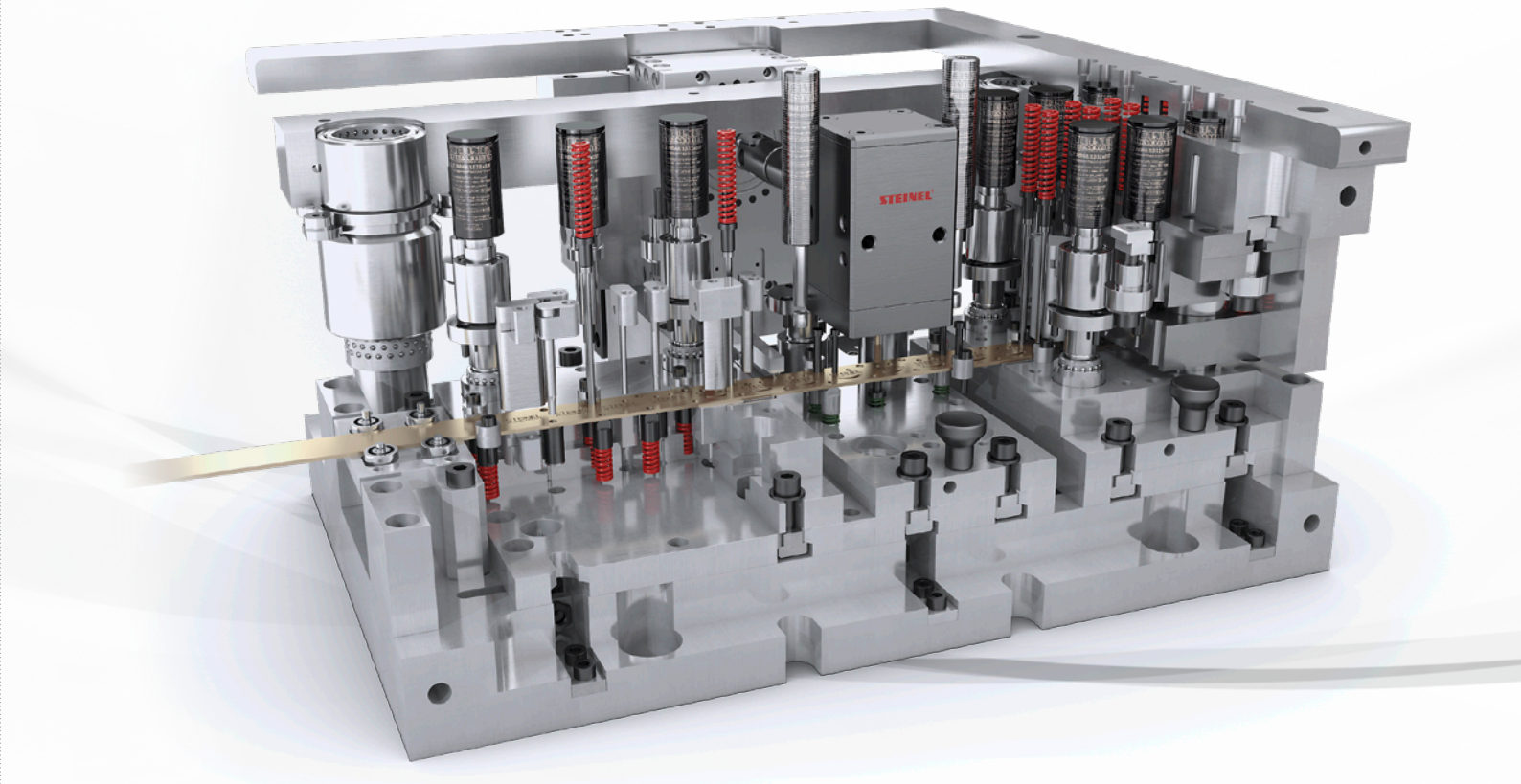
STEINEL®

All you need for tools

Your partner for punching and bending technology



Introduction

Die sets

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

Standardised module systems

Machine elements

Accessories

STEINEL

- Sales
- Download CAD data

All you need for tools – since 1925

Over 90 years of quality and tradition

STEINEL is a German family-owned company and a brand that is rich in tradition and can look back on more than 90 years of success.

As your partner for punching and bending technology, we combine highly precise products with first-class service, from our extensive range of standard parts right through to our tool and process optimisation, and ultimately the completed tool. STEINEL has a reputation as one of the world's punching and bending technology quality leaders.

STEINEL's motto is: **"All you need for tools".** This catalogue provides a complete overview of STEINEL's comprehensive product range. This includes all standard parts and assembly groups required for the construction of punching and bending tools. Experience the quality and variety of STEINEL's product range!

If you cannot find what you're looking for in this catalogue, we also design and build individual products according to your specifications. Because STEINEL combines everything under one roof: Development, production and service. This means that we are particularly fast and flexible, and can provide you with perfectly tailored solutions for each tool.

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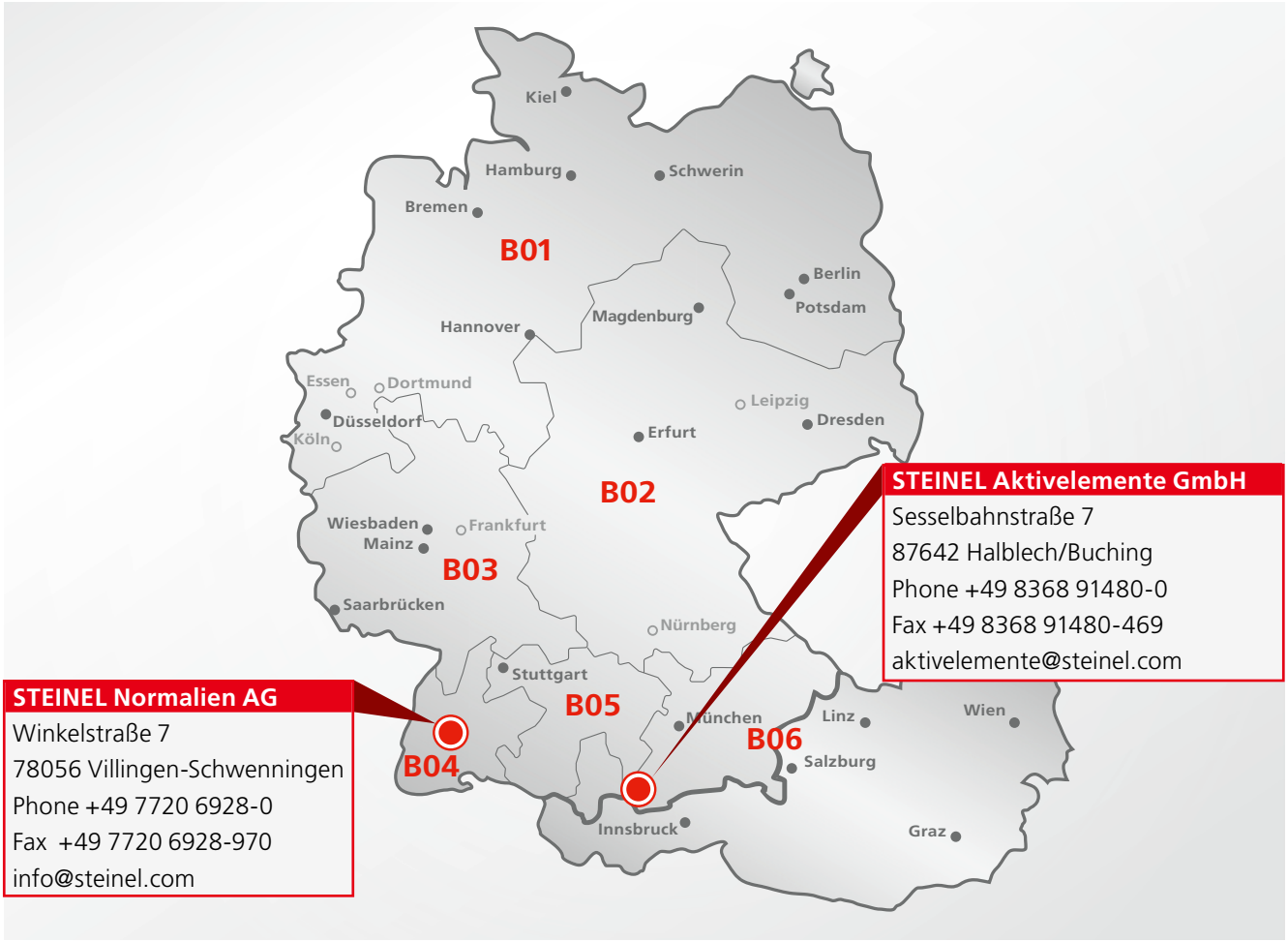

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Download CAD data

STEINEL Normalien PARTcommunity

To make it easier for you to design your tool, CAD data for our standard products and assembly groups is available in all common 2D and 3D formats. Simply register, log in, select the format and product you want and download the data.

The link for the free download of our standard parts can be found at **cad.steinel.com**.

If you require additional files types and information, please contact us directly.

Product index

- Die sets
- Guide units
- Active elements
- Spring elements
- Nitrogen systems
- Tapping units
- Standardised module systems
- Machine elements
- Accessories

Part number index

K100-000-0300 Valve key 5.90
ST0900 Tool modul 7.5
ST0900-01 Lower pressure plate 7.7
ST0900-02 Frame plate 7.8
ST0900-03 Guide plate 7.9
ST0900-04/-07 Intermediate plate 7.10
ST0900-05 Retaining plate 7.11
ST0900-06 Upper pressure plate 7.12
ST0900-12 Guide unit 7.13
ST0901 Tool modul 7.6
ST1001 Die set 1.43
ST1002 Die set 1.44
ST1004 Die set 1.45
ST1005 Die set 1.46
ST1006 Die set 1.47
ST1007 Die set 1.48
ST1092 Pneumatic stamping unit 8.3
ST1201 Die set 1.49
ST1202 Die set 1.50
ST1204 Die set 1.51
ST1205 Die set 1.52
ST1206 Die set 1.53
ST1207 Die set 1.54
ST1292 Pneumatic stamping unit 8.4
ST1401 Die set 1.55
ST1402 Die set 1.56
ST1404 Die set 1.57
ST1405 Die set 1.58
ST1406 Die set 1.59
ST1407 Die set 1.60
ST1601 Die set 1.61
ST1602 Die set 1.62
ST1606 Die set 1.63
ST1701 Die set 1.64
ST1702 Die set 1.65
ST1706 Die set 1.66
ST2001 Die set 1.67
ST2002 Die set 1.68
ST2004 Die set 1.69
ST2005 Die set 1.70
ST2006 Die set 1.71
ST2007 Die set 1.72
ST2011 Die set 1.73
ST2012 Die set 1.74
ST2014 Die set 1.75
ST2015 Die set 1.76
ST2862 Fineblanking die set 1.77
ST2865 Fineblanking die set 1.78
ST3500 Steel plate 1.42
ST3532 Die set 1.6
ST3539 Die set 1.9
ST3542 Die set 1.12
ST3549 Die set 1.14
ST3552 Die set 1.16
ST3559 Die set 1.19
ST3562 Die set 1.22
ST3569 Die set 1.24
ST3572 Die set 1.26
ST3579 Die set 1.29
ST3582 Die set 1.32
ST3589 Die set 1.34
ST3592 Die set 1.36
ST3599 Die set 1.38
ST3712 Die set 1.40
ST3719 Die set 1.41
ST7100 Guide pillar 2.21
ST7102 Guide pillar 2.22-1
ST7105 Guide pillar 2.23
ST7106 Guide pillar 2.25
ST7108 (inch) Guide pillar 2.126
ST7111 Guide pillar 2.119
ST7112 Guide pillar 2.120
ST7114 Guide pillar 2.27
ST7117 Guide pillar 2.29
ST7118 Guide pillar 2.31
ST7120 Guide pillar 2.33
ST7120 (inch) Guide pillar 2.127
ST7126 Guide pillar 2.35
ST7129 Guide pillar 2.37
ST7130 Ball cage 2.44
ST7130 (inch) Ball cage 2.129
ST7132 Cage holder 2.55
ST7132 (inch) Cage holder 2.133
ST7133 Ball cage 2.50
ST7134 Ball cage 2.53
ST7135 Limiting sleeve 2.54
ST7140 Roller cage 2.41
ST7141 Roller cage 2.42
ST7142 Roller cage 2.43
ST7150 Ball cage 2.47
ST7151 Ball cage 2.48
ST7152 Ball cage 2.49
ST7160 Guide pillar 2.107
ST7170 Ball cage 2.45
ST7171 Ball cage 2.46
ST7173 Ball cage 2.51
ST7174 Ball cage 2.52
ST7181 Quick-change guide pillar 2.38
ST7182 Pillar holding bush 2.40
ST7190 Guide pillar 2.17
ST7191 Guide bush 2.19
ST7192 Ball cage 2.18
ST7197 Guide bush 2.20
ST7200 Pillar bearing 2.100
ST7201 Guide bearing 2.103
ST7202 Guide bearing 2.104
ST7206 Guide bearing 2.101
ST7209 Guide bearing 2.102
ST7210 Pillar bearing 2.95
ST7211 Guide bearing 2.98
ST7212 Guide bearing 2.99
ST7216 Guide bearing 2.96
ST7219 Guide bearing 2.97
ST7250 Guide bearing 2.105
ST7260 Pillar bearing 2.106
ST7319 Guide bush 2.82
ST7360 Guide bush 2.122
ST7361 Guide bush 2.121
ST7366 Guide bush 2.123
ST7367 Holding clamp 2.124
ST7377 Holding clamp 2.124
ST7387 Holding disc 2.125
ST7402 Guide unit 2.59
ST7403 Guide unit 2.58
ST7404 Guide unit 2.61
ST7405 Guide unit 2.63
ST7406 Guide bush 2.56
ST7406 (inch) Guide bush 2.130
ST7407 Guide bush 2.57
ST7409 Guide bush 2.80
ST7411 Guide bush 2.83
ST7412 Guide unit 2.68
ST7413 Guide unit 2.67
ST7414 Guide unit 2.69
ST7415 Guide unit 2.70
ST7416 Guide bush 2.65
ST7416 (inch) Guide bush 2.131
ST7419 Guide bush 2.90
ST7419 (inch) Guide bush 2.132
ST7422 Guide unit 2.75
ST7423 Guide unit 2.73
ST7424 Guide unit 2.77
ST7425 Guide unit 2.79
ST7426 Guide bush 2.71
ST7429 Guide bush 2.89
ST7431 Guide bush 2.93
ST7441 Guide bush 2.94
ST7451 Guide bush 2.87
ST7460 Guide bush 2.108
ST7469 Guide bush 2.109
ST7471 Guide bush 2.91
ST7481 Guide bush 2.92
ST7491 Guide bush 2.85
ST7571 Guide plate 2.117
ST8841-1 Manifold cylinder 5.81
ST8841-2 Manifold cylinder 5.83
ST8841-3 Manifold cylinder 5.85
ST8841-DS Gasket kit 5.123
ST8841-WKZ-3 Socket 5.126
ST8841-WKZ-41 Socket 5.127
ST8841-ZB Accessory kit 5.123
ST8842-1 Sealing plug 5.124
ST8842-2 Sealing plug 5.125
ST8842-WKZ-5 Assembly tool 5.126
ST8845-01-01 Control panel 5.92
ST8845-02-01 Control panel 5.93
ST8845-32 Control panel 5.94
ST8845-444 Control panel 5.98

Part number index

ST8845-8 Control panel 5.96
ST8845-80 Control panel 5.95
ST8845-99 Control panel 5.97
ST8845-DW Pressure controller 5.99
ST9041 Pneumatic cylinder 8.5
ST9061 Traverse 8.6
ST9062 Traverse 8.6
ST9067 Threaded flange 8.7
ST9072 Mounting tabel 8.7
ST912x Toggle-lever press 8.8
ST9825 Guide pillar 2.112
ST9827 Guide pillar 2.113
ST9831 Guide bush 2.115
ST9833 Guide pillar 2.110
ST9833T Guide pillar 2.111
ST9834 Guide bush 2.116
SZ2700 Control cabinet 6.10
SZ2701 Tapping unit 6.11
SZ2702 Collet 6.17
SZ2703 Reducer 6.18
SZ2709 Interchangeable insert 6.19
SZ4035 Clamping socket 9.3
SZ4080 Clamping socket 9.4
SZ4125 Receiving chucks 9.5
SZ4129 Receiving chucks 9.6
SZ4160 Receiving chuck 9.7
SZ4161 Receiving chuck 9.8
SZ4351 Carrying screw 9.13
SZ4371 Lifting lug 9.14
SZ4381 Eye-bolt 9.9
SZ4385 Eye-bolt 9.10
SZ4390 Side-load hoist ring 9.11
SZ4392 Lifting point 9.12
SZ4432 Ball pressure screws 9.15
SZ4434 Ball pressure screws 9.16
SZ4512 Supporting bolt 9.17
SZ4513 Locating bolt 9.18
SZ4516 Supporting bolt 9.19
SZ5190 Polyurethane plates 4.55
SZ5290 Polyurethane rod 4.57
SZ5390 Polyurethane rod 4.58
SZ5391 Polyurethane rod 4.59
SZ5600 Cutting punch 3.18
SZ5691 Shape-cutting punch 3.27
SZ5692 Shape-cutting punch 3.29
SZ5693 Shape-cutting punch 3.31
SZ56xx Cutting punch 3.20
SZ5700 Cutting punch 3.19
SZ57xx Cutting punch 3.21
SZ5900 Cutting punch 3.22
SZ59xx Cutting punch 3.23
SZ60xx Cutting punch 3.8
SZ6121 Cutting punch 3.17
SZ6129 Cutting punch 3.16
SZ6134 Cutting punch 3.10
SZ6137 Cutting punch 3.12
SZ6139 Cutting punch 3.14
SZ6141 Spot facer 3.9
SZ6149 Cutting punch 3.6
SZ6210 Cutting bush 3.26
SZ6225 Punch guide bush 3.51
SZ6229 Punch guide bush 3.52
SZ6250 Drill Bush 3.39
SZ6255 Drill Bush 3.40
SZ6265 Cutting bush 3.41
SZ6285 Cutting bush 3.42
SZ6391 Shape-cutting bush 3.28
SZ6392 Shape-cutting bush 3.30
SZ6393 Shape-cutting bush 3.32
SZ6400 Embossing die 3.54
SZ6401 Internal embossing stamp 3.55
SZ6402 Number sleeve 3.56
SZ6403 Spacer 3.56
SZ6650 Ejector pin 3.43
SZ6700 Cutting punch 3.24
SZ6750 Ejector pin 3.46
SZ6751 Ejector sleeve 3.49
SZ67xx Cutting punch 3.25
SZ6981 Shape-cutting punch 3.33
SZ6982 Shape-cutting punch 3.35
SZ6983 Shape-cutting punch 3.37
SZ6991 Shape-cutting punch 3.34
SZ6992 Shape-cutting punch 3.36
SZ6993 Shape-cutting punch 3.38
SZ701008 Tube 5.100
SZ701108 Screw sleeve 5.101
SZ701208 F-Dorn 5.101
SZ701306 Screw connection 5.102
SZ701406 Ellbow screw connection 5.103
SZ701506 T-screw connection 5.104
SZ701606 Ellbow screw connection 5.103
SZ701706 L-screw connection 5.104
SZ701906 Adapter 5.108
SZ702006 Screw connection 5.102
SZ702106 Ellbow screw connection 5.107
SZ702206 T-screw connection 5.107
SZ702306 Four way screw connection 5.108
SZ702406 Screw connection 5.110
SZ703306 Intermediate adapter 5.106
SZ703406 Ellbow screw connection 5.105
SZ703506 T-screw connection 5.106
SZ703606 Ellbow screw connection 5.105
SZ704204 Quick coupling connector 5.112
SZ704301 Sealing plug 5.113
SZ704302 Quick coupling connector 5.111
SZ704303 Quick coupling sleeve 5.112
SZ704404 Sealing plug 5.113
SZ704405 Screw connection 5.109
SZ704406 Quick coupling connector 5.111
SZ7045 Charging adapter 5.88
SZ7045.10 Transition adapter 5.90
SZ7045.9 Transition adapter 5.90
SZ704530 Screw connection 5.109
SZ704531 Screw connection 5.110
SZ7046 Discharging screw 5.87
SZ7046 Discharging screw 5.87
SZ7066.2. Nitrogen cylinder 5.54
SZ7066.2.B Nitrogen cylinder 5.57
SZ7066.2.V Connecting nitrogen cylinder 5.59
SZ7066.2.VB Connecting nitrogen cylinder 5.61
SZ7080.2. Nitrogen cylinder 5.72
SZ7080.2.B Nitrogen cylinder 5.75
SZ7080.2.V Connecting nitrogen cylinder 5.77
SZ7080.2.VB Connecting nitrogen cylinder 5.79
SZ7087 Burst screw 5.122
SZ7368 Holding disc 2.125
SZ7900 Dowel pin 9.29
SZ7905 Dowel pin 9.31
SZ8000 Repair kit 1 5.118
SZ8000 WKZ Assembly tool 5.115
SZ8000 WKZ8065 Assembly tool 5.116
SZ8000 WKZ8066 Assembly tool 5.117
SZ8005 System spring 4.7
SZ8010 System spring 4.10
SZ8020 System spring 4.13
SZ8030 System spring 4.16
SZ8040 System spring 4.19
SZ8045 System spring 4.22
SZ8047 System spring 4.24
SZ8049 System spring 4.26
SZ8060.2. Nitrogen cylinder 5.13
SZ8060.2.B Nitrogen cylinder 5.15
SZ8060.2.PD Composite plate spring 5.20
SZ8060.2.V Connecting nitrogen cylinder 5.17
SZ8060.2.VB Connecting nitrogen cylinder 5.18
SZ8060.2.VZ Connecting nitrogen cylinder 5.19
SZ8063.1. Nitrogen cylinder 5.22
SZ8063.1.B Nitrogen cylinder 5.25
SZ8063.1.PD Composite plate spring 5.33
SZ8063.1.V Connecting nitrogen cylinder 5.27
SZ8063.1.VB Connecting nitrogen cylinder 5.29
SZ8063.1.VZ Connecting nitrogen cylinder 5.31
SZ8065.2. Nitrogen cylinder 5.35
SZ8065.2.B Nitrogen cylinder 5.37
SZ8065.2.V Connecting nitrogen cylinder 5.39
SZ8065.2.VB Connecting nitrogen cylinder 5.41
SZ8065.2.VZ Connecting nitrogen cylinder 5.43
SZ8066.2. Nitrogen cylinder 5.45
SZ8066.2.B Nitrogen cylinder 5.48
SZ8066.2.V Connecting nitrogen cylinder 5.50
SZ8066.2.VB Connecting nitrogen cylinder 5.52
SZ8078 Load cell 5.91
SZ8079 Force measuring device 5.91
SZ8080.2. Nitrogen cylinder 5.63
SZ8080.2.B Nitrogen cylinder 5.66
SZ8080.2.V Connecting nitrogen cylinder 5.68
SZ8080.2.VB Connecting nitrogen cylinder 5.70
SZ8085 Control set 5.86

Part number index

SZ8085.4 Charging tubing	5.89
SZ8085.6 Pressure reducer	5.89
SZ80855-1 Filling Unit	5.86
SZ8099 Warning sign	5.114
SZ8111 System spring	4.27
SZ8112 System spring	4.28
SZ8113 System spring	4.29
SZ8114 System spring	4.30
SZ8130 Thrust piece	4.64
SZ8131 Thrust piece	4.65
SZ8135 Thrust piece	4.60
SZ8140 Thrust piece	4.61
SZ8145 Thrust piece	4.62
SZ8146 Mounting key	4.63
SZ8300 Disc spring	4.41
SZ8455 Stripper	3.53
SZ8460 Thrust piece	4.60
SZ8500 Elastomer spring	4.43
SZ8510 Socket-head screw	9.20
SZ8512 Socket-head screw	9.24
SZ8514 (inch) Socket-head screw	2.134
SZ8515 Socket-head screw	9.22
SZ8520 Spring unit	4.47
SZ8522 Locating bush	4.52
SZ8523 Distance collar	4.53
SZ8524 Disc	4.54
SZ8526 Spring unit	4.45
SZ8527 Spring unit	4.46
SZ8530 Threaded pin	9.26
SZ8555 Guide pins	4.49
SZ8556 Spring washer	4.48
SZ8558 Shoulder screw	4.50
SZ8560 Distance collar	4.38
SZ8561 Disc	4.39
SZ8563 Damping spring	4.39
SZ8565.00 System spring unit	4.31
SZ8565.10 System spring unit	4.32
SZ8565.20 System spring unit	4.33
SZ8565.30 System spring unit	4.34
SZ8565.40 System spring unit	4.35
SZ8566 Threaded disc	4.36
SZ8567 Adapting disc	4.36
SZ8568 Clamping disc	4.37
SZ8569 Regrinding disc	4.37
SZ8580 Distance and fitting unit	4.40
SZ8590 Elastomer spring	4.44
SZ8881.01-0001 Cardan shaft	6.7
SZ8881.01-0002 Gear	6.8
SZ8881.01-0003 Gear rod	6.8
SZ8881.01-0004 Guide cartridge	6.9
SZ8881.01-0007 Tapping unit	6.7
SZ9005 Roller bearing grease	9.35
SZ9006 High-performance lubricant	9.35
SZ9014 Multi function spray	9.36
SZ9335 Holding magnet	9.27
SZ9336 Holding magnet	9.28
SZ9337 Holding magnet	9.28
SZ9400 Roll tap	6.20
SZ9511 Foil tape	9.32
SZ9512 Foil tape	9.32
SZ9514 Foil tape	9.33
SZ9515 Precision gauge	9.33
SZ960x Casting resin	9.40
SZ962x Model resin	9.41
SZ97042 Separating spray	9.39
SZ9717 Joint connection	9.38
SZ9740 Curing accelerator	9.36
SZ9741 Surface adhesive	9.37
SZ9742 Bearing mounting	9.37
SZ9743 Screw locking	9.38
SZ9744 Instant adhesive gel	9.39
SZ9800 High pressure lubrication gun	9.42
SZ9810 Lever press	9.42
SZ9850 High-performance oil	9.34
SZ9853 Slideway oil	9.34

Keyword index

Accessory kit
for manifold cylinder 5.123
Adapter
1/8" 5.108
Adapting disc 4.36
Assembly tool
base 5.115
DS-fixture 5.116
for sealing plug 5.126
Ball cage
Aluminium 2.44
Aluminium, with installation assistance 2.45
Aluminium, with locking device and fixing screw 2.53
Aluminium, with lock ring 2.46
Brass 2.47
Brass, Mini-series 2.18
Brass, with installation assistance 2.48
Brass, with lock ring 2.49
Polyurethane 2.50
Polyurethane, with installation assistance 2.51
Polyurethane, with lock ring 2.52
Ball pressure screws
with cylindrical head and hexagon socket 9.15
without head, with hexagon socket 9.16
Bearing mounting
LOCTITE 603 9.37
Burst screw 5.122
Cage holder 2.55
Cardan shaft
S-Former Z 6.7
Carrying screw
with thread 9.13
Casting resin
with hardener 9.40
Charging adapter 5.88
Charging tubing 5.89
Clamping disc 4.37
Clamping socket
with flange 9.4
with thread 9.3
Collet 6.17
Composite plate spring 5.20
Connecting nitrogen cylinder 5.17
2 connections, with burst protection 5.19
version extra heavy 5.59
version extra heavy, with burst protection 5.61
with burst protection 5.18
Control cabinet 6.10
Control panel
32 mm, for manifold plates, with burst protection, standard 5.94
80 mm, for manifold plates, with burst protection, standard 5.95
for composite plate, mini, with burst protection 5.97
for composite plate, with burst protection, standard 5.93
for manifold plates, mini, with burst protection 5.96
for manifold plates, with burst protection, standard 5.92
maxi, with burst protection 5.98
Control set 5.86
Curing accelerator
LOCTITE 7649 9.36
Cutting bush
for pressing-in 3.41
with quick-change mounting, tapered cutting bore 3.26
Cutting bush
with shoulder, for pressing-in 3.42
Cutting punch
with 60° head 3.10
with 60° head, reduced 3.16
with cylindrical head 3.18
with cylindrical head, reduced 3.20
with cylindrical head, reduced, with lift-off pin 3.23
with cylindrical head, with lift-off pin 3.22
with elongated neck 3.6
with elongated neck, reduced 3.8
with quick-change mounting 3.24
with quick-change mounting, reduced 3.25
Damping spring 4.39
Die set
thick upper part without thread, with ball guide 1.68
thick upper part without thread, with ball guide, with guide plate 1.74
thick upper part without thread, with sliding guide, bronze coating 1.67
thick upper part without thread, with sliding guide, bronze coating, with guide plate 1.73
thick upper part without thread, with sliding guide with solid lubricant 1.71
thick upper part with thread, with ball guide 1.70
thick upper part with thread, with ball guide, with guide plate 1.76
thick upper part with thread, with sliding guide, bronze coating 1.69
thick upper part with thread, with sliding guide, bronze coating, with guide plate 1.75
thick upper part with thread, with sliding guide with solid lubricant 1.72
upper part without thread, with ball guide 1.44
upper part without thread, with sliding guide, bronze coating 1.43
upper part without thread, with sliding guide with solid lubricant 1.47
upper part with thread, with ball guide 1.46
upper part with thread, with sliding guide, bronze coating 1.45
upper part with thread, with sliding guide with solid lubricant 1.48
with ball guide 1.6
with ball guide, for progressive and composite tools 1.40
with ball guide, four pillars 1.22
with ball guide, with guide plate 1.26
with ball guide, with guide plate, four pillars 1.36
with sliding guide, bronze coating 1.9
with sliding guide, bronze coating, for progressive and composite tools 1.41
with sliding guide, bronze coating, four pillars 1.24
with sliding guide, bronze coating, with guide plate 1.29
with sliding guide, bronze coating, with guide plate, four pillars 1.38
Disc 4.39
Discharging screw 5.87
for VG5 valve 5.87
Disc spring 4.41
Distance and fitting unit 4.40
Distance collar 4.38
Dowel pin 9.29
with internal thread 9.31
Drill Bush
for pressing-in 3.39
with shoulder, for pressing-in 3.40
Ejector pin
with 60° head, hardened 3.46
with cylindrical head, hardened 3.43
Ejector sleeve
with cylindrical head, hardened 3.49
Elastomer spring 4.43
Ellbow screw connection
45° 5.105
45°, adjustable 5.103
90° 5.105
90°, adjustable 5.103
Embossing die
complete embossing die 3.54
Eye-bolt
static 9.9
with key, hexagon shape 9.10
F-Dorn
DN4 5.101
Filling Unit 5.86
Fineblanking die set
upper part without thread, with ball guide 1.77
upper part without thread, with ball guide, with guide plate 1.78
Foil tape
Brass 9.32
non-corrosive, Steel 9.32
Steel, non-alloy 9.33
Force measuring device
for nitrogen cylinders 5.91
Four way screw connection 5.108
Frame plate 7.8
Gasket kit
for manifold cylinder 5.123
Gear
S-Former Z 6.8
Gear rod
S-Former Z 6.8
Guide bearing
ball guide with ball cage, with rectangular flange 2.104
ball guide without ball cage, with rectangular flange 2.101
machined, ball guide with ball cage, with rectangular flange 2.99
machined, ball guide without ball cage, with rectangular flange 2.96
machined, sliding guide with bronze coating, with rectangular flange 2.97
machined, sliding guide with solid lubricant, with rectangular flange 2.98
sliding guide, with round flange 2.105
sliding guide with bronze coating, with rectangular flange 2.102
sliding guide with solid lubricant, with rectangular flange 2.103
Guide bush
bronze coating, steel sliding guide, hardened, with flange 2.89
bronze coating, steel sliding guide, hardened, with shoulder 2.90
for industrial tool making, sliding guide solid bronze, with shoulder 2.108
for industrial tool making, sliding guide with bronze coating, with shoulder 2.109
sliding guide with solid lubricant, with flange 2.92

Keyword index

Guide bush
sliding guide with solid lubricant, with shoulder 2.91
smooth 2.56
smooth, Mini-series 2.19
smooth, sliding guide steel bronze plated 2.80
smooth, sliding guide steel bronze plated, for pouring 2.83
smooth, sliding guide with solid lubricant 2.85
smooth, solid bronze 2.121
smooth with adhesive grooves 2.57
smooth with adhesive grooves, Mini-series 2.20
with flange 2.71
with shoulder 2.65
with shoulder, solid bronze 2.122
Guide cartridge
S-Former Z 6.9
Guide pillar
for industrial tool making 2.110
for industrial tool making, with grooves 2.107
for industrial tool making, with shoulder 2.112
for industrial tool making, with transport hole 2.111
reduced 2.22-1
smooth 2.21
smooth, Mini-series 2.17
smooth, with head 2.119
smooth, with internal thread 2.126
smooth, with internal thread, both-sided 2.25
smooth, with recess and holding ring 2.23
with head, oil grooves 2.120
with middle mount shoulder 2.29
with middle mount shoulder, small 2.31
with middle mount shoulder, with internal thread, both-sided 2.27
with shoulder 2.113
with shoulder and internal thread 2.33
with shoulder and internal thread, both-sided 2.35
with shoulder and internal thread, fine centring 2.37
Guide pins
for elastomer spring 4.49
Guide plate 7.9
with solid lubricant, solid bronze 2.117
Guide unit
ball guide aluminium, with flange 2.75
ball guide aluminium, with shoulder 2.68
ball guide brass, with flange 2.77
ball guide brass, with shoulder 2.69
ball guide polyurethan, with flange 2.79
ball guide polyurethan, with shoulder 2.70
roller guide aluminium, with flange 2.73
roller guide aluminium, with shoulder 2.67
smooth, ball guide aluminium 2.59
smooth, ball guide brass 2.61
smooth, ball guide polyurethan 2.63
smooth, roller guide aluminium 2.58
with middle mount shoulder, small, smooth, ball guide aluminium 7.13
High-performance lubricant 9.35
High-performance oil 9.34
High pressure lubrication gun 9.42
Holding clamp
rectangular 2.124
round 2.124
Holding disc 2.125
with screw 2.125
Holding magnet
flat 9.28
flat, with threaded pins 9.28
round 9.27
Instant adhesive gel
LOCTITE 454 9.39
Interchangeable insert
S-Former E1.1
High-speed clamping system 6.19
Intermediate adapter
straight 5.106
Intermediate plate 7.10
Internal embossing stamp 3.55
Joint connection
LOCTITE 542 9.38
Lever press
with tube for conical lubricating nipple 9.42
Lifting lug
with screws 9.14
Lifting point
screwable 9.12
Limiting sleeve 2.54
Load cell 5.91
Locating bolt
cylindrical 9.18
Locating bush 4.52
Lower pressure plate 7.7
L-screw connection
adjustable, with lock nut 5.104
Manifold cylinder
high 5.81
low 5.85
normal 5.83
Model resin
with hardener 9.41
Mounting key
for thrust piece 4.63
Mounting tabel
for pneumatic stamping unit 8.7
Multi function spray
WD-40 9.36
Nitrogen cylinder
self-sufficient 5.13
self-sufficient, standard design 5.63
self-sufficient, version extra heavy 5.54
self-sufficient, version extra heavy, with burst protection 5.57
self-sufficient, with burst protection 5.15
Number sleeve 3.56
Pillar bearing
machined, with rectangular flange 2.95
with rectangular flange 2.100
with round flange 2.106
Pillar holding bush 2.40
Pneumatic cylinder 8.5
Pneumatic stamping unit
with rectangular working surface 8.4
with round working surface 8.3
Polyurethane plates 4.55
Polyurethane rod
hollow round rod 4.59
rectangular rod 4.57
round rod 4.58
Precision gauge
polished surface 9.33
Pressure controller
pressure controller 5.99
Pressure reducer 5.89
Punch guide bush
for pressing-in 3.51
Quick-change guide pillar
with mounting taper and internal thread 2.38
Quick coupling connector
G1/4 5.112
G1/8 5.111
M14 x 1.5 5.111
Quick coupling sleeve
G1/4 5.112
Receiving chuck
blank 9.8
for receiving chucks 9.7
Receiving chucks
with flange 9.6
with thread 9.5
Reducer 6.18
Regrinding disc 4.37
Repair kit 1 5.118
Repair kit 2 5.119
Repair kit 3 5.120
Repair kit 4 5.121
Retaining plate 7.11
Roller bearing grease 9.35
Roller cage
Aluminium 2.41
Aluminium, with installation assistance 2.42
Aluminium, with lock ring 2.43
Roll tap 6.20
Screw connection
short 5.102
straight, G1/4 5.109
straight, G1/4-G1/8 5.109
straight, G1/8-G1/8 5.110
straight, long 5.102
straight, M12 x 1.5 5.110
Screw locking
LOCTITE 270 9.38
Screw sleeve
DN4 5.101
Sealing plug 5.125
G1/4 5.113
G1/8 5.113
with six pans creux 5.124
Separating spray
for casting and model resin 9.39
Shape-cutting bush
with shoulder, oval, with protection against torsion 3.32
with shoulder, rectangular, with protection against torsion 3.30
with shoulder, square, with protection against torsion 3.28
Shape-cutting punch
oval, with head, continuously shaped 3.38
oval, without head, continuously shaped 3.37
rectangular, with head, continuously shaped 3.36
rectangular, without head, continuously shaped 3.35
square, with head, continuously shaped 3.34
square, without head, continuously shaped 3.33
with cylindrical head, oval, with protection against torsion 3.31
with cylindrical head, rectangular, with protection against torsion 3.29
with cylindrical head, square, with protection against torsion 3.27

Keyword index

Shoulder screw 4.50
Side-load hoist ring
rotatable 9.11
Slideway oil 9.34
for manifold cylinder 5.126
Socket-head screw
flat head, with hexagon socket 9.24
with hexagon socket 2.20
Spacer 3.56
Spot facer
for cutting punch with trumpet head 3.9
Spring unit
double, with elastomer spring 4.47
single, with elastomer spring 4.46
single, with rubber spring 4.45
Spring washer
for elastomer spring 4.48
Steel plate 1.42
Stripper
self-adhesive 3.53
Supporting bolt 9.17
swinging 9.19
Surface adhesive
LOCTITE 496 9.37
System spring
double, extra, extra heavy load, identification colour black-black 4.26
extra heavy load, identification colour black 4.24
extra heavy load, identification colour bronze 4.22
extra light load, identification colour lilac 4.7
heavy load, identification colour red 4.16
heavy load, identification colour red, small series 4.29
light load, identification colour green 4.10
light load, identification colour green, small series 4.27
medium load, identification colour blue 4.13
medium load, identification colour blue, small series 4.28
very heavy load, identification colour yellow 4.19
very heavy load, identification colour yellow, small series 4.30
System spring unit
heavy load, identification colour red, preloaded 4.34
light load, identification colour green, preloaded 4.32
medium load, identification colour blue, preloaded 4.33
very heavy load, identification colour yellow, preloaded 4.35
without spring 4.31
Tapping unit
S-Former E0 6.11
S-Former E1.1 6.12
S-Former E1.1 High-speed clamping system 6.13
S-Former E1.2 6.14
S-Former E2 6.15
S-Former E3 6.16
S-Former Z 6.7
Threaded disc 4.36
Threaded flange 8.7
Threaded pin
with hexagon socket 9.26
Thrust piece
heavy series 4.62
Thrust piece
Thrust piece 4.60
light series 4.61
with ball, slot 4.64
with bolt 4.60
with bolt, hexagon socket 4.65
Toggle-lever press 8.8
Tool modul
mounted 7.6
not mounted 7.5
Transition adapter 5.90
Traverse
bored 8.6
not bored 8.6
T-screw connection 5.106
adjustable 5.104
Tube
for self assembly 5.100
Upper pressure plate 7.12
Valve key 5.90
Warning sign 5.114

Die sets

- made from steel and cast iron with lamellar graphite
- for progressive stamping tools
- Steel plates
- Special designs

ST3532 1.6

ST3539 1.9

ST3542 1.12

ST3549 1.14

ST3552 1.16

ST3559 1.19

ST3562 1.22

ST3569 1.24

ST3572 1.26

ST3579 1.29

ST3582 1.32

ST3589 1.34

ST3592 1.36

ST3599 1.38

ST3712 1.40

ST3719 1.41

ST3500 1.42

ST1001 1.43

ST1002 1.44

ST1004 1.45

ST1005 1.46

ST1006 1.47

ST1007 1.48

ST1201 1.49

ST1202 1.50

ST1204 1.51

ST1205 1.52

ST1206 1.53

ST1207 1.54

ST1401 1.55

ST1402 1.56

ST1404 1.57

ST1405 1.58

ST1406 1.59

ST1407 1.60

ST1601 1.61

ST1602 1.62

ST1606 1.63

ST1701 1.64

ST1702 1.65

ST1706 1.66

ST2001 1.67

ST2002 1.68

ST2004 1.69

ST2005 1.70

ST2006 1.71

ST2007 1.72

ST2011 1.73

ST2012 1.74

ST2014 1.75

ST2015 1.76

ST2862 1.77

ST2865 1.78

Die sets

made from steel and cast-iron with lamellar graphite

Steel die sets

Standardised steel die sets are available in numerous sizes with two pillars in the diagonal, back-positioned and middle variants, as well as with four pillars. They are equipped with sliding or ball guides. The low-tension annealed frame plates are machined on all sides and plane-parallel ground. All steel die sets are tested in accordance with DIN 1690 Part 1, and are therefore free from cavities, cracks and inclusions. Depending on the variant, the die sets made of steel can be delivered with or without guide plates

Cast-iron die sets with lamellar graphite

The standardised cast-iron die sets with lamellar graphite can be delivered in numerous shapes and sizes. All cast-iron die sets with lamellar graphite are tested in accordance with DIN 1690 Part 1, and are therefore free from cavities, cracks and inclusions. They are equipped with sliding or ball guides.

Die sets

for progressive stamping tools, steel plates

Die sets for progressive stamping tools

The standardised die sets for progressive stamping tools are equipped with sliding or ball guides and are available in various sizes. These basic structures allow various production steps to be carried out successively, such as punching, embossing, and bending. Any generated lateral forces are optimally absorbed by the middle mount shoulder pillars in the guide plate.

Steel plates

The steel plates – made from the material 1.1730 (C45) – are available in various sizes. They are low-tension annealed, machined on all sides and plane-parallel ground.

Die sets

Special designs

Die sets and plates can also be manufactured according to your own specifications. The plates are, depending on their size, plane-parallel ground (up to 2000 x 1000 x 350 mm) or precision-milled (up to 1500 x 350 mm).

At our production locations, we can quickly produce die sets matching your tool concept. We prefer processing low-tension annealed 1.1730 (C45) and the high-strength aluminium alloy EN AW 7075 (AlZnMgCu1.5). Upon request, we also process materials such as 1.2312 (40CrMnMoS8-6) and TOOLOX.

For us to be able to respond to your questions quickly and succinctly, please send us your data in STEP or DXF format.

Measuring and testing

State-of-the-art measurement machines allow us to measure and document parts to the highest degree of precision.

	ACCURA II 8	MICURA
Measuring range	1200 x 1800 x 800	500 x 500 x 500
Deviation in length	E = 1.9 µm (Tolerance = 9.5 µm at 2300 mm space diagonal)	E = 0.7 µm (Tolerance = 3.5 µm at 866 mm space diagonal)
Resolution	0.20 µm	
Table load	2000 kg	280 kg

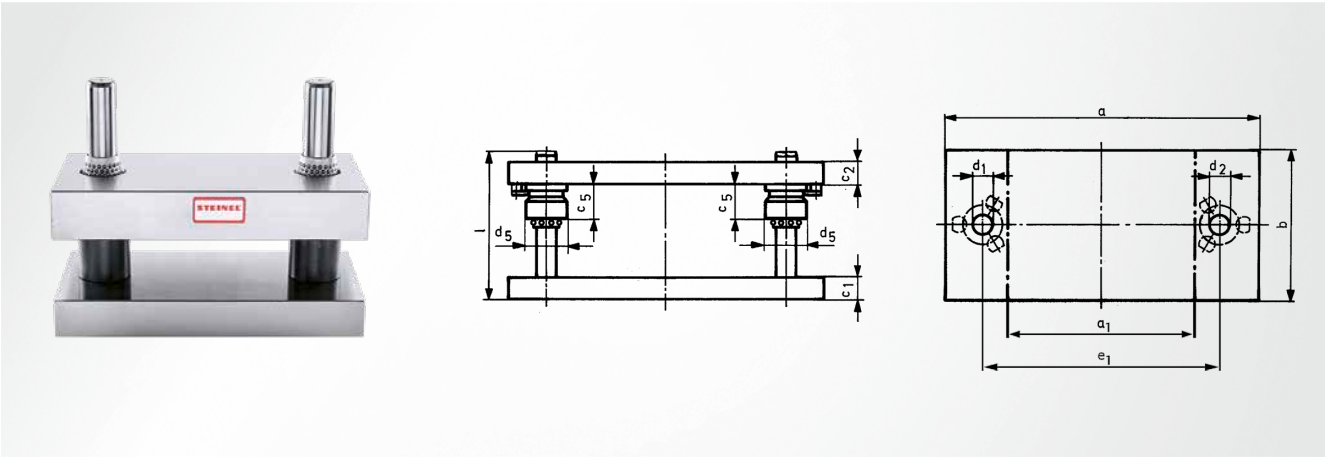
Customer-specific measurement protocols can be created upon request.

STEINEL machining service

	Length	Width	Height
Water jets	2000	1500	150
Plasma nitriding	2000	1500	350
Deep-hole boring	2000	1500	350
Wire EDM	500	350	256
Flat grinding	2000	1000	350
Milling	2000	1500	350
Jig grinding	1300	800	350
Tapping, thread cutting, milling	2000	1500	350

ST3532 Die set

with ball guide



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Ball guide

Pillar position
parallel centred

Note
Size c_1, c_2 +0.2 to +0.5

a x b	a_1	c_5	d_1 / d_2 x l	d_5	e_1	c_1	c_2	Item number
160 x 80	60	36	19 / 20 x 160	40	100	32	32	ST3532 **160 x 080**
160 x 100	60	36	19 / 20 x 160	40	100	32	32	ST3532 **160 x 100**
160 x 125	60	36	19 / 20 x 160	40	100	32	32	ST3532 **160 x 125**
200 x 100	70	57	24 / 25 x 180	48	120	40	40	ST3532 **200 x 100.1**
						32	40	ST3532 **200 x 100.2**
						40	32	ST3532 **200 x 100.3**
						32	32	ST3532 **200 x 100.4**
200 x 125	70	57	24 / 25 x 180	48	120	40	40	ST3532 **200 x 125.1**
						32	40	ST3532 **200 x 125.2**
						40	32	ST3532 **200 x 125.3**
						32	32	ST3532 **200 x 125.4**
200 x 160	70	57	24 / 25 x 180	48	120	40	40	ST3532 **200 x 160.1**
						32	40	ST3532 **200 x 160.2**
						40	32	ST3532 **200 x 160.3**
						32	32	ST3532 **200 x 160.4**
250 x 125	120	57	24 / 25 x 180	48	170	40	40	ST3532 **250 x 125.1**
						32	40	ST3532 **250 x 125.2**
						40	32	ST3532 **250 x 125.3**
						32	32	ST3532 **250 x 125.4**
250 x 160	120	57	24 / 25 x 180	48	170	40	40	ST3532 **250 x 160.1**
						32	40	ST3532 **250 x 160.2**
						40	32	ST3532 **250 x 160.3**
						32	32	ST3532 **250 x 160.4**
250 x 200	120	57	24 / 25 x 180	48	170	40	40	ST3532 **250 x 200.1**
						32	40	ST3532 **250 x 200.2**
						40	32	ST3532 **250 x 200.3**
						32	32	ST3532 **250 x 200.4**
315 x 160	165	63	30 / 32 x 200	56	225	50	50	ST3532 **315 x 160.1**
						40	50	ST3532 **315 x 160.2**
						50	40	ST3532 **315 x 160.3**
						40	40	ST3532 **315 x 160.4**
315 x 200	165	63	30 / 32 x 200	56	225	50	50	ST3532 **315 x 200.1**
						40	50	ST3532 **315 x 200.2**
						50	40	ST3532 **315 x 200.3**
						40	40	ST3532 **315 x 200.4**
315 x 250	165	63	30 / 32 x 200	56	225	50	50	ST3532 **315 x 250.1**

ST3532 Die set

with ball guide

a x b	a_1	c_5	d_1 / d_2 x l	d_5	e_1	c_1	c_2	Item number
315 x 250	165	63	30 / 32 x 200	56	225	40	50	ST3532 **315 x 250.2**
						50	40	ST3532 **315 x 250.3**
						40	40	ST3532 **315 x 250.4**
400 x 200	250	63	30 / 32 x 200	56	310	50	50	ST3532 **400 x 200.1**
						40	50	ST3532 **400 x 200.2**
						50	40	ST3532 **400 x 200.3**
						40	40	ST3532 **400 x 200.4**
400 x 250	250	63	30 / 32 x 200	56	310	50	50	ST3532 **400 x 250.1**
						40	50	ST3532 **400 x 250.2**
						50	40	ST3532 **400 x 250.3**
						40	40	ST3532 **400 x 250.4**
400 x 315	250	63	30 / 32 x 200	56	310	50	50	ST3532 **400 x 315.1**
						40	50	ST3532 **400 x 315.2**
						50	40	ST3532 **400 x 315.3**
						40	40	ST3532 **400 x 315.4**
500 x 250	330	70	38 / 40 x 200	66	400	50	50	ST3532 **500 x 250.1**
						40	50	ST3532 **500 x 250.2**
						50	40	ST3532 **500 x 250.3**
						40	40	ST3532 **500 x 250.4**
500 x 315	330	70	38 / 40 x 200	66	400	50	50	ST3532 **500 x 315.1**
						40	50	ST3532 **500 x 315.2**
						50	40	ST3532 **500 x 315.3**
						40	40	ST3532 **500 x 315.4**
500 x 400	330	70	38 / 40 x 200	66	400	50	50	ST3532 **500 x 400.1**
						40	50	ST3532 **500 x 400.2**
						50	40	ST3532 **500 x 400.3**
						40	40	ST3532 **500 x 400.4**
630 x 315	430	80	48 / 50 x 250	80	510	63	63	ST3532 **630 x 315.1**
						63	50	ST3532 **630 x 315.3**
630 x 315	430	80	48 / 50 x 224	80	510	50	63	ST3532 **630 x 315.2**
						50	50	ST3532 **630 x 315.4**
630 x 400	430	80	48 / 50 x 250	80	510	63	63	ST3532 **630 x 400.1**
						63	50	ST3532 **630 x 400.3**
630 x 400	430	80	48 / 50 x 224	80	510	50	63	ST3532 **630 x 400.2**
						50	50	ST3532 **630 x 400.4**
630 x 500	430	80	48 / 50 x 250	80	510	63	63	ST3532 **630 x 500.1**
						63	50	ST3532 **630 x 500.3**
630 x 500	430	80	48 / 50 x 224	80	510	50	63	ST3532 **630 x 500.2**
						50	50	ST3532 **630 x 500.4**
710 x 400	510	80	48 / 50 x 250	80	590	63	63	ST3532 **710 x 400.1**
						63	50	ST3532 **710 x 400.3**
710 x 400	510	80	48 / 50 x 224	80	590	50	63	ST3532 **710 x 400.2**
						50	50	ST3532 **710 x 400.4**
710 x 500	510	80	48 / 50 x 250	80	590	63	63	ST3532 **710 x 500.1**
						63	50	ST3532 **710 x 500.3**
710 x 500	510	80	48 / 50 x 224	80	590	50	63	ST3532 **710 x 500.2**
						50	50	ST3532 **710 x 500.4**
710 x 630	510	80	48 / 50 x 250	80	590	63	63	ST3532 **710 x 630.1**
						63	50	ST3532 **710 x 630.3**
710 x 630	510	80	48 / 50 x 224	80	590	50	63	ST3532 **710 x 630.2**
						50	50	ST3532 **710 x 630.4**
800 x 400	600	80	48 / 50 x 250	80	680	63	63	ST3532 **800 x 400.1**
						63	50	ST3532 **800 x 400.3**
800 x 400	600	80	48 / 50 x 224	80	680	50	63	ST3532 **800 x 400.2**
						50	50	ST3532 **800 x 400.4**
800 x 500	600	80	48 / 50 x 250	80	680	63	63	ST3532 **800 x 500.1**
						63	50	ST3532 **800 x 500.3**
800 x 500	600	80	48 / 50 x 224	80	680	50	63	ST3532 **800 x 500.2**
						50	50	ST3532 **800 x 500.4**
800 x 630	600	80	48 / 50 x 250	80	680	63	63	ST3532 **800 x 630.1**
						63	50	ST3532 **800 x 630.3**

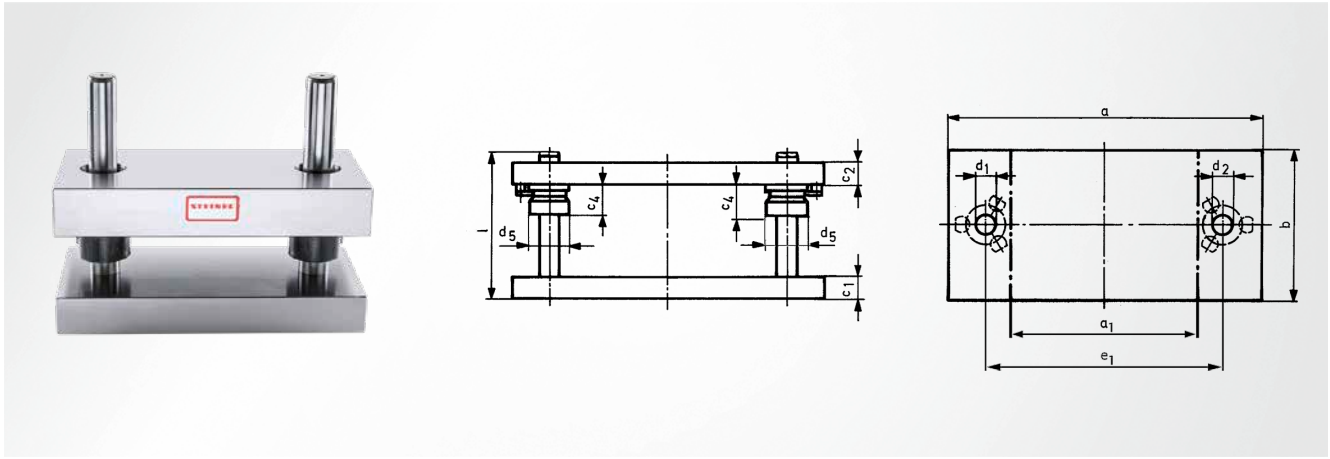
ST3532 Die set

with ball guide

a x b	a_1	c_5	d_1 / d_2 x l	d_5	e_1	c_1	c_2	Item number
800 x 630	600	80	48 / 50 x 224	80	680	50	63	ST3532 **800 x 630.2**
						50	50	ST3532 **800 x 630.4**

ST3539 Die set

with sliding guide, bronze coating



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Sliding guide with bronze coating

Pillar position
parallel centred

Note
Size c_1, c_2 +0.2 to +0.5

a x b	a_1	c_4	d_1 / d_2 x l	d_5	e_1	c_1	c_2	Item number
160 x 80	60	20	19 / 20 x 160	40	100	32	32	ST3539 **160 x 080**
160 x 100	60	20	19 / 20 x 160	40	100	32	32	ST3539 **160 x 100**
160 x 125	60	20	19 / 20 x 160	40	100	32	32	ST3539 **160 x 125**
200 x 100	70	37	24 / 25 x 180	48	120	40	40	ST3539 **200 x 100.1**
						32	40	ST3539 **200 x 100.2**
						40	32	ST3539 **200 x 100.3**
						32	32	ST3539 **200 x 100.4**
200 x 125	70	37	24 / 25 x 180	48	120	40	40	ST3539 **200 x 125.1**
						32	40	ST3539 **200 x 125.2**
						40	32	ST3539 **200 x 125.3**
						32	32	ST3539 **200 x 125.4**
200 x 160	70	37	24 / 25 x 180	48	120	40	40	ST3539 **200 x 160.1**
						32	40	ST3539 **200 x 160.2**
						40	32	ST3539 **200 x 160.3**
						32	32	ST3539 **200 x 160.4**
250 x 125	120	37	24 / 25 x 180	48	170	40	40	ST3539 **250 x 125.1**
						32	40	ST3539 **250 x 125.2**
						40	32	ST3539 **250 x 125.3**
						32	32	ST3539 **250 x 125.4**
250 x 160	120	37	24 / 25 x 180	48	170	40	40	ST3539 **250 x 160.1**
						32	40	ST3539 **250 x 160.2**
						40	32	ST3539 **250 x 160.3**
						32	32	ST3539 **250 x 160.4**
250 x 200	120	37	24 / 25 x 180	48	170	40	40	ST3539 **250 x 200.1**
						32	40	ST3539 **250 x 200.2**
						40	32	ST3539 **250 x 200.3**
						32	32	ST3539 **250 x 200.4**
315 x 160	165	45	30 / 32 x 200	56	225	50	50	ST3539 **315 x 160.1**
						40	50	ST3539 **315 x 160.2**
						50	40	ST3539 **315 x 160.3**
						40	40	ST3539 **315 x 160.4**
315 x 200	165	45	30 / 32 x 200	56	225	50	50	ST3539 **315 x 200.1**
						40	50	ST3539 **315 x 200.2**
						50	40	ST3539 **315 x 200.3**
						40	40	ST3539 **315 x 200.4**
315 x 250	165	45	30 / 32 x 200	56	225	50	50	ST3539 **315 x 250.1**

ST3539 Die set

with sliding guide, bronze coating

a x b	a_1	c_4	d_1 / d_2 x l	d_5	e_1	c_1	c_2	Item number
315 x 250	165	45	30 / 32 x 200	56	225	40	50	ST3539 **315 x 250.2**
						50	40	ST3539 **315 x 250.3**
						40	40	ST3539 **315 x 250.4**
400 x 200	250	45	30 / 32 x 200	56	310	50	50	ST3539 **400 x 200.1**
						40	50	ST3539 **400 x 200.2**
						50	40	ST3539 **400 x 200.3**
						40	40	ST3539 **400 x 200.4**
400 x 250	250	45	30 / 32 x 200	56	310	50	50	ST3539 **400 x 250.1**
						40	50	ST3539 **400 x 250.2**
						50	40	ST3539 **400 x 250.3**
						40	40	ST3539 **400 x 250.4**
400 x 315	250	45	30 / 32 x 200	56	310	50	50	ST3539 **400 x 315.1**
						40	50	ST3539 **400 x 315.2**
						50	40	ST3539 **400 x 315.3**
						40	40	ST3539 **400 x 315.4**
500 x 250	330	45	38 / 40 x 200	66	400	50	50	ST3539 **500 x 250.1**
						40	50	ST3539 **500 x 250.2**
						50	40	ST3539 **500 x 250.3**
						40	40	ST3539 **500 x 250.4**
500 x 315	330	45	38 / 40 x 200	66	400	50	50	ST3539 **500 x 315.1**
						40	50	ST3539 **500 x 315.2**
						50	40	ST3539 **500 x 315.3**
						40	40	ST3539 **500 x 315.4**
500 x 400	330	45	38 / 40 x 200	66	400	50	50	ST3539 **500 x 400.1**
						40	50	ST3539 **500 x 400.2**
						50	40	ST3539 **500 x 400.3**
						40	40	ST3539 **500 x 400.4**
630 x 315	430	50	48 / 50 x 250	80	510	63	63	ST3539 **630 x 315.1**
						63	50	ST3539 **630 x 315.3**
630 x 315	430	50	48 / 50 x 224	80	510	50	63	ST3539 **630 x 315.2**
						50	50	ST3539 **630 x 315.4**
630 x 400	430	50	48 / 50 x 250	80	510	63	63	ST3539 **630 x 400.1**
						63	50	ST3539 **630 x 400.3**
630 x 400	430	50	48 / 50 x 224	80	510	50	63	ST3539 **630 x 400.2**
						50	50	ST3539 **630 x 400.4**
630 x 500	430	50	48 / 50 x 250	80	510	63	63	ST3539 **630 x 500.1**
						63	50	ST3539 **630 x 500.3**
630 x 500	430	50	48 / 50 x 224	80	510	50	63	ST3539 **630 x 500.2**
						50	50	ST3539 **630 x 500.4**
710 x 400	510	50	48 / 50 x 250	80	590	63	63	ST3539 **710 x 400.1**
						63	50	ST3539 **710 x 400.3**
710 x 400	510	50	48 / 50 x 224	80	590	50	63	ST3539 **710 x 400.2**
						50	50	ST3539 **710 x 400.4**
710 x 500	510	50	48 / 50 x 250	80	590	63	63	ST3539 **710 x 500.1**
						63	50	ST3539 **710 x 500.3**
710 x 500	510	50	48 / 50 x 224	80	590	50	63	ST3539 **710 x 500.2**
						50	50	ST3539 **710 x 500.4**
710 x 630	510	50	48 / 50 x 250	80	590	63	63	ST3539 **710 x 630.1**
						63	50	ST3539 **710 x 630.3**
710 x 630	510	50	48 / 50 x 224	80	590	50	63	ST3539 **710 x 630.2**
						50	50	ST3539 **710 x 630.4**
800 x 400	600	50	48 / 50 x 250	80	680	63	63	ST3539 **800 x 400.1**
						63	50	ST3539 **800 x 400.3**
800 x 400	600	50	48 / 50 x 224	80	680	50	63	ST3539 **800 x 400.2**
						50	50	ST3539 **800 x 400.4**
800 x 500	600	50	48 / 50 x 250	80	680	63	63	ST3539 **800 x 500.1**
						63	50	ST3539 **800 x 500.3**
800 x 500	600	50	48 / 50 x 224	80	680	50	63	ST3539 **800 x 500.2**
						50	50	ST3539 **800 x 500.4**
800 x 630	600	50	48 / 50 x 250	80	680	63	63	ST3539 **800 x 630.1**
						63	50	ST3539 **800 x 630.3**

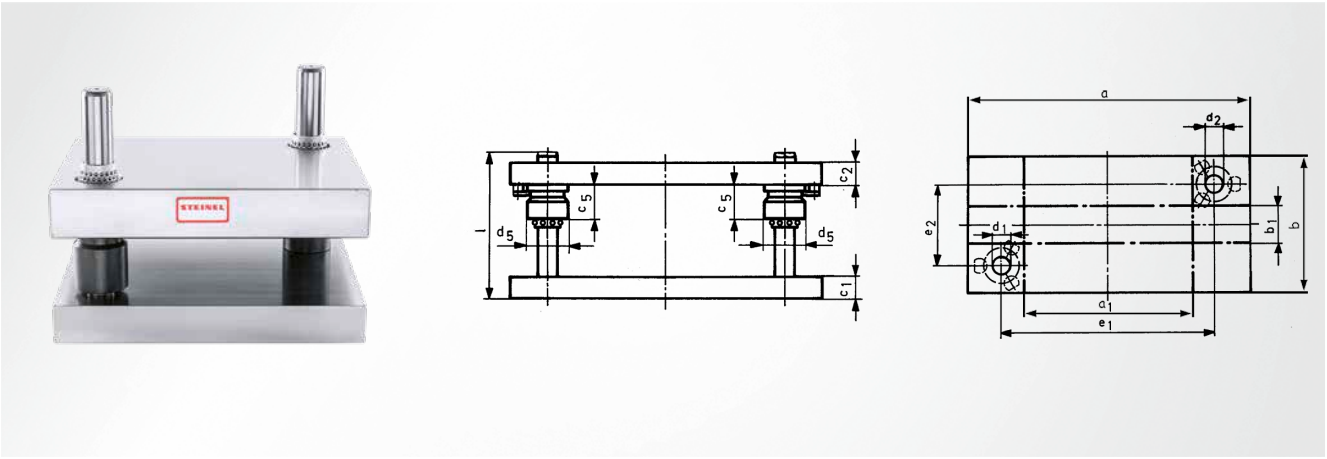
ST3539 Die set

with sliding guide, bronze coating

a x b	a_1	c_4	d_1 / d_2 x l	d_5	e_1	c_1	c_2	Item number
800 x 630	600	50	48 / 50 x 224	80	680	50	63	ST3539 **800 x 630.2**
						50	50	ST3539 **800 x 630.4**

ST3542 Die set

with ball guide



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Ball guide

Pillar position
diagonal

Note
Size c_1, c_2 +0.2 to +0.5

a x b	a_1	b_1	c_5	d_1 / d_2 x l	d_5	e_1	e_2	c_1	c_2	Item number
160 x 160	60	60	36	19 / 20 x 160	40	100	100	32	32	ST3542 **160 x 160**
200 x 200	70	70	57	24 / 25 x 180	48	120	120	40	40	ST3542 **200 x 200.1**
								32	40	ST3542 **200 x 200.2**
								40	32	ST3542 **200 x 200.3**
								32	32	ST3542 **200 x 200.4**
250 x 200	120	70	57	24 / 25 x 180	48	170	120	40	40	ST3542 **250 x 200.1**
								32	40	ST3542 **250 x 200.2**
								40	32	ST3542 **250 x 200.3**
								32	32	ST3542 **250 x 200.4**
250 x 250	120	120	57	24 / 25 x 180	48	170	170	40	40	ST3542 **250 x 250.1**
								32	40	ST3542 **250 x 250.2**
								40	32	ST3542 **250 x 250.3**
								32	32	ST3542 **250 x 250.4**
315 x 200	165	50	63	30 / 32 x 200	56	225	110	50	50	ST3542 **315 x 200.1**
								40	50	ST3542 **315 x 200.2**
								50	40	ST3542 **315 x 200.3**
								40	40	ST3542 **315 x 200.4**
315 x 250	165	100	63	30 / 32 x 200	56	225	160	50	50	ST3542 **315 x 250.1**
								40	50	ST3542 **315 x 250.2**
								50	40	ST3542 **315 x 250.3**
								40	40	ST3542 **315 x 250.4**
315 x 315	165	165	63	30 / 32 x 200	56	225	225	50	50	ST3542 **315 x 315.1**
								40	50	ST3542 **315 x 315.2**
								50	40	ST3542 **315 x 315.3**
								40	40	ST3542 **315 x 315.4**
400 x 200	250	50	63	30 / 32 x 200	56	310	110	50	50	ST3542 **400 x 200.1**
								40	50	ST3542 **400 x 200.2**
								50	40	ST3542 **400 x 200.3**
								40	40	ST3542 **400 x 200.4**
400 x 250	250	100	63	30 / 32 x 200	56	310	160	50	50	ST3542 **400 x 250.1**
								40	50	ST3542 **400 x 250.2**
								50	40	ST3542 **400 x 250.3**
								40	40	ST3542 **400 x 250.4**
400 x 315	250	165	63	30 / 32 x 200	56	310	225	50	50	ST3542 **400 x 315.1**
								40	50	ST3542 **400 x 315.2**
								50	40	ST3542 **400 x 315.3**

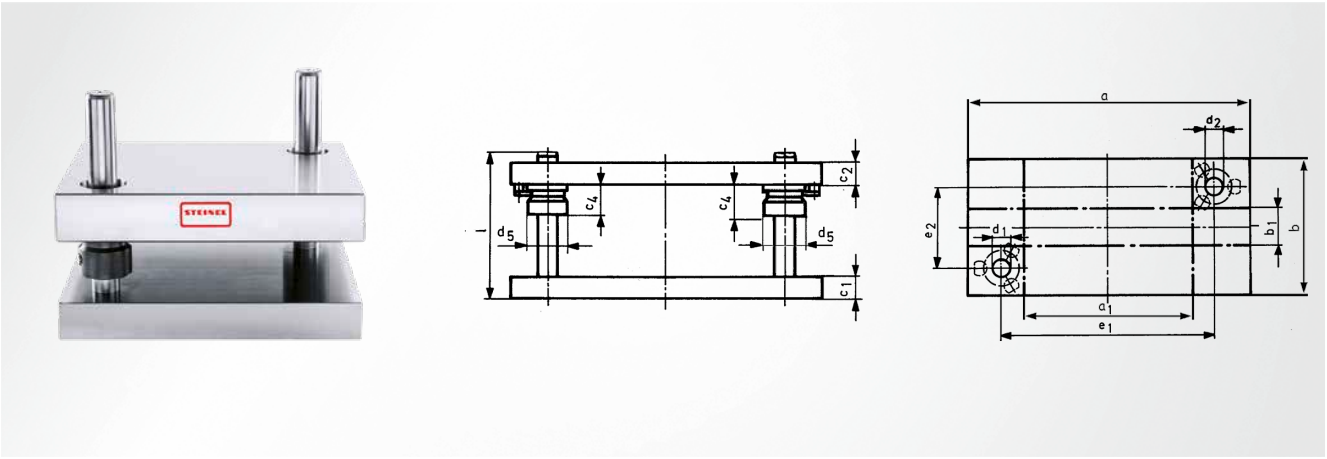
ST3542 Die set

with ball guide

a x b	a_1	b_1	c_5	d_1 / d_2 x l	d_5	e_1	e_2	c_1	c_2	Item number
400 x 315	250	165	63	30 / 32 x 200	56	310	225	40	40	ST3542 **400 x 315.4**
400 x 400	250	250	63	30 / 32 x 200	56	310	310	50	50	ST3542 **400 x 400.1**
								40	50	ST3542 **400 x 400.2**
								50	40	ST3542 **400 x 400.3**
								40	40	ST3542 **400 x 400.4**
500 x 250	330	80	70	38 / 40 x 200	66	400	150	50	50	ST3542 **500 x 250.1**
								40	50	ST3542 **500 x 250.2**
								50	40	ST3542 **500 x 250.3**
								40	40	ST3542 **500 x 250.4**
500 x 315	330	145	70	38 / 40 x 200	66	400	215	50	50	ST3542 **500 x 315.1**
								40	50	ST3542 **500 x 315.2**
								50	40	ST3542 **500 x 315.3**
								40	40	ST3542 **500 x 315.4**
500 x 400	330	230	70	38 / 40 x 200	66	400	300	50	50	ST3542 **500 x 400.1**
								40	50	ST3542 **500 x 400.2**
								50	40	ST3542 **500 x 400.3**
								40	40	ST3542 **500 x 400.4**
500 x 500	330	330	70	38 / 40 x 200	66	400	400	50	50	ST3542 **500 x 500.1**
								40	50	ST3542 **500 x 500.2**
								50	40	ST3542 **500 x 500.3**
								40	40	ST3542 **500 x 500.4**
630 x 315	430	115	80	48 / 50 x 250	80	510	195	63	63	ST3542 **630 x 315.1**
								63	50	ST3542 **630 x 315.3**
630 x 315	430	115	80	48 / 50 x 224	80	510	195	50	63	ST3542 **630 x 315.2**
								50	50	ST3542 **630 x 315.4**
630 x 400	430	200	80	48 / 50 x 250	80	510	280	63	63	ST3542 **630 x 400.1**
								63	50	ST3542 **630 x 400.3**
630 x 400	430	200	80	48 / 50 x 224	80	510	280	50	63	ST3542 **630 x 400.2**
								50	50	ST3542 **630 x 400.4**
630 x 500	430	300	80	48 / 50 x 250	80	510	380	63	63	ST3542 **630 x 500.1**
								63	50	ST3542 **630 x 500.3**
630 x 500	430	300	80	48 / 50 x 224	80	510	380	50	63	ST3542 **630 x 500.2**
								50	50	ST3542 **630 x 500.4**
630 x 630	430	430	80	48 / 50 x 250	80	510	510	63	63	ST3542 **630 x 630.1**
								63	50	ST3542 **630 x 630.3**
630 x 630	430	430	80	48 / 50 x 224	80	510	510	50	63	ST3542 **630 x 630.2**
								50	50	ST3542 **630 x 630.4**
710 x 400	510	200	80	48 / 50 x 250	80	590	280	63	63	ST3542 **710 x 400.1**
								63	50	ST3542 **710 x 400.3**
710 x 400	510	200	80	48 / 50 x 224	80	590	280	50	63	ST3542 **710 x 400.2**
								50	50	ST3542 **710 x 400.4**
710 x 500	510	300	80	48 / 50 x 250	80	590	380	63	63	ST3542 **710 x 500.1**
								63	50	ST3542 **710 x 500.3**
710 x 500	510	300	80	48 / 50 x 224	80	590	380	50	63	ST3542 **710 x 500.2**
								50	50	ST3542 **710 x 500.4**
710 x 630	510	430	80	48 / 50 x 250	80	590	510	63	63	ST3542 **710 x 630.1**
								63	50	ST3542 **710 x 630.3**
710 x 630	510	430	80	48 / 50 x 224	80	590	510	50	63	ST3542 **710 x 630.2**
								50	50	ST3542 **710 x 630.4**
800 x 400	600	200	80	48 / 50 x 250	80	680	280	63	63	ST3542 **800 x 400.1**
								63	50	ST3542 **800 x 400.3**
800 x 400	600	200	80	48 / 50 x 224	80	680	280	50	63	ST3542 **800 x 400.2**
								50	50	ST3542 **800 x 400.4**
800 x 500	600	300	80	48 / 50 x 250	80	680	380	63	63	ST3542 **800 x 500.1**
								63	50	ST3542 **800 x 500.3**
800 x 500	600	300	80	48 / 50 x 224	80	680	380	50	63	ST3542 **800 x 500.2**
								50	50	ST3542 **800 x 500.4**
800 x 630	600	430	80	48 / 50 x 250	80	680	510	63	63	ST3542 **800 x 630.1**
								63	50	ST3542 **800 x 630.3**
800 x 630	600	430	80	48 / 50 x 224	80	680	510	50	63	ST3542 **800 x 630.2**
								50	50	ST3542 **800 x 630.4**

ST3549 Die set

with sliding guide, bronze coating



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Sliding guide with bronze coating

Pillar position
diagonal

Note
Size c_1, c_2 +0.2 to +0.5

a x b	a_1	b_1	c_4	d_1 / d_2 x l	d_5	e_1	e_2	c_1	c_2	Item number
160 x 160	60	60	20	19 / 20 x 160	40	100	100	32	32	ST3549 **160 x 160**
200 x 200	70	70	37	24 / 25 x 180	48	120	120	40	40	ST3549 **200 x 200.1**
								32	40	ST3549 **200 x 200.2**
								40	32	ST3549 **200 x 200.3**
								32	32	ST3549 **200 x 200.4**
250 x 200	120	70	37	24 / 25 x 180	48	170	120	40	40	ST3549 **250 x 200.1**
								32	40	ST3549 **250 x 200.2**
								40	32	ST3549 **250 x 200.3**
								32	32	ST3549 **250 x 200.4**
250 x 250	120	120	37	24 / 25 x 180	48	170	170	40	40	ST3549 **250 x 250.1**
								32	40	ST3549 **250 x 250.2**
								40	32	ST3549 **250 x 250.3**
								32	32	ST3549 **250 x 250.4**
315 x 200	165	50	45	30 / 32 x 200	56	225	110	50	50	ST3549 **315 x 200.1**
								40	50	ST3549 **315 x 200.2**
								50	40	ST3549 **315 x 200.3**
								40	40	ST3549 **315 x 200.4**
315 x 250	165	100	45	30 / 32 x 200	56	225	160	50	50	ST3549 **315 x 250.1**
								40	50	ST3549 **315 x 250.2**
								50	40	ST3549 **315 x 250.3**
								40	40	ST3549 **315 x 250.4**
315 x 315	165	165	45	30 / 32 x 200	56	225	225	50	50	ST3549 **315 x 315.1**
								40	50	ST3549 **315 x 315.2**
								50	40	ST3549 **315 x 315.3**
								40	40	ST3549 **315 x 315.4**
400 x 200	250	50	45	30 / 32 x 200	56	310	110	50	50	ST3549 **400 x 200.1**
								40	50	ST3549 **400 x 200.2**
								50	40	ST3549 **400 x 200.3**
								40	40	ST3549 **400 x 200.4**
400 x 250	250	100	45	30 / 32 x 200	56	310	160	50	50	ST3549 **400 x 250.1**
								40	50	ST3549 **400 x 250.2**
								50	40	ST3549 **400 x 250.3**
								40	40	ST3549 **400 x 250.4**
400 x 315	250	165	45	30 / 32 x 200	56	310	225	50	50	ST3549 **400 x 315.1**
								40	50	ST3549 **400 x 315.2**
								50	40	ST3549 **400 x 315.3**

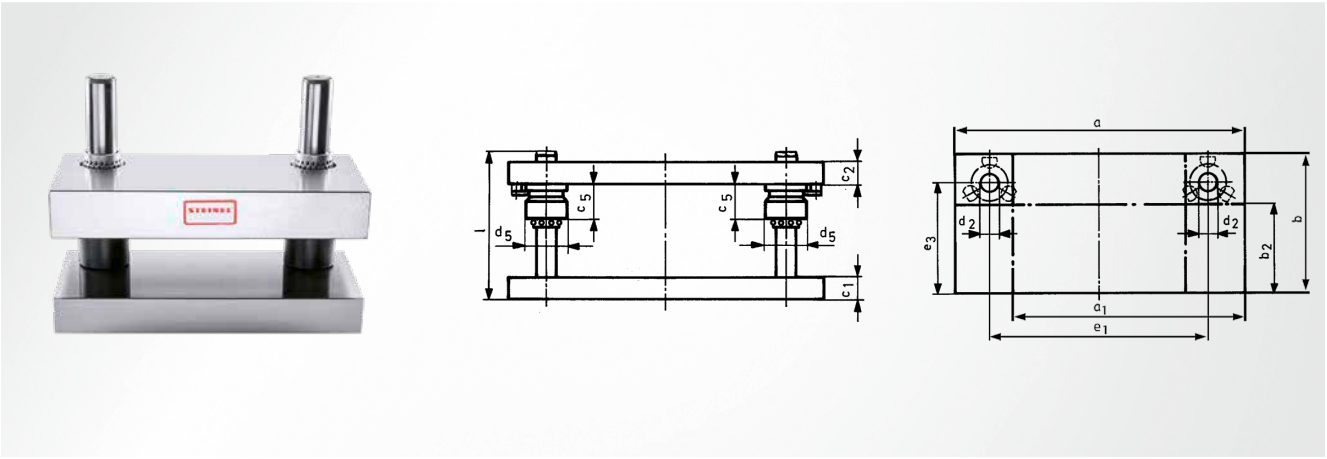
ST3549 Die set

with sliding guide, bronze coating

a x b	a_1	b_1	c_4	d_1 / d_2 x l	d_5	e_1	e_2	c_1	c_2	Item number
400 x 315	250	165	45	30 / 32 x 200	56	310	225	40	40	ST3549 **400 x 315.4**
400 x 400	250	250	45	30 / 32 x 200	56	310	310	50	50	ST3549 **400 x 400.1**
								40	50	ST3549 **400 x 400.2**
								50	40	ST3549 **400 x 400.3**
								40	40	ST3549 **400 x 400.4**
500 x 250	330	80	45	38 / 40 x 200	66	400	150	50	50	ST3549 **500 x 250.1**
								40	50	ST3549 **500 x 250.2**
								50	40	ST3549 **500 x 250.3**
								40	40	ST3549 **500 x 250.4**
500 x 315	330	145	45	38 / 40 x 200	66	400	215	50	50	ST3549 **500 x 315.1**
								40	50	ST3549 **500 x 315.2**
								50	40	ST3549 **500 x 315.3**
								40	40	ST3549 **500 x 315.4**
500 x 400	330	230	45	38 / 40 x 200	66	400	300	50	50	ST3549 **500 x 400.1**
								40	50	ST3549 **500 x 400.2**
								50	40	ST3549 **500 x 400.3**
								40	40	ST3549 **500 x 400.4**
500 x 500	330	330	45	38 / 40 x 200	66	400	400	50	50	ST3549 **500 x 500.1**
								40	50	ST3549 **500 x 500.2**
								50	40	ST3549 **500 x 500.3**
								40	40	ST3549 **500 x 500.4**
630 x 315	430	115	50	48 / 50 x 250	80	510	195	63	63	ST3549 **630 x 315.1**
								63	50	ST3549 **630 x 315.3**
630 x 315	430	115	50	48 / 50 x 224	80	510	195	50	63	ST3549 **630 x 315.2**
								50	50	ST3549 **630 x 315.4**
630 x 400	430	200	50	48 / 50 x 250	80	510	280	63	63	ST3549 **630 x 400.1**
								63	50	ST3549 **630 x 400.3**
630 x 400	430	200	50	48 / 50 x 224	80	510	280	50	63	ST3549 **630 x 400.2**
								50	50	ST3549 **630 x 400.4**
630 x 500	430	300	50	48 / 50 x 250	80	510	380	63	63	ST3549 **630 x 500.1**
								63	50	ST3549 **630 x 500.3**
630 x 500	430	300	50	48 / 50 x 224	80	510	380	50	63	ST3549 **630 x 500.2**
								50	50	ST3549 **630 x 500.4**
630 x 630	430	430	50	48 / 50 x 250	80	510	510	63	63	ST3549 **630 x 630.1**
								63	50	ST3549 **630 x 630.3**
630 x 630	430	430	50	48 / 50 x 224	80	510	510	50	63	ST3549 **630 x 630.2**
								50	50	ST3549 **630 x 630.4**
710 x 400	510	200	50	48 / 50 x 250	80	590	280	63	63	ST3549 **710 x 400.1**
								63	50	ST3549 **710 x 400.3**
710 x 400	510	200	50	48 / 50 x 224	80	590	280	50	63	ST3549 **710 x 400.2**
								50	50	ST3549 **710 x 400.4**
710 x 500	510	300	50	48 / 50 x 250	80	590	380	63	63	ST3549 **710 x 500.1**
								63	50	ST3549 **710 x 500.3**
710 x 500	510	300	50	48 / 50 x 224	80	590	380	50	63	ST3549 **710 x 500.2**
								50	50	ST3549 **710 x 500.4**
710 x 630	510	430	50	48 / 50 x 250	80	590	510	63	63	ST3549 **710 x 630.1**
								63	50	ST3549 **710 x 630.3**
710 x 630	510	430	50	48 / 50 x 224	80	590	510	50	63	ST3549 **710 x 630.2**
								50	50	ST3549 **710 x 630.4**
800 x 400	600	200	50	48 / 50 x 250	80	680	280	63	63	ST3549 **800 x 400.1**
								63	50	ST3549 **800 x 400.3**
800 x 400	600	200	50	48 / 50 x 224	80	680	280	50	63	ST3549 **800 x 400.2**
								50	50	ST3549 **800 x 400.4**
800 x 500	600	300	50	48 / 50 x 250	80	680	380	63	63	ST3549 **800 x 500.1**
								63	50	ST3549 **800 x 500.3**
800 x 500	600	300	50	48 / 50 x 224	80	680	380	50	63	ST3549 **800 x 500.2**
								50	50	ST3549 **800 x 500.4**
800 x 630	600	430	50	48 / 50 x 250	80	680	510	63	63	ST3549 **800 x 630.1**
								63	50	ST3549 **800 x 630.3**
800 x 630	600	430	50	48 / 50 x 224	80	680	510	50	63	ST3549 **800 x 630.2**
								50	50	ST3549 **800 x 630.4**

ST3552 Die set

with ball guide



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Ball guide

Pillar position
rear standing

Note
Size c_1, c_2 +0.2 to +0.5

a x b	a_1	b_2	c_5	d_2 x l	d_5	e_1	e_3	c_1	c_2	Item number
160 x 100	60	50	36	20 x 160	40	100	70	32	32	ST3552 **160 x 100**
160 x 125	60	75	36	20 x 160	40	100	95	32	32	ST3552 **160 x 125**
160 x 160	60	110	36	20 x 160	40	100	130	32	32	ST3552 **160 x 160**
200 x 125	70	60	57	25 x 180	48	120	85	40	40	ST3552 **200 x 125.1**
								32	40	ST3552 **200 x 125.2**
								40	32	ST3552 **200 x 125.3**
								32	32	ST3552 **200 x 125.4**
200 x 160	70	95	57	25 x 180	48	120	120	40	40	ST3552 **200 x 160.1**
								32	40	ST3552 **200 x 160.2**
								40	32	ST3552 **200 x 160.3**
								32	32	ST3552 **200 x 160.4**
200 x 200	70	135	57	25 x 180	48	120	160	40	40	ST3552 **200 x 200.1**
								32	40	ST3552 **200 x 200.2**
								40	32	ST3552 **200 x 200.3**
								32	32	ST3552 **200 x 200.4**
250 x 125	120	60	57	25 x 180	48	170	85	40	40	ST3552 **250 x 125.1**
								32	40	ST3552 **250 x 125.2**
								40	32	ST3552 **250 x 125.3**
								32	32	ST3552 **250 x 125.4**
250 x 160	120	95	57	25 x 180	48	170	120	40	40	ST3552 **250 x 160.1**
								32	40	ST3552 **250 x 160.2**
								40	32	ST3552 **250 x 160.3**
								32	32	ST3552 **250 x 160.4**
250 x 200	120	135	57	25 x 180	48	170	160	40	40	ST3552 **250 x 200.1**
								32	40	ST3552 **250 x 200.2**
								40	32	ST3552 **250 x 200.3**
								32	32	ST3552 **250 x 200.4**
250 x 250	120	185	37	25 x 180	48	170	210	40	40	ST3552 **250 x 250.1**
								32	40	ST3552 **250 x 250.2**
								40	32	ST3552 **250 x 250.3**
								32	32	ST3552 **250 x 250.4**
315 x 160	165	85	63	32 x 200	56	225	115	50	50	ST3552 **315 x 160.1**
								40	50	ST3552 **315 x 160.2**
								50	40	ST3552 **315 x 160.3**
								40	40	ST3552 **315 x 160.4**
315 x 200	165	125	63	32 x 200	56	225	155	50	50	ST3552 **315 x 200.1**

ST3552 Die set

with ball guide

a x b	a_1	b_2	c_5	d_2 x l	d_5	e_1	e_3	c_1	c_2	Item number
315 x 200	165	125	63	32 x 200	56	225	155	40	50	ST3552 **315 x 200.2**
								50	40	ST3552 **315 x 200.3**
								40	40	ST3552 **315 x 200.4**
315 x 250	165	175	63	32 x 200	56	225	205	50	50	ST3552 **315 x 250.1**
								40	50	ST3552 **315 x 250.2**
								50	40	ST3552 **315 x 250.3**
								40	40	ST3552 **315 x 250.4**
315 x 315	165	240	63	32 x 200	56	225	270	50	50	ST3552 **315 x 315.1**
								40	50	ST3552 **315 x 315.2**
								50	40	ST3552 **315 x 315.3**
								40	40	ST3552 **315 x 315.4**
400 x 200	250	125	63	32 x 200	56	310	155	50	50	ST3552 **400 x 200.1**
								40	50	ST3552 **400 x 200.2**
								50	40	ST3552 **400 x 200.3**
								40	40	ST3552 **400 x 200.4**
400 x 250	250	175	63	32 x 200	56	310	205	50	50	ST3552 **400 x 250.1**
								40	50	ST3552 **400 x 250.2**
								50	40	ST3552 **400 x 250.3**
								40	40	ST3552 **400 x 250.4**
400 x 315	250	240	63	32 x 200	56	310	270	50	50	ST3552 **400 x 315.1**
								40	50	ST3552 **400 x 315.2**
								50	40	ST3552 **400 x 315.3**
								40	40	ST3552 **400 x 315.4**
400 x 400	250	325	63	32 x 200	56	310	355	50	50	ST3552 **400 x 400.1**
								40	50	ST3552 **400 x 400.2**
								50	40	ST3552 **400 x 400.3**
								40	40	ST3552 **400 x 400.4**
500 x 250	330	165	70	40 x 200	66	400	200	50	50	ST3552 **500 x 250.1**
								40	50	ST3552 **500 x 250.2**
								50	40	ST3552 **500 x 250.3**
								40	40	ST3552 **500 x 250.4**
500 x 315	330	230	70	40 x 200	66	400	265	50	50	ST3552 **500 x 315.1**
								40	50	ST3552 **500 x 315.2**
								50	40	ST3552 **500 x 315.3**
								40	40	ST3552 **500 x 315.4**
500 x 400	330	315	70	40 x 200	66	400	350	50	50	ST3552 **500 x 400.1**
								40	50	ST3552 **500 x 400.2**
								50	40	ST3552 **500 x 400.3**
								40	40	ST3552 **500 x 400.4**
500 x 500	330	415	70	40 x 200	66	400	450	50	50	ST3552 **500 x 500.1**
								40	50	ST3552 **500 x 500.2**
								50	40	ST3552 **500 x 500.3**
								40	40	ST3552 **500 x 500.4**
630 x 315	430	215	80	50 x 250	80	510	255	63	63	ST3552 **630 x 315.1**
								63	50	ST3552 **630 x 315.3**
630 x 315	430	215	80	50 x 224	80	510	255	50	63	ST3552 **630 x 315.2**
								50	50	ST3552 **630 x 315.4**
630 x 400	430	300	80	50 x 250	80	510	340	63	63	ST3552 **630 x 400.1**
								63	50	ST3552 **630 x 400.3**
630 x 400	430	300	80	50 x 224	80	510	340	50	63	ST3552 **630 x 400.2**
								50	50	ST3552 **630 x 400.4**
630 x 500	430	400	80	50 x 250	80	510	440	63	63	ST3552 **630 x 500.1**
								63	50	ST3552 **630 x 500.3**
630 x 500	430	400	80	50 x 224	80	510	440	50	50	ST3552 **630 x 500.4**
								50	63	ST3552 **630 x 500.2**
630 x 630	430	530	80	50 x 250	80	510	570	63	63	ST3552 **630 x 630.1**
								63	50	ST3552 **630 x 630.3**
630 x 630	430	530	80	50 x 224	80	510	570	50	63	ST3552 **630 x 630.2**
								50	50	ST3552 **630 x 630.4**
710 x 400	510	300	80	50 x 250	80	590	340	63	63	ST3552 **710 x 400.1**
								63	50	ST3552 **710 x 400.3**

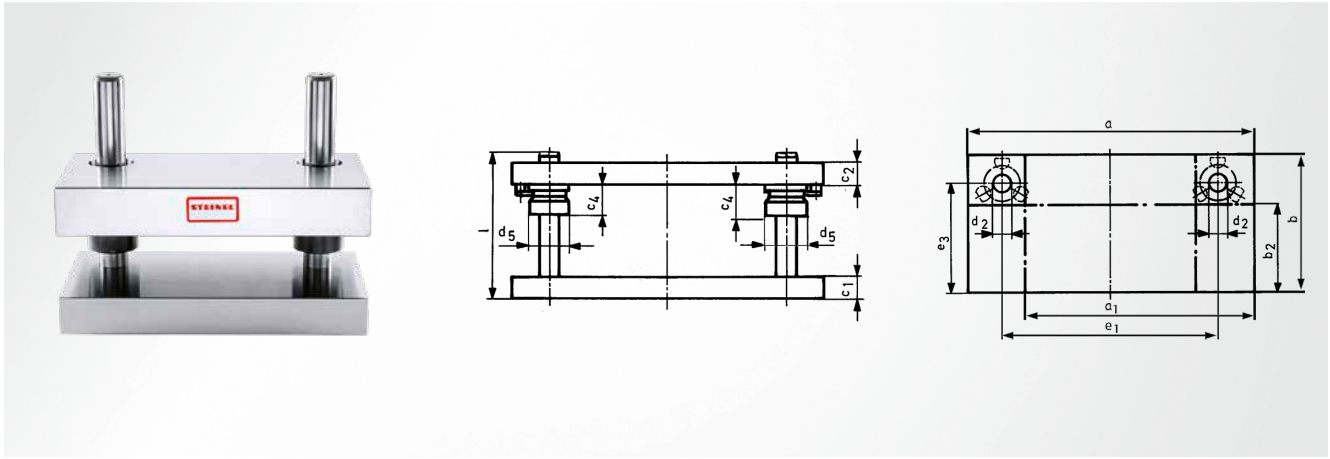
ST3552 Die set

with ball guide

a x b	a_1	b_2	c_5	d_2 x l	d_5	e_1	e_3	c_1	c_2	Item number
710 x 400	510	300	80	50 x 224	80	590	340	50	63	ST3552 **710 x 400.2**
								50	50	ST3552 **710 x 400.4**
710 x 500	510	400	80	50 x 250	80	590	440	63	63	ST3552 **710 x 500.1**
								63	50	ST3552 **710 x 500.3**
710 x 500	510	400	80	50 x 224	80	590	440	50	63	ST3552 **710 x 500.2**
								50	50	ST3552 **710 x 500.4**
710 x 630	510	530	80	50 x 250	80	590	570	63	63	ST3552 **710 x 630.1**
								63	50	ST3552 **710 x 630.3**
710 x 630	510	530	80	50 x 224	80	590	570	50	63	ST3552 **710 x 630.2**
								50	50	ST3552 **710 x 630.4**
800 x 400	600	300	80	50 x 250	80	680	340	63	63	ST3552 **800 x 400.1**
								63	50	ST3552 **800 x 400.3**
800 x 400	600	300	80	50 x 224	80	680	340	50	63	ST3552 **800 x 400.2**
								50	50	ST3552 **800 x 400.4**
800 x 500	600	400	80	50 x 250	80	680	440	63	63	ST3552 **800 x 500.1**
								63	50	ST3552 **800 x 500.3**
800 x 500	600	400	80	50 x 224	80	680	440	50	63	ST3552 **800 x 500.2**
								50	50	ST3552 **800 x 500.4**
800 x 630	600	530	80	50 x 250	80	680	570	63	63	ST3552 **800 x 630.1**
								63	50	ST3552 **800 x 630.3**
800 x 630	600	530	80	50 x 224	80	680	570	50	63	ST3552 **800 x 630.2**
								50	50	ST3552 **800 x 630.4**

ST3559 Die set

with sliding guide, bronze coating



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Sliding guide with bronze coating

Pillar position
rear standing

Note
Size c_1, c_2 +0.2 to +0.5

a x b	a_1	b_2	c_4	d_2 x l	d_5	e_1	e_3	c_1	c_2	Item number
160 x 100	60	50	20	20 x 160	40	100	70	32	32	ST3559 **160 x 100**
160 x 125	60	75	20	20 x 160	40	100	95	32	32	ST3559 **160 x 125**
160 x 160	60	110	20	20 x 160	40	100	130	32	32	ST3559 **160 x 160**
200 x 125	70	60	37	25 x 180	48	120	85	40	40	ST3559 **200 x 125.1**
								32	40	ST3559 **200 x 125.2**
								40	32	ST3559 **200 x 125.3**
								32	32	ST3559 **200 x 125.4**
200 x 160	70	95	37	25 x 180	48	120	120	40	40	ST3559 **200 x 160.1**
								32	40	ST3559 **200 x 160.2**
								40	32	ST3559 **200 x 160.3**
								32	32	ST3559 **200 x 160.4**
200 x 200	70	135	37	25 x 180	48	120	160	40	40	ST3559 **200 x 200.1**
								32	40	ST3559 **200 x 200.2**
								40	32	ST3559 **200 x 200.3**
								32	32	ST3559 **200 x 200.4**
250 x 125	120	60	37	25 x 180	48	170	85	40	40	ST3559 **250 x 125.1**
								32	40	ST3559 **250 x 125.2**
								40	32	ST3559 **250 x 125.3**
								32	32	ST3559 **250 x 125.4**
250 x 160	120	95	37	25 x 180	48	170	120	40	40	ST3559 **250 x 160.1**
								32	40	ST3559 **250 x 160.2**
								40	32	ST3559 **250 x 160.3**
								32	32	ST3559 **250 x 160.4**
250 x 200	120	135	37	25 x 180	48	170	160	40	40	ST3559 **250 x 200.1**
								32	40	ST3559 **250 x 200.2**
								40	32	ST3559 **250 x 200.3**
								32	32	ST3559 **250 x 200.4**
250 x 250	120	185	37	25 x 180	48	170	210	40	40	ST3559 **250 x 250.1**
								32	40	ST3559 **250 x 250.2**
								40	32	ST3559 **250 x 250.3**
								32	32	ST3559 **250 x 250.4**
315 x 160	165	85	45	32 x 200	56	225	115	50	50	ST3559 **315 x 160.1**
								40	50	ST3559 **315 x 160.2**
								50	40	ST3559 **315 x 160.3**
								40	40	ST3559 **315 x 160.4**
315 x 200	165	125	45	32 x 200	56	225	155	50	50	ST3559 **315 x 200.1**

ST3559 Die set

with sliding guide, bronze coating

a x b	a_1	b_2	c_4	d_2 x l	d_5	e_1	e_3	c_1	c_2	Item number
315 x 200	165	125	45	32 x 200	56	225	155	40	50	ST3559 **315 x 200.2**
								50	40	ST3559 **315 x 200.3**
								40	40	ST3559 **315 x 200.4**
315 x 250	165	175	45	32 x 200	56	225	205	50	50	ST3559 **315 x 250.1**
								40	50	ST3559 **315 x 250.2**
								50	40	ST3559 **315 x 250.3**
								40	40	ST3559 **315 x 250.4**
315 x 315	165	240	45	32 x 200	56	225	270	50	50	ST3559 **315 x 315.1**
								40	50	ST3559 **315 x 315.2**
								50	40	ST3559 **315 x 315.3**
								40	40	ST3559 **315 x 315.4**
400 x 200	250	125	45	32 x 200	56	310	155	50	50	ST3559 **400 x 200.1**
								40	50	ST3559 **400 x 200.2**
								50	40	ST3559 **400 x 200.3**
								40	40	ST3559 **400 x 200.4**
400 x 250	250	175	45	32 x 200	56	310	205	50	50	ST3559 **400 x 250.1**
								40	50	ST3559 **400 x 250.2**
								50	40	ST3559 **400 x 250.3**
								40	40	ST3559 **400 x 250.4**
400 x 315	250	240	45	32 x 200	56	310	270	50	50	ST3559 **400 x 315.1**
								40	50	ST3559 **400 x 315.2**
								50	40	ST3559 **400 x 315.3**
								40	40	ST3559 **400 x 315.4**
400 x 400	250	325	45	32 x 200	56	310	355	50	50	ST3559 **400 x 400.1**
								40	50	ST3559 **400 x 400.2**
								50	40	ST3559 **400 x 400.3**
								40	40	ST3559 **400 x 400.4**
500 x 250	330	165	45	40 x 200	66	400	200	50	50	ST3559 **500 x 250.1**
								40	50	ST3559 **500 x 250.2**
								50	40	ST3559 **500 x 250.3**
								40	40	ST3559 **500 x 250.4**
500 x 315	330	230	45	40 x 200	66	400	265	50	50	ST3559 **500 x 315.1**
								40	50	ST3559 **500 x 315.2**
								50	40	ST3559 **500 x 315.3**
								40	40	ST3559 **500 x 315.4**
500 x 400	330	315	45	40 x 200	66	400	350	50	50	ST3559 **500 x 400.1**
								40	50	ST3559 **500 x 400.2**
								50	40	ST3559 **500 x 400.3**
								40	40	ST3559 **500 x 400.4**
500 x 500	330	415	45	40 x 200	66	400	450	50	50	ST3559 **500 x 500.1**
								40	50	ST3559 **500 x 500.2**
								50	40	ST3559 **500 x 500.3**
								40	40	ST3559 **500 x 500.4**
630 x 315	430	215	50	50 x 250	80	510	255	63	63	ST3559 **630 x 315.1**
								63	50	ST3559 **630 x 315.3**
630 x 315	430	215	50	50 x 224	80	510	255	50	63	ST3559 **630 x 315.2**
								50	50	ST3559 **630 x 315.4**
630 x 400	430	300	50	50 x 250	80	510	340	63	63	ST3559 **630 x 400.1**
								63	50	ST3559 **630 x 400.3**
630 x 400	430	300	50	50 x 224	80	510	340	50	63	ST3559 **630 x 400.2**
								50	50	ST3559 **630 x 400.4**
630 x 500	430	400	50	50 x 250	80	510	440	63	63	ST3559 **630 x 500.1**
								63	50	ST3559 **630 x 500.3**
630 x 500	430	400	50	50 x 224	80	510	440	50	63	ST3559 **630 x 500.2**
								50	50	ST3559 **630 x 500.4**
630 x 630	430	530	50	50 x 250	80	510	570	63	63	ST3559 **630 x 630.1**
								63	50	ST3559 **630 x 630.3**
630 x 630	430	530	50	50 x 224	80	510	570	50	63	ST3559 **630 x 630.2**
								50	50	ST3559 **630 x 630.4**
710 x 400	510	300	50	50 x 250	80	590	340	63	63	ST3559 **710 x 400.1**
								63	50	ST3559 **710 x 400.3**

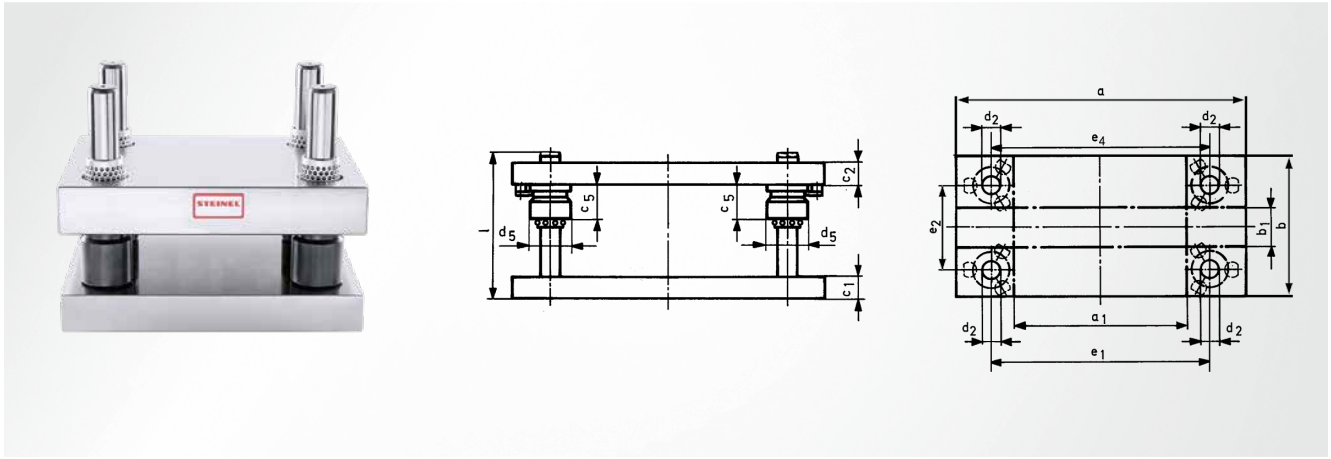
ST3559 Die set

with sliding guide, bronze coating

a x b	a_1	b_2	c_4	d_2 x l	d_5	e_1	e_3	c_1	c_2	Item number
710 x 400	510	300	50	50 x 224	80	590	340	50	63	ST3559 **710 x 400.2**
								50	50	ST3559 **710 x 400.4**
710 x 500	510	400	50	50 x 250	80	590	440	63	63	ST3559 **710 x 500.1**
								63	50	ST3559 **710 x 500.3**
710 x 500	510	400	50	50 x 224	80	590	440	50	63	ST3559 **710 x 500.2**
								50	50	ST3559 **710 x 500.4**
710 x 630	510	530	50	50 x 250	80	590	570	63	63	ST3559 **710 x 630.1**
								63	50	ST3559 **710 x 630.3**
710 x 630	510	530	50	50 x 224	80	590	570	50	63	ST3559 **710 x 630.2**
								50	50	ST3559 **710 x 630.4**
800 x 400	600	300	50	50 x 250	80	680	340	63	63	ST3559 **800 x 400.1**
								63	50	ST3559 **800 x 400.3**
800 x 400	600	300	50	50 x 224	80	680	340	50	63	ST3559 **800 x 400.2**
								50	50	ST3559 **800 x 400.4**
800 x 500	600	400	50	50 x 250	80	680	440	63	63	ST3559 **800 x 500.1**
								63	50	ST3559 **800 x 500.3**
800 x 500	600	400	50	50 x 224	80	680	440	50	63	ST3559 **800 x 500.2**
								50	50	ST3559 **800 x 500.4**
800 x 630	600	530	50	50 x 250	80	680	570	63	63	ST3559 **800 x 630.1**
								63	50	ST3559 **800 x 630.3**
800 x 630	600	530	50	50 x 224	80	680	570	50	63	ST3559 **800 x 630.2**
								50	50	ST3559 **800 x 630.4**

ST3562 Die set

with ball guide, four pillars



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Ball guide

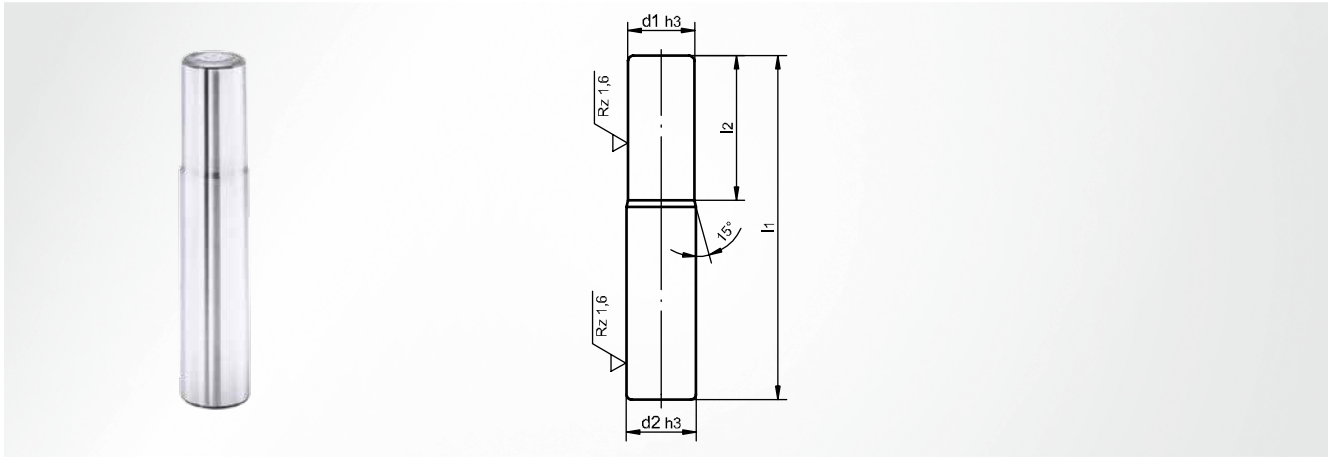
Pillar position
rectangular

Note
Size c_1, c_2 +0.2 to +0.5

a x b	a_1	b_1	c_5	d_2 x l	d_5	e_1	e_2	e_4	c_1	c_2	Item number
160 x 160	60	60	36	20 x 160	40	100	100	103	32	32	ST3562 **160 x 160**
200 x 200	70	70	57	25 x 180	48	120	120	123	40	40	ST3562 **200 x 200.1**
									32	40	ST3562 **200 x 200.2**
									40	32	ST3562 **200 x 200.3**
									32	32	ST3562 **200 x 200.4**
250 x 200	120	70	57	25 x 180	48	170	120	173	40	40	ST3562 **250 x 200.1**
									32	40	ST3562 **250 x 200.2**
									40	32	ST3562 **250 x 200.3**
									32	32	ST3562 **250 x 200.4**
250 x 250	120	120	57	25 x 180	48	170	170	173	40	40	ST3562 **250 x 250.1**
									32	40	ST3562 **250 x 250.2**
									40	32	ST3562 **250 x 250.3**
									32	32	ST3562 **250 x 250.4**
315 x 200	165	50	63	32 x 200	56	225	110	228	50	50	ST3562 **315 x 200.1**
									40	50	ST3562 **315 x 200.2**
									50	40	ST3562 **315 x 200.3**
									40	40	ST3562 **315 x 200.4**
315 x 250	165	100	63	32 x 200	56	225	160	228	50	50	ST3562 **315 x 250.1**
									40	50	ST3562 **315 x 250.2**
									50	40	ST3562 **315 x 250.3**
									40	40	ST3562 **315 x 250.4**
315 x 315	165	165	63	32 x 200	56	225	225	228	50	50	ST3562 **315 x 315.1**
									40	50	ST3562 **315 x 315.2**
									50	40	ST3562 **315 x 315.3**
									40	40	ST3562 **315 x 315.4**
400 x 200	250	50	63	32 x 200	56	310	110	313	50	50	ST3562 **400 x 200.1**
									40	50	ST3562 **400 x 200.2**
									50	40	ST3562 **400 x 200.3**
									40	40	ST3562 **400 x 200.4**
400 x 250	250	100	63	32 x 200	56	310	160	313	50	50	ST3562 **400 x 250.1**
									40	50	ST3562 **400 x 250.2**
									50	40	ST3562 **400 x 250.3**
									40	40	ST3562 **400 x 250.4**
400 x 315	250	165	63	32 x 200	56	310	225	313	50	50	ST3562 **400 x 315.1**
									40	50	ST3562 **400 x 315.2**
									50	40	ST3562 **400 x 315.3**

ST7102 Guide pillar

reduced



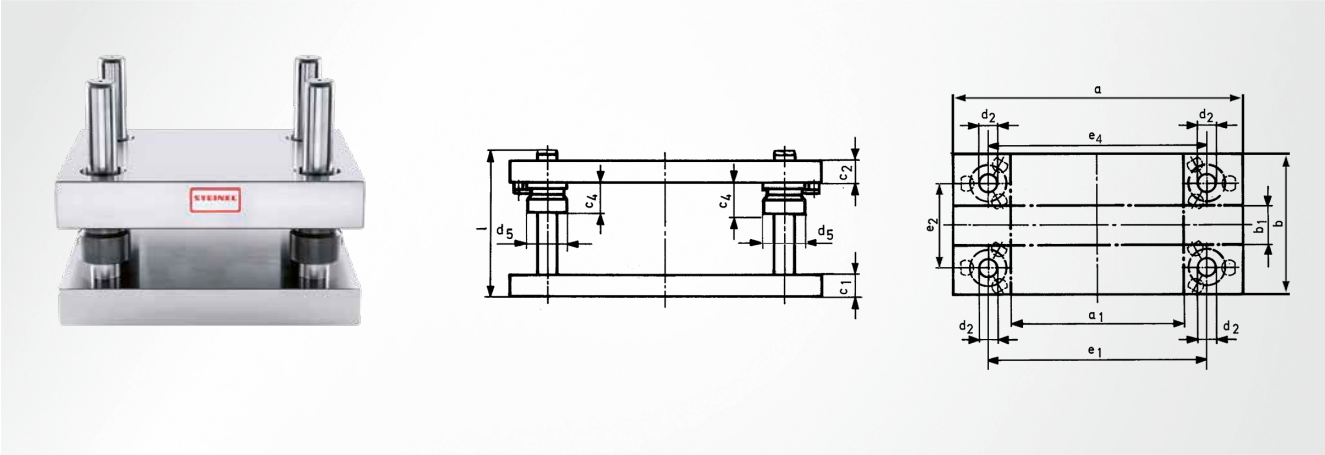
Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

d_1^{h3}	d_2^{h3}	l_1	l_2	Item Number
15	16	92.5	33.5	ST7102 **15-16 x 92.5**
15	16	102.5	43.5	ST7102 **15-16 x 102.5**
15	16	107.0	33.5	ST7102 **15-16 x 107**
19	20	92.5	33.5	ST7102 **19-20 x 92.5**
19	20	107.0	33.5	ST7102 **19-20 x 107**
19	20	120.0	41.0	ST7102 **19-20 x 120**
19	20	150.0	71.5	ST7102 **19-20 x 150**
24	25	120.0	41.0	ST7102 **24-25 x 120**
24	25	150.0	71.5	ST7102 **24-25 x 150**
38	40	197.0	83.0	ST7102 **38-40 x 197**

ST3569 Die set

with sliding guide, bronze coating, four pillars



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Sliding guide with bronze coating

Pillar position
square

Note
Size c_1, c_2 +0.2 to +0.5

a x b	a_1	b_1	c_4	d_2 x l	d_5	e_1	e_2	e_4	c_1	c_2	Item number
160 x 160	60	60	20	20 x 160	40	100	100	103	32	32	ST3569 **160 x 160**
200 x 200	70	70	37	25 x 180	48	120	120	123	40	40	ST3569 **200 x 200.1**
									32	40	ST3569 **200 x 200.2**
									40	32	ST3569 **200 x 200.3**
									32	32	ST3569 **200 x 200.4**
250 x 200	120	70	37	25 x 180	48	170	120	173	40	40	ST3569 **250 x 200.1**
									32	40	ST3569 **250 x 200.2**
									40	32	ST3569 **250 x 200.3**
									32	32	ST3569 **250 x 200.4**
250 x 250	120	120	37	25 x 180	48	170	170	173	40	40	ST3569 **250 x 250.1**
									32	40	ST3569 **250 x 250.2**
									40	32	ST3569 **250 x 250.3**
									32	32	ST3569 **250 x 250.4**
315 x 200	165	50	45	32 x 200	56	225	110	228	50	50	ST3569 **315 x 200.1**
									40	50	ST3569 **315 x 200.2**
									50	40	ST3569 **315 x 200.3**
									40	40	ST3569 **315 x 200.4**
315 x 250	165	100	45	32 x 200	56	225	160	228	50	50	ST3569 **315 x 250.1**
									40	50	ST3569 **315 x 250.2**
									50	40	ST3569 **315 x 250.3**
									40	40	ST3569 **315 x 250.4**
315 x 315	165	165	45	32 x 200	56	225	225	228	50	50	ST3569 **315 x 315.1**
									40	50	ST3569 **315 x 315.2**
									50	40	ST3569 **315 x 315.3**
									40	40	ST3569 **315 x 315.4**
400 x 200	250	50	45	32 x 200	56	310	110	313	50	50	ST3569 **400 x 200.1**
									40	50	ST3569 **400 x 200.2**
									50	40	ST3569 **400 x 200.3**
									40	40	ST3569 **400 x 200.4**
400 x 250	250	100	45	32 x 200	56	310	160	313	50	50	ST3569 **400 x 250.1**
									40	50	ST3569 **400 x 250.2**
									50	40	ST3569 **400 x 250.3**
									40	40	ST3569 **400 x 250.4**
400 x 315	250	165	45	32 x 200	56	310	225	313	50	50	ST3569 **400 x 315.1**
									40	50	ST3569 **400 x 315.2**
									50	40	ST3569 **400 x 315.3**

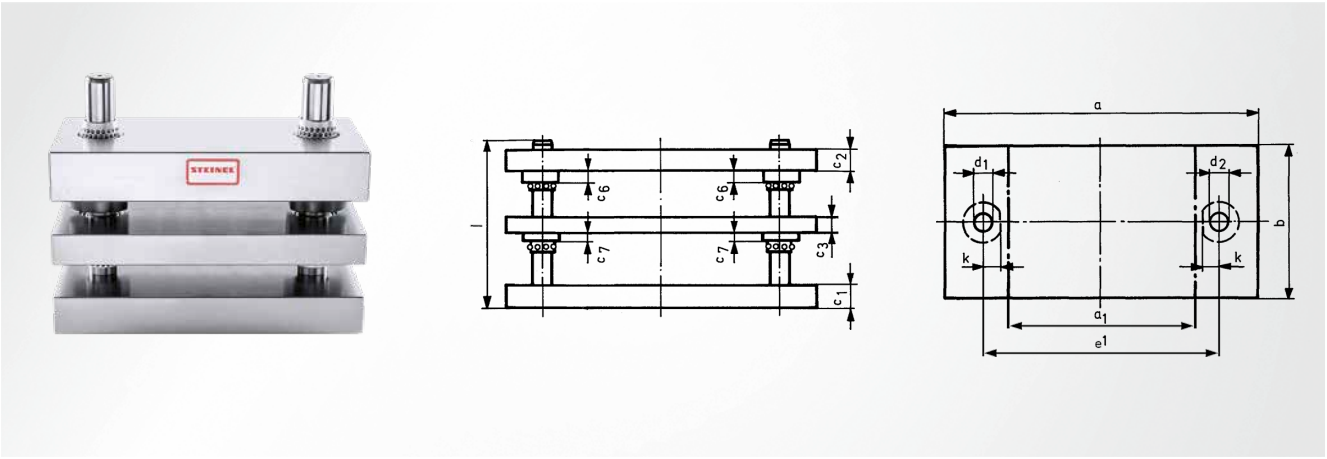
ST3569 Die set

with sliding guide, bronze coating, four pillars

a x b	a_1	b_1	c_4	d_2 x l	d_5	e_1	e_2	e_4	c_1	c_2	Item number
400 x 315	250	165	45	32 x 200	56	310	225	313	40	40	ST3569 **400 x 315.4**
400 x 400	250	250	45	32 x 200	56	310	310	313	50	50	ST3569 **400 x 400.1**
									40	50	ST3569 **400 x 400.2**
									50	40	ST3569 **400 x 400.3**
									40	40	ST3569 **400 x 400.4**
500 x 250	330	80	45	40 x 200	66	400	150	403	50	50	ST3569 **500 x 250.1**
									40	50	ST3569 **500 x 250.2**
									50	40	ST3569 **500 x 250.3**
									40	40	ST3569 **500 x 250.4**
500 x 315	330	145	45	40 x 200	66	400	215	403	50	50	ST3569 **500 x 315.1**
									40	50	ST3569 **500 x 315.2**
									50	40	ST3569 **500 x 315.3**
									40	40	ST3569 **500 x 315.4**
500 x 400	330	230	45	40 x 200	66	400	300	403	50	50	ST3569 **500 x 400.1**
									40	50	ST3569 **500 x 400.2**
									50	40	ST3569 **500 x 400.3**
									40	40	ST3569 **500 x 400.4**
500 x 500	330	330	45	40 x 200	66	400	400	403	50	50	ST3569 **500 x 500.1**
									40	50	ST3569 **500 x 500.2**
									50	40	ST3569 **500 x 500.3**
									40	40	ST3569 **500 x 500.4**
630 x 315	430	115	50	50 x 250	80	510	195	513	63	63	ST3569 **630 x 315.1**
									63	50	ST3569 **630 x 315.3**
630 x 315	430	115	50	50 x 224	80	510	195	513	50	63	ST3569 **630 x 315.2**
									50	50	ST3569 **630 x 315.4**
630 x 400	430	200	50	50 x 250	80	510	280	513	63	63	ST3569 **630 x 400.1**
									63	50	ST3569 **630 x 400.3**
630 x 400	430	200	50	50 x 224	80	510	280	513	50	63	ST3569 **630 x 400.2**
									50	50	ST3569 **630 x 400.4**
630 x 500	430	300	50	50 x 250	80	510	380	513	63	63	ST3569 **630 x 500.1**
									63	50	ST3569 **630 x 500.3**
630 x 500	430	300	50	50 x 224	80	510	380	513	50	63	ST3569 **630 x 500.2**
									50	50	ST3569 **630 x 500.4**
630 x 630	430	430	50	50 x 250	80	510	510	513	63	63	ST3569 **630 x 630.1**
									63	50	ST3569 **630 x 630.3**
630 x 630	430	430	50	50 x 224	80	510	510	513	50	63	ST3569 **630 x 630.2**
									50	50	ST3569 **630 x 630.4**
710 x 400	510	200	50	50 x 250	80	590	280	593	63	63	ST3569 **710 x 400.1**
									63	50	ST3569 **710 x 400.3**
710 x 400	510	200	50	50 x 224	80	590	280	593	50	63	ST3569 **710 x 400.2**
									50	50	ST3569 **710 x 400.4**
710 x 500	510	300	50	50 x 250	80	590	380	593	63	63	ST3569 **710 x 500.1**
									63	50	ST3569 **710 x 500.3**
710 x 500	510	300	50	50 x 224	80	590	380	593	50	63	ST3569 **710 x 500.2**
									50	50	ST3569 **710 x 500.4**
710 x 630	510	430	50	50 x 250	80	590	510	593	63	63	ST3569 **710 x 630.1**
									63	50	ST3569 **710 x 630.3**
710 x 630	510	430	50	50 x 224	80	590	510	593	50	63	ST3569 **710 x 630.2**
									50	50	ST3569 **710 x 630.4**
800 x 400	600	200	50	50 x 250	80	680	280	683	63	63	ST3569 **800 x 400.1**
									63	50	ST3569 **800 x 400.3**
800 x 400	600	200	50	50 x 224	80	680	280	683	50	63	ST3569 **800 x 400.2**
									50	50	ST3569 **800 x 400.4**
800 x 500	600	300	50	50 x 250	80	680	380	683	63	63	ST3569 **800 x 500.1**
									63	50	ST3569 **800 x 500.3**
800 x 500	600	300	50	50 x 224	80	680	380	683	50	63	ST3569 **800 x 500.2**
									50	50	ST3569 **800 x 500.4**
800 x 630	600	430	50	50 x 250	80	680	510	683	63	63	ST3569 **800 x 630.1**
									63	50	ST3569 **800 x 630.3**
800 x 630	600	430	50	50 x 224	80	680	510	683	50	63	ST3569 **800 x 630.2**
									50	50	ST3569 **800 x 630.4**

ST3572 Die set

with ball guide, with guide plate



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Ball guide

Pillar position
parallel centred

Note
Size c_1, c_2, c_3 +0.2 to +0.5

a x b	a_1	c_3	c_6	c_7	k	d_1 / d_2 x l	e_1	c_1	c_2	Item number
160 x 80	60	25	15	15	18	19 / 20 x 180	100	32	32	ST3572 **160 x 080**
160 x 100	60	25	15	15	18	19 / 20 x 180	100	32	32	ST3572 **160 x 100**
160 x 125	60	25	15	15	18	19 / 20 x 180	100	32	32	ST3572 **160 x 125**
200 x 100	70	25	25	15	23	24 / 25 x 200	120	40	40	ST3572 **200 x 100.1**
								32	40	ST3572 **200 x 100.2**
								40	32	ST3572 **200 x 100.3**
								32	32	ST3572 **200 x 100.4**
200 x 125	70	25	25	15	23	24 / 25 x 200	120	40	40	ST3572 **200 x 125.1**
								32	40	ST3572 **200 x 125.2**
								40	32	ST3572 **200 x 125.3**
								32	32	ST3572 **200 x 125.4**
200 x 160	70	25	25	15	23	24 / 25 x 200	120	40	40	ST3572 **200 x 160.1**
								32	40	ST3572 **200 x 160.2**
								40	32	ST3572 **200 x 160.3**
								32	32	ST3572 **200 x 160.4**
250 x 125	120	25	25	15	23	24 / 25 x 200	170	40	40	ST3572 **250 x 125.1**
								32	40	ST3572 **250 x 125.2**
								40	32	ST3572 **250 x 125.3**
								32	32	ST3572 **250 x 125.4**
250 x 160	120	25	25	15	23	24 / 25 x 200	170	40	40	ST3572 **250 x 160.1**
								32	40	ST3572 **250 x 160.2**
								40	32	ST3572 **250 x 160.3**
								32	32	ST3572 **250 x 160.4**
250 x 200	120	25	25	15	23	24 / 25 x 200	170	40	40	ST3572 **250 x 200.1**
								32	40	ST3572 **250 x 200.2**
								40	32	ST3572 **250 x 200.3**
								32	32	ST3572 **250 x 200.4**
315 x 160	165	32	25	15	28	30 / 32 x 224	225	50	50	ST3572 **315 x 160.1**
								40	50	ST3572 **315 x 160.2**
								50	40	ST3572 **315 x 160.3**
								40	40	ST3572 **315 x 160.4**
315 x 200	165	32	25	15	28	30 / 32 x 224	225	50	50	ST3572 **315 x 200.1**
								40	50	ST3572 **315 x 200.2**
								50	40	ST3572 **315 x 200.3**
								40	40	ST3572 **315 x 200.4**
315 x 250	165	32	25	15	28	30 / 32 x 224	225	50	50	ST3572 **315 x 250.1**

ST3572 Die set

with ball guide, with guide plate

a x b	a_1	c_3	c_6	c_7	k	d_1 / d_2 x l	e_1	c_1	c_2	Item number
315 x 250	165	32	25	15	28	30 / 32 x 224	225	40	50	ST3572 **315 x 250.2**
								50	40	ST3572 **315 x 250.3**
								40	40	ST3572 **315 x 250.4**
400 x 200	250	32	25	15	28	30 / 32 x 224	310	50	50	ST3572 **400 x 200.1**
								40	50	ST3572 **400 x 200.2**
								50	40	ST3572 **400 x 200.3**
								40	40	ST3572 **400 x 200.4**
400 x 250	250	32	25	15	28	30 / 32 x 224	310	50	50	ST3572 **400 x 250.1**
								40	50	ST3572 **400 x 250.2**
								50	40	ST3572 **400 x 250.3**
								40	40	ST3572 **400 x 250.4**
400 x 315	250	32	25	15	28	30 / 32 x 224	310	50	50	ST3572 **400 x 315.1**
								40	50	ST3572 **400 x 315.2**
								50	40	ST3572 **400 x 315.3**
								40	40	ST3572 **400 x 315.4**
500 x 250	330	32	30	25	33	38 / 40 x 224	400	50	50	ST3572 **500 x 250.1**
								40	50	ST3572 **500 x 250.2**
								50	40	ST3572 **500 x 250.3**
								40	40	ST3572 **500 x 250.4**
500 x 315	330	32	30	25	33	38 / 40 x 224	400	50	50	ST3572 **500 x 315.1**
								40	50	ST3572 **500 x 315.2**
								50	40	ST3572 **500 x 315.3**
								40	40	ST3572 **500 x 315.4**
500 x 400	330	32	30	25	33	38 / 40 x 224	400	50	50	ST3572 **500 x 400.1**
								40	50	ST3572 **500 x 400.2**
								50	40	ST3572 **500 x 400.3**
								40	40	ST3572 **500 x 400.4**
630 x 315	430	40	42	25	38	48 / 50 x 250	510	50	63	ST3572 **630 x 315.2**
								50	50	ST3572 **630 x 315.4**
630 x 315	430	40	42	25	38	48 / 50 x 280	510	63	63	ST3572 **630 x 315.1**
								63	50	ST3572 **630 x 315.3**
630 x 400	430	40	42	25	38	48 / 50 x 250	510	50	63	ST3572 **630 x 400.2**
								50	50	ST3572 **630 x 400.4**
630 x 400	430	40	42	25	38	48 / 50 x 280	510	63	63	ST3572 **630 x 400.1**
								63	50	ST3572 **630 x 400.3**
630 x 500	430	40	42	25	38	48 / 50 x 250	510	50	63	ST3572 **630 x 500.2**
								50	50	ST3572 **630 x 500.4**
630 x 500	430	40	42	25	38	48 / 50 x 280	510	63	63	ST3572 **630 x 500.1**
								63	50	ST3572 **630 x 500.3**
710 x 400	510	40	42	25	38	48 / 50 x 250	590	50	63	ST3572 **710 x 400.2**
								50	50	ST3572 **710 x 400.4**
710 x 400	510	40	42	25	38	48 / 50 x 280	590	63	63	ST3572 **710 x 400.1**
								63	50	ST3572 **710 x 400.3**
710 x 500	510	40	42	25	38	48 / 50 x 250	590	50	63	ST3572 **710 x 500.2**
								50	50	ST3572 **710 x 500.4**
710 x 500	510	40	42	25	38	48 / 50 x 280	590	63	63	ST3572 **710 x 500.1**
								63	50	ST3572 **710 x 500.3**
710 x 630	510	40	42	25	38	48 / 50 x 250	590	50	63	ST3572 **710 x 630.2**
								50	50	ST3572 **710 x 630.4**
710 x 630	510	40	42	25	38	48 / 50 x 280	590	63	63	ST3572 **710 x 630.1**
								63	50	ST3572 **710 x 630.3**
800 x 400	600	40	42	25	38	48 / 50 x 250	680	50	63	ST3572 **800 x 400.2**
								50	50	ST3572 **800 x 400.4**
800 x 400	600	40	42	25	38	48 / 50 x 280	680	63	63	ST3572 **800 x 400.1**
								63	50	ST3572 **800 x 400.3**
800 x 500	600	40	42	25	38	48 / 50 x 250	680	50	63	ST3572 **800 x 500.2**
								50	50	ST3572 **800 x 500.4**
800 x 500	600	40	42	25	38	48 / 50 x 280	680	63	63	ST3572 **800 x 500.1**
								63	50	ST3572 **800 x 500.3**
800 x 630	600	40	42	25	38	48 / 50 x 250	680	50	63	ST3572 **800 x 630.2**
								50	50	ST3572 **800 x 630.4**

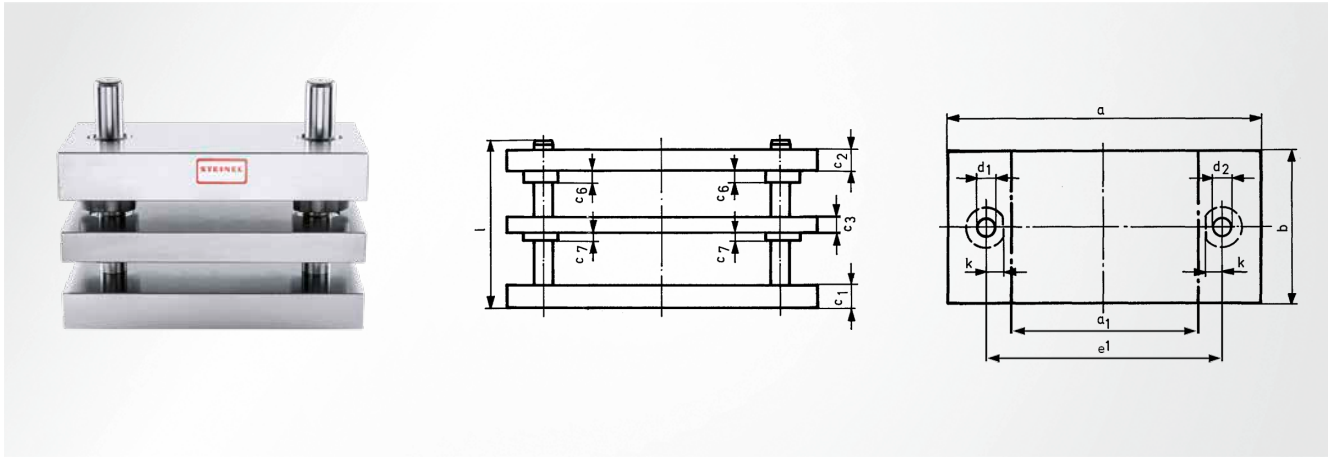
ST3572 Die set

with ball guide, with guide plate

a x b	a_1	c_3	c_6	c_7	k	d_1 / d_2 x l	e_1	c_1	c_2	Item number
800 x 630	600	40	42	25	38	48 / 50 x 280	680	63	63	ST3572 **800 x 630.1**
								63	50	ST3572 **800 x 630.3**

ST3579 Die set

with sliding guide, bronze coating, with guide plate



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Sliding guide with bronze coating

Pillar position
parallel centred

Note
Size c_1, c_2, c_3 +0.2 to +0.5

a x b	a_1	c_3	c_6	c_7	k	d_1 / d_2 x l	e_1	c_1	c_2	Item number
160 x 80	60	25	15	15	18	19 / 20 x 180	100	32	32	ST3579 **160 x 080**
160 x 100	60	25	15	15	18	19 / 20 x 180	100	32	32	ST3579 **160 x 100**
160 x 125	60	25	15	15	18	19 / 20 x 180	100	32	32	ST3579 **160 x 125**
200 x 100	70	25	25	15	23	24 / 25 x 200	120	40	40	ST3579 **200 x 100.1**
								32	40	ST3579 **200 x 100.2**
								40	32	ST3579 **200 x 100.3**
								32	32	ST3579 **200 x 100.4**
200 x 125	70	25	25	15	23	24 / 25 x 200	120	40	40	ST3579 **200 x 125.1**
								32	40	ST3579 **200 x 125.2**
								40	32	ST3579 **200 x 125.3**
								32	32	ST3579 **200 x 125.4**
200 x 160	70	25	25	15	23	24 / 25 x 200	120	40	40	ST3579 **200 x 160.1**
								32	40	ST3579 **200 x 160.2**
								40	32	ST3579 **200 x 160.3**
								32	32	ST3579 **200 x 160.4**
250 x 125	120	25	25	15	23	24 / 25 x 200	170	40	40	ST3579 **250 x 125.1**
								32	40	ST3579 **250 x 125.2**
								40	32	ST3579 **250 x 125.3**
								32	32	ST3579 **250 x 125.4**
250 x 160	120	25	25	15	23	24 / 25 x 200	170	40	40	ST3579 **250 x 160.1**
								32	40	ST3579 **250 x 160.2**
								40	32	ST3579 **250 x 160.3**
								32	32	ST3579 **250 x 160.4**
250 x 200	120	25	25	15	23	24 / 25 x 200	170	40	40	ST3579 **250 x 200.1**
								32	40	ST3579 **250 x 200.2**
								40	32	ST3579 **250 x 200.3**
								32	32	ST3579 **250 x 200.4**
315 x 160	165	32	25	15	28	30 / 32 x 224	225	50	50	ST3579 **315 x 160.1**
								40	50	ST3579 **315 x 160.2**
								50	40	ST3579 **315 x 160.3**
								40	40	ST3579 **315 x 160.4**
315 x 200	165	32	25	15	28	30 / 32 x 224	225	50	50	ST3579 **315 x 200.1**
								40	50	ST3579 **315 x 200.2**
								50	40	ST3579 **315 x 200.3**
								40	40	ST3579 **315 x 200.4**
315 x 250	165	32	25	15	28	30 / 32 x 224	225	50	50	ST3579 **315 x 250.1**

ST3579 Die set

with sliding guide, bronze coating, with guide plate

a x b	a_1	c_3	c_6	c_7	k	d_1 / d_2 x l	e_1	c_1	c_2	Item number
315 x 250	165	32	25	15	28	30 / 32 x 224	225	40	50	ST3579 **315 x 250.2**
								50	40	ST3579 **315 x 250.3**
								40	40	ST3579 **315 x 250.4**
400 x 200	250	32	25	15	28	30 / 32 x 224	310	50	50	ST3579 **400 x 200.1**
								40	50	ST3579 **400 x 200.2**
								50	40	ST3579 **400 x 200.3**
								40	40	ST3579 **400 x 200.4**
400 x 250	250	32	25	15	28	30 / 32 x 224	310	50	50	ST3579 **400 x 250.1**
								40	50	ST3579 **400 x 250.2**
								50	40	ST3579 **400 x 250.3**
								40	40	ST3579 **400 x 250.4**
400 x 315	250	32	25	15	28	30 / 32 x 224	310	50	50	ST3579 **400 x 315.1**
								40	50	ST3579 **400 x 315.2**
								50	40	ST3579 **400 x 315.3**
								40	40	ST3579 **400 x 315.4**
500 x 250	330	32	30	25	33	38 / 40 x 224	400	50	50	ST3579 **500 x 250.1**
								40	50	ST3579 **500 x 250.2**
								50	40	ST3579 **500 x 250.3**
								40	40	ST3579 **500 x 250.4**
500 x 315	330	32	30	25	33	38 / 40 x 224	400	50	50	ST3579 **500 x 315.1**
								40	50	ST3579 **500 x 315.2**
								50	40	ST3579 **500 x 315.3**
								40	40	ST3579 **500 x 315.4**
500 x 400	330	32	30	25	33	38 / 40 x 224	400	50	50	ST3579 **500 x 400.1**
								40	50	ST3579 **500 x 400.2**
								50	40	ST3579 **500 x 400.3**
								40	40	ST3579 **500 x 400.4**
630 x 315	430	40	42	25	38	48 / 50 x 280	510	63	63	ST3579 **630 x 315.1**
								63	50	ST3579 **630 x 315.3**
630 x 315	430	40	42	25	38	48 / 50 x 250	510	50	63	ST3579 **630 x 315.2**
								50	50	ST3579 **630 x 315.4**
630 x 400	430	40	42	25	38	48 / 50 x 280	510	63	63	ST3579 **630 x 400.1**
								63	50	ST3579 **630 x 400.3**
630 x 400	430	40	42	25	38	48 / 50 x 250	510	50	63	ST3579 **630 x 400.2**
								50	50	ST3579 **630 x 400.4**
630 x 500	430	40	42	25	38	48 / 50 x 280	510	63	63	ST3579 **630 x 500.1**
								63	50	ST3579 **630 x 500.3**
630 x 500	430	40	42	25	38	48 / 50 x 250	510	50	63	ST3579 **630 x 500.2**
								50	50	ST3579 **630 x 500.4**
710 x 400	510	40	42	25	38	48 / 50 x 280	590	63	63	ST3579 **710 x 400.1**
								63	50	ST3579 **710 x 400.3**
710 x 400	510	40	42	25	38	48 / 50 x 250	590	50	63	ST3579 **710 x 400.2**
								50	50	ST3579 **710 x 400.4**
710 x 500	510	40	42	25	38	48 / 50 x 280	590	63	63	ST3579 **710 x 500.1**
								63	50	ST3579 **710 x 500.3**
710 x 500	510	40	42	25	38	48 / 50 x 250	590	50	63	ST3579 **710 x 500.2**
								50	50	ST3579 **710 x 500.4**
710 x 630	510	40	42	25	38	48 / 50 x 280	590	63	63	ST3579 **710 x 630.1**
								63	50	ST3579 **710 x 630.3**
710 x 630	510	40	42	25	38	48 / 50 x 250	590	50	63	ST3579 **710 x 630.2**
								50	50	ST3579 **710 x 630.4**
800 x 400	600	40	42	25	38	48 / 50 x 280	680	63	63	ST3579 **800 x 400.1**
								63	50	ST3579 **800 x 400.3**
800 x 400	600	40	42	25	38	48 / 50 x 250	680	50	63	ST3579 **800 x 400.2**
								50	50	ST3579 **800 x 400.4**
800 x 500	600	40	42	25	38	48 / 50 x 280	680	63	63	ST3579 **800 x 500.1**
								63	50	ST3579 **800 x 500.3**
800 x 500	600	40	42	25	38	48 / 50 x 250	680	50	63	ST3579 **800 x 500.2**
								50	50	ST3579 **800 x 500.4**
800 x 630	600	40	42	25	38	48 / 50 x 280	680	63	63	ST3579 **800 x 630.1**
								63	50	ST3579 **800 x 630.3**

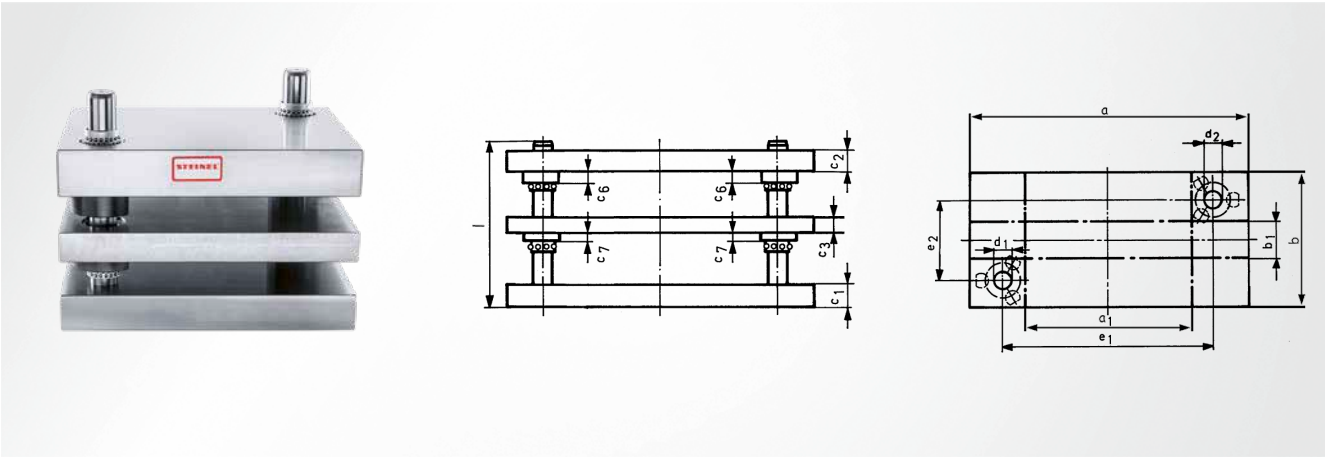
ST3579 Die set

with sliding guide, bronze coating, with guide plate

a x b	a_1	c_3	c_6	c_7	k	d_1 / d_2 x l	e_1	c_1	c_2	Item number
800 x 630	600	40	42	25	38	48 / 50 x 250	680	50	63	ST3579 **800 x 630.2**
								50	50	ST3579 **800 x 630.4**

ST3582 Die set

with ball guide, with guide plate



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Ball guide

Pillar position
diagonal

Note
Size c_1, c_2, c_3 +0.2 to +0.5

a x b	a_1	b_1	c_3	c_6	c_7	d_1 / d_2 x l	e_1	e_2	c_1	c_2	Item number
160 x 160	60	60	25	15	15	19 / 20 x 180	100	100	32	32	ST3582 **160 x 160**
200 x 200	70	70	25	25	15	24 / 25 x 200	120	120	40	40	ST3582 **200 x 200.1**
									32	40	ST3582 **200 x 200.2**
									40	32	ST3582 **200 x 200.3**
									32	32	ST3582 **200 x 200.4**
250 x 200	120	70	25	25	15	24 / 25 x 200	170	120	40	40	ST3582 **250 x 200.1**
									32	40	ST3582 **250 x 200.2**
									40	32	ST3582 **250 x 200.3**
									32	32	ST3582 **250 x 200.4**
250 x 250	120	120	25	25	15	24 / 25 x 200	170	170	40	40	ST3582 **250 x 250.1**
									32	40	ST3582 **250 x 250.2**
									40	32	ST3582 **250 x 250.3**
									32	32	ST3582 **250 x 250.4**
315 x 200	165	50	32	25	15	30 / 32 x 224	225	110	50	50	ST3582 **315 x 200.1**
									40	50	ST3582 **315 x 200.2**
									50	40	ST3582 **315 x 200.3**
									40	40	ST3582 **315 x 200.4**
315 x 250	165	100	32	25	15	30 / 32 x 224	225	160	50	50	ST3582 **315 x 250.1**
									40	50	ST3582 **315 x 250.2**
									50	40	ST3582 **315 x 250.3**
									40	40	ST3582 **315 x 250.4**
315 x 315	165	165	32	25	15	30 / 32 x 224	225	225	50	50	ST3582 **315 x 315.1**
									40	50	ST3582 **315 x 315.2**
									50	40	ST3582 **315 x 315.3**
									40	40	ST3582 **315 x 315.4**
400 x 200	250	50	32	25	15	30 / 32 x 224	310	110	50	50	ST3582 **400 x 200.1**
									40	50	ST3582 **400 x 200.2**
									50	40	ST3582 **400 x 200.3**
									40	40	ST3582 **400 x 200.4**
400 x 250	250	100	32	25	15	30 / 32 x 224	310	160	50	50	ST3582 **400 x 250.1**
									40	50	ST3582 **400 x 250.2**
									50	40	ST3582 **400 x 250.3**
									40	40	ST3582 **400 x 250.4**
400 x 315	250	165	32	25	15	30 / 32 x 224	310	225	50	50	ST3582 **400 x 315.1**
									40	50	ST3582 **400 x 315.2**
									50	40	ST3582 **400 x 315.3**

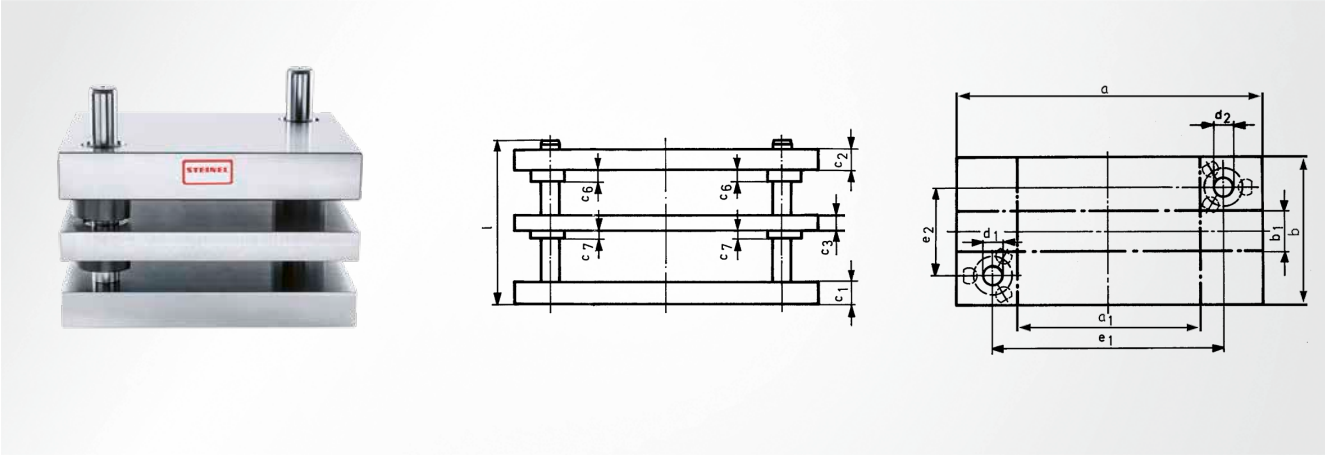
ST3582 Die set

with ball guide, with guide plate

a x b	a_1	b_1	c_3	c_6	c_7	d_1 / d_2 x l	e_1	e_2	c_1	c_2	Item number
400 x 315	250	165	32	25	15	30 / 32 x 224	310	225	40	40	ST3582 **400 x 315.4**
400 x 400	250	250	32	25	15	30 / 32 x 224	310	310	50	50	ST3582 **400 x 400.1**
									40	50	ST3582 **400 x 400.2**
									50	40	ST3582 **400 x 400.3**
									40	40	ST3582 **400 x 400.4**
500 x 250	330	80	32	30	25	38 / 40 x 224	400	150	50	50	ST3582 **500 x 250.1**
									40	50	ST3582 **500 x 250.2**
									50	40	ST3582 **500 x 250.3**
									40	40	ST3582 **500 x 250.4**
500 x 315	330	145	32	30	25	38 / 40 x 224	400	215	50	50	ST3582 **500 x 315.1**
									40	50	ST3582 **500 x 315.2**
									50	40	ST3582 **500 x 315.3**
									40	40	ST3582 **500 x 315.4**
500 x 400	330	230	32	30	25	38 / 40 x 224	400	300	50	50	ST3582 **500 x 400.1**
									40	50	ST3582 **500 x 400.2**
									50	40	ST3582 **500 x 400.3**
									40	40	ST3582 **500 x 400.4**
500 x 500	330	330	32	30	25	38 / 40 x 224	400	400	50	50	ST3582 **500 x 500.1**
									40	50	ST3582 **500 x 500.2**
									50	40	ST3582 **500 x 500.3**
									40	40	ST3582 **500 x 500.4**
630 x 315	430	115	40	42	25	48 / 50 x 250	510	195	50	63	ST3582 **630 x 315.2**
									50	50	ST3582 **630 x 315.4**
630 x 315	430	115	40	42	25	48 / 50 x 280	510	195	63	63	ST3582 **630 x 315.1**
									63	50	ST3582 **630 x 315.3**
630 x 400	430	200	40	42	25	48 / 50 x 250	510	280	50	63	ST3582 **630 x 400.2**
									50	50	ST3582 **630 x 400.4**
630 x 400	430	200	40	42	25	48 / 50 x 280	510	280	63	63	ST3582 **630 x 400.1**
									63	50	ST3582 **630 x 400.3**
630 x 500	430	300	40	42	25	48 / 50 x 250	510	380	50	63	ST3582 **630 x 500.2**
									50	50	ST3582 **630 x 500.4**
630 x 500	430	300	40	42	25	48 / 50 x 280	510	380	63	63	ST3582 **630 x 500.1**
									63	50	ST3582 **630 x 500.3**
630 x 630	430	430	40	42	25	48 / 50 x 250	510	510	50	63	ST3582 **630 x 630.2**
									50	50	ST3582 **630 x 630.4**
630 x 630	430	430	40	42	25	48 / 50 x 280	510	510	63	63	ST3582 **630 x 630.1**
									63	50	ST3582 **630 x 630.3**
710 x 400	510	200	40	42	25	48 / 50 x 250	590	280	50	63	ST3582 **710 x 400.2**
									50	50	ST3582 **710 x 400.4**
710 x 400	510	200	40	42	25	48 / 50 x 280	590	280	63	63	ST3582 **710 x 400.1**
									63	50	ST3582 **710 x 400.3**
710 x 500	510	300	40	42	25	48 / 50 x 250	590	380	50	63	ST3582 **710 x 500.2**
									50	50	ST3582 **710 x 500.4**
710 x 500	510	300	40	42	25	48 / 50 x 280	590	380	63	63	ST3582 **710 x 500.1**
									63	50	ST3582 **710 x 500.3**
710 x 630	510	430	40	42	25	48 / 50 x 250	590	510	50	63	ST3582 **710 x 630.2**
									50	50	ST3582 **710 x 630.4**
710 x 630	510	430	40	42	25	48 / 50 x 280	590	510	63	63	ST3582 **710 x 630.1**
									63	50	ST3582 **710 x 630.3**
800 x 400	600	200	40	42	25	48 / 50 x 250	680	280	50	63	ST3582 **800 x 400.2**
									50	50	ST3582 **800 x 400.4**
800 x 400	600	200	40	42	25	48 / 50 x 280	680	280	63	63	ST3582 **800 x 400.1**
									63	50	ST3582 **800 x 400.3**
800 x 500	600	300	40	42	25	48 / 50 x 250	680	380	50	63	ST3582 **800 x 500.2**
									50	50	ST3582 **800 x 500.4**
800 x 500	600	300	40	42	25	48 / 50 x 280	680	380	63	63	ST3582 **800 x 500.1**
									63	50	ST3582 **800 x 500.3**
800 x 630	600	430	40	42	25	48 / 50 x 250	680	510	50	63	ST3582 **800 x 630.2**
									50	50	ST3582 **800 x 630.4**
800 x 630	600	430	40	42	25	48 / 50 x 280	680	510	63	63	ST3582 **800 x 630.1**
									63	50	ST3582 **800 x 630.3**

ST3589 Die set

with sliding guide, bronze coating, with guide plate



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Sliding guide with bronze coating

Pillar position
diagonal

Note
Size c_1, c_2, c_3 +0.2 to +0.5

a x b	a_1	b_1	c_3	c_6	c_7	d_1 / d_2 x l	e_1	e_2	c_1	c_2	Item number
160 x 160	60	60	25	15	15	19 / 20 x 180	100	100	32	32	ST3589 **160 x 160**
200 x 200	70	70	25	25	15	24 / 25 x 200	120	120	40	40	ST3589 **200 x 200.1**
									32	40	ST3589 **200 x 200.2**
									40	32	ST3589 **200 x 200.3**
									32	32	ST3589 **200 x 200.4**
250 x 200	120	70	25	25	15	24 / 25 x 200	170	120	40	40	ST3589 **250 x 200.1**
									32	40	ST3589 **250 x 200.2**
									40	32	ST3589 **250 x 200.3**
									32	32	ST3589 **250 x 200.4**
250 x 250	120	120	25	25	15	24 / 25 x 200	170	170	40	40	ST3589 **250 x 250.1**
									32	40	ST3589 **250 x 250.2**
									40	32	ST3589 **250 x 250.3**
									32	32	ST3589 **250 x 250.4**
315 x 200	165	50	32	25	15	30 / 32 x 224	225	110	50	50	ST3589 **315 x 200.1**
									40	50	ST3589 **315 x 200.2**
									50	40	ST3589 **315 x 200.3**
									40	40	ST3589 **315 x 200.4**
315 x 250	165	100	32	25	15	30 / 32 x 224	225	160	50	50	ST3589 **315 x 250.1**
									40	50	ST3589 **315 x 250.2**
									50	40	ST3589 **315 x 250.3**
									40	40	ST3589 **315 x 250.4**
315 x 315	165	165	32	25	15	30 / 32 x 224	225	225	50	50	ST3589 **315 x 315.1**
									40	50	ST3589 **315 x 315.2**
									50	40	ST3589 **315 x 315.3**
									40	40	ST3589 **315 x 315.4**
400 x 200	250	50	32	25	15	30 / 32 x 224	310	110	50	50	ST3589 **400 x 200.1**
									40	50	ST3589 **400 x 200.2**
									50	40	ST3589 **400 x 200.3**
									40	40	ST3589 **400 x 200.4**
400 x 250	250	100	32	25	15	30 / 32 x 224	310	160	50	50	ST3589 **400 x 250.1**
									40	50	ST3589 **400 x 250.2**
									50	40	ST3589 **400 x 250.3**
									40	40	ST3589 **400 x 250.4**
400 x 315	250	165	32	25	15	30 / 32 x 224	310	225	50	50	ST3589 **400 x 315.1**
									40	50	ST3589 **400 x 315.2**
									50	40	ST3589 **400 x 315.3**

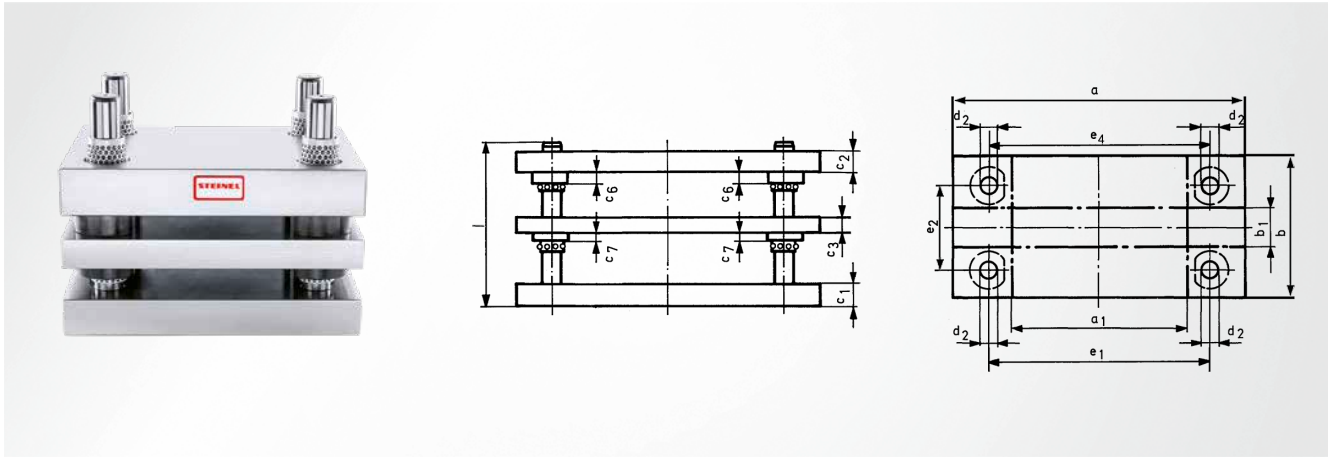
ST3589 Die set

with sliding guide, bronze coating, with guide plate

a x b	a_1	b_1	c_3	c_6	c_7	d_1 / d_2 x l	e_1	e_2	c_1	c_2	Item number
400 x 315	250	165	32	25	15	30 / 32 x 224	310	225	40	40	ST3589 **400 x 315.4**
400 x 400	250	250	32	25	15	30 / 32 x 224	310	310	50	50	ST3589 **400 x 400.1**
									40	50	ST3589 **400 x 400.2**
									50	40	ST3589 **400 x 400.3**
									40	40	ST3589 **400 x 400.4**
500 x 250	330	80	32	30	25	38 / 40 x 224	400	150	50	50	ST3589 **500 x 250.1**
									40	50	ST3589 **500 x 250.2**
									50	40	ST3589 **500 x 250.3**
									40	40	ST3589 **500 x 250.4**
500 x 315	330	145	32	30	25	38 / 40 x 224	400	215	50	50	ST3589 **500 x 315.1**
									40	50	ST3589 **500 x 315.2**
									50	40	ST3589 **500 x 315.3**
									40	40	ST3589 **500 x 315.4**
500 x 400	330	230	32	30	25	38 / 40 x 224	400	300	50	50	ST3589 **500 x 400.1**
									40	50	ST3589 **500 x 400.2**
									50	40	ST3589 **500 x 400.3**
									40	40	ST3589 **500 x 400.4**
500 x 500	330	330	32	30	25	38 / 40 x 224	400	400	50	50	ST3589 **500 x 500.1**
									40	50	ST3589 **500 x 500.2**
									50	40	ST3589 **500 x 500.3**
									40	40	ST3589 **500 x 500.4**
630 x 315	430	115	40	42	25	48 / 50 x 280	510	195	63	63	ST3589 **630 x 315.1**
									63	50	ST3589 **630 x 315.3**
630 x 315	430	115	40	42	25	48 / 50 x 250	510	195	50	63	ST3589 **630 x 315.2**
									50	50	ST3589 **630 x 315.4**
630 x 400	430	200	40	42	25	48 / 50 x 280	510	280	63	63	ST3589 **630 x 400.1**
									63	50	ST3589 **630 x 400.3**
630 x 400	430	200	40	42	25	48 / 50 x 250	510	280	50	63	ST3589 **630 x 400.2**
									50	50	ST3589 **630 x 400.4**
630 x 500	430	300	40	42	25	48 / 50 x 280	510	380	63	63	ST3589 **630 x 500.1**
									63	50	ST3589 **630 x 500.3**
630 x 500	430	300	40	42	25	48 / 50 x 250	510	380	50	63	ST3589 **630 x 500.2**
									50	50	ST3589 **630 x 500.4**
630 x 630	430	430	40	42	25	48 / 50 x 280	510	510	63	63	ST3589 **630 x 630.1**
									63	50	ST3589 **630 x 630.3**
630 x 630	430	430	40	42	25	48 / 50 x 250	510	510	50	63	ST3589 **630 x 630.2**
									50	50	ST3589 **630 x 630.4**
710 x 400	510	200	40	42	25	48 / 50 x 280	590	280	63	63	ST3589 **710 x 400.1**
									63	50	ST3589 **710 x 400.3**
710 x 400	510	200	40	42	25	48 / 50 x 250	590	280	50	63	ST3589 **710 x 400.2**
									50	50	ST3589 **710 x 400.4**
710 x 500	510	300	40	42	25	48 / 50 x 280	590	380	63	63	ST3589 **710 x 500.1**
									63	50	ST3589 **710 x 500.3**
710 x 500	510	300	40	42	25	48 / 50 x 250	590	380	50	63	ST3589 **710 x 500.2**
									50	50	ST3589 **710 x 500.4**
710 x 630	510	430	40	42	25	48 / 50 x 280	590	510	63	63	ST3589 **710 x 630.1**
									63	50	ST3589 **710 x 630.3**
710 x 630	510	430	40	42	25	48 / 50 x 250	590	510	50	63	ST3589 **710 x 630.2**
									50	50	ST3589 **710 x 630.4**
800 x 400	600	200	40	42	25	48 / 50 x 280	680	280	63	63	ST3589 **800 x 400.1**
									63	50	ST3589 **800 x 400.3**
800 x 400	600	200	40	42	25	48 / 50 x 250	680	280	50	63	ST3589 **800 x 400.2**
									50	50	ST3589 **800 x 400.4**
800 x 500	600	300	40	42	25	48 / 50 x 280	680	380	63	63	ST3589 **800 x 500.1**
									63	50	ST3589 **800 x 500.3**
800 x 500	600	300	40	42	25	48 / 50 x 250	680	380	50	63	ST3589 **800 x 500.2**
									50	50	ST3589 **800 x 500.4**
800 x 630	600	430	40	42	25	48 / 50 x 280	680	510	63	63	ST3589 **800 x 630.1**
									63	50	ST3589 **800 x 630.3**
800 x 630	600	430	40	42	25	48 / 50 x 250	680	510	50	63	ST3589 **800 x 630.2**
									50	50	ST3589 **800 x 630.4**

ST3592 Die set

with ball guide, with guide plate, four pillars



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Ball guide

Pillar position
square

Note
Size c_1, c_2, c_3 +0.2 to +0.5

a x b	a_1	b_1	c_3	c_6	c_7	d_2 x l	e_1	e_2	e_4	c_1	c_2	Item number
160 x 160	60	60	25	15	15	20 x 180	100	100	103	32	32	ST3592 **160 x 160**
200 x 200	70	70	25	25	15	25 x 200	120	120	123	40	40	ST3592 **200 x 200.1**
										32	40	ST3592 **200 x 200.2**
										40	32	ST3592 **200 x 200.3**
										32	32	ST3592 **200 x 200.4**
250 x 200	120	70	25	25	15	25 x 200	170	120	173	40	40	ST3592 **250 x 200.1**
										32	40	ST3592 **250 x 200.2**
										40	32	ST3592 **250 x 200.3**
										32	32	ST3592 **250 x 200.4**
250 x 250	120	120	25	25	15	25 x 200	170	170	173	40	40	ST3592 **250 x 250.1**
										32	40	ST3592 **250 x 250.2**
										40	32	ST3592 **250 x 250.3**
										32	32	ST3592 **250 x 250.4**
315 x 200	165	50	32	25	15	32 x 224	225	110	228	50	50	ST3592 **315 x 200.1**
										40	50	ST3592 **315 x 200.2**
										50	40	ST3592 **315 x 200.3**
										40	40	ST3592 **315 x 200.4**
315 x 250	165	100	32	25	15	32 x 224	225	160	228	50	50	ST3592 **315 x 250.1**
										40	50	ST3592 **315 x 250.2**
										50	40	ST3592 **315 x 250.3**
										40	40	ST3592 **315 x 250.4**
315 x 315	165	165	32	25	15	32 x 224	225	225	228	50	50	ST3592 **315 x 315.1**
										40	50	ST3592 **315 x 315.2**
										50	40	ST3592 **315 x 315.3**
										40	40	ST3592 **315 x 315.4**
400 x 200	250	50	32	25	15	32 x 224	310	110	313	50	50	ST3592 **400 x 200.1**
										40	50	ST3592 **400 x 200.2**
										50	40	ST3592 **400 x 200.3**
										40	40	ST3592 **400 x 200.4**
400 x 250	250	100	32	25	15	32 x 224	310	160	313	50	50	ST3592 **400 x 250.1**
										40	50	ST3592 **400 x 250.2**
										50	40	ST3592 **400 x 250.3**
										40	40	ST3592 **400 x 250.4**
400 x 315	250	165	32	25	15	32 x 224	310	225	313	50	50	ST3592 **400 x 315.1**
										40	50	ST3592 **400 x 315.2**
										50	40	ST3592 **400 x 315.3**

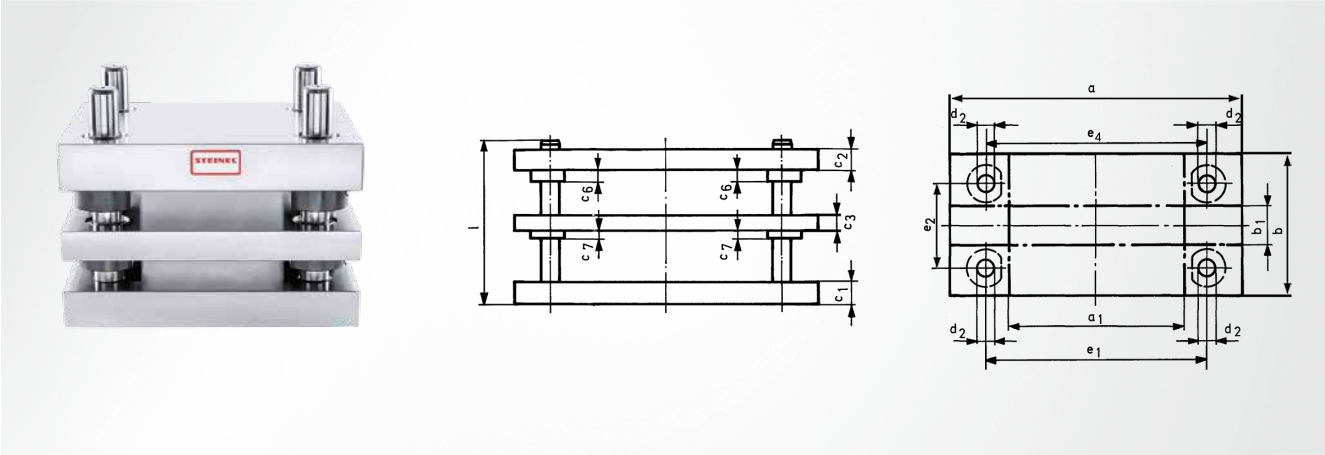
ST3592 Die set

with ball guide, with guide plate, four pillars

a x b	a_1	b_1	c_3	c_6	c_7	d_2 x l	e_1	e_2	e_4	c_1	c_2	Item number
400 x 315	250	165	32	25	15	32 x 224	310	225	313	40	40	ST3592 **400 x 315.4**
400 x 400	250	250	32	25	15	32 x 224	310	310	313	50	50	ST3592 **400 x 400.1**
										40	50	ST3592 **400 x 400.2**
										50	40	ST3592 **400 x 400.3**
										40	40	ST3592 **400 x 400.4**
500 x 250	330	80	32	30	25	40 x 224	400	150	403	50	50	ST3592 **500 x 250.1**
										40	50	ST3592 **500 x 250.2**
										50	40	ST3592 **500 x 250.3**
										40	40	ST3592 **500 x 250.4**
500 x 315	330	145	32	30	25	40 x 224	400	215	403	50	50	ST3592 **500 x 315.1**
										40	50	ST3592 **500 x 315.2**
										50	40	ST3592 **500 x 315.3**
										40	40	ST3592 **500 x 315.4**
500 x 400	330	230	32	30	25	40 x 224	400	300	403	50	50	ST3592 **500 x 400.1**
										40	50	ST3592 **500 x 400.2**
										50	40	ST3592 **500 x 400.3**
										40	40	ST3592 **500 x 400.4**
500 x 500	330	330	32	30	25	40 x 224	400	400	403	50	50	ST3592 **500 x 500.1**
										40	50	ST3592 **500 x 500.2**
										50	40	ST3592 **500 x 500.3**
										40	40	ST3592 **500 x 500.4**
630 x 315	430	115	40	42	25	50 x 280	510	195	513	63	63	ST3592 **630 x 315.1**
										63	50	ST3592 **630 x 315.3**
630 x 315	430	115	40	42	25	50 x 250	510	195	513	50	63	ST3592 **630 x 315.2**
										50	50	ST3592 **630 x 315.4**
630 x 400	430	200	40	42	25	50 x 280	510	280	513	63	63	ST3592 **630 x 400.1**
										63	50	ST3592 **630 x 400.3**
630 x 400	430	200	40	42	25	50 x 250	510	280	513	50	63	ST3592 **630 x 400.2**
										50	50	ST3592 **630 x 400.4**
630 x 500	430	300	40	42	25	50 x 280	510	380	513	63	63	ST3592 **630 x 500.1**
										63	50	ST3592 **630 x 500.3**
630 x 500	430	300	40	42	25	50 x 250	510	380	513	50	63	ST3592 **630 x 500.2**
										50	50	ST3592 **630 x 500.4**
630 x 630	430	430	40	42	25	50 x 280	510	510	513	63	63	ST3592 **630 x 630.1**
										63	50	ST3592 **630 x 630.3**
630 x 630	430	430	40	42	25	50 x 250	510	510	513	50	63	ST3592 **630 x 630.2**
										50	50	ST3592 **630 x 630.4**
710 x 400	510	200	40	42	25	50 x 280	590	280	593	63	63	ST3592 **710 x 400.1**
										63	50	ST3592 **710 x 400.3**
710 x 400	510	200	40	42	25	50 x 250	590	280	593	50	63	ST3592 **710 x 400.2**
										50	50	ST3592 **710 x 400.4**
710 x 500	510	300	40	42	25	50 x 280	590	380	593	63	63	ST3592 **710 x 500.1**
										63	50	ST3592 **710 x 500.3**
710 x 500	510	300	40	42	25	50 x 250	590	380	593	50	63	ST3592 **710 x 500.2**
										50	50	ST3592 **710 x 500.4**
710 x 630	510	430	40	42	25	50 x 280	590	510	593	63	63	ST3592 **710 x 630.1**
										63	50	ST3592 **710 x 630.3**
710 x 630	510	430	40	42	25	50 x 250	590	510	593	50	63	ST3592 **710 x 630.2**
										50	50	ST3592 **710 x 630.4**
800 x 400	600	200	40	42	25	50 x 280	680	280	683	63	63	ST3592 **800 x 400.1**
										63	50	ST3592 **800 x 400.3**
800 x 400	600	200	40	42	25	50 x 250	680	280	683	50	63	ST3592 **800 x 400.2**
										50	50	ST3592 **800 x 400.4**
800 x 500	600	300	40	42	25	50 x 280	680	380	683	63	63	ST3592 **800 x 500.1**
										63	50	ST3592 **800 x 500.3**
800 x 500	600	300	40	42	25	50 x 250	680	380	683	50	63	ST3592 **800 x 500.2**
										50	50	ST3592 **800 x 500.4**
800 x 630	600	430	40	42	25	50 x 280	680	510	683	63	63	ST3592 **800 x 630.1**
										63	50	ST3592 **800 x 630.3**
800 x 630	600	430	40	42	25	50 x 250	680	510	683	50	63	ST3592 **800 x 630.2**
										50	50	ST3592 **800 x 630.4**

ST3599 Die set

with sliding guide, bronze coating, with guide plate, four pillars



Referring to DIN 9868

Material
Steel 1.1730

Type of guidance
Sliding guide with bronze coating

Pillar position
square

Note
Size c_1, c_2, c_3 +0.2 to +0.5

a x b	a_1	b_1	c_3	c_6	c_7	d_2 x l	e_1	e_2	e_4	c_1	c_2	Item number
160 x 160	60	60	25	15	15	20 x 180	100	100	103	32	32	ST3599 **160 x 160**
200 x 200	70	70	25	25	15	25 x 200	120	120	123	40	40	ST3599 **200 x 200.1**
										32	40	ST3599 **200 x 200.2**
										40	32	ST3599 **200 x 200.3**
										32	32	ST3599 **200 x 200.4**
250 x 200	120	70	25	25	15	25 x 200	170	120	173	40	40	ST3599 **250 x 200.1**
										32	40	ST3599 **250 x 200.2**
										40	32	ST3599 **250 x 200.3**
										32	32	ST3599 **250 x 200.4**
250 x 250	120	120	25	25	15	25 x 200	170	170	173	40	40	ST3599 **250 x 250.1**
										32	40	ST3599 **250 x 250.2**
										40	32	ST3599 **250 x 250.3**
										32	32	ST3599 **250 x 250.4**
315 x 200	165	50	32	25	15	32 x 224	225	110	228	50	50	ST3599 **315 x 200.1**
										40	50	ST3599 **315 x 200.2**
										50	40	ST3599 **315 x 200.3**
										40	40	ST3599 **315 x 200.4**
315 x 250	165	100	32	25	15	32 x 224	225	160	228	50	50	ST3599 **315 x 250.1**
										40	50	ST3599 **315 x 250.2**
										50	40	ST3599 **315 x 250.3**
										40	40	ST3599 **315 x 250.4**
315 x 315	165	165	32	25	15	32 x 224	225	225	228	50	50	ST3599 **315 x 315.1**
										40	50	ST3599 **315 x 315.2**
										50	40	ST3599 **315 x 315.3**
										40	40	ST3599 **315 x 315.4**
400 x 200	250	50	32	25	15	32 x 224	310	110	313	50	50	ST3599 **400 x 200.1**
										40	50	ST3599 **400 x 200.2**
										50	40	ST3599 **400 x 200.3**
										40	40	ST3599 **400 x 200.4**
400 x 250	250	100	32	25	15	32 x 224	310	160	313	50	50	ST3599 **400 x 250.1**
										40	50	ST3599 **400 x 250.2**
										50	40	ST3599 **400 x 250.3**
										40	40	ST3599 **400 x 250.4**
400 x 315	250	165	32	25	15	32 x 224	310	225	313	50	50	ST3599 **400 x 315.1**
										40	50	ST3599 **400 x 315.2**
										50	40	ST3599 **400 x 315.3**

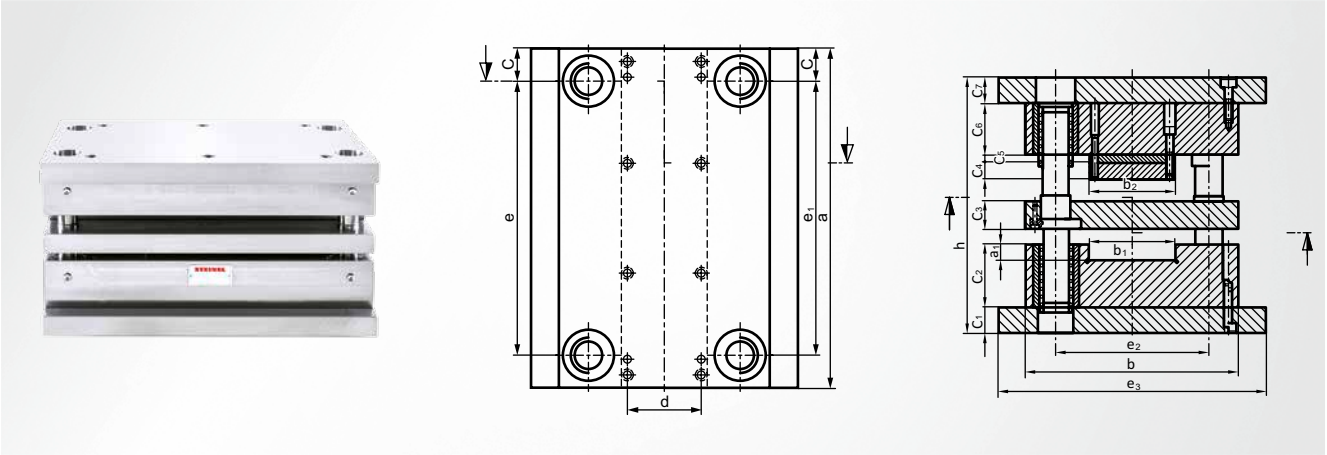
ST3599 Die set

with sliding guide, bronze coating, with guide plate, four pillars

a x b	a_1	b_1	c_3	c_6	c_7	d_2 x l	e_1	e_2	e_4	c_1	c_2	Item number
400 x 315	250	165	32	25	15	32 x 224	310	225	313	40	40	ST3599 **400 x 315.4**
400 x 400	250	250	32	25	15	32 x 224	310	310	313	50	50	ST3599 **400 x 400.1**
										40	50	ST3599 **400 x 400.2**
										50	40	ST3599 **400 x 400.3**
										40	40	ST3599 **400 x 400.4**
500 x 250	330	80	32	30	25	40 x 224	400	150	403	50	50	ST3599 **500 x 250.1**
										40	50	ST3599 **500 x 250.2**
										50	40	ST3599 **500 x 250.3**
										40	40	ST3599 **500 x 250.4**
500 x 315	330	145	32	30	25	40 x 224	400	215	403	50	50	ST3599 **500 x 315.1**
										40	50	ST3599 **500 x 315.2**
										50	40	ST3599 **500 x 315.3**
										40	40	ST3599 **500 x 315.4**
500 x 400	330	230	32	30	25	40 x 224	400	300	403	50	50	ST3599 **500 x 400.1**
										40	50	ST3599 **500 x 400.2**
										50	40	ST3599 **500 x 400.3**
										40	40	ST3599 **500 x 400.4**
500 x 500	330	330	32	30	25	40 x 224	400	400	403	50	50	ST3599 **500 x 500.1**
										40	50	ST3599 **500 x 500.2**
										50	40	ST3599 **500 x 500.3**
										40	40	ST3599 **500 x 500.4**
630 x 315	430	115	40	42	25	50 x 280	510	195	513	63	63	ST3599 **630 x 315.1**
										63	50	ST3599 **630 x 315.3**
630 x 315	430	115	40	42	25	50 x 250	510	195	513	50	63	ST3599 **630 x 315.2**
										50	50	ST3599 **630 x 315.4**
630 x 400	430	200	40	42	25	50 x 280	510	280	513	63	63	ST3599 **630 x 400.1**
										63	50	ST3599 **630 x 400.3**
630 x 400	430	200	40	42	25	50 x 250	510	280	513	50	63	ST3599 **630 x 400.2**
										50	50	ST3599 **630 x 400.4**
630 x 500	430	300	40	42	25	50 x 280	510	380	513	63	63	ST3599 **630 x 500.1**
										63	50	ST3599 **630 x 500.3**
630 x 500	430	300	40	42	25	50 x 250	510	380	513	50	63	ST3599 **630 x 500.2**
										50	50	ST3599 **630 x 500.4**
630 x 630	430	430	40	42	25	50 x 280	510	510	513	63	63	ST3599 **630 x 630.1**
										63	50	ST3599 **630 x 630.3**
630 x 630	430	430	40	42	25	50 x 250	510	510	513	50	63	ST3599 **630 x 630.2**
										50	50	ST3599 **630 x 630.4**
710 x 400	510	200	40	42	25	50 x 280	590	280	593	63	63	ST3599 **710 x 400.1**
										63	50	ST3599 **710 x 400.3**
710 x 400	510	200	40	42	25	50 x 250	590	280	593	50	63	ST3599 **710 x 400.2**
										50	50	ST3599 **710 x 400.4**
710 x 500	510	300	40	42	25	50 x 280	590	380	593	63	63	ST3599 **710 x 500.1**
										63	50	ST3599 **710 x 500.3**
710 x 500	510	300	40	42	25	50 x 250	590	380	593	50	63	ST3599 **710 x 500.2**
										50	50	ST3599 **710 x 500.4**
710 x 630	510	430	40	42	25	50 x 280	590	510	593	63	63	ST3599 **710 x 630.1**
										63	50	ST3599 **710 x 630.3**
710 x 630	510	430	40	42	25	50 x 250	590	510	593	50	63	ST3599 **710 x 630.2**
										50	50	ST3599 **710 x 630.4**
800 x 400	600	200	40	42	25	50 x 280	680	280	683	63	63	ST3599 **800 x 400.1**
										63	50	ST3599 **800 x 400.3**
800 x 400	600	200	40	42	25	50 x 250	680	280	683	50	63	ST3599 **800 x 400.2**
										50	50	ST3599 **800 x 400.4**
800 x 500	600	300	40	42	25	50 x 280	680	380	683	63	63	ST3599 **800 x 500.1**
										63	50	ST3599 **800 x 500.3**
800 x 500	600	300	40	42	25	50 x 250	680	380	683	50	63	ST3599 **800 x 500.2**
										50	50	ST3599 **800 x 500.4**
800 x 630	600	430	40	42	25	50 x 280	680	510	683	63	63	ST3599 **800 x 630.1**
										63	50	ST3599 **800 x 630.3**
800 x 630	600	430	40	42	25	50 x 250	680	510	683	50	63	ST3599 **800 x 630.2**
										50	50	ST3599 **800 x 630.4**

ST3712 Die set

with ball guide, for progressive and composite tools



Material
Steel 1.1730

Type of guidance
Ball guide

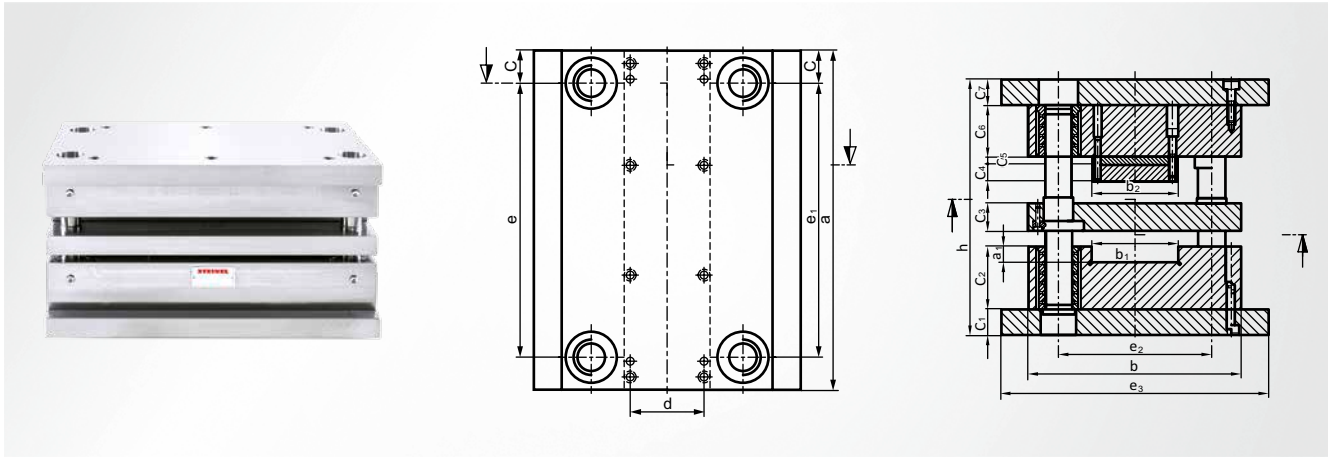
Note
Material of pressure plate and punch holding plate 1.2842 (90MnCrV8); pressure plate deliverable in hardened form upon request

Optional accessories
SZ8565.10; SZ8565.20; SZ8565.30; SZ8565.40

a_1	b_1	b_2	c	c_1	c_2	c_3	c_4	c_5	c_6	c_7	d	d_1 x l	e_2	e_3	h	a x b	e	e_1	Item number
12	60	60	24	25	60	25	15	8	47	25	50	19 x 180	108	196	241	196 x 156	148	145	ST3712 **196 x 156**
																246 x 156	198	195	ST3712 **246 x 156**
																311 x 156	263	260	ST3712 **311 x 156**
15	80	80	27	25	60	25	15	8	47	25	70	25 x 180	142	246	241	246 x 196	192	189	ST3712 **246 x 196**
																311 x 196	257	254	ST3712 **311 x 196**
																396 x 196	342	339	ST3712 **396 x 196**
15	100	100	34	25	60	30	15	8	60	25	88	32 x 210	178	311	257	311 x 246	243	240	ST3712 **311 x 246**
																396 x 246	328	325	ST3712 **396 x 246**
																496 x 246	428	425	ST3712 **496 x 246**
15	150	150	35	25	60	30	15	8	60	25	134	32 x 210	240	396	257	396 x 311	326	323	ST3712 **396 x 311**
																496 x 311	426	423	ST3712 **496 x 311**
																626 x 311	556	553	ST3712 **626 x 311**

ST3719 Die set

with sliding guide, bronze coating, for progressive and composite tools



Material
Steel 1.1730

Type of guidance
Sliding guide with bronze coating

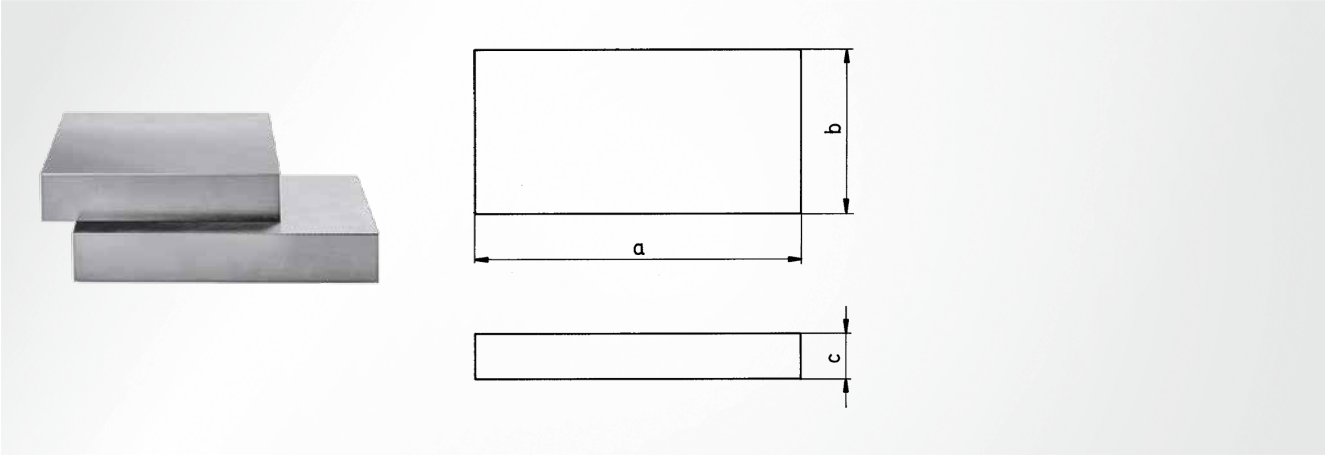
Installation instruction
central lubrication intended via funnel-type lubricating nipple with connection M8 x 1

Note
Material of pressure plate and punch holding plate 1.2842 (90MnCrV8); pressure plate deliverable in hardened form upon request

Optional accessories
SZ8565.10; SZ8565.20; SZ8565.30; SZ8565.40

a_1	b_1	b_2	c	c_1	c_2	c_3	c_4	c_5	c_6	c_7	d	d_1 x l	e_2	e_3	h	a x b	e	e_1	Item number
12	60	60	24	25	60	25	15	8	47	25	50	19 x 180	108	196	241	196 x 156	148	145	ST3719 **196 x 156**
																246 x 156	198	195	ST3719 **246 x 156**
																311 x 156	263	260	ST3719 **311 x 156**
15	80	80	27	25	60	25	15	8	47	25	70	25 x 180	142	246	241	246 x 196	192	189	ST3719 **246 x 196**
																311 x 196	257	254	ST3719 **311 x 196**
																396 x 196	342	339	ST3719 **396 x 196**
15	100	100	34	25	60	30	15	8	60	25	88	32 x 210	178	311	257	311 x 246	243	240	ST3719 **311 x 246**
																396 x 246	328	325	ST3719 **396 x 246**
																496 x 246	428	425	ST3719 **496 x 246**
15	150	150	35	25	60	30	15	8	60	25	134	32 x 210	240	396	257	396 x 311	326	323	ST3719 **396 x 311**
																496 x 311	426	423	ST3719 **496 x 311**
																626 x 311	556	553	ST3719 **626 x 311**

ST3500 Steel plate



Referring to DIN ISO 6753

Material
Steel 1.1730

Note
Size c +0.2 to +0.5; other sizes and materials are deliverable upon request

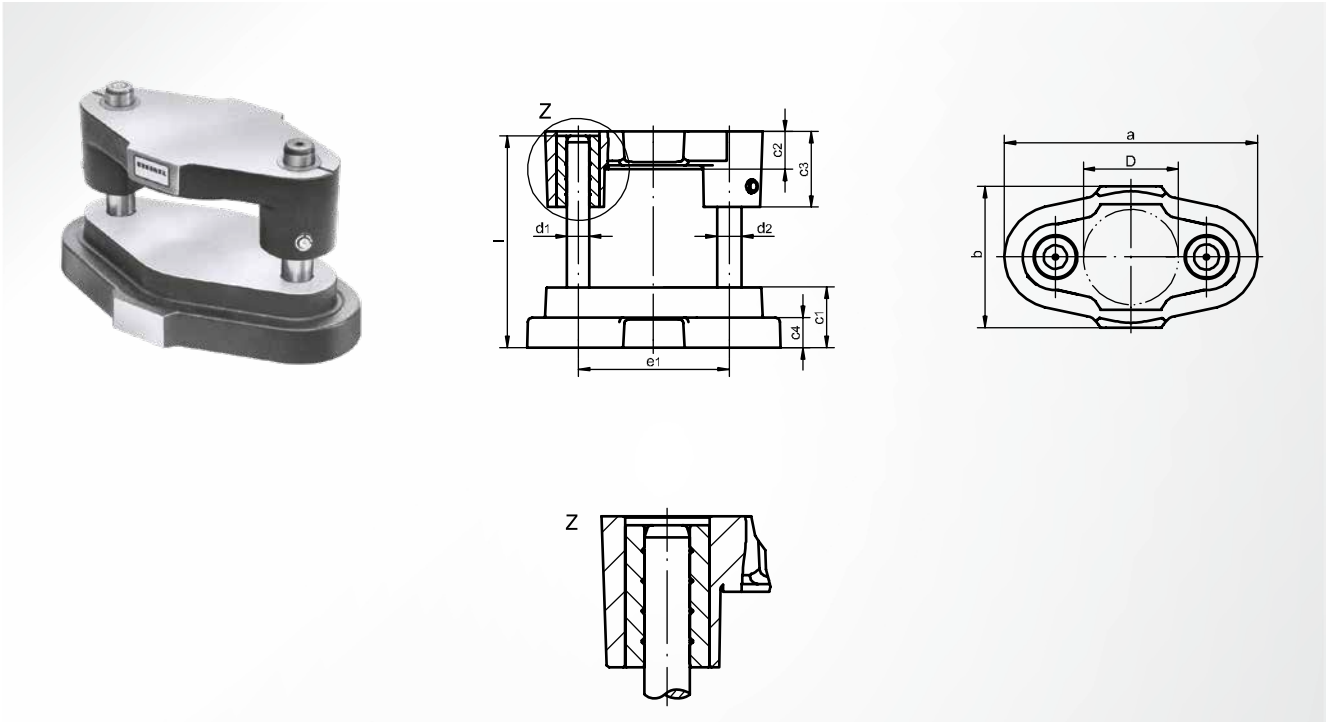
$a^{\pm 0.15}$ x $b^{\pm 0.15}$	c	Item number
160 x 80	25	ST3500 **160 x 080 x 25**
	32	ST3500 **160 x 080 x 32**
160 x 100	25	ST3500 **160 x 100 x 25**
	32	ST3500 **160 x 100 x 32**
160 x 125	25	ST3500 **160 x 125 x 25**
	32	ST3500 **160 x 125 x 32**
160 x 160	25	ST3500 **160 x 160 x 25**
	32	ST3500 **160 x 160 x 32**
200 x 100	25	ST3500 **200 x 100 x 25**
	32	ST3500 **200 x 100 x 32**
	40	ST3500 **200 x 100 x 40**
200 x 125	25	ST3500 **200 x 125 x 25**
	32	ST3500 **200 x 125 x 32**
	40	ST3500 **200 x 125 x 40**
200 x 160	25	ST3500 **200 x 160 x 25**
	32	ST3500 **200 x 160 x 32**
	40	ST3500 **200 x 160 x 40**
200 x 200	25	ST3500 **200 x 200 x 25**
	32	ST3500 **200 x 200 x 32**
	40	ST3500 **200 x 200 x 40**
250 x 125	25	ST3500 **250 x 125 x 25**
	32	ST3500 **250 x 125 x 32**
	40	ST3500 **250 x 125 x 40**
250 x 160	25	ST3500 **250 x 160 x 25**
	32	ST3500 **250 x 160 x 32**
	40	ST3500 **250 x 160 x 40**
250 x 200	25	ST3500 **250 x 200 x 25**
	32	ST3500 **250 x 200 x 32**
	40	ST3500 **250 x 200 x 40**
250 x 250	25	ST3500 **250 x 250 x 25**
	32	ST3500 **250 x 250 x 32**
	40	ST3500 **250 x 250 x 40**
315 x 160	32	ST3500 **315 x 160 x 32**

$a^{\pm 0.15}$ x $b^{\pm 0.15}$	c	Item number
315 x 160	40	ST3500 **315 x 160 x 40**
	50	ST3500 **315 x 160 x 50**
315 x 200	32	ST3500 **315 x 200 x 32**
	40	ST3500 **315 x 200 x 40**
	50	ST3500 **315 x 200 x 50**
315 x 250	32	ST3500 **315 x 250 x 32**
	40	ST3500 **315 x 250 x 40**
	50	ST3500 **315 x 250 x 50**
315 x 315	32	ST3500 **315 x 315 x 32**
	40	ST3500 **315 x 315 x 40**
	50	ST3500 **315 x 315 x 50**
400 x 200	32	ST3500 **400 x 200 x 32**
	40	ST3500 **400 x 200 x 40**
	50	ST3500 **400 x 200 x 50**
400 x 250	32	ST3500 **400 x 250 x 32**
	40	ST3500 **400 x 250 x 40**
	50	ST3500 **400 x 250 x 50**
400 x 315	32	ST3500 **400 x 315 x 32**
	40	ST3500 **400 x 315 x 40**
	50	ST3500 **400 x 315 x 50**
400 x 400	32	ST3500 **400 x 400 x 32**
	40	ST3500 **400 x 400 x 40**
	50	ST3500 **400 x 400 x 50**
500 x 250	32	ST3500 **500 x 250 x 32**
	40	ST3500 **500 x 250 x 40**
	50	ST3500 **500 x 250 x 50**
500 x 315	32	ST3500 **500 x 315 x 32**
	40	ST3500 **500 x 315 x 40**
	50	ST3500 **500 x 315 x 50**
500 x 400	32	ST3500 **500 x 400 x 32**
	40	ST3500 **500 x 400 x 40**
	50	ST3500 **500 x 400 x 50**
500 x 500	32	ST3500 **500 x 500 x 32**

$a^{\pm 0.15}$ x $b^{\pm 0.15}$	c	Item number
500 x 500	40	ST3500 **500 x 500 x 40**
	50	ST3500 **500 x 500 x 50**
630 x 315	40	ST3500 **630 x 315 x 40**
	50	ST3500 **630 x 315 x 50**
	63	ST3500 **630 x 315 x 63**
630 x 400	40	ST3500 **630 x 400 x 40**
	50	ST3500 **630 x 400 x 50**
	63	ST3500 **630 x 400 x 63**
630 x 500	40	ST3500 **630 x 500 x 40**
	50	ST3500 **630 x 500 x 50**
	63	ST3500 **630 x 500 x 63**
630 x 630	40	ST3500 **630 x 630 x 40**
	50	ST3500 **630 x 630 x 50**
	63	ST3500 **630 x 630 x 63**
710 x 400	40	ST3500 **710 x 400 x 40**
	50	ST3500 **710 x 400 x 50**
	63	ST3500 **710 x 400 x 63**
710 x 500	40	ST3500 **710 x 500 x 40**
	50	ST3500 **710 x 500 x 50**
	63	ST3500 **710 x 500 x 63**
710 x 630	40	ST3500 **710 x 630 x 40**
	50	ST3500 **710 x 630 x 50**
	63	ST3500 **710 x 630 x 63**
800 x 400	40	ST3500 **800 x 400 x 40**
	50	ST3500 **800 x 400 x 50**
	63	ST3500 **800 x 400 x 63**
800 x 500	40	ST3500 **800 x 500 x 40**
	50	ST3500 **800 x 500 x 50**
	63	ST3500 **800 x 500 x 63**
800 x 630	40	ST3500 **800 x 630 x 40**
	50	ST3500 **800 x 630 x 50**
	63	ST3500 **800 x 630 x 63**

ST1001 Die set

upper part without thread, with sliding guide, bronze coating



Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Sliding guide with bronze coating

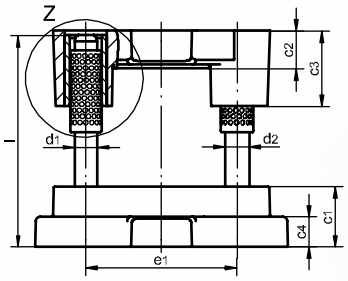
Working surface
round

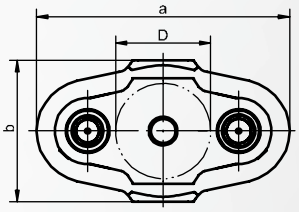
Pillar position
parallel centred

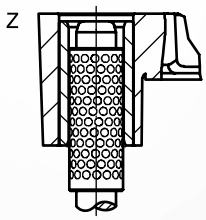
D	a	b	c_1	c_2	c_3	c_4	d_1 / d_2 x l	e_1	Item number
63	171	92	40	25	50	20	15 / 16 x 140	100	ST1001 **063**
80	217	114	50	30	63	30	19 / 20 x 160	131	ST1001 **080**
100	263	144	50	30	63	30	24 / 25 x 160	159	ST1001 **100**
125	288	169	50	30	63	30	24 / 25 x 160	184	ST1001 **125**
160	345	204	56	40	80	30	30 / 32 x 180	229	ST1001 **160**
180	366	224	56	40	80	30	30 / 32 x 180	250	ST1001 **180**
200	385	244	56	40	80	30	30 / 32 x 200	269	ST1001 **200**
224	448	278	56	50	80	30	38 / 40 x 200	310	ST1001 **224**
250	473	304	56	50	80	30	38 / 40 x 200	335	ST1001 **250**
280	504	335	63	50	80	30	38 / 40 x 224	366	ST1001 **280**
315	539	370	63	50	80	30	38 / 40 x 224	401	ST1001 **315**

ST1002 Die set

upper part without thread, with ball guide







Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Ball guide

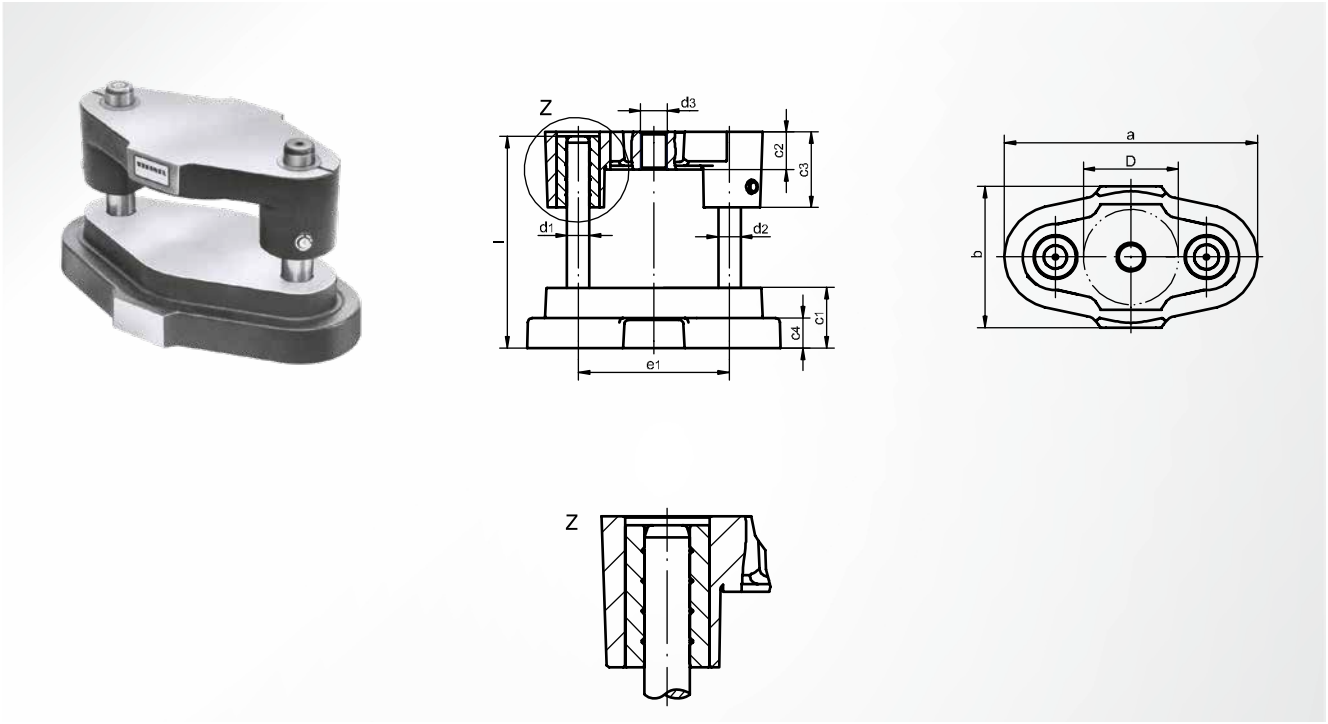
Working surface
round

Pillar position
parallel centred

D	a	b	c_1	c_2	c_3	c_4	d_1 / d_2 x l	e_1	Item number
63	171	92	40	25	50	20	15 / 16 x 140	100	ST1002 **063**
80	217	114	50	30	63	30	19 / 20 x 160	131	ST1002 **080**
100	263	144	50	30	63	30	24 / 25 x 160	159	ST1002 **100**
125	288	169	50	30	63	30	24 / 25 x 160	184	ST1002 **125**
160	345	204	56	40	80	30	30 / 32 x 180	229	ST1002 **160**
180	366	224	56	40	80	30	30 / 32 x 180	250	ST1002 **180**
200	385	244	56	40	80	30	30 / 32 x 200	269	ST1002 **200**
224	448	278	56	50	80	30	38 / 40 x 200	310	ST1002 **224**
250	473	304	56	50	80	30	38 / 40 x 200	335	ST1002 **250**
280	504	335	63	50	80	30	38 / 40 x 224	366	ST1002 **280**
315	539	370	63	50	80	30	38 / 40 x 224	401	ST1002 **315**

ST1004 Die set

upper part with thread, with sliding guide, bronze coating



Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Sliding guide with bronze coating

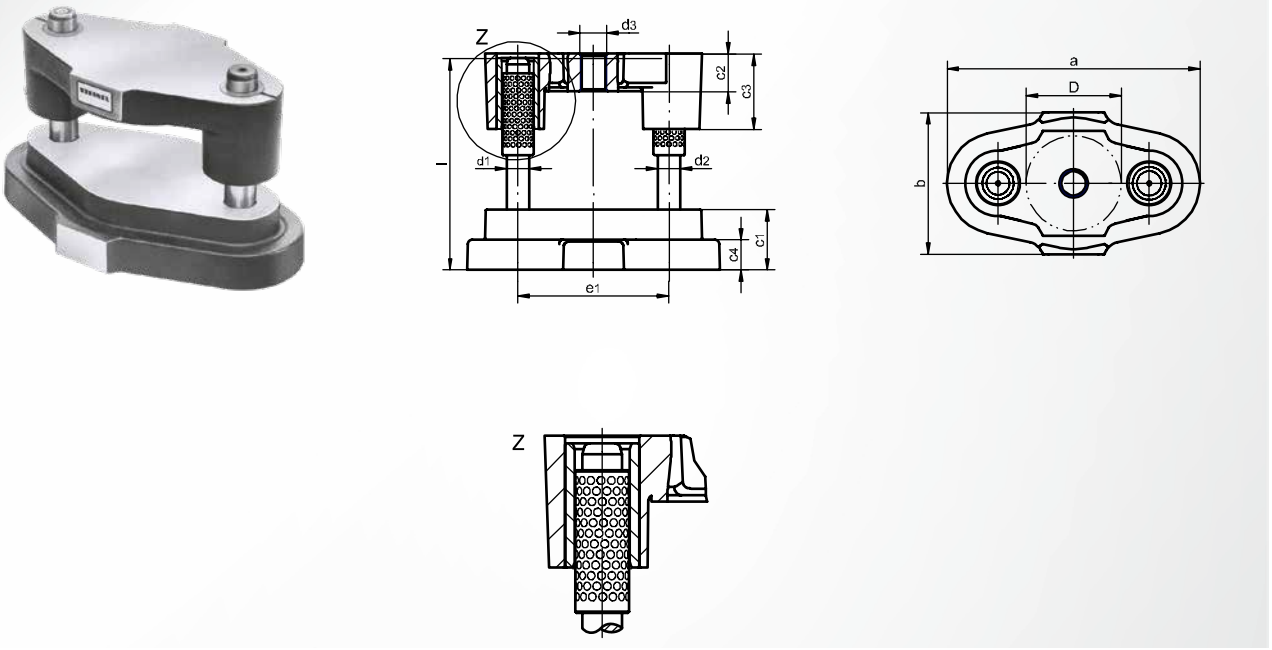
Working surface
round

Pillar position
parallel centred

D	a	b	c_1	c_2	c_3	c_4	d_3	d_1 / d_2 x l	e_1	Item number
63	171	92	40	25	50	20	M16 x 1.5	15 / 16 x 140	100	ST1004 **063**
80	217	114	50	30	63	30	M20 x 1.5	19 / 20 x 160	131	ST1004 **080**
100	263	144	50	30	63	30	M20 x 1.5	24 / 25 x 160	159	ST1004 **100**
125	288	169	50	30	63	30	M20 x 1.5	24 / 25 x 160	184	ST1004 **125**
160	345	204	56	40	80	30	M24 x 1.5	30 / 32 x 180	229	ST1004 **160**
180	366	224	56	40	80	30	M24 x 1.5	30 / 32 x 180	250	ST1004 **180**
200	385	244	56	40	80	30	M24 x 1.5	30 / 32 x 200	269	ST1004 **200**
224	448	278	56	50	80	30	M30 x 2	38 / 40 x 200	310	ST1004 **224**
250	473	304	56	50	80	30	M30 x 2	38 / 40 x 200	335	ST1004 **250**
280	504	335	63	50	80	30	M30 x 2	38 / 40 x 224	366	ST1004 **280**
315	539	370	63	50	80	30	M30 x 2	38 / 40 x 224	401	ST1004 **315**

ST1005 Die set

upper part with thread, with ball guide



Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Ball guide

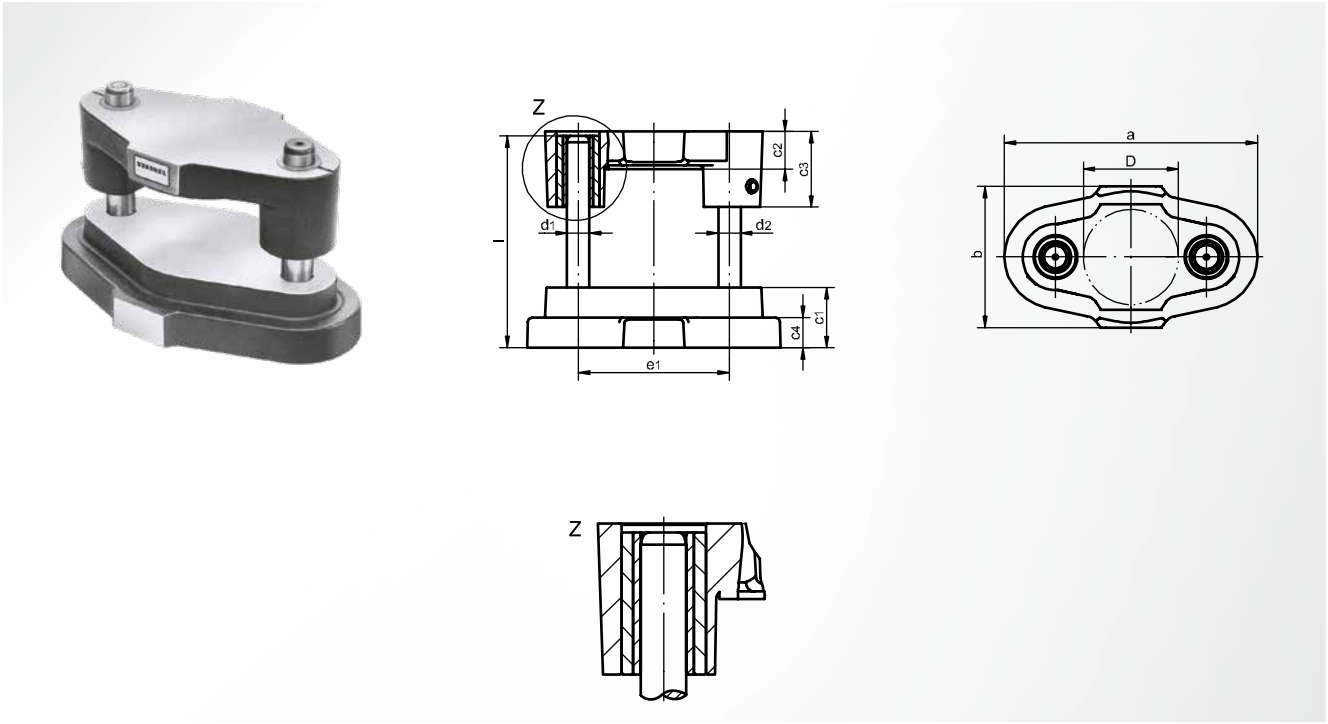
Working surface
round

Pillar position
parallel centred

D	a	b	c_1	c_2	c_3	c_4	d_3	d_1 / d_2 x l	e_1	Item number
63	171	92	40	25	50	20	M16 x 1.5	15 / 16 x 140	100	ST1005 **063**
80	217	114	50	30	63	30	M20 x 1.5	19 / 20 x 160	131	ST1005 **080**
100	263	144	50	30	63	30	M20 x 1.5	24 / 25 x 160	159	ST1005 **100**
125	288	169	50	30	63	30	M20 x 1.5	24 / 25 x 160	184	ST1005 **125**
160	345	204	56	40	80	30	M24 x 1.5	30 / 32 x 180	229	ST1005 **160**
180	366	224	56	40	80	30	M24 x 1.5	30 / 32 x 180	250	ST1005 **180**
200	385	244	56	40	80	30	M24 x 1.5	30 / 32 x 200	269	ST1005 **200**
224	448	278	56	50	80	30	M30 x 2	38 / 40 x 200	310	ST1005 **224**
250	473	304	56	50	80	30	M30 x 2	38 / 40 x 200	335	ST1005 **250**
280	504	335	63	50	80	30	M30 x 2	38 / 40 x 224	366	ST1005 **280**
315	539	370	63	50	80	30	M30 x 2	38 / 40 x 224	401	ST1005 **315**

ST1006 Die set

upper part without thread, with sliding guide with solid lubricant



Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Sliding guide with solid lubricant

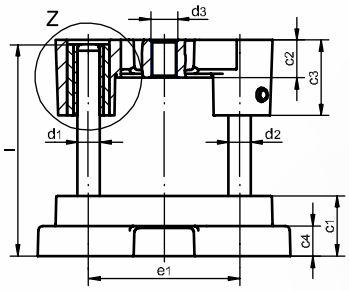
Working surface
round

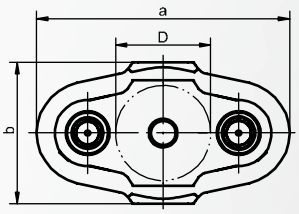
Pillar position
parallel centred

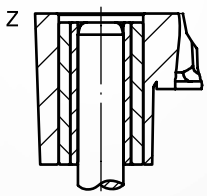
D	a	b	c_1	c_2	c_3	c_4	d_1 / d_2 x l	e_1	Item number
63	171	92	40	25	50	20	15 / 16 x 140	100	ST1006 **063**
80	217	114	50	30	63	30	19 / 20 x 160	131	ST1006 **080**
100	263	144	50	30	63	30	24 / 25 x 160	159	ST1006 **100**
125	288	169	50	30	63	30	24 / 25 x 160	184	ST1006 **125**
160	345	204	56	40	80	30	30 / 32 x 180	229	ST1006 **160**
180	366	224	56	40	80	30	30 / 32 x 180	250	ST1006 **180**
200	385	244	56	40	80	30	30 / 32 x 200	269	ST1006 **200**
224	448	278	56	50	80	30	38 / 40 x 200	310	ST1006 **224**
250	473	304	56	50	80	30	38 / 40 x 200	335	ST1006 **250**
280	504	335	63	50	80	30	38 / 40 x 224	366	ST1006 **280**
315	539	370	63	50	80	30	38 / 40 x 224	401	ST1006 **315**

ST1007 Die set

upper part with thread, with sliding guide with solid lubricant







Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Sliding guide with solid lubricant

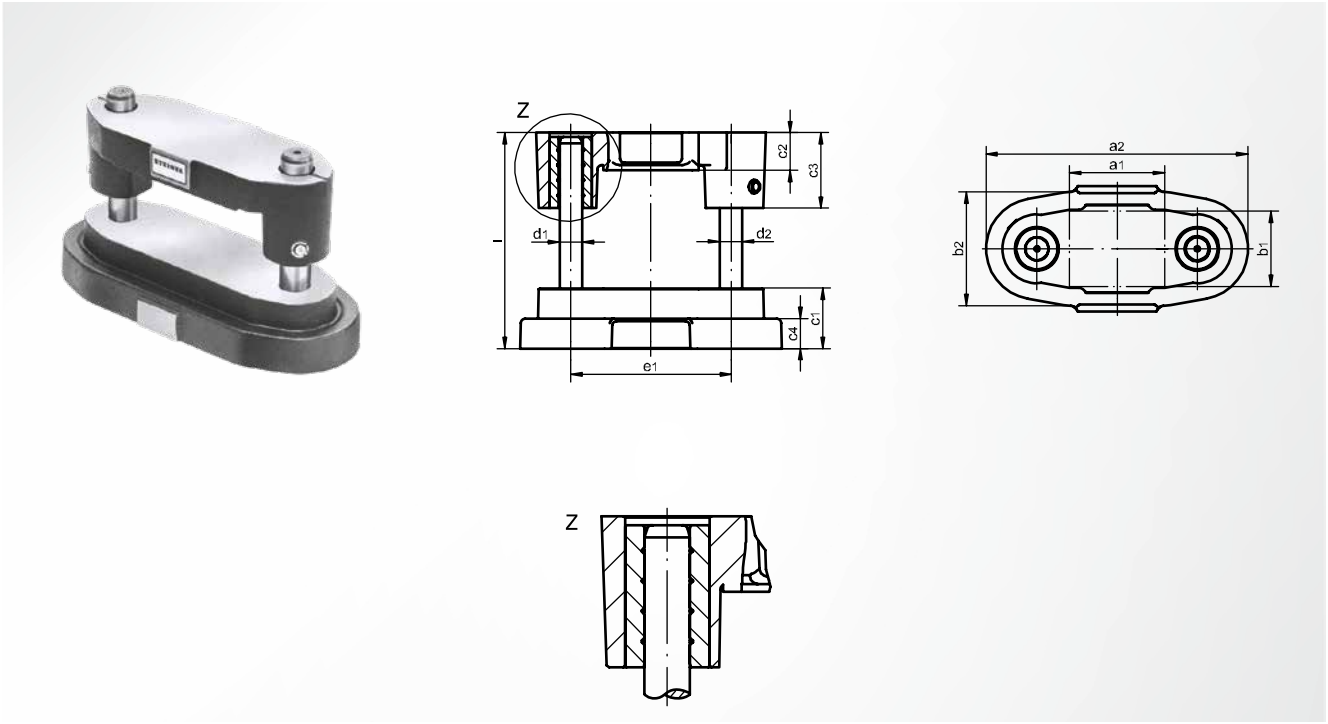
Working surface
round

Pillar position
parallel centred

D	a	b	c_1	c_2	c_3	c_4	d_3	d_1 / d_2 x l	e_1	Item number
63	171	92	40	25	50	20	M16 x 1.5	15 / 16 x 140	100	ST1007 **063**
80	217	114	50	30	63	30	M20 x 1.5	19 / 20 x 160	131	ST1007 **080**
100	263	144	50	30	63	30	M20 x 1.5	24 / 25 x 160	159	ST1007 **100**
125	288	169	50	30	63	30	M20 x 1.5	24 / 25 x 160	184	ST1007 **125**
160	345	204	56	40	80	30	M24 x 1.5	30 / 32 x 180	229	ST1007 **160**
180	366	224	56	40	80	30	M24 x 1.5	30 / 32 x 180	250	ST1007 **180**
200	385	244	56	40	80	30	M24 x 1.5	30 / 32 x 200	269	ST1007 **200**
224	448	278	56	50	80	30	M30 x 2	38 / 40 x 200	310	ST1007 **224**
250	473	304	56	50	80	30	M30 x 2	38 / 40 x 200	335	ST1007 **250**
280	504	335	63	50	80	30	M30 x 2	38 / 40 x 224	366	ST1007 **280**
315	539	370	63	50	80	30	M30 x 2	38 / 40 x 224	401	ST1007 **315**

ST1201 Die set

upper part without thread, with sliding guide, bronze coating



Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Sliding guide with bronze coating

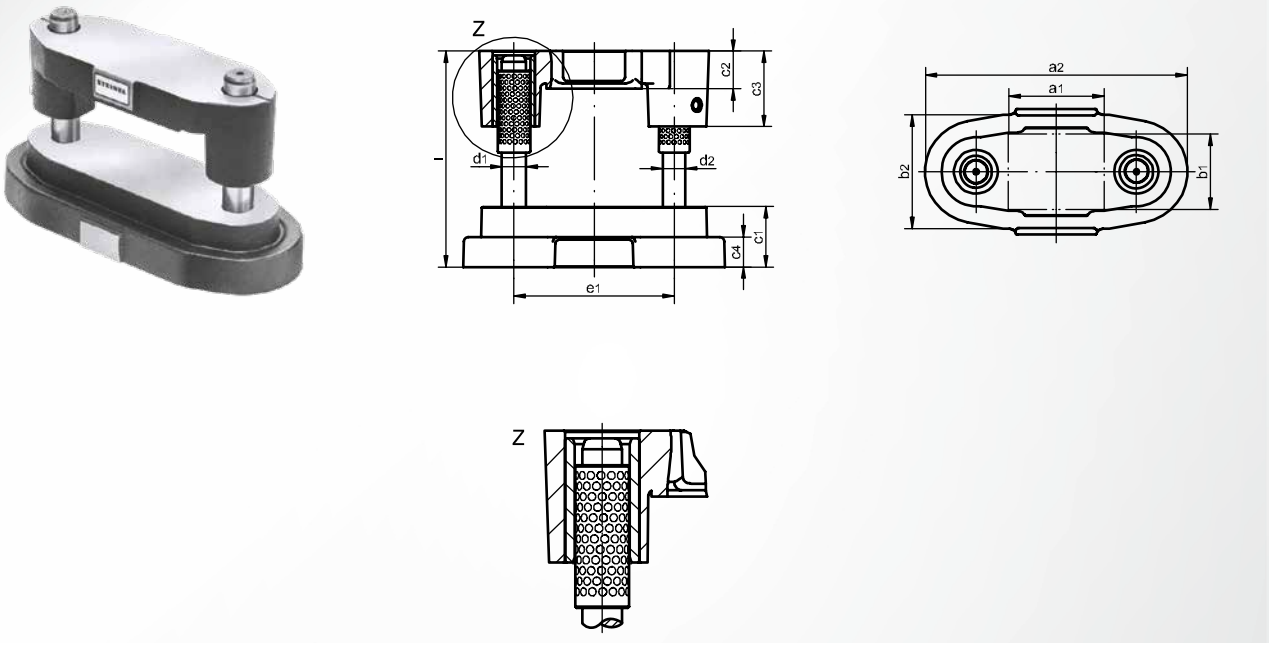
Working surface
rectangular

Pillar position
parallel centred

a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_1 / d_2 x l	e_1	Item number
63 x 50	177	74	40	25	50	20	15 / 16 x 140	106	ST1201 **063 x 050**
80 x 63	217	93	50	30	63	30	19 / 20 x 160	131	ST1201 **080 x 063**
100 x 63	237	93	50	30	63	30	19 / 20 x 160	151	ST1201 **100 x 063**
100 x 80	263	120	50	30	63	30	24 / 25 x 160	159	ST1201 **100 x 080**
125 x 63	262	93	50	30	63	30	19 / 20 x 160	176	ST1201 **125 x 063**
125 x 80	288	120	50	30	63	30	24 / 25 x 160	184	ST1201 **125 x 080**
125 x 100	288	140	50	40	80	30	24 / 25 x 180	184	ST1201 **125 x 100**
160 x 80	323	120	50	30	63	30	24 / 25 x 160	219	ST1201 **160 x 080**
160 x 100	323	140	50	40	80	30	24 / 25 x 180	219	ST1201 **160 x 100**
160 x 125	345	165	56	40	80	30	30 / 32 x 180	229	ST1201 **160 x 125**
200 x 100	385	140	56	40	80	30	30 / 32 x 180	269	ST1201 **200 x 100**
200 x 125	385	165	56	40	80	30	30 / 32 x 180	269	ST1201 **200 x 125**
200 x 160	385	200	56	50	80	30	30 / 32 x 200	269	ST1201 **200 x 160**
250 x 125	435	165	56	40	80	30	30 / 32 x 180	319	ST1201 **250 x 125**
250 x 160	435	200	56	50	80	30	30 / 32 x 200	319	ST1201 **250 x 160**
250 x 200	479	250	63	50	80	30	38 / 40 x 224	335	ST1201 **250 x 200**
315 x 160	545	210	63	50	80	30	38 / 40 x 224	401	ST1201 **315 x 160**

ST1202 Die set

upper part without thread, with ball guide



Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Ball guide

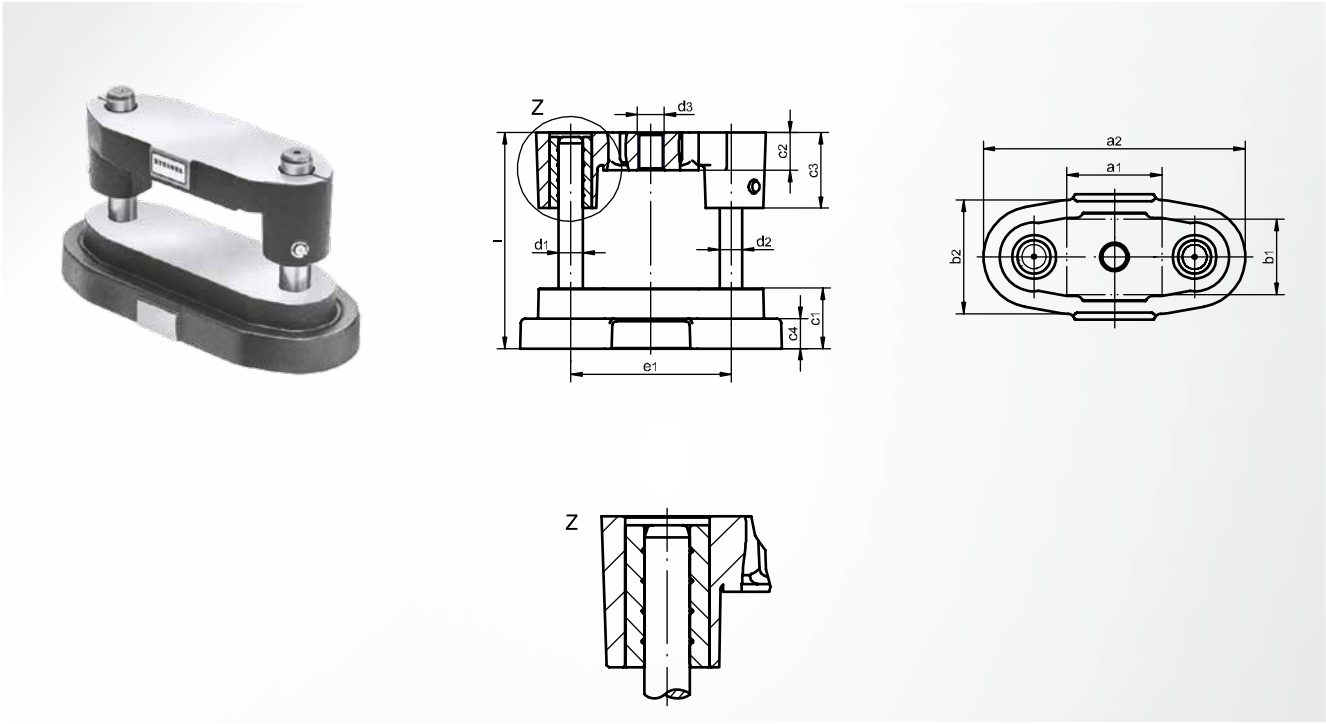
Working surface
rectangular

Pillar position
parallel centred

a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_1 / d_2 x l	e_1	Item number
63 x 50	177	74	40	25	50	20	15 / 16 x 140	106	ST1202 **063 x 050**
80 x 63	217	93	50	30	63	30	19 / 20 x 160	131	ST1202 **080 x 063**
100 x 63	237	93	50	30	63	30	19 / 20 x 160	151	ST1202 **100 x 063**
100 x 80	263	120	50	30	63	30	24 / 25 x 160	159	ST1202 **100 x 080**
125 x 63	262	93	50	30	63	30	19 / 20 x 160	176	ST1202 **125 x 063**
125 x 80	288	120	50	30	63	30	24 / 25 x 160	184	ST1202 **125 x 080**
125 x 100	288	140	50	40	80	30	24 / 25 x 180	184	ST1202 **125 x 100**
160 x 80	323	120	50	30	63	30	24 / 25 x 160	219	ST1202 **160 x 080**
160 x 100	323	140	50	40	80	30	24 / 25 x 180	219	ST1202 **160 x 100**
160 x 125	345	165	56	40	80	30	30 / 32 x 180	229	ST1202 **160 x 125**
200 x 100	385	140	56	40	80	30	30 / 32 x 180	269	ST1202 **200 x 100**
200 x 125	385	165	56	40	80	30	30 / 32 x 180	269	ST1202 **200 x 125**
200 x 160	385	200	56	50	80	30	30 / 32 x 200	269	ST1202 **200 x 160**
250 x 125	435	165	56	40	80	30	30 / 32 x 180	319	ST1202 **250 x 125**
250 x 160	435	200	56	50	80	30	30 / 32 x 200	319	ST1202 **250 x 160**
250 x 200	479	250	63	50	80	30	38 / 40 x 224	335	ST1202 **250 x 200**
315 x 160	545	210	63	50	80	30	38 / 40 x 224	401	ST1202 **315 x 160**

ST1204 Die set

upper part with thread, with sliding guide, bronze coating



Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Sliding guide with bronze coating

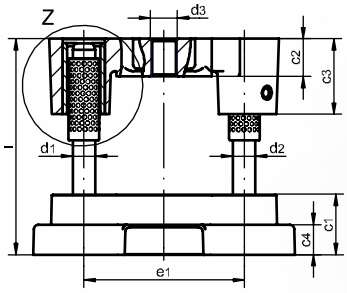
Working surface
rectangular

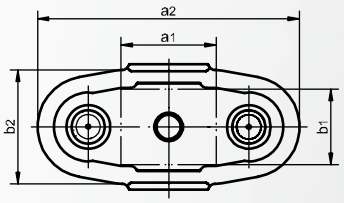
Pillar position
parallel centred

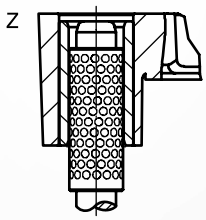
a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_3	d_1 / d_2 x l	e_1	Item number
63 x 50	177	74	40	25	50	20	M16 x 1.5	15 / 16 x 140	106	ST1204 **063 x 050**
80 x 63	217	93	50	30	63	30	M20 x 1.5	19 / 20 x 160	131	ST1204 **080 x 063**
100 x 63	237	93	50	30	63	30	M20 x 1.5	19 / 20 x 160	151	ST1204 **100 x 063**
100 x 80	263	120	50	30	63	30	M20 x 1.5	24 / 25 x 160	159	ST1204 **100 x 080**
125 x 63	262	93	50	30	63	30	M20 x 1.5	19 / 20 x 160	176	ST1204 **125 x 063**
125 x 80	288	120	50	30	63	30	M20 x 1.5	24 / 25 x 160	184	ST1204 **125 x 080**
125 x 100	288	140	50	40	80	30	M24 x 1.5	24 / 25 x 180	184	ST1204 **125 x 100**
160 x 80	323	120	50	30	63	30	M20 x 1.5	24 / 25 x 160	219	ST1204 **160 x 080**
160 x 100	323	140	50	40	80	30	M24 x 1.5	24 / 25 x 180	219	ST1204 **160 x 100**
160 x 125	345	165	56	40	80	30	M24 x 1.5	30 / 32 x 180	229	ST1204 **160 x 125**
200 x 100	385	140	56	40	80	30	M24 x 1.5	30 / 32 x 180	269	ST1204 **200 x 100**
200 x 125	385	165	56	40	80	30	M24 x 1.5	30 / 32 x 180	269	ST1204 **200 x 125**
200 x 160	385	200	56	50	80	30	M30 x 2	30 / 32 x 200	269	ST1204 **200 x 160**
250 x 125	435	165	56	40	80	30	M24 x 1.5	30 / 32 x 180	319	ST1204 **250 x 125**
250 x 160	435	200	56	50	80	30	M30 x 2	30 / 32 x 200	319	ST1204 **250 x 160**
250 x 200	479	250	63	50	80	30	M30 x 2	38 / 40 x 224	335	ST1204 **250 x 200**
315 x 160	545	210	63	50	80	30	M30 x 2	38 / 40 x 224	401	ST1204 **315 x 160**

ST1205 Die set

upper part with thread, with ball guide







Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Ball guide

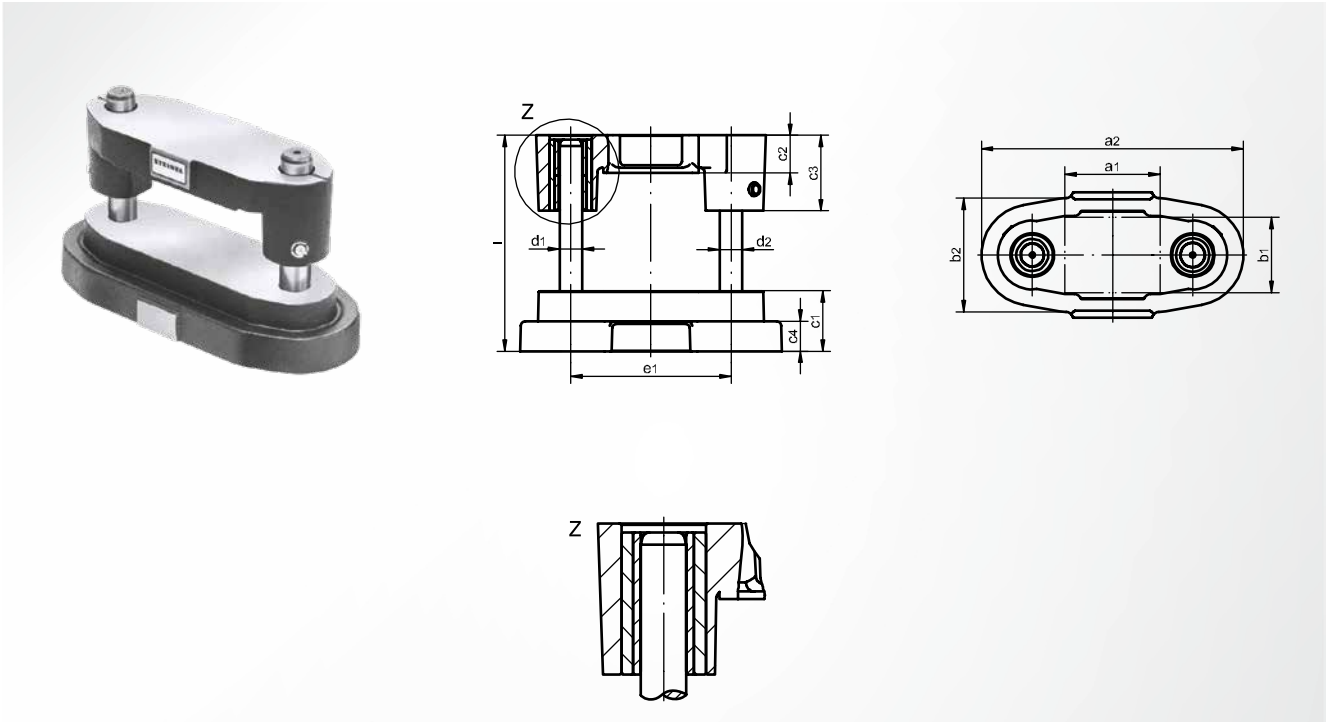
Working surface
rectangular

Pillar position
parallel centred

a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_3	d_1 / d_2 x l	e_1	Item number
63 x 50	177	74	40	25	50	20	M16 x 1.5	15 / 16 x 140	106	ST1205 **063 x 050**
80 x 63	217	93	50	30	63	30	M20 x 1.5	19 / 20 x 160	131	ST1205 **080 x 063**
100 x 63	237	93	50	30	63	30	M20 x 1.5	19 / 20 x 160	151	ST1205 **100 x 063**
100 x 80	263	120	50	30	63	30	M20 x 1.5	24 / 25 x 160	159	ST1205 **100 x 080**
125 x 63	262	93	50	30	63	30	M20 x 1.5	19 / 20 x 160	176	ST1205 **125 x 063**
125 x 80	288	120	50	30	63	30	M20 x 1.5	24 / 25 x 160	184	ST1205 **125 x 080**
125 x 100	288	140	50	40	80	30	M24 x 1.5	24 / 25 x 180	184	ST1205 **125 x 100**
160 x 80	323	120	50	30	63	30	M20 x 1.5	24 / 25 x 160	219	ST1205 **160 x 080**
160 x 100	323	140	50	40	80	30	M24 x 1.5	24 / 25 x 180	219	ST1205 **160 x 100**
160 x 125	345	165	56	40	80	30	M24 x 1.5	30 / 32 x 180	229	ST1205 **160 x 125**
200 x 100	385	140	56	40	80	30	M24 x 1.5	30 / 32 x 180	269	ST1205 **200 x 100**
200 x 125	385	165	56	40	80	30	M24 x 1.5	30 / 32 x 180	269	ST1205 **200 x 125**
200 x 160	385	200	56	50	80	30	M30 x 2	30 / 32 x 200	269	ST1205 **200 x 160**
250 x 125	435	165	56	40	80	30	M24 x 1.5	30 / 32 x 180	319	ST1205 **250 x 125**
250 x 160	435	200	56	50	80	30	M30 x 2	30 / 32 x 200	319	ST1205 **250 x 160**
250 x 200	479	250	63	50	80	30	M30 x 2	38 / 40 x 224	335	ST1205 **250 x 200**
315 x 160	545	210	63	50	80	30	M30 x 2	38 / 40 x 224	401	ST1205 **315 x 160**

ST1206 Die set

upper part without thread, with sliding guide with solid lubricant



Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Sliding guide with solid lubricant

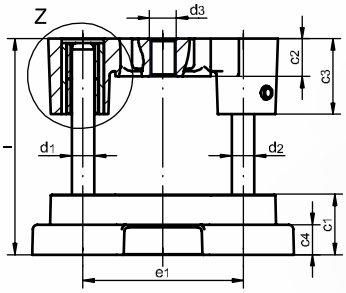
Working surface
rectangular

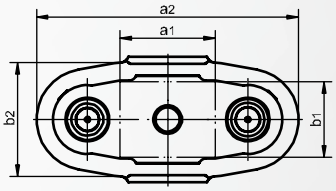
Pillar position
parallel centred

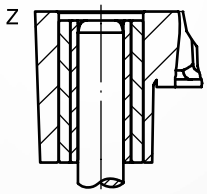
a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_1 / d_2 x l	e_1	Item number
63 x 50	177	74	40	25	50	20	15 / 16 x 140	106	ST1206 **063 x 050**
80 x 63	217	93	50	30	63	30	19 / 20 x 160	131	ST1206 **080 x 063**
100 x 63	237	93	50	30	63	30	19 / 20 x 160	151	ST1206 **100 x 063**
100 x 80	263	120	50	30	63	30	24 / 25 x 160	159	ST1206 **100 x 080**
125 x 63	262	93	50	30	63	30	19 / 20 x 160	176	ST1206 **125 x 063**
125 x 80	288	120	50	30	63	30	24 / 25 x 160	184	ST1206 **125 x 080**
125 x 100	288	140	50	40	80	30	24 / 25 x 180	184	ST1206 **125 x 100**
160 x 80	323	120	50	30	63	30	24 / 25 x 160	219	ST1206 **160 x 080**
160 x 100	323	140	50	40	80	30	24 / 25 x 180	219	ST1206 **160 x 100**
160 x 125	345	165	56	40	80	30	30 / 32 x 180	229	ST1206 **160 x 125**
200 x 100	385	140	56	40	80	30	30 / 32 x 180	269	ST1206 **200 x 100**
200 x 125	385	165	56	40	80	30	30 / 32 x 180	269	ST1206 **200 x 125**
200 x 160	385	200	56	50	80	30	30 / 32 x 200	269	ST1206 **200 x 160**
250 x 125	435	165	56	40	80	30	30 / 32 x 180	319	ST1206 **250 x 125**
250 x 160	435	200	56	50	80	30	30 / 32 x 200	319	ST1206 **250 x 160**
250 x 200	479	250	63	50	80	30	38 / 40 x 224	335	ST1206 **250 x 200**
315 x 160	545	210	63	50	80	30	38 / 40 x 224	401	ST1206 **315 x 160**

ST1207 Die set

upper part with thread, with sliding guide with solid lubricant







Referring to DIN 9812

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Sliding guide with solid lubricant

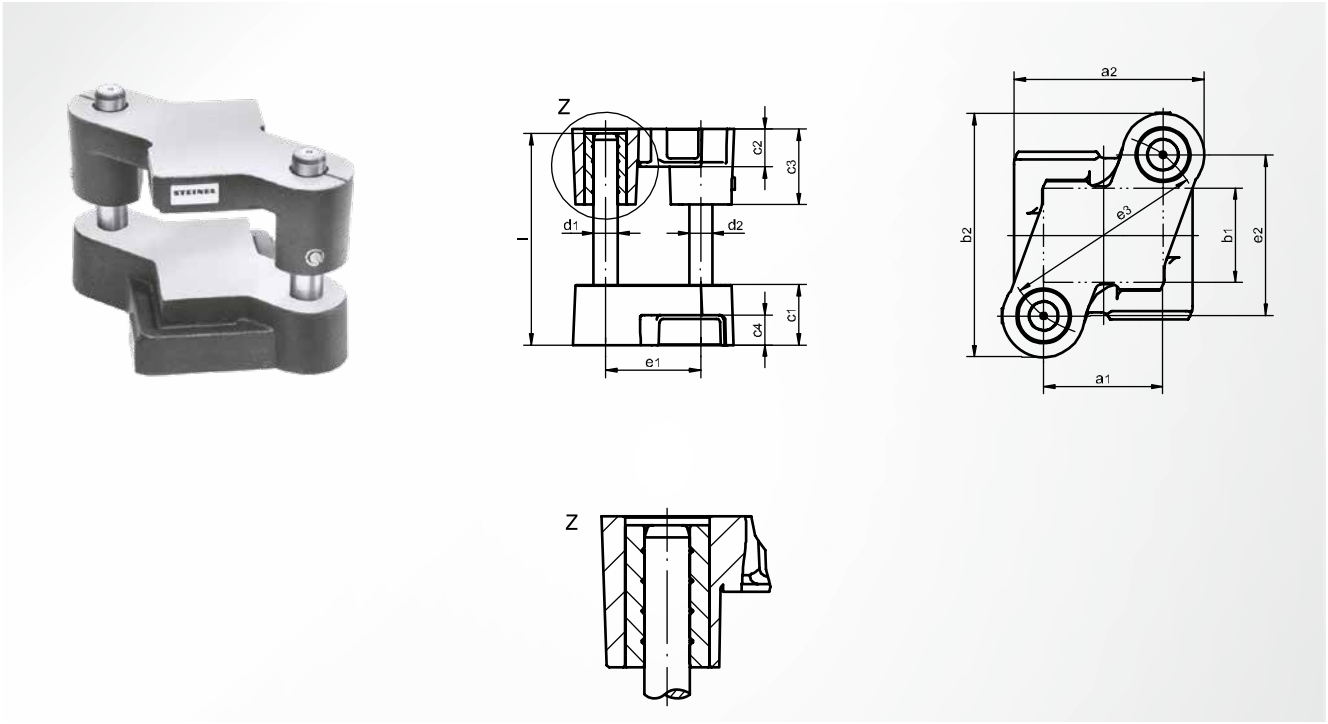
Working surface
rectangular

Pillar position
parallel centred

a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_3	d_1 / d_2 x l	e_1	Item number
63 x 50	177	74	40	25	50	20	M16 x 1.5	15 / 16 x 140	106	ST1207 **063 x 050**
80 x 63	217	93	50	30	63	30	M20 x 1.5	19 / 20 x 160	131	ST1207 **080 x 063**
100 x 63	237	93	50	30	63	30	M20 x 1.5	19 / 20 x 160	151	ST1207 **100 x 063**
100 x 80	263	120	50	30	63	30	M20 x 1.5	24 / 25 x 160	159	ST1207 **100 x 080**
125 x 63	262	93	50	30	63	30	M20 x 1.5	19 / 20 x 160	176	ST1207 **125 x 063**
125 x 80	288	120	50	30	63	30	M20 x 1.5	24 / 25 x 160	184	ST1207 **125 x 080**
125 x 100	288	140	50	40	80	30	M24 x 1.5	24 / 25 x 180	184	ST1207 **125 x 100**
160 x 80	323	120	50	30	63	30	M20 x 1.5	24 / 25 x 160	219	ST1207 **160 x 080**
160 x 100	323	140	50	40	80	30	M24 x 1.5	24 / 25 x 180	219	ST1207 **160 x 100**
160 x 125	345	165	56	40	80	30	M24 x 1.5	30 / 32 x 180	229	ST1207 **160 x 125**
200 x 100	385	140	56	40	80	30	M24 x 1.5	30 / 32 x 180	269	ST1207 **200 x 100**
200 x 125	385	165	56	40	80	30	M24 x 1.5	30 / 32 x 180	269	ST1207 **200 x 125**
200 x 160	385	200	56	50	80	30	M30 x 2	30 / 32 x 200	269	ST1207 **200 x 160**
250 x 125	435	165	56	40	80	30	M24 x 1.5	30 / 32 x 180	319	ST1207 **250 x 125**
250 x 160	435	200	56	50	80	30	M30 x 2	30 / 32 x 200	319	ST1207 **250 x 160**
250 x 200	479	250	63	50	80	30	M30 x 2	38 / 40 x 224	335	ST1207 **250 x 200**
315 x 160	545	210	63	50	80	30	M30 x 2	38 / 40 x 224	401	ST1207 **315 x 160**

ST1401 Die set

upper part without thread, with sliding guide, bronze coating



Referring to DIN 9819

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Sliding guide with bronze coating

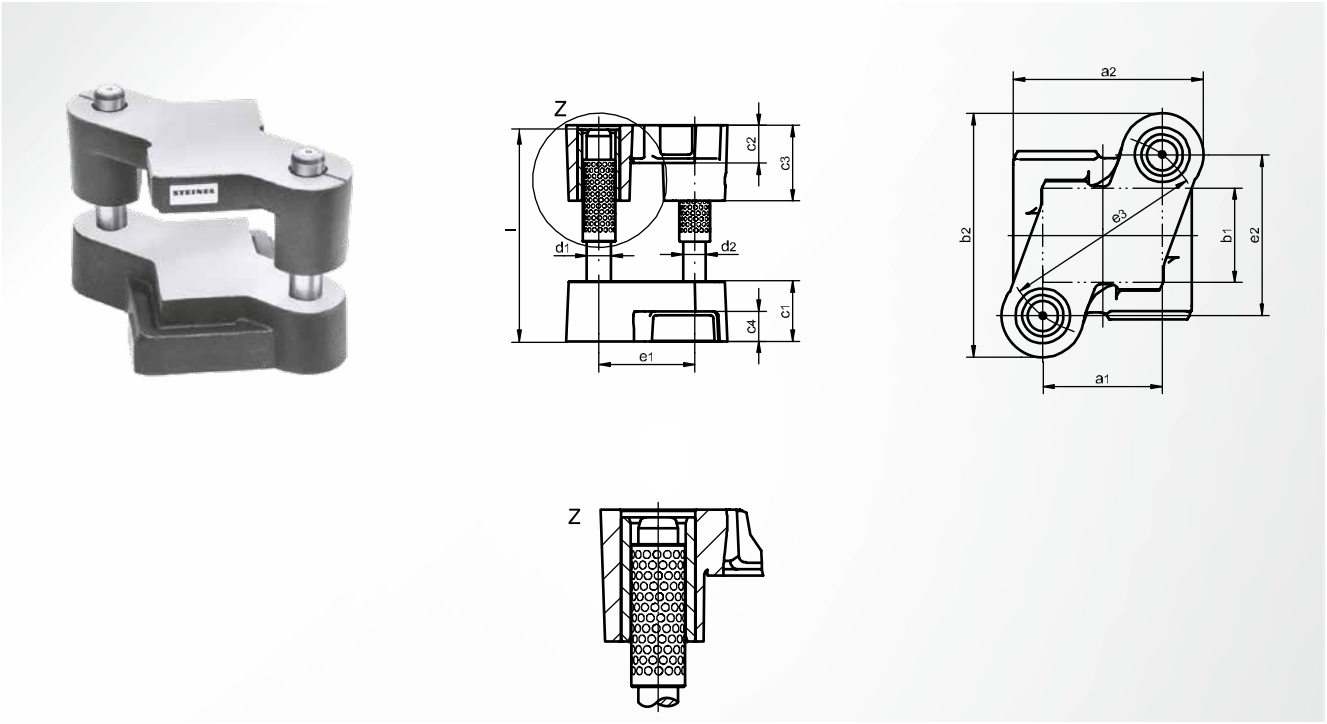
Working surface
rectangular

Pillar position
diagonal

a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_1 / d_2 x l	e_1	e_2	e_3	Item number
63 x 50	109	131	40	25	50	20	15 / 16 x 140	63.09	85.2	106.0	ST1401 **063 x 050**
80 x 63	136	164	50	30	63	30	19 / 20 x 160	79.99	108.0	134.4	ST1401 **080 x 063**
100 x 80	164	197	50	30	63	30	24 / 25 x 160	100.00	133.0	166.4	ST1401 **100 x 080**
125 x 80	189	197	50	30	63	30	24 / 25 x 160	124.97	133.0	182.5	ST1401 **125 x 080**
125 x 100	189	217	50	40	80	30	24 / 25 x 180	125.05	153.0	197.6	ST1401 **125 x 100**
160 x 100	225	227	50	40	80	30	24 / 25 x 180	160.85	163.0	229.0	ST1401 **160 x 100**
160 x 125	236	268	56	40	80	30	30 / 32 x 180	160.11	192.0	250.0	ST1401 **160 x 125**
200 x 100	276	239	56	40	80	30	30 / 32 x 180	199.99	163.0	258.0	ST1401 **200 x 100**
200 x 125	276	264	56	40	80	30	30 / 32 x 180	200.01	188.0	274.5	ST1401 **200 x 125**
200 x 160	275	299	56	50	80	30	30 / 32 x 200	198.72	222.6	298.4	ST1401 **200 x 160**
250 x 125	326	264	56	40	80	30	30 / 32 x 180	250.00	188.0	312.8	ST1401 **250 x 125**
250 x 160	326	299	56	50	80	30	30 / 32 x 200	249.99	223.0	335.0	ST1401 **250 x 160**
250 x 200	340	370	63	50	80	30	38 / 40 x 224	250.05	280.0	375.4	ST1401 **250 x 200**

ST1402 Die set

upper part without thread, with ball guide



Referring to DIN 9819

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Ball guide

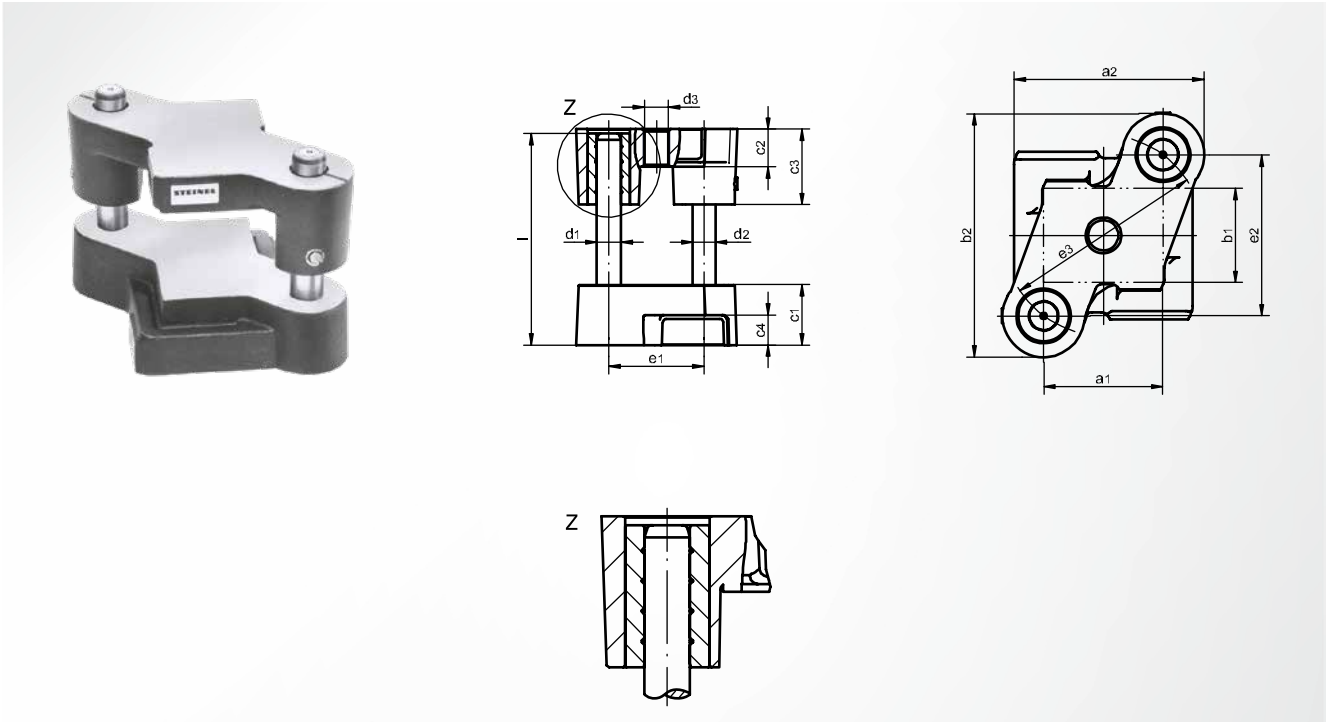
Working surface
rectangular

Pillar position
diagonal

a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_1 / d_2 x l	e_1	e_2	e_3	Item number
63 x 50	109	131	40	25	50	20	15 / 16 x 140	63.09	85.2	106.0	ST1402 **063 x 050**
80 x 63	136	164	50	30	63	30	19 / 20 x 160	79.99	108.0	134.4	ST1402 **080 x 063**
100 x 80	164	197	50	30	63	30	24 / 25 x 160	100.00	133.0	166.4	ST1402 **100 x 080**
125 x 80	189	197	50	30	63	30	24 / 25 x 160	124.97	133.0	182.5	ST1402 **125 x 080**
125 x 100	189	217	50	40	80	30	24 / 25 x 180	125.05	153.0	197.6	ST1402 **125 x 100**
160 x 100	225	227	50	40	80	30	24 / 25 x 180	160.85	163.0	229.0	ST1402 **160 x 100**
160 x 125	236	268	56	40	80	30	30 / 32 x 180	160.11	192.0	250.0	ST1402 **160 x 125**
200 x 100	276	239	56	40	80	30	30 / 32 x 180	199.99	163.0	258.0	ST1402 **200 x 100**
200 x 125	276	264	56	40	80	30	30 / 32 x 180	200.01	188.0	274.5	ST1402 **200 x 125**
200 x 160	275	299	56	50	80	30	30 / 32 x 200	198.72	222.6	298.4	ST1402 **200 x 160**
250 x 125	326	264	56	40	80	30	30 / 32 x 180	250.00	188.0	312.8	ST1402 **250 x 125**
250 x 160	326	299	56	50	80	30	30 / 32 x 200	249.99	223.0	335.0	ST1402 **250 x 160**
250 x 200	340	370	63	50	80	30	38 / 40 x 224	250.05	280.0	375.4	ST1402 **250 x 200**

ST1404 Die set

upper part with thread, with sliding guide, bronze coating



Referring to DIN 9819

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Sliding guide with bronze coating

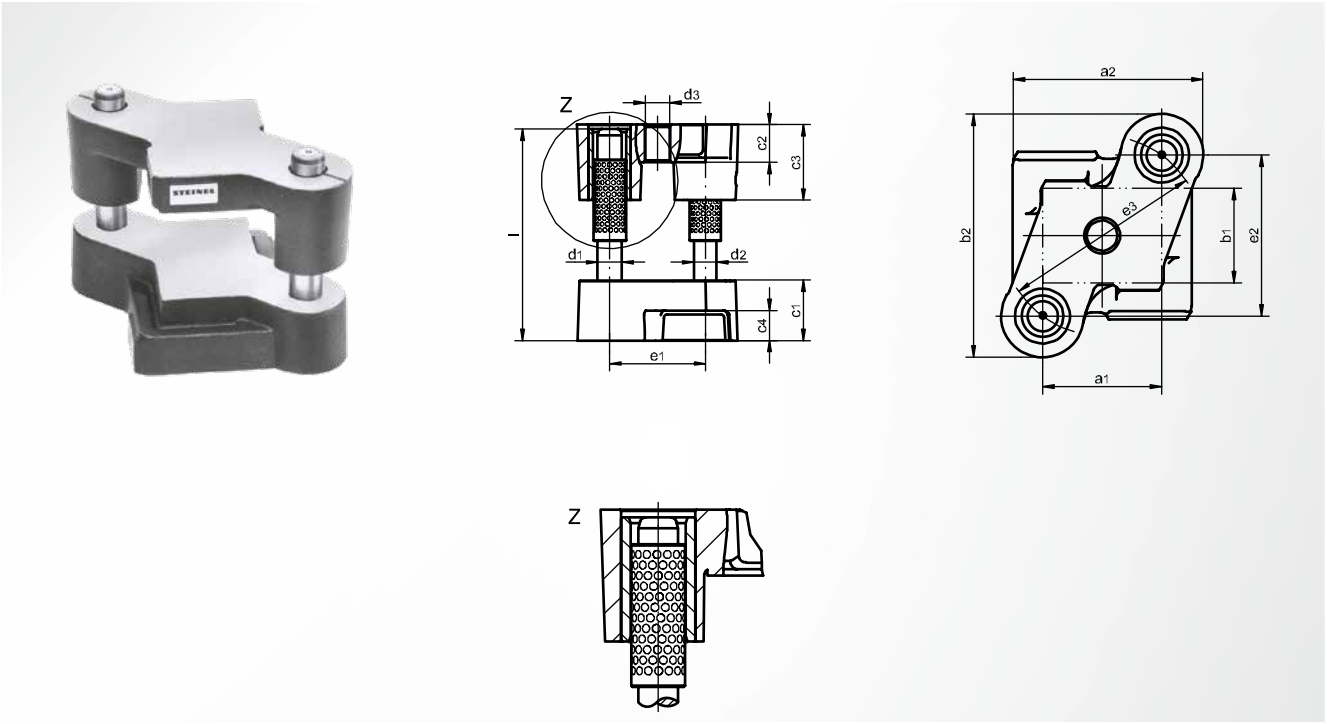
Working surface
rectangular

Pillar position
diagonal

a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_3	d_1 / d_2 x l	e_1	e_2	e_3	Item number
63 x 50	109	131	40	25	50	20	M16 x 1.5	15 / 16 x 140	63.09	85.2	106.0	ST1404 **063 x 050**
80 x 63	136	164	50	30	63	30	M20 x 1.5	19 / 20 x 160	79.99	108.0	134.4	ST1404 **080 x 063**
100 x 80	164	197	50	30	63	30	M20 x 1.5	24 / 25 x 160	100.00	133.0	166.4	ST1404 **100 x 080**
125 x 80	189	197	50	30	63	30	M20 x 1.5	24 / 25 x 160	124.97	133.0	182.5	ST1404 **125 x 080**
125 x 100	189	217	50	40	80	30	M24 x 1.5	24 / 25 x 180	125.05	153.0	197.6	ST1404 **125 x 100**
160 x 100	225	227	50	40	80	30	M24 x 1.5	24 / 25 x 180	160.85	163.0	229.0	ST1404 **160 x 100**
160 x 125	236	268	56	40	80	30	M24 x 1.5	30 / 32 x 180	160.11	192.0	250.0	ST1404 **160 x 125**
200 x 100	276	239	56	40	80	30	M24 x 1.5	30 / 32 x 180	199.99	163.0	258.0	ST1404 **200 x 100**
200 x 125	276	264	56	40	80	30	M24 x 1.5	30 / 32 x 180	200.01	188.0	274.5	ST1404 **200 x 125**
200 x 160	275	299	56	50	80	30	M30 x 2	30 / 32 x 200	198.72	222.6	298.4	ST1404 **200 x 160**
250 x 125	326	264	56	40	80	30	M24 x 1.5	30 / 32 x 180	250.00	188.0	312.8	ST1404 **250 x 125**
250 x 160	326	299	56	50	80	30	M30 x 2	30 / 32 x 200	249.99	223.0	335.0	ST1404 **250 x 160**
250 x 200	340	370	63	50	80	30	M30 x 2	38 / 40 x 224	250.05	280.0	375.4	ST1404 **250 x 200**

ST1405 Die set

upper part with thread, with ball guide



Referring to DIN 9819

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Ball guide

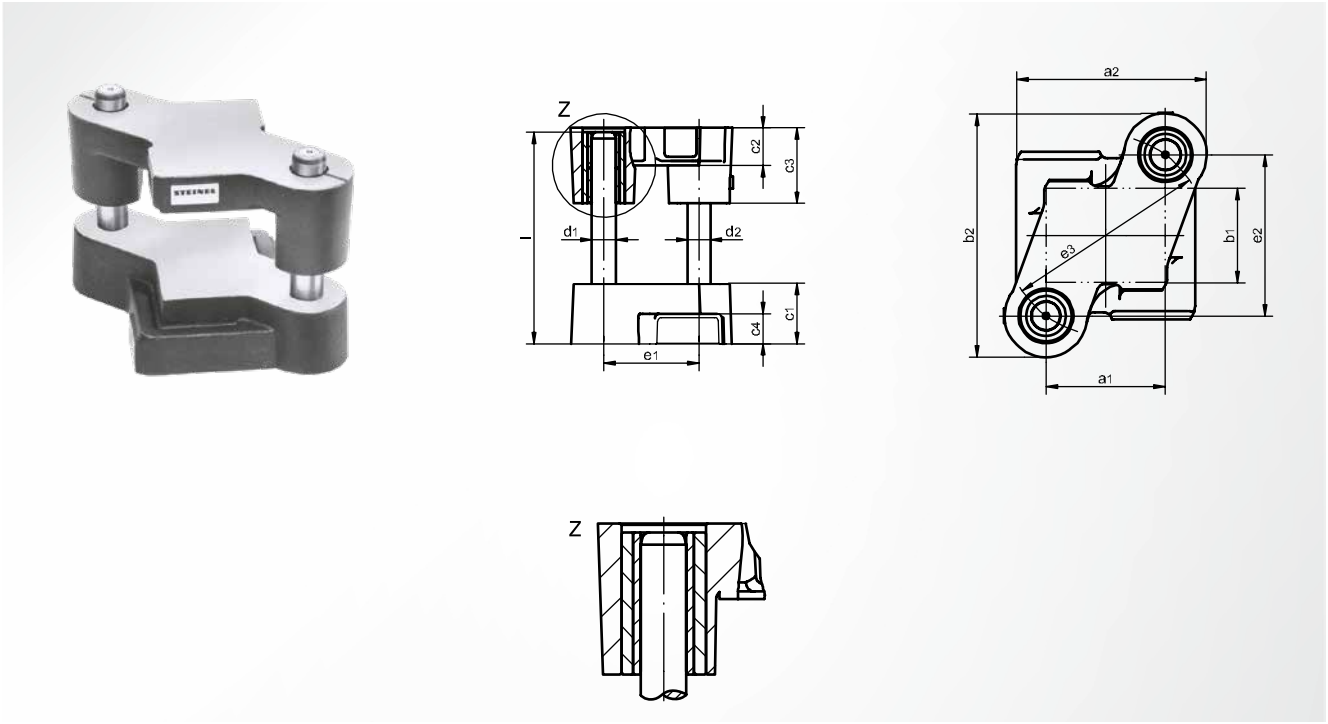
Working surface
rectangular

Pillar position
diagonal

a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_3	d_1 / d_2 x l	e_1	e_2	e_3	Item number
63 x 50	109	131	40	25	50	20	M16 x 1.5	15 / 16 x 140	63.09	85.2	106.0	ST1405 **063 x 050**
80 x 63	136	164	50	30	63	30	M20 x 1.5	19 / 20 x 160	79.99	108.0	134.4	ST1405 **080 x 063**
100 x 80	164	197	50	30	63	30	M20 x 1.5	24 / 25 x 160	100.00	133.0	166.4	ST1405 **100 x 080**
125 x 80	189	197	50	30	63	30	M20 x 1.5	24 / 25 x 160	124.97	133.0	182.5	ST1405 **125 x 080**
125 x 100	189	217	50	40	80	30	M24 x 1.5	24 / 25 x 180	125.05	153.0	197.6	ST1405 **125 x 100**
160 x 100	225	227	50	40	80	30	M24 x 1.5	24 / 25 x 180	160.85	163.0	229.0	ST1405 **160 x 100**
160 x 125	236	268	56	40	80	30	M24 x 1.5	30 / 32 x 180	160.11	192.0	250.0	ST1405 **160 x 125**
200 x 100	276	239	56	40	80	30	M24 x 1.5	30 / 32 x 180	199.99	163.0	258.0	ST1405 **200 x 100**
200 x 125	276	264	56	40	80	30	M24 x 1.5	30 / 32 x 180	200.01	188.0	274.5	ST1405 **200 x 125**
200 x 160	275	299	56	50	80	30	M30 x 2	30 / 32 x 200	198.72	222.6	298.4	ST1405 **200 x 160**
250 x 125	326	264	56	40	80	30	M24 x 1.5	30 / 32 x 180	250.00	188.0	312.8	ST1405 **250 x 125**
250 x 160	326	299	56	50	80	30	M30 x 2	30 / 32 x 200	249.99	223.0	335.0	ST1405 **250 x 160**
250 x 200	340	370	63	50	80	30	M30 x 2	38 / 40 x 224	250.05	280.0	375.4	ST1405 **250 x 200**

ST1406 Die set

upper part without thread, with sliding guide with solid lubricant



Referring to DIN 9819

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Sliding guide with solid lubricant

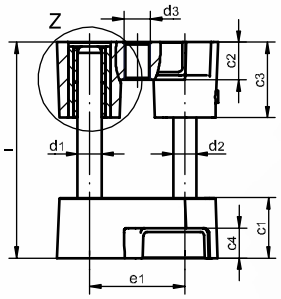
Working surface
rectangular

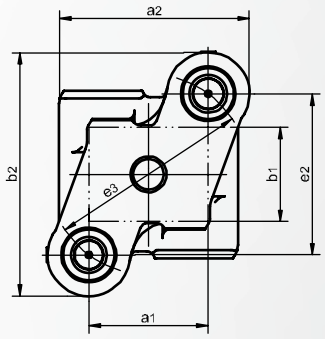
Pillar position
diagonal

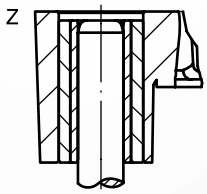
a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_1 / d_2 x l	e_1	e_2	e_3	Item number
63 x 50	109	131	40	25	50	20	15 / 16 x 140	63.09	85.2	106.0	ST1406 **063 x 050**
80 x 63	136	164	50	30	63	30	19 / 20 x 160	79.99	108.0	134.4	ST1406 **080 x 063**
100 x 80	164	197	50	30	63	30	24 / 25 x 160	100.00	133.0	166.4	ST1406 **100 x 080**
125 x 80	189	197	50	30	63	30	24 / 25 x 160	124.97	133.0	182.5	ST1406 **125 x 080**
125 x 100	189	217	50	40	80	30	24 / 25 x 180	125.05	153.0	197.6	ST1406 **125 x 100**
160 x 100	225	227	50	40	80	30	24 / 25 x 180	160.85	163.0	229.0	ST1406 **160 x 100**
160 x 125	236	268	56	40	80	30	30 / 32 x 180	160.11	192.0	250.0	ST1406 **160 x 125**
200 x 100	276	239	56	40	80	30	30 / 32 x 180	199.99	163.0	258.0	ST1406 **200 x 100**
200 x 125	276	264	56	40	80	30	30 / 32 x 180	200.01	188.0	274.5	ST1406 **200 x 125**
200 x 160	275	299	56	50	80	30	30 / 32 x 200	198.72	222.6	298.4	ST1406 **200 x 160**
250 x 125	326	264	56	40	80	30	30 / 32 x 180	250.00	188.0	312.8	ST1406 **250 x 125**
250 x 160	326	299	56	50	80	30	30 / 32 x 200	249.99	223.0	335.0	ST1406 **250 x 160**
250 x 200	340	370	63	50	80	30	38 / 40 x 224	250.05	280.0	375.4	ST1406 **250 x 200**

ST1407 Die set

upper part with thread, with sliding guide with solid lubricant







Referring to DIN 9819

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Sliding guide with solid lubricant

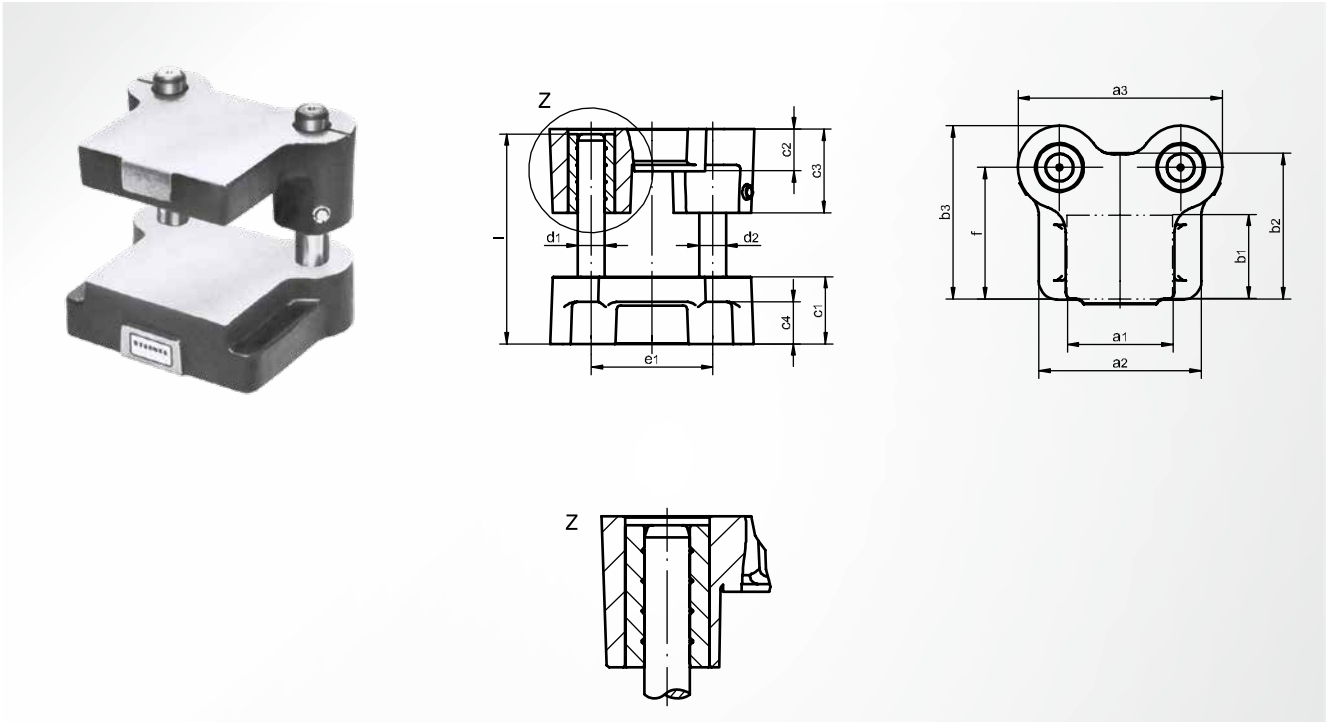
Working surface
rectangular

Pillar position
diagonal

a_1 x b_1	a_2	b_2	c_1	c_2	c_3	c_4	d_3	d_1 / d_2 x l	e_1	e_2	e_3	Item number
63 x 50	109	131	40	25	50	20	M16 x 1.5	15 / 16 x 140	63.09	85.2	106.0	ST1407 **063 x 050**
80 x 63	136	164	50	30	63	30	M20 x 1.5	19 / 20 x 160	79.99	108.0	134.4	ST1407 **080 x 063**
100 x 80	164	197	50	30	63	30	M20 x 1.5	24 / 25 x 160	100.00	133.0	166.4	ST1407 **100 x 080**
125 x 80	189	197	50	30	63	30	M20 x 1.5	24 / 25 x 160	124.97	133.0	182.5	ST1407 **125 x 080**
125 x 100	189	217	50	40	80	30	M24 x 1.5	24 / 25 x 180	125.05	153.0	197.6	ST1407 **125 x 100**
160 x 100	225	227	50	40	80	30	M24 x 1.5	24 / 25 x 180	160.85	163.0	229.0	ST1407 **160 x 100**
160 x 125	236	268	56	40	80	30	M24 x 1.5	30 / 32 x 180	160.11	192.0	250.0	ST1407 **160 x 125**
200 x 100	276	239	56	40	80	30	M24 x 1.5	30 / 32 x 180	199.99	163.0	258.0	ST1407 **200 x 100**
200 x 125	276	264	56	40	80	30	M24 x 1.5	30 / 32 x 180	200.01	188.0	274.5	ST1407 **200 x 125**
200 x 160	275	299	56	50	80	30	M30 x 2	30 / 32 x 200	198.72	222.6	298.4	ST1407 **200 x 160**
250 x 125	326	264	56	40	80	30	M24 x 1.5	30 / 32 x 180	250.00	188.0	312.8	ST1407 **250 x 125**
250 x 160	326	299	56	50	80	30	M30 x 2	30 / 32 x 200	249.99	223.0	335.0	ST1407 **250 x 160**
250 x 200	340	370	63	50	80	30	M30 x 2	38 / 40 x 224	250.05	280.0	375.4	ST1407 **250 x 200**

ST1601 Die set

upper part without thread, with sliding guide, bronze coating



Referring to DIN 9822 / Form C

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Sliding guide with bronze coating

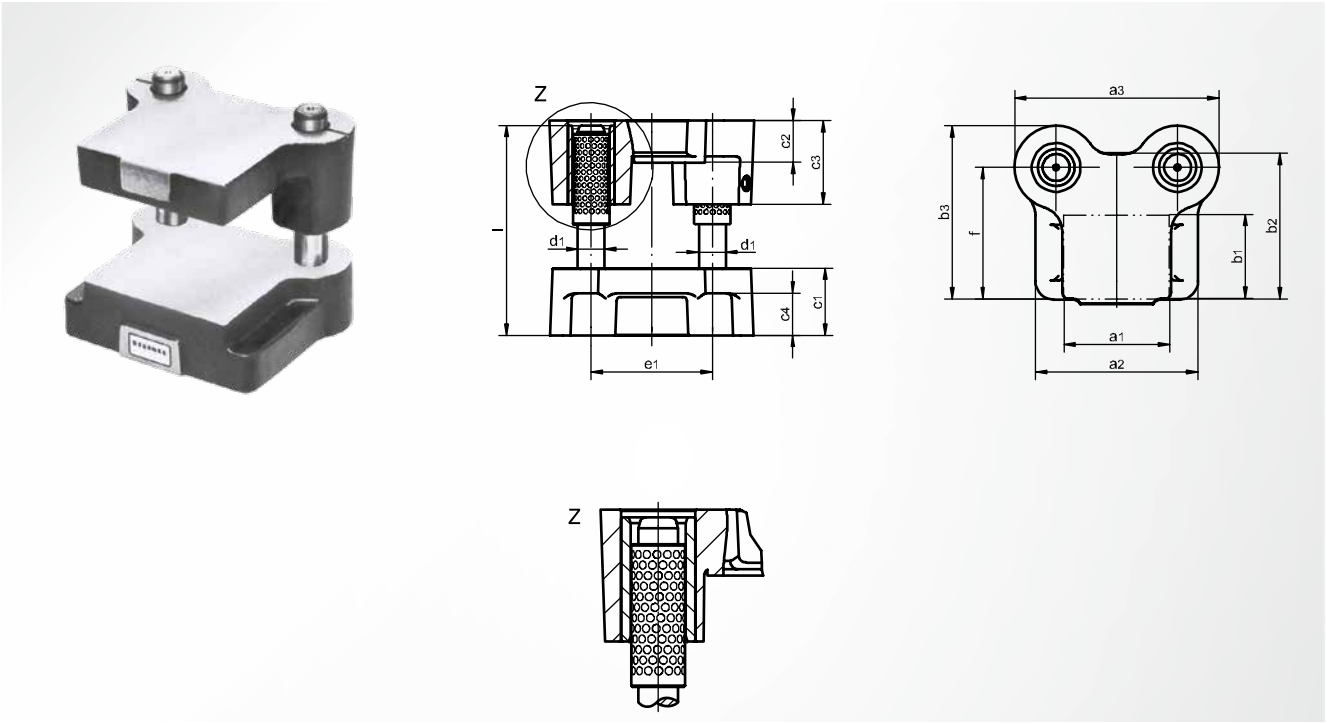
Working surface
rectangular

Pillar position
rear standing

a_1 x b_1	a_2	a_3	b_2	b_3	c_1	c_2	c_3	c_4	d_1 x l	e_1	f	Item number
50 x 40	84	118	69	87	36	20	50	20	16 x 112	72	62	ST1601 **050 x 040**
63 x 50	97	118	84	102	40	25	50	25	16 x 125	72	77	ST1601 **063 x 050**
80 x 50	114	126	84	102	40	25	50	25	16 x 125	80	77	ST1601 **080 x 050**
80 x 63	123	136	104	125	45	32	63	30	19 x 140	80	95	ST1601 **080 x 063**
100 x 63	143	156	104	125	45	32	63	30	19 x 140	100	95	ST1601 **100 x 063**
100 x 80	143	164	130	151	50	32	80	30	25 x 160	100	117	ST1601 **100 x 080**
125 x 63	168	181	104	125	45	32	63	30	19 x 140	125	95	ST1601 **125 x 063**
125 x 80	168	189	130	151	50	32	80	30	25 x 160	125	117	ST1601 **125 x 080**
125 x 100	168	201	155	182	56	40	96	30	32 x 180	125	142	ST1601 **125 x 100**
160 x 80	203	224	130	151	50	32	80	30	25 x 160	160	117	ST1601 **160 x 080**
160 x 100	203	236	155	182	56	40	96	30	32 x 180	160	142	ST1601 **160 x 100**
160 x 125	203	236	180	207	56	40	96	30	32 x 180	160	167	ST1601 **160 x 125**
200 x 100	243	276	155	182	56	40	96	30	32 x 180	200	142	ST1601 **200 x 100**
200 x 125	243	276	180	207	56	40	96	30	32 x 180	200	167	ST1601 **200 x 125**
200 x 160	253	288	227	259	63	50	121	30	40 x 200	200	213	ST1601 **200 x 160**
250 x 125	293	326	180	207	56	40	96	30	32 x 180	250	167	ST1601 **250 x 125**
250 x 160	303	338	227	259	63	50	121	30	40 x 200	250	213	ST1601 **250 x 160**
250 x 200	303	352	266	303	63	50	121	30	50 x 224	250	250	ST1601 **250 x 200**
315 x 250	368	412	321	355	63	50	121	30	50 x 224	310	302	ST1601 **315 x 250**

ST1602 Die set

upper part without thread, with ball guide



Referring to DIN 9822 / Form C

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Ball guide

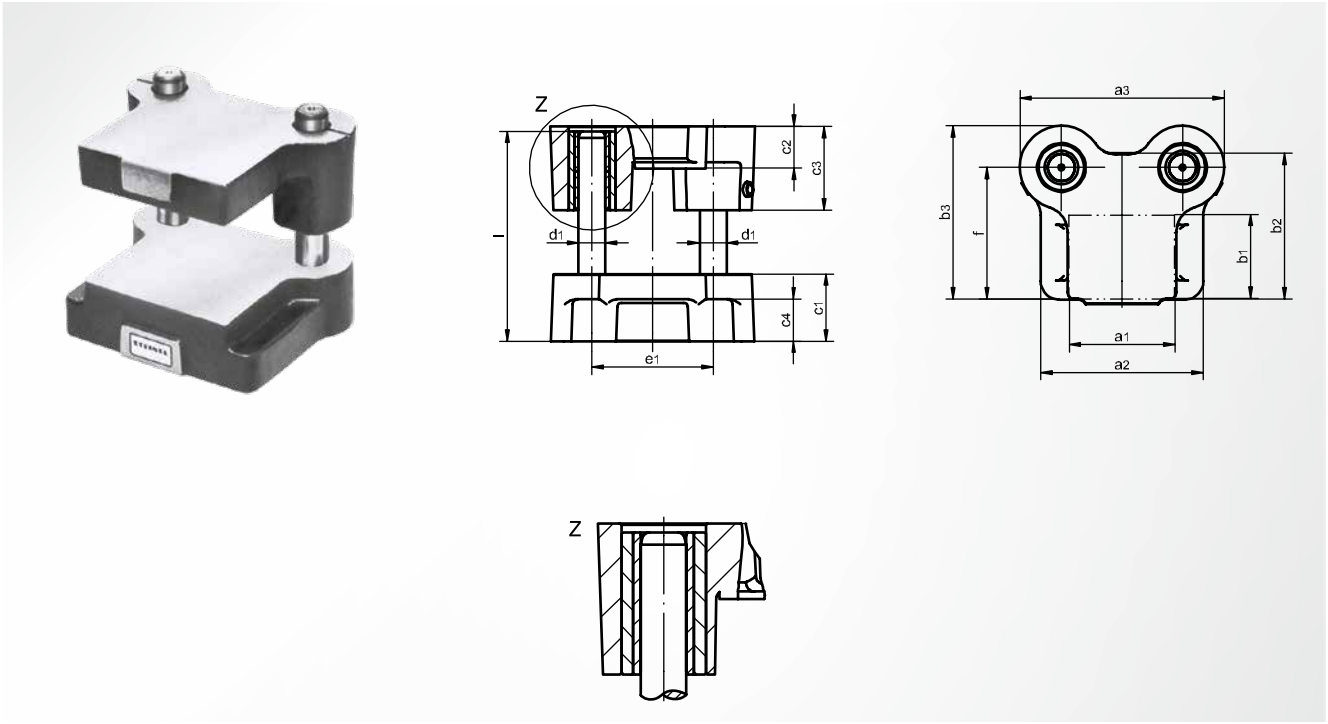
Working surface
rectangular

Pillar position
rear standing

a_1 x b_1	a_2	a_3	b_2	b_3	c_1	c_2	c_3	c_4	d_1 x l	e_1	f	Item number
50 x 40	84	118	69	87	36	20	50	20	16 x 112	72	62	ST1602 **050 x 040**
63 x 50	97	118	84	102	40	25	50	25	16 x 125	72	77	ST1602 **063 x 050**
80 x 50	114	126	84	102	40	25	50	25	16 x 125	80	77	ST1602 **080 x 050**
80 x 63	123	136	104	125	45	32	63	30	19 x 140	80	95	ST1602 **080 x 063**
100 x 63	143	156	104	125	45	32	63	30	19 x 140	100	95	ST1602 **100 x 063**
100 x 80	143	164	130	151	50	32	80	30	25 x 160	100	117	ST1602 **100 x 080**
125 x 63	168	181	104	125	45	32	63	30	19 x 140	125	95	ST1602 **125 x 063**
125 x 80	168	189	130	151	50	32	80	30	25 x 160	125	117	ST1602 **125 x 080**
125 x 100	168	201	155	182	56	40	96	30	32 x 180	125	142	ST1602 **125 x 100**
160 x 80	203	224	130	151	50	32	80	30	25 x 160	160	117	ST1602 **160 x 080**
160 x 100	203	236	155	182	56	40	96	30	32 x 180	160	142	ST1602 **160 x 100**
160 x 125	203	236	180	207	56	40	96	30	32 x 180	160	167	ST1602 **160 x 125**
200 x 100	243	276	155	182	56	40	96	30	32 x 180	200	142	ST1602 **200 x 100**
200 x 125	243	276	180	207	56	40	96	30	32 x 180	200	167	ST1602 **200 x 125**
200 x 160	253	288	227	259	63	50	121	30	40 x 200	200	213	ST1602 **200 x 160**
250 x 125	293	326	180	207	56	40	96	30	32 x 180	250	167	ST1602 **250 x 125**
250 x 160	303	338	227	259	63	50	121	30	40 x 200	250	213	ST1602 **250 x 160**
250 x 200	303	352	266	303	63	50	121	30	50 x 224	250	250	ST1602 **250 x 200**
315 x 250	368	412	321	355	63	50	121	30	50 x 224	310	302	ST1602 **315 x 250**

ST1606 Die set

upper part without thread, with sliding guide with solid lubricant



Referring to DIN 9822 / Form C

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Sliding guide with solid lubricant

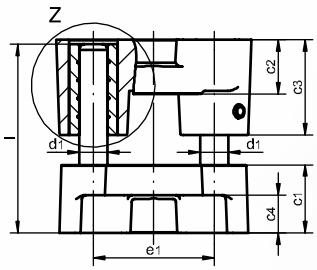
Working surface
rectangular

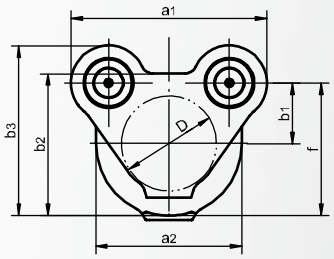
Pillar position
rear standing

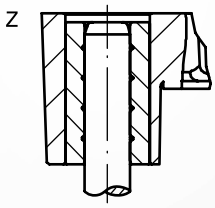
a_1 x b_1	a_2	a_3	b_2	b_3	c_1	c_2	c_3	c_4	d_1 x l	e_1	f	Item number
50 x 40	84	118	69	87	36	20	50	20	16 x 112	72	62	ST1606 **050 x 040**
63 x 50	97	118	84	102	40	25	50	25	16 x 125	72	77	ST1606 **063 x 050**
80 x 50	114	126	84	102	40	25	50	25	16 x 125	80	77	ST1606 **080 x 050**
80 x 63	123	136	104	125	45	32	63	30	19 x 140	80	95	ST1606 **080 x 063**
100 x 63	143	156	104	125	45	32	63	30	19 x 140	100	95	ST1606 **100 x 063**
100 x 80	143	164	130	151	50	32	80	30	25 x 160	100	117	ST1606 **100 x 080**
125 x 63	168	181	104	125	45	32	63	30	19 x 140	125	95	ST1606 **125 x 063**
125 x 80	168	189	130	151	50	32	80	30	25 x 160	125	117	ST1606 **125 x 080**
125 x 100	168	201	155	182	56	40	96	30	32 x 180	125	142	ST1606 **125 x 100**
160 x 80	203	224	130	151	50	32	80	30	25 x 160	160	117	ST1606 **160 x 080**
160 x 100	203	236	155	182	56	40	96	30	32 x 180	160	142	ST1606 **160 x 100**
160 x 125	203	236	180	207	56	40	96	30	32 x 180	160	167	ST1606 **160 x 125**
200 x 100	243	276	155	182	56	40	96	30	32 x 180	200	142	ST1606 **200 x 100**
200 x 125	243	276	180	207	56	40	96	30	32 x 180	200	167	ST1606 **200 x 125**
200 x 160	253	288	227	259	63	50	121	30	40 x 200	200	213	ST1606 **200 x 160**
250 x 125	293	326	180	207	56	40	96	30	32 x 180	250	167	ST1606 **250 x 125**
250 x 160	303	338	227	259	63	50	121	30	40 x 200	250	213	ST1606 **250 x 160**
250 x 200	303	352	266	303	63	50	121	30	50 x 224	250	250	ST1606 **250 x 200**
315 x 250	368	412	321	355	63	50	121	30	50 x 224	310	302	ST1606 **315 x 250**

ST1701 Die set

upper part without thread, with sliding guide, bronze coating







Material
Grey cast irons EN-GJL-250

Working surface
round

Upper plate
without thread

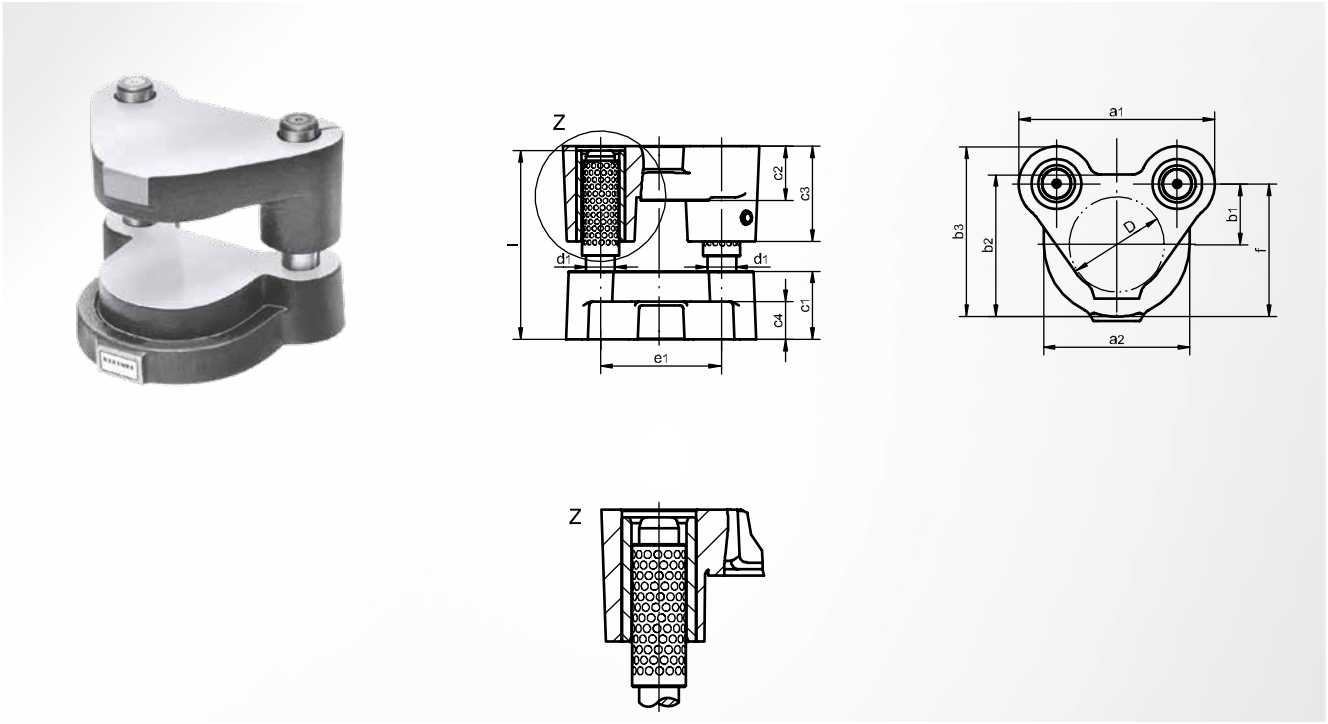
Pillar position
rear standing

Type of guidance
Sliding guide with bronze coating

D	a_1	a_2	b_1	b_2	b_3	c_1	c_2	c_3	c_4	d_1 x l	e_1	f	Item number
63	136	95	40	92	115	45	32	63	25	19 x 125	80	87	ST1701 **063**
80	164	112	50	112	138	50	32	63	30	25 x 140	100	106	ST1701 **080**
100	189	138	56	134	157	56	40	80	30	25 x 160	125	125	ST1701 **100**
125	236	168	63	164	185	56	40	80	30	32 x 180	160	147	ST1701 **125**
160	288	204	80	202	226	56	50	100	30	40 x 200	200	182	ST1701 **160**
180	307	224	85	222	241	63	50	100	30	40 x 200	219	197	ST1701 **180**

ST1702 Die set

upper part without thread, with ball guide



Material
Grey cast irons EN-GJL-250

Working surface
round

Upper plate
without thread

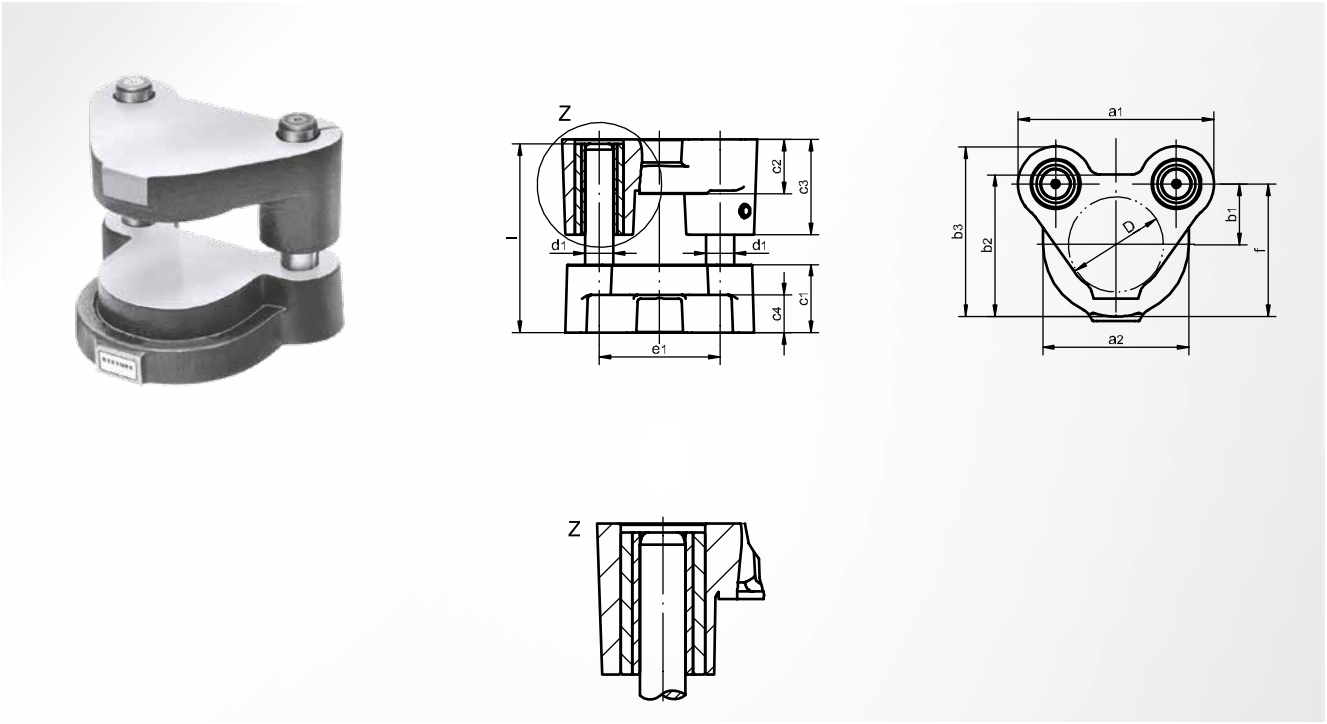
Pillar position
rear standing

Type of guidance
Ball guide

D	a_1	a_2	b_1	b_2	b_3	c_1	c_2	c_3	c_4	d_1 x l	e_1	f	Item number
63	136	95	40	92	115	45	32	63	25	19 x 125	80	87	ST1702 **063**
80	164	112	50	112	138	50	32	63	30	25 x 140	100	106	ST1702 **080**
100	189	138	56	134	157	56	40	80	30	25 x 160	125	125	ST1702 **100**
125	236	168	63	164	185	56	40	80	30	32 x 180	160	147	ST1702 **125**
160	288	204	80	202	226	56	50	100	30	40 x 200	200	182	ST1702 **160**
180	307	224	85	222	241	63	50	100	30	40 x 200	219	197	ST1702 **180**

ST1706 Die set

upper part without thread, with sliding guide with solid lubricant



Material
Grey cast irons EN-GJL-250

Working surface
round

Upper plate
without thread

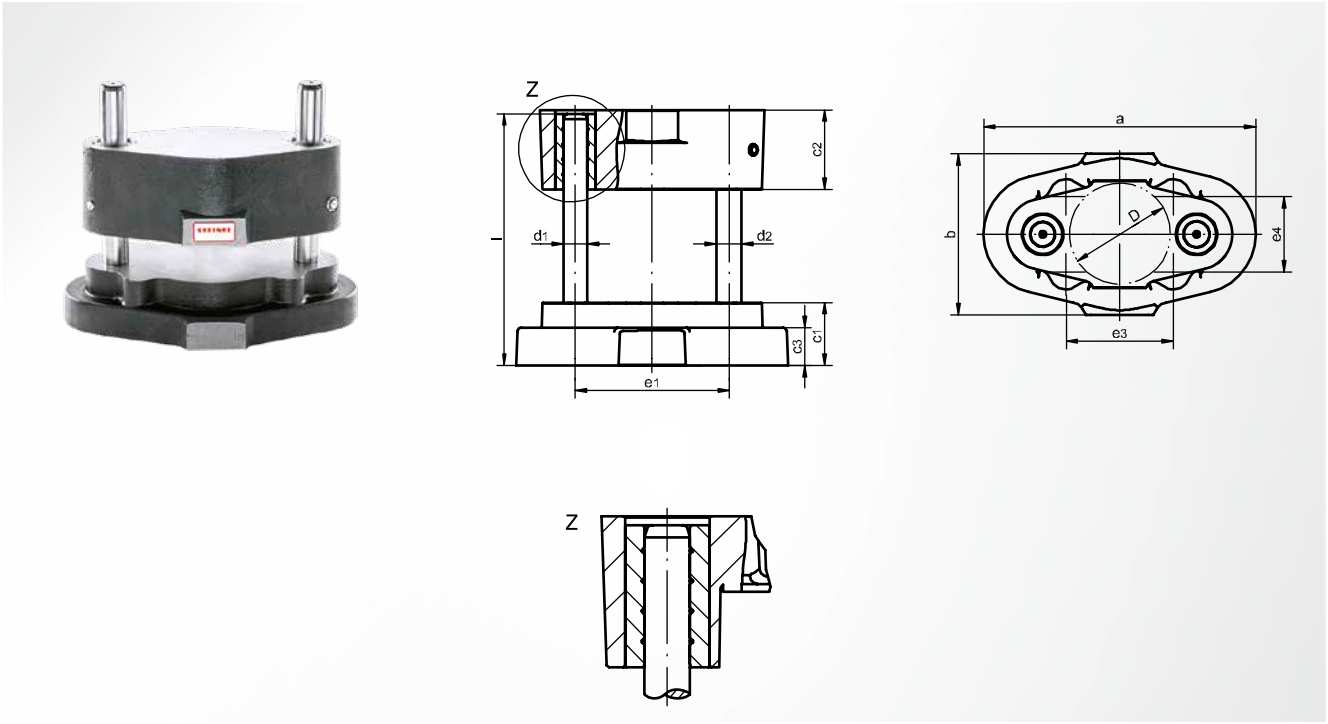
Pillar position
rear standing

Type of guidance
Sliding guide with solid lubricant

D	a_1	a_2	b_1	b_2	b_3	c_1	c_2	c_3	c_4	d_1 x l	e_1	f	Item number
63	136	95	40	92	115	45	32	63	25	19 x 125	80	87	ST1706 **063**
80	164	112	50	112	138	50	32	63	30	25 x 140	100	106	ST1706 **080**
100	189	138	56	134	157	56	40	80	30	25 x 160	125	125	ST1706 **100**
125	236	168	63	164	185	56	40	80	30	32 x 180	160	147	ST1706 **125**
160	288	204	80	202	226	56	50	100	30	40 x 200	200	182	ST1706 **160**
180	307	224	85	222	241	63	50	100	30	40 x 200	219	197	ST1706 **180**

ST2001 Die set

thick upper part without thread, with sliding guide, bronze coating



Referring to DIN 9816

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Sliding guide with bronze coating

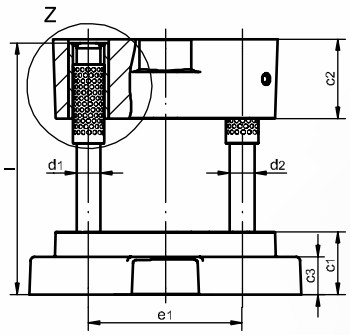
Working surface
round

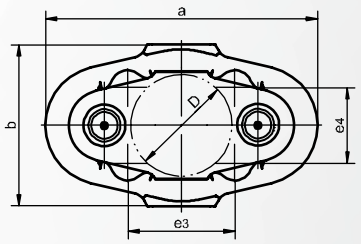
Pillar position
parallel centred

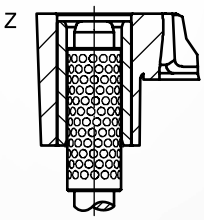
D	a	b	c_1	c_2	c_3	d_1 / d_2 x l	e_1	e_3	e_4	Item number
80	218	125	50	63	30	19 / 20 x 200	122	85	60	ST2001 **080**
100	258	144	50	80	30	24 / 25 x 200	154	105	70	ST2001 **100**
125	283	169	56	80	30	24 / 25 x 224	179	135	80	ST2001 **125**
160	345	204	63	100	30	30 / 32 x 250	229	170	90	ST2001 **160**

ST2002 Die set

thick upper part without thread, with ball guide







Referring to DIN 9816

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Ball guide

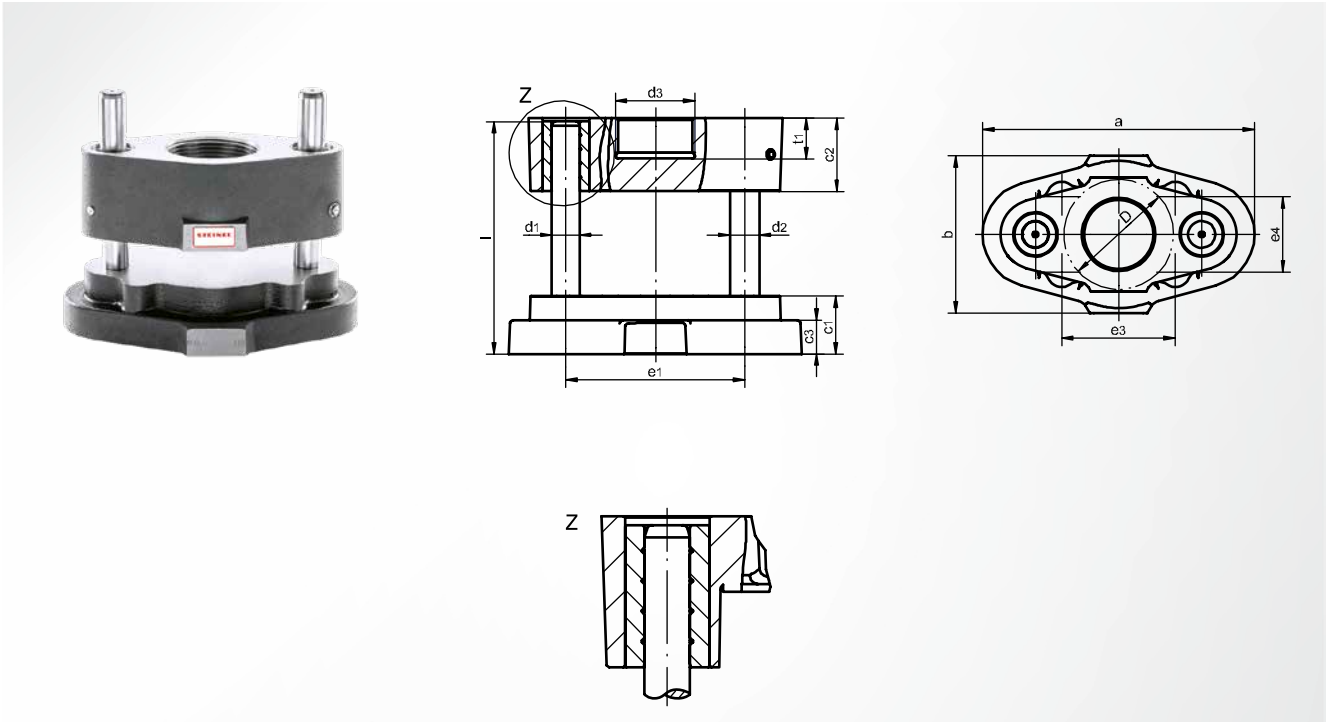
Working surface
round

Pillar position
parallel centred

D	a	b	c_1	c_2	c_3	d_1 / d_2 x l	e_1	e_3	e_4	Item number
80	218	125	50	63	30	19 / 20 x 200	122	85	60	ST2002 **080**
100	258	144	50	80	30	24 / 25 x 200	154	105	70	ST2002 **100**
125	283	169	56	80	30	24 / 25 x 224	179	135	80	ST2002 **125**
160	345	204	63	100	30	30 / 32 x 250	229	170	90	ST2002 **160**

ST2004 Die set

thick upper part with thread, with sliding guide, bronze coating



Referring to DIN 9816

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Sliding guide with bronze coating

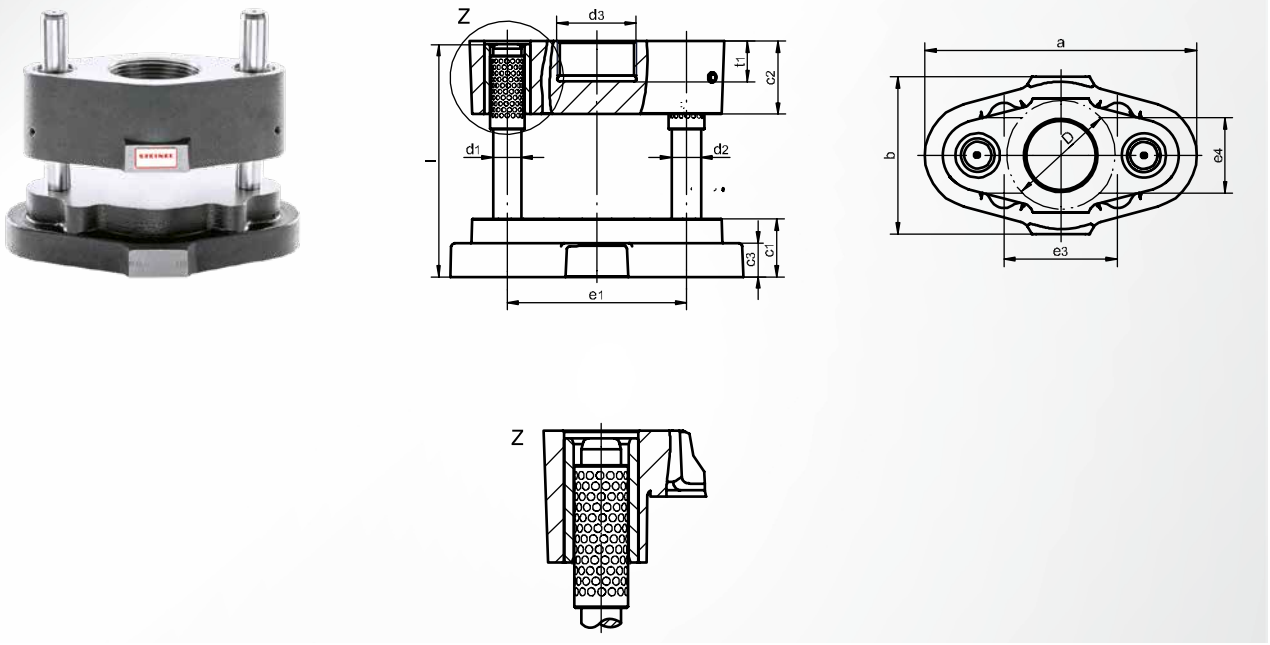
Working surface
round

Pillar position
parallel centred

D	a	b	c_1	c_2	c_3	d_3	d_1 / d_2 x l	e_1	e_3	e_4	t_1	Item number
100	258	144	50	80	30	M64 x 4	24 / 25 x 200	154	105	70	35	ST2004 **100**
125	283	169	56	80	30	M84 x 4	24 / 25 x 224	179	135	80	41	ST2004 **125**
160	345	204	63	100	30	M104 x 4	30 / 32 x 250	229	170	90	50	ST2004 **160**

ST2005 Die set

thick upper part with thread, with ball guide



Referring to DIN 9816

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Ball guide

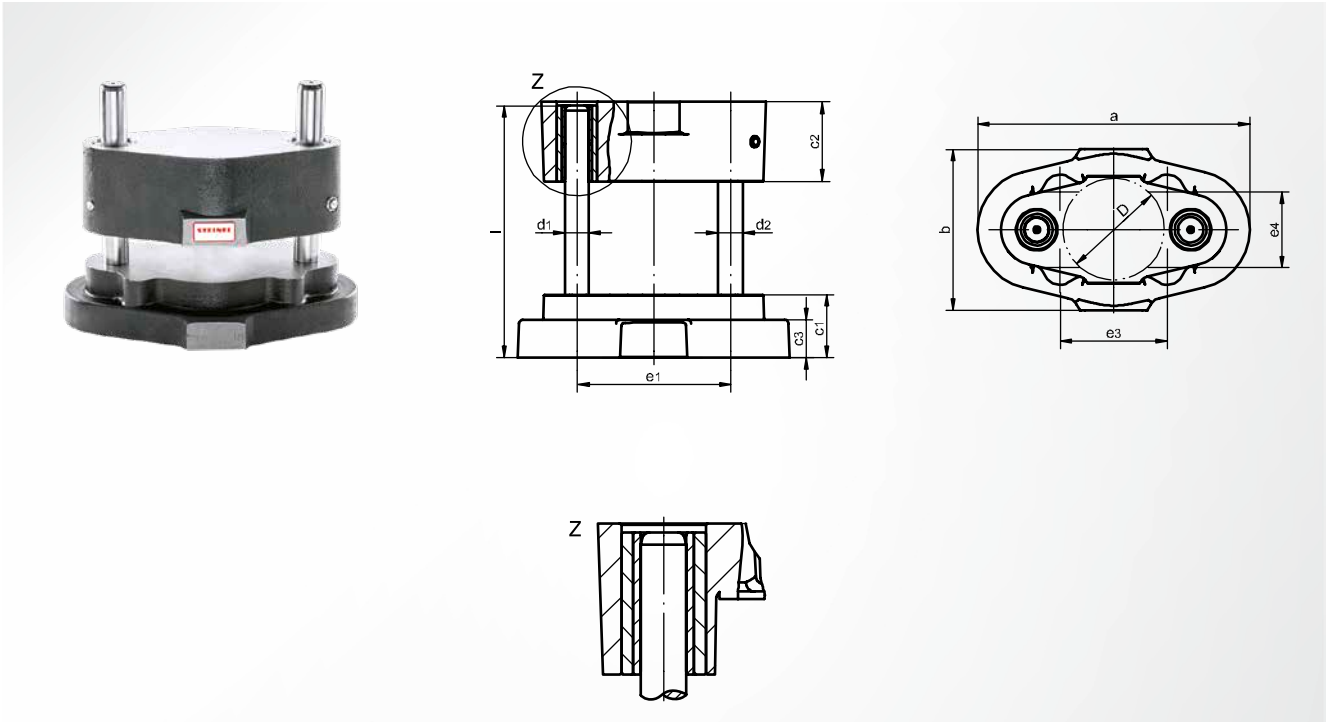
Working surface
round

Pillar position
parallel centred

D	a	b	c_1	c_2	c_3	d_3	d_1 / d_2 x l	e_1	e_3	e_4	t_1	Item number
100	258	144	50	80	30	M64 x 4	24 / 25 x 200	154	105	70	35	ST2005 **100**
125	283	169	56	80	30	M84 x 4	24 / 25 x 224	179	135	80	41	ST2005 **125**
160	345	204	63	100	30	M104 x 4	30 / 32 x 250	229	170	90	50	ST2005 **160**

ST2006 Die set

thick upper part without thread, with sliding guide with solid lubricant



Referring to DIN 9816

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Sliding guide with solid lubricant

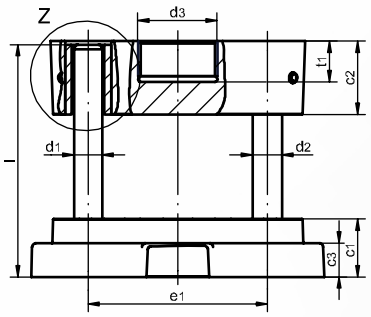
Working surface
round

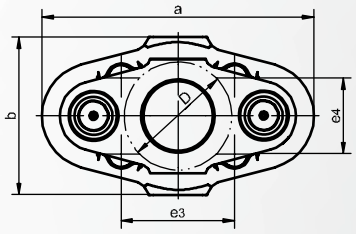
Pillar position
parallel centred

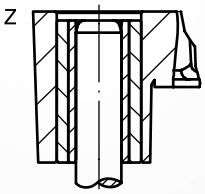
D	a	b	c_1	c_2	c_3	d_1 / d_2 x l	e_1	e_3	e_4	Item number
80	218	125	50	63	30	19 / 20 x 200	122	85	60	ST2006 **080**
100	258	144	50	80	30	24 / 25 x 200	154	105	70	ST2006 **100**
125	283	169	56	80	30	24 / 25 x 224	179	135	80	ST2006 **125**
160	345	204	63	100	30	30 / 32 x 250	229	170	90	ST2006 **160**

ST2007 Die set

thick upper part with thread, with sliding guide with solid lubricant







Referring to DIN 9816

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Sliding guide with solid lubricant

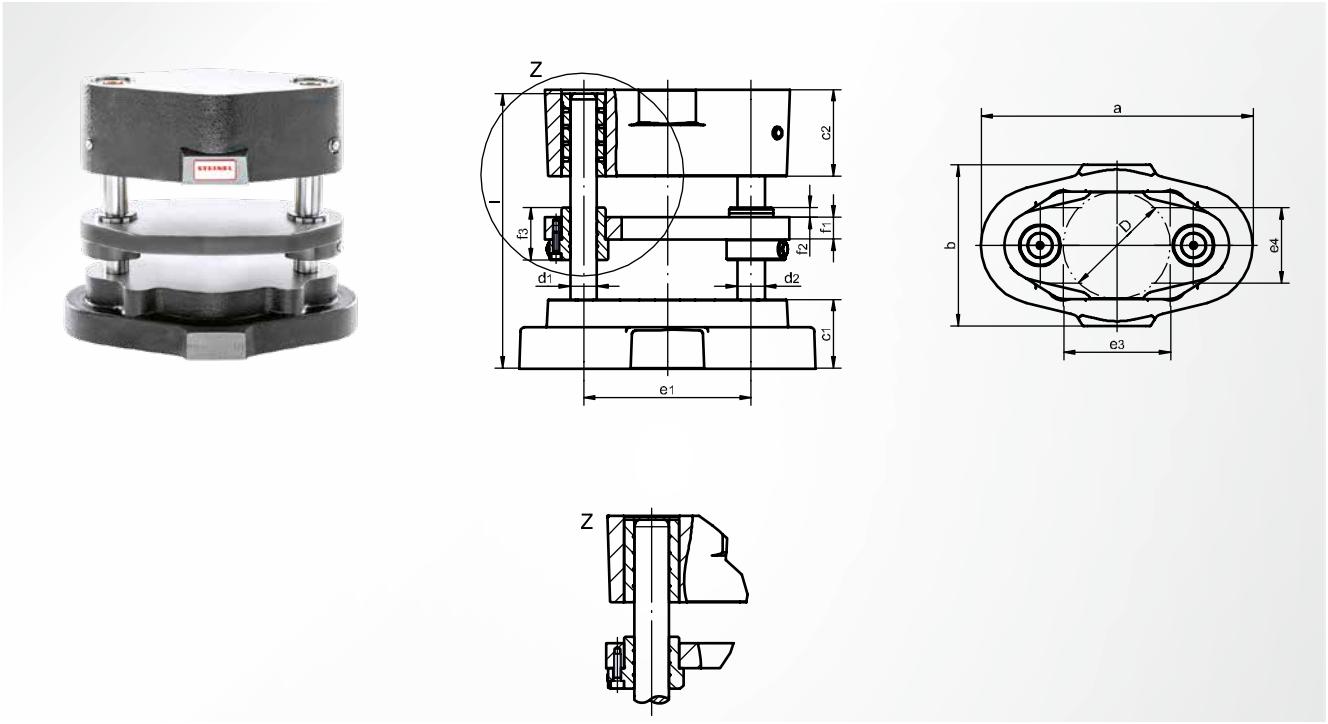
Working surface
round

Pillar position
parallel centred

D	a	b	c_1	c_2	c_3	d_3	d_1 / d_2 x l	e_1	e_3	e_4	t_1	Item number
100	258	144	50	80	30	M64 x 4	24 / 25 x 200	154	105	70	35	ST2007 **100**
125	283	169	56	80	30	M84 x 4	24 / 25 x 224	179	135	80	41	ST2007 **125**
160	345	204	63	100	30	M104 x 4	30 / 32 x 250	229	170	90	50	ST2007 **160**

ST2011 Die set

thick upper part without thread, with sliding guide, bronze coating, with guide plate



Referring to DIN 9816

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Sliding guide with bronze coating

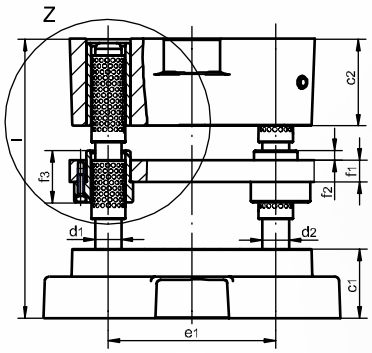
Working surface
round

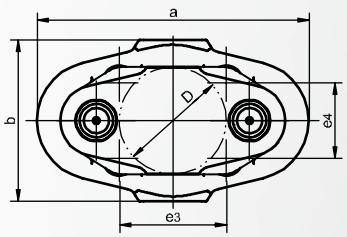
Pillar position
parallel centred

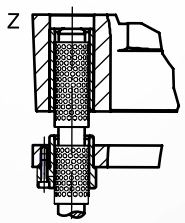
D	a	b	c_1	c_2	d_1 / d_2 x l	e_1	e_3	e_4	f_1	f_2	f_3	Item number
80	218	125	50	63	19 / 20 x 200	122	85	60	16	7	38	ST2011 **080**
100	258	144	50	80	24 / 25 x 200	154	105	70	18	5	38	ST2011 **100**
125	283	169	56	80	24 / 25 x 224	179	135	80	18	5	38	ST2011 **125**
160	345	204	63	100	30 / 32 x 250	229	170	90	22	8	45	ST2011 **160**

ST2012 Die set

thick upper part without thread, with ball guide, with guide plate







Referring to DIN 9816

Material
Grey cast irons EN-GJL-250

Upper plate
without thread

Type of guidance
Ball guide

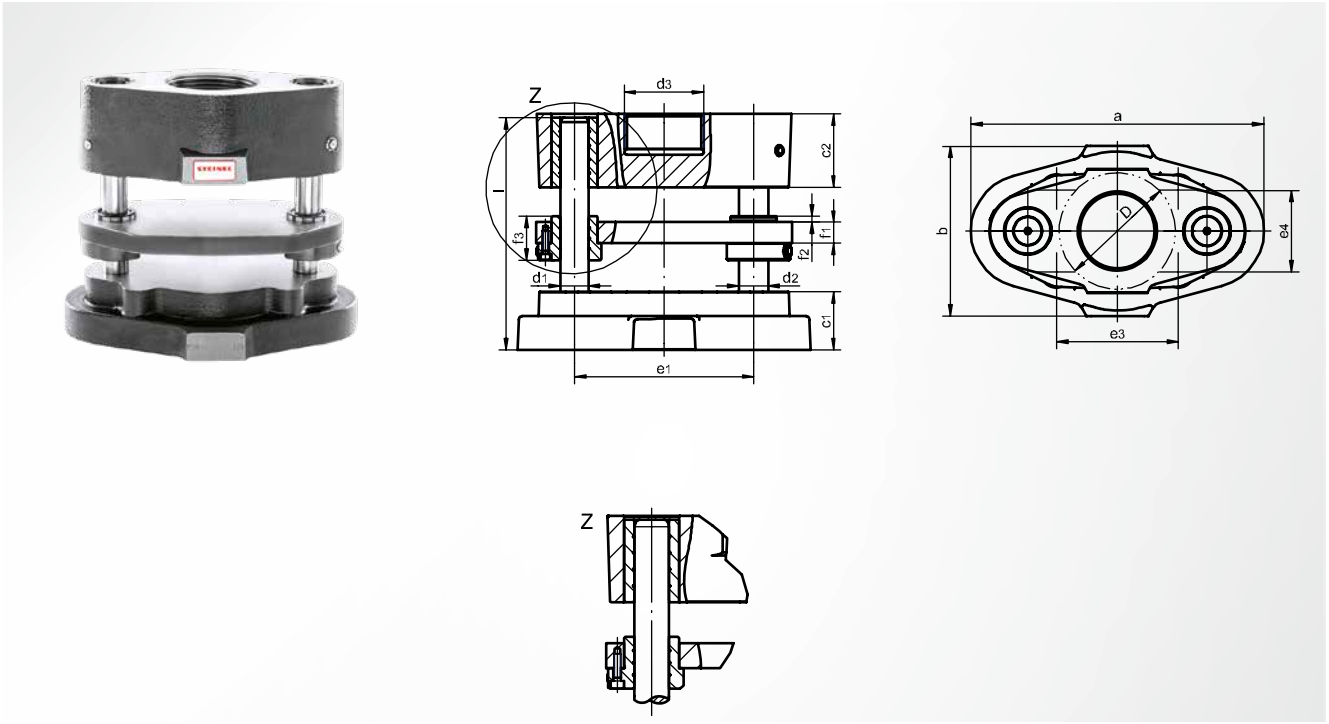
Working surface
round

Pillar position
parallel centred

D	a	b	c_1	c_2	d_1 / d_2 x l	e_1	e_3	e_4	f_1	f_2	f_3	Item number
80	218	125	50	63	19 / 20 x 200	122	85	60	16	7	38	ST2012 **080**
100	258	144	50	80	24 / 25 x 200	154	105	70	18	5	38	ST2012 **100**
125	283	169	56	80	24 / 25 x 224	179	135	80	18	5	38	ST2012 **125**
160	345	204	63	100	30 / 32 x 250	229	170	90	22	8	45	ST2012 **160**

ST2014 Die set

thick upper part with thread, with sliding guide, bronze coating, with guide plate



Referring to DIN 9816

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Sliding guide with bronze coating

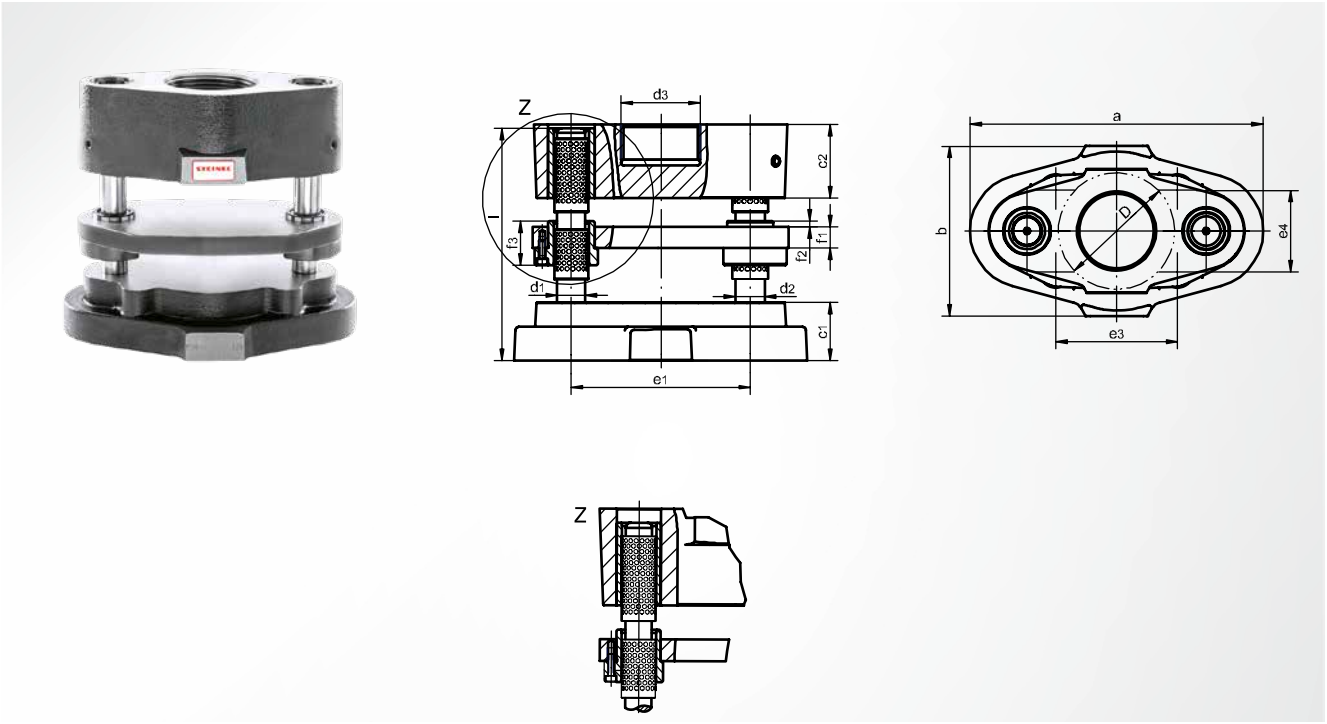
Working surface
round

Pillar position
parallel centred

D	a	b	c_1	c_2	d_3	d_1 / d_2 x l	e_1	e_3	e_4	f_1	f_2	f_3	t_1	Item number
100	258	144	50	80	M64 x 4	24 / 25 x 200	154	105	70	18	5	38	35	ST2014 **100**
125	283	169	56	80	M84 x 4	24 / 25 x 224	179	135	80	18	5	38	41	ST2014 **125**
160	345	204	63	100	M104 x 4	30 / 32 x 250	229	170	90	22	8	45	50	ST2014 **160**

ST2015 Die set

thick upper part with thread, with ball guide, with guide plate



Referring to DIN 9816

Material
Grey cast irons EN-GJL-250

Upper plate
with thread

Type of guidance
Ball guide

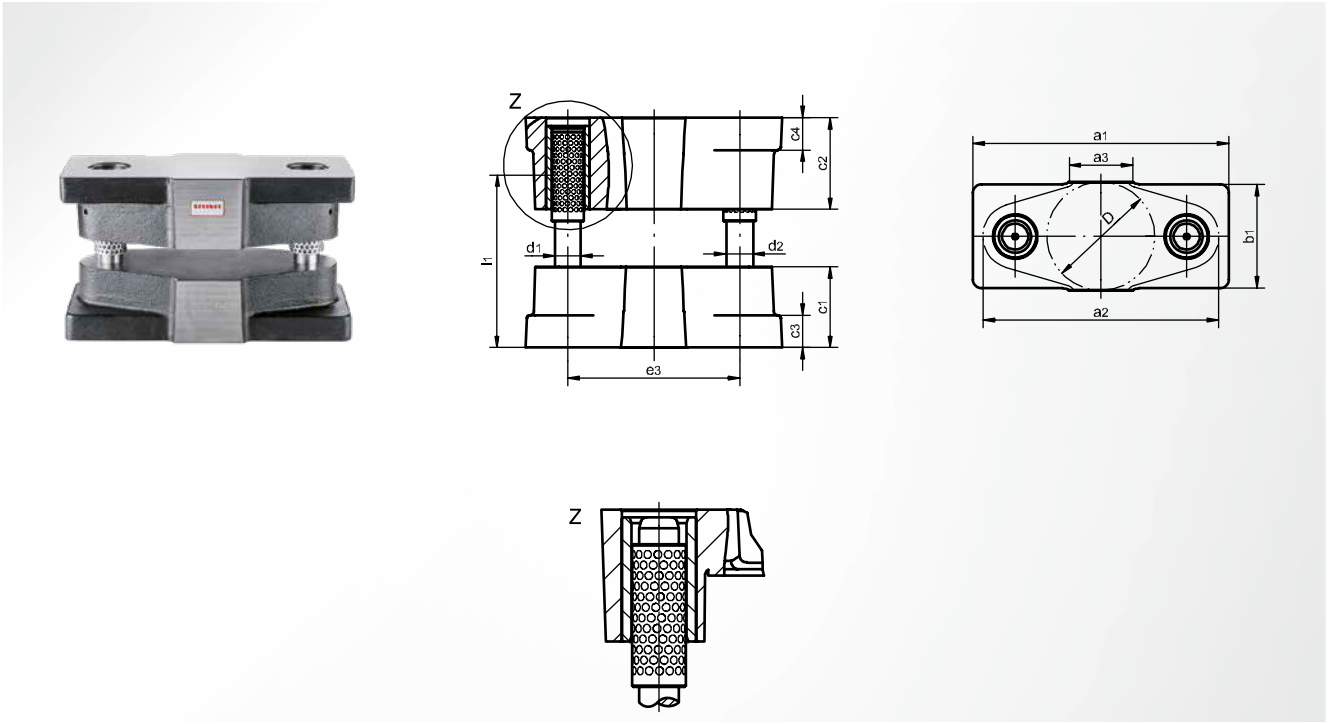
Working surface
round

Pillar position
parallel centred

D	a	b	c_1	c_2	c_3	d_3	d_1 / d_2 x l	e_1	e_3	e_4	f_1	f_2	f_3	t_1	Item number
100	258	144	50	80	30	M64 x 4	24 / 25 x 200	154	105	70	18	5	38	35	ST2015 **100**
125	283	169	56	80	30	M84 x 4	24 / 25 x 224	179	135	80	18	5	38	41	ST2015 **125**
160	345	204	63	100	30	M104 x 4	30 / 32 x 250	229	170	90	22	8	45	50	ST2015 **160**

ST2862 Fineblanking die set

upper part without thread, with ball guide



Material
Grey cast irons EN-GJL-250

Working surface
round

Upper plate
without thread

Pillar position
parallel centred

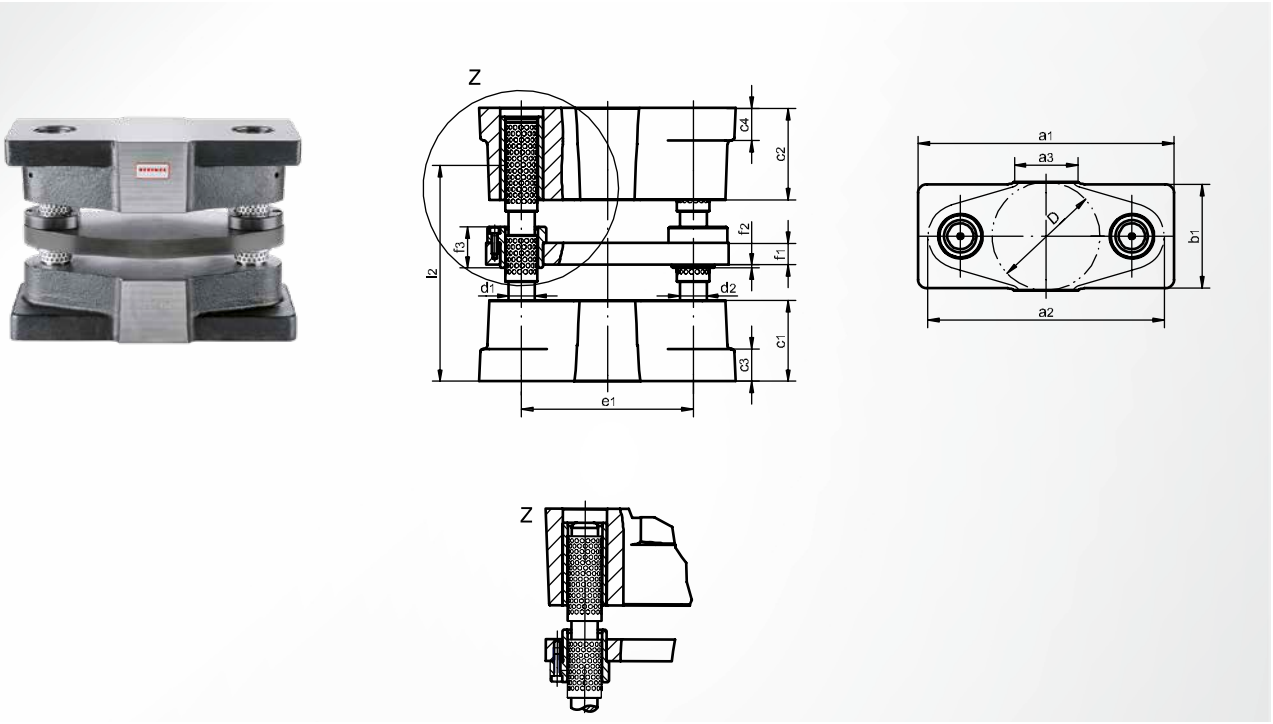
Type of guidance
Ball guide

Note
with lateral contact surface

D	a_1	a_2	a_3	b_1	c_1	c_2	c_3	c_4	d_1 / d_2 x l_1	e_1	Item number
100	237	219	50	92	75	80	30	30	24 / 25 x 160	159	ST2862 **100**
125	262	244	60	107	75	80	30	30	24 / 25 x 160	184	ST2862 **125**
160	328	301	70	142	75	80	30	30	30 / 32 x 160	229	ST2862 **160**
200	347	341	90	167	80	100	30	30	30 / 32 x 200	269	ST2862 **200**
250	425	419	100	222	85	100	30	30	38 / 40 x 224	335	ST2862 **250**

ST2865 Fineblanking die set

upper part without thread, with ball guide, with guide plate



Material
Grey cast irons EN-GJL-250

Working surface
round

Upper plate
without thread

Pillar position
parallel centred

Type of guidance
Ball guide

Note
with lateral contact surface

D	a_1	a_2	a_3	b_1	c_1	c_2	c_3	c_4	d_1 / d_2 x l_2	e_1	f_1	f_2	f_3	Item number
100	237	219	50	92	75	80	30	30	24 / 25 x 200	159	18	5	38	ST2865 **100**
125	262	244	60	107	75	80	30	30	24 / 25 x 200	184	18	5	38	ST2865 **125**
160	328	301	70	142	75	80	30	30	30 / 32 x 200	229	22	8	45	ST2865 **160**
200	347	341	90	167	80	100	30	30	30 / 32 x 224	269	22	8	45	ST2865 **200**
250	425	419	100	222	85	100	30	30	38 / 40 x 250	335	28	2	55	ST2865 **250**

Guide units

- Guide pillars
- Roller guides
- Sliding guides

ST7190 2.17	ST7192 2.18	ST7191 2.19	ST7197 2.20	ST7100 2.21	ST7102 2.22-1
ST7105 2.23	ST7106 2.25	ST7114 2.27	ST7117 2.29	ST7118 2.31	ST7120 2.33
ST7126 2.35	ST7129 2.37	ST7181 2.38	ST7182 2.40	ST7140 2.41	ST7141 2.42
ST7142 2.43	ST7130 2.44	ST7170 2.45	ST7171 2.46	ST7150 2.47	ST7151 2.48
ST7152 2.49	ST7133 2.50	ST7173 2.51	ST7174 2.52	ST7134 2.53	ST7135 2.54
ST7132 2.55	ST7406 2.56	ST7407 2.57	ST7403 2.58	ST7402 2.59	ST7404 2.61
ST7405 2.63	ST7416 2.65	ST7413 2.67	ST7412 2.68	ST7414 2.69	ST7415 2.70
ST7426 2.71	ST7423 2.73	ST7422 2.75	ST7424 2.77	ST7425 2.79	ST7409 2.80
ST7319 2.82	ST7411 2.83	ST7491 2.85	ST7451 2.87	ST7429 2.90	ST7419 2.89

ST7471 2.91
ST7481 2.92
ST7431 2.93
ST7441 2.94
ST7210 2.95
ST7216 2.96
ST7219 2.97
ST7211 2.98
ST7212 2.99
ST7200 2.100
ST7206 2.101
ST7209 2.102
ST7201 2.103
ST7202 2.104
ST7250 2.105
ST7260 2.106
ST7160 2.107
ST7460 2.108
ST7469 2.109
ST9833 2.110
ST9833T 2.111
ST9825 2.112
ST9827 2.113
ST9831 2.115
ST9834 2.116
ST7571 2.117
ST7111 2.119
ST7112 2.120
ST7361 2.121
ST7360 2.122
ST7366 2.123
ST7367 2.124
ST7377 2.124
ST7387 2.125
SZ7368 2.125
ST7108 (inch) 2.126
ST7120 (inch) 2.127
ST7130 (inch) 2.129
ST7406 (inch) 2.130
ST7416 (inch) 2.131
ST7419 (inch) 2.132
ST7132 (inch) 2.133
SZ8514 (inch) 2.134

Guide units

General

The highly-precise guide units from STEINEL are used in toolmaking, fixture manufacturing and machine engineering. The range includes two types of roller guide (roller and ball guides) and three types of sliding guide (bronzed steel, with solid lubricant and solid lubricant rings).

Quality criteria of STEINEL guides

Outstanding lifetimes and high loading capacity due to:

- highest part precision
- outstanding surface quality
- optimum material selection
- tailored heat treatment process
- perfect matching

Use of types of guidance

	Optimal	Good	Possible
high stroke speed	K	R	
large stroke (path)	Gb Gf		K R
accuracy	K R		Gb Gf
high lateral forces	Gb R		
small cutting clearance	K	R	Gb Gf
high lateral forces and small cutting clearance	R	Gb	
environment (without lubrication)	K	Gf R	
contamination (environment)	Gb		K R
contamination (creation)	K	R	

K Ball guide
R Roller guide
Gb Bronzed sliding guide
Gf Sliding guide solid lubricant

Guaranteed interchangeability

Thanks to the mounting bore ISO H6, all guide bushes can be used in accordance with DIN 9831/ ISO 9448 in the uniform bore. During the course of a tool's life, a different type of guidance can be switched to without any problems.

Pillar diameter	Mounting bore
10	22
12	
15	28
16	
19	32
20	
24	40
25	
30	48
32	
38	58
40	
48	70
50	
60	85
63	
80	105

Customised guide units

STEINEL develops and manufactures customised guide units for complex applications, individual geometries, contamination-prone processes and many other things, and supplies them with measurement protocols if requested.

Guide units

Guide pillars

Pillars for sliding and roller guides

Version	Diameter	Length	Variant	Properties
smooth, for pressing-in	10-80	90-500	with 2 internal threads	Guide diameter ISO h3, super-finished and subfined, Installation in mounting bore ISO R6
with middle mount shoulder	12-50	90-520		Guide diameter ISO h3, super-finished, Fitting diameter ISO js4, Installation in mounting bore ISO H6
with small middle mount shoulder	12-50	90-520		
with shoulder	15-80	110-560	with 2 internal threads	
with taper shanks	19-63	130-405		Guide diameter ISO h3, super-finished and subfined, mounting taper ground, for assembly in pillar holding bush
Mini pillar	3-10	30-160		Guide diameter ISO h3, super-finished and subfined, Installation in mounting bore ISO P6

Pillars for sliding guides

Version	Diameter	Length	Variant	Properties
with head	10-32	66-275	with oil grooves	Guide diameter ISO h6, super-finished, installation in mounting bore ISO N7 (press fit) or ISO H7, (when secured against slipping out)
with shoulder	15-80	115-560		Guide diameter ISO g6, super-finished, fitting diameter ISO j6, Installation in mounting bore ISO H6
for industrial tools	25-160	125-560	with oil grooves	Guide diameter ISO f6, super-finished, fitting diameter ISO r6, installation in mounting bore ISO R6
		125-400	with shoulder	Guide diameter ISO g6, super-finished, fitting diameter ISO r6, installation in mounting bore ISO H7

Roller guides (roller and ball guides)

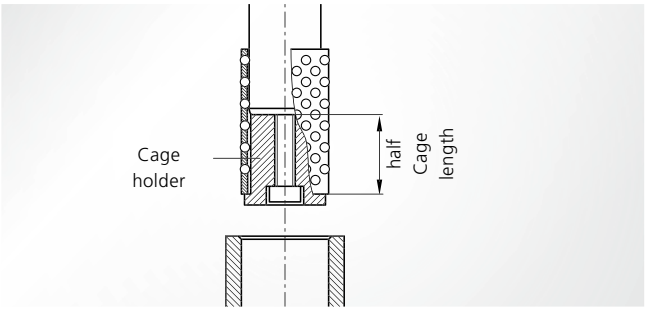
STEINEL roller guides (roller and ball guides) consist of a guide pillar, a roller or ball guide and a guide bush, which are paired together free of clearance. The cage travel is only half as long as the stroke of the guide.

Quality criteria of STEINEL roller guides

- long life time – Profile rollers and balls are helically arranged in the cage, and are free-wheeling mounted.
- fast stroke movements – Speeds of up to 30 m/min. can be achieved as a result of the low friction of the rollers or balls.
- high lateral forces possible – The large number of load-bearing rollers or balls ensures an even force distribution.
- high guide accuracy and interchangeability – Profile rollers or balls of optimum precision and identical sorting are used.
- low maintenance expense

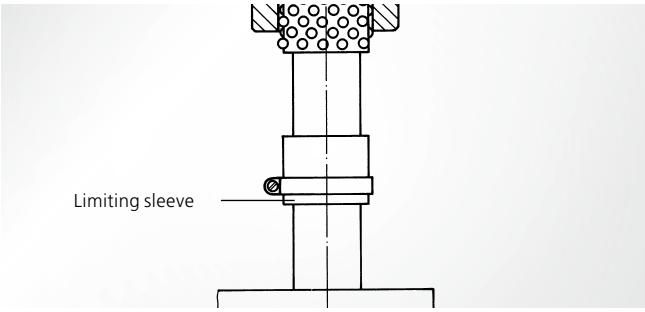
Accessories and options

Cage holder



- The cage holder intercepts the cage upon complete retraction from the guide bush.
- for die sets where the guide pillars are fixed in the upper part.
- for all roller and ball cages
- The length of the cage holder should be half of that of the cage used, and can be shortened accordingly if required.

Limiting sleeve



The limiting sleeve prevents the cage from “wandering”. It is moved over the guide pillar and clamped.

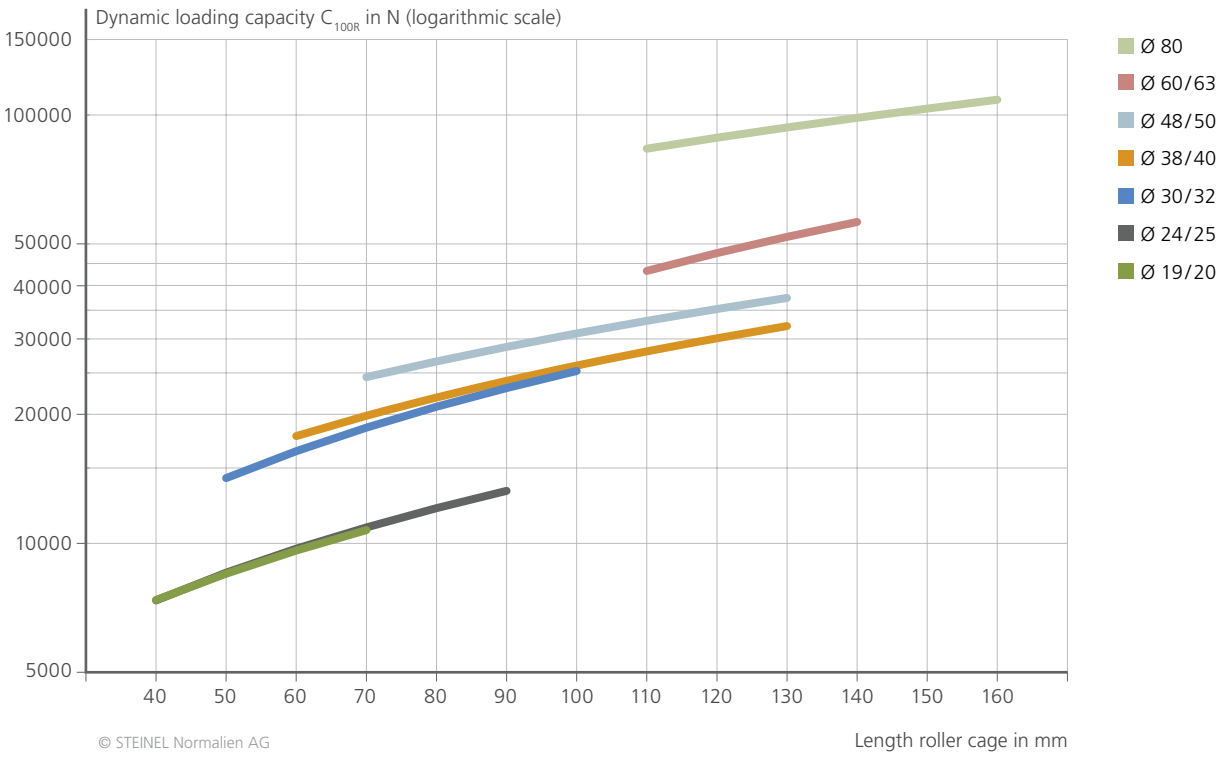
Roller guides

Application

Aluminium roller cages

- can be used in any installation position for longitudinal movements
- rotational motion not possible
- low mass and consequently lower inertia, particularly in the movement turning points
- long life time – The contact radii of the saddle shape are manufactured in such a way that critical loads on the edge area will be avoided. The bending as a result of the load in the middle surface to the external track leads to a compression which can be neglected.
- suitable for high lateral forces and a small cutting clearance – A profile roller can bear loads of 6 to 12 times higher (statically) and 2 to 3 times higher (dynamically) than a ball with the same diameter.

Dynamic loading capacity C_{100R} in accordance with DIN ISO 14728-1 for roller cages with diameters of 19 to 80 mm



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Application

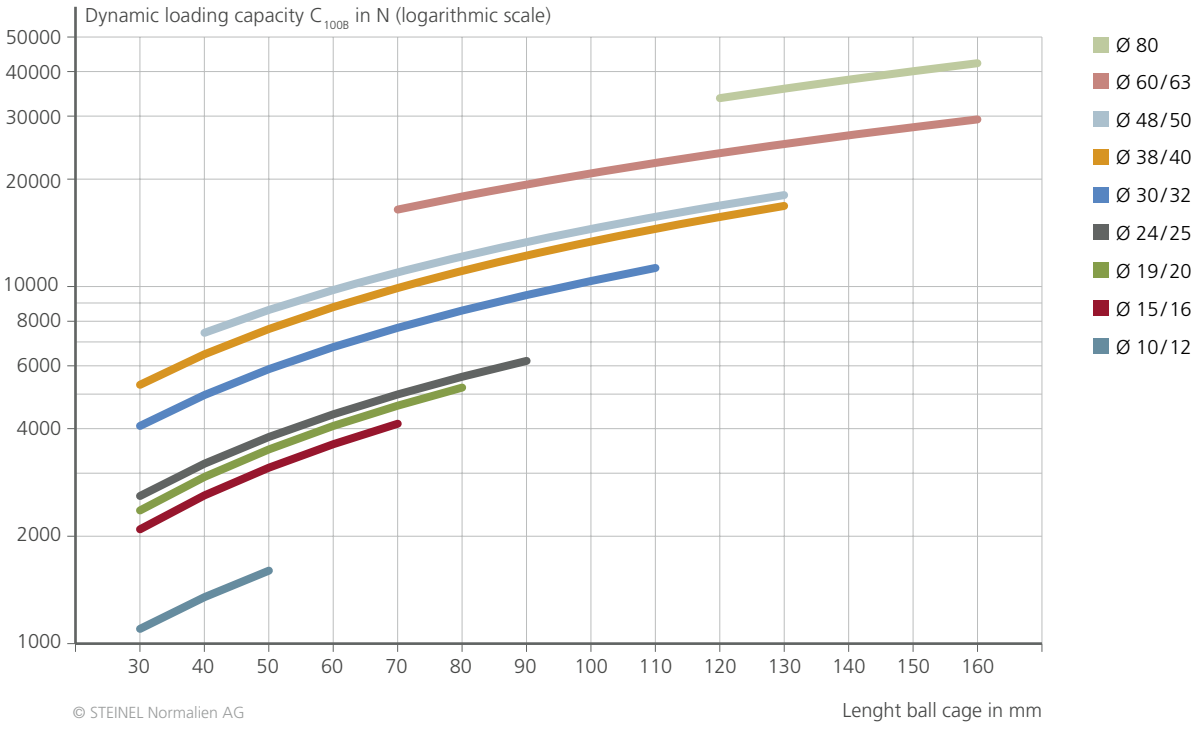
Aluminium, brass and plastic ball cages
- can be used in any installation position for longitudinal movements and rotational motions

Aluminium ball cages
- lower mass compared to the brass cage and consequently lower inertia, particularly in the movement turning points
- optimal ratio between stability and mass
- optimal heat resistance

Brass ball cage
- high wear resistance and stability
- low friction between the ball and cage
- optimal heat resistance
- Mini-series ball cages are ideally suited as construction elements in optical and electronic measuring devices.

Plastic ball cages
- low mass compared to other materials, and therefore suitable for high stroke frequencies in high-speed tools
- low friction between the ball and cage
- high medium resistance

Dynamic loading capacity C_{100B} in accordance with DIN ISO 14728-1 for ball cages with diameters of 10 to 80 mm



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Additional versions

With installation assistance

The installation assistance facilitates the positioning of the cage on the guide pillar, therefore making the assembly of tools with several guide units easier.

With lock ring

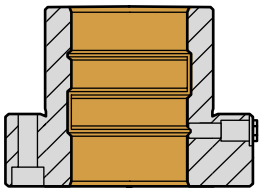
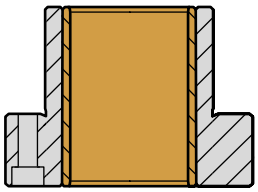
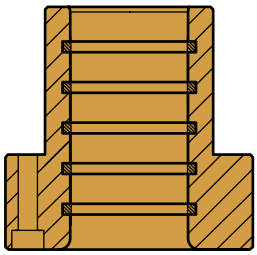
In accordance with DIN 471, the lock ring prevents the cage from slipping through the guide bush during the dismantling of the tool. In operation, it can prevent any potential "wandering" of the cage.

With locking device and screw (only for aluminium)

During the complete retraction from the guide bush, the locking plate holds the ball cage on the guide pillar.

Sliding guides (steel with bronze coating, solid lubricant, solid lubricant rings)

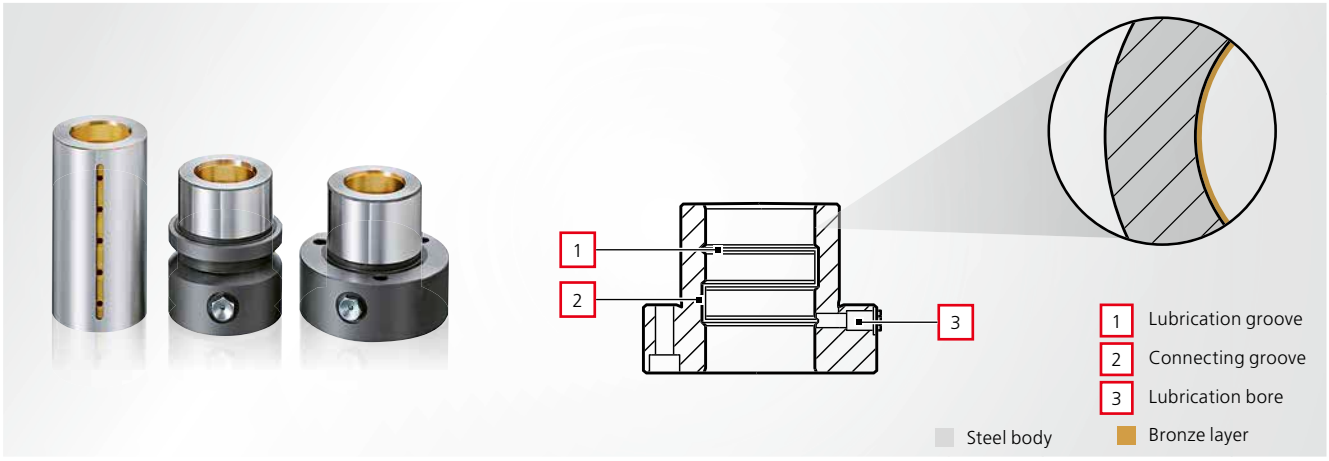
STEINEL sliding guides (steel with bronze coating, solid lubricant and solid lubricant rings) are comprised of a guide pillar and a guide bush.

Sliding guides	
Steel with bronze coating 	A bronze layer is galvanically applied to the running surfaces of the hardened steel guide bushes. The hard, extremely low-wear bronze layer is honed to the highest surface quality.
With solid lubricant 	A solid lubricant bushing is integrated into the hardened steel body of the low-maintenance sliding guides. The solid lubricant used here forms an adherent, coherent lubricating film between the bush and guide pillar. This provides good dry-running properties.
With solid lubricant rings 	The low-maintenance bronze guide bushes are equipped with solid lubricant rings; these create a lubricating film between the bush and guide pillar. In the case of strokes which are smaller than the distance between these rings, no dry-running properties are provided.

Quality criteria of STEINEL sliding guides

- Long life time and a high loading capacity – a choice of the best materials as well as high-precision machining guarantee the top quality of the guides.
- Large stroke – in comparison with roller guides, sliding guides enable strokes over the complete length of the guide pillar.
- High lateral forces possible – the forces are distributed over the bush surface
- Highest guide accuracy – highest processing precision ensures a minimal guide clearance. Upon request, this may be tailored to the customer's requirements for applications requiring a greater guide clearance.

Sliding guides, steel with bronze coating



Design

- The hardened steel body (63 HRC) takes on lateral forces and prevents the guide bush from becoming deformed due to the strong force application.
- The galvanic bronze layer spread across the running surface is very hard (250 – 300 HV), extremely low-wear and honed to the highest surface quality.
- It has excellent thermal conductivity in order to quickly dissipate the resulting friction heat.
- The guide bush's internal lubrication system consists of parallel lubrication grooves which are joined via connecting grooves.

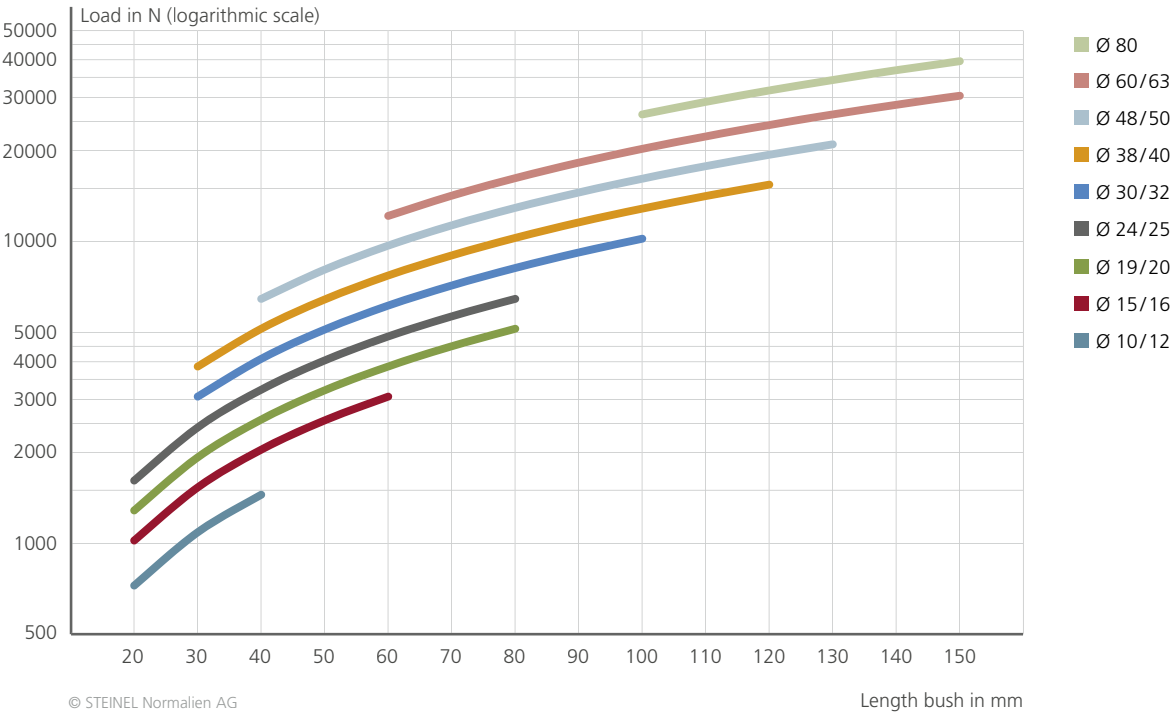
Lubrication

- The design of the internal lubrication system guarantees an even distribution of lubricant on the entire svliding surface and provides an effective shielding against dirt.
- Depending on the load of the guide, the internal lubrication system must be regularly supplied with high-performance lubricant (SZ9850/SZ9853) and can also be connected to a central lubrication.

Application

- Suitable for applications with all large strokes, high lateral forces as well as within environments susceptible to contamination.
- Sliding speed up to 20 m/min
- With an optimal design of the lubrication, guide clearance, stroke length, radial load and heat dissipation, high stroke frequencies of up to 800 strokes/min are possible
- Guide clearance of 2–7 µm (with a diameter of 32 mm) – If greater clearance is desired, please specify this when ordering.
- Dry-running properties available

Permissible lateral force with regard to the correct lubrication of bronze-coated bushes with lengths of 20 to 150 mm



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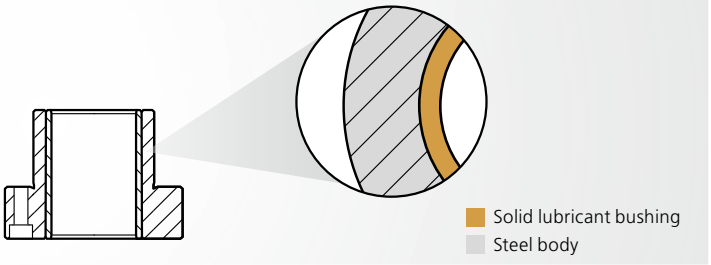
Sliding guides with solid lubricant and solid lubricant rings

With solid lubricant



Design

- The hardened steel body (63 HRC) supports the solid lubricant bushing, takes on lateral forces and prevents the guide bush from becoming deformed due to the strong force application.
- The integrated sintered bronze solid lubricant bushing (CuSn10) with solid lubricant (MoS2) is self-lubricating and low maintenance.
- The integrated solid lubricant bushing has a hardness class of 65 HV. It is extremely low-wear and honed to the highest surface quality.

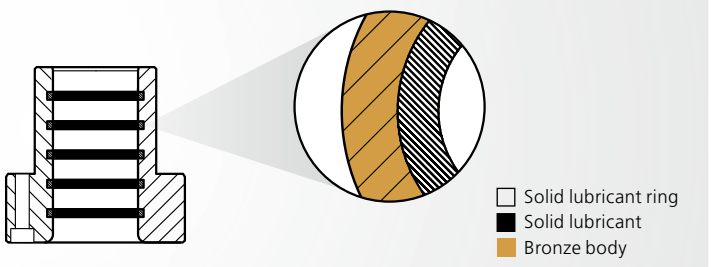
Lubrication

- The sintered bronze solid lubricant assumes the lubricating function between the bush and pillar.
- The lubricating film evenly covers the entire internal wall of the bush.
- The adherent, coherent lubricating film also prevents corrosion of the guide bush and guide pillar during standstill or when starting.

Application

- Also suitable for extremely small strokes and radial movements
- Sliding speed up to 20 m/min
- Guide clearance of 3 – 10 µm (with a diameter of 32 mm) – If greater clearance is desired, please specify this when ordering.
- Optimal for low maintenance applications
- Outstanding dry-running properties

With solid lubricant rings



Design

- The bronze guides (CuZn25Al5) with integrated graphite solid lubricant rings (soaked in hydraulic oil) are self-lubricating and low maintenance.
- With their material hardness class of 22 HRC, the guide bushes are characterised by a high level of stability.
- Several solid lubricant rings are integrated flush with the sliding surface inside the bush.
- It has excellent thermal conductivity in order to quickly dissipate the resulting friction heat.
- The self-lubrication system of the bush significantly reduces maintenance expense.

Lubrication

- The solid lubricant contained within the rings assumes the lubricating function between the bush and pillar.
- The adherent, coherent lubricating film also prevents corrosion of the guide bush and guide pillar during standstill or when starting.

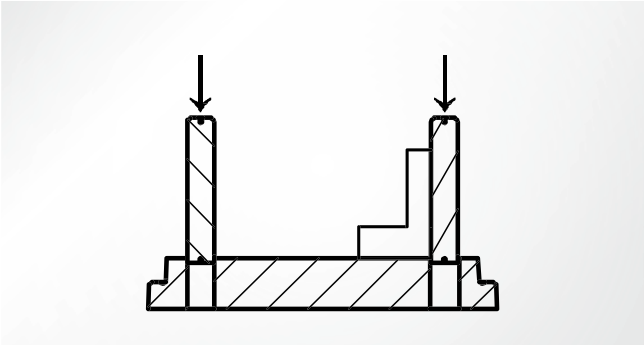
Application

- Suitable for axial movements with a large stroke
- In order to guarantee an optimal lubricating film for guide bushes with solid lubricant rings, the stroke must always be greater than the distance between the solid lubricant rings.
- Sliding speed up to 20 m/min
- Guide clearance of 3–10 µm (with a diameter of 32 mm) – If greater clearance is desired, please specify this when ordering
- Optimal for low maintenance applications
- Required dry-running properties

Guide pillar installation instructions

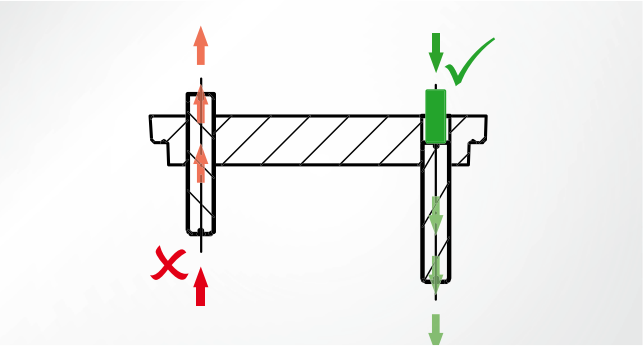
Installation instructions for smooth pillars

Installation of the guide pillar



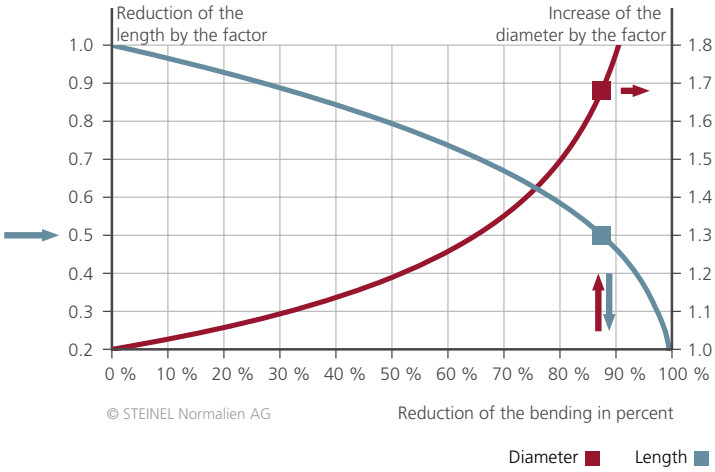
Carefully clean the boreholes in the top and bottom parts and apply oil to them (no grease). Slide the pillars in the top part. Place plane-parallel ground bars between the upper and bottom part. Drive the pillars approx. 3 mm deep into the bottom part. Push in the pillars using a hydraulic press or manual spindle press (the pillar has the fit ISO h3, the borehole has the fit ISO R6, therefore a press fit is guaranteed).

Disassembly of the guide pillar



In order to avoid damage to the surface of the guide pillars and mounting bores, the pillars must never be ejected via the running surface.

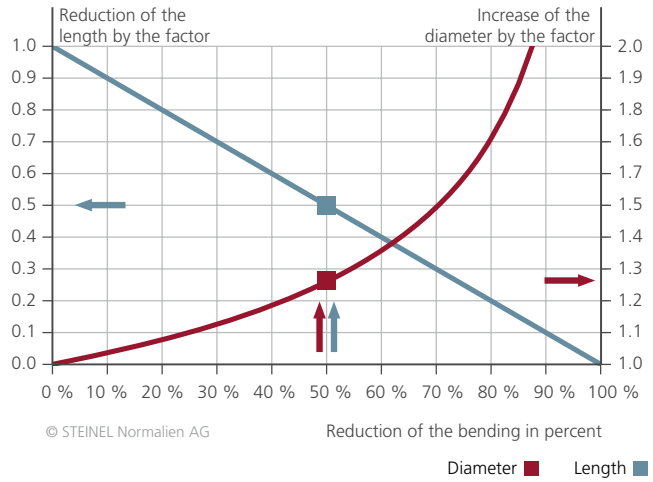
Pillars = bending subject to the length or diameter of the pillar



If the length of a pillar is reduced, the bending of the pillar is also reduced:

- If the length is halved, e.g. by a change from ST7120 (lower plate) to ST7117 (guide plate), the bending of the pillar is reduced by 87.5 %
- A reduction of 87.5 % can also be achieved when the diameter of the pillar is increased by the factor 1.68, e.g. from 25 mm to 42 mm.

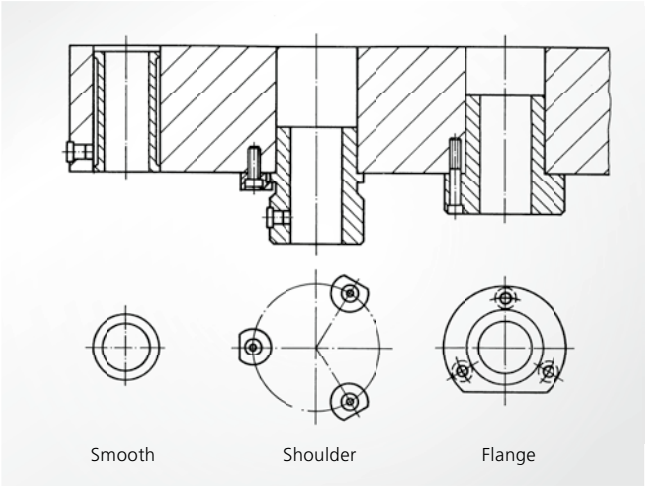
Pillars = bending stress subject to the length or diameter of the pillar

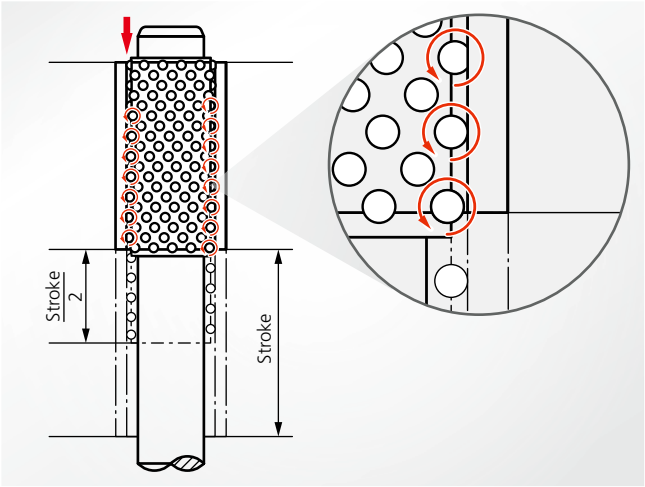


The are two possibilities for the reduction of the bending stress in a pillar by 50 %;

- Halving the pillar length, e.g. from 300 mm to 150 mm
- Increasing the pillar diameter by a factor of 1.26, e.g. from 19 mm to 24 mm

Installation instructions: sliding and roller guides





- The bushes must not be pressed. Pressing may result in deformation of the internal diameter.
- For security, smooth bushes must be stuck in the mounting bore (with Loctite 603, part number SZ9742). Adhesive surfaces must be completely free of grease. Please observe the instructions of the adhesive manufacturer.
- For flange bushes and guide bushings with shoulders, the shoulder and flange surfaces that are rectangular ground to the guide bore are pressed firmly to the plate with holding clamps or screws.
- Guides are to be furnished with a lubricating film.
- Frame plates must be brought together in parallel.
- When the roller guides are brought together, the rollers or balls must perform a rolling movement and must not slide.

STEINEL®

Tolerances according to DIN EN ISO 286-2

Tolerance classes for shafts	Nominal dimension range in mm							
	– ... 3	> 3 ... 6	> 6 ...10	> 10 ...18	> 18 ...30	> 30 ...50	> 50 ...80	> 80 ...120
f6	- 6 - 12	- 10 - 18	- 13 - 22	- 16 - 27	- 20 - 33	- 25 - 41	- 30 - 49	- 36 - 58
f7	- 6 - 16	- 10 - 22	- 13 - 28	- 16 - 34	- 20 - 41	- 25 - 50	- 30 - 60	- 36 - 71
g6	- 2 - 8	- 4 - 12	- 5 - 14	- 6 - 17	- 7 - 20	- 9 - 25	- 10 - 29	- 12 - 34
h3	0 - 2	0 - 2,5	0 - 2,5	0 - 3	0 - 4	0 - 4	0 - 5	0 - 6
h4	0 - 3	0 - 4	0 - 4	0 - 5	0 - 6	0 - 7	0 - 8	0 - 10
h5	0 - 4	0 - 5	0 - 6	0 - 8	0 - 9	0 - 11	0 - 13	0 - 15
h6	0 - 6	0 - 8	0 - 9	0 - 11	0 - 13	0 - 16	0 - 19	0 - 22
h8	0 - 14	0 - 18	0 - 22	0 - 27	0 - 33	0 - 39	0 - 46	0 - 54
h9	0 - 25	0 - 30	0 - 36	0 - 43	0 - 52	0 - 62	0 - 74	0 - 87
h15	0 - 400	0 - 480	0 - 580	0 - 700	0 - 840	0 - 1000	0 - 1200	0 - 1400
j6	4 - 2	6 - 2	7 - 2	8 - 3	9 - 4	11 - 5	12 - 7	13 - 9
js4	1,5 - 1,5	2 - 2	2 - 2	2,5 - 2,5	3 - 3	3,5 - 3,5	4 - 4	5 - 5
k6	6 0	9 1	10 1	12 1	15 2	18 2	21 2	25 3
m5	6 2	9 4	12 6	15 7	17 8	20 9	24 11	28 13
m6	8 2	12 4	15 6	28 7	21 8	25 9	30 11	35 13
n6	10 4	16 2	19 10	23 12	28 15	33 17	39 20	45 23
p6	12 6	20 12	24 15	29 18	35 22	42 26	51 32	59 37
r6	16 10	23 15	28 19	34 23	41 28	50 34	60 43	73 51

Tolerances in µm

Tolerance classes for boreholes	Nominal dimension range in mm							
	– ... 3	> 3 ... 6	> 6 ...10	> 10 ...18	> 18 ...30	> 30 ...50	> 50 ...80	> 80 ...120
H5	4 0	5 0	6 0	8 0	9 0	11 0	13 0	15 0
H6	6 0	8 0	9 0	11 0	13 0	16 0	19 0	22 0
H7	10 0	12 0	15 0	18 0	21 0	25 0	30 0	35 0
H8	14 0	18 0	22 0	27 0	33 0	39 0	46 0	54 0
H9	25 0	30 0	36 0	43 0	52 0	62 0	74 0	87 0
H10	40 0	48 0	58 0	70 0	84 0	100 0	120 0	140 0
H11	60 0	75 0	90 0	110 0	130 0	160 0	190 0	220 0
J7	4 - 6	6 - 6	8 - 7	10 - 8	12 - 9	14 - 11	18 - 12	22 - 13
K6	0 - 6	2 - 6	2 - 7	2 - 9	2 - 11	3 - 13	4 - 15	4 - 18
M6	- 2 - 8	- 1 - 9	- 3 - 7	- 4 - 15	- 4 - 17	- 4 - 20	- 5 - 24	- 6 - 28
N6	- 4 - 10	- 5 - 13	- 7 - 16	- 9 - 20	- 11 - 24	- 12 - 28	- 14 - 33	- 16 - 38
P6	- 6 - 12	- 9 - 17	- 12 - 21	- 15 - 26	- 18 - 31	- 21 - 37	- 26 - 45	- 30 - 52
P7	- 6 - 16	- 8 - 20	- 9 - 24	- 11 - 29	- 14 - 35	- 17 - 42	- 21 - 51	- 24 - 59
R6	- 10 - 16	- 12 - 20	- 16 - 25	- 20 - 31	- 24 - 37	- 29 - 45	- 35 - 56	- 44 - 66

Tolerances in µm

STEINEL®

Hardness comparison according to DIN EN ISO 18265

Revaluation* for hardness in hardness or hardness in tensile strength for non-alloy and low-alloy steels

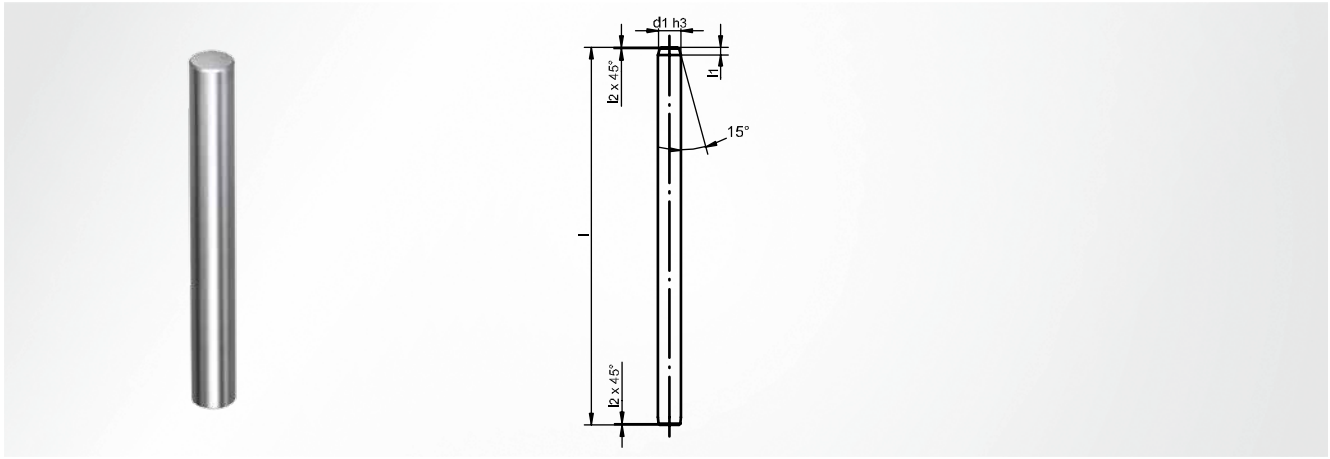
Tensile strength N/mm²	Vickers hardness HV	Brinell hardness HB	Rockwell hardness HRB	Rockwell hardness HRC
255	80	76.0		
270	85	80.7	41.0	
285	90	85.5	48.0	
305	95	90.2	52.0	
320	100	95.0	56.2	
335	105	99.8		
350	110	105	62.3	
370	115	109		
385	120	114	66.7	
400	125	119		
415	130	124	71.2	
430	135	128		
450	140	133	75.0	
465	145	138		
480	150	143	78.7	
495	155	147		
510	160	152	81.7	
530	165	156		
545	170	162	85.0	
560	175	166		
575	180	171	87.1	
595	185	176		
610	190	181	89.5	
625	195	185		
640	200	190	91.5	
660	205	195	92.5	
675	210	199	93.5	
690	215	204	94.0	
705	220	209	95.0	
720	225	214	96.0	
740	230	219	96.7	
755	235	223		
770	240	228	98.1	20.3
785	245	233		21.3
800	250	238	99.5	22.2
820	255	242		23.1
835	260	247	(101)	24.0
850	265	252		24.8
865	270	257	(102)	25.6
880	275	261		26.4
900	280	266	(104)	27.1
915	285	271		27.8
930	290	276	(105)	28.5
950	295	280		29.2
965	300	285		29.8
995	310	295		31.0
1030	320	304		32.2
1060	330	314		33.3
1095	340	323		34.4
1125	350	333		35.5

Tensile strength N/mm²	Vickers hardness HV	Brinell hardness HB	Rockwell hardness HRB	Rockwell hardness HRC
1155	360	342		36.6
1190	370	352		37.7
1220	380	361		38.8
1255	390	371		39.8
1290	400	380		40.8
1320	410	390		41.8
1350	420	399		42.7
1385	430	409		43.6
1420	440	418		44.5
1455	450	428		45.3
1485	460	437		46.1
1520	470	447		46.9
1555	480	456		47.7
1595	490	466		48.4
1630	500	475		49.1
1665	510	485		49.8
1700	520	494		50.5
1740	530	504		51.1
1775	540	513		51.7
1810	550	523		52.3
1845	560	532		53.0
1880	570	542		53.6
1920	580	551		54.1
1955	590	561		54.7
1995	600	570		55.2
2030	610	580		55.7
2070	620	589		56.3
2105	630	599		56.8
2145	640	608		57.3
2180	650	618		57.8
	660			58.3
	670			58.8
	680			59.2
	690			59.7
	700			60.1
	720			61.0
	740			61.8
	760			62.5
	780			63.3
	800			64.0
	820			64.7
	840			65.3
	860			65.9
	880			66.4
	900			67.0
	920			67.5
	940			68.0

The values in this table are only *comparison or standard values and cannot form the basis of complaints.

ST7190 Guide pillar

smooth, Mini-series



Material
Steel 1.7131 (16MnCr5); case-hardened

Hardness
62 ±2 HRC

Guide diameter
ISO h3

Installation instruction
one-sided entry chamfer or centring attachment

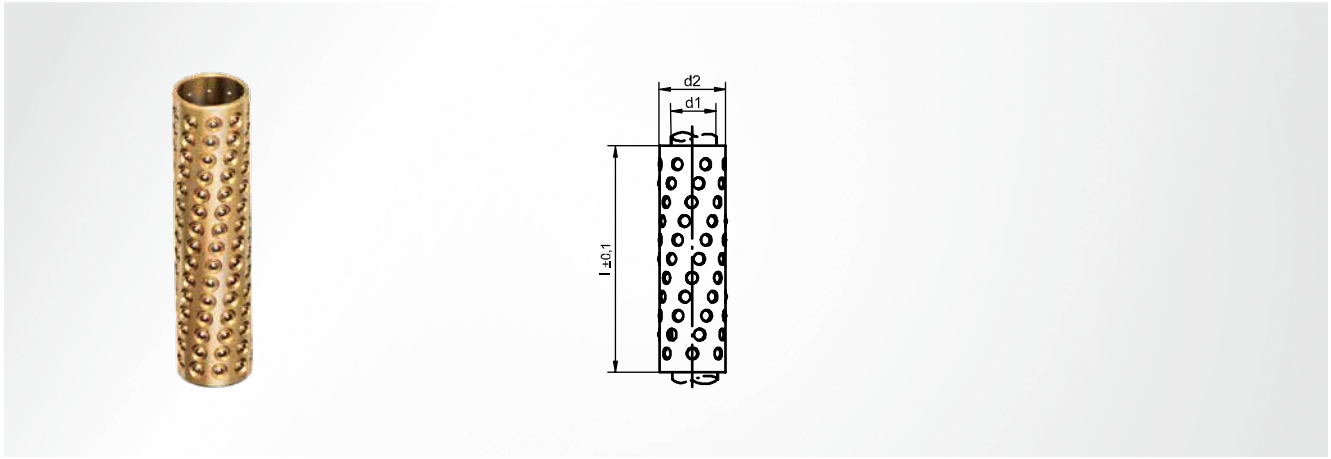
Note
Material for Ø 3-6 mm steel 1.2379

Installation in mounting bore
ISO P6

d_1^{h3}	l	l_1	l_2	Item number
3	30	1.5	0.2	ST7190 **03 x 030**
	40	1.5	0.2	ST7190 **03 x 040**
	60	1.5	0.2	ST7190 **03 x 060**
	80	1.5	0.2	ST7190 **03 x 080**
4	50	1.5	0.2	ST7190 **04 x 050**
	60	1.5	0.2	ST7190 **04 x 060**
	80	1.5	0.2	ST7190 **04 x 080**
	100	1.5	0.2	ST7190 **04 x 100**
5	50	1.5	0.2	ST7190 **05 x 050**
	60	1.5	0.2	ST7190 **05 x 060**
	80	1.5	0.2	ST7190 **05 x 080**
	100	1.5	0.2	ST7190 **05 x 100**
6	60	2.0	0.4	ST7190 **06 x 060**
	80	2.0	0.4	ST7190 **06 x 080**
	100	2.0	0.4	ST7190 **06 x 100**
	125	2.0	0.4	ST7190 **06 x 125**
8	80	2.0	0.4	ST7190 **08 x 080**
	100	2.0	0.4	ST7190 **08 x 100**
	125	2.0	0.4	ST7190 **08 x 125**
	160	2.0	0.4	ST7190 **08 x 160**
10	80	3.0	0.6	ST7190 **10 x 080**
	100	3.0	0.6	ST7190 **10 x 100**
	125	3.0	0.6	ST7190 **10 x 125**
	160	3.0	0.6	ST7190 **10 x 160**

ST7192 Ball cage

Brass, Mini-series



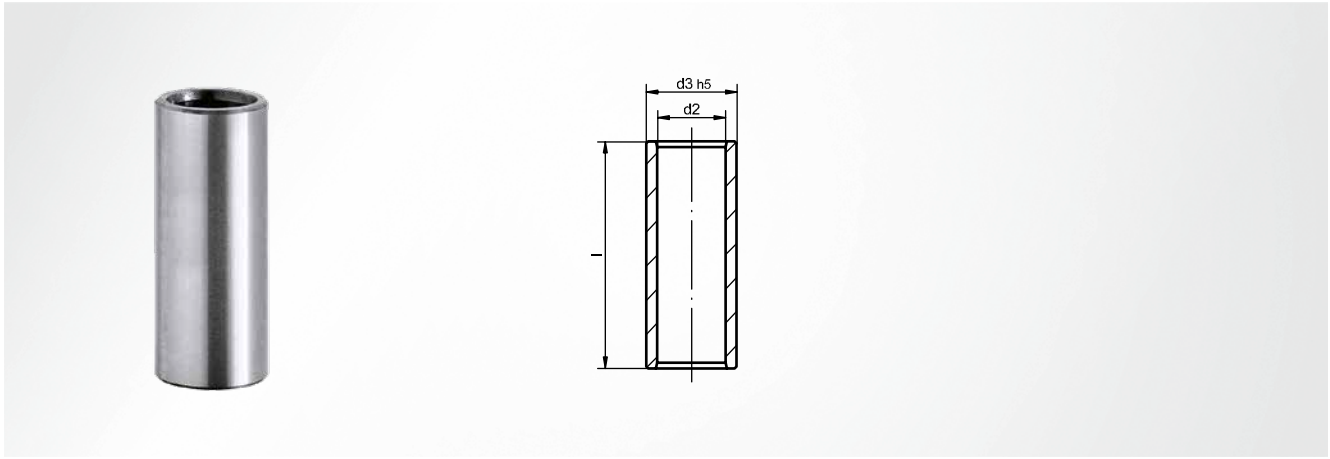
Material
Brass 2.0401

Ball property
Steel; hardened; quality class 1; sorted

d_1	d_2	l ±0.1	Item number
3	5	10	ST7192 **03 x 10**
		20	ST7192 **03 x 20**
		30	ST7192 **03 x 30**
4	6	10	ST7192 **04 x 10**
		20	ST7192 **04 x 20**
		30	ST7192 **04 x 30**
5	7	10	ST7192 **05 x 10**
		20	ST7192 **05 x 20**
		30	ST7192 **05 x 30**
6	9	20	ST7192 **06 x 20**
		30	ST7192 **06 x 30**
		40	ST7192 **06 x 40**
8	11	20	ST7192 **08 x 20**
		30	ST7192 **08 x 30**
		40	ST7192 **08 x 40**
10	13	20	ST7192 **10 x 20**
		30	ST7192 **10 x 30**
		40	ST7192 **10 x 40**

ST7191 Guide bush

smooth, Mini-series



Material
Steel 1.3505 (100 Cr6); hardened

Hardness
62 ±1 HRC

Installation instruction
Secure with adhesive; do not press in

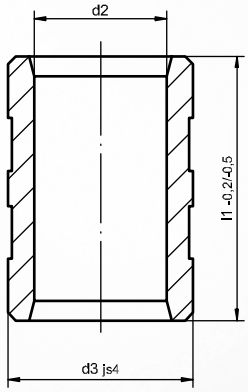
Installation in mounting bore
ISO H6

Optional accessories
SZ9742

d_1^{h3}	d_2	d_3^{h5}	l	Item number
3	5	7	10	ST7191 **03 x 10**
			20	ST7191 **03 x 20**
			30	ST7191 **03 x 30**
4	6	8	10	ST7191 **04 x 10**
			20	ST7191 **04 x 20**
			30	ST7191 **04 x 30**
5	7	10	10	ST7191 **05 x 10**
			20	ST7191 **05 x 20**
			30	ST7191 **05 x 30**
6	9	12	20	ST7191 **06 x 20**
			30	ST7191 **06 x 30**
			40	ST7191 **06 x 40**
8	11	15	20	ST7191 **08 x 20**
			30	ST7191 **08 x 30**
			40	ST7191 **08 x 40**
10	13	19	20	ST7191 **10 x 20**
			30	ST7191 **10 x 30**
			40	ST7191 **10 x 40**

ST7197 Guide bush

smooth with adhesive grooves, Mini-series



Referring to DIN 9831 / ISO 9448

Material
Steel 1.3505 (100 Cr6); hardened

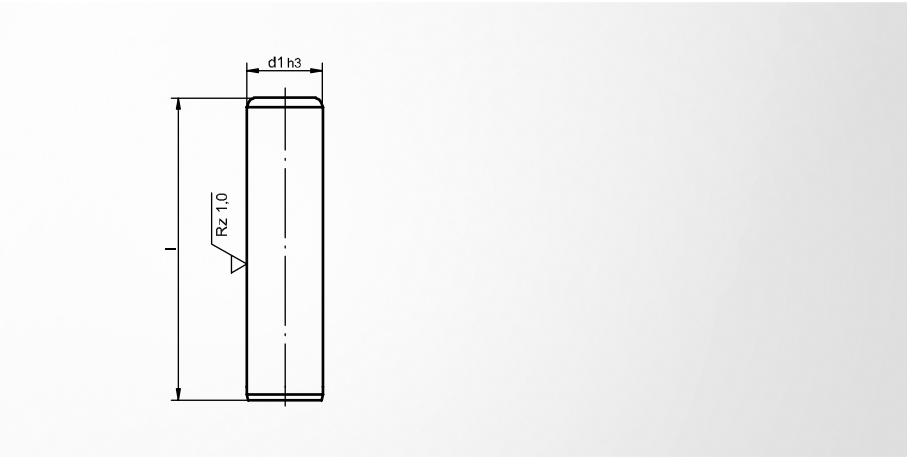
Hardness
62 ±1 HRC

Installation instruction
Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

d_1^{h3}	d_2	d_3^{js4}	$l_1^{-0.2 - -0.5}$	Item number
6	9	12	15	ST7197 **06 x 015**
			20	ST7197 **06 x 020**
			25	ST7197 **06 x 025**
			30	ST7197 **06 x 030**
			40	ST7197 **06 x 040**
8	11	15	20	ST7197 **08 x 020**
			25	ST7197 **08 x 025**
			30	ST7197 **08 x 030**
			35	ST7197 **08 x 035**
			40	ST7197 **08 x 040**
10	13	19	20	ST7197 **10 x 020**
			25	ST7197 **10 x 025**
			30	ST7197 **10 x 030**
			40	ST7197 **10 x 040**
			45	ST7197 **10 x 045**

ST7100 Guide pillar

smooth



Referring to DIN 9825 / ISO 9182

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
press in; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO R6

d_1^{h3}	l	Item number
10	90	ST7100 **10 x 090**
	100	ST7100 **10 x 100**
	112	ST7100 **10 x 112**
	125	ST7100 **10 x 125**
	140	ST7100 **10 x 140**
12	90	ST7100 **12 x 090**
	100	ST7100 **12 x 100**
	112	ST7100 **12 x 112**
	125	ST7100 **12 x 125**
	140	ST7100 **12 x 140**
15	90	ST7100 **15 x 090**
	100	ST7100 **15 x 100**
	112	ST7100 **15 x 112**
	125	ST7100 **15 x 125**
	140	ST7100 **15 x 140**
	160	ST7100 **15 x 160**
	180	ST7100 **15 x 180**
	200	ST7100 **15 x 200**
	224	ST7100 **15 x 224**
	250	ST7100 **15 x 250**
16	90	ST7100 **16 x 090**
	100	ST7100 **16 x 100**
	112	ST7100 **16 x 112**
	125	ST7100 **16 x 125**
	140	ST7100 **16 x 140**
	160	ST7100 **16 x 160**
	180	ST7100 **16 x 180**
	200	ST7100 **16 x 200**
	224	ST7100 **16 x 224**
	250	ST7100 **16 x 250**
19	80	ST7100 **19 x 080**
	100	ST7100 **19 x 100**
	112	ST7100 **19 x 112**
	125	ST7100 **19 x 125**

d_1^{h3}	l	Item number
19	140	ST7100 **19 x 140**
	160	ST7100 **19 x 160**
	180	ST7100 **19 x 180**
	200	ST7100 **19 x 200**
	224	ST7100 **19 x 224**
	250	ST7100 **19 x 250**
	280	ST7100 **19 x 280**
20	100	ST7100 **20 x 100**
	112	ST7100 **20 x 112**
	125	ST7100 **20 x 125**
	140	ST7100 **20 x 140**
	160	ST7100 **20 x 160**
	180	ST7100 **20 x 180**
	200	ST7100 **20 x 200**
	224	ST7100 **20 x 224**
	250	ST7100 **20 x 250**
	280	ST7100 **20 x 280**
24	100	ST7100 **24 x 100**
	112	ST7100 **24 x 112**
	125	ST7100 **24 x 125**
	140	ST7100 **24 x 140**
	160	ST7100 **24 x 160**
	180	ST7100 **24 x 180**
	200	ST7100 **24 x 200**
	224	ST7100 **24 x 224**
	250	ST7100 **24 x 250**
	280	ST7100 **24 x 280**
	315	ST7100 **24 x 315**
	355	ST7100 **24 x 355**
	400	ST7100 **24 x 400**
25	112	ST7100 **25 x 112**
	125	ST7100 **25 x 125**
	140	ST7100 **25 x 140**
	160	ST7100 **25 x 160**

ST7100 Guide pillar

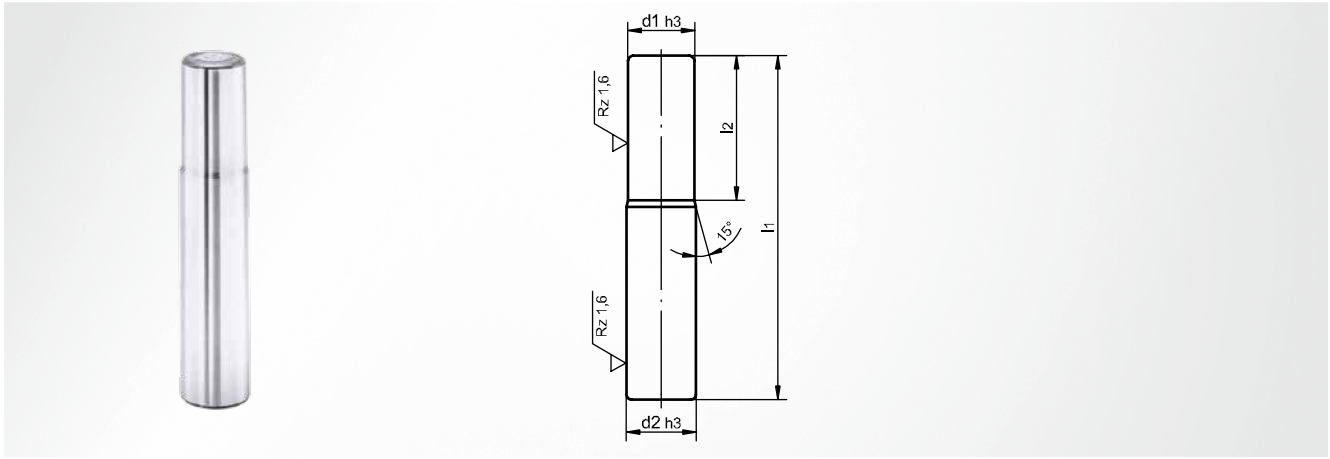
smooth

d_1 h3	l	Item number
25	180	ST7100 **25 x 180**
	200	ST7100 **25 x 200**
	224	ST7100 **25 x 224**
	250	ST7100 **25 x 250**
	280	ST7100 **25 x 280**
	315	ST7100 **25 x 315**
	355	ST7100 **25 x 355**
	400	ST7100 **25 x 400**
30	125	ST7100 **30 x 125**
	140	ST7100 **30 x 140**
	160	ST7100 **30 x 160**
	180	ST7100 **30 x 180**
	200	ST7100 **30 x 200**
	224	ST7100 **30 x 224**
	250	ST7100 **30 x 250**
	280	ST7100 **30 x 280**
	315	ST7100 **30 x 315**
	355	ST7100 **30 x 355**
	400	ST7100 **30 x 400**
32	125	ST7100 **32 x 125**
	140	ST7100 **32 x 140**
	160	ST7100 **32 x 160**
	180	ST7100 **32 x 180**
	200	ST7100 **32 x 200**
	224	ST7100 **32 x 224**
	250	ST7100 **32 x 250**
	280	ST7100 **32 x 280**
	315	ST7100 **32 x 315**
	355	ST7100 **32 x 355**
	400	ST7100 **32 x 400**
38	160	ST7100 **38 x 160**
	180	ST7100 **38 x 180**
	200	ST7100 **38 x 200**
	224	ST7100 **38 x 224**
	250	ST7100 **38 x 250**
	280	ST7100 **38 x 280**
	315	ST7100 **38 x 315**
	355	ST7100 **38 x 355**
	400	ST7100 **38 x 400**
	450	ST7100 **38 x 450**
40	160	ST7100 **40 x 160**
	180	ST7100 **40 x 180**
	200	ST7100 **40 x 200**
	224	ST7100 **40 x 224**
	250	ST7100 **40 x 250**
	280	ST7100 **40 x 280**

d_1 h3	l	Item number
40	315	ST7100 **40 x 315**
	355	ST7100 **40 x 355**
	400	ST7100 **40 x 400**
	450	ST7100 **40 x 450**
48	180	ST7100 **48 x 180**
	200	ST7100 **48 x 200**
	224	ST7100 **48 x 224**
	250	ST7100 **48 x 250**
	280	ST7100 **48 x 280**
	315	ST7100 **48 x 315**
	355	ST7100 **48 x 355**
	400	ST7100 **48 x 400**
	450	ST7100 **48 x 450**
	500	ST7100 **48 x 500**
50	180	ST7100 **50 x 180**
	200	ST7100 **50 x 200**
	224	ST7100 **50 x 224**
	250	ST7100 **50 x 250**
	280	ST7100 **50 x 280**
	315	ST7100 **50 x 315**
	355	ST7100 **50 x 355**
	400	ST7100 **50 x 400**
	450	ST7100 **50 x 450**
	500	ST7100 **50 x 500**
60	224	ST7100 **60 x 224**
	250	ST7100 **60 x 250**
	280	ST7100 **60 x 280**
	315	ST7100 **60 x 315**
	355	ST7100 **60 x 355**
	400	ST7100 **60 x 400**
	450	ST7100 **60 x 450**
	500	ST7100 **60 x 500**
63	224	ST7100 **63 x 224**
	250	ST7100 **63 x 250**
	280	ST7100 **63 x 280**
	315	ST7100 **63 x 315**
	355	ST7100 **63 x 355**
	400	ST7100 **63 x 400**
	450	ST7100 **63 x 450**
	500	ST7100 **63 x 500**
80	280	ST7100 **80 x 280**
	315	ST7100 **80 x 315**
	355	ST7100 **80 x 355**
	400	ST7100 **80 x 400**
	450	ST7100 **80 x 450**
	500	ST7100 **80 x 500**

ST7102 Guide pillar

reduced



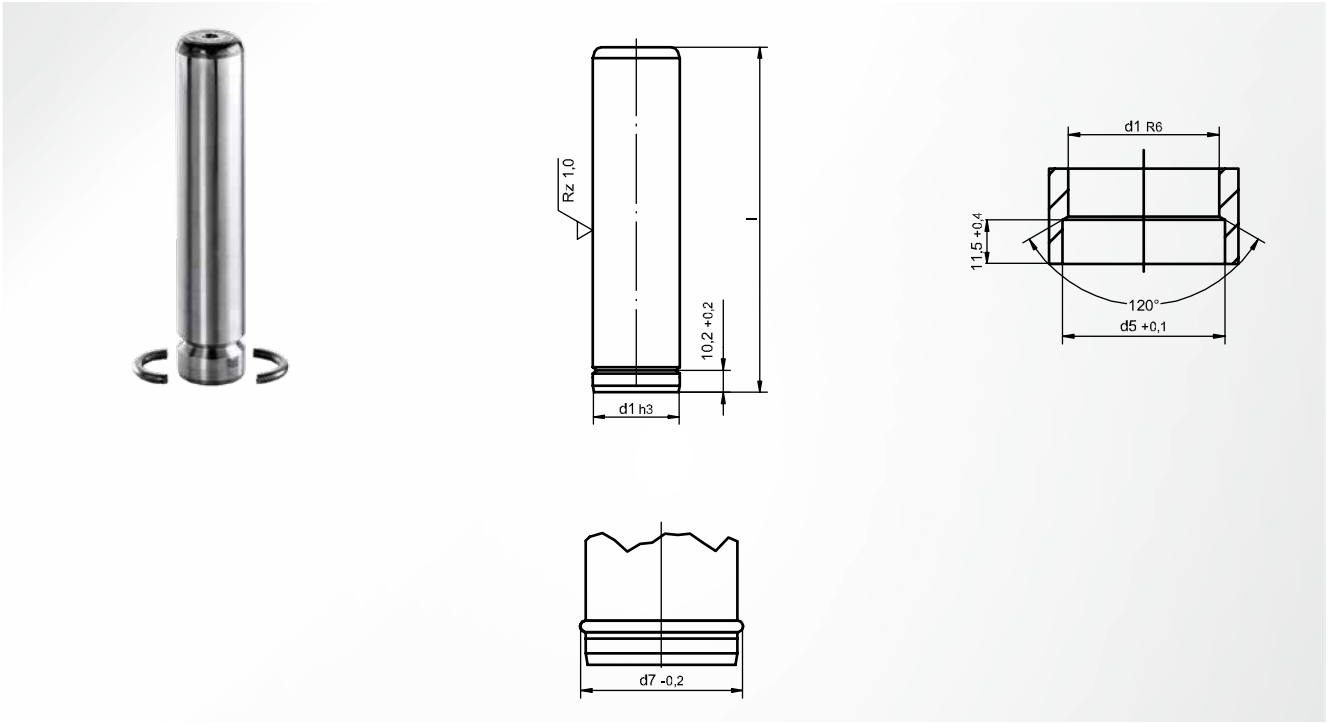
Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

d_1^{h3}	d_2^{h3}	l_1	l_2	Item Number
15	16	92.5	33.5	ST7102 **15-16 x 92.5**
15	16	102.5	43.5	ST7102 **15-16 x 102.5**
15	16	107.0	33.5	ST7102 **15-16 x 107**
19	20	92.5	33.5	ST7102 **19-20 x 92.5**
19	20	107.0	33.5	ST7102 **19-20 x 107**
19	20	120.0	41.0	ST7102 **19-20 x 120**
19	20	150.0	71.5	ST7102 **19-20 x 150**
24	25	120.0	41.0	ST7102 **24-25 x 120**
24	25	150.0	71.5	ST7102 **24-25 x 150**
38	40	197.0	83.0	ST7102 **38-40 x 197**

ST7105 Guide pillar

smooth, with recess and holding ring



Referring to DIN 9825 / ISO 9182

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
press in; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO R6

Scope of supply
Holding ring

d_1^{h3}	d_5	$d_7^{-0.2}$	l	Item number
10	13	13	90	ST7105 **10 x 090**
			100	ST7105 **10 x 100**
			112	ST7105 **10 x 112**
			125	ST7105 **10 x 125**
			140	ST7105 **10 x 140**
12	15	15	90	ST7105 **12 x 090**
			100	ST7105 **12 x 100**
			112	ST7105 **12 x 112**
			125	ST7105 **12 x 125**
			140	ST7105 **12 x 140**
15	18	18	90	ST7105 **15 x 090**
			100	ST7105 **15 x 100**
			112	ST7105 **15 x 112**
			125	ST7105 **15 x 125**
			140	ST7105 **15 x 140**
			160	ST7105 **15 x 160**
			180	ST7105 **15 x 180**
			200	ST7105 **15 x 200**
			224	ST7105 **15 x 224**
			250	ST7105 **15 x 250**
16	19	19	90	ST7105 **16 x 090**
			100	ST7105 **16 x 100**
			112	ST7105 **16 x 112**
			125	ST7105 **16 x 125**
			140	ST7105 **16 x 140**

d_1^{h3}	d_5	$d_7^{-0.2}$	l	Item number
16	19	19	160	ST7105 **16 x 160**
			180	ST7105 **16 x 180**
			200	ST7105 **16 x 200**
			224	ST7105 **16 x 224**
			250	ST7105 **16 x 250**
19	22	22	100	ST7105 **19 x 100**
			112	ST7105 **19 x 112**
			125	ST7105 **19 x 125**
			140	ST7105 **19 x 140**
			160	ST7105 **19 x 160**
			180	ST7105 **19 x 180**
			200	ST7105 **19 x 200**
			224	ST7105 **19 x 224**
			250	ST7105 **19 x 250**
			280	ST7105 **19 x 280**
20	23	23	100	ST7105 **20 x 100**
			112	ST7105 **20 x 112**
			125	ST7105 **20 x 125**
			140	ST7105 **20 x 140**
			160	ST7105 **20 x 160**
			180	ST7105 **20 x 180**
			200	ST7105 **20 x 200**
			224	ST7105 **20 x 224**
			250	ST7105 **20 x 250**
			280	ST7105 **20 x 280**

ST7105 Guide pillar

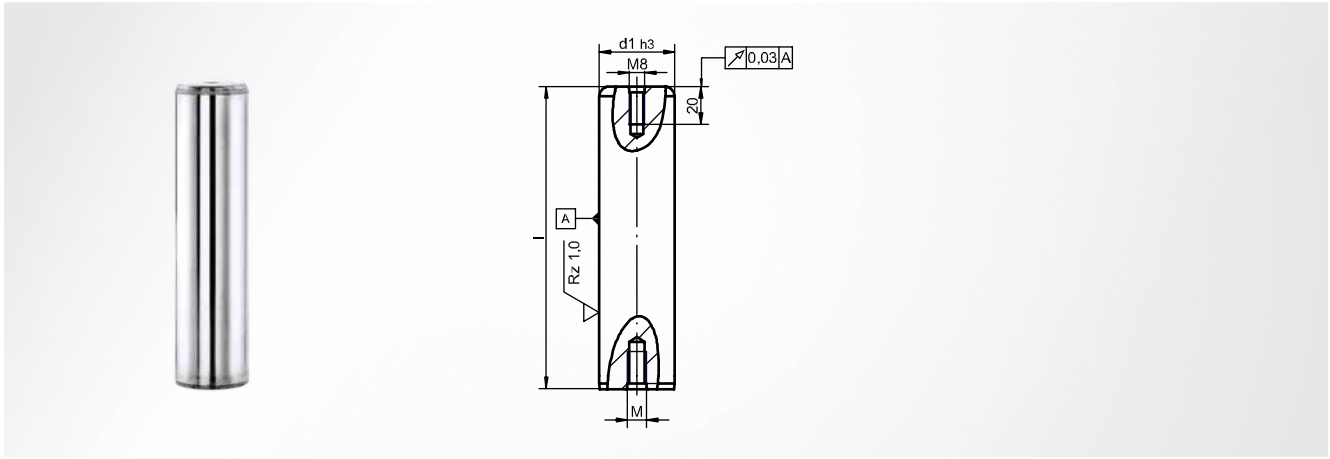
smooth, with recess and holding ring

d_1^{h3}	d_5	$d_7^{-0.2}$	l	Item number
24	27	27	112	ST7105 **24 x 112**
			125	ST7105 **24 x 125**
			140	ST7105 **24 x 140**
			160	ST7105 **24 x 160**
			180	ST7105 **24 x 180**
			200	ST7105 **24 x 200**
			224	ST7105 **24 x 224**
			250	ST7105 **24 x 250**
			280	ST7105 **24 x 280**
			315	ST7105 **24 x 315**
			355	ST7105 **24 x 355**
			400	ST7105 **24 x 400**
25	28	28	112	ST7105 **25 x 112**
			125	ST7105 **25 x 125**
			140	ST7105 **25 x 140**
			160	ST7105 **25 x 160**
			180	ST7105 **25 x 180**
			200	ST7105 **25 x 200**
			224	ST7105 **25 x 224**
			250	ST7105 **25 x 250**
			280	ST7105 **25 x 280**
			315	ST7105 **25 x 315**
			355	ST7105 **25 x 355**
			400	ST7105 **25 x 400**
30	33	33	125	ST7105 **30 x 125**
			140	ST7105 **30 x 140**
			160	ST7105 **30 x 160**
			180	ST7105 **30 x 180**
			200	ST7105 **30 x 200**
			224	ST7105 **30 x 224**
			250	ST7105 **30 x 250**
			280	ST7105 **30 x 280**
			315	ST7105 **30 x 315**
			355	ST7105 **30 x 355**
			400	ST7105 **30 x 400**
32	35	35	125	ST7105 **32 x 125**
			140	ST7105 **32 x 140**
			160	ST7105 **32 x 160**
			180	ST7105 **32 x 180**
			200	ST7105 **32 x 200**
			224	ST7105 **32 x 224**
			250	ST7105 **32 x 250**
			280	ST7105 **32 x 280**
			315	ST7105 **32 x 315**
			355	ST7105 **32 x 355**
			400	ST7105 **32 x 400**
38	41	41	160	ST7105 **38 x 160**
			180	ST7105 **38 x 180**
			200	ST7105 **38 x 200**
			224	ST7105 **38 x 224**
			250	ST7105 **38 x 250**
			280	ST7105 **38 x 280**
			315	ST7105 **38 x 315**
			355	ST7105 **38 x 355**

d_1^{h3}	d_5	$d_7^{-0.2}$	l	Item number
38	41	41	400	ST7105 **38 x 400**
			450	ST7105 **38 x 450**
40	43	43	160	ST7105 **40 x 160**
			180	ST7105 **40 x 180**
			200	ST7105 **40 x 200**
			224	ST7105 **40 x 224**
			250	ST7105 **40 x 250**
			280	ST7105 **40 x 280**
			315	ST7105 **40 x 315**
			355	ST7105 **40 x 355**
			400	ST7105 **40 x 400**
			450	ST7105 **40 x 450**
48	51	51	180	ST7105 **48 x 180**
			200	ST7105 **48 x 200**
			224	ST7105 **48 x 224**
			250	ST7105 **48 x 250**
			280	ST7105 **48 x 280**
			315	ST7105 **48 x 315**
			355	ST7105 **48 x 355**
			400	ST7105 **48 x 400**
			450	ST7105 **48 x 450**
			500	ST7105 **48 x 500**
50	53	53	180	ST7105 **50 x 180**
			200	ST7105 **50 x 200**
			224	ST7105 **50 x 224**
			250	ST7105 **50 x 250**
			280	ST7105 **50 x 280**
			315	ST7105 **50 x 315**
			355	ST7105 **50 x 355**
			400	ST7105 **50 x 400**
			450	ST7105 **50 x 450**
			500	ST7105 **50 x 500**
60	63	63	224	ST7105 **60 x 224**
			250	ST7105 **60 x 250**
			280	ST7105 **60 x 280**
			315	ST7105 **60 x 315**
			355	ST7105 **60 x 355**
			400	ST7105 **60 x 400**
			450	ST7105 **60 x 450**
			500	ST7105 **60 x 500**
63	66	66	224	ST7105 **63 x 224**
			250	ST7105 **63 x 250**
			280	ST7105 **63 x 280**
			315	ST7105 **63 x 315**
			355	ST7105 **63 x 355**
			400	ST7105 **63 x 400**
			450	ST7105 **63 x 450**
			500	ST7105 **63 x 500**
80	83	83	280	ST7105 **80 x 280**
			315	ST7105 **80 x 315**
			355	ST7105 **80 x 355**
			400	ST7105 **80 x 400**
			450	ST7105 **80 x 450**
			500	ST7105 **80 x 500**

ST7106 Guide pillar

smooth, with internal thread, both-sided



Referring to DIN 9825 / ISO 9182

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
press in; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO R6

d_1^{h3}	Thread pressing site M	l	Item number
19	M8	100	ST7106 **19 x 100**
		112	ST7106 **19 x 112**
		125	ST7106 **19 x 125**
		140	ST7106 **19 x 140**
		160	ST7106 **19 x 160**
		180	ST7106 **19 x 180**
		200	ST7106 **19 x 200**
		224	ST7106 **19 x 224**
		250	ST7106 **19 x 250**
		280	ST7106 **19 x 280**
20	M8	100	ST7106 **20 x 100**
		112	ST7106 **20 x 112**
		125	ST7106 **20 x 125**
		140	ST7106 **20 x 140**
		160	ST7106 **20 x 160**
		180	ST7106 **20 x 180**
		200	ST7106 **20 x 200**
		224	ST7106 **20 x 224**
		250	ST7106 **20 x 250**
		280	ST7106 **20 x 280**
24	M8	112	ST7106 **24 x 112**
		125	ST7106 **24 x 125**
		140	ST7106 **24 x 140**
		160	ST7106 **24 x 160**
		180	ST7106 **24 x 180**
		200	ST7106 **24 x 200**
		224	ST7106 **24 x 224**
		250	ST7106 **24 x 250**
		280	ST7106 **24 x 280**
		315	ST7106 **24 x 315**
		355	ST7106 **24 x 355**
		400	ST7106 **24 x 400**
25	M8	112	ST7106 **25 x 112**

d_1^{h3}	Thread pressing site M	l	Item number
25	M8	125	ST7106 **25 x 125**
		140	ST7106 **25 x 140**
		160	ST7106 **25 x 160**
		180	ST7106 **25 x 180**
		200	ST7106 **25 x 200**
		224	ST7106 **25 x 224**
		250	ST7106 **25 x 250**
		280	ST7106 **25 x 280**
		315	ST7106 **25 x 315**
		355	ST7106 **25 x 355**
		400	ST7106 **25 x 400**
30	M8	125	ST7106 **30 x 125**
		140	ST7106 **30 x 140**
		160	ST7106 **30 x 160**
		180	ST7106 **30 x 180**
		200	ST7106 **30 x 200**
		224	ST7106 **30 x 224**
		250	ST7106 **30 x 250**
		280	ST7106 **30 x 280**
		315	ST7106 **30 x 315**
		355	ST7106 **30 x 355**
		400	ST7106 **30 x 400**
32	M8	125	ST7106 **32 x 125**
		140	ST7106 **32 x 140**
		160	ST7106 **32 x 160**
		180	ST7106 **32 x 180**
		200	ST7106 **32 x 200**
		224	ST7106 **32 x 224**
		250	ST7106 **32 x 250**
		280	ST7106 **32 x 280**
		315	ST7106 **32 x 315**
		355	ST7106 **32 x 355**
		400	ST7106 **32 x 400**

ST7106 Guide pillar

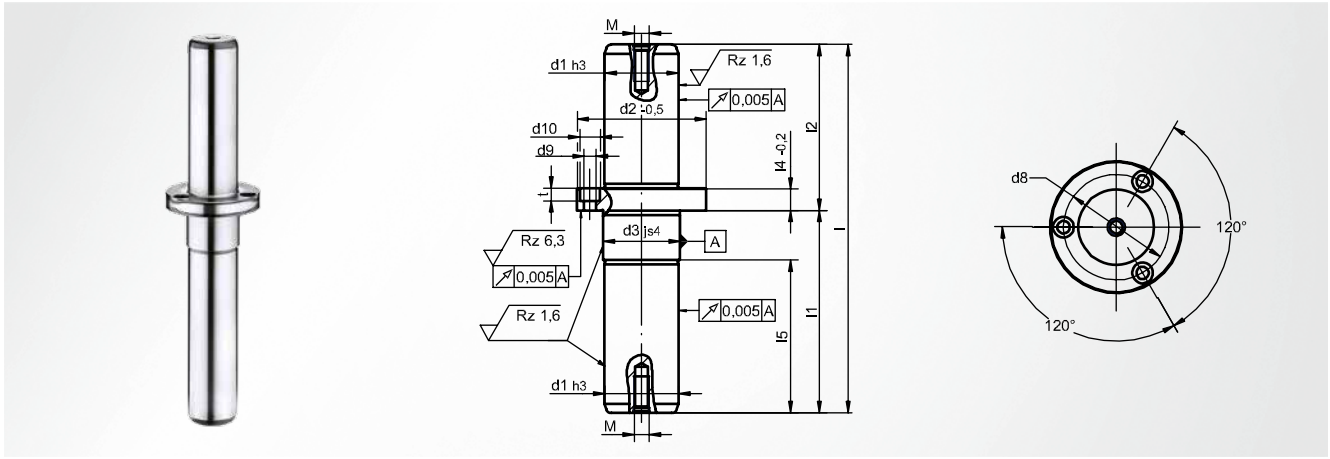
smooth, with internal thread, both-sided

d_1^{h3}	Thread pressing site M	l	Item number
38	M10	160	ST7106 **38 x 160**
		180	ST7106 **38 x 180**
		200	ST7106 **38 x 200**
		224	ST7106 **38 x 224**
		250	ST7106 **38 x 250**
		280	ST7106 **38 x 280**
		315	ST7106 **38 x 315**
		355	ST7106 **38 x 355**
		400	ST7106 **38 x 400**
		450	ST7106 **38 x 450**
40	M10	160	ST7106 **40 x 160**
		180	ST7106 **40 x 180**
		200	ST7106 **40 x 200**
		224	ST7106 **40 x 224**
		250	ST7106 **40 x 250**
		280	ST7106 **40 x 280**
		315	ST7106 **40 x 315**
		355	ST7106 **40 x 355**
		400	ST7106 **40 x 400**
		450	ST7106 **40 x 450**
48	M10	180	ST7106 **48 x 180**
		200	ST7106 **48 x 200**
		224	ST7106 **48 x 224**
		250	ST7106 **48 x 250**
		280	ST7106 **48 x 280**
		315	ST7106 **48 x 315**
		355	ST7106 **48 x 355**
		400	ST7106 **48 x 400**
		450	ST7106 **48 x 450**
		500	ST7106 **48 x 500**
50	M10	180	ST7106 **50 x 180**

d_1^{h3}	Thread pressing site M	l	Item number
50	M10	200	ST7106 **50 x 200**
		224	ST7106 **50 x 224**
		250	ST7106 **50 x 250**
		280	ST7106 **50 x 280**
		315	ST7106 **50 x 315**
		355	ST7106 **50 x 355**
		400	ST7106 **50 x 400**
		450	ST7106 **50 x 450**
		500	ST7106 **50 x 500**
60	M12	224	ST7106 **60 x 224**
		250	ST7106 **60 x 250**
		280	ST7106 **60 x 280**
		315	ST7106 **60 x 315**
		355	ST7106 **60 x 355**
		400	ST7106 **60 x 400**
		450	ST7106 **60 x 450**
		500	ST7106 **60 x 500**
63	M12	224	ST7106 **63 x 224**
		250	ST7106 **63 x 250**
		280	ST7106 **63 x 280**
		315	ST7106 **63 x 315**
		355	ST7106 **63 x 355**
		400	ST7106 **63 x 400**
		450	ST7106 **63 x 450**
		500	ST7106 **63 x 500**
80	M12	280	ST7106 **80 x 280**
		315	ST7106 **80 x 315**
		355	ST7106 **80 x 355**
		400	ST7106 **80 x 400**
		450	ST7106 **80 x 450**
		500	ST7106 **80 x 500**

ST7114 Guide pillar

with middle mount shoulder, with internal thread, both-sided



Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
Fixing with 3 socket-head screws (not included in the scope of delivery); one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

d_1^{h3}	$d_2^{-0.5}$	d_3^{js4}	d_8	d_9	d_{10}	$l_4^{-0.2}$	M	t	l	l_1	l_2	l_5	Item number
12	28	13	20	3.4	6	6	M6	3.4	90	50	40	38	ST7114 **12 x 050 x 040**
									100	60	40	48	ST7114 **12 x 060 x 040**
									110	60	50	48	ST7114 **12 x 060 x 050**
									120	70	50	58	ST7114 **12 x 070 x 050**
									130	70	60	58	ST7114 **12 x 070 x 060**
									140	70	70	58	ST7114 **12 x 070 x 070**
									200	100	100	88	ST7114 **12 x 100 x 100**
16	38	18	28	4.5	8	8	M6	4.6	140	80	60	64	ST7114 **16 x 080 x 060**
									150	90	60	74	ST7114 **16 x 090 x 060**
									160	90	70	74	ST7114 **16 x 090 x 070**
									170	100	70	84	ST7114 **16 x 100 x 070**
									180	100	80	84	ST7114 **16 x 100 x 080**
									190	100	90	84	ST7114 **16 x 100 x 090**
									270	140	130	124	ST7114 **16 x 140 x 130**
19	42	22	32	4.5	8	8	M8	4.6	160	90	70	70	ST7114 **19 x 090 x 070**
									170	100	70	80	ST7114 **19 x 100 x 070**
									180	100	80	80	ST7114 **19 x 100 x 080**
									190	110	80	90	ST7114 **19 x 110 x 080**
									200	110	90	90	ST7114 **19 x 110 x 090**
									210	110	100	90	ST7114 **19 x 110 x 100**
									310	160	150	140	ST7114 **19 x 160 x 150**
25	48	26	38	4.5	8	8	M8	4.6	180	100	80	78	ST7114 **25 x 100 x 080**
									190	110	80	88	ST7114 **25 x 110 x 080**
									200	110	90	88	ST7114 **25 x 110 x 090**
									210	120	90	98	ST7114 **25 x 120 x 090**
									220	120	100	98	ST7114 **25 x 120 x 100**
									230	120	110	98	ST7114 **25 x 120 x 110**
									330	170	160	148	ST7114 **25 x 170 x 160**
32	60	34	48	5.5	10	10	M8	5.7	180	100	80	75	ST7114 **32 x 100 x 080**
									190	110	80	85	ST7114 **32 x 110 x 080**
									200	110	90	85	ST7114 **32 x 110 x 090**
									210	120	90	95	ST7114 **32 x 120 x 090**
									220	120	100	95	ST7114 **32 x 120 x 100**
									230	130	100	105	ST7114 **32 x 130 x 100**

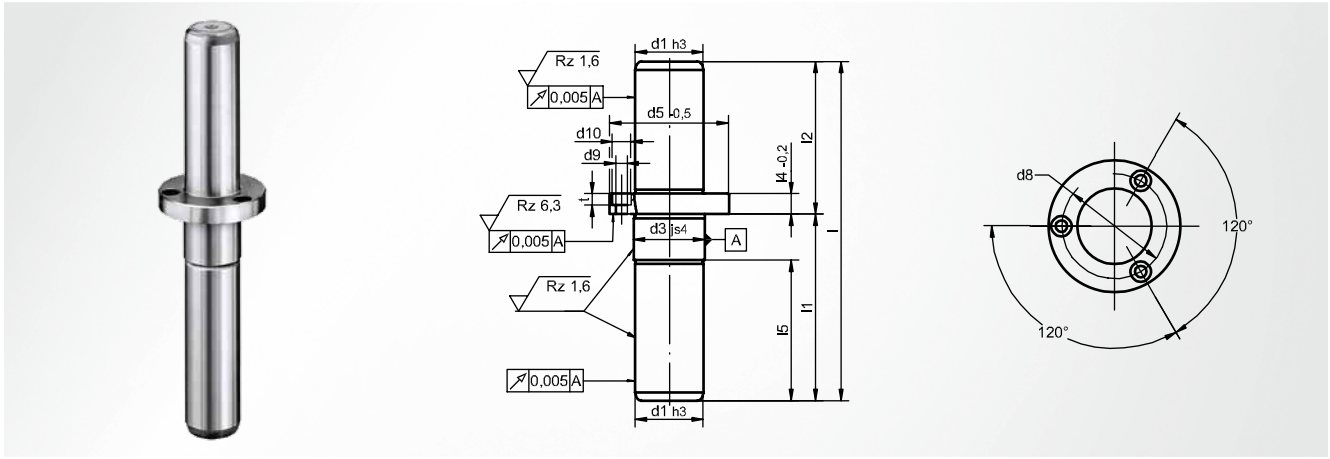
ST7114 Guide pillar

with middle mount shoulder, with internal thread, both-sided

d_1^{h3}	$d_2^{-0.5}$	d_3^{js4}	d_8	d_9	d_{10}	$l_4^{-0.2}$	M	t	l	l_1	l_2	l_5	Item number
32	60	34	48	5.5	10	10	M8	5.7	240	130	110	105	ST7114 **32 x 130 x 110**
									260	130	130	115	ST7114 **32 x 130 x 130**
									250	140	110	115	ST7114 **32 x 140 x 110**
									350	190	160	165	ST7114 **32 x 190 x 160**
40	70	42	56	6.6	11	12	M8	6.8	200	110	90	83	ST7114 **40 x 110 x 090**
									210	120	90	93	ST7114 **40 x 120 x 090**
									220	120	100	93	ST7114 **40 x 120 x 100**
									230	130	100	103	ST7114 **40 x 130 x 100**
									240	130	110	103	ST7114 **40 x 130 x 110**
									250	140	110	113	ST7114 **40 x 140 x 110**
									260	140	120	113	ST7114 **40 x 140 x 120**
									380	200	180	173	ST7114 **40 x 200 x 180**
50	80	52	66	6.6	11	15	M8	6.8	260	150	110	113	ST7114 **50 x 150 x 110**
									280	160	120	123	ST7114 **50 x 160 x 120**
									300	170	130	133	ST7114 **50 x 170 x 130**
									320	180	140	143	ST7114 **50 x 180 x 140**
									360	200	160	163	ST7114 **50 x 200 x 160**
									400	220	180	183	ST7114 **50 x 220 x 180**
									520	280	240	243	ST7114 **50 x 280 x 240**

ST7117 Guide pillar

with middle mount shoulder



Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
Fixing with 3 socket-head screws (not included in the scope of delivery); one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

d_1^{h3}	d_3^{js4}	$d_5^{-0.5}$	d_8	d_9	d_{10}	$l_4^{-0.2}$	t	l	l_1	l_2	l_5	Item number
12	13	28	20	3.4	6	6	3.4	90	50	40	38	ST7117 **12 x 050 x 040**
								100	60	40	48	ST7117 **12 x 060 x 040**
								110	60	50	48	ST7117 **12 x 060 x 050**
								120	70	50	58	ST7117 **12 x 070 x 050**
								130	70	60	58	ST7117 **12 x 070 x 060**
								140	70	70	58	ST7117 **12 x 070 x 070**
								200	100	100	88	ST7117 **12 x 100 x 100**
16	18	38	28	4.5	8	8	4.6	140	80	60	64	ST7117 **16 x 080 x 060**
								150	90	60	74	ST7117 **16 x 090 x 060**
								160	90	70	74	ST7117 **16 x 090 x 070**
								170	100	70	84	ST7117 **16 x 100 x 070**
								180	100	80	84	ST7117 **16 x 100 x 080**
								190	100	90	84	ST7117 **16 x 100 x 090**
								270	140	130	124	ST7117 **16 x 140 x 130**
19	22	42	32	4.5	8	8	4.6	160	90	70	70	ST7117 **19 x 090 x 070**
								170	100	70	80	ST7117 **19 x 100 x 070**
								180	100	80	80	ST7117 **19 x 100 x 080**
								190	110	80	90	ST7117 **19 x 110 x 080**
								200	110	90	90	ST7117 **19 x 110 x 090**
								210	110	100	90	ST7117 **19 x 110 x 100**
								250	110	140	90	ST7117 **19 x 110 x 140**
								310	160	150	140	ST7117 **19 x 160 x 150**
25	26	48	38	4.5	8	8	4.6	180	100	80	78	ST7117 **25 x 100 x 080**
								190	110	80	88	ST7117 **25 x 110 x 080**
								200	110	90	88	ST7117 **25 x 110 x 090**
								210	120	90	98	ST7117 **25 x 120 x 090**
								220	120	100	98	ST7117 **25 x 120 x 100**
								230	120	110	98	ST7117 **25 x 120 x 110**
								330	170	160	148	ST7117 **25 x 170 x 160**
32	34	60	48	5.5	10	10	5.7	180	100	80	75	ST7117 **32 x 100 x 080**
								190	110	80	85	ST7117 **32 x 110 x 080**
								200	110	90	85	ST7117 **32 x 110 x 090**
								210	120	90	95	ST7117 **32 x 120 x 090**
								220	120	100	95	ST7117 **32 x 120 x 100**

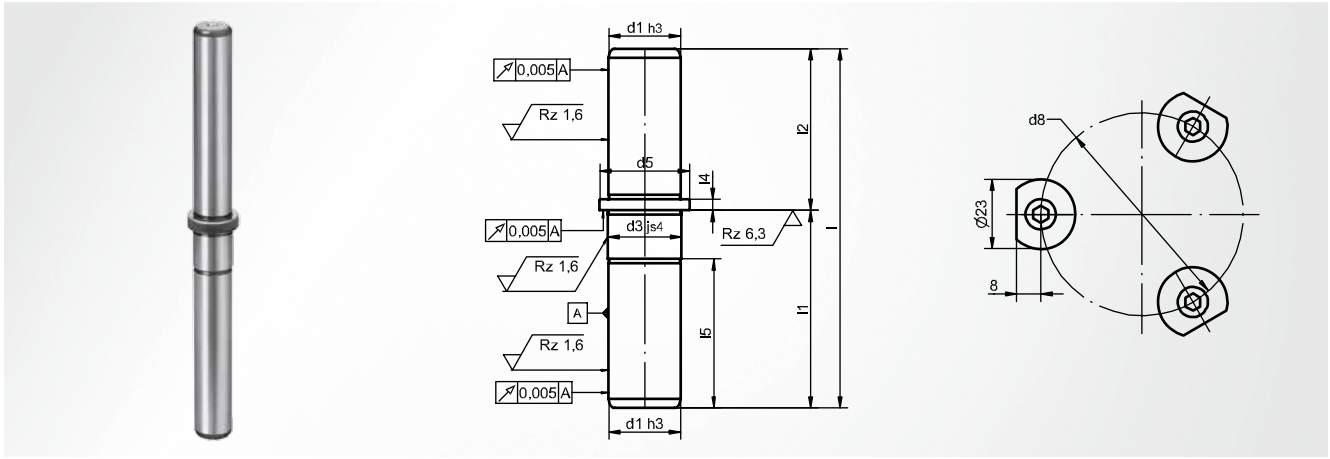
ST7117 Guide pillar

with middle mount shoulder

d_1^{h3}	d_3^{js4}	$d_5^{-0.5}$	d_8	d_9	d_{10}	$l_4^{-0.2}$	t	l	l_1	l_2	l_5	Item number
32	34	60	48	5.5	10	10	5.7	230	130	100	105	ST7117 **32 x 130 x 100**
								240	130	110	105	ST7117 **32 x 130 x 110**
								260	130	130	105	ST7117 **32 x 130 x 130**
								250	140	110	115	ST7117 **32 x 140 x 110**
								350	190	160	165	ST7117 **32 x 190 x 160**
40	42	70	56	6.6	11	12	6.8	200	110	90	83	ST7117 **40 x 110 x 090**
								210	120	90	93	ST7117 **40 x 120 x 090**
								220	120	100	93	ST7117 **40 x 120 x 100**
								230	130	100	103	ST7117 **40 x 130 x 100**
								240	130	110	103	ST7117 **40 x 130 x 110**
								250	140	110	113	ST7117 **40 x 140 x 110**
								260	140	120	113	ST7117 **40 x 140 x 120**
								380	200	180	173	ST7117 **40 x 200 x 180**
50	52	80	66	6.6	11	15	6.8	260	150	110	113	ST7117 **50 x 150 x 110**
								280	160	120	123	ST7117 **50 x 160 x 120**
								300	170	130	133	ST7117 **50 x 170 x 130**
								320	180	140	143	ST7117 **50 x 180 x 140**
								360	200	160	163	ST7117 **50 x 200 x 160**
								400	220	180	183	ST7117 **50 x 220 x 180**
								520	280	240	243	ST7117 **50 x 280 x 240**

ST7118 Guide pillar

with middle mount shoulder, small



Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

d_1^{h3}	d_3^{js4}	d_5	d_8	l_4	l	l_1	l_2	l_5	Item number
12	13	18	35	6.1	90	50	40	38	ST7118 **12 x 050 x 040**
					100	60	40	48	ST7118 **12 x 060 x 040**
					110	60	50	48	ST7118 **12 x 060 x 050**
					120	70	50	58	ST7118 **12 x 070 x 050**
					130	70	60	58	ST7118 **12 x 070 x 060**
					140	70	70	58	ST7118 **12 x 070 x 070**
					200	100	100	88	ST7118 **12 x 100 x 100**
16	17	22	39	6.1	140	80	60	64	ST7118 **16 x 080 x 060**
					150	90	60	74	ST7118 **16 x 090 x 060**
					160	90	70	74	ST7118 **16 x 090 x 070**
					170	100	70	84	ST7118 **16 x 100 x 070**
					180	100	80	84	ST7118 **16 x 100 x 080**
					190	100	90	84	ST7118 **16 x 100 x 090**
					270	140	130	124	ST7118 **16 x 140 x 130**
19	20	25	42	6.1	160	90	70	70	ST7118 **19 x 090 x 070**
					170	100	70	80	ST7118 **19 x 100 x 070**
					180	100	80	80	ST7118 **19 x 100 x 080**
					190	110	80	90	ST7118 **19 x 110 x 080**
					200	110	90	90	ST7118 **19 x 110 x 090**
					210	110	100	90	ST7118 **19 x 110 x 100**
					310	160	150	140	ST7118 **19 x 160 x 150**
25	26	32	49	6.1	180	100	80	78	ST7118 **25 x 100 x 080**
					190	110	80	88	ST7118 **25 x 110 x 080**
					200	110	90	88	ST7118 **25 x 110 x 090**
					210	120	90	98	ST7118 **25 x 120 x 090**
					220	120	100	98	ST7118 **25 x 120 x 100**
					230	120	110	98	ST7118 **25 x 120 x 110**
					330	170	160	148	ST7118 **25 x 170 x 160**
32	33	40	57	6.1	180	100	80	75	ST7118 **32 x 100 x 080**
					190	110	80	85	ST7118 **32 x 110 x 080**
					200	110	90	85	ST7118 **32 x 110 x 090**
					210	120	90	95	ST7118 **32 x 120 x 090**
					220	120	100	95	ST7118 **32 x 120 x 100**
					230	130	100	105	ST7118 **32 x 130 x 100**
					240	130	110	105	ST7118 **32 x 130 x 110**

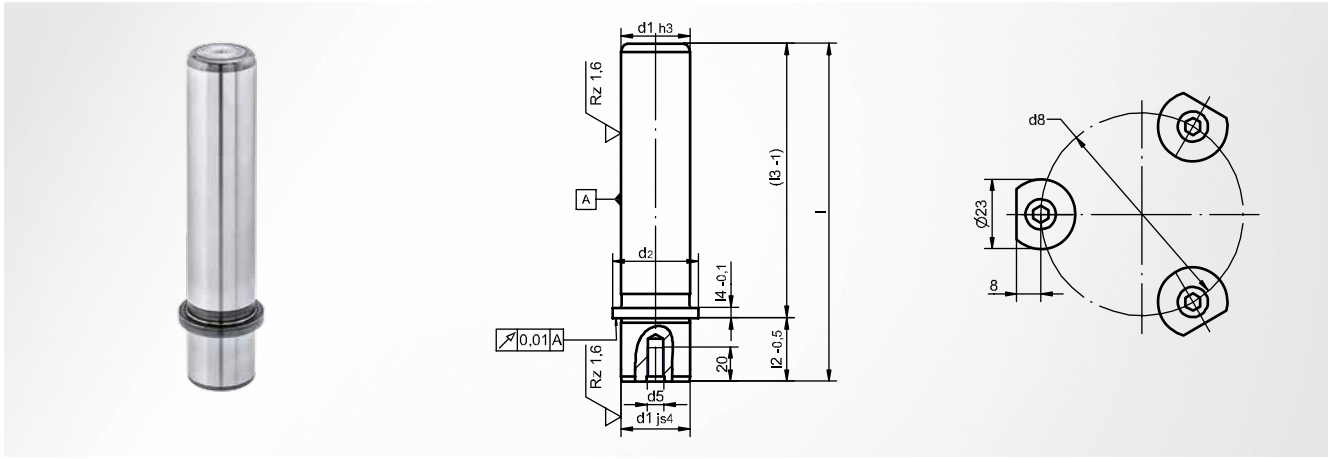
ST7118 Guide pillar

with middle mount shoulder, small

d_1^{h3}	d_3^{js4}	d_5	d_8	l_4	l	l_1	l_2	l_5	Item number
32	33	40	57	6.1	250	140	110	115	ST7118 **32 x 140 x 110**
					350	190	160	165	ST7118 **32 x 190 x 160**
40	41	50	67	6.1	200	110	90	83	ST7118 **40 x 110 x 090**
					210	120	90	93	ST7118 **40 x 120 x 090**
					220	120	100	93	ST7118 **40 x 120 x 100**
					230	130	100	103	ST7118 **40 x 130 x 100**
					240	130	110	103	ST7118 **40 x 130 x 110**
					250	140	110	113	ST7118 **40 x 140 x 110**
					260	140	120	113	ST7118 **40 x 140 x 120**
					380	200	180	173	ST7118 **40 x 200 x 180**
50	51	63	80	6.1	260	150	110	113	ST7118 **50 x 150 x 110**
					280	160	120	123	ST7118 **50 x 160 x 120**
					300	170	130	133	ST7118 **50 x 170 x 130**
					320	180	140	143	ST7118 **50 x 180 x 140**
					360	200	160	163	ST7118 **50 x 200 x 160**
					400	220	180	183	ST7118 **50 x 220 x 180**
					520	280	240	243	ST7118 **50 x 280 x 240**

ST7120 Guide pillar

with shoulder and internal thread



Referring to DIN 9825 / ISO 9182

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

Scope of supply
ST7367

Optional accessories
ST7387

d_1^{h3}	d_2	d_5	d_8	$l_2^{-0.5}$	$l_4^{-0.1}$	l	l_3^{-1}	Item number
15	21	M8	38	20	6.1	110	90	ST7120 **15 x 090 x 110**
						120	100	ST7120 **15 x 100 x 120**
						132	112	ST7120 **15 x 112 x 132**
						145	125	ST7120 **15 x 125 x 145**
						160	140	ST7120 **15 x 140 x 160**
						180	160	ST7120 **15 x 160 x 180**
						200	180	ST7120 **15 x 180 x 200**
						220	200	ST7120 **15 x 200 x 220**
16	21	M8	38	20	6.1	110	90	ST7120 **16 x 090 x 110**
						120	100	ST7120 **16 x 100 x 120**
						132	112	ST7120 **16 x 112 x 132**
						145	125	ST7120 **16 x 125 x 145**
						160	140	ST7120 **16 x 140 x 160**
						180	160	ST7120 **16 x 160 x 180**
						200	180	ST7120 **16 x 180 x 200**
						220	200	ST7120 **16 x 200 x 220**
19	25	M8	42	23	6.1	123	100	ST7120 **19 x 100 x 123**
						135	112	ST7120 **19 x 112 x 135**
						148	125	ST7120 **19 x 125 x 148**
						163	140	ST7120 **19 x 140 x 163**
						183	160	ST7120 **19 x 160 x 183**
						203	180	ST7120 **19 x 180 x 203**
						223	200	ST7120 **19 x 200 x 223**
						247	224	ST7120 **19 x 224 x 247**
						273	250	ST7120 **19 x 250 x 273**
20	25	M8	42	23	6.1	123	100	ST7120 **20 x 100 x 123**
						135	112	ST7120 **20 x 112 x 135**
						148	125	ST7120 **20 x 125 x 148**
						163	140	ST7120 **20 x 140 x 163**
						183	160	ST7120 **20 x 160 x 183**
						203	180	ST7120 **20 x 180 x 203**

d_1^{h3}	d_2	d_5	d_8	$l_2^{-0.5}$	$l_4^{-0.1}$	l	l_3^{-1}	Item number
20	25	M8	42	23	6.1	223	200	ST7120 **20 x 200 x 223**
						247	224	ST7120 **20 x 224 x 247**
						273	250	ST7120 **20 x 250 x 273**
24	32	M8	49	27	6.1	127	100	ST7120 **24 x 100 x 127**
						139	112	ST7120 **24 x 112 x 139**
						152	125	ST7120 **24 x 125 x 152**
						167	140	ST7120 **24 x 140 x 167**
						187	160	ST7120 **24 x 160 x 187**
						207	180	ST7120 **24 x 180 x 207**
						227	200	ST7120 **24 x 200 x 227**
						251	224	ST7120 **24 x 224 x 251**
						277	250	ST7120 **24 x 250 x 277**
						307	280	ST7120 **24 x 280 x 307**
						342	315	ST7120 **24 x 315 x 342**
25	32	M8	49	27	6.1	127	100	ST7120 **25 x 100 x 127**
						139	112	ST7120 **25 x 112 x 139**
						152	125	ST7120 **25 x 125 x 152**
						167	140	ST7120 **25 x 140 x 167**
						187	160	ST7120 **25 x 160 x 187**
						207	180	ST7120 **25 x 180 x 207**
						227	200	ST7120 **25 x 200 x 227**
						251	224	ST7120 **25 x 224 x 251**
						277	250	ST7120 **25 x 250 x 277**
						307	280	ST7120 **25 x 280 x 307**
						342	315	ST7120 **25 x 315 x 342**
30	40	M8	57	37	6.1	149	112	ST7120 **30 x 112 x 149**
						162	125	ST7120 **30 x 125 x 162**
						177	140	ST7120 **30 x 140 x 177**
						197	160	ST7120 **30 x 160 x 197**
						217	180	ST7120 **30 x 180 x 217**
						237	200	ST7120 **30 x 200 x 237**

ST7120 Guide pillar

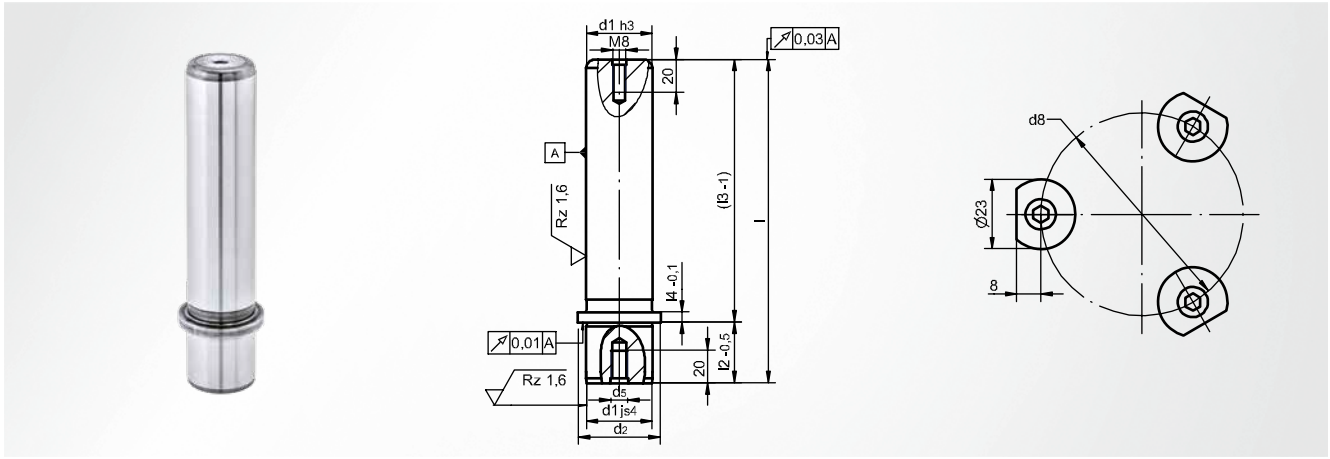
with shoulder and internal thread

d_1^{h3}	d_2	d_5	d_8	$l_2^{-0.5}$	$l_4^{-0.1}$	l	l_3^{-1}	Item number
30	40	M8	57	37	6.1	261	224	ST7120 **30 x 224 x 261**
						287	250	ST7120 **30 x 250 x 287**
						317	280	ST7120 **30 x 280 x 317**
						352	315	ST7120 **30 x 315 x 352**
						392	355	ST7120 **30 x 355 x 392**
32	40	M8	57	37	6.1	149	112	ST7120 **32 x 112 x 149**
						162	125	ST7120 **32 x 125 x 162**
						177	140	ST7120 **32 x 140 x 177**
						197	160	ST7120 **32 x 160 x 197**
						217	180	ST7120 **32 x 180 x 217**
						237	200	ST7120 **32 x 200 x 237**
						261	224	ST7120 **32 x 224 x 261**
						287	250	ST7120 **32 x 250 x 287**
						317	280	ST7120 **32 x 280 x 317**
						352	315	ST7120 **32 x 315 x 352**
						392	355	ST7120 **32 x 355 x 392**
38	50	M10	67	37	6.1	162	125	ST7120 **38 x 125 x 162**
						177	140	ST7120 **38 x 140 x 177**
						197	160	ST7120 **38 x 160 x 197**
						217	180	ST7120 **38 x 180 x 217**
						237	200	ST7120 **38 x 200 x 237**
						261	224	ST7120 **38 x 224 x 261**
						287	250	ST7120 **38 x 250 x 287**
						317	280	ST7120 **38 x 280 x 317**
						352	315	ST7120 **38 x 315 x 352**
						392	355	ST7120 **38 x 355 x 392**
						437	400	ST7120 **38 x 400 x 437**
40	50	M10	67	37	6.1	162	125	ST7120 **40 x 125 x 162**
						177	140	ST7120 **40 x 140 x 177**
						197	160	ST7120 **40 x 160 x 197**
						217	180	ST7120 **40 x 180 x 217**
						237	200	ST7120 **40 x 200 x 237**
						261	224	ST7120 **40 x 224 x 261**
						287	250	ST7120 **40 x 250 x 287**
						317	280	ST7120 **40 x 280 x 317**
						352	315	ST7120 **40 x 315 x 352**
						392	355	ST7120 **40 x 355 x 392**
						437	400	ST7120 **40 x 400 x 437**
48	63	M10	80	47	6.1	187	140	ST7120 **48 x 140 x 187**
						207	160	ST7120 **48 x 160 x 207**
						227	180	ST7120 **48 x 180 x 227**
						247	200	ST7120 **48 x 200 x 247**

d_1^{h3}	d_2	d_5	d_8	$l_2^{-0.5}$	$l_4^{-0.1}$	l	l_3^{-1}	Item number
48	63	M10	80	47	6.1	271	224	ST7120 **48 x 224 x 271**
						297	250	ST7120 **48 x 250 x 297**
						327	280	ST7120 **48 x 280 x 327**
						362	315	ST7120 **48 x 315 x 362**
						402	355	ST7120 **48 x 355 x 402**
						447	400	ST7120 **48 x 400 x 447**
						497	450	ST7120 **48 x 450 x 497**
50	63	M10	80	47	6.1	187	140	ST7120 **50 x 140 x 187**
						207	160	ST7120 **50 x 160 x 207**
						227	180	ST7120 **50 x 180 x 227**
						247	200	ST7120 **50 x 200 x 247**
						271	224	ST7120 **50 x 224 x 271**
						297	250	ST7120 **50 x 250 x 297**
						327	280	ST7120 **50 x 280 x 327**
						362	315	ST7120 **50 x 315 x 362**
						402	355	ST7120 **50 x 355 x 402**
						447	400	ST7120 **50 x 400 x 447**
						497	450	ST7120 **50 x 450 x 497**
60	80	M12	97	47	6.1	247	200	ST7120 **60 x 200 x 247**
						271	224	ST7120 **60 x 224 x 271**
						297	250	ST7120 **60 x 250 x 297**
						327	280	ST7120 **60 x 280 x 327**
						362	315	ST7120 **60 x 315 x 362**
						402	355	ST7120 **60 x 355 x 402**
						447	400	ST7120 **60 x 400 x 447**
						497	450	ST7120 **60 x 450 x 497**
63	80	M12	97	47	6.1	247	200	ST7120 **63 x 200 x 247**
						271	224	ST7120 **63 x 224 x 271**
						297	250	ST7120 **63 x 250 x 297**
						327	280	ST7120 **63 x 280 x 327**
						362	315	ST7120 **63 x 315 x 362**
						402	355	ST7120 **63 x 355 x 402**
						447	400	ST7120 **63 x 400 x 447**
						497	450	ST7120 **63 x 450 x 497**
80	95	M12	112	60	6.1	310	250	ST7120 **80 x 250 x 310**
						340	280	ST7120 **80 x 280 x 340**
						375	315	ST7120 **80 x 315 x 375**
						415	355	ST7120 **80 x 355 x 415**
						460	400	ST7120 **80 x 400 x 460**
						510	450	ST7120 **80 x 450 x 510**
						560	500	ST7120 **80 x 500 x 560**

ST7126 Guide pillar

with shoulder and internal thread, both-sided



Referring to DIN 9825 / ISO 9182

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

Scope of supply
ST7367

Optional accessories
ST7387

d_1^{h3}	d_2	d_5	d_8	$l_2^{-0.5}$	$l_4^{-0.1}$	l	l_3^{-1}	Item number
15	21	M8	38	20	6.1	110	90	ST7126 **15 x 090 x 110**
						120	100	ST7126 **15 x 100 x 120**
						132	112	ST7126 **15 x 112 x 132**
						145	125	ST7126 **15 x 125 x 145**
						160	140	ST7126 **15 x 140 x 160**
						180	160	ST7126 **15 x 160 x 180**
						200	180	ST7126 **15 x 180 x 200**
						220	200	ST7126 **15 x 200 x 220**
16	21	M8	38	20	6.1	110	90	ST7126 **16 x 090 x 110**
						120	100	ST7126 **16 x 100 x 120**
						132	112	ST7126 **16 x 112 x 132**
						145	125	ST7126 **16 x 125 x 145**
						160	140	ST7126 **16 x 140 x 160**
						180	160	ST7126 **16 x 160 x 180**
						200	180	ST7126 **16 x 180 x 200**
						220	200	ST7126 **16 x 200 x 220**
19	25	M8	42	23	6.1	123	100	ST7126 **19 x 100 x 123**
						135	112	ST7126 **19 x 112 x 135**
						148	125	ST7126 **19 x 125 x 148**
						163	140	ST7126 **19 x 140 x 163**
						183	160	ST7126 **19 x 160 x 183**
						203	180	ST7126 **19 x 180 x 203**
						223	200	ST7126 **19 x 200 x 223**
						247	224	ST7126 **19 x 224 x 247**
						273	250	ST7126 **19 x 250 x 273**
20	25	M8	42	23	6.1	123	100	ST7126 **20 x 100 x 123**
						135	112	ST7126 **20 x 112 x 135**
						148	125	ST7126 **20 x 125 x 148**
						163	140	ST7126 **20 x 140 x 163**
						183	160	ST7126 **20 x 160 x 183**
						203	180	ST7126 **20 x 180 x 203**

d_1^{h3}	d_2	d_5	d_8	$l_2^{-0.5}$	$l_4^{-0.1}$	l	l_3^{-1}	Item number
20	25	M8	42	23	6.1	223	200	ST7126 **20 x 200 x 223**
						247	224	ST7126 **20 x 224 x 247**
						273	250	ST7126 **20 x 250 x 273**
24	32	M8	49	27	6.1	127	100	ST7126 **24 x 100 x 127**
						139	112	ST7126 **24 x 112 x 139**
						152	125	ST7126 **24 x 125 x 152**
						167	140	ST7126 **24 x 140 x 167**
						187	160	ST7126 **24 x 160 x 187**
						207	180	ST7126 **24 x 180 x 207**
						227	200	ST7126 **24 x 200 x 227**
						251	224	ST7126 **24 x 224 x 251**
						277	250	ST7126 **24 x 250 x 277**
						307	280	ST7126 **24 x 280 x 307**
						342	315	ST7126 **24 x 315 x 342**
25	32	M8	49	27	6.1	127	100	ST7126 **25 x 100 x 127**
						139	112	ST7126 **25 x 112 x 139**
						152	125	ST7126 **25 x 125 x 152**
						167	140	ST7126 **25 x 140 x 167**
						187	160	ST7126 **25 x 160 x 187**
						207	180	ST7126 **25 x 180 x 207**
						227	200	ST7126 **25 x 200 x 227**
						251	224	ST7126 **25 x 224 x 251**
						277	250	ST7126 **25 x 250 x 277**
						307	280	ST7126 **25 x 280 x 307**
						342	315	ST7126 **25 x 315 x 342**
30	40	M8	57	37	6.1	149	112	ST7126 **30 x 112 x 149**
						162	125	ST7126 **30 x 125 x 162**
						177	140	ST7126 **30 x 140 x 177**
						197	160	ST7126 **30 x 160 x 197**
						217	180	ST7126 **30 x 180 x 217**
						237	200	ST7126 **30 x 200 x 237**

ST7126 Guide pillar

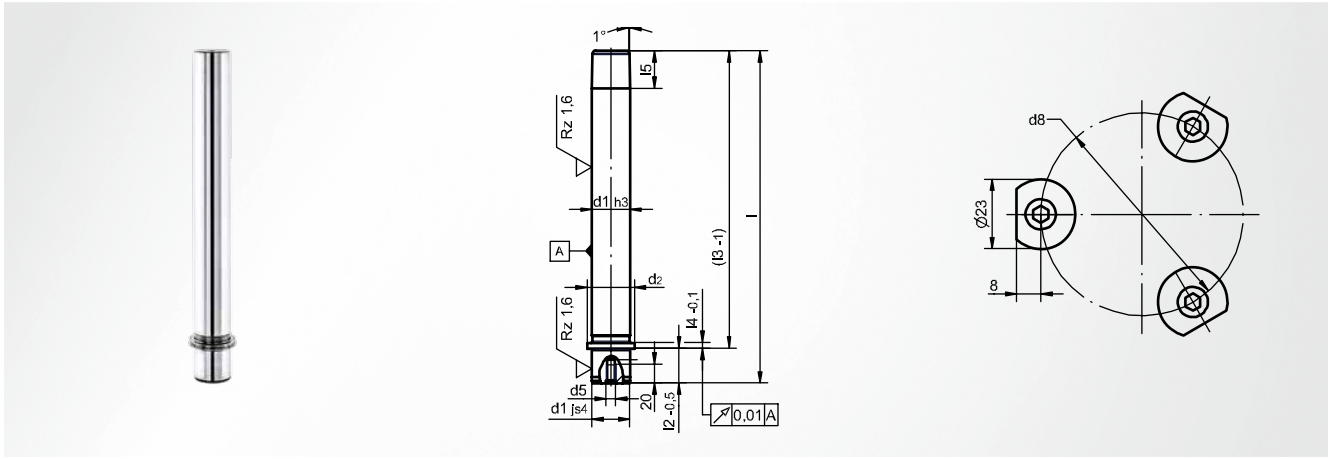
with shoulder and internal thread, both-sided

d_1^{h3}	d_2	d_5	d_8	$l_2^{-0.5}$	$l_4^{-0.1}$	l	l_3^{-1}	Item number
30	40	M8	57	37	6.1	261	224	ST7126 **30 x 224 x 261**
						287	250	ST7126 **30 x 250 x 287**
						317	280	ST7126 **30 x 280 x 317**
						352	315	ST7126 **30 x 315 x 352**
						392	355	ST7126 **30 x 355 x 392**
32	40	M8	57	37	6.1	149	112	ST7126 **32 x 112 x 149**
						162	125	ST7126 **32 x 125 x 162**
						177	140	ST7126 **32 x 140 x 177**
						197	160	ST7126 **32 x 160 x 197**
						217	180	ST7126 **32 x 180 x 217**
						237	200	ST7126 **32 x 200 x 237**
						261	224	ST7126 **32 x 224 x 261**
						287	250	ST7126 **32 x 250 x 287**
						317	280	ST7126 **32 x 280 x 317**
						352	315	ST7126 **32 x 315 x 352**
						392	355	ST7126 **32 x 355 x 392**
38	50	M10	67	37	6.1	162	125	ST7126 **38 x 125 x 162**
						177	140	ST7126 **38 x 140 x 177**
						197	160	ST7126 **38 x 160 x 197**
						217	180	ST7126 **38 x 180 x 217**
						237	200	ST7126 **38 x 200 x 237**
						261	224	ST7126 **38 x 224 x 261**
						287	250	ST7126 **38 x 250 x 287**
						317	280	ST7126 **38 x 280 x 317**
						352	315	ST7126 **38 x 315 x 352**
						392	355	ST7126 **38 x 355 x 392**
						437	400	ST7126 **38 x 400 x 437**
40	50	M10	67	37	6.1	162	125	ST7126 **40 x 125 x 162**
						177	140	ST7126 **40 x 140 x 177**
						197	160	ST7126 **40 x 160 x 197**
						217	180	ST7126 **40 x 180 x 217**
						237	200	ST7126 **40 x 200 x 237**
						261	224	ST7126 **40 x 224 x 261**
						287	250	ST7126 **40 x 250 x 287**
						317	280	ST7126 **40 x 280 x 317**
						352	315	ST7126 **40 x 315 x 352**
						392	355	ST7126 **40 x 355 x 392**
						437	400	ST7126 **40 x 400 x 437**
48	63	M10	80	47	6.1	187	140	ST7126 **48 x 140 x 187**
						207	160	ST7126 **48 x 160 x 207**
						227	180	ST7126 **48 x 180 x 227**
						247	200	ST7126 **48 x 200 x 247**

d_1^{h3}	d_2	d_5	d_8	$l_2^{-0.5}$	$l_4^{-0.1}$	l	l_3^{-1}	Item number
48	63	M10	80	47	6.1	271	224	ST7126 **48 x 224 x 271**
						297	250	ST7126 **48 x 250 x 297**
						327	280	ST7126 **48 x 280 x 327**
						362	315	ST7126 **48 x 315 x 362**
						402	355	ST7126 **48 x 355 x 402**
						447	400	ST7126 **48 x 400 x 447**
						497	450	ST7126 **48 x 450 x 497**
50	63	M10	80	47	6.1	187	140	ST7126 **50 x 140 x 187**
						207	160	ST7126 **50 x 160 x 207**
						227	180	ST7126 **50 x 180 x 227**
						247	200	ST7126 **50 x 200 x 247**
						271	224	ST7126 **50 x 224 x 271**
						297	250	ST7126 **50 x 250 x 297**
						327	280	ST7126 **50 x 280 x 327**
						362	315	ST7126 **50 x 315 x 362**
						402	355	ST7126 **50 x 355 x 402**
						447	400	ST7126 **50 x 400 x 447**
						497	450	ST7126 **50 x 450 x 497**
60	80	M12	97	47	6.1	247	200	ST7126 **60 x 200 x 247**
						271	224	ST7126 **60 x 224 x 271**
						297	250	ST7126 **60 x 250 x 297**
						327	280	ST7126 **60 x 280 x 327**
						362	315	ST7126 **60 x 315 x 362**
						402	355	ST7126 **60 x 355 x 402**
						447	400	ST7126 **60 x 400 x 447**
						497	450	ST7126 **60 x 450 x 497**
63	80	M12	97	47	6.1	247	200	ST7126 **63 x 200 x 247**
						271	224	ST7126 **63 x 224 x 271**
						297	250	ST7126 **63 x 250 x 297**
						327	280	ST7126 **63 x 280 x 327**
						362	315	ST7126 **63 x 315 x 362**
						402	355	ST7126 **63 x 355 x 402**
						447	400	ST7126 **63 x 400 x 447**
						497	450	ST7126 **63 x 450 x 497**
80	95	M12	112	60	6.1	310	250	ST7126 **80 x 250 x 310**
						340	280	ST7126 **80 x 280 x 340**
						375	315	ST7126 **80 x 315 x 375**
						415	355	ST7126 **80 x 355 x 415**
						460	400	ST7126 **80 x 400 x 460**
						510	450	ST7126 **80 x 450 x 510**
						560	500	ST7126 **80 x 500 x 560**

ST7129 Guide pillar

with shoulder and internal thread, fine centring



Referring to DIN 9825 / ISO 9182

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

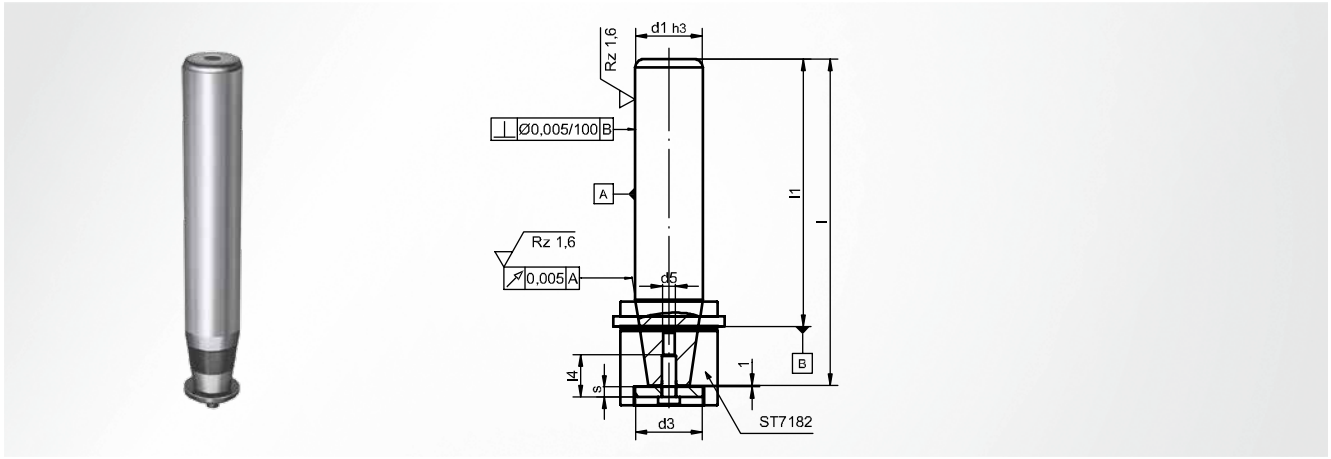
Scope of supply
ST7367

Optional accessories
ST7387

d_1^{h3}	d_2	d_5	d_8	l	$l_2^{-0.5}$	l_3^{-1}	$l_4^{-0.1}$	l_5	Item number
40	50	M10	67	352	37	315	6.1	40	ST7129 **40 x 315 x 352**
50	63	M10	80	362	47	315	6.1	50	ST7129 **50 x 315 x 362**

ST7181 Quick-change guide pillar

with mounting taper and internal thread



Referring to DIN 9825 / ISO 9182

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Scope of supply
SZ8512; SZ7368

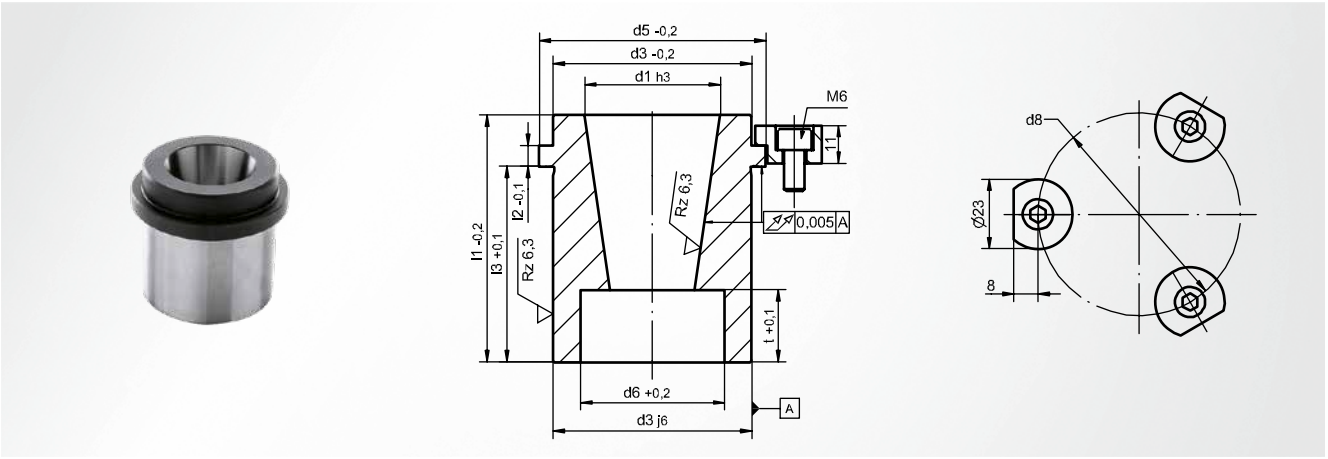
d_1^{h3}	d_3	d_5	l_4	s	l	l_1	Item number
19	18	M5	16	4	130.4	112	ST7181 **19 x 112 x 130**
					143.4	125	ST7181 **19 x 125 x 143**
					158.4	140	ST7181 **19 x 140 x 158**
					178.4	160	ST7181 **19 x 160 x 178**
					198.4	180	ST7181 **19 x 180 x 198**
20	18	M5	16	4	130.4	112	ST7181 **20 x 112 x 130**
					143.4	125	ST7181 **20 x 125 x 143**
					158.4	140	ST7181 **20 x 140 x 158**
					178.4	160	ST7181 **20 x 160 x 178**
					198.4	180	ST7181 **20 x 180 x 198**
24	24	M6	20	5	151.4	125	ST7181 **24 x 125 x 151**
					166.4	140	ST7181 **24 x 140 x 166**
					186.4	160	ST7181 **24 x 160 x 186**
					206.4	180	ST7181 **24 x 180 x 206**
					226.4	200	ST7181 **24 x 200 x 226**
					250.4	224	ST7181 **24 x 224 x 250**
					276.4	250	ST7181 **24 x 250 x 276**
25	24	M6	20	5	151.4	125	ST7181 **25 x 125 x 151**
					166.4	140	ST7181 **25 x 140 x 166**
					186.4	160	ST7181 **25 x 160 x 186**
					206.4	180	ST7181 **25 x 180 x 206**
					226.4	200	ST7181 **25 x 200 x 226**
					250.4	224	ST7181 **25 x 224 x 250**
					276.4	250	ST7181 **25 x 250 x 276**
30	30	M6	20	5	151.4	125	ST7181 **30 x 125 x 151**
					166.4	140	ST7181 **30 x 140 x 166**
					186.4	160	ST7181 **30 x 160 x 186**
					206.4	180	ST7181 **30 x 180 x 206**
					226.4	200	ST7181 **30 x 200 x 226**
					250.4	224	ST7181 **30 x 224 x 250**
					276.4	250	ST7181 **30 x 250 x 276**
					306.4	280	ST7181 **30 x 280 x 306**
32	30	M6	20	5	151.4	125	ST7181 **32 x 125 x 151**
					166.4	140	ST7181 **32 x 140 x 166**
					186.4	160	ST7181 **32 x 160 x 186**
					206.4	180	ST7181 **32 x 180 x 206**

ST7181 Quick-change guide pillar

with mounting taper and internal thread

d_1 h3	d_3	d_5	l_4	s	l	l_1	Item number
32	30	M6	20	5	226.4	200	ST7181 **32 x 200 x 226**
					250.4	224	ST7181 **32 x 224 x 250**
					276.4	250	ST7181 **32 x 250 x 276**
					306.4	280	ST7181 **32 x 280 x 306**
38	40	M8	25	6	174.4	140	ST7181 **38 x 140 x 174**
					194.4	160	ST7181 **38 x 160 x 194**
					214.4	180	ST7181 **38 x 180 x 214**
					234.4	200	ST7181 **38 x 200 x 234**
					258.4	224	ST7181 **38 x 224 x 258**
					284.4	250	ST7181 **38 x 250 x 284**
					314.4	280	ST7181 **38 x 280 x 314**
40	40	M8	25	6	174.4	140	ST7181 **40 x 140 x 174**
					194.4	160	ST7181 **40 x 160 x 194**
					214.4	180	ST7181 **40 x 180 x 214**
					234.4	200	ST7181 **40 x 200 x 234**
					258.4	224	ST7181 **40 x 224 x 258**
					284.4	250	ST7181 **40 x 250 x 284**
					314.4	280	ST7181 **40 x 280 x 314**
48	50	M10	30	6	192.3	160	ST7181 **48 x 160 x 192**
					212.3	180	ST7181 **48 x 180 x 212**
					232.3	200	ST7181 **48 x 200 x 232**
					256.3	224	ST7181 **48 x 224 x 256**
					282.3	250	ST7181 **48 x 250 x 282**
					312.3	280	ST7181 **48 x 280 x 312**
					347.3	315	ST7181 **48 x 315 x 347**
50	50	M10	30	6	192.3	160	ST7181 **50 x 160 x 192**
					212.3	180	ST7181 **50 x 180 x 212**
					232.3	200	ST7181 **50 x 200 x 232**
					256.3	224	ST7181 **50 x 224 x 256**
					282.3	250	ST7181 **50 x 250 x 282**
					312.3	280	ST7181 **50 x 280 x 312**
					347.3	315	ST7181 **50 x 315 x 347**
60	56	M12	30	6	229.8	180	ST7181 **60 x 180 x 230**
					249.8	200	ST7181 **60 x 200 x 250**
					273.8	224	ST7181 **60 x 224 x 274**
					299.8	250	ST7181 **60 x 250 x 300**
					329.8	280	ST7181 **60 x 280 x 330**
					364.8	315	ST7181 **60 x 315 x 365**
					404.8	355	ST7181 **60 x 355 x 405**
63	56	M12	30	6	229.8	180	ST7181 **63 x 180 x 230**
					249.8	200	ST7181 **63 x 200 x 250**
					273.8	224	ST7181 **63 x 224 x 274**
					299.8	250	ST7181 **63 x 250 x 300**
					329.8	280	ST7181 **63 x 280 x 330**
					364.8	315	ST7181 **63 x 315 x 365**
					404.8	355	ST7181 **63 x 355 x 405**

ST7182 Pillar holding bush



Referring to DIN 9825 / ISO 9182

Material
Steel 1.7139 (16MnCrS5); case-hardened

Hardness
62 ±1 HRC

Installation instruction
Fixing with 3 holding clamps; mounting diameter d_3 corresponds with the diameter of the guide bushes with flange (ST742x) and with shoulder (ST741x)

Note
Inside cone ground

Installation in mounting bore
ISO H6

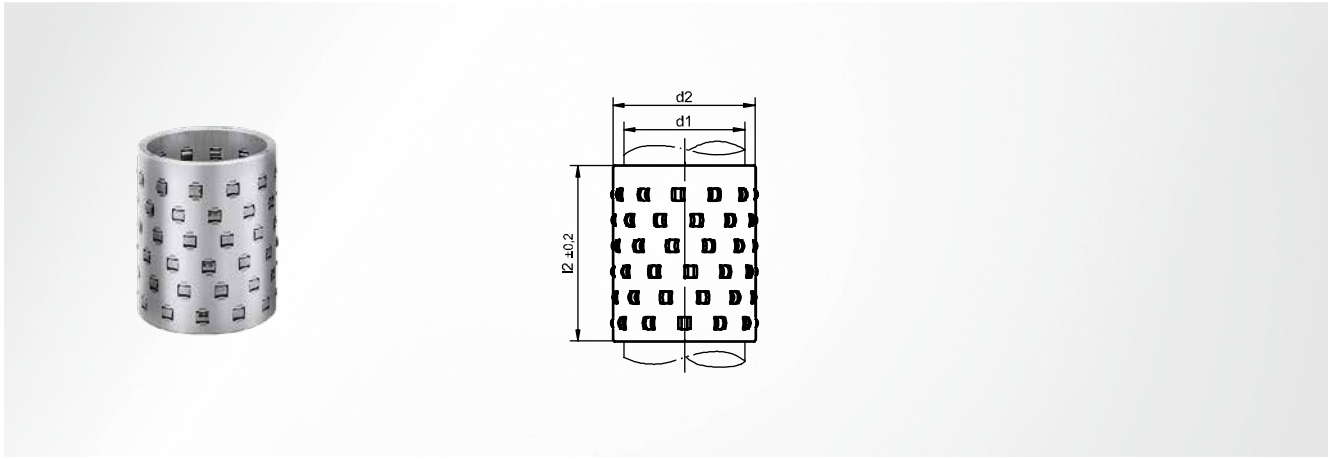
Mounting diameter
ISO j6

Scope of supply
ST7367

d_1^{h3}	d_3^{j6}	$d_5^{-0.2}$	$d_6^{+0.2}$	d_8	$l_2^{-0.1}$	$l_1^{-0.2}$	$l_3^{+0.1}$	$t^{+0.1}$	Item number
19 and 20	32	40	20	59	6.1	39	27	7.5	ST7182 **20 x 27**
						49	37	17.5	ST7182 **20 x 37**
24 and 25	40	48	26	65	6.1	49	37	9.0	ST7182 **25 x 37**
						59	47	19.0	ST7182 **25 x 47**
30 and 32	48	56	32	73	6.1	52	37	9.0	ST7182 **32 x 37**
						62	47	19.0	ST7182 **32 x 47**
38 and 40	58	66	42	83	6.1	62	47	11.0	ST7182 **40 x 47**
						72	57	21.0	ST7182 **40 x 57**
48 and 50	70	80	52	97	6.1	65	47	13.0	ST7182 **50 x 47**
						75	57	23.0	ST7182 **50 x 57**
60 and 63	85	95	58	112	6.1	85	67	15.0	ST7182 **63 x 67**
						95	77	25.0	ST7182 **63 x 77**

ST7140 Roller cage

Aluminium



Material
Aluminium 3.1645

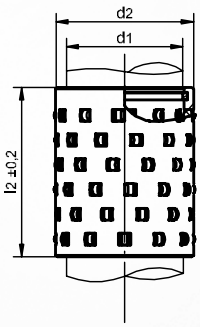
Characteristic of roller
Steel; hardened; quality class 1; sorted

d_1	d_2	Roller Ø	l_2 ±0.2	Item number
19	25	3	43	ST7140 **19 x 043**
			54	ST7140 **19 x 054**
			63	ST7140 **19 x 063**
			74	ST7140 **19 x 074**
20	26	3	43	ST7140 **20 x 043**
			54	ST7140 **20 x 054**
			63	ST7140 **20 x 063**
			74	ST7140 **20 x 074**
24	30	3	43	ST7140 **24 x 043**
			63	ST7140 **24 x 063**
			74	ST7140 **24 x 074**
			90	ST7140 **24 x 090**
25	31	3	43	ST7140 **25 x 043**
			63	ST7140 **25 x 063**
			74	ST7140 **25 x 074**
			90	ST7140 **25 x 090**
30	38	4	54	ST7140 **30 x 054**
			74	ST7140 **30 x 074**
			83	ST7140 **30 x 083**
			103	ST7140 **30 x 103**
32	40	4	54	ST7140 **32 x 054**
			74	ST7140 **32 x 074**
			83	ST7140 **32 x 083**
			103	ST7140 **32 x 103**

d_1	d_2	Roller Ø	l_2 ±0.2	Item number
38	46	4	58	ST7140 **38 x 058**
			88	ST7140 **38 x 088**
			94	ST7140 **38 x 094**
			128	ST7140 **38 x 128**
40	48	4	58	ST7140 **40 x 058**
			88	ST7140 **40 x 088**
			94	ST7140 **40 x 094**
			128	ST7140 **40 x 128**
48	56	4	74	ST7140 **48 x 074**
			108	ST7140 **48 x 108**
			128	ST7140 **48 x 128**
50	58	4	74	ST7140 **50 x 074**
			108	ST7140 **50 x 108**
			128	ST7140 **50 x 128**
60	70	5	113	ST7140 **60 x 113**
			128	ST7140 **60 x 128**
			139	ST7140 **60 x 139**
63	73	5	113	ST7140 **63 x 113**
			128	ST7140 **63 x 128**
			139	ST7140 **63 x 139**
80	92	6	113	ST7140 **80 x 113**
			138	ST7140 **80 x 138**
			156	ST7140 **80 x 156**

ST7141 Roller cage

Aluminium, with installation assistance



Material
Aluminium 3.1645

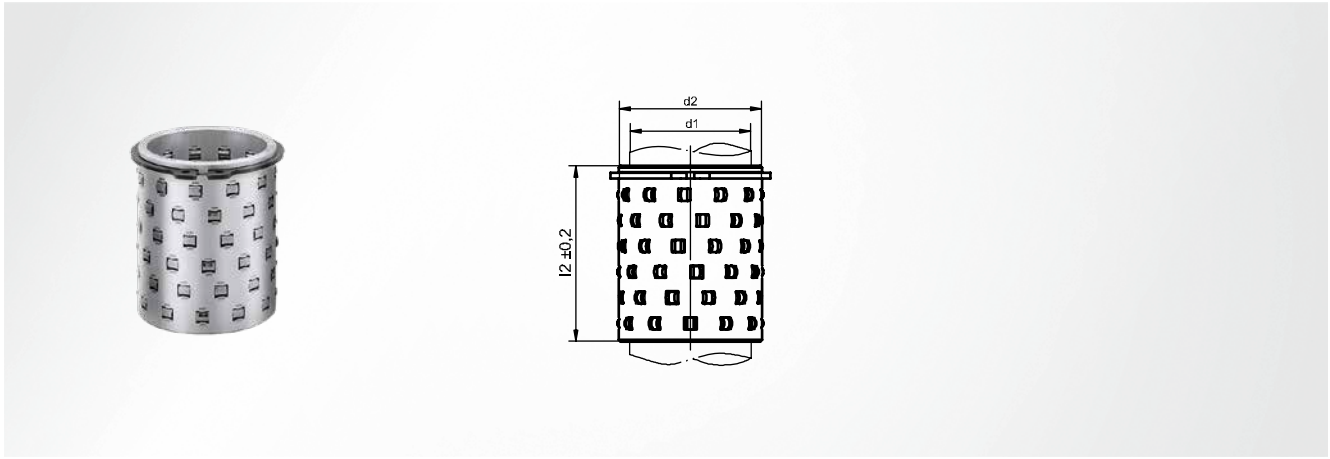
Characteristic of roller
Steel; hardened; quality class 1; sorted

d_1	d_2	Roller Ø	l_2 ±0.2	Item number
19	25	3	43	ST7141 **19 x 043**
			54	ST7141 **19 x 054**
			63	ST7141 **19 x 063**
			74	ST7141 **19 x 074**
20	26	3	43	ST7141 **20 x 043**
			54	ST7141 **20 x 054**
			63	ST7141 **20 x 063**
			74	ST7141 **20 x 074**
24	30	3	43	ST7141 **24 x 043**
			63	ST7141 **24 x 063**
			74	ST7141 **24 x 074**
			90	ST7141 **24 x 090**
25	31	3	43	ST7141 **25 x 043**
			63	ST7141 **25 x 063**
			74	ST7141 **25 x 074**
			90	ST7141 **25 x 090**
30	38	4	54	ST7141 **30 x 054**
			74	ST7141 **30 x 074**
			83	ST7141 **30 x 083**
			103	ST7141 **30 x 103**
32	40	4	54	ST7141 **32 x 054**
			74	ST7141 **32 x 074**
			83	ST7141 **32 x 083**
			103	ST7141 **32 x 103**

d_1	d_2	Roller Ø	l_2 ±0.2	Item number
38	46	4	58	ST7141 **38 x 058**
			88	ST7141 **38 x 088**
			94	ST7141 **38 x 094**
			128	ST7141 **38 x 128**
40	48	4	58	ST7141 **40 x 058**
			88	ST7141 **40 x 088**
			94	ST7141 **40 x 094**
			128	ST7141 **40 x 128**
48	56	4	74	ST7141 **48 x 074**
			108	ST7141 **48 x 108**
			128	ST7141 **48 x 128**
50	58	4	74	ST7141 **50 x 074**
			108	ST7141 **50 x 108**
			128	ST7141 **50 x 128**
60	70	5	113	ST7141 **60 x 113**
			128	ST7141 **60 x 128**
			139	ST7141 **60 x 139**
63	73	5	113	ST7141 **63 x 113**
			128	ST7141 **63 x 128**
			139	ST7141 **63 x 139**
80	92	6	113	ST7141 **80 x 113**
			138	ST7141 **80 x 138**
			156	ST7141 **80 x 156**

ST7142 Roller cage

Aluminium, with lock ring



Material
Aluminium 3.1645

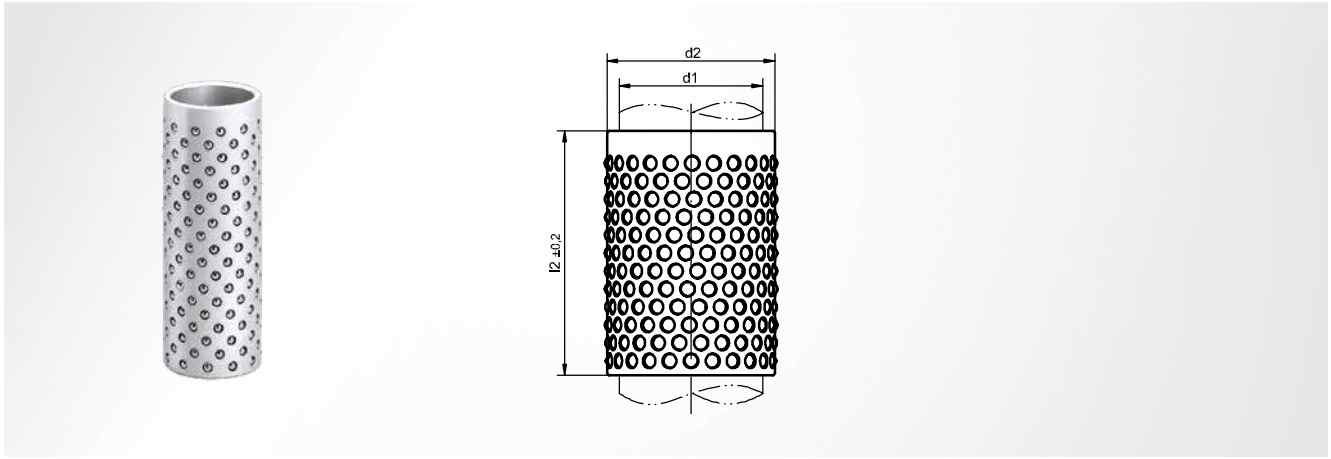
Characteristic of roller
Steel; hardened; quality class 1; sorted

d_1	d_2	Roller Ø	l_2 ±0.2	Item number
19	25	3	43	ST7142 **19 x 043**
			54	ST7142 **19 x 054**
			63	ST7142 **19 x 063**
			74	ST7142 **19 x 074**
20	26	3	43	ST7142 **20 x 043**
			54	ST7142 **20 x 054**
			63	ST7142 **20 x 063**
			74	ST7142 **20 x 074**
24	30	3	43	ST7142 **24 x 043**
			63	ST7142 **24 x 063**
			74	ST7142 **24 x 074**
			90	ST7142 **24 x 090**
25	31	3	43	ST7142 **25 x 043**
			63	ST7142 **25 x 063**
			74	ST7142 **25 x 074**
			90	ST7142 **25 x 090**
30	38	4	54	ST7142 **30 x 054**
			74	ST7142 **30 x 074**
			83	ST7142 **30 x 083**
			103	ST7142 **30 x 103**
32	40	4	54	ST7142 **32 x 054**
			74	ST7142 **32 x 074**
			83	ST7142 **32 x 083**
			103	ST7142 **32 x 103**

d_1	d_2	Roller Ø	l_2 ±0.2	Item number
38	46	4	58	ST7142 **38 x 058**
			88	ST7142 **38 x 088**
			94	ST7142 **38 x 094**
			128	ST7142 **38 x 128**
40	48	4	58	ST7142 **40 x 058**
			88	ST7142 **40 x 088**
			94	ST7142 **40 x 094**
			128	ST7142 **40 x 128**
48	56	4	74	ST7142 **48 x 074**
			108	ST7142 **48 x 108**
			128	ST7142 **48 x 128**
50	58	4	74	ST7142 **50 x 074**
			108	ST7142 **50 x 108**
			128	ST7142 **50 x 128**
60	70	5	113	ST7142 **60 x 113**
			128	ST7142 **60 x 128**
			139	ST7142 **60 x 139**
63	73	5	113	ST7142 **63 x 113**
			128	ST7142 **63 x 128**
			139	ST7142 **63 x 139**
80	92	6	113	ST7142 **80 x 113**
			138	ST7142 **80 x 138**
			156	ST7142 **80 x 156**

ST7130 Ball cage

Aluminium



Material
Aluminium 3.1645

Note
Cage travel = ½ stroke length

Ball property
Steel; hardened; quality class 1; sorted

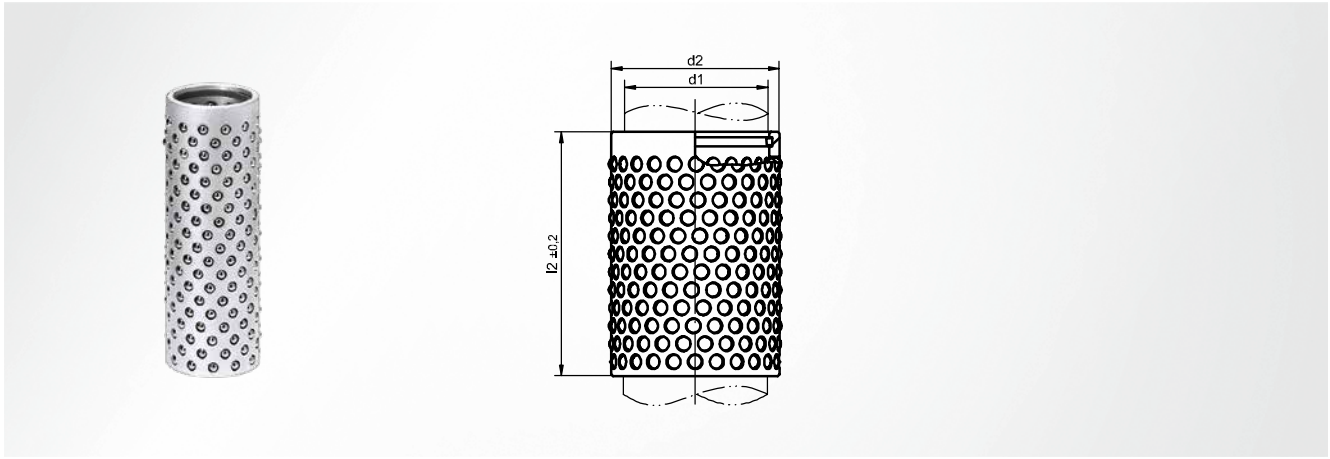
d_1	d_2	l_2 ±0.2	Item number
10	14	30	ST7130 **10 x 030**
		38	ST7130 **10 x 038**
		43	ST7130 **10 x 043**
12	16	30	ST7130 **12 x 030**
		38	ST7130 **12 x 038**
		43	ST7130 **12 x 043**
15	21	30	ST7130 **15 x 030**
		38	ST7130 **15 x 038**
		43	ST7130 **15 x 043**
		54	ST7130 **15 x 054**
		63	ST7130 **15 x 063**
16	22	24	ST7130 **16 x 024**
		30	ST7130 **16 x 030**
		35	ST7130 **16 x 035**
		38	ST7130 **16 x 038**
		43	ST7130 **16 x 043**
		54	ST7130 **16 x 054**
		63	ST7130 **16 x 063**
19	25	30	ST7130 **19 x 030**
		38	ST7130 **19 x 038**
		43	ST7130 **19 x 043**
		54	ST7130 **19 x 054**
		63	ST7130 **19 x 063**
		74	ST7130 **19 x 074**
20	26	30	ST7130 **20 x 030**
		38	ST7130 **20 x 038**
		43	ST7130 **20 x 043**
		54	ST7130 **20 x 054**
		63	ST7130 **20 x 063**
		74	ST7130 **20 x 074**
24	30	30	ST7130 **24 x 030**
		38	ST7130 **24 x 038**
		43	ST7130 **24 x 043**
		54	ST7130 **24 x 054**
		63	ST7130 **24 x 063**
		74	ST7130 **24 x 074**
		83	ST7130 **24 x 083**
		90	ST7130 **24 x 090**

d_1	d_2	l_2 ±0.2	Item number
25	31	30	ST7130 **25 x 030**
		38	ST7130 **25 x 038**
		43	ST7130 **25 x 043**
		54	ST7130 **25 x 054**
		63	ST7130 **25 x 063**
		74	ST7130 **25 x 074**
		83	ST7130 **25 x 083**
		90	ST7130 **25 x 090**
30	38	38	ST7130 **30 x 038**
		43	ST7130 **30 x 043**
		54	ST7130 **30 x 054**
		58	ST7130 **30 x 058**
		68	ST7130 **30 x 068**
		74	ST7130 **30 x 074**
		83	ST7130 **30 x 083**
		88	ST7130 **30 x 088**
		103	ST7130 **30 x 103**
		108	ST7130 **30 x 108**
32	40	38	ST7130 **32 x 038**
		43	ST7130 **32 x 043**
		54	ST7130 **32 x 054**
		58	ST7130 **32 x 058**
		68	ST7130 **32 x 068**
		74	ST7130 **32 x 074**
		83	ST7130 **32 x 083**
		88	ST7130 **32 x 088**
		103	ST7130 **32 x 103**
		108	ST7130 **32 x 108**
38	46	38	ST7130 **38 x 038**
		43	ST7130 **38 x 043**
		58	ST7130 **38 x 058**
		68	ST7130 **38 x 068**
		88	ST7130 **38 x 088**
		94	ST7130 **38 x 094**
		108	ST7130 **38 x 108**
		128	ST7130 **38 x 128**
40	48	38	ST7130 **40 x 038**
		43	ST7130 **40 x 043**

d_1	d_2	l_2 ±0.2	Item number
40	48	58	ST7130 **40 x 058**
		68	ST7130 **40 x 068**
		88	ST7130 **40 x 088**
		94	ST7130 **40 x 094**
		108	ST7130 **40 x 108**
		128	ST7130 **40 x 128**
48	56	43	ST7130 **48 x 043**
		58	ST7130 **48 x 058**
		68	ST7130 **48 x 068**
		74	ST7130 **48 x 074**
		88	ST7130 **48 x 088**
		108	ST7130 **48 x 108**
		128	ST7130 **48 x 128**
50	58	43	ST7130 **50 x 043**
		58	ST7130 **50 x 058**
		68	ST7130 **50 x 068**
		74	ST7130 **50 x 074**
		88	ST7130 **50 x 088**
		108	ST7130 **50 x 108**
		128	ST7130 **50 x 128**
60	70	75	ST7130 **60 x 075**
		94	ST7130 **60 x 094**
		113	ST7130 **60 x 113**
		128	ST7130 **60 x 128**
		139	ST7130 **60 x 139**
		154	ST7130 **60 x 154**
		170	ST7130 **60 x 170**
63	73	75	ST7130 **63 x 075**
		94	ST7130 **63 x 094**
		113	ST7130 **63 x 113**
		128	ST7130 **63 x 128**
		139	ST7130 **63 x 139**
		154	ST7130 **63 x 154**
80	92	113	ST7130 **80 x 113**
		138	ST7130 **80 x 138**
		156	ST7130 **80 x 156**

ST7170 Ball cage

Aluminium, with installation assistance



Material
Aluminium 3.1645

Note
Cage travel = ½ stroke length

Ball property
Steel; hardened; quality class 1; sorted

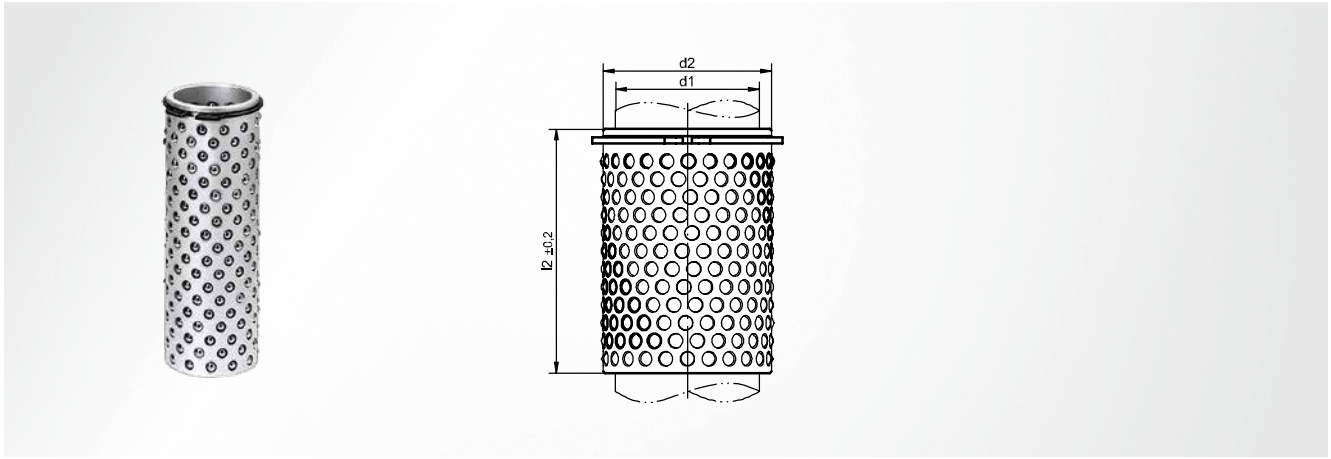
d_1	d_2	l_2 ±0.2	Item number
15	21	30	ST7170 **15 x 030**
		38	ST7170 **15 x 038**
		43	ST7170 **15 x 043**
		54	ST7170 **15 x 054**
		63	ST7170 **15 x 063**
16	22	24	ST7170 **16 x 024**
		30	ST7170 **16 x 030**
		35	ST7170 **16 x 035**
		38	ST7170 **16 x 038**
		43	ST7170 **16 x 043**
		54	ST7170 **16 x 054**
		63	ST7170 **16 x 063**
19	25	30	ST7170 **19 x 030**
		38	ST7170 **19 x 038**
		43	ST7170 **19 x 043**
		54	ST7170 **19 x 054**
		63	ST7170 **19 x 063**
		74	ST7170 **19 x 074**
20	26	30	ST7170 **20 x 030**
		38	ST7170 **20 x 038**
		43	ST7170 **20 x 043**
		54	ST7170 **20 x 054**
		63	ST7170 **20 x 063**
		74	ST7170 **20 x 074**
24	30	30	ST7170 **24 x 030**
		38	ST7170 **24 x 038**
		43	ST7170 **24 x 043**
		54	ST7170 **24 x 054**
		63	ST7170 **24 x 063**
		74	ST7170 **24 x 074**
		83	ST7170 **24 x 083**
		90	ST7170 **24 x 090**
25	31	30	ST7170 **25 x 030**
		38	ST7170 **25 x 038**
		43	ST7170 **25 x 043**

d_1	d_2	l_2 ±0.2	Item number
25	31	54	ST7170 **25 x 054**
		63	ST7170 **25 x 063**
		74	ST7170 **25 x 074**
		83	ST7170 **25 x 083**
		90	ST7170 **25 x 090**
30	38	38	ST7170 **30 x 038**
		43	ST7170 **30 x 043**
		54	ST7170 **30 x 054**
		58	ST7170 **30 x 058**
		68	ST7170 **30 x 068**
		74	ST7170 **30 x 074**
		83	ST7170 **30 x 083**
		88	ST7170 **30 x 088**
		103	ST7170 **30 x 103**
		108	ST7170 **30 x 108**
32	40	38	ST7170 **32 x 038**
		43	ST7170 **32 x 043**
		54	ST7170 **32 x 054**
		58	ST7170 **32 x 058**
		68	ST7170 **32 x 068**
		74	ST7170 **32 x 074**
		83	ST7170 **32 x 083**
		88	ST7170 **32 x 088**
		103	ST7170 **32 x 103**
		108	ST7170 **32 x 108**
38	46	38	ST7170 **38 x 038**
		43	ST7170 **38 x 043**
		58	ST7170 **38 x 058**
		68	ST7170 **38 x 068**
		88	ST7170 **38 x 088**
		94	ST7170 **38 x 094**
		108	ST7170 **38 x 108**
		128	ST7170 **38 x 128**
40	48	38	ST7170 **40 x 038**
		43	ST7170 **40 x 043**

d_1	d_2	l_2 ±0.2	Item number
40	48	58	ST7170 **40 x 058**
		68	ST7170 **40 x 068**
		88	ST7170 **40 x 088**
		94	ST7170 **40 x 094**
		108	ST7170 **40 x 108**
		128	ST7170 **40 x 128**
48	56	43	ST7170 **48 x 043**
		58	ST7170 **48 x 058**
		68	ST7170 **48 x 068**
		74	ST7170 **48 x 074**
		88	ST7170 **48 x 088**
		108	ST7170 **48 x 108**
		128	ST7170 **48 x 128**
50	58	43	ST7170 **50 x 043**
		58	ST7170 **50 x 058**
		68	ST7170 **50 x 068**
		74	ST7170 **50 x 074**
		88	ST7170 **50 x 088**
		108	ST7170 **50 x 108**
		128	ST7170 **50 x 128**
60	70	75	ST7170 **60 x 075**
		94	ST7170 **60 x 094**
		113	ST7170 **60 x 113**
		128	ST7170 **60 x 128**
		139	ST7170 **60 x 139**
		154	ST7170 **60 x 154**
63	73	75	ST7170 **63 x 075**
		94	ST7170 **63 x 094**
		113	ST7170 **63 x 113**
		128	ST7170 **63 x 128**
		139	ST7170 **63 x 139**
		154	ST7170 **63 x 154**
80	92	113	ST7170 **80 x 113**
		138	ST7170 **80 x 138**
		156	ST7170 **80 x 156**

ST7171 Ball cage

Aluminium, with lock ring



Material
Aluminium 3.1645

Note
Cage travel = ½ stroke length

Ball property
Steel; hardened; quality class 1; sorted

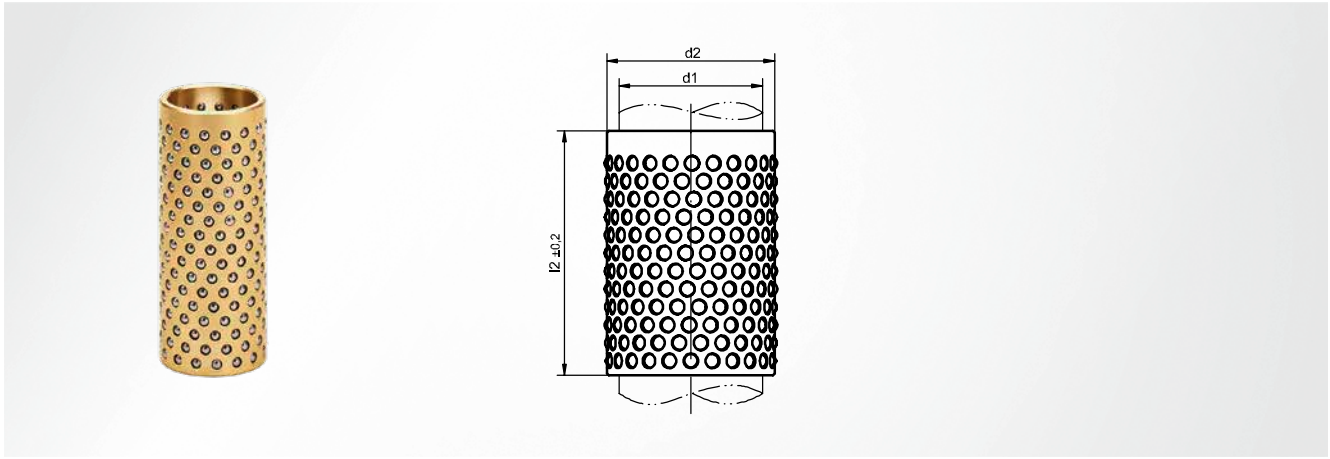
d_1	d_2	l_2 ±0.2	Item number
15	21	30	ST7171 **15 x 030**
		38	ST7171 **15 x 038**
		43	ST7171 **15 x 043**
		54	ST7171 **15 x 054**
		63	ST7171 **15 x 063**
16	22	30	ST7171 **16 x 030**
		38	ST7171 **16 x 038**
		43	ST7171 **16 x 043**
		54	ST7171 **16 x 054**
		63	ST7171 **16 x 063**
19	25	30	ST7171 **19 x 030**
		38	ST7171 **19 x 038**
		43	ST7171 **19 x 043**
		54	ST7171 **19 x 054**
		63	ST7171 **19 x 063**
		74	ST7171 **19 x 074**
20	26	30	ST7171 **20 x 030**
		38	ST7171 **20 x 038**
		43	ST7171 **20 x 043**
		54	ST7171 **20 x 054**
		63	ST7171 **20 x 063**
		74	ST7171 **20 x 074**
24	30	30	ST7171 **24 x 030**
		38	ST7171 **24 x 038**
		43	ST7171 **24 x 043**
		54	ST7171 **24 x 054**
		63	ST7171 **24 x 063**
		74	ST7171 **24 x 074**
		83	ST7171 **24 x 083**
		90	ST7171 **24 x 090**
25	31	30	ST7171 **25 x 030**
		38	ST7171 **25 x 038**
		43	ST7171 **25 x 043**
		54	ST7171 **25 x 054**
		63	ST7171 **25 x 063**

d_1	d_2	l_2 ±0.2	Item number
25	31	74	ST7171 **25 x 074**
		83	ST7171 **25 x 083**
		90	ST7171 **25 x 090**
30	38	38	ST7171 **30 x 038**
		43	ST7171 **30 x 043**
		54	ST7171 **30 x 054**
		58	ST7171 **30 x 058**
		68	ST7171 **30 x 068**
		74	ST7171 **30 x 074**
		83	ST7171 **30 x 083**
		88	ST7171 **30 x 088**
		103	ST7171 **30 x 103**
		108	ST7171 **30 x 108**
32	40	38	ST7171 **32 x 038**
		43	ST7171 **32 x 043**
		54	ST7171 **32 x 054**
		58	ST7171 **32 x 058**
		68	ST7171 **32 x 068**
		74	ST7171 **32 x 074**
		83	ST7171 **32 x 083**
		88	ST7171 **32 x 088**
		103	ST7171 **32 x 103**
		108	ST7171 **32 x 108**
38	46	38	ST7171 **38 x 038**
		43	ST7171 **38 x 043**
		58	ST7171 **38 x 058**
		68	ST7171 **38 x 068**
		88	ST7171 **38 x 088**
		94	ST7171 **38 x 094**
		108	ST7171 **38 x 108**
		128	ST7171 **38 x 128**
40	48	38	ST7171 **40 x 038**
		43	ST7171 **40 x 043**
		58	ST7171 **40 x 058**
		68	ST7171 **40 x 068**

d_1	d_2	l_2 ±0.2	Item number
40	48	88	ST7171 **40 x 088**
		94	ST7171 **40 x 094**
		108	ST7171 **40 x 108**
		128	ST7171 **40 x 128**
48	56	43	ST7171 **48 x 043**
		58	ST7171 **48 x 058**
		68	ST7171 **48 x 068**
		74	ST7171 **48 x 074**
		88	ST7171 **48 x 088**
		108	ST7171 **48 x 108**
		128	ST7171 **48 x 128**
50	58	43	ST7171 **50 x 043**
		58	ST7171 **50 x 058**
		68	ST7171 **50 x 068**
		74	ST7171 **50 x 074**
		88	ST7171 **50 x 088**
		108	ST7171 **50 x 108**
		128	ST7171 **50 x 128**
60	70	75	ST7171 **60 x 075**
		94	ST7171 **60 x 094**
		113	ST7171 **60 x 113**
		128	ST7171 **60 x 128**
		139	ST7171 **60 x 139**
		154	ST7171 **60 x 154**
63	73	75	ST7171 **63 x 075**
		94	ST7171 **63 x 094**
		113	ST7171 **63 x 113**
		128	ST7171 **63 x 128**
		139	ST7171 **63 x 139**
		154	ST7171 **63 x 154**
80	92	113	ST7171 **80 x 113**
		138	ST7171 **80 x 138**
		156	ST7171 **80 x 156**

ST7150 Ball cage

Brass



Material
Brass 2.0401

Note
Cage travel = ½ stroke length

Ball property
Steel; hardened; quality class 1; sorted

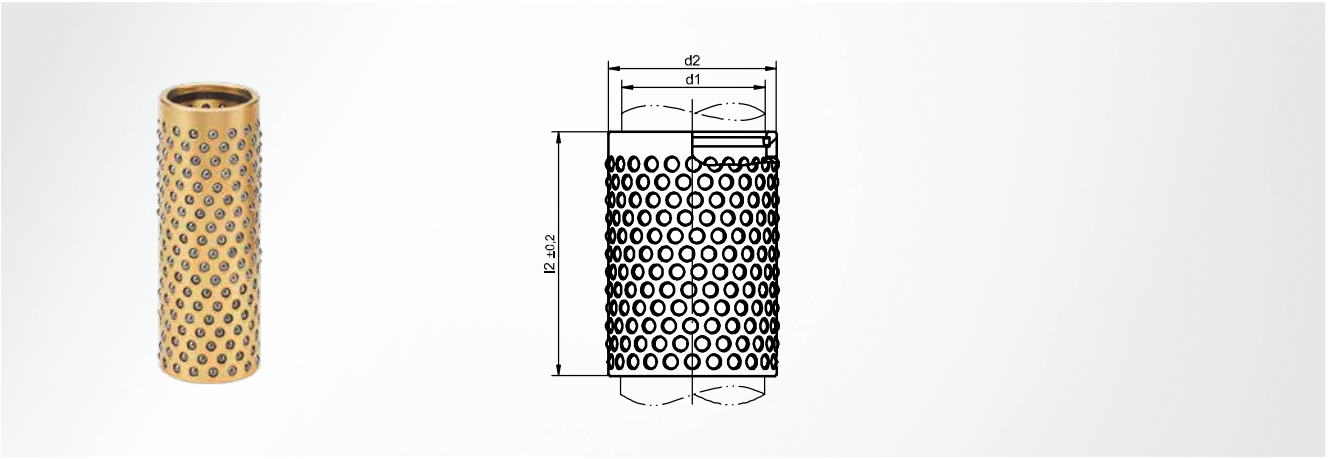
d_1	d_2	l_2 ±0.2	Item number
10	14	30	ST7150 **10 x 030**
		38	ST7150 **10 x 038**
		43	ST7150 **10 x 043**
12	16	30	ST7150 **12 x 030**
		38	ST7150 **12 x 038**
		43	ST7150 **12 x 043**
15	21	30	ST7150 **15 x 030**
		38	ST7150 **15 x 038**
		43	ST7150 **15 x 043**
		54	ST7150 **15 x 054**
		63	ST7150 **15 x 063**
16	22	30	ST7150 **16 x 030**
		38	ST7150 **16 x 038**
		43	ST7150 **16 x 043**
		54	ST7150 **16 x 054**
		63	ST7150 **16 x 063**
19	25	30	ST7150 **19 x 030**
		38	ST7150 **19 x 038**
		43	ST7150 **19 x 043**
		54	ST7150 **19 x 054**
		63	ST7150 **19 x 063**
		74	ST7150 **19 x 074**
20	26	30	ST7150 **20 x 030**
		38	ST7150 **20 x 038**
		43	ST7150 **20 x 043**
		54	ST7150 **20 x 054**
		63	ST7150 **20 x 063**
		74	ST7150 **20 x 074**
24	30	30	ST7150 **24 x 030**
		38	ST7150 **24 x 038**
		43	ST7150 **24 x 043**
		54	ST7150 **24 x 054**
		63	ST7150 **24 x 063**
		74	ST7150 **24 x 074**
		83	ST7150 **24 x 083**
		90	ST7150 **24 x 090**
25	31	30	ST7150 **25 x 030**

d_1	d_2	l_2 ±0.2	Item number
25	31	38	ST7150 **25 x 038**
		43	ST7150 **25 x 043**
		54	ST7150 **25 x 054**
		63	ST7150 **25 x 063**
		74	ST7150 **25 x 074**
		83	ST7150 **25 x 083**
		90	ST7150 **25 x 090**
30	38	38	ST7150 **30 x 038**
		43	ST7150 **30 x 043**
		54	ST7150 **30 x 054**
		58	ST7150 **30 x 058**
		68	ST7150 **30 x 068**
		74	ST7150 **30 x 074**
		83	ST7150 **30 x 083**
		88	ST7150 **30 x 088**
		103	ST7150 **30 x 103**
		108	ST7150 **30 x 108**
32	40	38	ST7150 **32 x 038**
		43	ST7150 **32 x 043**
		54	ST7150 **32 x 054**
		58	ST7150 **32 x 058**
		68	ST7150 **32 x 068**
		74	ST7150 **32 x 074**
		83	ST7150 **32 x 083**
		88	ST7150 **32 x 088**
		103	ST7150 **32 x 103**
		108	ST7150 **32 x 108**
38	46	38	ST7150 **38 x 038**
		43	ST7150 **38 x 043**
		58	ST7150 **38 x 058**
		68	ST7150 **38 x 068**
		88	ST7150 **38 x 088**
		94	ST7150 **38 x 094**
		108	ST7150 **38 x 108**
		128	ST7150 **38 x 128**
40	48	38	ST7150 **40 x 038**
		43	ST7150 **40 x 043**

d_1	d_2	l_2 ±0.2	Item number
40	48	58	ST7150 **40 x 058**
		68	ST7150 **40 x 068**
		88	ST7150 **40 x 088**
		94	ST7150 **40 x 094**
		108	ST7150 **40 x 108**
		128	ST7150 **40 x 128**
48	56	43	ST7150 **48 x 043**
		58	ST7150 **48 x 058**
		68	ST7150 **48 x 068**
		74	ST7150 **48 x 074**
		88	ST7150 **48 x 088**
		108	ST7150 **48 x 108**
		128	ST7150 **48 x 128**
50	58	43	ST7150 **50 x 043**
		58	ST7150 **50 x 058**
		68	ST7150 **50 x 068**
		74	ST7150 **50 x 074**
		88	ST7150 **50 x 088**
		108	ST7150 **50 x 108**
		128	ST7150 **50 x 128**
60	70	75	ST7150 **60 x 075**
		94	ST7150 **60 x 094**
		113	ST7150 **60 x 113**
		128	ST7150 **60 x 128**
		139	ST7150 **60 x 139**
		154	ST7150 **60 x 154**
63	73	75	ST7150 **63 x 075**
		94	ST7150 **63 x 094**
		113	ST7150 **63 x 113**
		128	ST7150 **63 x 128**
		139	ST7150 **63 x 139**
		154	ST7150 **63 x 154**
80	92	113	ST7150 **80 x 113**
		138	ST7150 **80 x 138**
		156	ST7150 **80 x 156**

ST7151 Ball cage

Brass, with installation assistance



Material
Brass 2.0401

Note
Cage travel = ½ stroke length

Ball property
Steel; hardened; quality class 1; sorted

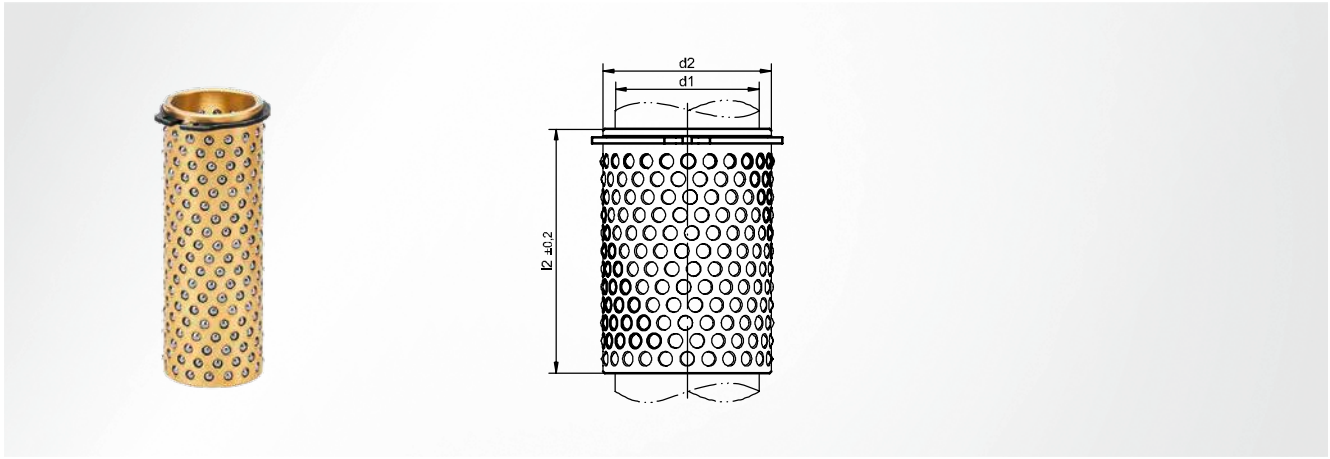
d_1	d_2	l_2 ±0.2	Item number
15	21	30	ST7151 **15 x 030**
		38	ST7151 **15 x 038**
		43	ST7151 **15 x 043**
		54	ST7151 **15 x 054**
		63	ST7151 **15 x 063**
16	22	30	ST7151 **16 x 030**
		38	ST7151 **16 x 038**
		43	ST7151 **16 x 043**
		54	ST7151 **16 x 054**
		63	ST7151 **16 x 063**
19	25	30	ST7151 **19 x 030**
		38	ST7151 **19 x 038**
		43	ST7151 **19 x 043**
		54	ST7151 **19 x 054**
		63	ST7151 **19 x 063**
		74	ST7151 **19 x 074**
20	26	30	ST7151 **20 x 030**
		38	ST7151 **20 x 038**
		43	ST7151 **20 x 043**
		54	ST7151 **20 x 054**
		63	ST7151 **20 x 063**
		74	ST7151 **20 x 074**
24	30	30	ST7151 **24 x 030**
		38	ST7151 **24 x 038**
		43	ST7151 **24 x 043**
		54	ST7151 **24 x 054**
		63	ST7151 **24 x 063**
		74	ST7151 **24 x 074**
		83	ST7151 **24 x 083**
		90	ST7151 **24 x 090**
25	31	30	ST7151 **25 x 030**
		38	ST7151 **25 x 038**
		43	ST7151 **25 x 043**
		54	ST7151 **25 x 054**
		63	ST7151 **25 x 063**

d_1	d_2	l_2 ±0.2	Item number
25	31	74	ST7151 **25 x 074**
		83	ST7151 **25 x 083**
		90	ST7151 **25 x 090**
30	38	38	ST7151 **30 x 038**
		43	ST7151 **30 x 043**
		54	ST7151 **30 x 054**
		58	ST7151 **30 x 058**
		68	ST7151 **30 x 068**
		74	ST7151 **30 x 074**
		83	ST7151 **30 x 083**
		88	ST7151 **30 x 088**
		103	ST7151 **30 x 103**
		108	ST7151 **30 x 108**
32	40	38	ST7151 **32 x 038**
		43	ST7151 **32 x 043**
		54	ST7151 **32 x 054**
		58	ST7151 **32 x 058**
		68	ST7151 **32 x 068**
		74	ST7151 **32 x 074**
		83	ST7151 **32 x 083**
		88	ST7151 **32 x 088**
		103	ST7151 **32 x 103**
		108	ST7151 **32 x 108**
38	46	38	ST7151 **38 x 038**
		43	ST7151 **38 x 043**
		58	ST7151 **38 x 058**
		68	ST7151 **38 x 068**
		88	ST7151 **38 x 088**
		94	ST7151 **38 x 094**
		108	ST7151 **38 x 108**
		128	ST7151 **38 x 128**
40	48	38	ST7151 **40 x 038**
		43	ST7151 **40 x 043**
		58	ST7151 **40 x 058**
		68	ST7151 **40 x 068**

d_1	d_2	l_2 ±0.2	Item number
40	48	88	ST7151 **40 x 088**
		94	ST7151 **40 x 094**
		108	ST7151 **40 x 108**
		128	ST7151 **40 x 128**
48	56	43	ST7151 **48 x 043**
		58	ST7151 **48 x 058**
		68	ST7151 **48 x 068**
		74	ST7151 **48 x 074**
		88	ST7151 **48 x 088**
		108	ST7151 **48 x 108**
		128	ST7151 **48 x 128**
50	58	43	ST7151 **50 x 043**
		58	ST7151 **50 x 058**
		68	ST7151 **50 x 068**
		74	ST7151 **50 x 074**
		88	ST7151 **50 x 088**
		108	ST7151 **50 x 108**
		128	ST7151 **50 x 128**
60	70	75	ST7151 **60 x 075**
		94	ST7151 **60 x 094**
		113	ST7151 **60 x 113**
		128	ST7151 **60 x 128**
		139	ST7151 **60 x 139**
		154	ST7151 **60 x 154**
63	73	75	ST7151 **63 x 075**
		94	ST7151 **63 x 094**
		113	ST7151 **63 x 113**
		128	ST7151 **63 x 128**
		139	ST7151 **63 x 139**
		154	ST7151 **63 x 154**
80	92	113	ST7151 **80 x 113**
		138	ST7151 **80 x 138**
		156	ST7151 **80 x 156**

ST7152 Ball cage

Brass, with lock ring



Material
Brass 2.0401

Note
Cage travel = ½ stroke length

Ball property
Steel; hardened; quality class 1; sorted

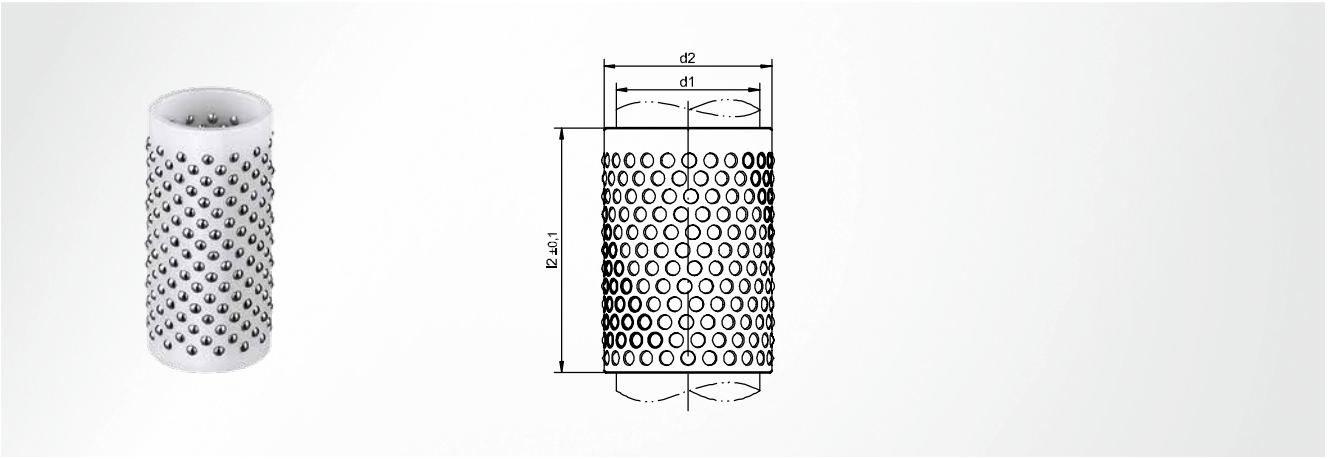
d_1	d_2	l_2 ±0.2	Item number
15	21	30	ST7152 **15 x 030**
		38	ST7152 **15 x 038**
		43	ST7152 **15 x 043**
		54	ST7152 **15 x 054**
		63	ST7152 **15 x 063**
16	22	30	ST7152 **16 x 030**
		38	ST7152 **16 x 038**
		43	ST7152 **16 x 043**
		54	ST7152 **16 x 054**
		63	ST7152 **16 x 063**
19	25	30	ST7152 **19 x 030**
		38	ST7152 **19 x 038**
		43	ST7152 **19 x 043**
		54	ST7152 **19 x 054**
		63	ST7152 **19 x 063**
		74	ST7152 **19 x 074**
20	26	30	ST7152 **20 x 030**
		38	ST7152 **20 x 038**
		43	ST7152 **20 x 043**
		54	ST7152 **20 x 054**
		63	ST7152 **20 x 063**
		74	ST7152 **20 x 074**
24	30	30	ST7152 **24 x 030**
		38	ST7152 **24 x 038**
		43	ST7152 **24 x 043**
		54	ST7152 **24 x 054**
		63	ST7152 **24 x 063**
		74	ST7152 **24 x 074**
		83	ST7152 **24 x 083**
		90	ST7152 **24 x 090**
25	31	30	ST7152 **25 x 030**
		38	ST7152 **25 x 038**
		43	ST7152 **25 x 043**
		54	ST7152 **25 x 054**
		63	ST7152 **25 x 063**

d_1	d_2	l_2 ±0.2	Item number
25	31	74	ST7152 **25 x 074**
		83	ST7152 **25 x 083**
		90	ST7152 **25 x 090**
30	38	38	ST7152 **30 x 038**
		43	ST7152 **30 x 043**
		54	ST7152 **30 x 054**
		58	ST7152 **30 x 058**
		68	ST7152 **30 x 068**
		74	ST7152 **30 x 074**
		83	ST7152 **30 x 083**
		88	ST7152 **30 x 088**
		103	ST7152 **30 x 103**
		108	ST7152 **30 x 108**
32	40	38	ST7152 **32 x 038**
		43	ST7152 **32 x 043**
		54	ST7152 **32 x 054**
		58	ST7152 **32 x 058**
		68	ST7152 **32 x 068**
		74	ST7152 **32 x 074**
		83	ST7152 **32 x 083**
		88	ST7152 **32 x 088**
		103	ST7152 **32 x 103**
		108	ST7152 **32 x 108**
38	46	38	ST7152 **38 x 038**
		43	ST7152 **38 x 043**
		58	ST7152 **38 x 058**
		68	ST7152 **38 x 068**
		88	ST7152 **38 x 088**
		94	ST7152 **38 x 094**
		108	ST7152 **38 x 108**
		128	ST7152 **38 x 128**
40	48	38	ST7152 **40 x 038**
		43	ST7152 **40 x 043**
		58	ST7152 **40 x 058**
		68	ST7152 **40 x 068**

d_1	d_2	l_2 ±0.2	Item number
40	48	88	ST7152 **40 x 088**
		94	ST7152 **40 x 094**
		108	ST7152 **40 x 108**
		128	ST7152 **40 x 128**
48	56	43	ST7152 **48 x 043**
		58	ST7152 **48 x 058**
		68	ST7152 **48 x 068**
		74	ST7152 **48 x 074**
		88	ST7152 **48 x 088**
		108	ST7152 **48 x 108**
		128	ST7152 **48 x 128**
50	58	43	ST7152 **50 x 043**
		58	ST7152 **50 x 058**
		68	ST7152 **50 x 068**
		74	ST7152 **50 x 074**
		88	ST7152 **50 x 088**
		108	ST7152 **50 x 108**
		128	ST7152 **50 x 128**
60	70	75	ST7152 **60 x 075**
		94	ST7152 **60 x 094**
		113	ST7152 **60 x 113**
		128	ST7152 **60 x 128**
		139	ST7152 **60 x 139**
		154	ST7152 **60 x 154**
63	73	75	ST7152 **63 x 075**
		94	ST7152 **63 x 094**
		113	ST7152 **63 x 113**
		128	ST7152 **63 x 128**
		139	ST7152 **63 x 139**
		154	ST7152 **63 x 154**
80	92	113	ST7152 **80 x 113**
		138	ST7152 **80 x 138**
		156	ST7152 **80 x 156**

ST7133 Ball cage

Polyurethane



Material
POM M25

Note
Cage travel = ½ stroke length

Ball property
Steel; hardened; quality class 1; sorted

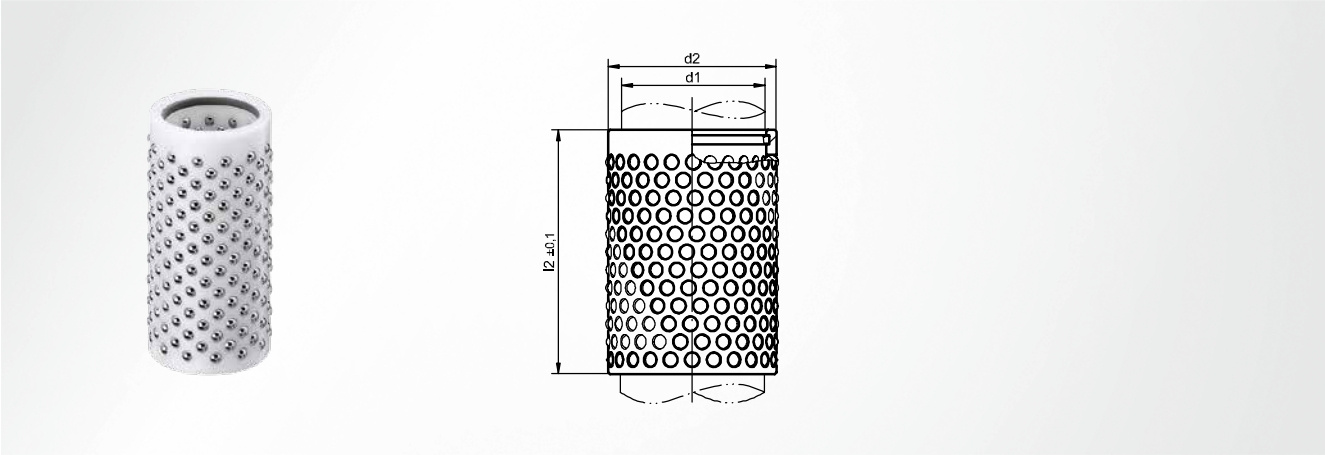
d_1	d_2	l_2 ±0.1	Item number
10	14	30	ST7133 **10 x 030**
		38	ST7133 **10 x 038**
		43	ST7133 **10 x 043**
12	16	30	ST7133 **12 x 030**
		38	ST7133 **12 x 038**
		43	ST7133 **12 x 043**
15	21	30	ST7133 **15 x 030**
		38	ST7133 **15 x 038**
		43	ST7133 **15 x 043**
		54	ST7133 **15 x 054**
		63	ST7133 **15 x 063**
16	22	30	ST7133 **16 x 030**
		38	ST7133 **16 x 038**
		43	ST7133 **16 x 043**
		54	ST7133 **16 x 054**
		63	ST7133 **16 x 063**
19	25	30	ST7133 **19 x 030**
		38	ST7133 **19 x 038**
		43	ST7133 **19 x 043**
		54	ST7133 **19 x 054**
		63	ST7133 **19 x 063**
		74	ST7133 **19 x 074**
20	26	30	ST7133 **20 x 030**
		38	ST7133 **20 x 038**
		43	ST7133 **20 x 043**
		54	ST7133 **20 x 054**
		63	ST7133 **20 x 063**
		74	ST7133 **20 x 074**
24	30	30	ST7133 **24 x 030**
		38	ST7133 **24 x 038**
		43	ST7133 **24 x 043**
		54	ST7133 **24 x 054**

d_1	d_2	l_2 ±0.1	Item number
24	30	63	ST7133 **24 x 063**
		74	ST7133 **24 x 074**
		83	ST7133 **24 x 083**
		90	ST7133 **24 x 090**
25	31	30	ST7133 **25 x 030**
		38	ST7133 **25 x 038**
		43	ST7133 **25 x 043**
		54	ST7133 **25 x 054**
		63	ST7133 **25 x 063**
		74	ST7133 **25 x 074**
		83	ST7133 **25 x 083**
		90	ST7133 **25 x 090**
30	38	38	ST7133 **30 x 038**
		43	ST7133 **30 x 043**
		54	ST7133 **30 x 054**
		58	ST7133 **30 x 058**
		68	ST7133 **30 x 068**
		74	ST7133 **30 x 074**
		83	ST7133 **30 x 083**
		88	ST7133 **30 x 088**
		103	ST7133 **30 x 103**
		108	ST7133 **30 x 108**
32	40	38	ST7133 **32 x 038**
		43	ST7133 **32 x 043**
		54	ST7133 **32 x 054**
		58	ST7133 **32 x 058**
		68	ST7133 **32 x 068**
		74	ST7133 **32 x 074**
		83	ST7133 **32 x 083**
		88	ST7133 **32 x 088**
		103	ST7133 **32 x 103**
		108	ST7133 **32 x 108**

d_1	d_2	l_2 ±0.1	Item number
38	46	38	ST7133 **38 x 038**
		43	ST7133 **38 x 043**
		58	ST7133 **38 x 058**
		68	ST7133 **38 x 068**
		88	ST7133 **38 x 088**
		94	ST7133 **38 x 094**
		108	ST7133 **38 x 108**
		128	ST7133 **38 x 128**
40	48	38	ST7133 **40 x 038**
		43	ST7133 **40 x 043**
		58	ST7133 **40 x 058**
		68	ST7133 **40 x 068**
		88	ST7133 **40 x 088**
		94	ST7133 **40 x 094**
		108	ST7133 **40 x 108**
		128	ST7133 **40 x 128**
48	56	43	ST7133 **48 x 043**
		58	ST7133 **48 x 058**
		68	ST7133 **48 x 068**
		74	ST7133 **48 x 074**
		88	ST7133 **48 x 088**
		108	ST7133 **48 x 108**
		128	ST7133 **48 x 128**
50	58	43	ST7133 **50 x 043**
		58	ST7133 **50 x 058**
		68	ST7133 **50 x 068**
		74	ST7133 **50 x 074**
		88	ST7133 **50 x 088**
		108	ST7133 **50 x 108**
		128	ST7133 **50 x 128**

ST7173 Ball cage

Polyurethane, with installation assistance



Material
POM M25

Note
Cage travel = ½ stroke length

Ball property
Steel; hardened; quality class 1; sorted

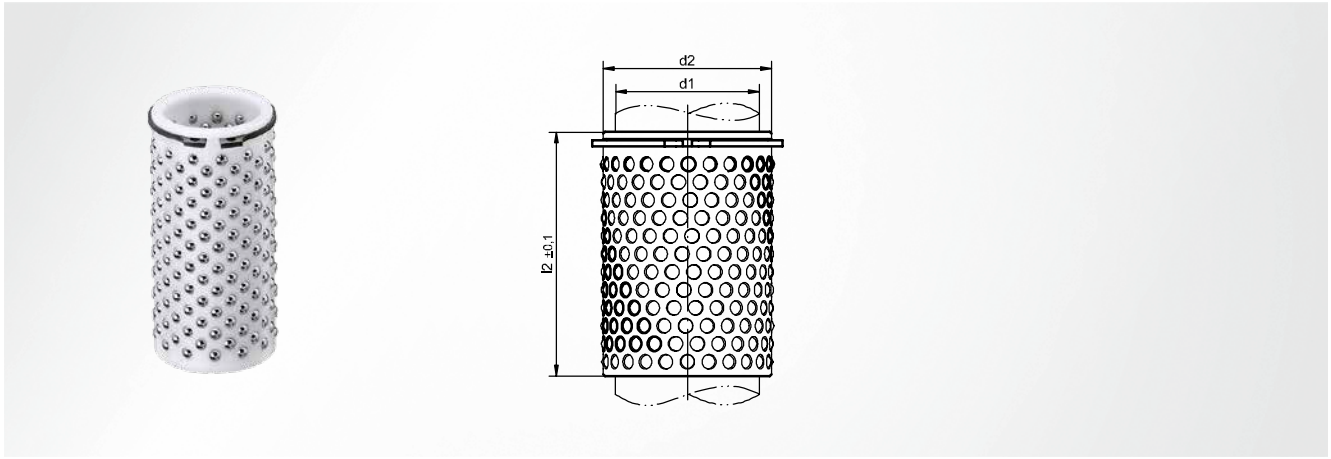
d_1	d_2	l_2 ±0.1	Item number
15	21	30	ST7173 **15 x 030**
		38	ST7173 **15 x 038**
		43	ST7173 **15 x 043**
		54	ST7173 **15 x 054**
		63	ST7173 **15 x 063**
16	22	30	ST7173 **16 x 030**
		38	ST7173 **16 x 038**
		43	ST7173 **16 x 043**
		54	ST7173 **16 x 054**
		63	ST7173 **16 x 063**
19	25	30	ST7173 **19 x 030**
		38	ST7173 **19 x 038**
		43	ST7173 **19 x 043**
		54	ST7173 **19 x 054**
		63	ST7173 **19 x 063**
		74	ST7173 **19 x 074**
20	26	30	ST7173 **20 x 030**
		38	ST7173 **20 x 038**
		43	ST7173 **20 x 043**
		54	ST7173 **20 x 054**
		63	ST7173 **20 x 063**
		74	ST7173 **20 x 074**
24	30	30	ST7173 **24 x 030**
		38	ST7173 **24 x 038**
		43	ST7173 **24 x 043**
		54	ST7173 **24 x 054**
		63	ST7173 **24 x 063**
		74	ST7173 **24 x 074**
		83	ST7173 **24 x 083**
		90	ST7173 **24 x 090**

d_1	d_2	l_2 ±0.1	Item number
25	31	30	ST7173 **25 x 030**
		38	ST7173 **25 x 038**
		43	ST7173 **25 x 043**
		54	ST7173 **25 x 054**
		63	ST7173 **25 x 063**
		74	ST7173 **25 x 074**
		83	ST7173 **25 x 083**
		90	ST7173 **25 x 090**
30	38	38	ST7173 **30 x 038**
		43	ST7173 **30 x 043**
		54	ST7173 **30 x 054**
		58	ST7173 **30 x 058**
		68	ST7173 **30 x 068**
		74	ST7173 **30 x 074**
		83	ST7173 **30 x 083**
		88	ST7173 **30 x 088**
		103	ST7173 **30 x 103**
		108	ST7173 **30 x 108**
32	40	38	ST7173 **32 x 038**
		43	ST7173 **32 x 043**
		54	ST7173 **32 x 054**
		58	ST7173 **32 x 058**
		68	ST7173 **32 x 068**
		74	ST7173 **32 x 074**
		83	ST7173 **32 x 083**
		88	ST7173 **32 x 088**
		103	ST7173 **32 x 103**
		108	ST7173 **32 x 108**
38	46	38	ST7173 **38 x 038**
		43	ST7173 **38 x 043**

d_1	d_2	l_2 ±0.1	Item number
38	46	58	ST7173 **38 x 058**
		68	ST7173 **38 x 068**
		88	ST7173 **38 x 088**
		94	ST7173 **38 x 094**
		108	ST7173 **38 x 108**
		128	ST7173 **38 x 128**
40	48	38	ST7173 **40 x 038**
		43	ST7173 **40 x 043**
		58	ST7173 **40 x 058**
		68	ST7173 **40 x 068**
		88	ST7173 **40 x 088**
		94	ST7173 **40 x 094**
		108	ST7173 **40 x 108**
		128	ST7173 **40 x 128**
48	56	43	ST7173 **48 x 043**
		58	ST7173 **48 x 058**
		68	ST7173 **48 x 068**
		74	ST7173 **48 x 074**
		88	ST7173 **48 x 088**
		108	ST7173 **48 x 108**
		128	ST7173 **48 x 128**
50	58	43	ST7173 **50 x 043**
		58	ST7173 **50 x 058**
		68	ST7173 **50 x 068**
		74	ST7173 **50 x 074**
		88	ST7173 **50 x 088**
		108	ST7173 **50 x 108**
		128	ST7173 **50 x 128**

ST7174 Ball cage

Polyurethane, with lock ring



Material
POM M25

Note
Cage travel = ½ stroke length

Ball property
Steel; hardened; quality class 1; sorted

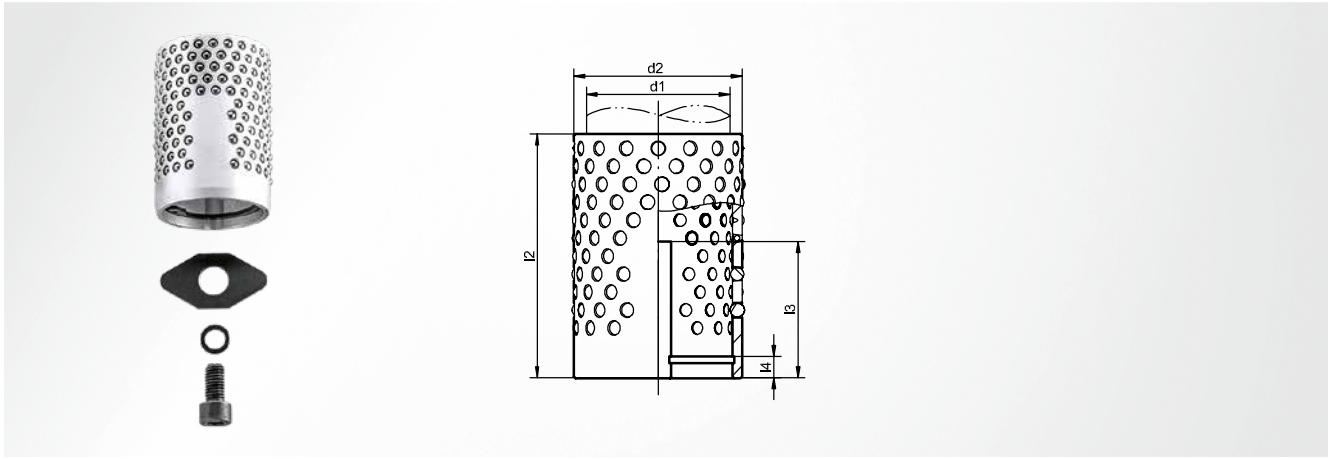
d_1	d_2	l_2 ±0.1	Item number
15	21	30	ST7174 **15 x 030**
		38	ST7174 **15 x 038**
		43	ST7174 **15 x 043**
		54	ST7174 **15 x 054**
		63	ST7174 **15 x 063**
16	22	30	ST7174 **16 x 030**
		38	ST7174 **16 x 038**
		43	ST7174 **16 x 043**
		54	ST7174 **16 x 054**
		63	ST7174 **16 x 063**
19	25	30	ST7174 **19 x 030**
		38	ST7174 **19 x 038**
		43	ST7174 **19 x 043**
		54	ST7174 **19 x 054**
		63	ST7174 **19 x 063**
		74	ST7174 **19 x 074**
20	26	30	ST7174 **20 x 030**
		38	ST7174 **20 x 038**
		43	ST7174 **20 x 043**
		54	ST7174 **20 x 054**
		63	ST7174 **20 x 063**
		74	ST7174 **20 x 074**
24	30	30	ST7174 **24 x 030**
		38	ST7174 **24 x 038**
		43	ST7174 **24 x 043**
		54	ST7174 **24 x 054**
		63	ST7174 **24 x 063**
		74	ST7174 **24 x 074**
		83	ST7174 **24 x 083**
		90	ST7174 **24 x 090**

d_1	d_2	l_2 ±0.1	Item number
25	31	30	ST7174 **25 x 030**
		38	ST7174 **25 x 038**
		43	ST7174 **25 x 043**
		54	ST7174 **25 x 054**
		63	ST7174 **25 x 063**
		74	ST7174 **25 x 074**
		83	ST7174 **25 x 083**
		90	ST7174 **25 x 090**
30	38	38	ST7174 **30 x 038**
		43	ST7174 **30 x 043**
		54	ST7174 **30 x 054**
		58	ST7174 **30 x 058**
		68	ST7174 **30 x 068**
		74	ST7174 **30 x 074**
		83	ST7174 **30 x 083**
		88	ST7174 **30 x 088**
		103	ST7174 **30 x 103**
		108	ST7174 **30 x 108**
32	40	38	ST7174 **32 x 038**
		43	ST7174 **32 x 043**
		54	ST7174 **32 x 054**
		58	ST7174 **32 x 058**
		68	ST7174 **32 x 068**
		74	ST7174 **32 x 074**
		83	ST7174 **32 x 083**
		88	ST7174 **32 x 088**
		103	ST7174 **32 x 103**
		108	ST7174 **32 x 108**
38	46	38	ST7174 **38 x 038**
		43	ST7174 **38 x 043**

d_1	d_2	l_2 ±0.1	Item number
38	46	58	ST7174 **38 x 058**
		68	ST7174 **38 x 068**
		88	ST7174 **38 x 088**
		94	ST7174 **38 x 094**
		108	ST7174 **38 x 108**
		128	ST7174 **38 x 128**
40	48	38	ST7174 **40 x 038**
		43	ST7174 **40 x 043**
		58	ST7174 **40 x 058**
		68	ST7174 **40 x 068**
		88	ST7174 **40 x 088**
		94	ST7174 **40 x 094**
		108	ST7174 **40 x 108**
		128	ST7174 **40 x 128**
48	56	43	ST7174 **48 x 043**
		58	ST7174 **48 x 058**
		68	ST7174 **48 x 068**
		74	ST7174 **48 x 074**
		88	ST7174 **48 x 088**
		108	ST7174 **48 x 108**
		128	ST7174 **48 x 128**
50	58	43	ST7174 **50 x 043**
		58	ST7174 **50 x 058**
		68	ST7174 **50 x 068**
		74	ST7174 **50 x 074**
		88	ST7174 **50 x 088**
		108	ST7174 **50 x 108**
		128	ST7174 **50 x 128**

ST7134 Ball cage

Aluminium, with locking device and fixing screw



Material
Aluminium 3.1645

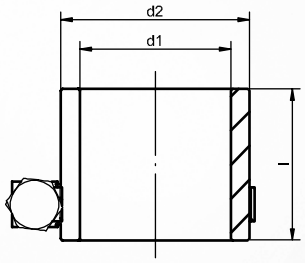
Note
Cage travel = ½ stroke length

Ball property
Steel; hardened; quality class 1; sorted

d_1	d_2	l_4	l_2	l_3	Item number
24	30	4.5	63	34	ST7134 **24 x 063**
			74	44	ST7134 **24 x 074**
			83	46	ST7134 **24 x 083**
25	31	4.5	63	34	ST7134 **25 x 063**
			74	44	ST7134 **25 x 074**
			83	46	ST7134 **25 x 083**
30	38	4.5	68	38	ST7134 **30 x 068**
			74	44	ST7134 **30 x 074**
			83	46	ST7134 **30 x 083**
			88	47	ST7134 **30 x 088**
			98	53	ST7134 **30 x 098**
			108	58	ST7134 **30 x 108**
32	40	4.5	68	38	ST7134 **32 x 068**
			74	44	ST7134 **32 x 074**
			83	46	ST7134 **32 x 083**
			88	47	ST7134 **32 x 088**
			98	53	ST7134 **32 x 098**
			108	58	ST7134 **32 x 108**
38	46	6.0	68	38	ST7134 **38 x 068**

d_1	d_2	l_4	l_2	l_3	Item number
38	46	6.0	88	47	ST7134 **38 x 088**
			108	58	ST7134 **38 x 108**
			128	78	ST7134 **38 x 128**
40	48	6.0	68	38	ST7134 **40 x 068**
			88	47	ST7134 **40 x 088**
			108	58	ST7134 **40 x 108**
			128	78	ST7134 **40 x 128**
48	56	7.0	88	47	ST7134 **48 x 088**
			108	58	ST7134 **48 x 108**
			128	78	ST7134 **48 x 128**
50	58	7.0	88	47	ST7134 **50 x 088**
			108	58	ST7134 **50 x 108**
			128	78	ST7134 **50 x 128**
60	70	7.0	113	65	ST7134 **60 x 113**
			128	78	ST7134 **60 x 128**
			139	86	ST7134 **60 x 139**
63	73	7.0	113	65	ST7134 **63 x 113**
			128	78	ST7134 **63 x 128**
			139	86	ST7134 **63 x 139**

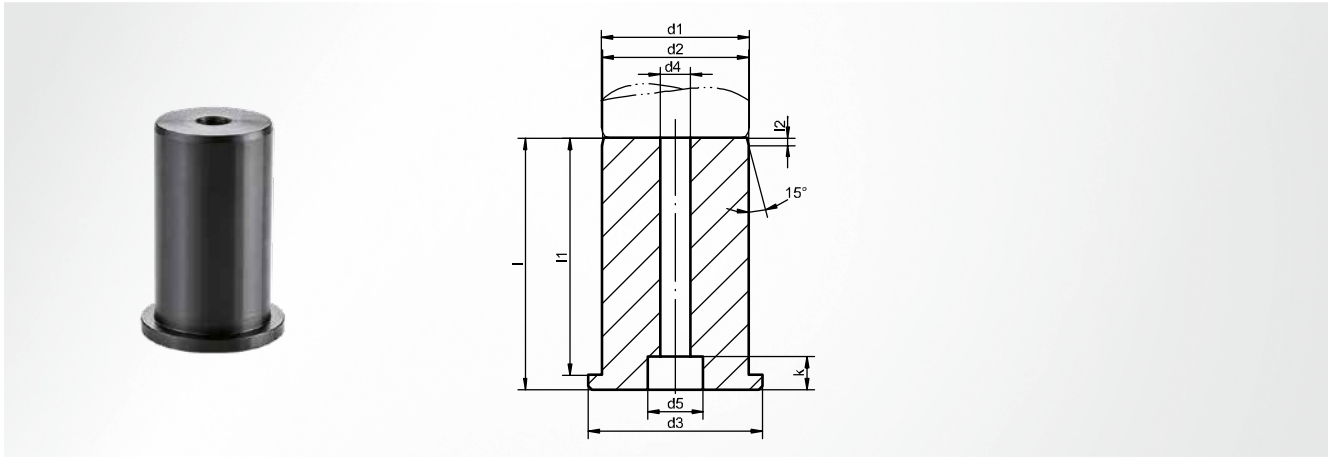
ST7135 Limiting sleeve



Material
Polyurethane

d_2	l	d_1	Item number
20	20	15	ST7135 **15**
		16	ST7135 **16**
25	20	19	ST7135 **19**
		20	ST7135 **20**
30	30	24	ST7135 **24**
		25	ST7135 **25**
40	30	30	ST7135 **30**
		32	ST7135 **32**
50	40	38	ST7135 **38**
		40	ST7135 **40**
60	40	48	ST7135 **48**
		50	ST7135 **50**
70	40	60	ST7135 **60**
		63	ST7135 **63**
90	45	80	ST7135 **80**

ST7132 Cage holder



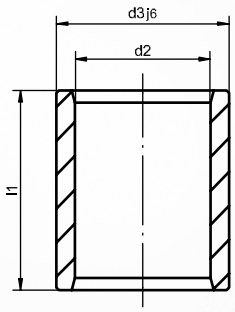
Material
Steel 1.0503 (C45)

Note
the length of the cage holder should be half of that of the cage used

d_1	d_2	d_3	d_4	d_5	l	l_1	l_2	k	Item number
15	14.5	20.5	8.1	13.5	34	31	3	9	ST7132 **15**
16	15.5	21.5	8.1	13.5	34	31	3	9	ST7132 **16**
19	18.5	24.5	8.1	15.0	40	37	3	9	ST7132 **19**
20	19.5	25.5	8.1	15.0	40	37	3	9	ST7132 **20**
24	23.5	29.5	8.1	15.0	48	45	3	9	ST7132 **24**
25	24.5	30.5	8.1	15.0	48	45	3	9	ST7132 **25**
30	29.5	37.0	8.1	15.0	58	54	4	9	ST7132 **30**
32	31.5	39.0	8.1	15.0	58	54	4	9	ST7132 **32**
38	37.5	45.0	8.1	15.0	68	64	4	9	ST7132 **38**
40	39.5	47.0	8.1	15.0	68	64	4	9	ST7132 **40**
48	47.5	55.0	8.1	15.0	68	64	4	9	ST7132 **48**
50	49.5	57.0	8.1	15.0	68	64	4	9	ST7132 **50**
60	59.5	69.0	8.1	15.0	80	75	5	9	ST7132 **60**
63	62.5	72.0	8.1	15.0	80	75	5	9	ST7132 **63**
80	79.0	91.0	8.1	15.0	80	75	5	9	ST7132 **80**

ST7406 Guide bush

smooth



Referring to DIN 9831 / ISO 9448

Material
Steel 1.3505 (100 Cr6); hardened

Hardness
62 ±1 HRC

Installation instruction
Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO G6

Optional accessories
SZ9742

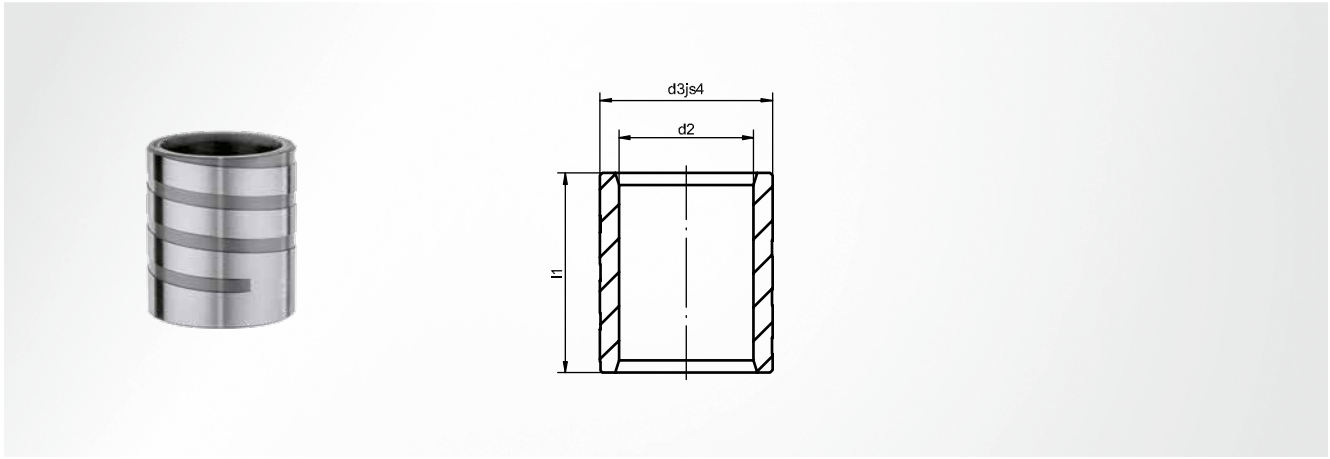
d_1^{h3}	d_2	d_3^{j6}	l_1	Item number
10	14	22	23	ST7406 **10 x 023**
			30	ST7406 **10 x 030**
			37	ST7406 **10 x 037**
12	16	22	23	ST7406 **12 x 023**
			30	ST7406 **12 x 030**
			37	ST7406 **12 x 037**
15	21	28	23	ST7406 **15 x 023**
			30	ST7406 **15 x 030**
			37	ST7406 **15 x 037**
			47	ST7406 **15 x 047**
			60	ST7406 **15 x 060**
16	22	28	23	ST7406 **16 x 023**
			30	ST7406 **16 x 030**
			37	ST7406 **16 x 037**
			47	ST7406 **16 x 047**
			60	ST7406 **16 x 060**
			70	ST7406 **16 x 070**
19	25	32	23	ST7406 **19 x 023**
			30	ST7406 **19 x 030**
			37	ST7406 **19 x 037**
			47	ST7406 **19 x 047**
			60	ST7406 **19 x 060**
20	26	32	23	ST7406 **20 x 023**
			30	ST7406 **20 x 030**
			37	ST7406 **20 x 037**
			47	ST7406 **20 x 047**
			60	ST7406 **20 x 060**
24	30	40	23	ST7406 **24 x 023**
			30	ST7406 **24 x 030**

d_1^{h3}	d_2	d_3^{j6}	l_1	Item number
24	30	40	37	ST7406 **24 x 037**
			47	ST7406 **24 x 047**
			60	ST7406 **24 x 060**
			77	ST7406 **24 x 077**
25	31	40	23	ST7406 **25 x 023**
			30	ST7406 **25 x 030**
			37	ST7406 **25 x 037**
			47	ST7406 **25 x 047**
			60	ST7406 **25 x 060**
			77	ST7406 **25 x 077**
30	38	48	30	ST7406 **30 x 030**
			37	ST7406 **30 x 037**
			47	ST7406 **30 x 047**
			60	ST7406 **30 x 060**
			77	ST7406 **30 x 077**
			95	ST7406 **30 x 095**
32	40	48	30	ST7406 **32 x 030**
			37	ST7406 **32 x 037**
			47	ST7406 **32 x 047**
			60	ST7406 **32 x 060**
			77	ST7406 **32 x 077**
			95	ST7406 **32 x 095**
38	46	58	30	ST7406 **38 x 030**
			37	ST7406 **38 x 037**
			47	ST7406 **38 x 047**
			60	ST7406 **38 x 060**
			77	ST7406 **38 x 077**
			95	ST7406 **38 x 095**
			120	ST7406 **38 x 120**

d_1^{h3}	d_2	d_3^{j6}	l_1	Item number
40	48	58	30	ST7406 **40 x 030**
			37	ST7406 **40 x 037**
			47	ST7406 **40 x 047**
			60	ST7406 **40 x 060**
			77	ST7406 **40 x 077**
			95	ST7406 **40 x 095**
			120	ST7406 **40 x 120**
48	56	70	37	ST7406 **48 x 037**
			47	ST7406 **48 x 047**
			60	ST7406 **48 x 060**
			77	ST7406 **48 x 077**
			95	ST7406 **48 x 095**
			120	ST7406 **48 x 120**
50	58	70	37	ST7406 **50 x 037**
			47	ST7406 **50 x 047**
			60	ST7406 **50 x 060**
			77	ST7406 **50 x 077**
			95	ST7406 **50 x 095**
			120	ST7406 **50 x 120**
60	70	85	60	ST7406 **60 x 060**
			77	ST7406 **60 x 077**
			95	ST7406 **60 x 095**
			120	ST7406 **60 x 120**
63	73	85	60	ST7406 **63 x 060**
			77	ST7406 **63 x 077**
			95	ST7406 **63 x 095**
			120	ST7406 **63 x 120**
80	92	105	120	ST7406 **80 x 120**
			135	ST7406 **80 x 135**

ST7407 Guide bush

smooth with adhesive grooves



Referring to DIN 9831 / ISO 9448

Material
Steel 1.3505 (100 Cr6); hardened

Hardness
62 ±1 HRC

Installation instruction
Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H5

Optional accessories
SZ9742

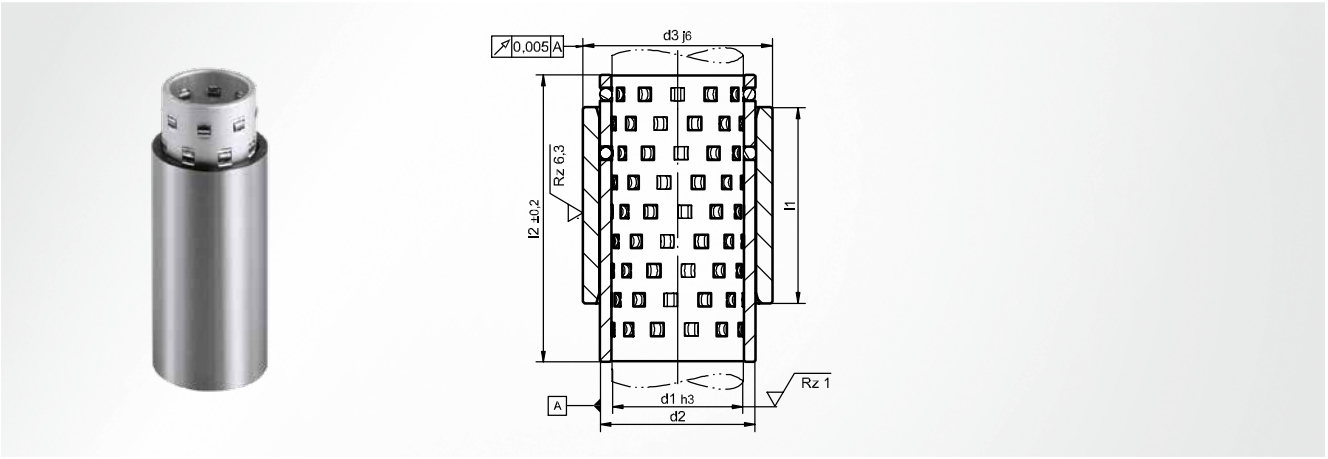
d_1^{h3}	d_2	d_3^{js4}	l_1	Item number
10	14	22	23	ST7407 **10 x 023**
			30	ST7407 **10 x 030**
			37	ST7407 **10 x 037**
12	16	22	23	ST7407 **12 x 023**
			30	ST7407 **12 x 030**
			37	ST7407 **12 x 037**
15	21	28	23	ST7407 **15 x 023**
			30	ST7407 **15 x 030**
			37	ST7407 **15 x 037**
			47	ST7407 **15 x 047**
			60	ST7407 **15 x 060**
16	22	28	23	ST7407 **16 x 023**
			30	ST7407 **16 x 030**
			37	ST7407 **16 x 037**
			47	ST7407 **16 x 047**
			60	ST7407 **16 x 060**
19	25	32	23	ST7407 **19 x 023**
			30	ST7407 **19 x 030**
			37	ST7407 **19 x 037**
			43	ST7407 **19 x 043**
			47	ST7407 **19 x 047**
			60	ST7407 **19 x 060**
20	26	32	23	ST7407 **20 x 023**
			30	ST7407 **20 x 030**
			37	ST7407 **20 x 037**
			47	ST7407 **20 x 047**

d_1^{h3}	d_2	d_3^{js4}	l_1	Item number
20	26	32	60	ST7407 **20 x 060**
24	30	40	23	ST7407 **24 x 023**
			30	ST7407 **24 x 030**
			37	ST7407 **24 x 037**
			47	ST7407 **24 x 047**
			60	ST7407 **24 x 060**
			77	ST7407 **24 x 077**
25	31	40	23	ST7407 **25 x 023**
			30	ST7407 **25 x 030**
			37	ST7407 **25 x 037**
			47	ST7407 **25 x 047**
			60	ST7407 **25 x 060**
			77	ST7407 **25 x 077**
30	38	48	30	ST7407 **30 x 030**
			37	ST7407 **30 x 037**
			47	ST7407 **30 x 047**
			60	ST7407 **30 x 060**
			77	ST7407 **30 x 077**
			95	ST7407 **30 x 095**
32	40	48	30	ST7407 **32 x 030**
			37	ST7407 **32 x 037**
			47	ST7407 **32 x 047**
			60	ST7407 **32 x 060**
			77	ST7407 **32 x 077**
			95	ST7407 **32 x 095**
38	46	58	30	ST7407 **38 x 030**

d_1^{h3}	d_2	d_3^{js4}	l_1	Item number
38	46	58	37	ST7407 **38 x 037**
			47	ST7407 **38 x 047**
			60	ST7407 **38 x 060**
			77	ST7407 **38 x 077**
			95	ST7407 **38 x 095**
			120	ST7407 **38 x 120**
40	48	58	30	ST7407 **40 x 030**
			37	ST7407 **40 x 037**
			47	ST7407 **40 x 047**
			60	ST7407 **40 x 060**
			77	ST7407 **40 x 077**
			95	ST7407 **40 x 095**
			120	ST7407 **40 x 120**
48	56	70	37	ST7407 **48 x 037**
			47	ST7407 **48 x 047**
			60	ST7407 **48 x 060**
			77	ST7407 **48 x 077**
			95	ST7407 **48 x 095**
			120	ST7407 **48 x 120**
50	58	70	37	ST7407 **50 x 037**
			47	ST7407 **50 x 047**
			60	ST7407 **50 x 060**
			77	ST7407 **50 x 077**
			95	ST7407 **50 x 095**
			120	ST7407 **50 x 120**

ST7403 Guide unit

smooth, roller guide aluminium



Referring to DIN 9831 / ISO 9448

Installation instruction

Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

Scope of supply

ST7406; ST7140

Optional accessories

SZ9742

Installation in mounting bore

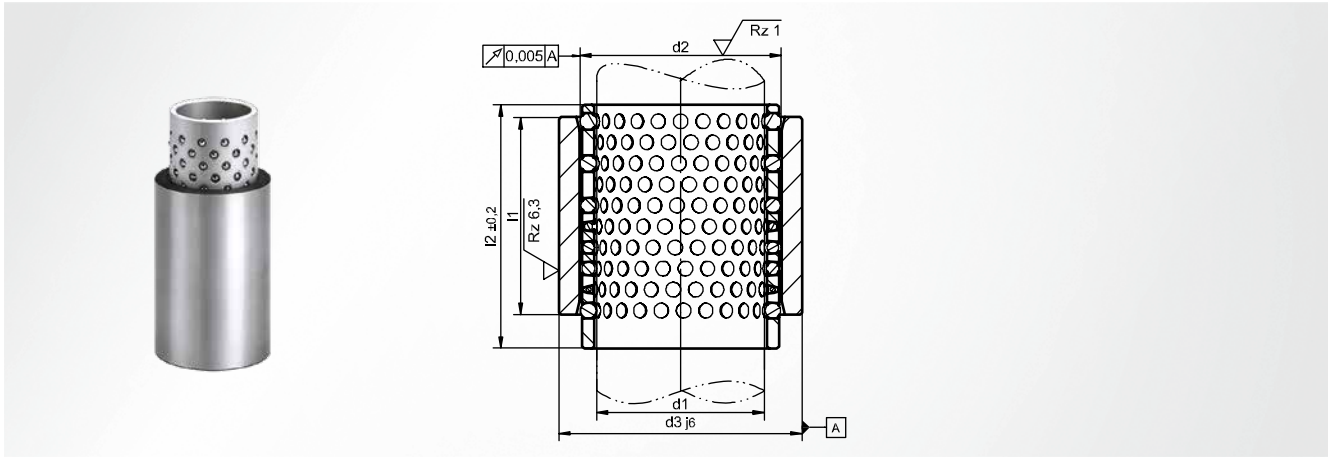
ISO G6

d_1^{h3}	d_2	d_3^{j6}	l_1	$l_2^{\pm 0.2}$	Item number
19	25	32	37	43	ST7403 **19 x 037 x 043**
			47	54	ST7403 **19 x 047 x 054**
			60	63	ST7403 **19 x 060 x 063**
20	26	32	37	43	ST7403 **20 x 037 x 043**
			47	54	ST7403 **20 x 047 x 054**
			60	63	ST7403 **20 x 060 x 063**
24	30	40	37	43	ST7403 **24 x 037 x 043**
			47	63	ST7403 **24 x 047 x 063**
			60	74	ST7403 **24 x 060 x 074**
			77	90	ST7403 **24 x 077 x 090**
25	31	40	37	43	ST7403 **25 x 037 x 043**
			47	63	ST7403 **25 x 047 x 063**
			60	74	ST7403 **25 x 060 x 074**
			77	90	ST7403 **25 x 077 x 090**
30	38	48	47	54	ST7403 **30 x 047 x 054**
			60	74	ST7403 **30 x 060 x 074**
			77	83	ST7403 **30 x 077 x 083**
			95	103	ST7403 **30 x 095 x 103**
32	40	48	47	54	ST7403 **32 x 047 x 054**
			60	74	ST7403 **32 x 060 x 074**
			77	83	ST7403 **32 x 077 x 083**
			95	103	ST7403 **32 x 095 x 103**

d_1^{h3}	d_2	d_3^{j6}	l_1	$l_2^{\pm 0.2}$	Item number
38	46	58	60	58	ST7403 **38 x 060 x 058**
			77	88	ST7403 **38 x 077 x 088**
			95	94	ST7403 **38 x 095 x 094**
			120	128	ST7403 **38 x 120 x 128**
40	48	58	60	58	ST7403 **40 x 060 x 058**
			77	88	ST7403 **40 x 077 x 088**
			95	94	ST7403 **40 x 095 x 094**
			120	128	ST7403 **40 x 120 x 128**
48	56	70	77	74	ST7403 **48 x 077 x 074**
			95	108	ST7403 **48 x 095 x 108**
			120	128	ST7403 **48 x 120 x 128**
50	58	70	77	74	ST7403 **50 x 077 x 074**
			95	108	ST7403 **50 x 095 x 108**
			120	128	ST7403 **50 x 120 x 128**
60	70	85	77	113	ST7403 **60 x 077 x 113**
			95	128	ST7403 **60 x 095 x 128**
			120	139	ST7403 **60 x 120 x 139**
63	73	85	77	113	ST7403 **63 x 077 x 113**
			95	128	ST7403 **63 x 095 x 128**
			120	139	ST7403 **63 x 120 x 139**
80	92	105	120	138	ST7403 **80 x 120 x 138**
			135	156	ST7403 **80 x 135 x 156**

ST7402 Guide unit

smooth, ball guide aluminium



Referring to DIN 9831 / ISO 9448

Installation instruction

Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

Installation in mounting bore

ISO G6

Scope of supply

ST7406; ST7130

Optional accessories

SZ9742

d_1^{h3}	d_2	d_3^{j6}	l_1	$l_2^{\pm 0.2}$	Item number
10	14	22	23	30	ST7402 **10 x 023 x 030**
			30	38	ST7402 **10 x 030 x 038**
			37	43	ST7402 **10 x 037 x 043**
12	16	22	23	30	ST7402 **12 x 023 x 030**
			30	38	ST7402 **12 x 030 x 038**
			37	43	ST7402 **12 x 037 x 043**
15	21	28	23	30	ST7402 **15 x 023 x 030**
			30	38	ST7402 **15 x 030 x 038**
			37	43	ST7402 **15 x 037 x 043**
			47	54	ST7402 **15 x 047 x 054**
			60	63	ST7402 **15 x 060 x 063**
16	22	28	23	30	ST7402 **16 x 023 x 030**
			30	38	ST7402 **16 x 030 x 038**
			37	43	ST7402 **16 x 037 x 043**
			47	54	ST7402 **16 x 047 x 054**
			60	63	ST7402 **16 x 060 x 063**
19	25	32	23	30	ST7402 **19 x 023 x 030**
			30	38	ST7402 **19 x 030 x 038**
			37	43	ST7402 **19 x 037 x 043**
			47	54	ST7402 **19 x 047 x 054**
			60	63	ST7402 **19 x 060 x 063**
20	26	32	23	30	ST7402 **20 x 023 x 030**
			30	38	ST7402 **20 x 030 x 038**
			37	43	ST7402 **20 x 037 x 043**
			47	54	ST7402 **20 x 047 x 054**
			60	63	ST7402 **20 x 060 x 063**
24	30	40	23	30	ST7402 **24 x 023 x 030**
			30	38	ST7402 **24 x 030 x 038**
			37	43	ST7402 **24 x 037 x 043**
			47	54	ST7402 **24 x 047 x 054**
			60	63	ST7402 **24 x 060 x 063**
			77	83	ST7402 **24 x 077 x 083**
25	31	40	23	30	ST7402 **25 x 023 x 030**
			30	38	ST7402 **25 x 030 x 038**
			37	43	ST7402 **25 x 037 x 043**

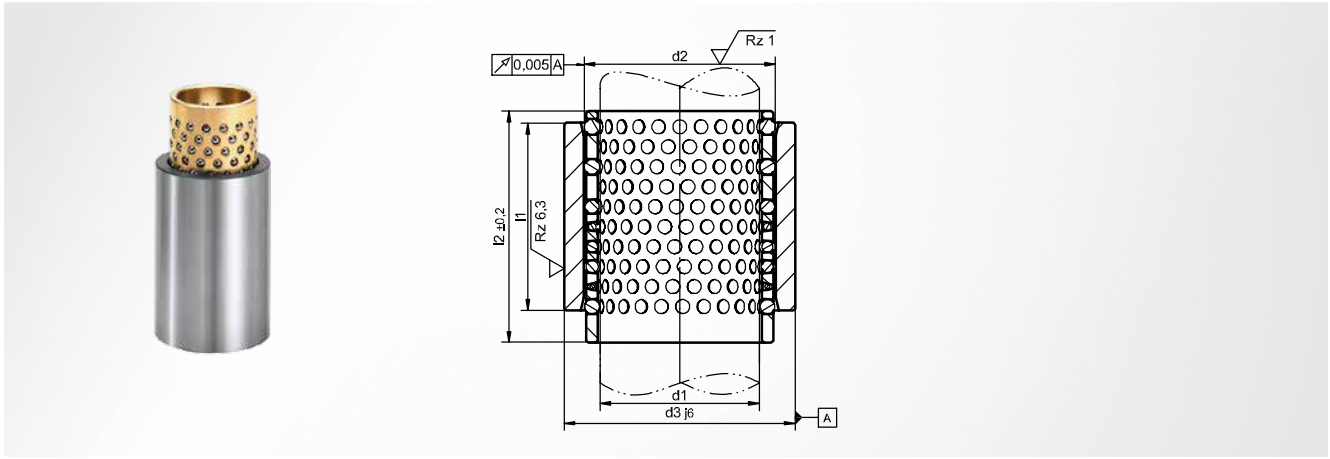
ST7402 Guide unit

smooth, ball guide aluminium

d_1^{h3}	d_2	d_3^{j6}	l_1	$l_2^{\pm 0.2}$	Item number
25	31	40	47	54	ST7402 **25 x 047 x 054**
			60	63	ST7402 **25 x 060 x 063**
			77	83	ST7402 **25 x 077 x 083**
30	38	48	30	38	ST7402 **30 x 030 x 038**
			37	43	ST7402 **30 x 037 x 043**
			47	58	ST7402 **30 x 047 x 058**
			60	68	ST7402 **30 x 060 x 068**
			77	88	ST7402 **30 x 077 x 088**
			95	108	ST7402 **30 x 095 x 108**
32	40	48	30	38	ST7402 **32 x 030 x 038**
			37	43	ST7402 **32 x 037 x 043**
			47	58	ST7402 **32 x 047 x 058**
			60	68	ST7402 **32 x 060 x 068**
			77	88	ST7402 **32 x 077 x 088**
			95	108	ST7402 **32 x 095 x 108**
38	46	58	30	38	ST7402 **38 x 030 x 038**
			37	43	ST7402 **38 x 037 x 043**
			47	58	ST7402 **38 x 047 x 058**
			60	68	ST7402 **38 x 060 x 068**
			77	88	ST7402 **38 x 077 x 088**
			95	108	ST7402 **38 x 095 x 108**
			120	128	ST7402 **38 x 120 x 128**
40	48	58	30	38	ST7402 **40 x 030 x 038**
			37	43	ST7402 **40 x 037 x 043**
			47	58	ST7402 **40 x 047 x 058**
			60	68	ST7402 **40 x 060 x 068**
			77	88	ST7402 **40 x 077 x 088**
			95	108	ST7402 **40 x 095 x 108**
			120	128	ST7402 **40 x 120 x 128**
48	56	70	37	43	ST7402 **48 x 037 x 043**
			47	58	ST7402 **48 x 047 x 058**
			60	68	ST7402 **48 x 060 x 068**
			77	88	ST7402 **48 x 077 x 088**
			95	108	ST7402 **48 x 095 x 108**
			120	128	ST7402 **48 x 120 x 128**
50	58	70	37	43	ST7402 **50 x 037 x 043**
			47	58	ST7402 **50 x 047 x 058**
			60	68	ST7402 **50 x 060 x 068**
			77	88	ST7402 **50 x 077 x 088**
			95	108	ST7402 **50 x 095 x 108**
			120	128	ST7402 **50 x 120 x 128**
60	70	85	60	75	ST7402 **60 x 060 x 075**
			77	94	ST7402 **60 x 077 x 094**
			95	113	ST7402 **60 x 095 x 113**
			120	139	ST7402 **60 x 120 x 139**
63	73	85	60	75	ST7402 **63 x 060 x 075**
			77	94	ST7402 **63 x 077 x 094**
			95	113	ST7402 **63 x 095 x 113**
			120	139	ST7402 **63 x 120 x 139**
80	92	105	120	138	ST7402 **80 x 120 x 138**
			135	156	ST7402 **80 x 135 x 156**

ST7404 Guide unit

smooth, ball guide brass



Referring to DIN 9831 / ISO 9448

Installation instruction
Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO G6

Scope of supply
ST7406; ST7150

Optional accessories
SZ9742

d_1^{h3}	d_2	d_3^{j6}	l_1	$l_2^{\pm 0.2}$	Item number
10	14	22	23	30	ST7404 **10 x 023 x 030**
			30	38	ST7404 **10 x 030 x 038**
			37	43	ST7404 **10 x 037 x 043**
12	16	22	23	30	ST7404 **12 x 023 x 030**
			30	38	ST7404 **12 x 030 x 038**
			37	43	ST7404 **12 x 037 x 043**
15	21	28	23	30	ST7404 **15 x 023 x 030**
			30	38	ST7404 **15 x 030 x 038**
			37	43	ST7404 **15 x 037 x 043**
			47	54	ST7404 **15 x 047 x 054**
			60	63	ST7404 **15 x 060 x 063**
16	22	28	23	30	ST7404 **16 x 023 x 030**
			30	38	ST7404 **16 x 030 x 038**
			37	43	ST7404 **16 x 037 x 043**
			47	54	ST7404 **16 x 047 x 054**
			60	63	ST7404 **16 x 060 x 063**
19	25	32	23	30	ST7404 **19 x 023 x 030**
			30	38	ST7404 **19 x 030 x 038**
			37	43	ST7404 **19 x 037 x 043**
			47	54	ST7404 **19 x 047 x 054**
			60	63	ST7404 **19 x 060 x 063**
20	26	32	23	30	ST7404 **20 x 023 x 030**
			30	38	ST7404 **20 x 030 x 038**
			37	43	ST7404 **20 x 037 x 043**
			47	54	ST7404 **20 x 047 x 054**
			60	63	ST7404 **20 x 060 x 063**
24	30	40	23	30	ST7404 **24 x 023 x 030**
			30	38	ST7404 **24 x 030 x 038**
			37	43	ST7404 **24 x 037 x 043**
			47	54	ST7404 **24 x 047 x 054**
			60	63	ST7404 **24 x 060 x 063**
			77	83	ST7404 **24 x 077 x 083**
25	31	40	23	30	ST7404 **25 x 023 x 030**
			30	38	ST7404 **25 x 030 x 038**
			37	43	ST7404 **25 x 037 x 043**

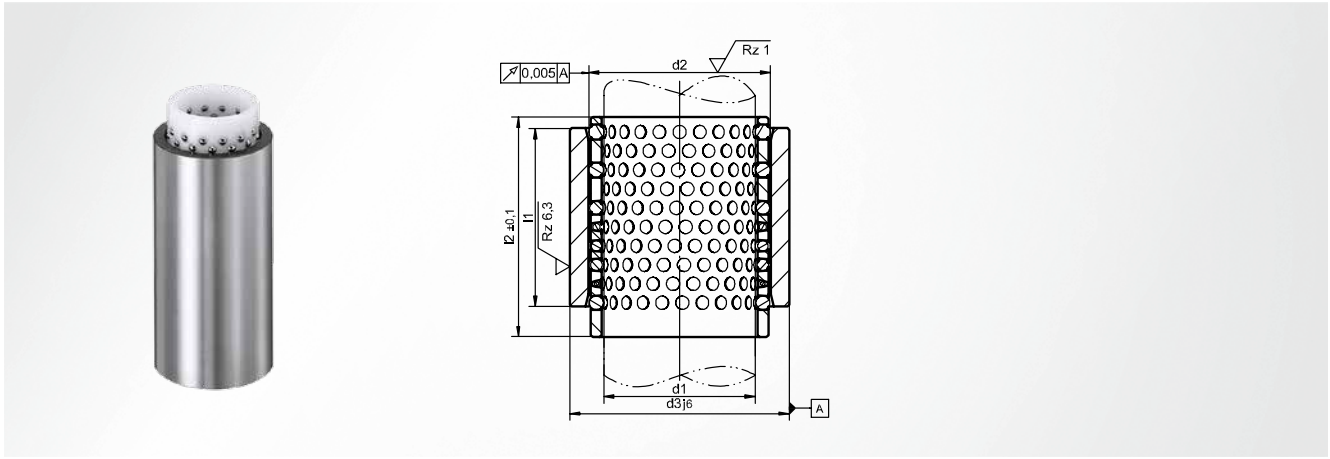
ST7404 Guide unit

smooth, ball guide brass

d_1^{h3}	d_2	d_3^{j6}	l_1	$l_2^{\pm 0.2}$	Item number
25	31	40	47	54	ST7404 **25 x 047 x 054**
			60	63	ST7404 **25 x 060 x 063**
			77	83	ST7404 **25 x 077 x 083**
30	38	48	30	38	ST7404 **30 x 030 x 038**
			37	43	ST7404 **30 x 037 x 043**
			47	58	ST7404 **30 x 047 x 058**
			60	68	ST7404 **30 x 060 x 068**
			77	88	ST7404 **30 x 077 x 088**
			95	108	ST7404 **30 x 095 x 108**
32	40	48	30	38	ST7404 **32 x 030 x 038**
			37	43	ST7404 **32 x 037 x 043**
			47	58	ST7404 **32 x 047 x 058**
			60	68	ST7404 **32 x 060 x 068**
			77	88	ST7404 **32 x 077 x 088**
			95	108	ST7404 **32 x 095 x 108**
38	46	58	30	38	ST7404 **38 x 030 x 038**
			37	43	ST7404 **38 x 037 x 043**
			47	58	ST7404 **38 x 047 x 058**
			60	68	ST7404 **38 x 060 x 068**
			77	88	ST7404 **38 x 077 x 088**
			95	108	ST7404 **38 x 095 x 108**
			120	128	ST7404 **38 x 120 x 128**
40	48	58	30	38	ST7404 **40 x 030 x 038**
			37	43	ST7404 **40 x 037 x 043**
			47	58	ST7404 **40 x 047 x 058**
			60	68	ST7404 **40 x 060 x 068**
			77	88	ST7404 **40 x 077 x 088**
			95	108	ST7404 **40 x 095 x 108**
			120	128	ST7404 **40 x 120 x 128**
48	56	70	37	43	ST7404 **48 x 037 x 043**
			47	58	ST7404 **48 x 047 x 058**
			60	68	ST7404 **48 x 060 x 068**
			77	88	ST7404 **48 x 077 x 088**
			95	108	ST7404 **48 x 095 x 108**
			120	128	ST7404 **48 x 120 x 128**
50	58	70	37	43	ST7404 **50 x 037 x 043**
			47	58	ST7404 **50 x 047 x 058**
			60	68	ST7404 **50 x 060 x 068**
			77	88	ST7404 **50 x 077 x 088**
			95	108	ST7404 **50 x 095 x 108**
			120	128	ST7404 **50 x 120 x 128**
60	70	85	60	75	ST7404 **60 x 060 x 075**
			77	94	ST7404 **60 x 077 x 094**
			95	113	ST7404 **60 x 095 x 113**
			120	139	ST7404 **60 x 120 x 139**
63	73	85	60	75	ST7404 **63 x 060 x 075**
			77	94	ST7404 **63 x 077 x 094**
			95	113	ST7404 **63 x 095 x 113**
			120	139	ST7404 **63 x 120 x 139**
80	92	105	120	138	ST7404 **80 x 120 x 138**
			135	156	ST7404 **80 x 135 x 156**

ST7405 Guide unit

smooth, ball guide polyurethan



Referring to DIN 9831 / ISO 9448

Installation instruction
Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO G6

Scope of supply
ST7406; ST7133

Optional accessories
SZ9742

d_1^{h3}	d_2	d_3^{j6}	l_1	$l_2^{\pm 0.1}$	Item number
10	14	22	23	30	ST7405 **10 x 023 x 030**
			30	38	ST7405 **10 x 030 x 038**
			37	43	ST7405 **10 x 037 x 043**
12	16	22	23	30	ST7405 **12 x 023 x 030**
			30	38	ST7405 **12 x 030 x 038**
			37	43	ST7405 **12 x 037 x 043**
15	21	28	23	30	ST7405 **15 x 023 x 030**
			30	38	ST7405 **15 x 030 x 038**
			37	43	ST7405 **15 x 037 x 043**
			47	54	ST7405 **15 x 047 x 054**
			60	63	ST7405 **15 x 060 x 063**
16	22	28	23	30	ST7405 **16 x 023 x 030**
			30	38	ST7405 **16 x 030 x 038**
			37	43	ST7405 **16 x 037 x 043**
			47	54	ST7405 **16 x 047 x 054**
			60	63	ST7405 **16 x 060 x 063**
19	25	32	23	30	ST7405 **19 x 023 x 030**
			30	38	ST7405 **19 x 030 x 038**
			37	43	ST7405 **19 x 037 x 043**
			47	54	ST7405 **19 x 047 x 054**
			60	63	ST7405 **19 x 060 x 063**
20	26	32	23	30	ST7405 **20 x 023 x 030**
			30	38	ST7405 **20 x 030 x 038**
			37	43	ST7405 **20 x 037 x 043**
			47	54	ST7405 **20 x 047 x 054**
			60	63	ST7405 **20 x 060 x 063**
24	30	40	23	30	ST7405 **24 x 023 x 030**
			30	38	ST7405 **24 x 030 x 038**
			37	43	ST7405 **24 x 037 x 043**
			47	54	ST7405 **24 x 047 x 054**
			60	63	ST7405 **24 x 060 x 063**
			77	83	ST7405 **24 x 077 x 083**
25	31	40	23	30	ST7405 **25 x 023 x 030**
			30	38	ST7405 **25 x 030 x 038**
			37	43	ST7405 **25 x 037 x 043**

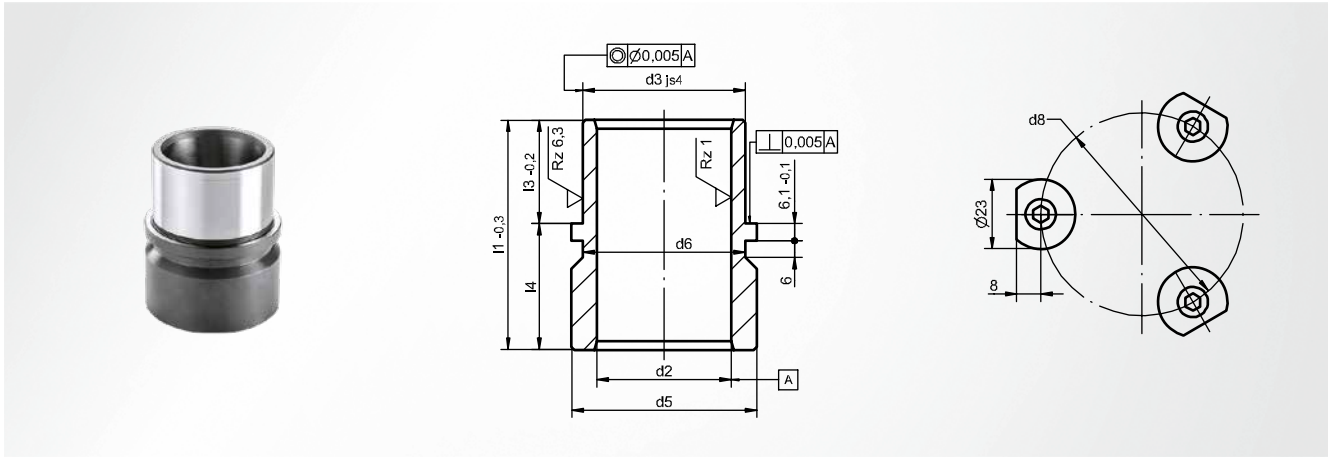
ST7405 Guide unit

smooth, ball guide polyurethan

d_1 h3	d_2	d_3 j6	l_1	l_2 ±0.1	Item number
25	31	40	47	54	ST7405 **25 x 047 x 054**
			60	63	ST7405 **25 x 060 x 063**
			77	83	ST7405 **25 x 077 x 083**
30	38	48	30	38	ST7405 **30 x 030 x 038**
			37	43	ST7405 **30 x 037 x 043**
			47	58	ST7405 **30 x 047 x 058**
			60	68	ST7405 **30 x 060 x 068**
			77	88	ST7405 **30 x 077 x 088**
			95	108	ST7405 **30 x 095 x 108**
32	40	48	30	38	ST7405 **32 x 030 x 038**
			37	43	ST7405 **32 x 037 x 043**
			47	58	ST7405 **32 x 047 x 058**
			60	68	ST7405 **32 x 060 x 068**
			77	88	ST7405 **32 x 077 x 088**
			95	108	ST7405 **32 x 095 x 108**
38	46	58	30	38	ST7405 **38 x 030 x 038**
			37	43	ST7405 **38 x 037 x 043**
			47	58	ST7405 **38 x 047 x 058**
			60	68	ST7405 **38 x 060 x 068**
			77	88	ST7405 **38 x 077 x 088**
			95	108	ST7405 **38 x 095 x 108**
			120	128	ST7405 **38 x 120 x 128**
40	48	58	30	38	ST7405 **40 x 030 x 038**
			37	43	ST7405 **40 x 037 x 043**
			47	58	ST7405 **40 x 047 x 058**
			60	68	ST7405 **40 x 060 x 068**
			77	88	ST7405 **40 x 077 x 088**
			95	108	ST7405 **40 x 095 x 108**
			120	128	ST7405 **40 x 120 x 128**
48	56	70	37	43	ST7405 **48 x 037 x 043**
			47	58	ST7405 **48 x 047 x 058**
			60	68	ST7405 **48 x 060 x 068**
			77	88	ST7405 **48 x 077 x 088**
			95	108	ST7405 **48 x 095 x 108**
			120	128	ST7405 **48 x 120 x 128**
50	58	70	37	43	ST7405 **50 x 037 x 043**
			47	58	ST7405 **50 x 047 x 058**
			60	68	ST7405 **50 x 060 x 068**
			77	88	ST7405 **50 x 077 x 088**
			95	108	ST7405 **50 x 095 x 108**
			120	128	ST7405 **50 x 120 x 128**

ST7416 Guide bush

with shoulder



Referring to DIN 9831 / ISO 9448

Material
Steel 1.7139 (16MnCrS5); case-hardened

Hardness
62 ±1 HRC

Installation instruction
Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

Scope of supply
ST7367

d_1	d_2	d_3^{js4}	d_5	d_6	d_8	$l_3^{-0.2}$	$l_1^{-0.3}$	l_4	Item number
19	25	32	40	32	59	23	35	12	ST7416 **19 x 035**
							43	20	ST7416 **19 x 043**
							59	36	ST7416 **19 x 059**
20	26	32	40	32	59	23	35	12	ST7416 **20 x 035**
							43	20	ST7416 **20 x 043**
							59	36	ST7416 **20 x 059**
24	30	40	48	40	65	23	35	12	ST7416 **24 x 035**
							60	37	ST7416 **24 x 060**
							80	57	ST7416 **24 x 080**
25	31	40	48	40	65	23	35	12	ST7416 **25 x 035**
							60	37	ST7416 **25 x 060**
							80	57	ST7416 **25 x 080**
30	38	48	56	48	73	30	42	12	ST7416 **30 x 042**
							75	45	ST7416 **30 x 075**
							93	63	ST7416 **30 x 093**
32	40	48	56	48	73	30	42	12	ST7416 **32 x 042**
							75	45	ST7416 **32 x 075**
							93	63	ST7416 **32 x 093**
38	46	58	66	58	83	37	52	15	ST7416 **38 x 052**
							82	45	ST7416 **38 x 082**
							107	70	ST7416 **38 x 107**
40	48	58	66	58	83	37	52	15	ST7416 **40 x 052**
							82	45	ST7416 **40 x 082**
							107	70	ST7416 **40 x 107**
48	56	70	80	70	97	47	65	18	ST7416 **48 x 065**
							97	50	ST7416 **48 x 097**
							127	80	ST7416 **48 x 127**
50	58	70	80	70	97	47	65	18	ST7416 **50 x 065**
							97	50	ST7416 **50 x 097**
							127	80	ST7416 **50 x 127**
60	70	85	95	85	112	60	80	20	ST7416 **60 x 080**
							115	55	ST7416 **60 x 115**
							150	90	ST7416 **60 x 150**

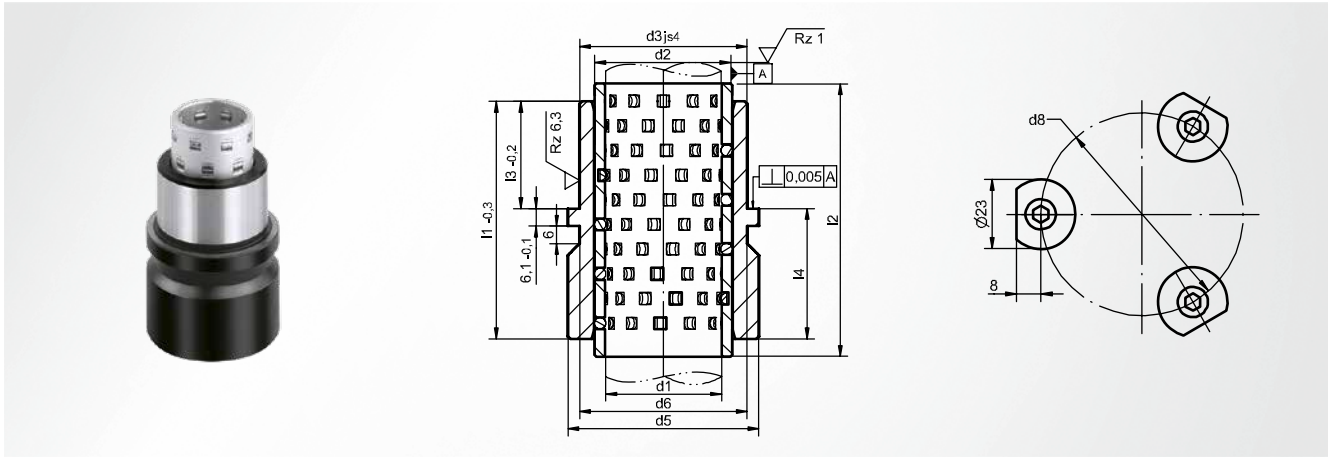
ST7416 Guide bush

with shoulder

d_1	d_2	d_3^{js4}	d_5	d_6	d_8	$l_3^{-0.2}$	$l_1^{-0.3}$	l_4	Item number
63	73	85	95	85	112	60	80	20	ST7416 **63 x 080**
							115	55	ST7416 **63 x 115**
							150	90	ST7416 **63 x 150**
80	92	105	118	105	135	60	80	20	ST7416 **80 x 080**
							120	60	ST7416 **80 x 120**
							150	90	ST7416 **80 x 150**

ST7413 Guide unit

roller guide aluminium, with shoulder



Referring to DIN 9831 / ISO 9448

Installation instruction

Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore

ISO H6

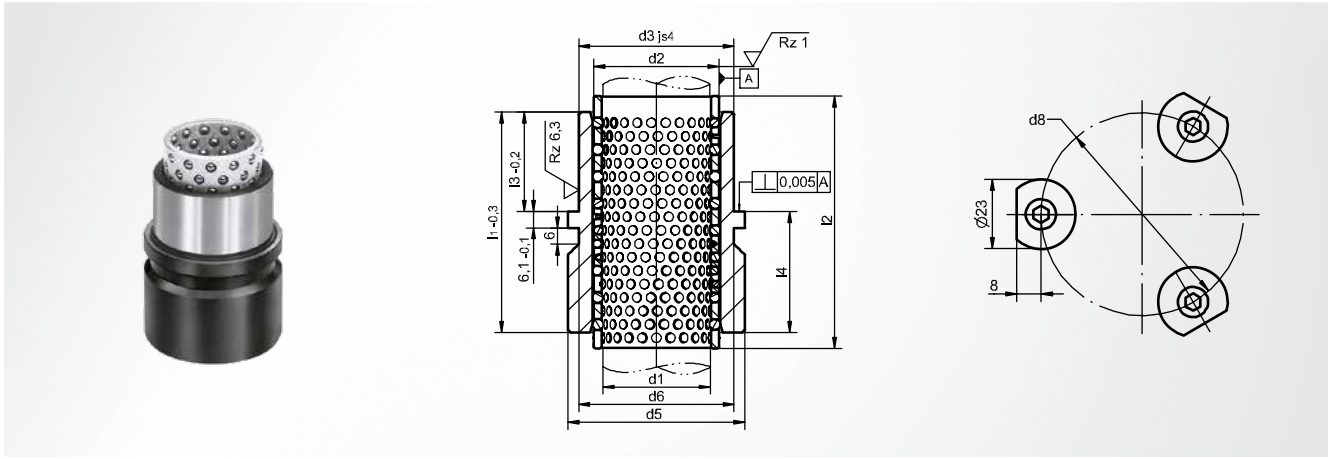
Scope of supply

ST7367; ST7140; ST7416

d_1^{h3}	d_2	d_3^{js4}	d_5	d_6	d_8	$l_3^{-0.2}$	$l_1^{-0.3}$	$l_2^{\pm 0.2}$	l_4	Item number
19	25	32	40	32	59	23	35	43	12	ST7413 **19 x 035 x 043**
							43	54	20	ST7413 **19 x 043 x 054**
							59	74	36	ST7413 **19 x 059 x 074**
20	26	32	40	32	59	23	35	43	12	ST7413 **20 x 035 x 043**
							43	54	20	ST7413 **20 x 043 x 054**
							59	74	36	ST7413 **20 x 059 x 074**
24	30	40	48	40	65	23	35	43	12	ST7413 **24 x 035 x 043**
							60	74	37	ST7413 **24 x 060 x 074**
							80	90	57	ST7413 **24 x 080 x 090**
25	31	40	48	40	65	23	35	43	12	ST7413 **25 x 035 x 043**
							60	74	37	ST7413 **25 x 060 x 074**
							80	90	57	ST7413 **25 x 080 x 090**
30	38	48	56	48	73	30	42	54	12	ST7413 **30 x 042 x 054**
							75	83	45	ST7413 **30 x 075 x 083**
							93	103	63	ST7413 **30 x 093 x 103**
32	40	48	56	48	73	30	42	54	12	ST7413 **32 x 042 x 054**
							75	83	45	ST7413 **32 x 075 x 083**
							93	103	63	ST7413 **32 x 093 x 103**
38	46	58	66	58	83	37	52	58	15	ST7413 **38 x 052 x 058**
							82	94	45	ST7413 **38 x 082 x 094**
							107	128	70	ST7413 **38 x 107 x 128**
40	48	58	66	58	83	37	52	58	15	ST7413 **40 x 052 x 058**
							82	94	45	ST7413 **40 x 082 x 094**
							107	128	70	ST7413 **40 x 107 x 128**
48	56	70	80	70	97	47	65	74	18	ST7413 **48 x 065 x 074**
							97	108	50	ST7413 **48 x 097 x 108**
							127	128	80	ST7413 **48 x 127 x 128**
50	58	70	80	70	97	47	65	74	18	ST7413 **50 x 065 x 074**
							97	108	50	ST7413 **50 x 097 x 108**
							127	128	80	ST7413 **50 x 127 x 128**
60	70	85	95	85	112	60	80	113	20	ST7413 **60 x 080 x 113**
							115	128	55	ST7413 **60 x 115 x 128**
							150	139	90	ST7413 **60 x 150 x 139**
63	73	85	95	85	112	60	80	113	20	ST7413 **63 x 080 x 113**
							115	128	55	ST7413 **63 x 115 x 128**
							150	139	90	ST7413 **63 x 150 x 139**
80	92	105	118	105	135	60	80	113	20	ST7413 **80 x 080 x 113**
							120	138	60	ST7413 **80 x 120 x 138**
							150	156	90	ST7413 **80 x 150 x 156**

ST7412 Guide unit

ball guide aluminium, with shoulder



Referring to DIN 9831 / ISO 9448

Installation instruction

Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore

ISO H6

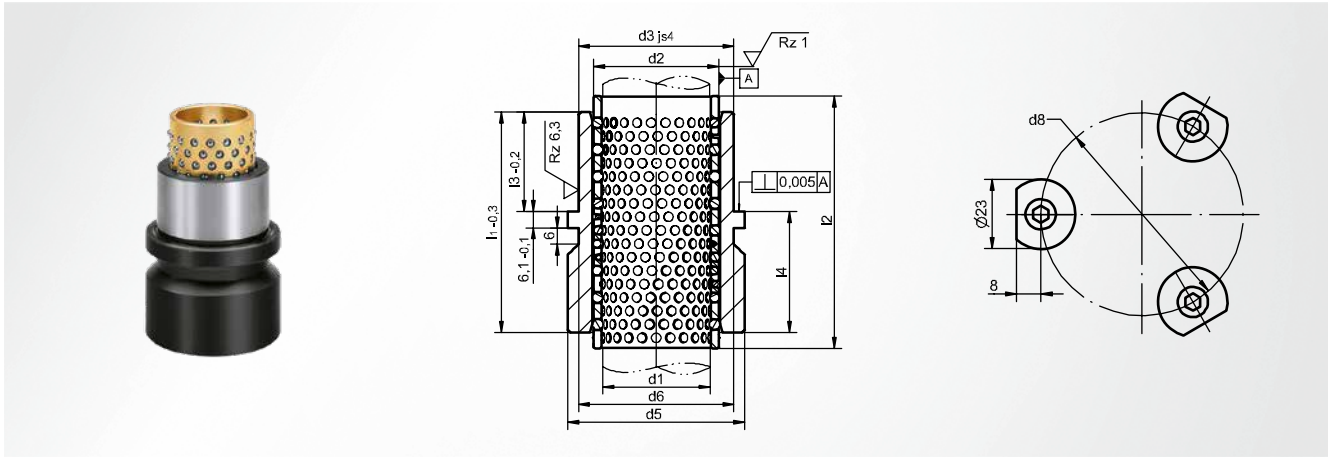
Scope of supply

ST7367; ST7130; ST7416

d_1^{h3}	d_2	d_3^{js4}	d_5	d_6	d_8	$l_3^{-0.2}$	$l_1^{-0.3}$	$l_2^{\pm 0.2}$	l_4	Item number
19	25	32	40	32	59	23	35	43	12	ST7412 **19 x 035 x 043**
							43	54	20	ST7412 **19 x 043 x 054**
							59	74	36	ST7412 **19 x 059 x 074**
20	26	32	40	32	59	23	35	43	12	ST7412 **20 x 035 x 043**
							43	54	20	ST7412 **20 x 043 x 054**
							59	74	36	ST7412 **20 x 059 x 074**
24	30	40	48	40	65	23	35	43	12	ST7412 **24 x 035 x 043**
							60	74	37	ST7412 **24 x 060 x 074**
							80	90	57	ST7412 **24 x 080 x 090**
25	31	40	48	40	65	23	35	43	12	ST7412 **25 x 035 x 043**
							60	74	37	ST7412 **25 x 060 x 074**
							80	90	57	ST7412 **25 x 080 x 090**
30	38	48	56	48	73	30	42	54	12	ST7412 **30 x 042 x 054**
							75	83	45	ST7412 **30 x 075 x 083**
							93	103	63	ST7412 **30 x 093 x 103**
32	40	48	56	48	73	30	42	54	12	ST7412 **32 x 042 x 054**
							75	83	45	ST7412 **32 x 075 x 083**
							93	103	63	ST7412 **32 x 093 x 103**
38	46	58	66	58	83	37	52	58	15	ST7412 **38 x 052 x 058**
							82	94	45	ST7412 **38 x 082 x 094**
							107	128	70	ST7412 **38 x 107 x 128**
40	48	58	66	58	83	37	52	58	15	ST7412 **40 x 052 x 058**
							82	94	45	ST7412 **40 x 082 x 094**
							107	128	70	ST7412 **40 x 107 x 128**
48	56	70	80	70	97	47	65	74	18	ST7412 **48 x 065 x 074**
							97	108	50	ST7412 **48 x 097 x 108**
							127	128	80	ST7412 **48 x 127 x 128**
50	58	70	80	70	97	47	65	74	18	ST7412 **50 x 065 x 074**
							97	108	50	ST7412 **50 x 097 x 108**
							127	128	80	ST7412 **50 x 127 x 128**
60	70	85	95	85	112	60	80	113	20	ST7412 **60 x 080 x 113**
							115	128	55	ST7412 **60 x 115 x 128**
							150	154	90	ST7412 **60 x 150 x 154**
63	73	85	95	85	112	60	80	113	20	ST7412 **63 x 080 x 113**
							115	128	55	ST7412 **63 x 115 x 128**
							150	154	90	ST7412 **63 x 150 x 154**
80	92	105	118	105	135	60	80	113	20	ST7412 **80 x 080 x 113**
							120	138	60	ST7412 **80 x 120 x 138**
							150	156	90	ST7412 **80 x 150 x 156**

ST7414 Guide unit

ball guide brass, with shoulder



Referring to DIN 9831 / ISO 9448

Installation instruction

Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore

ISO H6

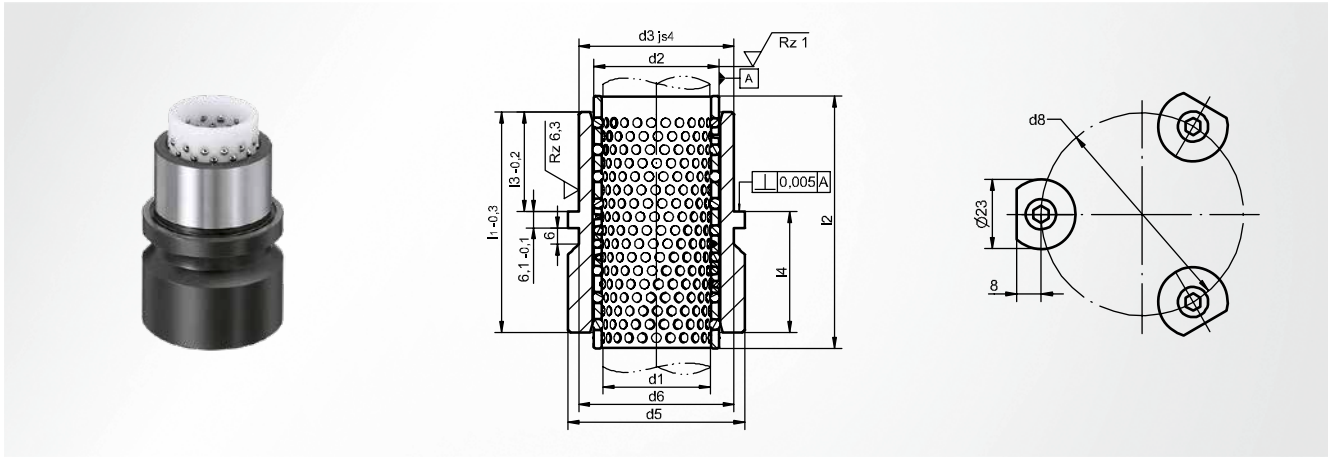
Scope of supply

ST7367; ST7150; ST7416

d_1 h3	d_2	d_3 js4	d_5	d_6	d_8	l_3 -0.2	l_1 -0.3	l_2 ±0.2	l_4	Item number
19	25	32	40	32	59	23	35	43	12	ST7414 **19 x 035 x 043**
							43	54	20	ST7414 **19 x 043 x 054**
							59	74	36	ST7414 **19 x 059 x 074**
20	26	32	40	32	59	23	35	43	12	ST7414 **20 x 035 x 043**
							43	54	20	ST7414 **20 x 043 x 054**
							59	74	36	ST7414 **20 x 059 x 074**
24	30	40	48	40	65	23	35	43	12	ST7414 **24 x 035 x 043**
							60	74	37	ST7414 **24 x 060 x 074**
							80	90	57	ST7414 **24 x 080 x 090**
25	31	40	48	40	65	23	35	43	12	ST7414 **25 x 035 x 043**
							60	74	37	ST7414 **25 x 060 x 074**
							80	90	57	ST7414 **25 x 080 x 090**
30	38	48	56	48	73	30	42	54	12	ST7414 **30 x 042 x 054**
							75	83	45	ST7414 **30 x 075 x 083**
							93	103	63	ST7414 **30 x 093 x 103**
32	40	48	56	48	73	30	42	54	12	ST7414 **32 x 042 x 054**
							75	83	45	ST7414 **32 x 075 x 083**
							93	103	63	ST7414 **32 x 093 x 103**
38	46	58	66	58	83	37	52	58	15	ST7414 **38 x 052 x 058**
							82	94	45	ST7414 **38 x 082 x 094**
							107	128	70	ST7414 **38 x 107 x 128**
40	48	58	66	58	83	37	52	58	15	ST7414 **40 x 052 x 058**
							82	94	45	ST7414 **40 x 082 x 094**
							107	128	70	ST7414 **40 x 107 x 128**
48	56	70	80	70	97	47	65	74	18	ST7414 **48 x 065 x 074**
							97	108	50	ST7414 **48 x 097 x 108**
							127	128	80	ST7414 **48 x 127 x 128**
50	58	70	80	70	97	47	65	74	18	ST7414 **50 x 065 x 074**
							97	108	50	ST7414 **50 x 097 x 108**
							127	128	80	ST7414 **50 x 127 x 128**
60	70	85	95	85	112	60	80	113	20	ST7414 **60 x 080 x 113**
							115	128	55	ST7414 **60 x 115 x 128**
							150	154	90	ST7414 **60 x 150 x 154**
63	73	85	95	85	112	60	80	113	20	ST7414 **63 x 080 x 113**
							115	128	55	ST7414 **63 x 115 x 128**
							150	154	90	ST7414 **63 x 150 x 154**
80	92	105	118	105	135	60	80	113	20	ST7414 **80 x 080 x 113**
							120	138	60	ST7414 **80 x 120 x 138**
							150	156	90	ST7414 **80 x 150 x 156**

ST7415 Guide unit

ball guide polyurethan, with shoulder



Referring to DIN 9831 / ISO 9448

Installation instruction

Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore

ISO H6

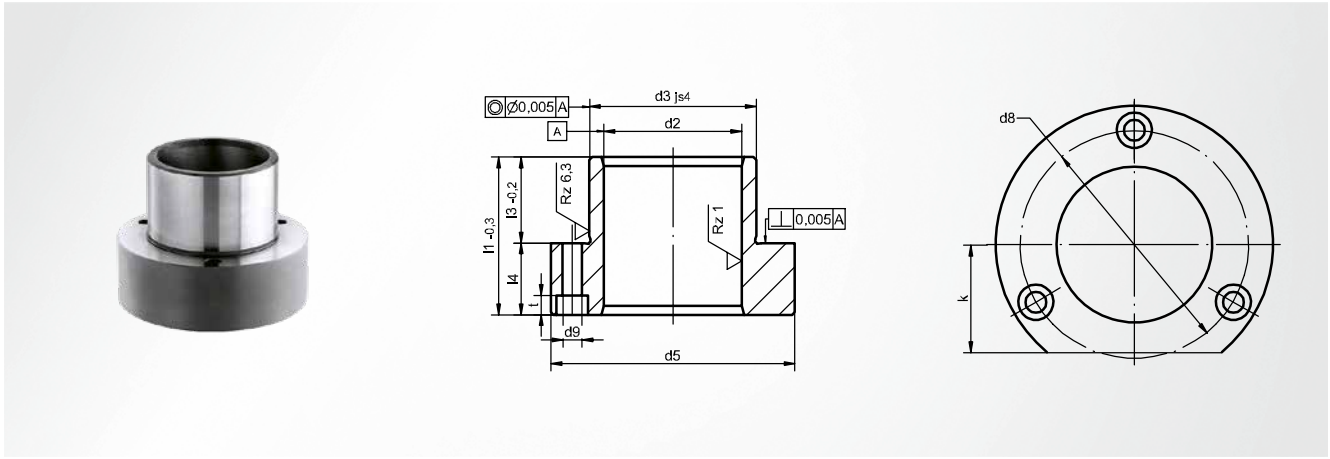
Scope of supply

ST7367; ST7133; ST7416

d_1^{h3}	d_2	d_3^{js4}	d_5	d_6	d_8	$l_3^{-0.2}$	$l_1^{-0.3}$	$l_2^{\pm 0.1}$	l_4	Item number
19	25	32	40	32	59	23	35	43	12	ST7415 **19 x 035 x 043**
							43	54	20	ST7415 **19 x 043 x 054**
							59	74	36	ST7415 **19 x 059 x 074**
20	26	32	40	32	59	23	35	43	12	ST7415 **20 x 035 x 043**
							43	54	20	ST7415 **20 x 043 x 054**
							59	74	36	ST7415 **20 x 059 x 074**
24	30	40	48	40	65	23	35	43	12	ST7415 **24 x 035 x 043**
							60	74	37	ST7415 **24 x 060 x 074**
							80	90	57	ST7415 **24 x 080 x 090**
25	31	40	48	40	65	23	35	43	12	ST7415 **25 x 035 x 043**
							60	74	37	ST7415 **25 x 060 x 074**
							80	90	57	ST7415 **25 x 080 x 090**
30	38	48	56	48	73	30	42	54	12	ST7415 **30 x 042 x 054**
							75	83	45	ST7415 **30 x 075 x 083**
							93	103	63	ST7415 **30 x 093 x 103**
32	40	48	56	48	73	30	42	54	12	ST7415 **32 x 042 x 054**
							75	83	45	ST7415 **32 x 075 x 083**
							93	103	63	ST7415 **32 x 093 x 103**
38	46	58	66	58	83	37	52	58	15	ST7415 **38 x 052 x 058**
							82	94	45	ST7415 **38 x 082 x 094**
							107	128	70	ST7415 **38 x 107 x 128**
40	48	58	66	58	83	37	52	58	15	ST7415 **40 x 052 x 058**
							82	94	45	ST7415 **40 x 082 x 094**
							107	128	70	ST7415 **40 x 107 x 128**
48	56	70	80	70	97	47	65	74	18	ST7415 **48 x 065 x 074**
							97	108	50	ST7415 **48 x 097 x 108**
							127	128	80	ST7415 **48 x 127 x 128**
50	58	70	80	70	97	47	65	74	18	ST7415 **50 x 065 x 074**
							97	108	50	ST7415 **50 x 097 x 108**
							127	128	80	ST7415 **50 x 127 x 128**

ST7426 Guide bush

with flange



Referring to DIN 9831 / ISO 9448

Material
Steel 1.7139 (16MnCrS5); case-hardened

Hardness
62 ±1 HRC

Installation instruction
Fixing with 3 socket-head screws (not included in the scope of delivery); one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

Optional accessories
SZ8510

d_1^{h3}	d_2	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_3^{-0.2}$	l_4	Item number
15	21	28	45	35	4.5	3.5	15	29	23	6	ST7426 **15 x 029**
								36	30	6	ST7426 **15 x 036**
16	22	28	45	35	4.5	3.5	15	29	23	6	ST7426 **16 x 029**
								36	30	6	ST7426 **16 x 036**
19	25	32	50	40	4.5	4.6	18	38	23	15	ST7426 **19 x 038**
								45	30	15	ST7426 **19 x 045**
								51	36	15	ST7426 **19 x 051**
20	26	32	50	40	4.5	4.6	18	38	23	15	ST7426 **20 x 038**
								45	30	15	ST7426 **20 x 045**
								51	36	15	ST7426 **20 x 051**
24	30	40	63	50	5.5	5.7	23	38	23	15	ST7426 **24 x 038**
								55	30	25	ST7426 **24 x 055**
								62	37	25	ST7426 **24 x 062**
25	31	40	63	50	5.5	5.7	23	38	23	15	ST7426 **25 x 038**
								55	30	25	ST7426 **25 x 055**
								62	37	25	ST7426 **25 x 062**
30	38	48	72	58	5.5	5.7	28	45	30	15	ST7426 **30 x 045**
								62	37	25	ST7426 **30 x 062**
								72	47	25	ST7426 **30 x 072**
32	40	48	72	58	5.5	5.7	28	45	30	15	ST7426 **32 x 045**
								62	37	25	ST7426 **32 x 062**
								72	47	25	ST7426 **32 x 072**
38	46	58	85	70	6.6	6.8	33	55	30	25	ST7426 **38 x 055**
								67	37	30	ST7426 **38 x 067**
								77	47	30	ST7426 **38 x 077**
40	48	58	85	70	6.6	6.8	33	55	30	25	ST7426 **40 x 055**
								67	37	30	ST7426 **40 x 067**
								77	47	30	ST7426 **40 x 077**
48	56	70	104	86	9.0	9.0	38	62	37	25	ST7426 **48 x 062**
								89	47	42	ST7426 **48 x 089**
								102	60	42	ST7426 **48 x 102**

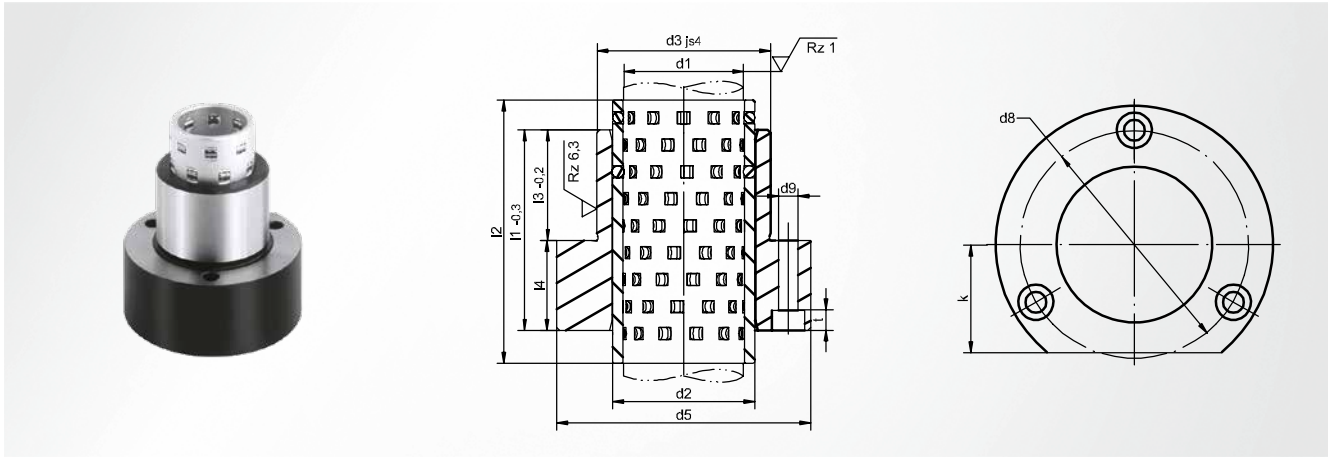
ST7426 Guide bush

with flange

d_1^{h3}	d_2	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_3^{-0.2}$	l_4	Item number
50	58	70	104	86	9.0	9.0	38	62	37	25	ST7426 **50 x 062**
								89	47	42	ST7426 **50 x 089**
								102	60	42	ST7426 **50 x 102**
60	70	85	120	100	9.0	9.0	46	89	47	42	ST7426 **60 x 089**
								102	60	42	ST7426 **60 x 102**
63	73	85	120	100	9.0	9.0	46	89	47	42	ST7426 **63 x 089**
								102	60	42	ST7426 **63 x 102**
80	92	105	148	125	11.0	11.0	56	125	75	50	ST7426 **80 x 125**

ST7423 Guide unit

roller guide aluminium, with flange



Referring to DIN 9831 / ISO 9448

Installation instruction

Fixing with 3 socket-head screws (not included in the scope of delivery); one-sided entry chamfer or centring attachment

Installation in mounting bore

ISO H6

Scope of supply

ST7426; ST7140

Optional accessories

SZ8510

d_1^{h3}	d_2	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_2^{\pm 0.2}$	$l_3^{-0.2}$	l_4	Item number
19	25	32	50	40	4.5	4.6	18	38	43	23	15	ST7423 **19 x 038 x 043**
								45	54	30	15	ST7423 **19 x 045 x 054**
								51	63	36	15	ST7423 **19 x 051 x 063**
20	26	32	50	40	4.5	4.6	18	38	43	23	15	ST7423 **20 x 038 x 043**
								45	54	30	15	ST7423 **20 x 045 x 054**
								51	63	36	15	ST7423 **20 x 051 x 063**
24	30	40	63	50	5.5	5.7	23	38	43	23	15	ST7423 **24 x 038 x 043**
								55	63	30	25	ST7423 **24 x 055 x 063**
								62	74	37	25	ST7423 **24 x 062 x 074**
25	31	40	63	50	5.5	5.7	23	38	43	23	15	ST7423 **25 x 038 x 043**
								55	63	30	25	ST7423 **25 x 055 x 063**
								62	74	37	25	ST7423 **25 x 062 x 074**
30	38	48	72	58	5.5	5.7	28	45	54	30	15	ST7423 **30 x 045 x 054**
								62	74	37	25	ST7423 **30 x 062 x 074**
								72	83	47	25	ST7423 **30 x 072 x 083**
32	40	48	72	58	5.5	5.7	28	45	54	30	15	ST7423 **32 x 045 x 054**
								62	74	37	25	ST7423 **32 x 062 x 074**
								72	83	47	25	ST7423 **32 x 072 x 083**
38	46	58	85	70	6.6	6.8	33	55	58	30	25	ST7423 **38 x 055 x 058**
								67	88	37	30	ST7423 **38 x 067 x 088**
								77	94	47	30	ST7423 **38 x 077 x 094**
40	48	58	85	70	6.6	6.8	33	55	58	30	25	ST7423 **40 x 055 x 058**
								67	88	37	30	ST7423 **40 x 067 x 088**
								77	94	47	30	ST7423 **40 x 077 x 094**
48	56	70	104	86	9.0	9.0	38	62	74	37	25	ST7423 **48 x 062 x 074**
								89	108	47	42	ST7423 **48 x 089 x 108**
								102	128	60	42	ST7423 **48 x 102 x 128**
50	58	70	104	86	9.0	9.0	38	62	74	37	25	ST7423 **50 x 062 x 074**
								89	108	47	42	ST7423 **50 x 089 x 108**
								102	128	60	42	ST7423 **50 x 102 x 128**
60	70	85	120	100	9.0	9.0	46	89	113	47	42	ST7423 **60 x 089 x 113**
								102	128	60	42	ST7423 **60 x 102 x 128**
63	73	85	120	100	9.0	9.0	46	89	113	47	42	ST7423 **63 x 089 x 113**

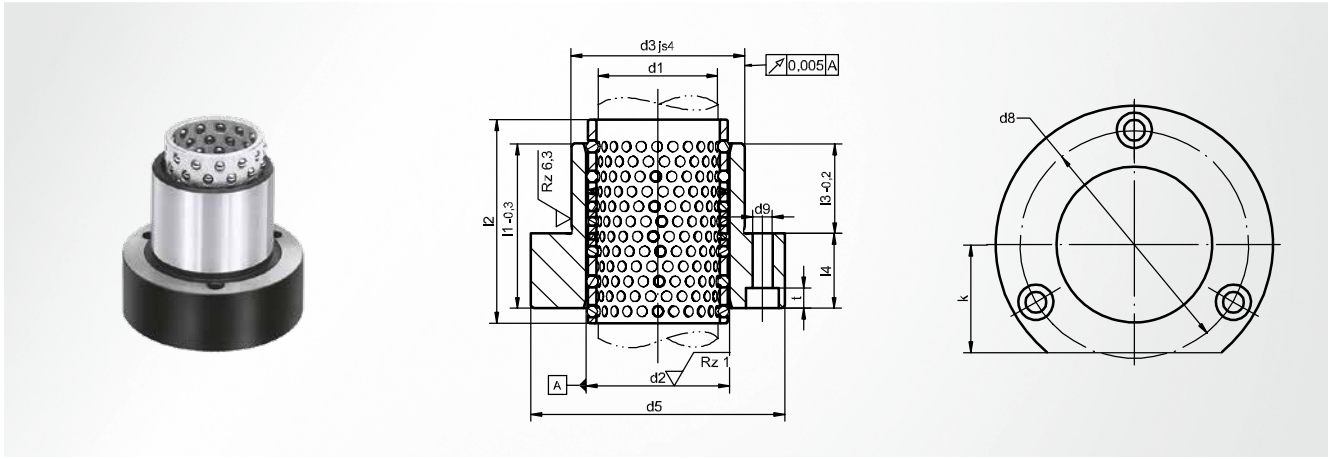
ST7423 Guide unit

roller guide aluminium, with flange

d_1^{h3}	d_2	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_2^{\pm 0.2}$	$l_3^{-0.2}$	l_4	Item number
63	73	85	120	100	9.0	9.0	46	102	128	60	42	ST7423 **63 x 102 x 128**
80	92	105	148	125	11.0	11.0	56	125	138	75	50	ST7423 **80 x 125 x 138**

ST7422 Guide unit

ball guide aluminium, with flange



Referring to DIN 9831 / ISO 9448

Installation instruction

Fixing with 3 socket-head screws (not included in the scope of delivery); one-sided entry chamfer or centring attachment

Installation in mounting bore

ISO H6

Scope of supply

ST7130; ST7426

Optional accessories

SZ8510

d_1^{h3}	d_2	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_2^{\pm 0.2}$	$l_3^{-0.2}$	l_4	Item number
15	21	28	45	35	4.5	3.5	15	29	43	23	6	ST7422 **15 x 029 x 043**
								36	43	30	6	ST7422 **15 x 036 x 043**
16	22	28	45	35	4.5	3.5	15	29	43	23	6	ST7422 **16 x 029 x 043**
								36	43	30	6	ST7422 **16 x 036 x 043**
19	25	32	50	40	4.5	4.6	18	38	43	23	15	ST7422 **19 x 038 x 043**
								45	54	30	15	ST7422 **19 x 045 x 054**
								51	63	36	15	ST7422 **19 x 051 x 063**
20	26	32	50	40	4.5	4.6	18	38	43	23	15	ST7422 **20 x 038 x 043**
								45	54	30	15	ST7422 **20 x 045 x 054**
								51	63	36	15	ST7422 **20 x 051 x 063**
24	30	40	63	50	5.5	5.7	23	38	43	23	15	ST7422 **24 x 038 x 043**
								55	63	30	25	ST7422 **24 x 055 x 063**
								62	74	37	25	ST7422 **24 x 062 x 074**
25	31	40	63	50	5.5	5.7	23	38	43	23	15	ST7422 **25 x 038 x 043**
								55	63	30	25	ST7422 **25 x 055 x 063**
								62	74	37	25	ST7422 **25 x 062 x 074**
30	38	48	72	58	5.5	5.7	28	45	54	30	15	ST7422 **30 x 045 x 054**
								62	74	37	25	ST7422 **30 x 062 x 074**
								72	83	47	25	ST7422 **30 x 072 x 083**
32	40	48	72	58	5.5	5.7	28	45	54	30	15	ST7422 **32 x 045 x 054**
								62	74	37	25	ST7422 **32 x 062 x 074**
								72	83	47	25	ST7422 **32 x 072 x 083**
38	46	58	85	70	6.6	6.8	33	55	58	30	25	ST7422 **38 x 055 x 058**
								67	88	37	30	ST7422 **38 x 067 x 088**
								77	94	47	30	ST7422 **38 x 077 x 094**
40	48	58	85	70	6.6	6.8	33	55	58	30	25	ST7422 **40 x 055 x 058**
								67	88	37	30	ST7422 **40 x 067 x 088**
								77	94	47	30	ST7422 **40 x 077 x 094**
48	56	70	104	86	9.0	9.0	38	62	74	37	25	ST7422 **48 x 062 x 074**
								89	108	47	42	ST7422 **48 x 089 x 108**
								102	128	60	42	ST7422 **48 x 102 x 128**
50	58	70	104	86	9.0	9.0	38	62	74	37	25	ST7422 **50 x 062 x 074**
								89	108	47	42	ST7422 **50 x 089 x 108**

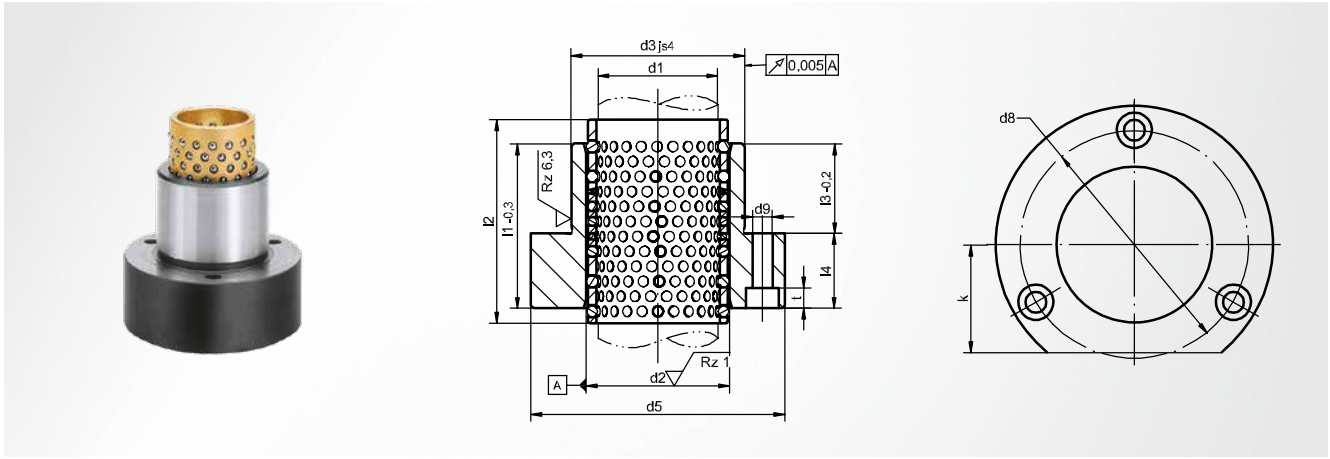
ST7422 Guide unit

ball guide aluminium, with flange

d_1^{h3}	d_2	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_2^{\pm 0.2}$	$l_3^{-0.2}$	l_4	Item number
50	58	70	104	86	9.0	9.0	38	102	128	60	42	ST7422 **50 x 102 x 128**
60	70	85	120	100	9.0	9.0	46	89	113	47	42	ST7422 **60 x 089 x 113**
								102	128	60	42	ST7422 **60 x 102 x 128**
63	73	85	120	100	9.0	9.0	46	89	113	47	42	ST7422 **63 x 089 x 113**
								102	128	60	42	ST7422 **63 x 102 x 128**
80	92	105	148	125	11.0	11.0	56	125	138	75	50	ST7422 **80 x 125 x 138**

ST7424 Guide unit

ball guide brass, with flange



Referring to DIN 9831 / ISO 9448

Installation instruction

Fixing with 3 socket-head screws (not included in the scope of delivery); one-sided entry chamfer or centring attachment

Installation in mounting bore

ISO H6

Scope of supply

ST7150; ST7426

Optional accessories

SZ8510

d_1^{h3}	d_2	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_2^{\pm 0.2}$	$l_3^{-0.2}$	l_4	Item number
15	21	28	45	35	4.5	3.5	15	29	43	23	6	ST7424 **15 x 029 x 043**
								36	43	30	6	ST7424 **15 x 036 x 043**
16	22	28	45	35	4.5	3.5	15	29	43	23	6	ST7424 **16 x 029 x 043**
								36	43	30	6	ST7424 **16 x 036 x 043**
19	25	32	50	40	4.5	4.6	18	38	43	23	15	ST7424 **19 x 038 x 043**
								45	54	30	15	ST7424 **19 x 045 x 054**
								51	63	36	15	ST7424 **19 x 051 x 063**
20	26	32	50	40	4.5	4.6	18	38	43	23	15	ST7424 **20 x 038 x 043**
								45	54	30	15	ST7424 **20 x 045 x 054**
								51	63	36	15	ST7424 **20 x 051 x 063**
24	30	40	63	50	5.5	5.7	23	38	43	23	15	ST7424 **24 x 038 x 043**
								55	63	30	25	ST7424 **24 x 055 x 063**
								62	74	37	25	ST7424 **24 x 062 x 074**
25	31	40	63	50	5.5	5.7	23	38	43	23	15	ST7424 **25 x 038 x 043**
								55	63	30	25	ST7424 **25 x 055 x 063**
								62	74	37	25	ST7424 **25 x 062 x 074**
30	38	48	72	58	5.5	5.7	28	45	54	30	15	ST7424 **30 x 045 x 054**
								62	74	37	25	ST7424 **30 x 062 x 074**
								72	83	47	25	ST7424 **30 x 072 x 083**
32	40	48	72	58	5.5	5.7	28	45	54	30	15	ST7424 **32 x 045 x 054**
								62	74	37	25	ST7424 **32 x 062 x 074**
								72	83	47	25	ST7424 **32 x 072 x 083**
38	46	58	85	70	6.6	6.8	33	55	58	30	25	ST7424 **38 x 055 x 058**
								67	88	37	30	ST7424 **38 x 067 x 088**
								77	94	47	30	ST7424 **38 x 077 x 094**
40	48	58	85	70	6.6	6.8	33	55	58	30	25	ST7424 **40 x 055 x 058**
								67	88	37	30	ST7424 **40 x 067 x 088**
								77	94	47	30	ST7424 **40 x 077 x 094**
48	56	70	104	86	9.0	9.0	38	62	74	37	25	ST7424 **48 x 062 x 074**
								89	108	47	42	ST7424 **48 x 089 x 108**
								102	128	60	42	ST7424 **48 x 102 x 128**
50	58	70	104	86	9.0	9.0	38	62	74	37	25	ST7424 **50 x 062 x 074**
								89	108	47	42	ST7424 **50 x 089 x 108**

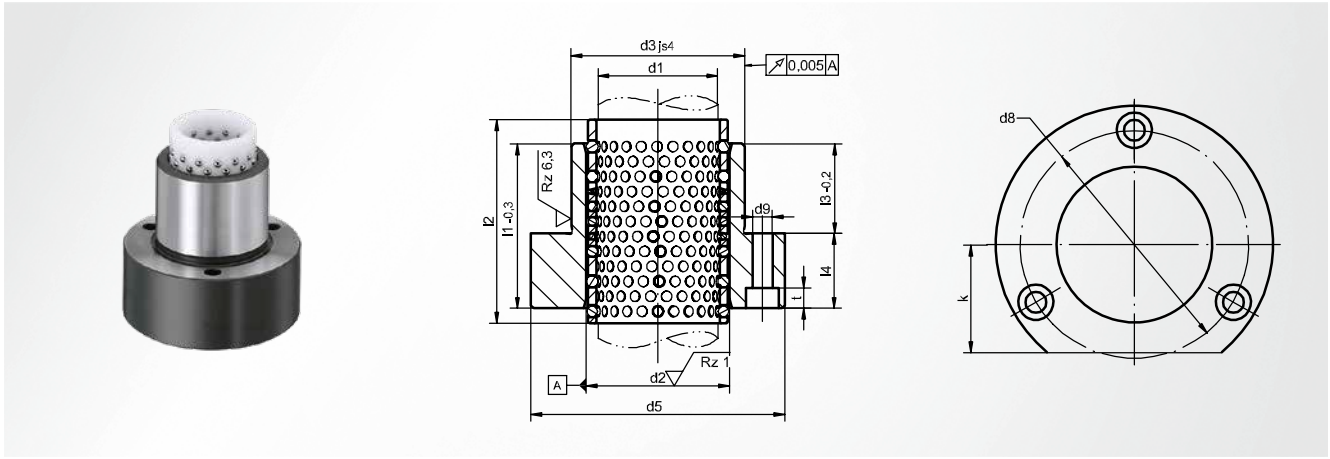
ST7424 Guide unit

ball guide brass, with flange

d_1^{h3}	d_2	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_2^{\pm 0.2}$	$l_3^{-0.2}$	l_4	Item number
50	58	70	104	86	9.0	9.0	38	102	128	60	42	ST7424 **50 x 102 x 128**
60	70	85	120	100	9.0	9.0	46	89	113	47	42	ST7424 **60 x 089 x 113**
								102	128	60	42	ST7424 **60 x 102 x 128**
63	73	85	120	100	9.0	9.0	46	89	113	47	42	ST7424 **63 x 089 x 113**
								102	128	60	42	ST7424 **63 x 102 x 128**
80	92	105	148	125	11.0	11.0	56	125	138	75	50	ST7424 **80 x 125 x 138**

ST7425 Guide unit

ball guide polyurethan, with flange



Referring to DIN 9831 / ISO 9448

Installation instruction

Fixing with 3 socket-head screws (not included in the scope of delivery); one-sided entry chamfer or centring attachment

Installation in mounting bore

ISO H6

Scope of supply

ST7133; ST7426

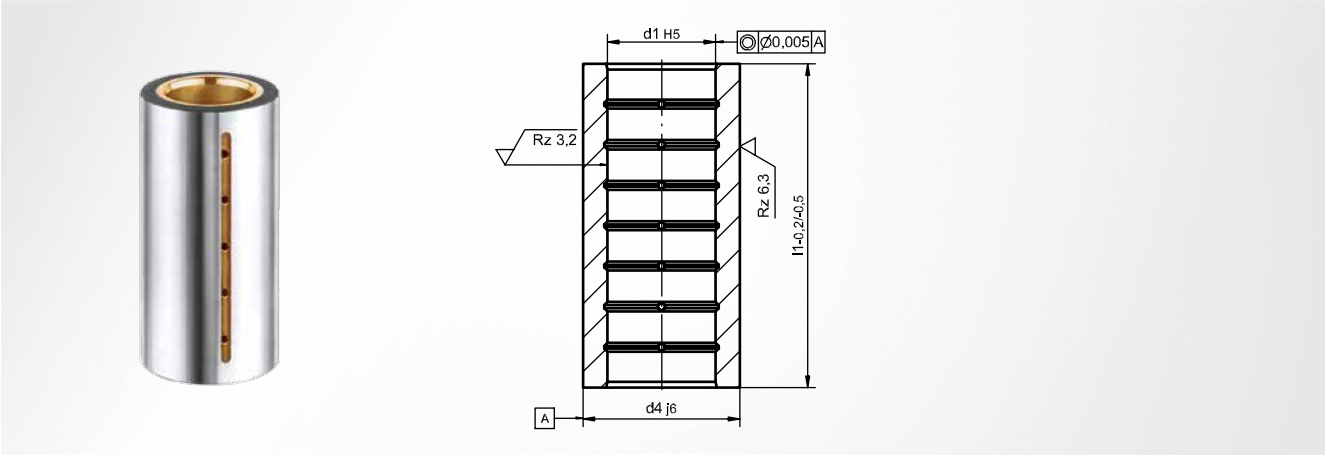
Optional accessories

SZ8510

d_1^{h3}	d_2	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_2^{\pm 0.1}$	$l_3^{-0.2}$	l_4	Item number
15	21	28	45	35	4.5	3.5	15	29	43	23	6	ST7425 **15 x 029 x 043**
								36	43	30	6	ST7425 **15 x 036 x 043**
16	22	28	45	35	4.5	3.5	15	29	43	23	6	ST7425 **16 x 029 x 043**
								36	43	30	6	ST7425 **16 x 036 x 043**
19	25	32	50	40	4.5	4.6	18	38	43	23	15	ST7425 **19 x 038 x 043**
								45	54	30	15	ST7425 **19 x 045 x 054**
								51	63	36	15	ST7425 **19 x 051 x 063**
20	26	32	50	40	4.5	4.6	18	38	43	23	15	ST7425 **20 x 038 x 043**
								45	54	30	15	ST7425 **20 x 045 x 054**
								51	63	36	15	ST7425 **20 x 051 x 063**
24	30	40	63	50	5.5	5.7	23	38	43	23	15	ST7425 **24 x 038 x 043**
								55	63	30	25	ST7425 **24 x 055 x 063**
								62	74	37	25	ST7425 **24 x 062 x 074**
25	31	40	63	50	5.5	5.7	23	38	43	23	15	ST7425 **25 x 038 x 043**
								55	63	30	25	ST7425 **25 x 055 x 063**
								62	74	37	25	ST7425 **25 x 062 x 074**
30	38	48	72	58	5.5	5.7	28	45	54	30	15	ST7425 **30 x 045 x 054**
								62	74	37	25	ST7425 **30 x 062 x 074**
								72	83	47	25	ST7425 **30 x 072 x 083**
32	40	48	72	58	5.5	5.7	28	45	54	30	15	ST7425 **32 x 045 x 054**
								62	74	37	25	ST7425 **32 x 062 x 074**
								72	83	47	25	ST7425 **32 x 072 x 083**
38	46	58	85	70	6.6	6.8	33	55	58	30	25	ST7425 **38 x 055 x 058**
								67	88	37	30	ST7425 **38 x 067 x 088**
								77	94	47	30	ST7425 **38 x 077 x 094**
40	48	58	85	70	6.6	6.8	33	55	58	30	25	ST7425 **40 x 055 x 058**
								67	88	37	30	ST7425 **40 x 067 x 088**
								77	94	47	30	ST7425 **40 x 077 x 094**
48	56	70	104	86	9.0	9.0	38	62	74	37	25	ST7425 **48 x 062 x 074**
								89	108	47	42	ST7425 **48 x 089 x 108**
								102	128	60	42	ST7425 **48 x 102 x 128**
50	58	70	104	86	9.0	9.0	38	62	74	37	25	ST7425 **50 x 062 x 074**
								89	108	47	42	ST7425 **50 x 089 x 108**
								102	128	60	42	ST7425 **50 x 102 x 128**

ST7409 Guide bush

smooth, sliding guide steel bronze plated



Referring to DIN 9831 / ISO 9448

Material
Steel 1.3505 (100 Cr6); hardened

Hardness
62 ±1 HRC

Optional accessories
SZ9742

Installation instruction
Secure with adhesive; when sticking in, ensure that the oil distribution groove on the mounting diameter remains free; do not press in; do not pour in; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO G6

d_1^{H5}	d_4^{j6}	$l_1^{-0.2 - -0.5}$	Item number
10	22	23	ST7409 **10 x 023**
		30	ST7409 **10 x 030**
		37	ST7409 **10 x 037**
12	22	23	ST7409 **12 x 023**
		30	ST7409 **12 x 030**
		37	ST7409 **12 x 037**
15	28	23	ST7409 **15 x 023**
		30	ST7409 **15 x 030**
		37	ST7409 **15 x 037**
		47	ST7409 **15 x 047**
		60	ST7409 **15 x 060**
16	28	23	ST7409 **16 x 023**
		30	ST7409 **16 x 030**
		37	ST7409 **16 x 037**
		47	ST7409 **16 x 047**
		60	ST7409 **16 x 060**
19	32	23	ST7409 **19 x 023**
		30	ST7409 **19 x 030**
		37	ST7409 **19 x 037**
		47	ST7409 **19 x 047**
		60	ST7409 **19 x 060**
		77	ST7409 **19 x 077**
20	32	23	ST7409 **20 x 023**
		30	ST7409 **20 x 030**
		37	ST7409 **20 x 037**
		47	ST7409 **20 x 047**
		60	ST7409 **20 x 060**
		77	ST7409 **20 x 077**
24	40	23	ST7409 **24 x 023**
		30	ST7409 **24 x 030**

d_1^{H5}	d_4^{j6}	$l_1^{-0.2 - -0.5}$	Item number
24	40	37	ST7409 **24 x 037**
		47	ST7409 **24 x 047**
		60	ST7409 **24 x 060**
		77	ST7409 **24 x 077**
25	40	23	ST7409 **25 x 023**
		30	ST7409 **25 x 030**
		37	ST7409 **25 x 037**
		47	ST7409 **25 x 047**
		60	ST7409 **25 x 060**
		77	ST7409 **25 x 077**
30	48	30	ST7409 **30 x 030**
		37	ST7409 **30 x 037**
		47	ST7409 **30 x 047**
		60	ST7409 **30 x 060**
		77	ST7409 **30 x 077**
		95	ST7409 **30 x 095**
32	48	30	ST7409 **32 x 030**
		37	ST7409 **32 x 037**
		47	ST7409 **32 x 047**
		60	ST7409 **32 x 060**
		77	ST7409 **32 x 077**
		95	ST7409 **32 x 095**
38	58	30	ST7409 **38 x 030**
		37	ST7409 **38 x 037**
		47	ST7409 **38 x 047**
		60	ST7409 **38 x 060**
		77	ST7409 **38 x 077**
		95	ST7409 **38 x 095**
		120	ST7409 **38 x 120**
40	58	30	ST7409 **40 x 030**

ST7409 Guide bush

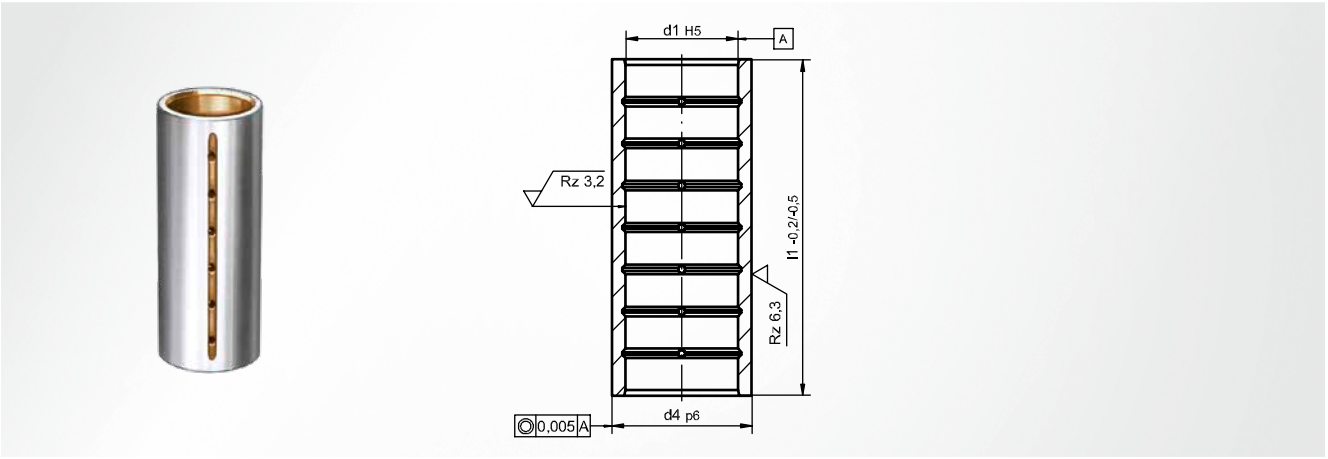
smooth, sliding guide steel bronze plated

d_1^{H5}	d_4^{j6}	$l_1^{-0.2 - -0.5}$	Item number
40	58	37	ST7409 **40 x 037**
		47	ST7409 **40 x 047**
		60	ST7409 **40 x 060**
		77	ST7409 **40 x 077**
		95	ST7409 **40 x 095**
		120	ST7409 **40 x 120**
48	70	37	ST7409 **48 x 037**
		47	ST7409 **48 x 047**
		60	ST7409 **48 x 060**
		77	ST7409 **48 x 077**
		95	ST7409 **48 x 095**
		120	ST7409 **48 x 120**
50	70	37	ST7409 **50 x 037**
		47	ST7409 **50 x 047**

d_1^{H5}	d_4^{j6}	$l_1^{-0.2 - -0.5}$	Item number
50	70	60	ST7409 **50 x 060**
		77	ST7409 **50 x 077**
		95	ST7409 **50 x 095**
		120	ST7409 **50 x 120**
60	85	60	ST7409 **60 x 060**
		77	ST7409 **60 x 077**
		95	ST7409 **60 x 095**
		120	ST7409 **60 x 120**
63	85	60	ST7409 **63 x 060**
		77	ST7409 **63 x 077**
		95	ST7409 **63 x 095**
		120	ST7409 **63 x 120**
80	105	120	ST7409 **80 x 120**
		135	ST7409 **80 x 135**

ST7319 Guide bush

smooth, sliding guide steel bronze plated



Material
Steel 1.3505 (100 Cr6); hardened

Hardness
62 ±1 HRC

Installation instruction
Secure with adhesive; when sticking in, ensure that the oil distribution groove on the mounting diameter remains free; do not pour in; do not press in; one-sided entry chamfer or centring attachment

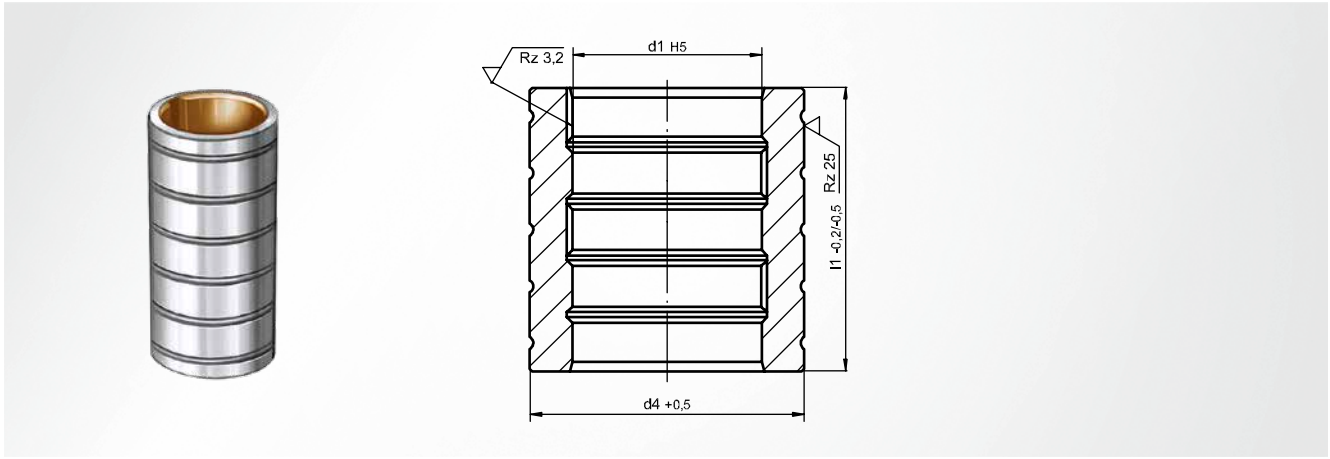
Installation in mounting bore
ISO E6

d_1^{H5}	d_4^{p6}	$l_1^{-0.2 - -0.5}$	Item number
10	16	23	ST7319 **10 x 023**
		30	ST7319 **10 x 030**
		33	ST7319 **10 x 033**
		37	ST7319 **10 x 037**
12	18	23	ST7319 **12 x 023**
		30	ST7319 **12 x 030**
		33	ST7319 **12 x 033**
		37	ST7319 **12 x 037**
15	21	23	ST7319 **15 x 023**
		30	ST7319 **15 x 030**
		37	ST7319 **15 x 037**
		47	ST7319 **15 x 047**
16	22	23	ST7319 **16 x 023**
		30	ST7319 **16 x 030**
		37	ST7319 **16 x 037**
		47	ST7319 **16 x 047**
19	26	30	ST7319 **19 x 030**
		37	ST7319 **19 x 037**
		47	ST7319 **19 x 047**
		60	ST7319 **19 x 060**
20	28	30	ST7319 **20 x 030**
		37	ST7319 **20 x 037**
		47	ST7319 **20 x 047**
		60	ST7319 **20 x 060**
24	32	30	ST7319 **24 x 030**
		37	ST7319 **24 x 037**
		47	ST7319 **24 x 047**

d_1^{H5}	d_4^{p6}	$l_1^{-0.2 - -0.5}$	Item number
24	32	60	ST7319 **24 x 060**
		77	ST7319 **24 x 077**
25	33	30	ST7319 **25 x 030**
		37	ST7319 **25 x 037**
		47	ST7319 **25 x 047**
		60	ST7319 **25 x 060**
		77	ST7319 **25 x 077**
30	38	37	ST7319 **30 x 037**
		47	ST7319 **30 x 047**
		60	ST7319 **30 x 060**
		77	ST7319 **30 x 077**
		95	ST7319 **30 x 095**
32	40	37	ST7319 **32 x 037**
		47	ST7319 **32 x 047**
		60	ST7319 **32 x 060**
		77	ST7319 **32 x 077**
		95	ST7319 **32 x 095**
38	48	47	ST7319 **38 x 047**
		60	ST7319 **38 x 060**
		77	ST7319 **38 x 077**
		95	ST7319 **38 x 095**
		120	ST7319 **38 x 120**
40	50	47	ST7319 **40 x 047**
		60	ST7319 **40 x 060**
		77	ST7319 **40 x 077**
		95	ST7319 **40 x 095**
		120	ST7319 **40 x 120**

ST7411 Guide bush

smooth, sliding guide steel bronze plated, for pouring



Referring to DIN 9831 / ISO 9448

Material
Steel 1.3505 (100 Cr6); hardened

Hardness
62 ±1 HRC

Installation instruction
pour in; only install vertically with the air groove upward; for casting gap, set d_4 +1 to +4 mm

Mounting diameter
machined, with recesses for casting resin

d_1^{H5}	$d_4^{+0.5}$	$l_1^{-0.2 - -0.5}$	Item number
10	22	23	ST7411 **10 x 023**
		30	ST7411 **10 x 030**
		37	ST7411 **10 x 037**
12	22	23	ST7411 **12 x 023**
		30	ST7411 **12 x 030**
		37	ST7411 **12 x 037**
15	28	23	ST7411 **15 x 023**
		30	ST7411 **15 x 030**
		37	ST7411 **15 x 037**
		47	ST7411 **15 x 047**
		60	ST7411 **15 x 060**
16	28	23	ST7411 **16 x 023**
		30	ST7411 **16 x 030**
		37	ST7411 **16 x 037**
		47	ST7411 **16 x 047**
		60	ST7411 **16 x 060**
19	32	23	ST7411 **19 x 023**
		30	ST7411 **19 x 030**
		37	ST7411 **19 x 037**
		47	ST7411 **19 x 047**
		60	ST7411 **19 x 060**
		77	ST7411 **19 x 077**
20	32	23	ST7411 **20 x 023**
		30	ST7411 **20 x 030**
		37	ST7411 **20 x 037**
		47	ST7411 **20 x 047**
		60	ST7411 **20 x 060**
		77	ST7411 **20 x 077**
24	40	23	ST7411 **24 x 023**
		30	ST7411 **24 x 030**
		37	ST7411 **24 x 037**
		47	ST7411 **24 x 047**
		60	ST7411 **24 x 060**
		77	ST7411 **24 x 077**

d_1^{H5}	$d_4^{+0.5}$	$l_1^{-0.2 - -0.5}$	Item number
25	40	23	ST7411 **25 x 023**
		30	ST7411 **25 x 030**
		37	ST7411 **25 x 037**
		47	ST7411 **25 x 047**
		60	ST7411 **25 x 060**
		77	ST7411 **25 x 077**
30	48	30	ST7411 **30 x 030**
		37	ST7411 **30 x 037**
		47	ST7411 **30 x 047**
		60	ST7411 **30 x 060**
		77	ST7411 **30 x 077**
		95	ST7411 **30 x 095**
32	48	30	ST7411 **32 x 030**
		37	ST7411 **32 x 037**
		47	ST7411 **32 x 047**
		60	ST7411 **32 x 060**
		77	ST7411 **32 x 077**
		95	ST7411 **32 x 095**
38	58	30	ST7411 **38 x 030**
		37	ST7411 **38 x 037**
		47	ST7411 **38 x 047**
		60	ST7411 **38 x 060**
		77	ST7411 **38 x 077**
		95	ST7411 **38 x 095**
		120	ST7411 **38 x 120**
40	58	30	ST7411 **40 x 030**
		37	ST7411 **40 x 037**
		47	ST7411 **40 x 047**
		60	ST7411 **40 x 060**
		77	ST7411 **40 x 077**
		95	ST7411 **40 x 095**
		120	ST7411 **40 x 120**
48	70	37	ST7411 **48 x 037**
		47	ST7411 **48 x 047**

ST7411 Guide bush

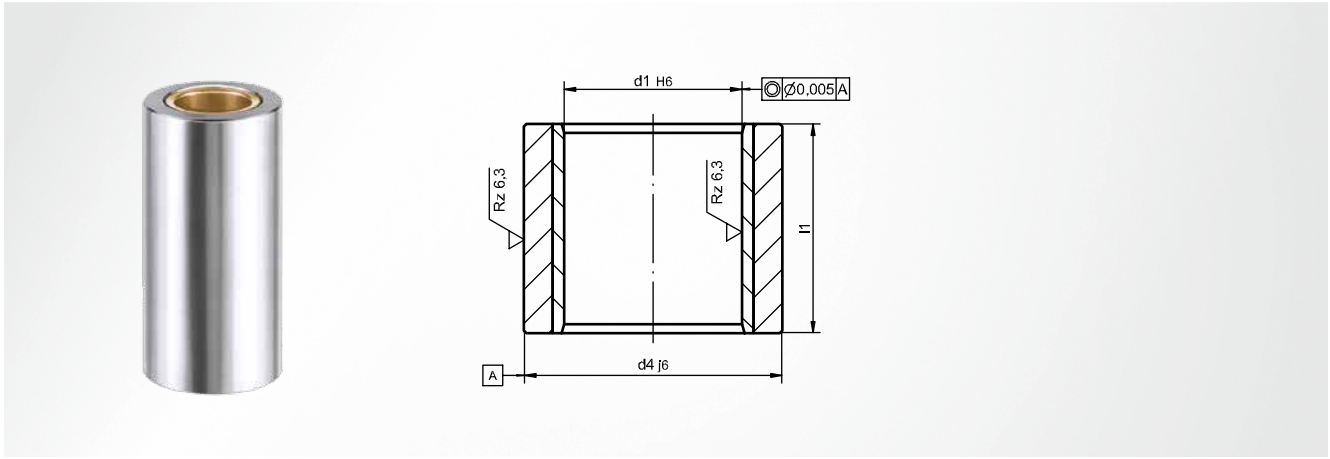
smooth, sliding guide steel bronze plated, for pouring

d_1^{H5}	$d_4^{+0.5}$	$l_1^{-0.2 - -0.5}$	Item number
48	70	60	ST7411 **48 x 060**
		77	ST7411 **48 x 077**
		95	ST7411 **48 x 095**
		120	ST7411 **48 x 120**
50	70	37	ST7411 **50 x 037**
		47	ST7411 **50 x 047**
		60	ST7411 **50 x 060**
		77	ST7411 **50 x 077**
		95	ST7411 **50 x 095**
		120	ST7411 **50 x 120**

d_1^{H5}	$d_4^{+0.5}$	$l_1^{-0.2 - -0.5}$	Item number
60	85	60	ST7411 **60 x 060**
		77	ST7411 **60 x 077**
		95	ST7411 **60 x 095**
		120	ST7411 **60 x 120**
63	85	60	ST7411 **63 x 060**
		77	ST7411 **63 x 077**
		95	ST7411 **63 x 095**
		120	ST7411 **63 x 120**
80	105	120	ST7411 **80 x 120**
		135	ST7411 **80 x 135**

ST7491 Guide bush

smooth, sliding guide with solid lubricant



Referring to DIN 9831 / ISO 9448

Material
Steel 1.3505 (100 Cr6); hardened; with solid lubricant insert

Hardness
62 ±1 HRC

Installation instruction
Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO G6

Optional accessories
SZ9742

d_1^{H6}	d_4^{j6}	l_1	Item number
15	28	23	ST7491 **15 x 023**
		30	ST7491 **15 x 030**
		37	ST7491 **15 x 037**
		47	ST7491 **15 x 047**
		60	ST7491 **15 x 060**
16	28	23	ST7491 **16 x 023**
		30	ST7491 **16 x 030**
		37	ST7491 **16 x 037**
		47	ST7491 **16 x 047**
		60	ST7491 **16 x 060**
19	32	23	ST7491 **19 x 023**
		30	ST7491 **19 x 030**
		37	ST7491 **19 x 037**
		47	ST7491 **19 x 047**
		60	ST7491 **19 x 060**
		77	ST7491 **19 x 077**
20	32	23	ST7491 **20 x 023**
		30	ST7491 **20 x 030**
		37	ST7491 **20 x 037**
		47	ST7491 **20 x 047**
		60	ST7491 **20 x 060**
		77	ST7491 **20 x 077**
24	40	23	ST7491 **24 x 023**
		30	ST7491 **24 x 030**
		37	ST7491 **24 x 037**
		47	ST7491 **24 x 047**
		60	ST7491 **24 x 060**
		77	ST7491 **24 x 077**
25	40	23	ST7491 **25 x 023**
		30	ST7491 **25 x 030**
		37	ST7491 **25 x 037**
		47	ST7491 **25 x 047**

d_1^{H6}	d_4^{j6}	l_1	Item number
25	40	60	ST7491 **25 x 060**
		77	ST7491 **25 x 077**
30	48	30	ST7491 **30 x 030**
		37	ST7491 **30 x 037**
		47	ST7491 **30 x 047**
		60	ST7491 **30 x 060**
		77	ST7491 **30 x 077**
		95	ST7491 **30 x 095**
32	48	30	ST7491 **32 x 030**
		37	ST7491 **32 x 037**
		47	ST7491 **32 x 047**
		60	ST7491 **32 x 060**
		77	ST7491 **32 x 077**
		95	ST7491 **32 x 095**
38	58	30	ST7491 **38 x 030**
		37	ST7491 **38 x 037**
		47	ST7491 **38 x 047**
		60	ST7491 **38 x 060**
		77	ST7491 **38 x 077**
		95	ST7491 **38 x 095**
		120	ST7491 **38 x 120**
40	58	30	ST7491 **40 x 030**
		37	ST7491 **40 x 037**
		47	ST7491 **40 x 047**
		60	ST7491 **40 x 060**
		77	ST7491 **40 x 077**
		95	ST7491 **40 x 095**
		120	ST7491 **40 x 120**
48	70	37	ST7491 **48 x 037**
		47	ST7491 **48 x 047**
		60	ST7491 **48 x 060**
		77	ST7491 **48 x 077**

ST7491 Guide bush

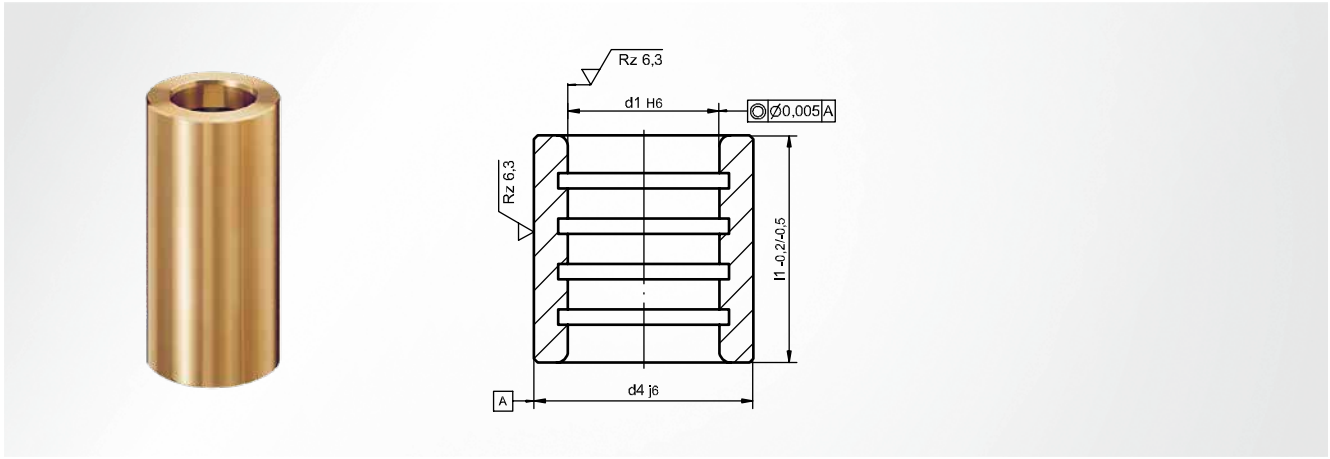
smooth, sliding guide with solid lubricant

d_1^{H6}	d_4^{j6}	l_1	Item number
48	70	95	ST7491 **48 x 095**
		120	ST7491 **48 x 120**
50	70	37	ST7491 **50 x 037**
		47	ST7491 **50 x 047**
		60	ST7491 **50 x 060**
		77	ST7491 **50 x 077**
		95	ST7491 **50 x 095**
		120	ST7491 **50 x 120**
60	85	60	ST7491 **60 x 060**

d_1^{H6}	d_4^{j6}	l_1	Item number
60	85	77	ST7491 **60 x 077**
		95	ST7491 **60 x 095**
		120	ST7491 **60 x 120**
63	85	60	ST7491 **63 x 060**
		77	ST7491 **63 x 077**
		95	ST7491 **63 x 095**
		120	ST7491 **63 x 120**
80	105	120	ST7491 **80 x 120**
		135	ST7491 **80 x 135**

ST7451 Guide bush

smooth, sliding guide with solid lubricant



Material
Bronze CuZn25Al5; with solid lubricant rings

Installation in mounting bore
ISO G6

Installation instruction
Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

Optional accessories
SZ9742

d_1^{H6}	d_4^{j6}	$l_1^{-0.2 - -0.5}$	Item number
15	28	23	ST7451 **15 x 023**
		30	ST7451 **15 x 030**
		37	ST7451 **15 x 037**
		47	ST7451 **15 x 047**
		60	ST7451 **15 x 060**
16	28	23	ST7451 **16 x 023**
		30	ST7451 **16 x 030**
		37	ST7451 **16 x 037**
		47	ST7451 **16 x 047**
		60	ST7451 **16 x 060**
19	32	23	ST7451 **19 x 023**
		30	ST7451 **19 x 030**
		37	ST7451 **19 x 037**
		47	ST7451 **19 x 047**
		60	ST7451 **19 x 060**
		77	ST7451 **19 x 077**
20	32	23	ST7451 **20 x 023**
		30	ST7451 **20 x 030**
		37	ST7451 **20 x 037**
		47	ST7451 **20 x 047**
		60	ST7451 **20 x 060**
		77	ST7451 **20 x 077**
24	40	23	ST7451 **24 x 023**
		30	ST7451 **24 x 030**
		37	ST7451 **24 x 037**
		47	ST7451 **24 x 047**
		60	ST7451 **24 x 060**
		77	ST7451 **24 x 077**
25	40	23	ST7451 **25 x 023**
		30	ST7451 **25 x 030**
		37	ST7451 **25 x 037**
		47	ST7451 **25 x 047**
		60	ST7451 **25 x 060**
		77	ST7451 **25 x 077**
30	48	30	ST7451 **30 x 030**

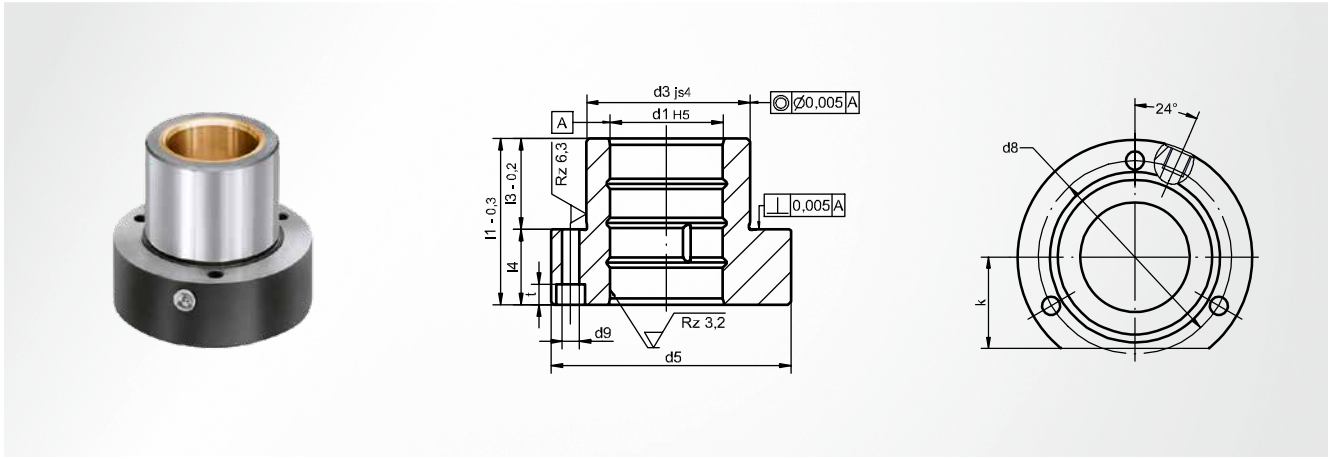
ST7451 Guide bush

smooth, sliding guide with solid lubricant

d_1^{H6}	d_4^{j6}	$l_1^{-0.2 - -0.5}$	Item number
30	48	37	ST7451 **30 x 037**
		47	ST7451 **30 x 047**
		60	ST7451 **30 x 060**
		77	ST7451 **30 x 077**
		95	ST7451 **30 x 095**
32	48	30	ST7451 **32 x 030**
		37	ST7451 **32 x 037**
		47	ST7451 **32 x 047**
		60	ST7451 **32 x 060**
		77	ST7451 **32 x 077**
		95	ST7451 **32 x 095**
38	58	30	ST7451 **38 x 030**
		37	ST7451 **38 x 037**
		47	ST7451 **38 x 047**
		60	ST7451 **38 x 060**
		77	ST7451 **38 x 077**
		95	ST7451 **38 x 095**
		120	ST7451 **38 x 120**
40	58	30	ST7451 **40 x 030**
		37	ST7451 **40 x 037**
		47	ST7451 **40 x 047**
		60	ST7451 **40 x 060**
		77	ST7451 **40 x 077**
		95	ST7451 **40 x 095**
		120	ST7451 **40 x 120**
48	70	37	ST7451 **48 x 037**
		47	ST7451 **48 x 047**
		60	ST7451 **48 x 060**
		77	ST7451 **48 x 077**
		95	ST7451 **48 x 095**
		120	ST7451 **48 x 120**
50	70	37	ST7451 **50 x 037**
		47	ST7451 **50 x 047**
		60	ST7451 **50 x 060**
		77	ST7451 **50 x 077**
		95	ST7451 **50 x 095**
		120	ST7451 **50 x 120**
60	85	60	ST7451 **60 x 060**
		77	ST7451 **60 x 077**
		95	ST7451 **60 x 095**
		120	ST7451 **60 x 120**
63	85	60	ST7451 **63 x 060**
		77	ST7451 **63 x 077**
		95	ST7451 **63 x 095**
		120	ST7451 **63 x 120**
80	105	120	ST7451 **80 x 120**
		135	ST7451 **80 x 135**

ST7429 Guide bush

bronze coating, steel sliding guide, hardened, with flange



Referring to DIN 9831 / ISO 9448

Material
Steel 1.7139 (16MnCrS5); case-hardened

Hardness
62 ±1 HRC

Optional accessories
SZ8510

Installation instruction
Fixing with 3 socket-head screws (not included in the scope of delivery); central lubrication intended via funnel-type lubricating nipple with connection M8 x 1; one-sided entry chamfer or centring attachment

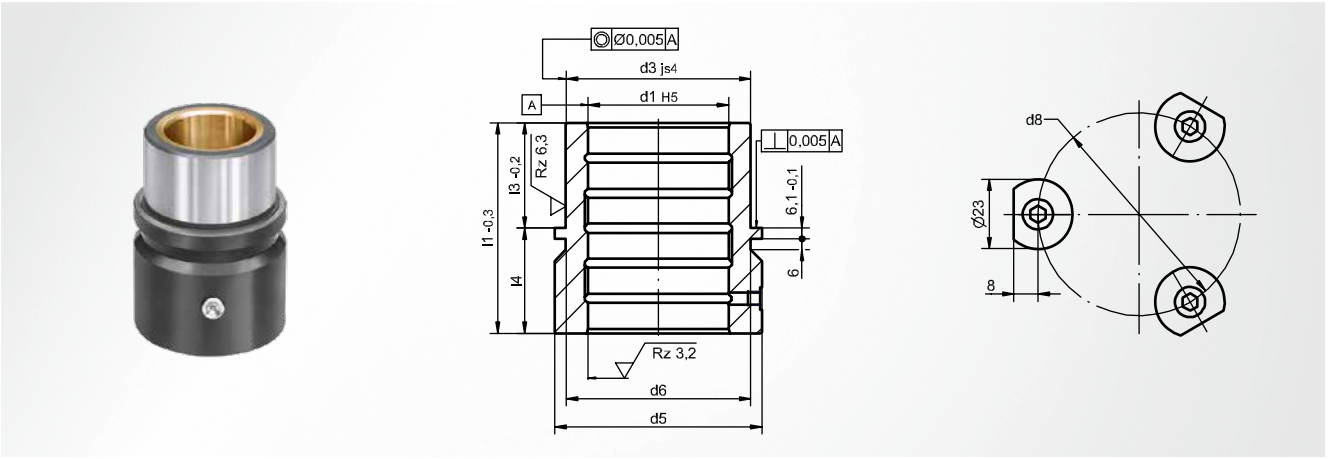
Note
For diameters 15 and 16 the borehole for lubrification is on d_3.

d_1^{H5}	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_3^{-0.2}$	l_4	Item number
15	28	45	35	4.5	3.5	15	29	23	6	ST7429 **15 x 029**
							36	30	6	ST7429 **15 x 036**
16	28	45	35	4.5	3.5	15	29	23	6	ST7429 **16 x 029**
							36	30	6	ST7429 **16 x 036**
19	32	50	40	4.5	4.6	18	38	23	15	ST7429 **19 x 038**
							45	30	15	ST7429 **19 x 045**
							51	37	15	ST7429 **19 x 051**
20	32	50	40	4.5	4.6	18	38	23	15	ST7429 **20 x 038**
							45	30	15	ST7429 **20 x 045**
							51	37	15	ST7429 **20 x 051**
24	40	63	50	5.5	5.7	23	38	23	15	ST7429 **24 x 038**
							55	30	25	ST7429 **24 x 055**
							62	37	25	ST7429 **24 x 062**
25	40	63	50	5.5	5.7	23	38	23	15	ST7429 **25 x 038**
							55	30	25	ST7429 **25 x 055**
							62	37	25	ST7429 **25 x 062**
30	48	72	58	5.5	5.7	28	45	30	15	ST7429 **30 x 045**
							62	37	25	ST7429 **30 x 062**
							72	47	25	ST7429 **30 x 072**
32	48	72	58	5.5	5.7	28	45	30	15	ST7429 **32 x 045**

d_1^{H5}	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_3^{-0.2}$	l_4	Item number
32	48	72	58	5.5	5.7	28	62	37	25	ST7429 **32 x 062**
							72	47	25	ST7429 **32 x 072**
38	58	85	70	6.6	6.8	33	55	30	25	ST7429 **38 x 055**
							67	37	30	ST7429 **38 x 067**
							77	47	30	ST7429 **38 x 077**
40	58	85	70	6.6	6.8	33	55	30	25	ST7429 **40 x 055**
							67	37	30	ST7429 **40 x 067**
							77	47	30	ST7429 **40 x 077**
48	70	104	86	9.0	9.0	38	62	37	25	ST7429 **48 x 062**
							89	47	42	ST7429 **48 x 089**
							102	60	42	ST7429 **48 x 102**
50	70	104	86	9.0	9.0	38	62	37	25	ST7429 **50 x 062**
							89	47	42	ST7429 **50 x 089**
							102	60	42	ST7429 **50 x 102**
60	85	120	100	9.0	9.0	46	89	47	42	ST7429 **60 x 089**
							102	60	42	ST7429 **60 x 102**
63	85	120	100	9.0	9.0	46	89	47	42	ST7429 **63 x 089**
							102	60	42	ST7429 **63 x 102**
80	105	148	125	11.0	11.0	56	125	75	50	ST7429 **80 x 125**

ST7419 Guide bush

bronze coating, steel sliding guide, hardened, with shoulder



Referring to DIN 9831 / ISO 9448

Material
Steel 1.7139 (16MnCrS5); case-hardened

Hardness
62 ±1 HRC

Installation instruction
Fixing with 3 holding clamps; central lubrication intended via funnel-type lubricating nipple with connection M8 x 1; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

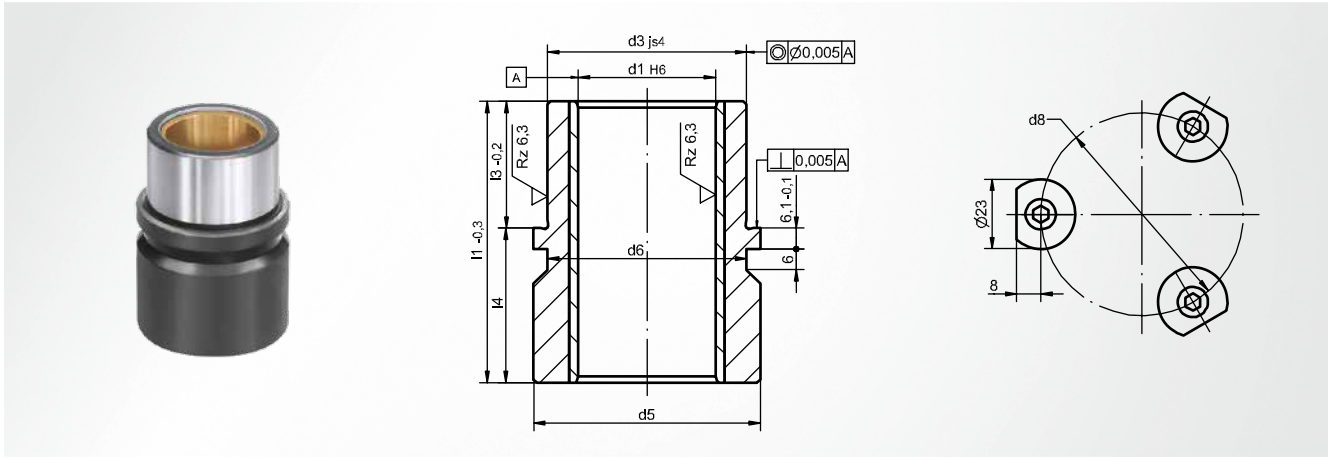
Scope of supply
ST7367

d_1^{H5}	d_3^{js4}	d_5	d_6	d_8	$l_3^{-0.2}$	$l_1^{-0.3}$	l_4	Item number
19	32	40	32	59	23	35	12	ST7419 **19 x 035**
						43	20	ST7419 **19 x 043**
						59	36	ST7419 **19 x 059**
20	32	40	32	59	23	35	12	ST7419 **20 x 035**
						43	20	ST7419 **20 x 043**
						59	36	ST7419 **20 x 059**
24	40	48	40	65	23	35	12	ST7419 **24 x 035**
						60	37	ST7419 **24 x 060**
						80	57	ST7419 **24 x 080**
25	40	48	40	65	23	35	12	ST7419 **25 x 035**
						60	37	ST7419 **25 x 060**
						80	57	ST7419 **25 x 080**
30	48	56	48	73	30	42	12	ST7419 **30 x 042**
						75	45	ST7419 **30 x 075**
						93	63	ST7419 **30 x 093**
32	48	56	48	73	30	42	12	ST7419 **32 x 042**
						75	45	ST7419 **32 x 075**
						93	63	ST7419 **32 x 093**
38	58	66	58	83	37	52	15	ST7419 **38 x 052**
						82	45	ST7419 **38 x 082**

d_1^{H5}	d_3^{js4}	d_5	d_6	d_8	$l_3^{-0.2}$	$l_1^{-0.3}$	l_4	Item number
38	58	66	58	83	37	107	70	ST7419 **38 x 107**
40	58	66	58	83	37	52	15	ST7419 **40 x 052**
						82	45	ST7419 **40 x 082**
						107	70	ST7419 **40 x 107**
48	70	80	70	97	47	65	18	ST7419 **48 x 065**
						97	50	ST7419 **48 x 097**
						127	80	ST7419 **48 x 127**
50	70	80	70	97	47	65	18	ST7419 **50 x 065**
						97	50	ST7419 **50 x 097**
						127	80	ST7419 **50 x 127**
60	85	95	85	112	60	80	20	ST7419 **60 x 080**
						115	55	ST7419 **60 x 115**
						150	90	ST7419 **60 x 150**
63	85	95	85	112	60	80	20	ST7419 **63 x 080**
						115	55	ST7419 **63 x 115**
						150	90	ST7419 **63 x 150**
80	105	118	105	135	60	80	20	ST7419 **80 x 080**
						120	60	ST7419 **80 x 120**
						150	90	ST7419 **80 x 150**

ST7471 Guide bush

sliding guide with solid lubricant, with shoulder



Referring to DIN 9831 / ISO 9448

Material
Steel 1.7139 (16MnCrS5); case-hardened; with solid lubricant insert

Hardness
62 ±1 HRC

Installation instruction
Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

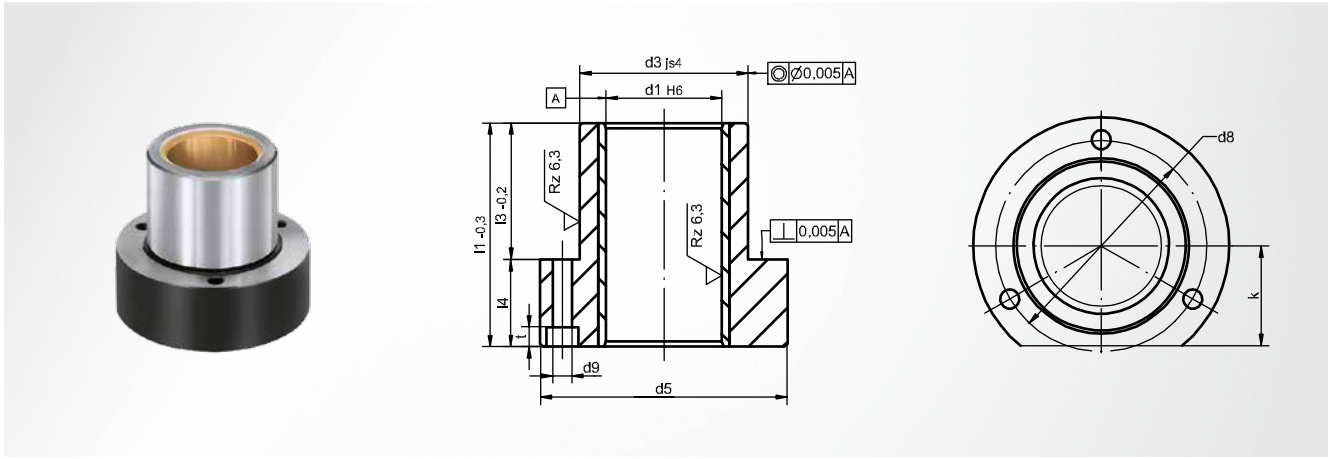
Scope of supply
ST7367

d_1^{H6}	d_3^{js4}	d_5	d_6	d_8	$l_3^{-0.2}$	$l_1^{-0.3}$	l_4	Item number
19	32	40	32	59	23	35	12	ST7471 **19 x 035**
						43	20	ST7471 **19 x 043**
						59	36	ST7471 **19 x 059**
20	32	40	32	59	23	35	12	ST7471 **20 x 035**
						43	20	ST7471 **20 x 043**
						59	36	ST7471 **20 x 059**
24	40	48	40	65	23	35	12	ST7471 **24 x 035**
						60	37	ST7471 **24 x 060**
						80	57	ST7471 **24 x 080**
25	40	48	40	65	23	35	12	ST7471 **25 x 035**
						60	37	ST7471 **25 x 060**
						80	57	ST7471 **25 x 080**
30	48	56	48	73	30	42	12	ST7471 **30 x 042**
						75	45	ST7471 **30 x 075**
						93	63	ST7471 **30 x 093**
32	48	56	48	73	30	42	12	ST7471 **32 x 042**
						75	45	ST7471 **32 x 075**
						93	63	ST7471 **32 x 093**
38	58	66	58	83	37	52	15	ST7471 **38 x 052**
						82	45	ST7471 **38 x 082**

d_1^{H6}	d_3^{js4}	d_5	d_6	d_8	$l_3^{-0.2}$	$l_1^{-0.3}$	l_4	Item number
38	58	66	58	83	37	107	70	ST7471 **38 x 107**
40	58	66	58	83	37	52	15	ST7471 **40 x 052**
						82	45	ST7471 **40 x 082**
						107	70	ST7471 **40 x 107**
48	70	80	70	97	47	65	18	ST7471 **48 x 065**
						97	50	ST7471 **48 x 097**
						127	80	ST7471 **48 x 127**
50	70	80	70	97	47	65	18	ST7471 **50 x 065**
						97	50	ST7471 **50 x 097**
						127	80	ST7471 **50 x 127**
60	85	95	85	112	60	80	20	ST7471 **60 x 080**
						115	55	ST7471 **60 x 115**
						150	90	ST7471 **60 x 150**
63	85	95	85	112	60	80	20	ST7471 **63 x 080**
						115	55	ST7471 **63 x 115**
						150	90	ST7471 **63 x 150**
80	105	118	105	135	60	80	20	ST7471 **80 x 080**
						120	60	ST7471 **80 x 120**
						150	90	ST7471 **80 x 150**

ST7481 Guide bush

sliding guide with solid lubricant, with flange



Referring to DIN 9831 / ISO 9448

Material
Steel 1.7139 (16MnCrS5); case-hardened; with solid lubricant insert

Hardness
62 ±1 HRC

Installation instruction
Fixing with 3 socket-head screws (not included in the scope of delivery); one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

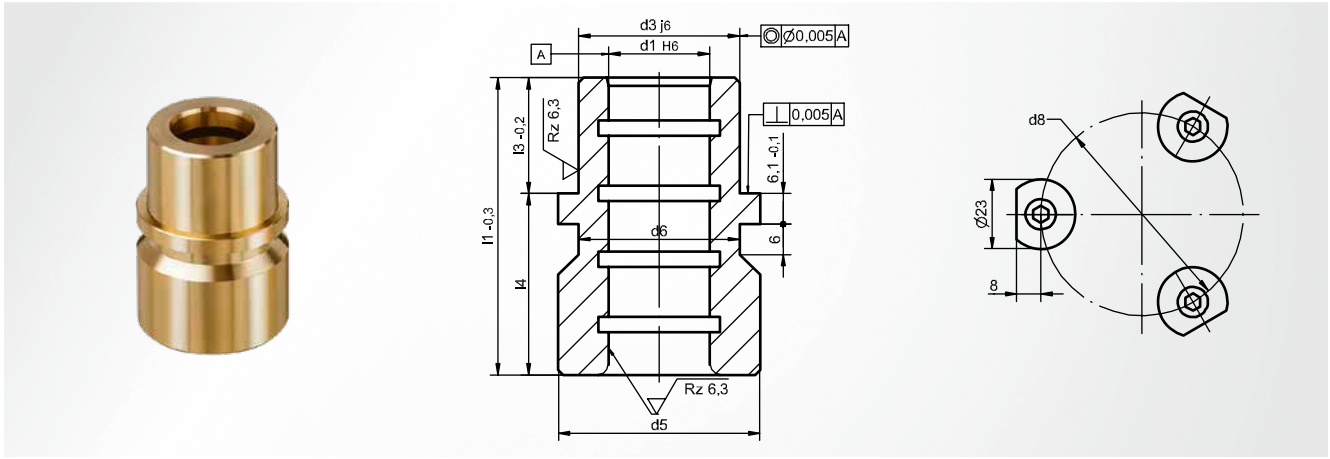
Optional accessories
SZ8510

d_1^{H6}	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_3^{-0.2}$	l_4	Item number
15	28	45	35	4.5	3.5	15	29	23	6	ST7481 **15 x 029**
							36	30	6	ST7481 **15 x 036**
16	28	45	35	4.5	3.5	15	29	23	6	ST7481 **16 x 029**
							36	30	6	ST7481 **16 x 036**
19	32	50	40	4.5	4.6	18	38	23	15	ST7481 **19 x 038**
							45	30	15	ST7481 **19 x 045**
							51	36	15	ST7481 **19 x 051**
20	32	50	40	4.5	4.6	18	38	23	15	ST7481 **20 x 038**
							45	30	15	ST7481 **20 x 045**
							51	36	15	ST7481 **20 x 051**
24	40	63	50	5.5	5.7	23	38	23	15	ST7481 **24 x 038**
							55	30	25	ST7481 **24 x 055**
							62	37	25	ST7481 **24 x 062**
25	40	63	50	5.5	5.7	23	38	23	15	ST7481 **25 x 038**
							55	30	25	ST7481 **25 x 055**
							62	37	25	ST7481 **25 x 062**
30	48	72	58	5.5	5.7	28	45	30	15	ST7481 **30 x 045**
							62	37	25	ST7481 **30 x 062**
							72	47	25	ST7481 **30 x 072**
32	48	72	58	5.5	5.7	28	45	30	15	ST7481 **32 x 045**

d_1^{H6}	d_3^{js4}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_3^{-0.2}$	l_4	Item number
32	48	72	58	5.5	5.7	28	62	37	25	ST7481 **32 x 062**
							72	47	25	ST7481 **32 x 072**
38	58	85	70	6.6	6.8	33	55	30	25	ST7481 **38 x 055**
							67	37	30	ST7481 **38 x 067**
							77	47	30	ST7481 **38 x 077**
40	58	85	70	6.6	6.8	33	55	30	25	ST7481 **40 x 055**
							67	37	30	ST7481 **40 x 067**
							77	47	30	ST7481 **40 x 077**
48	70	104	86	9.0	9.0	38	62	37	25	ST7481 **48 x 062**
							89	47	42	ST7481 **48 x 089**
							102	60	42	ST7481 **48 x 102**
50	70	104	86	9.0	9.0	38	62	37	25	ST7481 **50 x 062**
							89	47	42	ST7481 **50 x 089**
							102	60	42	ST7481 **50 x 102**
60	85	120	100	9.0	9.0	46	89	47	42	ST7481 **60 x 089**
							102	60	42	ST7481 **60 x 102**
63	85	120	100	9.0	9.0	46	89	47	42	ST7481 **63 x 089**
							102	60	42	ST7481 **63 x 102**
80	105	148	125	11.0	11.0	56	125	75	50	ST7481 **80 x 125**

ST7431 Guide bush

sliding guide with solid lubricant, with shoulder



Referring to DIN 9831 / ISO 9448

Material
Bronze CuZn25Al5; with solid lubricant rings

Installation instruction
Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

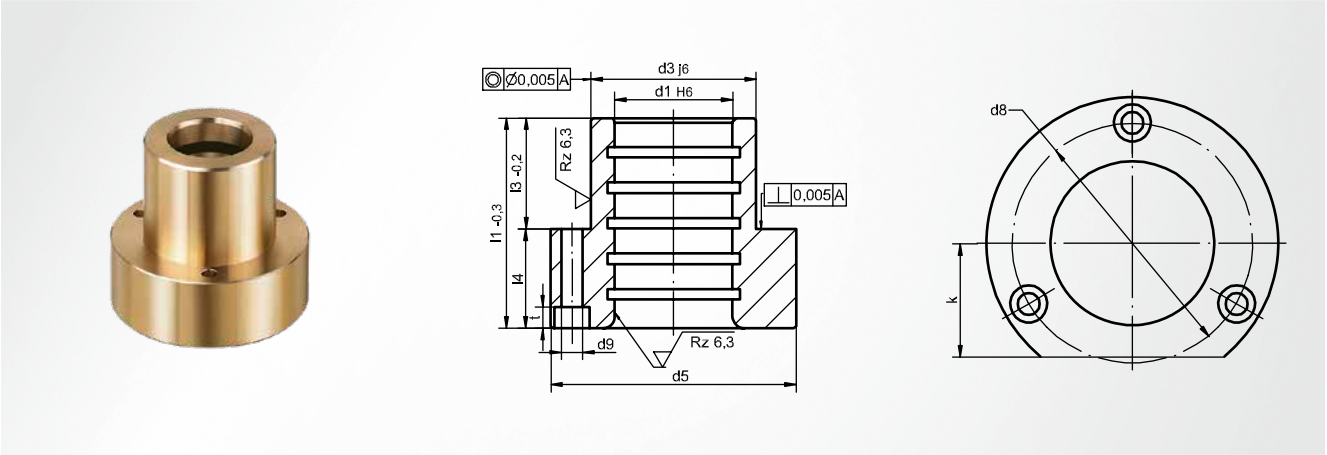
Scope of supply
ST7367

d_1^{H6}	d_3^{j6}	d_5	d_6	d_8	$l_3^{-0.2}$	$l_1^{-0.3}$	l_4	Item number
19	32	40	32	59	23	35	12	ST7431 **19 x 035**
						43	20	ST7431 **19 x 043**
						59	36	ST7431 **19 x 059**
20	32	40	32	59	23	35	12	ST7431 **20 x 035**
						43	20	ST7431 **20 x 043**
						59	36	ST7431 **20 x 059**
24	40	48	40	65	23	35	12	ST7431 **24 x 035**
						60	37	ST7431 **24 x 060**
						80	57	ST7431 **24 x 080**
25	40	48	40	65	23	35	12	ST7431 **25 x 035**
						60	37	ST7431 **25 x 060**
						80	57	ST7431 **25 x 080**
30	48	56	48	73	30	42	12	ST7431 **30 x 042**
						75	45	ST7431 **30 x 075**
						93	63	ST7431 **30 x 093**
32	48	56	48	73	30	42	12	ST7431 **32 x 042**
						75	45	ST7431 **32 x 075**
						93	63	ST7431 **32 x 093**
38	58	66	58	83	37	52	15	ST7431 **38 x 052**
						82	45	ST7431 **38 x 082**

d_1^{H6}	d_3^{j6}	d_5	d_6	d_8	$l_3^{-0.2}$	$l_1^{-0.3}$	l_4	Item number
38	58	66	58	83	37	107	70	ST7431 **38 x 107**
40	58	66	58	83	37	52	15	ST7431 **40 x 052**
						82	45	ST7431 **40 x 082**
						107	70	ST7431 **40 x 107**
48	70	80	70	97	47	65	18	ST7431 **48 x 065**
						97	50	ST7431 **48 x 097**
						127	80	ST7431 **48 x 127**
50	70	80	70	97	47	65	18	ST7431 **50 x 065**
						97	50	ST7431 **50 x 097**
						127	80	ST7431 **50 x 127**
60	85	95	85	112	60	80	20	ST7431 **60 x 080**
						115	55	ST7431 **60 x 115**
						150	90	ST7431 **60 x 150**
63	85	95	85	112	60	80	20	ST7431 **63 x 080**
						115	55	ST7431 **63 x 115**
						150	90	ST7431 **63 x 150**
80	105	118	105	135	60	80	20	ST7431 **80 x 080**
						120	60	ST7431 **80 x 120**
						150	90	ST7431 **80 x 150**

ST7441 Guide bush

sliding guide with solid lubricant, with flange



Referring to DIN 9831 / ISO 9448

Material
Bronze CuZn25Al5; with solid lubricant rings

Installation instruction
Fixing with 3 socket-head screws (not included in the scope of delivery); one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

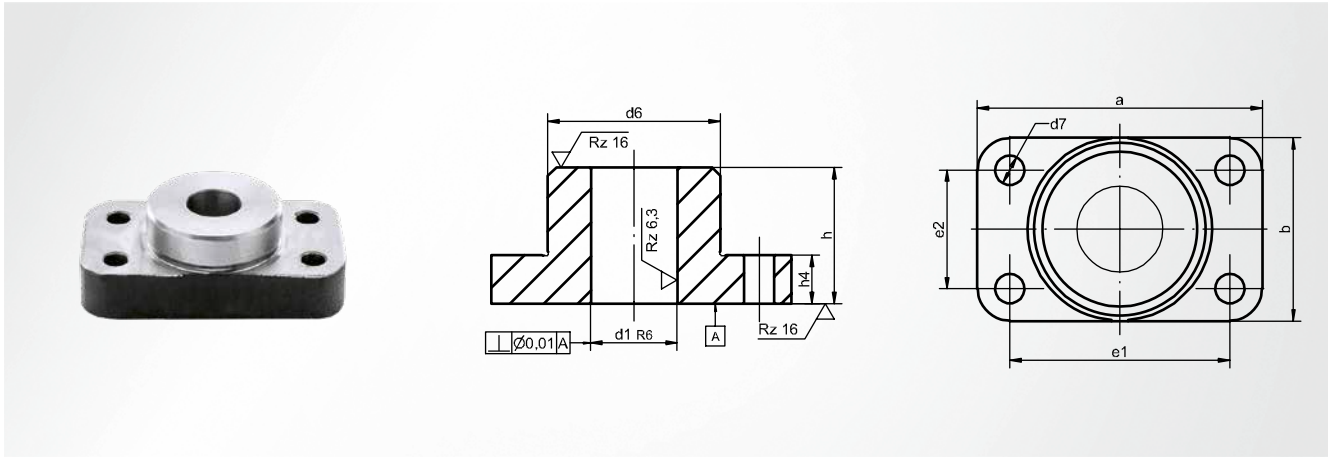
Optional accessories
SZ8510

d_1^{H6}	d_3^{j6}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_3^{-0.2}$	l_4	Item number
15	28	45	35	4.5	3.5	15	29	23	6	ST7441 **15 x 029**
							36	30	6	ST7441 **15 x 036**
16	28	45	35	4.5	3.5	15	29	23	6	ST7441 **16 x 029**
							36	30	6	ST7441 **16 x 036**
19	32	50	40	4.5	4.6	18	38	23	15	ST7441 **19 x 038**
							45	30	15	ST7441 **19 x 045**
							51	36	15	ST7441 **19 x 051**
20	32	50	40	4.5	4.6	18	38	23	15	ST7441 **20 x 038**
							45	30	15	ST7441 **20 x 045**
							51	36	15	ST7441 **20 x 051**
24	40	63	50	5.5	5.7	23	38	23	15	ST7441 **24 x 038**
							55	30	25	ST7441 **24 x 055**
							62	37	25	ST7441 **24 x 062**
25	40	63	50	5.5	5.7	23	38	23	15	ST7441 **25 x 038**
							55	30	25	ST7441 **25 x 055**
							62	37	25	ST7441 **25 x 062**
30	48	72	58	5.5	5.7	28	45	30	15	ST7441 **30 x 045**
							62	37	25	ST7441 **30 x 062**
							72	47	25	ST7441 **30 x 072**
32	48	72	58	5.5	5.7	28	45	30	15	ST7441 **32 x 045**

d_1^{H6}	d_3^{j6}	d_5	d_8	d_9	t	k	$l_1^{-0.3}$	$l_3^{-0.2}$	l_4	Item number
32	48	72	58	5.5	5.7	28	62	37	25	ST7441 **32 x 062**
							72	47	25	ST7441 **32 x 072**
38	58	85	70	6.6	6.8	33	55	30	25	ST7441 **38 x 055**
							67	37	30	ST7441 **38 x 067**
							77	47	30	ST7441 **38 x 077**
40	58	85	70	6.6	6.8	33	55	30	25	ST7441 **40 x 055**
							67	37	30	ST7441 **40 x 067**
							77	47	30	ST7441 **40 x 077**
48	70	104	86	9.0	9.0	38	62	37	25	ST7441 **48 x 062**
							89	47	42	ST7441 **48 x 089**
							102	60	42	ST7441 **48 x 102**
50	70	104	86	9.0	9.0	38	62	37	25	ST7441 **50 x 062**
							89	47	42	ST7441 **50 x 089**
							102	60	42	ST7441 **50 x 102**
60	85	120	100	9.0	9.0	46	89	47	42	ST7441 **60 x 089**
							102	60	42	ST7441 **60 x 102**
63	85	120	100	9.0	9.0	46	89	47	42	ST7441 **63 x 089**
							102	60	42	ST7441 **63 x 102**
80	105	148	125	11.0	11.0	56	125	75	50	ST7441 **80 x 125**

ST7210 Pillar bearing

machined, with rectangular flange



Material
Grey cast irons EN-GJL-250

Note
both flange surfaces machined

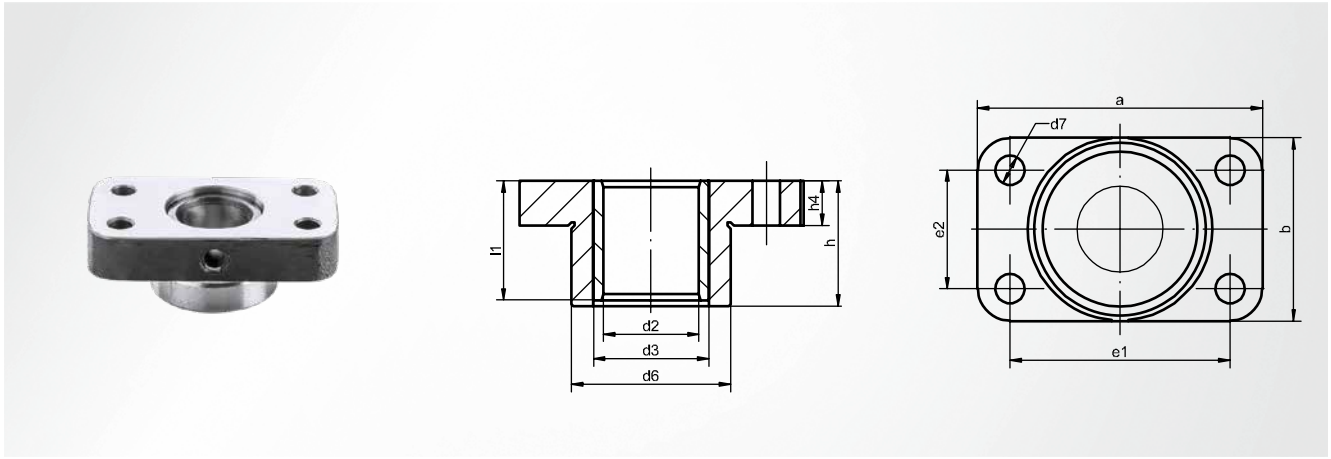
Guide diameter
ISO H5

Mounting bore
ISO R6

a	b	d_6	d_7	e_1	e_2	h	h_4	d_1^{R6}	Item number
71	40	37	6.6	53	22	25	14.0	15	ST7210 **15**
								16	ST7210 **16**
80	45	42	9.0	60	25	32	16.0	19	ST7210 **19**
								20	ST7210 **20**
90	56	52	9.0	69	35	40	16.0	24	ST7210 **24**
								25	ST7210 **25**
112	71	65	11.0	86	45	50	17.5	30	ST7210 **30**
								32	ST7210 **32**
132	85	80	14.0	102	55	63	22.5	38	ST7210 **38**
								40	ST7210 **40**
160	112	107	18.0	126	78	80	25.0	48	ST7210 **48**
								50	ST7210 **50**
200	132	125	18.0	154	86	100	33.0	60	ST7210 **60**
								63	ST7210 **63**
224	140	130	22.0	172	88	125	36.5	80	ST7210 **80**

ST7216 Guide bearing

machined, ball guide without ball cage, with rectangular flange



Material
Grey cast irons EN-GJL-250

Note
both flange surfaces machined

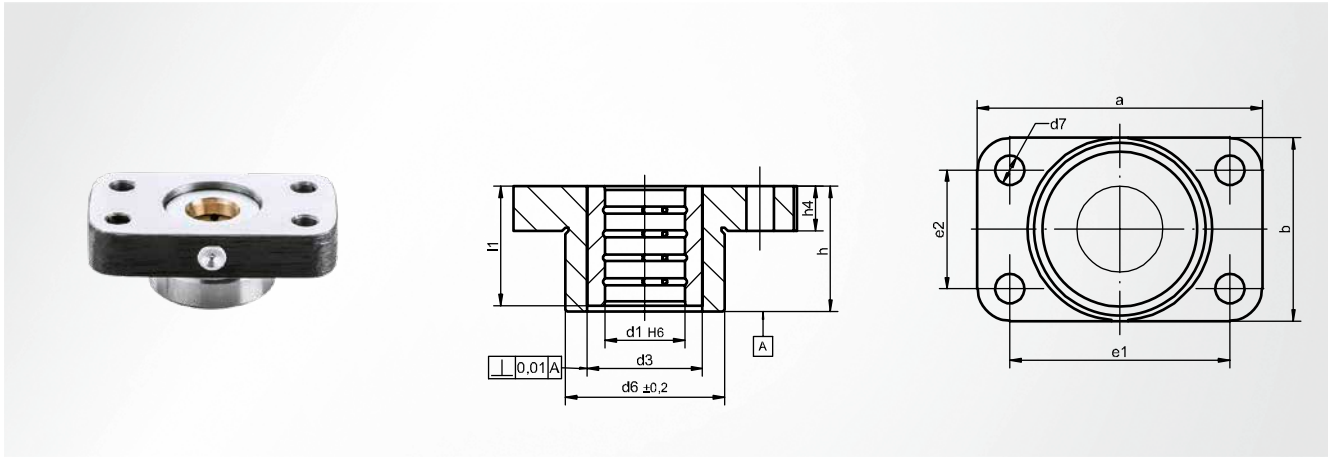
Guide diameter
ISO H5

Scope of supply
ST7406

a	b	d_3	d_6	d_7	e_1	e_2	h	h_4	l_1	d_1	d_2	Item number
71	40	28	37	6.6	53	22	25	14.0	23	15	21	ST7216 **15**
										16	22	ST7216 **16**
80	45	32	42	9.0	60	25	32	16.0	30	19	25	ST7216 **19**
										20	26	ST7216 **20**
90	56	40	52	9.0	69	35	40	16.0	37	24	30	ST7216 **24**
										25	31	ST7216 **25**
112	71	48	65	11.0	86	45	50	17.5	47	30	38	ST7216 **30**
										32	40	ST7216 **32**
132	85	58	80	14.0	102	55	63	22.5	60	38	46	ST7216 **38**
										40	48	ST7216 **40**
160	112	70	107	18.0	126	78	80	25.0	77	48	56	ST7216 **48**
										50	58	ST7216 **50**
200	132	85	125	18.0	154	86	100	33.0	95	60	70	ST7216 **60**
										63	73	ST7216 **63**
224	140	105	130	22.0	172	88	125	36.5	120	80	92	ST7216 **80**

ST7219 Guide bearing

machined, sliding guide with bronze coating, with rectangular flange



Material
Grey cast irons EN-GJL-250

Guide diameter
ISO H5

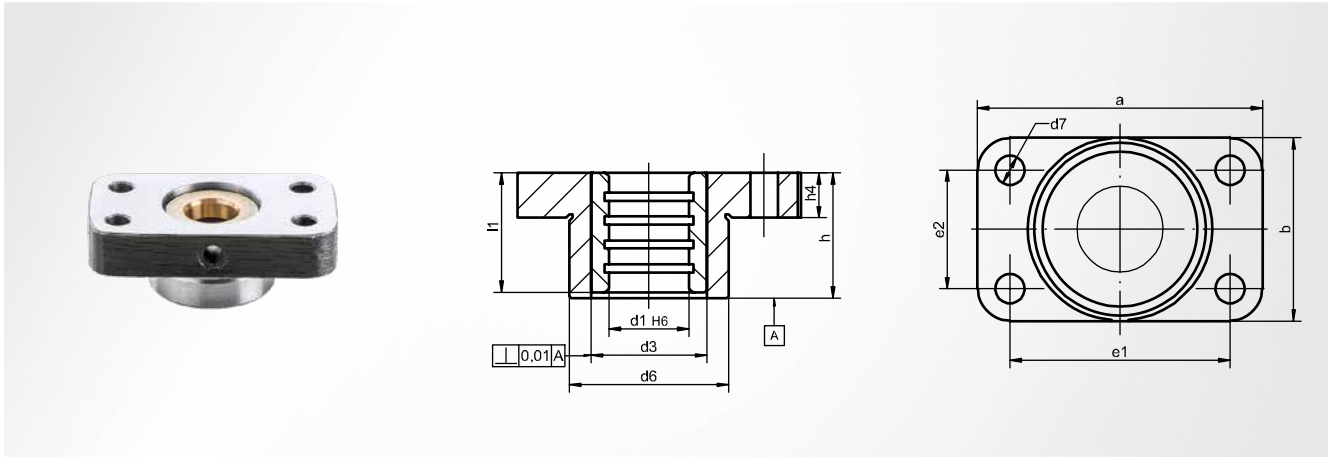
Note
Central lubrication via cup head lubrication nipple M8 x 1; both flange surfaces machined

Scope of supply
ST7409

a	b	d_3	$d_6^{\pm 0.2}$	d_7	e_1	e_2	h	h_4	l_1	d_1^{H6}	Item number
71	40	28	37	6.6	53	22	25	14.0	23	15	ST7219 **15**
										16	ST7219 **16**
80	45	32	42	9.0	60	25	32	16.0	30	19	ST7219 **19**
										20	ST7219 **20**
90	56	40	52	9.0	69	35	40	16.0	37	24	ST7219 **24**
										25	ST7219 **25**
112	71	48	65	11.0	86	45	50	17.5	47	30	ST7219 **30**
										32	ST7219 **32**
132	85	58	80	14.0	102	55	63	22.5	60	38	ST7219 **38**
										40	ST7219 **40**
160	112	70	107	18.0	126	78	80	25.0	77	48	ST7219 **48**
										50	ST7219 **50**
200	132	85	125	18.0	154	86	100	33.0	95	60	ST7219 **60**
										63	ST7219 **63**
224	140	105	130	22.0	172	88	125	36.5	120	80	ST7219 **80**

ST7211 Guide bearing

machined, sliding guide with solid lubricant, with rectangular flange



Material
Grey cast irons EN-GJL-250

Note
both flange surfaces machined

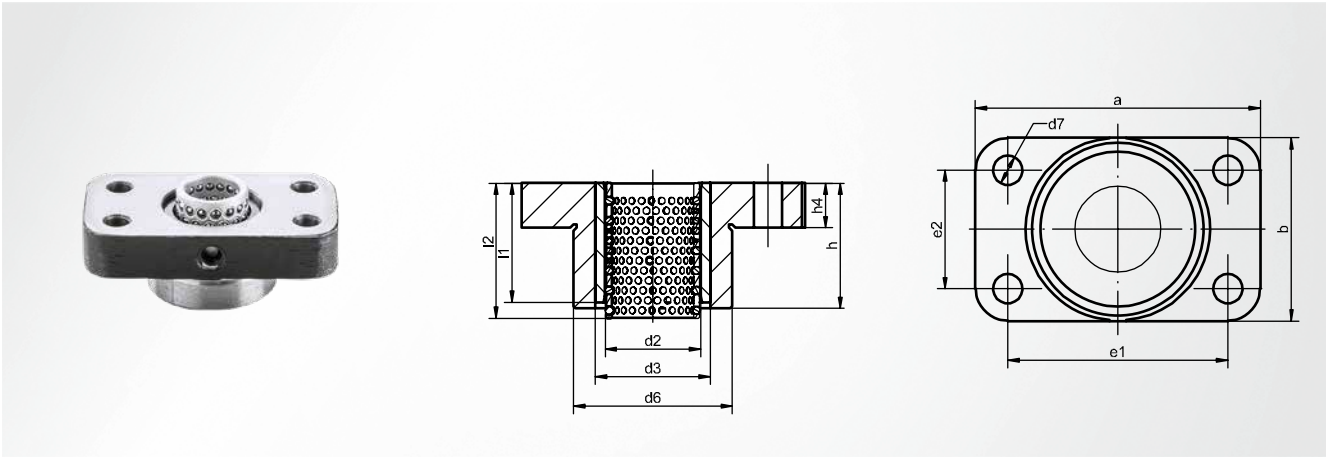
Guide diameter
ISO H5

Scope of supply
ST7451

a	b	d_3	d_6	d_7	e_1	e_2	h	h_4	l_1	d_1 H6	Item number
71	40	28	37	6.6	53	22	25	14.0	23	15	ST7211 **15**
										16	ST7211 **16**
80	45	32	42	9.0	60	25	32	16.0	30	19	ST7211 **19**
										20	ST7211 **20**
90	56	40	52	9.0	69	35	40	16.0	37	24	ST7211 **24**
										25	ST7211 **25**
112	71	48	65	11.0	86	45	50	17.5	47	30	ST7211 **30**
										32	ST7211 **32**
132	85	58	80	14.0	102	55	63	22.5	60	38	ST7211 **38**
										40	ST7211 **40**
160	112	70	107	18.0	126	78	80	25.0	77	48	ST7211 **48**
										50	ST7211 **50**
200	132	85	125	18.0	154	86	100	33.0	95	60	ST7211 **60**
										63	ST7211 **63**
224	140	105	130	22.0	172	88	125	36.5	120	80	ST7211 **80**

ST7212 Guide bearing

machined, ball guide with ball cage, with rectangular flange



Material
Grey cast irons EN-GJL-250

Note
both flange surfaces machined

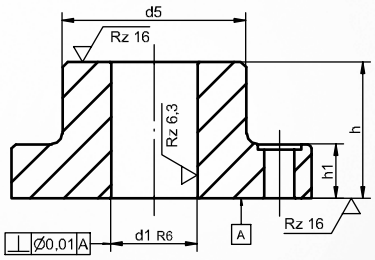
Guide diameter
ISO H5

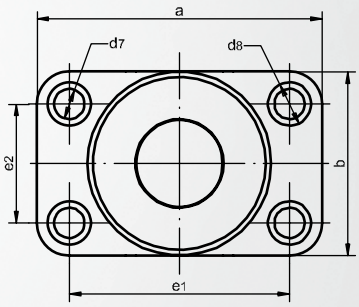
Scope of supply
ST7130; ST7406

a	b	d_3	d_6	d_7	e_1	e_2	h	h_4	l_1	l_2	d_1	d_2	Item number
71	40	28	37	6.6	53	22	25	14.0	23	30	15	21	ST7212 **15**
											16	22	ST7212 **16**
80	45	32	42	9.0	60	25	32	16.0	30	38	19	25	ST7212 **19**
											20	26	ST7212 **20**
90	56	40	52	9.0	69	35	40	16.0	37	43	24	30	ST7212 **24**
											25	31	ST7212 **25**
112	71	48	65	11.0	86	45	50	17.5	47	58	30	38	ST7212 **30**
											32	40	ST7212 **32**
132	85	58	80	14.0	102	55	63	22.5	60	68	38	46	ST7212 **38**
											40	48	ST7212 **40**
160	112	70	107	18.0	126	78	80	25.0	77	88	48	56	ST7212 **48**
											50	58	ST7212 **50**
200	132	85	125	18.0	154	86	100	33.0	95	113	60	70	ST7212 **60**
											63	73	ST7212 **63**
224	140	105	130	22.0	172	88	125	36.5	120	138	80	92	ST7212 **80**

ST7200 Pillar bearing

with rectangular flange





Referring to ISO 11903

Material
Grey cast irons EN-GJL-250

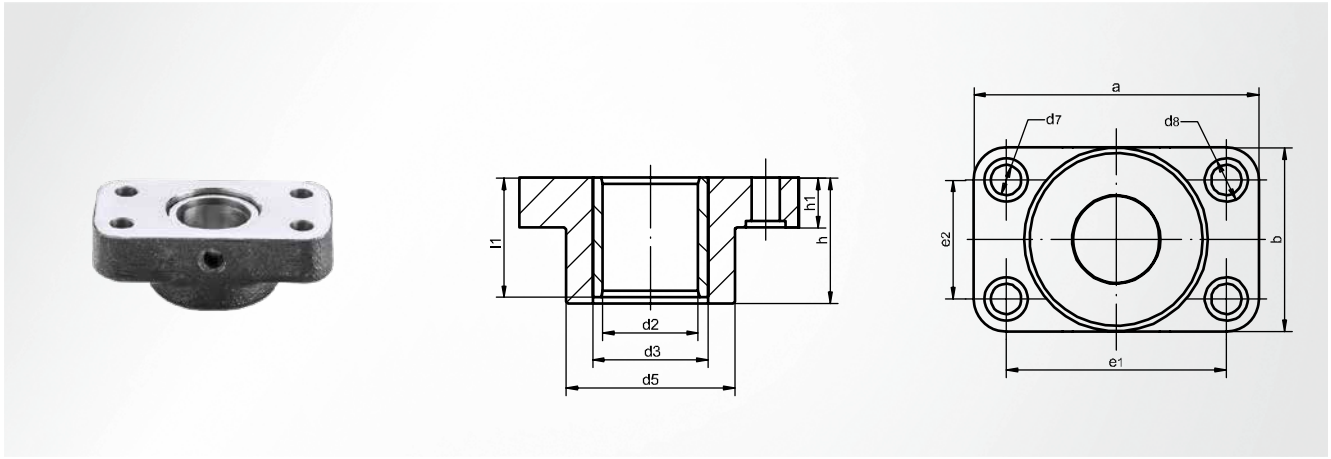
Guide diameter
ISO H5

Mounting bore
ISO R6

a	b	d_5	d_7	d_8	e_1	e_2	h	h_1	d_1^{R6}	Item number
71	40	40	6.6	11	53	22	25	16	15	ST7200 **15**
									16	ST7200 **16**
80	45	45	9.0	15	60	25	32	18	19	ST7200 **19**
									20	ST7200 **20**
90	56	56	9.0	15	69	35	40	18	24	ST7200 **24**
									25	ST7200 **25**
112	71	71	11.0	18	86	45	50	20	30	ST7200 **30**
									32	ST7200 **32**
132	85	85	14.0	20	102	55	63	25	38	ST7200 **38**
									40	ST7200 **40**
160	112	112	18.0	26	126	78	80	28	48	ST7200 **48**
									50	ST7200 **50**
200	132	132	18.0	26	154	86	100	36	60	ST7200 **60**
									63	ST7200 **63**
224	140	140	22.0	33	172	88	125	40	80	ST7200 **80**

ST7206 Guide bearing

ball guide without ball cage, with rectangular flange



Referring to ISO 11903

Material
Grey cast irons EN-GJL-250

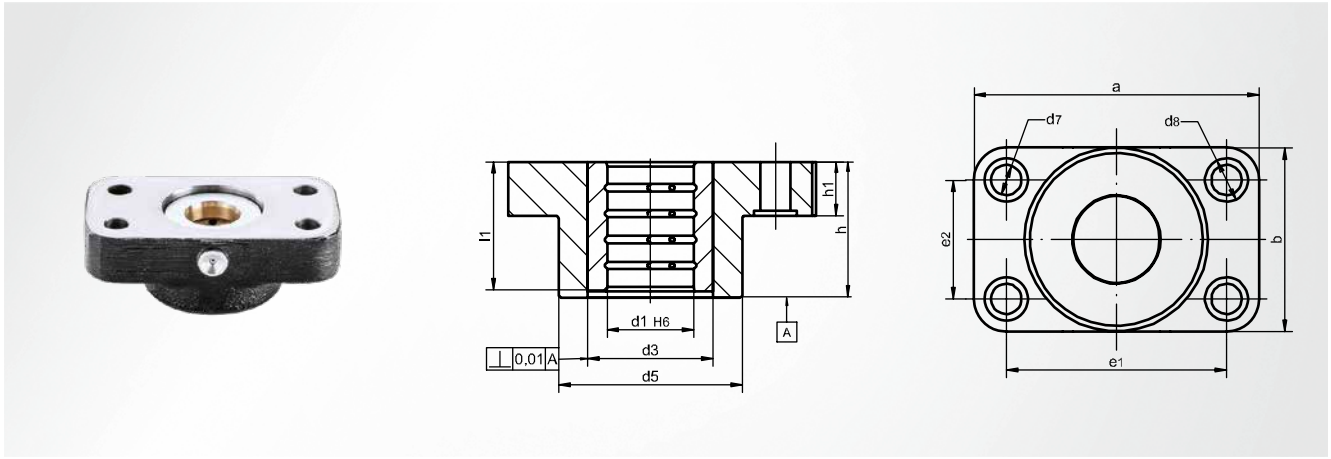
Guide diameter
ISO H5

Scope of supply
ST7406

a	b	d_3	d_5	d_7	d_8	e_1	e_2	h	h_1	l_1	d_1	d_2	Item number
71	40	28	40	6.6	11	53	22	25	16	23	15	21	ST7206 **15**
											16	22	ST7206 **16**
80	45	32	45	9.0	15	60	25	32	18	30	19	25	ST7206 **19**
											20	26	ST7206 **20**
90	56	40	56	9.0	15	69	35	40	18	37	24	30	ST7206 **24**
											25	31	ST7206 **25**
112	71	48	71	11.0	18	86	45	50	20	47	30	38	ST7206 **30**
											32	40	ST7206 **32**
132	85	58	85	14.0	20	102	55	63	25	60	38	46	ST7206 **38**
											40	48	ST7206 **40**
160	112	70	112	18.0	26	126	78	80	28	77	48	56	ST7206 **48**
											50	58	ST7206 **50**
200	132	85	132	18.0	26	154	86	100	36	95	60	70	ST7206 **60**
											63	73	ST7206 **63**
224	140	105	140	22.0	33	172	88	125	40	120	80	92	ST7206 **80**

ST7209 Guide bearing

sliding guide with bronze coating, with rectangular flange



Referring to ISO 11903

Material
Grey cast irons EN-GJL-250

Guide diameter
ISO H5

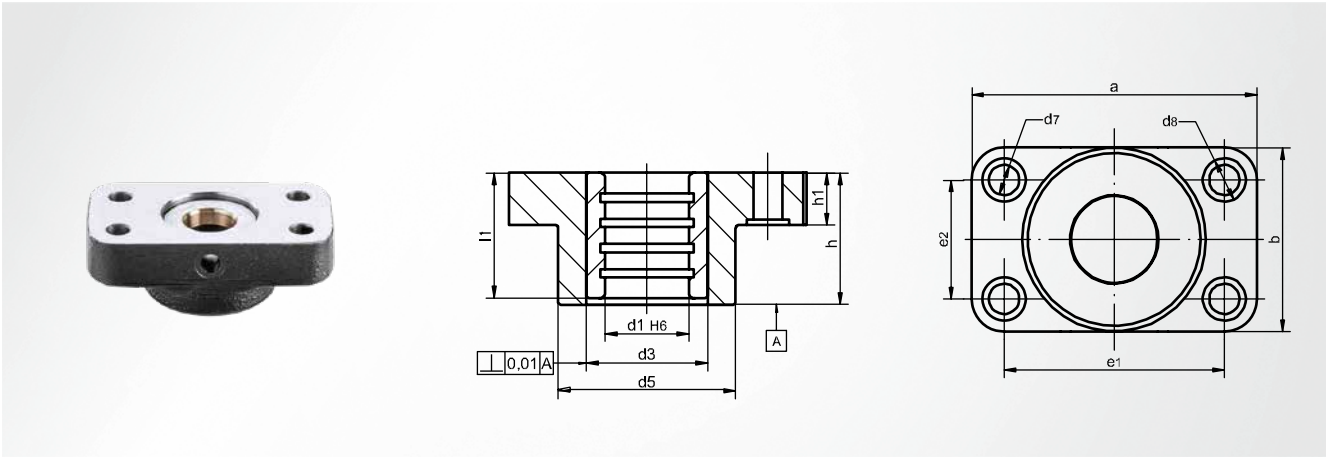
Note
Central lubrication via cup head lubrication nipple M8 x 1

Scope of supply
ST7409

a	b	d_3	d_5	d_7	d_8	e_1	e_2	h	h_1	l_1	d_1^{H6}	Item number
71	40	28	40	6.6	11	53	22	25	16	23	15	ST7209 **15**
											16	ST7209 **16**
80	45	32	45	9.0	15	60	25	32	18	30	19	ST7209 **19**
											20	ST7209 **20**
90	56	40	56	9.0	15	69	35	40	18	37	24	ST7209 **24**
											25	ST7209 **25**
112	71	48	71	11.0	18	86	45	50	20	47	30	ST7209 **30**
											32	ST7209 **32**
132	85	58	85	14.0	20	102	55	63	25	60	38	ST7209 **38**
											40	ST7209 **40**
160	112	70	112	18.0	26	126	78	80	28	77	48	ST7209 **48**
											50	ST7209 **50**
200	132	85	132	18.0	26	154	86	100	36	95	60	ST7209 **60**
											63	ST7209 **63**
224	140	105	140	22.0	33	172	88	125	40	120	80	ST7209 **80**

ST7201 Guide bearing

sliding guide with solid lubricant, with rectangular flange



Referring to ISO 11903

Material
Grey cast irons EN-GJL-250

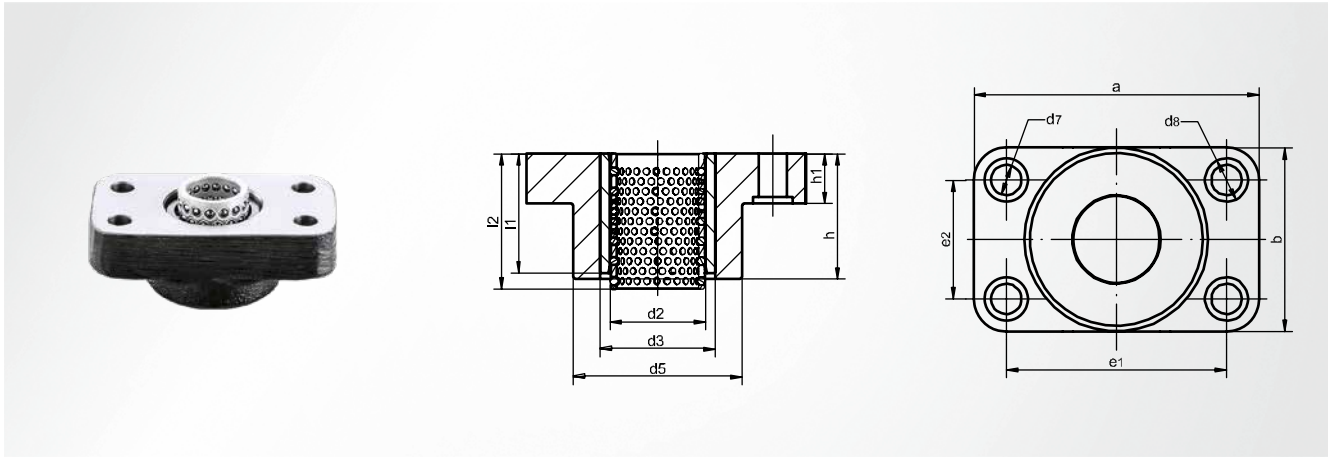
Guide diameter
ISO H5

Scope of supply
ST7451

a	b	d_3	d_5	d_7	d_8	e_1	e_2	h	h_1	l_1	d_1 H6	Item number
71	40	28	40	6.6	11	53	22	25	16	23	15	ST7201 **15**
											16	ST7201 **16**
80	45	32	45	9.0	15	60	25	32	18	30	19	ST7201 **19**
											20	ST7201 **20**
90	56	40	56	9.0	15	69	35	40	18	37	24	ST7201 **24**
											25	ST7201 **25**
112	71	48	71	11.0	18	86	45	50	20	47	30	ST7201 **30**
											32	ST7201 **32**
132	85	58	85	14.0	20	102	55	63	25	60	38	ST7201 **38**
											40	ST7201 **40**
160	112	70	112	18.0	26	126	78	80	28	77	48	ST7201 **48**
											50	ST7201 **50**
200	132	85	132	18.0	26	154	86	100	36	95	60	ST7201 **60**
											63	ST7201 **63**
224	140	105	140	22.0	33	172	88	125	40	120	80	ST7201 **80**

ST7202 Guide bearing

ball guide with ball cage, with rectangular flange



Referring to ISO 11903

Material
Grey cast irons EN-GJL-250

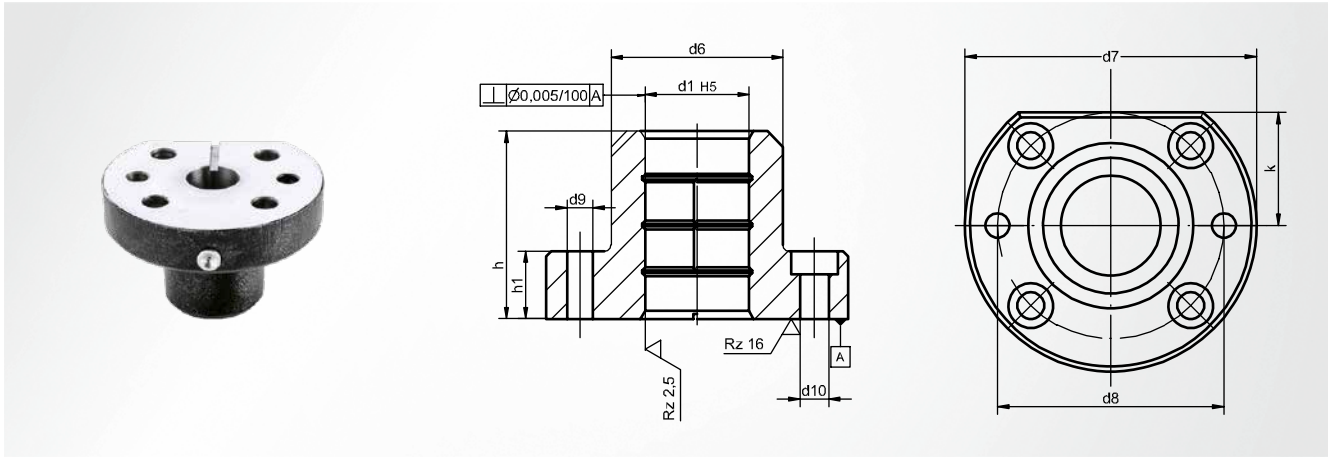
Guide diameter
ISO H5

Scope of supply
ST7130; ST7406

a	b	d_3	d_5	d_7	d_8	e_1	e_2	h	h_1	l_1	l_2	d_2	Item number
71	40	28	40	6.6	11	53	22	25	16	23	30	21	ST7202 **15**
												22	ST7202 **16**
80	45	32	45	9.0	15	60	25	32	18	30	38	25	ST7202 **19**
												26	ST7202 **20**
90	56	40	56	9.0	15	69	35	40	18	37	43	30	ST7202 **24**
												31	ST7202 **25**
112	71	48	71	11.0	18	86	45	50	20	47	58	38	ST7202 **30**
												40	ST7202 **32**
132	85	58	85	14.0	20	102	55	63	25	60	68	46	ST7202 **38**
												48	ST7202 **40**
160	112	70	112	18.0	26	126	78	80	28	77	88	56	ST7202 **48**
												58	ST7202 **50**
200	132	85	132	18.0	26	154	86	100	36	95	113	70	ST7202 **60**
												73	ST7202 **63**
224	140	105	140	22.0	33	172	88	125	40	120	138	92	ST7202 **80**

ST7250 Guide bearing

sliding guide, with round flange



Material
Grey cast irons EN-GJL-250

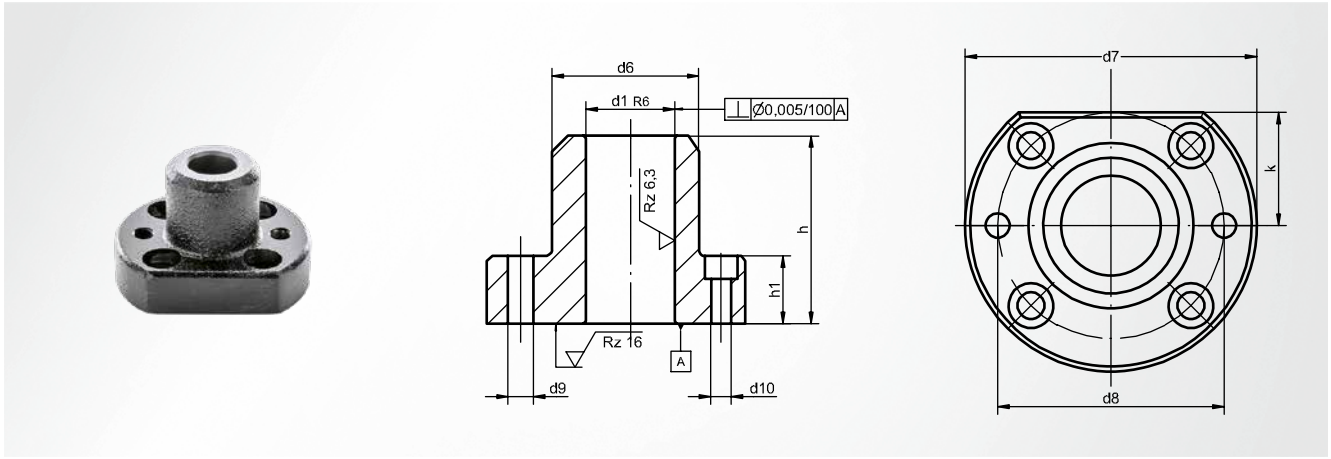
Note
Central lubrication via cup head lubrication nipple M8 x 1

Guide diameter
ISO H5

d_6	d_7	d_8	d_9	d_{10}	h	h_1	k	d_1^{H5}	Item number
36	78	54	7.8	9.0	50	18	30	19	ST7250 **19**
								20	ST7250 **20**
46	86	64	7.8	9.0	55	20	33	24	ST7250 **24**
								25	ST7250 **25**
56	106	80	9.8	11.0	63	22	41	30	ST7250 **30**
								32	ST7250 **32**
66	116	90	9.8	11.0	72	26	45	38	ST7250 **38**
								40	ST7250 **40**
80	140	108	11.8	13.5	80	30	54	48	ST7250 **48**
								50	ST7250 **50**

ST7260 Pillar bearing

with round flange



Material
Grey cast irons EN-GJL-250

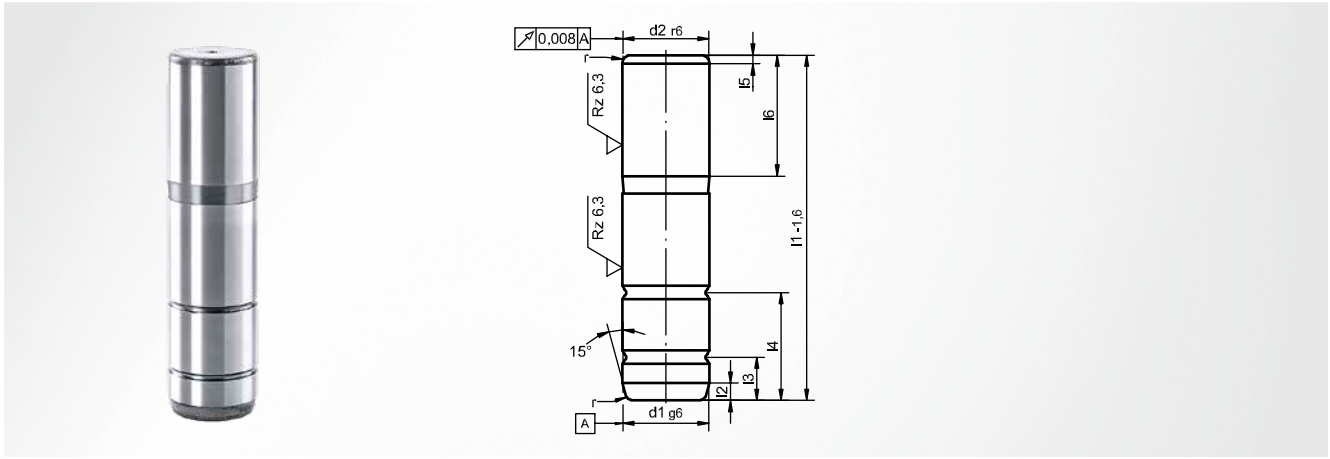
Mounting bore
ISO R6

Guide diameter
ISO H5

d_6	d_7	d_8	d_9	d_{10}	h	h_1	k	d_1^{R6}	Item number
36	78	54	7.8	9.0	50	18	30	19	ST7260 **19**
								20	ST7260 **20**
46	86	64	7.8	9.0	55	20	33	24	ST7260 **24**
								25	ST7260 **25**
56	106	80	9.8	11.0	63	22	41	30	ST7260 **30**
								32	ST7260 **32**
66	116	90	9.8	11.0	72	26	45	38	ST7260 **38**
								40	ST7260 **40**
80	140	108	11.8	13.5	80	30	54	48	ST7260 **48**
								50	ST7260 **50**

ST7160 Guide pillar

for industrial tool making, with grooves



Referring to DIN 9833 / ISO 9182

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation in mounting bore
ISO H7

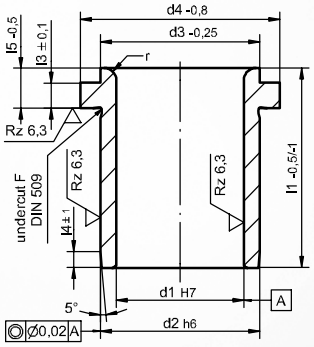
Attention
Use for sliding guide only

d_1^{g6}	d_2^{r6}	l_2	l_3	l_4	l_5	l_6	r	$l_1^{-1.6}$	Item number
25	25	8	20	45	4	40	2.0	125	ST7160 **025 x 125**
								140	ST7160 **025 x 140**
								160	ST7160 **025 x 160**
								180	ST7160 **025 x 180**
								200	ST7160 **025 x 200**
								224	ST7160 **025 x 224**
32	32	8	20	50	4	45	2.0	140	ST7160 **032 x 140**
								160	ST7160 **032 x 160**
								180	ST7160 **032 x 180**
								200	ST7160 **032 x 200**
								224	ST7160 **032 x 224**
								250	ST7160 **032 x 250**
40	40	8	20	50	4	56	2.0	160	ST7160 **040 x 160**
								180	ST7160 **040 x 180**
								200	ST7160 **040 x 200**
								224	ST7160 **040 x 224**
								250	ST7160 **040 x 250**
								280	ST7160 **040 x 280**
50	50	10	25	65	4	70	2.5	180	ST7160 **050 x 180**
								200	ST7160 **050 x 200**
								224	ST7160 **050 x 224**

d_1^{g6}	d_2^{r6}	l_2	l_3	l_4	l_5	l_6	r	$l_1^{-1.6}$	Item number
50	50	10	25	65	4	70	2.5	250	ST7160 **050 x 250**
								280	ST7160 **050 x 280**
								315	ST7160 **050 x 315**
63	63	10	32	72	4	80	2.5	200	ST7160 **063 x 200**
								224	ST7160 **063 x 224**
								250	ST7160 **063 x 250**
								280	ST7160 **063 x 280**
								315	ST7160 **063 x 315**
								355	ST7160 **063 x 355**
80	80	10	32	82	4	100	3.0	224	ST7160 **080 x 224**
								250	ST7160 **080 x 250**
								280	ST7160 **080 x 280**
								315	ST7160 **080 x 315**
								355	ST7160 **080 x 355**
								400	ST7160 **080 x 400**
100	100	10	32	82	4	125	3.0	250	ST7160 **100 x 250**
								280	ST7160 **100 x 280**
								315	ST7160 **100 x 315**
								355	ST7160 **100 x 355**
								400	ST7160 **100 x 400**
								450	ST7160 **100 x 450**

ST7460 Guide bush

for industrial tool making, sliding guide solid bronze, with shoulder



Referring to DIN 9834 / ISO 9448

Material
Bronze CuZn25Al5

Installation instruction
Fixing with 2 holding clamps (not included in the scope of delivery); one-sided entry chamfer or centring attachment

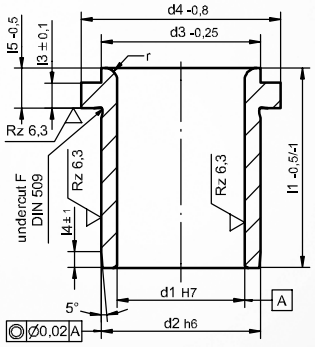
Installation in mounting bore
ISO H7

Optional accessories
ST7377

d_1 H7	d_2 h6	d_3 -0.25	d_4 -0.8	l_1 -0.5 - -1	l_3 ±0.1	l_4 ±1	l_5 0 - -0.5	r	Item number
25	32	32	40	40	6.3	3.0	10	3	ST7460 **025**
32	40	40	50	50	6.3	4.0	12	3	ST7460 **032**
40	50	50	63	63	6.3	5.0	15	3	ST7460 **040**
50	63	63	71	71	6.3	6.3	17	5	ST7460 **050**
63	80	80	90	80	10.0	8.0	19	6	ST7460 **063**
80	100	100	112	100	10.0	10.0	22	8	ST7460 **080**
100	125	125	140	125	10.0	12.5	21	10	ST7460 **100**

ST7469 Guide bush

for industrial tool making, sliding guide with bronze coating, with shoulder



Referring to DIN 9834 / ISO 9448

Material
Steel 1.7139 (16MnCrS5); case-hardened

Hardness
62 ±1 HRC

Installation instruction
Fixing with 2 holding clamps (not included in the scope of delivery); one-sided entry chamfer or centring attachment

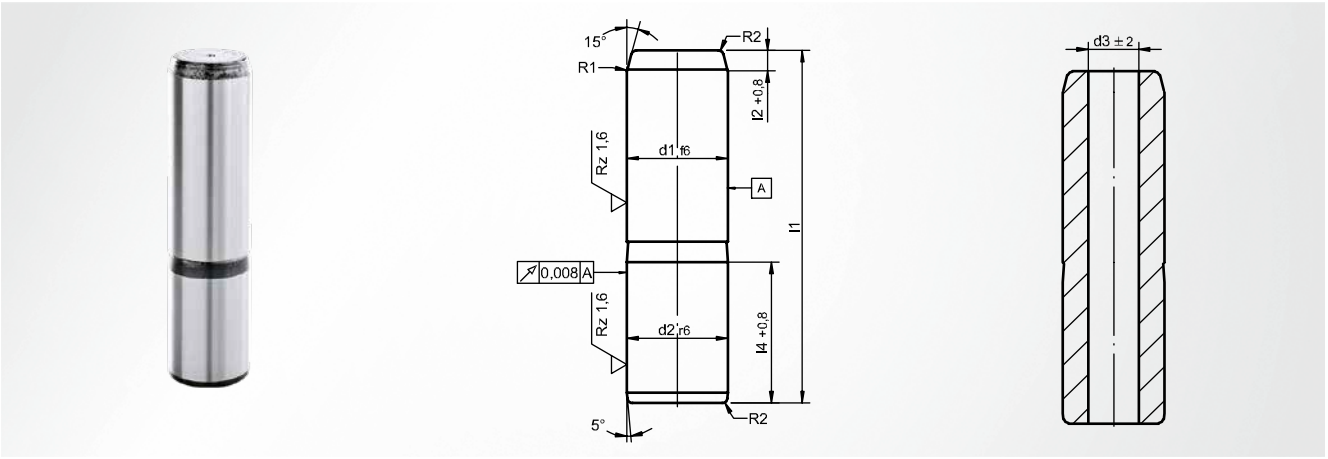
Installation in mounting bore
ISO H7

Optional accessories
ST7377

d_1 H7	d_2 h6	d_3 -0.25	d_4 -0.8	l_1 -0.5 - -1	l_3 ±0.1	l_4 ±1	l_5 0 - -0.5	r	Item number
25	32	32	40	40	6.3	3.0	10	3	ST7469 **025**
32	40	40	50	50	6.3	4.0	12	3	ST7469 **032**
40	50	50	63	63	6.3	5.0	15	3	ST7469 **040**
50	63	63	71	71	6.3	6.3	17	5	ST7469 **050**
63	80	80	90	80	10.0	8.0	19	6	ST7469 **063**
80	100	100	112	100	10.0	10.0	22	8	ST7469 **080**
100	125	125	140	125	10.0	12.5	21	10	ST7469 **100**

ST9833 Guide pillar

for industrial tool making



Referring to DIN 9833

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
62 ±2 HRC

Installation instruction
one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H7

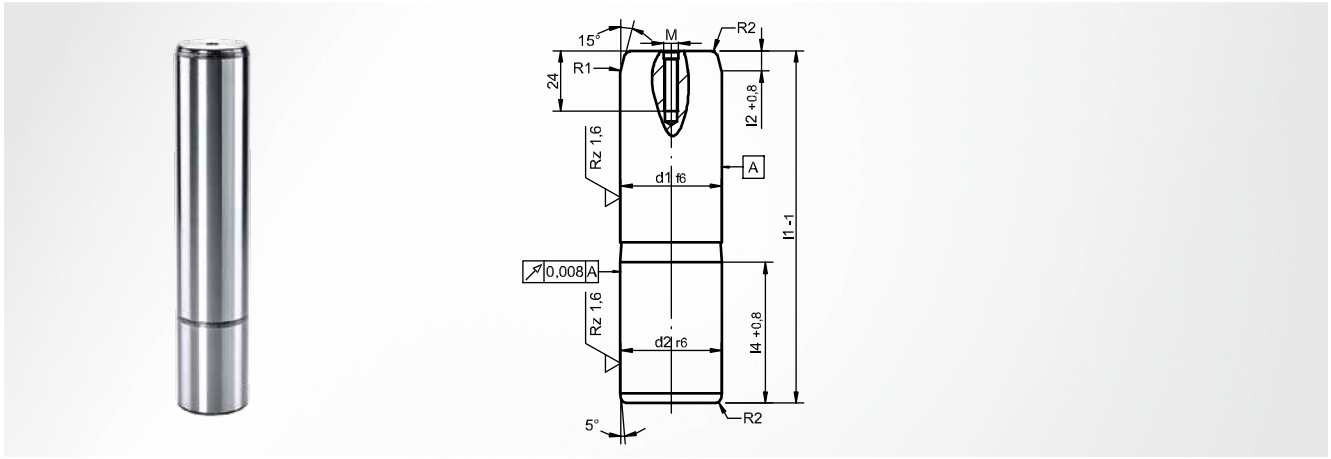
Attention
Use for sliding guide only

d_1 f6	d_2 r6	d_3 ±2	l_2 +0.8	l_4 +0.8	r_1	r_2	l_1	Item number
25	25		8	40	3	2.0	125	ST9833 **025 x 125**
							140	ST9833 **025 x 140**
							160	ST9833 **025 x 160**
							180	ST9833 **025 x 180**
							200	ST9833 **025 x 200**
							224	ST9833 **025 x 224**
32	32		8	45	3	2.0	140	ST9833 **032 x 140**
							160	ST9833 **032 x 160**
							180	ST9833 **032 x 180**
							200	ST9833 **032 x 200**
							224	ST9833 **032 x 224**
							250	ST9833 **032 x 250**
40	40		8	56	3	2.0	140	ST9833 **040 x 140**
							160	ST9833 **040 x 160**
							180	ST9833 **040 x 180**
							200	ST9833 **040 x 200**
							224	ST9833 **040 x 224**
							250	ST9833 **040 x 250**
							280	ST9833 **040 x 280**
50	50		10	70	5	2.5	160	ST9833 **050 x 160**
							180	ST9833 **050 x 180**
							200	ST9833 **050 x 200**
							224	ST9833 **050 x 224**
							250	ST9833 **050 x 250**
							280	ST9833 **050 x 280**
							315	ST9833 **050 x 315**
							355	ST9833 **050 x 355**
63	63		10	80	6	2.5	180	ST9833 **063 x 180**
							200	ST9833 **063 x 200**
							224	ST9833 **063 x 224**

d_1 f6	d_2 r6	d_3 ±2	l_2 +0.8	l_4 +0.8	r_1	r_2	l_1	Item number
63	63		10	80	6	2.5	250	ST9833 **063 x 250**
							280	ST9833 **063 x 280**
							315	ST9833 **063 x 315**
							355	ST9833 **063 x 355**
							400	ST9833 **063 x 400**
80	80	40	10	100	8	3.0	200	ST9833 **080 x 200**
							224	ST9833 **080 x 224**
							250	ST9833 **080 x 250**
							280	ST9833 **080 x 280**
							315	ST9833 **080 x 315**
							355	ST9833 **080 x 355**
							400	ST9833 **080 x 400**
							450	ST9833 **080 x 450**
100	100	50	10	125	10	3.0	224	ST9833 **100 x 224**
							250	ST9833 **100 x 250**
							280	ST9833 **100 x 280**
							315	ST9833 **100 x 315**
							355	ST9833 **100 x 355**
							400	ST9833 **100 x 400**
							450	ST9833 **100 x 450**
125	125	65	12	140	12	4.0	315	ST9833 **125 x 315**
							355	ST9833 **125 x 355**
							400	ST9833 **125 x 400**
							450	ST9833 **125 x 450**
							500	ST9833 **125 x 500**
160	160	95	12	180	18	4.0	400	ST9833 **160 x 400**
							450	ST9833 **160 x 450**
							500	ST9833 **160 x 500**
							560	ST9833 **160 x 560**

ST9833T Guide pillar

for industrial tool making, with transport hole



Referring to DIN 9833

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
62 ±2 HRC

Installation instruction
one-sided entry chamfer or centring attachment

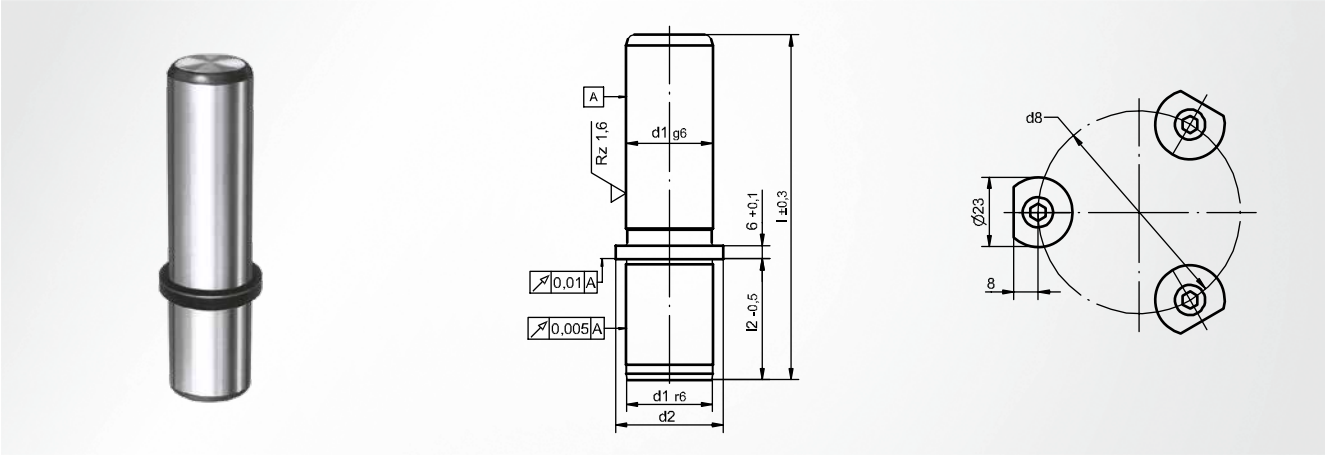
Installation in mounting bore
ISO H7

Attention
Use for sliding guide only

d_1^{f6}	d_2^{r6}	$d_3^{\pm 2}$	$l_2^{+0.8}$	$l_4^{+0.8}$	M	r_1	r_2	l_1^{-1}	Item number
80	80	40	10	100	M12 x 24	8	3.0	224	ST9833 **080 x 224T**
								250	ST9833 **080 x 250T**
								280	ST9833 **080 x 280T**
								315	ST9833 **080 x 315T**
								355	ST9833 **080 x 355T**
								400	ST9833 **080 x 400T**
								450	ST9833 **080 x 450T**
100	100	50	10	125	M12 x 24	10	3.0	280	ST9833 **100 x 280T**
								315	ST9833 **100 x 315T**
								355	ST9833 **100 x 355T**
								400	ST9833 **100 x 400T**
								450	ST9833 **100 x 450T**

ST9825 Guide pillar

for industrial tool making, with shoulder



Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Note
Pillars from diameter 80 with thread M12 x 18

Installation in mounting bore
ISO H7

Scope of supply
ST7367

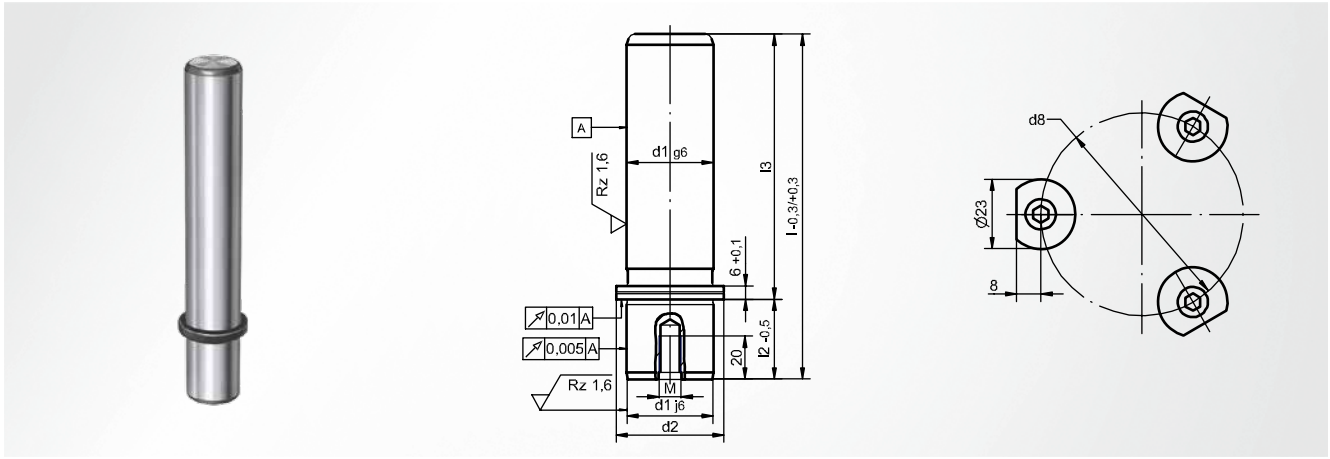
Attention
Use for sliding guide only

d_1^{g6}	d_2	d_8	$l_2^{-0.5}$	l ±0.3	Item number
25	32	49	40	125	ST9825 **025 x 125**
				140	ST9825 **025 x 140**
				160	ST9825 **025 x 160**
				180	ST9825 **025 x 180**
				200	ST9825 **025 x 200**
				224	ST9825 **025 x 224**
32	40	57	45	140	ST9825 **032 x 140**
				160	ST9825 **032 x 160**
				180	ST9825 **032 x 180**
				200	ST9825 **032 x 200**
				224	ST9825 **032 x 224**
				250	ST9825 **032 x 250**
40	50	67	56	160	ST9825 **040 x 160**
				180	ST9825 **040 x 180**
				200	ST9825 **040 x 200**
				224	ST9825 **040 x 224**
				250	ST9825 **040 x 250**
				280	ST9825 **040 x 280**
50	63	80	70	180	ST9825 **050 x 180**
				200	ST9825 **050 x 200**

d_1^{g6}	d_2	d_8	$l_2^{-0.5}$	l ±0.3	Item number
50	63	80	70	224	ST9825 **050 x 224**
				250	ST9825 **050 x 250**
				280	ST9825 **050 x 280**
				315	ST9825 **050 x 315**
63	80	97	80	200	ST9825 **063 x 200**
				224	ST9825 **063 x 224**
				250	ST9825 **063 x 250**
				280	ST9825 **063 x 280**
				315	ST9825 **063 x 315**
				355	ST9825 **063 x 355**
80	100	117	100	224	ST9825 **080 x 224**
				250	ST9825 **080 x 250**
				280	ST9825 **080 x 280**
				315	ST9825 **080 x 315**
				355	ST9825 **080 x 355**
				400	ST9825 **080 x 400**
100	125	142	125	280	ST9825 **100 x 280**
				315	ST9825 **100 x 315**
				355	ST9825 **100 x 355**
				400	ST9825 **100 x 400**

ST9827 Guide pillar

with shoulder



Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
Fixing with 3 holding clamps; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO H6

Scope of supply
ST7367

Optional accessories
ST7387

Attention
Use for sliding guide only

d_1^{g6}	d_2	d_8	$l_2^{-0.5}$	M	l ±0.3	l_3	Item number
15	21	38	20	M8	115	95	ST9827 **15 x 115**
					125	105	ST9827 **15 x 125**
					140	120	ST9827 **15 x 140**
					160	140	ST9827 **15 x 160**
					180	160	ST9827 **15 x 180**
					200	180	ST9827 **15 x 200**
					224	204	ST9827 **15 x 224**
16	21	38	20	M8	115	95	ST9827 **16 x 115**
					125	105	ST9827 **16 x 125**
					140	120	ST9827 **16 x 140**
					160	140	ST9827 **16 x 160**
					180	160	ST9827 **16 x 180**
					200	180	ST9827 **16 x 200**
					224	204	ST9827 **16 x 224**
19	25	42	23	M8	115	92	ST9827 **19 x 115**
					125	102	ST9827 **19 x 125**
					140	117	ST9827 **19 x 140**
					160	137	ST9827 **19 x 160**
					180	157	ST9827 **19 x 180**
					200	177	ST9827 **19 x 200**
					224	201	ST9827 **19 x 224**
					250	227	ST9827 **19 x 250**
20	25	42	23	M8	115	92	ST9827 **20 x 115**
					125	102	ST9827 **20 x 125**
					140	117	ST9827 **20 x 140**
					160	137	ST9827 **20 x 160**
					180	157	ST9827 **20 x 180**
					200	177	ST9827 **20 x 200**
					224	201	ST9827 **20 x 224**
					250	227	ST9827 **20 x 250**
24	32	49	27	M8	125	98	ST9827 **24 x 125**

d_1^{g6}	d_2	d_8	$l_2^{-0.5}$	M	l ±0.3	l_3	Item number
24	32	49	27	M8	140	113	ST9827 **24 x 140**
					160	133	ST9827 **24 x 160**
					180	153	ST9827 **24 x 180**
					200	173	ST9827 **24 x 200**
					224	197	ST9827 **24 x 224**
					250	223	ST9827 **24 x 250**
					280	253	ST9827 **24 x 280**
					315	288	ST9827 **24 x 315**
25	32	49	27	M8	125	98	ST9827 **25 x 125**
					140	113	ST9827 **25 x 140**
					160	133	ST9827 **25 x 160**
					180	153	ST9827 **25 x 180**
					200	173	ST9827 **25 x 200**
					224	197	ST9827 **25 x 224**
					250	223	ST9827 **25 x 250**
					280	253	ST9827 **25 x 280**
					315	288	ST9827 **25 x 315**
30	40	57	37	M8	140	103	ST9827 **30 x 140**
					160	123	ST9827 **30 x 160**
					180	143	ST9827 **30 x 180**
					200	163	ST9827 **30 x 200**
					224	187	ST9827 **30 x 224**
					250	213	ST9827 **30 x 250**
					280	243	ST9827 **30 x 280**
					315	278	ST9827 **30 x 315**
					355	318	ST9827 **30 x 355**
32	40	57	37	M8	140	103	ST9827 **32 x 140**
					160	123	ST9827 **32 x 160**
					180	143	ST9827 **32 x 180**
					200	163	ST9827 **32 x 200**
					224	187	ST9827 **32 x 224**

ST9827 Guide pillar

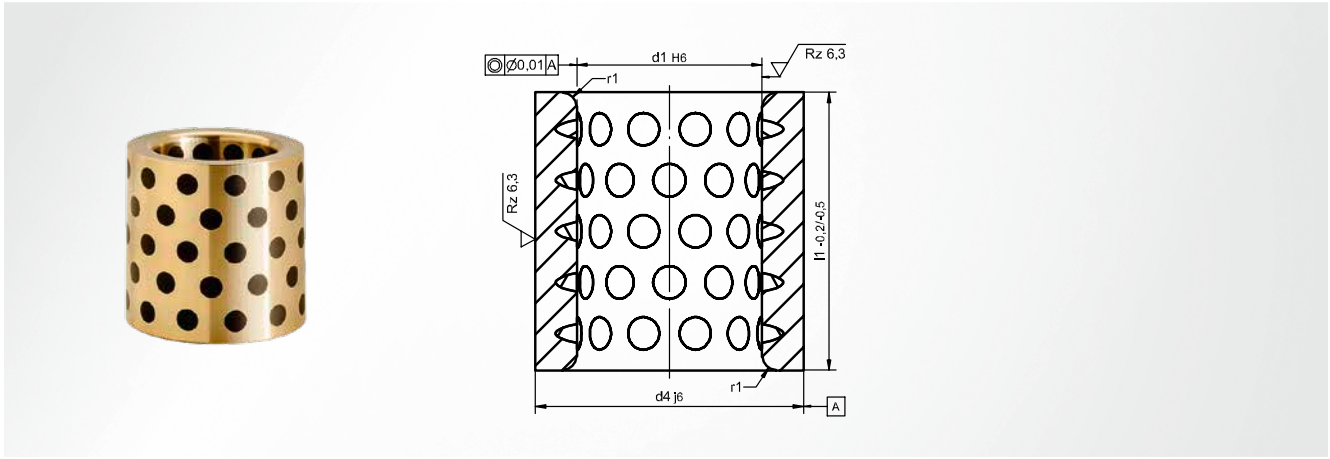
with shoulder

d_1^{g6}	d_2	d_8	$l_2^{-0.5}$	M	l ±0.3	l_3	Item number
32	40	57	37	M8	250	213	ST9827 **32 x 250**
					280	243	ST9827 **32 x 280**
					315	278	ST9827 **32 x 315**
					355	318	ST9827 **32 x 355**
38	50	67	37	M10	160	123	ST9827 **38 x 160**
					180	143	ST9827 **38 x 180**
					200	163	ST9827 **38 x 200**
					224	187	ST9827 **38 x 224**
					250	213	ST9827 **38 x 250**
					280	243	ST9827 **38 x 280**
					315	278	ST9827 **38 x 315**
					355	318	ST9827 **38 x 355**
					400	363	ST9827 **38 x 400**
40	50	67	37	M10	160	123	ST9827 **40 x 160**
					180	143	ST9827 **40 x 180**
					200	163	ST9827 **40 x 200**
					224	187	ST9827 **40 x 224**
					250	213	ST9827 **40 x 250**
					280	243	ST9827 **40 x 280**
					315	278	ST9827 **40 x 315**
					355	318	ST9827 **40 x 355**
					400	363	ST9827 **40 x 400**
48	63	80	47	M10	180	133	ST9827 **48 x 180**
					200	153	ST9827 **48 x 200**
					224	177	ST9827 **48 x 224**
					250	203	ST9827 **48 x 250**
					280	233	ST9827 **48 x 280**
					315	268	ST9827 **48 x 315**
					355	308	ST9827 **48 x 355**
					400	353	ST9827 **48 x 400**
					450	403	ST9827 **48 x 450**

d_1^{g6}	d_2	d_8	$l_2^{-0.5}$	M	l ±0.3	l_3	Item number
50	63	80	47	M10	180	133	ST9827 **50 x 180**
					200	153	ST9827 **50 x 200**
					224	177	ST9827 **50 x 224**
					250	203	ST9827 **50 x 250**
					280	233	ST9827 **50 x 280**
					315	268	ST9827 **50 x 315**
					355	308	ST9827 **50 x 355**
					400	353	ST9827 **50 x 400**
					450	403	ST9827 **50 x 450**
60	80	97	47	M12	224	177	ST9827 **60 x 224**
					250	203	ST9827 **60 x 250**
					280	233	ST9827 **60 x 280**
					315	268	ST9827 **60 x 315**
					355	308	ST9827 **60 x 355**
					400	353	ST9827 **60 x 400**
					450	403	ST9827 **60 x 450**
63	80	97	47	M12	224	177	ST9827 **63 x 224**
					250	203	ST9827 **63 x 250**
					280	233	ST9827 **63 x 280**
					315	268	ST9827 **63 x 315**
					355	308	ST9827 **63 x 355**
					400	353	ST9827 **63 x 400**
					450	403	ST9827 **63 x 450**
80	95	112	60	M12	280	220	ST9827 **80 x 280**
					315	255	ST9827 **80 x 315**
					355	295	ST9827 **80 x 355**
					400	340	ST9827 **80 x 400**
					450	390	ST9827 **80 x 450**
					500	440	ST9827 **80 x 500**
					560	500	ST9827 **80 x 560**

ST9831 Guide bush

smooth, sliding guide with solid lubricant



Material
Bronze CuZn25Al5; with solid lubricant insert

Installation in mounting bore
ISO G6

Installation instruction
Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

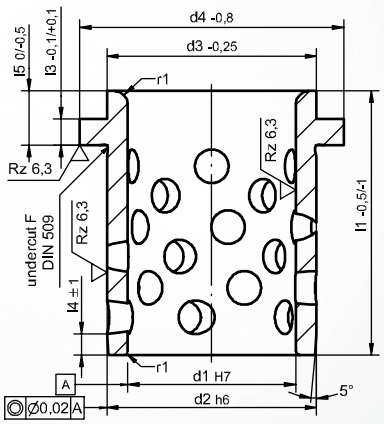
Optional accessories
SZ9742

d_1^{H6}	d_4^{j6}	r_1	$l_1^{-0.2 - -0.5}$	Item number
25	40	3	23	ST9831 **25 x 023**
			30	ST9831 **25 x 030**
			37	ST9831 **25 x 037**
			47	ST9831 **25 x 047**
			60	ST9831 **25 x 060**
			77	ST9831 **25 x 077**
32	48	3	30	ST9831 **32 x 030**
			37	ST9831 **32 x 037**
			47	ST9831 **32 x 047**
			60	ST9831 **32 x 060**
			77	ST9831 **32 x 077**
			95	ST9831 **32 x 095**
40	58	3	30	ST9831 **40 x 030**
			37	ST9831 **40 x 037**
			47	ST9831 **40 x 047**
			60	ST9831 **40 x 060**

d_1^{H6}	d_4^{j6}	r_1	$l_1^{-0.2 - -0.5}$	Item number
40	58	3	77	ST9831 **40 x 077**
			95	ST9831 **40 x 095**
			120	ST9831 **40 x 120**
50	70	5	37	ST9831 **50 x 037**
			47	ST9831 **50 x 047**
			60	ST9831 **50 x 060**
			77	ST9831 **50 x 077**
			95	ST9831 **50 x 095**
			120	ST9831 **50 x 120**
63	85	6	60	ST9831 **63 x 060**
			77	ST9831 **63 x 077**
			95	ST9831 **63 x 095**
			120	ST9831 **63 x 120**
80	105	8	120	ST9831 **80 x 120**
			135	ST9831 **80 x 135**

ST9834 Guide bush

sliding guide with solid lubricant, with shoulder



Referring to DIN 9834

Material

Bronze CuZn25Al5; with solid lubricant insert

Installation instruction

Fixing with 2 holding clamps (not included in the scope of delivery); one-sided entry chamfer or centring attachment

Installation in mounting bore

ISO H7

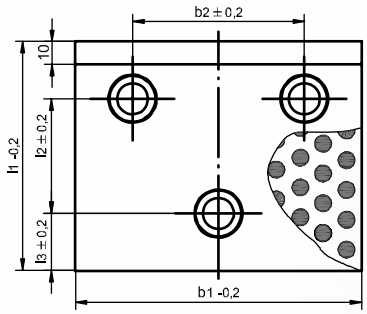
Optional accessories

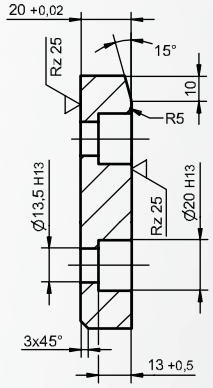
ST7377

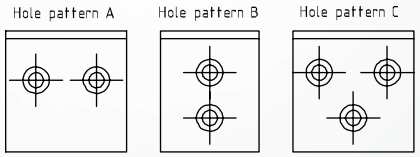
d_1^{H7}	d_2^{h6}	$d_3^{0-0.25}$	$d_4^{0-0.8}$	$l_1^{-0.5--1}$	$l_3^{\pm0.1}$	$l_4^{\pm1}$	$l_5^{0--0.5}$	r_1	Item number
25	32	32	40	40	6.3	3.0	10	3	ST9834 **025**
32	40	40	50	50	6.3	4.0	12	3	ST9834 **032**
40	50	50	63	63	6.3	5.0	15	3	ST9834 **040**
50	63	63	71	71	6.3	6.3	17	5	ST9834 **050**
63	80	80	90	80	10.0	8.0	19	6	ST9834 **063**
80	100	100	112	100	10.0	10.0	22	8	ST9834 **080**
100	125	125	140	125	10.0	12.5	21	10	ST9834 **100**
125	160	160	180	160	10.0	16.0	30	12	ST9834 **125**
160	200	200	220	200	10.0	16.0	32	18	ST9834 **160**

ST7571 Guide plate

with solid lubricant, solid bronze







Referring to VDI 3357

Material

Bronze WF 750 1A

Installation instruction

Fixing with socket screws DIN EN ISO 4762

Optional accessories

SZ8510

$b_1^{-0.2}$	$b_2^{\pm 0.2}$	$l_1^{-0.2}$	$l_2^{\pm 0.2}$	$l_3^{\pm 0.2}$	Hole pattern	Screw	Item number
50		80	30	25	B	M8 x 25	ST7571 **050 x 080**
		100	50	25	B	M12 x 25	ST7571 **050 x 100**
		125	75	25	B	M12 x 25	ST7571 **050 x 125**
		160	110	25	B	M12 x 25	ST7571 **050 x 160**
		200	150	25	B	M12 x 25	ST7571 **050 x 200**
80	30	50		25	A	M8 x 25	ST7571 **080 x 050**
		80	30	25	B	M12 x 25	ST7571 **080 x 080**
		100	50	25	B	M12 x 25	ST7571 **080 x 100**
		125	75	25	B	M12 x 25	ST7571 **080 x 125**
		160	110	25	B	M12 x 25	ST7571 **080 x 160**
		200	150	25	B	M12 x 25	ST7571 **080 x 200**
100	50	50		25	A	M12 x 25	ST7571 **100 x 050**
		80		40	A	M12 x 25	ST7571 **100 x 080**
		100	50	25	B	M12 x 25	ST7571 **100 x 100**
		125	75	25	B	M12 x 25	ST7571 **100 x 125**
		160	110	25	B	M12 x 25	ST7571 **100 x 160**
		200	150	25	B	M12 x 25	ST7571 **100 x 200**
125	75	50		25	A	M12 x 25	ST7571 **125 x 050**
	75	80		40	A	M12 x 25	ST7571 **125 x 080**
	75	100	50	25	C	M12 x 25	ST7571 **125 x 100**
	75	125	75	25	C	M12 x 25	ST7571 **125 x 125**

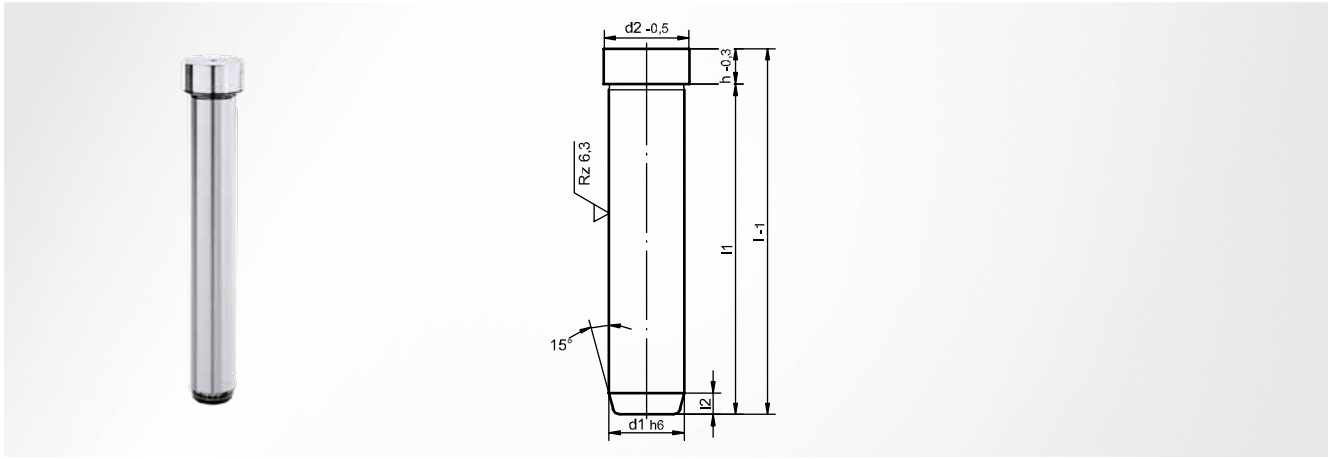
ST7571 Guide plate

with solid lubricant, solid bronze

b_1 -0.2	b_2 ±0.2	l_1 -0.2	l_2 ±0.2	l_3 ±0.2	Hole pattern	Screw	Item number
125	75	160	110	25	C	M12 x 25	ST7571 **125 x 160**
	75	200	150	25	C	M12 x 25	ST7571 **125 x 200**
160	110	50		25	A	M12 x 25	ST7571 **160 x 050**
	110	80		40	A	M12 x 25	ST7571 **160 x 080**
	110	100	50	25	C	M12 x 25	ST7571 **160 x 100**
	110	125	75	25	C	M12 x 25	ST7571 **160 x 125**
	110	160	110	25	C	M12 x 25	ST7571 **160 x 160**
	110	200	150	25	C	M12 x 25	ST7571 **160 x 200**

ST7111 Guide pillar

smooth, with head



Referring to ISO 9182

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation in mounting bore
ISO N7; ISO H7

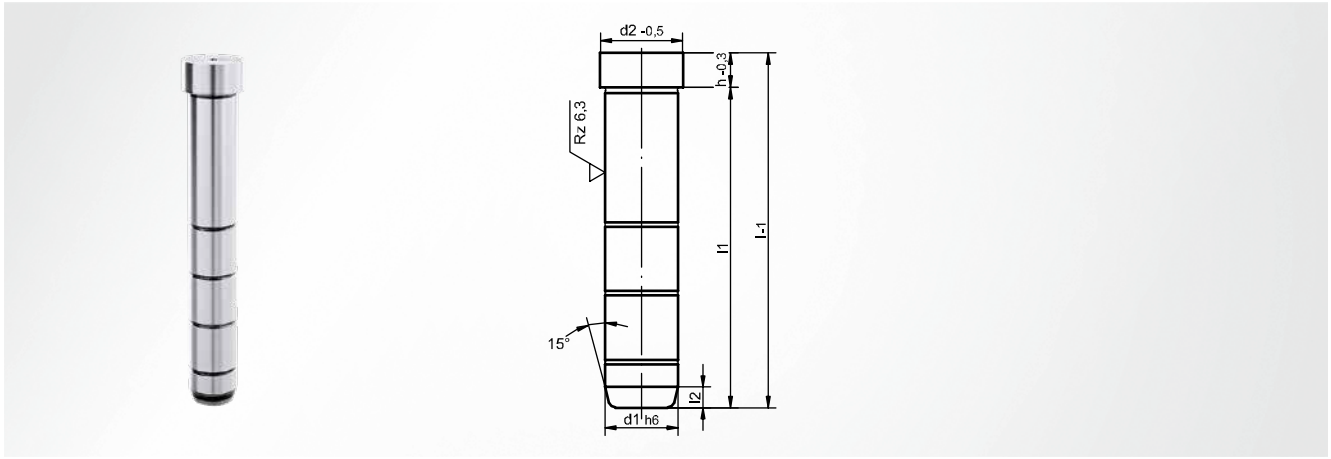
Attention
Use for sliding guide only

d_1^{h6}	$d_2^{-0.5}$	$h^{-0.3}$	l_2	l^{-1}	l_1	Item number
10	14	6	5	66	60	ST7111 **10 x 060**
				86	80	ST7111 **10 x 080**
				106	100	ST7111 **10 x 100**
				131	125	ST7111 **10 x 125**
12	16	6	5	66	60	ST7111 **12 x 060**
				86	80	ST7111 **12 x 080**
				106	100	ST7111 **12 x 100**
				131	125	ST7111 **12 x 125**
				166	160	ST7111 **12 x 160**
15	20	8	7	88	80	ST7111 **15 x 080**
				108	100	ST7111 **15 x 100**
				133	125	ST7111 **15 x 125**
				168	160	ST7111 **15 x 160**
				208	200	ST7111 **15 x 200**
16	20	8	8	88	80	ST7111 **16 x 080**
				108	100	ST7111 **16 x 100**
				133	125	ST7111 **16 x 125**
				168	160	ST7111 **16 x 160**
				208	200	ST7111 **16 x 200**
19	24	8	8	88	80	ST7111 **19 x 080**
				108	100	ST7111 **19 x 100**
				133	125	ST7111 **19 x 125**
				168	160	ST7111 **19 x 160**
				188	180	ST7111 **19 x 180**
				228	220	ST7111 **19 x 220**

d_1^{h6}	$d_2^{-0.5}$	$h^{-0.3}$	l_2	l^{-1}	l_1	Item number
20	24	8	8	88	80	ST7111 **20 x 080**
				108	100	ST7111 **20 x 100**
				133	125	ST7111 **20 x 125**
				168	160	ST7111 **20 x 160**
				188	180	ST7111 **20 x 180**
				228	220	ST7111 **20 x 220**
24	30	15	8	115	100	ST7111 **24 x 100**
				140	125	ST7111 **24 x 125**
				175	160	ST7111 **24 x 160**
				215	200	ST7111 **24 x 200**
				255	240	ST7111 **24 x 240**
25	30	15	8	115	100	ST7111 **25 x 100**
				140	125	ST7111 **25 x 125**
				175	160	ST7111 **25 x 160**
				215	200	ST7111 **25 x 200**
				255	240	ST7111 **25 x 240**
30	36	15	9	155	140	ST7111 **30 x 140**
				195	180	ST7111 **30 x 180**
				235	220	ST7111 **30 x 220**
				275	260	ST7111 **30 x 260**
32	36	15	9	155	140	ST7111 **32 x 140**
				195	180	ST7111 **32 x 180**
				235	220	ST7111 **32 x 220**
				275	260	ST7111 **32 x 260**

ST7112 Guide pillar

with head, oil grooves



Referring to ISO 9182

Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation in mounting bore
ISO N7; ISO H7

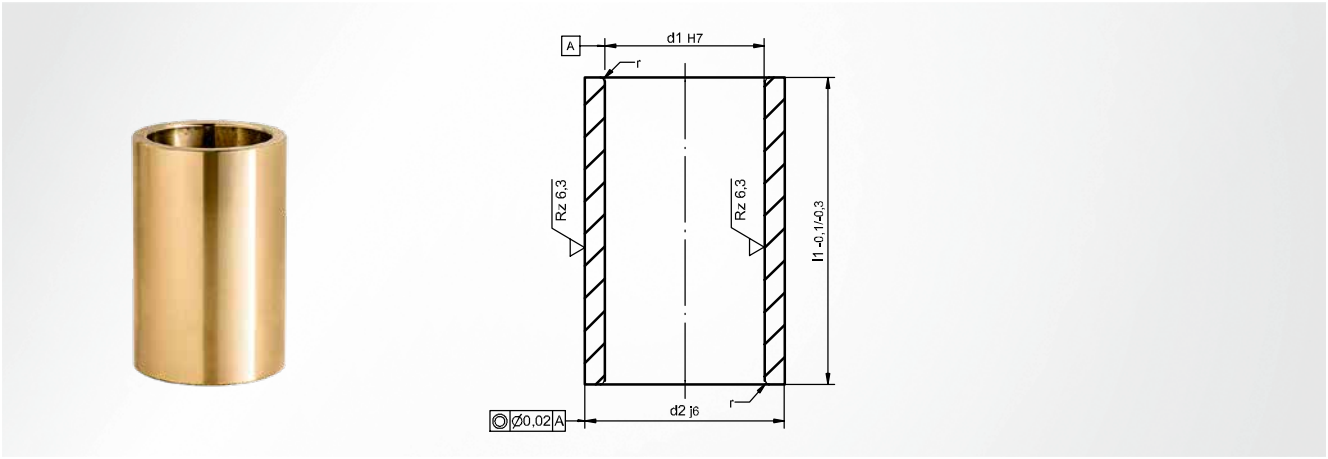
Attention
Use for sliding guide only

d_1^{h6}	$d_2^{-0.5}$	$h^{-0.3}$	l_2	l^{-1}	l_1	Item number
10	14	6	5	66	60	ST7112 **10 x 060**
				86	80	ST7112 **10 x 080**
				106	100	ST7112 **10 x 100**
				131	125	ST7112 **10 x 125**
12	16	6	5	66	60	ST7112 **12 x 060**
				86	80	ST7112 **12 x 080**
				106	100	ST7112 **12 x 100**
				131	125	ST7112 **12 x 125**
				166	160	ST7112 **12 x 160**
15	20	8	7	88	80	ST7112 **15 x 080**
				108	100	ST7112 **15 x 100**
				133	125	ST7112 **15 x 125**
				168	160	ST7112 **15 x 160**
				208	200	ST7112 **15 x 200**
16	20	8	8	88	80	ST7112 **16 x 080**
				108	100	ST7112 **16 x 100**
				133	125	ST7112 **16 x 125**
				168	160	ST7112 **16 x 160**
				208	200	ST7112 **16 x 200**
19	24	8	8	88	80	ST7112 **19 x 080**
				108	100	ST7112 **19 x 100**
				133	125	ST7112 **19 x 125**
				168	160	ST7112 **19 x 160**
				188	180	ST7112 **19 x 180**
				228	220	ST7112 **19 x 220**

d_1^{h6}	$d_2^{-0.5}$	$h^{-0.3}$	l_2	l^{-1}	l_1	Item number
20	24	8	8	88	80	ST7112 **20 x 080**
				108	100	ST7112 **20 x 100**
				133	125	ST7112 **20 x 125**
				168	160	ST7112 **20 x 160**
				188	180	ST7112 **20 x 180**
				228	220	ST7112 **20 x 220**
24	30	15	8	115	100	ST7112 **24 x 100**
				140	125	ST7112 **24 x 125**
				175	160	ST7112 **24 x 160**
				215	200	ST7112 **24 x 200**
				255	240	ST7112 **24 x 240**
25	30	15	8	115	100	ST7112 **25 x 100**
				140	125	ST7112 **25 x 125**
				175	160	ST7112 **25 x 160**
				215	200	ST7112 **25 x 200**
				255	240	ST7112 **25 x 240**
30	36	15	9	155	140	ST7112 **30 x 140**
				195	180	ST7112 **30 x 180**
				235	220	ST7112 **30 x 220**
				275	260	ST7112 **30 x 260**
32	36	15	9	155	140	ST7112 **32 x 140**
				195	180	ST7112 **32 x 180**
				235	220	ST7112 **32 x 220**
				275	260	ST7112 **32 x 260**

ST7361 Guide bush

smooth, solid bronze



Material
Bronze CuZn25Al5

Installation in mounting bore
ISO G6

Installation instruction
Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

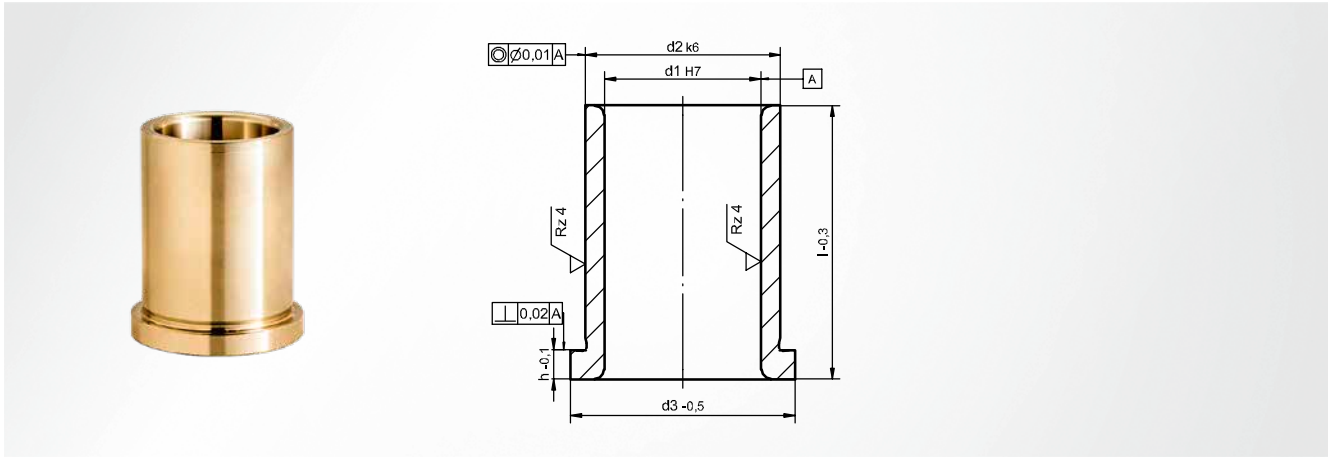
Optional accessories
SZ9742

d_1^{H7}	d_2^{j6}	r	$l_1^{-0.1-0.3}$	Item number
8	12	0.50	10	ST7361 **08 x 010**
			15	ST7361 **08 x 015**
			20	ST7361 **08 x 020**
10	16	0.50	10	ST7361 **10 x 010**
			15	ST7361 **10 x 015**
			23	ST7361 **10 x 023**
			30	ST7361 **10 x 030**
			37	ST7361 **10 x 037**
12	18	0.50	10	ST7361 **12 x 010**
			15	ST7361 **12 x 015**
			23	ST7361 **12 x 023**
			30	ST7361 **12 x 030**
			37	ST7361 **12 x 037**
15	21	0.75	15	ST7361 **15 x 015**
			23	ST7361 **15 x 023**
			30	ST7361 **15 x 030**
			37	ST7361 **15 x 037**
			47	ST7361 **15 x 047**
16	22	0.75	15	ST7361 **16 x 015**
			23	ST7361 **16 x 023**
			30	ST7361 **16 x 030**
			37	ST7361 **16 x 037**
			47	ST7361 **16 x 047**
19	26	0.75	23	ST7361 **19 x 023**
			30	ST7361 **19 x 030**
			37	ST7361 **19 x 037**
			47	ST7361 **19 x 047**
			60	ST7361 **19 x 060**
20	28	0.75	23	ST7361 **20 x 023**
			30	ST7361 **20 x 030**
			37	ST7361 **20 x 037**
			47	ST7361 **20 x 047**

d_1^{H7}	d_2^{j6}	r	$l_1^{-0.1-0.3}$	Item number
20	28	0.75	60	ST7361 **20 x 060**
24	32	0.75	23	ST7361 **24 x 023**
			30	ST7361 **24 x 030**
			37	ST7361 **24 x 037**
			47	ST7361 **24 x 047**
			60	ST7361 **24 x 060**
25	33	0.75	23	ST7361 **25 x 023**
			30	ST7361 **25 x 030**
			37	ST7361 **25 x 037**
			47	ST7361 **25 x 047**
			60	ST7361 **25 x 060**
30	38	1.00	23	ST7361 **30 x 023**
			30	ST7361 **30 x 030**
			37	ST7361 **30 x 037**
			47	ST7361 **30 x 047**
			60	ST7361 **30 x 060**
32	40	1.00	23	ST7361 **32 x 023**
			30	ST7361 **32 x 030**
			37	ST7361 **32 x 037**
			47	ST7361 **32 x 047**
			60	ST7361 **32 x 060**
38	48	1.00	30	ST7361 **38 x 030**
			37	ST7361 **38 x 037**
			47	ST7361 **38 x 047**
			60	ST7361 **38 x 060**
			77	ST7361 **38 x 077**
40	50	1.00	30	ST7361 **40 x 030**
			37	ST7361 **40 x 037**
			47	ST7361 **40 x 047**
			60	ST7361 **40 x 060**
			77	ST7361 **40 x 077**

ST7360 Guide bush

with shoulder, solid bronze



Referring to DIN 16716 / ISO 8018

Material
Bronze CuZn25Al5

Installation instruction
one-sided entry chamfer or centring attachment

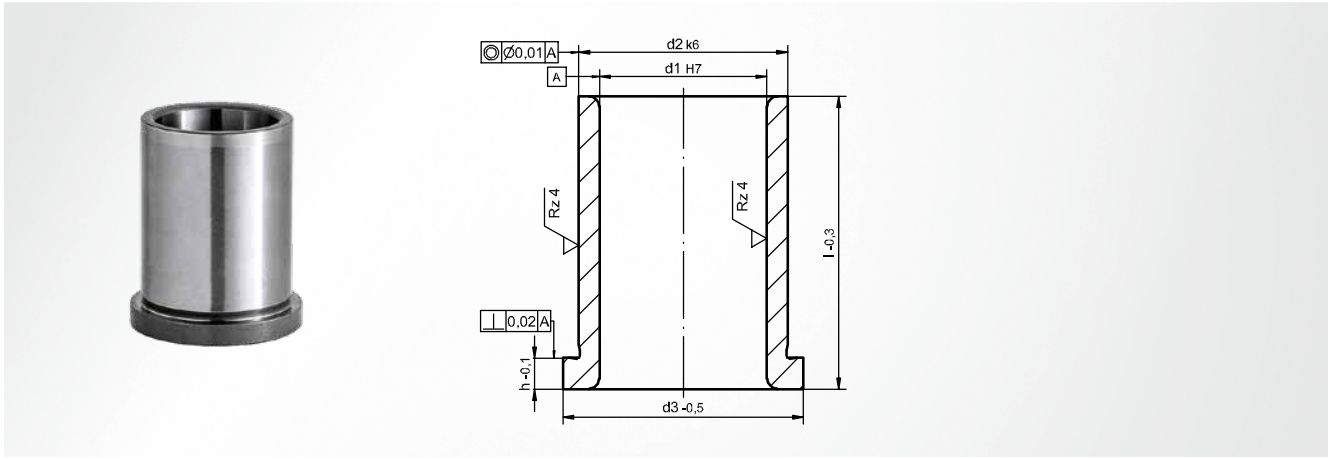
Installation in mounting bore
ISO H7

d_1^{H7}	d_2^{k6}	$d_3^{-0.5}$	$h^{-0.1}$	$l^{-0.3}$	Item number
10	16	20	3.5	12	ST7360 **16.10 x 012**
				17	ST7360 **16.10 x 017**
				22	ST7360 **16.10 x 022**
				27	ST7360 **16.10 x 027**
				36	ST7360 **16.10 x 036**
12	16	20	3.5	12	ST7360 **16.12 x 012**
				17	ST7360 **16.12 x 017**
				22	ST7360 **16.12 x 022**
				27	ST7360 **16.12 x 027**
				36	ST7360 **16.12 x 036**
15	20	25	6.0	17	ST7360 **20.15 x 017**
				22	ST7360 **20.15 x 022**
				27	ST7360 **20.15 x 027**
				36	ST7360 **20.15 x 036**
				46	ST7360 **20.15 x 046**
16	20	25	6.0	17	ST7360 **20.16 x 017**
				22	ST7360 **20.16 x 022**
				27	ST7360 **20.16 x 027**
				36	ST7360 **20.16 x 036**
				46	ST7360 **20.16 x 046**
19	26	31	6.0	22	ST7360 **26.19 x 022**

d_1^{H7}	d_2^{k6}	$d_3^{-0.5}$	$h^{-0.1}$	$l^{-0.3}$	Item number
19	26	31	6.0	27	ST7360 **26.19 x 027**
				36	ST7360 **26.19 x 036**
				46	ST7360 **26.19 x 046**
20	26	31	6.0	22	ST7360 **26.20 x 022**
				27	ST7360 **26.20 x 027**
				36	ST7360 **26.20 x 036**
				46	ST7360 **26.20 x 046**
24	30	35	6.0	27	ST7360 **30.24 x 027**
				36	ST7360 **30.24 x 036**
				46	ST7360 **30.24 x 046**
				56	ST7360 **30.24 x 056**
25	30	35	6.0	27	ST7360 **30.25 x 027**
				36	ST7360 **30.25 x 036**
				46	ST7360 **30.25 x 046**
				56	ST7360 **30.25 x 056**
30	40	46	6.0	36	ST7360 **40.30 x 036**
				46	ST7360 **40.30 x 046**
				56	ST7360 **40.30 x 056**
32	40	46	6.0	36	ST7360 **40.32 x 036**
				46	ST7360 **40.32 x 046**
				56	ST7360 **40.32 x 056**

ST7366 Guide bush

with shoulder



Referring to DIN 16716 / ISO 8018

Material
Steel 1.7139 (16MnCrS5); case-hardened

Hardness
62 ±1 HRC

Installation instruction
one-sided entry chamfer or centring attachment

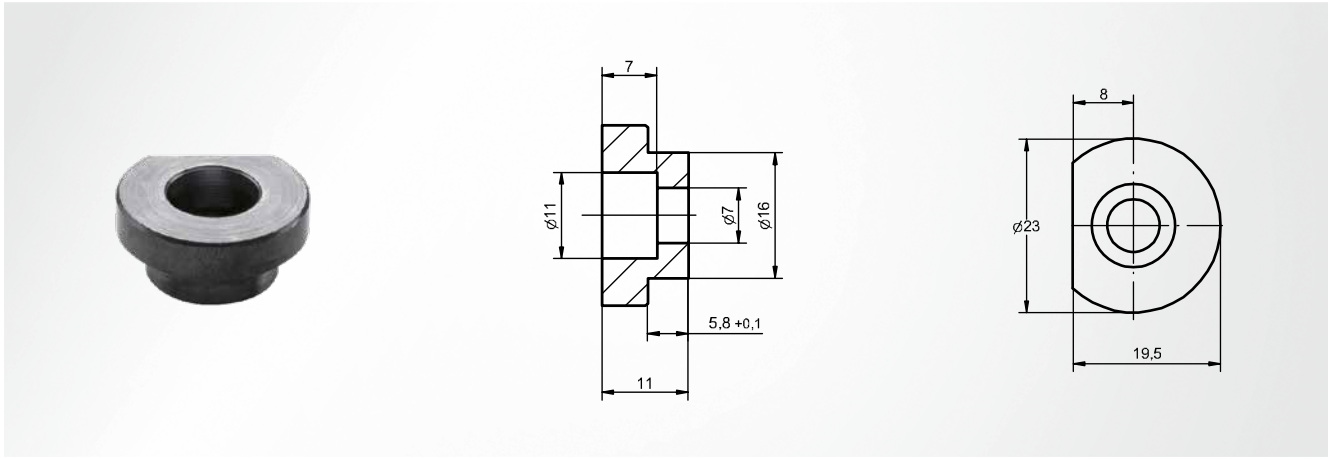
Installation in mounting bore
ISO H7

d_1^{H7}	d_2^{k6}	$d_3^{-0.5}$	$h^{-0.1}$	$l^{-0.3}$	Item number
10	16	20	3.5	12	ST7366 **16.10 x 012**
				17	ST7366 **16.10 x 017**
				22	ST7366 **16.10 x 022**
				27	ST7366 **16.10 x 027**
				36	ST7366 **16.10 x 036**
12	16	20	3.5	12	ST7366 **16.12 x 012**
				17	ST7366 **16.12 x 017**
				22	ST7366 **16.12 x 022**
				27	ST7366 **16.12 x 027**
				36	ST7366 **16.12 x 036**
15	20	25	6.0	17	ST7366 **20.15 x 017**
				22	ST7366 **20.15 x 022**
				27	ST7366 **20.15 x 027**
				36	ST7366 **20.15 x 036**
				46	ST7366 **20.15 x 046**
16	20	25	6.0	17	ST7366 **20.16 x 017**
				22	ST7366 **20.16 x 022**
				27	ST7366 **20.16 x 027**
				36	ST7366 **20.16 x 036**
				46	ST7366 **20.16 x 046**
19	26	31	6.0	22	ST7366 **26.19 x 022**

d_1^{H7}	d_2^{k6}	$d_3^{-0.5}$	$h^{-0.1}$	$l^{-0.3}$	Item number
19	26	31	6.0	27	ST7366 **26.19 x 027**
				36	ST7366 **26.19 x 036**
				46	ST7366 **26.19 x 046**
20	26	31	6.0	22	ST7366 **26.20 x 022**
				27	ST7366 **26.20 x 027**
				36	ST7366 **26.20 x 036**
				46	ST7366 **26.20 x 046**
24	30	35	6.0	27	ST7366 **30.24 x 027**
				36	ST7366 **30.24 x 036**
				46	ST7366 **30.24 x 046**
				56	ST7366 **30.24 x 056**
25	30	35	6.0	27	ST7366 **30.25 x 027**
				36	ST7366 **30.25 x 036**
				46	ST7366 **30.25 x 046**
				56	ST7366 **30.25 x 056**
30	40	46	6.0	36	ST7366 **40.30 x 036**
				46	ST7366 **40.30 x 046**
				56	ST7366 **40.30 x 056**
32	40	46	6.0	36	ST7366 **40.32 x 036**
				46	ST7366 **40.32 x 046**
				56	ST7366 **40.32 x 056**

ST7367 Holding clamp

round

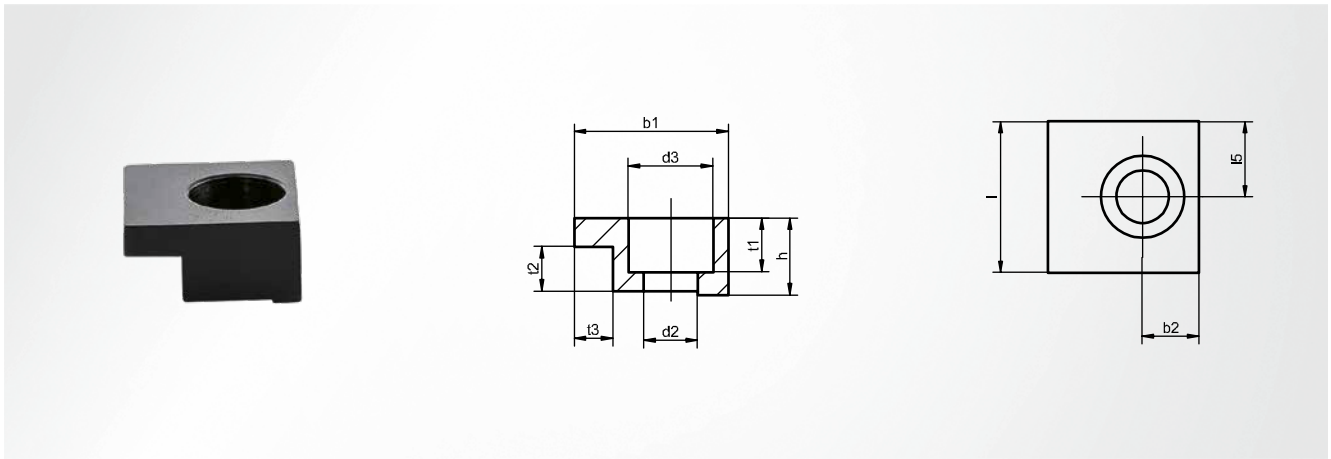


Material
Steel 1.0715 (9SMn28K)

Item number
ST7367

ST7377 Holding clamp

rectangular



Referring to DIN 9832

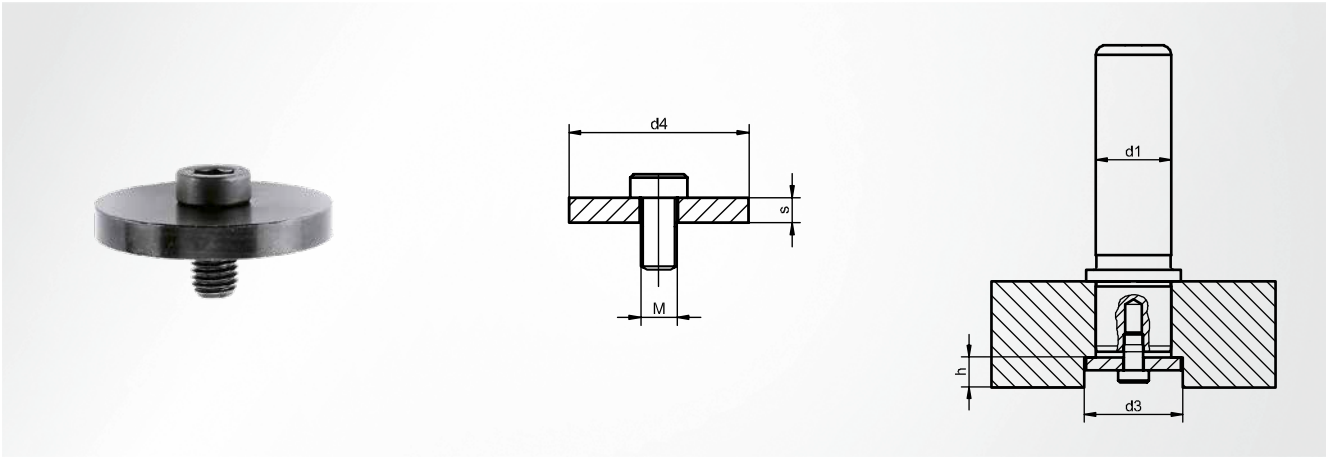
Material
Steel 1.0122

Optional accessories
SZ8510

d_1	d_2	d_3	b_1	b_2	h	l	l_5	t_1	t_2	t_3	screws	Item number
25	7.0	11.0	20	7.5	10	20	10	7.0	6.3	5	M6 x 16	ST7377.01
32	7.0	11.0	20	7.5	10	20	10	7.0	6.3	5	M6 x 16	ST7377.01
40	7.0	11.0	20	7.5	10	20	10	7.0	6.3	5	M6 x 16	ST7377.01
50	7.0	11.0	20	7.5	10	20	10	7.0	6.3	5	M6 x 16	ST7377.01
63	11.5	17.5	32	11.0	16	32	16	11.5	10.0	10	M10 x 25	ST7377.02
80	11.5	17.5	32	11.0	16	32	16	11.5	10.0	10	M10 x 25	ST7377.02
100	11.5	17.5	32	11.0	16	32	16	11.5	10.0	10	M10 x 25	ST7377.02
125	11.5	17.5	32	11.0	16	32	16	11.5	10.0	10	M10 x 25	ST7377.02
160	11.5	17.5	32	11.0	16	32	16	11.5	10.0	10	M10 x 25	ST7377.02

ST7387 Holding disc

with screw



Material
Steel 1.0503 (C45)

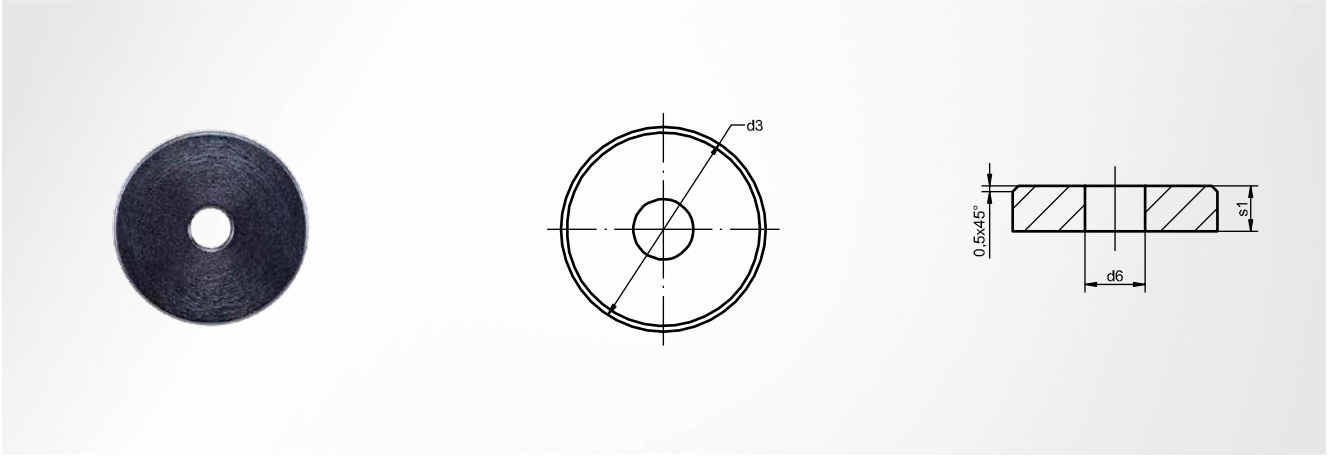
Scope of supply
SZ8512

Note
suitable socket screws DIN 6912 included in the scope of delivery

d_1	d_3	d_4	M	s	h_{min}	Item number
15 and 16	23	21	8	6	13	ST7387 **16**
19 and 20	27	25	8	6	13	ST7387 **20**
24 and 25	34	32	8	6	13	ST7387 **25**
30 and 32	42	40	8	7	14	ST7387 **32**

d_1	d_3	d_4	M	s	h_{min}	Item number
38 and 40	52	50	10	7	16	ST7387 **40**
48 and 50	62	60	10	8	17	ST7387 **50**
60 and 63	72	70	12	8	19	ST7387 **63**
80	98	95	12	10	15	ST7387 **80**

SZ7368 Holding disc



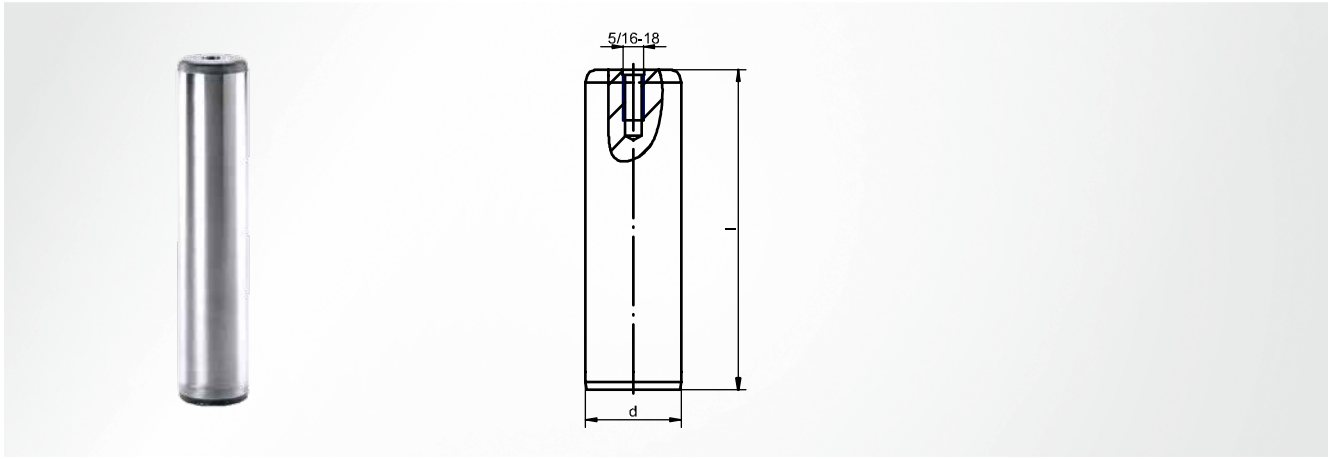
Material
Steel 1.0727 (45S20K)

d_3	d_6	s_1	Item number
18	5.3	4	SZ7368 **20**
24	6.4	5	SZ7368 **24**
30	6.4	5	SZ7368 **30**

d_3	d_6	s_1	Item number
40	8.4	6	SZ7368 **40**
50	10.5	6	SZ7368 **50**
56	13.0	6	SZ7368 **63**

ST7108 (inch) Guide pillar

smooth, with internal thread



Material
Steel 1.1221 (C60E); hardened

Hardness
63 ±1 HRC

Installation instruction
press in; one-sided entry chamfer or centring attachment

Installation in mounting bore
ISO R6

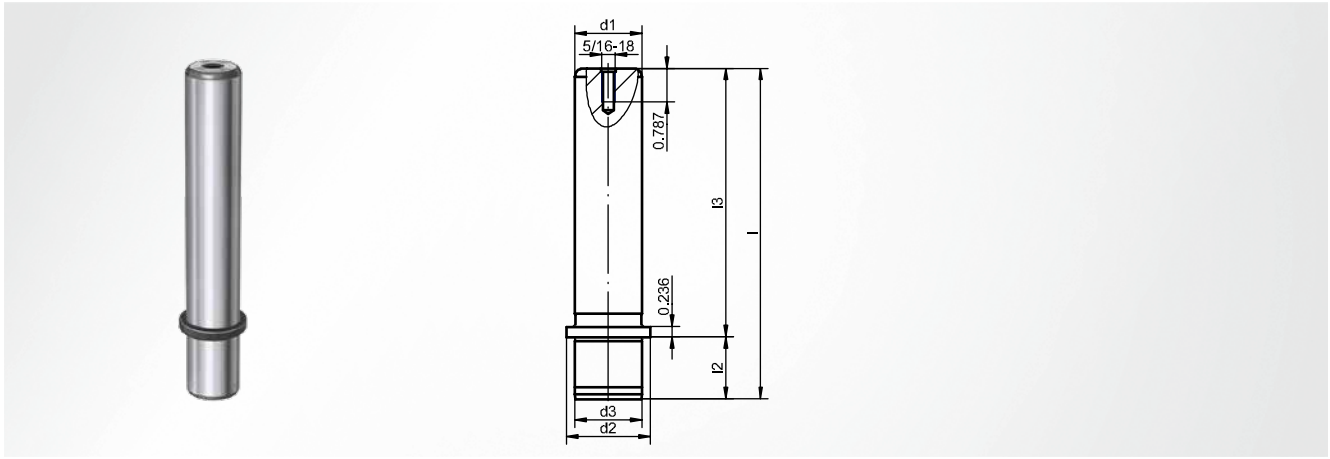
d "	l "	Item number
1	4	ST7108 **-1.00X04.000**
	4 1/2	ST7108 **-1.00X04.500**
	5	ST7108 **-1.00X05.000**
	5 1/2	ST7108 **-1.00X05.500**
	6	ST7108 **-1.00X06.000**
	6 1/2	ST7108 **-1.00X06.500**
	7	ST7108 **-1.00X07.000**
	7 1/2	ST7108 **-1.00X07.500**
	8	ST7108 **-1.00X08.000**
	8 1/2	ST7108 **-1.00X08.500**
	9	ST7108 **-1.00X09.000**
	10	ST7108 **-1.00X10.000**
1 1/4	4	ST7108 **-1.25X04.000**
	4 1/2	ST7108 **-1.25X04.500**
	5	ST7108 **-1.25X05.000**
	5 1/2	ST7108 **-1.25X05.500**
	6	ST7108 **-1.25X06.000**
	6 1/2	ST7108 **-1.25X06.500**
	7	ST7108 **-1.25X07.000**
	7 1/2	ST7108 **-1.25X07.500**
	8	ST7108 **-1.25X08.000**
	8 1/2	ST7108 **-1.25X08.500**
	9	ST7108 **-1.25X09.000**
	10	ST7108 **-1.25X10.000**

d "	l "	Item number
1 1/4	11	ST7108 **-1.25X11.000**
	12	ST7108 **-1.25X12.000**
	13	ST7108 **-1.25X13.000**
1 1/2	5	ST7108 **-1.50X05.000**
	5 1/2	ST7108 **-1.50X05.500**
	6	ST7108 **-1.50X06.000**
	6 1/2	ST7108 **-1.50X06.500**
	7	ST7108 **-1.50X07.000**
	7 1/2	ST7108 **-1.50X07.500**
	8	ST7108 **-1.50X08.000**
	8 1/2	ST7108 **-1.50X08.500**
	9	ST7108 **-1.50X09.000**
	10	ST7108 **-1.50X10.000**
	11	ST7108 **-1.50X11.000**
	12	ST7108 **-1.50X12.000**
	13	ST7108 **-1.50X13.000**
	14	ST7108 **-1.50X14.000**
1 3/4	6	ST7108 **-1.75X06.000**
	6 1/2	ST7108 **-1.75X06.500**
	7	ST7108 **-1.75X07.000**
	7 1/2	ST7108 **-1.75X07.500**
	8	ST7108 **-1.75X08.000**
	8 1/2	ST7108 **-1.75X08.500**
	9	ST7108 **-1.75X09.000**

d "	l "	Item number
1 3/4	10	ST7108 **-1.75X10.000**
	11	ST7108 **-1.75X11.000**
	12	ST7108 **-1.75X12.000**
	13	ST7108 **-1.75X13.000**
	14	ST7108 **-1.75X14.000**
	15	ST7108 **-1.75X15.000**
	16	ST7108 **-1.75X16.000**
	17	ST7108 **-1.75X17.000**
2	6	ST7108 **-2.00X06.000**
	6 1/2	ST7108 **-2.00X06.500**
	7	ST7108 **-2.00X07.000**
	7 1/2	ST7108 **-2.00X07.500**
	8	ST7108 **-2.00X08.000**
	8 1/2	ST7108 **-2.00X08.500**
	9	ST7108 **-2.00X09.000**
	10	ST7108 **-2.00X10.000**
	11	ST7108 **-2.00X11.000**
	12	ST7108 **-2.00X12.000**
	13	ST7108 **-2.00X13.000**
	14	ST7108 **-2.00X14.000**
	15	ST7108 **-2.00X15.000**
	16	ST7108 **-2.00X16.000**
	17	ST7108 **-2.00X17.000**

ST7120 (inch) Guide pillar

with shoulder and internal thread



Material
Steel 1.1221 (C60E); inductively hardened

Hardness
63 ±1 HRC

Installation instruction
Fixing with 3 holding clamps

Scope of supply
ST7367

Optional accessories
ST7132 (inch)

d_1 "	d_2 "	d_3 "	l_2 "	l "	l_3 "	Item number
1	1.312	1	1.1880	5.188	4	ST7120 **-1.00X04.000**
				5.688	4 1/2	ST7120 **-1.00X04.500**
				6.188	5	ST7120 **-1.00X05.000**
				6.688	5 1/2	ST7120 **-1.00X05.500**
				7.188	6	ST7120 **-1.00X06.000**
				7.688	6 1/2	ST7120 **-1.00X06.500**
				8.188	7	ST7120 **-1.00X07.000**
				8.688	7 1/2	ST7120 **-1.00X07.500**
				9.188	8	ST7120 **-1.00X08.000**
				9.688	8 1/2	ST7120 **-1.00X08.500**
				10.188	9	ST7120 **-1.00X09.000**
				11.188	10	ST7120 **-1.00X10.000**
1 1/4	1.562	1 1/4	1.5620	5.562	4	ST7120 **-1.25X04.000**
				6.062	4 1/2	ST7120 **-1.25X04.500**
				6.562	5	ST7120 **-1.25X05.000**
				7.062	5 1/2	ST7120 **-1.25X09.000**
				7.562	6	ST7120 **-1.25X05.500**
				8.062	6 1/2	ST7120 **-1.25X06.000**
				8.562	7	ST7120 **-1.25X06.500**
				9.062	7 1/2	ST7120 **-1.25X07.000**
				9.562	8	ST7120 **-1.25X07.500**
				10.062	8 1/2	ST7120 **-1.25X08.000**
				10.562	9	ST7120 **-1.25X08.500**
				11.562	10	ST7120 **-1.25X10.000**
1 1/2	1.857	1 1/2	1.8750	6.875	5	ST7120 **-1.50X05.000**
				7.375	5 1/2	ST7120 **-1.50X05.500**
				7.875	6	ST7120 **-1.50X06.000**
				8.375	6 1/2	ST7120 **-1.50X06.500**
				8.875	7	ST7120 **-1.50X07.000**
				9.375	7 1/2	ST7120 **-1.50X07.500**
				9.875	8	ST7120 **-1.50X08.000**
				10.875	9	ST7120 **-1.50X09.000**

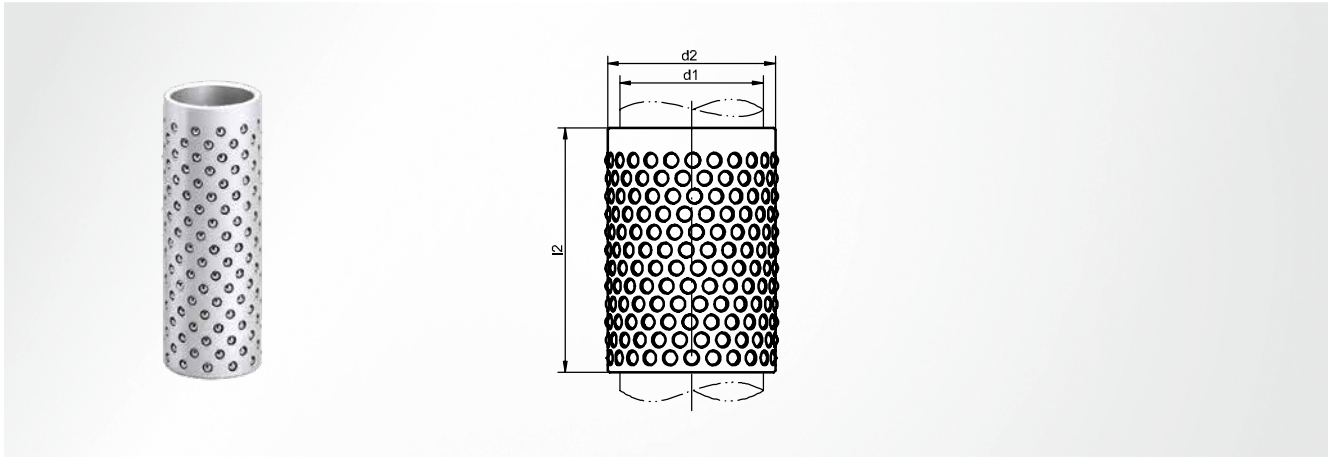
ST7120 (inch) Guide pillar

with shoulder and internal thread

d_1 "	d_2 "	d_3 "	l_2 "	l "	l_3 "	Item number
1 1/2	1.857	1 1/2	1.8750	11.875	10	ST7120 **-1.50X10.000**
				12.875	11	ST7120 **-1.50X11.000**
				13.875	12	ST7120 **-1.50X12.000**
1 3/4	2.250	1 3/4	2.2500	7.250	5	ST7120 **-1.75X05.000**
				7.750	5 1/2	ST7120 **-1.75X05.500**
				8.250	6	ST7120 **-1.75X06.000**
				8.750	6 1/2	ST7120 **-1.75X06.500**
				9.250	7	ST7120 **-1.75X07.000**
				9.750	7 1/2	ST7120 **-1.75X07.500**
				10.250	8	ST7120 **-1.75X08.000**
				11.250	9	ST7120 **-1.75X09.000**
				12.250	10	ST7120 **-1.75X10.000**
				13.250	11	ST7120 **-1.75X11.000**
				14.250	12	ST7120 **-1.75X12.000**
2	2.500	2	2.5000	7.500	5	ST7120 **-2.00X05.000**
				8.000	5 1/2	ST7120 **-2.00X05.500**
				8.500	6	ST7120 **-2.00X06.000**
				9.000	6 1/2	ST7120 **-2.00X06.500**
				9.500	7	ST7120 **-2.00X07.000**
				10.000	7 1/2	ST7120 **-2.00X07.500**
				10.500	8	ST7120 **-2.00X08.000**
				11.500	9	ST7120 **-2.00X09.000**
				12.500	10	ST7120 **-2.00X10.000**
				13.500	11	ST7120 **-2.00X11.000**
				14.500	12	ST7120 **-2.00X12.000**

ST7130 (inch) Ball cage

Aluminium



Material
Aluminium 3.1645

Note
Cage travel = ½ stroke length

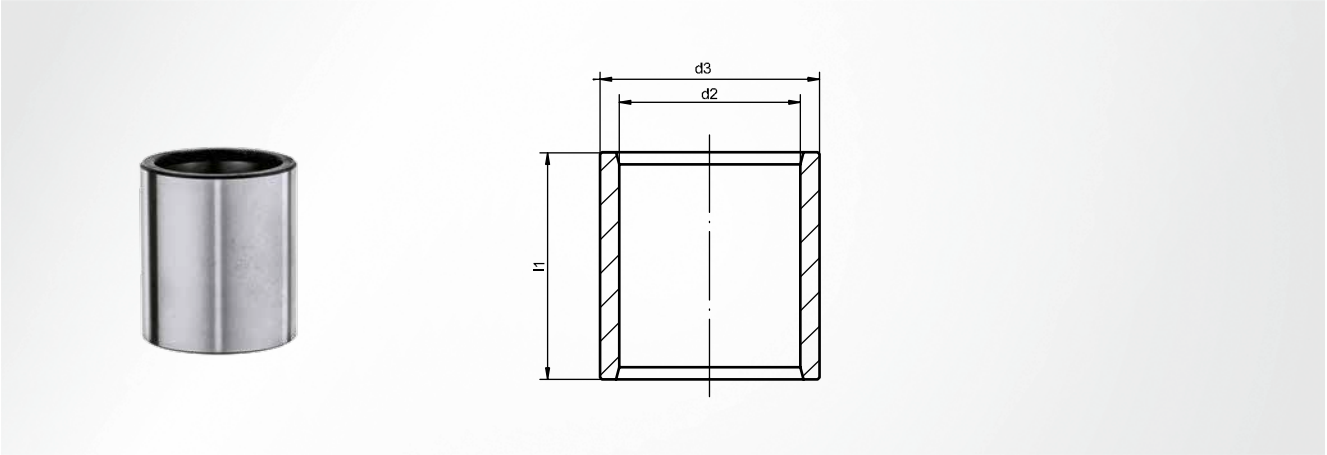
Ball property
Steel; hardened; quality class 1; sorted

d_1 "	d_2 "	l_2 "	Item number
1	1.2362	1 1/2	ST7130 **-1.00X01.500**
		1 3/4	ST7130 **-1.00X01.750**
		2	ST7130 **-1.00X02.000**
		2 1/4	ST7130 **-1.00X02.250**
		2 1/5	ST7130 **-1.00X02.500**
1 1/4	1.5650	2	ST7130 **-1.25X02.000**
		2 1/4	ST7130 **-1.25X02.250**
		2 1/5	ST7130 **-1.25X02.500**
		2 3/4	ST7130 **-1.25X02.750**
		3	ST7130 **-1.25X03.000**
		3 1/4	ST7130 **-1.25X03.250**
1 1/2	1.8150	2 1/5	ST7130 **-1.50X02.500**
		2 3/4	ST7130 **-1.50X02.750**
		3	ST7130 **-1.50X03.000**
		3 1/4	ST7130 **-1.50X03.250**
		3 1/2	ST7130 **-1.50X03.500**

d_1 "	d_2 "	l_2 "	Item number
1 1/2	1.8150	3 3/4	ST7130 **-1.50X03.750**
		4	ST7130 **-1.50X04.000**
1 3/4	2.0650	2 3/4	ST7130 **-1.75X02.750**
		3	ST7130 **-1.75X03.000**
		3 1/4	ST7130 **-1.75X03.250**
		3 1/2	ST7130 **-1.75X03.500**
		3 3/4	ST7130 **-1.75X03.750**
		4	ST7130 **-1.75X04.000**
		4 1/4	ST7130 **-1.75X04.250**
2	2.3150	3 1/4	ST7130 **-2.00X03.250**
		3 1/2	ST7130 **-2.00X03.500**
		3 3/4	ST7130 **-2.00X03.750**
		4	ST7130 **-2.00X04.000**
		4 1/4	ST7130 **-2.00X04.250**
		4 1/2	ST7130 **-2.00X04.500**
		5 1/2	ST7130 **-2.00X05.500**

ST7406 (inch) Guide bush

smooth



Material
Steel 1.3505 (100 Cr6)

Hardness
62 ±1 HRC

Installation instruction
Secure with adhesive; do not press in; one-sided entry chamfer or centring attachment

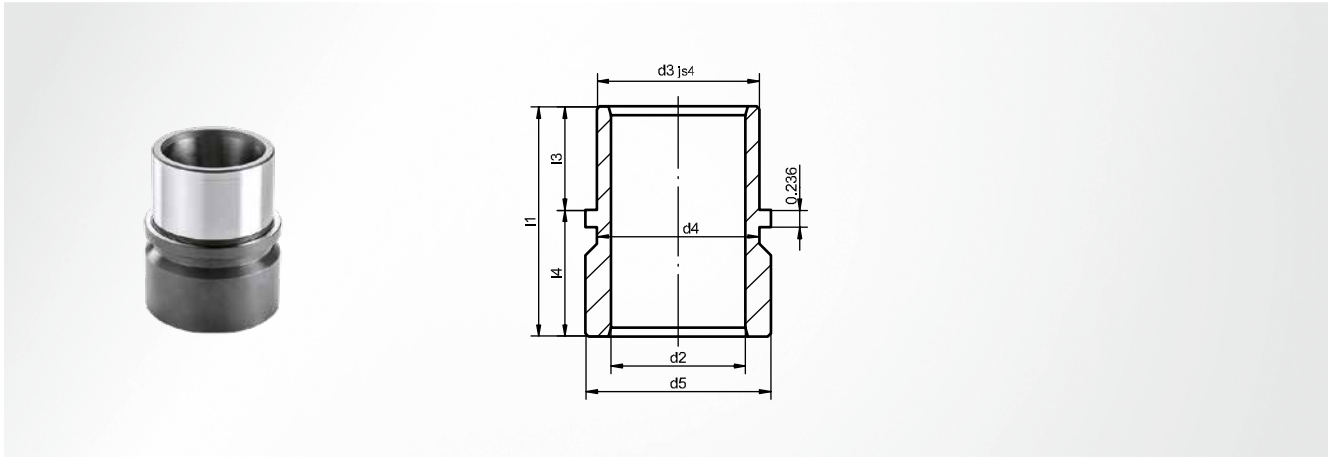
Installation in mounting bore
ISO G6

Optional accessories
SZ9742

d_1 "	d_2 "	d_3 "	l_1 "	Item number
1	1.2362	1.7170	2 7 /16	ST7406 **-1.00X02.437**
			2 15/16	ST7406 **-1.00X02.937**
			3 7/16	ST7406 **-1.00X03.437**
			3 15/16	ST7406 **-1.00X03.937**
1 1/4	1.5650	2.1070	2 7 /16	ST7406 **-1.25X02.437**
			2 15/16	ST7406 **-1.25X02.937**
			3 7/16	ST7406 **-1.25X03.437**
			3 15/16	ST7406 **-1.25X03.937**
1 1/2	1.8150	2.4370	3	ST7406 **-1.50X03.000**
			3 3/4	ST7406 **-1.50X03.750**
			4 1/2	ST7406 **-1.50X04.500**
			5	ST7406 **-1.50X05.000**
1 3/4	2.0650	2.7470	3	ST7406 **-1.75X03.000**
			4	ST7406 **-1.75X04.000**
			5	ST7406 **-1.75X05.000**
			5 1/2	ST7406 **-1.75X05.500**
2	2.3150	3.1620	3	ST7406 **-2.00X03.000**
			4	ST7406 **-2.00X04.000**
			5	ST7406 **-2.00X05.000**
			5 1/2	ST7406 **-2.00X05.500**

ST7416 (inch) Guide bush

with shoulder



Material
Steel 1.7139 (16MnCrS5); case-hardened

Hardness
62 ±1 HRC

Installation instruction
Fixing with 3 holding clamps

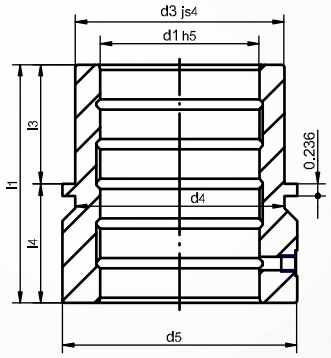
Installation in mounting bore
ISO H6

Scope of supply
ST7367

d "	d_2 "	d_3^{js4} "	d_4 "	l_3 "	d_5 "	l_1 "	l_4 "	Item number
1	1.2362	1.7170	2.0320	0.9375	1.7170	2 7 /16	1.5000	ST7416 **-1.00X02.437**
					2.0320	2 15/16	2.0000	ST7416 **-1.00X02.937**
					2.0320	3 7/16	2.5000	ST7416 **-1.00X03.437**
1 1/4	1.5650	2.1070	2.4220	1.1250	2.1070	2 15/16	1.8125	ST7416 **-1.25X02.937**
					2.4220	3 7/16	2.3125	ST7416 **-1.25X03.437**
					2.4220	3 15/16	2.8125	ST7416 **-1.25X03.937**
1 1/2	1.8150	2.4370	2.7520	1.1875	2.4370	2 15/16	1.7500	ST7416 **-1.50X02.937**
					2.7520	3 11/16	2.5000	ST7416 **-1.50X03.687**
					2.7520	4 7/16	3.2500	ST7416 **-1.50X04.437**
1 3/4	2.0650	2.7470	3.0620	1.3750	2.7470	3 7/16	2.0625	ST7416 **-1.75X03.437**
					3.0620	4 3/16	2.8125	ST7416 **-1.75X04.187**
					3.0620	4 15/16	3.5625	ST7416 **-1.75X04.937**
2	2.3150	3.1620	3.4770	1.6250	3.1620	4 7/16	1.8125	ST7416 **-2.00X03.437**
					3.4770	4 11/16	3.0625	ST7416 **-2.00X04.687**
					3.4770	5 7/16	3.8125	ST7416 **-2.00X05.437**

ST7419 (inch) Guide bush

bronze coating, steel sliding guide, hardened, with shoulder



Material
Steel 1.7139 (16MnCrS5); case-hardened

Hardness
62 ±1 HRC

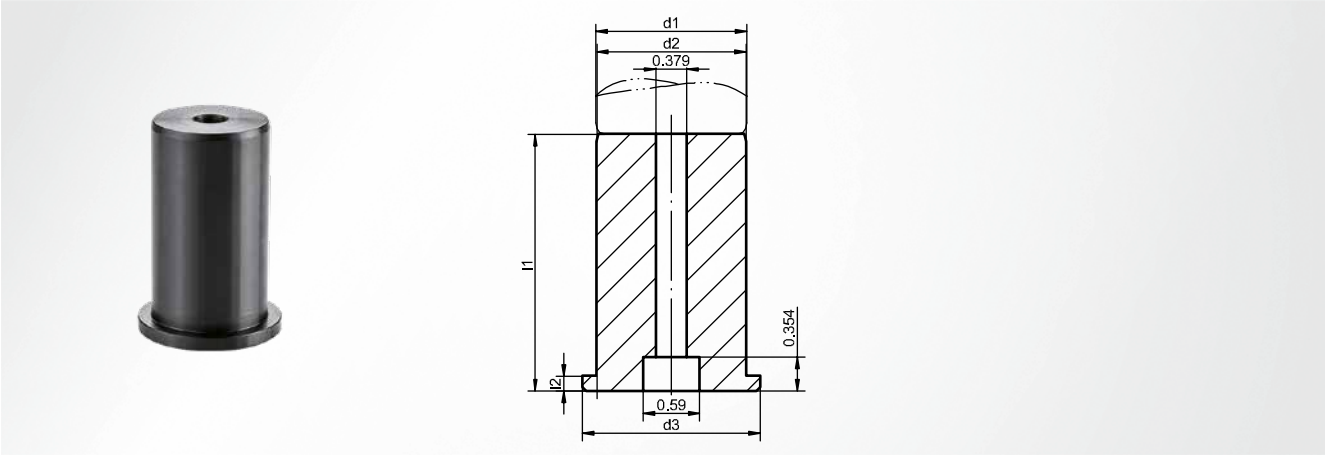
Installation instruction
Fixing with 3 holding clamps; central lubrication via cup head lubrication nipple M8 x 1

Installation in mounting bore
ISO H6

Scope of supply
ST7367

d_1^{H5} "	d_3^{js4} "	d_4 "	d_5 "	l_1 "	l_3 "	l_4 "	Item number
1	1.7170	2.0320	1.7170	1 3/4	0.9375	0.8125	ST7419 **-1.00X01.750**
			2.0320	2 11/16	0.9375	1.7500	ST7419 **-1.00X02.687**
			2.0320	3 15/16	0.9375	3.0000	ST7419 **-1.00X03.937**
1 1/4	2.1070	2.4220	2.1070	1 15/16	1.1250	0.8125	ST7419 **-1.25X01.937**
			2.4220	3 1/8	1.1250	2.0000	ST7419 **-1.25X03.125**
			2.4220	4 1/8	1.1250	3.0000	ST7419 **-1.25X04.125**
1 1/2	2.4370	2.7520	2.4370	2	1.1875	0.8125	ST7419 **-1.50X02.000**
			2.7520	3 3/16	1.1875	2.0000	ST7419 **-1.50X03.187**
			2.7520	4 3/16	1.1875	3.0000	ST7419 **-1.50X04.187**
1 3/4	2.7470	3.0620	2.7470	2 3/8	1.3750	1.0000	ST7419 **-1.75X02.375**
			3.0620	3 3/8	1.3750	2.0000	ST7419 **-1.75X03.375**
			3.0620	4 3/8	1.3750	3.0000	ST7419 **-1.75X04.375**
2	3.1620	3.4770	3.1620	2 5/8	1.6250	1.0000	ST7419 **-2.00X02.625**
			3.4770	3 5/8	1.6250	2.0000	ST7419 **-2.00X04.625**
			3.4770	4 5/8	1.6250	3.0000	ST7419 **-2.00X03.625**

ST7132 (inch) Cage holder



Material
Steel 1.0503 (C45)

Note
the length of the cage holder should be half of that of the cage used

d_1 "	d_2 "	d_3 "	l_1 "	l_2 "	Screw "	Item number
1	0.9803	1.2165	2	0.118	5/16-20-UNC x 2 1/4	ST7132 **-1.00X02.000**
1 1/4	1.2303	1.5433	2	0.157	5/16-20-UNC x 2 1/4	ST7132 **-1.25X02.000**
1 1/2	1.4803	1.7953	2 1/5	0.157	5/16-20-UNC x 2 3/4	ST7132 **-1.50X02.500**
1 3/4	1.7303	2.0827	2 1/5	0.157	5/16-20-UNC x 2 3/4	ST7132 **-1.75X02.500**
2	1.9803	2.2953	2 1/5	0.157	5/16-20-UNC x 2 3/4	ST7132 **-2.00X02.500**

SZ8514 (inch) Socket-head screw

with hexagon socket

Screw "	Item number
1/4"x 7/16" UNC	SZ8514 **.1**
5/16" x 2 1/4" UNC	SZ8514 **.2**
5/16" x 2 3/4" UNC	SZ8514 **.3**

Active elements

- Cutting punch
- Cutting bushes
- Drill bushes
- Punch guide bushes
- Shape-cutting elements
- Ejector pins

SZ6149 3.6

SZ60xx 3.8

SZ6141 3.9

SZ6134 3.10

SZ6137 3.12

SZ6139 3.14

SZ6129 3.16

SZ6121 3.17

SZ5600 3.18

SZ5700 3.19

SZ56xx 3.20

SZ57xx 3.21

SZ5900 3.22

SZ59xx 3.23

SZ6700 3.24

SZ67xx 3.25

SZ6210 3.26

SZ5691 3.27

SZ6391 3.28

SZ5692 3.29

SZ6392 3.30

SZ5693 3.31

SZ6393 3.32

SZ6981 3.33

SZ6991 3.34

SZ6982 3.35

SZ6992 3.36

SZ6983 3.37

SZ6993 3.38

SZ6250 3.39

SZ6255 3.40

SZ6265 3.41

SZ6285 3.42

SZ6650 3.43

SZ6750 3.46

SZ6751 3.49

SZ6225 3.51

SZ6229 3.52

SZ8455 3.53

SZ6400 3.54

SZ6401 3.55

SZ6402 3.56

SZ6403 3.56

Active elements

General

In punching and bending tools, active elements are the cutting and shaping parts. Here, the highest requirements in dimensional accuracy and surface quality must be met. Active elements are wearing parts and can be replaced several times over the course of a tool's life time.

In addition to standard active elements, STEINEL also offers individual solutions tailored to your specifications. Upon request, you will receive all required active elements from a single source – from a single unit to mass production.

Properties

- Starting materials for the STEINEL active elements are high-quality materials such as:
  - conventional tool steels
  - powder metallurgical steels
  - carbides
- microblasted cutting edges upon request
- PVD coatings upon request, such as:
  - AlCrN (aluminium chrome nitride)
  - TiN (titanium nitride)
  - TiCN (titanium carbonitride)
  - CrN (chrome nitride)
  - Futura TiAlN (titanium aluminium nitride)
  - Futura Nano TiAlN

Cutting punch, cutting bushes

Cutting punch	Standard	Shape	Diameter	Length	Material
with trumpet head	–	D	3.0-20.0	71, 80, 100	HSS
		C	1.0-19.5	71, 80, 100	HSS
with conical head	DIN 9861 / ISO 6752	D	0.8-16.0	71, 80, 100	HSS, HWS, PM
	DIN 9861 / ISO 9181	C	0.5-2.9	71, 80	HSS
with cylindrical head	ISO 8020	A	3.0-25.0	71, 80, 90, 100	HSS, PM
		B	1.0-24.5	71, 80, 90, 100	HSS, PM
		E	6.0-2.0	71, 80, 90, 100	HSS
		F	1.6-24.5	71, 80, 90, 100	HSS
Quick-change cutting punch	DIN ISO 10071	–	6.0-25.0	71, 80	HWS

Cutting bushes	Standard	Shape	Diameter	Length	Material
for pressing-in	ISO 8977	A	1.0-25.0	20, 25	HSS
for pressing-in with shoulder	ISO 8977	B	1.0-25.0	25, 32	HSS
Quick-change cutting bushes	–	–	2.0-25.0	32	HWS

Shape-cutting elements, shape-cutting bushes

Shape-cutting elements*	Standard	Shape	Length	Material
continuously shaped (with/without hot upset head)	–	square, rectangular, oval	80	HSS
with reduced shaft, with twisting surface	ISO 8020	square, rectangular, oval	80	HSS

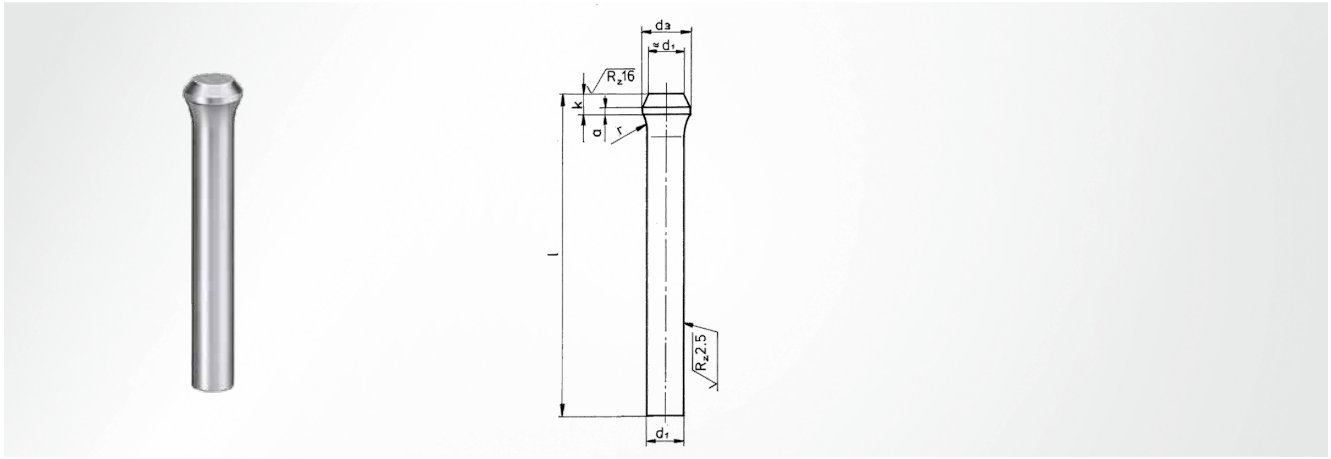
*available in several versions, and as a special design

Shape-cutting bushes*	Standard	Shape	Length	Material
with shoulder, with twisting surface	DIN ISO 8977	square, rectangular, oval	32	HSS

*available in several versions, and as a special design

SZ6149 Cutting punch

with elongated neck



Shape
D

Material
HSS

Head hardness
50 ±5 HRC

Shank hardness
64 ±2 HRC

Note
deliverable with PVD coating upon request

d_1 h6	d_3	a	$k^{+0.2}$	$r^{-0.2}$	$l^{+0.5}$	Item number
2.0	3.0	1.0	3	3.5	71	SZ6149 **020 x 071**
					80	SZ6149 **020 x 080**
					100	SZ6149 **020 x 100**
2.5	4.0	1.0	3	5.0	71	SZ6149 **025 x 071**
					80	SZ6149 **025 x 080**
					100	SZ6149 **025 x 100**
3.0	4.5	1.0	3	6.5	71	SZ6149 **030 x 071**
					80	SZ6149 **030 x 080**
					100	SZ6149 **030 x 100**
3.5	5.0	1.0	3	8.0	80	SZ6149 **035 x 080**
					100	SZ6149 **035 x 100**
4.0	5.5	1.5	4	8.0	71	SZ6149 **040 x 071**
					80	SZ6149 **040 x 080**
					100	SZ6149 **040 x 100**
4.5	6.0	1.5	4	8.0	71	SZ6149 **045 x 071**
					100	SZ6149 **045 x 100**
5.0	7.0	1.5	4	10.0	71	SZ6149 **050 x 071**
					80	SZ6149 **050 x 080**
					100	SZ6149 **050 x 100**
5.5	8.0	1.5	4	10.0	71	SZ6149 **055 x 071**
					80	SZ6149 **055 x 080**
					100	SZ6149 **055 x 100**
6.0	9.0	1.5	4	10.0	71	SZ6149 **060 x 071**
					80	SZ6149 **060 x 080**
					100	SZ6149 **060 x 100**
6.5	10.0	1.5	4	12.0	100	SZ6149 **065 x 100**
7.0	10.0	1.5	4	10.0	71	SZ6149 **070 x 071**
					80	SZ6149 **070 x 080**
					100	SZ6149 **070 x 100**
7.5	11.0	1.5	4	12.0	80	SZ6149 **075 x 080**
					100	SZ6149 **075 x 100**
8.0	11.0	1.5	4	12.0	71	SZ6149 **080 x 071**
					80	SZ6149 **080 x 080**
					100	SZ6149 **080 x 100**

d_1 h6	d_3	a	$k^{+0.2}$	$r^{-0.2}$	$l^{+0.5}$	Item number
8.5	13.0	1.5	4	15.0	71	SZ6149 **085 x 071**
					100	SZ6149 **085 x 100**
9.0	13.0	1.5	4	15.0	71	SZ6149 **090 x 071**
					80	SZ6149 **090 x 080**
					100	SZ6149 **090 x 100**
9.5	14.0	1.5	4	15.0	71	SZ6149 **095 x 071**
					80	SZ6149 **095 x 080**
					100	SZ6149 **095 x 100**
10.0	14.0	1.5	4	15.0	71	SZ6149 **100 x 071**
					80	SZ6149 **100 x 080**
					100	SZ6149 **100 x 100**
10.5	15.0	1.5	4	15.0	71	SZ6149 **105 x 071**
					100	SZ6149 **105 x 100**
11.0	15.0	1.5	4	15.0	71	SZ6149 **110 x 071**
					80	SZ6149 **110 x 080**
					100	SZ6149 **110 x 100**
11.5	16.0	1.5	4	15.0	71	SZ6149 **115 x 071**
					80	SZ6149 **115 x 080**
					100	SZ6149 **115 x 100**
12.0	16.0	1.5	4	15.0	71	SZ6149 **120 x 071**
					80	SZ6149 **120 x 080**
12.5	17.0	1.5	4	15.0	71	SZ6149 **125 x 071**
					80	SZ6149 **125 x 080**
					100	SZ6149 **125 x 100**
13.0	17.0	1.5	4	15.0	71	SZ6149 **130 x 071**
					80	SZ6149 **130 x 080**
					100	SZ6149 **130 x 100**
13.5	18.0	1.5	4	15.0	71	SZ6149 **135 x 071**
					80	SZ6149 **135 x 080**
					100	SZ6149 **135 x 100**
14.0	18.0	1.5	4	15.0	71	SZ6149 **140 x 071**
					80	SZ6149 **140 x 080**
14.5	19.0	1.5	4	15.0	71	SZ6149 **145 x 071**
					80	SZ6149 **145 x 080**

SZ6149 Cutting punch

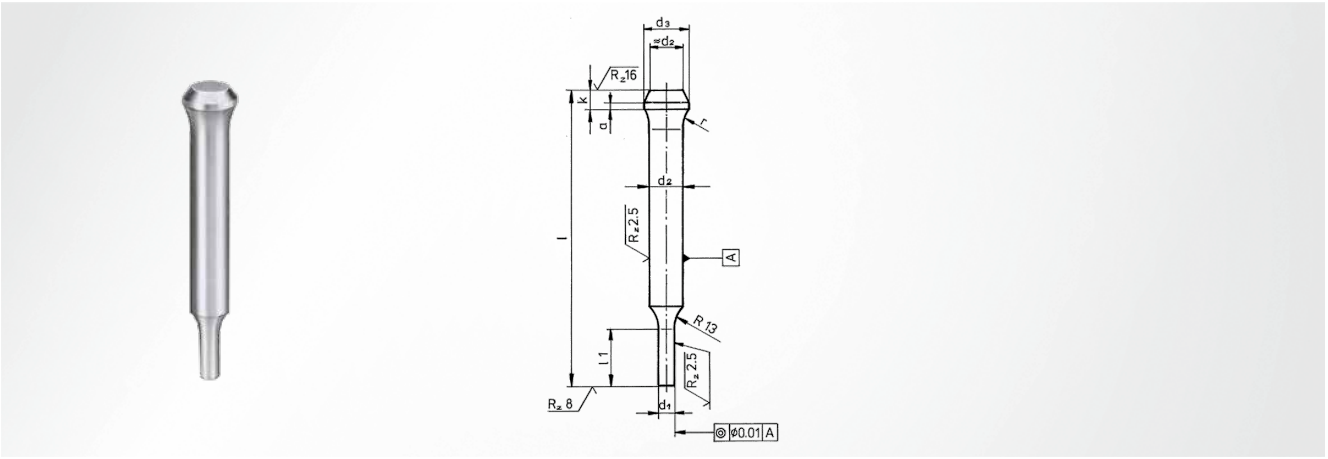
with elongated neck

d_1^{h6}	d_3	a	$k^{+0.2}$	$r^{-0.2}$	$l^{+0.5}$	Item number
14.5	19.0	1.5	4	15.0	100	SZ6149 **145 x 100**
15.0	19.0	1.5	4	15.0	71	SZ6149 **150 x 071**
					80	SZ6149 **150 x 080**
					100	SZ6149 **150 x 100**
15.5	20.0	1.5	4	15.0	71	SZ6149 **155 x 071**
					80	SZ6149 **155 x 080**
					100	SZ6149 **155 x 100**
16.0	20.0	1.5	4	15.0	71	SZ6149 **160 x 071**
					80	SZ6149 **160 x 080**
					100	SZ6149 **160 x 100**
16.5	21.0	1.5	4	15.0	71	SZ6149 **165 x 071**
					80	SZ6149 **165 x 080**
					100	SZ6149 **165 x 100**
17.0	21.0	1.5	4	15.0	71	SZ6149 **170 x 071**
					80	SZ6149 **170 x 080**
					100	SZ6149 **170 x 100**
17.5	22.0	1.5	4	15.0	71	SZ6149 **175 x 071**

d_1^{h6}	d_3	a	$k^{+0.2}$	$r^{-0.2}$	$l^{+0.5}$	Item number
17.5	22.0	1.5	4	15.0	80	SZ6149 **175 x 080**
					100	SZ6149 **175 x 100**
18.0	22.0	1.5	4	15.0	71	SZ6149 **180 x 071**
					80	SZ6149 **180 x 080**
					100	SZ6149 **180 x 100**
18.5	23.0	1.5	4	15.0	71	SZ6149 **185 x 071**
					80	SZ6149 **185 x 080**
					100	SZ6149 **185 x 100**
19.0	23.0	1.5	4	15.0	71	SZ6149 **190 x 071**
					80	SZ6149 **190 x 080**
					100	SZ6149 **190 x 100**
19.5	25.0	1.5	4	15.0	71	SZ6149 **195 x 071**
					80	SZ6149 **195 x 080**
					100	SZ6149 **195 x 100**
20.0	25.0	1.5	4	15.0	71	SZ6149 **200 x 071**
					100	SZ6149 **200 x 100**

SZ60xx Cutting punch

with elongated neck, reduced



Shape
C

Material
HSS

Head hardness
50 ±5 HRC

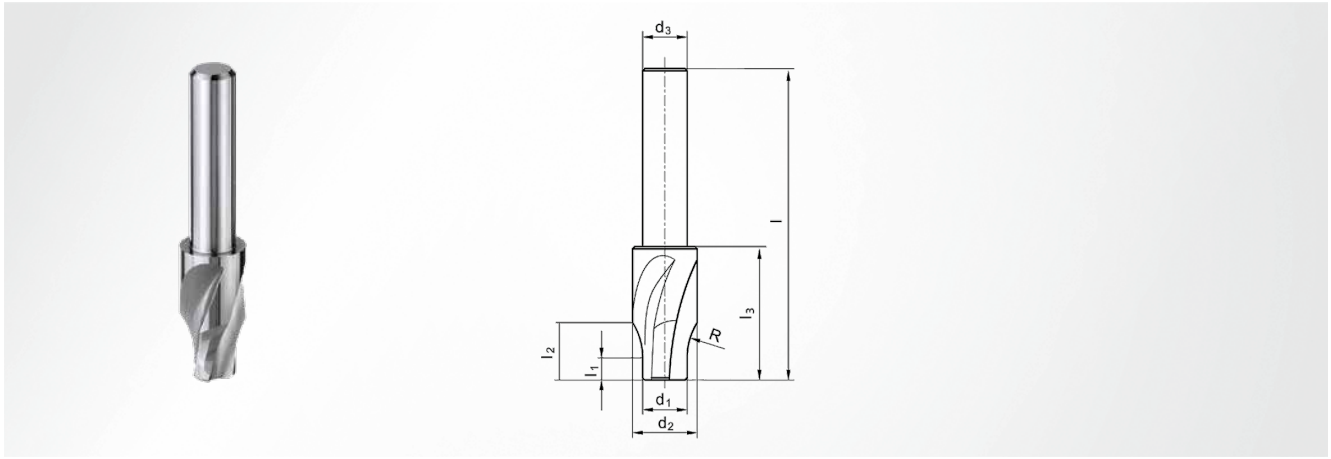
Shank hardness
64 ±2 HRC

Note
deliverable with PVD coating upon request

d_1^{h6}	d_2^{h6}	d_3	a	$k^{+0.2}$	l_1	$r^{-0.2}$	Grading	l	Item number
1.0-2.5	3	4.5	1.0	3	10	6.5	0.1	71	SZ6013 **010 - 025 x 071**
								80	SZ6013 **010 - 025 x 080**
								100	SZ6013 **010 - 025 x 100**
1.0-3.5	4	5.5	1.5	4	10	8.0	0.1	71	SZ6014 **010 - 035 x 071**
								80	SZ6014 **010 - 035 x 080**
								100	SZ6014 **010 - 035 x 100**
2.0-4.5	5	7.0	1.5	4	10	10.0	0.1	71	SZ6015 **020 - 045 x 071**
								80	SZ6015 **020 - 045 x 080**
								100	SZ6015 **020 - 045 x 100**
2.5-5.5	6	9.0	1.5	4	10	10.0	0.1	71	SZ6016 **025 - 055 x 071**
								80	SZ6016 **025 - 055 x 080**
								100	SZ6016 **025 - 055 x 100**
3.0-7.5	8	11.0	1.5	4	13	12.0	0.1	71	SZ6028 **030 - 075 x 071**
								80	SZ6028 **030 - 075 x 080**
								100	SZ6028 **030 - 075 x 100**
5.0-9.5	10	14.0	1.5	4	17	15.0	0.5	71	SZ6040 **050 - 095 x 071**
								80	SZ6040 **050 - 095 x 080**
								100	SZ6040 **050 - 095 x 100**
7.5-12.5	13	17.0	1.5	4	17	15.0	0.5	71	SZ6043 **075 - 125 x 071**
								80	SZ6043 **075 - 125 x 080**
								100	SZ6043 **075 - 125 x 100**
10.0-15.5	16	20.0	1.5	4	17	15.0	0.5	71	SZ6046 **100 - 155 x 071**
								80	SZ6046 **100 - 155 x 080**
								100	SZ6046 **100 - 155 x 100**
15.0-19.5	20	25.0	1.5	4	17	15.0	0.5	71	SZ6050 **150 - 195 x 071**
								80	SZ6050 **150 - 195 x 080**
								100	SZ6050 **150 - 195 x 100**

SZ6141 Spot facer

for cutting punch with trumpet head



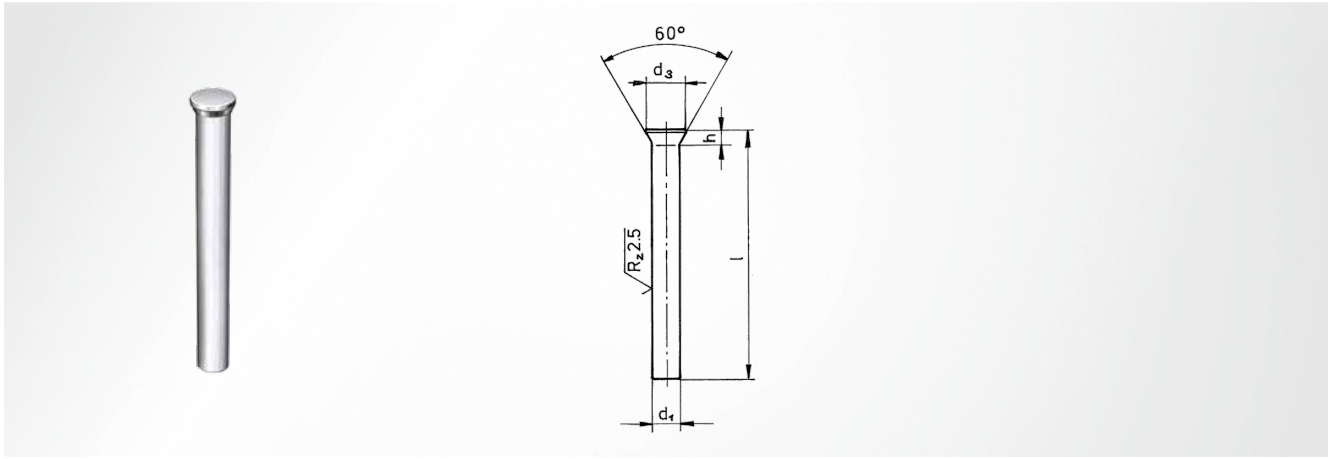
Material
HSS

Hardness
63 ±2 HRC

d_1^{f7}	d_2^{h8}	d_3^{h11}	l	l_1	l_2	l_3	R	Item number
3	4.9	8	70	5	8.4	30	6.5	SZ6141 **03**
4	5.9	8	70	5	8.8	30	8.0	SZ6141 **04**
5	7.4	8	70	5	9.7	30	10.0	SZ6141 **05**
6	9.5	8	70	5	10.6	30	10.0	SZ6141 **06**
8	11.5	8	70	5	11.2	30	12.0	SZ6141 **08**
10	14.5	10	70	8	15.9	30	15.0	SZ6141 **10**
13	17.5	10	70	8	15.9	30	15.0	SZ6141 **13**
16	20.5	10	70	8	15.8	30	15.0	SZ6141 **16**
20	25.5	16	70	8	16.7	30	15.0	SZ6141 **20**

SZ6134 Cutting punch

with 60° head



Referring to DIN 9861 / ISO 6752

Shape
D

Material
HWS

Head hardness
50 ±5 HRC

Shank hardness
62 ±2 HRC

Note
other lenghts available upon request; if there is no HWS material available ex stock, HSS is delivered

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
0.5	0.9	0.55	71	SZ6134 **005 x 071**
0.6	1.1	0.63	71	SZ6134 **006 x 071**
0.7	1.3	0.72	71	SZ6134 **007 x 071**
0.8	1.4	0.92	71	SZ6134 **008 x 071**
0.9	1.6	1.01	71	SZ6134 **009 x 071**
			80	SZ6134 **009 x 080**
1.0	1.8	1.19	71	SZ6134 **010 x 071**
			80	SZ6134 **010 x 080**
1.1	1.8	1.11	71	SZ6134 **011 x 071**
			80	SZ6134 **011 x 080**
1.2	2.0	1.19	71	SZ6134 **012 x 071**
			80	SZ6134 **012 x 080**
1.3	2.0	1.11	71	SZ6134 **013 x 071**
			80	SZ6134 **013 x 080**
1.4	2.2	1.19	71	SZ6134 **014 x 071**
			80	SZ6134 **014 x 080**
1.5	2.2	1.11	71	SZ6134 **015 x 071**
			80	SZ6134 **015 x 080**
1.6	2.5	1.28	71	SZ6134 **016 x 071**
			80	SZ6134 **016 x 080**
1.7	2.5	1.19	71	SZ6134 **017 x 071**
			80	SZ6134 **017 x 080**
1.8	2.8	1.37	71	SZ6134 **018 x 071**
			80	SZ6134 **018 x 080**
1.9	2.8	1.28	71	SZ6134 **019 x 071**
			80	SZ6134 **019 x 080**
2.0	3.0	1.37	71	SZ6134 **020 x 071**
			80	SZ6134 **020 x 080**
2.1	3.2	1.45	71	SZ6134 **021 x 071**
			80	SZ6134 **021 x 080**
2.2	3.2	1.37	71	SZ6134 **022 x 071**
			80	SZ6134 **022 x 080**
2.3-2.5	3.5	1.37	71	SZ6134 **023 - 025 x 071**

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
2.3-2.5	3.5	1.37	80	SZ6134 **023 - 025 x 080**
2.6-2.9	4.0	1.54	71	SZ6134 **026 - 029 x 071**
			80	SZ6134 **026 - 029 x 080**
3.0-3.4	4.5	1.54	71	SZ6134 **030 - 034 x 071**
			80	SZ6134 **030 - 034 x 080**
			100	SZ6134 **030 - 034 x 100**
3.5-3.9	5.0	1.54	71	SZ6139 **035 - 039 x 071**
			80	SZ6139 **035 - 039 x 080**
			100	SZ6139 **035 - 039 x 100**
4.0-4.4	5.5	1.63	71	SZ6134 **040 - 044 x 071**
			80	SZ6134 **040 - 044 x 080**
			100	SZ6134 **040 - 044 x 100**
4.5-4.9	6.0	1.63	71	SZ6134 **045 - 049 x 071**
			80	SZ6134 **045 - 049 x 080**
			100	SZ6134 **045 - 049 x 100**
5.0-5.4	6.5	1.63	71	SZ6134 **050 - 054 x 071**
			80	SZ6134 **050 - 054 x 080**
			100	SZ6134 **050 - 054 x 100**
5.5-5.9	7.0	1.71	71	SZ6134 **055 - 059 x 071**
			80	SZ6134 **055 - 059 x 080**
			100	SZ6134 **055 - 059 x 100**
6.0-6.4	8.0	2.06	71	SZ6134 **060 - 064 x 071**
			80	SZ6134 **060 - 064 x 080**
			100	SZ6134 **060 - 064 x 100**
6.5-6.9	9.0	3.17	71	SZ6134 **065 - 069 x 071**
			80	SZ6134 **065 - 069 x 080**
			100	SZ6134 **065 - 069 x 100**
7.0-7.4	9.0	2.73	71	SZ6134 **070 - 074 x 071**
			80	SZ6134 **070 - 074 x 080**
			100	SZ6134 **070 - 074 x 100**
7.5-7.9	10.0	3.17	71	SZ6134 **075 - 079 x 071**
			80	SZ6134 **075 - 079 x 080**
			100	SZ6134 **075 - 079 x 100**

SZ6134 Cutting punch

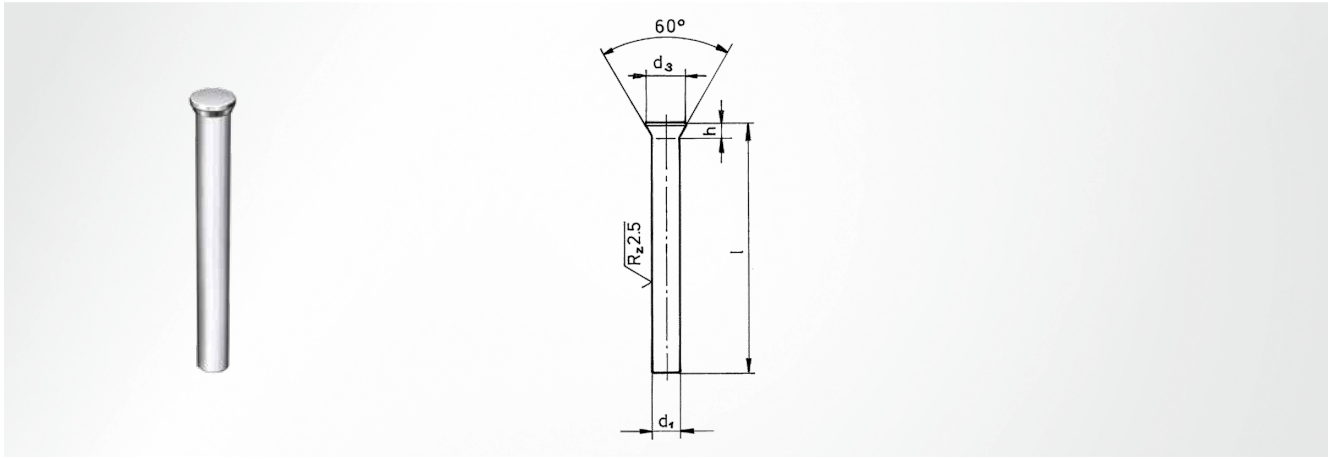
with 60° head

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
8.0-8.4	10.0	2.73	71	SZ6134 **080 - 084 x 071**
			80	SZ6134 **080 - 084 x 080**
			100	SZ6134 **080 - 084 x 100**
8.5-8.9	11.0	3.17	71	SZ6134 **080 - 089 x 071**
			80	SZ6134 **080 - 089 x 080**
			100	SZ6134 **080 - 089 x 100**
9.0-9.4	11.0	2.73	71	SZ6134 **090 - 094 x 071**
			80	SZ6134 **090 - 094 x 080**
			100	SZ6134 **090 - 094 x 100**
9.5-9.9	12.0	3.17	71	SZ6134 **095 - 099 x 071**
			80	SZ6134 **095 - 099 x 080**
			100	SZ6134 **095 - 099 x 100**
10.0	12.0	2.73	71	SZ6134 **100 x 071**
			80	SZ6134 **100 x 080**
			100	SZ6134 **100 x 100**
10.5	13.0	3.17	71	SZ6134 **105 x 071**
			100	SZ6134 **105 x 100**
11.0	13.0	2.73	71	SZ6134 **110 x 071**
			80	SZ6134 **110 x 080**
			100	SZ6134 **110 x 100**
11.5	14.0	3.17	71	SZ6134 **115 x 071**
			80	SZ6134 **115 x 080**

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
12.0	14.0	2.73	71	SZ6134 **120 x 071**
			80	SZ6134 **120 x 080**
			100	SZ6134 **120 x 100**
12.5	15.0	3.17	71	SZ6134 **125 x 071**
			80	SZ6134 **125 x 080**
13.0	15.0	2.73	71	SZ6134 **130 x 071**
			80	SZ6134 **130 x 080**
			100	SZ6134 **130 x 100**
14.0	16.0	3.23	71	SZ6134 **140 x 071**
			80	SZ6134 **140 x 080**
			100	SZ6134 **140 x 100**
14.5	17.0	3.67	71	SZ6134 **145 x 071**
			80	SZ6134 **145 x 080**
15.0	17.0	3.23	71	SZ6134 **150 x 071**
			80	SZ6134 **150 x 080**
			100	SZ6134 **150 x 100**
15.5	18.0	3.67	71	SZ6134 **155 x 071**
			80	SZ6134 **155 x 080**
16.0	18.0	3.23	71	SZ6134 **160 x 071**
			80	SZ6134 **160 x 080**
			100	SZ6134 **160 x 100**

SZ6137 Cutting punch

with 60° head



Referring to DIN 9861 / ISO 6752

Shape
D

Material
PM

Head hardness
50 ±5 HRC

Shank hardness
64 ±2 HRC

Note
deliverable with PVD coating upon request

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
1.0	1.8	1.19	71	SZ6137 **010 x 071**
			80	SZ6137 **010 x 080**
1.5	2.2	1.11	71	SZ6137 **015 x 071**
			80	SZ6137 **015 x 080**
2.0	3.0	1.37	71	SZ6137 **020 x 071**
			80	SZ6137 **020 x 080**
2.5	3.5	1.37	71	SZ6137 **025 x 071**
			80	SZ6137 **025 x 080**
3.0	4.5	1.80	71	SZ6137 **030 x 071**
			80	SZ6137 **030 x 080**
			100	SZ6137 **030 x 100**
3.5	5.0	1.80	71	SZ6137 **035 x 071**
			80	SZ6137 **035 x 080**
			100	SZ6137 **035 x 100**
4.0	5.5	1.80	71	SZ6137 **040 x 071**
			80	SZ6137 **040 x 080**
			100	SZ6137 **040 x 100**
4.5	6.0	1.80	71	SZ6137 **045 x 071**
			80	SZ6137 **045 x 080**
			100	SZ6137 **045 x 100**
5.0	6.5	1.80	71	SZ6137 **050 x 071**
			80	SZ6137 **050 x 080**
			100	SZ6137 **050 x 100**
5.5	7.0	1.80	71	SZ6137 **055 x 071**
			80	SZ6137 **055 x 080**
			100	SZ6137 **055 x 100**
6.0	8.0	2.23	71	SZ6137 **060 x 071**
			80	SZ6137 **060 x 080**
			100	SZ6137 **060 x 100**
6.5	9.0	3.17	71	SZ6137 **065 x 071**
			80	SZ6137 **065 x 080**
			100	SZ6137 **065 x 100**
7.0	9.0	2.73	71	SZ6137 **070 x 071**
			80	SZ6137 **070 x 080**

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
7.0	9.0	2.73	100	SZ6137 **070 x 100**
7.5	10.0	3.17	71	SZ6137 **075 x 071**
			80	SZ6137 **075 x 080**
			100	SZ6137 **075 x 100**
8.0	10.0	2.73	71	SZ6137 **080 x 071**
			80	SZ6137 **080 x 080**
			100	SZ6137 **080 x 100**
8.5	11.0	3.17	71	SZ6137 **085 x 071**
			80	SZ6137 **085 x 080**
			100	SZ6137 **085 x 100**
9.0	11.0	2.73	71	SZ6137 **090 x 071**
			80	SZ6137 **090 x 080**
			100	SZ6137 **090 x 100**
9.5	12.0	3.17	71	SZ6137 **095 x 071**
			80	SZ6137 **095 x 080**
			100	SZ6137 **095 x 100**
10.0	12.0	2.73	71	SZ6137 **100 x 071**
			80	SZ6137 **100 x 080**
			100	SZ6137 **100 x 100**
10.5	13.0	3.17	71	SZ6137 **105 x 071**
			80	SZ6137 **105 x 080**
			100	SZ6137 **105 x 100**
11.0	13.0	2.73	71	SZ6137 **110 x 071**
			80	SZ6137 **110 x 080**
			100	SZ6137 **110 x 100**
11.5	14.0	3.17	71	SZ6137 **115 x 071**
			80	SZ6137 **115 x 080**
			100	SZ6137 **115 x 100**
12.0	14.0	2.73	71	SZ6137 **120 x 071**
			80	SZ6137 **120 x 080**
			100	SZ6137 **120 x 100**
12.5	15.0	3.17	71	SZ6137 **125 x 071**
			80	SZ6137 **125 x 080**
			100	SZ6137 **125 x 100**

SZ6137 Cutting punch

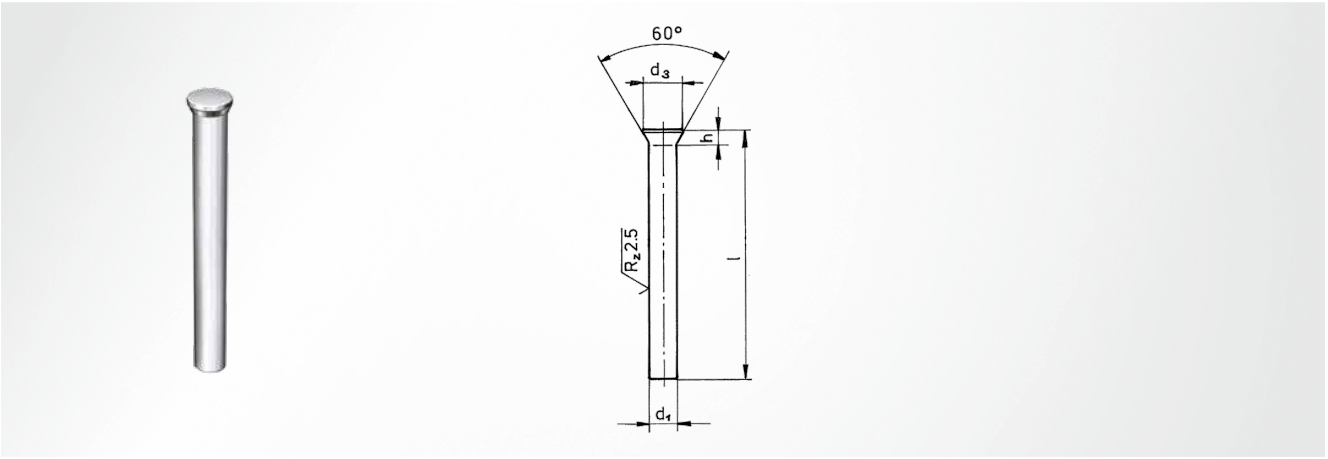
with 60° head

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
13.0	15.0	2.73	71	SZ6137 **130 x 071**
			80	SZ6137 **130 x 080**
			100	SZ6137 **130 x 100**
13.5	16.0	3.67	71	SZ6137 **135 x 071**
			80	SZ6137 **135 x 080**
			100	SZ6137 **135 x 100**
14.0	16.0	3.23	71	SZ6137 **140 x 071**
			80	SZ6137 **140 x 080**
			100	SZ6137 **140 x 100**
14.5	17.0	3.67	71	SZ6137 **145 x 071**
			80	SZ6137 **145 x 080**

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
14.5	17.0	3.67	100	SZ6137 **145 x 100**
15.0	17.0	3.23	71	SZ6137 **150 x 071**
			80	SZ6137 **150 x 080**
			100	SZ6137 **150 x 100**
15.5	18.0	3.67	71	SZ6137 **155 x 071**
			80	SZ6137 **155 x 080**
			100	SZ6137 **155 x 100**
16.0	18.0	3.23	71	SZ6137 **160 x 071**
			80	SZ6137 **160 x 080**
			100	SZ6137 **160 x 100**

SZ6139 Cutting punch

with 60° head



Referring to DIN 9861 / ISO 6752

Shape
D

Material
HSS

Head hardness
50 ±5 HRC

Shank hardness
64 ±2 HRC

Note
deliverable with PVD coating upon request

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
0.5	0.9	0.55	71	SZ6139 **005 x 071**
			80	SZ6139 **005 x 080**
0.6	1.1	0.63	71	SZ6139 **006 x 071**
			80	SZ6139 **006 x 080**
0.7	1.3	0.72	71	SZ6139 **007 x 071**
			80	SZ6139 **007 x 080**
0.8	1.4	0.92	71	SZ6139 **008 x 071**
			80	SZ6139 **008 x 080**
0.9	1.6	1.01	71	SZ6139 **009 x 071**
			80	SZ6139 **009 x 080**
1.0	1.8	1.19	71	SZ6139 **010 x 071**
			80	SZ6139 **010 x 080**
1.1	1.8	1.11	71	SZ6139 **011 x 071**
			80	SZ6139 **011 x 080**
1.2	2.0	1.19	71	SZ6139 **012 x 071**
			80	SZ6139 **012 x 080**
1.3	2.0	1.11	71	SZ6139 **013 x 071**
			80	SZ6139 **013 x 080**
1.4	2.2	1.19	71	SZ6139 **014 x 071**
			80	SZ6139 **014 x 080**
1.5	2.2	1.11	71	SZ6139 **015 x 071**
			80	SZ6139 **015 x 080**
1.6	2.5	1.28	71	SZ6139 **016 x 071**
			80	SZ6139 **016 x 080**
1.7	2.5	1.19	71	SZ6139 **017 x 071**
			80	SZ6139 **017 x 080**
1.8	2.8	1.37	71	SZ6139 **018 x 071**
			80	SZ6139 **018 x 080**
1.9	2.8	1.28	71	SZ6139 **019 x 071**
			80	SZ6139 **019 x 080**
2.0	3.0	1.37	71	SZ6139 **020 x 071**
			80	SZ6139 **020 x 080**
2.1	3.2	1.45	71	SZ6139 **021 x 071**
			80	SZ6139 **021 x 080**

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
2.2	3.2	1.37	71	SZ6139 **022 x 071**
			80	SZ6139 **022 x 080**
2.3-2.5	3.5	1.37	71	SZ6139 **023 - 025 x 071**
			80	SZ6139 **023 - 025 x 080**
2.6-2.9	4.0	1.54	71	SZ6139 **026 - 029 x 071**
			80	SZ6139 **026 - 029 x 080**
3.0-3.4	4.5	1.54	71	SZ6139 **030 - 034 x 071**
			80	SZ6139 **030 - 034 x 080**
			100	SZ6139 **030 - 034 x 100**
3.5-3.9	5.0	1.54	71	SZ6139 **035 - 039 x 071**
			80	SZ6139 **035 - 039 x 080**
			100	SZ6139 **035 - 039 x 100**
4.0-4.4	5.5	1.63	71	SZ6139 **040 - 044 x 071**
			80	SZ6139 **040 - 044 x 080**
			100	SZ6139 **040 - 044 x 100**
4.5-4.9	6.0	1.63	71	SZ6139 **045 - 049 x 071**
			80	SZ6139 **045 - 049 x 080**
			100	SZ6139 **045 - 049 x 100**
5.0-5.4	6.5	1.63	71	SZ6139 **050 - 054 x 071**
			80	SZ6139 **050 - 054 x 080**
			100	SZ6139 **050 - 054 x 100**
5.5-5.9	7.0	1.71	71	SZ6139 **055 - 059 x 071**
			80	SZ6139 **055 - 059 x 080**
			100	SZ6139 **055 - 059 x 100**
6.0-6.4	8.0	2.06	71	SZ6139 **060 - 064 x 071**
			80	SZ6139 **060 - 064 x 080**
			100	SZ6139 **060 - 064 x 100**
6.5-6.9	9.0	3.17	71	SZ6139 **065 - 069 x 071**
			80	SZ6139 **065 - 069 x 080**
			100	SZ6139 **065 - 069 x 100**
7.0-7.4	9.0	2.73	71	SZ6139 **070 - 074 x 071**
			80	SZ6139 **070 - 074 x 080**
			100	SZ6139 **070 - 074 x 100**
7.5-7.9	10.0	3.17	71	SZ6139 **075 - 079 x 071**

SZ6139 Cutting punch

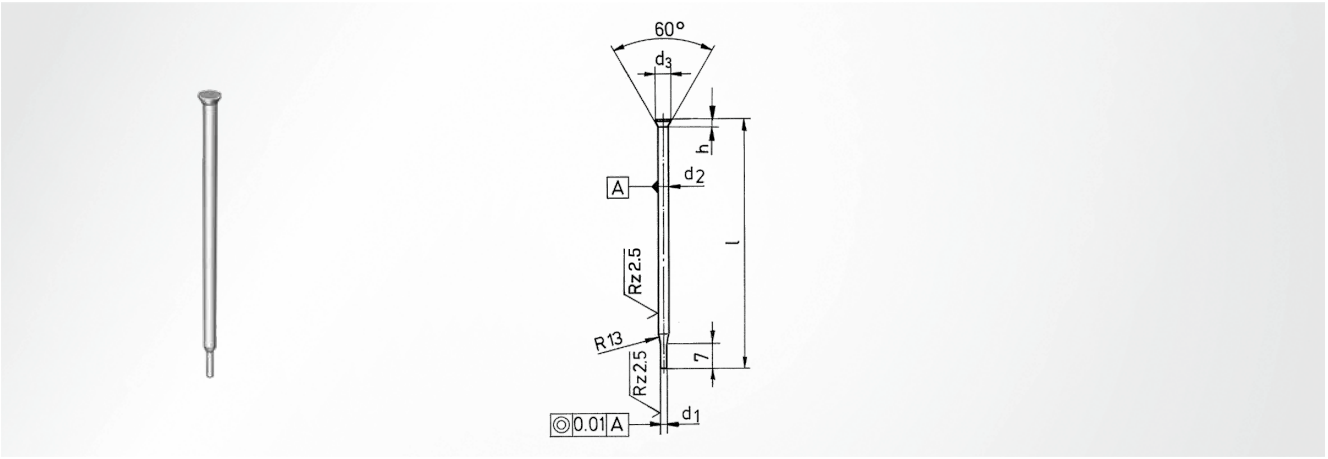
with 60° head

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
7.5-7.9	10.0	3.17	80	SZ6139 **075 - 079 x 080**
			100	SZ6139 **075 - 079 x 100**
8.0-8.4	10.0	2.73	71	SZ6139 **080 - 084 x 071**
			80	SZ6139 **080 - 084 x 080**
			100	SZ6139 **080 - 084 x 100**
8.5-8.9	11.0	3.17	71	SZ6139 **085 - 089 x 071**
			80	SZ6139 **085 - 089 x 080**
			100	SZ6139 **085 - 089 x 100**
9.0-9.4	11.0	2.73	71	SZ6139 **090 - 094 x 071**
			80	SZ6139 **090 - 094 x 080**
			100	SZ6139 **090 - 094 x 100**
9.5-9.9	12.0	3.17	71	SZ6139 **095 - 099 x 071**
			80	SZ6139 **095 - 099 x 080**
			100	SZ6139 **095 - 099 x 100**
10.0	12.0	2.73	71	SZ6139 **100 x 071**
			80	SZ6139 **100 x 080**
			100	SZ6139 **100 x 100**
10.5	13.0	3.17	71	SZ6139 **105 x 071**
			80	SZ6139 **105 x 080**
			100	SZ6139 **105 x 100**
11.0	13.0	2.73	71	SZ6139 **110 x 071**
			80	SZ6139 **110 x 080**
			100	SZ6139 **110 x 100**
11.5	14.0	3.17	71	SZ6139 **115 x 071**
			80	SZ6139 **115 x 080**
			100	SZ6139 **115 x 100**
12.0	14.0	2.73	71	SZ6139 **120 x 071**

d_1^{h6}	d_3	$h^{+0.2}$	$l^{+0.5}$	Item number
12.0	14.0	2.73	80	SZ6139 **120 x 080**
			100	SZ6139 **120 x 100**
12.5	15.0	3.17	71	SZ6139 **125 x 071**
			80	SZ6139 **125 x 080**
			100	SZ6139 **125 x 100**
13.0	15.0	2.73	71	SZ6139 **130 x 071**
			80	SZ6139 **130 x 080**
			100	SZ6139 **130 x 100**
13.5	16.0	3.67	71	SZ6139 **135 x 071**
			80	SZ6139 **135 x 080**
			100	SZ6139 **135 x 100**
14.0	16.0	3.23	71	SZ6139 **140 x 071**
			80	SZ6139 **140 x 080**
			100	SZ6139 **140 x 100**
14.5	17.0	3.67	71	SZ6139 **145 x 071**
			80	SZ6139 **145 x 080**
			100	SZ6139 **145 x 100**
15.0	17.0	3.23	71	SZ6139 **150 x 071**
			80	SZ6139 **150 x 080**
			100	SZ6139 **150 x 100**
15.5	18.0	3.67	71	SZ6139 **155 x 071**
			80	SZ6139 **155 x 080**
			100	SZ6139 **155 x 100**
16.0	18.0	3.23	71	SZ6139 **160 x 071**
			80	SZ6139 **160 x 080**
			100	SZ6139 **160 x 100**

SZ6129 Cutting punch

with 60° head, reduced



DIN 9861 / ISO 9181

Shape
C

Material
HSS

Head hardness
50 ±5 HRC

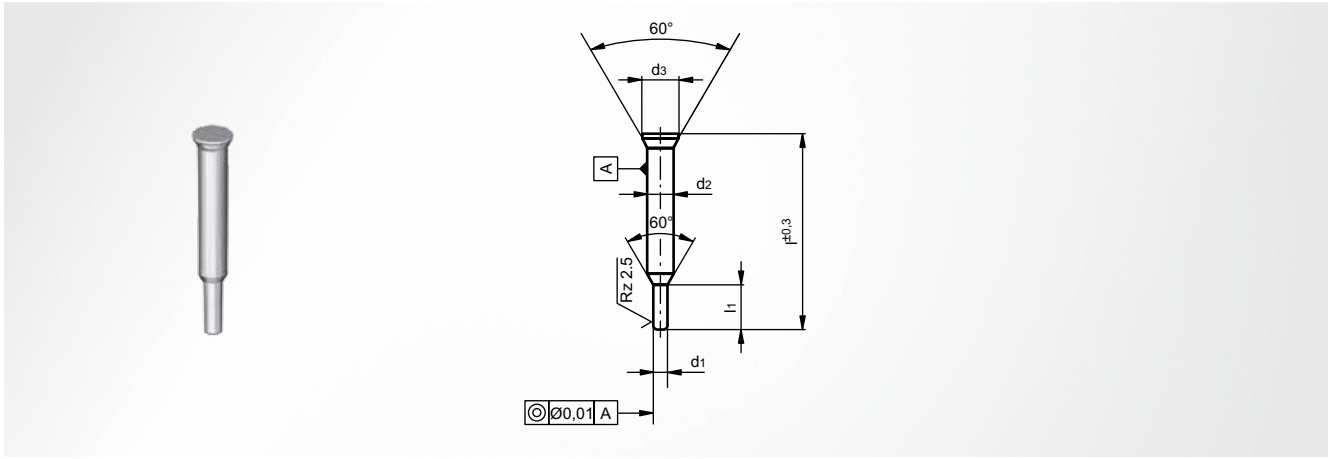
Shank hardness
64 ±2 HRC

Note
deliverable with PVD coating upon request

d_1^{h6}	d_2^{h6}	d_3	$h^{+0.2}$	Grading	$l^{+0.5}$	Item number
0.5-1.5	2	3.0	1.37	0.1	71	SZ6129 **005 - 015 x 71**
					80	SZ6129 **005 - 015 x 80**
1.6-2.9	3	4.5	1.80	0.1	71	SZ6129 **016 - 029 x 71**
					80	SZ6129 **016 - 029 x 80**

SZ6121 Cutting punch

with 60° head, reduced



Material
HWS

Shank hardness
62 ±2 HRC

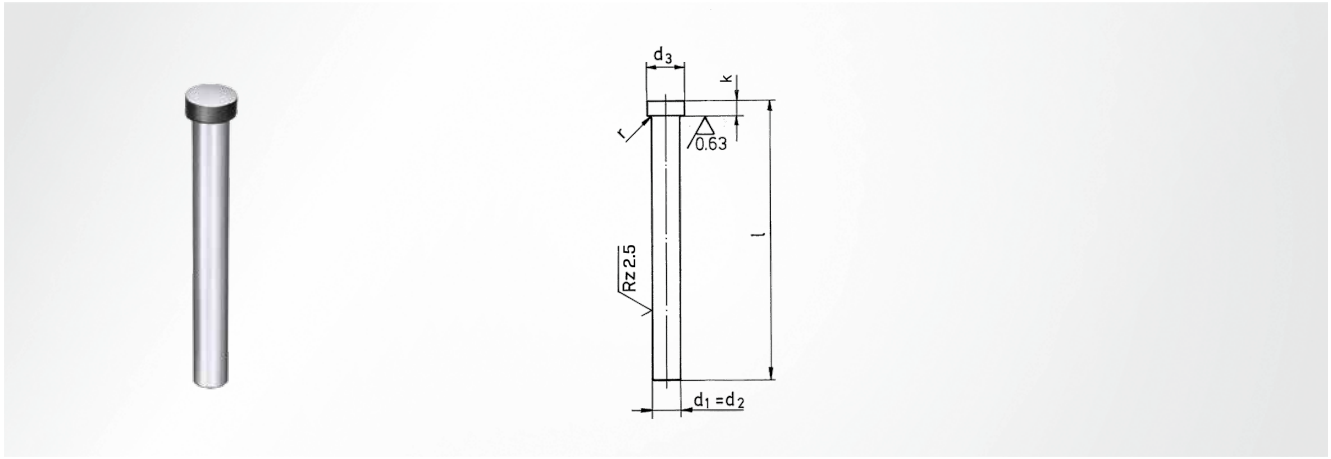
Head hardness
52 ±3 HRC

Note
deliverable with PVD coating upon request

d_2^{h6}	d_3	$l^{\pm 0.3}$	l_1	d_1^{h6}	Item number
4	5.5	30	7	2.0	SZ6121 **020 x 30**
				2.1	SZ6121 **021 x 30**
				2.2	SZ6121 **022 x 30**
				2.3	SZ6121 **023 x 30**
				2.4	SZ6121 **024 x 30**
				2.5	SZ6121 **025 x 30**
				2.6	SZ6121 **026 x 30**
				2.7	SZ6121 **027 x 30**
				2.8	SZ6121 **028 x 30**
				2.9	SZ6121 **029 x 30**
				3.0	SZ6121 **030 x 30**
				3.1	SZ6121 **031 x 30**
				3.2	SZ6121 **032 x 30**
				3.3	SZ6121 **033 x 30**
				3.4	SZ6121 **034 x 30**
				3.5	SZ6121 **035 x 30**
				3.6	SZ6121 **036 x 30**
				3.7	SZ6121 **037 x 30**
				3.8	SZ6121 **038 x 30**
				3.9	SZ6121 **039 x 30**
				4.0	SZ6121 **040 x 30**

SZ5600 Cutting punch

with cylindrical head



ISO 8020

Shape
A

Material
HSS

Head hardness
50 ±5 HRC

Shank hardness
64 ±2 HRC

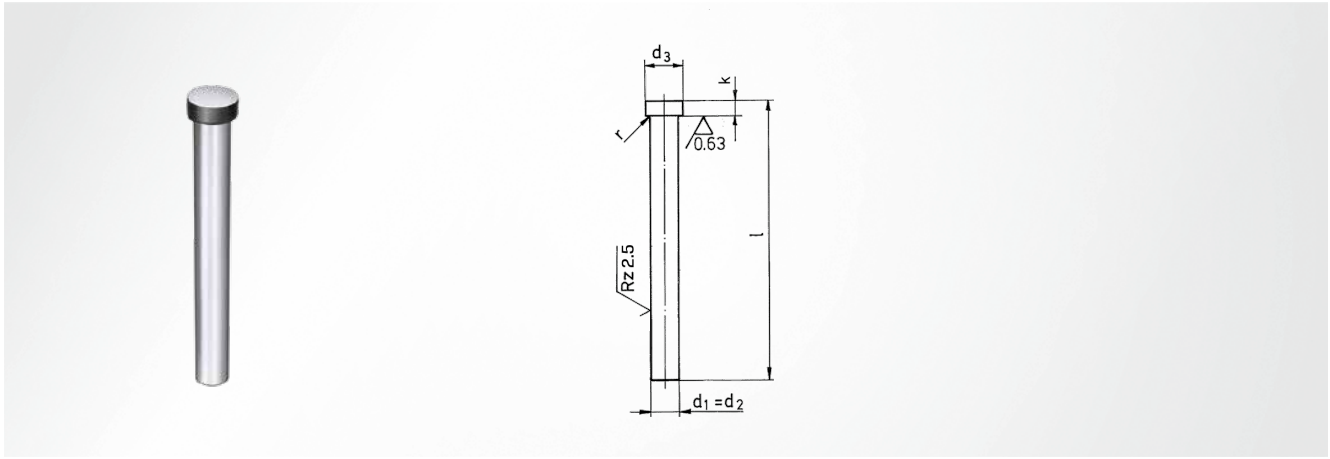
Note
deliverable with PVD coating upon request

d_1 m5	d_3	$k^{+0.1 - +0.2}$	r 0 - +0.1	$l^{+0.5}$	Item number
3	5	3	0.2	63	SZ5600 **030 x 063**
				71	SZ5600 **030 x 071**
				80	SZ5600 **030 x 080**
4	6	3	0.2	63	SZ5600 **040 x 063**
				71	SZ5600 **040 x 071**
				80	SZ5600 **040 x 080**
5	8	5	0.3	63	SZ5600 **050 x 063**
				71	SZ5600 **050 x 071**
				80	SZ5600 **050 x 080**
				90	SZ5600 **050 x 090**
6	9	5	0.3	63	SZ5600 **060 x 063**
				71	SZ5600 **060 x 071**
				80	SZ5600 **060 x 080**
				90	SZ5600 **060 x 090**
				100	SZ5600 **060 x 100**
8	11	5	0.3	63	SZ5600 **080 x 063**
				71	SZ5600 **080 x 071**
				80	SZ5600 **080 x 080**
				90	SZ5600 **080 x 090**
				100	SZ5600 **080 x 100**

d_1 m5	d_3	$k^{+0.1 - +0.2}$	r 0 - +0.1	$l^{+0.5}$	Item number
10	13	5	0.3	63	SZ5600 **100 x 063**
				71	SZ5600 **100 x 071**
				80	SZ5600 **100 x 080**
				90	SZ5600 **100 x 090**
				100	SZ5600 **100 x 100**
13	16	5	0.4	71	SZ5600 **130 x 071**
				80	SZ5600 **130 x 080**
				90	SZ5600 **130 x 090**
				100	SZ5600 **130 x 100**
16	19	5	0.4	71	SZ5600 **160 x 071**
				80	SZ5600 **160 x 080**
				90	SZ5600 **160 x 090**
				100	SZ5600 **160 x 100**
20	23	5	0.4	80	SZ5600 **200 x 080**
				90	SZ5600 **200 x 090**
				100	SZ5600 **200 x 100**
25	28	5	0.4	80	SZ5600 **250 x 080**
				90	SZ5600 **250 x 090**
				100	SZ5600 **250 x 100**

SZ5700 Cutting punch

with cylindrical head



ISO 8020

Shape
A

Material
PM

Head hardness
50 ±5 HRC

Shank hardness
64 ±2 HRC

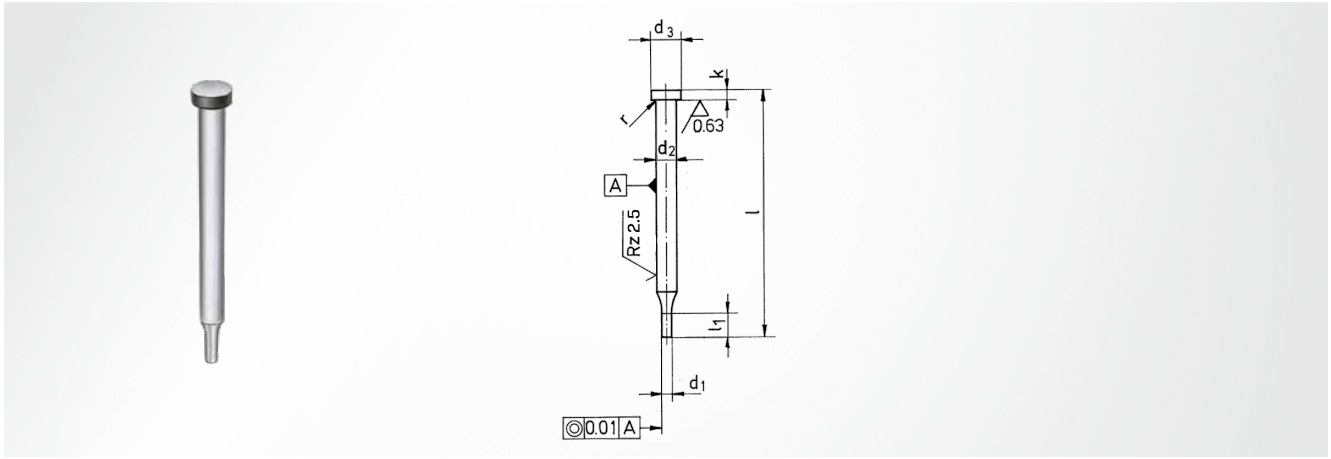
Note
deliverable with PVD coating upon request

d_1^{m5}	d_3	$k^{+0.1 - +0.2}$	$r^{0 - +0.1}$	$l^{+0.5}$	Item number
3	5	3	0.2	63	SZ5700 **030 x 063**
				71	SZ5700 **030 x 071**
				80	SZ5700 **030 x 080**
4	6	3	0.2	63	SZ5700 **040 x 063**
				71	SZ5700 **040 x 071**
				80	SZ5700 **040 x 080**
5	8	5	0.3	63	SZ5700 **050 x 063**
				71	SZ5700 **050 x 071**
				80	SZ5700 **050 x 080**
				90	SZ5700 **050 x 090**
6	9	5	0.3	63	SZ5700 **060 x 063**
				71	SZ5700 **060 x 071**
				80	SZ5700 **060 x 080**
				90	SZ5700 **060 x 090**
				100	SZ5700 **060 x 100**
8	11	5	0.3	63	SZ5700 **080 x 063**
				71	SZ5700 **080 x 071**
				80	SZ5700 **080 x 080**

d_1^{m5}	d_3	$k^{+0.1 - +0.2}$	$r^{0 - +0.1}$	$l^{+0.5}$	Item number
8	11	5	0.3	90	SZ5700 **080 x 090**
				100	SZ5700 **080 x 100**
10	13	5	0.3	63	SZ5700 **100 x 063**
				71	SZ5700 **100 x 071**
				80	SZ5700 **100 x 080**
				90	SZ5700 **100 x 090**
				100	SZ5700 **100 x 100**
13	16	5	0.4	71	SZ5700 **130 x 071**
				80	SZ5700 **130 x 080**
				90	SZ5700 **130 x 090**
				100	SZ5700 **130 x 100**
16	19	5	0.4	71	SZ5700 **160 x 071**
				80	SZ5700 **160 x 080**
				90	SZ5700 **160 x 090**
				100	SZ5700 **160 x 100**
20	23	5	0.4	80	SZ5700 **200 x 080**
				90	SZ5700 **200 x 090**
				100	SZ5700 **200 x 100**

SZ56xx Cutting punch

with cylindrical head, reduced



ISO 8020

Shape
B

Material
HSS

Head hardness
50 ±5 HRC

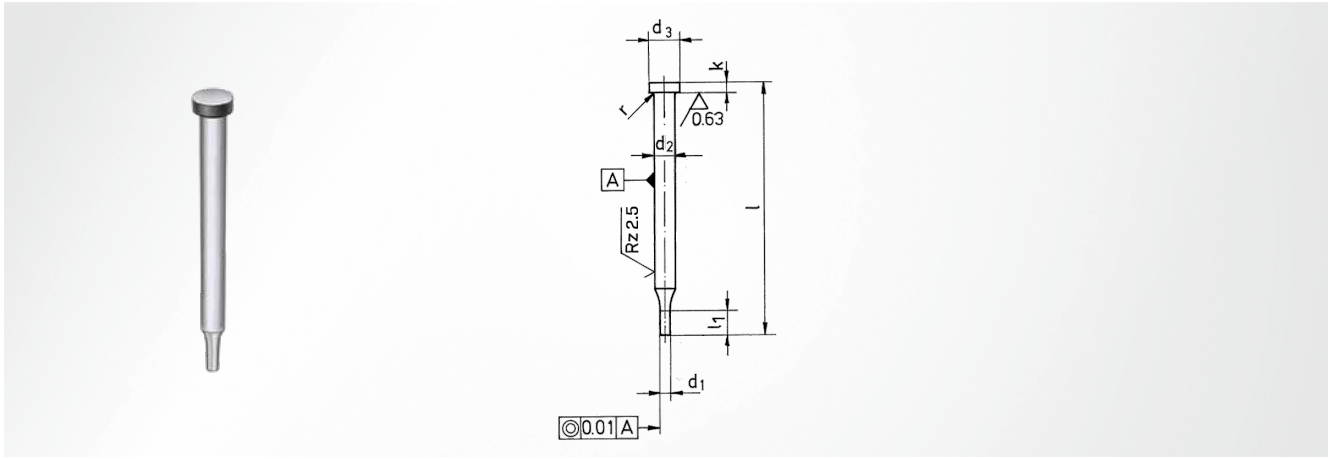
Shank hardness
64 ±2 HRC

Note
deliverable with PVD coating upon request

d_1^{j6}	d_2^{m5}	d_3	$k^{+0.1 - +0.2}$	$l_1^{+0.5}$	$r^{0 - +0.1}$	Grading	$l^{+0.5}$	Item number
1.0-2.5	3	5	3	10	0.2	0.1	71	SZ5613 **010 - 025 x 071**
							80	SZ5613 **010 - 025 x 080**
1.0-3.5	4	6	3	10	0.2	0.1	71	SZ5614 **010 - 035 x 071**
							80	SZ5614 **010 - 035 x 080**
2.0-4.5	5	8	5	10	0.3	0.1	71	SZ5615 **020 - 045 x 071**
							80	SZ5615 **020 - 045 x 080**
2.5-5.5	6	9	5	10	0.3	0.1	71	SZ5616 **025 - 055 x 071**
							80	SZ5616 **025 - 055 x 080**
							90	SZ5616 **025 - 055 x 090**
							100	SZ5616 **025 - 055 x 100**
3.0-7.5	8	11	5	13	0.3	0.1	71	SZ5628 **030 - 075 x 071**
							80	SZ5628 **030 - 075 x 080**
							90	SZ5628 **030 - 075 x 090**
							100	SZ5628 **030 - 075 x 100**
5.0-9.5	10	13	5	17	0.4	0.1	71	SZ5640 **050 - 095 x 071**
							80	SZ5640 **050 - 095 x 080**
							90	SZ5640 **050 - 095 x 090**
							100	SZ5640 **050 - 095 x 100**
7.5-12.5	13	16	5	17	0.4	0.1	71	SZ5643 **075 - 125 x 071**
							80	SZ5643 **075 - 125 x 080**
							90	SZ5643 **075 - 125 x 090**
							100	SZ5643 **075 - 125 x 100**
10.0-15.5	16	19	5	17	0.4	0.1	80	SZ5646 **100 - 155 x 080**
							90	SZ5646 **100 - 155 x 090**
							100	SZ5646 **100 - 155 x 100**
15.0-19.5	20	23	5	17	0.4	0.5	80	SZ5650 **150 - 195 x 080**
							90	SZ5650 **150 - 195 x 090**
							100	SZ5650 **150 - 195 x 100**
20.0-24.5	25	28	5	17	0.4	0.5	80	SZ5655 **200 - 245 x 080**
							90	SZ5655 **200 - 245 x 090**
							100	SZ5655 **200 - 245 x 100**

SZ57xx Cutting punch

with cylindrical head, reduced



ISO 8020

Shape
B

Material
PM

Head hardness
50 ±5 HRC

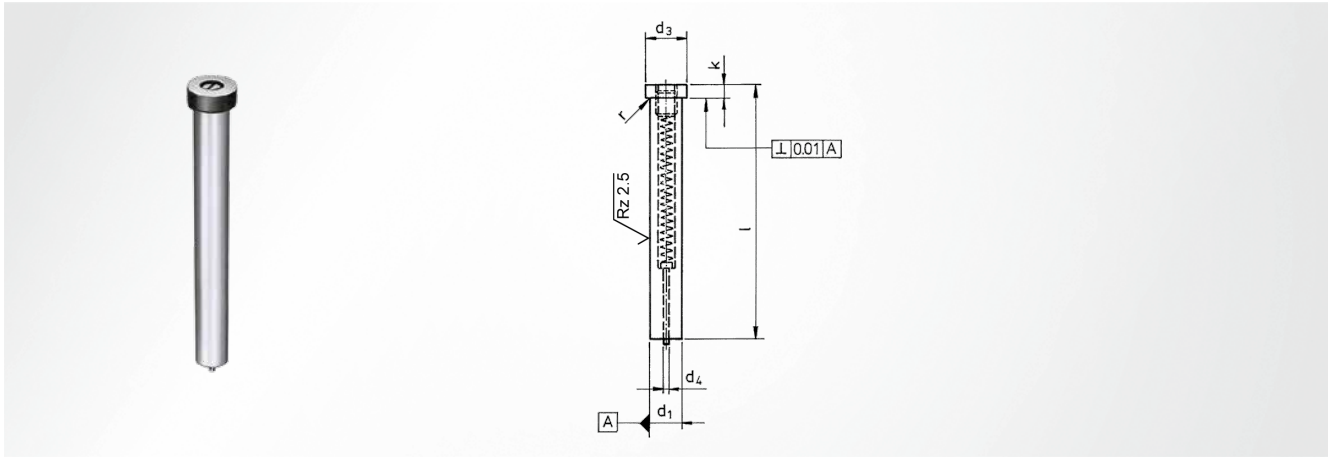
Shank hardness
64 ±2 HRC

Note
deliverable with PVD coating upon request

d_1^{j6}	d_2^{m5}	d_3	$k^{+0.1 - +0.2}$	$l_1^{+0.5}$	$r^{0 - +0.1}$	Grading	$l^{+0.5}$	Item number
1.0-2.5	3	5	3	10	0.2	0.1	71	SZ5713 **010 - 025 x 071**
							80	SZ5713 **010 - 025 x 080**
1.0-3.5	4	6	3	10	0.2	0.1	71	SZ5714 **010 - 035 x 071**
							80	SZ5714 **010 - 035 x 080**
2.0-4.5	5	8	5	10	0.3	0.1	71	SZ5715 **020 - 045 x 071**
							80	SZ5715 **020 - 045 x 080**
2.5-5.5	6	9	5	10	0.3	0.1	71	SZ5716 **025 - 055 x 071**
							80	SZ5716 **025 - 055 x 080**
							90	SZ5716 **025 - 055 x 090**
							100	SZ5716 **025 - 055 x 100**
3.0-7.5	8	11	5	13	0.3	0.1	71	SZ5728 **030 - 075 x 071**
							80	SZ5728 **030 - 075 x 080**
							90	SZ5728 **030 - 075 x 090**
							100	SZ5728 **030 - 075 x 100**
5.0-9.5	10	13	5	17	0.4	0.1	71	SZ5740 **050 - 095 x 071**
							80	SZ5740 **050 - 095 x 080**
							90	SZ5740 **050 - 095 x 090**
							100	SZ5740 **050 - 095 x 100**
7.5-12.5	13	16	5	17	0.4	0.1	71	SZ5743 **075 - 125 x 071**
							80	SZ5743 **075 - 125 x 080**
							90	SZ5743 **075 - 125 x 090**
							100	SZ5743 **075 - 125 x 100**
10.0-15.5	16	19	5	17	0.4	0.1	80	SZ5746 **100 - 155 x 080**
							90	SZ5746 **100 - 155 x 090**
							100	SZ5746 **100 - 155 x 100**
15.0-19.5	20	23	5	17	0.4	0.5	80	SZ5750 **150 - 195 x 080**
							90	SZ5750 **150 - 195 x 090**
							100	SZ5750 **150 - 195 x 100**
20.0-24.5	25	28	5	17	0.4	0.5	80	SZ5755 **200 - 245 x 080**
							90	SZ5755 **200 - 245 x 090**
							100	SZ5755 **200 - 245 x 100**

SZ5900 Cutting punch

with cylindrical head, with lift-off pin



ISO 8020

Shape
E

Material
HSS

Head hardness
50 ±5 HRC

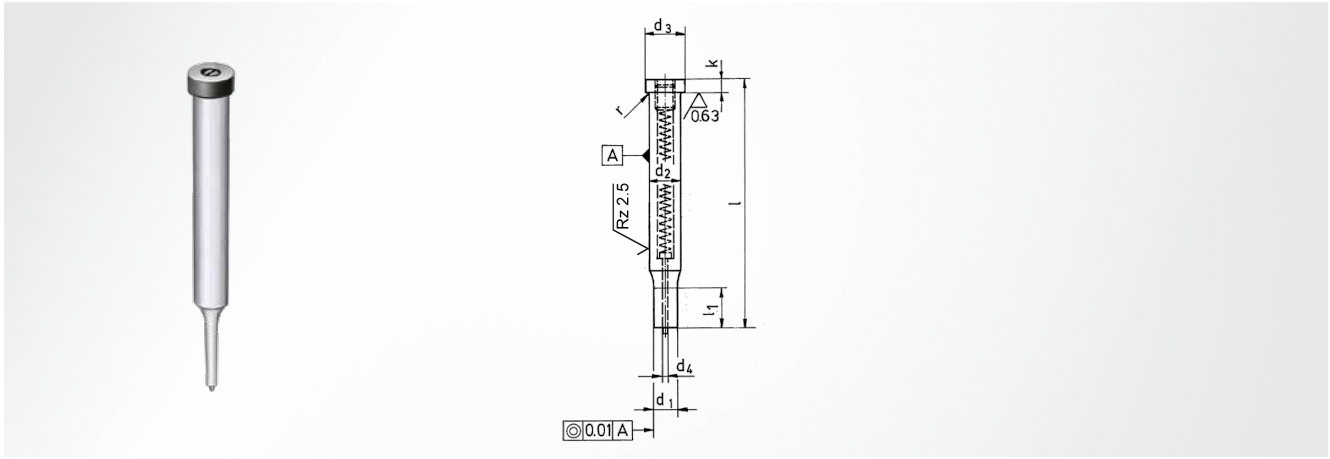
Shank hardness
64 ±2 HRC

Note
deliverable with PVD coating upon request

d_1^{m5}	d_3	d_4	$k^{+0.1 - +0.2}$	$r^{0 - +0.1}$	$l^{+0.5}$	Item number
6	9	0.8	5	0.3	71	SZ5900 **060 x 071**
					80	SZ5900 **060 x 080**
					90	SZ5900 **060 x 090**
					100	SZ5900 **060 x 100**
8	11	1.2	5	0.3	71	SZ5900 **080 x 071**
					80	SZ5900 **080 x 080**
					90	SZ5900 **080 x 090**
					100	SZ5900 **080 x 100**
10	13	1.5	5	0.3	71	SZ5900 **100 x 071**
					80	SZ5900 **100 x 080**
					90	SZ5900 **100 x 090**
					100	SZ5900 **100 x 100**
13	16	1.5	5	0.4	71	SZ5900 **130 x 071**
					80	SZ5900 **130 x 080**
					90	SZ5900 **130 x 090**
					100	SZ5900 **130 x 100**
16	19	2.0	5	0.4	71	SZ5900 **160 x 071**
					80	SZ5900 **160 x 080**
					90	SZ5900 **160 x 090**
					100	SZ5900 **160 x 100**
20	24	2.5	5	0.4	80	SZ5900 **200 x 080**
					90	SZ5900 **200 x 090**
					100	SZ5900 **200 x 100**
25	29	2.5	5	0.4	80	SZ5900 **250 x 080**
					90	SZ5900 **250 x 090**
					100	SZ5900 **250 x 100**

SZ59xx Cutting punch

with cylindrical head, reduced, with lift-off pin



ISO 8020

Shape
F

Material
HSS

Head hardness
50 ±5 HRC

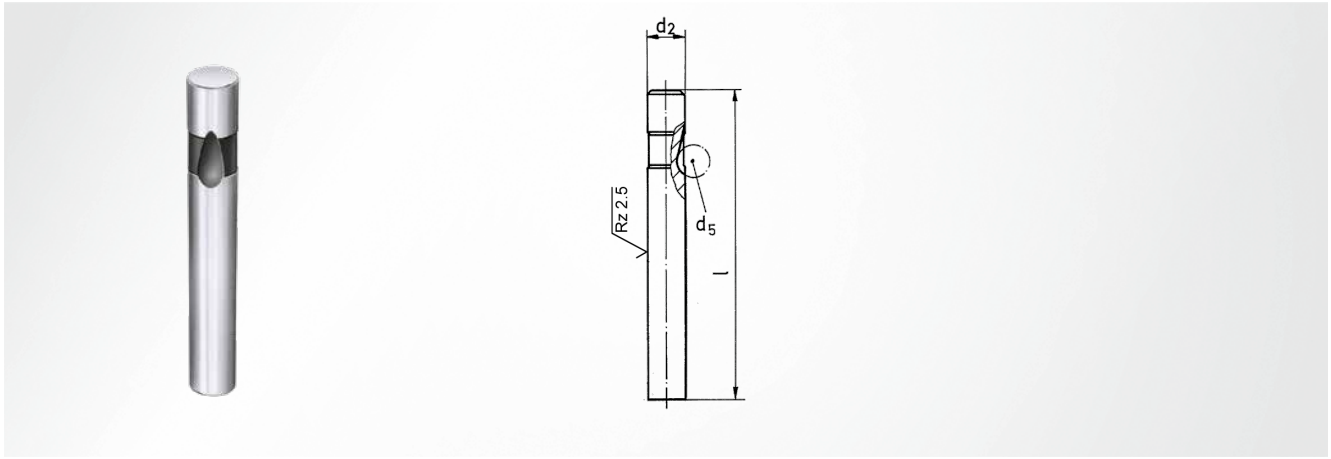
Shank hardness
64 ±2 HRC

Note
deliverable with PVD coating upon request

d_1^{j6}	d_2^{m5}	d_3	d_4	$k^{+0.1 - +0.2}$	$l_1^{+0.5}$	$r^{0 - +0.1}$	Grading	$l^{+0.5}$	Item number
1.6-5.9	6	9	0.8	5	10	0.3	0.1	71	SZ5906 **016 - 059 x 071**
								80	SZ5906 **016 - 059 x 080**
								90	SZ5906 **016 - 059 x 090**
								100	SZ5906 **016 - 059 x 100**
2.5-7.9	8	11	1.2	5	13	0.3	0.1	71	SZ5908 **025 - 079 x 071**
								80	SZ5908 **025 - 079 x 080**
								90	SZ5908 **025 - 079 x 090**
								100	SZ5908 **025 - 079 x 100**
5.0-9.9	10	13	1.5	5	17	0.4	0.1	71	SZ5910 **050 - 099 x 071**
								80	SZ5910 **050 - 099 x 080**
								90	SZ5910 **050 - 099 x 090**
								100	SZ5910 **050 - 099 x 100**
6.0-12.9	13	16	1.5	5	17	0.4	0.1	71	SZ5913 **060 - 129 x 071**
								80	SZ5913 **060 - 129 x 080**
								90	SZ5913 **060 - 129 x 090**
								100	SZ5913 **060 - 129 x 100**
8.0-15.9	16	19	2.0	5	17	0.4	0.1	80	SZ5916 **080 - 159 x 080**
								90	SZ5916 **080 - 159 x 090**
								100	SZ5916 **080 - 159 x 100**
12.0-19.5	20	23	2.5	5	17	0.4	0.5	80	SZ5920 **120 - 195 x 080**
								90	SZ5920 **120 - 195 x 090**
								100	SZ5920 **120 - 195 x 100**
16.5-24.5	25	28	2.5	5	17	0.4	0.5	80	SZ5925 **165 - 245 x 080**
								90	SZ5925 **165 - 245 x 090**
								100	SZ5925 **165 - 245 x 100**

SZ6700 Cutting punch

with quick-change mounting



DIN ISO 10071

Material
HWS

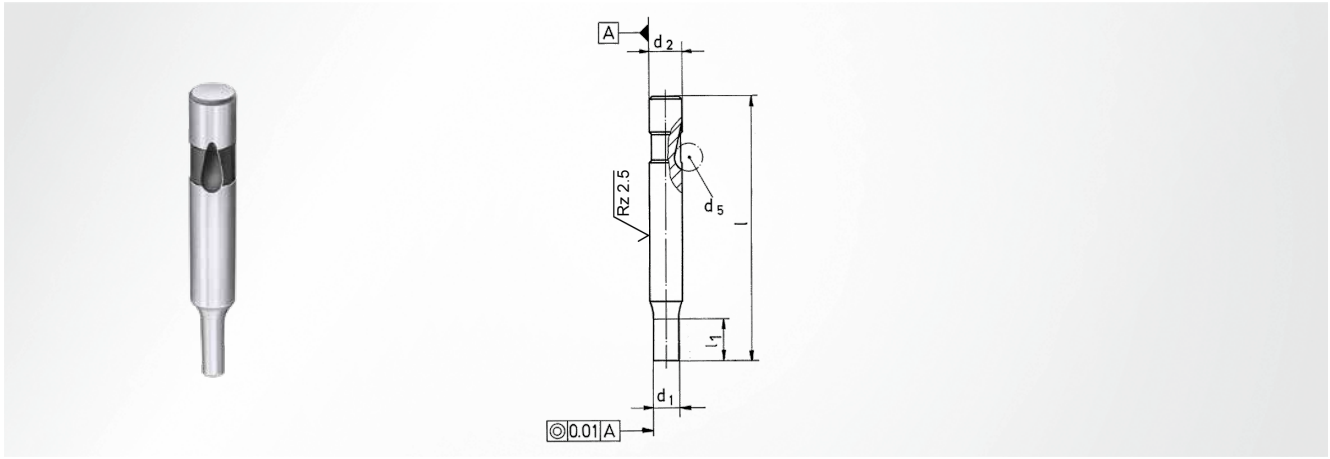
Shank hardness
62 ±2 HRC

Note
deliverable with PVD coating upon request

d_2^{g5}	d_5	$l^{+0.5}$	Item number
6	6	63	SZ6700 **060 x 63**
		71	SZ6700 **060 x 71**
		80	SZ6700 **060 x 80**
10	8	63	SZ6700 **100 x 63**
		71	SZ6700 **100 x 71**
		80	SZ6700 **100 x 80**
13	8	63	SZ6700 **130 x 63**
		71	SZ6700 **130 x 71**
		80	SZ6700 **130 x 80**
16	8	71	SZ6700 **160 x 71**
		80	SZ6700 **160 x 80**
20	8	80	SZ6700 **200 x 80**
25	8	80	SZ6700 **250 x 80**

SZ67xx Cutting punch

with quick-change mounting, reduced



DIN ISO 10071

Material
HWS

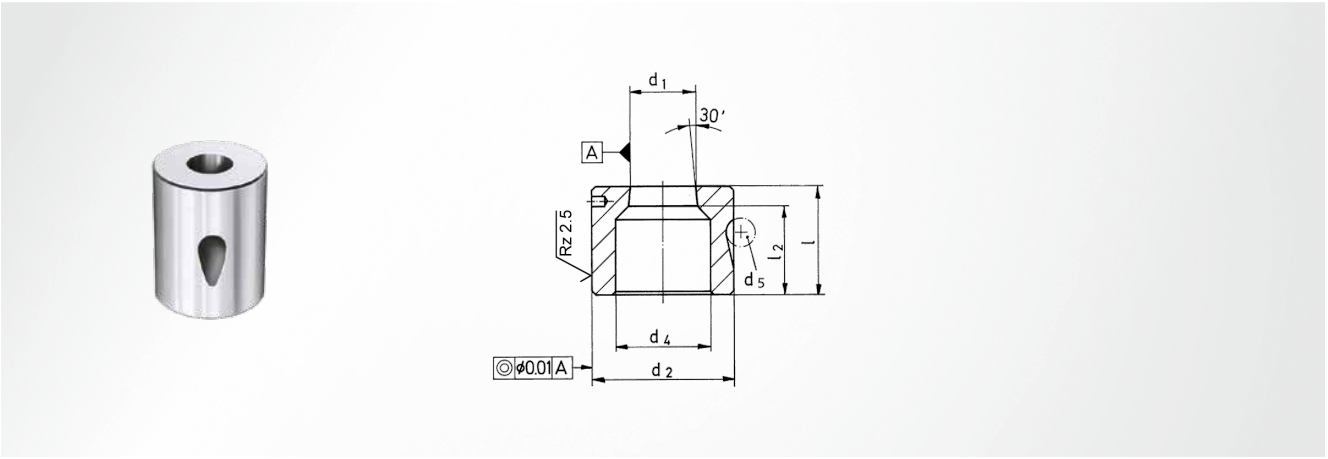
Shank hardness
62 ±2 HRC

Note
deliverable with PVD coating upon request

d_1^{j6}	d_2^{g5}	d_5	l_1	Grading	$l^{+0.5}$	Item number
2.5-4.5	6	6	13	0.1	63	SZ6706 **025 - 045 x 63**
					71	SZ6706 **025 - 045 x 71**
					80	SZ6706 **025 - 045 x 80**
5.0-5.5	6	6	13	0.1	63	SZ6706 **050 - 055 x 63**
					71	SZ6706 **050 - 055 x 71**
					80	SZ6706 **050 - 055 x 80**
5.0-5.5	10	8	13	0.1	63	SZ6710 **050 - 055 x 63**
					71	SZ6710 **050 - 055 x 71**
					80	SZ6710 **050 - 055 x 80**
6.0-6.5	10	8	13	0.1	63	SZ6710 **060 - 065 x 63**
					71	SZ6710 **060 - 065 x 71**
					80	SZ6710 **060 - 065 x 80**
7.0-7.5	10	8	13	0.1	63	SZ6710 **070 - 075 x 63**
					71	SZ6710 **070 - 075 x 71**
					80	SZ6710 **070 - 075 x 80**
8.0-8.5	10	8	13	0.1	63	SZ6710 **080 - 085 x 63**
					71	SZ6710 **080 - 085 x 71**
					80	SZ6710 **080 - 085 x 80**
6.0-6.5	13	8	13	0.1	71	SZ6713 **060 - 065 x 71**
					80	SZ6713 **060 - 065 x 80**
7.0-12.0	13	8	13	0.5	71	SZ6713 **070 - 120 x 71**
					80	SZ6713 **070 - 120 x 80**
12.0-15.5	16	8	13	0.5	80	SZ6716 **120 - 155 x 80**
16.0-19.5	20	8	13	0.5	80	SZ6720 **160 - 195 x 80**
20.0-24.5	25	8	13	0.5	80	SZ6725 **200 - 245 x 80**

SZ6210 Cutting bush

with quick-change mounting, tapered cutting bore



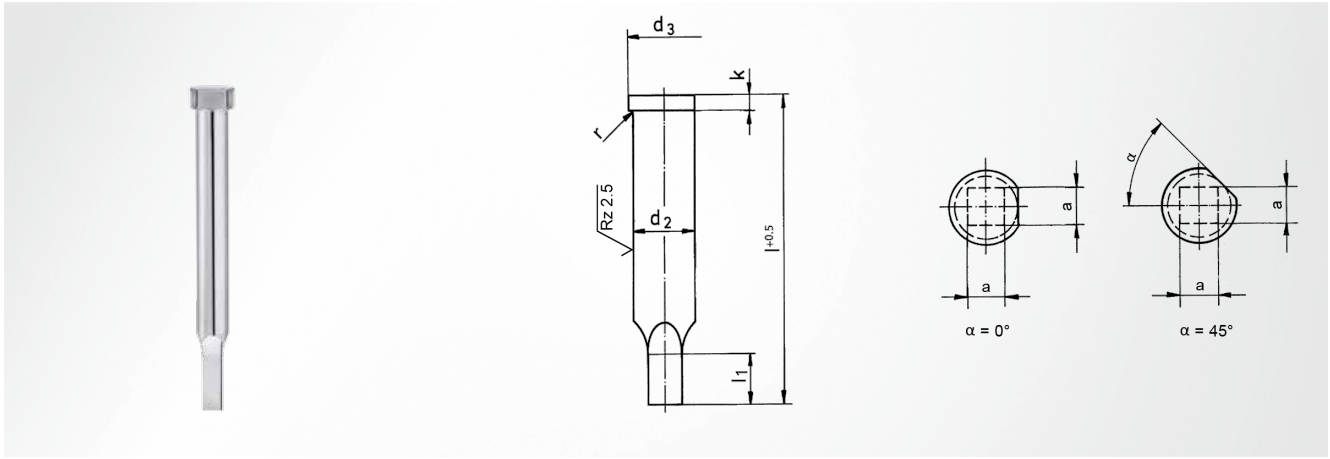
Material
HWS

Hardness
60 ±2 HRC

d_1^{H8}	d_2^{h6}	d_4	d_5	l	l_2	Grading	Item number
2.0-3.9	16	6	8	32	29	0.1	SZ6210 **020 - 039 x 32**
4.0-7.9	20	10	8	32	28	0.1	SZ6210 **040 - 079 x 32**
8.0-9.9	25	14	8	32	28	0.1	SZ6210 **080 - 099 x 32**
10.0-11.5	25	14	8	32	28	0.5	SZ6210 **100 - 115 x 32**
12.0-15.5	32	18	8	32	27	0.5	SZ6210 **120 - 155 x 32**
16.0-19.5	42	22	8	32	26	0.5	SZ6210 **160 - 195 x 32**
20.0-25.0	42	28	8	32	26	1.0	SZ6210 **200 - 250 x 32**

SZ5691 Shape-cutting punch

with cylindrical head, square, with protection against torsion



ISO 8020

Material
HSS

Head hardness
52 ±3 HRC

Shank hardness
64 ±2 HRC

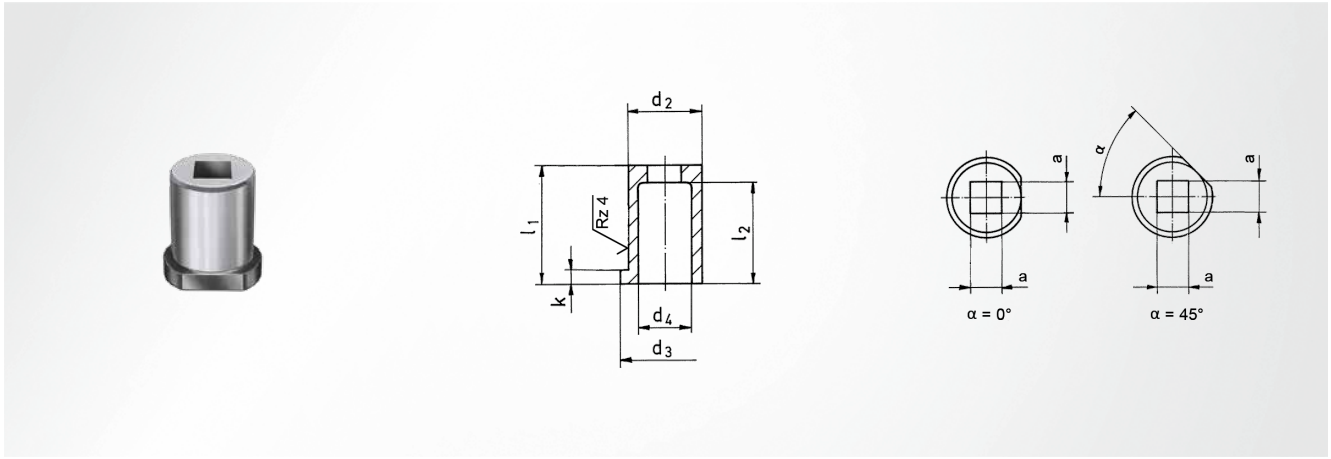
Note
diagonal dimension, however, max. d_2 -0.2 mm; free choice of size a; please specify the position of the protection against torsion α when ordering; deliverable with PVD coating upon request

a^{j6}	$d_2{}^{m5}$	d_3	$k^{+0.1 - +0.2}$	$l^{+0.5}$	l_1	$r^{0 - +0.1}$	Item number
1.6-4.1	6	9	5	80	13	0.3	SZ5691 **.06**
2.0-5.5	8	11	5	80	13	0.3	SZ5691 **.08**
2.0-6.9	10	13	5	80	13	0.3	SZ5691 **.10**

a^{j6}	$d_2{}^{m5}$	d_3	$k^{+0.1 - +0.2}$	$l^{+0.5}$	l_1	$r^{0 - +0.1}$	Item number
2.5-9.0	13	16	5	80	13	0.4	SZ5691 **.13**
3.2-11.1	16	19	5	80	13	0.4	SZ5691 **.16**
4.0-14.0	20	23	5	80	13	0.4	SZ5691 **.20**

SZ6391 Shape-cutting bush

with shoulder, square, with protection against torsion



DIN ISO 8977

Material
HSS

Hardness
62 ±2 HRC

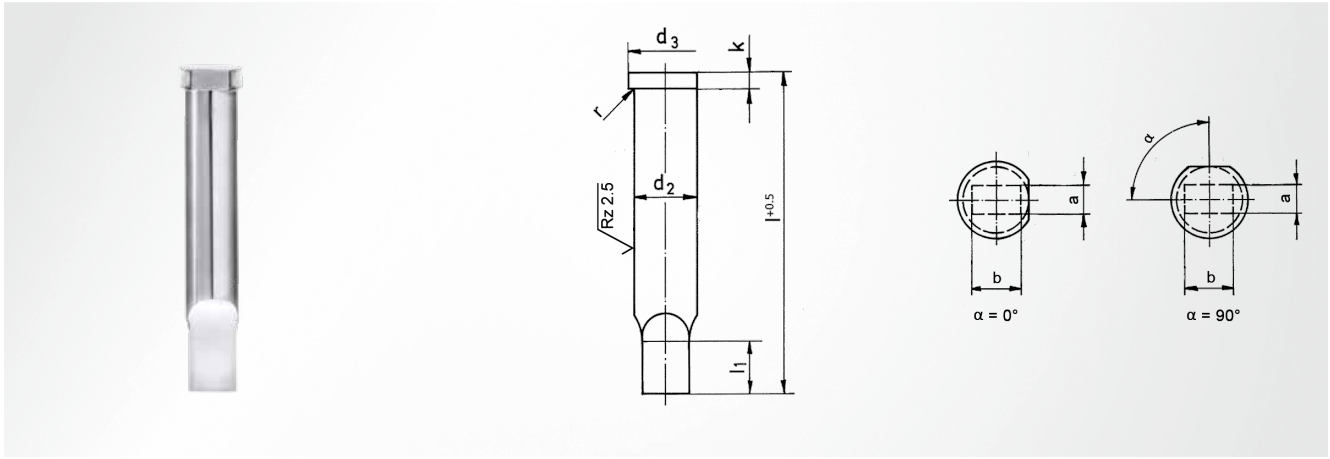
Note
Free choice of size a; diagonal dimension, however, max. d_4 -1.0 mm; please specify the position of the protection against torsion α when ordering

a^{H8}	d_2^{m5}	d_3	d_4	$k^{+0.25}$	$l_1^{+0.5}$	l_2	Item number
1.6-3.8	10	13	6.5	5	32	29	SZ6391 **.10**
2.0-5.3	13	16	8.5	5	32	28	SZ6391 **.13**
2.0-7.0	16	19	11.0	5	32	28	SZ6391 **.16**
2.5-9.1	20	24	14.0	5	32	27	SZ6391 **.20**

a^{H8}	d_2^{m5}	d_3	d_4	$k^{+0.25}$	$l_1^{+0.5}$	l_2	Item number
3.2-11.3	25	29	17.0	5	32	27	SZ6391 **.25**
4.0-14.8	32	36	22.0	5	32	26	SZ6391 **.32**
5.0-19.0	40	44	28.0	5	32	24	SZ6391 **.40**

SZ5692 Shape-cutting punch

with cylindrical head, rectangular, with protection against torsion



ISO 8020

Material
HSS

Head hardness
52 ±3 HRC

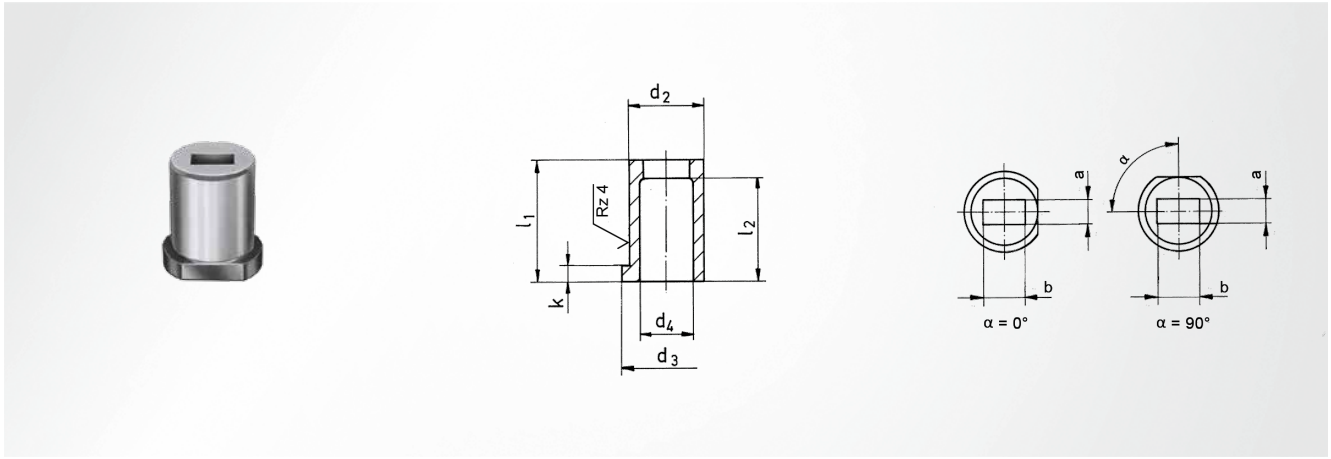
Shank hardness
64 ±2 HRC

Note
Free choice of sizes a x b; diagonal dimension, however, max. d_2 -0.2 mm; please specify the position of the protection against torsion α when ordering; deliverable with PVD coating upon request

a^{j6}	b^{j6}	$d_2{}^{m5}$	d_3	$k^{+0.1\ -\ +0.2}$	$l^{+0.5}$	l_1	$r^{\ 0\ -\ +0.1}$	Item number
1.6-5.4	2.0-5.5	6	9	5	80	13	0.3	SZ5692 **.06**
2.0-7.3	2.5-7.5	8	11	5	80	13	0.3	SZ5692 **.08**
2.0-9.3	2.5-9.5	10	13	5	80	13	0.3	SZ5692 **.10**
1.5-12.3	3.2-12.5	13	16	5	80	13	0.4	SZ5692 **.13**
3.2-15.2	4.0-15.4	16	19	5	80	13	0.4	SZ5692 **.16**
4.0-19.1	5.0-19.3	20	23	5	80	13	0.4	SZ5692 **.20**
5.0-23.9	6.3-24.2	25	28	5	80	13	0.4	SZ5692 **.25**

SZ6392 Shape-cutting bush

with shoulder, rectangular, with protection against torsion



DIN ISO 8977

Material
HSS

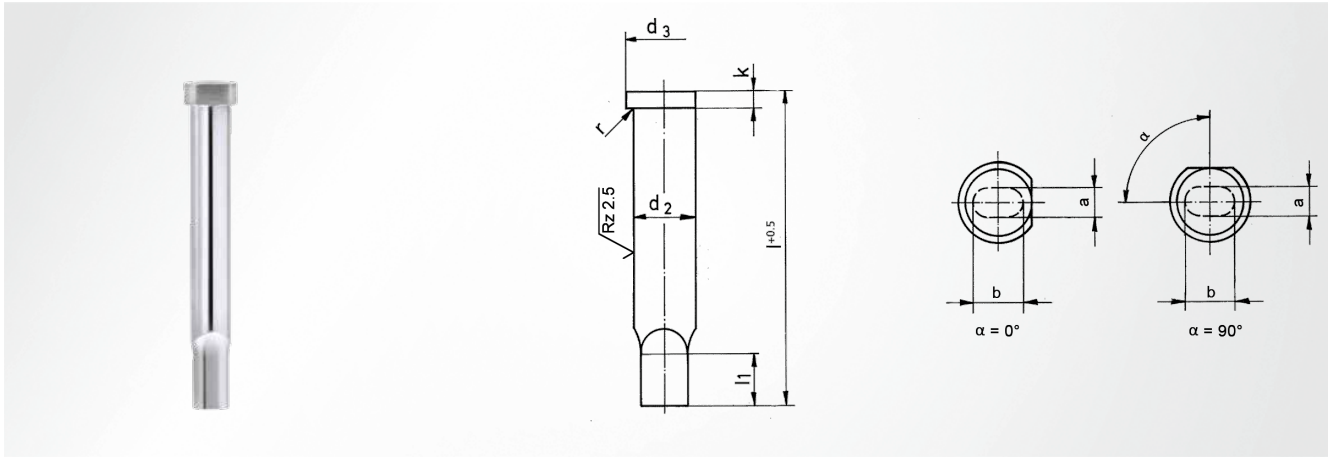
Hardness
62 ±2 HRC

Note
Free choice of sizes a x b; diagonal dimension, however, max. d_4 -1.0 mm; please specify the position of the protection against torsion α when ordering

a^{H8}	b^{H8}	d_2^{m5}	d_3	d_4	$k^{+0.25}$	$l_1^{+0.5}$	l_2	Item number
1.6-5.1	2.0-5.2	10	13	5.8	5	32	29	SZ6392 **.10**
2.0-7.0	2.5-7.2	13	16	8.0	5	32	28	SZ6392 **.13**
2.0-9.6	2.5-9.7	16	19	9.5	5	32	28	SZ6392 **.16**
2.5-12.6	3.2-12.7	20	24	12.0	5	32	27	SZ6392 **.20**
3.2-15.4	4.0-15.6	25	29	17.3	5	32	27	SZ6392 **.25**
4.0-20.3	5.0-20.6	32	35	20.7	5	32	26	SZ6392 **.32**
5.0-26.2	6.3-26.5	40	44	27.7	5	32	24	SZ6392 **.40**

SZ5693 Shape-cutting punch

with cylindrical head, oval, with protection against torsion



ISO 8020

Material
HSS

Head hardness
52 ±3 HRC

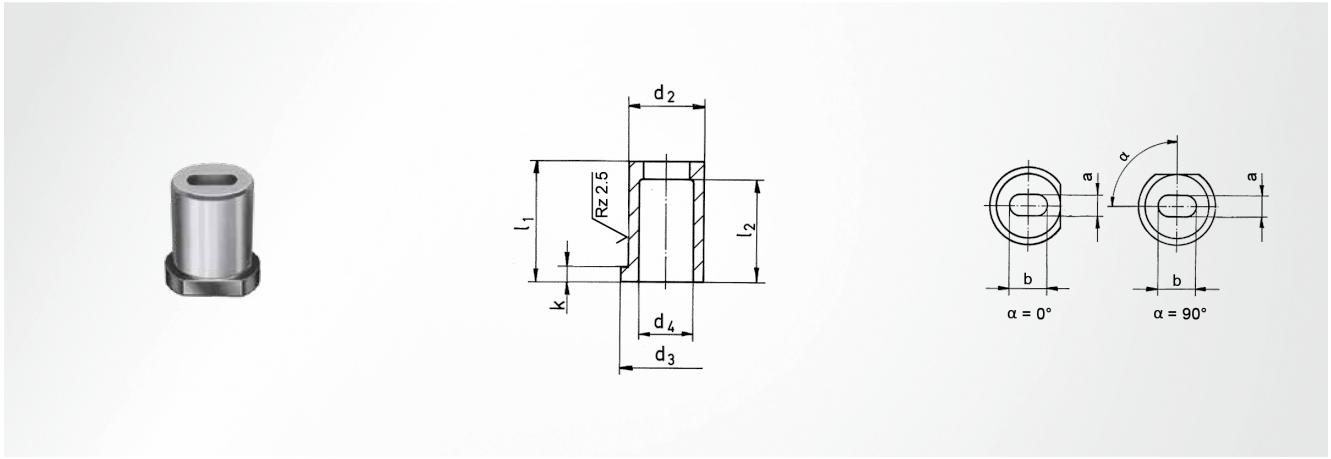
Shank hardness
64 ±2 HRC

Note
Free choice of sizes a x b; please specify the position of the protection against torsion α when ordering; deliverable with PVD coating upon request

a^{j6}	b^{j6}	d_2^{m5}	d_3	$k^{+0.1 - +0.2}$	$l^{+0.5}$	l_1	$r^{0 - +0.1}$	Item number
1.6-5.5	2.0-5.6	6	9	5	80	13	0.3	SZ5693 **.06**
2.0-7.5	2.5-7.6	8	11	5	80	13	0.3	SZ5693 **.08**
2.0-9.5	2.5-9.6	10	13	5	80	13	0.3	SZ5693 **.10**
2.5-12.5	3.2-12.6	13	16	5	80	13	0.4	SZ5693 **.13**
3.2-15.5	4.0-15.6	16	19	5	80	13	0.4	SZ5693 **.16**
4.0-19.5	5.0-19.6	20	23	5	80	13	0.4	SZ5693 **.20**
5.0-24.5	6.3-24.6	25	28	5	80	13	0.4	SZ5693 **.25**

SZ6393 Shape-cutting bush

with shoulder, oval, with protection against torsion



DIN ISO 8977

Material
HSS

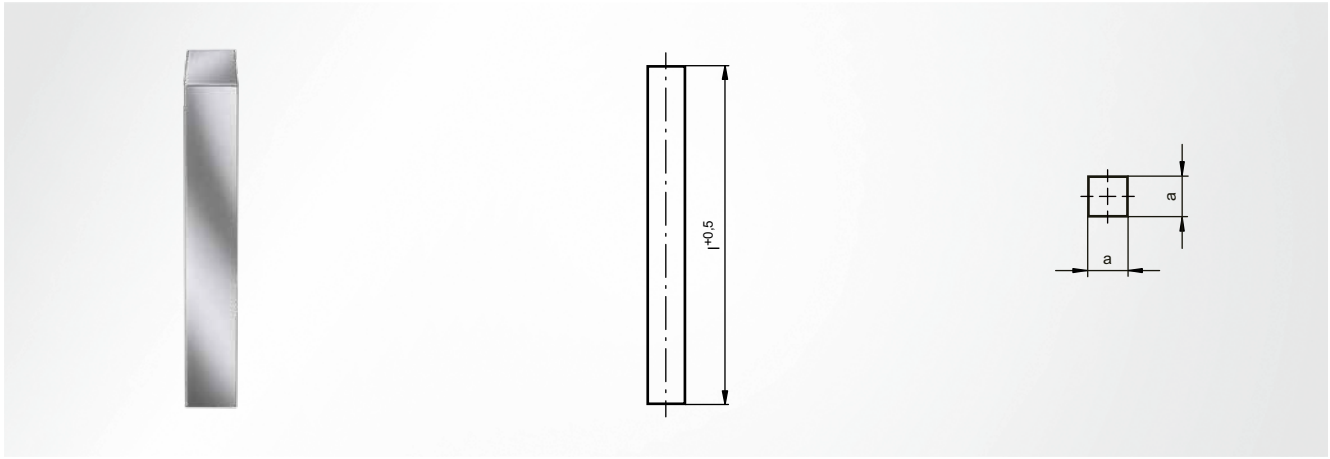
Hardness
63 ±1 HRC

Note
Free choice of sizes a x b; please specify the position of the protection against torsion α when ordering

a^{H8}	b^{H8}	d_2^{m5}	d_3	d_4	$k^{+0.25}$	$l_1^{+0.5}$	l_2	Item number
1.6-5.4	2.0-5.5	10	13	5.8	5	32	29	SZ6393 **.10**
2.0-7.4	2.5-7.5	13	16	8.0	5	32	28	SZ6393 **.13**
2.0-8.9	2.5-9.0	16	19	9.5	5	32	28	SZ6393 **.16**
2.5-10.9	3.2-11.0	20	24	12.0	5	32	27	SZ6393 **.20**
3.2-15.9	4.0-16.0	25	29	17.3	5	32	27	SZ6393 **.25**
4.0-19.9	5.0-20.0	32	35	20.7	5	32	26	SZ6393 **.32**
5.0-26.9	6.3-27.0	40	44	27.7	5	32	24	SZ6393 **.40**

SZ6981 Shape-cutting punch

square, without head, continuously shaped



Material
HSS

Shank hardness
64 ±2 HRC

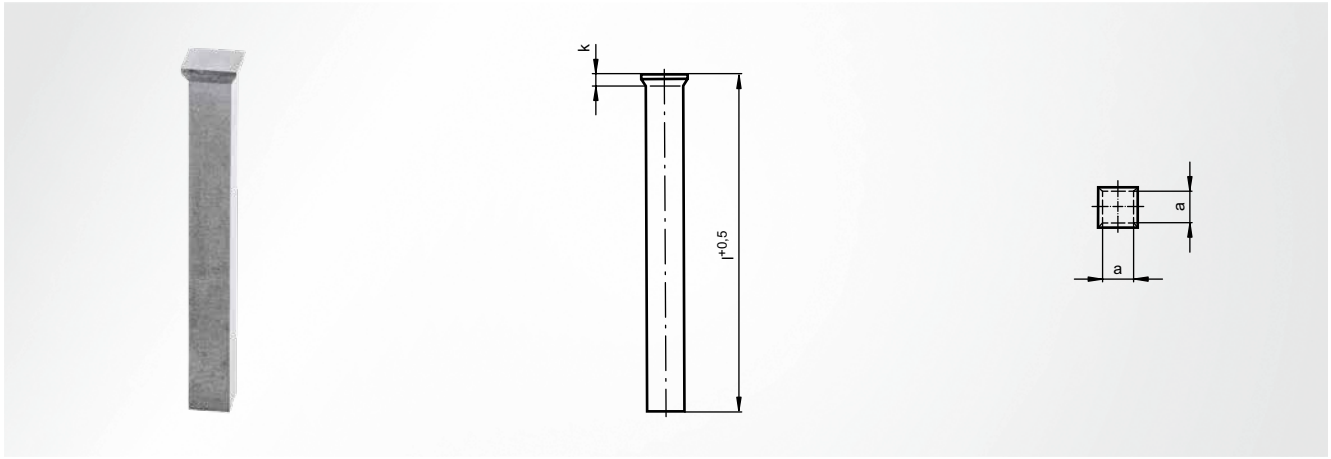
Note
Shank, super-finished; free choice of size a; deliverable with PVD coating upon request

a ±0.01	l+0.5	Item number
1.0	80	SZ6981 **010 x 80**
2.0	80	SZ6981 **020 x 80**
3.0	80	SZ6981 **030 x 80**
4.0	80	SZ6981 **040 x 80**
5.0	80	SZ6981 **050 x 80**

a ±0.01	l+0.5	Item number
6.0	80	SZ6981 **060 x 80**
7.0	80	SZ6981 **070 x 80**
9.0	80	SZ6981 **090 x 80**
10.0	80	SZ6981 **100 x 80**

SZ6991 Shape-cutting punch

square, with head, continuously shaped



Material
HSS

Head hardness
52 ±3 HRC

Shank hardness
64 ±2 HRC

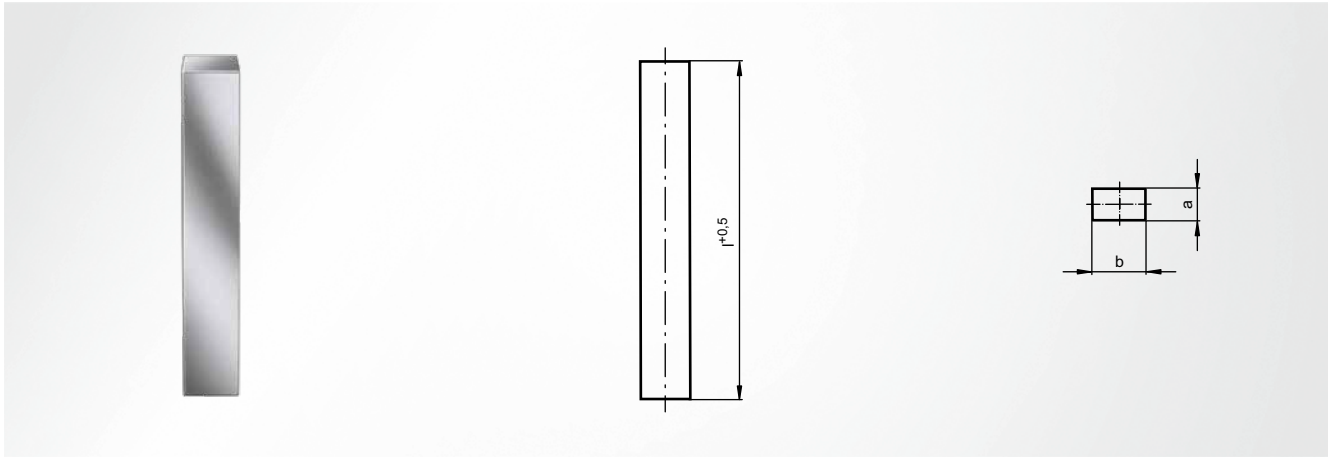
Note
Shank, super-finished, head hot upset and annealed; free choice of size a; deliverable with PVD coating upon request

a ±0.01	k	l+0.5	Item number
1.0	1.2	80	SZ6991 **010 x 80**
2.0	1.4	80	SZ6991 **020 x 80**
3.0	1.8	80	SZ6991 **030 x 80**
4.0	1.8	80	SZ6991 **040 x 80**
5.0	1.8	80	SZ6991 **050 x 80**

a ±0.01	k	l+0.5	Item number
6.0	2.2	80	SZ6991 **060 x 80**
7.0	2.8	80	SZ6991 **070 x 80**
8.0	2.8	80	SZ6991 **080 x 80**
9.0	2.8	80	SZ6991 **090 x 80**
10.0	2.8	80	SZ6991 **100 x 80**

SZ6982 Shape-cutting punch

rectangular, without head, continuously shaped



Material
HSS

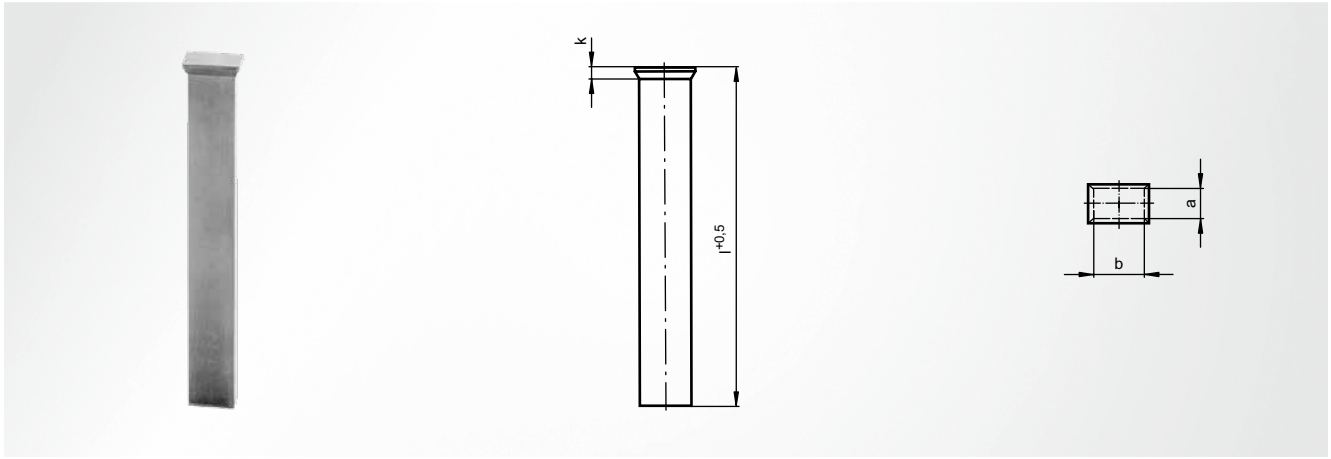
Shank hardness
64 ±2 HRC

Note
Shank, super-finished; free choice of sizes a x b; deliverable with PVD coating upon request

a ±0.01	b ±0.01	l+0.5	Item number
1.0	2.0-8.0	80	SZ6982 **010 x 020 - 080**
2.0	3.0-10.0	80	SZ6982 **020 x 030 - 100**
3.0	4.0-10.0	80	SZ6982 **030 x 040 - 100**
4.0	5.0-12.0	80	SZ6982 **040 x 050 - 120**
5.0	6.0-15.0	80	SZ6982 **050 x 060 - 150**
6.0	7.0-16.0	80	SZ6982 **060 x 070 - 160**
6.0	16.0-20.0	80	SZ6982 **060 x 160 - 200**
7.0	8.0-16.0	80	SZ6982 **070 x 080 - 160**
7.0	16.0-24.0	80	SZ6982 **070 x 160 - 240**
8.0	9.0-16.0	80	SZ6982 **080 x 090 - 160**
8.0	16.0-24.0	80	SZ6982 **080 x 160 - 240**
9.0	10.0-16.0	80	SZ6982 **090 x 100 - 160**
9.0	16.0-28.0	80	SZ6982 **090 x 160 - 280**
10.0	11.0-16.0	80	SZ6982 **100 x 110 - 160**
10.0	16.0-34.0	80	SZ6982 **100 x 160 - 340**

SZ6992 Shape-cutting punch

rectangular, with head, continuously shaped



Material
HSS

Shank hardness
64 ±2 HRC

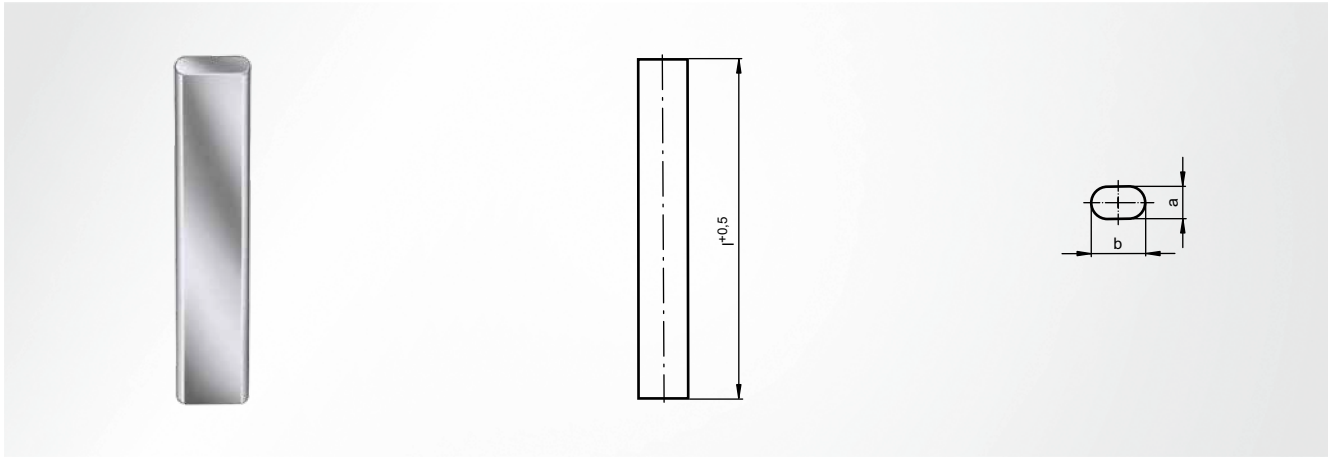
Head hardness
52 ±3 HRC

Note
Shank, super-finished, head hot upset and annealed; free choice of sizes a x b; deliverable with PVD coating upon request

a ±0.01	b ±0.01	k	l+0.5	Item number
1.0	2.0-8.0	1.2	80	SZ6992 **010 x 020 - 080**
2.0	3.0-10.0	1.4	80	SZ6992 **020 x 030 - 100**
3.0	4.0-10.0	1.8	80	SZ6992 **030 x 040 - 100**
4.0	5.0-12.0	1.8	80	SZ6992 **040 x 050 - 120**
5.0	6.0-15.0	1.8	80	SZ6992 **050 x 060 - 150**
6.0	7.0-16.0	2.2	80	SZ6992 **060 x 070 - 160**
6.0	16.0-20.0	2.2	80	SZ6992 **060 x 160 - 200**
7.0	8.0-16.0	2.8	80	SZ6992 **070 x 080 - 160**
7.0	16.0-24.0	2.8	80	SZ6992 **070 x 160 - 240**
8.0	9.0-16.0	2.8	80	SZ6992 **080 x 090 - 160**
8.0	16.0-24.0	2.8	80	SZ6992 **080 x 160 - 240**
9.0	10.0-16.0	2.8	80	SZ6992 **090 x 100 - 160**
9.0	16.0-28.0	2.8	80	SZ6992 **090 x 160 - 280**
10.0	11.0-16.0	2.8	80	SZ6992 **100 x 110 - 160**
10.0	16.0-34.0	2.8	80	SZ6992 **100 x 160 - 340**

SZ6983 Shape-cutting punch

oval, without head, continuously shaped



Material
HSS

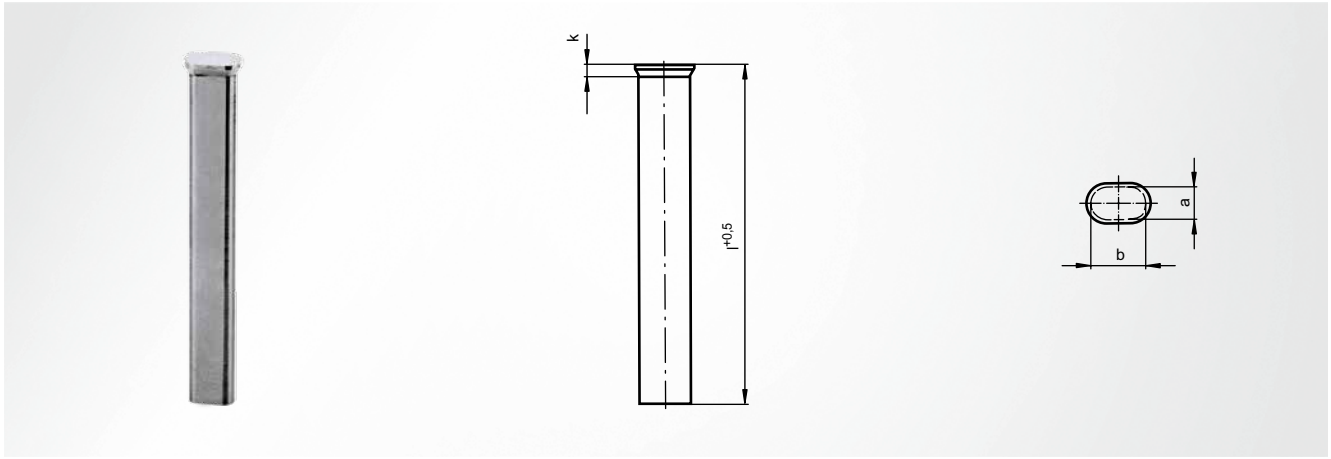
Shank hardness
64 ±2 HRC

Note
Shank, super-finished; free choice of sizes a x b; deliverable with PVD coating upon request

a ±0.01	b ±0.01	l+0.5	Item number
1.0	2.0-8.0	80	SZ6983 **010 x 020 - 080**
2.0	3.0-10.0	80	SZ6983 **020 x 030 - 100**
3.0	4.0-10.0	80	SZ6983 **030 x 040 - 100**
4.0	5.0-12.0	80	SZ6983 **040 x 050 - 120**
5.0	6.0-15.0	80	SZ6983 **050 x 060 - 150**
6.0	7.0-16.0	80	SZ6983 **060 x 070 - 160**
6.0	16.0-20.0	80	SZ6983 **060 x 160 - 200**
7.0	8.0-16.0	80	SZ6983 **070 x 080 - 160**
7.0	16.0-24.0	80	SZ6983 **070 x 160 - 240**
8.0	9.0-16.0	80	SZ6983 **080 x 090 - 160**
8.0	16.0-24.0	80	SZ6983 **080 x 160 - 240**
9.0	10.0-16.0	80	SZ6983 **090 x 100 - 160**
9.0	16.0-28.0	80	SZ6983 **090 x 160 - 280**
10.0	11.0-16.0	80	SZ6983 **100 x 110 - 160**
10.0	16.0-34.0	80	SZ6983 **100 x 160 - 340**

SZ6993 Shape-cutting punch

oval, with head, continuously shaped



Material
HSS

Shank hardness
64 ±2 HRC

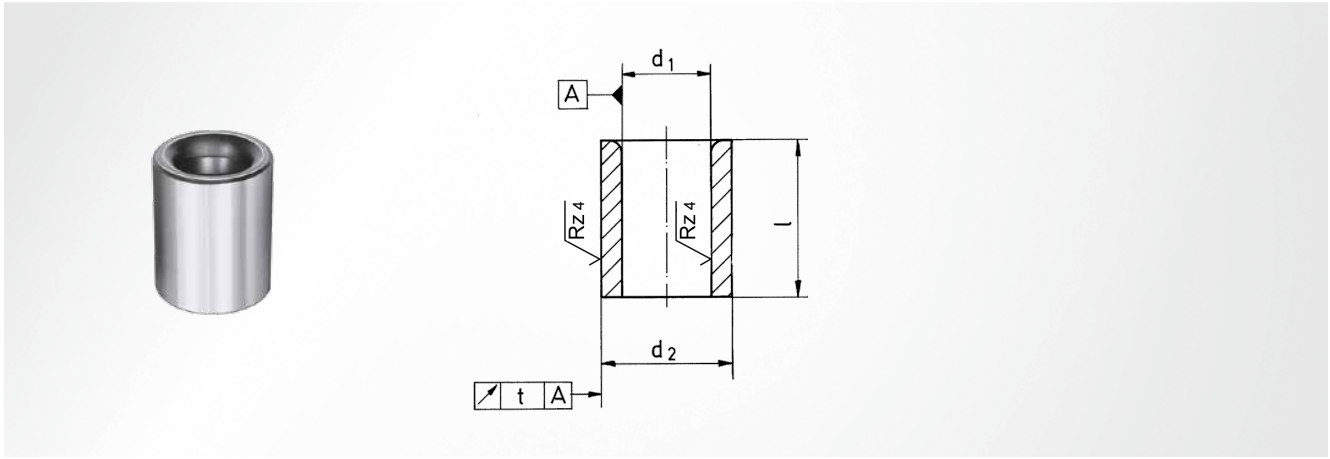
Head hardness
52 ±3 HRC

Note
Shank, super-finished, head hot upset and annealed; free choice of sizes a x b; deliverable with PVD coating upon request

a ±0.01	b ±0.01	k	l+0.5	Item number
1.0	2.0-8.0	1.2	80	SZ6993 **010 x 020 - 080**
2.0	3.0-10.0	1.4	80	SZ6993 **020 x 030 - 100**
3.0	4.0-10.0	1.8	80	SZ6993 **030 x 040 - 100**
4.0	5.0-12.0	1.8	80	SZ6993 **040 x 050 - 120**
5.0	6.0-15.0	1.8	80	SZ6993 **050 x 060 - 150**
6.0	7.0-16.0	2.2	80	SZ6993 **060 x 070 - 160**
6.0	16.0-20.0	2.2	80	SZ6993 **060 x 160 - 200**
7.0	8.0-16.0	2.8	80	SZ6993 **070 x 080 - 160**
7.0	16.0-24.0	2.8	80	SZ6993 **070 x 160 - 240**
8.0	9.0-16.0	2.8	80	SZ6993 **080 x 090 - 160**
8.0	16.0-24.0	2.8	80	SZ6993 **080 x 160 - 240**
9.0	10.0-16.0	2.8	80	SZ6993 **090 x 100 - 160**
9.0	16.0-28.0	2.8	80	SZ6993 **090 x 160 - 280**
10.0	11.0-16.0	2.8	80	SZ6993 **100 x 110 - 160**
10.0	16.0-34.0	2.8	80	SZ6993 **100 x 160 - 340**

SZ6250 Drill Bush

for pressing-in



DIN 179 / ISO 4247

Shape

A

Material

Case-hardening steel

Hardness

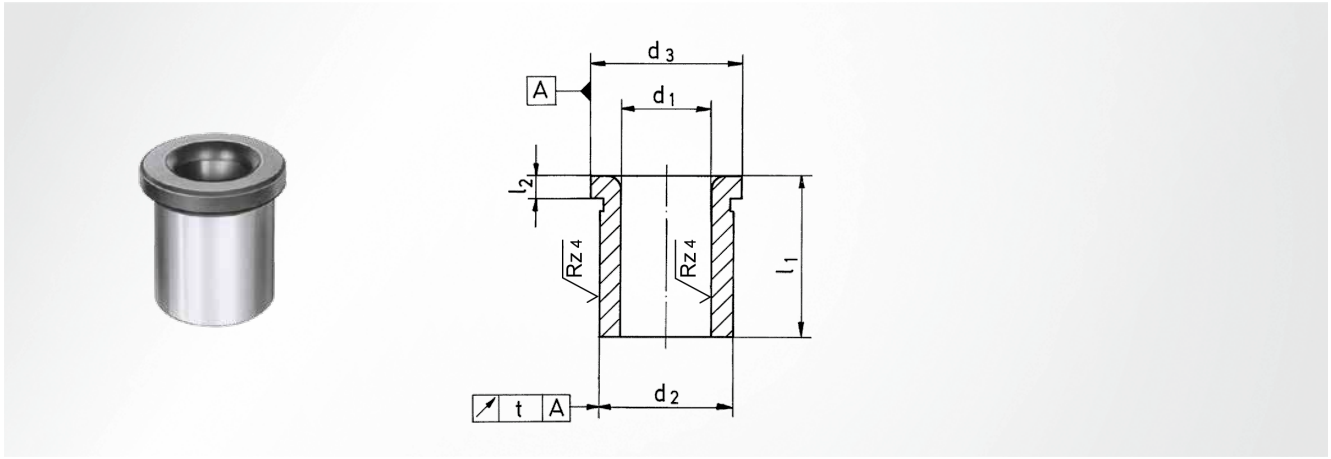
62 ±2 HRC

d_1^{F7}	d_2^{n6}	t	Grading	l	Item number
0.5-0.6	3	0.01	0.1	6	SZ6250 **005 - 006 x 06**
0.8	3	0.01	0.1	6	SZ6250 **008 x 06**
0.9-1.0	3	0.01	0.1	6	SZ6250 **009 - 010 x 06**
				9	SZ6250 **009 - 010 x 09**
1.1-1.8	4	0.01	0.1	6	SZ6250 **011 - 018 x 06**
				9	SZ6250 **011 - 018 x 09**
1.9-2.6	5	0.01	0.1	6	SZ6250 **019 - 026 x 06**
				9	SZ6250 **019 - 026 x 09**
2.7-3.3	6	0.01	0.1	8	SZ6250 **027 - 033 x 08**
				12	SZ6250 **027 - 033 x 12**
3.4-4.0	7	0.01	0.1	8	SZ6250 **034 - 040 x 08**
				12	SZ6250 **034 - 040 x 12**
4.1-5.0	8	0.01	0.1	8	SZ6250 **041 - 050 x 08**
				12	SZ6250 **041 - 050 x 12**
5.1-6.0	10	0.02	0.1	10	SZ6250 **051 - 060 x 10**
				16	SZ6250 **051 - 060 x 16**
6.1-8.0	12	0.02	0.1	10	SZ6250 **061 - 080 x 10**
				16	SZ6250 **061 - 080 x 16**
8.1-10.0	15	0.02	0.1	12	SZ6250 **081 - 100 x 12**
				20	SZ6250 **081 - 100 x 20**

d_1^{F7}	d_2^{n6}	t	Grading	l	Item number
10.1-12.0	18	0.02	0.1	12	SZ6250 **101 - 120 x 12**
				20	SZ6250 **101 - 120 x 20**
12.5-15.0	22	0.02	0.5	16	SZ6250 **125 - 150 x 16**
				28	SZ6250 **125 - 150 x 28**
15.5-18.0	26	0.02	0.5	16	SZ6250 **155 - 180 x 16**
				28	SZ6250 **155 - 180 x 28**
18.5-20.0	30	0.02	0.5	20	SZ6250 **185 - 200 x 20**
				36	SZ6250 **185 - 200 x 36**
21.0-22.0	30	0.02	1.0	20	SZ6250 **210 - 220 x 20**
				36	SZ6250 **210 - 220 x 36**
23.0-26.0	35	0.02	1.0	20	SZ6250 **230 - 260 x 20**
				36	SZ6250 **230 - 260 x 36**
27.0-30.0	42	0.02	1.0	25	SZ6250 **270 - 300 x 25**
				45	SZ6250 **270 - 300 x 45**
31.0-35.0	48	0.04	1.0	25	SZ6250 **310 - 350 x 25**
				45	SZ6250 **310 - 350 x 45**
36.0-42.0	55	0.04	1.0	30	SZ6250 **360 - 420 x 30**
				56	SZ6250 **360 - 420 x 56**
43.0-48.0	62	0.04	1.0	30	SZ6250 **430 - 480 x 30**
				56	SZ6250 **430 - 480 x 56**

SZ6255 Drill Bush

with shoulder, for pressing-in



DIN 172 / ISO 4247

Shape

A

Material

Case-hardening steel

Hardness

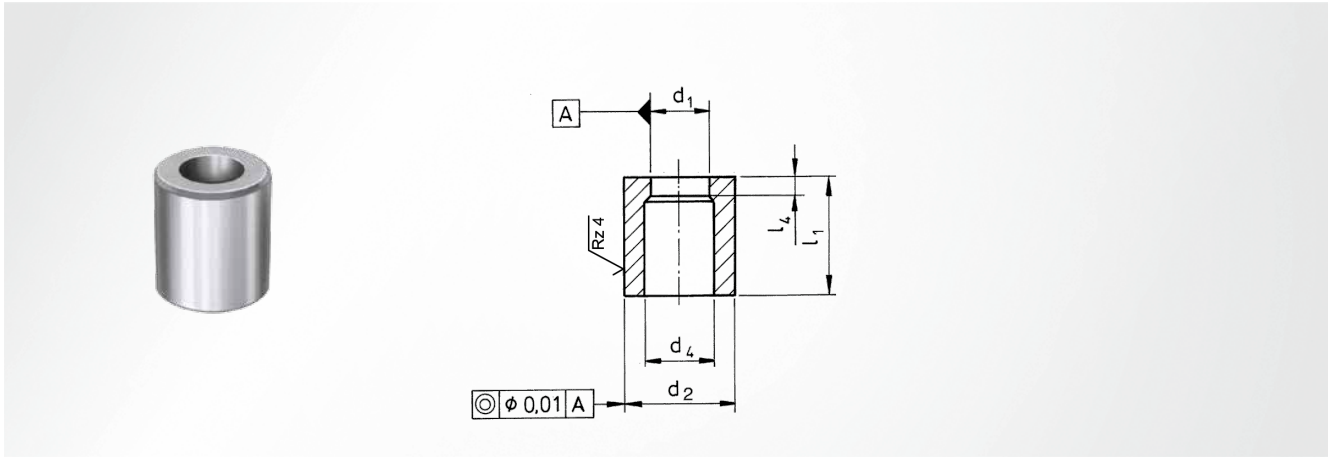
62 ±2 HRC

d_1^{F7}	d_2^{n6}	d_3	l_2	Grading	l	Item number
0.5-0.6	3	5	2.0	0.1	6	SZ6255 **005 - 006 x 06**
0.7-1.0	3	6	2.0	0.1	6	SZ6255 **007 - 010 x 06**
0.8-1.0	3	6	2.0	0.1	9	SZ6255 **008 - 010 x 09**
1.1-1.8	4	7	2.0	0.1	6	SZ6255 **011 - 018 x 06**
					9	SZ6255 **011 - 018 x 09**
1.9-2.6	5	8	2.0	0.1	6	SZ6255 **019 - 026 x 06**
					9	SZ6255 **019 - 026 x 09**
2.7-3.3	6	9	2.5	0.1	8	SZ6255 **027 - 033 x 08**
					12	SZ6255 **027 - 033 x 12**
3.4-4.0	7	10	2.5	0.1	8	SZ6255 **034 - 040 x 08**
					12	SZ6255 **034 - 040 x 12**
4.1-5.0	8	11	2.5	0.1	8	SZ6255 **041 - 050 x 08**
					12	SZ6255 **041 - 050 x 12**
5.1-6.0	10	13	3.0	0.1	10	SZ6255 **051 - 060 x 10**
					16	SZ6255 **051 - 060 x 16**
6.1-8.0	12	15	3.0	0.1	10	SZ6255 **061 - 080 x 10**
					16	SZ6255 **061 - 080 x 16**
8.1-10.0	15	18	3.0	0.1	12	SZ6255 **081 - 100 x 12**
					20	SZ6255 **081 - 100 x 20**
10.1-12.0	18	22	4.0	0.1	12	SZ6255 **101 - 120 x 12**

d_1^{F7}	d_2^{n6}	d_3	l_2	Grading	l	Item number
10.1-12.0	18	22	4.0	0.1	20	SZ6255 **101 - 120 x 20**
12.5-15.0	22	26	4.0	0.5	16	SZ6255 **125 - 150 x 16**
					28	SZ6255 **125 - 150 x 28**
15.5-18.0	26	30	4.0	0.5	16	SZ6255 **155 - 180 x 16**
					28	SZ6255 **155 - 180 x 28**
18.5-20.0	30	34	5.0	0.5	20	SZ6255 **185 - 200 x 20**
					36	SZ6255 **185 - 200 x 36**
21.0-22.0	30	34	5.0	1.0	20	SZ6255 **210 - 220 x 20**
					36	SZ6255 **210 - 220 x 36**
23.0-26.0	35	39	5.0	1.0	20	SZ6255 **230 - 260 x 20**
					36	SZ6255 **230 - 260 x 36**
27.0-30.0	42	46	5.0	1.0	25	SZ6255 **270 - 300 x 25**
					45	SZ6255 **270 - 300 x 45**
31.0-35.0	48	52	5.0	1.0	25	SZ6255 **310 - 350 x 25**
					45	SZ6255 **310 - 350 x 45**
36.0-42.0	55	59	5.0	1.0	30	SZ6255 **360 - 420 x 30**
					56	SZ6255 **360 - 420 x 56**
43.0-48.0	62	66	6.0	1.0	30	SZ6255 **430 - 480 x 30**
					56	SZ6255 **430 - 480 x 56**

SZ6265 Cutting bush

for pressing-in



DIN ISO 8977

Shape
A

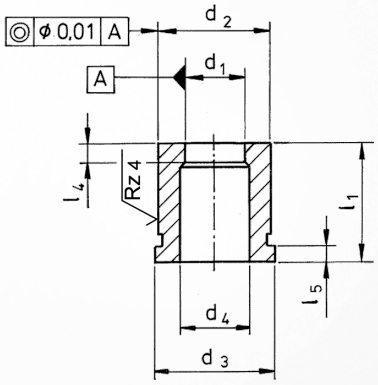
Material
HSS

Hardness
62 ±2 HRC

d_1 0 - +0.02	d_2 n5	d_4	l_4	Grading	l_1 +0.5	Item number
1.0-2.0	5	2.8	2	0.1	20	SZ6265 **010 - 020 x 20**
					25	SZ6265 **010 - 020 x 25**
2.1-3.0	6	3.5	3	0.1	20	SZ6265 **021 - 030 x 20**
					25	SZ6265 **021 - 030 x 25**
3.1-3.5	8	4.0	4	0.1	20	SZ6265 **031 - 035 x 20**
					25	SZ6265 **031 - 035 x 25**
3.6-5.0	10	5.8	4	0.1	20	SZ6265 **036 - 050 x 20**
					25	SZ6265 **036 - 050 x 25**
5.1-7.0	13	8.0	5	0.1	20	SZ6265 **051 - 070 x 20**
					25	SZ6265 **051 - 070 x 25**
7.1-8.8	16	9.5	5	0.1	20	SZ6265 **071 - 088 x 20**
					25	SZ6265 **071 - 088 x 25**
8.9-11.0	20	12.0	8	0.1	20	SZ6265 **089 - 110 x 20**
					25	SZ6265 **089 - 110 x 25**
11.1-15.0	25	17.3	8	0.1	20	SZ6265 **111 - 150 x 20**
					25	SZ6265 **111 - 150 x 25**
15.5-20.0	32	20.7	8	0.5	20	SZ6265 **155 - 200 x 20**
					25	SZ6265 **155 - 200 x 25**
20.5-25.0	40	27.7	8	0.5	20	SZ6265 **205 - 250 x 20**
					25	SZ6265 **205 - 250 x 25**

SZ6285 Cutting bush

with shoulder, for pressing-in



DIN ISO 8977

Shape
B

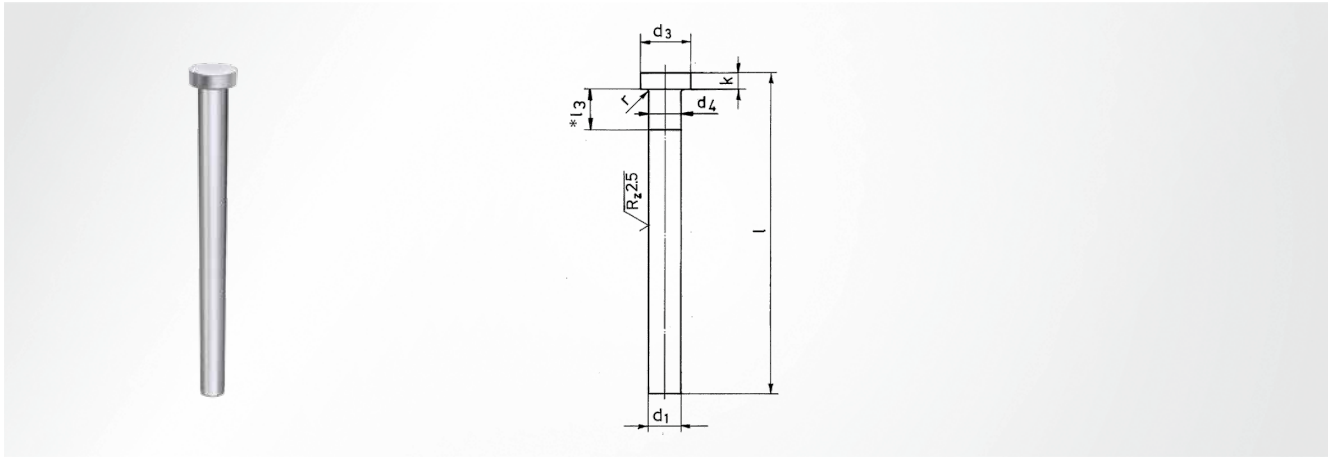
Material
HSS

Hardness
62 ±2 HRC

d_1 0 - +0.02	d_2 m5	d_3	d_4	l_4	l_5	Grading	l_1 +0.5	Item number
1.0-2.0	5	8	2.8	2	5	0.1	25	SZ6285 **010 - 020 x 25**
2.1-3.0	6	9	3.5	3	5	0.1	25	SZ6285 **021 - 030 x 25**
3.1-3.5	8	11	4.0	4	5	0.1	25	SZ6285 **031 - 035 x 25**
							32	SZ6285 **031 - 035 x 32**
3.6-5.0	10	13	5.8	4	5	0.1	25	SZ6285 **036 - 050 x 25**
							32	SZ6285 **036 - 050 x 32**
5.1-7.0	13	16	8.0	5	5	0.1	25	SZ6285 **051 - 070 x 25**
							32	SZ6285 **051 - 070 x 32**
7.1-8.8	16	19	9.5	5	5	0.1	25	SZ6285 **071 - 088 x 25**
							32	SZ6285 **071 - 088 x 32**
8.9-11.0	20	23	12.0	8	5	0.1	25	SZ6285 **089 - 110 x 25**
							32	SZ6285 **089 - 110 x 32**
11.1-15.0	25	28	17.3	8	5	0.1	25	SZ6285 **111 - 150 x 25**
							32	SZ6285 **111 - 150 x 32**
15.5-20.0	32	35	20.7	8	5	0.5	25	SZ6285 **155 - 200 x 25**
							32	SZ6285 **155 - 200 x 32**
20.5-25.0	40	43	27.7	8	5	0.5	25	SZ6285 **205 - 250 x 25**
							32	SZ6285 **205 - 250 x 32**

SZ6650 Ejector pin

with cylindrical head, hardened



DIN ISO 6751

Shape
AH

Material
Tool steel

Head hardness
45 ±5 HRC

Shank hardness
60 ±2 HRC

Note
*Additional surface roughness or another slight deviation of the diameter d_1 over a certain length is permitted for ejectors

d_1^{g6}	$d_3^{-0.2}$	d_4	$k^{-0.05}$	l_3	$r^{+0.2}$	l^{+2}	Item number
0.8	2.5	0.83	1.2	5	0.2	80	SZ6650 **008 x 080**
						100	SZ6650 **008 x 100**
						125	SZ6650 **008 x 125**
0.9	2.5	0.93	1.2	5	0.2	80	SZ6650 **009 x 080**
						100	SZ6650 **009 x 100**
						125	SZ6650 **009 x 125**
1.0	2.5	1.03	1.2	5	0.2	80	SZ6650 **010 x 080**
						100	SZ6650 **010 x 100**
						125	SZ6650 **010 x 125**
						160	SZ6650 **010 x 160**
1.1	2.5	1.13	1.2	5	0.2	80	SZ6650 **011 x 080**
						100	SZ6650 **011 x 100**
						125	SZ6650 **011 x 125**
						160	SZ6650 **011 x 160**
1.2	2.5	1.23	1.2	5	0.2	80	SZ6650 **012 x 080**
						100	SZ6650 **012 x 100**
						125	SZ6650 **012 x 125**
						160	SZ6650 **012 x 160**
1.3	3.0	1.33	1.5	5	0.2	80	SZ6650 **013 x 080**
						100	SZ6650 **013 x 100**
						125	SZ6650 **013 x 125**
						160	SZ6650 **013 x 160**
1.4	3.0	1.43	1.5	5	0.2	80	SZ6650 **014 x 080**
						100	SZ6650 **014 x 100**
						125	SZ6650 **014 x 125**
						160	SZ6650 **014 x 160**
1.5	3.0	1.53	1.5	5	0.2	100	SZ6650 **015 x 100**
						125	SZ6650 **015 x 125**
						160	SZ6650 **015 x 160**
						200	SZ6650 **015 x 200**
1.6	3.0	1.63	1.5	5	0.2	100	SZ6650 **016 x 100**
						125	SZ6650 **016 x 125**

d_1^{g6}	$d_3^{-0.2}$	d_4	$k^{-0.05}$	l_3	$r^{+0.2}$	l^{+2}	Item number
1.6	3.0	1.63	1.5	5	0.2	160	SZ6650 **016 x 160**
						200	SZ6650 **016 x 200**
1.7	3.0	1.73	2.0	5	0.2	100	SZ6650 **017 x 100**
						125	SZ6650 **017 x 125**
						160	SZ6650 **017 x 160**
						200	SZ6650 **017 x 200**
1.8	3.0	1.83	2.0	5	0.2	100	SZ6650 **018 x 100**
						125	SZ6650 **018 x 125**
						160	SZ6650 **018 x 160**
						200	SZ6650 **018 x 200**
1.9	3.0	1.93	2.0	5	0.2	100	SZ6650 **019 x 100**
						125	SZ6650 **019 x 125**
						160	SZ6650 **019 x 160**
						200	SZ6650 **019 x 200**
2.0	4.0	2.03	2.0	5	0.2	100	SZ6650 **020 x 100**
						125	SZ6650 **020 x 125**
						160	SZ6650 **020 x 160**
						200	SZ6650 **020 x 200**
2.1	4.0	2.13	2.0	5	0.2	100	SZ6650 **021 x 100**
						125	SZ6650 **021 x 125**
						160	SZ6650 **021 x 160**
						200	SZ6650 **021 x 200**
2.2	4.0	2.23	2.0	5	0.2	100	SZ6650 **022 x 100**
						125	SZ6650 **022 x 125**
						160	SZ6650 **022 x 160**
						200	SZ6650 **022 x 200**
2.3	4.0	2.33	2.0	5	0.2	100	SZ6650 **023 x 100**
						125	SZ6650 **023 x 125**
						160	SZ6650 **023 x 160**
						200	SZ6650 **023 x 200**
2.4	4.0	2.43	2.0	5	0.2	100	SZ6650 **024 x 100**
						125	SZ6650 **024 x 125**

SZ6650 Ejector pin

with cylindrical head, hardened

d_1^{g6}	$d_3^{-0.2}$	d_4	$k^{-0.05}$	l_3	$r^{+0.2}$	l^{+2}	Item number
2.4	4.0	2.43	2.0	5	0.2	160	SZ6650 **024 x 160**
						200	SZ6650 **024 x 200**
2.5	5.0	2.53	2.0	5	0.3	100	SZ6650 **025 x 100**
						125	SZ6650 **025 x 125**
						160	SZ6650 **025 x 160**
						200	SZ6650 **025 x 200**
2.6	5.0	2.63	2.0	5	0.3	100	SZ6650 **026 x 100**
						125	SZ6650 **026 x 125**
						160	SZ6650 **026 x 160**
						200	SZ6650 **026 x 200**
2.7	5.0	2.73	2.0	5	0.3	100	SZ6650 **027 x 100**
						125	SZ6650 **027 x 125**
						160	SZ6650 **027 x 160**
						200	SZ6650 **027 x 200**
2.8	5.0	2.83	2.0	5	0.3	100	SZ6650 **028 x 100**
						125	SZ6650 **028 x 125**
						200	SZ6650 **028 x 200**
						160	SZ6650 **028 x 160**
2.9	5.0	2.93	2.0	5	0.3	100	SZ6650 **029 x 100**
						125	SZ6650 **029 x 125**
						160	SZ6650 **029 x 160**
						200	SZ6650 **029 x 200**
3.0	6.0	3.03	3.0	6	0.3	100	SZ6650 **030 x 100**
						125	SZ6650 **030 x 125**
						160	SZ6650 **030 x 160**
						200	SZ6650 **030 x 200**
3.1	6.0	3.13	3.0	5	0.3	100	SZ6650 **031 x 100**
						125	SZ6650 **031 x 125**
						160	SZ6650 **031 x 160**
						200	SZ6650 **031 x 200**
3.2	6.0	3.23	3.0	5	0.3	100	SZ6650 **032 x 100**
						125	SZ6650 **032 x 125**
						160	SZ6650 **032 x 160**
						200	SZ6650 **032 x 200**
3.3	6.0	3.33	3.0	5	0.3	100	SZ6650 **033 x 100**
						125	SZ6650 **033 x 125**
						160	SZ6650 **033 x 160**
						200	SZ6650 **033 x 200**
3.4	6.0	3.43	3.0	5	0.3	100	SZ6650 **034 x 100**
						125	SZ6650 **034 x 125**
						160	SZ6650 **034 x 160**
						200	SZ6650 **034 x 200**
3.5	7.0	3.53	3.0	5	0.3	100	SZ6650 **035 x 100**
						125	SZ6650 **035 x 125**
						160	SZ6650 **035 x 160**
						200	SZ6650 **035 x 200**
3.6	7.0	3.63	3.0	5	0.3	100	SZ6650 **036 x 100**
						125	SZ6650 **036 x 125**
						160	SZ6650 **036 x 160**
						200	SZ6650 **036 x 200**
3.7	7.0	3.73	3.0	5	0.3	100	SZ6650 **037 x 100**
						125	SZ6650 **037 x 125**
						160	SZ6650 **037 x 160**
						200	SZ6650 **037 x 200**
3.8	7.0	3.83	3.0	5	0.3	100	SZ6650 **038 x 100**
						125	SZ6650 **038 x 125**
						160	SZ6650 **038 x 160**
						200	SZ6650 **038 x 200**
3.9	7.0	3.93	3.0	5	0.3	100	SZ6650 **039 x 100**
						125	SZ6650 **039 x 125**

d_1^{g6}	$d_3^{-0.2}$	d_4	$k^{-0.05}$	l_3	$r^{+0.2}$	l^{+2}	Item number
3.9	7.0	3.93	3.0	5	0.3	160	SZ6650 **039 x 160**
						200	SZ6650 **039 x 200**
4.0	8.0	4.03	3.0	5	0.3	100	SZ6650 **040 x 100**
						125	SZ6650 **040 x 125**
						160	SZ6650 **040 x 160**
						200	SZ6650 **040 x 200**
						250	SZ6650 **040 x 250**
4.1	8.0	4.13	3.0	5	0.3	100	SZ6650 **041 x 100**
						125	SZ6650 **041 x 125**
						160	SZ6650 **041 x 160**
						200	SZ6650 **041 x 200**
4.2	8.0	4.23	3.0	5	0.3	100	SZ6650 **042 x 100**
						125	SZ6650 **042 x 125**
						160	SZ6650 **042 x 160**
						200	SZ6650 **042 x 200**
						250	SZ6650 **042 x 250**
4.3	8.0	4.33	3.0	5	0.3	100	SZ6650 **043 x 100**
						125	SZ6650 **043 x 125**
						160	SZ6650 **043 x 160**
						200	SZ6650 **043 x 200**
4.4	8.0	4.43	3.0	5	0.3	100	SZ6650 **044 x 100**
						125	SZ6650 **044 x 125**
						160	SZ6650 **044 x 160**
						200	SZ6650 **044 x 200**
4.5	8.0	4.53	3.0	5	0.3	100	SZ6650 **045 x 100**
						125	SZ6650 **045 x 125**
						160	SZ6650 **045 x 160**
						200	SZ6650 **045 x 200**
4.6	8.0	4.63	3.0	5	0.3	100	SZ6650 **046 x 100**
						125	SZ6650 **046 x 125**
						160	SZ6650 **046 x 160**
						200	SZ6650 **046 x 200**
4.7	8.0	4.73	3.0	5	0.3	100	SZ6650 **047 x 100**
						125	SZ6650 **047 x 125**
						160	SZ6650 **047 x 160**
						200	SZ6650 **047 x 200**
4.8	8.0	4.83	3.0	5	0.3	100	SZ6650 **048 x 100**
						125	SZ6650 **048 x 125**
						160	SZ6650 **048 x 160**
						200	SZ6650 **048 x 200**
4.9	8.0	4.93	3.0	5	0.3	100	SZ6650 **049 x 100**
						125	SZ6650 **049 x 125**
						160	SZ6650 **049 x 160**
						200	SZ6650 **049 x 200**
5.0	10.0	5.03	3.0	5	0.3	100	SZ6650 **050 x 100**
						125	SZ6650 **050 x 125**
						160	SZ6650 **050 x 160**
						200	SZ6650 **050 x 200**
						250	SZ6650 **050 x 250**
5.1	10.0	5.13	3.0	5	0.3	100	SZ6650 **051 x 100**
						125	SZ6650 **051 x 125**
						160	SZ6650 **051 x 160**
						200	SZ6650 **051 x 200**
5.2	10.0	5.23	3.0	5	0.3	100	SZ6650 **052 x 100**
						125	SZ6650 **052 x 125**
						160	SZ6650 **052 x 160**
						200	SZ6650 **052 x 200**
						250	SZ6650 **052 x 250**
5.3	10.0	5.33	3.0	5	0.3	100	SZ6650 **053 x 100**
						125	SZ6650 **053 x 125**

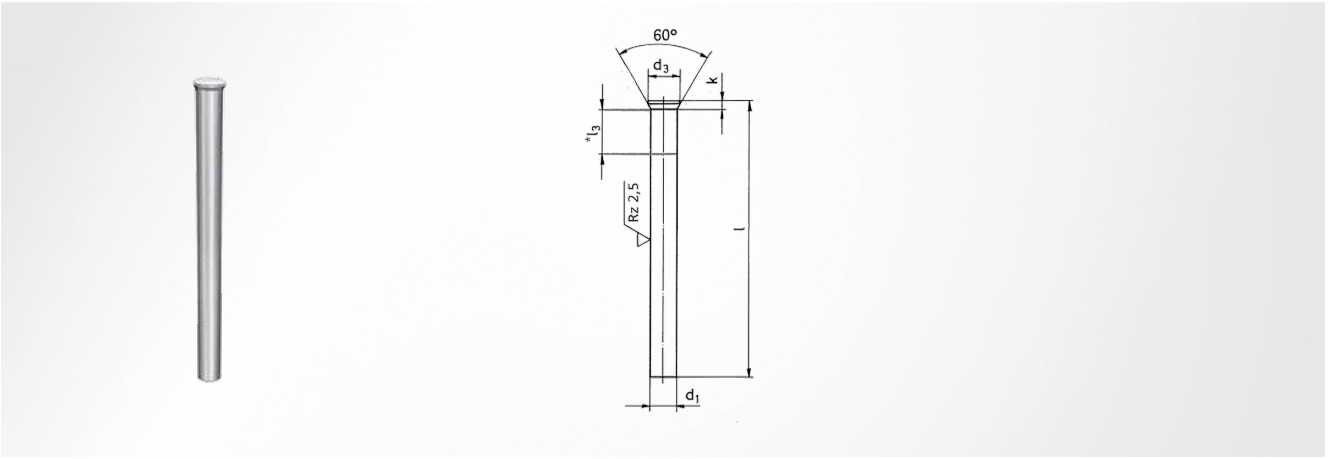
SZ6650 Ejector pin

with cylindrical head, hardened

d_1^{g6}	$d_3^{-0.2}$	d_4	$k^{-0.05}$	l_3	$r^{+0.2}$	l^{+2}	Item number
5.3	10.0	5.33	3.0	5	0.3	160	SZ6650 **053 x 160**
						200	SZ6650 **053 x 200**
5.4	10.0	5.43	3.0	5	0.3	100	SZ6650 **054 x 100**
						125	SZ6650 **054 x 125**
						160	SZ6650 **054 x 160**
						200	SZ6650 **054 x 200**
5.5	10.0	5.53	3.0	5	0.3	100	SZ6650 **055 x 100**
						125	SZ6650 **055 x 125**
						160	SZ6650 **055 x 160**
						200	SZ6650 **055 x 200**
5.6	10.0	5.63	3.0	5	0.3	100	SZ6650 **056 x 100**
						125	SZ6650 **056 x 125**
						160	SZ6650 **056 x 160**
						200	SZ6650 **056 x 200**
5.7	10.0	5.73	3.0	5	0.3	100	SZ6650 **057 x 100**
						125	SZ6650 **057 x 125**
						160	SZ6650 **057 x 160**
						200	SZ6650 **057 x 200**
5.8	10.0	5.83	3.0	5	0.3	100	SZ6650 **058 x 100**
						125	SZ6650 **058 x 125**
						160	SZ6650 **058 x 160**
						200	SZ6650 **058 x 200**
5.9	10.0	5.93	3.0	5	0.3	100	SZ6650 **059 x 100**
						125	SZ6650 **059 x 125**
						160	SZ6650 **059 x 160**
						200	SZ6650 **059 x 200**
6.0	12.0	6.03	5.0	6	0.5	100	SZ6650 **060 x 100**
						125	SZ6650 **060 x 125**
						160	SZ6650 **060 x 160**
						200	SZ6650 **060 x 200**
						250	SZ6650 **060 x 250**
6.2	12.0	6.23	5.0	8	0.5	100	SZ6650 **062 x 100**
						125	SZ6650 **062 x 125**
						160	SZ6650 **062 x 160**
						200	SZ6650 **062 x 200**
						250	SZ6650 **062 x 250**
6.5	12.0	6.53	5.0	8	0.5	100	SZ6650 **065 x 100**
						125	SZ6650 **065 x 125**
						160	SZ6650 **065 x 160**
						200	SZ6650 **065 x 200**
7.0	12.0	7.03	5.0	8	0.5	100	SZ6650 **070 x 100**
						125	SZ6650 **070 x 125**
						160	SZ6650 **070 x 160**
						200	SZ6650 **070 x 200**
						250	SZ6650 **070 x 250**
7.5	12.0	7.53	5.0	8	0.5	100	SZ6650 **075 x 100**
						125	SZ6650 **075 x 125**
						160	SZ6650 **075 x 160**
						200	SZ6650 **075 x 200**
8.0	14.0	8.03	5.0	8	0.5	100	SZ6650 **080 x 100**
						125	SZ6650 **080 x 125**
						160	SZ6650 **080 x 160**
						200	SZ6650 **080 x 200**
						250	SZ6650 **080 x 250**
8.2	14.0	8.23	5.0	8	0.5	100	SZ6650 **082 x 100**
						125	SZ6650 **082 x 125**
						160	SZ6650 **082 x 160**
						200	SZ6650 **082 x 200**
						250	SZ6650 **082 x 250**
8.5	14.0	8.53	5.0	8	0.5	100	SZ6650 **085 x 100**
8.5	14.0	8.53	5.0	8	0.5	125	SZ6650 **085 x 125**
						160	SZ6650 **085 x 160**
						200	SZ6650 **085 x 200**
9.0	14.0	9.03	5.0	8	0.5	100	SZ6650 **090 x 100**
						125	SZ6650 **090 x 125**
						160	SZ6650 **090 x 160**
						200	SZ6650 **090 x 200**
						250	SZ6650 **090 x 250**
9.5	14.0	9.53	5.0	10	0.5	100	SZ6650 **095 x 100**
						125	SZ6650 **095 x 125**
						160	SZ6650 **095 x 160**
						200	SZ6650 **095 x 200**
10.0	16.0	10.03	5.0	10	0.5	100	SZ6650 **100 x 100**
						125	SZ6650 **100 x 125**
						160	SZ6650 **100 x 160**
						200	SZ6650 **100 x 200**
						250	SZ6650 **100 x 250**
10.2	16.0	10.24	5.0	10	0.5	100	SZ6650 **102 x 100**
						125	SZ6650 **102 x 125**
						160	SZ6650 **102 x 160**
						200	SZ6650 **102 x 200**
10.5	16.0	10.53	5.0	10	0.5	100	SZ6650 **105 x 100**
						125	SZ6650 **105 x 125**
						160	SZ6650 **105 x 160**
						200	SZ6650 **105 x 200**
11.0	16.0	11.03	5.0	10	0.5	100	SZ6650 **110 x 100**
						125	SZ6650 **110 x 125**
						160	SZ6650 **110 x 160**
						200	SZ6650 **110 x 200**
						250	SZ6650 **110 x 250**
12.0	18.0	12.03	7.0	12	0.8	100	SZ6650 **120 x 100**
						125	SZ6650 **120 x 125**
						160	SZ6650 **120 x 160**
						200	SZ6650 **120 x 200**
						250	SZ6650 **120 x 250**
12.5	18.0	12.53	7.0	12	0.8	160	SZ6650 **125 x 160**
						200	SZ6650 **125 x 200**
						250	SZ6650 **125 x 250**
13.0	18.0	13.03	7.0	13	0.8	250	SZ6650 **130 x 250**
						200	SZ6650 **130 x 200**
						160	SZ6650 **130 x 160**
14.0	22.0	14.03	7.0	14	0.8	160	SZ6650 **140 x 160**
						200	SZ6650 **140 x 200**
						250	SZ6650 **140 x 250**
15.0	22.0	15.03	7.0	14	0.8	160	SZ6650 **150 x 160**
						200	SZ6650 **150 x 200**
						250	SZ6650 **150 x 250**
16.0	22.0	16.03	7.0	16	0.8	160	SZ6650 **160 x 160**
						200	SZ6650 **160 x 200**
						250	SZ6650 **160 x 250**
18.0	24.0	18.03	7.0	18	0.8	160	SZ6650 **180 x 160**
						200	SZ6650 **180 x 200**
						250	SZ6650 **180 x 250**
20.0	26.0	20.03	8.0	20	0.8	160	SZ6650 **200 x 160**
						200	SZ6650 **200 x 200**
						250	SZ6650 **200 x 250**
25.0	32.0	25.03	10.0	25	1.1	160	SZ6650 **250 x 160**
						200	SZ6650 **250 x 200**
						250	SZ6650 **250 x 250**

SZ6750 Ejector pin

with 60° head, hardened



DIN 1530

Shape
D

Material
Tool steel

Head hardness
45 ±5 HRC

Shank hardness
60 ±2 HRC

Note
*Additional surface roughness or another slight deviation of the diameter d_1 over a certain length is permitted for ejectors

d_1^{g6}	$d_3^{-0.2}$	k	l_3	l^{+2}	Item number
0.8	1.4	0.92	5	100	SZ6750 **008 x 100**
				160	SZ6750 **008 x 160**
0.9	1.6	1.01	5	100	SZ6750 **009 x 100**
				160	SZ6750 **009 x 160**
1.0	1.8	1.19	5	100	SZ6750 **010 x 100**
				160	SZ6750 **010 x 160**
1.1	1.8	1.11	5	100	SZ6750 **011 x 100**
				160	SZ6750 **011 x 160**
1.2	2.0	1.19	5	100	SZ6750 **012 x 100**
				160	SZ6750 **012 x 160**
1.3	2.0	1.11	5	100	SZ6750 **013 x 100**
				160	SZ6750 **013 x 160**
1.4	2.2	1.19	5	100	SZ6750 **014 x 100**
				160	SZ6750 **014 x 160**
1.5	2.2	1.11	5	100	SZ6750 **015 x 100**
				160	SZ6750 **015 x 160**
1.6	2.5	1.28	5	100	SZ6750 **016 x 100**
				160	SZ6750 **016 x 160**
1.7	2.5	1.19	5	100	SZ6750 **017 x 100**
				160	SZ6750 **017 x 160**
1.8	2.8	1.37	5	160	SZ6750 **018 x 160**
				100	SZ6750 **018 x 100**
1.9	2.8	1.28	5	100	SZ6750 **019 x 100**
				160	SZ6750 **019 x 160**
2.0	3.0	1.37	5	100	SZ6750 **020 x 100**
				125	SZ6750 **020 x 125**
				160	SZ6750 **020 x 160**
				200	SZ6750 **020 x 200**
2.1	3.2	1.45	5	100	SZ6750 **021 x 100**
				125	SZ6750 **021 x 125**
				200	SZ6750 **021 x 200**

d_1^{g6}	$d_3^{-0.2}$	k	l_3	l^{+2}	Item number
2.2	3.2	1.37	5	100	SZ6750 **022 x 100**
				125	SZ6750 **022 x 125**
				200	SZ6750 **022 x 200**
2.3	3.5	1.54	5	100	SZ6750 **023 x 100**
				125	SZ6750 **023 x 125**
				200	SZ6750 **023 x 200**
2.4	3.5	1.45	5	100	SZ6750 **024 x 100**
				125	SZ6750 **024 x 125**
				200	SZ6750 **024 x 200**
2.5	3.5	1.37	5	100	SZ6750 **025 x 100**
				125	SZ6750 **025 x 125**
				160	SZ6750 **025 x 160**
				200	SZ6750 **025 x 200**
2.6	4.0	1.71	5	100	SZ6750 **026 x 100**
				125	SZ6750 **026 x 125**
				200	SZ6750 **026 x 200**
2.7	4.0	1.63	5	100	SZ6750 **027 x 100**
				125	SZ6750 **027 x 125**
				200	SZ6750 **027 x 200**
2.8	4.0	1.54	5	100	SZ6750 **028 x 100**
				125	SZ6750 **028 x 125**
				200	SZ6750 **028 x 200**
2.9	4.0	1.45	5	100	SZ6750 **029 x 100**
				125	SZ6750 **029 x 125**
				200	SZ6750 **029 x 200**
3.0	4.5	1.80	5	100	SZ6750 **030 x 100**
				125	SZ6750 **030 x 125**
				160	SZ6750 **030 x 160**
				200	SZ6750 **030 x 200**
3.1	4.5	1.71	5	100	SZ6750 **031 x 100**
				125	SZ6750 **031 x 125**

SZ6750 Ejector pin

with 60° head, hardened

d_1^{g6}	$d_3^{-0.2}$	k	l_3	l^{+2}	Item number
3.1	4.5	1.71	5	200	SZ6750 **031 x 200**
3.2	4.5	1.63	5	100	SZ6750 **032 x 100**
				125	SZ6750 **032 x 125**
				200	SZ6750 **032 x 200**
3.3	4.5	1.54	5	100	SZ6750 **033 x 100**
				125	SZ6750 **033 x 125**
				200	SZ6750 **033 x 200**
3.4	4.5	1.45	5	100	SZ6750 **034 x 100**
				125	SZ6750 **034 x 125**
				200	SZ6750 **034 x 200**
3.5	5.0	1.80	5	100	SZ6750 **035 x 100**
				125	SZ6750 **035 x 125**
				160	SZ6750 **035 x 160**
				200	SZ6750 **035 x 200**
3.6	5.0	1.71	5	100	SZ6750 **036 x 100**
				160	SZ6750 **036 x 160**
				200	SZ6750 **036 x 200**
3.7	5.0	1.63	5	100	SZ6750 **037 x 100**
				125	SZ6750 **037 x 125**
				200	SZ6750 **037 x 200**
3.9	5.0	1.45	5	100	SZ6750 **039 x 100**
				125	SZ6750 **039 x 125**
				200	SZ6750 **039 x 200**
4.0	5.0	1.80	5	100	SZ6750 **040 x 100**
				125	SZ6750 **040 x 125**
				160	SZ6750 **040 x 160**
				200	SZ6750 **040 x 200**
4.1	5.5	1.71	5	100	SZ6750 **041 x 100**
				125	SZ6750 **041 x 125**
				200	SZ6750 **041 x 200**
4.2	5.5	1.63	5	100	SZ6750 **042 x 100**
				125	SZ6750 **042 x 125**
				200	SZ6750 **042 x 200**
4.3	5.5	1.54	5	100	SZ6750 **043 x 100**
				125	SZ6750 **043 x 125**
				200	SZ6750 **043 x 200**
4.4	5.5	1.45	5	100	SZ6750 **044 x 100**
				125	SZ6750 **044 x 125**
				200	SZ6750 **044 x 200**
4.5	6.0	1.80	5	100	SZ6750 **045 x 100**
				125	SZ6750 **045 x 125**
				160	SZ6750 **045 x 160**
				200	SZ6750 **045 x 200**
4.6	6.0	1.71	5	100	SZ6750 **046 x 100**
				125	SZ6750 **046 x 125**
				200	SZ6750 **046 x 200**
4.7	6.0	1.63	5	100	SZ6750 **047 x 100**
				125	SZ6750 **047 x 125**
				200	SZ6750 **047 x 200**
4.8	6.0	1.54	5	100	SZ6750 **048 x 100**
				125	SZ6750 **048 x 125**
				200	SZ6750 **048 x 200**
4.9	6.0	1.45	5	100	SZ6750 **049 x 100**
				125	SZ6750 **049 x 125**
				200	SZ6750 **049 x 200**
5.0	6.5	1.80	6	100	SZ6750 **050 x 100**
				125	SZ6750 **050 x 125**
				160	SZ6750 **050 x 160**
				200	SZ6750 **050 x 200**

d_1^{g6}	$d_3^{-0.2}$	k	l_3	l^{+2}	Item number
5.1	6.5	1.71	6	100	SZ6750 **051 x 100**
				125	SZ6750 **051 x 125**
				160	SZ6750 **051 x 160**
				200	SZ6750 **051 x 200**
5.2	6.5	1.63	6	100	SZ6750 **052 x 100**
				125	SZ6750 **052 x 125**
				160	SZ6750 **052 x 160**
				200	SZ6750 **052 x 200**
5.3	6.5	1.54	6	100	SZ6750 **053 x 100**
				125	SZ6750 **053 x 125**
				200	SZ6750 **053 x 200**
5.4	6.5	1.45	6	100	SZ6750 **054 x 100**
				125	SZ6750 **054 x 125**
				200	SZ6750 **054 x 200**
5.5	7.0	1.80	6	100	SZ6750 **055 x 100**
				125	SZ6750 **055 x 125**
				160	SZ6750 **055 x 160**
				200	SZ6750 **055 x 200**
5.6	7.0	1.71	6	100	SZ6750 **056 x 100**
				125	SZ6750 **056 x 125**
				200	SZ6750 **056 x 200**
5.7	7.0	1.63	6	125	SZ6750 **057 x 125**
				200	SZ6750 **057 x 200**
5.8	7.0	1.54	6	125	SZ6750 **058 x 125**
				200	SZ6750 **058 x 200**
5.9	7.0	1.45	6	125	SZ6750 **059 x 125**
				200	SZ6750 **059 x 200**
6.0	8.0	2.23	6	100	SZ6750 **060 x 100**
				125	SZ6750 **060 x 125**
				160	SZ6750 **060 x 160**
				200	SZ6750 **060 x 200**
6.2	8.0	2.06	6	100	SZ6750 **062 x 100**
				125	SZ6750 **062 x 125**
				160	SZ6750 **062 x 160**
				200	SZ6750 **062 x 200**
6.5	9.0	3.16	6	100	SZ6750 **065 x 100**
				125	SZ6750 **065 x 125**
				160	SZ6750 **065 x 160**
				200	SZ6750 **065 x 200**
7.0	9.0	2.73	6	100	SZ6750 **070 x 100**
				125	SZ6750 **070 x 125**
				160	SZ6750 **070 x 160**
				200	SZ6750 **070 x 200**
7.5	9.0	3.17	6	100	SZ6750 **075 x 100**
				125	SZ6750 **075 x 125**
				160	SZ6750 **075 x 160**
				200	SZ6750 **075 x 200**
8.0	10.0	2.73	6	100	SZ6750 **080 x 100**
				125	SZ6750 **080 x 125**
				160	SZ6750 **080 x 160**
				200	SZ6750 **080 x 200**
8.5	10.0	3.17	8	100	SZ6750 **085 x 100**
				125	SZ6750 **085 x 125**
				160	SZ6750 **085 x 160**
				200	SZ6750 **085 x 200**
9.0	11.0	2.73	8	100	SZ6750 **090 x 100**
				125	SZ6750 **090 x 125**
				160	SZ6750 **090 x 160**
				200	SZ6750 **090 x 200**

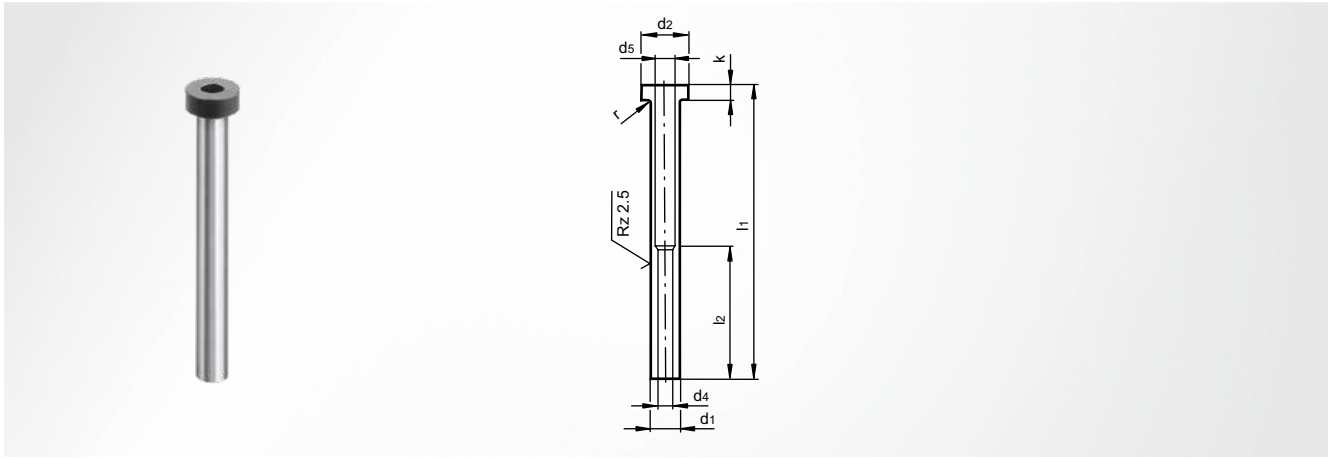
SZ6750 Ejector pin

with 60° head, hardened

d_1^{g6}	$d_3^{-0.2}$	k	l_3	l^{+2}	Item number
9.5	11.0	3.17	8	100	SZ6750 **095 x 100**
				125	SZ6750 **095 x 125**
				160	SZ6750 **095 x 160**
				200	SZ6750 **095 x 200**
10.0	12.0	2.73	8	100	SZ6750 **100 x 100**
				125	SZ6750 **100 x 125**
				160	SZ6750 **100 x 160**
				200	SZ6750 **100 x 200**
11.0	12.0	2.73	10	100	SZ6750 **110 x 100**
				125	SZ6750 **110 x 125**
				160	SZ6750 **110 x 160**
				200	SZ6750 **110 x 200**
12.0	14.0	2.73	10	100	SZ6750 **120 x 100**
				125	SZ6750 **120 x 125**
				160	SZ6750 **120 x 160**
				200	SZ6750 **120 x 200**
13.0	15.0	2.73	10	125	SZ6750 **130 x 125**
				100	SZ6750 **130 x 100**
				160	SZ6750 **130 x 160**
				200	SZ6750 **130 x 200**
14.0	16.0	3.23	10	100	SZ6750 **140 x 100**
				125	SZ6750 **140 x 125**
				160	SZ6750 **140 x 160**
				200	SZ6750 **140 x 200**
16.0	18.0	3.23	10	100	SZ6750 **160 x 100**
				125	SZ6750 **160 x 125**

SZ6751 Ejector sleeve

with cylindrical head, hardened



DIN ISO 8405

Material
Tool steel

Head hardness
45 ±5 HRC

Shank hardness
61 ±2 HRC

d_1^{g6}	$d_2^{-0.2}$	d_4^{H5}	d_5	$k^{-0.05}$	$r^{+0.2}$	l_1^{+1}	l_2	Item number
4	8	2.0	2.4	3	0.3	100	35	SZ6751 **020 x 040 x 100**
						125	35	SZ6751 **020 x 040 x 125**
5	10	3.0	3.4	3	0.3	100	45	SZ6751 **030 x 050 x 100**
						125	45	SZ6751 **030 x 050 x 125**
						150	45	SZ6751 **030 x 050 x 150**
5	10	3.2	3.6	3	0.3	100	45	SZ6751 **032 x 050 x 100**
						125	45	SZ6751 **032 x 050 x 125**
						150	45	SZ6751 **032 x 050 x 150**
6	12	4.0	4.4	5	0.5	100	45	SZ6751 **040 x 060 x 100**
						125	45	SZ6751 **040 x 060 x 125**
						150	45	SZ6751 **040 x 060 x 150**
						175	45	SZ6751 **040 x 060 x 175**
8	14	4.2	4.6	5	0.5	100	45	SZ6751 **042 x 080 x 100**
						125	45	SZ6751 **042 x 080 x 125**
						150	45	SZ6751 **042 x 080 x 150**
						175	45	SZ6751 **042 x 080 x 175**
8	14	5.0	5.4	5	0.5	100	45	SZ6751 **050 x 080 x 100**
						125	45	SZ6751 **050 x 080 x 125**
						150	45	SZ6751 **050 x 080 x 150**
						175	45	SZ6751 **050 x 080 x 175**
						200	45	SZ6751 **050 x 080 x 200**
8	14	5.2	5.6	5	0.5	100	45	SZ6751 **052 x 080 x 100**
						125	45	SZ6751 **052 x 080 x 125**
						150	45	SZ6751 **052 x 080 x 150**
						175	45	SZ6751 **052 x 080 x 175**
						200	45	SZ6751 **052 x 080 x 200**
10	16	6.0	6.4	5	0.5	100	45	SZ6751 **060 x 100 x 100**
						125	45	SZ6751 **060 x 100 x 125**
						150	45	SZ6751 **060 x 100 x 150**
						175	45	SZ6751 **060 x 100 x 175**
						200	45	SZ6751 **060 x 100 x 200**
10	16	6.2	6.6	5	0.5	100	45	SZ6751 **062 x 100 x 100**
						125	45	SZ6751 **062 x 100 x 125**
						150	45	SZ6751 **062 x 100 x 150**
						175	45	SZ6751 **062 x 100 x 175**
						200	45	SZ6751 **062 x 100 x 200**

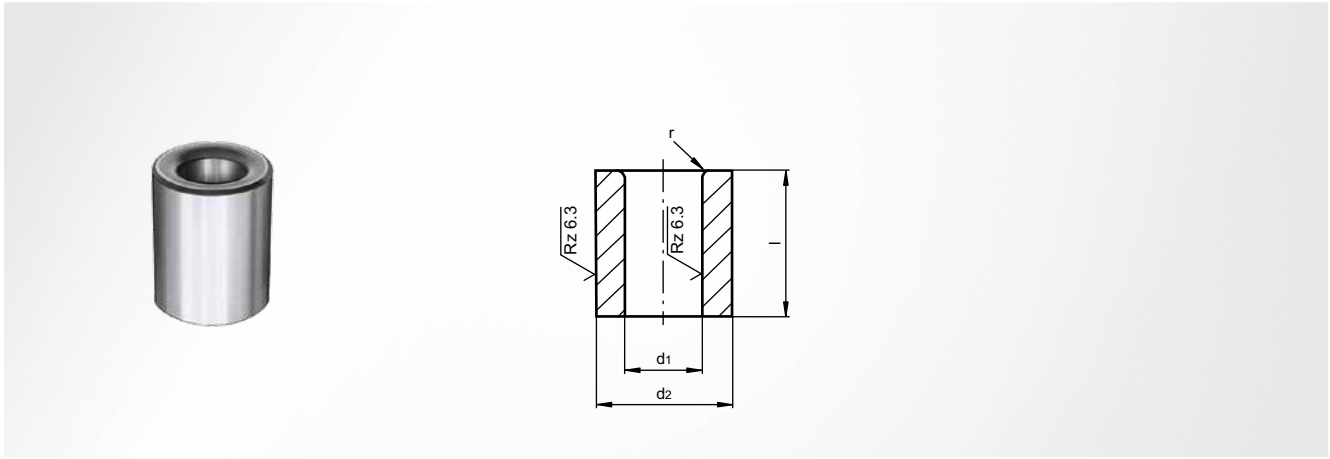
SZ6751 Ejector sleeve

with cylindrical head, hardened

d_1^{g6}	$d_2^{-0.2}$	d_4^{H5}	d_5	$k^{-0.05}$	$r^{+0.2}$	l_1^{+1}	l_2	Item number
12	20	8.0	8.4	7	0.8	100	45	SZ6751 **080 x 120 x 100**
						125	45	SZ6751 **080 x 120 x 125**
						150	45	SZ6751 **080 x 120 x 150**
						175	45	SZ6751 **080 x 120 x 175**
						200	45	SZ6751 **080 x 120 x 200**
12	20	8.2	8.6	7	0.8	100	45	SZ6751 **082 x 120 x 100**
						125	45	SZ6751 **082 x 120 x 125**
						150	45	SZ6751 **082 x 120 x 150**
						175	45	SZ6751 **082 x 120 x 175**
						200	45	SZ6751 **082 x 120 x 200**

SZ6225 Punch guide bush

for pressing-in



ISO 8978

Material
Case-hardening steel

Hardness
62 ±2 HRC

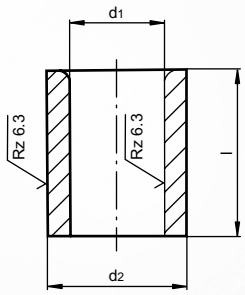
Note
for cutting punches DIN 9861

d_1^{H6}	d_2^{n6}	l	r	Grading	Item number
1.0-2.0	5	8.0	1.0	0.1	SZ6225 **010 - 020 x 08**
2.1-3.0	6	12.5	1.0	0.1	SZ6225 **021 - 030 x 12**
3.1-3.5	8	12.5	1.5	0.1	SZ6225 **031 - 035 x 12**
3.6-5.0	10	16.0	2.0	0.1	SZ6225 **036 - 050 x 16**
5.1-7.0	13	16.0	2.0	0.1	SZ6225 **051 - 070 x 16**

d_1^{H6}	d_2^{n6}	l	r	Grading	Item number
7.1-8.8	16	20.0	2.0	0.1	SZ6225 **071 - 088 x 20**
8.9-11.0	20	20.0	2.5	0.1	SZ6225 **089 - 110 x 20**
11.1-15.0	25	25.0	2.5	0.1	SZ6225 **111 - 150 x 25**
15.5-20.0	32	25.0	4.0	0.5	SZ6225 **155 - 200 x 25**
20.5-25.0	40	32.0	4.0	0.5	SZ6225 **205 - 250 x 32**

SZ6229 Punch guide bush

for pressing-in



Material
Case-hardening steel

Note
for cutting punches ISO 8020

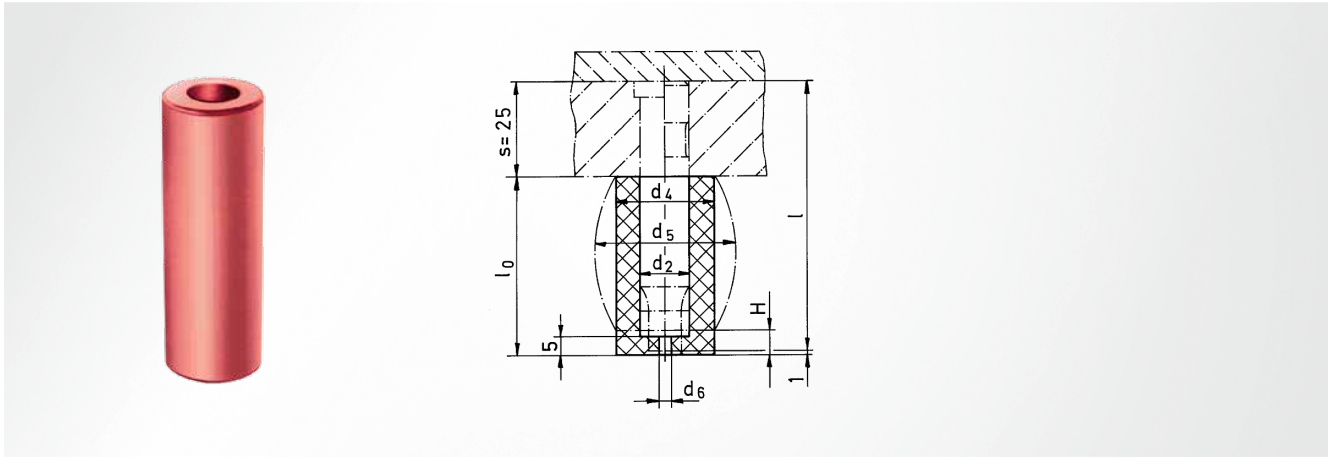
Hardness
62 ±2 HRC

d_1^{F7}	d_2^{n6}	l	t	Grading	Item number
1.1-1.8	4	9	0.01	0.1	SZ6229 **011 - 018 x 09**
1.9-2.6	5	9	0.01	0.1	SZ6229 **019 - 026 x 09**
2.7-3.3	6	12	0.01	0.1	SZ6229 **027 - 033 x 12**
3.4-4.0	7	12	0.01	0.1	SZ6229 **034 - 040 x 12**
4.1-5.0	8	12	0.01	0.1	SZ6229 **041 - 050 x 12**
5.1-6.0	10	16	0.02	0.1	SZ6229 **051 - 060 x 16**
6.1-8.0	12	16	0.02	0.1	SZ6229 **061 - 080 x 16**

d_1^{F7}	d_2^{n6}	l	t	Grading	Item number
8.1-10.0	15	20	0.02	0.1	SZ6229 **081 - 100 x 20**
10.1-12.0	18	20	0.02	0.1	SZ6229 **101 - 120 x 20**
12.5-15.0	22	28	0.02	0.5	SZ6229 **125 - 150 x 28**
15.5-18.0	26	28	0.02	0.5	SZ6229 **155 - 180 x 28**
18.5-20.0	30	36	0.02	0.5	SZ6229 **185 - 200 x 36**
21.0-22.0	30	36	0.02	1.0	SZ6229 **210 - 220 x 36**
23.0-26.0	35	36	0.02	1.0	SZ6229 **230 - 260 x 36**

SZ8455 Stripper

self-adhesive



Material
Polyurethane (PUR)

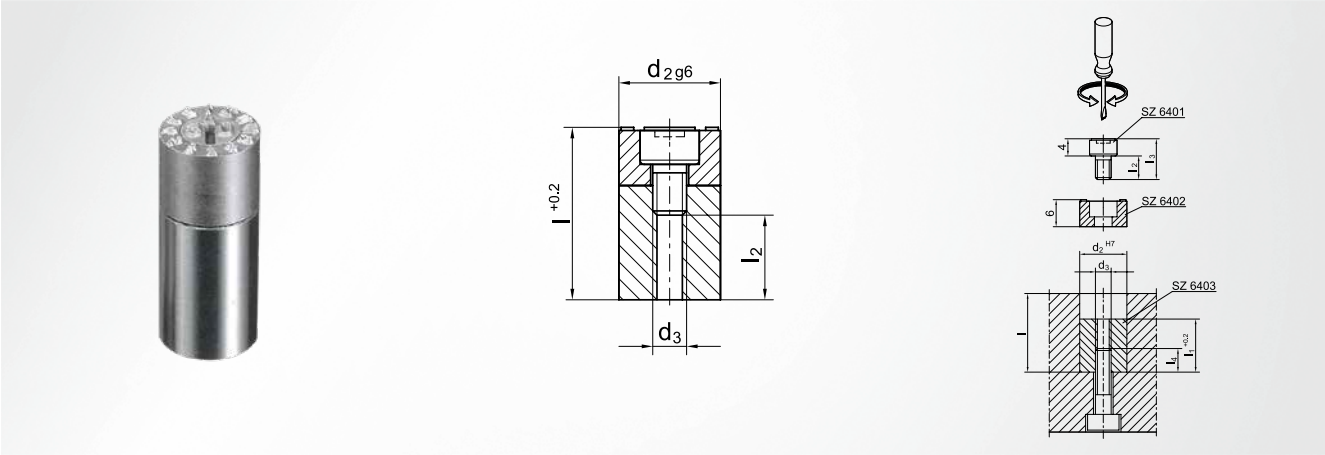
Hardness
93 ±5 Shore A

Note
Scraper lengths l_0 are a coordinated series of suggestions; deviating dimensions are calculated as follows: $l_0 = l - s + 1$

d_2	d_4	d_6	l_0^{+1}	l	H = 3 mm F N	H = 3 mm d_5	H = 6.5 mm F N	H = 6.5 mm d_5	H = 9.5 mm F N	H = 9.5 mm d_5	Item number
4	17	1.6	36	60	1250	19.3					SZ8455 **04 x 36**
			46	70	1150	18.7	1750	20.3			SZ8455 **04 x 46**
6	19	1.6	36	70	1400	21.3					SZ8455 **06 x 36**
			39	63	1380	21.0	2360	22.9			SZ8455 **06 x 39**
			46	70	1350	20.7	2300	22.3			SZ8455 **06 x 46**
			47	71	1300	20.6	2200	22.1			SZ8455 **06 x 47**
			56	80	1100	20.4	1900	21.6	2400	22.9	SZ8455 **06 x 56**
8	21	3.0	36	60	1600	23.3					SZ8455 **08 x 36**
			39	63	1580	23.0	2400	24.9			SZ8455 **08 x 39**
			46	70	1500	22.7	2250	24.3			SZ8455 **08 x 46**
			47	71	1450	22.6	2200	24.1			SZ8455 **08 x 47**
			56	80	1350	22.4	2000	23.6	3000	24.9	SZ8455 **08 x 56**
10	23	3.0	36	60	2100	25.3					SZ8455 **10 x 36**
			39	63	1900	25.0	3100	26.9			SZ8455 **10 x 39**
			46	70	1750	24.7	2850	26.3			SZ8455 **10 x 46**
			47	71	1600	24.6	2700	26.1			SZ8455 **10 x 47**
			56	80	1450	24.4	2500	25.6	3250	26.9	SZ8455 **10 x 56**
13	26	3.0	36	60	2600	28.3					SZ8455 **13 x 36**
			39	63	2250	28.0	3600	29.9			SZ8455 **13 x 39**
			46	70	2150	27.7	3400	29.3			SZ8455 **13 x 46**
			47	71	1650	27.6	2700	29.1			SZ8455 **13 x 47**
			56	80	1500	27.4	2400	28.6	3000	29.9	SZ8455 **13 x 56**
16	30	3.0	36	60	3000	32.5					SZ8455 **16 x 36**
			39	63	2600	32.2	4200	34.1			SZ8455 **16 x 39**
			46	70	2400	31.9	3900	33.4			SZ8455 **16 x 46**
			47	71	2350	31.8	3850	33.2			SZ8455 **16 x 47**
			56	80	2200	31.5	3600	32.7	4600	34.1	SZ8455 **16 x 56**
20	38	3.0	39	63	2800	40.8	4200	43.2			SZ8455 **20 x 39**
			47	71	2400	40.2	3900	42.2			SZ8455 **20 x 47**
			56	80	2000	39.9	3500	41.5	5500	43.2	SZ8455 **20 x 56**
25	50	3.0	39	63	11000	54.2	16000	55.9			SZ8455 **25 x 39**
			47	71	9000	53.1	14000	54.6			SZ8455 **25 x 47**
			56	80	7000	51.5	11500	54.0	16000	56.0	SZ8455 **25 x 56**

SZ6400 Embossing die

complete embossing die



Material
HWS

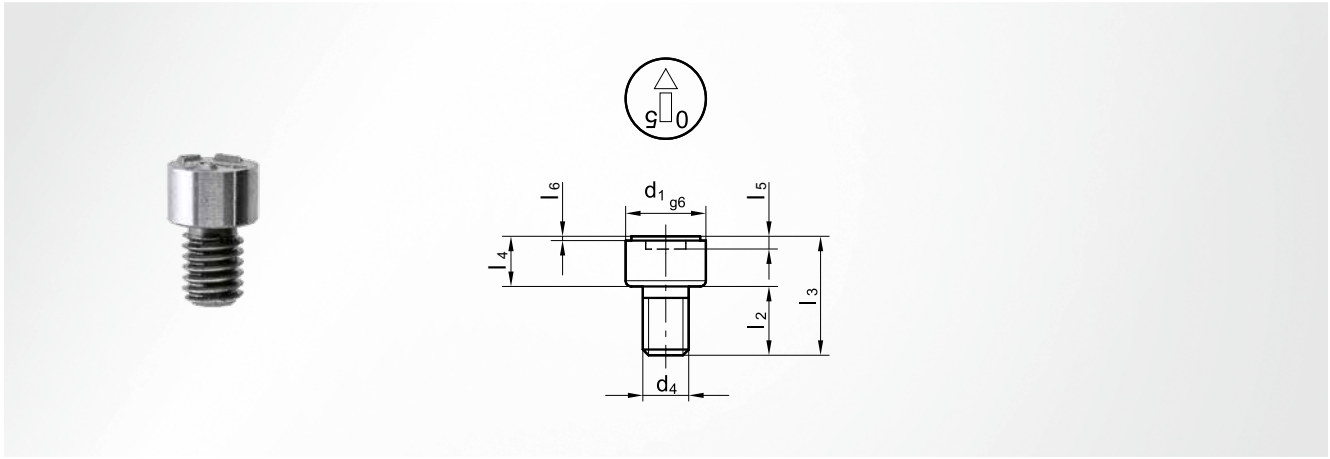
Hardness
60 HRC

Note
Period (months) = 1 number sleeve;
period (weeks) = 5 number sleeves;
please quote the year when ordering

Scope of supply
SZ6401; SZ6402; SZ6403

d_2	d_3	l	l_2	Period	Item number
6	M3	15	6	1-12 months	SZ6400 **06 x 12**
6	M3	15	6	1-52 weeks	SZ6400 **06 x 52**
10	M4	18	8	1-12 months	SZ6400 **10 x 12**
10	M4	18	8	1-52 weeks	SZ6400 **10 x 52**

SZ6401 Internal embossing stamp



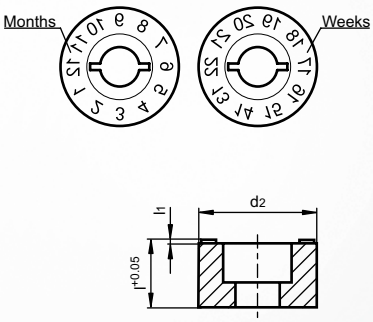
Material
HWS

Note
please quote the year when ordering

Hardness
60 HRC

d_1	d_4	l_2	l_3	l_4	l_5	l_6	Item number
3.4	M2.5	4.5	8.5	4	1	0.25	SZ6401 **06**
5.9	M4	5.5	9.5	4	1	0.25	SZ6401 **10**

SZ6402 Number sleeve



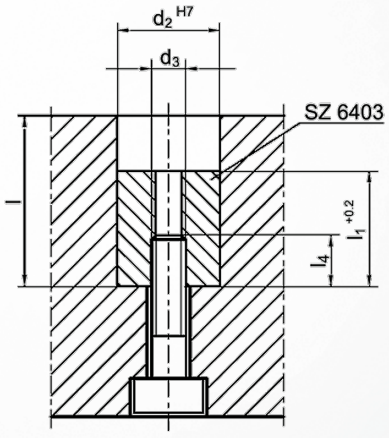
Material
HWS

Hardness
60 HRC

Note
Period (months) = 1 number sleeve;
period (weeks) = 5 number sleeves

d_2	$l^{+0.05}$	l_2	Period	Item number
6	6	0.25	1-12 months	SZ6402 **06 x 12**
6	6	0.25	1-52 weeks	SZ6402 **06 x 52**
10	6	0.25	1-12 months	SZ6402 **10 x 12**
10	6	0.25	1-52 weeks	SZ6402 **10 x 52**

SZ6403 Spacer



d_2^{h7}	l	$l_1^{+0.2}$	l_4	Item number
6	15	9	5.0	SZ6403 **06**
10	18	12	6.5	SZ6403 **10**

Spring elements

- System springs, system spring units
- Helical compression springs
- Elastomer springs
- Thrust pieces

SZ8005 4.7
SZ8010 4.10
SZ8020 4.13
SZ8030 4.16
SZ8040 4.19
SZ8045 4.22
SZ8047 4.24
SZ8049 4.26
SZ8111 4.27
SZ8112 4.28
SZ8113 4.29
SZ8114 4.30
SZ8565.00 4.31
SZ8565.10 4.32
SZ8565.20 4.33
SZ8565.30 4.34
SZ8565.40 4.35
SZ8566 4.36
SZ8567 4.36
SZ8568 4.37
SZ8569 4.37
SZ8560 4.38
SZ8561 4.39
SZ8563 4.39
SZ8580 4.40
SZ8300 4.41
SZ8500 4.43
SZ8590 4.44
SZ8526 4.45
SZ8527 4.46
SZ8520 4.47
SZ8556 4.48
SZ8555 4.49
SZ8558 4.50
SZ8522 4.52
SZ8523 4.53
SZ8524 4.54
SZ5190 4.55
SZ5290 4.57
SZ5390 4.58
SZ5391 4.59
SZ8460 4.60
SZ8135 4.60
SZ8140 4.61
SZ8145 4.62
SZ8146 4.63
SZ8130 4.64
SZ8131 4.65

Spring elements

System springs

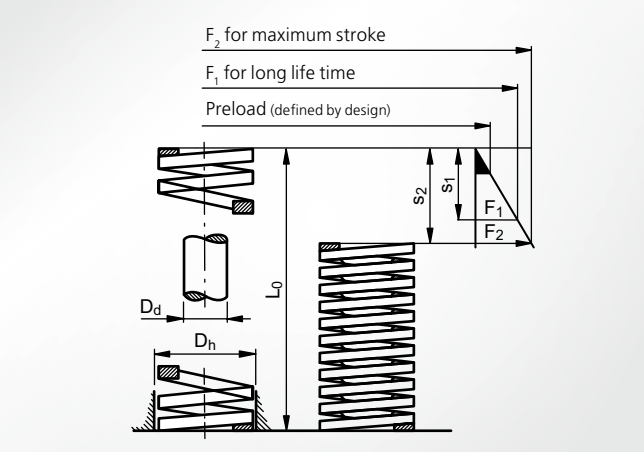
* ISO 10243

STEINEL system springs are available in eight types of load, as well as various diameters and lengths. Types of load are colour-marked so that they can be immediately told apart.

Technical features

- alloyed valve spring steel
- heat-treated
- shot-blasted
- set
- powder-coated
- Application up to 180°C
- Forces up to 4500 daN over the maximum stroke

General spring characteristic image



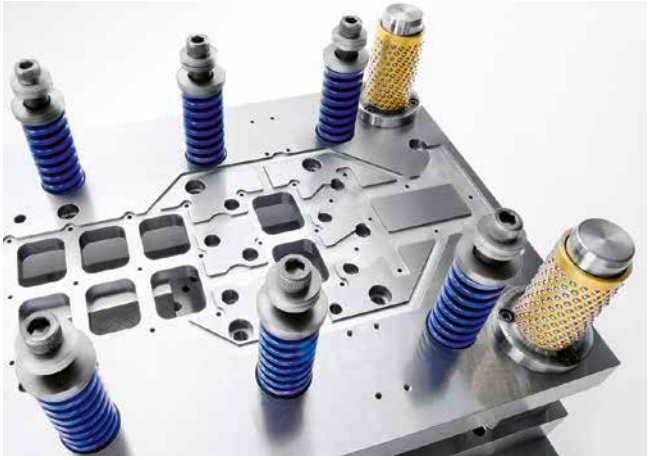
The "long life time" is recommended for the optimal design of the spring. The data on the maximum stroke can be found on the corresponding product pages. The tolerances for the length L_0 of the unloaded spring are ±1 %, at least ±0.75 mm.

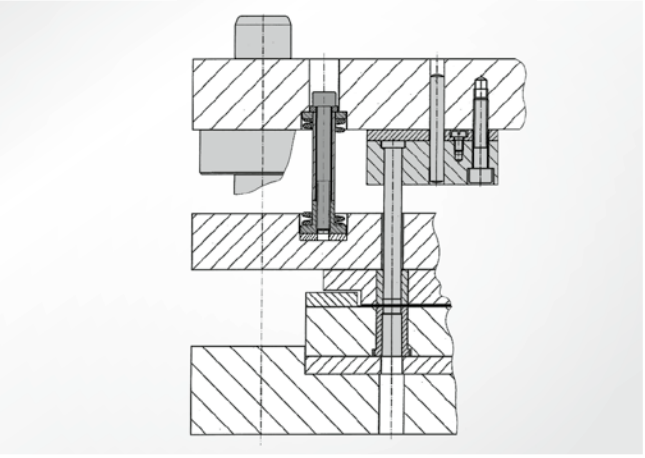
D_d = Pin diameter in mm (inner guide)
D_H = Sleeve diameter in mm (outer guide)
F_1 and F_2 = Spring forces in N assigned to stroke s_1 and s_2
L_0 = Length of the unloaded spring in mm
s_1 and s_2 = Strokes in mm assigned to the spring forces F_1 and F_2

c = Spring rate in N/mm (Force increase per stroke)

In addition to the standardised system springs, all components for pre-loaded system spring units are also available; this ensures a perfectly coordinated, ready-to-install combination.

System spring units in the tool





Elastomer springs

Elastomer springs made from rubber or plastic are distinguished by their high operational safety and long life times. The preferred application fields are medium and industrial tool making, where they serve as cushioning for scrapers and wedge-type gate valves, as well as supports for tool upper parts.

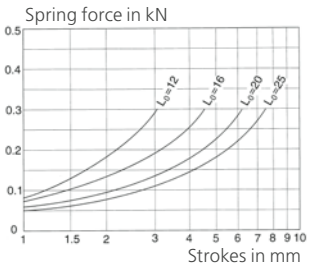
Elastomer springs must be guided with the aid of guide pins. These determine the position of the springs and prevent lateral buckling. Elastomer springs can also be used as individual springs as well as stacked spring units. When stacking, guide pins and metallic discs are required.

Rubber springs

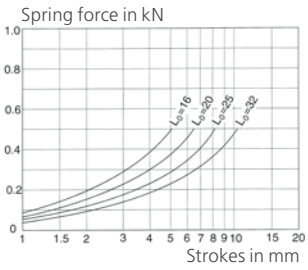
The material is high-quality chloroprene elastomer (CR) with a hardness value of 70 ±3 Shore-A. It is distinguished by its high level of elasticity and resistance to breakage, as well as its good resistance to oil.

Force path diagrams for rubber springs

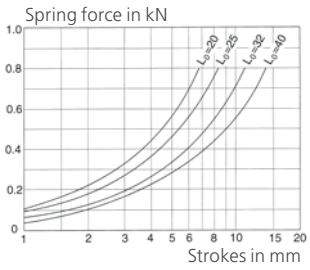
D_a 16



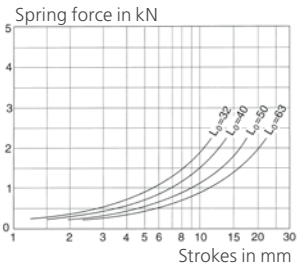
D_a 20



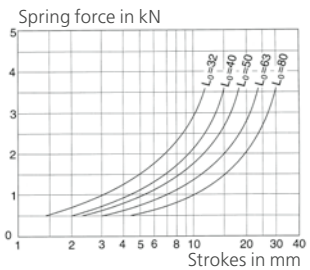
D_a 25



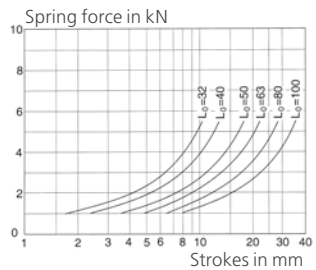
D_a 32



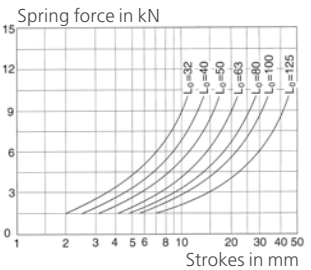
D_a 40



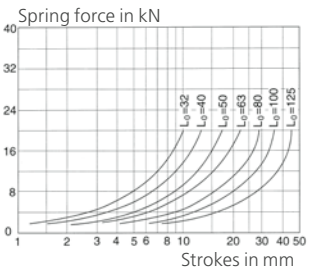
D_a 50



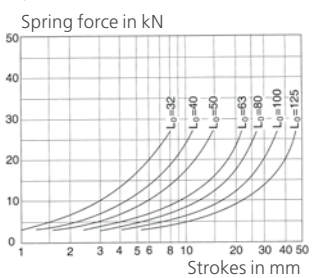
D_a 63



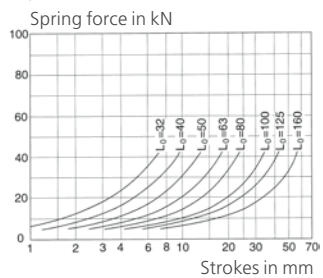
D_a 80



D_a 100



D_a 125

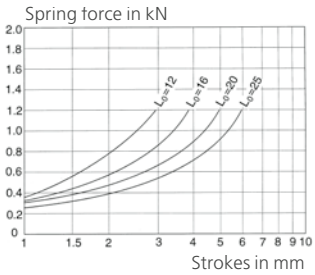


Elastomer springs

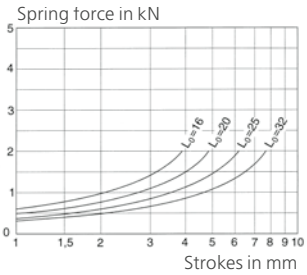
This material is a high-quality polyurethane elastomer (PUR) with a hardness value of 90 ±5 Shore-A. It is distinguished by its imperviousness to chemical and mechanical influences. At the same sizes, elastomer springs have a greater spring force than rubber springs. They are ideally suitable for use wherever high forces are required for small dimensions.

Force path diagrams for elastomer springs

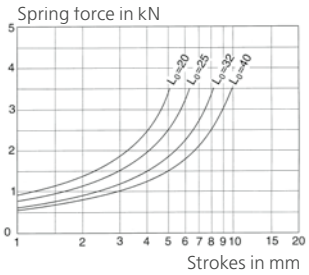
D_a 16



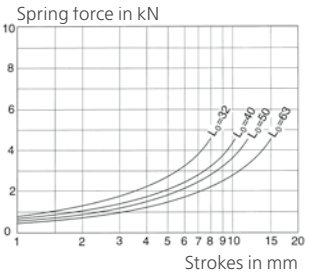
D_a 20



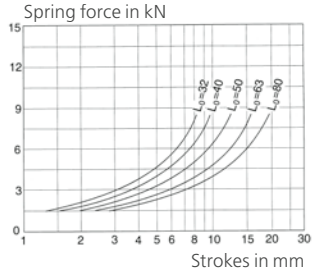
D_a 25



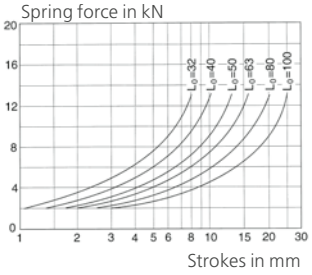
D_a 32



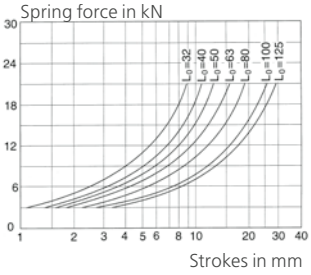
D_a 40



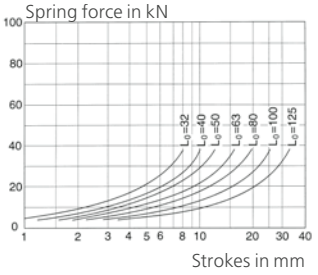
D_a 50



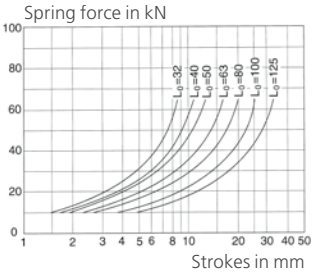
D_a 63



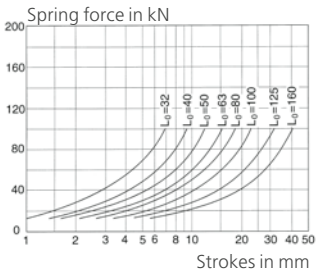
D_a 80



D_a 100



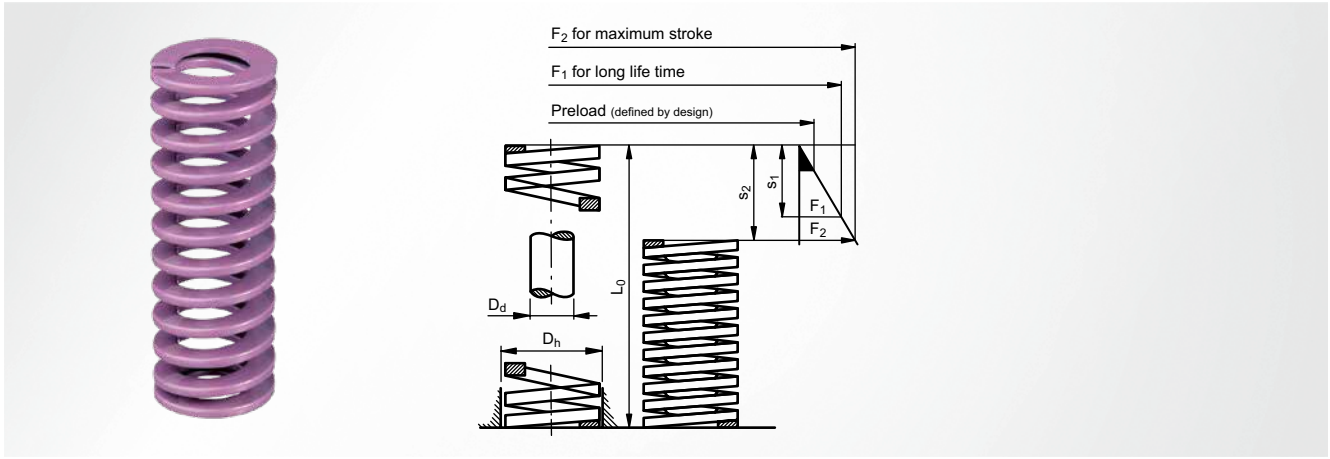
D_a 125



In addition to their usual round design, elastomer springs are also available as rectangular rods or plate material. Mechanical reworking tasks such as water jet cutting, turning, drilling and milling can be carried out without any problems.

SZ8005 System spring

extra light load, identification colour lilac



Material
Profiled valve spring steel wire (52SiCrNi5)

Wire cross-section
rectangular

Spring type
Helical compression spring

Note
Spring is set, closed and rectangular ground

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time $s_1^{35\,\%}$	long life time F_1 N	max. stroke $s_2^{50\,\%}$	max. stroke F_2 N	Item number
10.0	5.0	2.1 x 0.9	25	8.5	8.8	74	12.5	106	SZ8005 **10 x 025**
			32	6.5	11.2	73	16.0	104	SZ8005 **10 x 032**
			38	5.5	13.3	73	19.0	105	SZ8005 **10 x 038**
			44	5.0	15.4	77	22.0	110	SZ8005 **10 x 044**
			51	4.5	17.9	80	25.5	115	SZ8005 **10 x 051**
			64	3.3	22.4	74	32.0	106	SZ8005 **10 x 064**
			76	3.2	26.6	85	38.0	122	SZ8005 **10 x 076**
			305	0.6	106.8	64	152.5	92	SZ8005 **10 x 305**
12.5	6.3	2.5 x 1.2	25	15.5	8.8	136	12.5	194	SZ8005 **13 x 025**
			32	12.2	11.2	137	16.0	195	SZ8005 **13 x 032**
			38	10.3	13.3	137	19.0	196	SZ8005 **13 x 038**
			44	8.7	15.4	134	22.0	191	SZ8005 **13 x 044**
			51	7.5	17.9	134	25.5	191	SZ8005 **13 x 051**
			64	5.8	22.4	130	32.0	186	SZ8005 **13 x 064**
			76	4.7	26.6	125	38.0	179	SZ8005 **13 x 076**
			89	4.1	31.2	128	44.5	182	SZ8005 **13 x 089**
			102	3.6	35.7	129	51.0	184	SZ8005 **13 x 102**
			305	1.2	106.8	128	152.5	183	SZ8005 **13 x 305**
16.0	8.0	3.4 x 1.2	25	20.2	8.8	177	12.5	253	SZ8005 **16 x 025**
			32	14.4	11.2	161	16.0	230	SZ8005 **16 x 032**
			38	12.3	13.3	164	19.0	234	SZ8005 **16 x 038**
			44	10.6	15.4	163	22.0	233	SZ8005 **16 x 044**
			51	8.9	17.9	159	25.5	227	SZ8005 **16 x 051**
			64	7.0	22.4	157	32.0	224	SZ8005 **16 x 064**
			76	5.8	26.6	154	38.0	220	SZ8005 **16 x 076**
			89	4.8	31.2	150	44.5	214	SZ8005 **16 x 089**
			102	4.0	35.7	143	51.0	204	SZ8005 **16 x 102**
			115	3.9	40.3	157	57.5	224	SZ8005 **16 x 115**
			305	1.5	106.8	160	152.5	229	SZ8005 **16 x 305**
20.0	10.0	4.0 x 1.7	25	32.1	8.8	281	12.5	401	SZ8005 **20 x 025**
			32	24.7	11.2	277	16.0	395	SZ8005 **20 x 032**
			38	20.7	13.3	275	19.0	393	SZ8005 **20 x 038**
			44	17.8	15.4	274	22.0	392	SZ8005 **20 x 044**
			51	15.3	17.9	273	25.5	390	SZ8005 **20 x 051**
			64	12.1	22.4	271	32.0	387	SZ8005 **20 x 064**
			76	10.2	26.6	271	38.0	388	SZ8005 **20 x 076**

SZ8005 System spring

extra light load, identification colour lilac

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time s_1 35 %	F_1 N	max. stroke s_2 50 %	F_2 N	Item number
20.0	10.0	4.0 x 1.7	89	8.6	31.2	268	44.5	383	SZ8005 **20 x 089**
			102	7.5	35.7	268	51.0	383	SZ8005 **20 x 102**
			115	6.7	40.3	270	57.5	385	SZ8005 **20 x 115**
			127	6.1	44.5	271	63.5	387	SZ8005 **20 x 127**
			139	5.5	48.7	268	69.5	382	SZ8005 **20 x 139**
			152	5.1	53.2	271	76.0	388	SZ8005 **20 x 152**
			305	2.5	106.8	267	152.5	381	SZ8005 **20 x 305**
25.0	12.5	5.4 x 2.2	25	52.7	8.8	461	12.5	659	SZ8005 **25 x 025**
			32	40.0	11.2	448	16.0	640	SZ8005 **25 x 032**
			38	33.3	13.3	443	19.0	633	SZ8005 **25 x 038**
			44	28.6	15.4	440	22.0	629	SZ8005 **25 x 044**
			51	24.7	17.9	441	25.5	630	SZ8005 **25 x 051**
			64	19.4	22.4	435	32.0	621	SZ8005 **25 x 064**
			76	16.3	26.6	434	38.0	619	SZ8005 **25 x 076**
			89	13.9	31.2	433	44.5	619	SZ8005 **25 x 089**
			102	12.1	35.7	432	51.0	617	SZ8005 **25 x 102**
			115	10.8	40.3	435	57.5	621	SZ8005 **25 x 115**
			127	9.8	44.5	436	63.5	622	SZ8005 **25 x 127**
			139	8.9	48.7	433	69.5	619	SZ8005 **25 x 139**
			152	8.1	53.2	431	76.0	616	SZ8005 **25 x 152**
			178	6.9	62.3	430	89.0	614	SZ8005 **25 x 178**
			203	6.1	71.1	433	101.5	619	SZ8005 **25 x 203**
			305	4.0	106.8	427	152.5	610	SZ8005 **25 x 305**
32.0	16.0	6.4 x 2.7	38	43.8	13.3	583	19.0	832	SZ8005 **32 x 038**
			44	37.5	15.4	578	22.0	825	SZ8005 **32 x 044**
			51	32.3	17.9	577	25.5	824	SZ8005 **32 x 051**
			64	25.4	22.4	569	32.0	813	SZ8005 **32 x 064**
			76	21.3	26.6	567	38.0	809	SZ8005 **32 x 076**
			89	18.1	31.2	564	44.5	805	SZ8005 **32 x 089**
			102	15.8	35.7	564	51.0	806	SZ8005 **32 x 102**
			115	13.9	40.3	559	57.5	799	SZ8005 **32 x 115**
			127	12.6	44.5	560	63.5	800	SZ8005 **32 x 127**
			139	11.4	48.7	555	69.5	792	SZ8005 **32 x 139**
			152	10.5	53.2	559	76.0	798	SZ8005 **32 x 152**
			178	8.9	62.3	554	89.0	792	SZ8005 **32 x 178**
			203	7.8	71.1	554	101.5	792	SZ8005 **32 x 203**
			254	6.2	88.9	551	127.0	787	SZ8005 **32 x 254**
			305	5.2	106.8	555	152.5	793	SZ8005 **32 x 305**
40.0	20.0	7.8 x 3.4	51	50.8	17.9	907	25.5	1295	SZ8005 **40 x 051**
			64	39.7	22.4	889	32.0	1270	SZ8005 **40 x 064**
			76	33.1	26.6	880	38.0	1258	SZ8005 **40 x 076**
			89	28.1	31.2	875	44.5	1250	SZ8005 **40 x 089**
			102	24.5	35.7	875	51.0	1250	SZ8005 **40 x 102**
			115	21.6	40.3	869	57.5	1242	SZ8005 **40 x 115**
			127	19.5	44.5	867	63.5	1238	SZ8005 **40 x 127**
			139	17.8	48.7	866	69.5	1237	SZ8005 **40 x 139**
			152	16.3	53.2	867	76.0	1239	SZ8005 **40 x 152**
			178	13.8	62.3	860	89.0	1228	SZ8005 **40 x 178**
			203	12.1	71.1	860	101.5	1228	SZ8005 **40 x 203**
			254	9.7	88.9	862	127.0	1232	SZ8005 **40 x 254**
			305	8.0	106.8	854	152.5	1220	SZ8005 **40 x 305**
50.0	25.0	10.7 x 4.4	64	80.2	22.4	1796	32.0	2566	SZ8005 **50 x 064**
			76	66.9	26.6	1780	38.0	2542	SZ8005 **50 x 076**
			89	56.6	31.2	1763	44.5	2519	SZ8005 **50 x 089**
			102	49.3	35.7	1760	51.0	2514	SZ8005 **50 x 102**
			115	43.5	40.3	1751	57.5	2501	SZ8005 **50 x 115**
			127	39.3	44.5	1747	63.5	2496	SZ8005 **50 x 127**
			139	35.8	48.7	1742	69.5	2488	SZ8005 **50 x 139**
			152	32.8	53.2	1745	76.0	2493	SZ8005 **50 x 152**

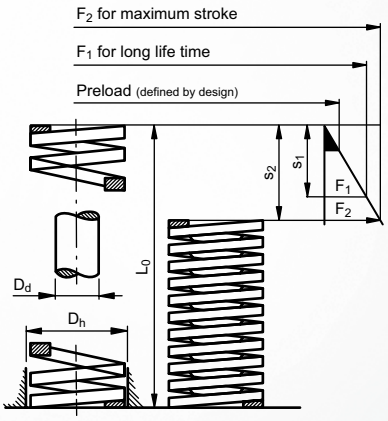
SZ8005 System spring

extra light load, identification colour lilac

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time s_1 35 %	F_1 N	max. stroke s_2 50 %	F_2 N	Item number
50.0	25.0	10.7 x 4.4	178	27.8	62.3	1732	89.0	2474	SZ8005 **50 x 178**
			203	24.2	71.1	1719	101.5	2456	SZ8005 **50 x 203**
			254	19.2	88.9	1707	127.0	2438	SZ8005 **50 x 254**
			305	16.0	106.8	1708	152.5	2440	SZ8005 **50 x 305**
63.0	38.0	11.4 x 5.1	76	57.8	26.6	1537	38.0	2196	SZ8005 **63 x 076**
			89	51.4	31.2	1601	44.5	2287	SZ8005 **63 x 089**
			102	44.4	35.7	1585	51.0	2264	SZ8005 **63 x 102**
			115	41.6	40.3	1674	57.5	2392	SZ8005 **63 x 115**
			127	33.2	44.5	1476	63.5	2108	SZ8005 **63 x 127**
			152	27.4	53.2	1458	76.0	2082	SZ8005 **63 x 152**
			178	24.0	62.3	1495	89.0	2136	SZ8005 **63 x 178**
			203	21.0	71.1	1492	101.5	2132	SZ8005 **63 x 203**
			254	16.4	88.9	1458	127.0	2083	SZ8005 **63 x 254**
			305	13.6	106.8	1452	152.5	2074	SZ8005 **63 x 305**

SZ8010 System spring

light load, identification colour green



ISO 10243

Material
Profiled valve spring steel wire (52SiCrNi5)

Spring type
Helical compression spring

Wire cross-section
rectangular

Note
Spring is set, closed and rectangular ground

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time $s_1^{30\ \%}$	long life time F_1 N	max. stroke $s_2^{40\ \%}$	max. stroke F_2 N	Item number
10.0	5.0	1.7 x 1.1	25	11.0	7.5	83	10.0	110	SZ8010 **10 x 025**
			32	8.5	9.6	82	12.8	109	SZ8010 **10 x 032**
			38	6.8	11.4	78	15.2	103	SZ8010 **10 x 038**
			44	6.0	13.2	79	17.6	106	SZ8010 **10 x 044**
			51	5.0	15.3	77	20.4	102	SZ8010 **10 x 051**
			64	4.1	19.2	79	25.6	105	SZ8010 **10 x 064**
			76	3.6	22.8	82	30.4	109	SZ8010 **10 x 076**
			305	0.9	91.5	82	122.0	110	SZ8010 **10 x 305**
12.5	6.3	2.3 x 1.5	25	21.0	7.5	158	10.0	210	SZ8010 **13 x 025**
			32	16.4	9.6	157	12.8	210	SZ8010 **13 x 032**
			38	13.6	11.4	155	15.2	207	SZ8010 **13 x 038**
			44	12.1	13.2	160	17.6	213	SZ8010 **13 x 044**
			51	10.3	15.3	158	20.4	210	SZ8010 **13 x 051**
			64	7.6	19.2	146	25.6	195	SZ8010 **13 x 064**
			76	6.3	22.8	144	30.4	192	SZ8010 **13 x 076**
			89	5.4	26.7	144	35.6	192	SZ8010 **13 x 089**
			102	4.6	30.6	141	40.8	188	SZ8010 **13 x 102**
			305	1.6	91.5	146	122.0	195	SZ8010 **13 x 305**
16.0	8.0	3.2 x 1.7	25	29.0	7.5	218	10.0	290	SZ8010 **16 x 025**
			32	22.9	9.6	220	12.8	293	SZ8010 **16 x 032**
			38	19.3	11.4	220	15.2	293	SZ8010 **16 x 038**
			44	17.1	13.2	226	17.6	301	SZ8010 **16 x 044**
			51	14.0	15.3	214	20.4	286	SZ8010 **16 x 051**
			64	10.7	19.2	205	25.6	274	SZ8010 **16 x 064**
			76	9.0	22.8	205	30.4	274	SZ8010 **16 x 076**
			89	7.3	26.7	195	35.6	260	SZ8010 **16 x 089**
			102	6.8	30.6	208	40.8	277	SZ8010 **16 x 102**
			115	7.0	34.5	242	46.0	322	SZ8010 **16 x 115**
			305	2.3	91.5	210	122.0	281	SZ8010 **16 x 305**
20.0	10.0	4.0 x 2.1	25	55.8	7.5	419	10.0	558	SZ8010 **20 x 025**
			32	45.0	9.6	432	12.8	576	SZ8010 **20 x 032**
			38	36.0	11.4	410	15.2	547	SZ8010 **20 x 038**
			44	30.0	13.2	396	17.6	528	SZ8010 **20 x 044**
			51	24.5	15.3	375	20.4	500	SZ8010 **20 x 051**

SZ8010 System spring

light load, identification colour green

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time $s_1^{30\ \%}$	long life time F_1 N	max. stroke $s_2^{40\ \%}$	max. stroke F_2 N	Item number
20.0	10.0	4.0 x 2.1	64	19.2	19.2	369	25.6	492	SZ8010 **20 x 064**
			76	16.0	22.8	365	30.4	486	SZ8010 **20 x 076**
			89	14.0	26.7	374	35.6	498	SZ8010 **20 x 089**
			102	12.0	30.6	367	40.8	490	SZ8010 **20 x 102**
			115	10.9	34.5	376	46.0	501	SZ8010 **20 x 115**
			127	9.5	38.1	362	50.8	483	SZ8010 **20 x 127**
			139	8.4	41.7	350	55.6	467	SZ8010 **20 x 139**
			152	7.5	45.6	342	60.8	456	SZ8010 **20 x 152**
			305	4.0	91.5	366	122.0	488	SZ8010 **20 x 305**
25.0	12.5	5.3 x 2.7	25	105.0	7.5	788	10.0	1050	SZ8010 **25 x 025**
			32	80.3	9.6	771	12.8	1028	SZ8010 **25 x 032**
			38	62.0	11.4	707	15.2	942	SZ8010 **25 x 038**
			44	52.9	13.2	698	17.6	931	SZ8010 **25 x 044**
			51	44.0	15.3	673	20.4	898	SZ8010 **25 x 051**
			64	35.2	19.2	676	25.6	901	SZ8010 **25 x 064**
			76	28.0	22.8	638	30.4	851	SZ8010 **25 x 076**
			89	24.0	26.7	641	35.6	854	SZ8010 **25 x 089**
			102	21.1	30.6	646	40.8	861	SZ8010 **25 x 102**
			115	18.7	34.5	645	46.0	860	SZ8010 **25 x 115**
			127	16.7	38.1	636	50.8	848	SZ8010 **25 x 127**
			139	15.3	41.7	638	55.6	851	SZ8010 **25 x 139**
			152	14.0	45.6	638	60.8	851	SZ8010 **25 x 152**
			178	12.5	53.4	668	71.2	890	SZ8010 **25 x 178**
			203	10.4	60.9	633	81.2	844	SZ8010 **25 x 203**
			305	7.0	91.5	641	122.0	854	SZ8010 **25 x 305**
32.0	16.0	6.7 x 3.3	38	98.0	11.4	1117	15.2	1490	SZ8010 **32 x 038**
			44	79.5	13.2	1049	17.6	1399	SZ8010 **32 x 044**
			51	67.0	15.3	1025	20.4	1367	SZ8010 **32 x 051**
			64	53.0	19.2	1018	25.6	1357	SZ8010 **32 x 064**
			76	44.0	22.8	1003	30.4	1338	SZ8010 **32 x 076**
			89	37.2	26.7	993	35.6	1324	SZ8010 **32 x 089**
			102	32.0	30.6	979	40.8	1306	SZ8010 **32 x 102**
			115	29.0	34.5	1001	46.0	1334	SZ8010 **32 x 115**
			127	25.0	38.1	953	50.8	1270	SZ8010 **32 x 127**
			139	23.0	41.7	959	55.6	1279	SZ8010 **32 x 139**
			152	21.5	45.6	980	60.8	1307	SZ8010 **32 x 152**
			178	18.2	53.4	972	71.2	1296	SZ8010 **32 x 178**
			203	15.8	60.9	962	81.2	1283	SZ8010 **32 x 203**
			254	12.5	76.2	953	101.6	1275	SZ8010 **32 x 254**
			305	10.3	91.5	942	122.0	1257	SZ8010 **32 x 305**
40.0	20.0	8.0 x 4.0	51	92.0	15.3	1408	20.4	1877	SZ8010 **40 x 051**
			64	73.0	19.2	1402	25.6	1869	SZ8010 **40 x 064**
			76	63.0	22.8	1436	30.4	1915	SZ8010 **40 x 076**
			89	51.0	26.7	1362	35.6	1816	SZ8010 **40 x 089**
			102	44.5	30.6	1362	40.8	1816	SZ8010 **40 x 102**
			115	39.6	34.5	1366	46.0	1822	SZ8010 **40 x 115**
			127	36.0	38.1	1372	50.8	1829	SZ8010 **40 x 127**
			139	32.0	41.7	1334	55.6	1779	SZ8010 **40 x 139**
			152	28.0	45.6	1277	60.8	1702	SZ8010 **40 x 152**
			178	25.2	53.4	1346	71.2	1794	SZ8010 **40 x 178**
			203	21.8	60.9	1328	81.2	1770	SZ8010 **40 x 203**
			254	17.0	76.2	1295	101.6	1734	SZ8010 **40 x 254**
			305	14.8	91.5	1354	122.0	1806	SZ8010 **40 x 305**
50.0	25.0	11.1 x 5.5	64	156.0	19.2	2995	25.6	3994	SZ8010 **50 x 064**
			76	125.0	22.8	2850	30.4	3800	SZ8010 **50 x 076**
			89	109.0	26.7	2910	35.6	3880	SZ8010 **50 x 089**
			102	94.0	30.6	2876	40.8	3835	SZ8010 **50 x 102**
			115	81.0	34.5	2795	46.0	3726	SZ8010 **50 x 115**
			127	71.0	38.1	2705	50.8	3607	SZ8010 **50 x 127**

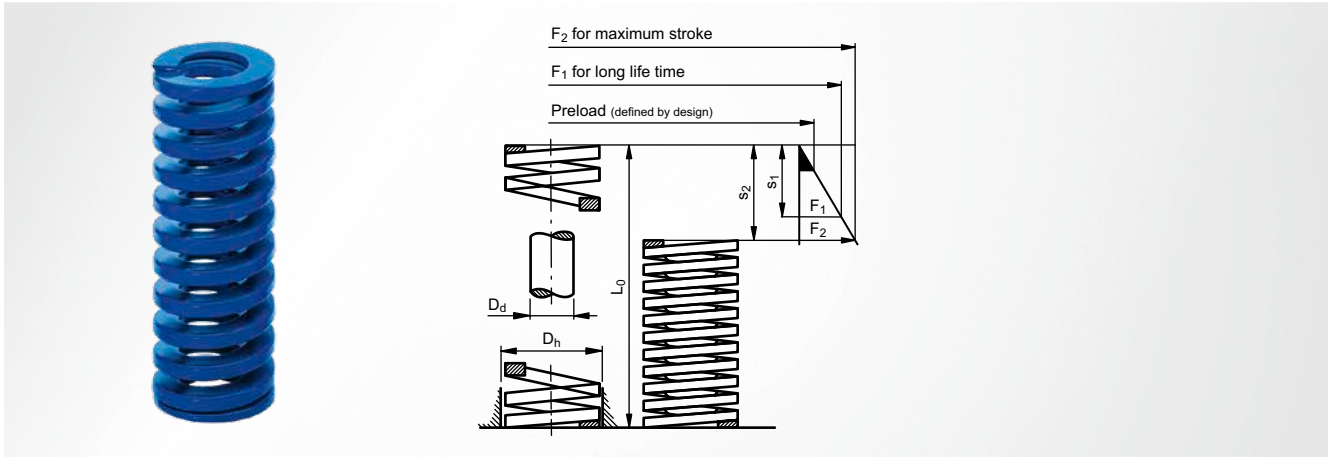
SZ8010 System spring

light load, identification colour green

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time $s_1^{30\ \%}$	long life time F_1 N	max. stroke $s_2^{40\ \%}$	max. stroke F_2 N	Item number
50.0	25.0	11.1 x 5.5	139	66.5	41.7	2773	55.6	3697	SZ8010 **50 x 139**
			152	60.0	45.6	2736	60.8	3648	SZ8010 **50 x 152**
			178	52.0	53.4	2777	71.2	3702	SZ8010 **50 x 178**
			203	44.0	60.9	2680	81.2	3573	SZ8010 **50 x 203**
			229	38.2	68.7	2624	91.6	3499	SZ8010 **50 x 229**
			254	35.0	76.2	2667	101.6	3570	SZ8010 **50 x 254**
			305	28.5	91.5	2608	122.0	3477	SZ8010 **50 x 305**
63.0	38.0	11.6 x 7.7	76	189.0	22.8	4309	30.4	5746	SZ8010 **63 x 076**
			89	158.0	26.7	4219	35.6	5625	SZ8010 **63 x 089**
			102	131.0	30.6	4009	40.8	5345	SZ8010 **63 x 102**
			115	116.0	34.5	4002	46.0	5336	SZ8010 **63 x 115**
			127	103.0	38.1	3924	50.8	5232	SZ8010 **63 x 127**
			152	84.3	45.6	3844	60.8	5125	SZ8010 **63 x 152**
			178	71.5	53.4	3818	71.2	5091	SZ8010 **63 x 178**
			203	61.7	60.9	3758	81.2	5010	SZ8010 **63 x 203**
			254	47.0	76.2	3581	101.6	4775	SZ8010 **63 x 254**
			305	38.2	91.5	3495	122.0	4660	SZ8010 **63 x 305**

SZ8020 System spring

medium load, identification colour blue



ISO 10243

Material
Profiled valve spring steel wire (52SiCrNi5)

Spring type
Helical compression spring

Wire cross-section
rectangular

Note
Spring is set, closed and rectangular ground

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time $s_1^{25\ \%}$	long life time F_1 N	max. stroke $s_2^{37.5\ \%}$	max. stroke F_2 N	Item number
10.0	5.0	1.8 x 1.2	25	16.0	6.3	100	9.4	150	SZ8020 **10 x 025**
			32	13.0	8.0	104	12.0	156	SZ8020 **10 x 032**
			38	11.9	9.5	113	14.2	169	SZ8020 **10 x 038**
			44	10.3	11.0	113	16.5	170	SZ8020 **10 x 044**
			51	8.9	12.8	113	19.1	170	SZ8020 **10 x 051**
			64	7.5	16.0	120	24.0	180	SZ8020 **10 x 064**
			76	6.2	19.0	118	28.5	177	SZ8020 **10 x 076**
			305	1.6	76.3	122	114.4	182	SZ8020 **10 x 305**
12.5	6.3	2.5 x 1.7	25	30.0	6.3	188	9.4	282	SZ8020 **13 x 025**
			32	24.8	8.0	198	12.0	298	SZ8020 **13 x 032**
			38	21.4	9.5	203	14.2	304	SZ8020 **13 x 038**
			44	18.0	11.0	198	16.5	297	SZ8020 **13 x 044**
			51	15.5	12.8	198	19.1	296	SZ8020 **13 x 051**
			64	12.1	16.0	194	24.0	290	SZ8020 **13 x 064**
			76	10.2	19.0	194	28.5	291	SZ8020 **13 x 076**
			89	8.4	22.3	187	33.3	280	SZ8020 **13 x 089**
			102	7.1	25.5	181	38.3	272	SZ8020 **13 x 102**
			305	2.4	76.3	183	114.0	274	SZ8020 **13 x 305**
16.0	8.0	3.2 x 2.0	25	49.4	6.3	309	9.4	464	SZ8020 **16 x 025**
			32	38.5	8.0	308	12.0	462	SZ8020 **16 x 032**
			38	33.9	9.5	322	14.2	481	SZ8020 **16 x 038**
			44	30.0	11.0	330	16.5	495	SZ8020 **16 x 044**
			51	26.4	12.8	337	19.1	504	SZ8020 **16 x 051**
			64	20.5	16.0	328	24.0	492	SZ8020 **16 x 064**
			76	17.8	19.0	338	28.5	507	SZ8020 **16 x 076**
			89	15.2	22.3	338	33.3	506	SZ8020 **16 x 089**
			102	13.5	25.5	344	38.2	516	SZ8020 **16 x 102**
			115	12.0	28.8	345	43.1	518	SZ8020 **16 x 115**
			305	4.3	76.3	328	114.4	490	SZ8020 **16 x 305**
20.0	10.0	4.0 x 2.4	25	98.0	6.3	613	9.4	921	SZ8020 **20 x 025**
			32	72.6	8.0	581	12.0	871	SZ8020 **20 x 032**
			38	56.0	9.5	532	14.2	795	SZ8020 **20 x 038**
			44	47.5	11.0	523	16.5	784	SZ8020 **20 x 044**
			51	41.7	12.8	532	19.1	797	SZ8020 **20 x 051**

SZ8020 System spring

medium load, identification colour blue

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time s_1 25 %	F_1 N	max. stroke s_2 37.5 %	F_2 N	Item number
20.0	10.0	4.0 x 2.4	64	32.3	16.0	517	24.0	775	SZ8020 **20 x 064**
			76	25.1	19.0	477	28.5	715	SZ8020 **20 x 076**
			89	22.0	22.3	490	33.3	733	SZ8020 **20 x 089**
			102	19.8	25.5	505	38.2	756	SZ8020 **20 x 102**
			115	18.1	28.8	520	43.1	780	SZ8020 **20 x 115**
			127	16.6	31.8	527	47.6	790	SZ8020 **20 x 127**
			139	15.1	34.8	525	52.1	787	SZ8020 **20 x 139**
			152	13.2	38.0	502	57.0	752	SZ8020 **20 x 152**
			305	6.1	76.3	465	114.4	695	SZ8020 **20 x 305**
25.0	12.5	5.3 x 3.1	25	157.0	6.3	981	9.4	1476	SZ8020 **25 x 025**
			32	118.0	8.0	944	12.0	1416	SZ8020 **25 x 032**
			38	93.0	9.5	884	14.2	1321	SZ8020 **25 x 038**
			44	80.8	11.0	889	16.5	1333	SZ8020 **25 x 044**
			51	68.6	12.8	875	19.1	1310	SZ8020 **25 x 051**
			64	53.0	16.0	848	24.0	1272	SZ8020 **25 x 064**
			76	43.2	19.0	821	28.5	1231	SZ8020 **25 x 076**
			89	38.2	22.3	850	33.3	1272	SZ8020 **25 x 089**
			102	33.0	25.5	842	38.2	1272	SZ8020 **25 x 102**
			115	28.0	28.8	805	43.1	1207	SZ8020 **25 x 115**
			127	25.9	31.8	822	47.6	1233	SZ8020 **25 x 127**
			139	23.2	34.8	806	52.1	1209	SZ8020 **25 x 139**
			152	20.8	38.0	790	57.0	1186	SZ8020 **25 x 152**
			178	17.8	44.5	792	66.7	1187	SZ8020 **25 x 178**
			203	15.8	50.8	802	76.1	1202	SZ8020 **25 x 203**
			305	10.2	76.3	778	114.4	1163	SZ8020 **25 x 305**
32.0	16.0	6.8 x 4.0	38	185.0	9.5	1758	14.2	2627	SZ8020 **32 x 038**
			44	158.0	11.0	1738	16.5	2607	SZ8020 **32 x 044**
			51	134.0	12.8	1709	19.1	2559	SZ8020 **32 x 051**
			64	99.0	16.0	1584	24.0	2376	SZ8020 **32 x 064**
			76	80.5	19.0	1530	28.5	2294	SZ8020 **32 x 076**
			89	69.1	22.3	1537	33.3	2301	SZ8020 **32 x 089**
			102	58.8	25.5	1499	38.2	2246	SZ8020 **32 x 102**
			115	51.5	28.8	1481	43.1	2220	SZ8020 **32 x 115**
			127	44.8	31.8	1422	47.6	2132	SZ8020 **32 x 127**
			139	42.3	34.8	1470	52.1	2204	SZ8020 **32 x 139**
			152	37.8	38.0	1436	57.0	2155	SZ8020 **32 x 152**
			178	32.5	44.5	1446	66.7	2168	SZ8020 **32 x 178**
			203	28.9	50.8	1467	76.1	2199	SZ8020 **32 x 203**
			254	22.2	63.5	1410	95.2	2113	SZ8020 **32 x 254**
			305	18.3	76.3	1395	114.4	2086	SZ8020 **32 x 305**
40.0	20.0	8.1 x 4.8	51	181.6	12.8	2315	19.1	3476	SZ8020 **40 x 051**
			64	140.0	16.0	2240	24.0	3360	SZ8020 **40 x 064**
			76	108.0	19.0	2052	28.5	3078	SZ8020 **40 x 076**
			89	90.7	22.3	2018	33.3	3020	SZ8020 **40 x 089**
			102	81.0	25.5	2066	38.2	3094	SZ8020 **40 x 102**
			115	71.8	28.8	2064	43.1	3095	SZ8020 **40 x 115**
			127	62.7	31.8	1991	47.6	2985	SZ8020 **40 x 127**
			139	57.5	34.8	1998	52.1	2996	SZ8020 **40 x 139**
			152	51.6	38.0	1961	57.0	2941	SZ8020 **40 x 152**
			160	47.5	40.0	1900	60.0	2850	SZ8020 **40 x 160**
			178	44.1	44.5	1962	66.7	2941	SZ8020 **40 x 178**
			203	36.7	50.8	1863	76.1	2793	SZ8020 **40 x 203**
			254	30.1	63.5	1911	95.2	2866	SZ8020 **40 x 254**
			305	24.6	76.3	1876	114.4	2804	SZ8020 **40 x 305**
50.0	25.0	10.9 x 6.0	64	209.0	16.0	3344	24.0	5016	SZ8020 **50 x 064**
			76	168.0	19.0	3192	28.5	4788	SZ8020 **50 x 076**
			89	140.0	22.3	3115	33.3	4662	SZ8020 **50 x 089**
			102	119.0	25.5	3035	38.2	4546	SZ8020 **50 x 102**
			115	106.0	28.8	3048	43.1	4569	SZ8020 **50 x 115**

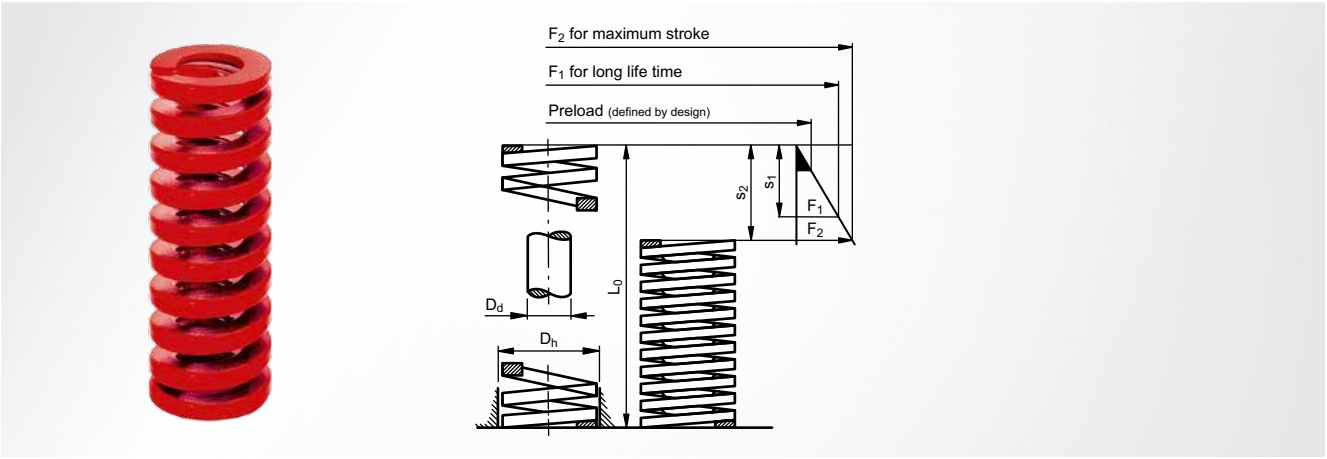
SZ8020 System spring

medium load, identification colour blue

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time $s_1^{25\ \%}$	long life time F_1 N	max. stroke $s_2^{37.5\ \%}$	max. stroke F_2 N	Item number
50.0	25.0	10.9 x 6.0	127	97.0	31.8	3080	47.6	4617	SZ8020 **50 x 127**
			139	87.0	34.8	3023	52.1	4533	SZ8020 **50 x 139**
			152	80.0	38.0	3040	57.0	4560	SZ8020 **50 x 152**
			160	76.0	40.0	3040	60.0	4560	SZ8020 **50 x 160**
			178	69.5	44.5	3093	66.7	4636	SZ8020 **50 x 178**
			203	59.8	50.8	3035	76.1	4551	SZ8020 **50 x 203**
			229	50.9	57.3	2914	85.8	4367	SZ8020 **50 x 229**
			254	46.0	63.5	2921	95.2	4379	SZ8020 **50 x 254**
			305	38.6	76.3	2943	114.4	4400	SZ8020 **50 x 305**
63.0	38.0	11.5 x 9.3	76	320.0	19.0	6080	28.5	9120	SZ8020 **63 x 076**
			89	260.0	22.3	5785	33.3	8658	SZ8020 **63 x 089**
			102	221.0	25.5	5636	38.2	8442	SZ8020 **63 x 102**
			115	187.0	28.8	5376	43.1	8060	SZ8020 **63 x 115**
			127	168.0	31.8	5334	47.6	7997	SZ8020 **63 x 127**
			152	136.0	38.0	5168	57.0	7752	SZ8020 **63 x 152**
			160	128.0	40.0	5120	60.0	7680	SZ8020 **63 x 160**
			178	114.0	44.5	5073	66.7	7604	SZ8020 **63 x 178**
			203	100.0	50.8	5075	76.1	7610	SZ8020 **63 x 203**
			229	89.2	57.3	5107	85.8	7653	SZ8020 **63 x 229**
			254	78.4	63.5	4978	95.2	7464	SZ8020 **63 x 254**
			305	64.7	76.3	4933	114.4	7376	SZ8020 **63 x 305**
			315	62.8	78.8	4946	118.1	7418	SZ8020 **63 x 315**
			400	48.5	100.0	4850	150.0	7275	SZ8020 **63 x 400**

SZ8030 System spring

heavy load, identification colour red



ISO 10243

Material
Profiled valve spring steel wire (52SiCrNi5)

Spring type
Helical compression spring

Wire cross-section
rectangular

Note
Spring is set, closed and rectangular ground

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time $s_1^{20\ \%}$	long life time F_1 N	max. stroke $s_2^{30\ \%}$	max. stroke F_2 N	Item number
10.0	5.0	1.8 x 1.4	25	23.0	5.0	115	7.5	173	SZ8030 **10 x 025**
			32	17.5	6.4	112	9.6	168	SZ8030 **10 x 032**
			38	14.8	7.6	112	11.4	169	SZ8030 **10 x 038**
			44	13.0	8.8	114	13.2	172	SZ8030 **10 x 044**
			51	11.2	10.2	114	15.3	171	SZ8030 **10 x 051**
			64	9.2	12.8	118	19.2	177	SZ8030 **10 x 064**
			76	7.5	15.2	114	22.8	171	SZ8030 **10 x 076**
			305	1.9	61.0	116	91.5	174	SZ8030 **10 x 305**
12.5	6.3	2.4 x 2.0	25	42.1	5.0	211	7.5	316	SZ8030 **13 x 025**
			32	33.2	6.4	212	9.6	319	SZ8030 **13 x 032**
			38	29.3	7.6	223	11.4	334	SZ8030 **13 x 038**
			44	24.6	8.8	216	13.2	325	SZ8030 **13 x 044**
			51	19.6	10.2	200	15.3	300	SZ8030 **13 x 051**
			64	15.0	12.8	192	19.2	288	SZ8030 **13 x 064**
			76	13.2	15.2	201	22.8	301	SZ8030 **13 x 076**
			89	11.4	17.8	203	26.7	304	SZ8030 **13 x 089**
			102	9.4	20.4	192	30.6	288	SZ8030 **13 x 102**
			305	3.2	61.0	195	91.5	293	SZ8030 **13 x 305**
16.0	8.0	3.0 x 2.4	25	75.7	5.0	379	7.5	568	SZ8030 **16 x 025**
			32	60.2	6.4	385	9.6	578	SZ8030 **16 x 032**
			38	50.8	7.6	386	11.4	579	SZ8030 **16 x 038**
			44	42.8	8.8	377	13.2	565	SZ8030 **16 x 044**
			51	37.1	10.2	378	15.3	568	SZ8030 **16 x 051**
			64	30.3	12.8	388	19.2	582	SZ8030 **16 x 064**
			76	25.7	15.2	391	22.8	586	SZ8030 **16 x 076**
			89	21.7	17.8	386	26.7	579	SZ8030 **16 x 089**
			102	18.9	20.4	386	30.6	578	SZ8030 **16 x 102**
			115	17.0	23.0	391	34.5	587	SZ8030 **16 x 115**
			305	6.3	61.0	384	91.5	577	SZ8030 **16 x 305**
20.0	10.0	4.0 x 3.2	25	216.0	5.0	1080	7.5	1620	SZ8030 **20 x 025**
			32	168.0	6.4	1075	9.6	1613	SZ8030 **20 x 032**
			38	129.0	7.6	980	11.4	1471	SZ8030 **20 x 038**
			44	112.0	8.8	986	13.2	1478	SZ8030 **20 x 044**
			51	94.0	10.2	959	15.3	1438	SZ8030 **20 x 051**

SZ8030 System spring

heavy load, identification colour red

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time s_1 20 %	F_1 N	max. stroke s_2 30 %	F_2 N	Item number
20.0	10.0	4.0 x 3.2	64	72.1	12.8	923	19.2	1384	SZ8030 **20 x 064**
			76	59.7	15.2	907	22.8	1361	SZ8030 **20 x 076**
			89	50.5	17.8	899	26.7	1348	SZ8030 **20 x 089**
			102	44.2	20.4	902	30.6	1353	SZ8030 **20 x 102**
			115	38.4	23.0	883	34.5	1325	SZ8030 **20 x 115**
			127	34.1	25.4	866	38.1	1299	SZ8030 **20 x 127**
			139	31.0	27.8	862	41.7	1293	SZ8030 **20 x 139**
			152	28.2	30.4	857	45.6	1286	SZ8030 **20 x 152**
			305	14.0	61.0	854	91.5	1281	SZ8030 **20 x 305**
25.0	12.5	5.6 x 4.1	25	375.0	5.0	1875	7.5	2813	SZ8030 **25 x 025**
			32	297.0	6.4	1901	9.6	2851	SZ8030 **25 x 032**
			38	219.0	7.6	1664	11.4	2497	SZ8030 **25 x 038**
			44	187.0	8.8	1646	13.2	2468	SZ8030 **25 x 044**
			51	156.0	10.2	1591	15.3	2387	SZ8030 **25 x 051**
			64	123.0	12.8	1574	19.2	2362	SZ8030 **25 x 064**
			76	99.0	15.2	1505	22.8	2257	SZ8030 **25 x 076**
			89	84.0	17.8	1495	26.7	2243	SZ8030 **25 x 089**
			102	73.0	20.4	1489	30.6	2234	SZ8030 **25 x 102**
			115	65.0	23.0	1495	34.5	2243	SZ8030 **25 x 115**
			127	57.7	25.4	1466	38.1	2198	SZ8030 **25 x 127**
			139	52.7	27.8	1465	41.7	2198	SZ8030 **25 x 139**
			152	47.8	30.4	1453	45.6	2180	SZ8030 **25 x 152**
			178	41.0	35.6	1460	53.4	2189	SZ8030 **25 x 178**
			203	35.8	40.6	1453	60.9	2180	SZ8030 **25 x 203**
			305	22.9	61.0	1397	91.5	2095	SZ8030 **25 x 305**
32.0	16.0	6.9 x 5.3	38	388.0	7.6	2949	11.4	4423	SZ8030 **32 x 038**
			44	324.0	8.8	2851	13.2	4277	SZ8030 **32 x 044**
			51	272.0	10.2	2774	15.3	4162	SZ8030 **32 x 051**
			64	212.0	12.8	2714	19.2	4070	SZ8030 **32 x 064**
			76	172.0	15.2	2614	22.8	3922	SZ8030 **32 x 076**
			89	141.0	17.8	2510	26.7	3765	SZ8030 **32 x 089**
			102	122.0	20.4	2489	30.6	3733	SZ8030 **32 x 102**
			115	107.0	23.0	2461	34.5	3692	SZ8030 **32 x 115**
			127	93.0	25.4	2362	38.1	3543	SZ8030 **32 x 127**
			139	86.0	27.8	2391	41.7	3586	SZ8030 **32 x 139**
			152	78.0	30.4	2371	45.6	3557	SZ8030 **32 x 152**
			178	67.2	35.6	2392	53.4	3558	SZ8030 **32 x 178**
			203	59.1	40.6	2399	60.9	3599	SZ8030 **32 x 203**
			254	46.4	50.8	2357	76.2	3536	SZ8030 **32 x 254**
			305	38.0	61.0	2318	91.5	3477	SZ8030 **32 x 305**
40.0	20.0	8.4 x 6.2	51	350.0	10.2	3570	15.3	5355	SZ8030 **40 x 051**
			64	269.0	12.8	3443	19.2	5165	SZ8030 **40 x 064**
			76	219.0	15.2	3329	22.8	4993	SZ8030 **40 x 076**
			89	190.0	17.8	3382	26.7	5073	SZ8030 **40 x 089**
			102	163.0	20.4	3325	30.6	4988	SZ8030 **40 x 102**
			115	142.0	23.0	3266	34.5	4899	SZ8030 **40 x 115**
			127	128.0	25.4	3251	38.1	4877	SZ8030 **40 x 127**
			139	115.0	27.8	3197	41.7	4796	SZ8030 **40 x 139**
			152	105.0	30.4	3192	45.6	4788	SZ8030 **40 x 152**
			178	89.0	35.6	3168	53.4	4753	SZ8030 **40 x 178**
			203	77.0	40.6	3126	60.9	4689	SZ8030 **40 x 203**
			254	61.0	50.8	3099	76.2	4648	SZ8030 **40 x 254**
			305	51.0	61.0	3111	91.5	4667	SZ8030 **40 x 305**
50.0	25.0	11.3 x 7.4	64	413.0	12.8	5286	19.2	7930	SZ8030 **50 x 064**
			76	339.0	15.2	5153	22.8	7729	SZ8030 **50 x 076**
			89	288.0	17.8	5126	26.7	7690	SZ8030 **50 x 089**
			102	245.0	20.4	4998	30.6	7497	SZ8030 **50 x 102**
			115	215.0	23.0	4945	34.5	7418	SZ8030 **50 x 115**
			127	192.0	25.4	4877	38.1	7315	SZ8030 **50 x 127**

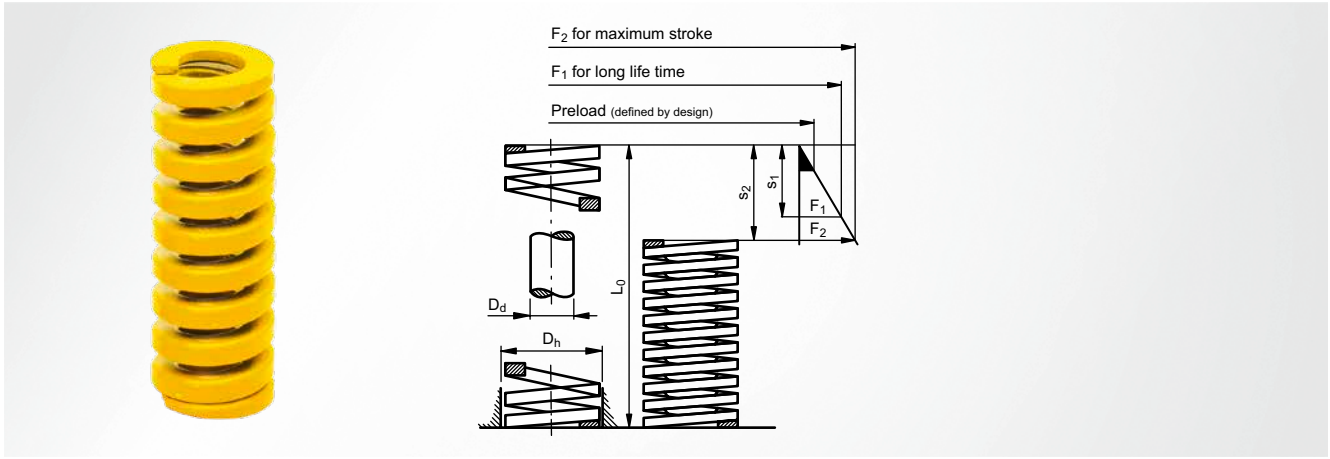
SZ8030 System spring

heavy load, identification colour red

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time $s_1^{20\ \%}$	long life time F_1 N	max. stroke $s_2^{30\ \%}$	max. stroke F_2 N	Item number
50.0	25.0	11.3 x 7.4	139	168.0	27.8	4670	41.7	7006	SZ8030 **50 x 139**
			152	154.0	30.4	4682	45.6	7022	SZ8030 **50 x 152**
			178	134.0	35.6	4770	53.4	7156	SZ8030 **50 x 178**
			203	117.0	40.6	4750	60.9	7125	SZ8030 **50 x 203**
			254	89.0	50.8	4521	76.2	6782	SZ8030 **50 x 254**
			305	73.0	61.0	4453	91.5	6680	SZ8030 **50 x 305**
63.0	38.0	11.2 x 12.9	76	630.0	15.2	9576	22.8	14364	SZ8030 **63 x 076**
			89	485.0	17.8	8633	26.7	12950	SZ8030 **63 x 089**
			102	434.0	20.4	8854	30.6	13280	SZ8030 **63 x 102**
			115	384.0	23.0	8832	34.5	13248	SZ8030 **63 x 115**
			127	349.0	25.4	8865	38.1	13297	SZ8030 **63 x 127**
			152	276.0	30.4	8390	45.6	12586	SZ8030 **63 x 152**
			178	237.0	35.6	8437	53.4	12656	SZ8030 **63 x 178**
			203	210.0	40.6	8526	60.9	12789	SZ8030 **63 x 203**
			254	165.0	50.8	8382	76.2	12573	SZ8030 **63 x 254**
			305	134.0	61.0	8174	91.5	12261	SZ8030 **63 x 305**

SZ8040 System spring

very heavy load, identification colour yellow



ISO 10243

Material
Profiled valve spring steel wire (52SiCrNi5)

Spring type
Helical compression spring

Wire cross-section
rectangular

Note
Spring is set, closed and rectangular ground

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time $s_1^{17\ \%}$	long life time F_1 N	max. stroke $s_2^{25\ \%}$	max. stroke F_2 N	Item number
10.0	5.0	1.9 x 1.5	25	36.8	4.3	156	6,2	228	SZ8040 **10 x 025**
			32	27.9	5.4	152	8,0	223	SZ8040 **10 x 032**
			38	23.7	6.5	153	9,5	225	SZ8040 **10 x 038**
			44	19.2	7.5	144	11,0	211	SZ8040 **10 x 044**
			51	16.5	8.7	143	12,7	210	SZ8040 **10 x 051**
			64	13.2	10.9	144	16,0	211	SZ8040 **10 x 064**
			76	10.9	12.9	141	19,0	207	SZ8040 **10 x 076**
			305	2.6	51.9	135	76,3	198	SZ8040 **10 x 305**
12.5	6.3	2.3 x 2.2	25	58.5	4.3	249	6,2	363	SZ8040 **13 x 025**
			32	43.9	5.4	239	8,0	351	SZ8040 **13 x 032**
			38	36.0	6.5	233	9,5	342	SZ8040 **13 x 038**
			44	30.3	7.5	227	11,0	333	SZ8040 **13 x 044**
			51	26.2	8.7	227	12,7	333	SZ8040 **13 x 051**
			64	21.2	10.9	231	16,0	339	SZ8040 **13 x 064**
			76	17.1	12.9	221	19,0	325	SZ8040 **13 x 076**
			89	14.5	15.1	219	22,2	322	SZ8040 **13 x 089**
			102	12.5	17.3	217	25,5	319	SZ8040 **13 x 102**
			305	4.3	51.9	223	76,3	328	SZ8040 **13 x 305**
16.0	8.0	3.2 x 2.7	25	118.0	4.3	502	6,2	732	SZ8040 **16 x 025**
			32	89.0	5.4	484	8,0	712	SZ8040 **16 x 032**
			38	72.1	6.5	466	9,5	685	SZ8040 **16 x 038**
			44	60.9	7.5	456	11,0	670	SZ8040 **16 x 044**
			51	52.3	8.7	453	12,7	664	SZ8040 **16 x 051**
			64	41.2	10.9	448	16,0	659	SZ8040 **16 x 064**
			76	34.1	12.9	441	19,0	648	SZ8040 **16 x 076**
			89	29.5	15.1	446	22,2	655	SZ8040 **16 x 089**
			102	25.6	17.3	444	25,5	653	SZ8040 **16 x 102**
			115	22.8	19.6	446	28,8	656	SZ8040 **16 x 115**
			305	8.4	51.9	436	76,3	641	SZ8040 **16 x 305**
20.0	10.0	4.1 x 3.7	25	293.0	4.3	1245	6,2	1817	SZ8040 **20 x 025**
			32	224.0	5.4	1219	8,0	1792	SZ8040 **20 x 032**
			38	177.0	6.5	1143	9,5	1682	SZ8040 **20 x 038**
			44	149.0	7.5	1115	11,0	1639	SZ8040 **20 x 044**
			51	128.0	8.7	1110	12,7	1626	SZ8040 **20 x 051**

SZ8040 System spring

very heavy load, identification colour yellow

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time $s_1^{17\,\%}$	long life time F_1 N	max. stroke $s_2^{25\,\%}$	max. stroke F_2 N	Item number
20.0	10.0	4.1 x 3.7	64	99.0	10.9	1077	16,0	1584	SZ8040 **20 x 064**
			76	81.7	12.9	1056	19,0	1552	SZ8040 **20 x 076**
			89	69.5	15.1	1052	22,2	1543	SZ8040 **20 x 089**
			102	60.6	17.3	1051	25,5	1545	SZ8040 **20 x 102**
			115	53.0	19.6	1036	28,7	1521	SZ8040 **20 x 115**
			127	47.5	21.6	1026	31,7	1506	SZ8040 **20 x 127**
			139	43.0	23.6	1016	34,7	1492	SZ8040 **20 x 139**
			152	39.0	25.8	1008	38,0	1482	SZ8040 **20 x 152**
			305	20.0	51.9	1037	76,3	1526	SZ8040 **20 x 305**
25.0	12.5	5.6 x 4.6	25	488.0	4.3	2098	6,3	3074	SZ8040 **25 x 025**
			32	374.4	5.4	2037	8,0	2992	SZ8040 **25 x 032**
			38	300.0	6.5	1938	9,5	2850	SZ8040 **25 x 038**
			44	244.0	7.5	1825	11,0	2684	SZ8040 **25 x 044**
			51	207.5	8.7	1799	12,7	2642	SZ8040 **25 x 051**
			64	161.0	10.9	1752	16,0	2576	SZ8040 **25 x 064**
			76	130.8	12.9	1690	19,0	2489	SZ8040 **25 x 076**
			89	110.5	15.1	1672	22,2	2464	SZ8040 **25 x 089**
			102	96.3	17.3	1670	25,5	2456	SZ8040 **25 x 102**
			115	85.7	19.6	1675	28,7	2460	SZ8040 **25 x 115**
			127	76.3	21.6	1647	31,7	2419	SZ8040 **25 x 127**
			139	66.0	23.6	1560	34,7	2290	SZ8040 **25 x 139**
			152	63.5	25.8	1641	38,0	2413	SZ8040 **25 x 152**
			178	53.9	30.3	1631	44,5	2399	SZ8040 **25 x 178**
			203	47.0	34.5	1622	50,7	2383	SZ8040 **25 x 203**
			305	30.9	51.9	1602	76,3	2358	SZ8040 **25 x 305**
32.0	16.0	7.2 x 5.6	38	480.0	6.5	3101	9,5	4560	SZ8040 **32 x 038**
			44	390.0	7.5	2917	11,0	4290	SZ8040 **32 x 044**
			51	336.0	8.7	2913	12,7	4267	SZ8040 **32 x 051**
			64	269.2	10.9	2929	16,0	4304	SZ8040 **32 x 064**
			76	218.5	12.9	2823	19,0	4161	SZ8040 **32 x 076**
			89	180.3	15.1	2728	22,2	3996	SZ8040 **32 x 089**
			102	155.0	17.3	2688	25,5	3953	SZ8040 **32 x 102**
			115	140.0	19.6	2737	28,7	4018	SZ8040 **32 x 115**
			127	124.0	21.6	2677	31,7	3931	SZ8040 **32 x 127**
			139	112.0	23.6	2647	34,7	3886	SZ8040 **32 x 139**
			152	102.0	25.8	2636	38,0	3876	SZ8040 **32 x 152**
			178	88.2	30.3	2669	44,5	3925	SZ8040 **32 x 178**
			203	76.0	34.5	2623	50,7	3853	SZ8040 **32 x 203**
			254	60.8	43.2	2625	63,5	3891	SZ8040 **32 x 254**
			305	49.0	51.9	2541	76,3	3739	SZ8040 **32 x 305**
40.0	20.0	8.7 x 7.3	51	628.0	8.7	5445	12,7	7976	SZ8040 **40 x 051**
			64	487.0	10.9	5299	16,0	7792	SZ8040 **40 x 064**
			76	379.0	12.9	4897	19,0	7201	SZ8040 **40 x 076**
			89	321.0	15.1	4857	22,2	7126	SZ8040 **40 x 089**
			102	281.0	17.3	4873	25,5	7166	SZ8040 **40 x 102**
			115	245.0	19.6	4790	28,7	7032	SZ8040 **40 x 115**
			127	221.0	21.6	4771	31,7	7006	SZ8040 **40 x 127**
			139	185.0	23.6	4372	34,7	6420	SZ8040 **40 x 139**
			152	168.0	25.8	4341	38,0	6384	SZ8040 **40 x 152**
			178	150.0	30.3	4539	44,5	6675	SZ8040 **40 x 178**
			203	132.0	34.5	4555	50,7	6692	SZ8040 **40 x 203**
			254	107.0	43.2	4620	63,5	6848	SZ8040 **40 x 254**
			305	87.8	51.9	4552	76,6	6725	SZ8040 **40 x 305**
50.0	25.0	11.4 x 9.1	64	709.0	10.9	7714	16,0	11344	SZ8040 **50 x 064**
			76	572.0	12.9	7390	19,0	10868	SZ8040 **50 x 076**
			89	475.0	15.1	7187	22,3	10569	SZ8040 **50 x 089**
			102	405.0	17.3	7023	25,5	10328	SZ8040 **50 x 102**
			115	352.0	19.6	6882	28,7	10102	SZ8040 **50 x 115**
			127	316.0	21.6	6822	31,7	10017	SZ8040 **50 x 127**

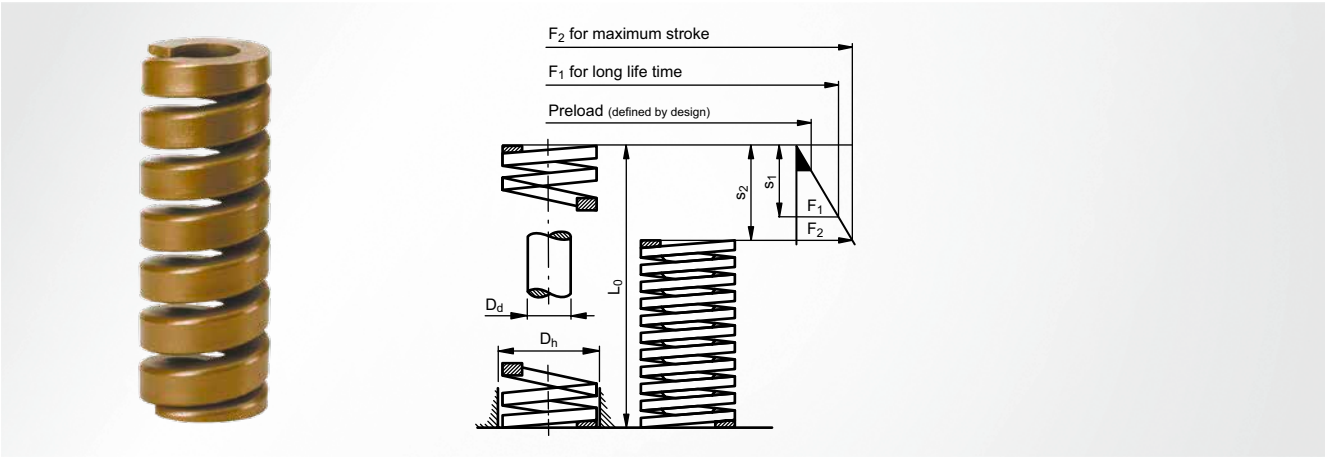
SZ8040 System spring

very heavy load, identification colour yellow

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time s_1 17 %	long life time F_1 N	max. stroke s_2 25 %	max. stroke F_2 N	Item number
50.0	25.0	11.4 x 9.1	139	289.0	23.6	6829	34,7	10028	SZ8040 **50 x 139**
			152	255.0	25.8	6589	38,0	9690	SZ8040 **50 x 152**
			178	215.0	30.3	6506	44,5	9568	SZ8040 **50 x 178**
			203	187.0	34.5	6453	50,7	9481	SZ8040 **50 x 203**
			254	153.0	43.2	6607	63,5	9792	SZ8040 **50 x 254**
			305	127.0	51.9	6585	76,3	9690	SZ8040 **50 x 305**
63.0	38.0	11.8 x 13.4	76	842.0	12.9	10879	19,0	15998	SZ8040 **63 x 076**
			89	726.0	15.1	10984	22,3	16154	SZ8040 **63 x 089**
			102	656.0	17.3	11375	25,5	16728	SZ8040 **63 x 102**
			115	534.0	19.6	10440	28,8	15353	SZ8040 **63 x 115**
			127	480.0	21.6	10363	31,8	15240	SZ8040 **63 x 127**
			152	396.0	25.8	10233	38,0	15048	SZ8040 **63 x 152**
			178	335.0	30.3	10137	44,5	14908	SZ8040 **63 x 178**
			203	297.0	34.5	10249	50,8	15073	SZ8040 **63 x 203**
			254	235.0	43.2	10147	63,5	14923	SZ8040 **63 x 254**
			305	194.0	51.9	10059	76,3	14793	SZ8040 **63 x 305**

SZ8045 System spring

extra heavy load, identification colour bronze



Material
Profiled valve spring steel wire (52SiCrNi5)

Wire cross-section
rectangular

Spring type
Helical compression spring

Note
Spring is set, closed and rectangular ground

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time s_1 10 %	long life time F_1 N	max. stroke s_2 15 %	max. stroke F_2 N	Item number
10.0	5.0	2.2 x 2.7	25	167	2.5	418	3.8	626	SZ8045 **10 x 025**
			32	130	3.2	416	4.8	624	SZ8045 **10 x 032**
			38	105	3.8	399	5.7	599	SZ8045 **10 x 038**
			44	86	4.4	378	6.6	568	SZ8045 **10 x 044**
			51	79	5.1	403	7.7	604	SZ8045 **10 x 051**
			64	62	6.4	397	9.6	595	SZ8045 **10 x 064**
			76	51	7.6	388	11.4	581	SZ8045 **10 x 076**
12.5	6.3	2.8 x 3.4	25	288	2.5	720	3.8	1080	SZ8045 **13 x 025**
			32	216	3.2	691	4.8	1037	SZ8045 **13 x 032**
			38	176	3.8	669	5.7	1003	SZ8045 **13 x 038**
			44	149	4.4	656	6.6	983	SZ8045 **13 x 044**
			51	128	5.1	653	7.7	979	SZ8045 **13 x 051**
			64	100	6.4	640	9.6	960	SZ8045 **13 x 064**
			76	84	7.6	638	11.4	958	SZ8045 **13 x 076**
			89	71	8.9	632	13.4	948	SZ8045 **13 x 089**
			102	61	10.2	622	15.3	933	SZ8045 **13 x 102**
16.0	8.0	3.5 x 4.6	32	449	3.2	1437	4.8	2155	SZ8045 **16 x 032**
			38	363	3.8	1379	5.7	2069	SZ8045 **16 x 038**
			44	309	4.4	1360	6.6	2039	SZ8045 **16 x 044**
			51	256	5.1	1306	7.7	1958	SZ8045 **16 x 051**
			64	203	6.4	1299	9.6	1949	SZ8045 **16 x 064**
			76	166	7.6	1262	11.4	1892	SZ8045 **16 x 076**
			89	139	8.9	1237	13.4	1856	SZ8045 **16 x 089**
			102	114	10.2	1163	15.3	1744	SZ8045 **16 x 102**
			115	105	11.5	1208	17.3	1811	SZ8045 **16 x 115**
			127	94	12.7	1194	19.1	1791	SZ8045 **16 x 127**
			152	69	15.2	1049	22.8	1573	SZ8045 **16 x 152**
			305	37	30.5	1129	45.8	1693	SZ8045 **16 x 305**
20.0	10.0	4.1 x 5.9	44	452	4.4	1989	6.6	2983	SZ8045 **20 x 044**
			51	378	5.1	1928	7.7	2892	SZ8045 **20 x 051**
			64	301	6.4	1926	9.6	2890	SZ8045 **20 x 064**
			76	247	7.6	1877	11.4	2816	SZ8045 **20 x 076**
			89	208	8.9	1851	13.4	2777	SZ8045 **20 x 089**
			102	188	10.2	1918	15.3	2876	SZ8045 **20 x 102**
			115	159	11.5	1829	17.3	2743	SZ8045 **20 x 115**
			127	146	12.7	1854	19.1	2781	SZ8045 **20 x 127**

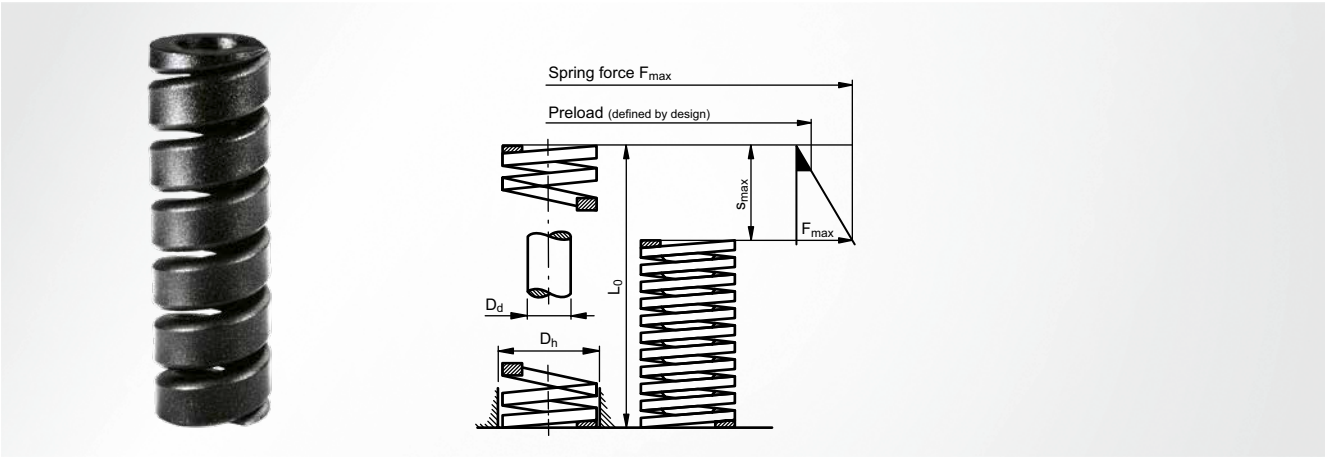
SZ8045 System spring

extra heavy load, identification colour bronze

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	Wire	L_0	Spring rate N/mm c ±10 %	long life time s_1 10 %	long life time F_1 N	max. stroke s_2 15 %	max. stroke F_2 N	Item number
20.0	10.0	4.1 x 5.9	152	121	15.2	1839	22.8	2759	SZ8045 **20 x 152**
			305	60	30.5	1830	45.8	2745	SZ8045 **20 x 305**
25.0	12.5	5.7 x 7.4	44	1158	4.4	5095	6.6	7643	SZ8045 **25 x 044**
			51	933	5.1	4758	7.7	7137	SZ8045 **25 x 051**
			64	730	6.4	4672	9.6	7008	SZ8045 **25 x 064**
			76	556	7.6	4226	11.4	6338	SZ8045 **25 x 076**
			89	462	8.9	4112	13.4	6168	SZ8045 **25 x 089**
			102	390	10.2	3978	15.3	5967	SZ8045 **25 x 102**
			115	360	11.5	4140	17.3	6210	SZ8045 **25 x 115**
			127	326	12.7	4140	19.1	6210	SZ8045 **25 x 127**
			152	255	15.2	3876	22.8	5814	SZ8045 **25 x 152**
			178	230	17.8	4094	26.7	6141	SZ8045 **25 x 178**
			203	202	20.3	4101	30.5	6151	SZ8045 **25 x 203**
			305	136	30.5	4148	45.8	6222	SZ8045 **25 x 305**
32.0	16.0	7.4 x 8.8	44	1300	4.4	5720	6.6	8580	SZ8045 **32 x 044**
			51	1150	5.1	5865	7.7	8798	SZ8045 **32 x 051**
			64	887	6.4	5677	9.6	8515	SZ8045 **32 x 064**
			76	733	7.6	5571	11.4	8356	SZ8045 **32 x 076**
			89	612	8.9	5447	13.4	8170	SZ8045 **32 x 089**
			102	544	10.2	5549	15.3	8323	SZ8045 **32 x 102**
			115	494	11.5	5681	17.3	8522	SZ8045 **32 x 115**
			127	432	12.7	5486	19.1	8230	SZ8045 **32 x 127**
			152	356	15.2	5411	22.8	8117	SZ8045 **32 x 152**
			178	304	17.8	5411	26.7	8117	SZ8045 **32 x 178**
			203	265	20.3	5380	30.5	8069	SZ8045 **32 x 203**
			254	214	25.4	5436	38.1	8153	SZ8045 **32 x 254**
			305	177	30.5	5399	45.8	8098	SZ8045 **32 x 305**
40.0	20.0	8.4 x 10.9	64	1228	6.4	7859	9.6	11789	SZ8045 **40 x 064**
			76	1017	7.6	7729	11.4	11594	SZ8045 **40 x 076**
			89	880	8.9	7832	13.4	11748	SZ8045 **40 x 089**
			102	762	10.2	7772	15.3	11659	SZ8045 **40 x 102**
			115	679	11.5	7809	17.3	11713	SZ8045 **40 x 115**
			127	622	12.7	7899	19.1	11849	SZ8045 **40 x 127**
			152	509	15.2	7737	22.8	11605	SZ8045 **40 x 152**
			178	429	17.8	7636	26.7	11454	SZ8045 **40 x 178**
			203	374	20.3	7592	30.5	11388	SZ8045 **40 x 203**
			254	296	25.4	7518	38.1	11278	SZ8045 **40 x 254**
			305	246	30.5	7503	45.8	11255	SZ8045 **40 x 305**
50.0	25.0	11.8 x 13.4	64	1980	6.4	12672	9.6	19008	SZ8045 **50 x 064**
			76	1811	7.6	13764	11.4	20645	SZ8045 **50 x 076**
			89	1410	8.9	12549	13.4	18824	SZ8045 **50 x 089**
			102	1215	10.2	12393	15.3	18590	SZ8045 **50 x 102**
			115	1076	11.5	12374	17.3	18561	SZ8045 **50 x 115**
			127	968	12.7	12294	19.1	18440	SZ8045 **50 x 127**
			152	806	15.2	12251	22.8	18377	SZ8045 **50 x 152**
			178	698	17.8	12424	26.7	18637	SZ8045 **50 x 178**
			203	612	20.3	12424	30.5	18635	SZ8045 **50 x 203**
			254	472	25.4	11989	38.1	17983	SZ8045 **50 x 254**
			305	388	30.5	11834	45.8	17751	SZ8045 **50 x 305**
63.0	38.0	11.8 x 17.8	89	1560	10.0	15600	17.4	27144	SZ8045 **63 x 089**
			102	1298	12.0	15576	20.9	27128	SZ8045 **63 x 102**
			115	1078	14.1	15200	25.2	27166	SZ8045 **63 x 115**
			127	970	15.7	15229	28.0	27160	SZ8045 **63 x 127**
			152	801	18.9	15139	33.9	27154	SZ8045 **63 x 152**
			178	655	23.4	15327	41.4	27117	SZ8045 **63 x 178**
			203	552	27.0	14904	49.0	27048	SZ8045 **63 x 203**
			254	423	35.0	14805	64.0	27072	SZ8045 **63 x 254**
			305	349	42.5	14833	77.5	27048	SZ8045 **63 x 305**

SZ8047 System spring

extra heavy load, identification colour black



Material
Profiled valve spring steel wire (52SiCrNi5)

Wire cross-section
rectangular

Spring type
Helical compression spring

Note
Spring is set, closed and rectangular ground

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	L_0 ± 0.5 % min ± 0.2 mm	Spring rate N/mm c ±10 %	long life time s_{max}	F_{max} N	Item number
10.0	5.0	20	580	2.2	1250	SZ8047 **10 x 020**
		30	360	3.5	1250	SZ8047 **10 x 030**
		40	260	4.8	1250	SZ8047 **10 x 040**
		50	200	6.0	1250	SZ8047 **10 x 050**
12.5	6.3	20	850	2.4	2000	SZ8047 **13 x 020**
		30	590	3.3	2000	SZ8047 **13 x 030**
		40	400	5.0	2000	SZ8047 **13 x 040**
		50	320	6.0	2000	SZ8047 **13 x 050**
16.0	8.0	20	1650	2.1	3500	SZ8047 **16 x 020**
		35	920	3.8	3500	SZ8047 **16 x 035**
		50	580	6.0	3500	SZ8047 **16 x 050**
		75	410	8.5	3500	SZ8047 **16 x 075**
		100	280	12.5	3500	SZ8047 **16 x 100**
19.0	10.0	25	2270	2.2	5000	SZ8047 **20 x 025**
		40	1160	4.3	5000	SZ8047 **20 x 040**
		50	830	6.0	5000	SZ8047 **20 x 050**
		75	500	10.0	5000	SZ8047 **20 x 075**
		100	360	14.0	5000	SZ8047 **20 x 100**
25.0	12.5	30	4550	2.2	10000	SZ8047 **25 x 030**
		50	2000	5.0	10000	SZ8047 **25 x 050**
		60	1500	6.5	10000	SZ8047 **25 x 060**
		75	1250	8.0	10000	SZ8047 **25 x 075**
		100	900	11.1	10000	SZ8047 **25 x 100**
		125	710	14.0	10000	SZ8047 **25 x 125**
32.0	16.0	35	5360	2.8	15000	SZ8047 **32 x 035**
		50	3000	5.0	15000	SZ8047 **32 x 050**
		75	1670	9.0	15000	SZ8047 **32 x 075**
		100	1200	12.5	15000	SZ8047 **32 x 100**
		125	940	16.0	15000	SZ8047 **32 x 125**
		150	810	18.5	15000	SZ8047 **32 x 150**
38.0	20.0	40	5710	3.5	20000	SZ8047 **40 x 040**
		50	4000	5.0	20000	SZ8047 **40 x 050**
		75	2220	9.0	20000	SZ8047 **40 x 075**
		100	1540	13.0	20000	SZ8047 **40 x 100**
		150	1050	19.0	20000	SZ8047 **40 x 150**
		200	740	27.0	20000	SZ8047 **40 x 200**

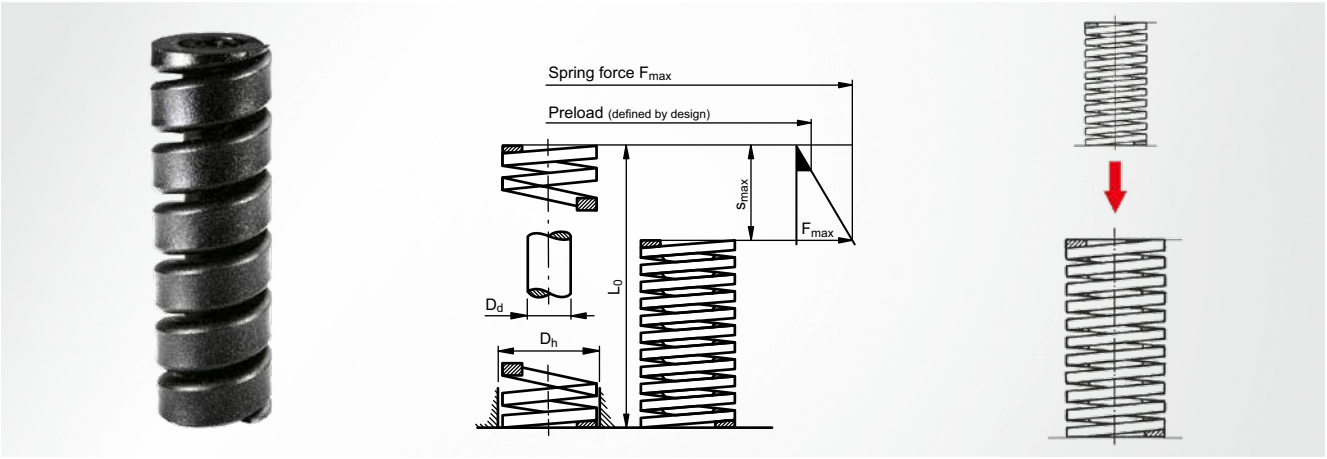
SZ8047 System spring

extra heavy load, identification colour black

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	L_0 ± 0.5 % min ± 0.2 mm	Spring rate N/mm c ±10 %	long life time s_{max}	F_{max} N	Item number
50.0	25.0	60	4605	7.6	35000	SZ8047 **50 x 060**
		75	3932	8.9	35000	SZ8047 **50 x 075**
		100	2650	13.2	35000	SZ8047 **50 x 100**
		125	2000	17.5	35000	SZ8047 **50 x 125**
		150	1605	21.8	35000	SZ8047 **50 x 150**
		200	1167	30.0	35000	SZ8047 **50 x 200**

SZ8049 System spring

double, extra, extra heavy load, identification colour black-black



Material
Profiled valve spring steel wire (52SiCrNi5)

Wire cross-section
rectangular

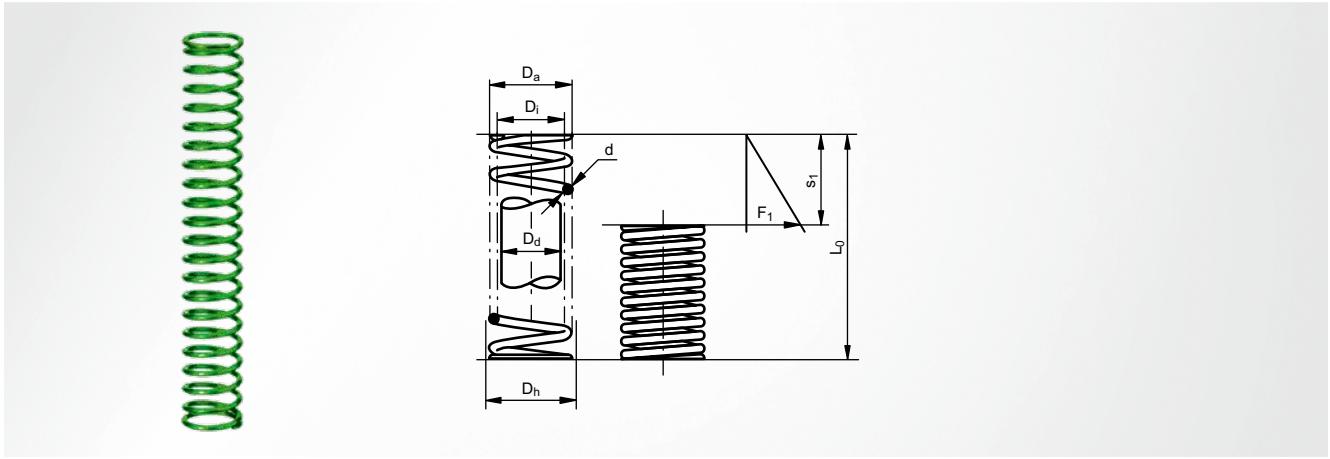
Spring type
Helical compression spring

Note
Spring is set, closed and rectangular ground

Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	L_0 ± 0.5 % min ± 0.2 mm	Spring rate N/mm c ±10 %	long life time s_{max}	long life time F_{max} N	Item number
32	8.0	35	6280	3.0	18500	SZ8049 **32 x 035**
		50	3580	5.2	18500	SZ8049 **32 x 050**
		75	2080	9.0	18500	SZ8049 **32 x 075**
		100	1480	12.5	18500	SZ8049 **32 x 100**
38	10.0	40	6880	3.6	25000	SZ8049 **40 x 040**
		50	4830	5.2	25000	SZ8049 **40 x 050**
		75	2720	9.2	25000	SZ8049 **40 x 075**
		100	1900	13.2	25000	SZ8049 **40 x 100**
50	12.5	60	6105	7.4	45000	SZ8049 **50 x 060**
		75	5182	8.7	45000	SZ8049 **50 x 075**
		100	3550	12.7	45000	SZ8049 **50 x 100**
		125	2710	16.6	45000	SZ8049 **50 x 125**

SZ8111 System spring

light load, identification colour green, small series



Material
Spring steel wire in accordance with EN 10270-1 DH (type D)

Spring type
Helical compression spring

Wire cross-section
round

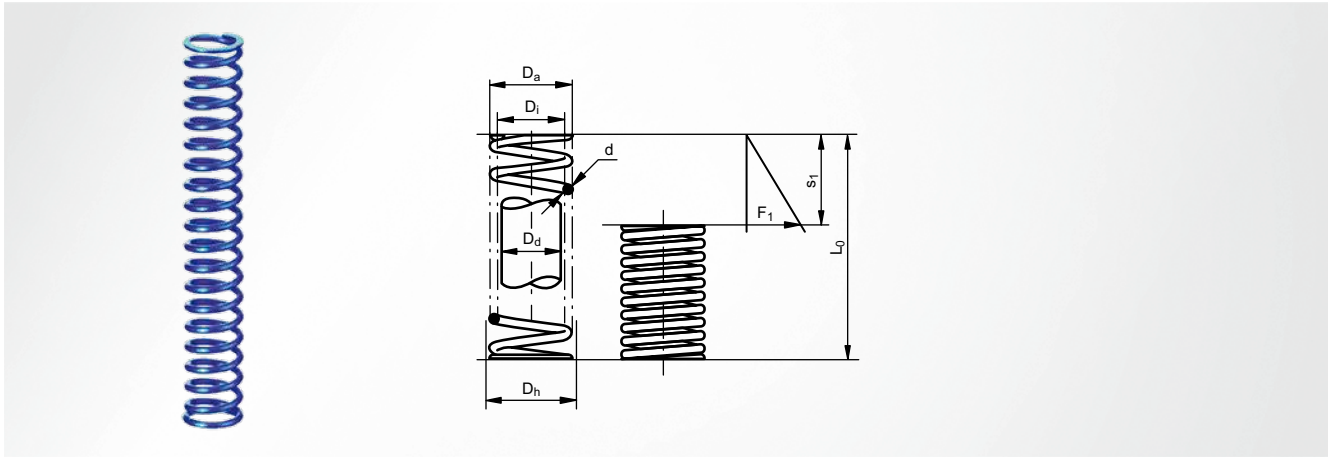
Installation instruction
Preload spring; spring set; winding closed and ground at each of the two ends

Note
Table specifications refer to the maximum permissible stroke at 1 mm preload for a long life time; if the preload is greater than 1 mm, the maximum working stroke is decreased; DIN EN 13906 must be observed for the design

D_a	Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	D_i	d wire	Standard packaging piece	L_0	Spring rate N/mm c ±10 %	s_1	F_1 N	Item number
6	6.3	4.4	4.7	0.6	20	16	1.5	5.2	7.98	SZ8111 **06 x 016**
						25	0.8	8.5	7.17	SZ8111 **06 x 025**
						38	0.5	14.0	7.38	SZ8111 **06 x 038**
						51	0.4	19.0	7.28	SZ8111 **06 x 051**
8	8.3	5.9	6.2	0.8	20	16	2.2	6.0	13.50	SZ8111 **08 x 016**
						25	1.2	11.0	13.75	SZ8111 **08 x 025**
						38	0.8	16.0	12.85	SZ8111 **08 x 038**
						51	0.6	23.0	12.93	SZ8111 **08 x 051**

SZ8112 System spring

medium load, identification colour blue, small series



Material
Spring steel wire in accordance with EN 10270-1 DH (type D)

Spring type
Helical compression spring

Wire cross-section
round

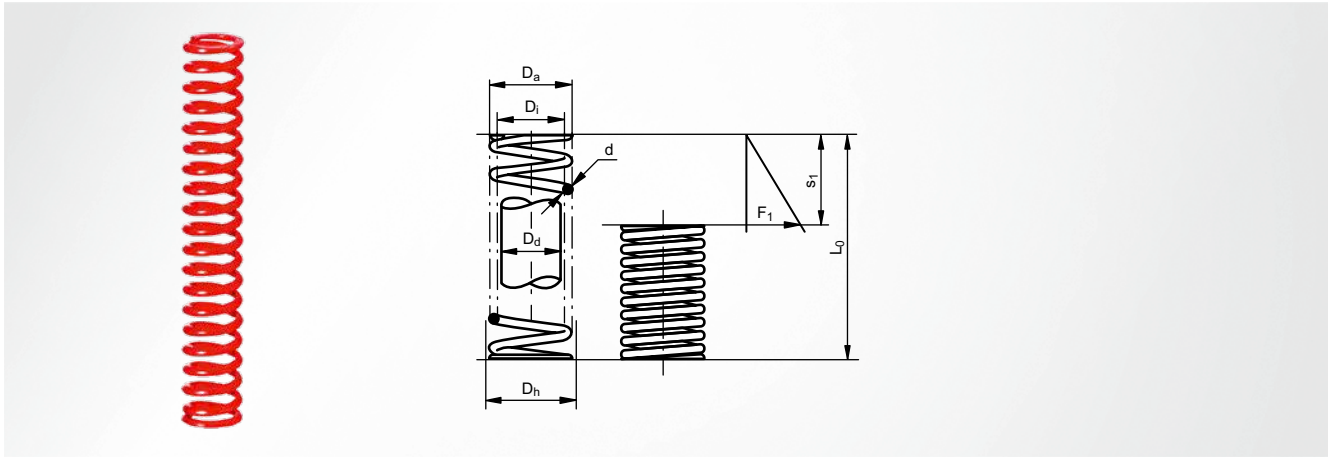
Installation instruction
Preload spring; spring set; winding closed and ground at each of the two ends

Note
Table specifications refer to the maximum permissible stroke at 1 mm preload for a long life time; if the preload is greater than 1 mm, the maximum working stroke is decreased; DIN EN 13906 must be observed for the design

D_a	Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	D_i	d wire	Standard packaging piece	L_0	Spring rate N/mm c ±10 %	s_1	F_1 N	Item number
6	6.3	3.9	4.2	0.8	20	16	5.4	3.2	17.38	SZ8112 **06 x 016**
						25	3.0	6.0	18.00	SZ8112 **06 x 025**
						38	1.9	9.5	17.73	SZ8112 **06 x 038**
						51	1.5	12.5	16.96	SZ8112 **06 x 051**
8	8.3	5.5	5.8	1.0	20	16	7.5	3.3	24.65	SZ8112 **08 x 016**
						25	3.7	6.6	24.62	SZ8112 **08 x 025**
						38	2.3	10.8	24.84	SZ8112 **08 x 038**
						51	1.7	15.0	24.90	SZ8112 **08 x 051**

SZ8113 System spring

heavy load, identification colour red, small series



Material
Spring steel wire in accordance with EN 10270-1 DH (type D)

Spring type
Helical compression spring

Wire cross-section
round

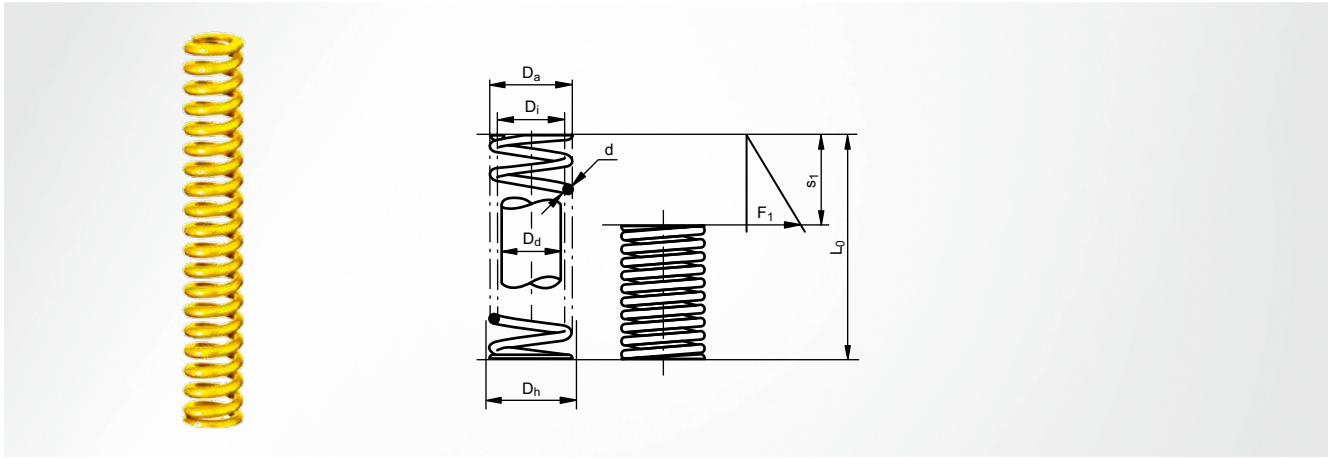
Installation instruction
Preload spring; spring set; winding closed and ground at each of the two ends

Note
Table specifications refer to the maximum permissible stroke at 1 mm preload for a long life time; if the preload is greater than 1 mm, the maximum working stroke is decreased; DIN EN 13906 must be observed for the design

D_a	Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	D_i	d wire	Standard packaging piece	L_0	Spring rate N/mm c ±10 %	s_1	F_1 N	Item number
6	6.3	3.6	3.9	1.0	20	16	16.4	2.1	34.44	SZ8113 **06 x 016**
						25	9.1	3.8	34.62	SZ8113 **06 x 025**
						38	5.9	5.9	34.56	SZ8113 **06 x 038**
						51	4.1	8.4	34.44	SZ8113 **06 x 051**
8	8.3	5.2	5.5	1.2	20	16	16.9	3.1	52.39	SZ8113 **08 x 016**
						25	8.4	5.5	46.48	SZ8113 **08 x 025**
						38	5.2	8.4	43.68	SZ8113 **08 x 038**
						51	3.8	11.6	43.56	SZ8113 **08 x 051**

SZ8114 System spring

very heavy load, identification colour yellow, small series



Material
Spring steel wire in accordance with EN 10270-1 DH (type D)

Spring type
Helical compression spring

Wire cross-section
round

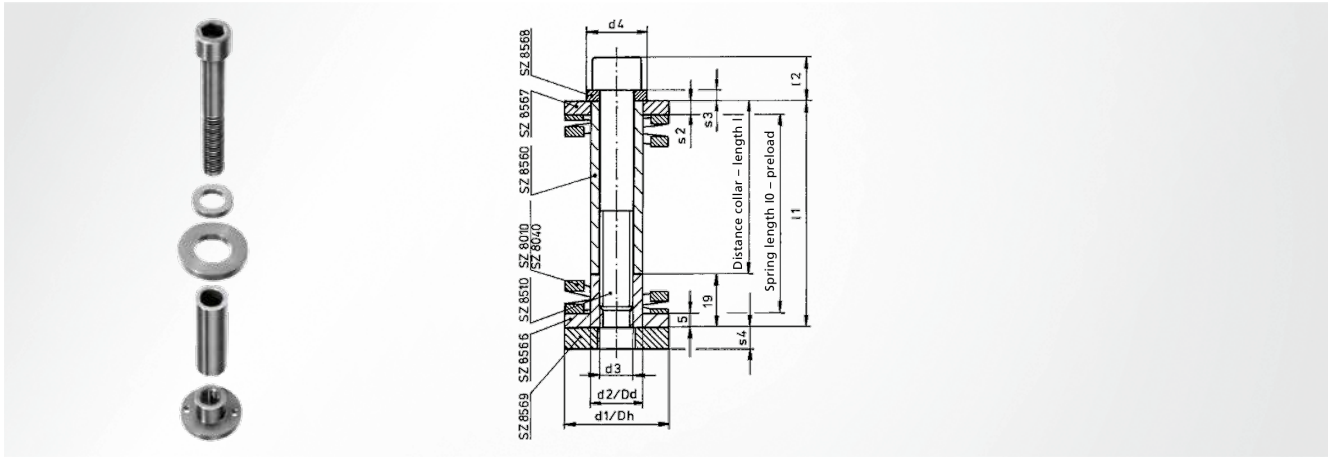
Installation instruction
Preload spring; spring set; winding closed and ground at each of the two ends

Note
Table specifications refer to the maximum permissible stroke at 1 mm preload for a long life time; If the preload is greater than 1 mm, the maximum working stroke is decreased; DIN EN 13906 must be observed for the design

D_a	Sleeve Ø D_h^{H15}	Pin Ø D_d^{h15}	D_i	d wire	Standard packaging piece	L_0	Spring rate N/mm c ±10 %	s_1	F_1 N	Item number
6	6.3	3.2	3.5	1.2	20	16	38.4	2.0	76.88	SZ8114 **06 x 016**
						25	21.4	3.1	66.19	SZ8114 **06 x 025**
						38	13.7	4.5	61.79	SZ8114 **06 x 038**
						51	9.6	6.0	57.66	SZ8114 **06 x 051**
8	8.3	4.5	4.8	1.5	20	16	47.2	2.2	103.93	SZ8114 **08 x 016**
						25	23.6	3.8	89.76	SZ8114 **08 x 025**
						38	14.5	6.0	87.18	SZ8114 **08 x 038**
						51	10.5	7.6	79.80	SZ8114 **08 x 051**

SZ8565.00 System spring unit

without spring



Note

Consisting of adapting disc, spacer pipe, threaded disc, regrinding disc, clamping disc, socket-head screw

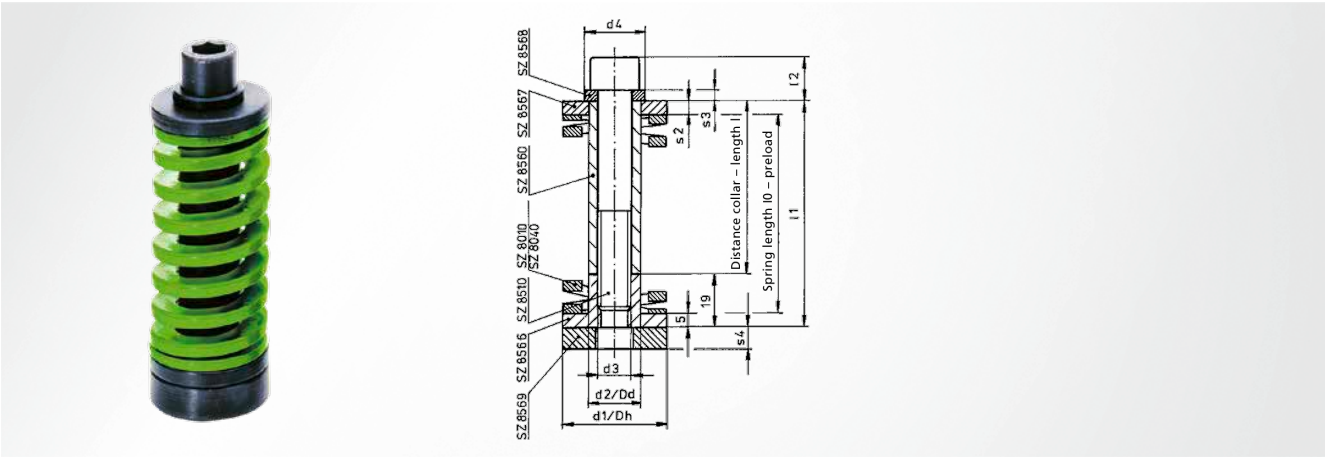
Scope of supply

SZ8510; SZ8560; SZ8566; SZ8567; SZ8568; SZ8569

Sleeve Ø d_1/D_h	Pin Ø d_2/D_d	d_3	d_4	s_2	l_2	s_3	l	l_1	Item number
20	10.0	M6	13	4	9	3	20	39	SZ8565.00. **20 x 039**
							30	49	SZ8565.00. **20 x 049**
							50	69	SZ8565.00. **20 x 069**
							63	82	SZ8565.00. **20 x 082**
25	12.5	M8	16	4	11	3	20	39	SZ8565.00. **25 x 039**
							30	49	SZ8565.00. **25 x 049**
							50	69	SZ8565.00. **25 x 069**
							63	82	SZ8565.00. **25 x 082**
							100	119	SZ8565.00. **25 x 119**
32	16.0	M10	19	4	13	3	30	49	SZ8565.00. **32 x 049**
							50	69	SZ8565.00. **32 x 069**
							63	82	SZ8565.00. **32 x 082**
							100	119	SZ8565.00. **32 x 119**
40	20.0	M12	23	5	16	4	50	69	SZ8565.00. **40 x 069**
							63	82	SZ8565.00. **40 x 082**
							100	119	SZ8565.00. **40 x 119**
50	25.0	M16	28	5	20	4	50	69	SZ8565.00. **50 x 069**
							63	82	SZ8565.00. **50 x 082**
							100	119	SZ8565.00. **50 x 119**

SZ8565.10 System spring unit

light load, identification colour green, preloaded

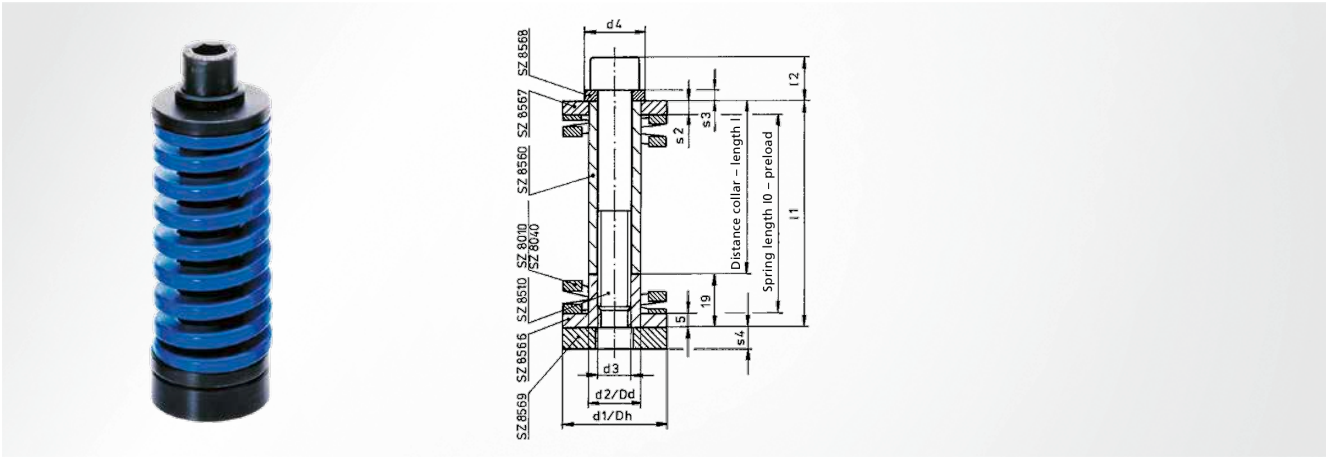


Scope of supply
SZ8010; SZ8565.00

SZ8010	preload mm	preload %	preload force N	max. stroke	max. spring force N	Item number
20 x 032	2	6	90	10.8	576	SZ8565.10. **20 x 039**
20 x 044	4	9	120	13.6	528	SZ8565.10. **20 x 049**
20 x 064	4	6	80	21.6	512	SZ8565.10. **20 x 069**
20 x 076	3	4	48	27.4	486	SZ8565.10. **20 x 082**
25 x 032	2	6	160	10.8	1027	SZ8565.10. **25 x 039**
25 x 044	4	9	211	13.6	931	SZ8565.10. **25 x 049**
25 x 064	4	6	140	21.6	901	SZ8565.10. **25 x 069**
25 x 076	3	4	84	27.4	851	SZ8565.10. **25 x 082**
25 x 115	5	4	93	41.0	860	SZ8565.10. **25 x 119**
32 x 044	4	9	318	13.6	1399	SZ8565.10. **32 x 049**
32 x 064	4	6	212	21.6	1356	SZ8565.10. **32 x 069**
32 x 076	3	4	132	27.4	1337	SZ8565.10. **32 x 082**
32 x 115	5	4	145	41.0	1334	SZ8565.10. **32 x 119**
40 x 064	5	8	365	20.6	1868	SZ8565.10. **40 x 069**
40 x 076	4	5	252	26.4	1915	SZ8565.10. **40 x 082**
40 x 115	6	5	237	40.0	1821	SZ8565.10. **40 x 119**
50 x 064	5	8	780	20.6	3993	SZ8565.10. **50 x 069**
50 x 076	4	5	500	26.4	3800	SZ8565.10. **50 x 082**
50 x 115	6	5	486	40.0	3726	SZ8565.10. **50 x 119**

SZ8565.20 System spring unit

medium load, identification colour blue, preloaded



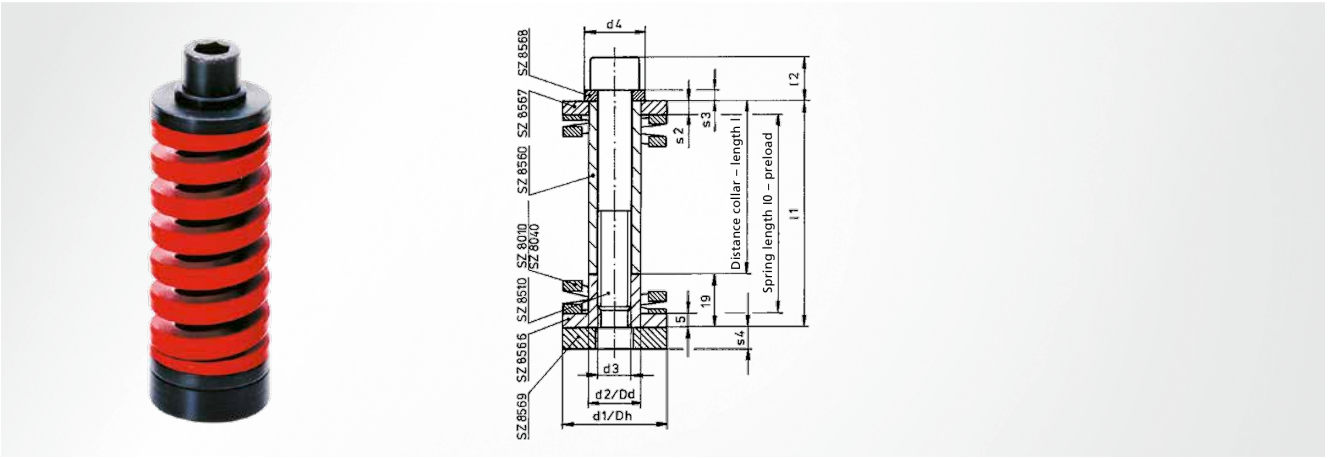
Scope of supply

SZ8020; SZ8565.00

SZ8020	preload mm	preload %	preload force N	max. stroke	max. spring force N	Item number
20 x 032	2	6	145	9.2	813	SZ8565.20. **20 x 039**
20 x 044	4	9	190	11.4	731	SZ8565.20. **20 x 049**
20 x 064	4	6	129	18.4	723	SZ8565.20. **20 x 069**
20 x 076	3	4	75	23.6	667	SZ8565.20. **20 x 082**
25 x 032	2	6	236	9.2	1321	SZ8565.20. **25 x 039**
25 x 044	4	9	323	11.4	1244	SZ8565.20. **25 x 049**
25 x 064	4	6	212	18.4	1187	SZ8565.20. **25 x 069**
25 x 076	3	4	129	23.6	1149	SZ8565.20. **25 x 082**
25 x 115	5	4	40	35.3	1128	SZ8565.20. **25 x 119**
32 x 044	4	9	632	11.4	2433	SZ8565.20. **32 x 049**
32 x 064	4	6	396	18.4	2217	SZ8565.20. **32 x 069**
32 x 076	3	4	241	23.6	2141	SZ8565.20. **32 x 082**
32 x 115	5	4	257	35.3	2058	SZ8565.20. **32 x 119**
40 x 064	5	8	700	17.4	3136	SZ8565.20. **40 x 069**
40 x 076	4	5	432	22.6	2872	SZ8565.20. **40 x 082**
40 x 115	6	5	430	34.3	2893	SZ8565.20. **40 x 119**
50 x 064	5	8	1045	17.4	4681	SZ8565.20. **50 x 069**
50 x 076	4	5	672	22.6	4468	SZ8565.20. **50 x 082**
50 x 115	6	5	636	34.3	4271	SZ8565.20. **50 x 119**

SZ8565.30 System spring unit

heavy load, identification colour red, preloaded



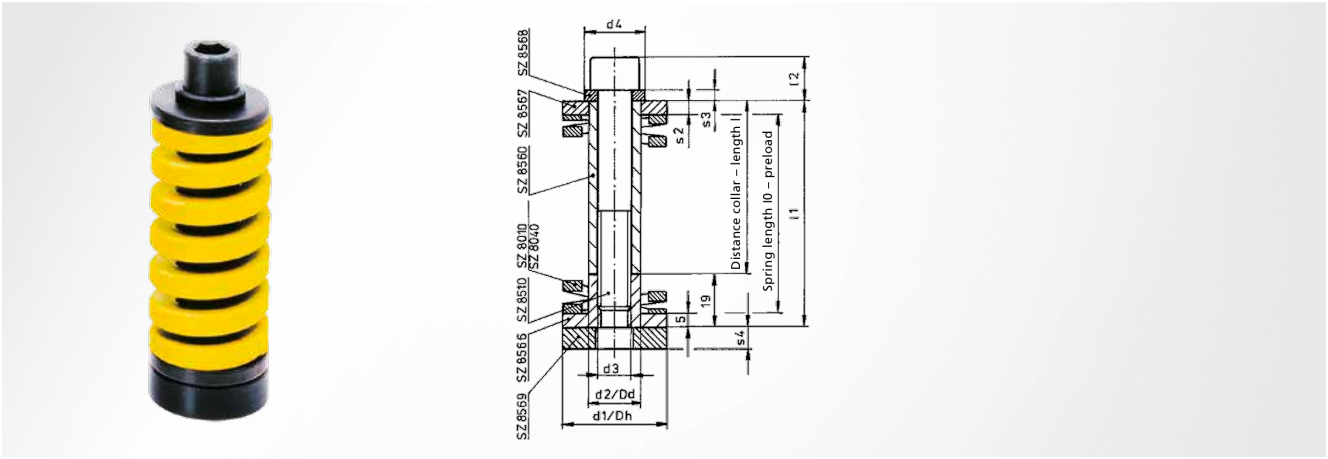
Scope of supply

SZ8030; SZ8565.00

SZ8030	preload mm	preload %	preload force N	max. stroke	max. spring force N	Item number
20 x 032	2	6	336	7.6	1612	SZ8565.30. **20 x 039**
20 x 044	4	9	448	9.2	1478	SZ8565.30. **20 x 049**
20 x 064	4	6	288	15.2	1384	SZ8565.30. **20 x 069**
20 x 076	3	4	179	19.8	1361	SZ8565.30. **20 x 082**
25 x 032	2	6	594	7.6	2851	SZ8565.30. **25 x 039**
25 x 044	4	9	748	9.2	2468	SZ8565.30. **25 x 049**
25 x 064	4	6	492	15.2	2361	SZ8565.30. **25 x 069**
25 x 076	3	4	297	19.8	2257	SZ8565.30. **25 x 082**
25 x 115	5	4	325	29.5	2242	SZ8565.30. **25 x 119**
32 x 044	4	9	1296	9.2	4276	SZ8565.30. **32 x 049**
32 x 064	4	6	848	15.2	4070	SZ8565.30. **32 x 069**
32 x 076	3	4	516	19.8	3921	SZ8565.30. **32 x 082**
32 x 115	5	4	535	29.5	3691	SZ8565.30. **32 x 119**
40 x 064	5	8	1345	14.2	5164	SZ8565.30. **40 x 069**
40 x 076	4	5	876	18.8	4993	SZ8565.30. **40 x 082**
40 x 115	6	5	852	28.5	4899	SZ8565.30. **40 x 119**
50 x 064	5	8	2065	14.2	7929	SZ8565.30. **50 x 069**
50 x 076	4	5	1356	18.8	7729	SZ8565.30. **50 x 082**
50 x 115	6	5	1290	28.5	7417	SZ8565.30. **50 x 119**

SZ8565.40 System spring unit

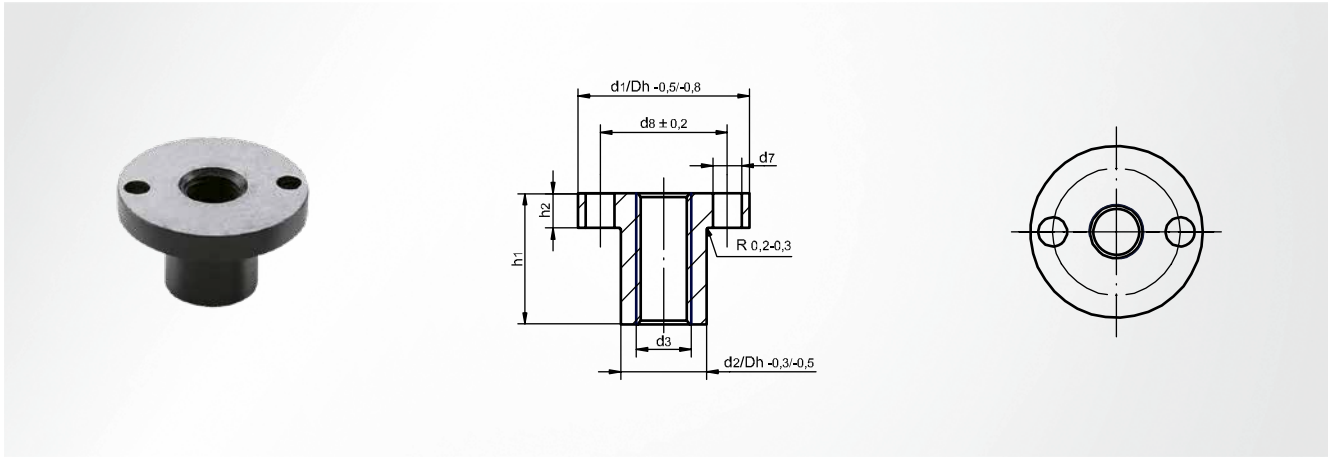
very heavy load, identification colour yellow, preloaded



Scope of supply
SZ8040; SZ8565.00

SZ8040	preload mm	preload %	preload force N	max. stroke	max. spring force N	Item number
20 x 032	2	6	448	6.0	1792	SZ8565.40. **20 x 039**
20 x 044	4	9	596	7.0	1639	SZ8565.40. **20 x 049**
20 x 064	4	6	396	12.0	1584	SZ8565.40. **20 x 069**
20 x 076	3	4	245	16.0	1552	SZ8565.40. **20 x 082**
25 x 032	2	6	748	6.0	2995	SZ8565.40. **25 x 039**
25 x 044	4	9	976	7.0	2684	SZ8565.40. **25 x 049**
25 x 064	4	6	644	12.0	2576	SZ8565.40. **25 x 069**
25 x 076	3	4	392	16.0	2485	SZ8565.40. **25 x 082**
25 x 115	5	4	428	23.8	2468	SZ8565.40. **25 x 119**
32 x 044	4	9	1976	7.0	4668	SZ8565.40. **32 x 049**
32 x 064	4	6	1076	12.0	4307	SZ8565.40. **32 x 069**
32 x 076	3	4	655	16.0	4151	SZ8565.40. **32 x 082**
32 x 115	5	4	700	23.8	4032	SZ8565.40. **32 x 119**
40 x 064	5	8	2435	11.0	7792	SZ8565.40. **40 x 069**
40 x 076	4	5	1516	15.0	7201	SZ8565.40. **40 x 082**
40 x 115	6	5	1470	22.8	7056	SZ8565.40. **40 x 119**
50 x 064	5	8	3545	11.0	11344	SZ8565.40. **50 x 069**
50 x 076	4	5	2288	15.0	10868	SZ8565.40. **50 x 082**
50 x 115	6	5	2112	22.8	10137	SZ8565.40. **50 x 119**

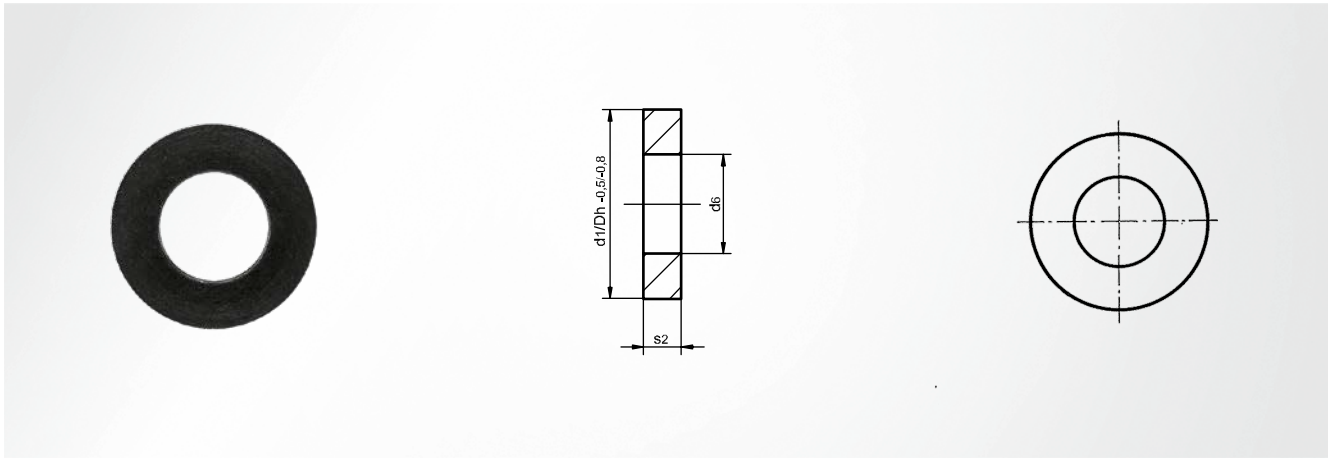
SZ8566 Threaded disc



Material
Steel 1.0503 (C45)

d_1 / Dh$^{-0.5 - -0.8}$	d_2 / Dd$^{-0.5 - -0.3}$	d_3	d_7	d_8	h_1	h_2	Item number
20	10.0	M6	3.2	14.0	19	5	SZ8566 **20**
25	12.5	M8	4.2	18.5	19	5	SZ8566 **25**
32	16.0	M10	4.2	25.0	19	5	SZ8566 **32**
40	20.0	M12	4.2	30.0	19	5	SZ8566 **40**
50	25.0	M16	4.2	40.0	19	5	SZ8566 **50**

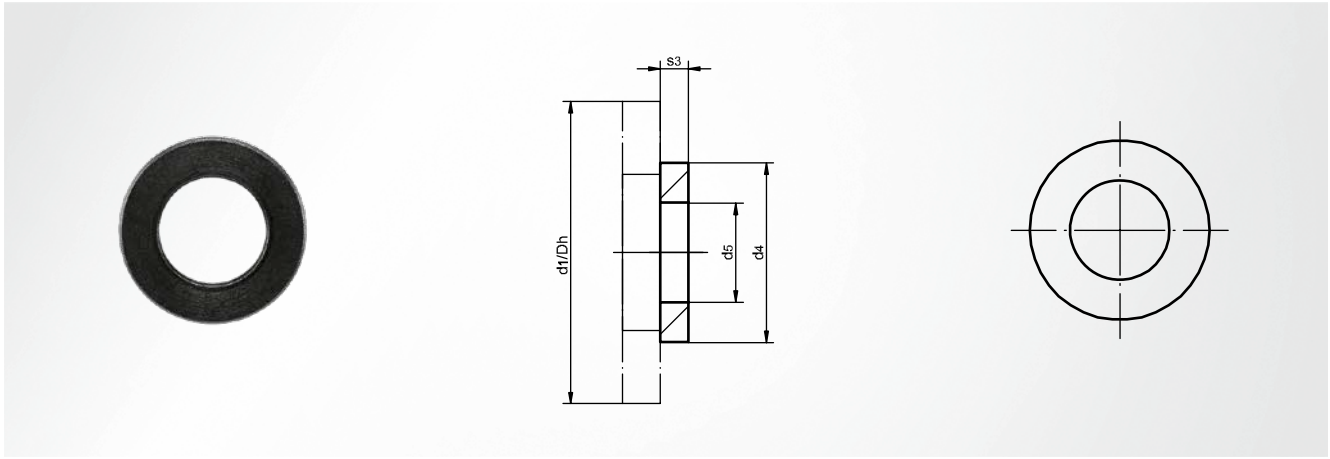
SZ8567 Adapting disc



Material
Steel 1.0503 (C45)

d_1 / Dh$^{-0.5 - -0.8}$	d_6	s_2	Item number
20	10.5	4	SZ8567 **20**
25	13.0	4	SZ8567 **25**
32	16.5	4	SZ8567 **32**
40	20.5	5	SZ8567 **40**
50	25.5	5	SZ8567 **50**

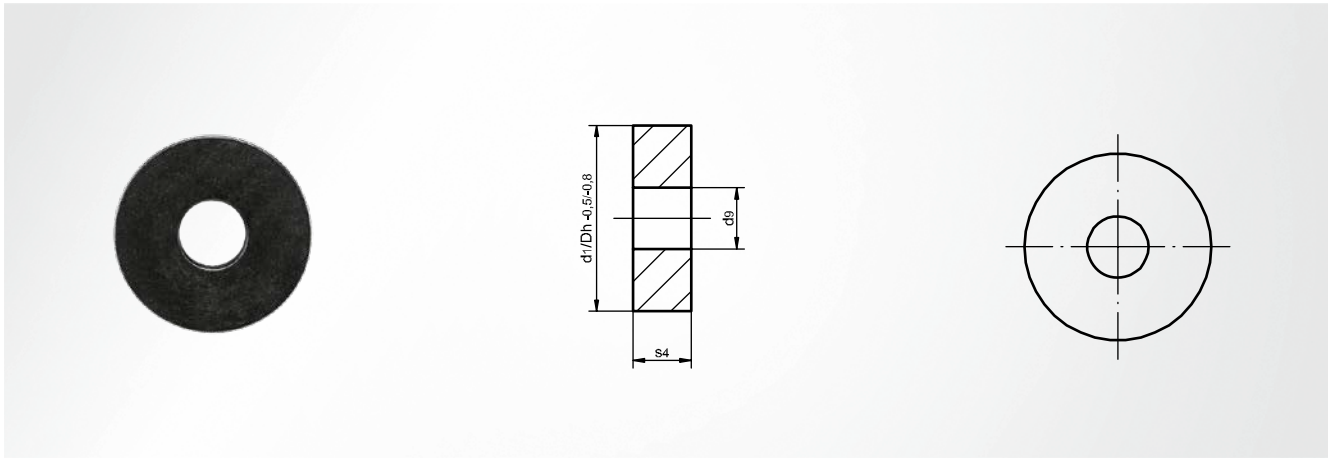
SZ8568 Clamping disc



Material
Steel 1.0503 (C45)

d_1 / $Dh^{-0.5 - -0.8}$	d_4	d_5	s_3	Item number
20	13	6.5	3	SZ8568 **20**
25	16	8.5	3	SZ8568 **25**
32	19	10.5	3	SZ8568 **32**
40	23	12.5	4	SZ8568 **40**
50	28	16.5	4	SZ8568 **50**

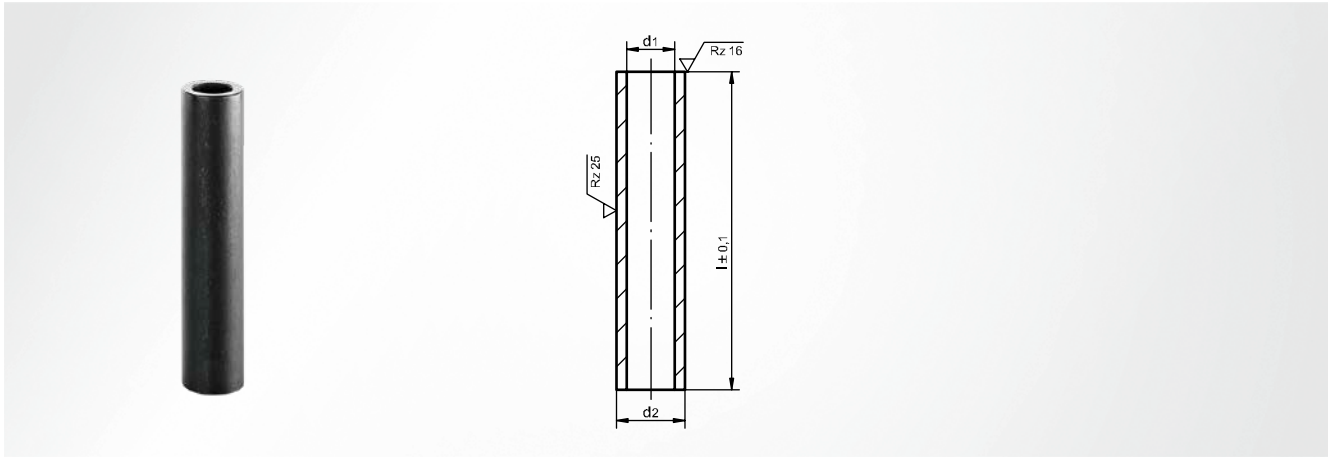
SZ8569 Regrinding disc



Material
Steel 1.0503 (C45)

d_1 / $Dh^{-0.5 - -0.8}$	d_9	s_4	Item number
20	6.5	8	SZ8569 **20**
25	8.5	8	SZ8569 **25**
32	10.5	10	SZ8569 **32**
40	12.5	10	SZ8569 **40**
50	16.5	10	SZ8569 **50**

SZ8560 Distance collar

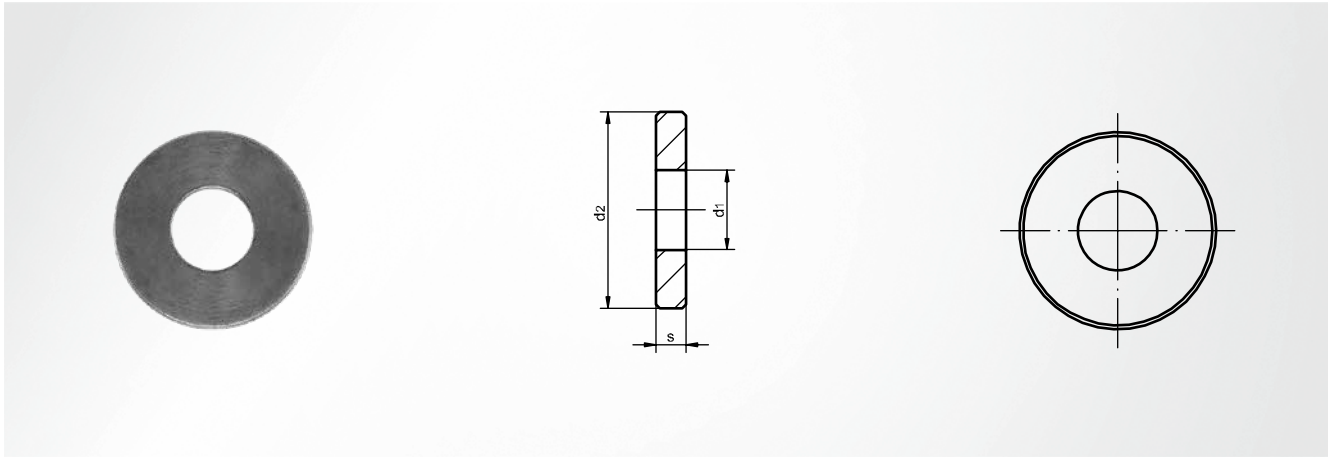


Material
Steel 1.0308 (St35); hardened

Hardness
57 ±1 HRC

d_1	d_2	l ±0.1	Item number
7	10.0	20	SZ8560 **10 x 020**
		30	SZ8560 **10 x 030**
		40	SZ8560 **10 x 040**
		50	SZ8560 **10 x 050**
		63	SZ8560 **10 x 063**
		80	SZ8560 **10 x 080**
9	12.5	20	SZ8560 **12 x 020**
		30	SZ8560 **12 x 030**
		40	SZ8560 **12 x 040**
		50	SZ8560 **12 x 050**
		63	SZ8560 **12 x 063**
		80	SZ8560 **12 x 080**
		100	SZ8560 **12 x 100**
9	13.0	20	SZ8560 **13 x 020**
		30	SZ8560 **13 x 030**
		40	SZ8560 **13 x 040**
		50	SZ8560 **13 x 050**
		63	SZ8560 **13 x 063**
		80	SZ8560 **13 x 080**
		100	SZ8560 **13 x 100**
11	16.0	30	SZ8560 **16 x 030**
		40	SZ8560 **16 x 040**
		50	SZ8560 **16 x 050**
		60	SZ8560 **16 x 060**
		63	SZ8560 **16 x 063**
		80	SZ8560 **16 x 080**
		100	SZ8560 **16 x 100**
		125	SZ8560 **16 x 125**
		160	SZ8560 **16 x 160**
		200	SZ8560 **16 x 200**
13	19.0	30	SZ8560 **19 x 030**
		40	SZ8560 **19 x 040**
		50	SZ8560 **19 x 050**
		60	SZ8560 **19 x 060**
		63	SZ8560 **19 x 063**

d_1	d_2	l ±0.1	Item number
13	19.0	80	SZ8560 **19 x 080**
		100	SZ8560 **19 x 100**
		125	SZ8560 **19 x 125**
		200	SZ8560 **19 x 200**
13	20.0	30	SZ8560 **20 x 030**
		40	SZ8560 **20 x 040**
		50	SZ8560 **20 x 050**
		60	SZ8560 **20 x 060**
		63	SZ8560 **20 x 063**
		80	SZ8560 **20 x 080**
		100	SZ8560 **20 x 100**
		125	SZ8560 **20 x 125**
		200	SZ8560 **20 x 200**
17	25.0	50	SZ8560 **25 x 050**
		60	SZ8560 **25 x 060**
		63	SZ8560 **25 x 063**
		70	SZ8560 **25 x 070**
		80	SZ8560 **25 x 080**
		90	SZ8560 **25 x 090**
		100	SZ8560 **25 x 100**
		125	SZ8560 **25 x 125**
		200	SZ8560 **25 x 200**
22	30.0	70	SZ8560 **30 x 070**
		80	SZ8560 **30 x 080**
		90	SZ8560 **30 x 090**
		100	SZ8560 **30 x 100**
		120	SZ8560 **30 x 120**
		125	SZ8560 **30 x 125**
		150	SZ8560 **30 x 150**
		200	SZ8560 **30 x 200**
26	36.0	80	SZ8560 **36 x 080**
		100	SZ8560 **36 x 100**
		125	SZ8560 **36 x 125**
		150	SZ8560 **36 x 150**
		200	SZ8560 **36 x 200**



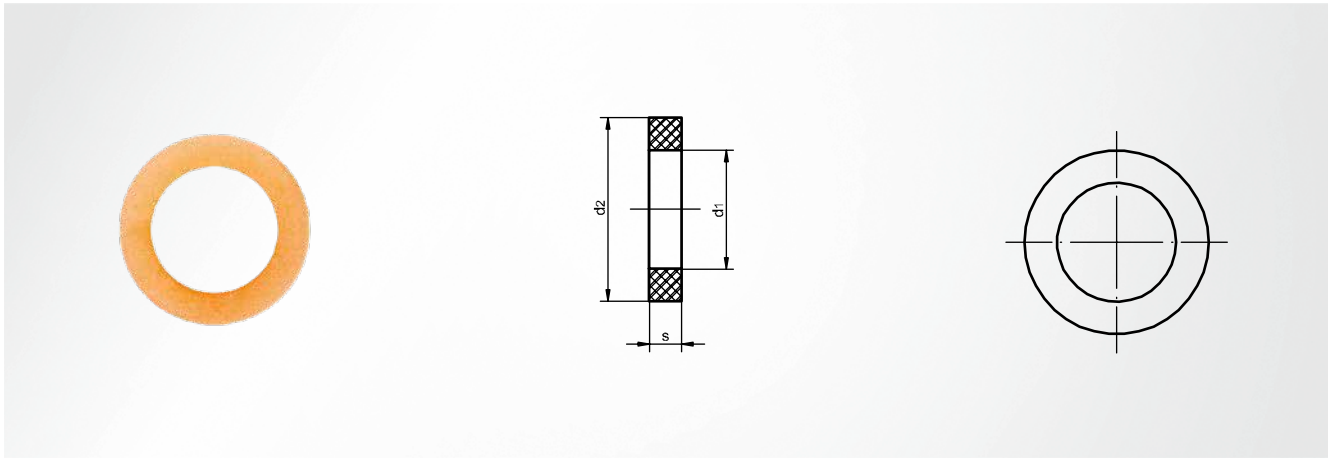
Material
Steel 1.0503 (C45)

Hardness
48 ±2 HRC

d_1	d_2	s	Item number
6.4	17	3	SZ8561 **06.4**
8.4	23	4	SZ8561 **08.4**
10.5	26	4	SZ8561 **10.5**
13.0	30	5	SZ8561 **13**

d_1	d_2	s	Item number
17.0	35	6	SZ8561 **17**
21.0	42	8	SZ8561 **21**
25.0	46	10	SZ8561 **25**

SZ8563 Damping spring



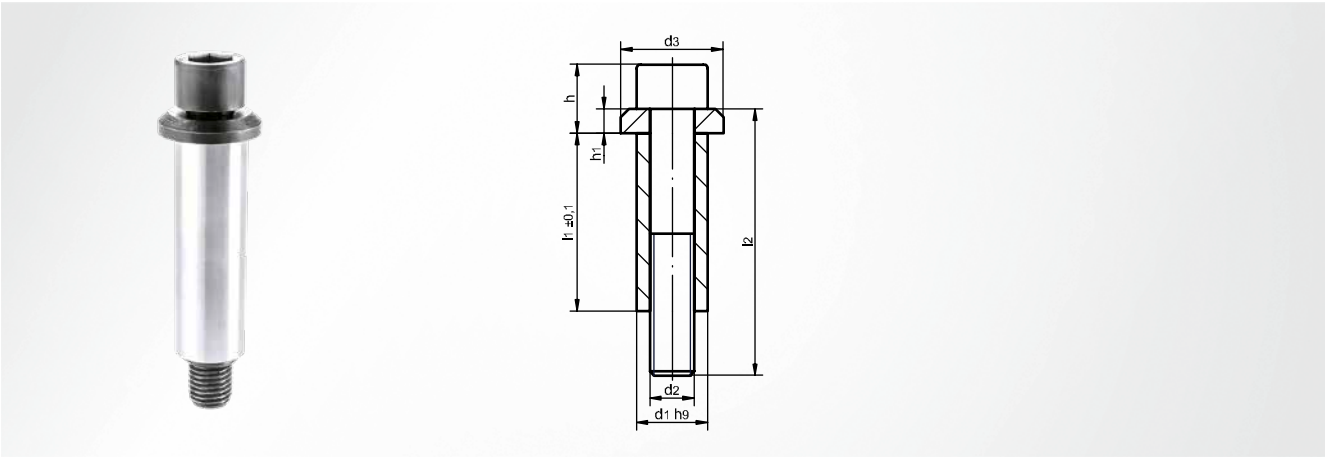
Material
Polyurethane (PUR)

Hardness
93 ±5 Shore A

d_1	d_2	s	Item number
11	17	3	SZ8563 **11**
14	23	4	SZ8563 **14**
17	26	4	SZ8563 **17**
21	30	5	SZ8563 **21**

d_1	d_2	s	Item number
26	35	6	SZ8563 **26**
31	42	6	SZ8563 **31**
37	46	6	SZ8563 **37**

SZ8580 Distance and fitting unit

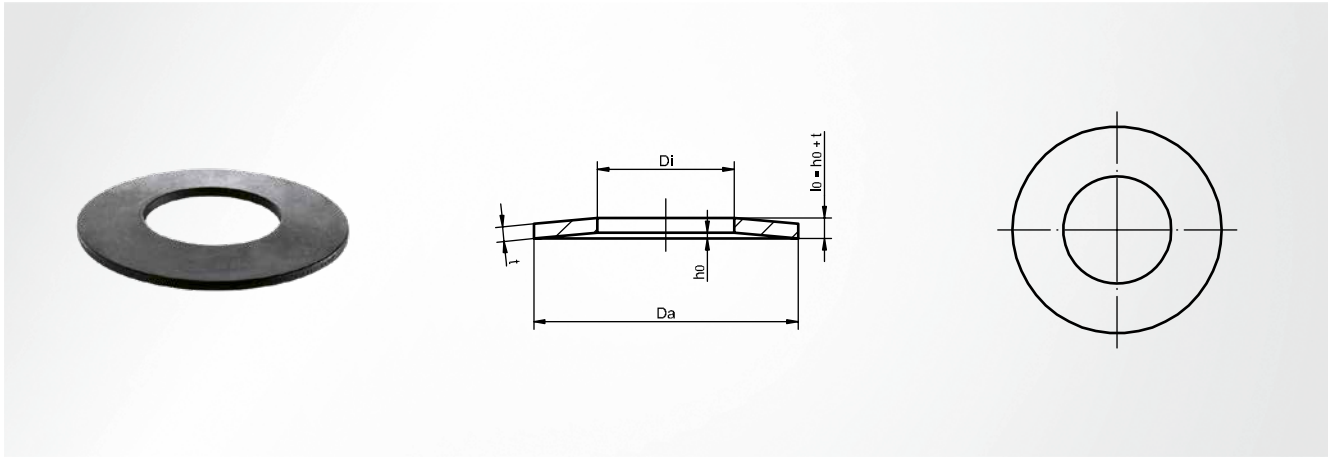


Scope of supply

Disc; spacer pipe; socket-head screw

d_1^{h9}	d_2	d_3	h	h_1	$l_1^{\pm 0.1}$	l_2	Item number
10	M6	15	10.0	4.0	20	35	SZ8580 **10 x 020**
					30	45	SZ8580 **10 x 030**
					40	60	SZ8580 **10 x 040**
					50	70	SZ8580 **10 x 050**
					63	80	SZ8580 **10 x 063**
					80	100	SZ8580 **10 x 080**
12	M8	19	13.0	5.0	20	35	SZ8580 **12 x 020**
					30	45	SZ8580 **12 x 030**
					40	60	SZ8580 **12 x 040**
					50	70	SZ8580 **12 x 050**
					63	80	SZ8580 **12 x 063**
					80	100	SZ8580 **12 x 080**
					100	120	SZ8580 **12 x 100**
16	M10	23	15.5	5.5	30	50	SZ8580 **16 x 030**
					40	60	SZ8580 **16 x 040**
					50	70	SZ8580 **16 x 050**
					63	80	SZ8580 **16 x 063**
					80	100	SZ8580 **16 x 080**
					100	120	SZ8580 **16 x 100**
					125	150	SZ8580 **16 x 125**
20	M12	27	19.0	7.0	30	50	SZ8580 **20 x 030**
					40	60	SZ8580 **20 x 040**
					50	70	SZ8580 **20 x 050**
					63	90	SZ8580 **20 x 063**
					80	100	SZ8580 **20 x 080**
					100	120	SZ8580 **20 x 100**
					125	150	SZ8580 **20 x 125**
25	M16	34	23.0	7.0	50	80	SZ8580 **25 x 050**
					63	90	SZ8580 **25 x 063**
					80	110	SZ8580 **25 x 080**
					100	130	SZ8580 **25 x 100**
					125	150	SZ8580 **25 x 125**

SZ8300 Disc spring



DIN EN 16983 / Series A and B

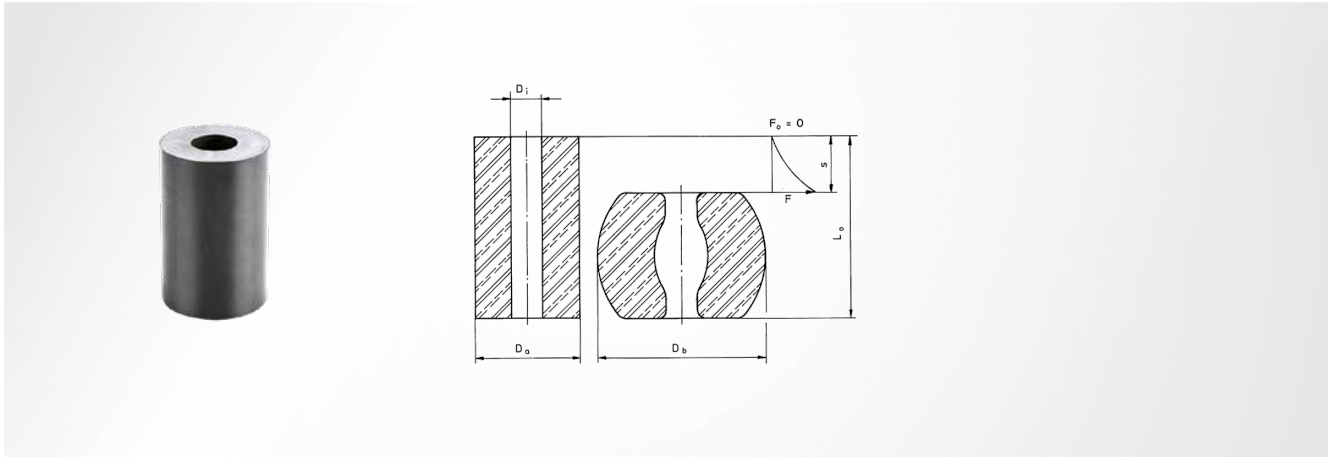
Series A and B

Spring type
Disc spring

Note
s = stroke of a single disc

D_a	D_i	t	h_0	l_0	s = 0.2 h_0 F N	s	s = 0.4 h_0 F N	s	s = 0.6 h_0 F N	s	s = 0.75 h_0 F N	s	Standard packaging piece	Item number
8.0	4.2	0.30	0.25	0.55	42.5	0.05	75.6	0.10	102	0.15	119	0.19	100	SZ8300 **08 x 4.2 x 0.3**
8.0	4.2	0.40	0.20	0.60	63.5	0.04	120.0	0.08	173	0.12	210	0.15	100	SZ8300 **08 x 4.2 x 0.4**
10.0	5.2	0.40	0.30	0.70	72.1	0.06	130.0	0.12	178	0.18	213	0.23	100	SZ8300 **10 x 5.2 x 0.4**
10.0	5.2	0.50	0.25	0.75	98.5	0.05	187.0	0.10	268	0.15	329	0.19	100	SZ8300 **10 x 5.2 x 0.5**
12.5	6.2	0.50	0.35	0.85	98.3	0.07	180.0	0.14	248	0.21	291	0.26	100	SZ8300 **12.5 x 6.2 x 0.5**
12.5	6.2	0.70	0.30	1.00	194.0	0.06	372.0	0.12	539	0.18	673	0.23	100	SZ8300 **12.5 x 6.2 x 0.7**
14.0	7.2	0.50	0.40	0.90	98.9	0.08	177.0	0.16	239	0.24	279	0.30	100	SZ8300 **14 x 7.2 x 0.5**
14.0	7.2	0.80	0.30	1.10	229.0	0.06	444.0	0.12	648	0.18	813	0.23	100	SZ8300 **14 x 7.2 x 0.8**
15.0	5.2	0.70	0.40	1.10	174.0	0.08	326.0	0.16	461	0.24	555	0.30	100	SZ8300 **15 x 5.2 x 0.7**
16.0	8.2	0.60	0.45	1.05	141.0	0.09	255.0	0.18	349	0.27	412	0.34	100	SZ8300 **16 x 8.2 x 0.6**
16.0	8.2	0.90	0.35	1.25	293.0	0.07	566.0	0.14	825	0.21	1000	0.26	100	SZ8300 **16 x 8.2 x 0.9**
18.0	9.2	0.70	0.50	1.20	191.0	0.10	348.0	0.20	480	0.30	572	0.38	100	SZ8300 **18 x 9.2 x 0.7**
18.0	9.2	1.00	0.40	1.40	364.0	0.08	703.0	0.16	1020	0.24	1250	0.30	100	SZ8300 **18 x 9.2 x 1**
20.0	10.2	0.80	0.55	1.35	249.0	0.11	456.0	0.22	631	0.33	745	0.41	100	SZ8300 **20 x 10.2 x 0.8**
20.0	10.2	0.90	0.55	1.45	336.0	0.11	624.0	0.22	877	0.33	1040	0.41	100	SZ8300 **20 x 10.2 x 0.9**
20.0	10.2	1.10	0.45	1.55	443.0	0.09	854.0	0.18	1240	0.27	1530	0.34	100	SZ8300 **20 x 10.2 x 1.1**
22.5	11.2	0.80	0.65	1.45	252.0	0.13	450.0	0.26	608	0.39	710	0.49	100	SZ8300 **22.5 x 11.2 x 0.**
22.5	11.2	1.25	0.50	1.75	560.0	0.10	1080.0	0.20	1570	0.30	1950	0.38	100	SZ8300 **22.5 x 11.2 x 12**
23.0	12.2	1.25	0.60	1.85	700.0	0.12	1330.0	0.24	1920	0.36	2330	0.45	100	SZ8300 **23 x 12.2 x 1.25**
25.0	12.2	0.90	0.70	1.60	302.0	0.14	542.0	0.28	737	0.42	868	0.53	100	SZ8300 **25 x 12.2 x 0.9**
25.0	12.2	1.50	0.55	2.05	838.0	0.11	1630.0	0.22	2380	0.33	2910	0.41	100	SZ8300 **25 x 12.2 x 1.5**
28.0	14.2	1.00	0.80	1.80	392.0	0.16	702.0	0.32	949	0.48	1110	0.60	100	SZ8300 **28 x 14.2 x 1.0**
28.0	14.2	1.50	0.65	2.15	836.0	0.13	1600.0	0.26	2320	0.39	2850	0.49	100	SZ8300 **28 x 14.2 x 1.5**
31.5	16.3	1.25	0.90	2.15	648.0	0.18	1180.0	0.36	1620	0.54	1920	0.68	100	SZ8300 **31.5 x 16.3 x 12**
31.5	16.3	1.75	0.70	2.45	1120.0	0.14	2170.0	0.28	3160	0.42	3900	0.53	100	SZ8300 **31.5 x 16.3 x 17**
35.5	18.3	1.25	1.00	2.25	602.0	0.20	1080.0	0.40	1460	0.60	1700	0.75	50	SZ8300 **35.5 x 18.3 x 12**
35.5	18.3	2.00	0.80	2.80	1500.0	0.16	2910.0	0.32	4230	0.48	5190	0.60	50	SZ8300 **35.5 x 18.3 x 2**
40.0	20.4	1.50	1.15	2.65	911.0	0.23	1640.0	0.46	2240	0.69	2620	0.86	50	SZ8300 **40 x 20.4 x 1.5**
40.0	20.4	2.25	0.90	3.15	1890.0	0.18	3640.0	0.36	5300	0.54	6540	0.68	50	SZ8300 **40 x 20.4 x 2.25**
45.0	22.4	1.75	1.30	3.05	1250.0	0.26	2260.0	0.52	3100	0.78	3660	0.98	50	SZ8300 **45 x 22.4 x 1.75**
45.0	22.4	2.50	1.00	3.50	2240.0	0.20	4320.0	0.40	6290	0.60	7720	0.75	50	SZ8300 **45 x 22.4 x 2.5**
50.0	25.4	2.00	1.40	3.40	1600.0	0.28	2910.0	0.56	4020	0.84	4760	1.05	50	SZ8300 **50 x 25.4X2**
50.0	25.4	2.50	1.40	3.90	2820.0	0.28	5300.0	0.56	7520	0.84	9060	1.05	50	SZ8300 **50 x 25.4 x 2.5**

D_a	D_i	t	h_0	l_0	s = 0.2 h_0		s = 0.4 h_0		s = 0.6 h_0		s = 0.75 h_0		Standard packaging piece	Item number
					F N	s	F N	s	F N	s	F N	s		
50.0	25.4	3.00	1.10	4.10	3430.0	0.22	6660.0	0.44	9740	0.66	12000	0.83	50	SZ8300 **50 x 25.4X3**
56.0	28.5	2.00	1.60	3.60	1570.0	0.32	2810.0	0.64	3810	0.96	4440	1.20	50	SZ8300 **56 x 28.5X2**
56.0	28.5	3.00	1.30	4.30	3350.0	0.26	6430.0	0.52	9320	0.78	11400	0.98	50	SZ8300 **56 x 28.5X3**
63.0	31.0	2.50	1.75	4.25	2410.0	0.35	4400.0	0.70	6080	1.05	7180	1.31	50	SZ8300 **63 x 31X2.5**
63.0	31.0	3.50	1.40	4.90	4360.0	0.28	8420.0	0.56	12300	0.84	15000	1.05	50	SZ8300 **63 x 31X3.5**



DIN ISO 10069-1

Material
Chloroprene elastomer (CR)

Hardness
70 ±3 Shore A

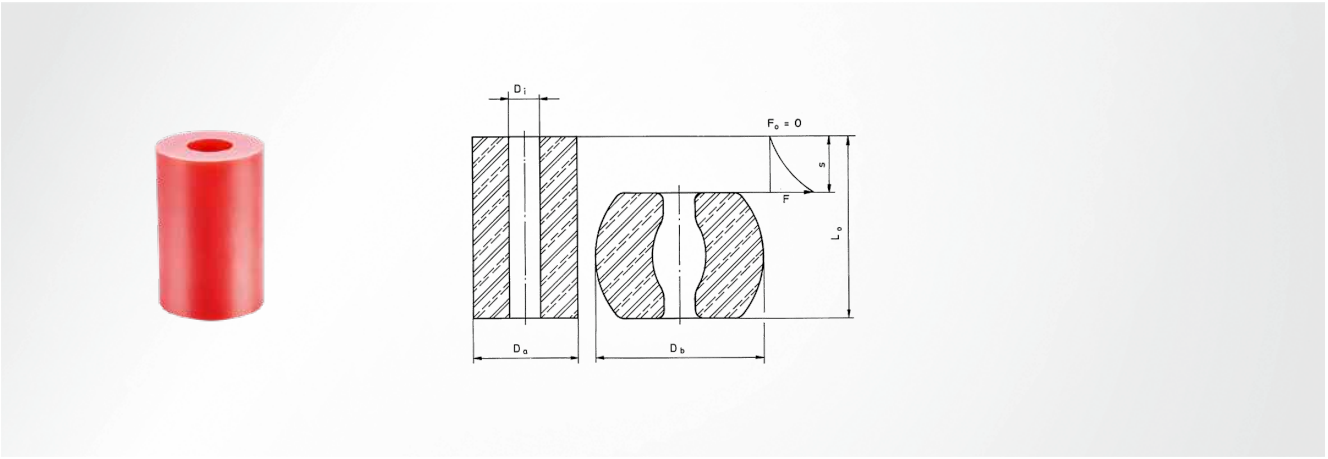
Spring type
Rubber spring

Note
Permissible spring deflection s_{max} = 0.35 L_0; setting inclination 3-5 % of L_0; thermal stability up to +80°, +120° for short periods

D_a	D_i	D_b	L_0	Standard packaging piece	Item number
16	6.5	22	12	10	SZ8500 **016 x 012**
			16	10	SZ8500 **016 x 016**
			20	10	SZ8500 **016 x 020**
			25	10	SZ8500 **016 x 025**
20	8.5	27	16	10	SZ8500 **020 x 016**
			20	10	SZ8500 **020 x 020**
			25	10	SZ8500 **020 x 025**
			32	10	SZ8500 **020 x 032**
25	10.5	34	20	5	SZ8500 **025 x 020**
			25	5	SZ8500 **025 x 025**
			32	5	SZ8500 **025 x 032**
			40	5	SZ8500 **025 x 040**
32	13.5	43	32	5	SZ8500 **032 x 032**
			40	5	SZ8500 **032 x 040**
			50	5	SZ8500 **032 x 050**
			63	5	SZ8500 **032 x 063**
40	13.5	54	32	3	SZ8500 **040 x 032**
			40	3	SZ8500 **040 x 040**
			50	3	SZ8500 **040 x 050**
			63	3	SZ8500 **040 x 063**
			80	3	SZ8500 **040 x 080**
50	17.0	68	32	3	SZ8500 **050 x 032**
			40	3	SZ8500 **050 x 040**
			50	3	SZ8500 **050 x 050**
			63	2	SZ8500 **050 x 063**
			80	2	SZ8500 **050 x 080**
			100	2	SZ8500 **050 x 100**
63	17.0	85	32	2	SZ8500 **063 x 032**

D_a	D_i	D_b	L_0	Standard packaging piece	Item number
63	17.0	85	40	2	SZ8500 **063 x 040**
			50	2	SZ8500 **063 x 050**
			63	2	SZ8500 **063 x 063**
			80	1	SZ8500 **063 x 080**
			100	1	SZ8500 **063 x 100**
			125	1	SZ8500 **063 x 125**
80	21.0	108	32	1	SZ8500 **080 x 032**
			40	1	SZ8500 **080 x 040**
			50	1	SZ8500 **080 x 050**
			63	1	SZ8500 **080 x 063**
			80	1	SZ8500 **080 x 080**
			100	1	SZ8500 **080 x 100**
			125	1	SZ8500 **080 x 125**
100	21.0	135	32	1	SZ8500 **100 x 032**
			40	1	SZ8500 **100 x 040**
			50	1	SZ8500 **100 x 050**
			63	1	SZ8500 **100 x 063**
			80	1	SZ8500 **100 x 080**
			100	1	SZ8500 **100 x 100**
			125	1	SZ8500 **100 x 125**
125	27.0	169	32	1	SZ8500 **125 x 032**
			40	1	SZ8500 **125 x 040**
			50	1	SZ8500 **125 x 050**
			63	1	SZ8500 **125 x 063**
			80	1	SZ8500 **125 x 080**
			100	1	SZ8500 **125 x 100**
			125	1	SZ8500 **125 x 125**
			160	1	SZ8500 **125 x 160**

SZ8590 Elastomer spring



DIN ISO 10069-1

Material
Polyurethane elastomer (PUR)

Hardness
93 ±5 Shore A

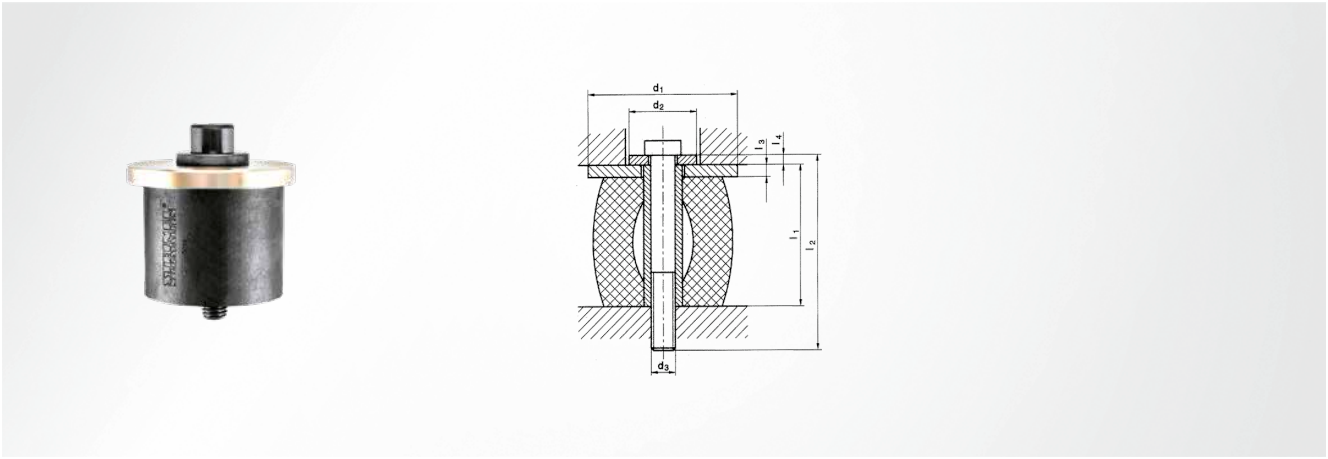
Spring type
Elastomer spring

Note
Permissible spring deflection s_{max} = 0.25 L_0; setting inclination 8-10 % of L_0; thermal stability up to +80°, +120° for short periods

D_a	D_i	D_b	L_0	Standard packaging piece	Item number
16	6.5	20	12	10	SZ8590 **016 x 012**
			16	10	SZ8590 **016 x 016**
			20	10	SZ8590 **016 x 020**
			25	10	SZ8590 **016 x 025**
20	8.5	25	16	10	SZ8590 **020 x 016**
			20	10	SZ8590 **020 x 020**
			25	10	SZ8590 **020 x 025**
			32	10	SZ8590 **020 x 032**
25	10.5	31	20	5	SZ8590 **025 x 020**
			25	5	SZ8590 **025 x 025**
			32	5	SZ8590 **025 x 032**
			40	5	SZ8590 **025 x 040**
32	13.5	40	32	5	SZ8590 **032 x 032**
			40	5	SZ8590 **032 x 040**
			50	5	SZ8590 **032 x 050**
			63	5	SZ8590 **032 x 063**
40	13.5	50	32	3	SZ8590 **040 x 032**
			40	3	SZ8590 **040 x 040**
			50	3	SZ8590 **040 x 050**
			63	3	SZ8590 **040 x 063**
			80	3	SZ8590 **040 x 080**
50	17.0	63	32	3	SZ8590 **050 x 032**
			40	3	SZ8590 **050 x 040**
			50	3	SZ8590 **050 x 050**
			63	2	SZ8590 **050 x 063**
			80	2	SZ8590 **050 x 080**
			100	2	SZ8590 **050 x 100**
63	17.0	79	32	2	SZ8590 **063 x 032**
63	17.0	79	40	2	SZ8590 **063 x 040**
			50	2	SZ8590 **063 x 050**
			63	2	SZ8590 **063 x 063**
			80	1	SZ8590 **063 x 080**
			100	1	SZ8590 **063 x 100**
			125	1	SZ8590 **063 x 125**
80	21.0	100	32	1	SZ8590 **080 x 032**
			40	1	SZ8590 **080 x 040**
			50	1	SZ8590 **080 x 050**
			63	1	SZ8590 **080 x 063**
			80	1	SZ8590 **080 x 080**
			100	1	SZ8590 **080 x 100**
			125	1	SZ8590 **080 x 125**
100	21.0	125	32	1	SZ8590 **100 x 032**
			40	1	SZ8590 **100 x 040**
			50	1	SZ8590 **100 x 050**
			63	1	SZ8590 **100 x 063**
			80	1	SZ8590 **100 x 080**
			100	1	SZ8590 **100 x 100**
			125	1	SZ8590 **100 x 125**
125	27.0	156	32	1	SZ8590 **125 x 032**
			40	1	SZ8590 **125 x 040**
			50	1	SZ8590 **125 x 050**
			63	1	SZ8590 **125 x 063**
			80	1	SZ8590 **125 x 080**
			100	1	SZ8590 **125 x 100**
			125	1	SZ8590 **125 x 125**
			160	1	SZ8590 **125 x 160**

SZ8526 Spring unit

single, with rubber spring



Note

Stroke including preload is max. 35 % of L_0 of the elastomer springs used

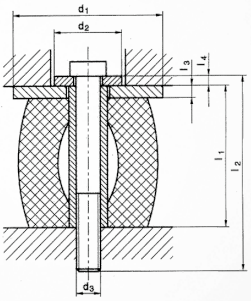
Scope of supply

SZ8500; SZ8510; SZ8556; SZ8560; SZ8561

d_1	d_2	d_3	l_3	l_4	l_1	l_2	SZ8500	Item number
30	17	M6	5	3	20	30	025 x 020	SZ8526 **030 x 020**
					30	40	025 x 032	SZ8526 **030 x 032**
					40	50	025 x 040	SZ8526 **030 x 040**
40	23	M8	5	4	30	50	032 x 032	SZ8526 **040 x 032**
					40	60	032 x 040	SZ8526 **040 x 040**
					50	70	032 x 050	SZ8526 **040 x 050**
					63	80	032 x 063	SZ8526 **040 x 063**
50	23	M8	5	4	30	50	040 x 032	SZ8526 **050 x 032**
					40	60	040 x 040	SZ8526 **050 x 040**
					50	70	040 x 050	SZ8526 **050 x 050**
					63	80	040 x 063	SZ8526 **050 x 063**
					80	100	040 x 080	SZ8526 **050 x 080**
60	26	M10	6	4	30	50	050 x 032	SZ8526 **060 x 032**
					40	60	050 x 040	SZ8526 **060 x 040**
					50	70	050 x 050	SZ8526 **060 x 050**
					63	80	050 x 063	SZ8526 **060 x 063**
					80	100	050 x 080	SZ8526 **060 x 080**
					100	120	050 x 100	SZ8526 **060 x 100**
80	26	M10	6	4	30	50	063 x 032	SZ8526 **080 x 032**
					40	60	063 x 040	SZ8526 **080 x 040**
					50	70	063 x 050	SZ8526 **080 x 050**
					63	80	063 x 063	SZ8526 **080 x 063**
					80	100	063 x 080	SZ8526 **080 x 080**
					100	120	063 x 100	SZ8526 **080 x 100**
					125	140	063 x 125	SZ8526 **080 x 125**
100	30	M12	8	5	30	50	080 x 032	SZ8526 **100 x 032**
					40	60	080 x 040	SZ8526 **100 x 040**
					50	70	080 x 050	SZ8526 **100 x 050**
					63	80	080 x 063	SZ8526 **100 x 063**
					80	100	080 x 080	SZ8526 **100 x 080**
					100	120	080 x 100	SZ8526 **100 x 100**
					125	140	080 x 125	SZ8526 **100 x 125**
120	30	M12	8	5	30	50	100 x 032	SZ8526 **120 x 032**
					40	60	100 x 040	SZ8526 **120 x 040**
					50	70	100 x 050	SZ8526 **120 x 050**
					63	80	100 x 063	SZ8526 **120 x 063**
					80	100	100 x 080	SZ8526 **120 x 080**
					100	120	100 x 100	SZ8526 **120 x 100**
					125	140	100 x 125	SZ8526 **120 x 125**

SZ8527 Spring unit

single, with elastomer spring



Note

Stroke including preload is max. 25 % of L_0 of the elastomer springs used

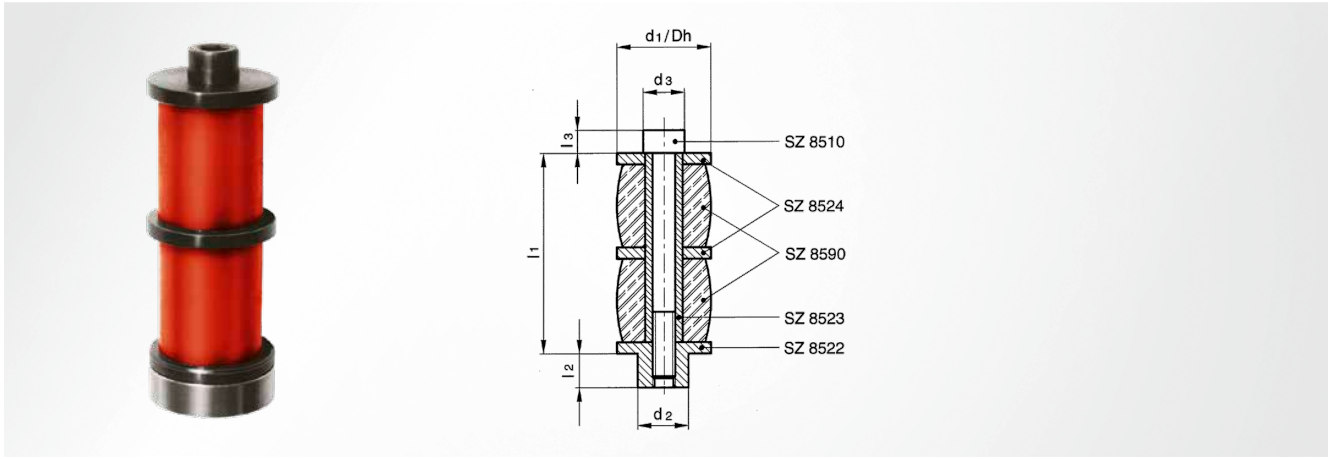
Scope of supply

SZ8510; SZ8556; SZ8560; SZ8561; SZ8590

d_1	d_2	d_3	l_3	l_4	l_1	l_2	SZ8590	Item number
30	17	M6	5	3	20	30	025 x 020	SZ8527 **030 x 020**
					30	40	025 x 032	SZ8527 **030 x 032**
					40	50	025 x 040	SZ8527 **030 x 040**
40	23	M8	5	4	30	50	032 x 032	SZ8527 **040 x 032**
					40	60	032 x 040	SZ8527 **040 x 040**
					50	70	032 x 050	SZ8527 **040 x 050**
					63	80	032 x 063	SZ8527 **040 x 063**
50	23	M8	5	4	30	50	040 x 032	SZ8527 **050 x 032**
					40	60	040 x 040	SZ8527 **050 x 040**
					50	70	040 x 050	SZ8527 **050 x 050**
					63	80	040 x 063	SZ8527 **050 x 063**
					80	100	040 x 080	SZ8527 **050 x 080**
60	26	M10	6	4	30	50	050 x 032	SZ8527 **060 x 032**
					40	60	050 x 040	SZ8527 **060 x 040**
					50	70	050 x 050	SZ8527 **060 x 050**
					63	80	050 x 063	SZ8527 **060 x 063**
					80	100	050 x 080	SZ8527 **060 x 080**
					100	120	050 x 100	SZ8527 **060 x 100**
80	26	M10	6	4	30	50	063 x 032	SZ8527 **080 x 032**
					40	60	063 x 040	SZ8527 **080 x 040**
					50	70	063 x 050	SZ8527 **080 x 050**
					63	80	063 x 063	SZ8527 **080 x 063**
					80	100	063 x 080	SZ8527 **080 x 080**
					100	120	063 x 100	SZ8527 **080 x 100**
					125	140	063 x 125	SZ8527 **080 x 125**
100	30	M12	8	5	30	50	080 x 032	SZ8527 **100 x 032**
					40	60	080 x 040	SZ8527 **100 x 040**
					50	70	080 x 050	SZ8527 **100 x 050**
					63	80	080 x 063	SZ8527 **100 x 063**
					80	100	080 x 080	SZ8527 **100 x 080**
					100	120	080 x 100	SZ8527 **100 x 100**
					125	140	080 x 125	SZ8527 **100 x 125**
120	30	M12	8	5	30	50	100 x 032	SZ8527 **120 x 032**
					40	60	100 x 040	SZ8527 **120 x 040**
					50	70	100 x 050	SZ8527 **120 x 050**
					63	80	100 x 063	SZ8527 **120 x 063**
					80	100	100 x 080	SZ8527 **120 x 080**
					100	120	100 x 100	SZ8527 **120 x 100**
					125	140	100 x 125	SZ8527 **120 x 125**

SZ8520 Spring unit

double, with elastomer spring



Note

Stroke including preload is max. 25 % of L_0 of the elastomer springs used (SZ8590)

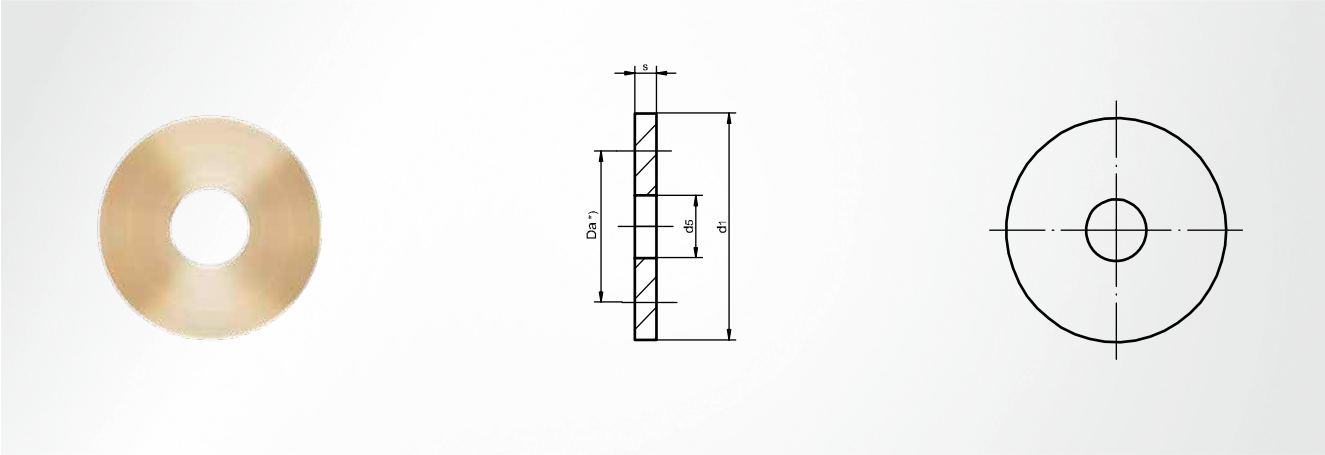
Scope of supply

SZ8510; SZ8590; SZ8522; SZ8523; SZ8524

Sleeve Ø d_1/D_h	d_2	d_3	l_2	l_3	l_1	SZ8510	SZ8522	SZ8523	SZ8524	SZ8590	Item number
25	13	10	9	6	53	06 x 060	25	08 x 050	25	020 x 025	SZ8520 **25 x 053**
					67	06 x 080	25	08 x 064	25	020 x 032	SZ8520 **25 x 067**
32	16	13	11	8	53	08 x 060	32	10 x 050	32	025 x 025	SZ8520 **32 x 053**
					67	08 x 080	32	10 x 064	32	025 x 032	SZ8520 **32 x 067**
					83	08 x 090	32	10 x 080	32	025 x 040	SZ8520 **32 x 083**
40	20	16	14	10	67	10 x 080	40	13 x 064	40	032 x 032	SZ8520 **40 x 067**
					83	10 x 090	40	13 x 080	40	032 x 040	SZ8520 **40 x 083**
					103	10 x 110	40	13 x 100	40	032 x 050	SZ8520 **40 x 103**
50	25	16	14	10	86	10 x 090	50	13 x 082	50	040 x 040	SZ8520 **50 x 086**
					106	10 x 110	50	13 x 102	50	040 x 050	SZ8520 **50 x 106**
					132	10 x 140	50	13 x 128	50	040 x 063	SZ8520 **50 x 132**

SZ8556 Spring washer

for elastomer spring



DIN ISO 10069-1

Material

Brass

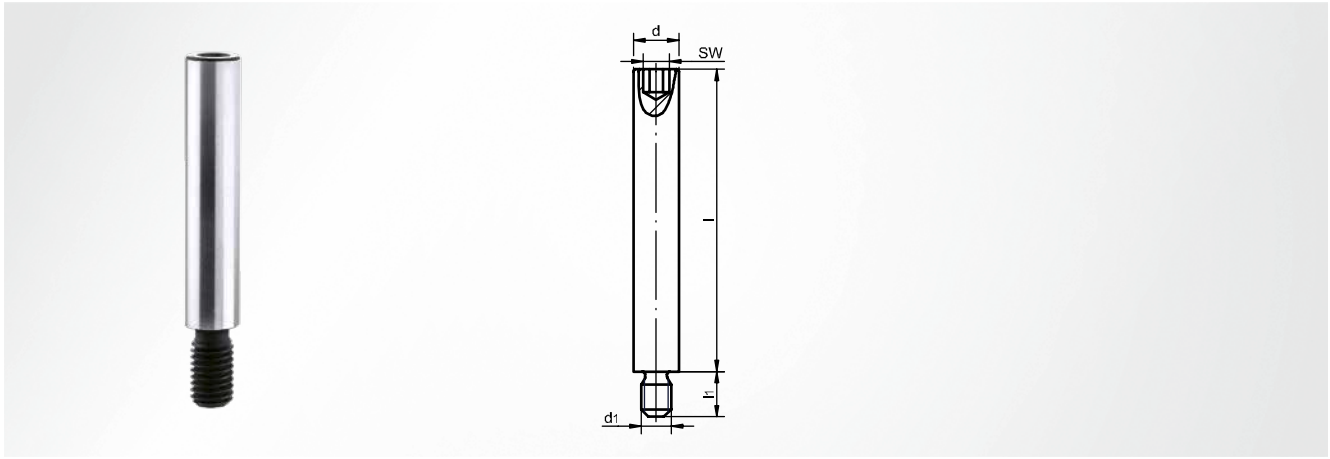
Note

D_a = spring diameter

D_a	d_1	d_5	s	Item number
16	20	6.5	4	SZ8556 **016**
20	25	8.5	4	SZ8556 **020**
25	30	10.5	5	SZ8556 **025**
32	40	13.5	5	SZ8556 **032**
40	50	13.5	5	SZ8556 **040**
50	60	16.5	6	SZ8556 **050**
63	80	16.5	6	SZ8556 **063**
80	100	20.5	8	SZ8556 **080**
100	120	20.5	8	SZ8556 **100**
125	150	26.0	8	SZ8556 **125**

SZ8555 Guide pins

for elastomer spring



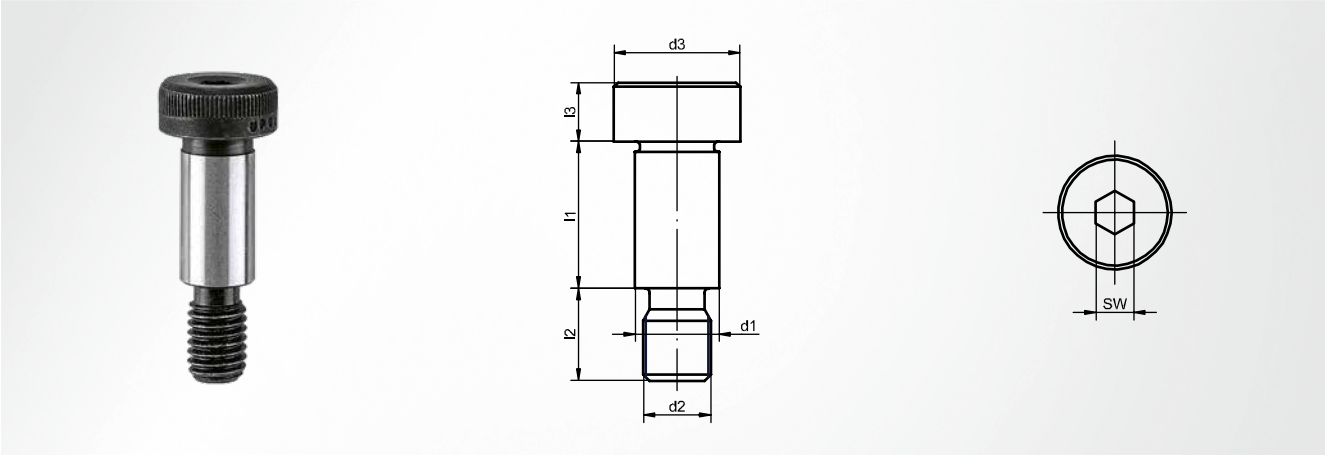
DIN ISO 10069-1

Material
Steel 1.7225

d_1	d^{h11}	l_1	SW	l	Standard packaging piece	Item number
M4	6	6	3	20	10	SZ8555 **06 x 020**
				25	10	SZ8555 **06 x 025**
				32	10	SZ8555 **06 x 032**
M6	8	9	4	20	10	SZ8555 **08 x 020**
				25	10	SZ8555 **08 x 025**
				32	10	SZ8555 **08 x 032**
				40	10	SZ8555 **08 x 040**
				50	10	SZ8555 **08 x 050**
M8	10	15	5	20	10	SZ8555 **10 x 020**
				25	10	SZ8555 **10 x 025**
				32	5	SZ8555 **10 x 032**
				40	5	SZ8555 **10 x 040**
				50	5	SZ8555 **10 x 050**
				63	5	SZ8555 **10 x 063**
M10	13	15	6	32	5	SZ8555 **13 x 032**
				40	5	SZ8555 **13 x 040**
				50	5	SZ8555 **13 x 050**
				63	5	SZ8555 **13 x 063**
				80	5	SZ8555 **13 x 080**
				95	5	SZ8555 **13 x 095**
M12	16	18	8	32	5	SZ8555 **16 x 032**

d_1	d^{h11}	l_1	SW	l	Standard packaging piece	Item number
M12	16	18	8	40	5	SZ8555 **16 x 040**
				50	5	SZ8555 **16 x 050**
				63	5	SZ8555 **16 x 063**
				80	2	SZ8555 **16 x 080**
				95	2	SZ8555 **16 x 095**
				118	2	SZ8555 **16 x 118**
				140	2	SZ8555 **16 x 140**
M16	20	25	10	50	2	SZ8555 **20 x 050**
				63	2	SZ8555 **20 x 063**
				80	2	SZ8555 **20 x 080**
				95	2	SZ8555 **20 x 095**
				118	2	SZ8555 **20 x 118**
				140	2	SZ8555 **20 x 140**
M20	25	30	14	50	2	SZ8555 **25 x 050**
				63	2	SZ8555 **25 x 063**
				80	2	SZ8555 **25 x 080**
				95	2	SZ8555 **25 x 095**
				118	2	SZ8555 **25 x 118**
				140	2	SZ8555 **25 x 140**
				180	2	SZ8555 **25 x 180**

SZ8558 Shoulder screw



ISO 7379

Note

Strength class 12.9

d_1^{f9}	d_2	d_3	l_2	l_3	SW	$l_1^{+0.25}$	Item number
4	M3	7	7.0	3.0	2.0	10	SZ8558 **04 x 010**
						12	SZ8558 **04 x 012**
						16	SZ8558 **04 x 016**
						20	SZ8558 **04 x 020**
						25	SZ8558 **04 x 025**
						30	SZ8558 **04 x 030**
5	M4	9	8.0	4.0	2.5	10	SZ8558 **05 x 010**
						12	SZ8558 **05 x 012**
						16	SZ8558 **05 x 016**
						20	SZ8558 **05 x 020**
						25	SZ8558 **05 x 025**
						30	SZ8558 **05 x 030**
						40	SZ8558 **05 x 040**
6	M5	10	9.5	4.5	3.0	10	SZ8558 **06 x 010**
						12	SZ8558 **06 x 012**
						16	SZ8558 **06 x 016**
						20	SZ8558 **06 x 020**
						25	SZ8558 **06 x 025**
						30	SZ8558 **06 x 030**
						35	SZ8558 **06 x 035**
						40	SZ8558 **06 x 040**
						45	SZ8558 **06 x 045**
						50	SZ8558 **06 x 050**
						55	SZ8558 **06 x 055**
						60	SZ8558 **06 x 060**
						65	SZ8558 **06 x 065**
						70	SZ8558 **06 x 070**
8	M6	13	11.0	5.5	4.0	16	SZ8558 **08 x 016**
						20	SZ8558 **08 x 020**
						25	SZ8558 **08 x 025**
						30	SZ8558 **08 x 030**
						35	SZ8558 **08 x 035**
						40	SZ8558 **08 x 040**
						45	SZ8558 **08 x 045**
						50	SZ8558 **08 x 050**
						55	SZ8558 **08 x 055**
						60	SZ8558 **08 x 060**
						65	SZ8558 **08 x 065**
						70	SZ8558 **08 x 070**
						80	SZ8558 **08 x 080**

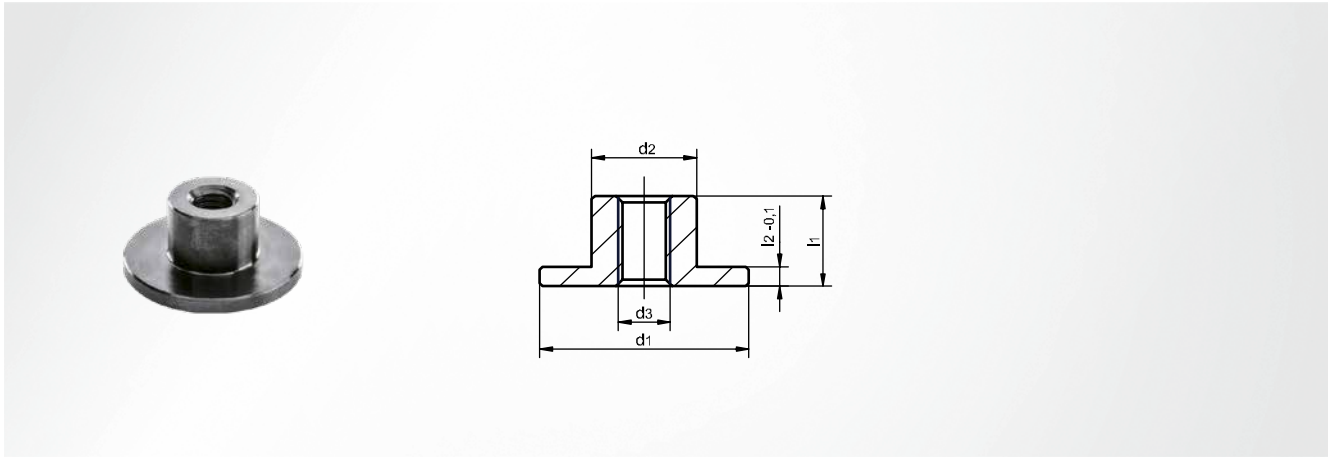
d_1^{f9}	d_2	d_3	l_2	l_3	SW	$l_1^{+0.25}$	Item number
8	M6	13	11.0	5.5	4.0	90	SZ8558 **08 x 090**
						100	SZ8558 **08 x 100**
10	M8	16	13.0	7.0	5.0	16	SZ8558 **10 x 016**
						20	SZ8558 **10 x 020**
						25	SZ8558 **10 x 025**
						30	SZ8558 **10 x 030**
						35	SZ8558 **10 x 035**
						40	SZ8558 **10 x 040**
						45	SZ8558 **10 x 045**
						50	SZ8558 **10 x 050**
						55	SZ8558 **10 x 055**
						60	SZ8558 **10 x 060**
						65	SZ8558 **10 x 065**
						70	SZ8558 **10 x 070**
						80	SZ8558 **10 x 080**
						90	SZ8558 **10 x 090**
						100	SZ8558 **10 x 100**
12	M10	18	16.0	8.0	6.0	16	SZ8558 **12 x 016**
						20	SZ8558 **12 x 020**
						25	SZ8558 **12 x 025**
						30	SZ8558 **12 x 030**
						35	SZ8558 **12 x 035**
						40	SZ8558 **12 x 040**
						45	SZ8558 **12 x 045**
						50	SZ8558 **12 x 050**
						55	SZ8558 **12 x 055**
						60	SZ8558 **12 x 060**
						65	SZ8558 **12 x 065**
						70	SZ8558 **12 x 070**
						80	SZ8558 **12 x 080**
						90	SZ8558 **12 x 090**
						100	SZ8558 **12 x 100**
16	M12	24	18.0	11.0	8.0	25	SZ8558 **16 x 025**
						30	SZ8558 **16 x 030**
						35	SZ8558 **16 x 035**
						40	SZ8558 **16 x 040**
						45	SZ8558 **16 x 045**
						50	SZ8558 **16 x 050**
						55	SZ8558 **16 x 055**
						60	SZ8558 **16 x 060**

SZ8558 Shoulder screw

d_1^{f9}	d_2	d_3	l_2	l_3	SW	$l_1^{+0.25}$	Item number
16	M12	24	18.0	11.0	8.0	65	SZ8558 **16 x 065**
						70	SZ8558 **16 x 070**
						80	SZ8558 **16 x 080**
						90	SZ8558 **16 x 090**
						100	SZ8558 **16 x 100**
20	M16	30	27.0	16.0	10.0	30	SZ8558 **20 x 030**
						35	SZ8558 **20 x 035**
						40	SZ8558 **20 x 040**
						45	SZ8558 **20 x 045**
						50	SZ8558 **20 x 050**
						55	SZ8558 **20 x 055**
						60	SZ8558 **20 x 060**

d_1^{f9}	d_2	d_3	l_2	l_3	SW	$l_1^{+0.25}$	Item number
20	M16	30	27.0	16.0	10.0	65	SZ8558 **20 x 065**
						70	SZ8558 **20 x 070**
						80	SZ8558 **20 x 080**
						90	SZ8558 **20 x 090**
						100	SZ8558 **20 x 100**
24	M20	36	27.0	16.0	12.0	50	SZ8558 **24 x 050**
						60	SZ8558 **24 x 060**
						65	SZ8558 **24 x 065**
						70	SZ8558 **24 x 070**
						80	SZ8558 **24 x 080**
						90	SZ8558 **24 x 090**
						100	SZ8558 **24 x 100**

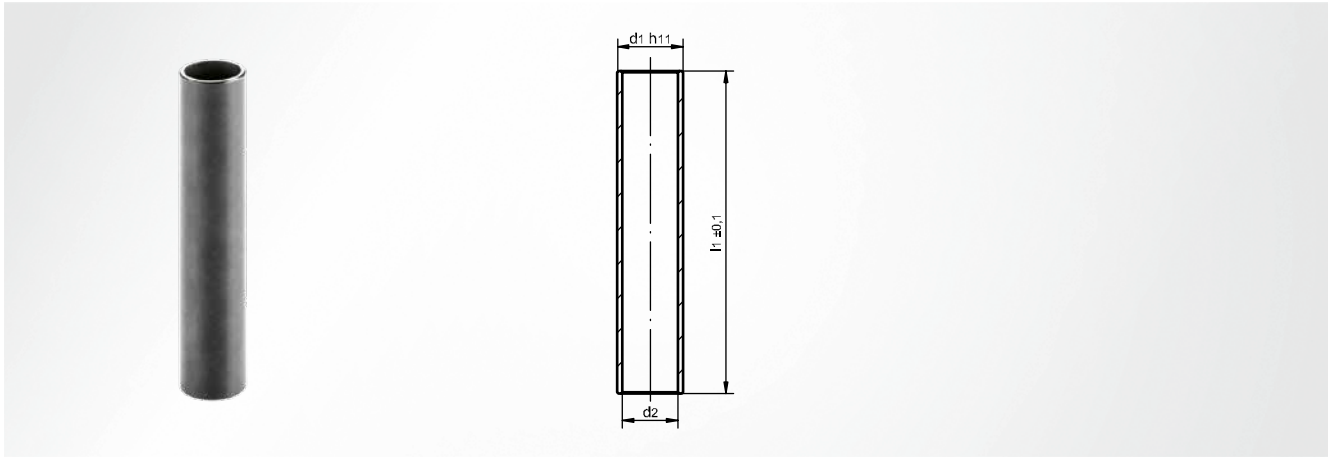
SZ8522 Locating bush



Material
Steel 1.0503 (C45)

d_1	d_2	d_3	l_1	$l_2^{-0.1}$	Item number
25	13	M6	12	3	SZ8522 **25**
32	16	M8	14	3	SZ8522 **32**
40	20	M10	17	3	SZ8522 **40**
50	25	M10	18	4	SZ8522 **50**

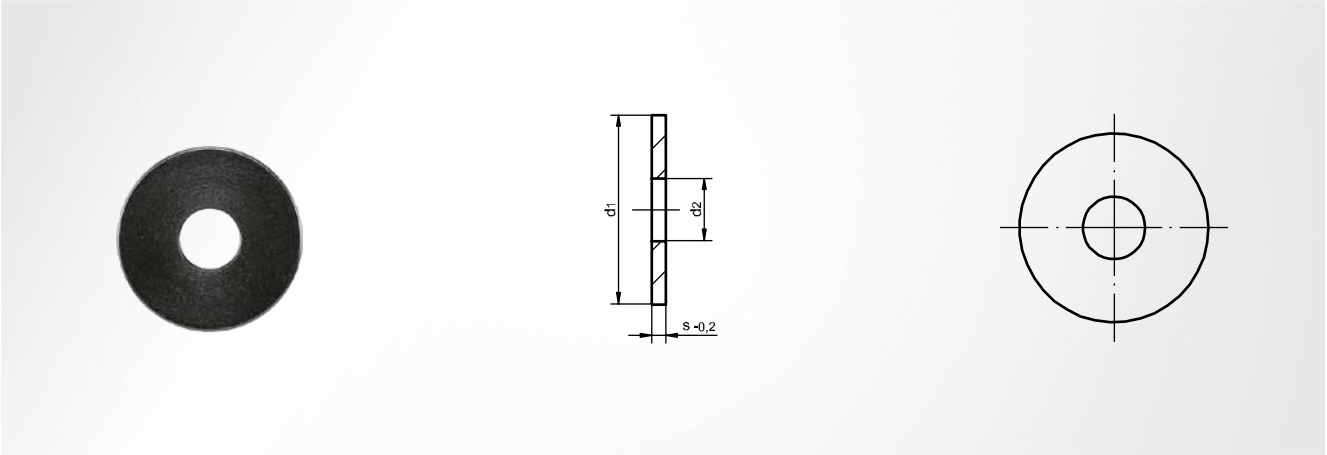
SZ8523 Distance collar



Material
Steel 1.0715 (9SMn28K)

d_1^{h11}	d_2	$l_1^{\pm 0.1}$	Item number
8	6.5	50	SZ8523 **08 x 050**
		64	SZ8523 **08 x 064**
10	8.5	50	SZ8523 **10 x 050**
		64	SZ8523 **10 x 064**
		80	SZ8523 **10 x 080**
13	11.0	64	SZ8523 **13 x 064**
		80	SZ8523 **13 x 080**
		82	SZ8523 **13 x 082**
		100	SZ8523 **13 x 100**
		102	SZ8523 **13 x 102**
		128	SZ8523 **13 x 128**

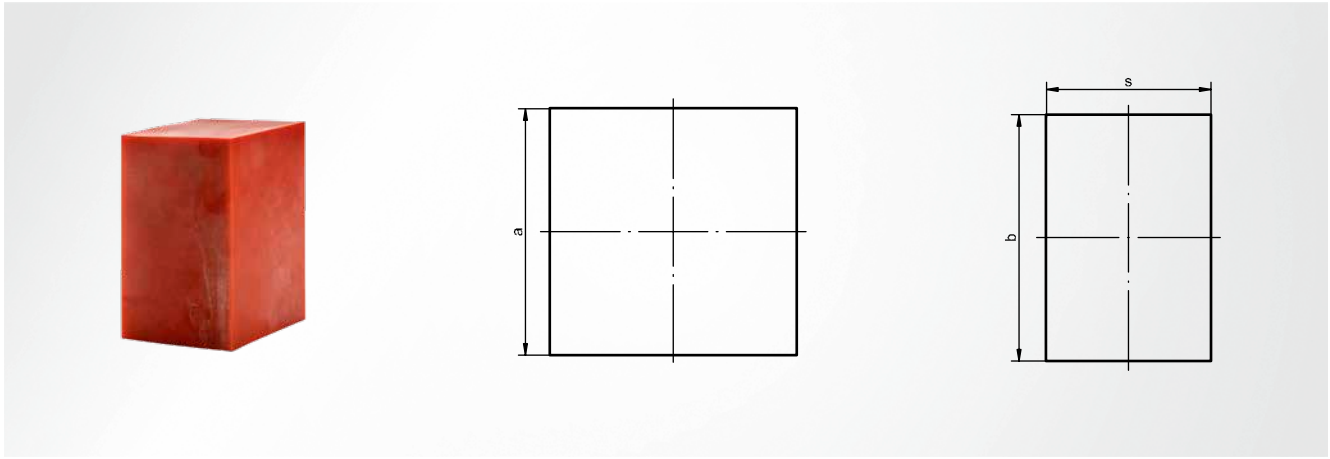
SZ8524 Disc



Material
Steel 1.0503 (C45)

d_1	d_2	$s^{-0.2}$	Item number
25	8	3	SZ8524 **25**
32	10	3	SZ8524 **32**
40	13	3	SZ8524 **40**
50	13	4	SZ8524 **50**

SZ5190 Polyurethane plates



Material
Polyurethane elastomer (PUR); the colour depends on the batch (red or natural)

Hardness
93 ±5 Shore A

Spring type
Elastomer spring

a x b	s	Item number
75 x 75	25.0	SZ5190 **075 x 075 x 25**
	50.0	SZ5190 **075 x 075 x 50**
100 x 75	12.0	SZ5190 **100 x 075 x 12**
	25.0	SZ5190 **100 x 075 x 25**
	50.0	SZ5190 **100 x 075 x 50**
100 x 100	12.0	SZ5190 **100 x 100 x 12**
	25.0	SZ5190 **100 x 100 x 25**
	50.0	SZ5190 **100 x 100 x 50**
125 x 100	12.0	SZ5190 **125 x 125 x 12**
	25.0	SZ5190 **125 x 100 x 25**
	50.0	SZ5190 **125 x 100 x 50**
125 x 125	12.0	SZ5190 **125 x 100 x 12**
	25.0	SZ5190 **125 x 125 x 25**
	50.0	SZ5190 **125 x 125 x 50**
150 x 75	12.0	SZ5190 **150 x 075 x 12**
	25.0	SZ5190 **150 x 075 x 25**
	50.0	SZ5190 **150 x 075 x 50**
150 x 100	12.0	SZ5190 **150 x 100 x 12**
	25.0	SZ5190 **150 x 100 x 25**
	50.0	SZ5190 **150 x 100 x 50**
150 x 125	12.0	SZ5190 **150 x 125 x 12**
	25.0	SZ5190 **150 x 125 x 25**
	50.0	SZ5190 **150 x 125 x 50**
150 x 150	12.0	SZ5190 **150 x 150 x 12**
	25.0	SZ5190 **150 x 150 x 25**
	50.0	SZ5190 **150 x 150 x 50**
200 x 100	12.0	SZ5190 **200 x 100 x 12**
	25.0	SZ5190 **200 x 100 x 25**
	50.0	SZ5190 **200 x 100 x 50**
200 x 125	12.0	SZ5190 **200 x 125 x 12**
	25.0	SZ5190 **200 x 125 x 25**
	50.0	SZ5190 **200 x 125 x 50**
200 x 150	12.0	SZ5190 **200 x 150 x 12**
	25.0	SZ5190 **200 x 150 x 25**
	50.0	SZ5190 **200 x 150 x 50**
200 x 200	12.0	SZ5190 **200 x 200 x 12**

a x b	s	Item number
200 x 200	25.0	SZ5190 **200 x 200 x 25**
	50.0	SZ5190 **200 x 200 x 50**
250 x 125	12.0	SZ5190 **250 x 125 x 12**
	25.0	SZ5190 **250 x 125 x 25**
	50.0	SZ5190 **250 x 125 x 50**
250 x 150	12.0	SZ5190 **250 x 150 x 12**
	25.0	SZ5190 **250 x 150 x 25**
	50.0	SZ5190 **250 x 150 x 50**
250 x 200	12.0	SZ5190 **250 x 200 x 12**
	25.0	SZ5190 **250 x 200 x 25**
	50.0	SZ5190 **250 x 200 x 50**
250 x 250	12.0	SZ5190 **250 x 250 x 12**
	25.0	SZ5190 **250 x 250 x 25**
	50.0	SZ5190 **250 x 250 x 50**
300 x 150	12.0	SZ5190 **300 x 150 x 12**
	25.0	SZ5190 **300 x 150 x 25**
	50.0	SZ5190 **300 x 150 x 50**
300 x 200	12.0	SZ5190 **300 x 200 x 12**
	25.0	SZ5190 **300 x 200 x 25**
	50.0	SZ5190 **300 x 200 x 50**
300 x 250	12.0	SZ5190 **300 x 250 x 12**
	25.0	SZ5190 **300 x 250 x 25**
	50.0	SZ5190 **300 x 250 x 50**
300 x 300	12.0	SZ5190 **300 x 300 x 12**
	25.0	SZ5190 **300 x 300 x 25**
	50.0	SZ5190 **300 x 300 x 50**
400 x 200	12.0	SZ5190 **400 x 200 x 12**
	25.0	SZ5190 **400 x 200 x 25**
	50.0	SZ5190 **400 x 200 x 50**
400 x 250	12.0	SZ5190 **400 x 250 x 12**
	25.0	SZ5190 **400 x 250 x 25**
	50.0	SZ5190 **400 x 250 x 50**
400 x 300	12.0	SZ5190 **400 x 300 x 12**
	25.0	SZ5190 **400 x 300 x 25**
	50.0	SZ5190 **400 x 300 x 50**
500 x 250	12.0	SZ5190 **500 x 250 x 12**

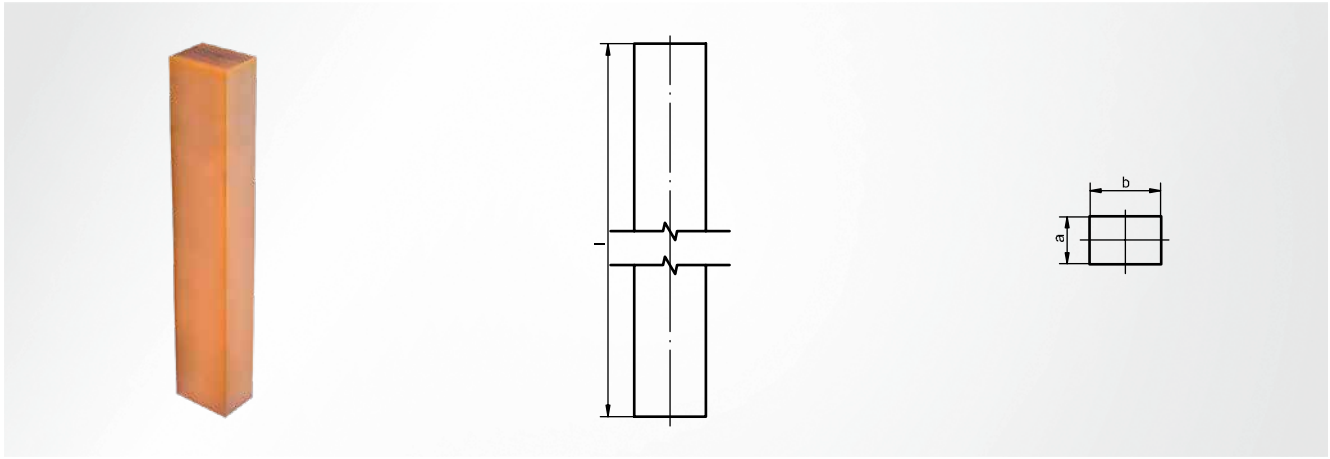
SZ5190 Polyurethane plates

a x b	s	Item number
500 x 250	25.0	SZ5190 **500 x 250 x 25**
	50.0	SZ5190 **500 x 250 x 50**
500 x 300	12.0	SZ5190 **500 x 300 x 12**
	25.0	SZ5190 **500 x 300 x 25**

a x b	s	Item number
500 x 300	50.0	SZ5190 **500 x 300 x 50**
600 x 300	12.0	SZ5190 **600 x 300 x 12**
	25.0	SZ5190 **600 x 300 x 25**
	50.0	SZ5190 **600 x 300 x 50**

SZ5290 Polyurethane rod

rectangular rod



Material
Polyurethane elastomer (PUR)

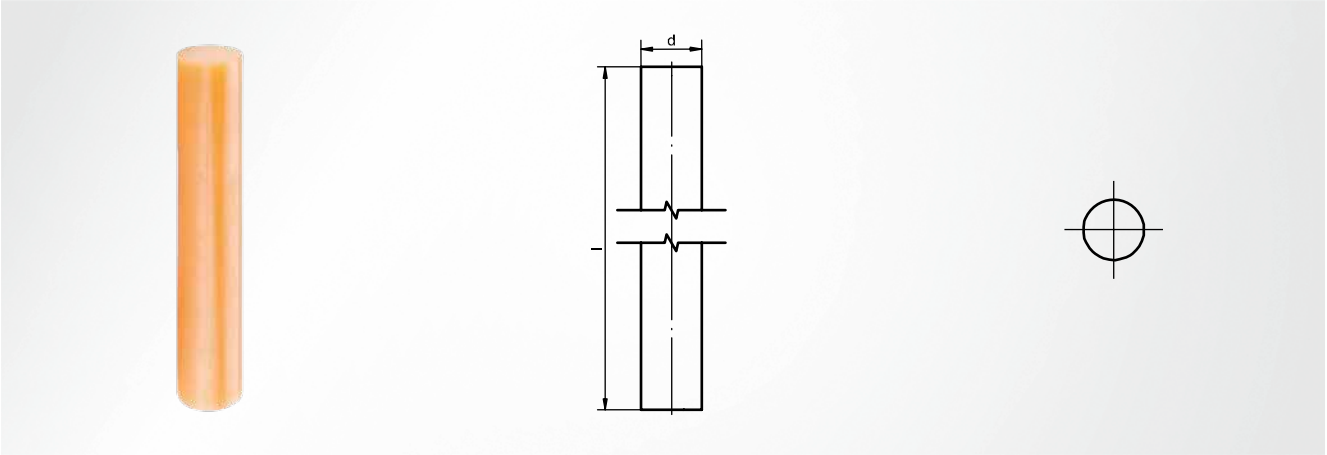
Spring type
Elastomer spring

Hardness
93 ±5 Shore A

a	b	l	Item number
25.0	25.0	300	SZ5290 **25 x 25 x 300**
		600	SZ5290 **25 x 25 x 600**
		1200	SZ5290 **25 x 25 x 1200**
25.0	37.5	200	SZ5290 **25 x 37.5 x 200**
		300	SZ5290 **25 x 37.5 x 300**
		600	SZ5290 **25 x 37.5 x 600**
		1200	SZ5290 **25 x 37.5 x 1200**
50.0	50.0	100	SZ5290 **50 x 50 x 100**
		200	SZ5290 **50 x 50 x 200**
		300	SZ5290 **50 x 50 x 300**
		600	SZ5290 **50 x 50 x 600**
		1200	SZ5290 **50 x 50 x 1200**
50.0	75.0	100	SZ5290 **50 x 75 x 100**
		200	SZ5290 **50 x 75 x 200**
		300	SZ5290 **50 x 75 x 300**
		600	SZ5290 **50 x 75 x 600**
		1200	SZ5290 **50 x 75 x 1200**
75.0	75.0	100	SZ5290 **75 x 75 x 100**
		200	SZ5290 **75 x 75 x 200**
		300	SZ5290 **75 x 75 x 300**
		600	SZ5290 **75 x 75 x 600**
75.0	100.0	100	SZ5290 **75 x 100 x 100**
		200	SZ5290 **75 x 100 x 200**
		300	SZ5290 **75 x 100 x 300**
		600	SZ5290 **75 x 100 x 600**

SZ5390 Polyurethane rod

round rod



Material
Polyurethane elastomer (PUR)

Spring type
Elastomer spring

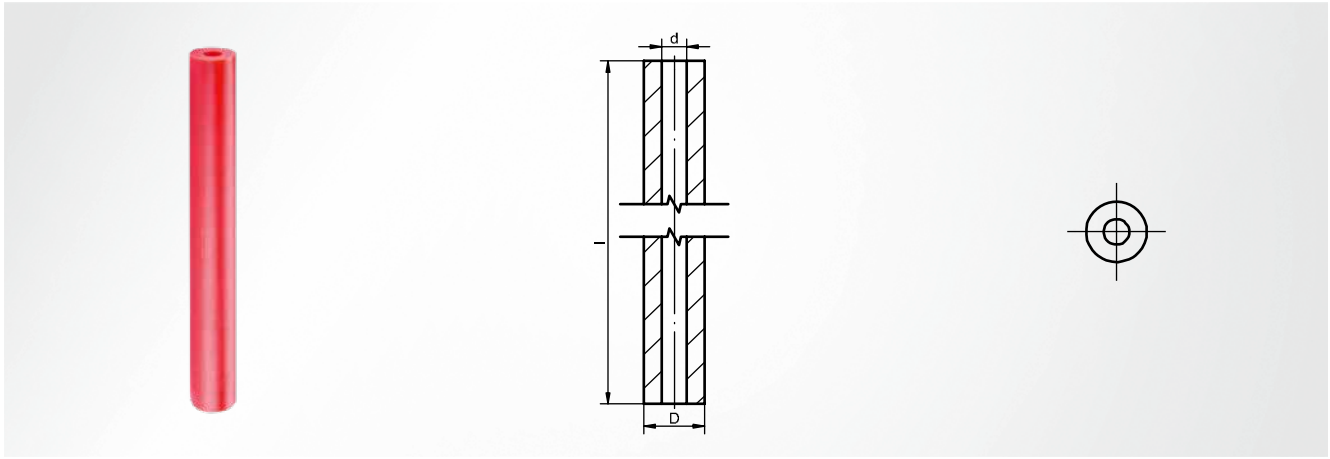
Hardness
93 ±5 Shore A

d	l	Item number
25	200	SZ5390 **25 x 200**
	300	SZ5390 **25 x 300**
32	100	SZ5390 **32 x 100**
	200	SZ5390 **32 x 200**
	300	SZ5390 **32 x 300**
50	63	SZ5390 **50 x 063**
	80	SZ5390 **50 x 080**
	100	SZ5390 **50 x 100**

d	l	Item number
50	160	SZ5390 **50 x 160**
	200	SZ5390 **50 x 200**
	300	SZ5390 **50 x 300**
75	80	SZ5390 **75 x 080**
	100	SZ5390 **75 x 100**
	160	SZ5390 **75 x 160**
	200	SZ5390 **75 x 200**
	300	SZ5390 **75 x 300**

SZ5391 Polyurethane rod

hollow round rod



Material
Polyurethane elastomer (PUR)

Hardness
93 ±5 Shore A

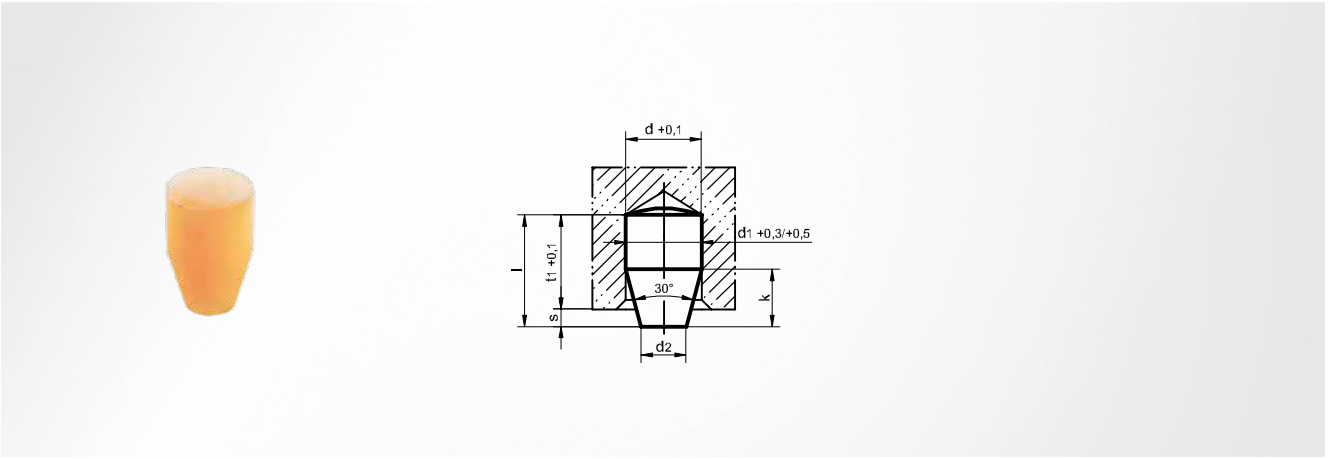
Spring type
Elastomer spring

Note
Permissible spring deflection s_{max} = 30 %; setting inclination 6-8 %; thermal stability -20° to +80°, -40° to +120° for short periods; resistant against: oil (lubricant oil), grease, alcohol, benzene, ozone

D	d	l	Item number
16	6.5	300	SZ5391 **016 x 300**
20	8.5	300	SZ5391 **020 x 300**
25	10.5	300	SZ5391 **025 x 300**
32	13.5	300	SZ5391 **032 x 300**
40	13.5	300	SZ5391 **040 x 300**

D	d	l	Item number
50	17.0	400	SZ5391 **050 x 400**
63	17.0	400	SZ5391 **063 x 400**
80	21.0	400	SZ5391 **080 x 400**
100	21.0	300	SZ5391 **100 x 300**
125	27.0	300	SZ5391 **125 x 300**

SZ8460 Thrust piece



Material
Polyurethane elastomer (PUR)

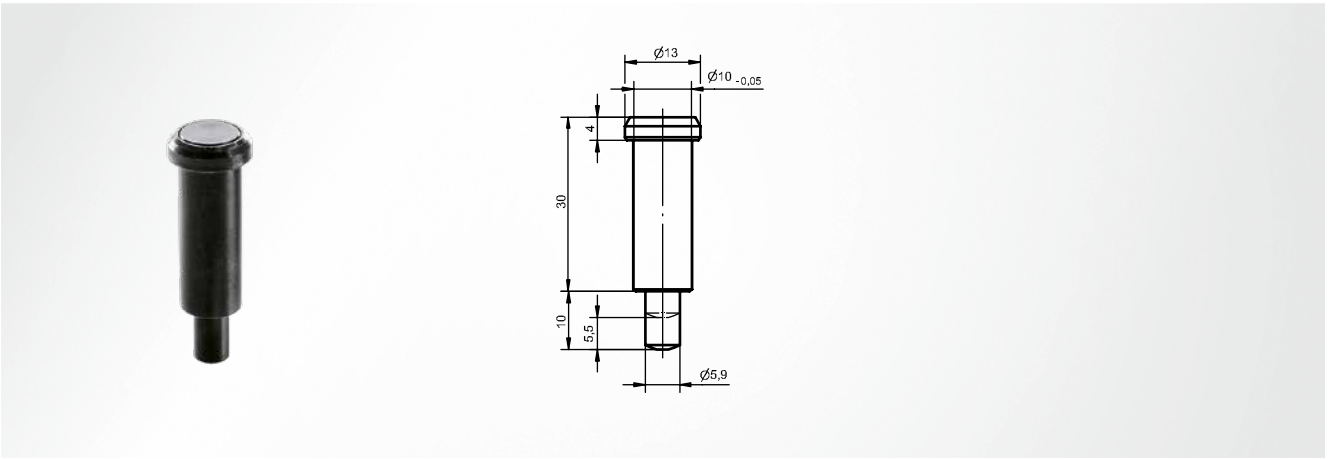
Installation in mounting bore
d +0.1

Hardness
93 ±5 Shore A

Compressive force N	d_1 +0.3 - +0.5	d_2	l	k	t_1 +0.1	s	Standard packaging piece	Item number
150	6	3.6	9.5	4.5	8	1.5	20	SZ8460 **06**
350	10	6.0	15.5	7.5	13	2.5	20	SZ8460 **10**
1500	16	9.5	25.0	12.0	21	4.0	10	SZ8460 **16**

SZ8135 Thrust piece

with bolt



Material
Free-cutting steel

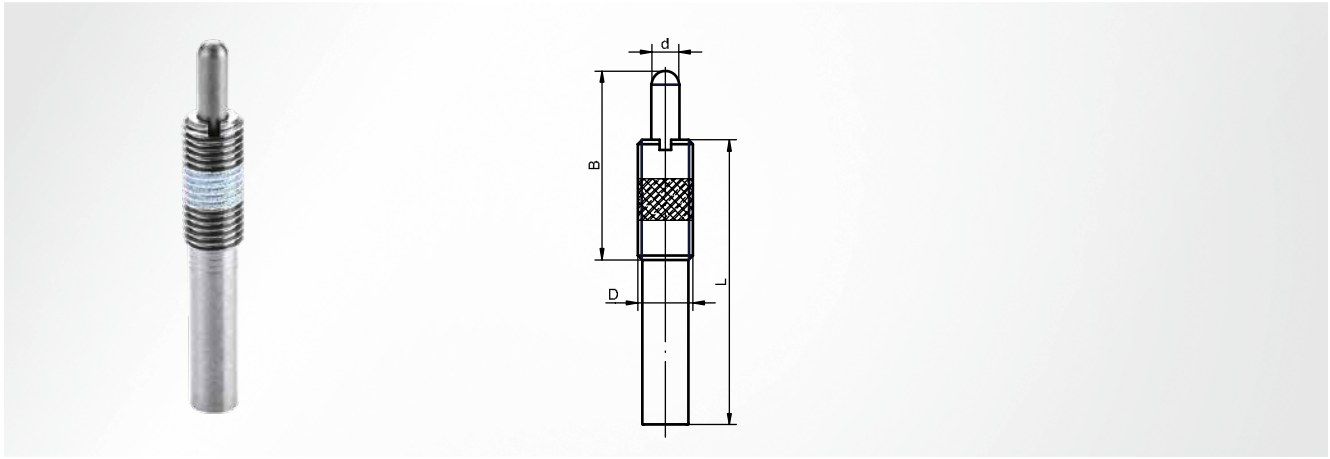
Installation in mounting bore
10 H7

Note
Pressure: Start ~45 N - end ~100 N; thrust bolt, hardened

Item number
SZ813510

SZ8140 Thrust piece

light series



Material
Free-cutting steel

Optional accessories
SZ8146

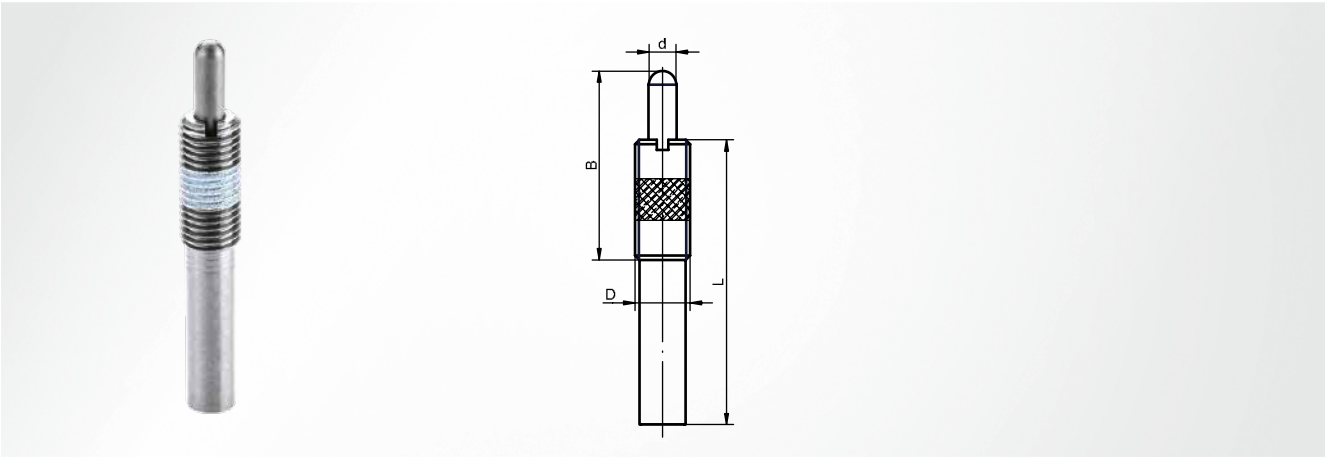
Installation instruction
Installation and disassembly only with suitable key; coloured thread marking also serves to secure the thread

Spring force daN	D	B	d	Initial force daN	Stroke	L	Item number
2	M12	35	5.5	0.4	10	43	SZ8140 **12 x 010**
4	M16	35	7.5	1.3	10	60	SZ8140 **16 x 010**
				1.0	15	60	SZ8140 **16 x 015**
				1.3	20	80	SZ8140 **16 x 020**

Spring force daN	D	B	d	Initial force daN	Stroke	L	Item number
4	M16	35	7.5	1.8	30	125	SZ8140 **16 x 030**
				1.3	40	150	SZ8140 **16 x 040**
				1.3	50	150	SZ8140 **16 x 050**
10	M24	45	10.0	2.0	15	60	SZ8140 **24 x 015**

SZ8145 Thrust piece

heavy series



Material
Free-cutting steel

Optional accessories
SZ8146

Installation instruction
Installation and disassembly only with suitable key; coloured thread marking also serves to secure the thread

Spring force daN	D	B	d	Initial force daN	Stroke	L	Item number
4	M12	35	5.5	0.7	10	43	SZ8145 **12 x 010**
8	M16	35	7.5	2.7	10	60	SZ8145 **16 x 010**
				1.5	15	60	SZ8145 **16 x 015**
				1.7	20	80	SZ8145 **16 x 020**

Spring force daN	D	B	d	Initial force daN	Stroke	L	Item number
8	M16	35	7.5	2.0	30	125	SZ8145 **16 x 030**
				2.6	40	150	SZ8145 **16 x 040**
				2.6	50	150	SZ8145 **16 x 050**
20	M24	45	10.0	4.0	15	60	SZ8145 **24 x 015**

SZ8146 Mounting key

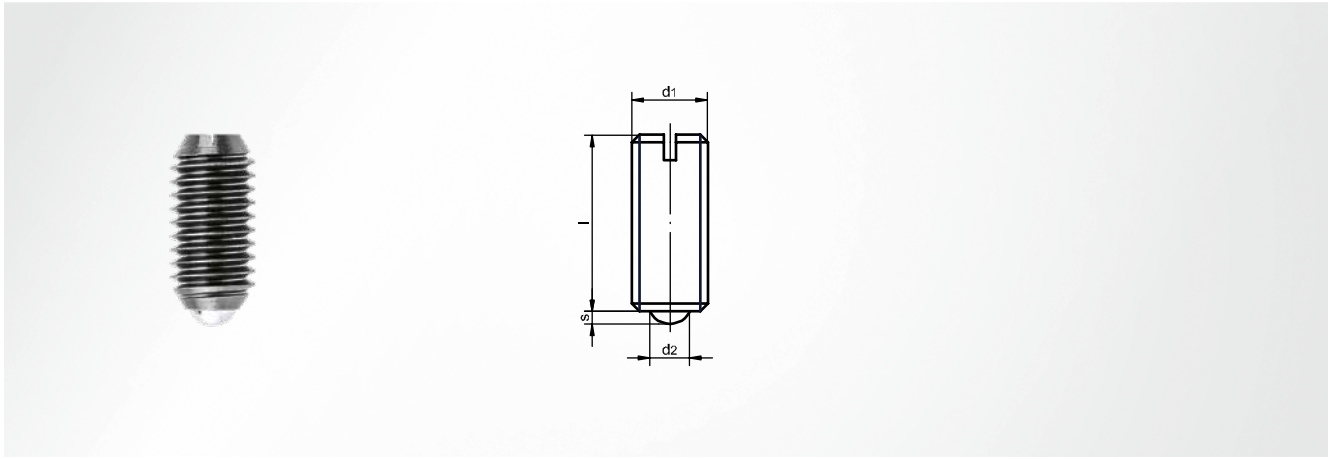
for thrust piece

Installation instruction
for installation and disassembly of the thrust pieces
SZ8140 and SZ8145

D	Item number
M12	SZ8146 **.12**
M16	SZ8146 **.16**
M24	SZ8146 **.24**

SZ8130 Thrust piece

with ball, slot



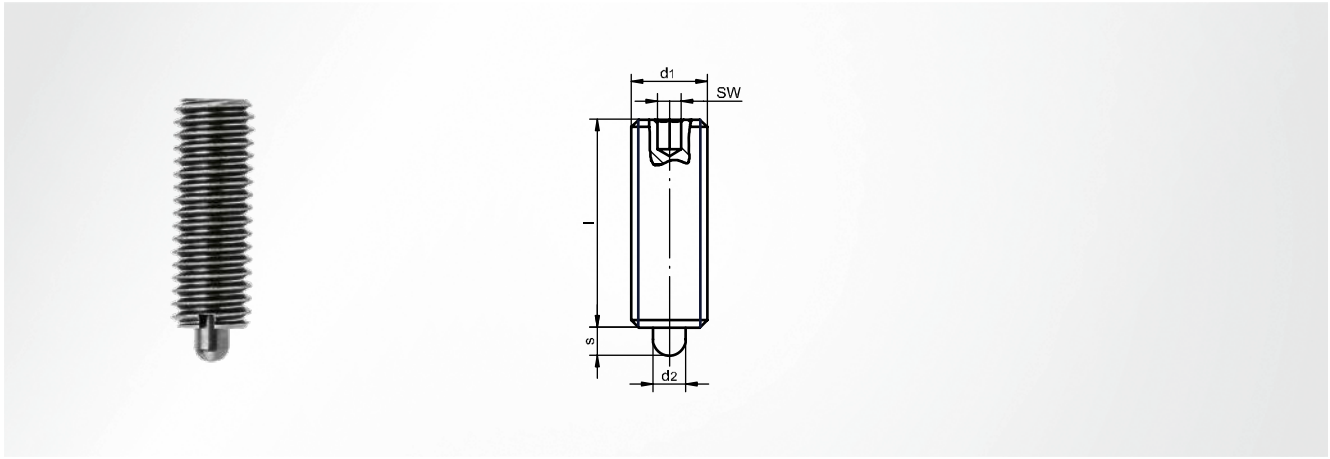
Material
Free-cutting steel

Note
Ball, hardened

d_1	d_2	l	s	Initial pressure N	Final pressure N	Standard packaging piece	Item number
M3	1.5	7	0.5	2.2	3	50	SZ8130 **03**
M4	2.5	9	0.8	6.0	12	50	SZ8130 **04**
M5	3.0	12	0.9	7.0	13	50	SZ8130 **05**
M6	3.5	14	1.0	9.0	15	50	SZ8130 **06**
M8	5.0	16	1.5	20.0	35	50	SZ8130 **08**
M10	6.0	19	2.0	25.0	45	50	SZ8130 **10**
M12	8.0	22	2.5	35.0	60	25	SZ8130 **12**
M16	10.0	24	3.5	65.0	110	25	SZ8130 **16**

SZ8131 Thrust piece

with bolt, hexagon socket



Material
Free-cutting steel

Note
Bolts hardened

d_1	d_2	l	s	Initial pressure N	Final pressure N	Standard packaging piece	SW	Item number
M3	1.0	12	1.0	1.7	3.5	25	0.7	SZ8131 **03**
M4	1.5	15	1.5	5.0	15.0	25	1.3	SZ8131 **04**
M5	2.4	18	2.3	7.0	20.0	25	1.5	SZ8131 **05**
M6	2.7	20	2.5	7.0	20.0	25	2.0	SZ8131 **06**
M8	3.5	22	3.0	9.0	35.0	10	2.5	SZ8131 **08**
M10	4.0	22	3.0	9.0	35.0	10	3.0	SZ8131 **10**
M12	6.0	28	4.0	15.0	55.0	10	4.0	SZ8131 **12**
M16	7.5	32	5.0	45.0	100.0	10	5.0	SZ8131 **16**

Nitrogen systems

- Nitrogen cylinders
- Composite tube systems
- Composite plate systems
- Manifold plate systems

SZ8060.2. 5.13

SZ8060.2.B 5.15

SZ8060.2.V 5.17

SZ8060.2.VB 5.18

SZ8060.2.VZ 5.19

SZ8060.2.PD 5.20

SZ8063.1. 5.22

SZ8063.1.B 5.25

SZ8063.1.V 5.27

SZ8063.1.VB 5.29

SZ8063.1.VZ 5.31

SZ8063.1.PD 5.33

SZ8065.2. 5.35

SZ8065.2.B 5.37

SZ8065.2.V 5.39

SZ8065.2.VB 5.41

SZ8065.2.VZ 5.43

SZ8066.2. 5.45

SZ8066.2.B 5.48

SZ8066.2.V 5.50

SZ8066.2.VB 5.52

SZ7066.2. 5.54

SZ7066.2.B 5.57

SZ7066.2.V 5.59

SZ7066.2.VB 5.61

SZ8080.2. 5.63

SZ8080.2.B 5.66

SZ8080.2.V 5.68

SZ8080.2.VB 5.70

SZ7080.2. 5.72

SZ7080.2.B 5.75

SZ7080.2.V 5.77

SZ7080.2.VB 5.79

ST8841-1 5.81

ST8841-2 5.83

ST8841-3 5.85

SZ8085 5.86

SZ80855-1 5.86

SZ7046 5.87

SZ7046 5.87

SZ7045 5.88

SZ8085.4 5.89

SZ8085.6 5.89

K100-000-0300 5.90

SZ7045.9 5.90

SZ7045.10 5.90

SZ8079 5.91

SZ8078 5.91

ST8845-01-01 5.92

ST8845-02-01 5.93

ST8845-32-01 5.94

ST8845-80-01 5.95

ST8845-8 5.96

ST8845-9 5.97

ST8845-444 5.98

ST8845-DW 5.99

SZ701008 5.100

SZ701108 5.101

SZ701208 5.101

SZ702006 5.102

SZ701306 5.102

SZ701406 5.103

SZ701606 5.103

SZ701506 5.104

SZ701706 5.104

SZ703406 5.105

SZ703606 5.105

SZ703506 5.106

SZ703306 5.106

SZ702106 5.107

SZ702206 5.107

SZ702306 5.108

SZ701906 5.108

SZ704530 5.109

SZ704405 5.109

SZ702406 5.110

SZ704531 5.110

SZ704302 5.111

SZ704406 5.111

SZ704204 5.112

SZ704303 5.112

SZ704404 5.113

SZ704301 5.113

SZ8099 5.114

SZ8000 WKZ 5.115

SZ8000 WKZ8065 5.116

SZ8000 WKZ8066 5.117

SZ8000 5.118

SZ8000 5.119

SZ8000 5.120

SZ8000 5.121

SZ7087 5.122

ST8841-DS 5.123

ST8841-ZB 5.123

ST8842-1 5.124

ST8842-2 5.125

ST8842-WKZ-5 5.126

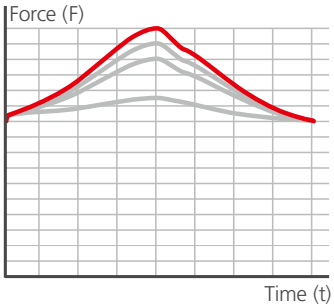
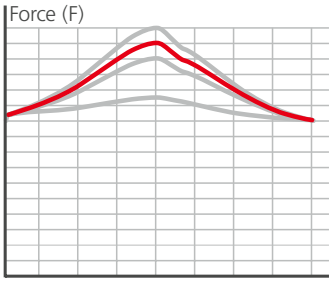
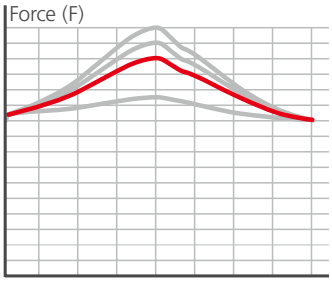
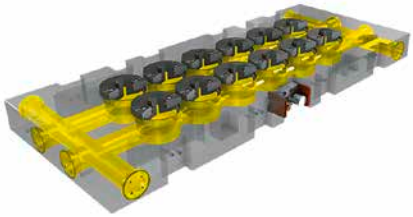
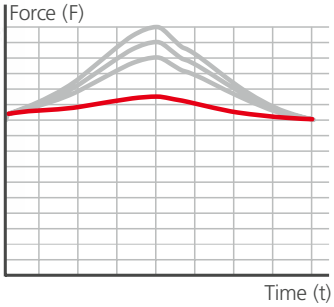
ST8841-WKZ-3 5.126

ST8841-WKZ-41 5.127

Nitrogen systems

Overview

Nitrogen systems are heavy-duty and flexible alternatives to mechanical spring elements. They provide optimal solutions for complex projects with various compressive forces and the same spring force. They are compact and require less installation space than mechanical spring elements. With nitrogen systems, the installation height of the tools can be reduced and the force progressions optimised. Whether it concerns the selection and design of the nitrogen cylinders, combined solutions or individual manifold plates – with STEINEL nitrogen systems, you will always have technically and economically optimal tools.

Systems	Force curves	Application
nitrogen cylinders	steep force increase 	They are used as standardised spring elements when large forces are required within small spaces.
Composite tube systems	levelled force increase 	They are used to ensure that the same pressure prevails for all nitrogen cylinders connected within the system. It can be adjusted using the control panel. The nitrogen volume increases through the tube connections, and this results in a levelled force increase. Composite tube systems are flexible and can also be retrofitted.
Composite plate systems	low force increase 	They are used in customer-specific solutions and also effect a uniform pressure at the nitrogen cylinders, which can be adjusted using the control panel. In addition to the reduction of the sealing points with respect to the composite tube systems, a greater increase of the nitrogen volume is achieved through the connecting boreholes in the plate. This results in a low force increase.
Manifold plate systems 	very low force increase 	They are always developed according to customer specifications and also guarantee a uniform pressure at all cylinders, which can be adjusted using the control panel. Through the integrated nitrogen buffers (volume boreholes), manifold plate systems achieve an optimal use of space as well as a very low force increase.

The FEM-calculated and TUV-approved design provides the highest safety standards in accordance with the PED directives (Pressure Equipment Directive). Starting at a nitrogen volume of 1 litre, pressure equipment is subject to PED directives and must also be tested and have a CE mark. Additional regulations, installation instructions etc. for our products can be found under **www.steinel.com » Service » Operating instructions.**

Nitrogen cylinders

Nitrogen cylinders can be easily integrated into the tool and increase availability with regard to mechanical spring elements. Preloading is not needed, which facilitates improved handling.

Advantages

- outstanding lifetimes due to innovative sealing materials, lifetime lubrication and two-point piston support
- large product range for each installation situation and application
- rapid availability of all products thanks to in-house production and extensive warehousing

Safety features

- maximum security thanks to FEM-calculated components
- application of PED directives (Pressure Equipment Directive DGRL)
- constant traceability of all materials and production stages
- all nitrogen cylinders available with diameters from 32 mm, also available with burst protection upon request
- all nitrogen cylinders come with complete documentation

Operating parameters	
pressure medium	gaseous nitrogen N_2 min. 2.8
permissible temperature (TS)	
min.	5°C
max.	80 °C
min. filling pressure	50 bar

Rod-sealed springs

For rod-sealed springs, the seal is firmly fixed in the housing and seals at the piston surface. During the stroke movement, nitrogen flows past the piston collar and into the resulting second pressure chamber. The pressure space is therefore not separated by the piston. When the piston is retracted, the nitrogen volume is reduced and the pressure consequently increases. When springing back, the nitrogen in the upper nitrogen cylinder space acts as a stop damper. The stressed sealing area is smaller in comparison with piston-sealed springs. The rod-sealed springs are suitable for high speeds and long stroke lengths.

Due to their characteristics, rod-sealed springs are available in most variants and designs. They are the most commonly used nitrogen cylinders in punching tools.

Piston-sealed springs

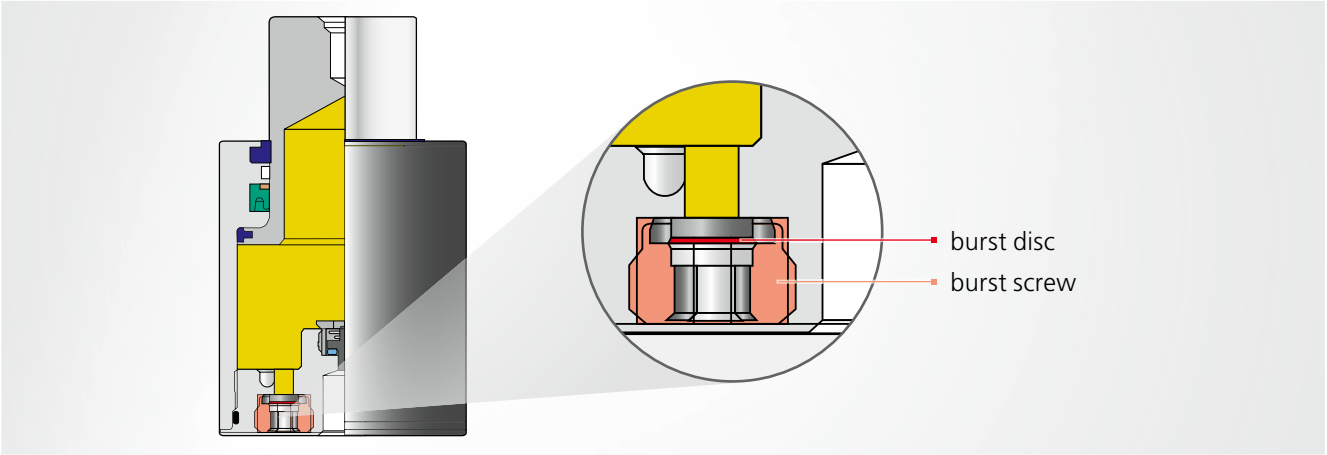
For piston-sealed springs, the seal is installed at the piston collar. When the piston is retracted, the entire nitrogen volume is compressed and the pressure consequently increases. They only have one pressure space. Springing back is not damped and has a direct effect. At the same stroke value and force curve, piston-sealed springs become larger than rod-sealed springs. Therefore, since the piston seal is located within the nitrogen cylinder, its sealing function is not affected by external influences. The larger sealing area limits the piston speed.

Due to their characteristics, piston-sealed springs are used with slowly-running punching tools or within dirty environments.

The nitrogen cylinders of the SZ8060.2 series are piston-sealed.

Nitrogen systems

Burst protection



All STEINEL nitrogen cylinders with outer diameters from 32 mm are available with burst protection, in the form of a burst screw with integrated burst disc, upon request. All STEINEL control panels are equipped with burst protection as standard.

The burst disc cracks when a specified pressure level has been exceeded, and the nitrogen can then immediately leak out. By using burst protection, the nitrogen cylinder is protected from overpressure damage.

Advantages

- prevents consequential damage to nitrogen systems and tool
- nitrogen systems are refillable and ready for operation following a technical test and replacement of the burst protection.
- burst protection integrated into the base of the nitrogen cylinder and the housing of the control panel
- burst protection for standard nitrogen cylinders retrofit-table through replacement of the base

Electronic pressure controller

The electronic pressure controller is used to monitor the pressure within the nitrogen systems. When the freely configurable limit is reached, corresponding signals are emitted by the machine controller and can be used, e.g., for warning messages or to switch off the machine.

Product features

- pressure range from 0 to 600 bar
- configurable switching point, reset point and switching function (NO/NC)
- scalable analogue outlet
- LED display and operating buttons on the device
- password-protected configuration menu
- display and connection rotatable
- housing and medium-contacting parts made from stainless steel

Nitrogen systems

Composite tube systems

In composite tube systems, multiple nitrogen cylinders and a control panel are connected using tube lines in order to standardise system pressure. Compared to nitrogen cylinders, the total volume of nitrogen in the system is easily increased through the tube lines, which leads to a flattening of both the pressure increase and the force curve. All of the nitrogen cylinders within a pressure cycle have a standardised pressure level, which means that the force ratio between them is constant. This lowers the risk of tilting, reduces the lateral forces in the guide units and thus guarantees effective tool protection.

Advantages

- The integration of a control panel means that system pressure can be reliably monitored at any time and optimised in line with the production process.
- It is possible to temporarily compensate for a small pressure drop by replenishing nitrogen levels without having to interrupt the production process.
- One or multiple pressure cycles can be installed in a tool.
- One of the burst protection systems integrated within the control panel provides maximum safety. Individual nitrogen cylinders can also be equipped with burst protection.
- The use of a pressure controller is optional.
- If the force increase has to be further reduced, the nitrogen volume can be increased via the connection of an external storage buffer.

STEINEL will happily support you from the design phase right through to commissioning and maintenance of your composite tube systems.

Operating parameters	
pressure medium	gaseous nitrogen N_2 min. 2.8
permissible temperature (TS)	
min.	5°C
max.	80 °C
min. filling pressure	50 bar

Nitrogen systems

Composite plate systems

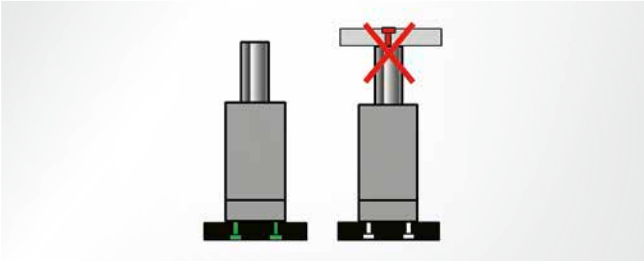
Composite plate systems consist of several nitrogen cylinders, a control panels and the composite plate. All components are connected to one another via boreholes in the composite plate. As with composite tube systems, this ensures standardised system pressure and a larger nitrogen volume, resulting in a flatter force curve.

The standardised pressure and therefore the uniform force ratio lowers the risk of tilting, reduces the lateral forces in the guide units and thus guarantees effective tool protection. The direct nitrogen supply via the lower plate reduces the sealing points in comparison with the composite tube systems, therefore increasing system availability. Composite plate systems are particularly compact and safe to operate.

Advantages

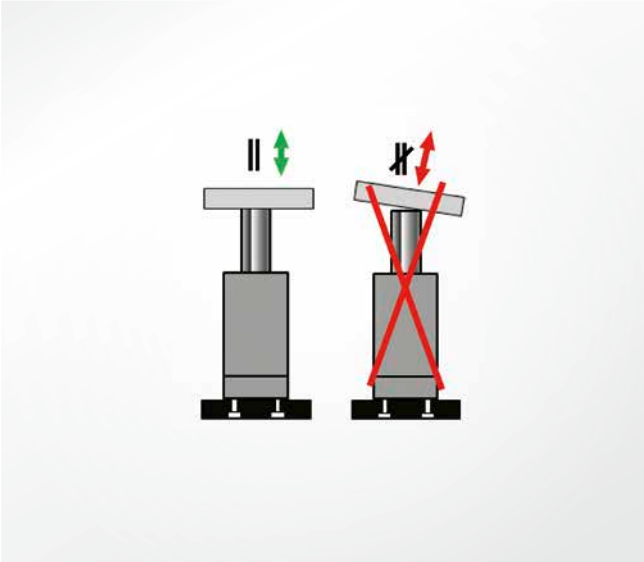
- No additional space is required in the tool for external tube lines, as all of the connecting boreholes are in the interior of the composite plate.
- It is possible to temporarily compensate for a small pressure drop by replenishing nitrogen levels without having to interrupt the production process.
- The number of sealing points is reduced to a minimum in order to prevent the risk of tool failure due to leaks in the system.
- The integration of a control panel means that system pressure can be reliably monitored at any time and optimised in line with the production process.
- A composite plate system can include several pressure cycles.
- One of the burst protection systems integrated within the control panel provides maximum safety. Individual nitrogen cylinders can also be equipped with burst protection.
- The use of a pressure controller is optional.
- If the force increase has to be further reduced, the nitrogen volume can be increased via the connection of an external storage buffer.

Operating parameters	
pressure medium	gaseous nitrogen N_2 min. 2.8
permissible temperature (TS)	
min.	5 °C
max.	75 °C
min. filling pressure	50 bar



Nitrogen cylinders must be screwed via the mounting threads on the housing base, and never on the piston.

The thread in the piston surface is only meant for nitrogen cylinder assembly and no other parts may be screwed on to it.

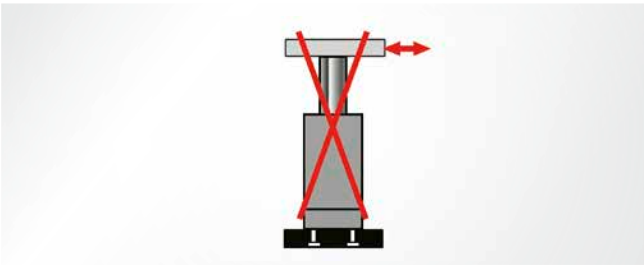


The nitrogen cylinders must be installed coaxial to the acting force.

The piston rod surface must be completely impinged. The contact surface should be suitably hardened.

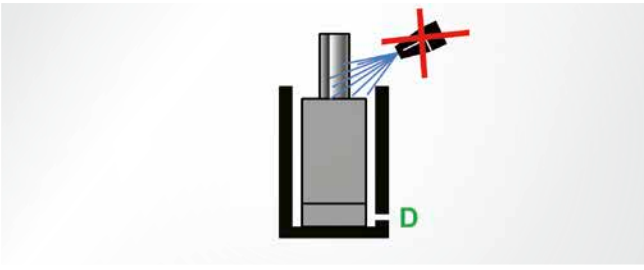
The screw-on surface must be flat and parallel to the pressure surface.

The nitrogen cylinders must not be preloaded in the tool. If preloaded nitrogen cylinders are installed in a tool, the nitrogen cylinders must not be preloaded more than 0.2 mm. In this case, an appropriate warning sign must be posted at the installation site.

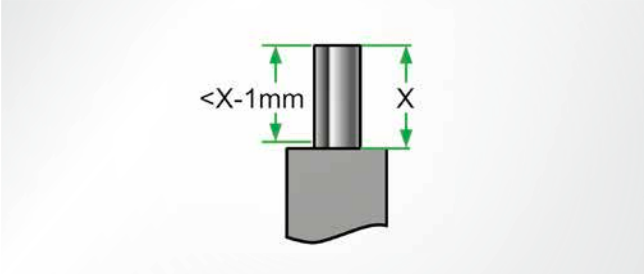


Lateral forces should be avoided.

Transverse forces on the piston rod can damage the nitrogen cylinders.



When installed in counterbores, the nitrogen cylinders must be provided with a circumferential gap of at least 1.5 mm between the nitrogen cylinder and the walls. The release of liquid by means of a drainage bore (D) must be possible. The piston rod must be protected from contact with liquids and mechanical damage.

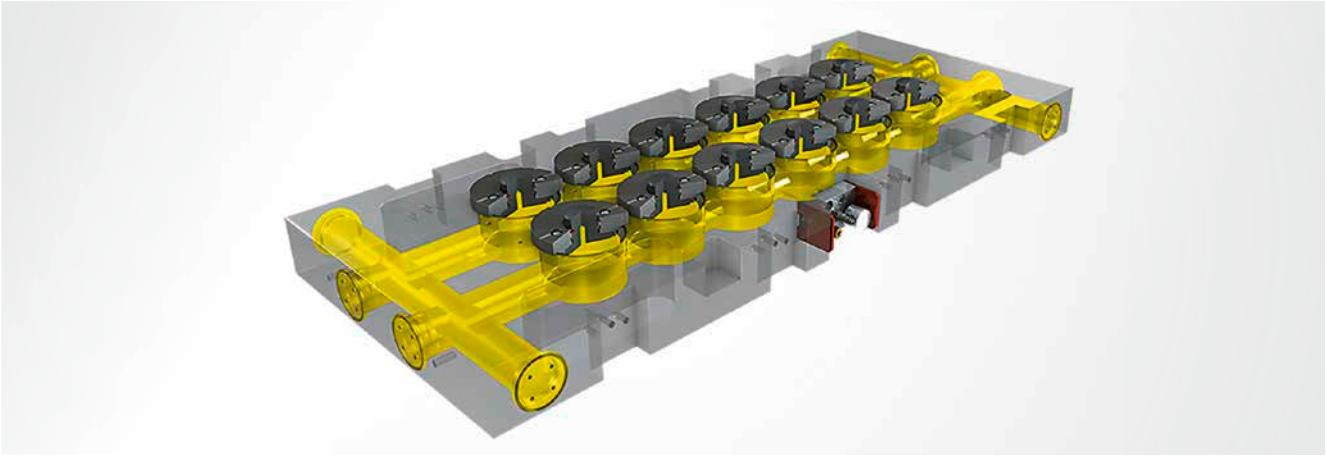


A stroke reserve of at least 1 mm must be provided.

X = maximum stroke

Nitrogen systems

Manifold plate systems



Manifold plates are constructed and manufactured according to customer specifications. They consist of a metal plate with volume boreholes as an integrated nitrogen buffer, space-saving manifold cylinders and control panels. The nitrogen buffer's large volume allows for a very low force increase.

Drawing cushion

STEINEL also provides machine-bound drawing cushions as a special form of manifold plate. The spring forces are transmitted through guide pins to the correct location in the tool. With phenomenal lifetimes, a high number of cycles and a very low mass to be moved, nitrogen drawing cushions from STEINEL are clearly superior to conventional pneumatic drawing cushions in terms of dynamics, durability and heat generation.

Advantages

- Manifold plates are distinguished by an extremely flat force curve in comparison to other nitrogen systems.
- The standardised system pressure guarantees a uniform force at all manifold cylinders.
- Manifold plates are distinguished by a low temperature increase.
- The maximum filling pressure of 150 bar and the permissible pressure increase of a maximum of 20 % ensure a flexible, tool-friendly production process.
- Control panels, burst protection and pressure controllers are also possible, just like for the composite systems.
- One of the burst protection systems integrated within the control panel provides maximum safety. Individual nitrogen cylinders can also be equipped with burst protection.
- The use of a pressure controller is optional.
- If the force increase has to be further reduced, the nitrogen volume can be increased via the connection of an external storage buffer.

Specific customer requirements are already the main focus with regard to individually designed manifold plate systems and drawing cushions. If testing or repeat testing by a certified entity is required before commissioning, STEINEL will happily provide support for the organising it. If testing by a person qualified in accordance with the operational safety directive (BetrSichV) is required, it can be carried out by STEINEL employees upon request.

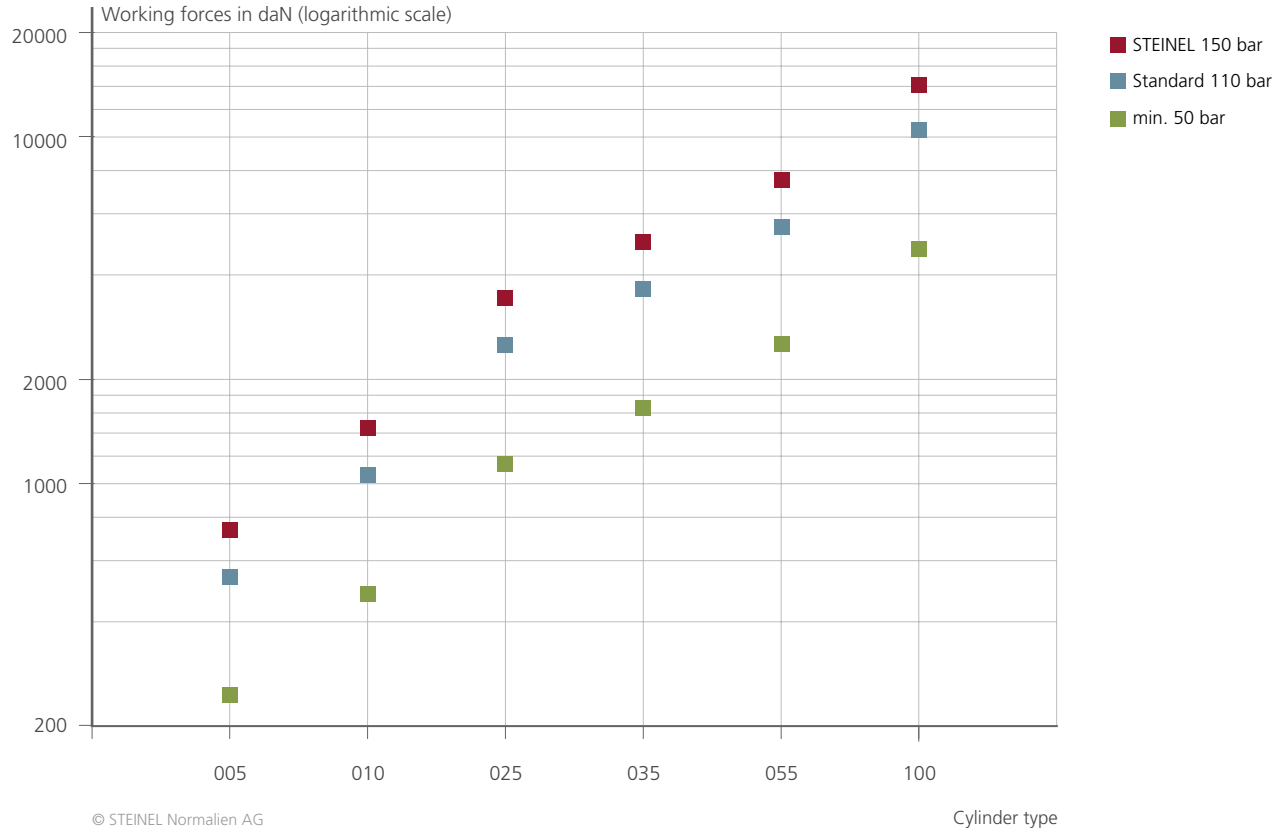
Please observe the respective national regulations for the operation of pressure equipment.

Operating parameters	
pressure medium	gaseous nitrogen N_2 min. 2.8
permissible temperature (TS)	
min.	5°C
max.	75 °C
Filling pressure	
min.	50 bar
max.	150 bar
max. permissible pressure (PS)	180 bar

Manifold cylinders

STEINEL manifold cylinders are available in three variants (high, normal, low) and in six different cylinder types each.

Manifold cylinder ST8841 – filling pressure-dependent working forces



Operating parameters	
pressure medium	gaseous nitrogen N_2 min. 2.8
permissible temperature (TS)	
min.	5°C
max.	75 °C
Filling pressure	
min.	50 bar
max.	150 bar
max. permissible pressure (PS)	180 bar

The components are to be used in accordance with the Pressure Equipment Directive (PED). Starting at a volume of 1 litre, pressure equipment in which manifold plate components are integrated must be tested and have a CE mark.

Control panels

Standard version

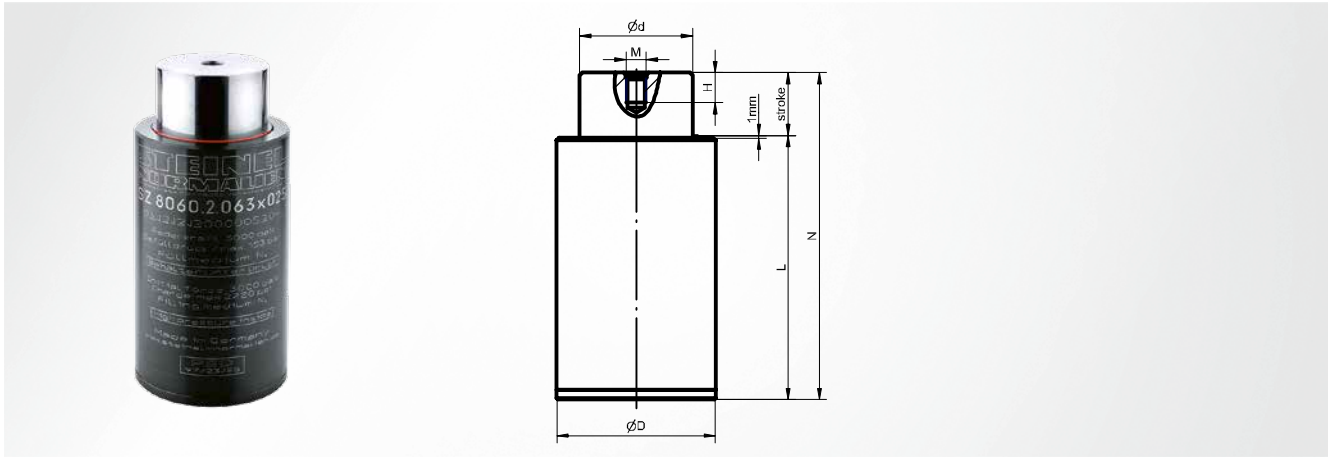
Mini version

Maxi version

Type	Version	Burst pressure bar	Connection possibilities				
			G 1/8" Tube system	G 1/4" universal	Connec-tions for composite plate	Connec-tions for manifold plate	Remarks
ST8845-01-01	standard	180	3	2	–	–	▪ with tube connection to manifold plate ▪ both rear boreholes with sealing plugs
ST8845-32-01	standard	180	3	2	–	1	▪ Direct installation at manifold plates from 32 mm width possible ▪ rear upper borehole with sealing plug ▪ Connection possibility via rear lower borehole
ST8845-80-01	standard	180	3	2	–	1	▪ Direct installation at manifold plates from 80 mm width possible ▪ rear lower borehole with sealing plug ▪ Connection possibility via rear upper borehole
ST8845-8	mini	180	3	2	–	1	▪ only for direct installation at manifold plates
ST8845-02-01	standard	450	3	2	2	–	▪ for all composite systems
ST8845-9	mini	450	3	1	1	–	▪ for all composite systems
ST8845-444	maxi	450	12	1	–	–	▪ only for composite tube systems

SZ8060.2. Nitrogen cylinder

self-sufficient



Base
Standard base

Filling
with standard nitrogen

Burst protection
not integrated

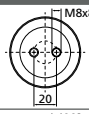
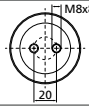
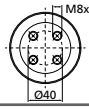
Delivery
will be supplied filled

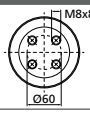
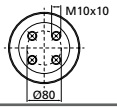
D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
25	14	M8	centred	157	400	730	M6	6	75	10	65	SZ8060.2 **.025 x 010**
									90	15	75	SZ8060.2 **.025 x 015**
									120	25	95	SZ8060.2 **.025 x 025**
									195	50	145	SZ8060.2 **.025 x 050**
32	18	M8	centred	155	700	1230	M6	6	75	10	65	SZ8060.2 **.032 x 010**
									90	15	75	SZ8060.2 **.032 x 015**
									120	25	95	SZ8060.2 **.032 x 025**
									195	50	145	SZ8060.2 **.032 x 050**
38	22	M8	centred	162	1000	1710	M6	6	75	10	65	SZ8060.2 **.038 x 010**
									90	15	75	SZ8060.2 **.038 x 015**
									120	25	95	SZ8060.2 **.038 x 025**
									195	50	145	SZ8060.2 **.038 x 050**
50	35	M10	centred	159	2000	3400	M8	8	80	10	70	SZ8060.2 **.050 x 010**
									95	15	80	SZ8060.2 **.050 x 015**
									125	25	100	SZ8060.2 **.050 x 025**
									200	50	150	SZ8060.2 **.050 x 050**
63	45	M10	centred	153	3000	4800	M8	8	85	10	75	SZ8060.2 **.063 x 010**
									100	15	85	SZ8060.2 **.063 x 015**
									130	25	105	SZ8060.2 **.063 x 025**
									205	50	155	SZ8060.2 **.063 x 050**
75	55	M12	centred	142	4000	6400	M8	8	85	10	75	SZ8060.2 **.075 x 010**
									100	15	85	SZ8060.2 **.075 x 015**
									130	25	105	SZ8060.2 **.075 x 025**
									205	50	155	SZ8060.2 **.075 x 050**
95	65	M12	centred	158	7000	11200	M8	8	90	10	80	SZ8060.2 **.095 x 010**
									105	15	90	SZ8060.2 **.095 x 015**
									135	25	110	SZ8060.2 **.095 x 025**
									210	50	160	SZ8060.2 **.095 x 050**
120	85	M12	centred	141	10000	16000	M8	8	100	10	90	SZ8060.2 **.120 x 010**
									115	15	100	SZ8060.2 **.120 x 015**
									145	25	120	SZ8060.2 **.120 x 025**
									220	50	170	SZ8060.2 **.120 x 050**

SZ8060.2. Nitrogen cylinder

self-sufficient

D	Cylinder mounting
25	
32	
38	

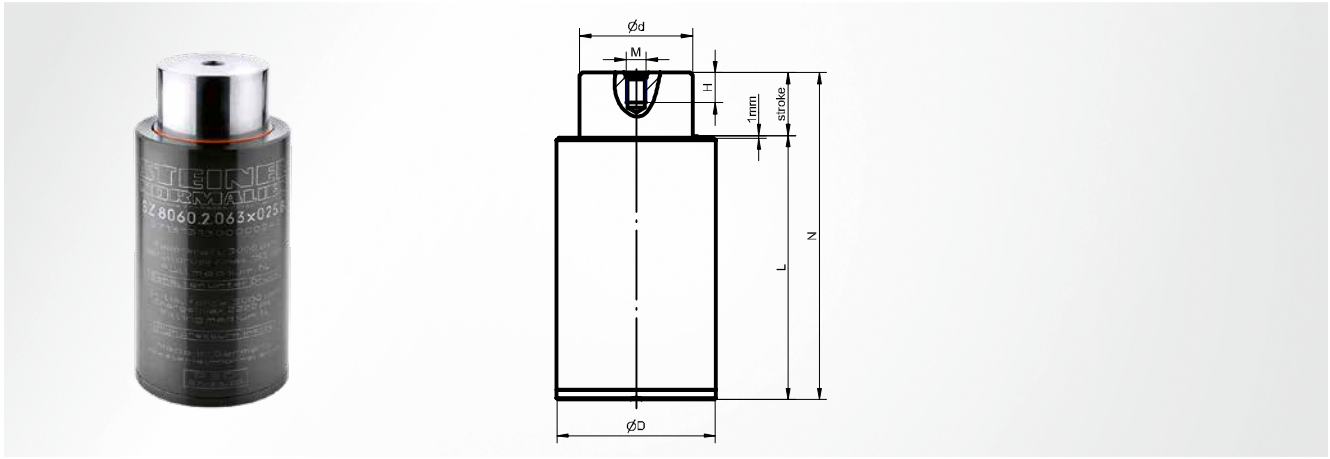
D	Cylinder mounting
50	
63	
75	

D	Cylinder mounting
95	
120	

from D 38, the medium thread is only used for filling

SZ8060.2.B Nitrogen cylinder

self-sufficient, with burst protection



Base
Standard base; with burst protection

Filling
with standard nitrogen

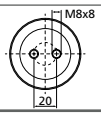
Burst protection
integrated

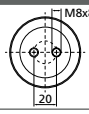
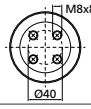
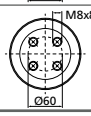
Delivery
will be supplied filled

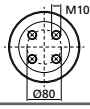
D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
32	18	M8	centred	155	700	1230	M6	6	75	10	65	SZ8060.2 **.032 x 010B**
									90	15	75	SZ8060.2 **.032 x 015B**
									120	25	95	SZ8060.2 **.032 x 025B**
									195	50	145	SZ8060.2 **.032 x 050B**
38	22	M8	centred	162	1000	1710	M6	6	75	10	65	SZ8060.2 **.038 x 010B**
									90	15	75	SZ8060.2 **.038 x 015B**
									120	25	95	SZ8060.2 **.038 x 025B**
									195	50	145	SZ8060.2 **.038 x 050B**
50	35	M10	centred	159	2000	3400	M8	8	80	10	70	SZ8060.2 **.050 x 010B**
									95	15	80	SZ8060.2 **.050 x 015B**
									125	25	100	SZ8060.2 **.050 x 025B**
									200	50	150	SZ8060.2 **.050 x 050B**
63	45	M10	centred	153	3000	4800	M8	8	85	10	75	SZ8060.2 **.063 x 010B**
									100	15	85	SZ8060.2 **.063 x 015B**
									130	25	105	SZ8060.2 **.063 x 025B**
									205	50	155	SZ8060.2 **.063 x 050B**
75	55	M12	centred	142	4000	6400	M8	8	85	10	75	SZ8060.2 **.075 x 010B**
									100	15	85	SZ8060.2 **.075 x 015B**
									130	25	105	SZ8060.2 **.075 x 025B**
									205	50	155	SZ8060.2 **.075 x 050B**
95	65	M12	centred	158	7000	11200	M8	8	90	10	80	SZ8060.2 **.095 x 010B**
									105	15	90	SZ8060.2 **.095 x 015B**
									135	25	110	SZ8060.2 **.095 x 025B**
									210	50	160	SZ8060.2 **.095 x 050B**
120	85	M12	centred	141	10000	16000	M8	8	100	10	90	SZ8060.2 **.120 x 010B**
									115	15	100	SZ8060.2 **.120 x 015B**
									145	25	120	SZ8060.2 **.120 x 025B**
									220	50	170	SZ8060.2 **.120 x 050B**

SZ8060.2.B Nitrogen cylinder

self-sufficient, with burst protection

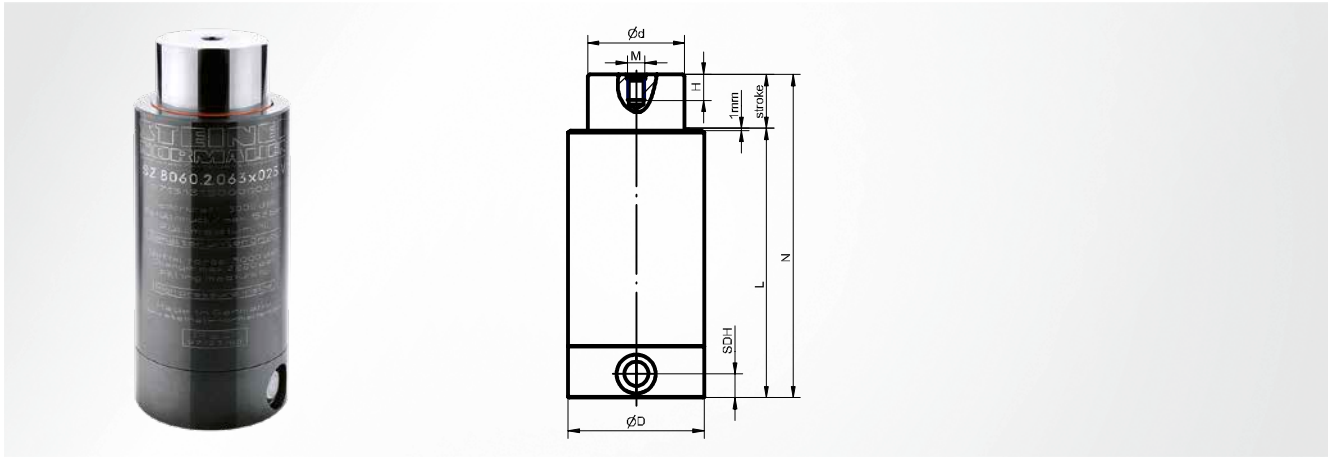
D	Cylinder mounting
32	
38	
50	

D	Cylinder mounting
63	
75	
95	

D	Cylinder mounting
120	

from D 38, the medium thread is only used for filling

SZ8060.2.V Connecting nitrogen cylinder



Base
Composite base

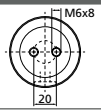
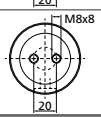
Burst protection
not integrated

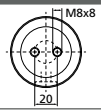
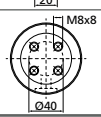
Filling
carried out via composite system

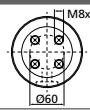
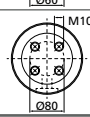
Delivery
will be supplied unfilled

Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
38	22	G1/8	on the side	162	1000	1710	M6	6	95	10	85	SZ8060.2 **.038 x 010V**
									110	15	95	SZ8060.2 **.038 x 015V**
									140	25	115	SZ8060.2 **.038 x 025V**
									215	50	165	SZ8060.2 **.038 x 050V**
50	35	G1/8	on the side	159	2000	3400	M8	8	100	10	90	SZ8060.2 **.050 x 010V**
									115	15	100	SZ8060.2 **.050 x 015V**
									145	25	120	SZ8060.2 **.050 x 025V**
									220	50	170	SZ8060.2 **.050 x 050V**
63	45	G1/8	on the side	153	3000	4800	M8	8	105	10	95	SZ8060.2 **.063 x 010V**
									120	15	105	SZ8060.2 **.063 x 015V**
									150	25	125	SZ8060.2 **.063 x 025V**
									225	50	175	SZ8060.2 **.063 x 050V**
75	55	G1/8	on the side	142	4000	6400	M8	8	105	10	95	SZ8060.2 **.075 x 010V**
									120	15	105	SZ8060.2 **.075 x 015V**
									150	25	125	SZ8060.2 **.075 x 025V**
									225	50	175	SZ8060.2 **.075 x 050V**
95	65	G1/8	on the side	158	7000	11200	M8	8	110	10	100	SZ8060.2 **.095 x 010V**
									125	15	110	SZ8060.2 **.095 x 015V**
									155	25	130	SZ8060.2 **.095 x 025V**
									230	50	180	SZ8060.2 **.095 x 050V**
120	85	G1/8	on the side	141	10000	16000	M8	8	120	10	110	SZ8060.2 **.120 x 010V**
									135	15	120	SZ8060.2 **.120 x 015V**
									165	25	140	SZ8060.2 **.120 x 025V**
									240	50	190	SZ8060.2 **.120 x 050V**

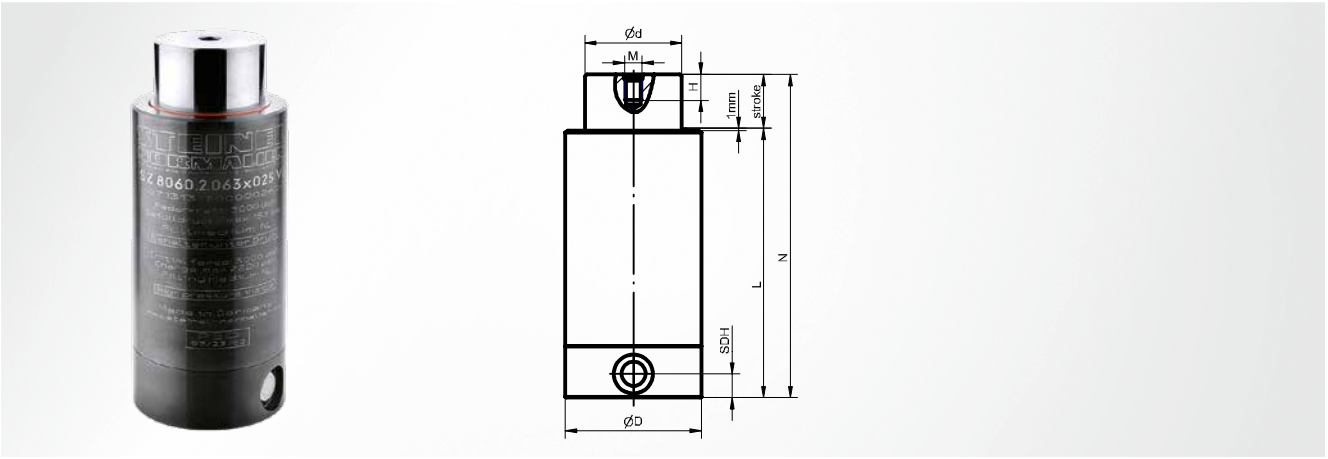
D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	
120	

SZ8060.2.VB Connecting nitrogen cylinder

with burst protection



Base
Composite base; with burst protection

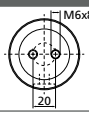
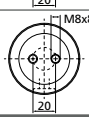
Burst protection
integrated

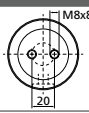
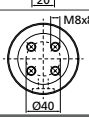
Filling
carried out via composite system

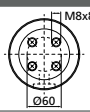
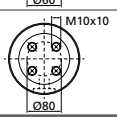
Delivery
will be supplied unfilled

Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
38	22	G1/8	on the side	162	1000	1710	M6	6	95	10	85	SZ8060.2 **.038 x 010VB**
									110	15	95	SZ8060.2 **.038 x 015VB**
									140	25	115	SZ8060.2 **.038 x 025VB**
									215	50	165	SZ8060.2 **.038 x 050VB**
50	35	G1/8	on the side	159	2000	3400	M8	8	100	10	90	SZ8060.2 **.050 x 010VB**
									115	15	100	SZ8060.2 **.050 x 015VB**
									145	25	120	SZ8060.2 **.050 x 025VB**
									220	50	170	SZ8060.2 **.050 x 050VB**
63	45	G1/8	on the side	153	3000	4800	M8	8	105	10	95	SZ8060.2 **.063 x 010VB**
									120	15	105	SZ8060.2 **.063 x 015VB**
									150	25	125	SZ8060.2 **.063 x 025VB**
									225	50	175	SZ8060.2 **.063 x 050VB**
75	55	G1/8	on the side	142	4000	6400	M8	8	105	10	95	SZ8060.2 **.075 x 010VB**
									120	15	105	SZ8060.2 **.075 x 015VB**
									150	25	125	SZ8060.2 **.075 x 025VB**
									225	50	175	SZ8060.2 **.075 x 050VB**
95	65	G1/8	on the side	158	7000	11200	M8	8	110	10	100	SZ8060.2 **.095 x 010VB**
									125	15	110	SZ8060.2 **.095 x 015VB**
									155	25	130	SZ8060.2 **.095 x 025VB**
									230	50	180	SZ8060.2 **.095 x 050VB**
120	85	G1/8	on the side	141	10000	16000	M8	8	120	10	110	SZ8060.2 **.120 x 010VB**
									135	15	120	SZ8060.2 **.120 x 015VB**
									165	25	140	SZ8060.2 **.120 x 025VB**
									240	50	190	SZ8060.2 **.120 x 050VB**

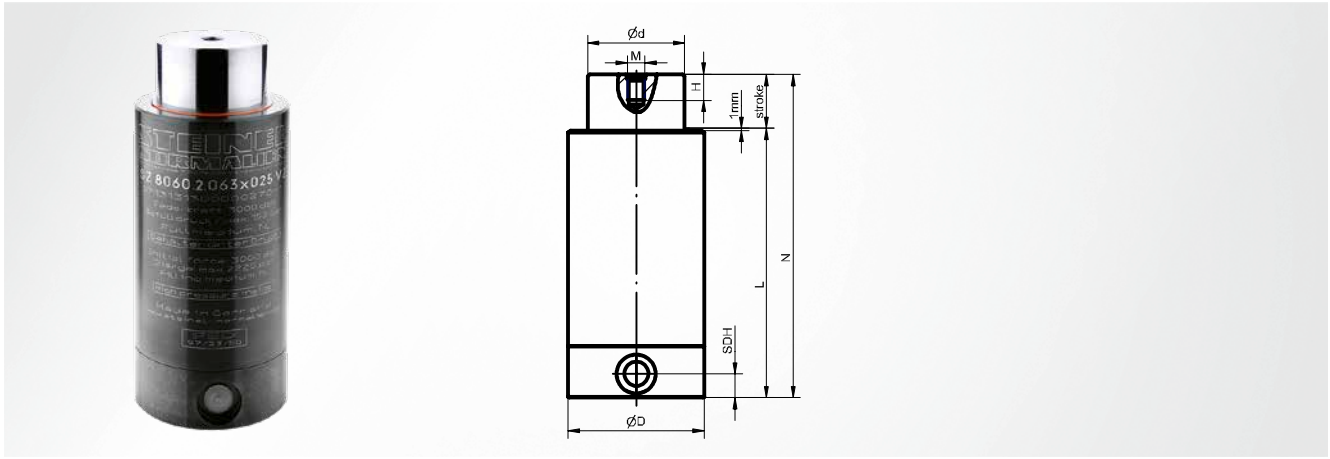
D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	
120	

SZ8060.2.VZ Connecting nitrogen cylinder

2 connections, with burst protection



Base
Composite base; with burst protection; 2 connections

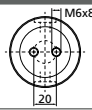
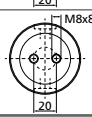
Burst protection
integrated

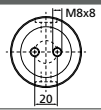
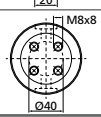
Filling
carried out via composite system

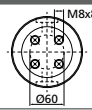
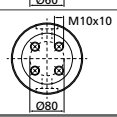
Delivery
will be supplied unfilled

Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

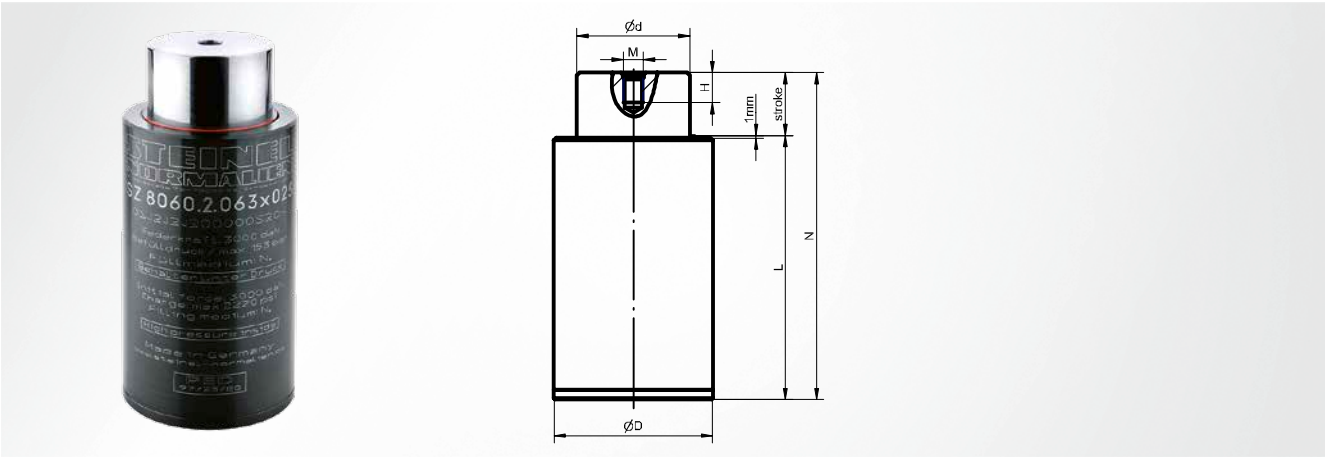
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
38	22	G1/8	on the side	162	1000	1710	M6	6	95	10	85	SZ8060.2 **.038 x 010VZ**
									110	15	95	SZ8060.2 **.038 x 015VZ**
									140	25	115	SZ8060.2 **.038 x 025VZ**
									215	50	165	SZ8060.2 **.038 x 050VZ**
50	35	G1/8	on the side	159	2000	3400	M8	8	100	10	90	SZ8060.2 **.050 x 010VZ**
									115	15	100	SZ8060.2 **.050 x 015VZ**
									145	25	120	SZ8060.2 **.050 x 025VZ**
									220	50	170	SZ8060.2 **.050 x 050VZ**
63	45	G1/8	on the side	153	3000	4800	M8	8	105	10	95	SZ8060.2 **.063 x 010VZ**
									120	15	105	SZ8060.2 **.063 x 015VZ**
									150	25	125	SZ8060.2 **.063 x 025VZ**
									225	50	175	SZ8060.2 **.063 x 050VZ**
75	55	G1/8	on the side	142	4000	6400	M8	8	105	10	95	SZ8060.2 **.075 x 010VZ**
									120	15	105	SZ8060.2 **.075 x 015VZ**
									150	25	125	SZ8060.2 **.075 x 025VZ**
									225	50	175	SZ8060.2 **.075 x 050VZ**
95	65	G1/8	on the side	158	7000	11200	M8	8	110	10	100	SZ8060.2 **.095 x 010VZ**
									125	15	110	SZ8060.2 **.095 x 015VZ**
									155	25	130	SZ8060.2 **.095 x 025VZ**
									230	50	180	SZ8060.2 **.095 x 050VZ**
120	85	G1/8	on the side	141	10000	16000	M8	8	120	10	110	SZ8060.2 **.120 x 010VZ**
									135	15	120	SZ8060.2 **.120 x 015VZ**
									165	25	140	SZ8060.2 **.120 x 025VZ**
									240	50	190	SZ8060.2 **.120 x 050VZ**

D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	
120	

SZ8060.2.PD Composite plate spring



Base
Composite plate floor

Burst protection
not integrated

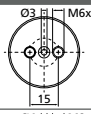
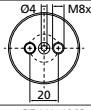
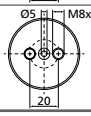
Filling
carried out via composite system

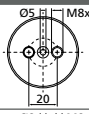
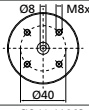
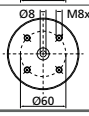
Delivery
will be supplied unfilled

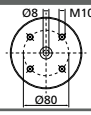
Installation instruction
Springs are screwed on through the composite panel by means of the base mounting threads; the plate must be flat and have a minimum surface roughness of Rz 6.3 in the area of the spring diameter; composite plate springs must be filled with oil to 1 % of the volume of the spring; filling is carried out via the connected control panel

D	d	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
32	18	155	700	1230	M6	6	10	65	75	SZ8060.2 **.032 x 010PD**
							15	75	90	SZ8060.2 **.032 x 015PD**
							25	95	120	SZ8060.2 **.032 x 025PD**
							50	145	195	SZ8060.2 **.032 x 050PD**
38	22	162	1000	1710	M6	6	10	65	75	SZ8060.2 **.038 x 010PD**
							15	75	90	SZ8060.2 **.038 x 015PD**
							25	95	120	SZ8060.2 **.038 x 025PD**
							50	145	195	SZ8060.2 **.038 x 050PD**
50	35	159	2000	3400	M8	8	10	70	80	SZ8060.2 **.050 x 010PD**
							15	80	95	SZ8060.2 **.050 x 015PD**
							25	100	125	SZ8060.2 **.050 x 025PD**
							50	150	200	SZ8060.2 **.050 x 050PD**
63	45	153	3000	4800	M8	8	10	75	85	SZ8060.2 **.063 x 010PD**
							15	85	100	SZ8060.2 **.063 x 015PD**
							25	105	130	SZ8060.2 **.063 x 025PD**
							50	155	205	SZ8060.2 **.063 x 050PD**
75	55	142	4000	6400	M8	8	10	75	85	SZ8060.2 **.075 x 010PD**
							15	85	100	SZ8060.2 **.075 x 015PD**
							25	105	130	SZ8060.2 **.075 x 025PD**
							50	155	205	SZ8060.2 **.075 x 050PD**
95	65	158	7000	11200	M8	8	10	80	90	SZ8060.2 **.095 x 010PD**
							15	90	105	SZ8060.2 **.095 x 015PD**
							25	110	135	SZ8060.2 **.095 x 025PD**
							50	160	210	SZ8060.2 **.095 x 050PD**
120	85	141	10000	16000	M8	8	10	90	100	SZ8060.2 **.120 x 010PD**
							15	100	115	SZ8060.2 **.120 x 015PD**
							25	120	145	SZ8060.2 **.120 x 025PD**
							50	170	220	SZ8060.2 **.120 x 050PD**

SZ8060.2.PD Composite plate spring

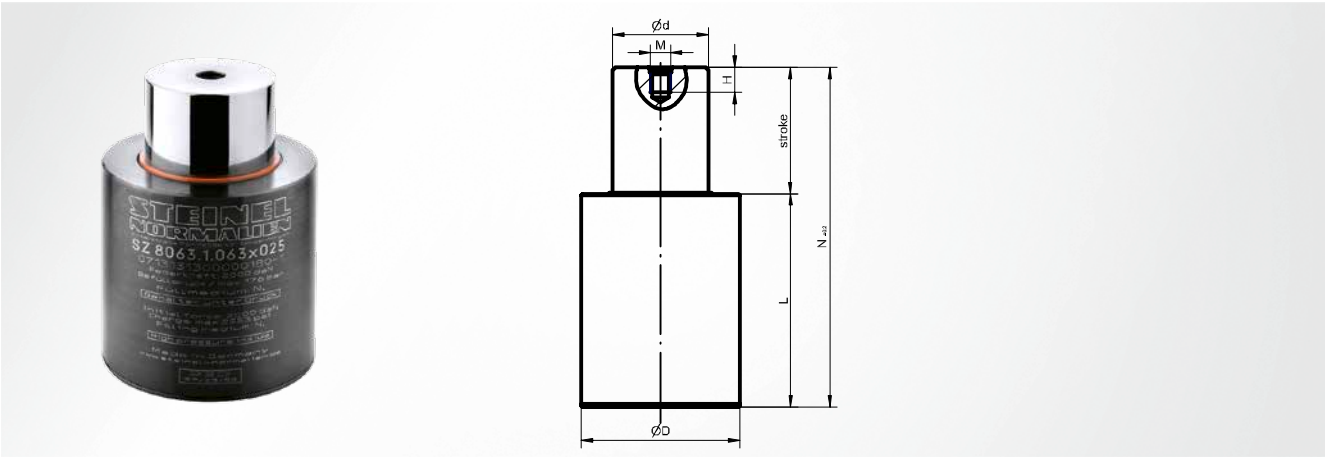
D	Cylinder mounting
32	
38	
50	

D	Cylinder mounting
63	
75	
95	

D	Cylinder mounting
120	

SZ8063.1. Nitrogen cylinder

self-sufficient



Base
Standard base

Filling
with standard nitrogen

Burst protection
not integrated

Delivery
will be supplied filled

D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
19	11	M8	centred	179	170	272			5	35	40	SZ8063.1 **.019 x 005**
					170	272			10	40	50	SZ8063.1 **.019 x 010**
					170	272			15	45	60	SZ8063.1 **.019 x 015**
					170	272			19	49	68	SZ8063.1 **.019 x 019**
					170	272			25	55	80	SZ8063.1 **.019 x 025**
					170	272			32	62	94	SZ8063.1 **.019 x 032**
					170	272			38	68	106	SZ8063.1 **.019 x 038**
					170	272			50	80	130	SZ8063.1 **.019 x 050**
					170	272			63	93	156	SZ8063.1 **.019 x 063**
					170	272			80	115	195	SZ8063.1 **.019 x 080**
					170	272			100	135	235	SZ8063.1 **.019 x 100**
					170	272			125	160	285	SZ8063.1 **.019 x 125**
25	14	M8	centred	195	300	480			5	35	40	SZ8063.1 **.025 x 005**
					300	480			10	40	50	SZ8063.1 **.025 x 010**
					300	480			15	45	60	SZ8063.1 **.025 x 015**
					300	480			19	49	68	SZ8063.1 **.025 x 019**
					300	480	M6	6	25	55	80	SZ8063.1 **.025 x 025**
					300	480	M6	6	32	62	94	SZ8063.1 **.025 x 032**
					300	480	M6	6	38	68	106	SZ8063.1 **.025 x 038**
					300	480	M6	6	50	80	130	SZ8063.1 **.025 x 050**
					300	480	M6	6	63	93	156	SZ8063.1 **.025 x 063**
					300	480	M6	6	80	110	190	SZ8063.1 **.025 x 080**
					300	480	M6	6	100	130	230	SZ8063.1 **.025 x 100**
					300	1200	M6	6	125	155	280	SZ8063.1 **.025 x 125**
32	18	M6	centred	196	500	700			5	35	40	SZ8063.1 **.032 x 005**
					500	760	M6	6	10	40	50	SZ8063.1 **.032 x 010**
					500	800	M6	6	13	43	56	SZ8063.1 **.032 x 013**
					500	800	M6	6	15	45	60	SZ8063.1 **.032 x 015**
					500	800	M6	6	19	49	68	SZ8063.1 **.032 x 019**
					500	800	M6	6	25	55	80	SZ8063.1 **.032 x 025**
					500	800	M6	6	32	62	94	SZ8063.1 **.032 x 032**
					500	800	M6	6	38	68	106	SZ8063.1 **.032 x 038**
					500	800	M6	6	50	80	130	SZ8063.1 **.032 x 050**
					500	800	M6	6	63	93	156	SZ8063.1 **.032 x 063**
					500	800	M6	6	80	110	190	SZ8063.1 **.032 x 080**
					500	800	M6	6	100	130	230	SZ8063.1 **.032 x 100**
					500	800	M6	6	125	155	280	SZ8063.1 **.032 x 125**

SZ8063.1. Nitrogen cylinder

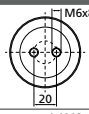
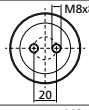
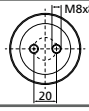
self-sufficient

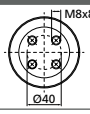
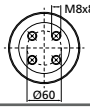
D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
38	22	M8	centred	197	750	1050			5	35	40	SZ8063.1 **.038 x 005**
					750	1155	M6	6	10	40	50	SZ8063.1 **.038 x 010**
					750	1200	M6	6	15	45	60	SZ8063.1 **.038 x 015**
					750	1200	M6	6	19	49	68	SZ8063.1 **.038 x 019**
					750	1200	M6	6	25	55	80	SZ8063.1 **.038 x 025**
					750	1200	M6	6	32	62	94	SZ8063.1 **.038 x 032**
					750	1200	M6	6	38	68	106	SZ8063.1 **.038 x 038**
					750	1200	M6	6	50	80	130	SZ8063.1 **.038 x 050**
					750	1200	M6	6	63	93	156	SZ8063.1 **.038 x 063**
					750	1200	M6	6	80	110	190	SZ8063.1 **.038 x 080**
					750	1200	M6	6	100	130	230	SZ8063.1 **.038 x 100**
					750	1200	M6	6	125	155	280	SZ8063.1 **.038 x 125**
50	30	M10	centred	212	1500	2130			5	40	45	SZ8063.1 **.050 x 005**
					1500	2310	M8	8	10	45	55	SZ8063.1 **.050 x 010**
					1500	2400	M8	8	15	50	65	SZ8063.1 **.050 x 015**
					1500	2400	M8	8	19	54	73	SZ8063.1 **.050 x 019**
					1500	2400	M8	8	25	60	85	SZ8063.1 **.050 x 025**
					1500	2400	M8	8	32	67	99	SZ8063.1 **.050 x 032**
					1500	2400	M8	8	38	73	111	SZ8063.1 **.050 x 038**
					1500	2400	M8	8	50	85	135	SZ8063.1 **.050 x 050**
					1500	2400	M8	8	63	98	161	SZ8063.1 **.050 x 063**
					1500	2400	M8	8	80	120	200	SZ8063.1 **.050 x 080**
					1500	2400	M8	8	100	135	235	SZ8063.1 **.050 x 100**
					1500	2400	M8	8	125	160	285	SZ8063.1 **.050 x 125**
63	38	M10	centred	176	2000	2720			5	40	45	SZ8063.1 **.063 x 005**
					2000	3080	M8	8	10	45	55	SZ8063.1 **.063 x 010**
					2000	3200	M8	8	15	50	65	SZ8063.1 **.063 x 015**
					2000	3200	M8	8	19	54	73	SZ8063.1 **.063 x 019**
					2000	3200	M8	8	25	60	85	SZ8063.1 **.063 x 025**
					2000	3200	M8	8	32	67	99	SZ8063.1 **.063 x 032**
					2000	3200	M8	8	38	73	111	SZ8063.1 **.063 x 038**
					2000	3200	M8	8	50	85	135	SZ8063.1 **.063 x 050**
					2000	3200	M8	8	63	98	161	SZ8063.1 **.063 x 063**
					2000	3200	M8	8	80	120	200	SZ8063.1 **.063 x 080**
					2000	3200	M8	8	100	135	235	SZ8063.1 **.063 x 100**
					2000	3200	M8	8	125	160	285	SZ8063.1 **.063 x 125**
75	45	M12	centred	189	3000	4050			5	45	50	SZ8063.1 **.075 x 005**
					3000	4590	M8	8	10	50	60	SZ8063.1 **.075 x 010**
					3000	4800	M8	8	15	55	70	SZ8063.1 **.075 x 015**
					3000	4800	M8	8	19	59	78	SZ8063.1 **.075 x 019**
					3000	4800	M8	8	25	65	90	SZ8063.1 **.075 x 025**
					3000	4800	M8	8	32	72	104	SZ8063.1 **.075 x 032**
					3000	1800	M8	8	38	78	116	SZ8063.1 **.075 x 038**
					3000	4800	M8	8	50	90	140	SZ8063.1 **.075 x 050**
					3000	4800	M8	8	63	103	166	SZ8063.1 **.075 x 063**
					3000	4800	M8	8	80	125	205	SZ8063.1 **.075 x 080**
					3000	4800	M8	8	100	145	245	SZ8063.1 **.075 x 100**
					3000	4800	M8	8	125	170	295	SZ8063.1 **.075 x 125**
95	55	M12	centred	210	5000	7000			5	55	60	SZ8063.1 **.095 x 005**
					5000	7800	M8	8	10	60	70	SZ8063.1 **.095 x 010**
					5000	8000	M8	8	15	65	80	SZ8063.1 **.095 x 015**
					5000	8000	M8	8	19	69	88	SZ8063.1 **.095 x 019**
					5000	8000	M8	8	25	75	100	SZ8063.1 **.095 x 025**
					5000	8000	M8	8	32	82	114	SZ8063.1 **.095 x 032**
					5000	8000	M8	8	38	87	125	SZ8063.1 **.095 x 038**
					5000	8000	M8	8	50	100	150	SZ8063.1 **.095 x 050**
					5000	8000	M8	8	63	113	176	SZ8063.1 **.095 x 063**
					5000	8000	M8	8	80	130	210	SZ8063.1 **.095 x 080**
					5000	8000	M8	8	100	150	250	SZ8063.1 **.095 x 100**
					5000	8000	M8	8	125	175	300	SZ8063.1 **.095 x 125**

SZ8063.1. Nitrogen cylinder

self-sufficient

D	Cylinder mounting
19	
25	
32	

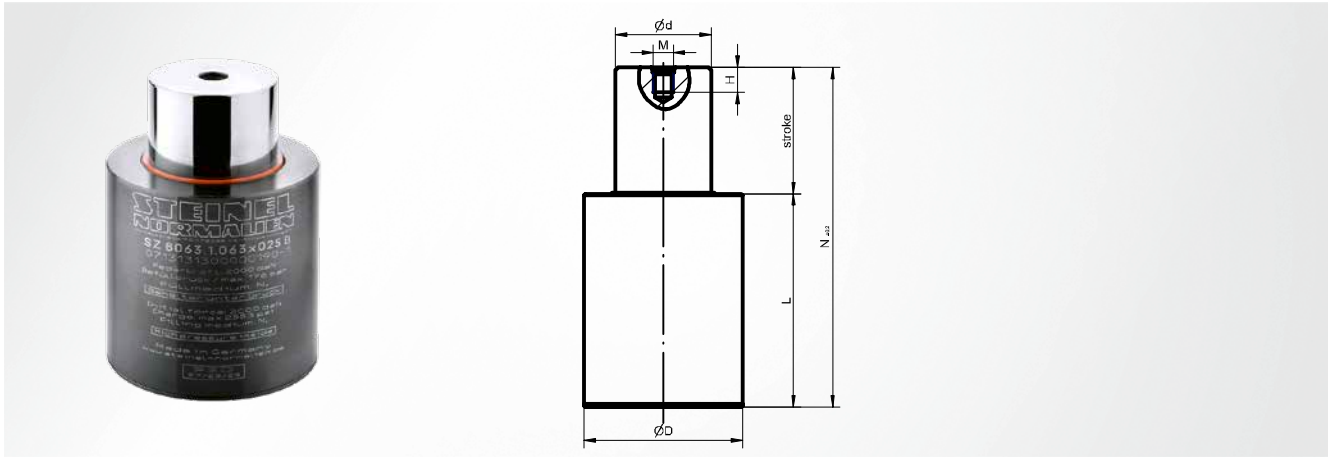
D	Cylinder mounting
38	
50	
63	

D	Cylinder mounting
75	
95	

from D 50, the medium thread is only used for filling

SZ8063.1.B Nitrogen cylinder

self-sufficient, with burst protection



Base
Standard base; with burst protection

Filling
with standard nitrogen

Burst protection
integrated

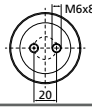
Delivery
will be supplied filled

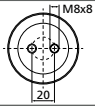
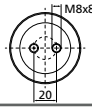
D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
32	18	M6	centred	196			500	700	5	35	40	SZ8063.1 **.032 x 005B**
32	18	M6	centred	196	M6	6	500	760	10	40	50	SZ8063.1 **.032 x 010B**
							500	800	15	45	60	SZ8063.1 **.032 x 015B**
							500	800	19	49	68	SZ8063.1 **.032 x 019B**
							500	800	25	55	80	SZ8063.1 **.032 x 025B**
							500	800	32	62	94	SZ8063.1 **.032 x 032B**
							500	800	38	68	106	SZ8063.1 **.032 x 038B**
							500	800	50	80	130	SZ8063.1 **.032 x 050B**
							500	800	63	93	156	SZ8063.1 **.032 x 063B**
							500	800	80	110	190	SZ8063.1 **.032 x 080B**
							500	800	100	130	230	SZ8063.1 **.032 x 100B**
							500	800	125	155	280	SZ8063.1 **.032 x 125B**
38	22	M8	centred	197			750	1050	5	35	40	SZ8063.1 **.038 x 005B**
38	22	M8	centred	197	M6	6	750	1155	10	40	50	SZ8063.1 **.038 x 010B**
							750	1200	15	45	60	SZ8063.1 **.038 x 015B**
							750	1200	19	49	68	SZ8063.1 **.038 x 019B**
							750	1200	25	55	80	SZ8063.1 **.038 x 025B**
							750	1200	32	62	94	SZ8063.1 **.038 x 032B**
							750	1200	38	68	106	SZ8063.1 **.038 x 038B**
							750	1200	50	80	130	SZ8063.1 **.038 x 050B**
							750	1200	63	93	156	SZ8063.1 **.038 x 063B**
							750	1200	80	110	190	SZ8063.1 **.038 x 080B**
							750	1200	100	130	230	SZ8063.1 **.038 x 100B**
							750	1200	125	155	280	SZ8063.1 **.038 x 125B**
50	30	M10	centred	212			1500	2130	5	40	45	SZ8063.1 **.050 x 005B**
50	30	M10	centred	212	M8	8	1500	2310	10	45	55	SZ8063.1 **.050 x 010B**
							1500	2400	15	50	65	SZ8063.1 **.050 x 015B**
							1500	2400	19	54	73	SZ8063.1 **.050 x 019B**
							1500	2400	25	60	85	SZ8063.1 **.050 x 025B**
							1500	2400	32	67	99	SZ8063.1 **.050 x 032B**
							1500	2400	38	73	111	SZ8063.1 **.050 x 038B**
							1500	2400	50	85	135	SZ8063.1 **.050 x 050B**
							1500	2400	63	98	161	SZ8063.1 **.050 x 063B**
							1500	2400	80	120	200	SZ8063.1 **.050 x 080B**
							1500	2400	100	135	235	SZ8063.1 **.050 x 100B**
							1500	2400	125	160	285	SZ8063.1 **.050 x 125B**
63	38	M10	centred	176			2000	2720	5	40	45	SZ8063.1 **.063 x 005B**

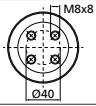
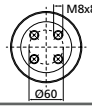
SZ8063.1.B Nitrogen cylinder

self-sufficient, with burst protection

D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
63	38	M10	centred	176	M8	8	2000	3080	10	45	55	SZ8063.1 **.063 x 010B**
							2000	3200	15	50	65	SZ8063.1 **.063 x 015B**
							2000	3200	19	54	73	SZ8063.1 **.063 x 019B**
							2000	3200	25	60	85	SZ8063.1 **.063 x 025B**
							2000	3200	32	67	99	SZ8063.1 **.063 x 032B**
							2000	3200	38	73	111	SZ8063.1 **.063 x 038B**
							2000	3200	50	85	135	SZ8063.1 **.063 x 050B**
							2000	3200	63	98	161	SZ8063.1 **.063 x 063B**
							2000	3200	80	120	200	SZ8063.1 **.063 x 080B**
							2000	3200	100	135	235	SZ8063.1 **.063 x 100B**
							2000	3200	125	160	285	SZ8063.1 **.063 x 125B**
75	45	M12	centred	189			3000	4050	5	45	50	SZ8063.1 **.075 x 005B**
75	45	M12	centred	189	M8	8	3000	4590	10	50	60	SZ8063.1 **.075 x 010B**
							3000	4800	15	55	70	SZ8063.1 **.075 x 015B**
							3000	4800	19	59	78	SZ8063.1 **.075 x 019B**
							3000	4800	25	65	90	SZ8063.1 **.075 x 025B**
							3000	4800	32	72	104	SZ8063.1 **.075 x 032B**
							3000	4800	38	78	116	SZ8063.1 **.075 x 038B**
							3000	4800	50	90	140	SZ8063.1 **.075 x 050B**
							3000	4800	63	103	166	SZ8063.1 **.075 x 063B**
							3000	4800	80	125	205	SZ8063.1 **.075 x 080B**
							3000	4800	100	145	245	SZ8063.1 **.075 x 100B**
							3000	4800	125	170	295	SZ8063.1 **.075 x 125B**
95	55	M12	centred	210			5000	7000	5	55	60	SZ8063.1 **.095 x 005B**
95	55	M12	centred	210	M8	8	5000	7800	10	60	70	SZ8063.1 **.095 x 010B**
							5000	8000	15	65	80	SZ8063.1 **.095 x 015B**
							5000	8000	19	69	88	SZ8063.1 **.095 x 019B**
							5000	8000	25	75	100	SZ8063.1 **.095 x 025B**
							5000	8000	32	82	114	SZ8063.1 **.095 x 032B**
							5000	8000	38	87	125	SZ8063.1 **.095 x 038B**
							5000	8000	50	100	150	SZ8063.1 **.095 x 050B**
							5000	8000	63	113	176	SZ8063.1 **.095 x 063B**
							5000	8000	80	130	210	SZ8063.1 **.095 x 080B**
							5000	8000	100	150	250	SZ8063.1 **.095 x 100B**
							5000	8000	125	175	300	SZ8063.1 **.095 x 125B**

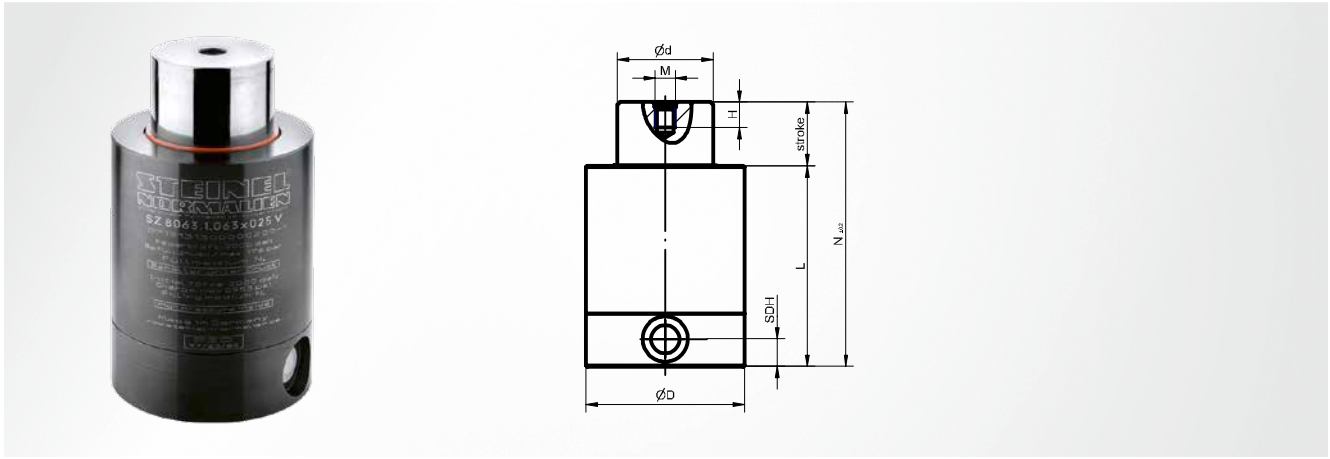
D	Cylinder mounting
32	
38	

D	Cylinder mounting
50	
63	

D	Cylinder mounting
75	
95	

from D 50, the medium thread is only used for filling

SZ8063.1.V Connecting nitrogen cylinder



Base
Composite base

Burst protection
not integrated

Filling
carried out via composite system

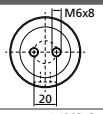
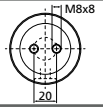
Delivery
will be supplied unfilled

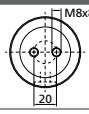
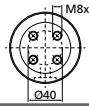
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

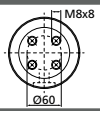
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
38	22	G1/8	on the side	197			750	1050	5	55	60	SZ8063.1 **.038 x 005V**
38	22	G1/8	on the side	197	M6	6	750	1155	10	60	70	SZ8063.1 **.038 x 010V**
							750	1200	15	65	80	SZ8063.1 **.038 x 015V**
							750	1200	19	69	88	SZ8063.1 **.038 x 019V**
							750	1200	25	75	100	SZ8063.1 **.038 x 025V**
							750	1200	32	82	114	SZ8063.1 **.038 x 032V**
							750	1200	38	88	126	SZ8063.1 **.038 x 038V**
							750	1200	50	100	150	SZ8063.1 **.038 x 050V**
							750	1200	63	113	176	SZ8063.1 **.038 x 063V**
							750	1200	80	130	210	SZ8063.1 **.038 x 080V**
							750	1200	100	150	250	SZ8063.1 **.038 x 100V**
							750	1200	125	175	300	SZ8063.1 **.038 x 125V**
50	30	G1/8	on the side	212			1500	2130	5	60	65	SZ8063.1 **.050 x 005V**
50	30	G1/8	on the side	212	M8	8	1500	2310	10	65	75	SZ8063.1 **.050 x 010V**
							1500	2400	15	70	85	SZ8063.1 **.050 x 015V**
							1500	2400	19	74	93	SZ8063.1 **.050 x 019V**
							1500	2400	25	80	105	SZ8063.1 **.050 x 025V**
							1500	2400	32	87	119	SZ8063.1 **.050 x 032V**
							1500	2400	38	93	131	SZ8063.1 **.050 x 038V**
							1500	2400	50	105	155	SZ8063.1 **.050 x 050V**
							1500	2400	63	118	181	SZ8063.1 **.050 x 063V**
							1500	2400	80	140	220	SZ8063.1 **.050 x 080V**
							1500	2400	100	155	255	SZ8063.1 **.050 x 100V**
							1500	2400	125	180	305	SZ8063.1 **.050 x 125V**
63	38	G1/8	on the side	176			2000	2720	5	60	65	SZ8063.1 **.063 x 005V**
63	38	G1/8	on the side	176	M8	8	2000	3080	10	65	75	SZ8063.1 **.063 x 010V**
							2000	3200	15	70	85	SZ8063.1 **.063 x 015V**
							2000	3200	19	74	93	SZ8063.1 **.063 x 019V**
							2000	3200	25	80	105	SZ8063.1 **.063 x 025V**
							2000	3200	32	87	119	SZ8063.1 **.063 x 032V**
							2000	3200	38	93	131	SZ8063.1 **.063 x 038V**
							2000	3200	50	105	155	SZ8063.1 **.063 x 050V**
							2000	3200	63	118	181	SZ8063.1 **.063 x 063V**

SZ8063.1.V Connecting nitrogen cylinder

D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
63	38	G1/8	on the side	176	M8	8	2000	3200	80	140	220	SZ8063.1 **.063 x 080V**
							2000	3200	100	155	255	SZ8063.1 **.063 x 100V**
							2000	3200	125	180	305	SZ8063.1 **.063 x 125V**
75	45	G1/8	on the side	189			3000	4050	5	65	70	SZ8063.1 **.075 x 005V**
75	45	G1/8	on the side	189	M8	8	3000	4590	10	70	80	SZ8063.1 **.075 x 010V**
							3000	4800	15	75	90	SZ8063.1 **.075 x 015V**
							3000	4800	19	79	98	SZ8063.1 **.075 x 019V**
							3000	4800	25	85	110	SZ8063.1 **.075 x 025V**
							3000	4800	32	92	124	SZ8063.1 **.075 x 032V**
							3000	4800	38	98	136	SZ8063.1 **.075 x 038V**
							3000	4800	50	110	160	SZ8063.1 **.075 x 050V**
							3000	4800	63	123	186	SZ8063.1 **.075 x 063V**
							3000	4800	80	145	225	SZ8063.1 **.075 x 080V**
							3000	4800	100	165	265	SZ8063.1 **.075 x 100V**
							3000	4800	125	190	315	SZ8063.1 **.075 x 125V**
95	55	G1/8	on the side	210			5000	7000	5	75	80	SZ8063.1 **.095 x 005V**
95	55	G1/8	on the side	210	M8	8	5000	7800	10	80	90	SZ8063.1 **.095 x 010V**
							5000	8000	15	85	100	SZ8063.1 **.095 x 015V**
							5000	8000	19	89	108	SZ8063.1 **.095 x 019V**
							5000	8000	25	95	120	SZ8063.1 **.095 x 025V**
							5000	8000	32	102	134	SZ8063.1 **.095 x 032V**
							5000	8000	38	107	145	SZ8063.1 **.095 x 038V**
							5000	8000	50	120	170	SZ8063.1 **.095 x 050V**
							5000	8000	63	133	196	SZ8063.1 **.095 x 063V**
							5000	8000	80	150	230	SZ8063.1 **.095 x 080V**
							5000	8000	100	170	270	SZ8063.1 **.095 x 100V**
							5000	8000	125	195	320	SZ8063.1 **.095 x 125V**

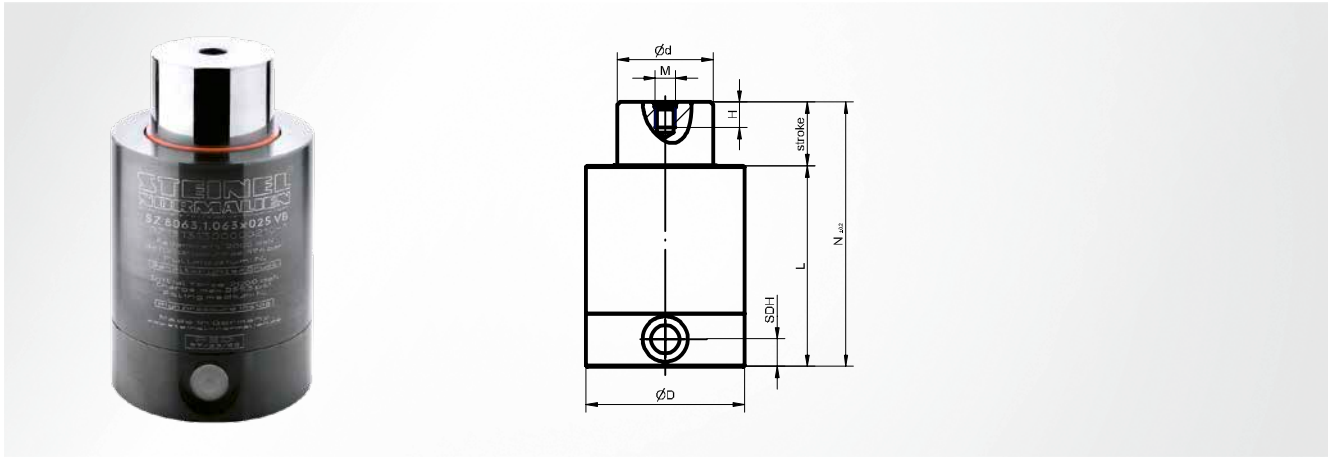
D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	

SZ8063.1.VB Connecting nitrogen cylinder

with burst protection



Base
Composite base; with burst protection

Burst protection
integrated

Filling
carried out via composite system

Delivery
will be supplied unfilled

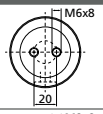
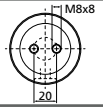
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

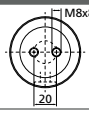
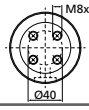
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
38	22	G1/8	on the side	197			750	1050	5	55	60	SZ8063.1 **.038 x 005VB**
38	22	G1/8	on the side	197	M6	6	750	1155	10	60	70	SZ8063.1 **.038 x 010VB**
							750	1200	15	65	80	SZ8063.1 **.038 x 015VB**
							750	1200	19	69	88	SZ8063.1 **.038 x 019VB**
							750	1200	25	75	100	SZ8063.1 **.038 x 025VB**
							750	1200	32	82	114	SZ8063.1 **.038 x 032VB**
							750	1200	38	88	126	SZ8063.1 **.038 x 038VB**
							750	1200	50	100	150	SZ8063.1 **.038 x 050VB**
							750	1200	63	113	176	SZ8063.1 **.038 x 063VB**
							750	1200	80	130	210	SZ8063.1 **.038 x 080VB**
							750	1200	100	150	250	SZ8063.1 **.038 x 100VB**
							750	1200	125	175	300	SZ8063.1 **.038 x 125VB**
50	30	G1/8	on the side	212			1500	2130	5	60	65	SZ8063.1 **.050 x 005VB**
50	30	G1/8	on the side	212	M8	8	1500	2310	10	65	75	SZ8063.1 **.050 x 010VB**
							1500	2400	15	70	85	SZ8063.1 **.050 x 015VB**
							1500	2400	19	74	93	SZ8063.1 **.050 x 019VB**
							1500	2400	25	80	105	SZ8063.1 **.050 x 025VB**
							1500	2400	32	87	119	SZ8063.1 **.050 x 032VB**
							1500	2400	38	93	131	SZ8063.1 **.050 x 038VB**
							1500	2400	50	105	155	SZ8063.1 **.050 x 050VB**
							1500	2400	63	118	181	SZ8063.1 **.050 x 063VB**
							1500	2400	80	140	220	SZ8063.1 **.050 x 080VB**
							1500	2400	100	155	255	SZ8063.1 **.050 x 100VB**
							1500	2400	125	180	305	SZ8063.1 **.050 x 125VB**
63	38	G1/8	on the side	176			2000	2720	5	60	65	SZ8063.1 **.063 x 005VB**
63	38	G1/8	on the side	176	M8	8	2000	3080	10	65	75	SZ8063.1 **.063 x 010VB**
							2000	3200	15	70	85	SZ8063.1 **.063 x 015VB**
							2000	3200	19	74	93	SZ8063.1 **.063 x 019VB**
							2000	3200	25	80	105	SZ8063.1 **.063 x 025VB**
							2000	3200	32	87	119	SZ8063.1 **.063 x 032VB**
							2000	3200	38	93	131	SZ8063.1 **.063 x 038VB**
							2000	3200	50	105	155	SZ8063.1 **.063 x 050VB**
							2000	3200	63	118	181	SZ8063.1 **.063 x 063VB**

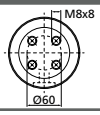
SZ8063.1.VB Connecting nitrogen cylinder

with burst protection

D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
63	38	G1/8	on the side	176	M8	8	2000	3200	80	140	220	SZ8063.1 **.063 x 080VB**
							2000	3200	100	155	255	SZ8063.1 **.063 x 100VB**
							2000	3200	125	180	305	SZ8063.1 **.063 x 125VB**
75	45	G1/8	on the side	189			3000	4050	5	65	70	SZ8063.1 **.075 x 005VB**
75	45	G1/8	on the side	189	M8	8	3000	4590	10	70	80	SZ8063.1 **.075 x 010VB**
							3000	4800	15	75	90	SZ8063.1 **.075 x 015VB**
							3000	4800	19	79	98	SZ8063.1 **.075 x 019VB**
							3000	4800	25	85	110	SZ8063.1 **.075 x 025VB**
							3000	4800	32	92	124	SZ8063.1 **.075 x 032VB**
							3000	4800	38	98	136	SZ8063.1 **.075 x 038VB**
							3000	4800	50	110	160	SZ8063.1 **.075 x 050VB**
							3000	4800	63	123	186	SZ8063.1 **.075 x 063VB**
							3000	4800	80	145	225	SZ8063.1 **.075 x 080VB**
							3000	4800	100	165	265	SZ8063.1 **.075 x 100VB**
							3000	4800	125	190	315	SZ8063.1 **.075 x 125VB**
95	55	G1/8	on the side	210			5000	7000	5	75	80	SZ8063.1 **.095 x 005VB**
95	55	G1/8	on the side	210	M8	8	5000	7800	10	80	90	SZ8063.1 **.095 x 010VB**
							5000	8000	15	85	100	SZ8063.1 **.095 x 015VB**
							5000	8000	19	89	108	SZ8063.1 **.095 x 019VB**
							5000	8000	25	95	120	SZ8063.1 **.095 x 025VB**
							5000	8000	32	102	134	SZ8063.1 **.095 x 032VB**
							5000	8000	38	107	145	SZ8063.1 **.095 x 038VB**
							5000	8000	50	120	170	SZ8063.1 **.095 x 050VB**
							5000	8000	63	133	196	SZ8063.1 **.095 x 063VB**
							5000	8000	80	150	230	SZ8063.1 **.095 x 080VB**
							5000	8000	100	170	270	SZ8063.1 **.095 x 100VB**
							5000	8000	125	195	320	SZ8063.1 **.095 x 125VB**

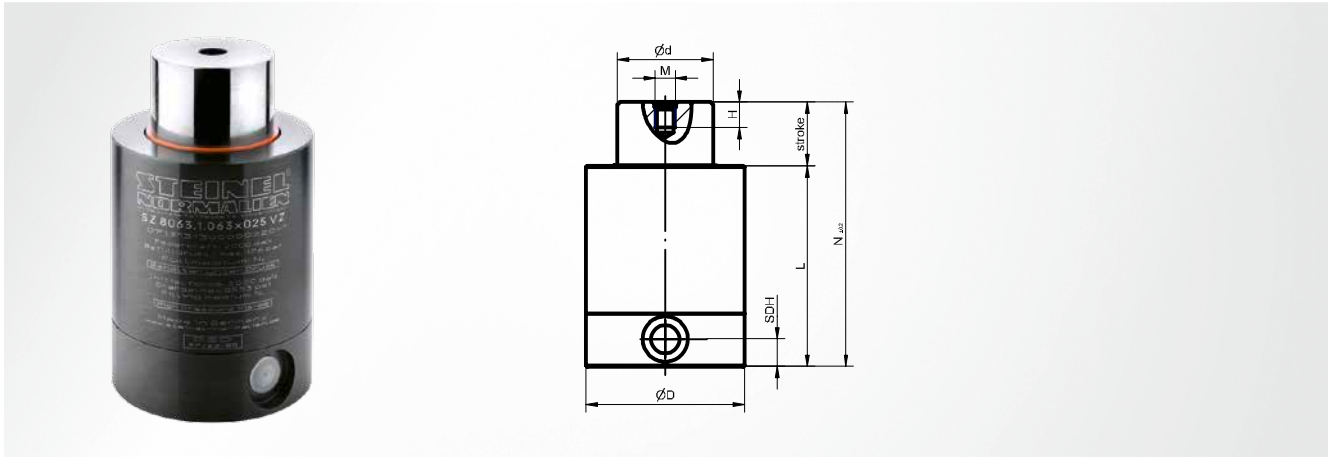
D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	

SZ8063.1.VZ Connecting nitrogen cylinder

2 connections, with burst protection



Base
Composite base; with burst protection; 2 connections

Burst protection
integrated

Filling
carried out via composite system

Delivery
will be supplied unfilled

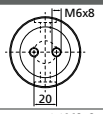
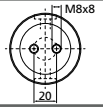
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

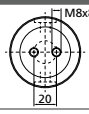
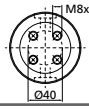
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
38	22	G1/8	on the side	197			750	1050	5	55	60	SZ8063.1 **.038 x 005VZ**
38	22	G1/8	on the side	197	M6	6	750	1155	10	60	70	SZ8063.1 **.038 x 010VZ**
							750	1200	15	65	80	SZ8063.1 **.038 x 015VZ**
							750	1200	19	69	88	SZ8063.1 **.038 x 019VZ**
							750	1200	25	75	100	SZ8063.1 **.038 x 025VZ**
							750	1200	32	82	114	SZ8063.1 **.038 x 032VZ**
							750	1200	38	88	126	SZ8063.1 **.038 x 038VZ**
							750	1200	50	100	150	SZ8063.1 **.038 x 050VZ**
							750	1200	63	113	176	SZ8063.1 **.038 x 063VZ**
							750	1200	80	130	210	SZ8063.1 **.038 x 080VZ**
							750	1200	100	150	250	SZ8063.1 **.038 x 100VZ**
							750	1200	125	175	300	SZ8063.1 **.038 x 125VZ**
50	30	G1/8	on the side	212			1500	2130	5	60	65	SZ8063.1 **.050 x 005VZ**
50	30	G1/8	on the side	212	M8	8	1500	2310	10	65	75	SZ8063.1 **.050 x 010VZ**
							1500	2400	15	70	85	SZ8063.1 **.050 x 015VZ**
							1500	2400	19	74	93	SZ8063.1 **.050 x 019VZ**
							1500	2400	25	80	105	SZ8063.1 **.050 x 025VZ**
							1500	2400	32	87	119	SZ8063.1 **.050 x 032VZ**
							1500	2400	38	93	131	SZ8063.1 **.050 x 038VZ**
							1500	2400	50	105	155	SZ8063.1 **.050 x 050VZ**
							1500	2400	63	118	181	SZ8063.1 **.050 x 063VZ**
							1500	2400	80	140	220	SZ8063.1 **.050 x 080VZ**
							1500	2400	100	155	255	SZ8063.1 **.050 x 100VZ**
							1500	2400	125	180	305	SZ8063.1 **.050 x 125VZ**
63	38	G1/8	on the side	176			2000	2720	5	60	65	SZ8063.1 **.063 x 005VZ**
63	38	G1/8	on the side	176	M8	8	2000	3080	10	65	75	SZ8063.1 **.063 x 010VZ**
							2000	3200	15	70	85	SZ8063.1 **.063 x 015VZ**
							2000	3200	19	74	93	SZ8063.1 **.063 x 019VZ**
							2000	3200	25	80	105	SZ8063.1 **.063 x 025VZ**
							2000	3200	32	87	119	SZ8063.1 **.063 x 032VZ**
							2000	3200	38	93	131	SZ8063.1 **.063 x 038VZ**
							2000	3200	50	105	155	SZ8063.1 **.063 x 050VZ**
							2000	3200	63	118	181	SZ8063.1 **.063 x 063VZ**

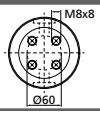
SZ8063.1.VZ Connecting nitrogen cylinder

2 connections, with burst protection

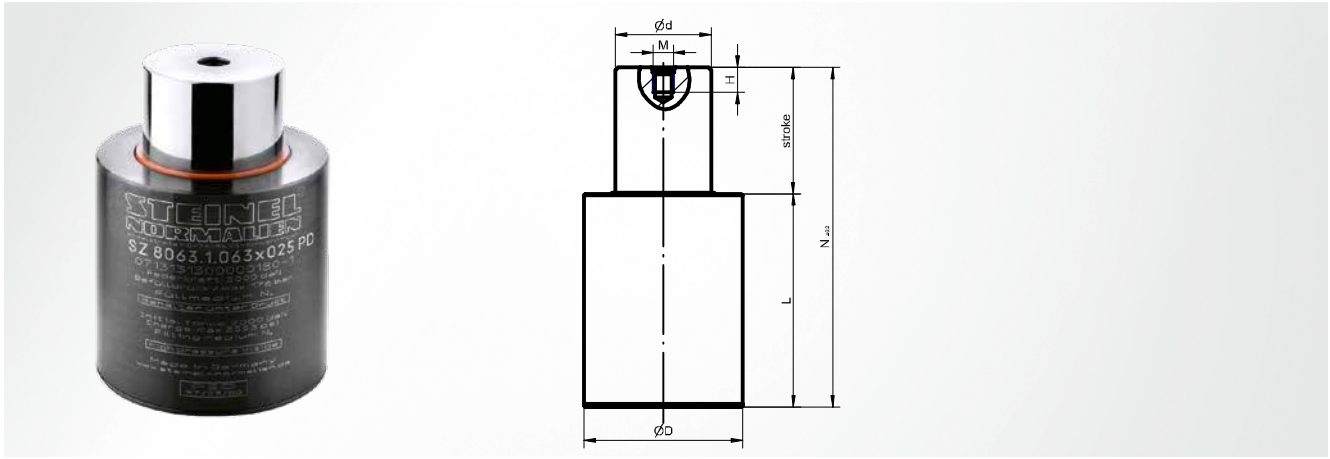
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
63	38	G1/8	on the side	176	M8	8	2000	3200	80	140	220	SZ8063.1 **.063 x 080VZ**
							2000	3200	100	155	255	SZ8063.1 **.063 x 100VZ**
							2000	3200	125	180	305	SZ8063.1 **.063 x 125VZ**
75	45	G1/8	on the side	189			3000	4050	5	65	70	SZ8063.1 **.075 x 005VZ**
75	45	G1/8	on the side	189	M8	8	3000	4590	10	70	80	SZ8063.1 **.075 x 010VZ**
							3000	4800	15	75	90	SZ8063.1 **.075 x 015VZ**
							3000	4800	19	79	98	SZ8063.1 **.075 x 019VZ**
							3000	4800	25	85	110	SZ8063.1 **.075 x 025VZ**
							3000	4800	32	92	124	SZ8063.1 **.075 x 032VZ**
							3000	4800	38	98	136	SZ8063.1 **.075 x 038VZ**
							3000	4800	50	110	160	SZ8063.1 **.075 x 050VZ**
							3000	4800	63	123	186	SZ8063.1 **.075 x 063VZ**
							3000	4800	80	140	215	SZ8063.1 **.075 x 080VZ**
							3000	4800	100	165	265	SZ8063.1 **.075 x 100VZ**
							3000	4800	125	190	315	SZ8063.1 **.075 x 125VZ**
95	55	G1/8	on the side	210			5000	7000	5	75	80	SZ8063.1 **.095 x 005VZ**
95	55	G1/8	on the side	210	M8	8	5000	7800	10	80	90	SZ8063.1 **.095 x 010VZ**
							5000	8000	15	85	100	SZ8063.1 **.095 x 015VZ**
							5000	8000	19	89	108	SZ8063.1 **.095 x 019VZ**
							5000	8000	25	95	120	SZ8063.1 **.095 x 025VZ**
							5000	8000	32	102	134	SZ8063.1 **.095 x 032VZ**
							5000	8000	38	107	145	SZ8063.1 **.095 x 038VZ**
							5000	8000	50	120	170	SZ8063.1 **.095 x 050VZ**
							5000	8000	63	133	196	SZ8063.1 **.095 x 063VZ**
							5000	8000	80	150	230	SZ8063.1 **.095 x 080VZ**
							5000	8000	100	170	270	SZ8063.1 **.095 x 100VZ**
							5000	8000	125	195	320	SZ8063.1 **.095 x 125VZ**

D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	

SZ8063.1.PD Composite plate spring



Base
Composite plate floor

Burst protection
not integrated

Filling
carried out via composite system

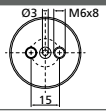
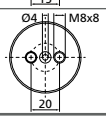
Delivery
will be supplied unfilled

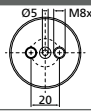
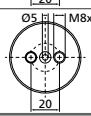
Installation instruction
Springs are screwed on through the composite panel by means of the base mounting threads; the plate must be flat and have a minimum surface roughness of Rz 6.3 in the area of the spring diameter; composite plate springs must be filled with oil to 1 % of the volume of the spring; filling is carried out via the connected control panel

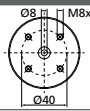
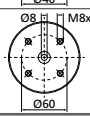
D	d	Filling pressure max. bar	M	H	daN	daN	N	Stroke	L	Item number
32	18	196			500	700	40	5	35	SZ8063.1 **.032 x 005PD**
32	18	196	M6	6	500	760	50	10	40	SZ8063.1 **.032 x 010PD**
					500	800	56	13	43	SZ8063.1 **.032 x 013PD**
					500	800	60	15	45	SZ8063.1 **.032 x 015PD**
					500	800	68	19	49	SZ8063.1 **.032 x 019PD**
					500	800	80	25	55	SZ8063.1 **.032 x 025PD**
					500	800	94	32	62	SZ8063.1 **.032 x 032PD**
					500	800	106	38	68	SZ8063.1 **.032 x 038PD**
					500	800	130	50	80	SZ8063.1 **.032 x 050PD**
					500	800	156	63	93	SZ8063.1 **.032 x 063PD**
					500	800	190	80	110	SZ8063.1 **.032 x 080PD**
					500	800	230	100	130	SZ8063.1 **.032 x 100PD**
					500	800	280	125	155	SZ8063.1 **.032 x 125PD**
38	22	197			750	1050	40	5	35	SZ8063.1 **.038 x 005PD**
38	22	197	M6	6	750	1155	50	10	40	SZ8063.1 **.038 x 010PD**
					750	1200	56	13	43	SZ8063.1 **.038 x 013PD**
					750	1200	60	15	45	SZ8063.1 **.038 x 015PD**
					750	1200	68	19	49	SZ8063.1 **.038 x 019PD**
					750	1200	80	25	55	SZ8063.1 **.038 x 025PD**
					750	1200	94	32	62	SZ8063.1 **.038 x 032PD**
					750	1200	106	38	68	SZ8063.1 **.038 x 038PD**
					750	1200	130	50	80	SZ8063.1 **.038 x 050PD**
					750	1200	156	63	93	SZ8063.1 **.038 x 063PD**
					750	1200	190	80	110	SZ8063.1 **.038 x 080PD**
					750	1200	230	100	130	SZ8063.1 **.038 x 100PD**
					750	1200	280	125	155	SZ8063.1 **.038 x 125PD**
50	30	212			1500	2130	45	5	40	SZ8063.1 **.050 x 005PD**
50	30	212	M8	8	1500	2310	55	10	45	SZ8063.1 **.050 x 010PD**
					1500	2400	65	15	50	SZ8063.1 **.050 x 015PD**
					1500	2400	73	19	54	SZ8063.1 **.050 x 019PD**
					1500	2400	85	25	60	SZ8063.1 **.050 x 025PD**

SZ8063.1.PD Composite plate spring

D	d	Filling pressure max. bar	M	H	daN	daN	N	Stroke	L	Item number
50	30	212	M8	8	1500	2400	99	32	67	SZ8063.1 **.050 x 032PD**
					1500	2400	111	38	73	SZ8063.1 **.050 x 038PD**
					1500	2400	135	50	85	SZ8063.1 **.050 x 050PD**
					1500	2400	161	63	98	SZ8063.1 **.050 x 063PD**
					1500	2400	200	80	120	SZ8063.1 **.050 x 080PD**
					1500	2400	235	100	135	SZ8063.1 **.050 x 100PD**
					1500	2400	285	125	160	SZ8063.1 **.050 x 125PD**
63	38	176			2000	2720	45	5	40	SZ8063.1 **.063 x 005PD**
63	38	176	M8	8	2000	3080	55	10	45	SZ8063.1 **.063 x 010PD**
					2000	3200	65	15	50	SZ8063.1 **.063 x 015PD**
					2000	3200	73	19	54	SZ8063.1 **.063 x 019PD**
					2000	3200	85	25	60	SZ8063.1 **.063 x 025PD**
					2000	3200	99	32	67	SZ8063.1 **.063 x 032PD**
					2000	3200	111	38	73	SZ8063.1 **.063 x 038PD**
					2000	3200	135	50	85	SZ8063.1 **.063 x 050PD**
					2000	3200	161	63	98	SZ8063.1 **.063 x 063PD**
					2000	3200	200	80	120	SZ8063.1 **.063 x 080PD**
					2000	3200	235	100	135	SZ8063.1 **.063 x 100PD**
					2000	3200	285	125	160	SZ8063.1 **.063 x 125PD**
75	45	189			3000	4050	50	5	45	SZ8063.1 **.075 x 005PD**
75	45	189	M8	8	3000	4590	60	10	50	SZ8063.1 **.075 x 010PD**
					3000	4800	70	15	55	SZ8063.1 **.075 x 015PD**
					3000	4800	78	19	59	SZ8063.1 **.075 x 019PD**
					3000	4800	90	25	65	SZ8063.1 **.075 x 025PD**
					3000	4800	104	32	72	SZ8063.1 **.075 x 032PD**
					3000	4800	116	38	78	SZ8063.1 **.075 x 038PD**
					3000	4800	140	50	90	SZ8063.1 **.075 x 050PD**
					3000	4800	166	63	103	SZ8063.1 **.075 x 063PD**
					3000	4800	205	80	125	SZ8063.1 **.075 x 080PD**
					3000	4800	245	100	145	SZ8063.1 **.075 x 100PD**
					3000	4800	295	125	170	SZ8063.1 **.075 x 125PD**
95	55	210			5000	7000	60	5	55	SZ8063.1 **.095 x 005PD**
95	55	210	M8	8	5000	7800	70	10	60	SZ8063.1 **.095 x 010PD**
					5000	8000	80	15	65	SZ8063.1 **.095 x 015PD**
					5000	8000	88	19	69	SZ8063.1 **.095 x 019PD**
					5000	8000	100	25	75	SZ8063.1 **.095 x 025PD**
					5000	8000	114	32	82	SZ8063.1 **.095 x 032PD**
					5000	8000	125	38	87	SZ8063.1 **.095 x 038PD**
					5000	8000	150	50	100	SZ8063.1 **.095 x 050PD**
					5000	8000	176	63	113	SZ8063.1 **.095 x 063PD**
					5000	8000	210	80	130	SZ8063.1 **.095 x 080PD**
					5000	8000	250	100	150	SZ8063.1 **.095 x 100PD**
					5000	8000	300	125	175	SZ8063.1 **.095 x 125PD**

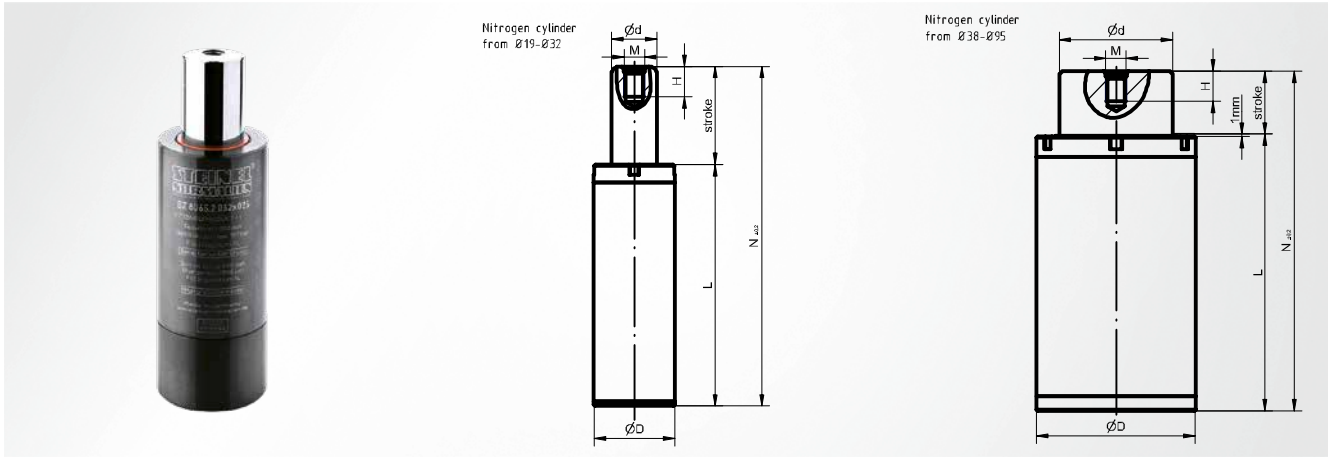
D	Cylinder mounting
32	
38	

D	Cylinder mounting
50	
63	

D	Cylinder mounting
75	
95	

SZ8065.2. Nitrogen cylinder

self-sufficient



Base
Standard base

Filling
with standard nitrogen

Burst protection
not integrated

Delivery
will be supplied filled

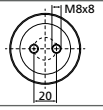
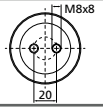
D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
19	11	M8	centred	158	150	240			10	65	75	SZ8065.2 **.019 x 010**
									15	70	85	SZ8065.2 **.019 x 015**
									25	80	105	SZ8065.2 **.019 x 025**
									38	97	135	SZ8065.2 **.019 x 038**
									50	110	160	SZ8065.2 **.019 x 050**
									63	127	190	SZ8065.2 **.019 x 063**
									80	140	220	SZ8065.2 **.019 x 080**
25	14	M8	centred	196	300	480			10	65	75	SZ8065.2 **.025 x 010**
									15	70	85	SZ8065.2 **.025 x 015**
							M6	6	25	80	105	SZ8065.2 **.025 x 025**
							M6	6	38	97	135	SZ8065.2 **.025 x 038**
							M6	6	50	110	160	SZ8065.2 **.025 x 050**
							M6	6	63	127	190	SZ8065.2 **.025 x 063**
							M6	6	80	145	225	SZ8065.2 **.025 x 080**
32	18	M6	centred	196	500	800	M6	6	10	65	75	SZ8065.2 **.032 x 010**
							M6	6	15	70	85	SZ8065.2 **.032 x 015**
							M6	6	25	80	105	SZ8065.2 **.032 x 025**
							M6	6	38	97	135	SZ8065.2 **.032 x 038**
							M6	6	50	110	160	SZ8065.2 **.032 x 050**
							M6	6	63	132	195	SZ8065.2 **.032 x 063**
							M6	6	80	150	230	SZ8065.2 **.032 x 080**
38	25	M8	centred	205	1000	1600	M6	6	10	65	75	SZ8065.2 **.038 x 010**
							M6	6	15	70	85	SZ8065.2 **.038 x 015**
							M6	6	25	80	105	SZ8065.2 **.038 x 025**
							M6	6	38	97	135	SZ8065.2 **.038 x 038**
							M6	6	50	110	160	SZ8065.2 **.038 x 050**
							M6	6	63	142	205	SZ8065.2 **.038 x 063**
							M6	6	80	160	240	SZ8065.2 **.038 x 080**
50	35	M10	centred	209	2000	3200	M8	8	10	95	105	SZ8065.2 **.050 x 010**
							M8	8	15	100	115	SZ8065.2 **.050 x 015**
							M8	8	25	110	135	SZ8065.2 **.050 x 025**
							M8	8	38	127	165	SZ8065.2 **.050 x 038**
							M8	8	50	140	190	SZ8065.2 **.050 x 050**
							M8	8	63	157	220	SZ8065.2 **.050 x 063**
							M8	8	80	175	255	SZ8065.2 **.050 x 080**
63	45	M10	centred	189	3000	4800	M8	8	10	95	105	SZ8065.2 **.063 x 010**
							M8	8	15	100	115	SZ8065.2 **.063 x 015**

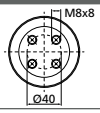
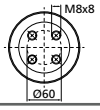
SZ8065.2. Nitrogen cylinder

self-sufficient

D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
63	45	M10	centred	189	3000	4800	M8	8	25	110	135	SZ8065.2 **.063 x 025**
							M8	8	38	127	165	SZ8065.2 **.063 x 038**
							M8	8	50	140	190	SZ8065.2 **.063 x 050**
							M8	8	63	157	220	SZ8065.2 **.063 x 063**
							M8	8	80	175	255	SZ8065.2 **.063 x 080**
75	56	M12	centred	203	5000	8000	M8	8	10	105	115	SZ8065.2 **.075 x 010**
							M8	8	15	110	125	SZ8065.2 **.075 x 015**
							M8	8	25	120	145	SZ8065.2 **.075 x 025**
							M8	8	38	137	175	SZ8065.2 **.075 x 038**
							M8	8	50	150	200	SZ8065.2 **.075 x 050**
							M8	8	63	177	240	SZ8065.2 **.075 x 063**
							M8	8	80	195	275	SZ8065.2 **.075 x 080**
95	75	M12	centred	182	8000	12800	M8	8	10	115	125	SZ8065.2 **.095 x 010**
							M8	8	15	120	135	SZ8065.2 **.095 x 015**
							M8	8	25	130	155	SZ8065.2 **.095 x 025**
							M8	8	38	147	185	SZ8065.2 **.095 x 038**
							M8	8	50	165	215	SZ8065.2 **.095 x 050**
							M8	8	63	192	255	SZ8065.2 **.095 x 063**
							M8	8	80	210	290	SZ8065.2 **.095 x 080**

D	Cylinder mounting
19	
25	
32	

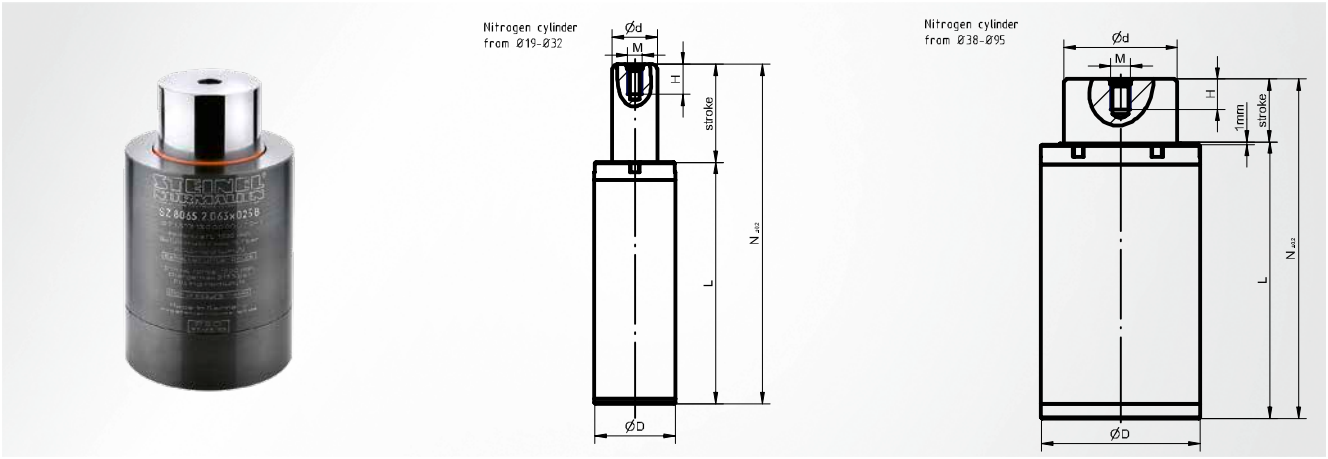
D	Cylinder mounting
38	
50	
63	

D	Cylinder mounting
75	
95	

from D 38, the medium thread is only used for filling

SZ8065.2.B Nitrogen cylinder

self-sufficient, with burst protection



Base
Standard base; with burst protection

Filling
with standard nitrogen

Burst protection
integrated

Delivery
will be supplied filled

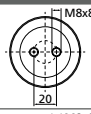
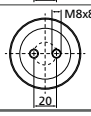
D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
32	18	M6	centred	196	500	800	M6	6	10	65	75	SZ8065.2 **.032 x 010B**
									15	70	85	SZ8065.2 **.032 x 015B**
									25	80	105	SZ8065.2 **.032 x 025B**
									38	97	135	SZ8065.2 **.032 x 038B**
									50	110	160	SZ8065.2 **.032 x 050B**
									63	132	195	SZ8065.2 **.032 x 063B**
									80	150	230	SZ8065.2 **.032 x 080B**
38	25	M6	centred	205	1000	1600	M8	6	10	65	75	SZ8065.2 **.038 x 010B**
									15	70	85	SZ8065.2 **.038 x 015B**
									25	80	105	SZ8065.2 **.038 x 025B**
									38	97	135	SZ8065.2 **.038 x 038B**
									50	110	160	SZ8065.2 **.038 x 050B**
									63	142	205	SZ8065.2 **.038 x 063B**
									80	160	240	SZ8065.2 **.038 x 080B**
50	35	M8	centred	209	2000	3200	M8	8	10	95	105	SZ8065.2 **.050 x 010B**
									15	100	115	SZ8065.2 **.050 x 015B**
									25	110	135	SZ8065.2 **.050 x 025B**
									38	127	165	SZ8065.2 **.050 x 038B**
									50	140	190	SZ8065.2 **.050 x 050B**
									63	157	220	SZ8065.2 **.050 x 063B**
									80	175	255	SZ8065.2 **.050 x 080B**
63	45	M8	centred	189	3000	4800	M8	8	10	95	105	SZ8065.2 **.063 x 010B**
									15	100	115	SZ8065.2 **.063 x 015B**
									25	110	135	SZ8065.2 **.063 x 025B**
									38	127	165	SZ8065.2 **.063 x 038B**
									50	140	190	SZ8065.2 **.063 x 050B**
									63	157	220	SZ8065.2 **.063 x 063B**
									80	175	255	SZ8065.2 **.063 x 080B**
75	56	M8	centred	203	5000	8000	M8	8	10	105	115	SZ8065.2 **.075 x 010B**
									15	110	125	SZ8065.2 **.075 x 015B**
									25	120	145	SZ8065.2 **.075 x 025B**
									38	137	175	SZ8065.2 **.075 x 038B**
									50	150	200	SZ8065.2 **.075 x 050B**
									63	177	240	SZ8065.2 **.075 x 063B**
									80	195	275	SZ8065.2 **.075 x 080B**
95	75	M8	centred	182	8000	12800	M8	8	10	115	125	SZ8065.2 **.095 x 010B**
									15	120	135	SZ8065.2 **.095 x 015B**

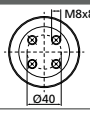
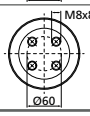
SZ8065.2.B Nitrogen cylinder

self-sufficient, with burst protection

D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
95	75	M8	centred	182	8000	12800	M8	8	25	130	155	SZ8065.2 **.095 x 025B**
									38	147	185	SZ8065.2 **.095 x 038B**
									50	165	215	SZ8065.2 **.095 x 050B**
									63	192	255	SZ8065.2 **.095 x 063B**
									80	210	290	SZ8065.2 **.095 x 080B**

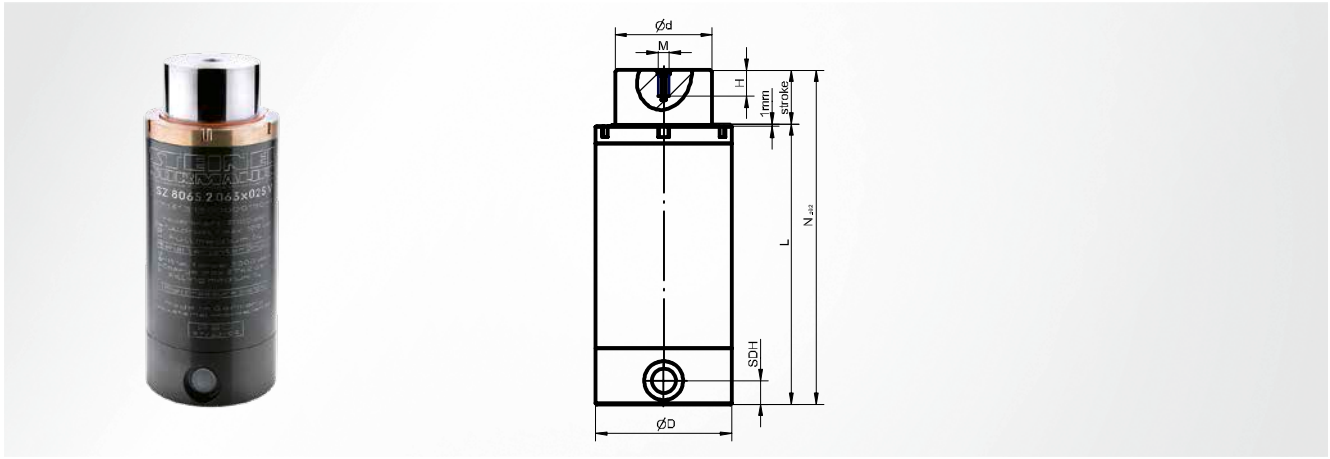
D	Cylinder mounting
32	
38	

D	Cylinder mounting
50	
63	

D	Cylinder mounting
75	
95	

from D 38, the medium thread is only used for filling

SZ8065.2.V Connecting nitrogen cylinder



Base
Composite base

Burst protection
not integrated

Filling
carried out via composite system

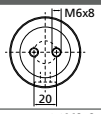
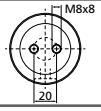
Delivery
will be supplied unfilled

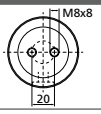
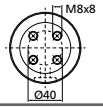
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

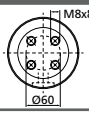
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
38	25	G1/8	on the side	205	1000	1600	M6	6	95	10	85	SZ8065.2 **.038 x 010V**
									105	15	90	SZ8065.2 **.038 x 015V**
									125	25	100	SZ8065.2 **.038 x 025V**
									155	38	117	SZ8065.2 **.038 x 038V**
									180	50	130	SZ8065.2 **.038 x 050V**
									225	63	162	SZ8065.2 **.038 x 063V**
									260	80	180	SZ8065.2 **.038 x 080V**
50	35	G1/8	on the side	209	2000	3200	M8	8	125	10	115	SZ8065.2 **.050 x 010V**
									135	15	120	SZ8065.2 **.050 x 015V**
									155	25	130	SZ8065.2 **.050 x 025V**
									185	38	147	SZ8065.2 **.050 x 038V**
									210	50	160	SZ8065.2 **.050 x 050V**
									240	63	177	SZ8065.2 **.050 x 063V**
									275	80	195	SZ8065.2 **.050 x 080V**
63	45	G1/8	on the side	189	3000	4800	M8	8	125	10	115	SZ8065.2 **.063 x 010V**
									135	15	120	SZ8065.2 **.063 x 015V**
									155	25	130	SZ8065.2 **.063 x 025V**
									185	38	147	SZ8065.2 **.063 x 038V**
									210	50	160	SZ8065.2 **.063 x 050V**
									240	63	177	SZ8065.2 **.063 x 063V**
									275	80	195	SZ8065.2 **.063 x 080V**
75	56	G1/8	on the side	203	5000	8000	M8	8	135	10	125	SZ8065.2 **.075 x 010V**
									145	15	130	SZ8065.2 **.075 x 015V**
									165	25	140	SZ8065.2 **.075 x 025V**
									195	38	157	SZ8065.2 **.075 x 038V**
									220	50	170	SZ8065.2 **.075 x 050V**
									260	63	197	SZ8065.2 **.075 x 063V**
									295	80	215	SZ8065.2 **.075 x 080V**
95	75	G1/8	on the side	182	8000	12800	M8	8	145	10	135	SZ8065.2 **.095 x 010V**
									155	15	140	SZ8065.2 **.095 x 015V**
									175	25	150	SZ8065.2 **.095 x 025V**
									205	38	167	SZ8065.2 **.095 x 038V**
									235	50	185	SZ8065.2 **.095 x 050V**

SZ8065.2.V Connecting nitrogen cylinder

D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
95	75	G1/8	on the side	182	8000	12800	M8	8	275	63	212	SZ8065.2 **.095 x 063V**
									310	80	230	SZ8065.2 **.095 x 080V**

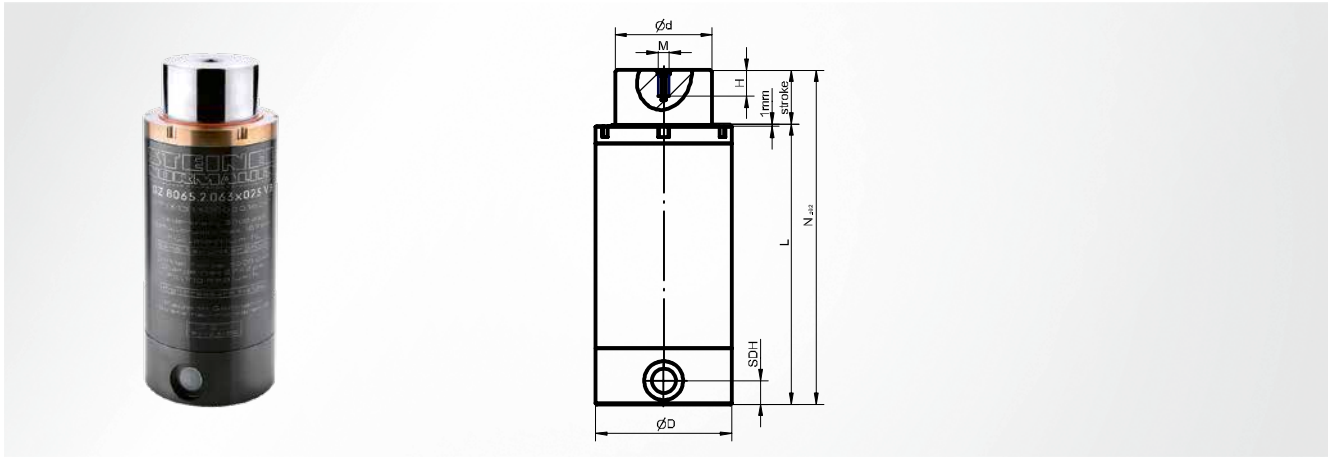
D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	

SZ8065.2.VB Connecting nitrogen cylinder

with burst protection



Base
Composite base; with burst protection

Burst protection
integrated

Filling
carried out via composite system

Delivery
will be supplied unfilled

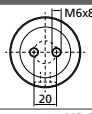
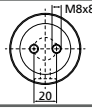
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

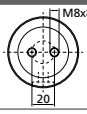
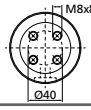
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
38	25	G1/8	on the side	205	1000	1600	M6	6	95	10	85	SZ8065.2 **.038 x 010VB**
									105	15	90	SZ8065.2 **.038 x 015VB**
									125	25	100	SZ8065.2 **.038 x 025VB**
									155	38	117	SZ8065.2 **.038 x 038VB**
									180	50	130	SZ8065.2 **.038 x 050VB**
									225	63	162	SZ8065.2 **.038 x 063VB**
									260	80	180	SZ8065.2 **.038 x 080VB**
50	35	G1/8	on the side	209	2000	3200	M8	8	125	10	115	SZ8065.2 **.050 x 010VB**
									135	15	120	SZ8065.2 **.050 x 015VB**
									155	25	130	SZ8065.2 **.050 x 025VB**
									185	38	147	SZ8065.2 **.050 x 038VB**
									210	50	160	SZ8065.2 **.050 x 050VB**
									240	63	177	SZ8065.2 **.050 x 063VB**
									275	80	195	SZ8065.2 **.050 x 080VB**
63	45	G1/8	on the side	189	3000	4800	M8	8	125	10	115	SZ8065.2 **.063 x 010VB**
									135	15	120	SZ8065.2 **.063 x 015VB**
									155	25	130	SZ8065.2 **.063 x 025VB**
									185	38	147	SZ8065.2 **.063 x 038VB**
									210	50	160	SZ8065.2 **.063 x 050VB**
									240	63	177	SZ8065.2 **.063 x 063VB**
									275	80	195	SZ8065.2 **.063 x 080VB**
75	56	G1/8	on the side	203	5000	8000	M8	8	135	10	125	SZ8065.2 **.075 x 010VB**
									145	15	130	SZ8065.2 **.075 x 015VB**
									165	25	140	SZ8065.2 **.075 x 025VB**
									195	38	157	SZ8065.2 **.075 x 038VB**
									220	50	170	SZ8065.2 **.075 x 050VB**
									260	63	197	SZ8065.2 **.075 x 063VB**
									295	80	215	SZ8065.2 **.075 x 080VB**
95	75	G1/8	on the side	182	8000	12800	M8	8	145	10	135	SZ8065.2 **.095 x 010VB**
									155	15	140	SZ8065.2 **.095 x 015VB**
									175	25	150	SZ8065.2 **.095 x 025VB**
									205	38	167	SZ8065.2 **.095 x 038VB**
									235	50	185	SZ8065.2 **.095 x 050VB**

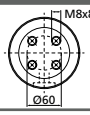
SZ8065.2.VB Connecting nitrogen cylinder

with burst protection

D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
95	75	G1/8	on the side	182	8000	12800	M8	8	275	63	212	SZ8065.2 **.095 x 063VB**
									310	80	230	SZ8065.2 **.095 x 080VB**

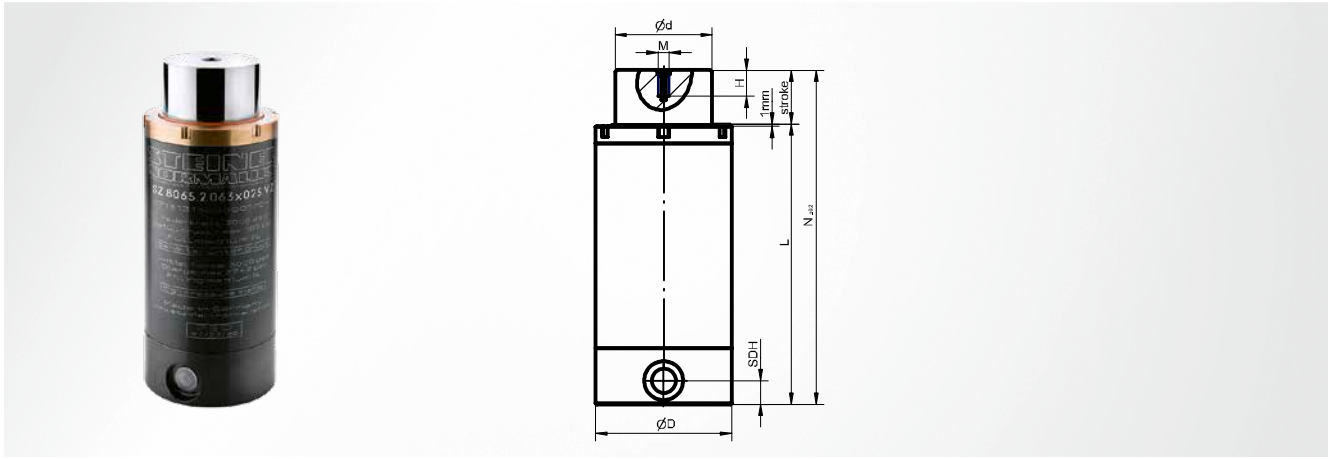
D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	

SZ8065.2.VZ Connecting nitrogen cylinder

2 connections, with burst protection



Base
Composite base; with burst protection; 2 connections

Burst protection
integrated

Filling
carried out via composite system

Delivery
will be supplied unfilled

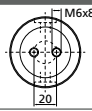
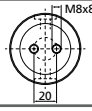
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

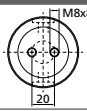
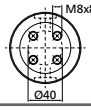
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
38	25	G1/8	on the side	205	1000	1600	M6	6	95	10	85	SZ8065.2 **.038 x 010VZ**
									105	15	90	SZ8065.2 **.038 x 015VZ**
									125	25	100	SZ8065.2 **.038 x 025VZ**
									155	38	117	SZ8065.2 **.038 x 038VZ**
									180	50	130	SZ8065.2 **.038 x 050VZ**
									225	63	162	SZ8065.2 **.038 x 063VZ**
									260	80	180	SZ8065.2 **.038 x 080VZ**
50	35	G1/8	on the side	209	2000	3200	M8	8	125	10	115	SZ8065.2 **.050 x 010VZ**
									135	15	120	SZ8065.2 **.050 x 015VZ**
									155	25	130	SZ8065.2 **.050 x 025VZ**
									185	38	147	SZ8065.2 **.050 x 038VZ**
									210	50	160	SZ8065.2 **.050 x 050VZ**
									240	63	177	SZ8065.2 **.050 x 063VZ**
									275	80	195	SZ8065.2 **.050 x 080VZ**
63	45	G1/8	on the side	189	3000	4800	M8	8	125	10	115	SZ8065.2 **.063 x 010VZ**
									135	15	120	SZ8065.2 **.063 x 015VZ**
									155	25	130	SZ8065.2 **.063 x 025VZ**
									185	38	147	SZ8065.2 **.063 x 038VZ**
									210	50	160	SZ8065.2 **.063 x 050VZ**
									240	63	177	SZ8065.2 **.063 x 063VZ**
									275	80	195	SZ8065.2 **.063 x 080VZ**
75	56	G1/8	on the side	203	5000	8000	M8	8	135	10	125	SZ8065.2 **.075 x 010VZ**
									145	15	130	SZ8065.2 **.075 x 015VZ**
									165	25	140	SZ8065.2 **.075 x 025VZ**
									195	38	157	SZ8065.2 **.075 x 038VZ**
									220	50	170	SZ8065.2 **.075 x 050VZ**
									260	63	197	SZ8065.2 **.075 x 063VZ**
									295	80	215	SZ8065.2 **.075 x 080VZ**
95	75	G1/8	on the side	182	8000	12800	M8	8	145	10	135	SZ8065.2 **.095 x 010VZ**
									155	15	140	SZ8065.2 **.095 x 015VZ**
									175	25	150	SZ8065.2 **.095 x 025VZ**
									205	38	167	SZ8065.2 **.095 x 038VZ**
									235	50	185	SZ8065.2 **.095 x 050VZ**

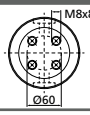
SZ8065.2.VZ Connecting nitrogen cylinder

2 connections, with burst protection

D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
95	75	G1/8	on the side	182	8000	12800	M8	8	275	63	212	SZ8065.2 **.095 x 063VZ**
									310	80	230	SZ8065.2 **.095 x 080VZ**

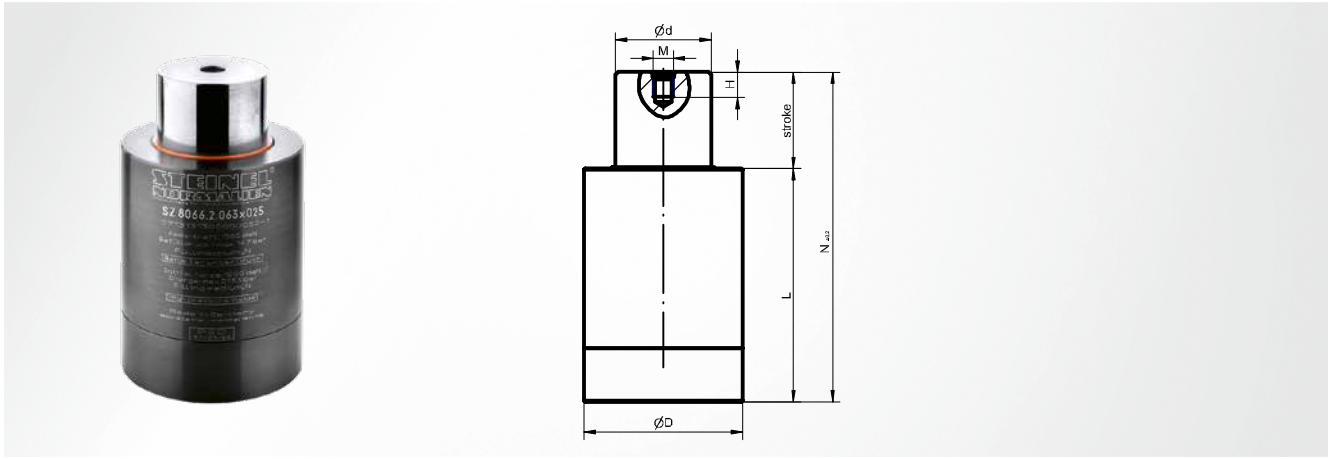
D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	

SZ8066.2. Nitrogen cylinder

self-sufficient



Base
Standard base

Filling
with standard nitrogen

Burst protection
not integrated

Delivery
will be supplied filled

D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
19	11	M8	centred	105	100	160			5	45	50	SZ8066.2 **.019 x 005**
					100	160			10	50	60	SZ8066.2 **.019 x 010**
					100	160			15	55	70	SZ8066.2 **.019 x 015**
					100	160			19	59	78	SZ8066.2 **.019 x 019**
					100	160			25	65	90	SZ8066.2 **.019 x 025**
					100	160			32	72	104	SZ8066.2 **.019 x 032**
					100	160			38	78	116	SZ8066.2 **.019 x 038**
					100	160			50	90	140	SZ8066.2 **.019 x 050**
					100	160			63	103	166	SZ8066.2 **.019 x 063**
					100	160			80	120	200	SZ8066.2 **.019 x 080**
					100	160			100	140	240	SZ8066.2 **.019 x 100**
					100	160			125	165	290	SZ8066.2 **.019 x 125**
25	14	M8	centred	129	200	320			5	45	50	SZ8066.2 **.025 x 005**
					200	320			10	50	60	SZ8066.2 **.025 x 010**
					200	320			15	55	70	SZ8066.2 **.025 x 015**
					200	320			19	59	78	SZ8066.2 **.025 x 019**
					200	320	M6	6	25	65	90	SZ8066.2 **.025 x 025**
					200	320	M6	6	32	72	104	SZ8066.2 **.025 x 032**
					200	320	M6	6	38	78	116	SZ8066.2 **.025 x 038**
					200	320	M6	6	50	90	140	SZ8066.2 **.025 x 050**
					200	320	M6	6	63	103	166	SZ8066.2 **.025 x 063**
					200	320	M6	6	80	120	200	SZ8066.2 **.025 x 080**
					200	320	M6	6	100	140	240	SZ8066.2 **.025 x 100**
					200	320	M6	6	125	165	290	SZ8066.2 **.025 x 125**
32	18	M8	centred	137	350	490			5	50	55	SZ8066.2 **.032 x 005**
					350	532	M6	6	10	55	65	SZ8066.2 **.032 x 010**
					350	560	M6	6	15	60	75	SZ8066.2 **.032 x 015**
					350	560	M6	6	19	64	83	SZ8066.2 **.032 x 019**
					350	560	M6	6	25	70	95	SZ8066.2 **.032 x 025**
					350	560	M6	6	32	77	109	SZ8066.2 **.032 x 032**
					350	560	M6	6	38	83	121	SZ8066.2 **.032 x 038**
					350	560	M6	6	50	95	145	SZ8066.2 **.032 x 050**
					350	560	M6	6	63	108	171	SZ8066.2 **.032 x 063**
					350	560	M6	6	80	125	205	SZ8066.2 **.032 x 080**
					350	560	M6	6	100	145	245	SZ8066.2 **.032 x 100**
					350	560	M6	6	125	170	295	SZ8066.2 **.032 x 125**
38	22	M8	centred	131	500	700			5	50	55	SZ8066.2 **.038 x 005**

SZ8066.2. Nitrogen cylinder

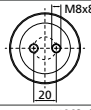
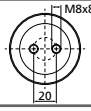
self-sufficient

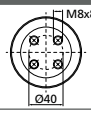
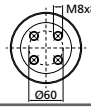
D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
38	22	M8	centred	131	500	770	M6	6	10	55	65	SZ8066.2 **.038 x 010**
					500	800	M6	6	15	60	75	SZ8066.2 **.038 x 015**
					500	800	M6	6	19	64	83	SZ8066.2 **.038 x 019**
					500	800	M6	6	25	70	95	SZ8066.2 **.038 x 025**
					500	800	M6	6	32	77	109	SZ8066.2 **.038 x 032**
					500	800	M6	6	38	83	121	SZ8066.2 **.038 x 038**
					500	800	M6	6	50	95	145	SZ8066.2 **.038 x 050**
					500	800	M6	6	63	108	171	SZ8066.2 **.038 x 063**
					500	800	M6	6	80	125	205	SZ8066.2 **.038 x 080**
					500	800	M6	6	100	145	245	SZ8066.2 **.038 x 100**
					500	800	M6	6	125	170	295	SZ8066.2 **.038 x 125**
50	30	M10	centred	141	1000	1420			5	55	60	SZ8066.2 **.050 x 005**
					1000	1540	M8	8	10	60	70	SZ8066.2 **.050 x 010**
					1000	1600	M8	8	15	65	80	SZ8066.2 **.050 x 015**
					1000	1600	M8	8	19	69	88	SZ8066.2 **.050 x 019**
					1000	1600	M8	8	25	75	100	SZ8066.2 **.050 x 025**
					1000	1600	M8	8	32	82	114	SZ8066.2 **.050 x 032**
					1000	1600	M8	8	38	88	126	SZ8066.2 **.050 x 038**
					1000	1600	M8	8	50	100	150	SZ8066.2 **.050 x 050**
					1000	1600	M8	8	63	113	176	SZ8066.2 **.050 x 063**
					1000	1600	M8	8	80	130	210	SZ8066.2 **.050 x 080**
					1000	1600	M8	8	100	150	250	SZ8066.2 **.050 x 100**
					1000	1600	M8	8	125	190	315	SZ8066.2 **.050 x 125**
63	38	M10	centred	132	1500	2040			5	60	65	SZ8066.2 **.063 x 005**
					1500	2310	M8	8	10	65	75	SZ8066.2 **.063 x 010**
					1500	2400	M8	8	15	70	85	SZ8066.2 **.063 x 015**
					1500	2400	M8	8	19	74	93	SZ8066.2 **.063 x 019**
					1500	2400	M8	8	25	80	105	SZ8066.2 **.063 x 025**
					1500	2400	M8	8	32	87	119	SZ8066.2 **.063 x 032**
					1500	2400	M8	8	38	93	131	SZ8066.2 **.063 x 038**
					1500	2400	M8	8	50	105	155	SZ8066.2 **.063 x 050**
					1500	2400	M8	8	63	118	181	SZ8066.2 **.063 x 063**
					1500	2400	M8	8	80	135	215	SZ8066.2 **.063 x 080**
					1500	2400	M8	8	100	160	260	SZ8066.2 **.063 x 100**
					1500	2400	M8	8	125	190	315	SZ8066.2 **.063 x 125**
75	45	M12	centred	157	2500	3375			5	60	65	SZ8066.2 **.075 x 005**
					2500	3825	M8	8	10	65	75	SZ8066.2 **.075 x 010**
					2500	4000	M8	8	15	70	85	SZ8066.2 **.075 x 015**
					2500	4000	M8	8	19	74	93	SZ8066.2 **.075 x 019**
					2500	4000	M8	8	25	80	105	SZ8066.2 **.075 x 025**
					2500	4000	M8	8	32	87	119	SZ8066.2 **.075 x 032**
					2500	4000	M8	8	38	93	131	SZ8066.2 **.075 x 038**
					2500	4000	M8	8	50	105	155	SZ8066.2 **.075 x 050**
					2500	4000	M8	8	63	118	181	SZ8066.2 **.075 x 063**
					2500	4000	M8	8	80	135	215	SZ8066.2 **.075 x 080**
					2500	4000	M8	8	100	155	255	SZ8066.2 **.075 x 100**
					2500	4000	M8	8	125	200	325	SZ8066.2 **.075 x 125**
95	55	M12	centred	168	4000	5600			5	70	75	SZ8066.2 **.095 x 005**
					4000	6240	M8	8	10	75	85	SZ8066.2 **.095 x 010**
					4000	6400	M8	8	15	80	95	SZ8066.2 **.095 x 015**
					4000	6400	M8	8	19	84	103	SZ8066.2 **.095 x 019**
					4000	6400	M8	8	25	90	115	SZ8066.2 **.095 x 025**
					4000	6400	M8	8	32	97	129	SZ8066.2 **.095 x 032**
					4000	6400	M8	8	38	103	141	SZ8066.2 **.095 x 038**
					4000	6400	M8	8	50	115	165	SZ8066.2 **.095 x 050**
					4000	6400	M8	8	63	128	191	SZ8066.2 **.095 x 063**
					4000	6400	M8	8	80	155	235	SZ8066.2 **.095 x 080**
					4000	6400	M8	8	100	185	285	SZ8066.2 **.095 x 100**
					4000	6400	M8	8	125	220	345	SZ8066.2 **.095 x 125**

SZ8066.2. Nitrogen cylinder

self-sufficient

D	Cylinder mounting
19	
25	
32	

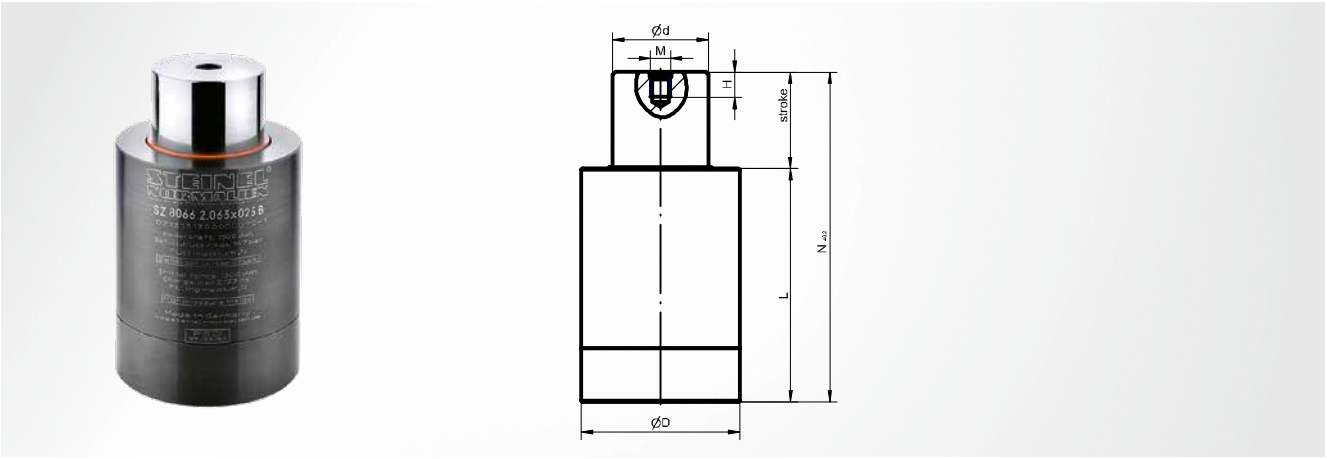
D	Cylinder mounting
38	
50	
63	

D	Cylinder mounting
75	
95	

from D 38, the medium thread is only used for filling

SZ8066.2.B Nitrogen cylinder

self-sufficient, with burst protection



Base
Standard base; with burst protection

Filling
with standard nitrogen

Burst protection
integrated

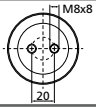
Delivery
will be supplied filled

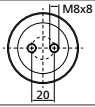
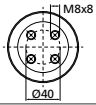
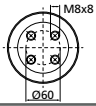
D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
32	18	M8	centred	137			350	490	5	50	55	SZ8066.2 **.032 x 005B**
32	18	M8	centred	137	M6	6	350	532	10	55	65	SZ8066.2 **.032 x 010B**
							350	560	15	60	75	SZ8066.2 **.032 x 015B**
							350	560	19	64	83	SZ8066.2 **.032 x 019B**
							350	560	25	70	95	SZ8066.2 **.032 x 025B**
							350	560	32	77	109	SZ8066.2 **.032 x 032B**
							350	560	38	83	121	SZ8066.2 **.032 x 038B**
							350	560	50	95	145	SZ8066.2 **.032 x 050B**
							350	560	63	108	171	SZ8066.2 **.032 x 063B**
							350	560	80	125	205	SZ8066.2 **.032 x 080B**
							350	560	100	145	245	SZ8066.2 **.032 x 100B**
							350	560	125	170	295	SZ8066.2 **.032 x 125B**
38	22	M8	centred	131			500	700	5	50	55	SZ8066.2 **.038 x 005B**
38	22	M8	centred	131	M6	6	500	770	10	55	65	SZ8066.2 **.038 x 010B**
							500	800	15	60	75	SZ8066.2 **.038 x 015B**
							500	800	19	64	83	SZ8066.2 **.038 x 019B**
							500	800	25	70	95	SZ8066.2 **.038 x 025B**
							500	800	32	77	109	SZ8066.2 **.038 x 032B**
							500	800	38	83	121	SZ8066.2 **.038 x 038B**
							500	800	50	95	145	SZ8066.2 **.038 x 050B**
							500	800	63	108	171	SZ8066.2 **.038 x 063B**
							500	800	80	125	205	SZ8066.2 **.038 x 080B**
							500	800	100	145	245	SZ8066.2 **.038 x 100B**
							500	800	125	170	295	SZ8066.2 **.038 x 125B**
50	30	M10	centred	141			1000	1420	5	55	60	SZ8066.2 **.050 x 005B**
50	30	M10	centred	141	M8	8	1000	1540	10	60	70	SZ8066.2 **.050 x 010B**
							1000	1600	15	65	80	SZ8066.2 **.050 x 015B**
							1000	1600	19	69	88	SZ8066.2 **.050 x 019B**
							1000	1600	25	75	100	SZ8066.2 **.050 x 025B**
							1000	1600	32	82	114	SZ8066.2 **.050 x 032B**
							1000	1600	38	88	126	SZ8066.2 **.050 x 038B**
							1000	1600	50	100	150	SZ8066.2 **.050 x 050B**
							1000	1600	63	113	176	SZ8066.2 **.050 x 063B**
							1000	1600	80	130	210	SZ8066.2 **.050 x 080B**
							1000	1600	100	150	250	SZ8066.2 **.050 x 100B**
							1000	1600	125	190	315	SZ8066.2 **.050 x 125B**
63	38	M10	centred	132			1500	2040	5	60	65	SZ8066.2 **.063 x 005B**

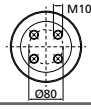
SZ8066.2.B Nitrogen cylinder

self-sufficient, with burst protection

D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
63	38	M10	centred	132	M8	8	1500	2310	10	65	75	SZ8066.2 **.063 x 010B**
							1500	2400	15	70	85	SZ8066.2 **.063 x 015B**
							1500	2400	19	74	93	SZ8066.2 **.063 x 019B**
							1500	2400	25	80	105	SZ8066.2 **.063 x 025B**
							1500	2400	32	87	119	SZ8066.2 **.063 x 032B**
							1500	2400	38	93	131	SZ8066.2 **.063 x 038B**
							1500	2400	50	105	155	SZ8066.2 **.063 x 050B**
							1500	2400	63	118	181	SZ8066.2 **.063 x 063B**
							1500	2400	80	135	215	SZ8066.2 **.063 x 080B**
							1500	2400	100	160	260	SZ8066.2 **.063 x 100B**
							1500	2400	125	190	315	SZ8066.2 **.063 x 125B**
75	45	M12	centred	157			2500	3375	5	60	65	SZ8066.2 **.075 x 005B**
75	45	M12	centred	157	M8	8	2500	3825	10	65	75	SZ8066.2 **.075 x 010B**
							2500	4000	15	70	85	SZ8066.2 **.075 x 015B**
							2500	4000	19	74	93	SZ8066.2 **.075 x 019B**
							2500	4000	25	80	105	SZ8066.2 **.075 x 025B**
							2500	4000	32	87	119	SZ8066.2 **.075 x 032B**
							2500	4000	38	93	131	SZ8066.2 **.075 x 038B**
							2500	4000	50	105	155	SZ8066.2 **.075 x 050B**
							2500	4000	63	118	181	SZ8066.2 **.075 x 063B**
							2500	4000	80	135	215	SZ8066.2 **.075 x 080B**
							2500	4000	100	155	255	SZ8066.2 **.075 x 100B**
							2500	4000	125	200	325	SZ8066.2 **.075 x 125B**
95	55	M12	centred	168			4000	5600	5	70	75	SZ8066.2 **.095 x 005B**
95	55	M12	centred	168	M8	8	4000	6240	10	75	85	SZ8066.2 **.095 x 010B**
							4000	6400	15	80	95	SZ8066.2 **.095 x 015B**
							4000	6400	19	84	103	SZ8066.2 **.095 x 019B**
							4000	6400	25	90	115	SZ8066.2 **.095 x 025B**
							4000	6400	32	97	129	SZ8066.2 **.095 x 032B**
							4000	6400	38	103	141	SZ8066.2 **.095 x 038B**
							4000	6400	50	115	165	SZ8066.2 **.095 x 050B**
							4000	6400	63	128	191	SZ8066.2 **.095 x 063B**
							4000	6400	80	155	235	SZ8066.2 **.095 x 080B**
							4000	6400	100	185	285	SZ8066.2 **.095 x 100B**
							4000	6400	125	220	345	SZ8066.2 **.095 x 125B**
120	75	M12	centred	147	M8	8	6500	10400	25	100	125	SZ8066.2 **.120 x 025B**
							6500	10400	38	113	151	SZ8066.2 **.120 x 038B**
							6500	10400	50	125	175	SZ8066.2 **.120 x 050B**
							6500	10400	63	138	201	SZ8066.2 **.120 x 063B**
							6500	10400	80	160	240	SZ8066.2 **.120 x 080B**
							6500	10400	100	190	290	SZ8066.2 **.120 x 100B**
							6500	10400	125	225	350	SZ8066.2 **.120 x 125B**
							6500	10400	160	270	430	SZ8066.2 **.120 x 160B**
							6500	10400	200	320	520	SZ8066.2 **.120 x 200B**
							6500	10400	210	340	550	SZ8066.2 **.120 x 210B**

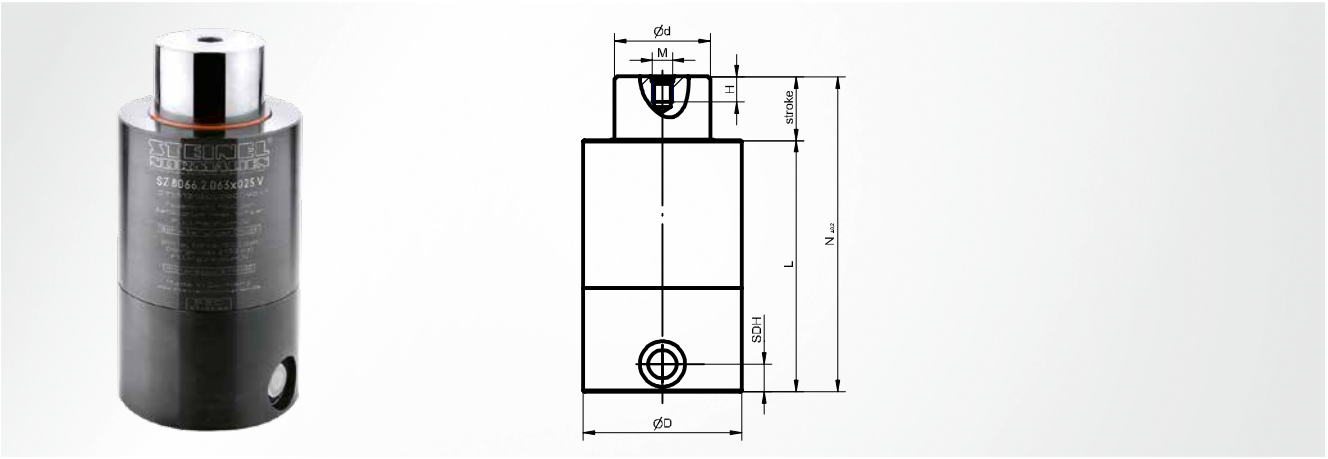
D	Cylinder mounting
32	
38	
50	

D	Cylinder mounting
63	
75	
95	

D	Cylinder mounting
120	

from D 38, the medium thread is only used for filling

SZ8066.2.V Connecting nitrogen cylinder



Base
Composite base

Burst protection
not integrated

Filling
carried out via composite system

Delivery
will be supplied unfilled

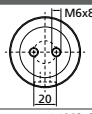
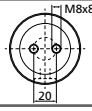
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

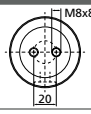
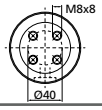
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
38	22	G1/8	on the side	131			500	700	5	70	75	SZ8066.2 **.038 x 005V**
38	22	G1/8	on the side	131	M6	6	500	770	10	75	85	SZ8066.2 **.038 x 010V**
							500	800	15	80	95	SZ8066.2 **.038 x 015V**
							500	800	19	84	103	SZ8066.2 **.038 x 019V**
							500	800	25	90	115	SZ8066.2 **.038 x 025V**
							500	800	32	97	129	SZ8066.2 **.038 x 032V**
							500	800	38	103	141	SZ8066.2 **.038 x 038V**
							500	800	50	115	165	SZ8066.2 **.038 x 050V**
							500	800	63	128	191	SZ8066.2 **.038 x 063V**
							500	800	80	145	225	SZ8066.2 **.038 x 080V**
							500	800	100	165	265	SZ8066.2 **.038 x 100V**
							500	800	125	190	315	SZ8066.2 **.038 x 125V**
50	30	G1/8	on the side	141			1000	1420	5	75	80	SZ8066.2 **.050 x 005V**
50	30	G1/8	on the side	141	M8	8	1000	1540	10	80	90	SZ8066.2 **.050 x 010V**
							1000	1600	15	85	100	SZ8066.2 **.050 x 015V**
							1000	1600	19	89	108	SZ8066.2 **.050 x 019V**
							1000	1600	25	95	120	SZ8066.2 **.050 x 025V**
							1000	1600	32	102	134	SZ8066.2 **.050 x 032V**
							1000	1600	38	108	146	SZ8066.2 **.050 x 038V**
							1000	1600	50	120	170	SZ8066.2 **.050 x 050V**
							1000	1600	63	133	196	SZ8066.2 **.050 x 063V**
							1000	1600	80	150	230	SZ8066.2 **.050 x 080V**
							1000	1600	100	170	270	SZ8066.2 **.050 x 100V**
							1000	1600	125	210	335	SZ8066.2 **.050 x 125V**
63	38	G1/8	on the side	132			1500	2040	5	80	85	SZ8066.2 **.063 x 005V**
63	38	G1/8	on the side	132	M8	8	1500	2310	10	85	95	SZ8066.2 **.063 x 010V**
							1500	2400	15	90	105	SZ8066.2 **.063 x 015V**
							1500	2400	19	94	113	SZ8066.2 **.063 x 019V**
							1500	2400	25	100	125	SZ8066.2 **.063 x 025V**
							1500	2400	32	107	139	SZ8066.2 **.063 x 032V**
							1500	2400	38	113	151	SZ8066.2 **.063 x 038V**
							1500	2400	50	125	175	SZ8066.2 **.063 x 050V**
							1500	2400	63	138	201	SZ8066.2 **.063 x 063V**

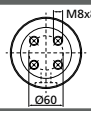
SZ8066.2.V Connecting nitrogen cylinder

STEINEL®

D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
63	38	G1/8	on the side	132	M8	8	1500	2400	80	155	235	SZ8066.2 **.063 x 080V**
							1500	2400	100	180	280	SZ8066.2 **.063 x 100V**
							1500	2400	125	210	335	SZ8066.2 **.063 x 125V**
75	45	G1/8	on the side	157			2500	3375	5	80	85	SZ8066.2 **.075 x 005V**
75	45	G1/8	on the side	157	M8	8	2500	3825	10	85	95	SZ8066.2 **.075 x 010V**
							2500	4000	15	90	105	SZ8066.2 **.075 x 015V**
							2500	4000	19	94	113	SZ8066.2 **.075 x 019V**
							2500	4000	25	100	125	SZ8066.2 **.075 x 025V**
							2500	4000	32	107	139	SZ8066.2 **.075 x 032V**
							2500	4000	38	113	151	SZ8066.2 **.075 x 038V**
							2500	4000	50	125	175	SZ8066.2 **.075 x 050V**
							2500	4000	63	138	201	SZ8066.2 **.075 x 063V**
							2500	4000	80	155	235	SZ8066.2 **.075 x 080V**
							2500	4000	100	175	275	SZ8066.2 **.075 x 100V**
							2500	4000	125	220	345	SZ8066.2 **.075 x 125V**
95	55	G1/8	on the side	168			4000	5600	5	90	95	SZ8066.2 **.095 x 005V**
95	55	G1/8	on the side	168	M8	8	4000	6240	10	95	105	SZ8066.2 **.095 x 010V**
							4000	6400	15	100	115	SZ8066.2 **.095 x 015V**
							4000	6400	19	104	123	SZ8066.2 **.095 x 019V**
							4000	6400	25	110	135	SZ8066.2 **.095 x 025V**
							4000	6400	32	117	149	SZ8066.2 **.095 x 032V**
							4000	6400	38	123	161	SZ8066.2 **.095 x 038V**
							4000	6400	50	135	185	SZ8066.2 **.095 x 050V**
							4000	6400	63	148	211	SZ8066.2 **.095 x 063V**
							4000	6400	80	175	255	SZ8066.2 **.095 x 080V**
							4000	6400	100	205	305	SZ8066.2 **.095 x 100V**
							4000	6400	125	240	365	SZ8066.2 **.095 x 125V**

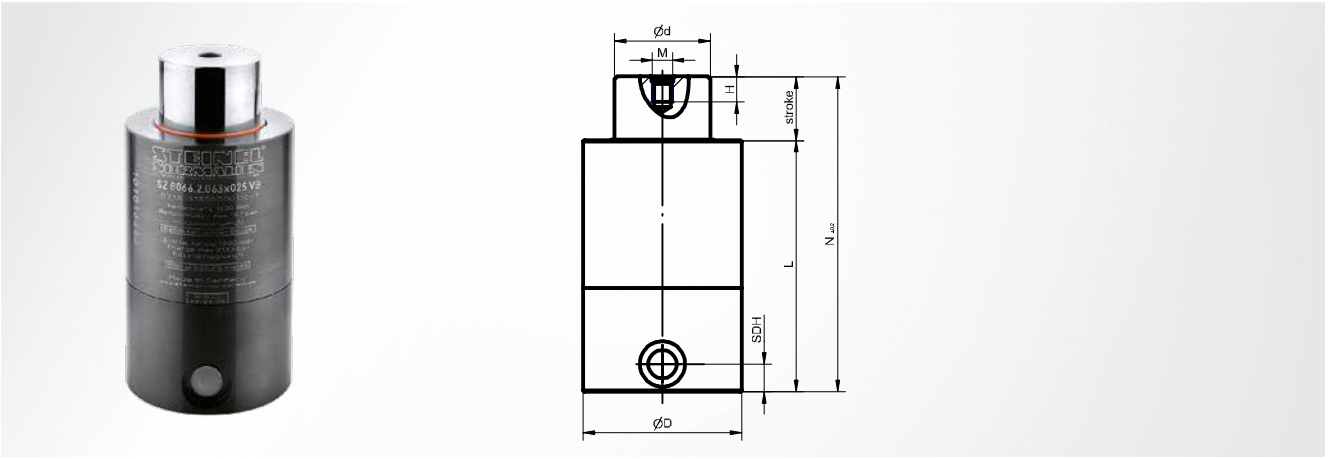
D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	

SZ8066.2.VB Connecting nitrogen cylinder

with burst protection



Base
Composite base; with burst protection

Burst protection
integrated

Filling
carried out via composite system

Delivery
will be supplied unfilled

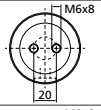
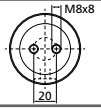
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

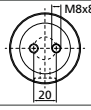
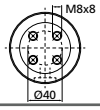
D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
38	22	G1/8	on the side	131			500	700	5	70	75	SZ8066.2 **.038 x 005VB**
38	22	G1/8	on the side	131	M6	6	500	770	10	75	85	SZ8066.2 **.038 x 010VB**
							500	800	15	80	95	SZ8066.2 **.038 x 015VB**
							500	800	19	84	103	SZ8066.2 **.038 x 019VB**
							500	800	25	90	115	SZ8066.2 **.038 x 025VB**
							500	800	32	97	129	SZ8066.2 **.038 x 032VB**
							500	800	38	103	141	SZ8066.2 **.038 x 038VB**
							500	800	50	115	165	SZ8066.2 **.038 x 050VB**
							500	800	63	128	191	SZ8066.2 **.038 x 063VB**
							500	800	80	145	225	SZ8066.2 **.038 x 080VB**
							500	800	100	165	265	SZ8066.2 **.038 x 100VB**
							500	800	125	190	315	SZ8066.2 **.038 x 125VB**
50	30	G1/8	on the side	141			1000	1420	5	75	80	SZ8066.2 **.050 x 005VB**
50	30	G1/8	on the side	141	M8	8	1000	1540	10	80	90	SZ8066.2 **.050 x 010VB**
							1000	1600	15	85	100	SZ8066.2 **.050 x 015VB**
							1000	1600	19	89	108	SZ8066.2 **.050 x 019VB**
							1000	1600	25	95	120	SZ8066.2 **.050 x 025VB**
							1000	1600	32	102	134	SZ8066.2 **.050 x 032VB**
							1000	1600	38	108	146	SZ8066.2 **.050 x 038VB**
							1000	1600	50	120	170	SZ8066.2 **.050 x 050VB**
							1000	1600	63	133	196	SZ8066.2 **.050 x 063VB**
							1000	1600	80	150	230	SZ8066.2 **.050 x 080VB**
							1000	1600	100	170	270	SZ8066.2 **.050 x 100VB**
							1000	1600	125	210	335	SZ8066.2 **.050 x 125VB**
63	38	G1/8	on the side	132			1500	2040	5	80	85	SZ8066.2 **.063 x 005VB**
63	38	G1/8	on the side	132	M8	8	1500	2310	10	85	95	SZ8066.2 **.063 x 010VB**
							1500	2400	15	90	105	SZ8066.2 **.063 x 015VB**
							1500	2400	19	94	113	SZ8066.2 **.063 x 019VB**
							1500	2400	25	100	125	SZ8066.2 **.063 x 025VB**
							1500	2400	32	107	139	SZ8066.2 **.063 x 032VB**
							1500	2400	38	113	151	SZ8066.2 **.063 x 038VB**
							1500	2400	50	125	175	SZ8066.2 **.063 x 050VB**
							1500	2400	63	138	201	SZ8066.2 **.063 x 063VB**

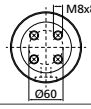
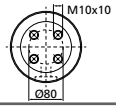
SZ8066.2.VB Connecting nitrogen cylinder

with burst protection

D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
63	38	G1/8	on the side	132	M8	8	1500	2400	80	155	235	SZ8066.2 **.063 x 080VB**
							1500	2400	100	180	280	SZ8066.2 **.063 x 100VB**
							1500	2400	125	210	335	SZ8066.2 **.063 x 125VB**
75	45	G1/8	on the side	157			2500	3375	5	80	85	SZ8066.2 **.075 x 005VB**
75	45	G1/8	on the side	157	M8	8	2500	3825	10	85	95	SZ8066.2 **.075 x 010VB**
							2500	4000	15	90	105	SZ8066.2 **.075 x 015VB**
							2500	4000	19	94	113	SZ8066.2 **.075 x 019VB**
							2500	4000	25	100	125	SZ8066.2 **.075 x 025VB**
							2500	4000	32	107	139	SZ8066.2 **.075 x 032VB**
							2500	4000	38	113	151	SZ8066.2 **.075 x 038VB**
							2500	4000	50	125	175	SZ8066.2 **.075 x 050VB**
							2500	4000	63	138	201	SZ8066.2 **.075 x 063VB**
							2500	4000	80	155	235	SZ8066.2 **.075 x 080VB**
							2500	4000	100	175	275	SZ8066.2 **.075 x 100VB**
							2500	4000	125	220	345	SZ8066.2 **.075 x 125VB**
95	55	G1/8	on the side	168			4000	5600	5	90	95	SZ8066.2 **.095 x 005VB**
95	55	G1/8	on the side	168	M8	8	4000	6240	10	95	105	SZ8066.2 **.095 x 010VB**
							4000	6400	15	100	115	SZ8066.2 **.095 x 015VB**
							4000	6400	19	104	123	SZ8066.2 **.095 x 019VB**
							4000	6400	25	110	135	SZ8066.2 **.095 x 025VB**
							4000	6400	32	117	149	SZ8066.2 **.095 x 032VB**
							4000	6400	38	123	161	SZ8066.2 **.095 x 038VB**
							4000	6400	50	135	185	SZ8066.2 **.095 x 050VB**
							4000	6400	63	148	211	SZ8066.2 **.095 x 063VB**
							4000	6400	80	175	255	SZ8066.2 **.095 x 080VB**
							4000	6400	100	205	305	SZ8066.2 **.095 x 100VB**
							4000	6400	125	240	365	SZ8066.2 **.095 x 125VB**
120	75	G1/8	on the side	147	M8	8	6500	10400	25	120	145	SZ8066.2 **.120 x 025VB**
							6500	10400	38	133	171	SZ8066.2 **.120 x 038VB**
							6500	10400	50	145	195	SZ8066.2 **.120 x 050VB**
							6500	10400	63	158	221	SZ8066.2 **.120 x 063VB**
							6500	10400	80	180	260	SZ8066.2 **.120 x 080VB**
							6500	10400	100	210	310	SZ8066.2 **.120 x 100VB**
							6500	10400	125	245	370	SZ8066.2 **.120 x 125VB**
							6500	10400	160	290	450	SZ8066.2 **.120 x 160VB**
							6500	10400	200	340	540	SZ8066.2 **.120 x 200VB**
							6500	10400	210	360	570	SZ8066.2 **.120 x 210VB**

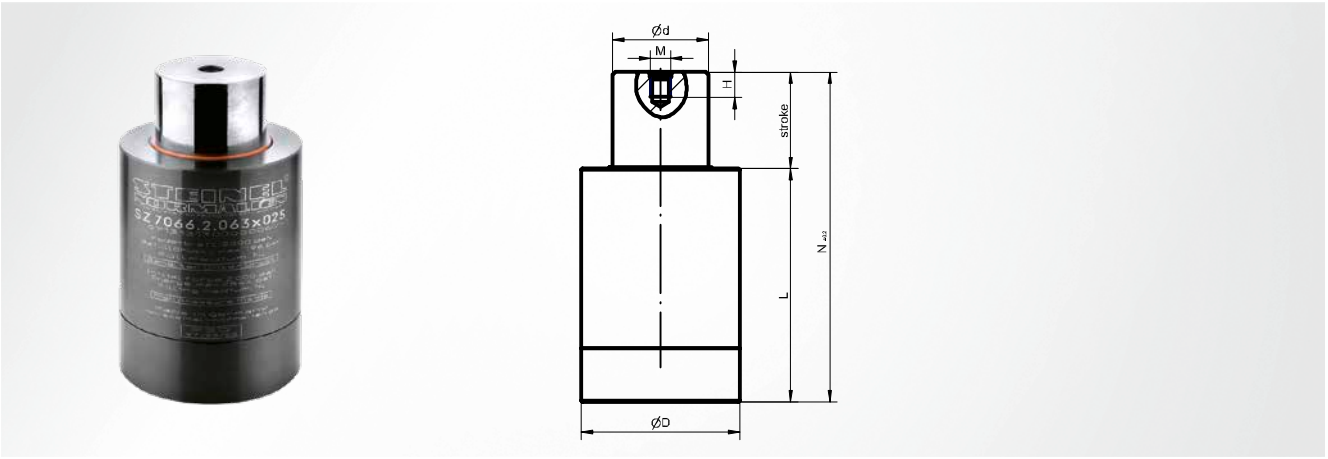
D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	
120	

SZ7066.2. Nitrogen cylinder

self-sufficient, version extra heavy



Base
Standard base

Filling
with standard nitrogen

Burst protection
not integrated

Delivery
will be supplied filled

D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
19	11	M8	centred	158	150	240			5	45	50	SZ7066.2 **.019 x 005**
					150	240			10	50	60	SZ7066.2 **.019 x 010**
					150	240			15	55	70	SZ7066.2 **.019 x 015**
					150	240			19	59	78	SZ7066.2 **.019 x 019**
					150	240			25	65	90	SZ7066.2 **.019 x 025**
					150	240			32	72	104	SZ7066.2 **.019 x 032**
					150	240			38	78	116	SZ7066.2 **.019 x 038**
					150	240			50	90	140	SZ7066.2 **.019 x 050**
					150	240			63	103	166	SZ7066.2 **.019 x 063**
					150	240			80	120	200	SZ7066.2 **.019 x 080**
					150	240			100	140	240	SZ7066.2 **.019 x 100**
					150	240			125	165	290	SZ7066.2 **.019 x 125**
25	14	M8	centred	195	300	480			5	45	50	SZ7066.2 **.025 x 005**
					300	480			10	50	60	SZ7066.2 **.025 x 010**
					300	480			15	55	70	SZ7066.2 **.025 x 015**
					300	480			19	59	78	SZ7066.2 **.025 x 019**
					300	480	M6	6	25	65	90	SZ7066.2 **.025 x 025**
					300	480	M6	6	32	72	104	SZ7066.2 **.025 x 032**
					300	480	M6	6	38	78	116	SZ7066.2 **.025 x 038**
					300	480	M6	6	50	90	140	SZ7066.2 **.025 x 050**
					300	480	M6	6	63	103	166	SZ7066.2 **.025 x 063**
					300	480	M6	6	80	120	200	SZ7066.2 **.025 x 080**
					300	480	M6	6	100	140	240	SZ7066.2 **.025 x 100**
					300	480	M6	6	125	165	290	SZ7066.2 **.025 x 125**
32	18	M8	centred	196	500	700			5	50	55	SZ7066.2 **.032 x 005**
					500	760	M6	6	10	55	65	SZ7066.2 **.032 x 010**
					500	800	M6	6	15	60	75	SZ7066.2 **.032 x 015**
					500	800	M6	6	19	64	83	SZ7066.2 **.032 x 019**
					500	800	M6	6	25	70	95	SZ7066.2 **.032 x 025**
					500	800	M6	6	32	77	109	SZ7066.2 **.032 x 032**
					500	800	M6	6	38	83	121	SZ7066.2 **.032 x 038**
					500	800	M6	6	50	95	145	SZ7066.2 **.032 x 050**
					500	800	M6	6	63	108	171	SZ7066.2 **.032 x 063**
					500	800	M6	6	80	125	205	SZ7066.2 **.032 x 080**
					500	800	M6	6	100	145	245	SZ7066.2 **.032 x 100**
					500	800	M6	6	125	170	295	SZ7066.2 **.032 x 125**
38	22	M8	centred	197	750	1050			5	50	55	SZ7066.2 **.038 x 005**

SZ7066.2. Nitrogen cylinder

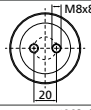
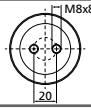
self-sufficient, version extra heavy

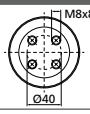
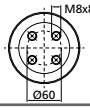
D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
38	22	M8	centred	197	750	1155	M6	6	10	55	65	SZ7066.2 **.038 x 010**
					750	1200	M6	6	15	60	75	SZ7066.2 **.038 x 015**
					750	1200	M6	6	19	64	83	SZ7066.2 **.038 x 019**
					750	1200	M6	6	25	70	95	SZ7066.2 **.038 x 025**
					750	1200	M6	6	32	77	109	SZ7066.2 **.038 x 032**
					750	1200	M6	6	38	83	121	SZ7066.2 **.038 x 038**
					750	1200	M6	6	50	95	145	SZ7066.2 **.038 x 050**
					750	1200	M6	6	63	108	171	SZ7066.2 **.038 x 063**
					750	1200	M6	6	80	125	205	SZ7066.2 **.038 x 080**
					750	1200	M6	6	100	145	245	SZ7066.2 **.038 x 100**
					750	1200	M6	6	125	170	295	SZ7066.2 **.038 x 125**
50	30	M10	centred	212	1500	2130			5	55	60	SZ7066.2 **.050 x 005**
					1500	2310	M8	8	10	60	70	SZ7066.2 **.050 x 010**
					1500	2400	M8	8	15	65	80	SZ7066.2 **.050 x 015**
					1500	2400	M8	8	19	69	88	SZ7066.2 **.050 x 019**
					1500	2400	M8	8	25	75	100	SZ7066.2 **.050 x 025**
					1500	2400	M8	8	32	82	114	SZ7066.2 **.050 x 032**
					1500	2400	M8	8	38	88	126	SZ7066.2 **.050 x 038**
					1500	2400	M8	8	50	100	150	SZ7066.2 **.050 x 050**
					1500	2400	M8	8	63	113	176	SZ7066.2 **.050 x 063**
					1500	2400	M8	8	80	130	210	SZ7066.2 **.050 x 080**
					1500	2400	M8	8	100	150	250	SZ7066.2 **.050 x 100**
					1500	2400	M8	8	125	190	315	SZ7066.2 **.050 x 125**
63	38	M10	centred	176	2000	2720			5	60	65	SZ7066.2 **.063 x 005**
					2000	3080	M8	8	10	65	75	SZ7066.2 **.063 x 010**
					2000	3200	M8	8	15	70	85	SZ7066.2 **.063 x 015**
					2000	3200	M8	8	19	74	93	SZ7066.2 **.063 x 019**
					2000	3200	M8	8	25	80	105	SZ7066.2 **.063 x 025**
					2000	3200	M8	8	32	87	119	SZ7066.2 **.063 x 032**
					2000	3200	M8	8	38	93	131	SZ7066.2 **.063 x 038**
					2000	3200	M8	8	50	105	155	SZ7066.2 **.063 x 050**
					2000	3200	M8	8	63	118	181	SZ7066.2 **.063 x 063**
					2000	3200	M8	8	80	135	215	SZ7066.2 **.063 x 080**
					2000	3200	M8	8	100	160	260	SZ7066.2 **.063 x 100**
					2000	3200	M8	8	125	190	315	SZ7066.2 **.063 x 125**
75	45	M12	centred	189	3000	4050			5	60	65	SZ7066.2 **.075 x 005**
					3000	4590	M8	8	10	65	75	SZ7066.2 **.075 x 010**
					3000	4800	M8	8	15	70	85	SZ7066.2 **.075 x 015**
					3000	4800	M8	8	19	74	93	SZ7066.2 **.075 x 019**
					3000	4800	M8	8	25	80	105	SZ7066.2 **.075 x 025**
					3000	4800	M8	8	32	87	119	SZ7066.2 **.075 x 032**
					3000	4800	M8	8	38	93	131	SZ7066.2 **.075 x 038**
					3000	4800	M8	8	50	105	155	SZ7066.2 **.075 x 050**
					3000	4800	M8	8	63	118	181	SZ7066.2 **.075 x 063**
					3000	4800	M8	8	80	135	215	SZ7066.2 **.075 x 080**
					3000	4800	M8	8	100	155	255	SZ7066.2 **.075 x 100**
					3000	4800	M8	8	125	200	325	SZ7066.2 **.075 x 125**
95	55	M12	centred	210	5000	7000			5	70	75	SZ7066.2 **.095 x 005**
					5000	7800	M8	8	10	75	85	SZ7066.2 **.095 x 010**
					5000	8000	M8	8	15	80	95	SZ7066.2 **.095 x 015**
					5000	8000	M8	8	19	84	103	SZ7066.2 **.095 x 019**
					5000	8000	M8	8	25	90	115	SZ7066.2 **.095 x 025**
					5000	8000	M8	8	32	97	129	SZ7066.2 **.095 x 032**
					5000	8000	M8	8	38	103	141	SZ7066.2 **.095 x 038**
					5000	8000	M8	8	50	115	165	SZ7066.2 **.095 x 050**
					5000	8000	M8	8	63	128	191	SZ7066.2 **.095 x 063**
					5000	8000	M8	8	80	155	235	SZ7066.2 **.095 x 080**
					5000	8000	M8	8	100	185	285	SZ7066.2 **.095 x 100**
					5000	8000	M8	8	125	220	345	SZ7066.2 **.095 x 125**

SZ7066.2. Nitrogen cylinder

self-sufficient, version extra heavy

D	Cylinder mounting
19	
25	
32	

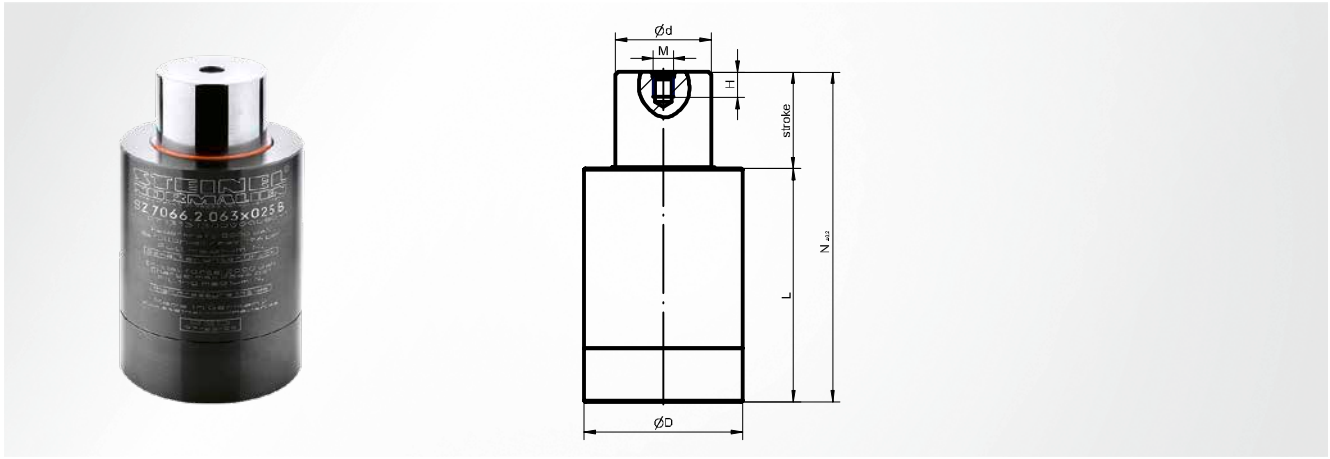
D	Cylinder mounting
38	
50	
63	

D	Cylinder mounting
75	
95	

from D 38, the medium thread is only used for filling

SZ7066.2.B Nitrogen cylinder

self-sufficient, version extra heavy, with burst protection



Base
Standard base; with burst protection

Filling
with standard nitrogen

Burst protection
integrated

Delivery
will be supplied filled

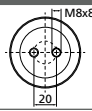
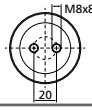
D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
32	18	M8	centred	196	M6	6	500	700	5	50	55	SZ7066.2 **.032 x 005B**
							500	760	10	55	65	SZ7066.2 **.032 x 010B**
							500	800	15	60	75	SZ7066.2 **.032 x 015B**
							500	800	19	64	83	SZ7066.2 **.032 x 019B**
							500	800	25	70	95	SZ7066.2 **.032 x 025B**
							500	800	32	77	109	SZ7066.2 **.032 x 032B**
							500	800	38	83	121	SZ7066.2 **.032 x 038B**
							500	800	50	95	145	SZ7066.2 **.032 x 050B**
							500	800	63	108	171	SZ7066.2 **.032 x 063B**
							500	800	80	125	205	SZ7066.2 **.032 x 080B**
							500	800	100	145	245	SZ7066.2 **.032 x 100B**
							500	800	125	170	295	SZ7066.2 **.032 x 125B**
38	22	M8	centred	197	M6	6	750	1050	5	50	55	SZ7066.2 **.038 x 005B**
							750	1155	10	55	65	SZ7066.2 **.038 x 010B**
							750	1200	15	60	75	SZ7066.2 **.038 x 015B**
							750	1200	19	64	83	SZ7066.2 **.038 x 019B**
							750	1200	25	70	95	SZ7066.2 **.038 x 025B**
							750	1200	32	77	109	SZ7066.2 **.038 x 032B**
							750	1200	38	83	121	SZ7066.2 **.038 x 038B**
							750	1200	50	95	145	SZ7066.2 **.038 x 050B**
							750	1200	63	108	171	SZ7066.2 **.038 x 063B**
							750	1200	80	125	205	SZ7066.2 **.038 x 080B**
							750	1200	100	145	245	SZ7066.2 **.038 x 100B**
							750	1200	125	170	295	SZ7066.2 **.038 x 125B**
50	30	M10	centred	212	M8	8	1500	2130	5	55	60	SZ7066.2 **.050 x 005B**
							1500	2310	10	60	70	SZ7066.2 **.050 x 010B**
							1500	2400	15	65	80	SZ7066.2 **.050 x 015B**
							1500	2400	19	69	88	SZ7066.2 **.050 x 019B**
							1500	2400	25	75	100	SZ7066.2 **.050 x 025B**
							1500	2400	32	82	114	SZ7066.2 **.050 x 032B**
							1500	2400	38	88	126	SZ7066.2 **.050 x 038B**
							1500	2400	50	100	150	SZ7066.2 **.050 x 050B**
							1500	2400	63	113	176	SZ7066.2 **.050 x 063B**
							1500	2400	80	130	210	SZ7066.2 **.050 x 080B**
							1500	2400	100	150	250	SZ7066.2 **.050 x 100B**
							1500	2400	125	190	315	SZ7066.2 **.050 x 125B**
63	38	M10	centred	176	M8	8	2000	2720	5	60	65	SZ7066.2 **.063 x 005B**

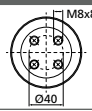
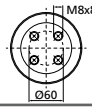
SZ7066.2.B Nitrogen cylinder

self-sufficient, version extra heavy, with burst protection

D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
63	38	M10	centred	176	M8	8	2000	3080	10	65	75	SZ7066.2 **.063 x 010B**
							2000	3200	15	70	85	SZ7066.2 **.063 x 015B**
							2000	3200	19	74	93	SZ7066.2 **.063 x 019B**
							2000	3200	25	80	105	SZ7066.2 **.063 x 025B**
							2000	3200	32	87	119	SZ7066.2 **.063 x 032B**
							2000	3200	38	93	131	SZ7066.2 **.063 x 038B**
							2000	3200	50	105	155	SZ7066.2 **.063 x 050B**
							2000	3200	63	118	181	SZ7066.2 **.063 x 063B**
							2000	3200	80	135	215	SZ7066.2 **.063 x 080B**
							2000	3200	100	160	260	SZ7066.2 **.063 x 100B**
							2000	3200	125	190	315	SZ7066.2 **.063 x 125B**
75	45	M12	centred	189	M8	8	3000	4050	5	60	65	SZ7066.2 **.075 x 005B**
							3000	4590	10	65	75	SZ7066.2 **.075 x 010B**
							3000	4800	15	70	85	SZ7066.2 **.075 x 015B**
							3000	4800	19	74	93	SZ7066.2 **.075 x 019B**
							3000	4800	25	80	105	SZ7066.2 **.075 x 025B**
							3000	4800	32	87	119	SZ7066.2 **.075 x 032B**
							3000	4800	38	93	131	SZ7066.2 **.075 x 038B**
							3000	4800	50	105	155	SZ7066.2 **.075 x 050B**
							3000	4800	63	118	181	SZ7066.2 **.075 x 063B**
							3000	4800	80	135	215	SZ7066.2 **.075 x 080B**
							3000	4800	100	155	255	SZ7066.2 **.075 x 100B**
							3000	4800	125	200	325	SZ7066.2 **.075 x 125B**
95	55	M12	centred	210	M8	8	5000	7000	5	70	75	SZ7066.2 **.095 x 005B**
							5000	7800	10	75	85	SZ7066.2 **.095 x 010B**
							5000	8000	15	80	95	SZ7066.2 **.095 x 015B**
							5000	8000	19	84	103	SZ7066.2 **.095 x 019B**
							5000	8000	25	90	115	SZ7066.2 **.095 x 025B**
							5000	8000	32	97	129	SZ7066.2 **.095 x 032B**
							5000	8000	38	103	141	SZ7066.2 **.095 x 038B**
							5000	8000	50	115	165	SZ7066.2 **.095 x 050B**
							5000	8000	63	128	191	SZ7066.2 **.095 x 063B**
							5000	8000	80	155	235	SZ7066.2 **.095 x 080B**
							5000	8000	100	185	285	SZ7066.2 **.095 x 100B**
							5000	8000	125	220	345	SZ7066.2 **.095 x 125B**

D	Cylinder mounting
32	
38	

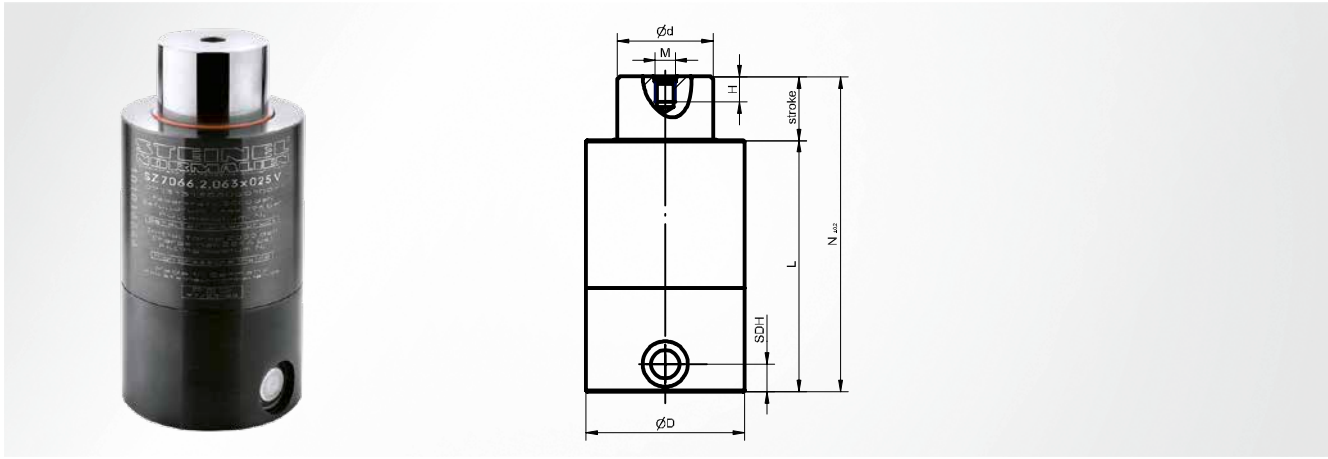
D	Cylinder mounting
50	
63	

D	Cylinder mounting
75	
95	

from D 38, the medium thread is only used for filling

SZ7066.2.V Connecting nitrogen cylinder

version extra heavy



Base
Composite base

Burst protection
not integrated

Filling
carried out via composite system

Delivery
will be supplied filled

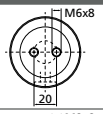
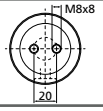
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

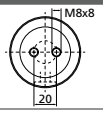
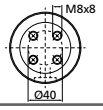
D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
38	22	G1/8	on the side	197	M6	6	750	1050	5	70	75	SZ7066.2 **.038 x 005V**
							750	1155	10	75	85	SZ7066.2 **.038 x 010V**
							750	1200	15	80	95	SZ7066.2 **.038 x 015V**
							750	1200	19	84	103	SZ7066.2 **.038 x 019V**
							750	1200	25	90	115	SZ7066.2 **.038 x 025V**
							750	1200	32	97	129	SZ7066.2 **.038 x 032V**
							750	1200	38	103	141	SZ7066.2 **.038 x 038V**
							750	1200	50	115	165	SZ7066.2 **.038 x 050V**
							750	1200	63	128	191	SZ7066.2 **.038 x 063V**
							750	1200	80	145	225	SZ7066.2 **.038 x 080V**
							750	1200	100	165	265	SZ7066.2 **.038 x 100V**
							750	1200	125	190	315	SZ7066.2 **.038 x 125V**
50	30	G1/8	on the side	212	M8	8	1500	2130	5	75	80	SZ7066.2 **.050 x 005V**
							1500	2310	10	80	90	SZ7066.2 **.050 x 010V**
							1500	2400	15	85	100	SZ7066.2 **.050 x 015V**
							1500	2400	19	89	108	SZ7066.2 **.050 x 019V**
							1500	2400	25	95	120	SZ7066.2 **.050 x 025V**
							1500	2400	32	102	134	SZ7066.2 **.050 x 032V**
							1500	2400	38	108	146	SZ7066.2 **.050 x 038V**
							1500	2400	50	120	170	SZ7066.2 **.050 x 050V**
							1500	2400	63	133	196	SZ7066.2 **.050 x 063V**
							1500	2400	80	150	230	SZ7066.2 **.050 x 080V**
							1500	2400	100	170	270	SZ7066.2 **.050 x 100V**
							1500	2400	125	210	335	SZ7066.2 **.050 x 125V**
63	38	G1/8	on the side	176	M8	8	2000	2720	5	80	85	SZ7066.2 **.063 x 005V**
							2000	3080	10	85	95	SZ7066.2 **.063 x 010V**
							2000	3200	15	90	105	SZ7066.2 **.063 x 015V**
							2000	3200	19	94	113	SZ7066.2 **.063 x 019V**
							2000	3200	25	100	125	SZ7066.2 **.063 x 025V**
							2000	3200	32	107	139	SZ7066.2 **.063 x 032V**
							2000	3200	38	113	151	SZ7066.2 **.063 x 038V**
							2000	3200	50	125	175	SZ7066.2 **.063 x 050V**
							2000	3200	63	138	201	SZ7066.2 **.063 x 063V**

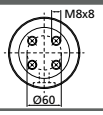
SZ7066.2.V Connecting nitrogen cylinder

version extra heavy

D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
63	38	G1/8	on the side	176	M8	8	2000	3200	80	155	235	SZ7066.2 **.063 x 080V**
							2000	3200	100	180	280	SZ7066.2 **.063 x 100V**
							2000	3200	125	210	335	SZ7066.2 **.063 x 125V**
75	45	G1/8	on the side	189	M8	8	3000	4050	5	80	85	SZ7066.2 **.075 x 005V**
							3000	4590	10	85	95	SZ7066.2 **.075 x 010V**
							3000	4800	15	90	105	SZ7066.2 **.075 x 015V**
							3000	4800	19	94	113	SZ7066.2 **.075 x 019V**
							3000	4800	25	100	125	SZ7066.2 **.075 x 025V**
							3000	4800	32	107	139	SZ7066.2 **.075 x 032V**
							3000	4800	38	113	151	SZ7066.2 **.075 x 038V**
							3000	4800	50	125	175	SZ7066.2 **.075 x 050V**
							3000	4800	63	138	201	SZ7066.2 **.075 x 063V**
							3000	4800	80	155	235	SZ7066.2 **.075 x 080V**
							3000	4800	100	175	275	SZ7066.2 **.075 x 100V**
							3000	4800	125	220	345	SZ7066.2 **.075 x 125V**
95	55	G1/8	on the side	210	M8	8	5000	7000	5	90	95	SZ7066.2 **.095 x 005V**
							5000	7800	10	95	105	SZ7066.2 **.095 x 010V**
							5000	8000	15	100	115	SZ7066.2 **.095 x 015V**
							5000	8000	19	104	123	SZ7066.2 **.095 x 019V**
							5000	8000	25	110	135	SZ7066.2 **.095 x 025V**
							5000	8000	32	117	149	SZ7066.2 **.095 x 032V**
							5000	8000	38	123	161	SZ7066.2 **.095 x 038V**
							5000	8000	50	135	185	SZ7066.2 **.095 x 050V**
							5000	8000	63	148	211	SZ7066.2 **.095 x 063V**
							5000	8000	80	175	255	SZ7066.2 **.095 x 080V**
							5000	8000	100	205	305	SZ7066.2 **.095 x 100V**
							5000	8000	125	240	365	SZ7066.2 **.095 x 125V**

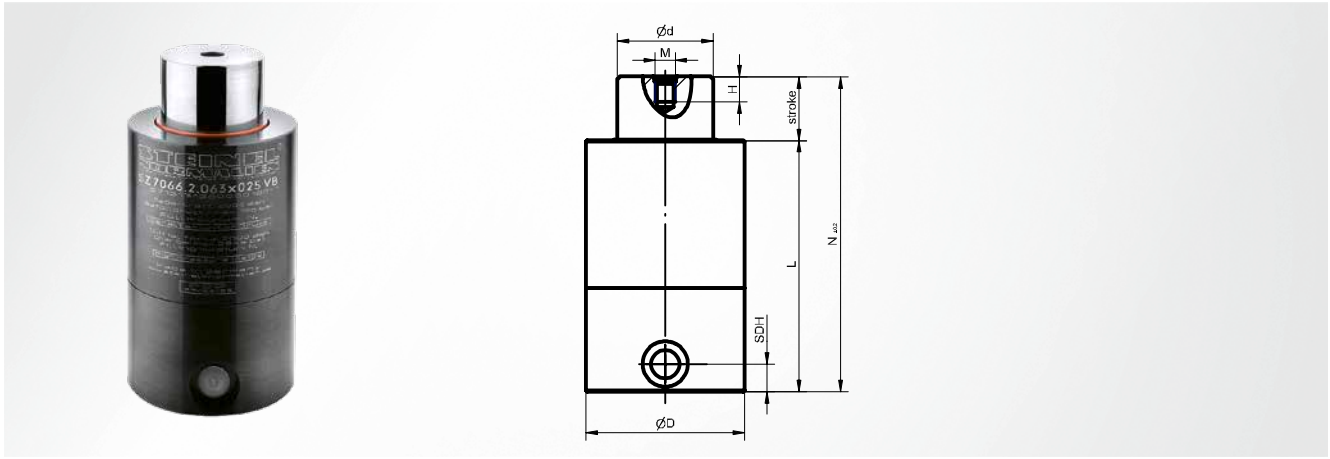
D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	

SZ7066.2.VB Connecting nitrogen cylinder

version extra heavy, with burst protection



Base
Composite base; with burst protection

Burst protection
integrated

Filling
carried out via composite system

Delivery
will be supplied unfilled

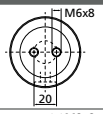
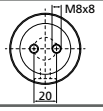
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

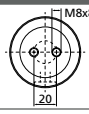
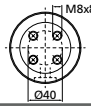
D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
38	22	G1/8	on the side	197	M6	6	750	1050	5	70	75	SZ7066.2 **.038 x 005VB**
							750	1155	10	75	85	SZ7066.2 **.038 x 010VB**
							750	1200	15	80	95	SZ7066.2 **.038 x 015VB**
							750	1200	19	84	103	SZ7066.2 **.038 x 019VB**
							750	1200	25	90	115	SZ7066.2 **.038 x 025VB**
							750	1200	32	97	129	SZ7066.2 **.038 x 032VB**
							750	1200	38	103	141	SZ7066.2 **.038 x 038VB**
							750	1200	50	115	165	SZ7066.2 **.038 x 050VB**
							750	1200	63	128	191	SZ7066.2 **.038 x 063VB**
							750	1200	80	145	225	SZ7066.2 **.038 x 080VB**
							750	1200	100	165	265	SZ7066.2 **.038 x 100VB**
							750	1200	125	190	315	SZ7066.2 **.038 x 125VB**
50	30	G1/8	on the side	212	M8	8	1500	2130	5	75	80	SZ7066.2 **.050 x 005VB**
							1500	2310	10	80	90	SZ7066.2 **.050 x 010VB**
							1500	2400	15	85	100	SZ7066.2 **.050 x 015VB**
							1500	2400	19	89	108	SZ7066.2 **.050 x 019VB**
							1500	2400	25	95	120	SZ7066.2 **.050 x 025VB**
							1500	2400	32	102	134	SZ7066.2 **.050 x 032VB**
							1500	2400	38	108	146	SZ7066.2 **.050 x 038VB**
							1500	2400	50	120	170	SZ7066.2 **.050 x 050VB**
							1500	2400	63	133	196	SZ7066.2 **.050 x 063VB**
							1500	2400	80	150	230	SZ7066.2 **.050 x 080VB**
							1500	2400	100	170	270	SZ7066.2 **.050 x 100VB**
							1500	2400	125	210	335	SZ7066.2 **.050 x 125VB**
63	38	G1/8	on the side	176	M8	8	2000	2720	5	80	85	SZ7066.2 **.063 x 005VB**
							2000	3080	10	85	95	SZ7066.2 **.063 x 010VB**
							2000	3200	15	90	105	SZ7066.2 **.063 x 015VB**
							2000	3200	19	94	113	SZ7066.2 **.063 x 019VB**
							2000	3200	25	100	125	SZ7066.2 **.063 x 025VB**
							2000	3200	32	107	139	SZ7066.2 **.063 x 032VB**
							2000	3200	38	113	151	SZ7066.2 **.063 x 038VB**
							2000	3200	50	125	175	SZ7066.2 **.063 x 050VB**
							2000	3200	63	138	201	SZ7066.2 **.063 x 063VB**

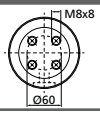
SZ7066.2.VB Connecting nitrogen cylinder

version extra heavy, with burst protection

D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
63	38	G1/8	on the side	176	M8	8	2000	3200	80	155	235	SZ7066.2 **.063 x 080VB**
							2000	3200	100	180	280	SZ7066.2 **.063 x 100VB**
							2000	3200	125	210	335	SZ7066.2 **.063 x 125VB**
75	45	G1/8	on the side	189	M8	8	3000	4050	5	80	85	SZ7066.2 **.075 x 005VB**
							3000	4590	10	85	95	SZ7066.2 **.075 x 010VB**
							3000	4800	15	90	105	SZ7066.2 **.075 x 015VB**
							3000	4800	19	94	113	SZ7066.2 **.075 x 019VB**
							3000	4800	25	100	125	SZ7066.2 **.075 x 025VB**
							3000	4800	32	107	139	SZ7066.2 **.075 x 032VB**
							3000	4800	38	113	151	SZ7066.2 **.075 x 038VB**
							3000	4800	50	125	175	SZ7066.2 **.075 x 050VB**
							3000	4800	63	138	201	SZ7066.2 **.075 x 063VB**
							3000	4800	80	155	235	SZ7066.2 **.075 x 080VB**
							3000	4800	100	175	275	SZ7066.2 **.075 x 100VB**
							3000	4800	125	220	345	SZ7066.2 **.075 x 125VB**
95	55	G1/8	on the side	210	M8	8	5000	7000	5	90	95	SZ7066.2 **.095 x 005VB**
							5000	7800	10	95	105	SZ7066.2 **.095 x 010VB**
							5000	8000	15	100	115	SZ7066.2 **.095 x 015VB**
							5000	8000	19	104	123	SZ7066.2 **.095 x 019VB**
							5000	8000	25	110	135	SZ7066.2 **.095 x 025VB**
							5000	8000	32	117	149	SZ7066.2 **.095 x 032VB**
							5000	8000	38	123	161	SZ7066.2 **.095 x 038VB**
							5000	8000	50	135	185	SZ7066.2 **.095 x 050VB**
							5000	8000	63	148	211	SZ7066.2 **.095 x 063VB**
							5000	8000	80	175	255	SZ7066.2 **.095 x 080VB**
							5000	8000	100	205	305	SZ7066.2 **.095 x 100VB**
							5000	8000	125	240	365	SZ7066.2 **.095 x 125VB**

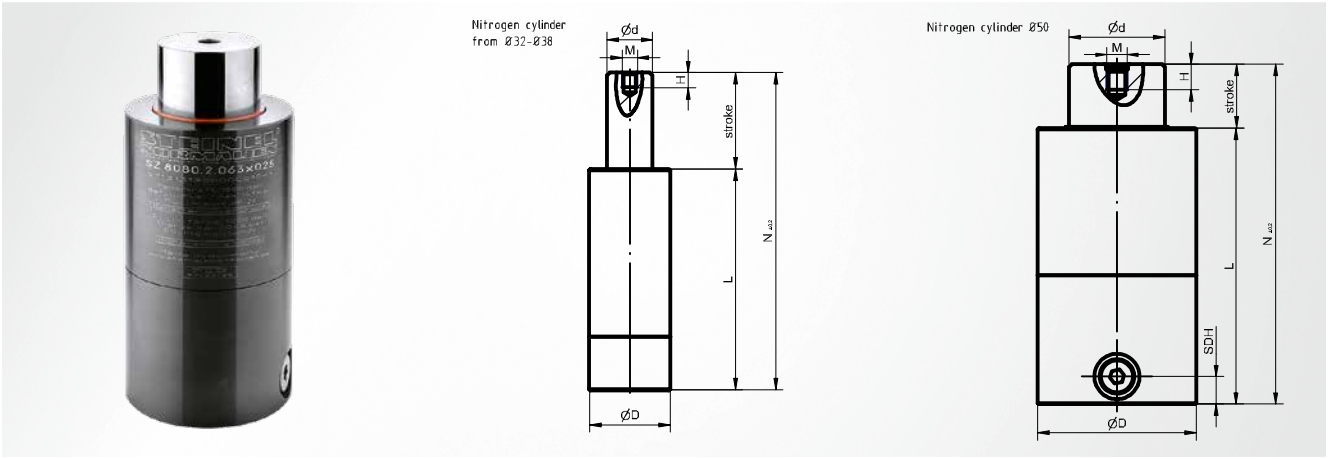
D	Cylinder mounting
38	
50	

D	Cylinder mounting
63	
75	

D	Cylinder mounting
95	

SZ8080.2. Nitrogen cylinder

self-sufficient, standard design



Base
Standard base

Delivery
will be supplied filled

Burst protection
not integrated

Installation instruction
SDH = the height of the lateral connection is 11 mm

Filling
with standard nitrogen

D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
19	11	M8	centred	105	100	160			5	65	70	SZ8080.2 **.019 x 005**
					100	160			10	70	80	SZ8080.2 **.019 x 010**
					100	160			15	75	90	SZ8080.2 **.019 x 015**
					100	160			19	79	98	SZ8080.2 **.019 x 019**
					100	160			25	85	110	SZ8080.2 **.019 x 025**
					100	160			32	92	124	SZ8080.2 **.019 x 032**
					100	160			38	98	136	SZ8080.2 **.019 x 038**
					100	160			50	110	160	SZ8080.2 **.019 x 050**
					100	160			63	123	186	SZ8080.2 **.019 x 063**
					100	160			80	140	220	SZ8080.2 **.019 x 080**
					100	160			100	160	260	SZ8080.2 **.019 x 100**
					100	160			125	185	310	SZ8080.2 **.019 x 125**
25	14	M8	centred	129	200	320			5	65	70	SZ8080.2 **.025 x 005**
					200	320			10	70	80	SZ8080.2 **.025 x 010**
					200	320			15	75	90	SZ8080.2 **.025 x 015**
					200	320			19	79	98	SZ8080.2 **.025 x 019**
					200	320	M6	6	25	85	110	SZ8080.2 **.025 x 025**
					200	320	M6	6	32	92	124	SZ8080.2 **.025 x 032**
					200	320	M6	6	38	98	136	SZ8080.2 **.025 x 038**
					200	320	M6	6	50	110	160	SZ8080.2 **.025 x 050**
					200	320	M6	6	63	123	186	SZ8080.2 **.025 x 063**
					200	320	M6	6	80	140	220	SZ8080.2 **.025 x 080**
					200	320	M6	6	100	160	260	SZ8080.2 **.025 x 100**
					200	320	M6	6	125	185	310	SZ8080.2 **.025 x 125**
32	18	M8	centred	137	350	490			5	55	60	SZ8080.2 **.032 x 005**
					350	532	M6	6	10	60	70	SZ8080.2 **.032 x 010**
					350	560	M6	6	15	65	80	SZ8080.2 **.032 x 015**
					350	560	M6	6	19	69	88	SZ8080.2 **.032 x 019**
					350	560	M6	6	25	75	100	SZ8080.2 **.032 x 025**
					350	560	M6	6	32	82	114	SZ8080.2 **.032 x 032**
					350	560	M6	6	38	88	126	SZ8080.2 **.032 x 038**
					350	560	M6	6	50	100	150	SZ8080.2 **.032 x 050**
					350	560	M6	6	63	113	176	SZ8080.2 **.032 x 063**
					350	560	M6	6	80	130	210	SZ8080.2 **.032 x 080**

SZ8080.2. Nitrogen cylinder

self-sufficient, standard design

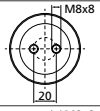
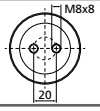
D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
32	18	M8	centred	137	350	560	M6	6	100	150	250	SZ8080.2 **.032 x 100**
					350	560	M6	6	125	175	300	SZ8080.2 **.032 x 125**
38	22	M8	centred	131	500	700			5	60	65	SZ8080.2 **.038 x 005**
					500	770	M6	6	10	65	75	SZ8080.2 **.038 x 010**
					500	800	M6	6	15	70	85	SZ8080.2 **.038 x 015**
					500	800	M6	6	19	74	93	SZ8080.2 **.038 x 019**
					500	800	M6	6	25	80	105	SZ8080.2 **.038 x 025**
					500	800	M6	6	32	87	119	SZ8080.2 **.038 x 032**
					500	800	M6	6	38	93	131	SZ8080.2 **.038 x 038**
					500	800	M6	6	50	105	155	SZ8080.2 **.038 x 050**
					500	800	M6	6	63	118	181	SZ8080.2 **.038 x 063**
					500	800	M6	6	80	140	220	SZ8080.2 **.038 x 080**
					500	800	M6	6	100	155	255	SZ8080.2 **.038 x 100**
					500	800	M6	6	125	180	305	SZ8080.2 **.038 x 125**
50	30	G1/8	on the side	141	1000	1420			5	90	95	SZ8080.2 **.050 x 005**
					1000	1540	M8	8	10	95	105	SZ8080.2 **.050 x 010**
					1000	1600	M8	8	15	100	115	SZ8080.2 **.050 x 015**
					1000	1600	M8	8	19	104	123	SZ8080.2 **.050 x 019**
					1000	1600	M8	8	25	110	135	SZ8080.2 **.050 x 025**
					1000	1600	M8	8	32	117	149	SZ8080.2 **.050 x 032**
					1000	1600	M8	8	38	123	161	SZ8080.2 **.050 x 038**
					1000	1600	M8	8	50	135	185	SZ8080.2 **.050 x 050**
					1000	1600	M8	8	63	148	211	SZ8080.2 **.050 x 063**
					1000	1600	M8	8	80	165	245	SZ8080.2 **.050 x 080**
					1000	1600	M8	8	100	195	295	SZ8080.2 **.050 x 100**
					1000	1600	M8	8	125	220	345	SZ8080.2 **.050 x 125**
63	38	G1/8	on the side	132	1500	2040			5	90	95	SZ8080.2 **.063 x 005**
					1500	2310	M8	8	10	95	105	SZ8080.2 **.063 x 010**
					1500	2400	M8	8	15	100	115	SZ8080.2 **.063 x 015**
					1500	2400	M8	8	19	104	123	SZ8080.2 **.063 x 019**
					1500	2400	M8	8	25	110	135	SZ8080.2 **.063 x 025**
					1500	2400	M8	8	32	117	149	SZ8080.2 **.063 x 032**
					1500	2400	M8	8	38	123	161	SZ8080.2 **.063 x 038**
					1500	2400	M8	8	50	135	185	SZ8080.2 **.063 x 050**
					1500	2400	M8	8	63	148	211	SZ8080.2 **.063 x 063**
					1500	2400	M8	8	80	165	245	SZ8080.2 **.063 x 080**
					1500	2400	M8	8	100	185	285	SZ8080.2 **.063 x 100**
					1500	2400	M8	8	125	220	345	SZ8080.2 **.063 x 125**
75	45	G1/8	on the side	157	2500	3375			5	100	105	SZ8080.2 **.075 x 005**
					2500	3825	M8	8	10	105	115	SZ8080.2 **.075 x 010**
					2500	4000	M8	8	15	110	125	SZ8080.2 **.075 x 015**
					2500	4000	M8	8	19	114	133	SZ8080.2 **.075 x 019**
					2500	4000	M8	8	25	120	145	SZ8080.2 **.075 x 025**
					2500	4000	M8	8	32	127	159	SZ8080.2 **.075 x 032**
					2500	4000	M8	8	38	133	171	SZ8080.2 **.075 x 038**
					2500	4000	M8	8	50	145	195	SZ8080.2 **.075 x 050**
					2500	4000	M8	8	63	158	221	SZ8080.2 **.075 x 063**
					2500	4000	M8	8	80	175	255	SZ8080.2 **.075 x 080**
					2500	4000	M8	8	100	200	300	SZ8080.2 **.075 x 100**
					2500	4000	M8	8	125	225	350	SZ8080.2 **.075 x 125**
95	55	G1/8	on the side	168	4000	5600			5	110	115	SZ8080.2 **.095 x 005**
					4000	6240	M8	8	10	115	125	SZ8080.2 **.095 x 010**
					4000	6400	M8	8	15	120	135	SZ8080.2 **.095 x 015**
					4000	6400	M8	8	19	124	143	SZ8080.2 **.095 x 019**
					4000	6400	M8	8	25	130	155	SZ8080.2 **.095 x 025**
					4000	6400	M8	8	32	137	169	SZ8080.2 **.095 x 032**
					4000	6400	M8	8	38	142	180	SZ8080.2 **.095 x 038**
					4000	6400	M8	8	50	155	205	SZ8080.2 **.095 x 050**
					4000	6400	M8	8	63	168	231	SZ8080.2 **.095 x 063**
					4000	6400	M8	8	80	190	270	SZ8080.2 **.095 x 080**

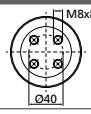
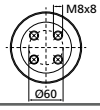
SZ8080.2. Nitrogen cylinder

self-sufficient, standard design

D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
95	55	G1/8	on the side	168	4000	6400	M8	8	100	210	310	SZ8080.2 **.095 x 100**
					4000	6400	M8	8	125	245	370	SZ8080.2 **.095 x 125**

D	Cylinder mounting
19	
25	
32	

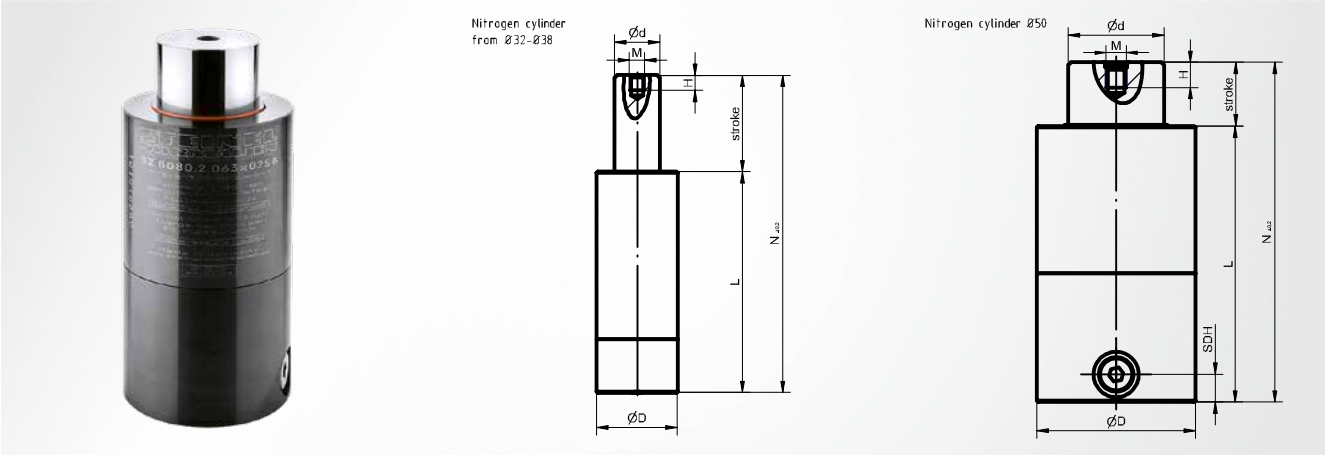
D	Cylinder mounting
38	
50	
63	

D	Cylinder mounting
75	
95	

for D 38, the medium thread is only used for filling

SZ8080.2.B Nitrogen cylinder

self-sufficient, with burst protection



Base
Standard base; with burst protection

Burst protection
integrated

Filling
with standard nitrogen

Delivery
will be supplied filled

Installation instruction
SDH = the height of the lateral connection is 11 mm

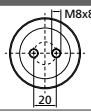
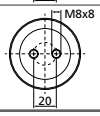
D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
32	18	M8	centred	137			350	490	5	55	60	SZ8080.2 **.032 x 005B**
32	18	M8	centred	137	M6	6	350	532	10	60	70	SZ8080.2 **.032 x 010B**
							350	560	15	65	80	SZ8080.2 **.032 x 015B**
							350	560	19	69	88	SZ8080.2 **.032 x 019B**
							350	560	25	75	100	SZ8080.2 **.032 x 025B**
							350	560	32	82	114	SZ8080.2 **.032 x 032B**
							350	560	38	88	126	SZ8080.2 **.032 x 038B**
							350	560	50	100	150	SZ8080.2 **.032 x 050B**
							350	560	63	113	176	SZ8080.2 **.032 x 063B**
							350	560	80	130	210	SZ8080.2 **.032 x 080B**
							350	560	100	150	250	SZ8080.2 **.032 x 100B**
							350	560	125	175	300	SZ8080.2 **.032 x 125B**
38	22	M8	centred	131			500	700	5	60	65	SZ8080.2 **.038 x 005B**
38	22	M8	centred	131	M6	6	500	770	10	65	75	SZ8080.2 **.038 x 010B**
							500	800	15	70	85	SZ8080.2 **.038 x 015B**
							500	800	19	74	93	SZ8080.2 **.038 x 019B**
							500	800	25	80	105	SZ8080.2 **.038 x 025B**
							500	800	32	87	119	SZ8080.2 **.038 x 032B**
							500	800	38	93	131	SZ8080.2 **.038 x 038B**
							500	800	50	105	155	SZ8080.2 **.038 x 050B**
							500	800	63	118	181	SZ8080.2 **.038 x 063B**
							500	800	80	140	220	SZ8080.2 **.038 x 080B**
							500	800	100	155	255	SZ8080.2 **.038 x 100B**
							500	800	125	180	305	SZ8080.2 **.038 x 125B**
50	30	G1/8	on the side	141			1000	1420	5	90	95	SZ8080.2 **.050 x 005B**
50	30	G1/8	on the side	141	M8	8	1000	1540	10	95	105	SZ8080.2 **.050 x 010B**
							1000	1600	15	100	115	SZ8080.2 **.050 x 015B**
							1000	1600	19	104	123	SZ8080.2 **.050 x 019B**
							1000	1600	25	110	135	SZ8080.2 **.050 x 025B**
							1000	1600	32	117	149	SZ8080.2 **.050 x 032B**
							1000	1600	38	123	161	SZ8080.2 **.050 x 038B**
							1000	1600	50	135	185	SZ8080.2 **.050 x 050B**
							1000	1600	63	148	211	SZ8080.2 **.050 x 063B**
							1000	1600	80	165	245	SZ8080.2 **.050 x 080B**

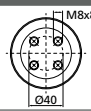
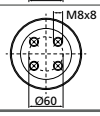
SZ8080.2.B Nitrogen cylinder

self-sufficient, with burst protection

D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
50	30	G1/8	on the side	141	M8	8	1000	1600	100	195	295	SZ8080.2 **.050 x 100B**
							1000	1600	125	220	345	SZ8080.2 **.050 x 125B**
63	38	G1/8	on the side	132			1500	2040	5	90	95	SZ8080.2 **.063 x 005B**
63	38	G1/8	on the side	132	M8	8	1500	2310	10	95	105	SZ8080.2 **.063 x 010B**
							1500	2400	15	100	115	SZ8080.2 **.063 x 015B**
							1500	2400	19	104	123	SZ8080.2 **.063 x 019B**
							1500	2400	25	110	135	SZ8080.2 **.063 x 025B**
							1500	2400	32	117	149	SZ8080.2 **.063 x 032B**
							1500	2400	38	123	161	SZ8080.2 **.063 x 038B**
							1500	2400	50	135	185	SZ8080.2 **.063 x 050B**
							1500	2400	63	148	211	SZ8080.2 **.063 x 063B**
							1500	2400	80	165	245	SZ8080.2 **.063 x 080B**
							1500	2400	100	185	285	SZ8080.2 **.063 x 100B**
							1500	2400	125	220	345	SZ8080.2 **.063 x 125B**
75	45	G1/8	on the side	157			2500	3375	5	100	105	SZ8080.2 **.075 x 005B**
75	45	G1/8	on the side	157	M8	8	2500	3825	10	105	115	SZ8080.2 **.075 x 010B**
							2500	4000	15	110	125	SZ8080.2 **.075 x 015B**
							2500	4000	19	114	133	SZ8080.2 **.075 x 019B**
							2500	4000	25	120	145	SZ8080.2 **.075 x 025B**
							2500	4000	32	127	159	SZ8080.2 **.075 x 032B**
							2500	4000	38	133	171	SZ8080.2 **.075 x 038B**
							2500	4000	50	145	195	SZ8080.2 **.075 x 050B**
							2500	4000	63	158	221	SZ8080.2 **.075 x 063B**
							2500	4000	80	175	255	SZ8080.2 **.075 x 080B**
							2500	4000	100	200	300	SZ8080.2 **.075 x 100B**
							2500	4000	125	225	350	SZ8080.2 **.075 x 125B**
95	55	G1/8	on the side	168			4000	5600	5	110	115	SZ8080.2 **.095 x 005B**
95	55	G1/8	on the side	168	M8	8	4000	6240	10	115	125	SZ8080.2 **.095 x 010B**
							4000	6400	15	120	135	SZ8080.2 **.095 x 015B**
							4000	6400	19	124	143	SZ8080.2 **.095 x 019B**
							4000	6400	25	130	155	SZ8080.2 **.095 x 025B**
							4000	6400	32	137	169	SZ8080.2 **.095 x 032B**
							4000	6400	38	142	180	SZ8080.2 **.095 x 038B**
							4000	6400	50	155	205	SZ8080.2 **.095 x 050B**
							4000	6400	63	168	231	SZ8080.2 **.095 x 063B**
							4000	6400	80	190	270	SZ8080.2 **.095 x 080B**
							4000	6400	100	210	310	SZ8080.2 **.095 x 100B**
							4000	6400	125	245	370	SZ8080.2 **.095 x 125B**

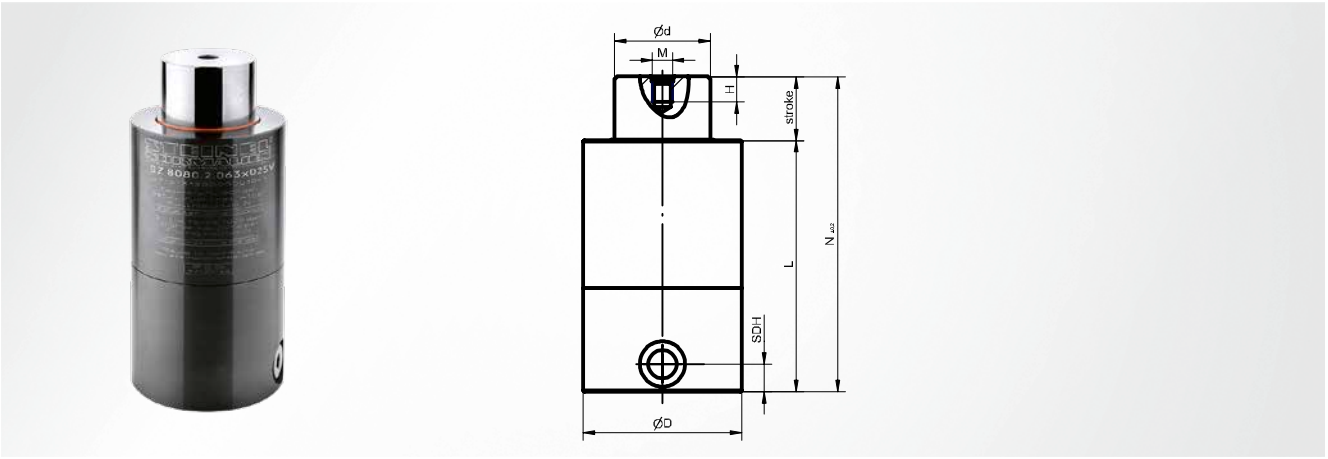
D	Cylinder mounting
32	
38	

D	Cylinder mounting
50	
63	

D	Cylinder mounting
75	
95	

for D 38, the medium thread is only used for filling

SZ8080.2.V Connecting nitrogen cylinder



Base
Composite base

Burst protection
not integrated

Filling
carried out via composite system

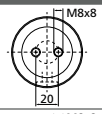
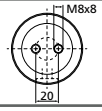
Delivery
will be supplied unfilled

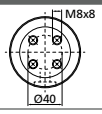
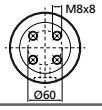
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
50	30	G1/8	on the side	141			1000	1420	5	90	95	SZ8080.2 **.050 x 005V**
50	30	G1/8	on the side	141	M8	8	1000	1540	10	95	105	SZ8080.2 **.050 x 010V**
							1000	1600	15	100	115	SZ8080.2 **.050 x 015V**
							1000	1600	19	104	123	SZ8080.2 **.050 x 019V**
							1000	1600	25	110	135	SZ8080.2 **.050 x 025V**
							1000	1600	32	117	149	SZ8080.2 **.050 x 032V**
							1000	1600	38	123	161	SZ8080.2 **.050 x 038V**
							1000	1600	50	135	185	SZ8080.2 **.050 x 050V**
							1000	1600	63	148	211	SZ8080.2 **.050 x 063V**
							1000	1600	80	165	245	SZ8080.2 **.050 x 080V**
							1000	1600	100	195	295	SZ8080.2 **.050 x 100V**
							1000	1600	125	220	345	SZ8080.2 **.050 x 125V**
63	38	G1/8	on the side	132			1500	2040	5	90	95	SZ8080.2 **.063 x 005V**
63	38	G1/8	on the side	132	M8	8	1500	2310	10	95	105	SZ8080.2 **.063 x 010V**
							1500	2400	15	100	115	SZ8080.2 **.063 x 015V**
							1500	2400	19	104	123	SZ8080.2 **.063 x 019V**
							1500	2400	25	110	135	SZ8080.2 **.063 x 025V**
							1500	2400	32	117	149	SZ8080.2 **.063 x 032V**
							1500	2400	38	123	161	SZ8080.2 **.063 x 038V**
							1500	2400	50	135	185	SZ8080.2 **.063 x 050V**
							1500	2400	63	148	211	SZ8080.2 **.063 x 063V**
							1500	2400	80	165	245	SZ8080.2 **.063 x 080V**
							1500	2400	100	185	285	SZ8080.2 **.063 x 100V**
							1500	2400	125	220	345	SZ8080.2 **.063 x 125V**
75	45	G1/8	on the side	157			2500	3375	5	100	105	SZ8080.2 **.075 x 005V**
75	45	G1/8	on the side	157	M8	8	2500	3825	10	105	115	SZ8080.2 **.075 x 010V**
							2500	4000	15	110	125	SZ8080.2 **.075 x 015V**
							2500	4000	19	114	133	SZ8080.2 **.075 x 019V**
							2500	4000	25	120	145	SZ8080.2 **.075 x 025V**
							2500	4000	32	127	159	SZ8080.2 **.075 x 032V**
							2500	4000	38	133	171	SZ8080.2 **.075 x 038V**
							2500	4000	50	145	195	SZ8080.2 **.075 x 050V**
							2500	4000	63	158	221	SZ8080.2 **.075 x 063V**

SZ8080.2.V Connecting nitrogen cylinder

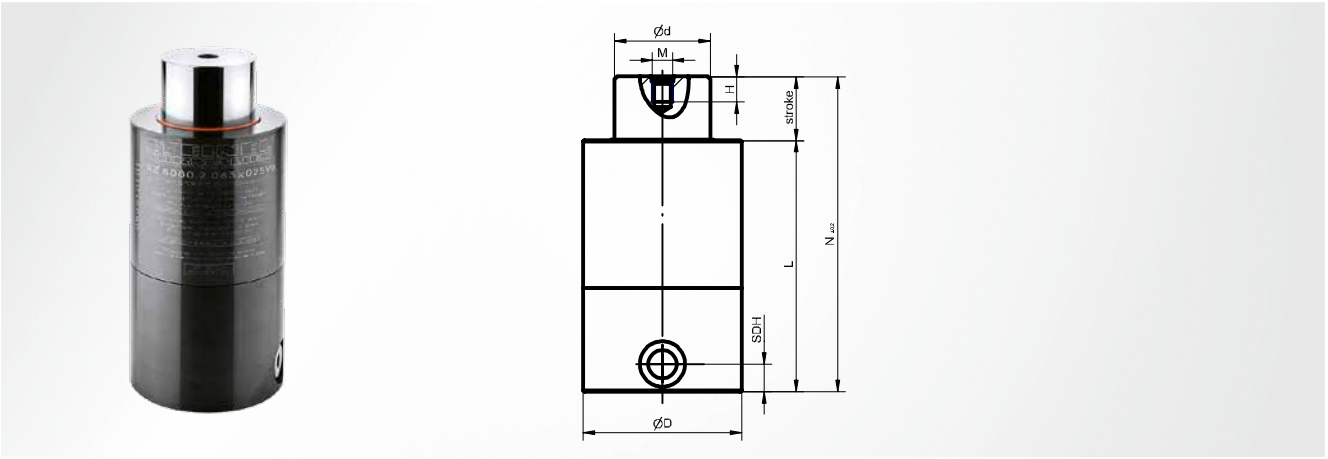
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
75	45	G1/8	on the side	157	M8	8	2500	4000	80	175	255	SZ8080.2 **.075 x 080V**
							2500	4000	100	200	300	SZ8080.2 **.075 x 100V**
							2500	4000	125	225	350	SZ8080.2 **.075 x 125V**
95	55	G1/8	on the side	168			4000	5600	5	110	115	SZ8080.2 **.095 x 005V**
95	55	G1/8	on the side	168	M8	8	4000	6240	10	115	125	SZ8080.2 **.095 x 010V**
							4000	6400	15	120	135	SZ8080.2 **.095 x 015V**
							4000	6400	19	124	143	SZ8080.2 **.095 x 019V**
							4000	6400	25	130	155	SZ8080.2 **.095 x 025V**
							4000	6400	32	137	169	SZ8080.2 **.095 x 032V**
							4000	6400	38	142	180	SZ8080.2 **.095 x 038V**
							4000	6400	50	155	205	SZ8080.2 **.095 x 050V**
							4000	6400	63	168	231	SZ8080.2 **.095 x 063V**
							4000	6400	80	190	270	SZ8080.2 **.095 x 080V**
							4000	6400	100	210	310	SZ8080.2 **.095 x 100V**
							4000	6400	125	245	370	SZ8080.2 **.095 x 125V**

D	Cylinder mounting
50	
63	

D	Cylinder mounting
75	
95	

SZ8080.2.VB Connecting nitrogen cylinder

with burst protection



Base
Composite base; with burst protection

Burst protection
integrated

Filling
carried out via composite system

Delivery
will be supplied unfilled

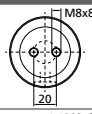
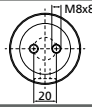
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

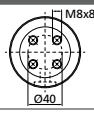
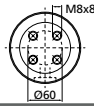
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
50	30	G1/8	on the side	141			1000	1420	5	90	95	SZ8080.2 **.050 x 005VB**
50	30	G1/8	on the side	141	M8	8	1000	1540	10	95	105	SZ8080.2 **.050 x 010VB**
							1000	1600	15	100	115	SZ8080.2 **.050 x 015VB**
							1000	1600	19	104	123	SZ8080.2 **.050 x 019VB**
							1000	1600	25	110	135	SZ8080.2 **.050 x 025VB**
							1000	1600	32	117	149	SZ8080.2 **.050 x 032VB**
							1000	1600	38	123	161	SZ8080.2 **.050 x 038VB**
							1000	1600	50	135	185	SZ8080.2 **.050 x 050VB**
							1000	1600	63	148	211	SZ8080.2 **.050 x 063VB**
							1000	1600	80	165	245	SZ8080.2 **.050 x 080VB**
							1000	1600	100	195	295	SZ8080.2 **.050 x 100VB**
							1000	1600	125	220	345	SZ8080.2 **.050 x 125VB**
63	38	G1/8	on the side	132			1500	2040	5	90	95	SZ8080.2 **.063 x 005VB**
63	38	G1/8	on the side	132	M8	8	1500	2310	10	95	105	SZ8080.2 **.063 x 010VB**
							1500	2400	15	100	115	SZ8080.2 **.063 x 015VB**
							1500	2400	19	104	123	SZ8080.2 **.063 x 019VB**
							1500	2400	25	110	135	SZ8080.2 **.063 x 025VB**
							1500	2400	32	117	149	SZ8080.2 **.063 x 032VB**
							1500	2400	38	123	161	SZ8080.2 **.063 x 038VB**
							1500	2400	50	135	185	SZ8080.2 **.063 x 050VB**
							1500	2400	63	148	211	SZ8080.2 **.063 x 063VB**
							1500	2400	80	165	245	SZ8080.2 **.063 x 080VB**
							1500	2400	100	185	285	SZ8080.2 **.063 x 100VB**
							1500	2400	125	220	345	SZ8080.2 **.063 x 125VB**
75	45	G1/8	on the side	157			2500	3375	5	100	105	SZ8080.2 **.075 x 005VB**
75	45	G1/8	on the side	157	M8	8	2500	3825	10	105	115	SZ8080.2 **.075 x 010VB**
							2500	4000	15	110	125	SZ8080.2 **.075 x 015VB**
							2500	4000	19	114	133	SZ8080.2 **.075 x 019VB**
							2500	4000	25	120	145	SZ8080.2 **.075 x 025VB**
							2500	4000	32	127	159	SZ8080.2 **.075 x 032VB**
							2500	4000	38	133	171	SZ8080.2 **.075 x 038VB**
							2500	4000	50	145	195	SZ8080.2 **.075 x 050VB**
							2500	4000	63	158	221	SZ8080.2 **.075 x 063VB**

SZ8080.2.VB Connecting nitrogen cylinder

with burst protection

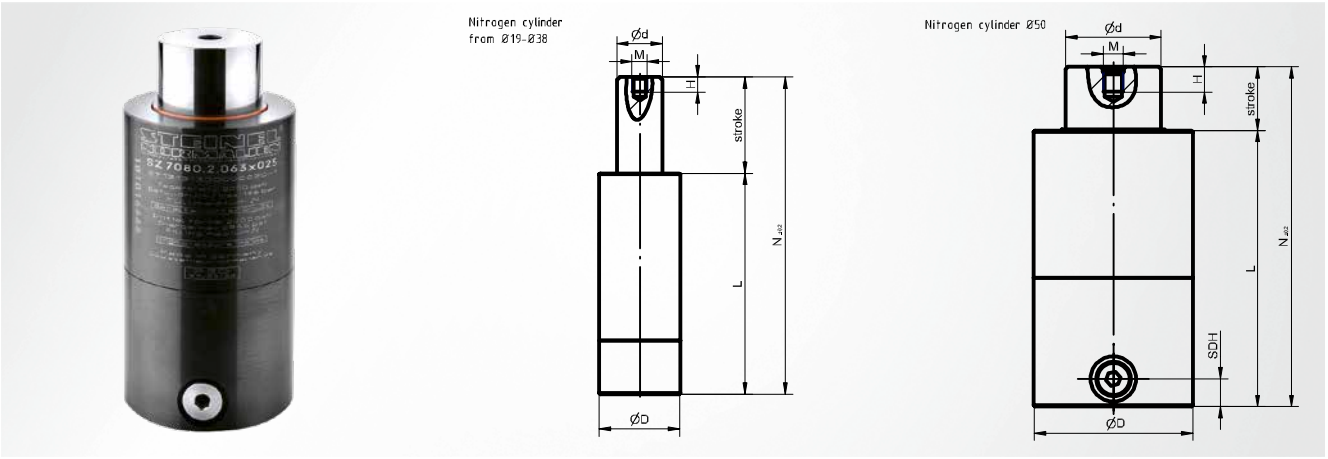
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
75	45	G1/8	on the side	157	M8	8	2500	4000	80	175	255	SZ8080.2 **.075 x 080VB**
							2500	4000	100	200	300	SZ8080.2 **.075 x 100VB**
							2500	4000	125	225	350	SZ8080.2 **.075 x 125VB**
95	55	G1/8	on the side	168			4000	5600	5	110	115	SZ8080.2 **.095 x 005VB**
95	55	G1/8	on the side	168	M8	8	4000	6240	10	115	125	SZ8080.2 **.095 x 010VB**
							4000	6400	15	120	135	SZ8080.2 **.095 x 015VB**
							4000	6400	19	124	143	SZ8080.2 **.095 x 019VB**
							4000	6400	25	130	155	SZ8080.2 **.095 x 025VB**
							4000	6400	32	137	169	SZ8080.2 **.095 x 032VB**
							4000	6400	38	142	180	SZ8080.2 **.095 x 038VB**
							4000	6400	50	155	205	SZ8080.2 **.095 x 050VB**
							4000	6400	63	168	231	SZ8080.2 **.095 x 063VB**
							4000	6400	80	190	270	SZ8080.2 **.095 x 080VB**
							4000	6400	100	210	310	SZ8080.2 **.095 x 100VB**
							4000	6400	125	245	370	SZ8080.2 **.095 x 125VB**

D	Cylinder mounting
50	
63	

D	Cylinder mounting
75	
95	

SZ7080.2. Nitrogen cylinder

self-sufficient, version extra heavy



Base
Standard base

Delivery
will be supplied filled

Burst protection
not integrated

Installation instruction
SDH = the height of the lateral connection is 11 mm

Filling
with standard nitrogen

D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
19	11	M8	centred	158	150	240			5	65	70	SZ7080.2 **.019 x 005**
					150	240			10	70	80	SZ7080.2 **.019 x 010**
					150	240			15	75	90	SZ7080.2 **.019 x 015**
					150	240			19	79	98	SZ7080.2 **.019 x 019**
					150	240			25	85	110	SZ7080.2 **.019 x 025**
					150	240			32	92	124	SZ7080.2 **.019 x 032**
					150	240			38	98	136	SZ7080.2 **.019 x 038**
					150	240			50	110	160	SZ7080.2 **.019 x 050**
					150	240			63	123	186	SZ7080.2 **.019 x 063**
					150	240			80	140	220	SZ7080.2 **.019 x 080**
					150	240			100	160	260	SZ7080.2 **.019 x 100**
					150	240			125	185	310	SZ7080.2 **.019 x 125**
25	14	M8	centred	195	300	480			5	65	70	SZ7080.2 **.025 x 005**
					300	480			10	70	80	SZ7080.2 **.025 x 010**
					300	480			15	75	90	SZ7080.2 **.025 x 015**
					300	480			19	79	98	SZ7080.2 **.025 x 019**
					300	480	M6	6	25	85	110	SZ7080.2 **.025 x 025**
					300	480	M6	6	32	92	124	SZ7080.2 **.025 x 032**
					300	480	M6	6	38	98	136	SZ7080.2 **.025 x 038**
					300	480	M6	6	50	110	160	SZ7080.2 **.025 x 050**
					300	480	M6	6	63	123	186	SZ7080.2 **.025 x 063**
					300	480	M6	6	80	140	220	SZ7080.2 **.025 x 080**
					300	480	M6	6	100	160	260	SZ7080.2 **.025 x 100**
					300	480	M6	6	125	185	310	SZ7080.2 **.025 x 125**
32	18	M8	centred	196	500	700	M6	6	5	55	60	SZ7080.2 **.032 x 005**
					500	760	M6	6	10	60	70	SZ7080.2 **.032 x 010**
					500	800	M6	6	15	65	80	SZ7080.2 **.032 x 015**
					500	800	M6	6	19	69	88	SZ7080.2 **.032 x 019**
					500	800	M6	6	25	75	100	SZ7080.2 **.032 x 025**
					500	800	M6	6	32	82	114	SZ7080.2 **.032 x 032**
					500	800	M6	6	38	88	126	SZ7080.2 **.032 x 038**
					500	800	M6	6	50	100	150	SZ7080.2 **.032 x 050**
					500	800	M6	6	63	113	176	SZ7080.2 **.032 x 063**
					500	800	M6	6	80	130	210	SZ7080.2 **.032 x 080**

SZ7080.2. Nitrogen cylinder

self-sufficient, version extra heavy

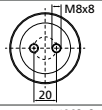
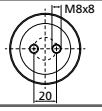
D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
32	18	M8	centred	196	500	800	M6	6	100	150	250	SZ7080.2 **.032 x 100**
					500	800	M6	6	125	175	300	SZ7080.2 **.032 x 125**
38	22	M8	centred	197	750	1050	M6	6	5	60	65	SZ7080.2 **.038 x 005**
					750	1155	M6	6	10	65	75	SZ7080.2 **.038 x 010**
					750	1200	M6	6	15	70	85	SZ7080.2 **.038 x 015**
					750	1200	M6	6	19	74	93	SZ7080.2 **.038 x 019**
					750	1200	M6	6	25	80	105	SZ7080.2 **.038 x 025**
					750	1200	M6	6	32	87	119	SZ7080.2 **.038 x 032**
					750	1200	M6	6	38	93	131	SZ7080.2 **.038 x 038**
					750	1200	M6	6	50	105	155	SZ7080.2 **.038 x 050**
					750	1200	M6	6	63	118	181	SZ7080.2 **.038 x 063**
					750	1200	M6	6	80	140	220	SZ7080.2 **.038 x 080**
					750	1200	M6	6	100	155	255	SZ7080.2 **.038 x 100**
					750	1200	M6	6	125	180	305	SZ7080.2 **.038 x 125**
50	30	G1/8	on the side	212	1500	2130	M8	8	5	90	95	SZ7080.2 **.050 x 005**
					1500	2310	M8	8	10	95	105	SZ7080.2 **.050 x 010**
					1500	2400	M8	8	15	100	115	SZ7080.2 **.050 x 015**
					1500	2400	M8	8	19	104	123	SZ7080.2 **.050 x 019**
					1500	2400	M8	8	25	110	135	SZ7080.2 **.050 x 025**
					1500	2400	M8	8	32	117	149	SZ7080.2 **.050 x 032**
					1500	2400	M8	8	38	123	161	SZ7080.2 **.050 x 038**
					1500	2400	M8	8	50	135	185	SZ7080.2 **.050 x 050**
					1500	2400	M8	8	63	148	211	SZ7080.2 **.050 x 063**
					1500	2400	M8	8	80	165	245	SZ7080.2 **.050 x 080**
					1500	2400	M8	8	100	195	295	SZ7080.2 **.050 x 100**
					1500	2400	M8	8	125	220	345	SZ7080.2 **.050 x 125**
63	38	G1/8	on the side	176	2000	2720	M8	8	5	90	95	SZ7080.2 **.063 x 005**
					2000	3080	M8	8	10	95	105	SZ7080.2 **.063 x 010**
					2000	3200	M8	8	15	100	115	SZ7080.2 **.063 x 015**
					2000	3200	M8	8	19	104	123	SZ7080.2 **.063 x 019**
					2000	3200	M8	8	25	110	135	SZ7080.2 **.063 x 025**
					2000	3200	M8	8	32	117	149	SZ7080.2 **.063 x 032**
					2000	3200	M8	8	38	123	161	SZ7080.2 **.063 x 038**
					2000	3200	M8	8	50	135	185	SZ7080.2 **.063 x 050**
					2000	3200	M8	8	63	148	211	SZ7080.2 **.063 x 063**
					2000	3200	M8	8	80	165	245	SZ7080.2 **.063 x 080**
					2000	3200	M8	8	100	185	285	SZ7080.2 **.063 x 100**
					2000	3200	M8	8	125	220	345	SZ7080.2 **.063 x 125**
75	45	G1/8	on the side	189	3000	4050	M8	8	5	100	105	SZ7080.2 **.075 x 005**
					3000	4590	M8	8	10	105	115	SZ7080.2 **.075 x 010**
					3000	4800	M8	8	15	110	125	SZ7080.2 **.075 x 015**
					3000	4800	M8	8	19	114	133	SZ7080.2 **.075 x 019**
					3000	4800	M8	8	25	120	145	SZ7080.2 **.075 x 025**
					3000	4800	M8	8	32	127	159	SZ7080.2 **.075 x 032**
					3000	4800	M8	8	38	133	171	SZ7080.2 **.075 x 038**
					3000	4800	M8	8	50	145	195	SZ7080.2 **.075 x 050**
					3000	4800	M8	8	63	158	221	SZ7080.2 **.075 x 063**
					3000	4800	M8	8	80	175	255	SZ7080.2 **.075 x 080**
					3000	4800	M8	8	100	200	300	SZ7080.2 **.075 x 100**
					3000	4800	M8	8	125	225	350	SZ7080.2 **.075 x 125**
95	55	G1/8	on the side	210	5000	7000	M8	8	5	110	115	SZ7080.2 **.095 x 005**
					5000	7800	M8	8	10	115	125	SZ7080.2 **.095 x 010**
					5000	8000	M8	8	15	120	135	SZ7080.2 **.095 x 015**
					5000	8000	M8	8	19	124	143	SZ7080.2 **.095 x 019**
					5000	8000	M8	8	25	130	155	SZ7080.2 **.095 x 025**
					5000	8000	M8	8	32	137	169	SZ7080.2 **.095 x 032**
					5000	8000	M8	8	38	142	180	SZ7080.2 **.095 x 038**
					5000	8000	M8	8	50	155	205	SZ7080.2 **.095 x 050**
					5000	8000	M8	8	63	168	231	SZ7080.2 **.095 x 063**
					5000	8000	M8	8	80	190	270	SZ7080.2 **.095 x 080**

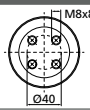
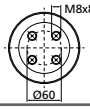
SZ7080.2. Nitrogen cylinder

self-sufficient, version extra heavy

D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
95	55	G1/8	on the side	210	5000	8000	M8	8	100	210	310	SZ7080.2 **.095 x 100**
					5000	8000	M8	8	125	245	370	SZ7080.2 **.095 x 125**

D	Cylinder mounting
19	
25	
32	

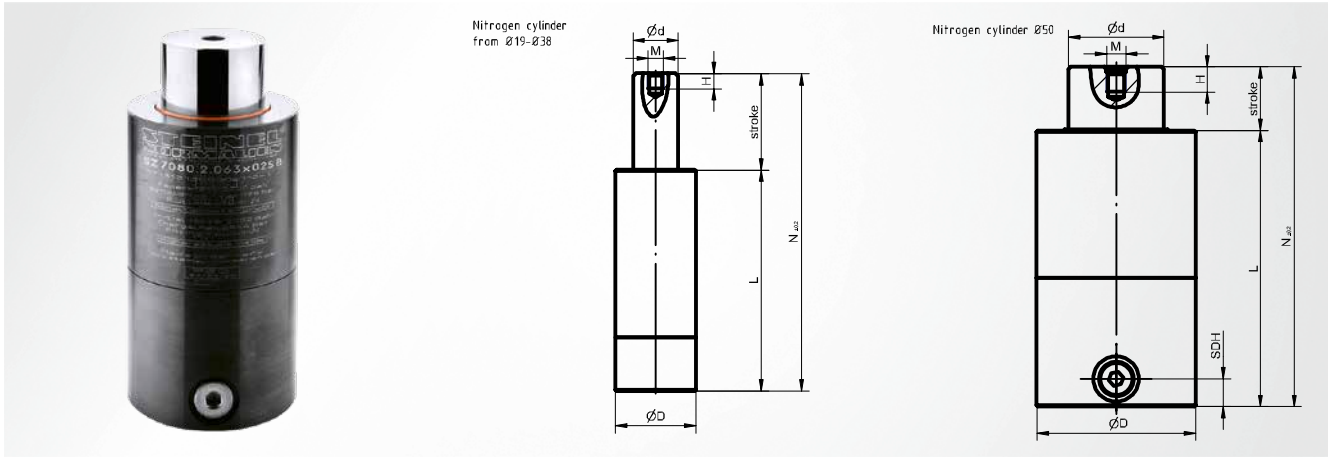
D	Cylinder mounting
38	
50	
63	

D	Cylinder mounting
75	
95	

for D 38, the medium thread is only used for filling

SZ7080.2.B Nitrogen cylinder

self-sufficient, version extra heavy, with burst protection



Base
Standard base; with burst protection

Burst protection
integrated

Filling
with standard nitrogen

Delivery
will be supplied filled

Installation instruction
SDH = the height of the lateral connection is 11 mm

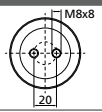
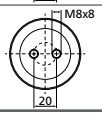
D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
32	18	M8	centred	196	M6	6	500	700	5	55	60	SZ7080.2 **.032 x 005B**
							500	760	10	60	70	SZ7080.2 **.032 x 010B**
							500	800	15	65	80	SZ7080.2 **.032 x 015B**
							500	800	19	69	88	SZ7080.2 **.032 x 019B**
							500	800	25	75	100	SZ7080.2 **.032 x 025B**
							500	800	32	82	114	SZ7080.2 **.032 x 032B**
							500	800	38	88	126	SZ7080.2 **.032 x 038B**
							500	800	50	100	150	SZ7080.2 **.032 x 050B**
							500	800	63	113	176	SZ7080.2 **.032 x 063B**
							500	800	80	130	210	SZ7080.2 **.032 x 080B**
							500	800	100	150	250	SZ7080.2 **.032 x 100B**
							500	800	125	175	300	SZ7080.2 **.032 x 125B**
38	22	M8	centred	197	M6	6	750	1050	5	60	65	SZ7080.2 **.038 x 005B**
							750	1155	10	65	75	SZ7080.2 **.038 x 010B**
							750	1200	15	70	85	SZ7080.2 **.038 x 015B**
							750	1200	19	74	93	SZ7080.2 **.038 x 019B**
							750	1200	25	80	105	SZ7080.2 **.038 x 025B**
							750	1200	32	87	119	SZ7080.2 **.038 x 032B**
							750	1200	38	93	131	SZ7080.2 **.038 x 038B**
							750	1200	50	105	155	SZ7080.2 **.038 x 050B**
							750	1200	63	118	181	SZ7080.2 **.038 x 063B**
							750	1200	80	140	220	SZ7080.2 **.038 x 080B**
							750	1200	100	155	255	SZ7080.2 **.038 x 100B**
							750	1200	125	180	305	SZ7080.2 **.038 x 125B**
50	30	G1/8	on the side	212	M8	8	1500	2130	5	90	95	SZ7080.2 **.050 x 005B**
							1500	2310	10	95	105	SZ7080.2 **.050 x 010B**
							1500	2400	15	100	115	SZ7080.2 **.050 x 015B**
							1500	2400	19	104	123	SZ7080.2 **.050 x 019B**
							1500	2400	25	110	135	SZ7080.2 **.050 x 025B**
							1500	2400	32	117	149	SZ7080.2 **.050 x 032B**
							1500	2400	38	123	161	SZ7080.2 **.050 x 038B**
							1500	2400	50	135	185	SZ7080.2 **.050 x 050B**
							1500	2400	63	148	211	SZ7080.2 **.050 x 063B**
							1500	2400	80	165	245	SZ7080.2 **.050 x 080B**

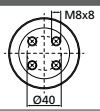
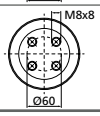
SZ7080.2.B Nitrogen cylinder

self-sufficient, version extra heavy, with burst protection

D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
50	30	G1/8	on the side	212	M8	8	1500	2400	100	195	295	SZ7080.2 **.050 x 100B**
							1500	2400	125	220	345	SZ7080.2 **.050 x 125B**
63	38	G1/8	on the side	176	M8	8	2000	2720	5	90	95	SZ7080.2 **.063 x 005B**
							2000	3080	10	95	105	SZ7080.2 **.063 x 010B**
							2000	3200	15	100	115	SZ7080.2 **.063 x 015B**
							2000	3200	19	104	123	SZ7080.2 **.063 x 019B**
							2000	3200	25	110	135	SZ7080.2 **.063 x 025B**
							2000	3200	32	117	149	SZ7080.2 **.063 x 032B**
							2000	3200	38	123	161	SZ7080.2 **.063 x 038B**
							2000	3200	50	135	185	SZ7080.2 **.063 x 050B**
							2000	3200	63	148	211	SZ7080.2 **.063 x 063B**
							2000	3200	80	165	245	SZ7080.2 **.063 x 080B**
							2000	3200	100	185	285	SZ7080.2 **.063 x 100B**
							2000	3200	125	220	345	SZ7080.2 **.063 x 125B**
75	45	G1/8	on the side	189	M8	8	3000	4050	5	100	105	SZ7080.2 **.075 x 005B**
							3000	4590	10	105	115	SZ7080.2 **.075 x 010B**
							3000	4800	15	110	125	SZ7080.2 **.075 x 015B**
							3000	4800	19	114	133	SZ7080.2 **.075 x 019B**
							3000	4800	25	120	145	SZ7080.2 **.075 x 025B**
							3000	4800	32	127	159	SZ7080.2 **.075 x 032B**
							3000	4800	38	133	171	SZ7080.2 **.075 x 038B**
							3000	4800	50	145	195	SZ7080.2 **.075 x 050B**
							3000	4800	63	158	221	SZ7080.2 **.075 x 063B**
							3000	4800	80	175	255	SZ7080.2 **.075 x 080B**
							3000	4800	100	200	300	SZ7080.2 **.075 x 100B**
							3000	4800	125	225	350	SZ7080.2 **.075 x 125B**
95	55	G1/8	on the side	210	M8	8	5000	7000	5	110	115	SZ7080.2 **.095 x 005B**
							5000	7800	10	115	125	SZ7080.2 **.095 x 010B**
							5000	8000	15	120	135	SZ7080.2 **.095 x 015B**
							5000	8000	19	124	143	SZ7080.2 **.095 x 019B**
							5000	8000	25	130	155	SZ7080.2 **.095 x 025B**
							5000	8000	32	137	169	SZ7080.2 **.095 x 032B**
							5000	8000	38	142	180	SZ7080.2 **.095 x 038B**
							5000	8000	50	155	205	SZ7080.2 **.095 x 050B**
							5000	8000	63	168	231	SZ7080.2 **.095 x 063B**
							5000	8000	80	190	270	SZ7080.2 **.095 x 080B**
							5000	8000	100	210	310	SZ7080.2 **.095 x 100B**
							5000	8000	125	245	370	SZ7080.2 **.095 x 125B**

D	Cylinder mounting
32	
38	

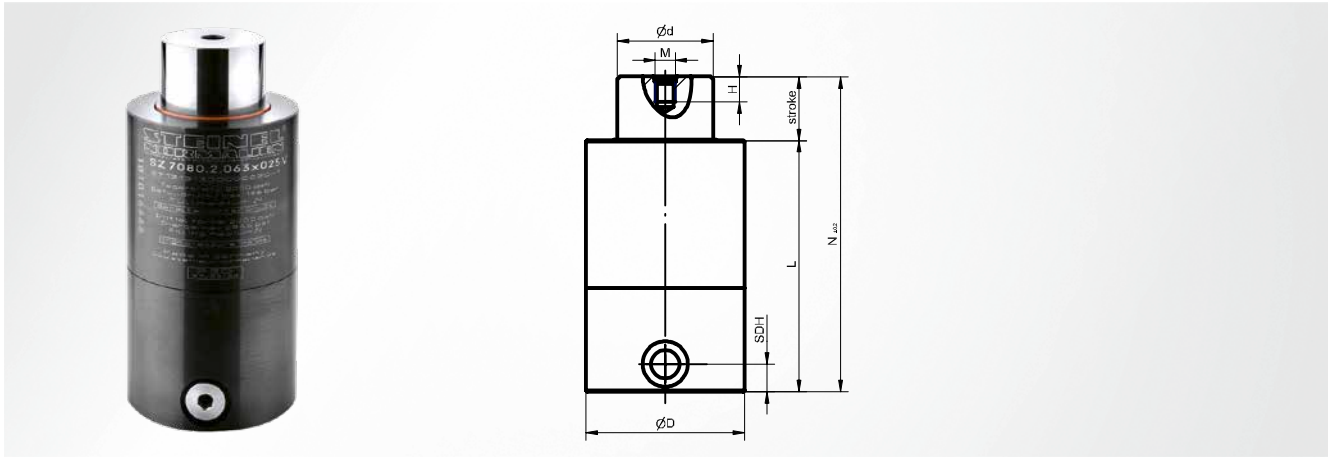
D	Cylinder mounting
50	
63	

D	Cylinder mounting
75	
95	

for D 38, the medium thread is only used for filling

SZ7080.2.V Connecting nitrogen cylinder

version extra heavy



Base
Composite base

Burst protection
not integrated

Filling
carried out via composite system

Delivery
will be supplied unfilled

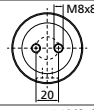
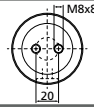
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

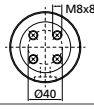
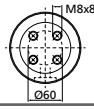
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
50	30	G1/8	on the side	212	M8	8	1500	2130	5	90	95	SZ7080.2 **.050 x 005V**
							1500	2310	10	95	105	SZ7080.2 **.050 x 010V**
							1500	2400	15	100	115	SZ7080.2 **.050 x 015V**
							1500	2400	19	104	123	SZ7080.2 **.050 x 019V**
							1500	2400	25	110	135	SZ7080.2 **.050 x 025V**
							1500	2400	32	117	149	SZ7080.2 **.050 x 032V**
							1500	2400	38	123	161	SZ7080.2 **.050 x 038V**
							1500	2400	50	135	185	SZ7080.2 **.050 x 050V**
							1500	2400	63	148	211	SZ7080.2 **.050 x 063V**
							1500	2400	80	165	245	SZ7080.2 **.050 x 080V**
							1500	2400	100	195	295	SZ7080.2 **.050 x 100V**
							1500	2400	125	220	345	SZ7080.2 **.050 x 125V**
63	38	G1/8	on the side	176	M8	8	2000	2720	5	90	95	SZ7080.2 **.063 x 005V**
							2000	3080	10	95	105	SZ7080.2 **.063 x 010V**
							2000	3200	15	100	115	SZ7080.2 **.063 x 015V**
							2000	3200	19	104	123	SZ7080.2 **.063 x 019V**
							2000	3200	25	110	135	SZ7080.2 **.063 x 025V**
							2000	3200	32	117	149	SZ7080.2 **.063 x 032V**
							2000	3200	38	123	161	SZ7080.2 **.063 x 038V**
							2000	3200	50	135	185	SZ7080.2 **.063 x 050V**
							2000	3200	63	148	211	SZ7080.2 **.063 x 063V**
							2000	3200	80	165	245	SZ7080.2 **.063 x 080V**
							2000	3200	100	185	285	SZ7080.2 **.063 x 100V**
							2000	3200	125	220	345	SZ7080.2 **.063 x 125V**
75	45	G1/8	on the side	189	M8	8	3000	4050	5	100	105	SZ7080.2 **.075 x 005V**
							3000	4590	10	105	115	SZ7080.2 **.075 x 010V**
							3000	4800	15	110	125	SZ7080.2 **.075 x 015V**
							3000	4800	19	114	133	SZ7080.2 **.075 x 019V**
							3000	4800	25	120	145	SZ7080.2 **.075 x 025V**
							3000	4800	32	127	159	SZ7080.2 **.075 x 032V**
							3000	4800	38	133	171	SZ7080.2 **.075 x 038V**
							3000	4800	50	145	195	SZ7080.2 **.075 x 050V**
							3000	4800	63	158	221	SZ7080.2 **.075 x 063V**

SZ7080.2.V Connecting nitrogen cylinder

version extra heavy

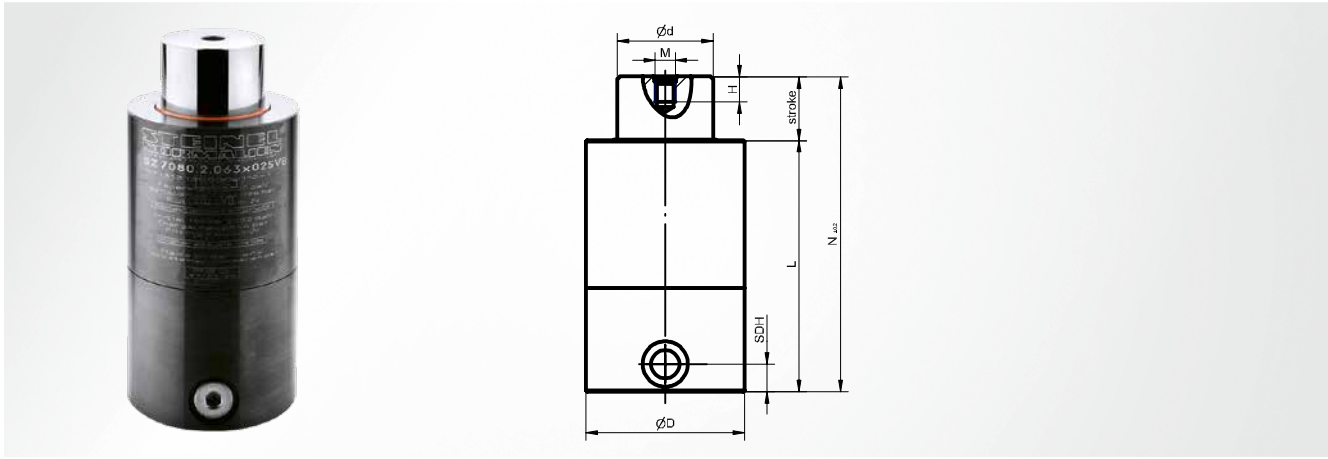
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
75	45	G1/8	on the side	189	M8	8	3000	4800	80	175	255	SZ7080.2 **.075 x 080V**
							3000	4800	100	200	300	SZ7080.2 **.075 x 100V**
							3000	4800	125	225	350	SZ7080.2 **.075 x 125V**
95	55	G1/8	on the side	210	M8	8	5000	7000	5	110	115	SZ7080.2 **.095 x 005V**
							5000	7800	10	115	125	SZ7080.2 **.095 x 010V**
							5000	8000	15	120	135	SZ7080.2 **.095 x 015V**
							5000	8000	19	124	143	SZ7080.2 **.095 x 019V**
							5000	8000	25	130	155	SZ7080.2 **.095 x 025V**
							5000	8000	32	137	169	SZ7080.2 **.095 x 032V**
							5000	8000	38	142	180	SZ7080.2 **.095 x 038V**
							5000	8000	50	155	205	SZ7080.2 **.095 x 050V**
							5000	8000	63	168	231	SZ7080.2 **.095 x 063V**
							5000	8000	80	190	270	SZ7080.2 **.095 x 080V**
							5000	8000	100	210	310	SZ7080.2 **.095 x 100V**
							5000	8000	125	245	370	SZ7080.2 **.095 x 125V**

D	Cylinder mounting
50	
63	

D	Cylinder mounting
75	
95	

SZ7080.2.VB Connecting nitrogen cylinder

version extra heavy, with burst protection



Base
Composite base; with burst protection

Burst protection
integrated

Filling
carried out via composite system

Delivery
will be supplied unfilled

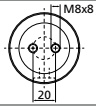
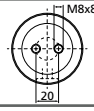
Installation instruction
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

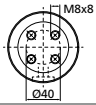
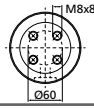
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
50	30	G1/8	on the side	212	M8	8	1500	2130	5	90	95	SZ7080.2 **.050 x 005VB**
							1500	2310	10	95	105	SZ7080.2 **.050 x 010VB**
							1500	2400	15	100	115	SZ7080.2 **.050 x 015VB**
							1500	2400	19	104	123	SZ7080.2 **.050 x 019VB**
							1500	2400	25	110	135	SZ7080.2 **.050 x 025VB**
							1500	2400	32	117	149	SZ7080.2 **.050 x 032VB**
							1500	2400	38	123	161	SZ7080.2 **.050 x 038VB**
							1500	2400	50	135	185	SZ7080.2 **.050 x 050VB**
							1500	2400	63	148	211	SZ7080.2 **.050 x 063VB**
							1500	2400	80	165	245	SZ7080.2 **.050 x 080VB**
							1500	2400	100	195	295	SZ7080.2 **.050 x 100VB**
							1500	2400	125	220	345	SZ7080.2 **.050 x 125VB**
63	38	G1/8	on the side	176	M8	8	2000	2720	5	90	95	SZ7080.2 **.063 x 005VB**
							2000	3080	10	95	105	SZ7080.2 **.063 x 010VB**
							2000	3200	15	100	115	SZ7080.2 **.063 x 015VB**
							2000	3200	19	104	123	SZ7080.2 **.063 x 019VB**
							2000	3200	25	110	135	SZ7080.2 **.063 x 025VB**
							2000	3200	32	117	149	SZ7080.2 **.063 x 032VB**
							2000	3200	38	123	161	SZ7080.2 **.063 x 038VB**
							2000	3200	50	135	185	SZ7080.2 **.063 x 050VB**
							2000	3200	63	148	211	SZ7080.2 **.063 x 063VB**
							2000	3200	80	165	245	SZ7080.2 **.063 x 080VB**
							2000	3200	100	185	285	SZ7080.2 **.063 x 100VB**
							2000	3200	125	220	345	SZ7080.2 **.063 x 125VB**
75	45	G1/8	on the side	189	M8	8	3000	4050	5	100	105	SZ7080.2 **.075 x 005VB**
							3000	4590	10	105	115	SZ7080.2 **.075 x 010VB**
							3000	4800	15	110	125	SZ7080.2 **.075 x 015VB**
							3000	4800	19	114	133	SZ7080.2 **.075 x 019VB**
							3000	4800	25	120	145	SZ7080.2 **.075 x 025VB**
							3000	4800	32	127	159	SZ7080.2 **.075 x 032VB**
							3000	4800	38	133	171	SZ7080.2 **.075 x 038VB**
							3000	4800	50	145	195	SZ7080.2 **.075 x 050VB**
							3000	4800	63	158	221	SZ7080.2 **.075 x 063VB**

SZ7080.2.VB Connecting nitrogen cylinder

version extra heavy, with burst protection

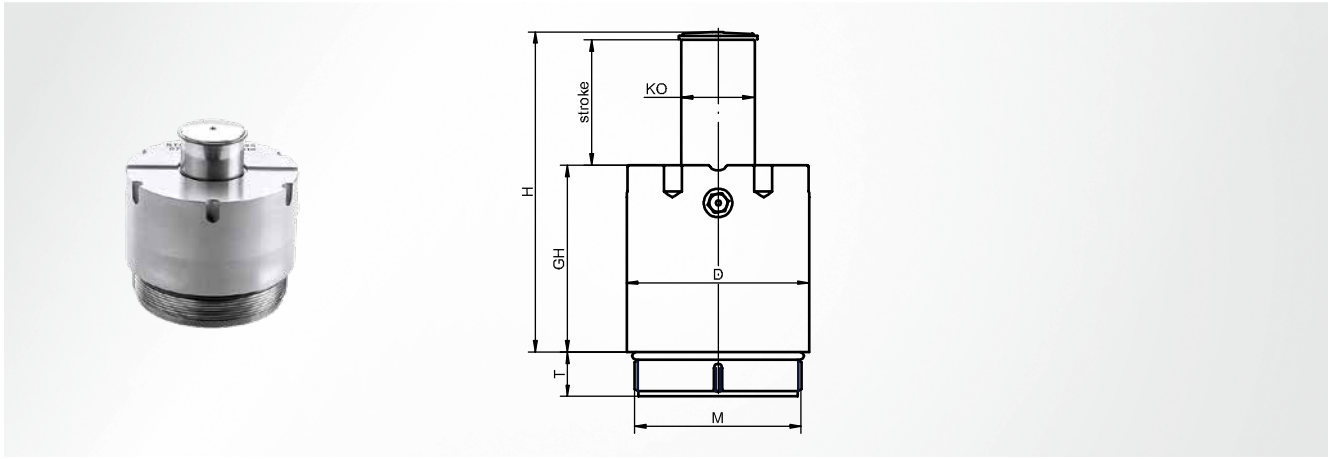
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
75	45	G1/8	on the side	189	M8	8	3000	4800	80	175	255	SZ7080.2 **.075 x 080VB**
							3000	4800	100	200	300	SZ7080.2 **.075 x 100VB**
							3000	4800	125	225	350	SZ7080.2 **.075 x 125VB**
95	55	G1/8	on the side	210	M8	8	5000	7000	5	110	115	SZ7080.2 **.095 x 005VB**
							5000	7800	10	115	125	SZ7080.2 **.095 x 010VB**
							5000	8000	15	120	135	SZ7080.2 **.095 x 015VB**
							5000	8000	19	124	143	SZ7080.2 **.095 x 019VB**
							5000	8000	25	130	155	SZ7080.2 **.095 x 025VB**
							5000	8000	32	137	169	SZ7080.2 **.095 x 032VB**
							5000	8000	38	142	180	SZ7080.2 **.095 x 038VB**
							5000	8000	50	155	205	SZ7080.2 **.095 x 050VB**
							5000	8000	63	168	231	SZ7080.2 **.095 x 063VB**
							5000	8000	80	190	270	SZ7080.2 **.095 x 080VB**
							5000	8000	100	210	310	SZ7080.2 **.095 x 100VB**
							5000	8000	125	245	370	SZ7080.2 **.095 x 125VB**

D	Cylinder mounting
50	
63	

D	Cylinder mounting
75	
95	

ST8841-1 Manifold cylinder

high



Delivery
will be supplied unfilled

Note
Initial force at 110 bar filling pressure

Installation instruction
Case height changes with the stroke; is used when the thickness of the backing plate is limited and the assembly height can be compensated

Initial force daN	Cylinder type	D	KO	M	T	GH	H	Stroke	Item number
500	005	42	12	M36 x 2	15.0	31.3	45.5	12.5	ST8841-1 **-005 x 012**
						43.8	70.5	25.0	ST8841-1 **-005 x 025**
						56.8	96.5	38.0	ST8841-1 **-005 x 038**
						68.8	120.5	50.0	ST8841-1 **-005 x 050**
						93.8	170.5	75.0	ST8841-1 **-005 x 075**
						118.8	220.5	100.0	ST8841-1 **-005 x 100**
1000	010	54	22	M48 x 2	15.5	46.8	73.5	25.0	ST8841-1 **-010 x 025**
						59.8	99.5	38.0	ST8841-1 **-010 x 038**
						71.8	123.5	50.0	ST8841-1 **-010 x 050**
						96.8	173.5	75.0	ST8841-1 **-010 x 075**
						121.8	223.5	100.0	ST8841-1 **-010 x 100**
						171.8	323.5	150.0	ST8841-1 **-010 x 150**
2500	025	70	28	M64 x 2	17.0	46.8	73.0	25.0	ST8841-1 **-025 x 025**
						59.8	99.0	38.0	ST8841-1 **-025 x 038**
						71.8	123.0	50.0	ST8841-1 **-025 x 050**
						96.8	173.0	75.0	ST8841-1 **-025 x 075**
						121.8	223.0	100.0	ST8841-1 **-025 x 100**
						171.8	323.0	150.0	ST8841-1 **-025 x 150**
3500	035	88	28	M80 x 2	19.5	56.5	83.5	25.0	ST8841-1 **-035 x 025**
						69.5	109.5	38.0	ST8841-1 **-035 x 038**
						81.5	133.5	50.0	ST8841-1 **-035 x 050**
						106.5	183.5	75.0	ST8841-1 **-035 x 075**
						131.5	233.5	100.0	ST8841-1 **-035 x 100**
						181.5	333.5	150.0	ST8841-1 **-035 x 150**
5500	055	108	40	M100 x 2	25.0	61.5	88.5	25.0	ST8841-1 **-055 x 025**
						74.5	114.5	38.0	ST8841-1 **-055 x 038**
						86.5	138.5	50.0	ST8841-1 **-055 x 050**
						111.5	188.5	75.0	ST8841-1 **-055 x 075**
						136.5	238.5	100.0	ST8841-1 **-055 x 100**
						186.5	338.5	150.0	ST8841-1 **-055 x 150**
10000	100	146	50	M130 x 2	27.0	66.5	93.5	25.0	ST8841-1 **-100 x 025**
						79.5	119.5	38.0	ST8841-1 **-100 x 038**
						91.5	143.5	50.0	ST8841-1 **-100 x 050**

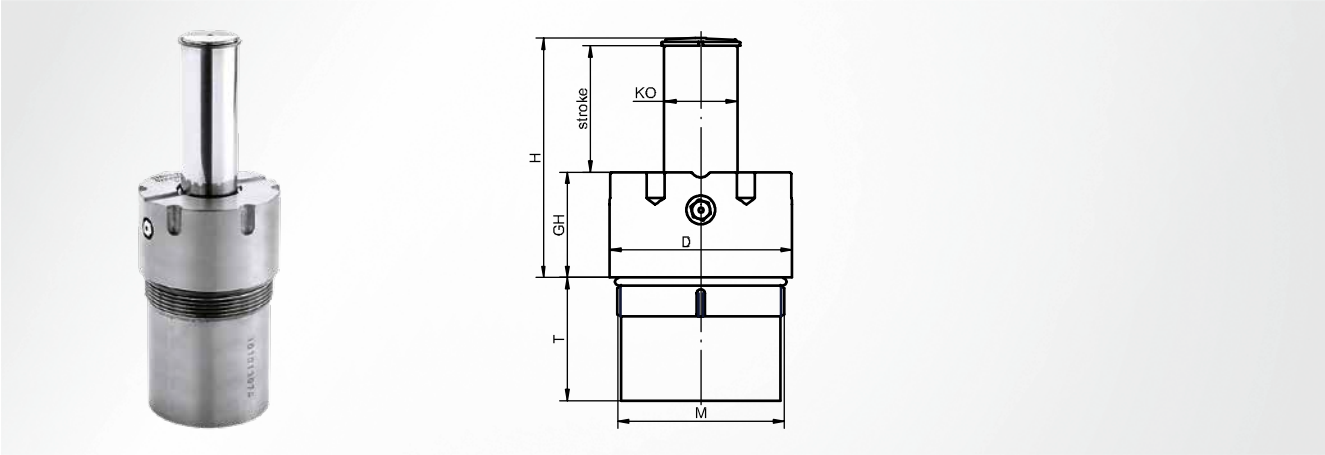
ST8841-1 Manifold cylinder

high

Initial force daN	Cylinder type	D	KO	M	T	GH	H	Stroke	Item number
10000	100	146	50	M130 x 2	27.0	116.5	193.5	75.0	ST8841-1 **-100 x 075**
						141.5	243.5	100.0	ST8841-1 **-100 x 100**
						191.5	343.5	150.0	ST8841-1 **-100 x 150**

ST8841-2 Manifold cylinder

normal



Delivery
will be supplied unfilled

Note
Initial force at 110 bar filling pressure

Installation instruction
Casing installation depth changes with the stroke; is used when the assembly height is limited but the backing plate can be chosen with an appropriate thickness

Initial force daN	Cylinder type	D	KO	M	GH	H	Stroke	T	Item number
500	005	42	12	M36 x 2	40.5	54.5	12.5	14.5	ST8841-2 **-005 x 012**
						67.0	25.0	18.3	ST8841-2 **-005 x 025**
						80.0	38.0	31.3	ST8841-2 **-005 x 038**
						92.0	50.0	43.3	ST8841-2 **-005 x 050**
						117.0	75.0	68.3	ST8841-2 **-005 x 075**
						142.0	100.0	93.3	ST8841-2 **-005 x 100**
1000	010	54	22	M48 x 2	40.5	67.0	25.0	21.8	ST8841-2 **-010 x 025**
						80.0	38.0	34.8	ST8841-2 **-010 x 038**
						92.0	50.0	46.8	ST8841-2 **-010 x 050**
						117.0	75.0	71.8	ST8841-2 **-010 x 075**
						142.0	100.0	96.8	ST8841-2 **-010 x 100**
						192.0	150.0	146.8	ST8841-2 **-010 x 150**
2500	025	70	28	M64 x 2	40.5	67.0	25.0	22.3	ST8841-2 **-025 x 025**
						80.0	38.0	35.3	ST8841-2 **-025 x 038**
						92.0	50.0	47.3	ST8841-2 **-025 x 050**
						117.0	75.0	72.3	ST8841-2 **-025 x 075**
						142.0	100.0	97.3	ST8841-2 **-025 x 100**
						192.0	150.0	147.3	ST8841-2 **-025 x 150**
3500	035	88	28	M80 x 2	49.5	76.5	25.0	26.5	ST8841-2 **-035 x 025**
						89.5	38.0	39.5	ST8841-2 **-035 x 038**
						101.5	50.0	51.5	ST8841-2 **-035 x 050**
						126.5	75.0	76.5	ST8841-2 **-035 x 075**
						151.5	100.0	101.5	ST8841-2 **-035 x 100**
						201.5	150.0	151.5	ST8841-2 **-035 x 150**
5500	055	108	40	M100 x 2	52.5	79.5	25.0	34.0	ST8841-2 **-055 x 025**
						92.5	38.0	47.0	ST8841-2 **-055 x 038**
						104.5	50.0	59.0	ST8841-2 **-055 x 050**
						129.5	75.0	84.0	ST8841-2 **-055 x 075**
						154.5	100.0	109.0	ST8841-2 **-055 x 100**
						204.5	150.0	159.0	ST8841-2 **-055 x 150**
10000	100	146	50	M130 x 2	62.5	89.5	25.0	31.0	ST8841-2 **-100 x 025**
						102.5	38.0	44.0	ST8841-2 **-100 x 038**
						114.5	50.0	56.0	ST8841-2 **-100 x 050**

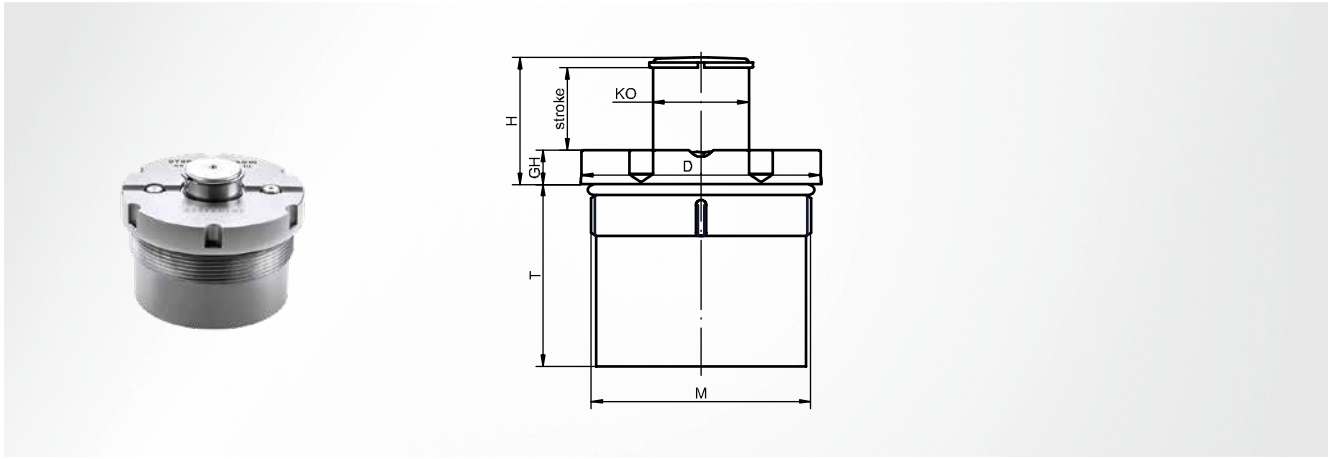
ST8841-2 Manifold cylinder

normal

Initial force daN	Cylinder type	D	KO	M	GH	H	Stroke	T	Item number
10000	100	146	50	M130 x 2	62.5	139.5	75.0	81.0	ST8841-2 **-100 x 075**
						164.5	100.0	106.0	ST8841-2 **-100 x 100**
						214.5	150.0	156.0	ST8841-2 **-100 x 150**

ST8841-3 Manifold cylinder

low



Delivery
will be supplied unfilled

Note
Initial force at 110 bar filling pressure

Installation instruction
Casing installation depth changes with the stroke; is used mainly for small strokes and wherever the smallest assembly heights are required.

Initial force daN	Cylinder type	D	KO	M	GH	H	Stroke	T	Item number
500	005	42	12	M36 x 2	10	17.7	6	29.8	ST8841-3 **-005 x 006**
						21.7	10	33.8	ST8841-3 **-005 x 010**
						26.7	15	38.8	ST8841-3 **-005 x 015**
						31.7	20	43.8	ST8841-3 **-005 x 020**
						36.7	25	48.8	ST8841-3 **-005 x 025**
1000	010	54	22	M48 x 2	10	17.0	6	33.3	ST8841-3 **-010 x 006**
						21.0	10	37.3	ST8841-3 **-010 x 010**
						26.0	15	42.3	ST8841-3 **-010 x 015**
						31.0	20	47.3	ST8841-3 **-010 x 020**
						36.0	25	52.3	ST8841-3 **-010 x 025**
2500	025	70	28	M64 x 2	10	18.0	6	34.0	ST8841-3 **-025 x 006**
						22.0	10	38.0	ST8841-3 **-025 x 010**
						27.0	15	43.0	ST8841-3 **-025 x 015**
						32.0	20	48.0	ST8841-3 **-025 x 020**
						37.0	25	53.0	ST8841-3 **-025 x 025**
3500	035	88	28	M80 x 2	14	22.0	6	38.0	ST8841-3 **-035 x 006**
						26.0	10	42.0	ST8841-3 **-035 x 010**
						31.0	15	47.0	ST8841-3 **-035 x 015**
						36.0	20	52.0	ST8841-3 **-035 x 020**
						41.0	25	57.0	ST8841-3 **-035 x 025**
5500	055	108	40	M100 x 2	14	23.0	6	44.5	ST8841-3 **-055 x 006**
						27.0	10	48.5	ST8841-3 **-055 x 010**
						32.0	15	53.5	ST8841-3 **-055 x 015**
						37.0	20	58.5	ST8841-3 **-055 x 020**
						42.0	25	63.5	ST8841-3 **-055 x 025**
10000	100	146	50	M130 x 2	20	28.0	6	54.5	ST8841-3 **-100 x 006**
						32.0	10	58.5	ST8841-3 **-100 x 010**
						37.0	15	63.5	ST8841-3 **-100 x 015**
						42.0	20	68.5	ST8841-3 **-100 x 020**
						47.0	25	73.5	ST8841-3 **-100 x 025**

SZ8085 Control set

Note
A nitrogen bottle and a cylinder pressure regulator
(only for SZ8085.8) are required on the customer side;
* = complete set discharging screws / charging adapters

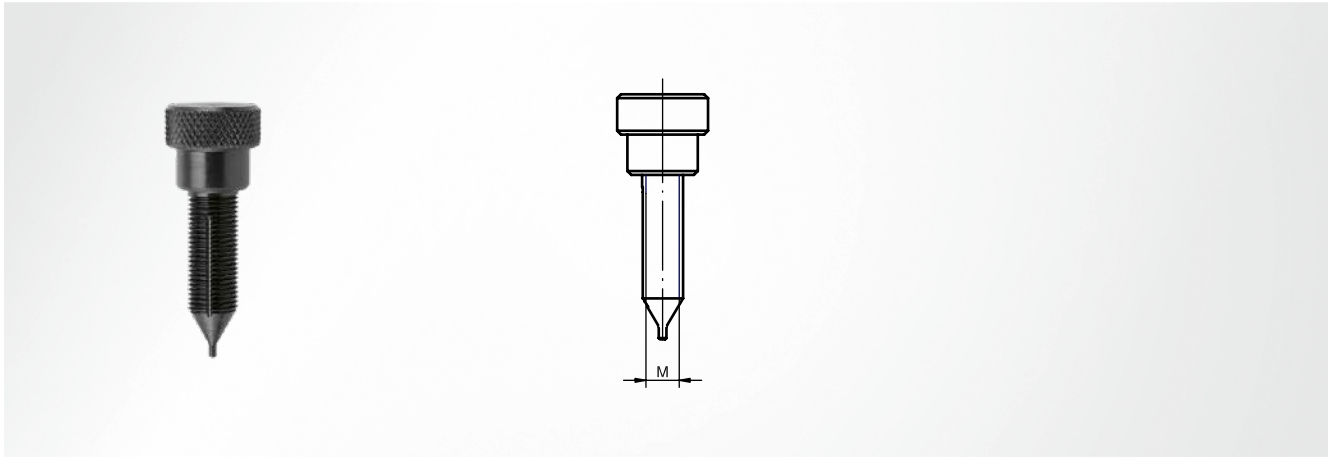
Filling Unit	Pressure reducer	Discharging screw	Charging adapter	Charging tubing	Valve key	Transition adapter	Item number
SZ80855-1		SZ7046*	SZ7045*	SZ8085.4			SZ8085 **8**
SZ80855-1	SZ8085.6	SZ7046*	SZ7045*	SZ8085.4	K100-000-0300	SZ7045.9	SZ8085 **9**

SZ80855-1 Filling Unit

Item number
SZ80855-1

without charging adapter suitable for	without charging adapter suitable for
SZ7080.2.019-038	SZ8065.2.019-038
SZ8080.2.019-038	SZ8066.2.019-038
SZ7066.2.019-038	SZ8063.1.019-025
SZ8060.2.025-038	SZ8063.1.038

SZ7046 Discharging screw



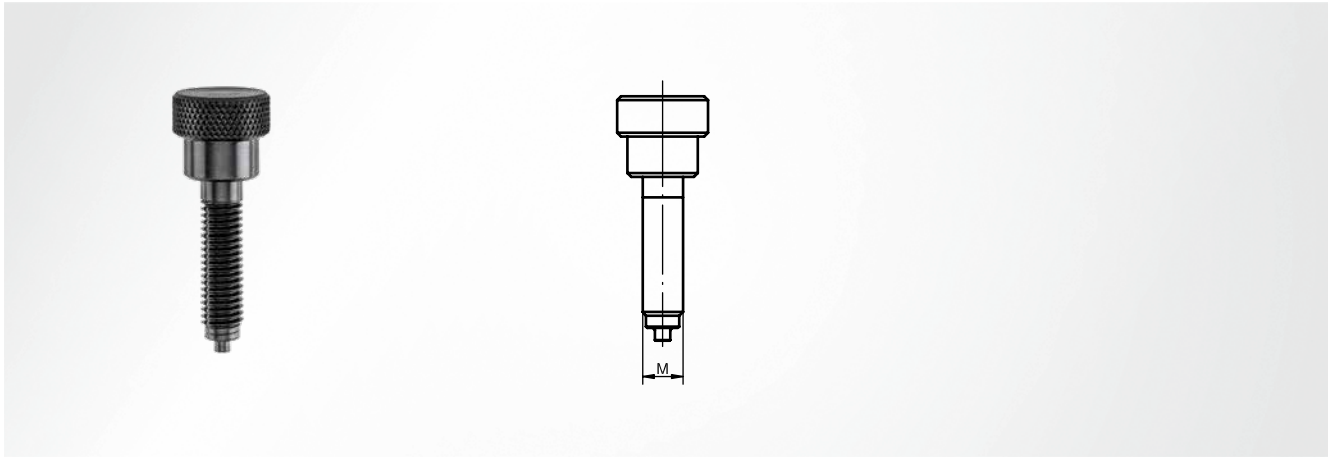
Note
for the venting of the nitrogen cylinder prior to disassembly

M	Item number
M4	SZ7046 **2**
M6	SZ7046 **3**
M8	SZ7046 **4**

M	Item number
M10	SZ7046 **5**
M12	SZ7046 **6**
G1/8	SZ7046 **7**

SZ7046 Discharging screw

for VG5 valve

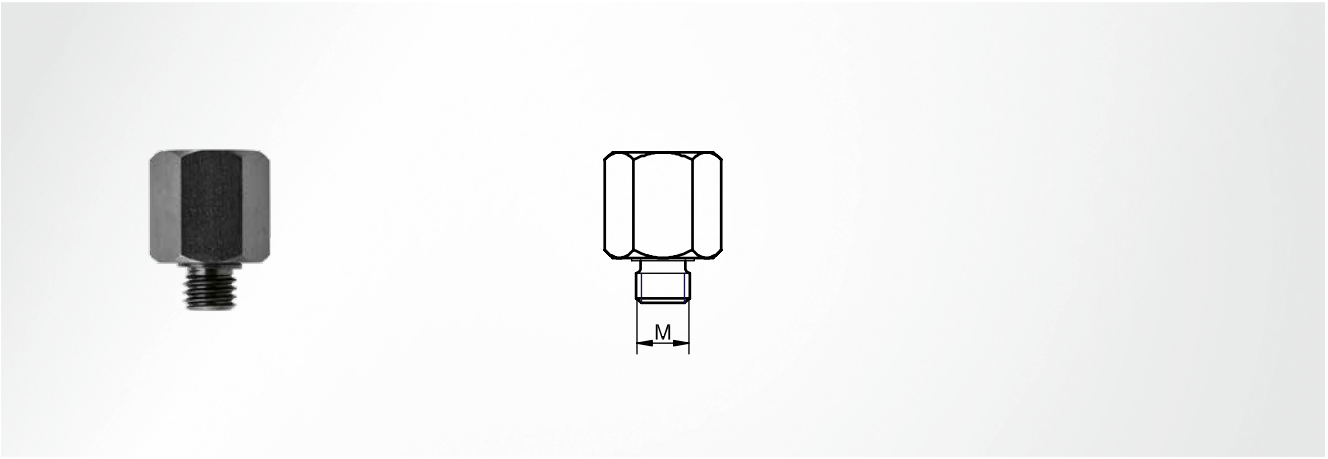


Note
for the venting of the nitrogen cylinder prior to disassembly

M	Item number
M8	SZ7046 **14**
M10	SZ7046 **15**

M	Item number
M12	SZ7046 **16**
G1/8	SZ7046 **17**

SZ7045 Charging adapter



M	Use of nitrogen cylinder	Item number
M6	SZ7066.1.019-032 SZ8063.1.032 SZ8065.1.019-032 SZ8066.1.019-032	SZ7045 **21**
M8	all .2 GDF 019-038	SZ7045 **22**
M10	SZ8063.1.050 all .2 GDF 050-063	SZ7045 **23**

M	Use of nitrogen cylinder	Item number
M12	SZ8063.1.063-095 all .2 GDF 075-120	SZ7045 **24**
G1/8	all .2 GDF V, VB	SZ7045 **25**

SZ8085.4 Charging tubing

Note	Item number
Connection for pressure reducer SZ8085.6 suitable for filling unit and control panels	SZ8085.4

SZ8085.6 Pressure reducer

Note	Item number
Connecting piece for 300 bar nitrogen bottles (assembled) and for 200 bar (included as loose piece)	SZ8085.6

K100-000-0300 Valve key

Item number
K100-000-0300

SZ7045.9 Transition adapter

Note
Transition adapter for previous connecting nipples (SZ7042.01)

Item number
SZ7045.9

SZ7045.10 Transition adapter

Note
for the transition from the previous control set tube on the STEINEL standard parts system

Item number
SZ7045.10

SZ8079 Force measuring device

for nitrogen cylinders

Note
Load cell not included in the scope of delivery

Scope of supply
Basic frame; hydraulic pump; different adapters

Optional accessories
SZ8078

Item number
SZ8079

SZ8078 Load cell

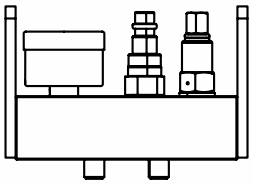
Note
Load cell SZ8078.16000 do not use for force measuring device

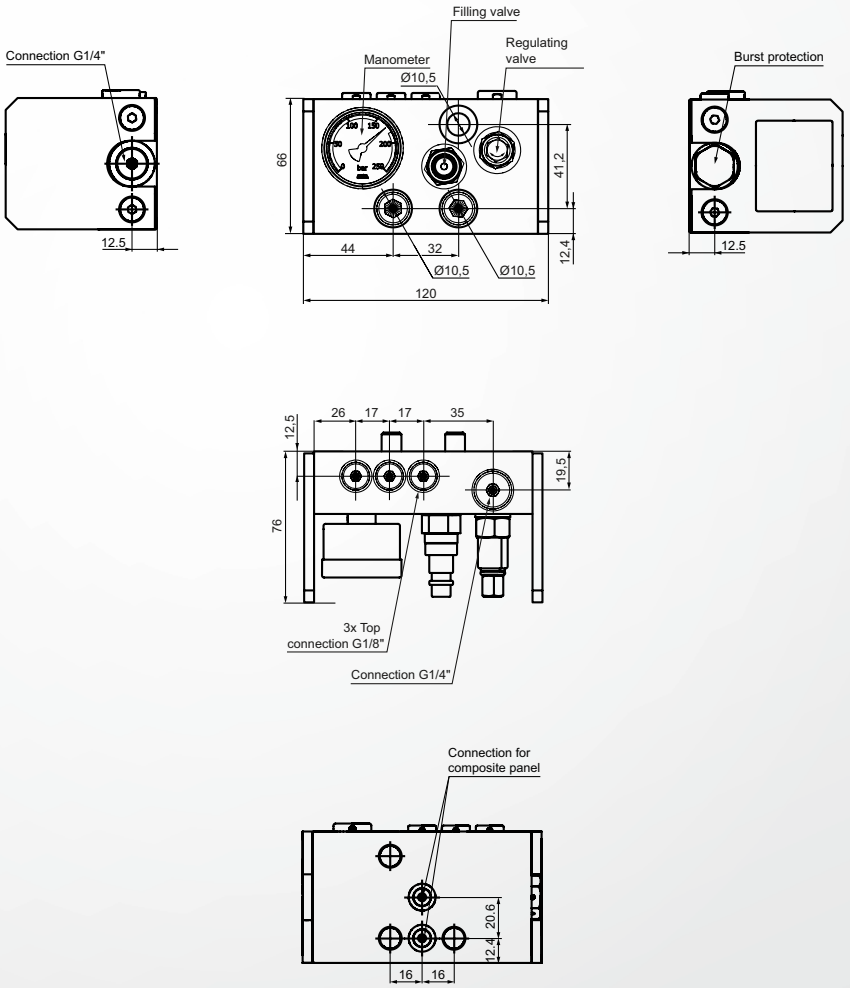
Measuring range daN	Item number
25-250	SZ8078 **00250**
100-1000	SZ8078 **01000**

Measuring range daN	Item number
630-6300	SZ8078 **06300**
1600-16000	SZ8078 **16000**

ST8845-01-01 Control panel

for manifold plates, with burst protection, standard





Burst protection
integrated

Burst pressure
180 bar

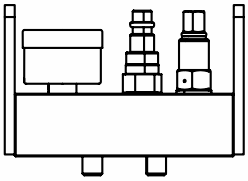
Mounting screw
2x M10 x 30

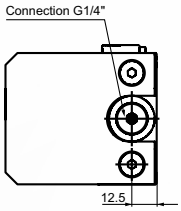
Connection
3x G1/8"; 2x G1/4"; 2x prepared connections for manifold plates (closed); connection for pressure controller ST8845-DW250W2

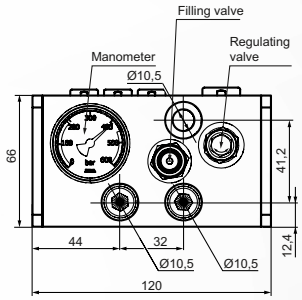
Item number
ST8845-01-01

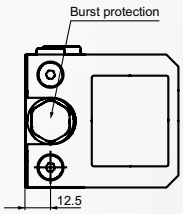
ST8845-02-01 Control panel

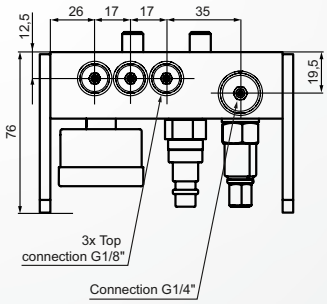
for composite plate, with burst protection, standard

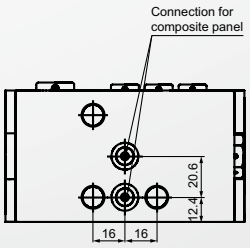












Burst protection
integrated

Burst pressure
450 bar

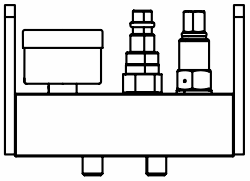
Mounting screw
2x M10 x 30

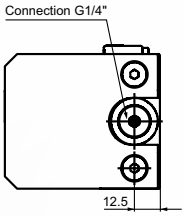
Connection
3x G1/8"; 2x G1/4"; 2x prepared connections for composite plates (closed); connection for pressure controller ST8845-DW600W2

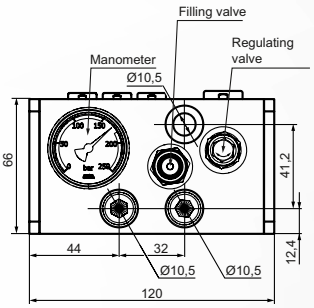
Item number
ST8845-02-01

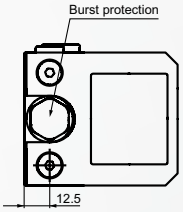
ST8845-32-01 Control panel

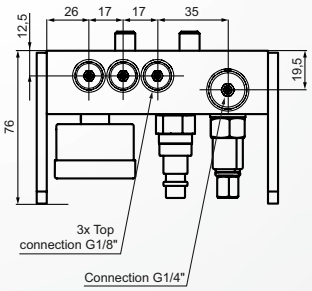
32 mm, for manifold plates, with burst protection, standard

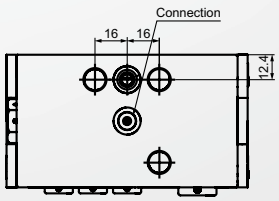












Burst protection
integrated

Burst pressure
180 bar

Installation instruction
for attachment/fitting to manifold plates = 32 mm

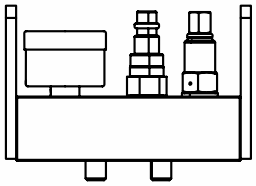
Mounting screw
2x M10 x 30

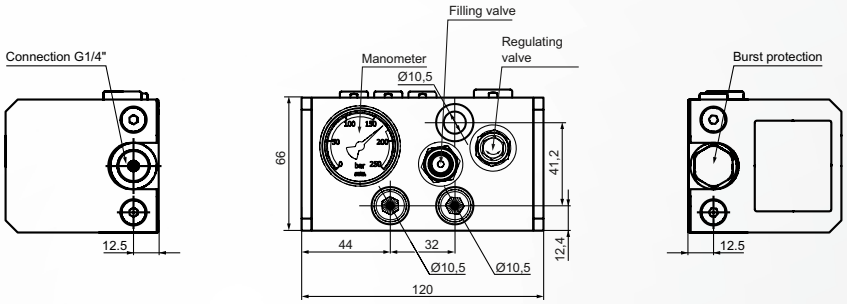
Connection
3x G1/8"; 2x G1/4"; 2 x prepared connections for manifold plates (1x open at the bottom); connection for pressure controller ST8845-DW250W2

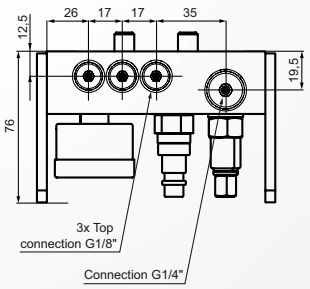
Item number
ST8845-32-01

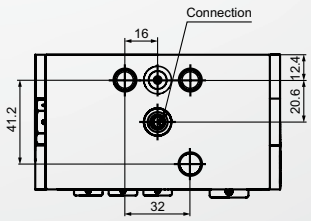
ST8845-80-01 Control panel

80 mm, for manifold plates, with burst protection, standard









Burst protection
integrated

Burst pressure
180 bar

Installation instruction
for attachment/fitting to manifold plates = 80 mm

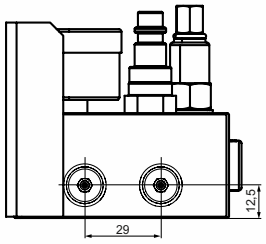
Mounting screw
2x M10 x 30

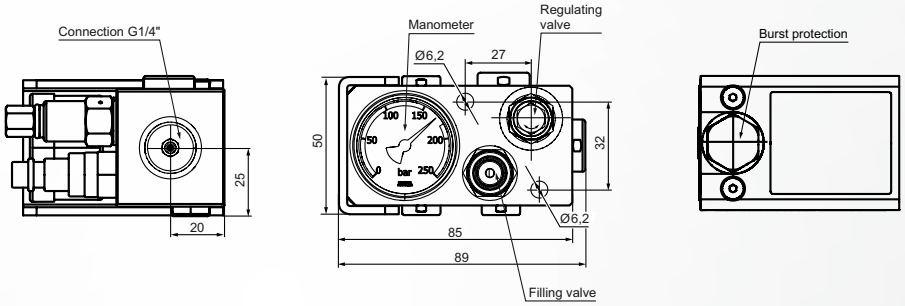
Connection
3x G1/8"; 2x G1/4"; 2 x prepared connections for manifold plates (1x open at the top); connection for pressure controller ST8845-DW250W2

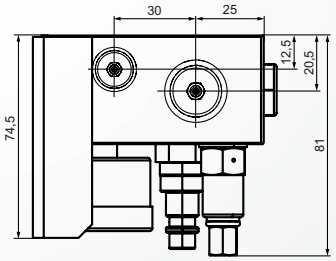
Item number
ST8845-80-01

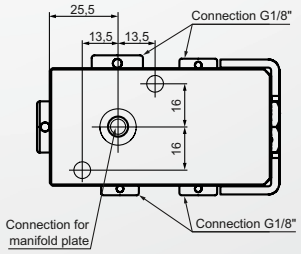
ST8845-8 Control panel

for manifold plates, mini, with burst protection









Burst protection
integrated

Burst pressure
180 bar

Installation instruction
for attachment/fitting to manifold plates = 80 mm

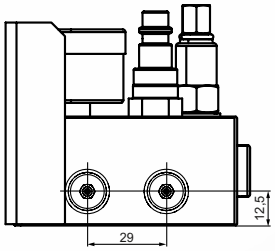
Mounting screw
2x M6 x 50

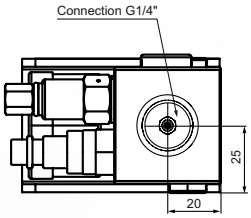
Connection
3x G1/8"; 2x G1/4"; 1x prepared connection for manifold plates; connection for pressure controller ST8845-DW250W2

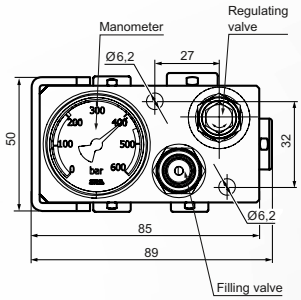
Item number
ST8845-8

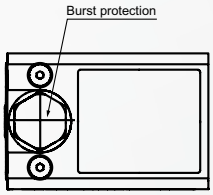
ST8845-9 Control panel

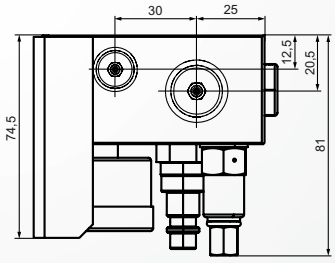
for composite plate, mini, with burst protection

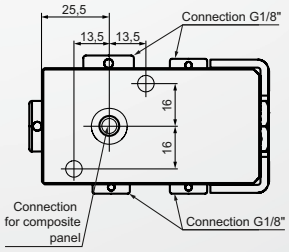












Burst protection
integrated

Burst pressure
450 bar

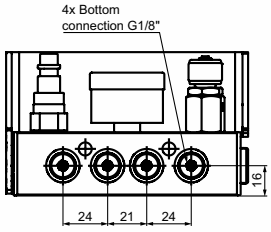
Mounting screw
2x M6 x 50

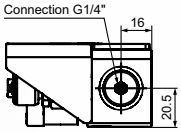
Connection
3x G1/8"; 2x G1/4"; 1x prepared connection for composite plates (closed); connection for pressure controller ST8845-DW600W2

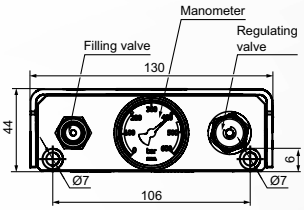
Item number
ST8845-9

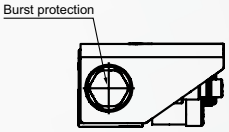
ST8845-444 Control panel

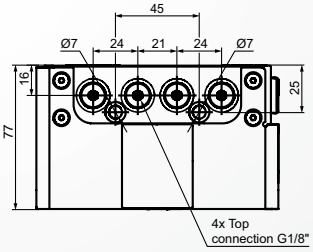
maxi, with burst protection

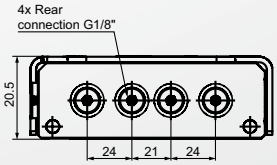












Burst protection
integrated

Burst pressure
450 bar

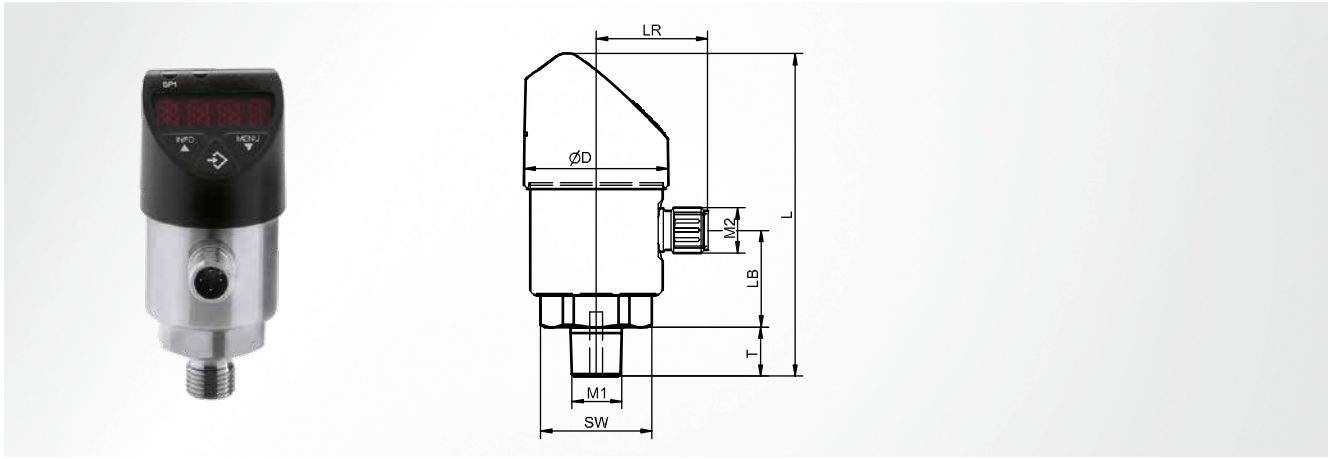
Mounting screw
2x M6 x 45

Connection
12x G1/8"; 1x G1/4"

Item number
ST8845-444

ST8845-DW Pressure controller

pressure controller



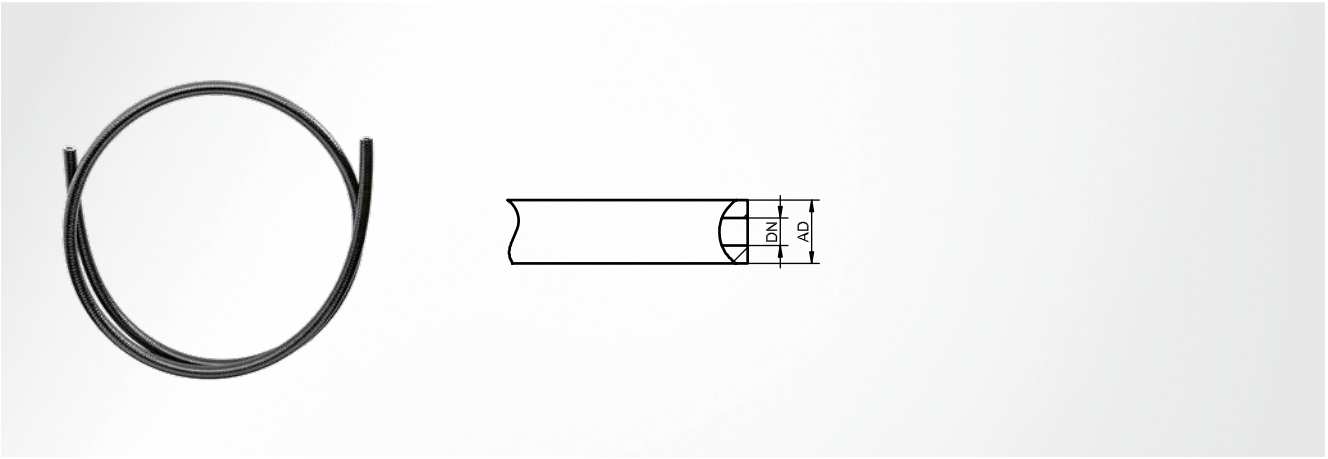
Note

with a switch outlet 0...10 V; switching to p or n potential;
IO-Link: without; power supply: DC 15...35 V;
permissible temperature for medium: -20 … +85 °C;
electrical connection: circular connector M12 x 1 (4-pin);
electrical output assignment: U+=1, U-=3, S+=2, SP1=4;
accuracy: ± 0.5% of span

D	adjustment range	T	LB	LR	SW	M_1	M_2	L	Item number
~ 38	0...250	14	26.0	29.5	27	G1/4	M12 x 1	86	ST8845 - **DW250W2**
~ 38	0...600	14	26.0	29.5	27	G1/4	M12 x 1	86	ST8845 - **DW600W2**

SZ701008 Tube

for self assembly



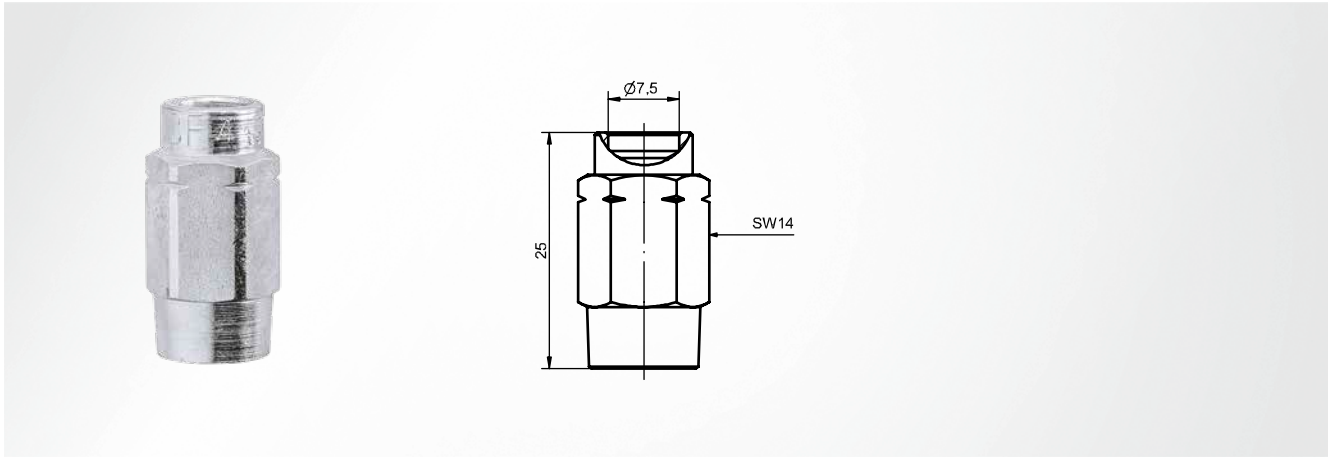
Note

The fitting, consisting of the F-Dorn and screw sleeve, is required for assembly; tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Outer diameter	Working pressure	Operating temperature °	Tube length m	Tube size	min. curve radius	Item number
9.2	max. 380 bar at 80°C	-40 to +80	2.5	DN4	40	SZ7010 **08**

SZ701108 Screw sleeve

DN4



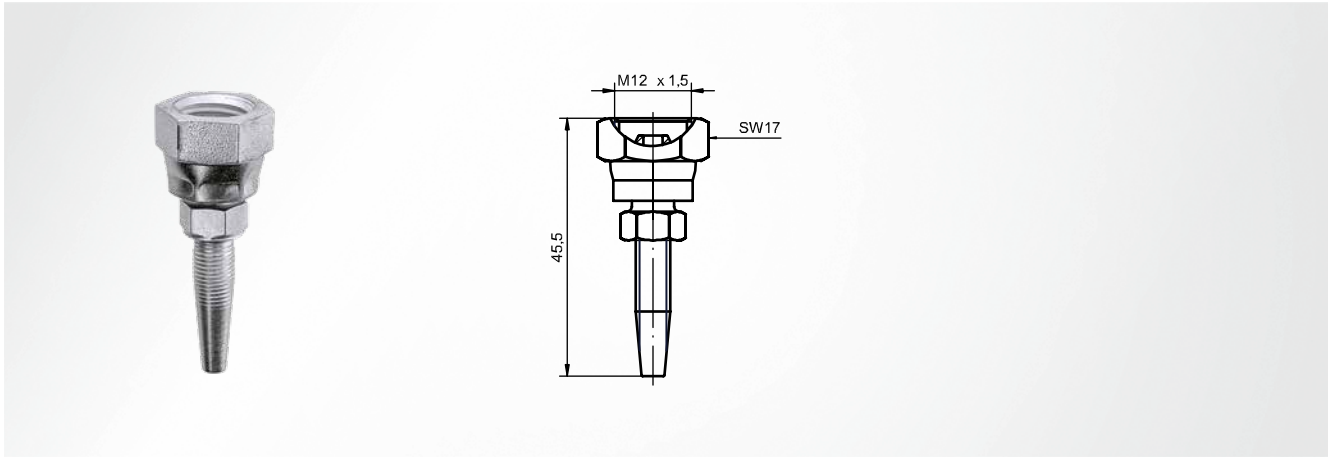
Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Suitable tube
SZ701008

Item number
SZ701108

SZ701208 F-Dorn

DN4



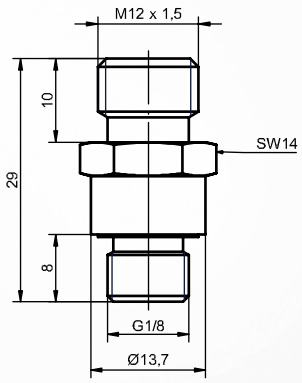
Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Suitable tube
SZ701008

Item number
SZ701208

SZ702006 Screw connection

straight, long

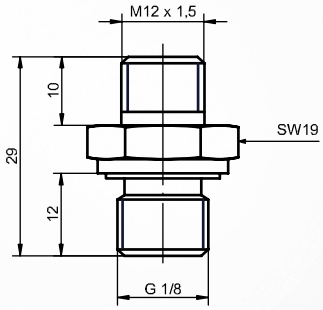


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ702006

SZ701306 Screw connection

short

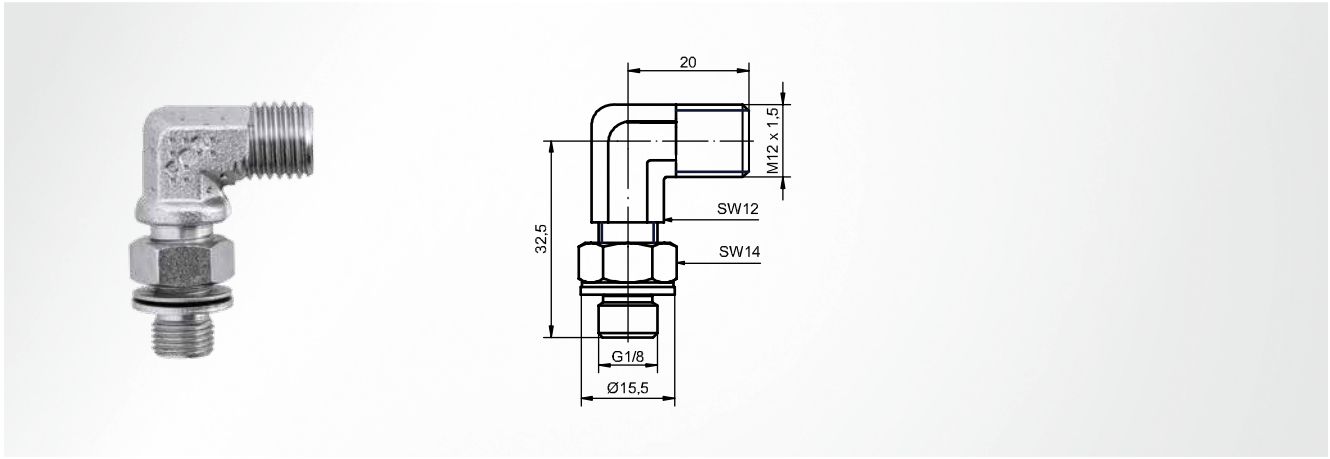


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ701306

SZ701406 Ellbow screw connection

90°, adjustable

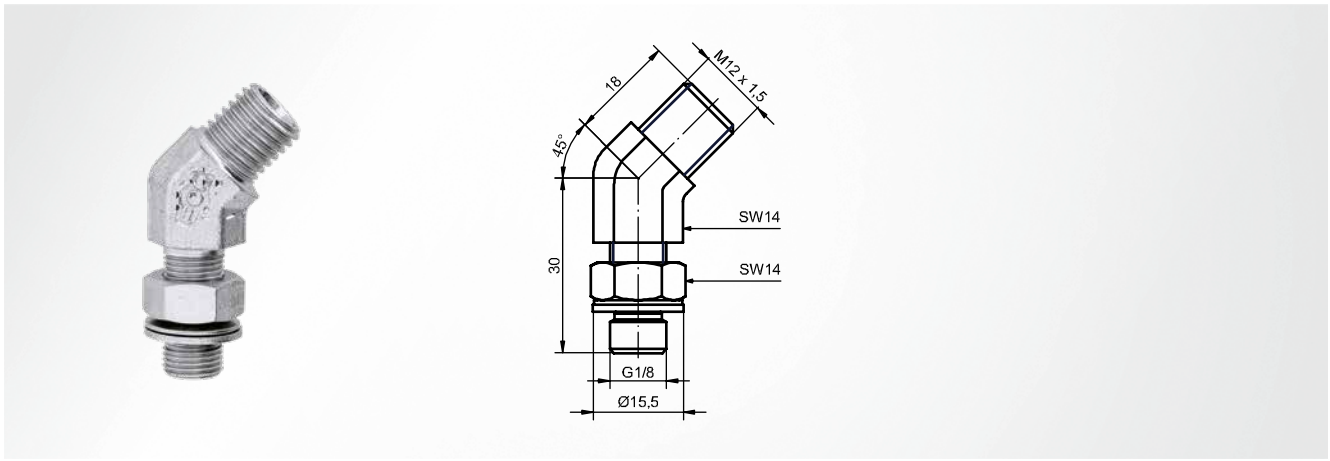


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ701406

SZ701606 Ellbow screw connection

45°, adjustable

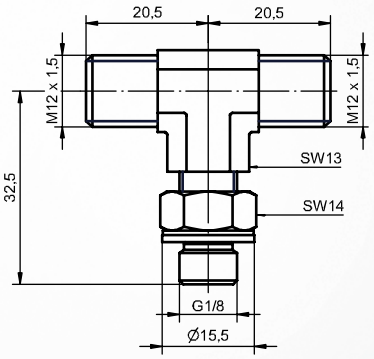


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ701606

SZ701506 T-screw connection

adjustable

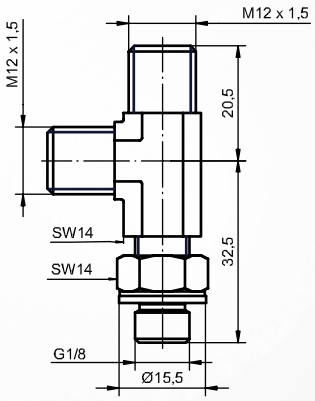


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ701506

SZ701706 L-screw connection

adjustable, with lock nut

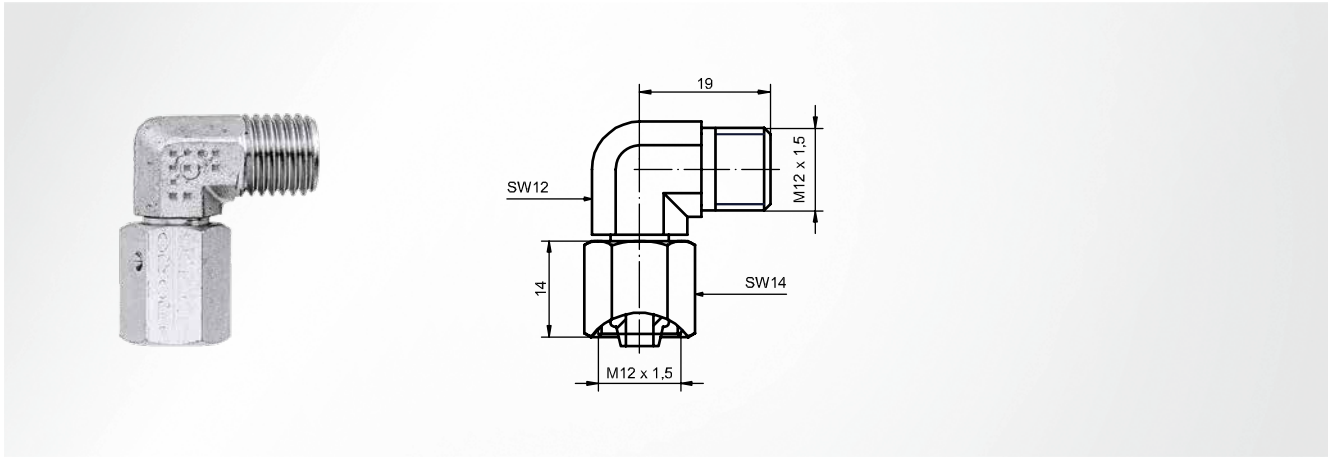


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ701706

SZ703406 Ellbow screw connection

90°

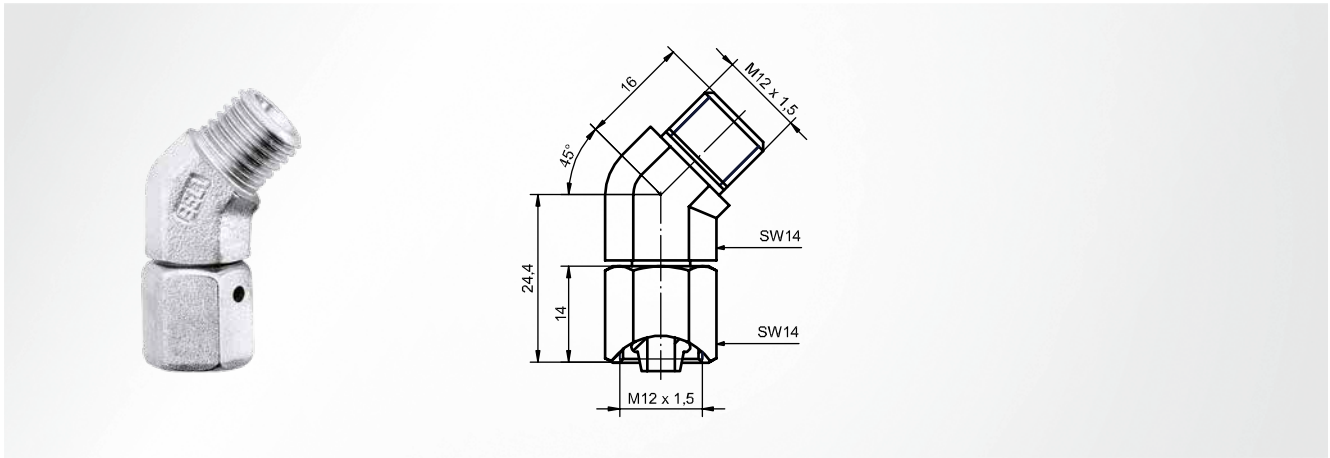


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ703406

SZ703606 Ellbow screw connection

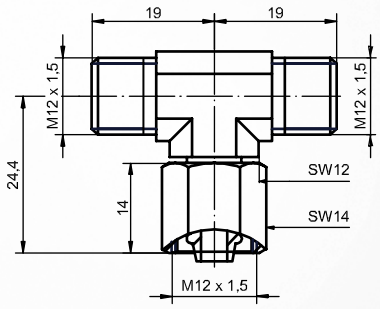
45°



Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ703606

SZ703506 T-screw connection

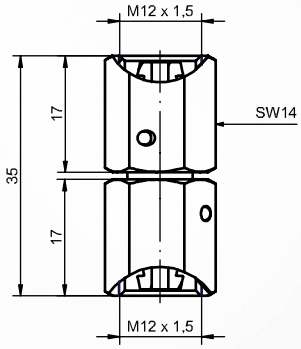


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ703506

SZ703306 Intermediate adapter

straight

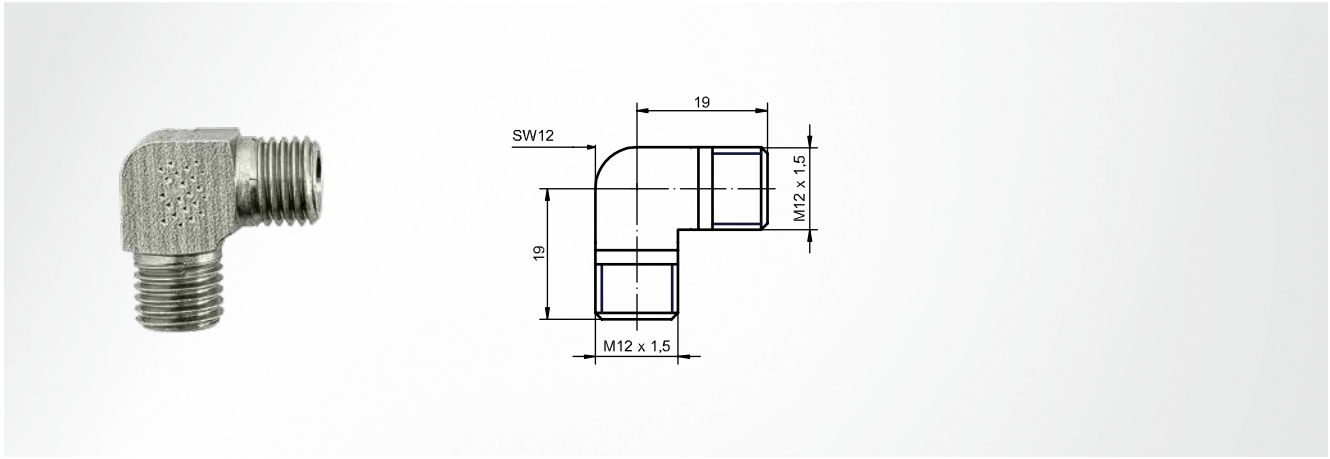


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ703306

SZ702106 Ellbow screw connection

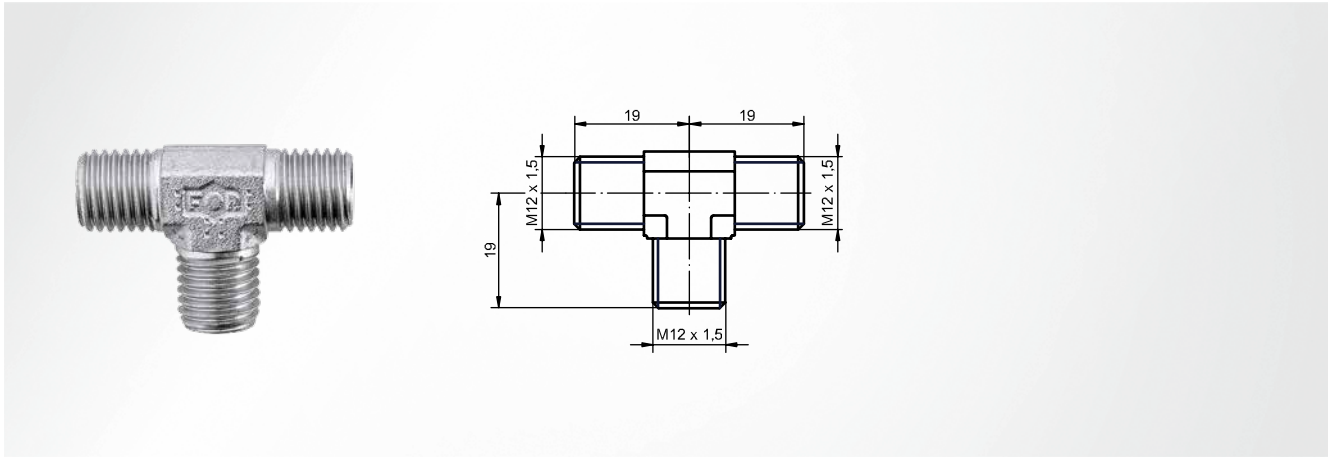
90°



Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ702106

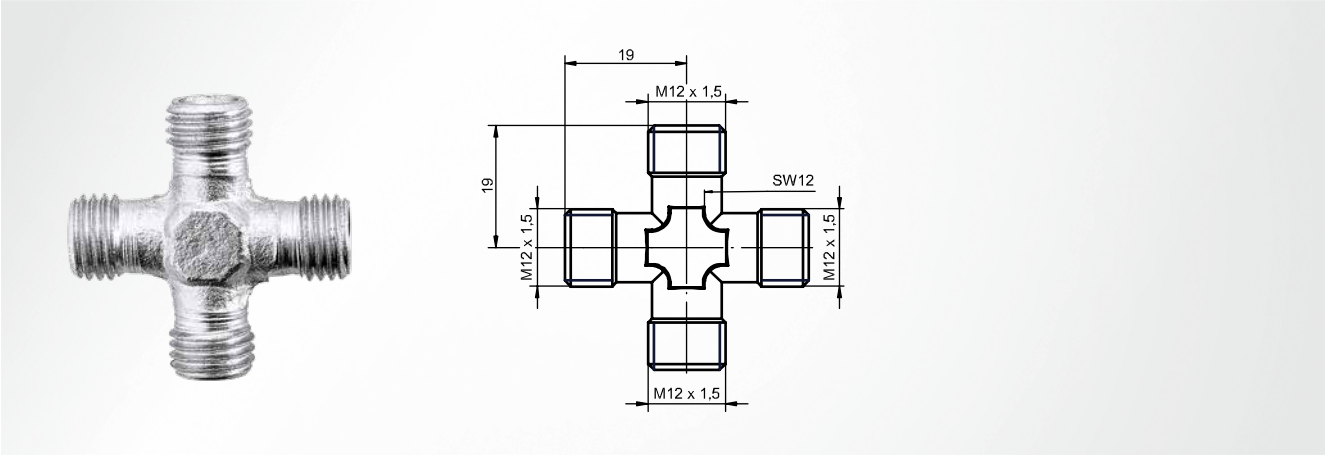
SZ702206 T-screw connection



Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ702206

SZ702306 Four way screw connection

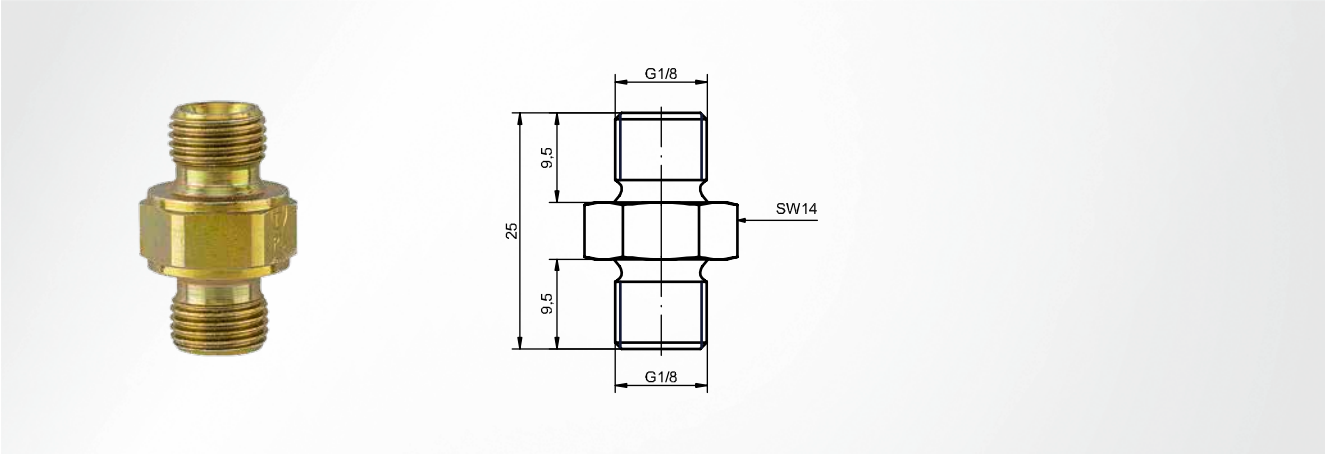


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ702306

SZ701906 Adapter

1/8"

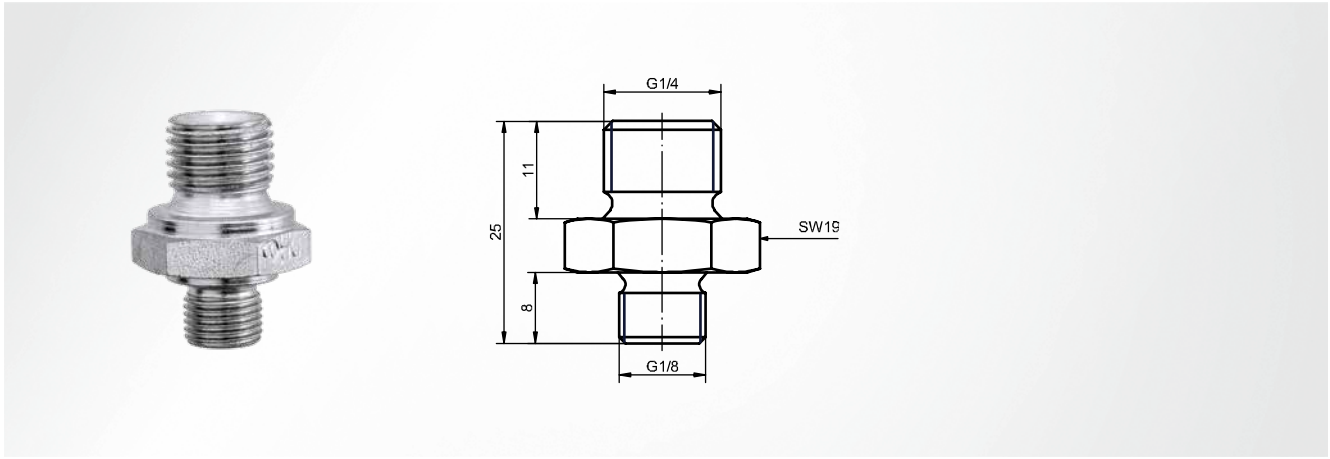


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ701906

SZ704530 Screw connection

straight, G1/4-G1/8

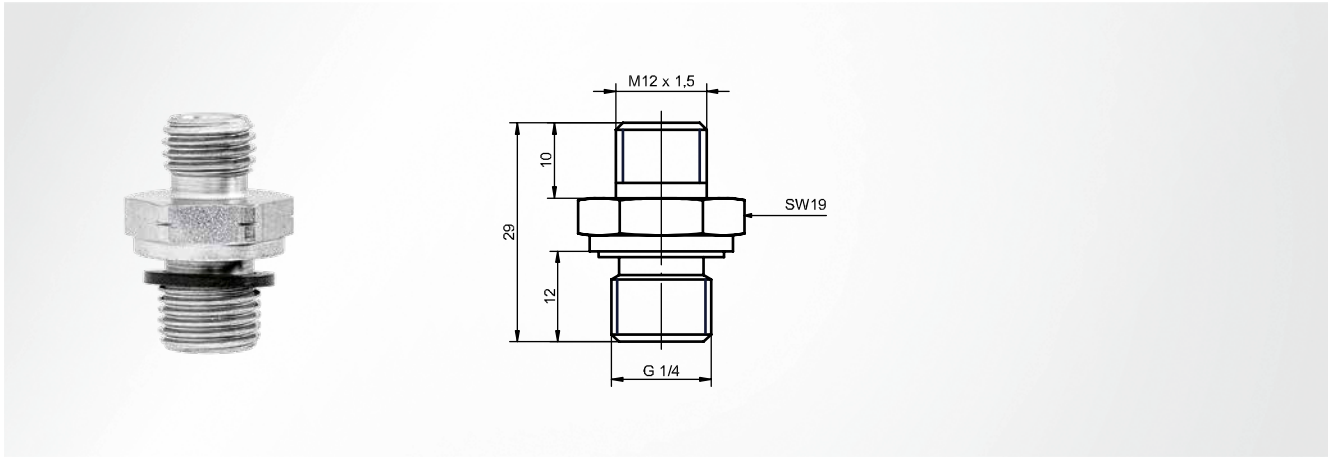


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ704530

SZ704405 Screw connection

straight, G1/4

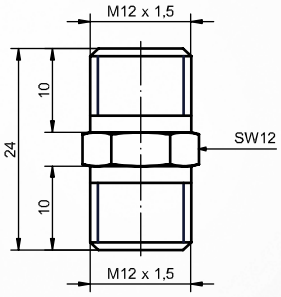


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ704405

SZ702406 Screw connection

straight, M12 x 1.5

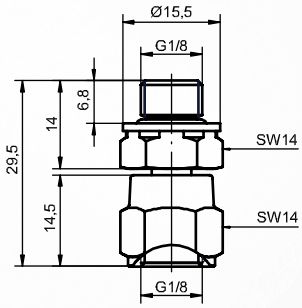


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ702406

SZ704531 Screw connection

straight, G1/8-G1/8

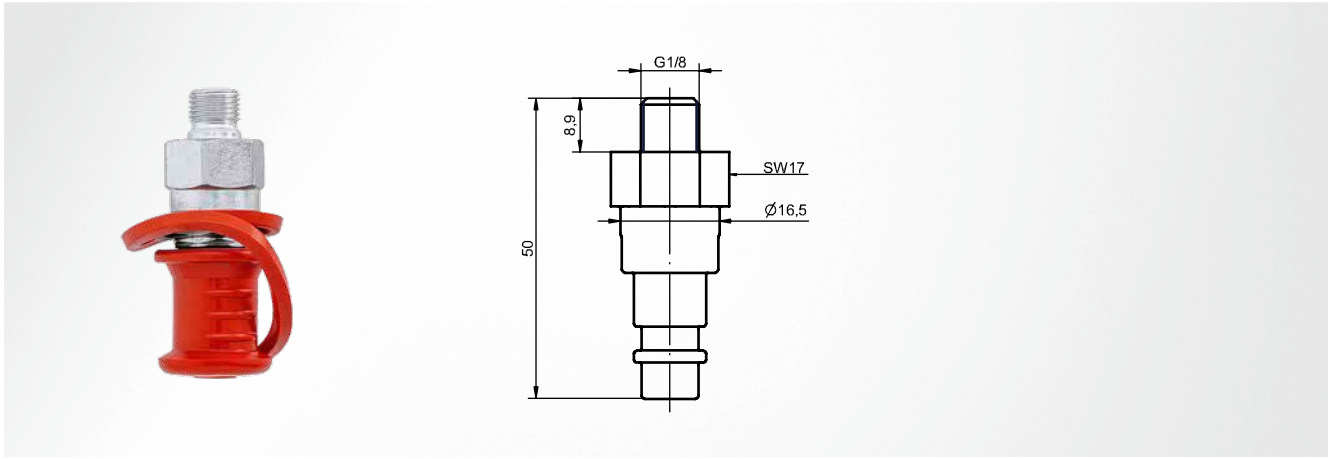


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ704531

SZ704302 Quick coupling connector

G1/8

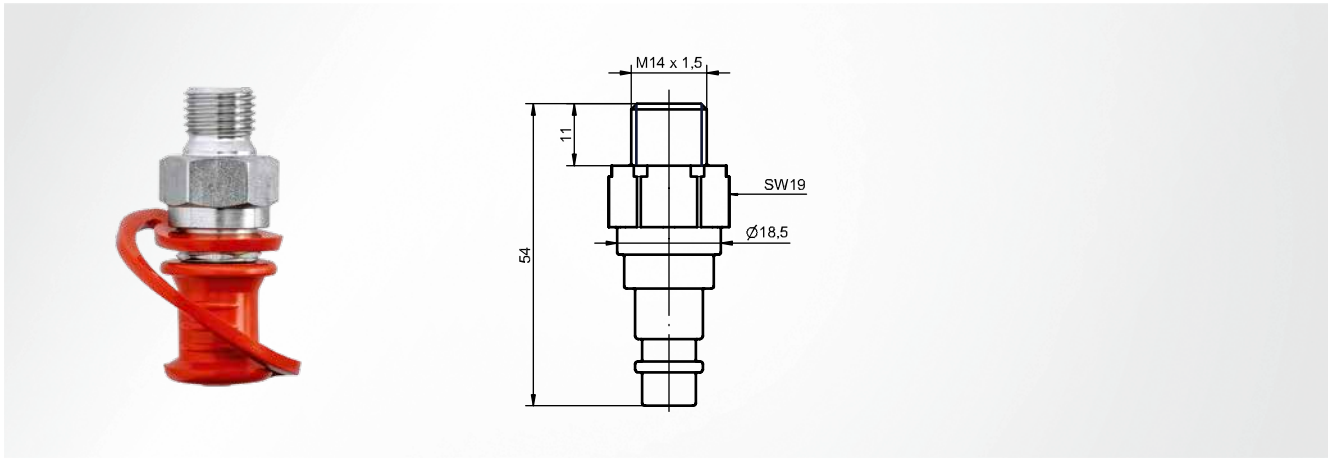


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ704302

SZ704406 Quick coupling connector

M14 x 1.5

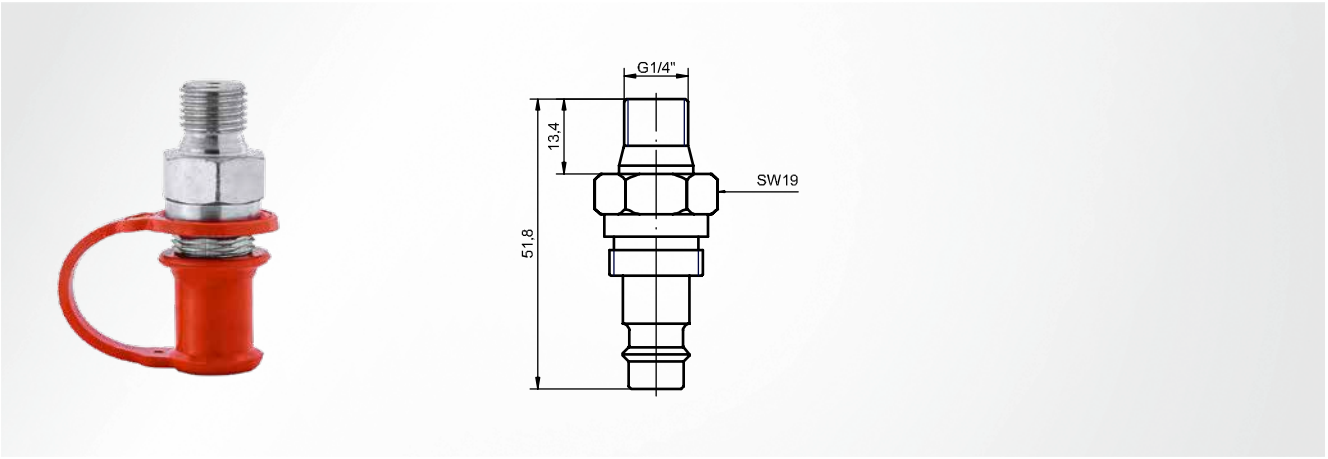


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ704406

SZ704204 Quick coupling connector

G1/4

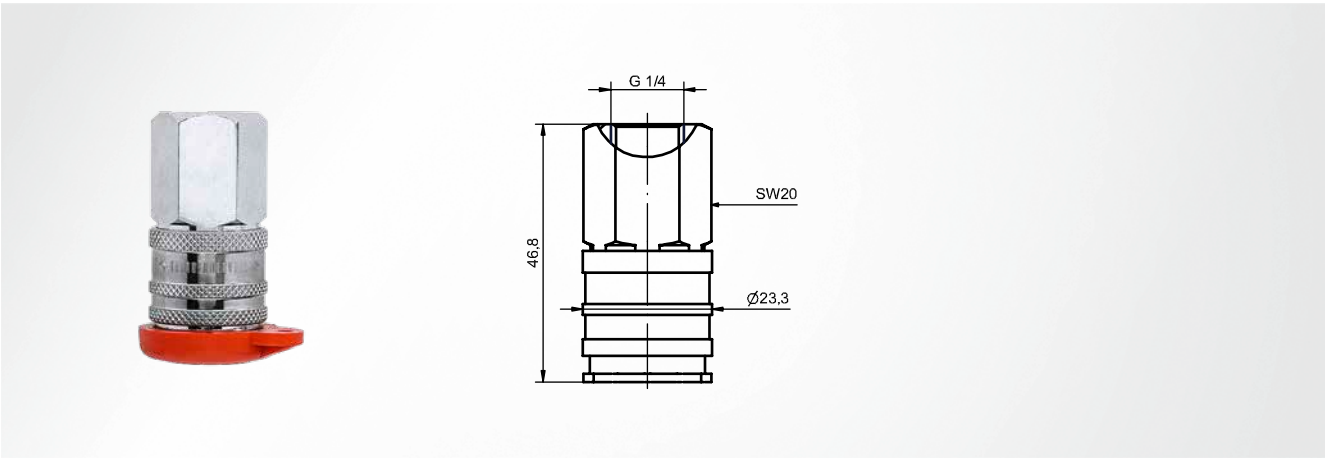


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ704204

SZ704303 Quick coupling sleeve

G1/4

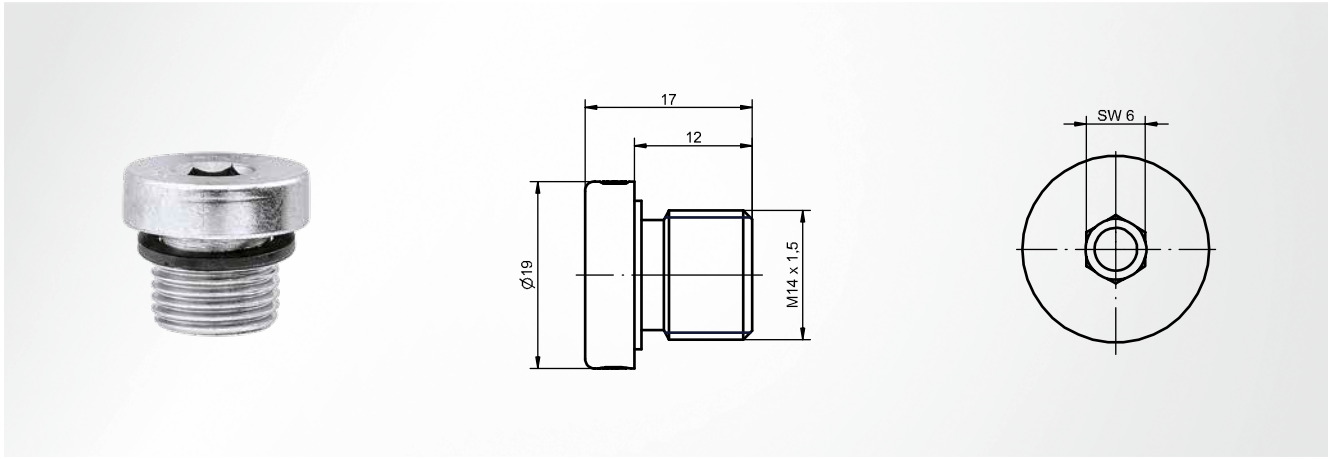


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ704303

SZ704404 Sealing plug

G1/4

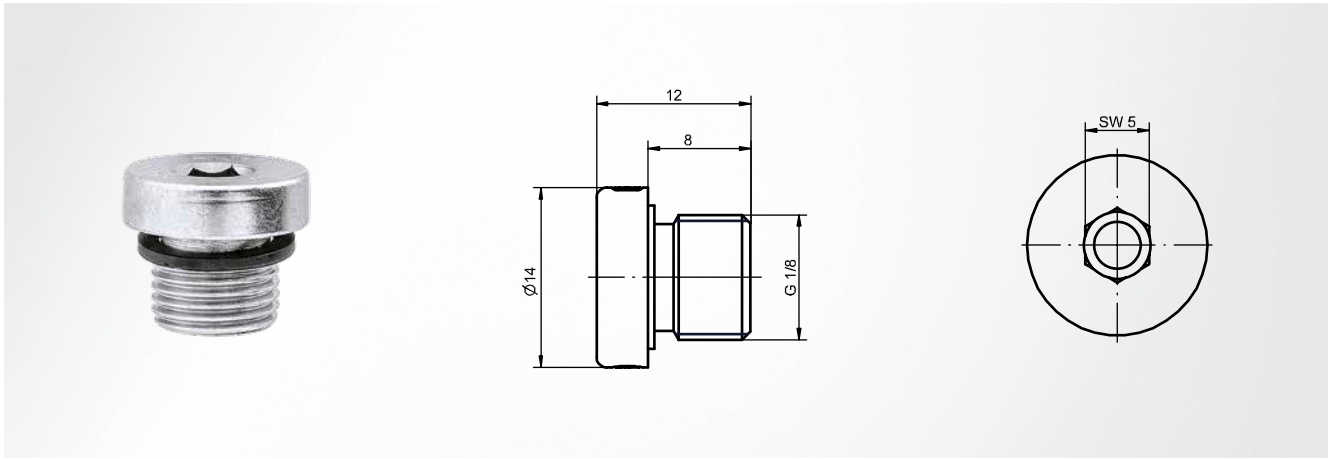


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ704404

SZ704301 Sealing plug

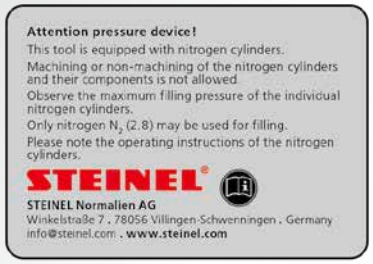
G1/8

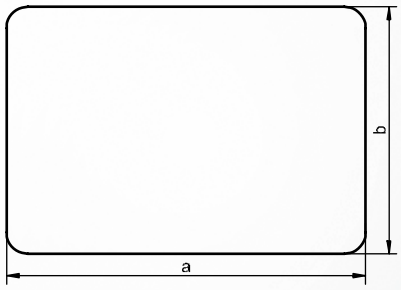


Note
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

Item number
SZ704301

SZ8099 Warning sign

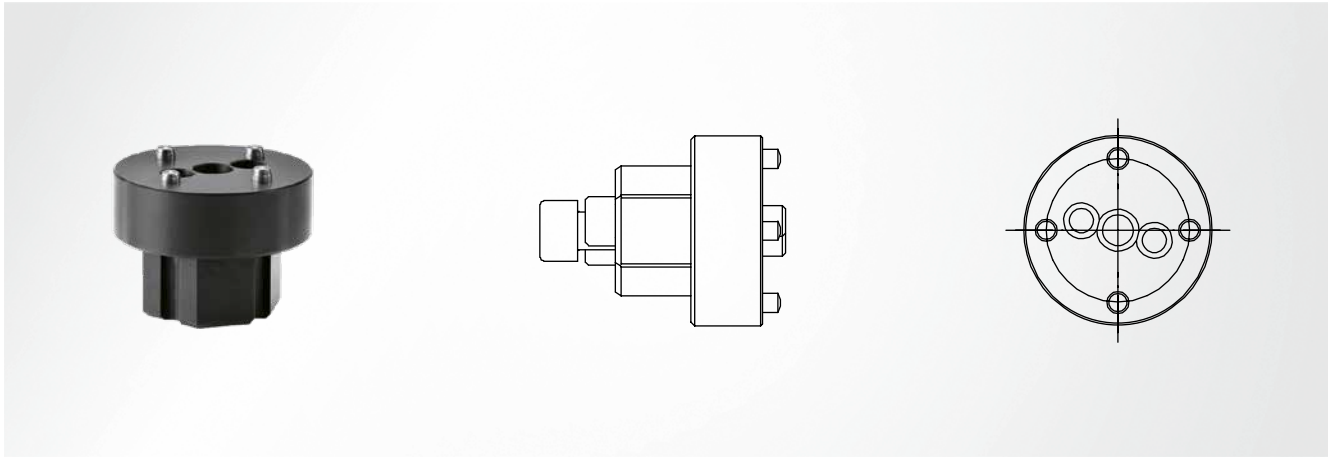




a	b	Language	Item number
50	35	german	SZ8099 **-002**
		englisch	SZ8099 **-102**
		french	SZ8099 **-202**
105	75	german	SZ8099 **-001**
		englisch	SZ8099 **-101**
		french	SZ8099 **-201**
150	110	german	SZ8099 **-003**
		englisch	SZ8099 **-103**
		french	SZ8099 **-203**

SZ8000 WKZ Assembly tool

base



Compatibel series
all series

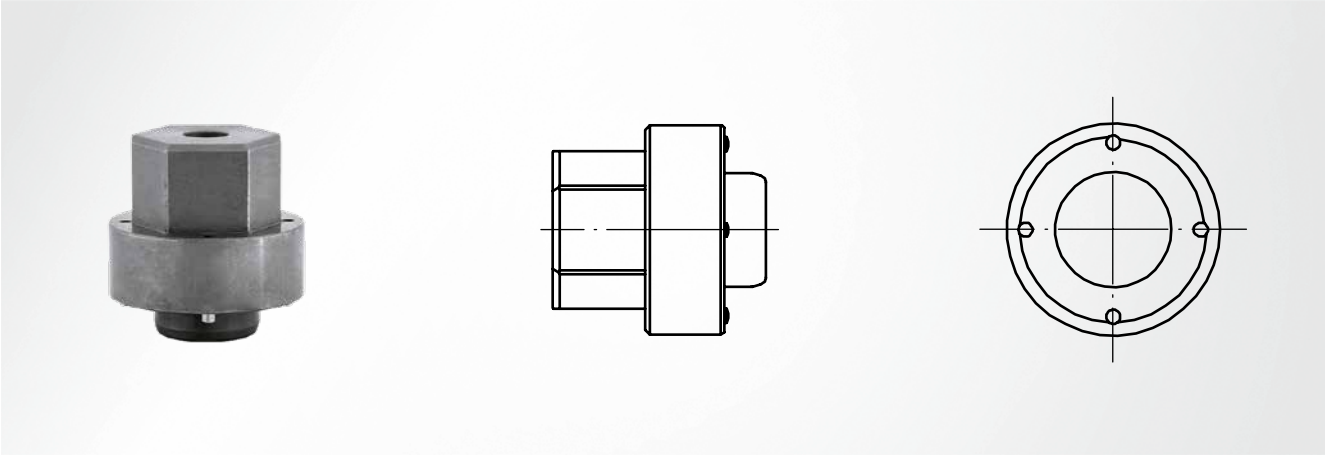
Note
Assembly and disassembly of the screwed-on base; repair of nitrogen systems must only be carried out by trained personnel; please observe our operating and safety instructions

D	Item number
19	SZ8000 **WKZ019**
25	SZ8000 **WKZ025**
32	SZ8000 **WKZ032**
38	SZ8000 **WKZ038-1**
50	SZ8000 **WKZ050**

D	Item number
63	SZ8000 **WKZ063**
75	SZ8000 **WKZ075**
95	SZ8000 **WKZ095**
120	SZ8000 **WKZ120**

SZ8000 WKZ8065 Assembly tool

DS-fixture



Compatibel series
SZ8065.1.; SZ8065.2.038-095

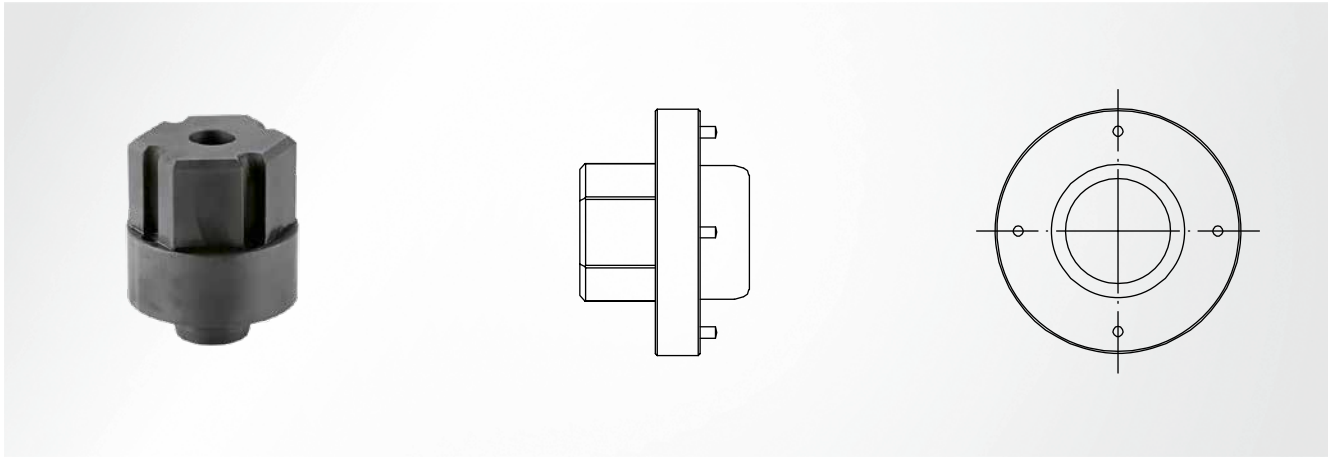
Note
Assembly and disassembly of the DS fixture; repair of nitrogen systems must only be carried out by trained personnel; please observe our operating and safety instructions

D	Item number
19	SZ8000 **WKZ8065DS19**
25	SZ8000 **WKZ8065DS25**
32	SZ8000 **WKZ8065DS32**
38	SZ8000 **WKZ8065DS38**

D	Item number
50	SZ8000 **WKZ8065DS50**
63	SZ8000 **WKZ8065DS63**
75	SZ8000 **WKZ8065DS75**
95	SZ8000 **WKZ8065DS95**

SZ8000 WKZ8066 Assembly tool

DS-fixture



Compatibel series
SZ7066.1.; SZ8066.1.; SZ8080.1.

Note
Assembly and disassembly of the DS fixture; repair of nitrogen systems must only be carried out by trained personnel; please observe our operating and safety instructions

D	Item number
19	SZ8000 **WKZ8066DS19**
25	SZ8000 **WKZ8066DS25**
32	SZ8000 **WKZ8066DS32**
38	SZ8000 **WKZ8066DS38**

D	Item number
50	SZ8000 **WKZ8066DS50**
63	SZ8000 **WKZ8066DS63**
75	SZ8000 **WKZ8066DS75**
95	SZ8000 **WKZ8066DS95**

SZ8000 Repair kit 1

Compatibel series
SZ8060.1.; SZ8060.2.

Composition
scraper; high-performance oil; piston seal; piston guide; O-ring base; repair instructions (available in German and English); screw locking; lock ring; rod guide

Note
Repair of nitrogen systems must only be carried out by trained personnel; please observe our operating and safety instructions

D	Item number
19	SZ8000 **REP001019**
25	SZ8000 **REP001025**
32	SZ8000 **REP001032**
38	SZ8000 **REP001038**
50	SZ8000 **REP001050**

D	Item number
63	SZ8000 **REP001063**
75	SZ8000 **REP001075**
95	SZ8000 **REP001095**
120	SZ8000 **REP001120**

SZ8000 Repair kit 2

Compatibel series
SZ7066.2.; SZ7080.2.; SZ8063.1.; SZ8065.2.019-032; SZ8066.2.; SZ8080.2.

Composition
scraper; high-performance oil; piston guide; O-ring base; repair instructions (available in German and English); screw locking; lock ring; rod seal; rod guide

Note
Repair of nitrogen systems must only be carried out by trained personnel; please observe our operating and safety instructions

D	Item number
19	SZ8000 **REP002019**
25	SZ8000 **REP002025**
32	SZ8000 **REP002032**
38	SZ8000 **REP002038**

D	Item number
50	SZ8000 **REP002050**
63	SZ8000 **REP002063**
75	SZ8000 **REP002075**
95	SZ8000 **REP002095**

SZ8000 Repair kit 3

Compatibel series
SZ8065.1.; SZ8065.2.038-095

Composition
gasket kit mounting complete; high-performance oil; piston guide; O-ring base; repair instructions (available in German and English); screw locking; rod seal

Note
Repair of nitrogen systems must only be carried out by trained personnel; please observe our operating and safety instructions

D	Item number
19	SZ8000 **REP003019**
25	SZ8000 **REP003025**
32	SZ8000 **REP003032**
38	SZ8000 **REP003038**

D	Item number
50	SZ8000 **REP003050**
63	SZ8000 **REP003063**
75	SZ8000 **REP003075**
95	SZ8000 **REP003095**

SZ8000 Repair kit 4

Compatibel series
SZ7066.1.; SZ7080.1.; SZ8066.1.; SZ8066.2.120; SZ8080.1.; SZ8080.2.120

Composition
gasket kit mounting complete; high-performance oil; piston guide; O-ring base; repair instructions (available in German and English); screw locking; rod seal

Note
Repair of nitrogen systems must only be carried out by trained personnel; please observe our operating and safety instructions

D	Item number
19	SZ8000 **REP004019**
25	SZ8000 **REP004025**
32	SZ8000 **REP004032**
38	SZ8000 **REP004038**
50	SZ8000 **REP004050**

D	Item number
63	SZ8000 **REP004063**
75	SZ8000 **REP004075**
95	SZ8000 **REP004095**
120	SZ8000 **REP002120**

SZ7087 Burst screw

Note

The specified burst pressure corresponds with the maximum allowable pressure PS of the nitrogen cylinders

Nitrogen cylinder	Burst pressure bar	Item number
Ø32 and Ø38	350	SZ7087 **06350**
	380	SZ7087 **06380**
	430	SZ7087 **06430**
	450	SZ7087 **06450**
	470	SZ7087 **06470**
	500	SZ7087 **06500**
from Ø50	350	SZ7087 **12350**

Nitrogen cylinder	Burst pressure bar	Item number
from Ø50	380	SZ7087 **12380**
	400	SZ7087 **12400**
	430	SZ7087 **12430**
	450	SZ7087 **12450**
	470	SZ7087 **12470**
	500	SZ7087 **12500**
	600	SZ7087 **12600**

ST8841-DS Gasket kit

for manifold cylinder

Scope of supply
Scraper; piston seal; piston guide; O-ring; rod guide; high-performance oil

Compatibel cylinder	Item number
ST8841-1-005, ST8841-2-005, ST8841-3-005	ST8841 **-005-DS**
ST8841-1-010, ST8841-2-010, ST8841-3-010	ST8841 **-010-DS**
ST8841-1-025, ST8841-2-025, ST8841-3-025	ST8841 **-025-DS**

Compatibel cylinder	Item number
ST8841-1-035, ST8841-2-035, ST8841-3-035	ST8841 **-035-DS**
ST8841-1-055, ST8841-2-055, ST8841-3-055	ST8841 **-055-DS**
ST8841-1-100, ST8841-2-100, ST8841-3-100	ST8841 **-100-DS**

ST8841-ZB Accessory kit

for manifold cylinder

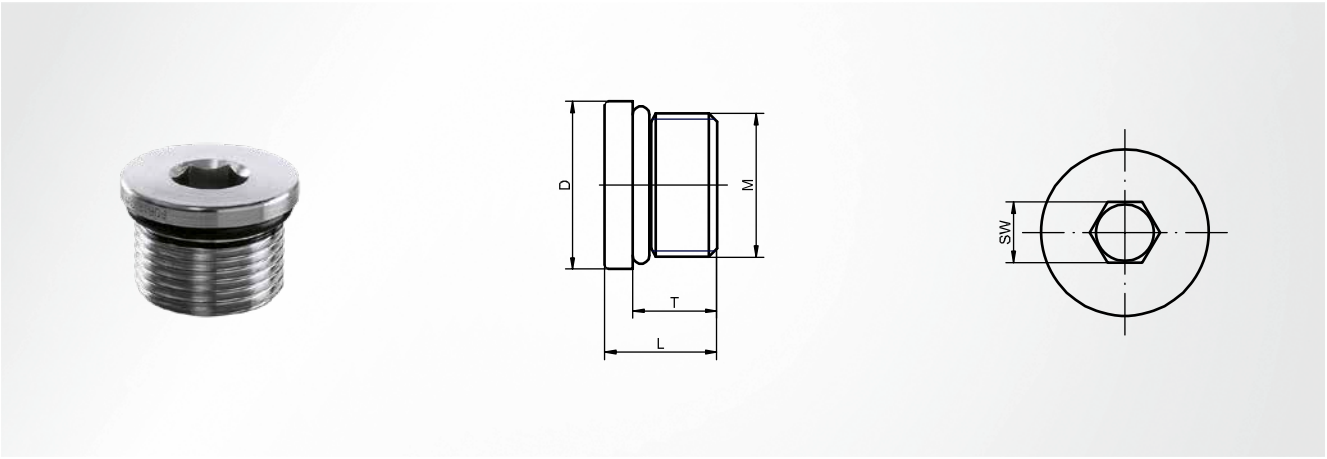
Scope of supply
Bleed valve; lubricating nipple; lock ring

Compatibel cylinder	Item number
ST8841-1-005, ST8841-2-005	ST8841 **-1-005-ZB**
ST8841-1-010, ST8841-2-010	ST8841 **-1-010-ZB**
ST8841-1-025, ST8841-2-025	ST8841 **-1-025-ZB**
ST8841-1-035, ST8841-2-035	ST8841 **-1-035-ZB**

Compatibel cylinder	Item number
ST8841-1-055, ST8841-2-055	ST8841 **-1-055-ZB**
ST8841-1-100, ST8841-2-100	ST8841 **-1-100-ZB**
ST8841-3-003	ST8841 **-3-005-ZB**
ST8841-3-010	ST8841 **-3-010-ZB**

ST8842-1 Sealing plug

with six pans creux

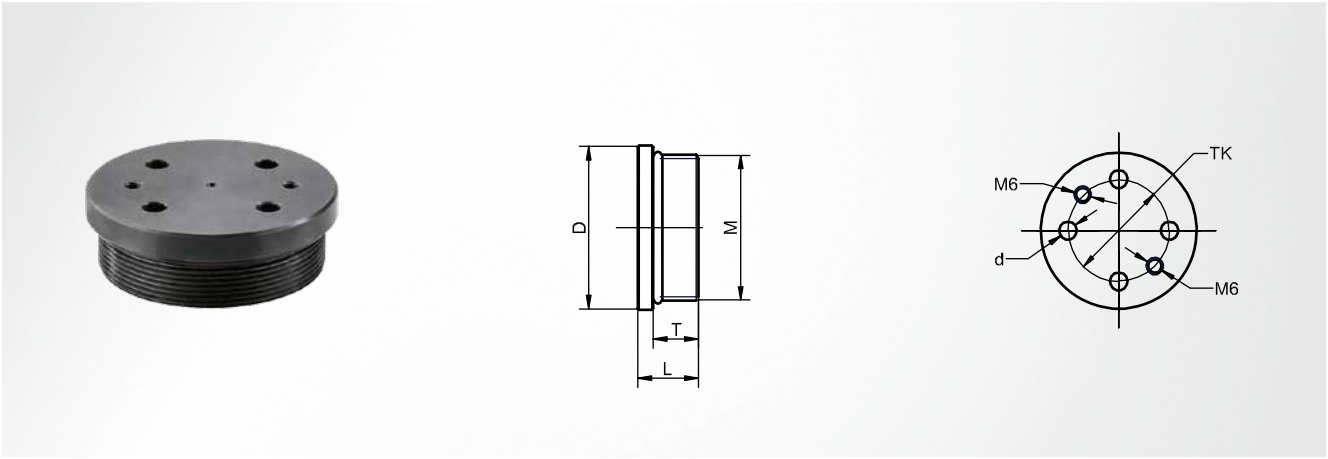


Note

is used for sealing the volume or connecting holes

D	M	L	SW	Torque Nm	Bore hole diameter	Circular area cm²	T	Item number
16	1/2"-20 UNF	12.0	5	40	10	0.785	9.0	ST8842 **-012**
19	M14 x 1.5	14.0	6	45	12	2.011	11.0	ST8842 **-014**
22	3/4"-16 UNF	15.0	8	55	16	1.131	12.0	ST8842 **-016**
27	M20 x 1.5	18.0	10	70	16	2.545	14.0	ST8842 **-020**
32	M27 x 2	22.5	12	160	24	4.524	18.5	ST8842 **-027**

ST8842-2 Sealing plug

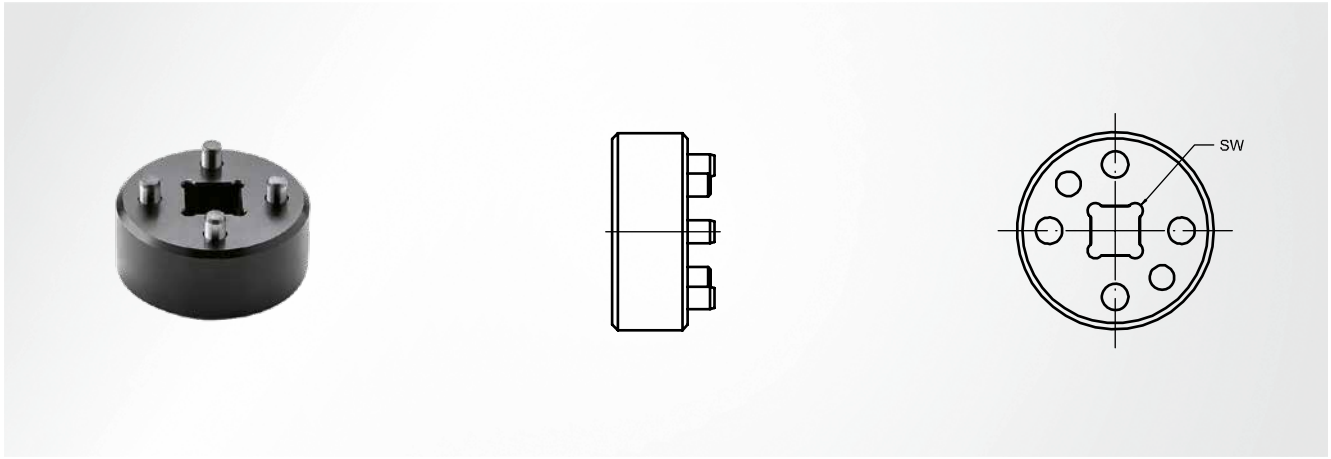


Note
is used for sealing the volume or connecting holes

D	M	d	T	TK	Torque Nm	Bore hole diameter	Circular area cm^2	L	Item number
42	M36 x 2	5.2	15	25	300	33	8.553	20	ST8842 **-036**
48	M42 x 2	5.2	15	30	330	39	11.946	20	ST8842 **-042**
54	M48 x 2	6.2	15	35	440	44	15.904	20	ST8842 **-048**
70	M64 x 2	6.2	15	45	440	60	28.274	20	ST8842 **-064**
88	M80 x 2	8.2	20	55	800	76	45.365	30	ST8842 **-080**
108	M100 x 2	8.2	20	70	1000	96	72.382	30	ST8842 **-100**
145	M130 x 2	8.2	20	90	1200	126	124.69	30	ST8842 **-130**

ST8842-WKZ-5 Assembly tool

for sealing plug

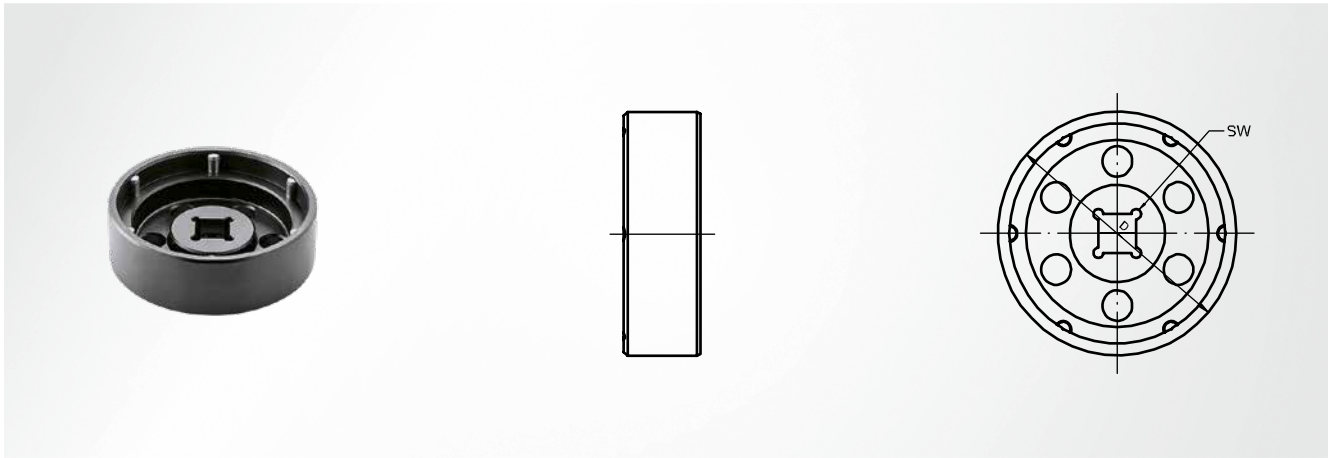


M	SW	Item number
M36 x 2	12.7	ST8842 **-WKZ-5-036**
M42 x 2	12.7	ST8842 **-WKZ-5-042**
M48 x 2	12.7	ST8842 **-WKZ-5-048**
M64 x 2	19.0	ST8842 **-WKZ-5-064**

M	SW	Item number
M80 x 2	19.0	ST8842 **-WKZ-5-080**
M100 x 2	19.0	ST8842 **-WKZ-5-100**
M130 x 2	19.0	ST8842 **-WKZ-5-130**

ST8841-WKZ-3 Socket

for manifold cylinder



Note

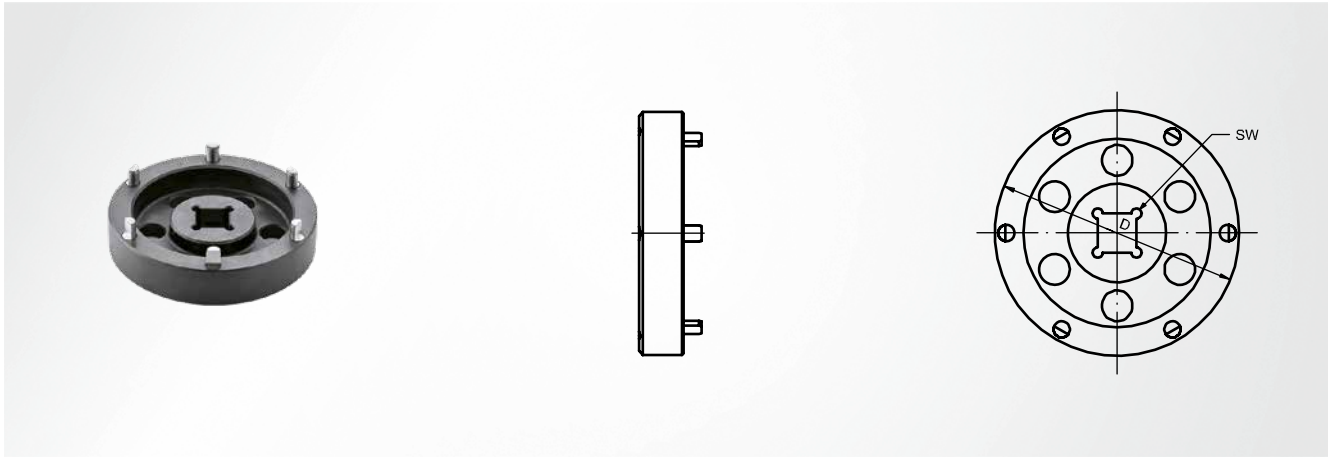
is used when there is an open installation space and standard installation clearance in the event of several cylinders on a manifold plate; when there is a sufficient depression diameter in the event of recessed installation

Cylinder type	D	SW	Item number
005	52	12.7	ST8841 **-WKZ-3-005**
010	64	12.7	ST8841 **-WKZ-3-010**
025	82	12.7	ST8841 **-WKZ-3-025**

Cylinder type	D	SW	Item number
035	100	12.7	ST8841 **-WKZ-3-035**
055	120	19.0	ST8841 **-WKZ-3-055**
100	165	19.0	ST8841 **-WKZ-3-100**

ST8841-WKZ-41 Socket

for manifold cylinder



Note
is used in the event of recessed installation or a shortened cylinder installation clearance

Cylinder type	D	SW	Item number
005	52	12.7	ST8841 **-WKZ-41-005**
010	64	12.7	ST8841 **-WKZ-41-010**
025	82	12.7	ST8841 **-WKZ-41-025**

Cylinder type	D	SW	Item number
035	100	19.0	ST8841 **-WKZ-41-035**
055	120	19.0	ST8841 **-WKZ-41-055**
100	165	19.0	ST8841 **-WKZ-41-100**

Tapping units

- S-Former Z
- S-Former E

SZ8881.01-0007 6.7

SZ8881.01-0001 6.7

SZ8881.01-0002 6.8

SZ8881.01-0003 6.8

SZ8881.01-0004 6.9

SZ2700 6.10

SZ2701 6.11

SZ2701 6.12

SZ2701 6.13

SZ2701 6.14

SZ8871.02 6.15

SZ8871.03 6.16

SZ2702 6.17

SZ2703 6.18

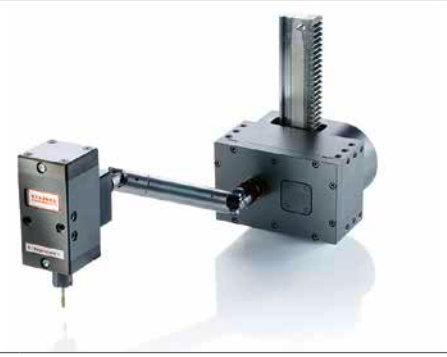
SZ2709 6.19

SZ9400 6.20

Tapping units

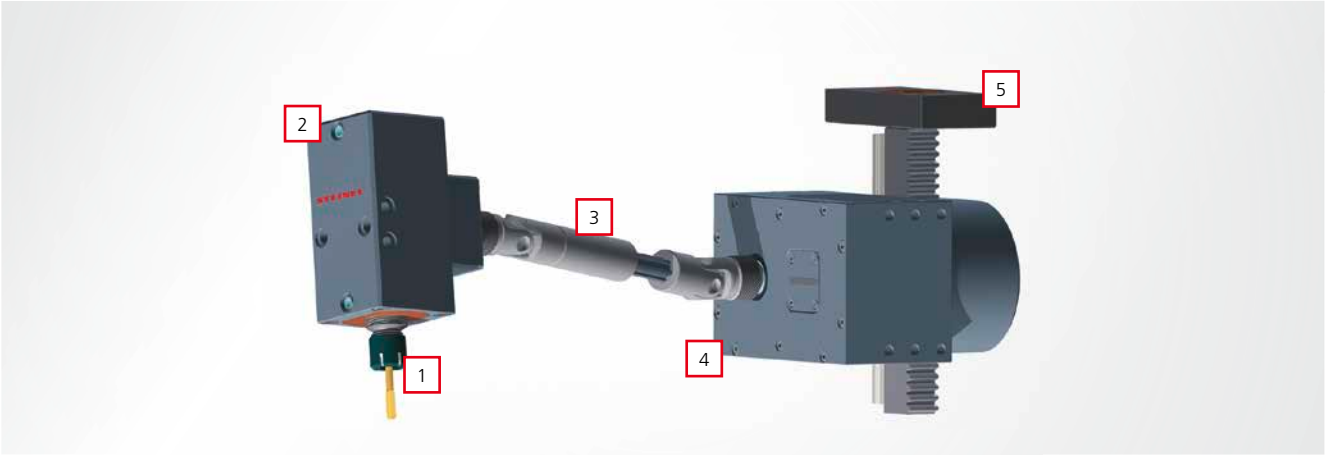
S-Former Z, S-Former E

With the specially designed tapping units S-Former Z (mechanical) and S-Former E (electronic) for punching and bending tools, STEINEL has made two systems available. The decision on the best system variant to use is made according to the specific requirements. We will be happy to help you with the selection, as well as the integration in your tool.

Application fields/features	S-Former Z	S-Former E
		
Drive	mechanical via press stroke	electrical via AC Servodrive
Activation	via tool stroke	via external control unit
max. press speed depending on the process parameters (strokes/min)	150	E0 = 160 E1.1 = 110 E1 = 80 E2 = 70 E3 = 50
Use in progressive stamping tools	✓	✓
Use as autonomous unit, e.g. for rotary indexing tables (assembly station), in production lines	–	✓
Use in presses, punching machines	✓	✓
Tapping at any angle	✓	✓
Process monitoring	–	✓
Use of carbide taps	✓	✓
installable on blank holders	✓	✓
installable on movable mounting	✓	✓
installable on lower plate	✓	✓
Use in various tools	–	✓
various thread sizes with a unit	–	✓

Tapping units

S-Former Z



The S-Former Z is a purely mechanical solution for process-integrated tapping. The linear stroke movement of the press is converted into a rotation movement via a gear rod-sprocket pairing. This is translated in the gear to the required rotation speed and transmitted via a Cardan shaft to the tapping unit head. There, a lead screw rotates equally with the roll tap (equal pitch) and drives it into the part.

For the design of the S-Former, information about the process is required. For inquiries, a corresponding form is available. It can be found at:
www.steinel.com » Tapping units » S-Former Z » S-Former Z enquiry

Technical features

- Thread dimensions up to M12 possible
- Thread possible at almost any angle
- Collet for roll tap
- Threaded bush suspension as collision protection
- Lead screw rotates equally with the roll tap (equal pitch)
- Cardan shaft for balancing tapping unit head stroke movements
- Gear rod runner block guide
- Gear with oil lubrication/tapping unit head with grease lubrication
- compact design of the tapping unit head (60 x 60 x 143 mm)
- compact design of the gear (150 x 150 x 96 mm)

The S-Former Z consists of

1 Guide cartridge

2 Tapping unit head

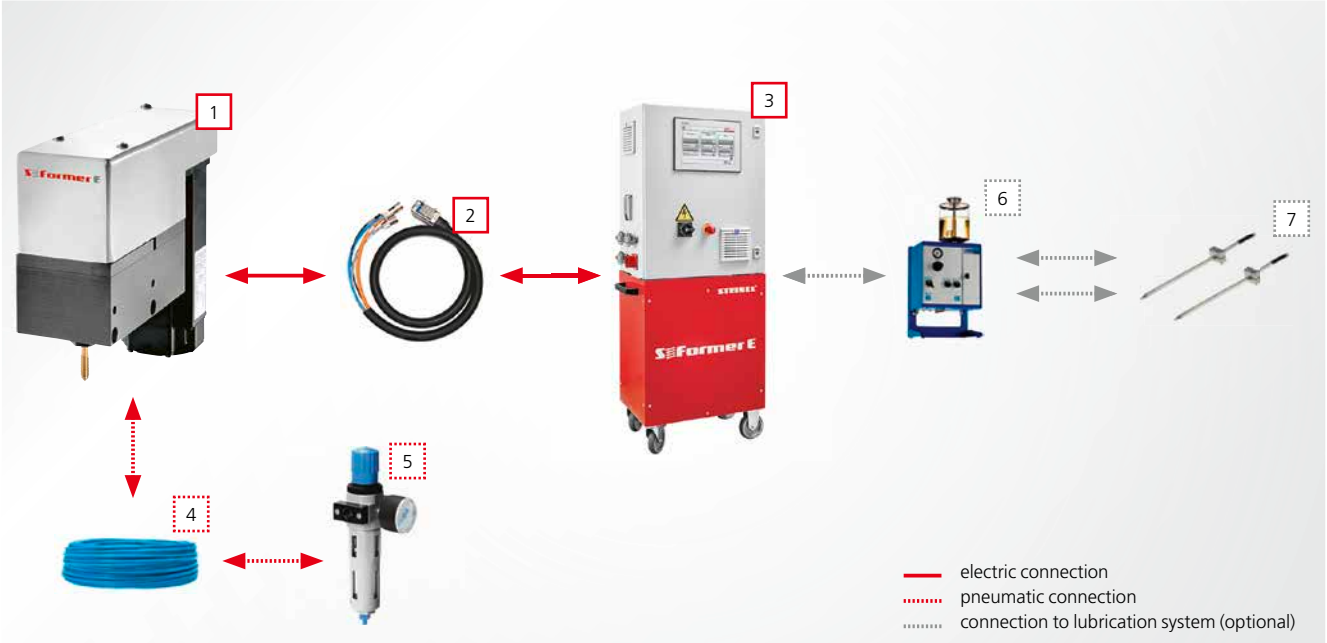
3 Cardan shaft

4 Gear

5 Gear rod with mounting plate

Tapping units

S-Former E



The S-Former E is an electronic system for process-integrated tapping. The AC Servodrive integrated within the tapping unit head drives the roll tap. The movement of the roll tap to the part is done pneumatically and the tap moves into the material itself as a result of its pitch. The PLC control regulates and monitors the servo drive and thus the tapping.

For the design of the S-Former, information about the process is required. For inquiries, a corresponding form is available. It can be found at:
www.steinel.com » Tapping units » S-Former E » S-Former E enquiry

Technical features

- permanent process monitoring and quality checks
- Logging, archiving and processing of the monitoring results
- The S-Former E can be integrated within any production lines.
- Tapping at any angle possible
- parallel work with different tapping unit head sizes/ thread sizes
- automatic recognition of the connected tapping unit head types to avoid errors during setup
- individual programming of the individual tapping unit heads
- Teach in support during programming
- unlimited number of freely configurable programming
- 12" touch display
- German/English menu instructions as standard, additional languages optional
- detailed help and information texts stored in the control unit
- optional remote maintenance module
- user administration for the approval of individual functions

The S-Former E consists of

1 up to 4 tapping unit heads (E0 to E3) in parallel operation, in variable compositions

2 cable set per tapping unit head

3 control cabinet, control unit for up to 4 tapping unit heads

4 pneumatic supply per tapping unit head

5 compressed air maintenance unit with pressure reducer

6 minimal quantity lubrication system/other lubrication system (optional)

7 spray nozzles (optional)

Technical note

Incomplete machine in accordance with Machinery Directive 2006/42/EC with emergency stop function

Tapping units

S-Former E

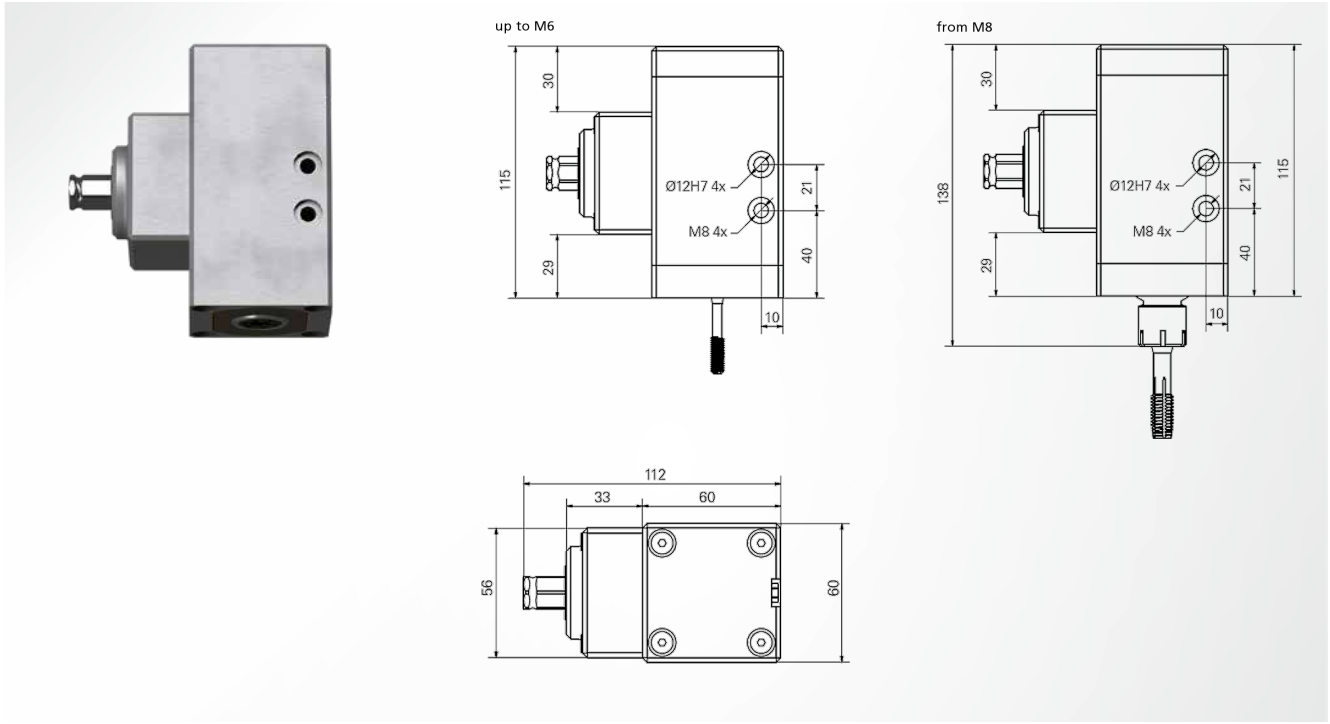
Five tapping unit head sizes cover the thread area from 1 mm to 26 mm diameter. The tapping units are powered by powerful AC Servodrives providing up to 2.25 kW (400 V).

S-Former E	E0	E1.1	E1	E2	E3
Ø thread [mm]	1-4	4-8	4-8	6-16	8-26
Ø tap shaft [mm]	1-4	4-8	4-8	6-12	8-16
max. tap path [mm]	20	30	30	40	50
Number of strokes [stroke/min]*	Up to 160	Up to 110	Up to 80	Up to 70	Up to 50
max. torque M_F [Nm]	2	8	14	20	40
Rotation speed n_F [t/min]	Up to 5000	Up to 3250	Up to 2777	Up to 2500	Up to 1000

* 120° feed and fixing angle (which corresponds to a thread form angle of 240°), steel < 600 N/mm^2; F = roll tap

SZ8881.01-0007 Tapping unit

S-Former Z

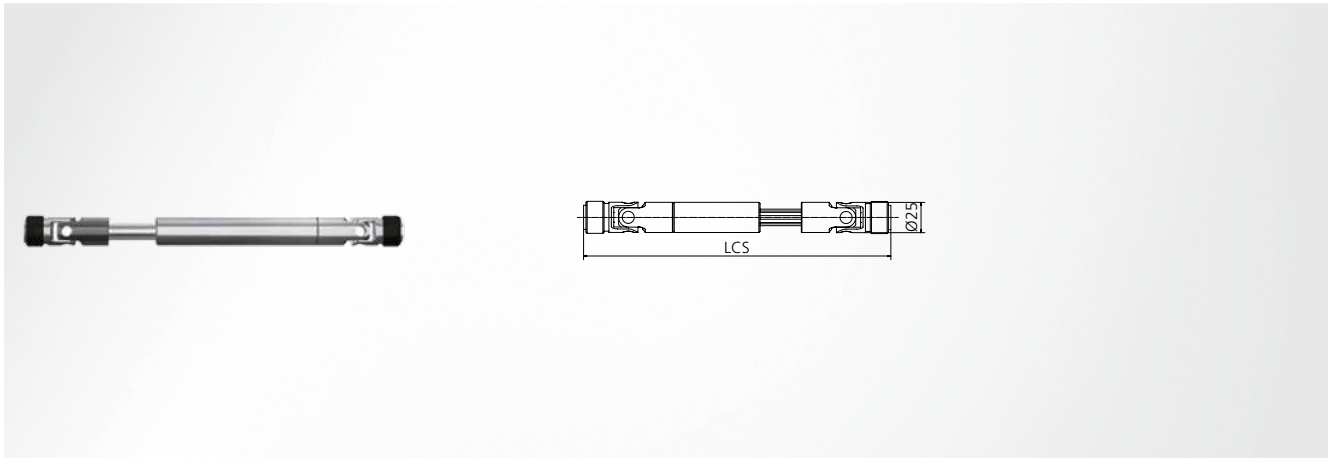


Note
Guide cartridge (SZ8881.01-0004) must also be specified for the tapping unit

Item number
SZ8881.07-0007

SZ8881.01-0001 Cardan shaft

S-Former Z

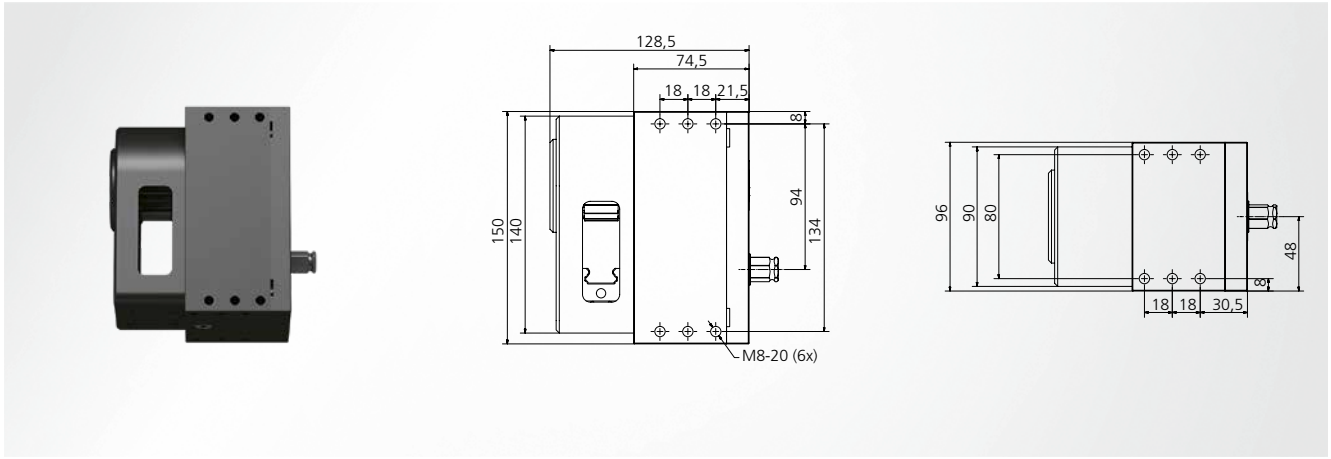


Note
LCS = length of the cardan shaft

Item number
SZ8881.01-0001

SZ8881.01-0002 Gear

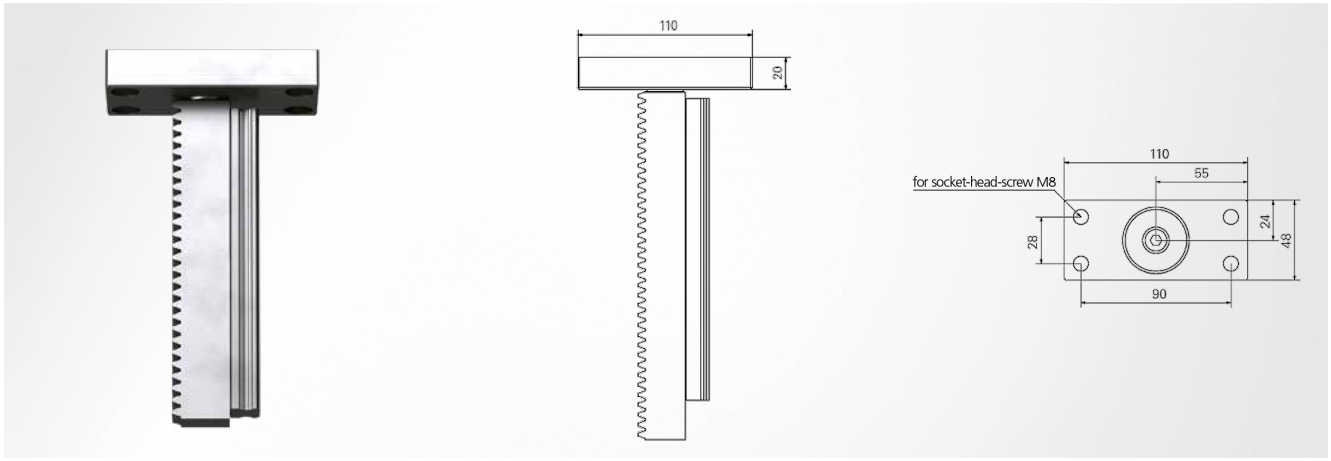
S-Former Z



Item number
SZ8881.01-0002

SZ8881.01-0003 Gear rod

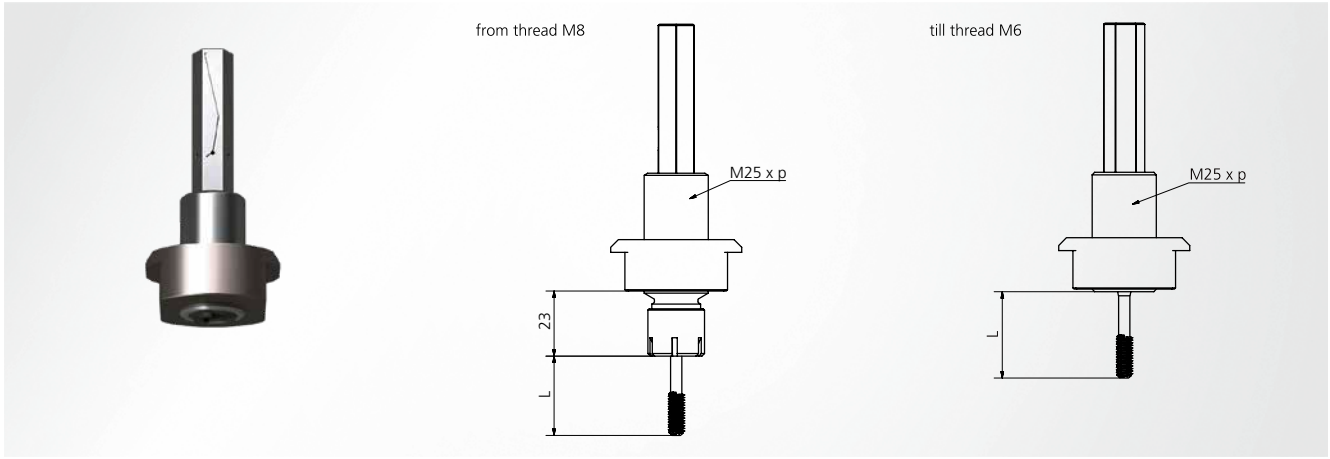
S-Former Z



Item number
SZ8881.01-0003

SZ8881.01-0004 Guide cartridge

S-Former Z



Note
P = roll tap pitch

Item number
SZ8881.01-0004

Thread	Guide cartridge	P	L
M4	M 25 x	0.70	22
M5	M 25 x	0.80	25
M6	M 25 x	1.00	30
M8	M 25 x	1.25	35
M10	M 25 x	1.50	40
M12	M 25 x	1.75	36

SZ2700 Control cabinet

Control cabinet with a Bosch Rexroth control unit featuring a colourful 12" touch screen display and a two-channel emergency stop input/output for a safe drive shutdown procedure. Up to 4 drives may be controlled

Note
minimal quantity lubrication system is available upon request

Power supply
3 x 400 V AC / 50 Hz / 16 A

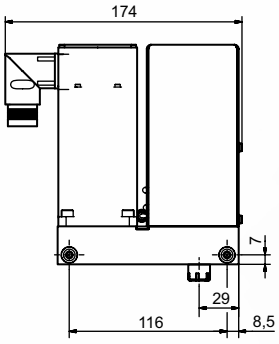
Connection S-Former E
singel, double, triple, fourfold

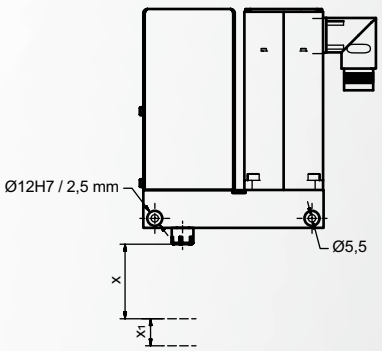
Size incl. control cabinet (W x H x D)
600 x 1530 x 350 mm

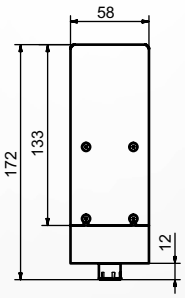
Weight incl. control cabinet
35-50 kg

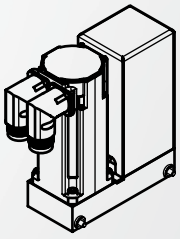
SZ2701 Tapping unit

S-Former E0









Ø Thread
1-4 mm

Number of strokes
up to max. 160 H/min depending on the application

Max. torque
2 Nm

Max. distance
X1 = 20 mm

Max. overhang
X = 55 mm

Ø Thread former shaft
1-4 mm

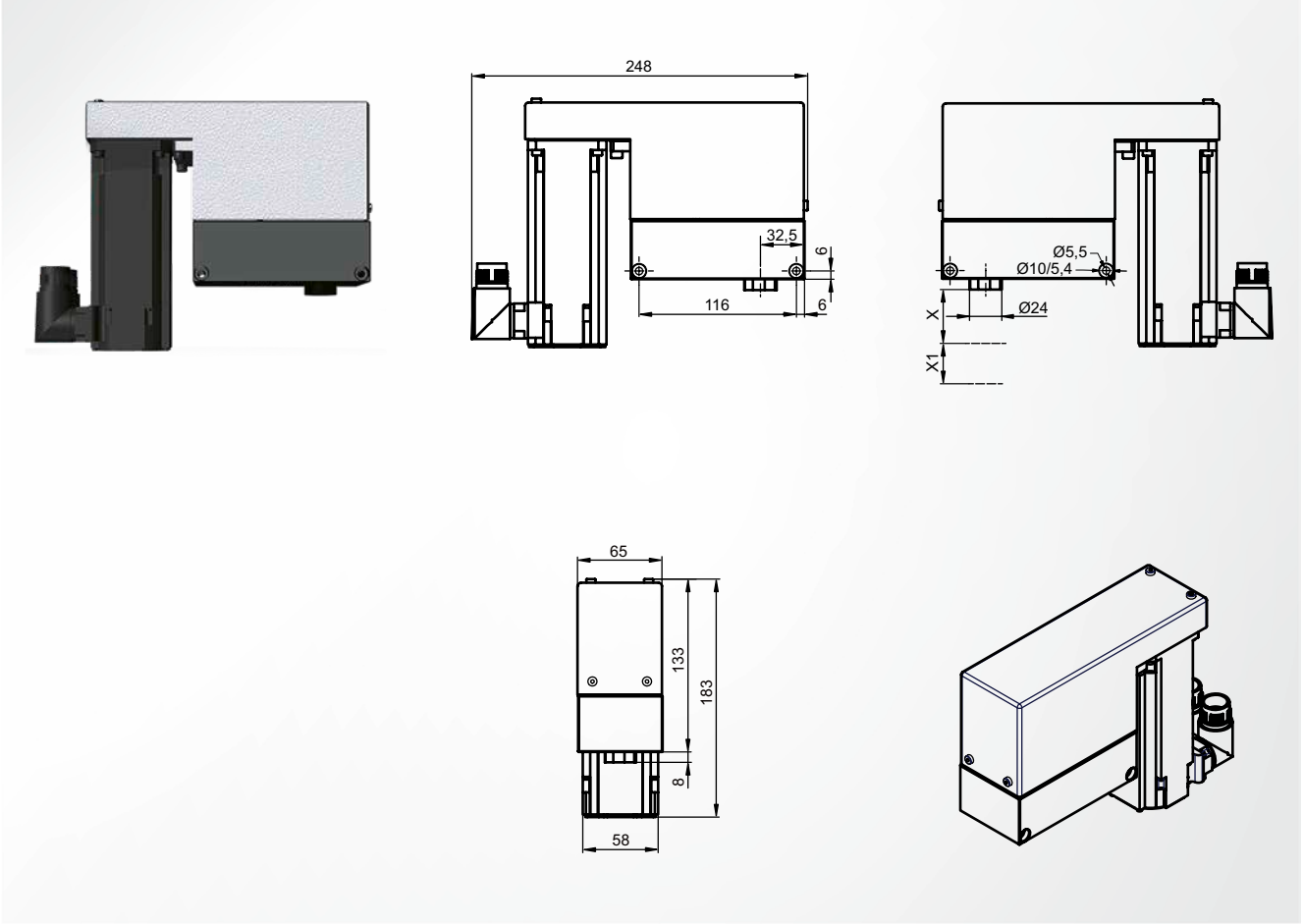
Rotational speed up to
5000 1/min

Note
Clamping nut SZ2702-00014 and clamping key SZ2702-00015 are included in the scope of delivery; each roll tap can be used in accordance with DIN 2174

Item number
SZ2701-00005

SZ2701 Tapping unit

S-Former E1.1



Ø Thread
4-8 mm

Number of strokes
up to max. 110 H/min depending on the application

Max. torque
8 Nm

Max. distance
X1 = 30 mm

Max. overhang
X = 40 mm

Ø Thread former shaft
4-8 mm

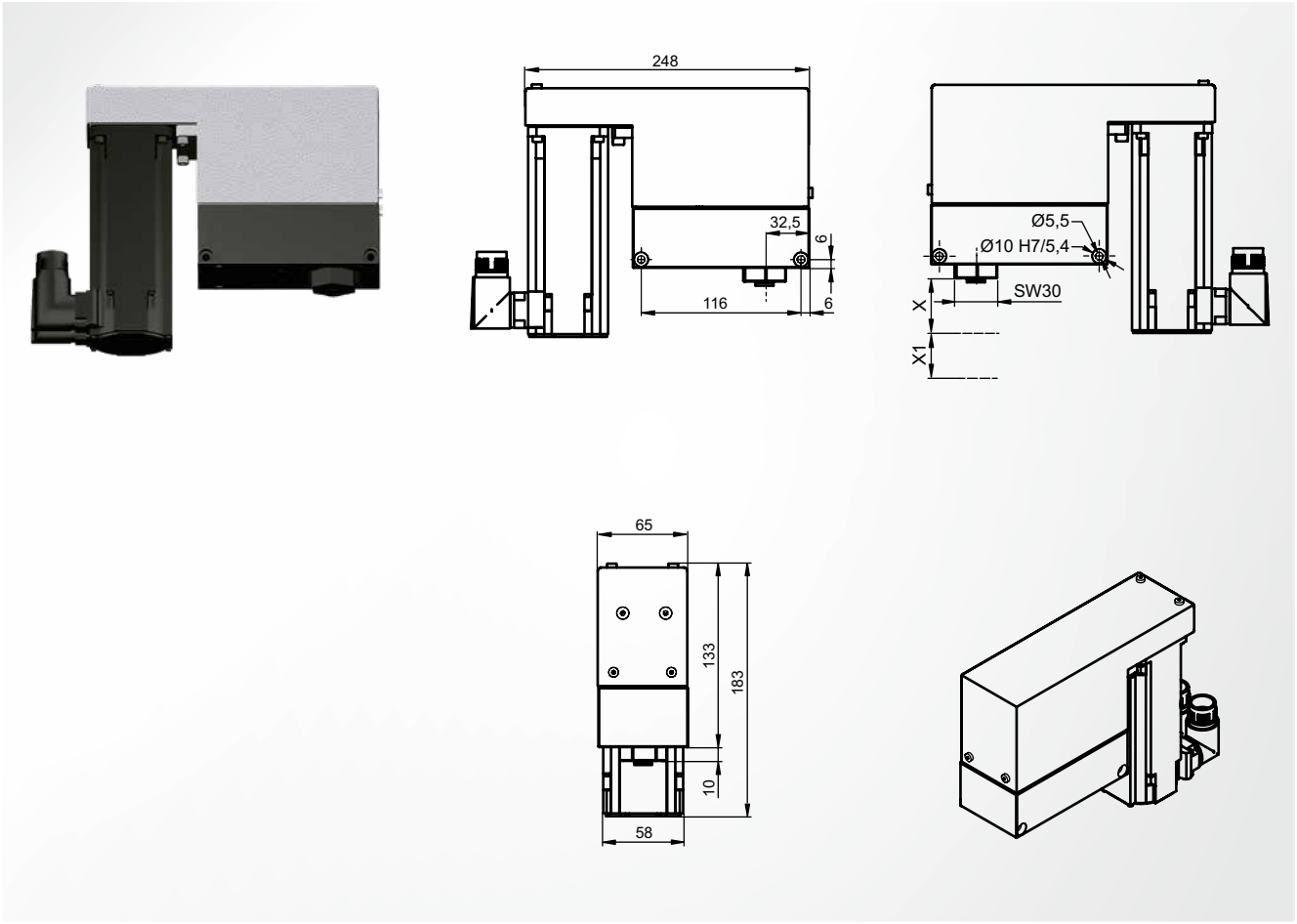
Rotational speed up to
3250 1/min

Note
Clamping nut SZ2702-00006 and clamping key SZ2702-00007 are included in the scope of delivery; each roll tap can be used in accordance with DIN 2174

Item number
SZ2701-00001

SZ2701 Formerkopf

S-Former E1.1 High-speed clamping system



Ø Thread
4-8 mm

Number of strokes
up to max. 110 H/min depending on the application

Max. torque
8 Nm

Max. distance
X1 = 30 mm

Max. overhang
X = 40 mm

Ø Thread former shaft
4-8 mm

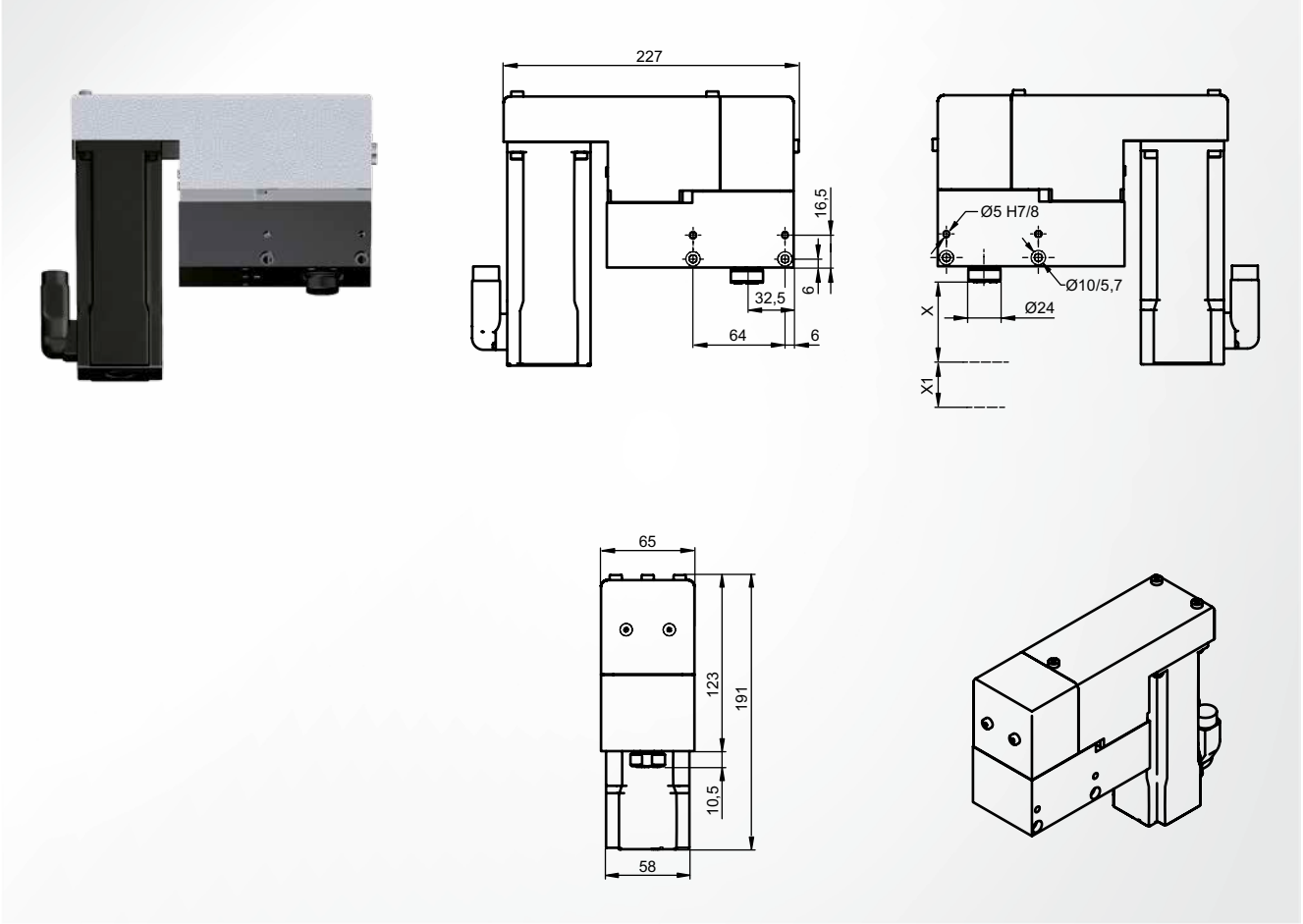
Rotational speed up to
3250 1/min

Note
Each roll tap can be used in accordance with DIN 2174

Item number
SZ2701-00004

SZ2701 Tapping unit

S-Former E1.2



Ø Thread
4-8 mm

Number of strokes
up to max. 80 H/min depending on the application

Max. torque
14 Nm

Max. distance
X1 = 30 mm

Max. overhang
X = 40 mm

Ø Thread former shaft
4-8 mm

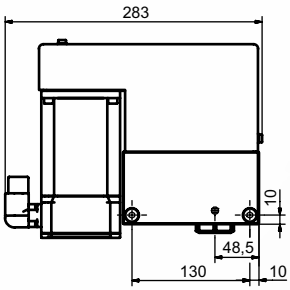
Rotational speed up to
2777 1/min

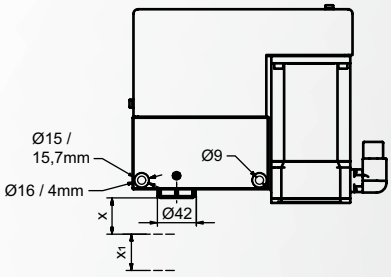
Note
Clamping nut SZ2702-00006 and clamping key SZ2702-00007 are included in the scope of delivery; each roll tap can be used in accordance with DIN 2174

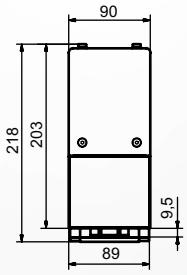
Item number
SZ2701-00003

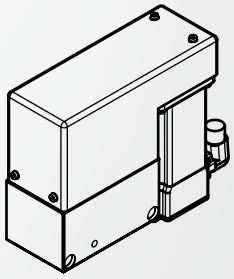
SZ8871.02 Tapping unit

S-Former E2









Ø Thread
6-16 mm

Number of strokes
up to max. 70 H/min depending on the application

Max. torque
20 Nm

Max. distance
X1 = 40 mm

Max. overhang
X = 40 mm

Ø Thread former shaft
6-12 mm

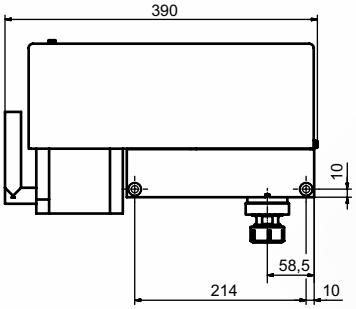
Rotational speed up to
2500 1/min

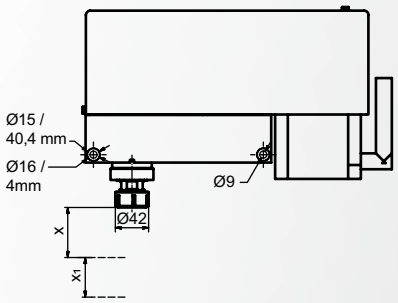
Note
Clamping nut SZ2702-00025 and clamping key SZ2702-00026 are included in the scope of delivery; each roll tap can be used in accordance with DIN 2174

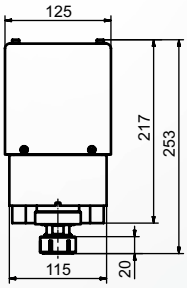
Item number
SZ2701-00006

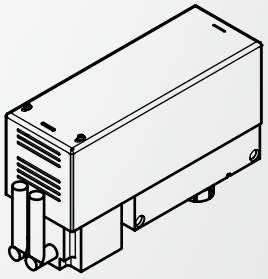
SZ8871.03 Tapping unit

S-Former E3









Ø Thread
8-26 mm

Number of strokes
up to max. 50 H/min depending on the application

Max. torque
40 Nm

Max. distance
X1 = 50 mm

Max. overhang
X = 63 mm

Ø Thread former shaft
8-16 mm

Rotational speed up to
1000 1/min

Note
Clamping nut SZ2702-00025 and clamping key SZ2702-00026 are included in the scope of delivery; each roll tap can be used in accordance with DIN 2174

Item number
SZ2701-00007

Note
Each roll tap can be used in accordance with DIN 2174

Tapping unit	Shaft diameter	Square dimension	Item number
E0	2.5	2.1	SZ2702 **-00009**
E0	2.8	2.1	SZ2702 **-00010**
E0	3.5	2.7	SZ2702 **-00011**
E0	4.0	3.0	SZ2702 **-00012**
E0	4.5		SZ2702 **-00013**
E1.1, E1.2	3.5		SZ2702 **-00001**
E1.1, E1.2	4		SZ2702 **-00008**
E1.1, E1.2	4.5		SZ2702 **-00002**
E1.1, E1.2	6		SZ2702 **-00003**
E1.1, E1.2	7		SZ2702 **-00004**
E1.1, E1.2	8		SZ2702 **-00005**
E2, E3	6		SZ2702 **-00016**
E2, E3	7		SZ2702 **-00017**
E2, E3	8		SZ2702 **-00018**
E2, E3	9		SZ2702 **-00019**
E2, E3	10		SZ2702 **-00020**
E2, E3	11		SZ2702 **-00021**
E2, E3	12		SZ2702 **-00022**
E2, E3	14		SZ2702 **-00023**
E2, E3	16		SZ2702 **-00024**

SZ2703 Reducer

Note

Adapter and square dimension adjustment for consistent tap protrusion; the reducers are listed for each respective roll tap dimension

Tapping unit	Dimension reducer	Square dimension	Square depth	Length compensation	Item number
E1.1	M3	2,9	5	27	SZ2703 **-00001**
E1.1	M4	3,6	5	27	SZ2703 **-00002**
E1.1	M5	5,1	7	20	SZ2703 **-00003**
E1.1	M6	5,1	7	10	SZ2703 **-00004**
E1.1	M3.5	2.9	5	27	SZ2703 **-00005**
E1.2	M3	3.6	5	27	SZ2703 **-00006**
E1.2	M4	5.1	7	27	SZ2703 **-00007**
E1.2	M5	5.1	7	20	SZ2703 **-00008**
E1.2	M6	3.1	5	10	SZ2703 **-00009**
E2	M6	2.9	5	42	SZ2703 **-00010**
E2	M7	3.6	5	42	SZ2703 **-00011**
E2	M8	5.1	7	36	SZ2703 **-00012**
E2	M9	5.1	7	36	SZ2703 **-00013**
E2	M10	5.1	4.3	26	SZ2703 **-00014**
E2	M11	6.4	9.3	26	SZ2703 **-00015**
E2	M12 fein	7.2	10.3	26	SZ2703 **-00016**
E2	M12	7.2	10.3	16	SZ2703 **-00017**
E2	M14	9.2	12.3	16	SZ2703 **-00018**
E2	M14 fein	9.2	12.3	16	SZ2703 **-00019**
E3	M8	6.4	4.3	65	SZ2703 **-00020**
E3	M9	7.2	4.3	64	SZ2703 **-00021**
E3	M10	8.2	11.3	60	SZ2703 **-00022**
E3	M11	6.4	9.3	60	SZ2703 **-00023**
E3	M12 fein	7.2	10.3	60	SZ2703 **-00024**
E3	M12	7.2	9.3	49	SZ2703 **-00025**
E3	M14 fein	9.2	11.3	49	SZ2703 **-00026**
E3	M14	9.2	11.3	49	SZ2703 **-00027**
E3	M18 fein	11.2	13.3	49	SZ2703 **-00028**
E3	M18	11.2	13.3	34	SZ2703 **-00029**
E3	M20 fein	12.2	14.3	34	SZ2703 **-00030**
E3	M22 fein	14.7	16.3	34	SZ2703 **-00031**
E3	M24 fein	14.7	16.3	19	SZ2703 **-00032**

SZ2709 Interchangeable insert

S-Former E1.1 High-speed clamping system

Installation information

Roll tap protrusion consistent when thread sizes are variable; with M4 thread the tap protrusion is smaller; tool-free roll tap change

Thread	Item number
M4 x 0.7, M4 x 0.5	SZ2709 **-00001**
M5 x 0.8, M5 x 0.5	SZ2709 **-00002**
M6 x 1, M6 x 0.75, M6 x 0.5	SZ2709 **-00003**
M8 x 1.25, UNF 5/16"	SZ2709 **-00004**
UNF 7/16"	SZ2709 **-00005**
M8 x 1	SZ2709 **-00006**
M10 x 1	SZ2709 **-00007**
M10 x 1.25	SZ2709 **-00008**
UNF 1/4"	SZ2709 **-00009**

SZ9400 Roll tap

DIN 2174

Note
Carbide tap deliverable upon request

Coating
TIN – Tensile strengths up to 1000 N/mm², good sliding characteristics and wear-resistant; **TICN** – Tensile strengths > 800 N/mm², high hardness and wear resistance when toughness properties are good

Thread	core hole	Tolerance	Coating	Item number
M3 x 0.5	2.80	HX	TIN	SZ9400 **03 x 0.5B2**
			TICN	SZ9400 **03 x 0.5C2**
M4 x 0.7	3.70	HX	TIN	SZ9400 **04 x 0.7B2**
			TICN	SZ9400 **04 x 0.7C2**
M5 x 0.8	4.65	HX	TIN	SZ9400 **05 x 0.8B2**
			TICN	SZ9400 **05 x 0.8C2**
M6 x 0.5	5.80	HX	TIN	SZ9400 **06 x 0.5B2**
			TICN	SZ9400 **06 x 0.5C2**
M6 x 1	5.55	HX	TIN	SZ9400 **06 x 1.0B2**
			TICN	SZ9400 **06 x 1.0C2**
M8 x 1	7.55	HX	TIN	SZ9400 **08 x 1.0B2**
			TICN	SZ9400 **08 x 1.0C2**
M8 x 1.25	7.45	HX	TIN	SZ9400 **08 x 1.25B2**
			TICN	SZ9400 **08 x 1.25C2**
M10 x 1	9.55	HX	TIN	SZ9400 **10 x 1.0B2**
			TICN	SZ9400 **10 x 1.0C2**
M10 x 1.5	9.35	HX	TIN	SZ9400 **10 x 1.5B2**
			TICN	SZ9400 **10 x 1.5C2**
M12 x 1	11.55	HX	TIN	SZ9400 **12 x 1.0B2**
			TICN	SZ9400 **12 x 1.0C2**
M12 x 1.25	11.45	HX	TIN	SZ9400 **12 x 1.25B2**
M12 x 1.5	11.35	HX	TIN	SZ9400 **12 x 1.5B2**
			TICN	SZ9400 **12 x 1.5C2**
M12 x 1.75	11.20	HX	TIN	SZ9400 **12 x 1.75B2**
			TICN	SZ9400 **12 x 1.75C2**
UNF 7/16"-20	9.90	2B	TIN	SZ9400 **7/16"-20**

Standardised module systems

- Basic structure
- Adapter plate
- Tool modules

ST0900 7.5

ST0901 7.6

ST0900-01 7.7

ST0900-02 7.8

ST0900-03 7.9

ST0900-04/-07 7.10

ST0900-05 7.11

ST0900-06 7.12

ST0900-12 7.13

Standardised module systems

General

The modular tool system from STEINEL consists of a machine-specific basic structure, a tool-specific adapter plate and standardised tool modules.

The machine-specific basic structure

The basic structure is optimally designed for the production facility and the maximum bandwidth, and it includes:

- rear standing guides
- Pre-loaded spring packs for the creation of blank holder forces in 50 mm grid
- Positioning and mounting points for the adapter plate
- Hold points for the standardised tool modules

The tool-specific adapter plate

The adapter plate is installed on the lower plate and provides the positioning and mounting points for the individual tool modules. Additional tool-specific mechanisms and functions may also be implemented, for example:

- Band inlet
- Feed control
- Chopping station
- Specific waste material and part contours

The standardised tool modules

The quickly changeable tool modules are available in two widths and six lengths. They include completely machined plates for the fixture of:

- Guide units
- Pressure springs
- Distance collars
- Screws
- etc.

In addition, complete modules as well as spare parts and assembly groups can also be purchased.

All that remains to be done is to complete the inductions for the installation of the active elements at the standardised tool modules. Upon request, STEINEL will also complete this step for you.

Tool modules

The tool modules are available from stock in two widths (200 and 250 mm) and six lengths (100 to 350 mm). Depending on their size, the modules are equipped with two or four ball guides.

The following applies to all tool modules

- mechanical protection against torsion
- optical protection against torsion via chamfer 5 x 45° over the overall height of the plates, chamfer right rear
- maximum press stroke 45 mm
- corresponds to the standardised guide stroke (6 mm) at the time of delivery

Modules guided with two pillars are pre-equipped with four receiving points for the blank holder forces, while modules guided with four pillars have eight. The force application always takes place via the guide pillars, as well as the thrust pieces that are installed in an equal number. For additional receiving points, STEINEL will deliver six thrust bolts for each module.

STEP data is available for the processing of the modules.

Max. bandwidth	Width	Height (UT)	Guides	Blank holder force receiving points		Length
				Middle mount shoulder pillars	Spacers	
65	200	120		2	2	100
						150
				4	4	200
						250
						300
						350
115	250	120		2	2	100
						150
				4	4	200
						250
						300
						350

ST0900 Tool modul

not mounted

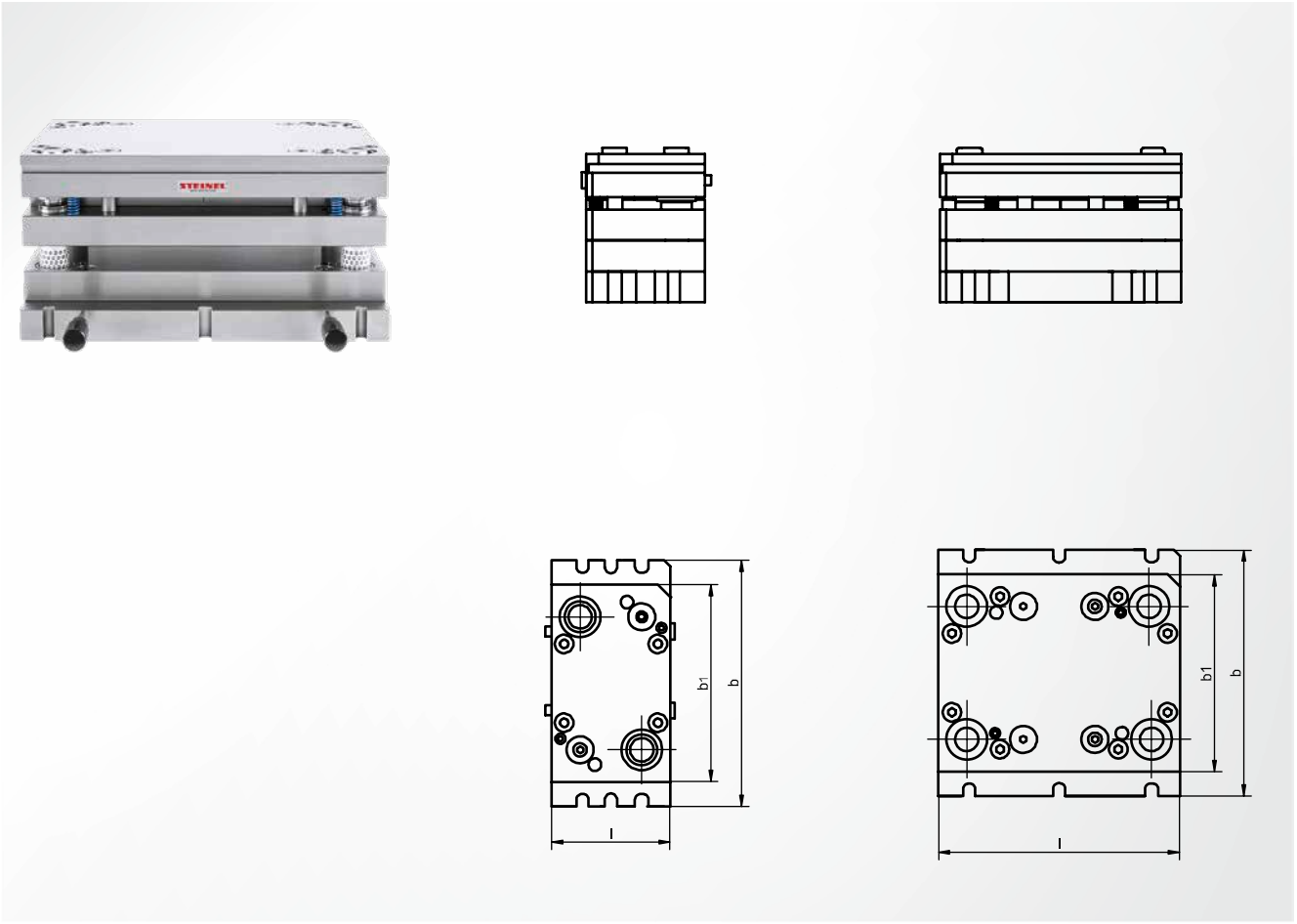
Material
Steel 1.2379

Note
The unassembled module is delivered as an assembly kit; it includes the associated frame, guide, intermediate, retaining and pressure plates and the guide unit assembly group and accessories

b	l	Number of guides	Item number
200	100	2	ST0900 **100 x 200**
	150	2	ST0900 **150 x 200**
	200	4	ST0900 **200 x 200**
	250	4	ST0900 **250 x 200**
	300	4	ST0900 **300 x 200**
	350	4	ST0900 **350 x 200**
250	100	2	ST0900 **100 x 250**
	150	2	ST0900 **150 x 250**
	200	4	ST0900 **200 x 250**
	250	4	ST0900 **250 x 250**
	300	4	ST0900 **300 x 250**
	350	4	ST0900 **350 x 250**

ST0901 Tool modul

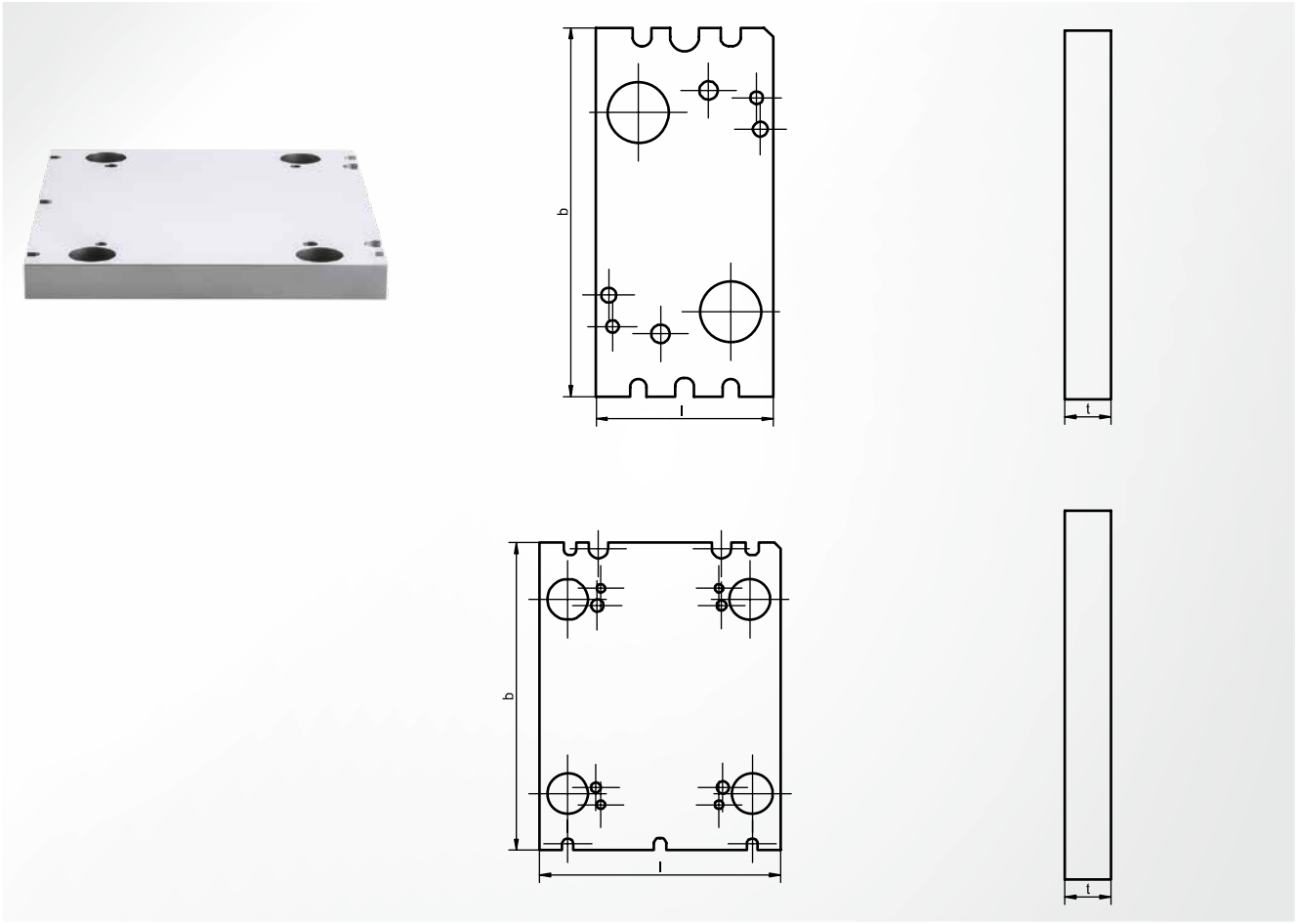
mounted



Material
Steel 1.2379

b	b_1	l	Number of guides	Item number
200	150	100	2	ST0901 **100 x 200**
		150	2	ST0901 **150 x 200**
		200	4	ST0901 **200 x 200**
		250	4	ST0901 **250 x 200**
		300	4	ST0901 **300 x 200**
		350	4	ST0901 **350 x 200**
250	200	100	2	ST0901 **100 x 250**
		150	2	ST0901 **150 x 250**
		200	4	ST0901 **200 x 250**
		250	4	ST0901 **250 x 250**
		300	4	ST0901 **300 x 250**
		350	4	ST0901 **350 x 250**

ST0900-01 Lower pressure plate

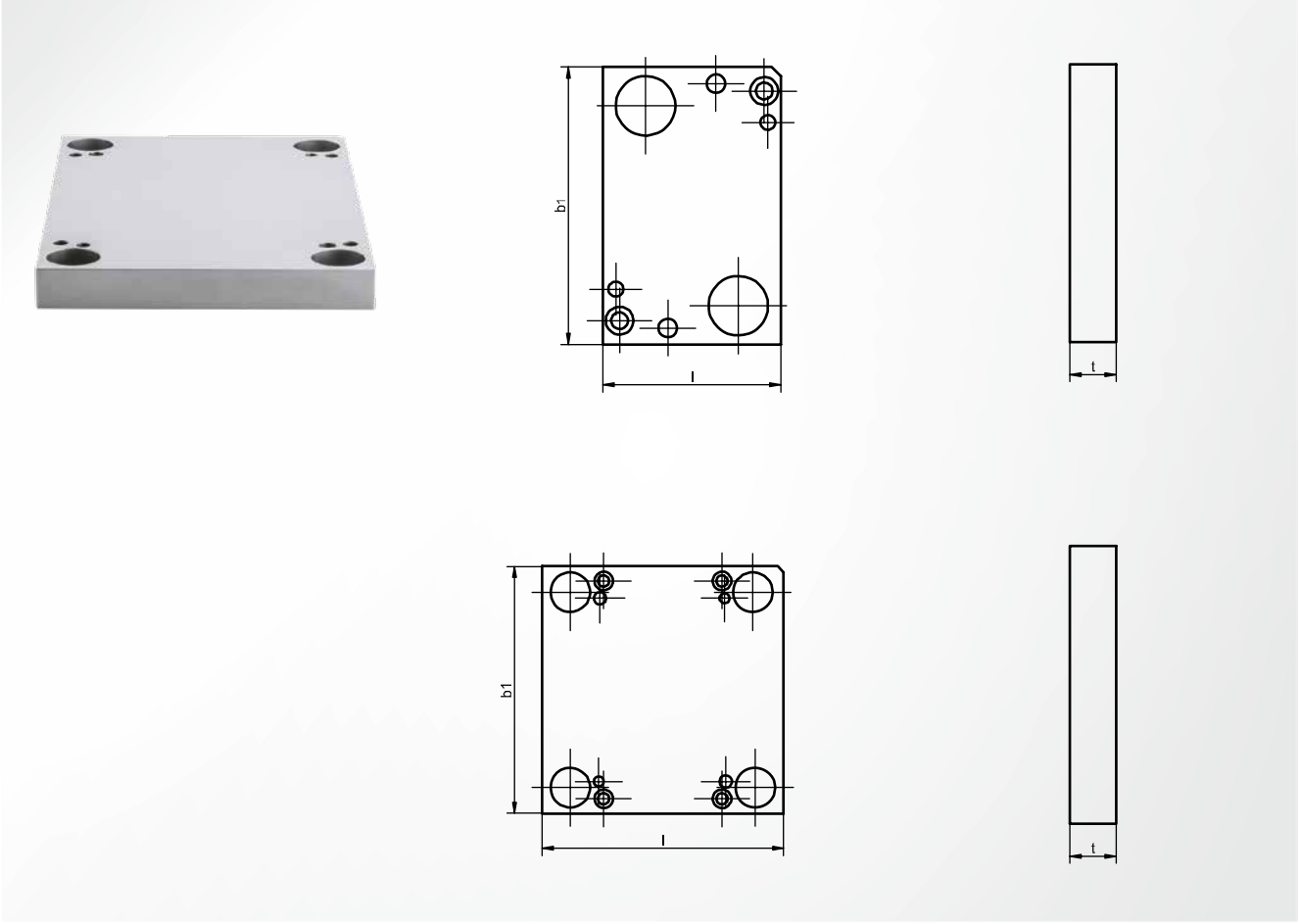


Material
Steel 1.2379

Hardness
58+2 HRC

b	l	t	Item number
200	100	25	ST0900 **100 x 200-01**
	150	25	ST0900 **150 x 200-01**
	200	25	ST0900 **200 x 200-01**
	250	25	ST0900 **250 x 200-01**
	300	25	ST0900 **300 x 200-01**
	350	25	ST0900 **350 x 200-01**
250	100	25	ST0900 **100 x 250-01**
	150	25	ST0900 **150 x 250-01**
	200	25	ST0900 **200 x 250-01**
	250	25	ST0900 **250 x 250-01**
	300	25	ST0900 **300 x 250-01**
	350	25	ST0900 **350 x 250-01**

ST0900-02 Frame plate

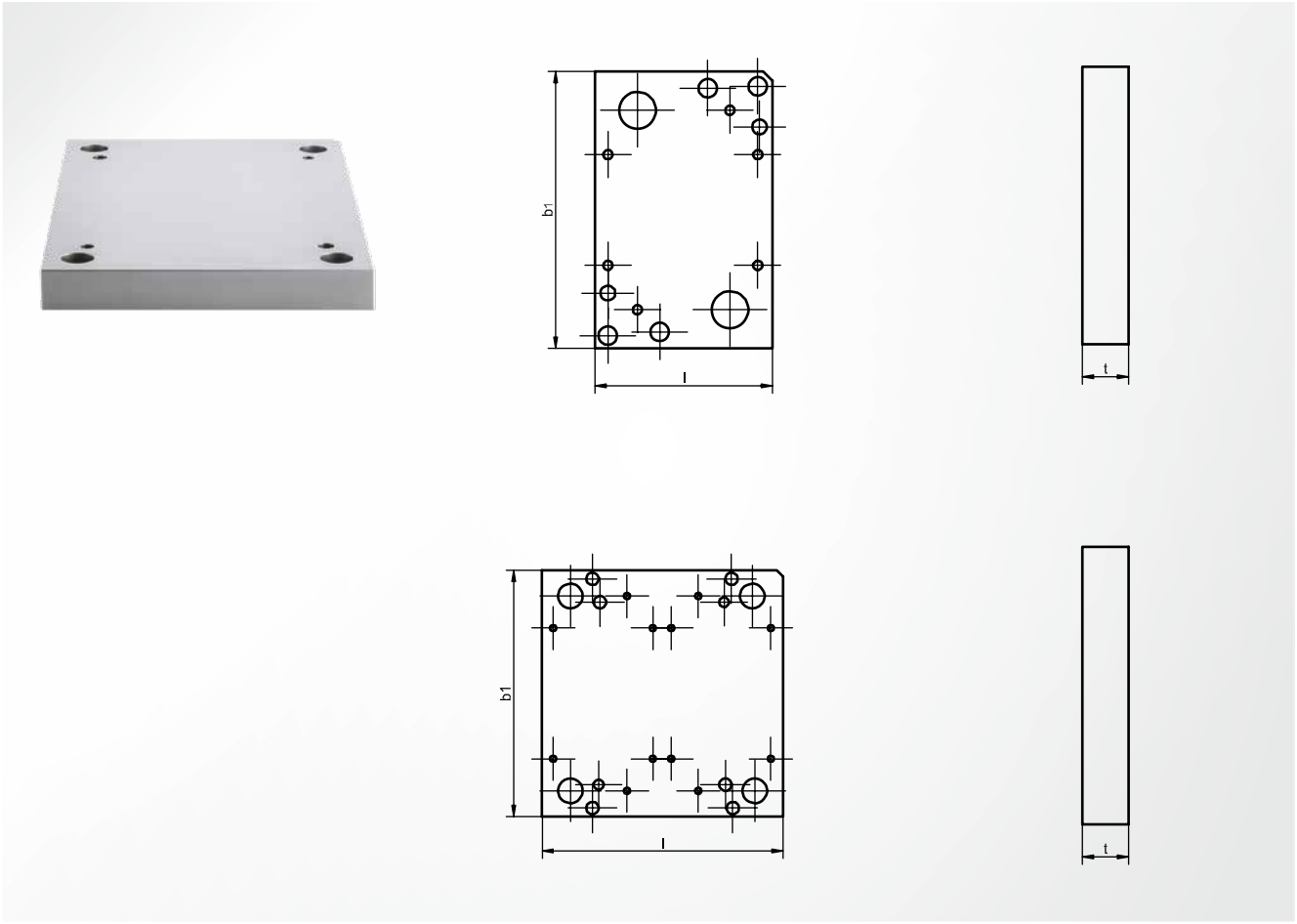


Material
Steel 1.2379; frozen

Hardness
58+2 HRC

b	b_1	l	t	Item number
200	150	100	25	ST0900 **100 x 200-02**
		150	25	ST0900 **150 x 200-02**
		200	25	ST0900 **200 x 200-02**
		250	25	ST0900 **250 x 200-02**
		300	25	ST0900 **300 x 200-02**
		350	25	ST0900 **350 x 200-02**
250	200	100	25	ST0900 **100 x 250-02**
		150	25	ST0900 **150 x 250-02**
		200	25	ST0900 **200 x 250-02**
		250	25	ST0900 **250 x 250-02**
		300	25	ST0900 **300 x 250-02**
		350	25	ST0900 **350 x 250-02**

ST0900-03 Guide plate

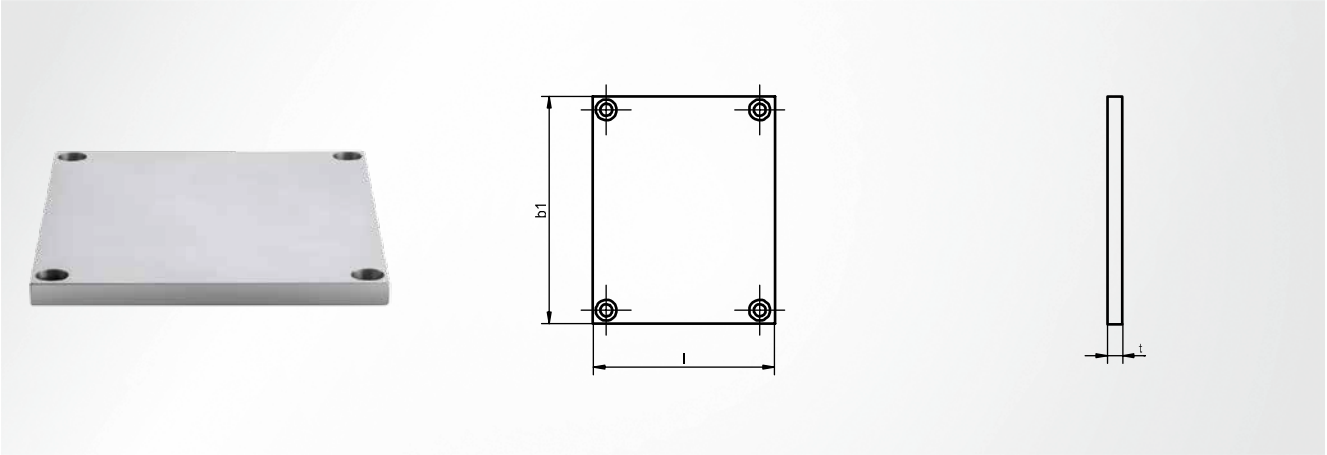


Material
Steel 1.2379; frozen

Hardness
58+2 HRC

b	b_1	l	t	Item number
200	150	100	25	ST0900 **100 x 200-03**
		150	25	ST0900 **150 x 200-03**
		200	25	ST0900 **200 x 200-03**
		250	25	ST0900 **250 x 200-03**
		300	25	ST0900 **300 x 200-03**
		350	25	ST0900 **350 x 200-03**
250	200	100	25	ST0900 **100 x 250-03**
		150	25	ST0900 **150 x 250-03**
		200	25	ST0900 **200 x 250-03**
		250	25	ST0900 **250 x 250-03**
		300	25	ST0900 **300 x 250-03**
		350	25	ST0900 **350 x 250-03**

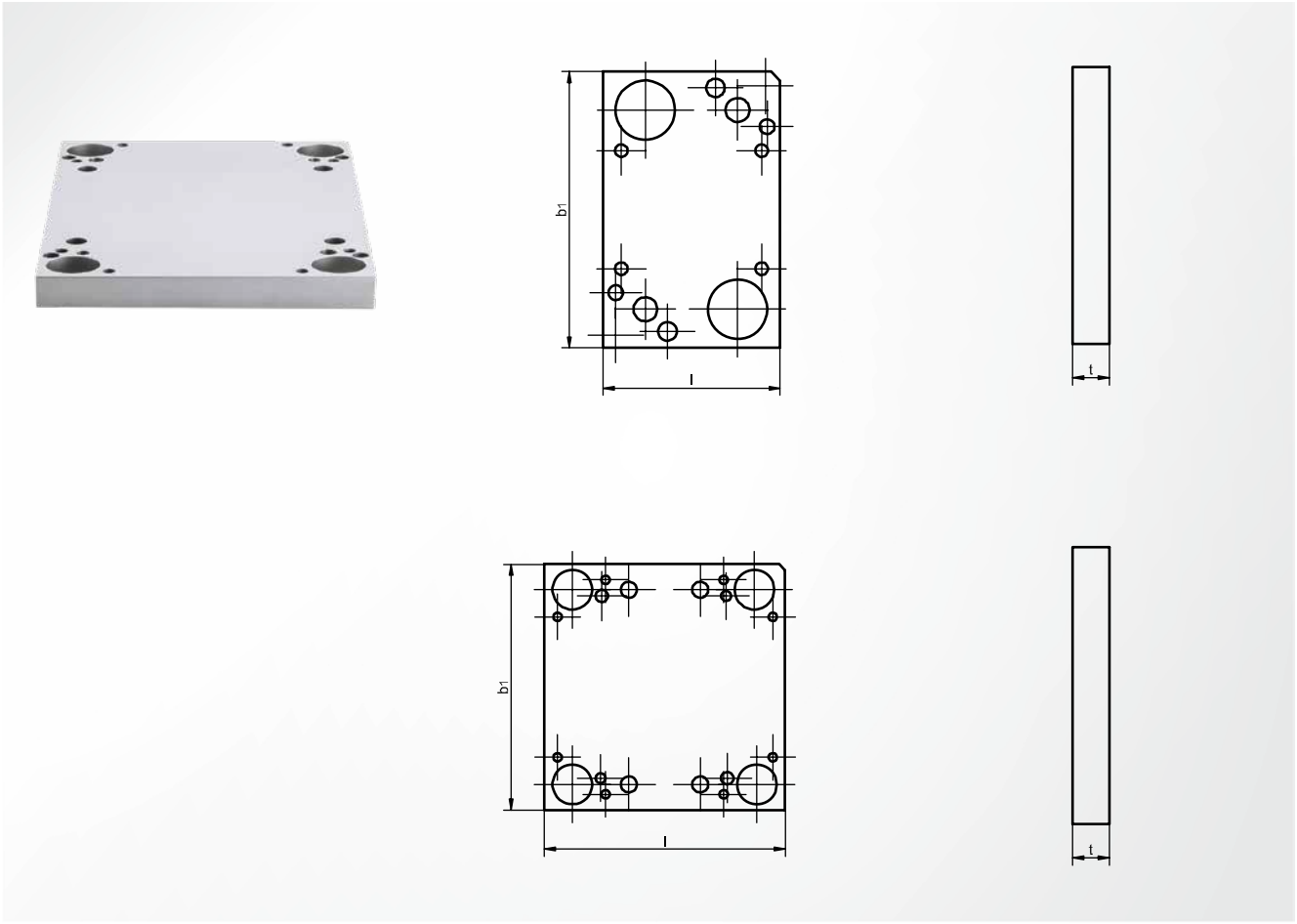
ST0900-04/-07 Intermediate plate



Material
Steel 1.2379

b	b_1	l	t	Item number
200	74	100	8	ST0900 **100 x 200-04**
		150	8	ST0900 **150 x 200-07**
250	120	100	8	ST0900 **100 x 250-04**
		150	8	ST0900 **150 x 250-07**

ST0900-05 Retaining plate

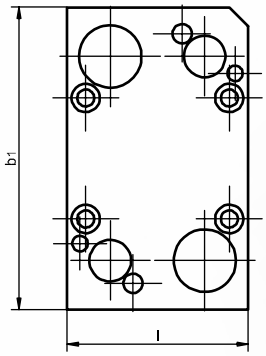


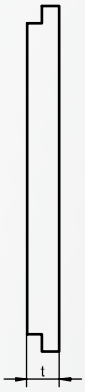
Material
Steel 1.2379; frozen

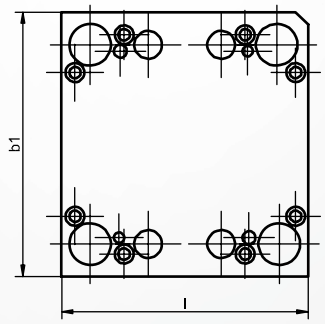
Hardness
58+2 HRC

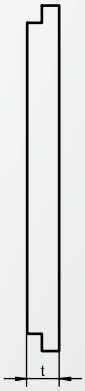
b	b_1	l	t	Item number
200	150	100	20	ST0900 **100 x 200-05**
		150	20	ST0900 **150 x 200-05**
		200	20	ST0900 **200 x 200-05**
		300	20	ST0900 **300 x 200-05**
		250	20	ST0900 **250 x 200-05**
		350	20	ST0900 **350 x 200-05**
250	200	100	20	ST0900 **100 x 250-05**
		150	20	ST0900 **150 x 250-05**
		200	20	ST0900 **200 x 250-05**
		250	20	ST0900 **250 x 250-05**
		300	20	ST0900 **300 x 250-05**
		350	20	ST0900 **350 x 250-05**

ST0900-06 Upper pressure plate









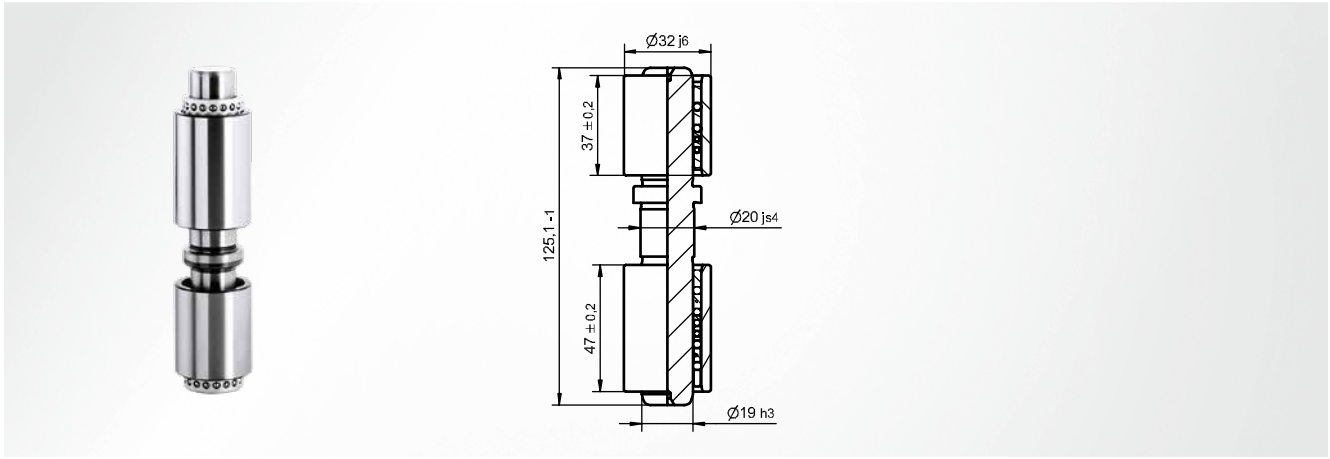
Material
Steel 1.2379

Hardness
58+2 HRC

b	b_1	l	t	Item number
200	160	100	15	ST0900 **100 x 200-06**
		150	15	ST0900 **150 x 200-06**
		200	15	ST0900 **200 x 200-06**
		250	15	ST0900 **250 x 200-06**
		300	15	ST0900 **300 x 200-06**
		350	15	ST0900 **350 x 200-06**
250	210	200	15	ST0900 **200 x 250-06**
		100	15	ST0900 **100 x 250-06**
		150	15	ST0900 **150 x 250-06**
		250	15	ST0900 **250 x 250-06**
		300	15	ST0900 **300 x 250-06**
		350	15	ST0900 **350 x 250-06**

ST0900-12 Guide unit

with middle mount shoulder, small, smooth, ball guide aluminium



Scope of supply
ST740619X037; ST740619X047;
ST717019X030; ST717019X043;
ST0900711819X125

Item number
ST0900-12

Machine elements

- Pneumatic stamping unit
- Toggle-lever presses

ST1092 8.3

ST1292 8.4

ST9041 8.5

ST9061 8.6

ST9062 8.6

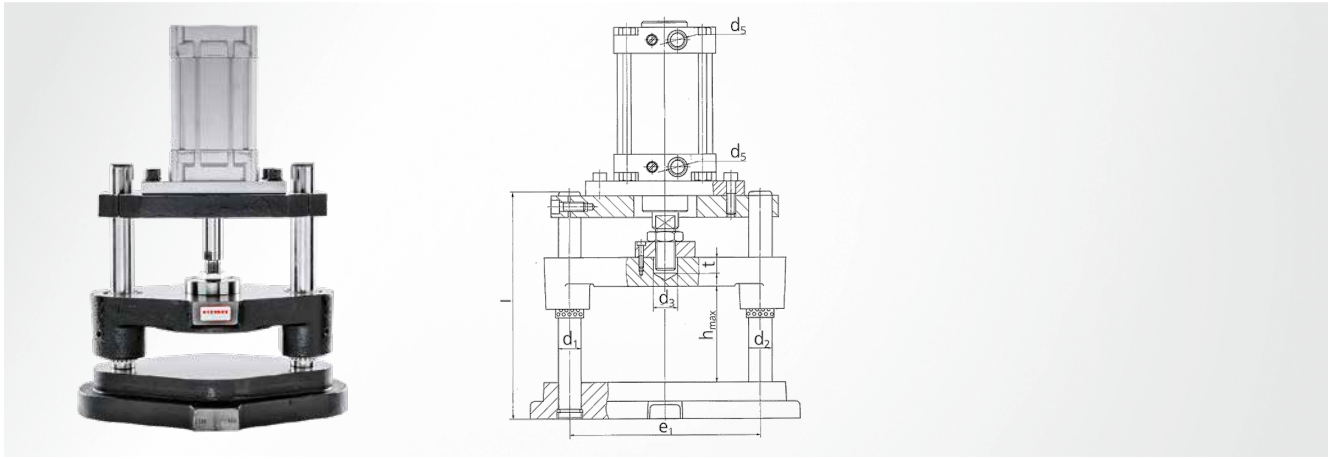
ST9067 8.7

ST9072 8.7

ST912x 8.8

ST1092 Pneumatic stamping unit

with round working surface



Note

Consisting of pneumatic cylinder, threaded flange, die set with ball guide, traverse

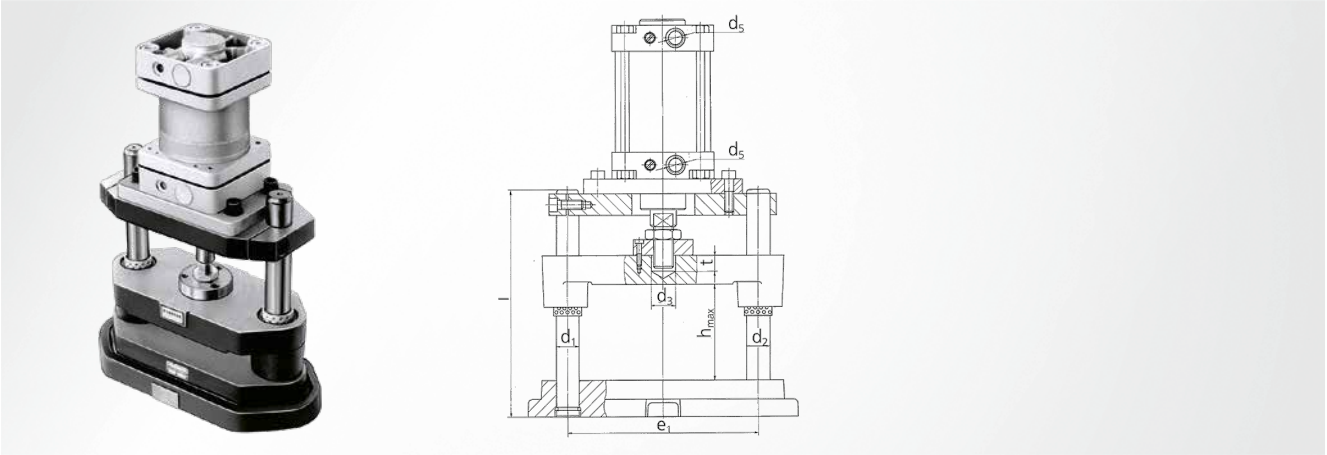
Scope of supply

ST1002; ST9062; ST9067; ST9041

d_1 / d_2 x l	D	d_3	d_5	e_1	t	Ø Cylinder	Compressive force F at 6 bar N	Stroke Cylinder	h_{max}	Item number
24 / 25 x 280	125	25	G3/8"	184	15	80	3015	50	115	ST1092 **125**
30 / 32 x 315	160	25	G1/2"	229	15	100	4712	50	130	ST1092 **160**
30 / 32 x 355	200	32	G1/2"	269	20	125	7360	100	165	ST1092 **200**
38 / 40 x 400	250	42	G3/4"	335	28	160	12060	100	170	ST1092 **250**

ST1292 Pneumatic stamping unit

with rectangular working surface



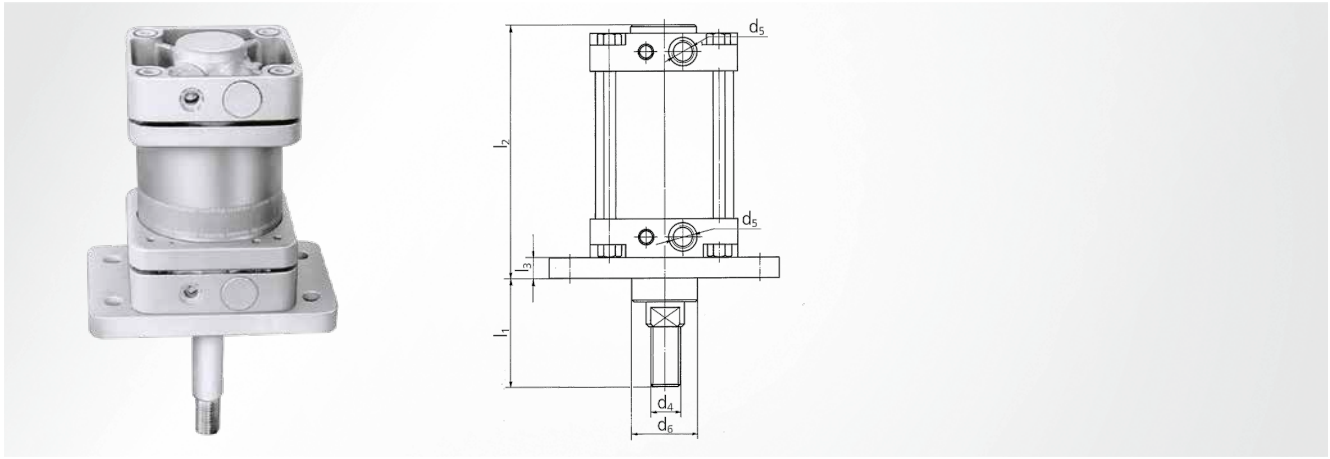
Note

Consisting of pneumatic cylinder, threaded flange, die set with ball guide, traverse

Scope of supply

ST1202; ST9062; ST9067; ST9041

d_1 / d_2 x l	a_1 x b_1	d_3	d_5	e_1	l	t	Ø Cylinder	Compressive force F at 6 bar N	Stroke Cylinder	h_{max}	Item number
24 / 25 x 280	125 x 80	25	G3/8"	184	280	15	80	3015	50	115	ST1292 **125 x 080**
24 / 25 x 280	125 x 100	25	G3/8"	184	280	15	80	3015	50	115	ST1292 **125 x 100**
30 / 32 x 315	160 x 125	25	G1/2"	229	315	15	100	4712	50	130	ST1292 **160 x 125**
30 / 32 x 355	200 x 100	32	G1/2"	269	355	20	125	7360	100	165	ST1292 **200 x 100**
30 / 32 x 355	200 x 125	32	G1/2"	269	355	20	125	7360	100	165	ST1292 **200 x 125**
30 / 32 x 355	200 x 160	32	G1/2"	269	355	20	125	7360	100	165	ST1292 **200 x 160**
38 / 40 x 400	250 x 200	42	G3/4"	335	400	28	160	12060	100	170	ST1292 **250 x 200**



DIN ISO 6431

Installation instruction

The next size is suitable for use without flange; screw on from underneath; if required, enlarge the length (l) of the guide pillars appropriately

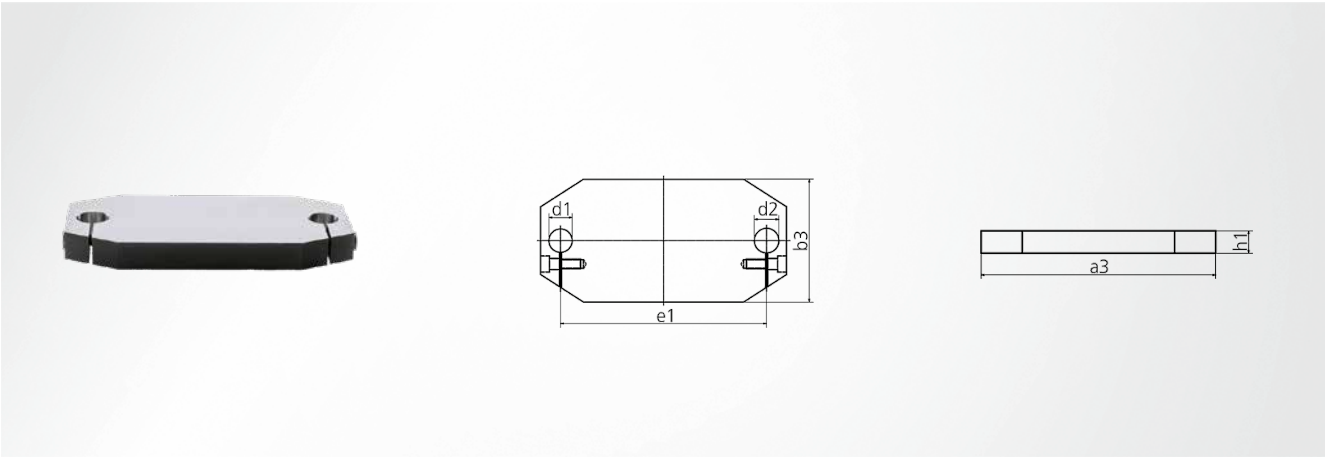
Note

Diameter 200 has no flange

Compressive force N	D	Stroke	d_4	d_5	d_6	l_1	l_2	l_3	Item number
3015	80	50	M20 x 1.5	G3/8"	48	70	148	18	ST9041 **080 x 050**
4712	100	50	M20 x 1.5	G1/2"	52	75	159	18	ST9041 **100 x 050**
7360	125	100	M27 x 2	G1/2"	60	99	186	20	ST9041 **125 x 100**
12060	160	100	M36 x 2	G3/4"	80	132	205	25	ST9041 **160 x 100**
18840	200	100	M36 x 2	G3/4"	80	142	217	25	ST9041 **200 x 100**

ST9061 Traverse

not bored

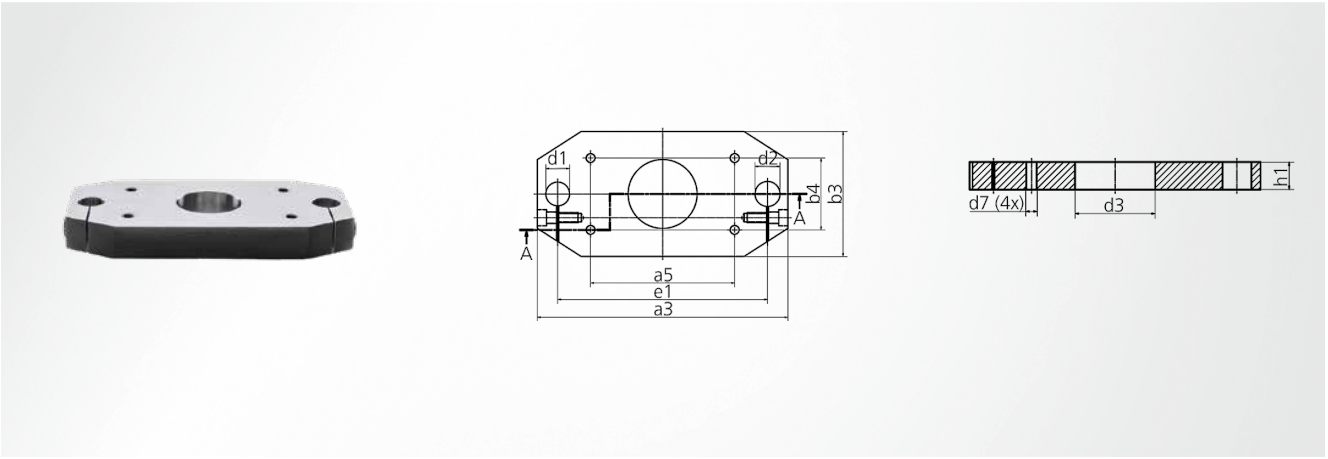


Material
Steel 1.1730

a_3	b_3	d_1	d_2	e_1	h_1	Item number
228	115	24	25	184	28	ST9061 **184**
280	135	30	32	229	28	ST9061 **229**
320	160	30	32	269	38	ST9061 **269**
400	200	38	40	335	38	ST9061 **335**

ST9062 Traverse

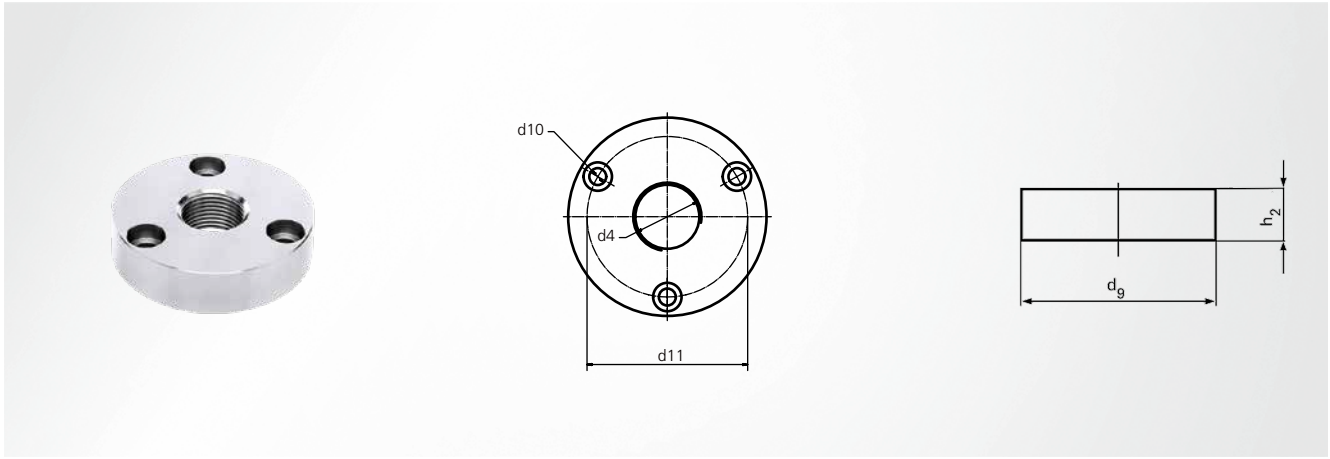
bored



Material
Steel 1.1730

a_3	a_5	b_3	d_1	d_2	d_3	b_4	e_1	h_1	d_7	Item number
228	126	115	24	25	52	63	184	28	M10	ST9062 **184**
280	150	135	30	32	56	75	229	28	M12	ST9062 **229**
320	180	160	30	32	74	90	269	38	M14	ST9062 **269**
400	230	200	38	40	110	115	335	38	M16	ST9062 **335**

ST9067 Threaded flange



d_4	d_9	d_{10}	d_{11}	h_2	Item number
M20 x 1.5	70	M6	56	16	ST9067 **20**
M27 x 2	80	M8	62	20	ST9067 **27**
M36 x 2	105	M8	85	28	ST9067 **36**

ST9072 Mounting tabel

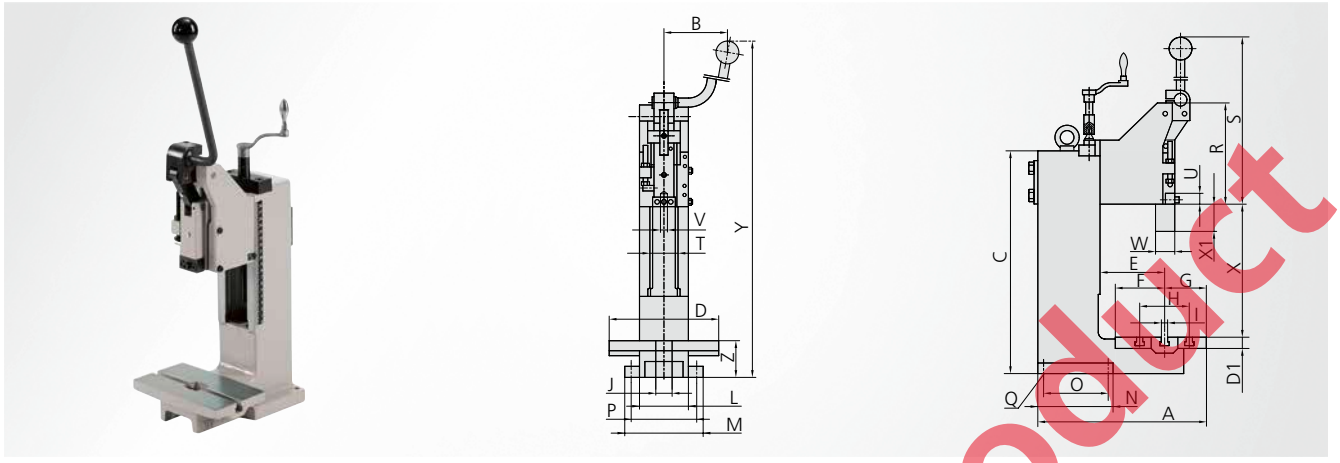
for pneumatic stamping unit

Size (W x H x D)
725 x 722.5 x 605 mm

Item number
ST907201

Note
Thickness of the work surface:
42.5 mm

ST912x Toggle-lever press



The ST912x toggle-lever presses boast 360° adjustable hand levers, height adjustability, large ram strokes, work tables with T-slots for tool fixing, clearance boreholes in the middle of the tables and a compact and stable design, while taking up little space.

Note

via a change of the bearing bolt, ST9124, ST9126
convertible to 12 kN or 16 kN at max. stroke 25 mm

Discontinued product

	ST9120	ST9122	ST9124	ST9126
A	202	227	310	420
B	140	140	140	160
C	320	344	415	590
D	150	180	200	300
D1	12	15	20	30
E	90	90	120	160
F	60	60	92	130
G	40	50	75	100
H				100
J	25	30	40	80
K	25	30	40	60
L	58	80	90	120
M	90	130	140	160
N	112	115	140	160
O	85	95	120	130
P	74	110	120	144
R	143	166	188	264
S	380	480	508	710
T	28	48	48	65
U	25	21	21	29
W	26	35	35	48
Y	480-600	595-715	655-820	930-1150
Z	50	52	70	125
Ø Q	7	9	9	9
Ø Truing-up trunnion bore in the ram (V)	10H7	10H7	10H7	15H7
mounting surface	150 x 100	190 x 110	200 x 165	300 x 230
mounting surface at the ram	27 x 30	33 x 48	33 x 48	48 x 65
overhang E	90	90	120	160
compressive force - kN	2.5	5	8 + 12	8 + 16
weight - kg	12	20	32	79
base space	150 x 200	180 x 240	180 x 310	300 x 420
height	400	420	500	710
width of groove (I)	M8 x 10	M8 x 10	M8 x 10	M8 x 10
space requirement incl. hand lever	150 x 600	180 x 665	180 x 819	300 x 1150

	ST9120	ST9122	ST9124	ST9126
ram stroke (X1)	0-42	0-40	0-45	0-58
distance between tabel and ram	33-195	25-195	30-243	42-325
pitch range (X)	75-190	70-195	75-240	100-320
centre borehole in the tabel (J)	25	30	40	80

Discontinued product

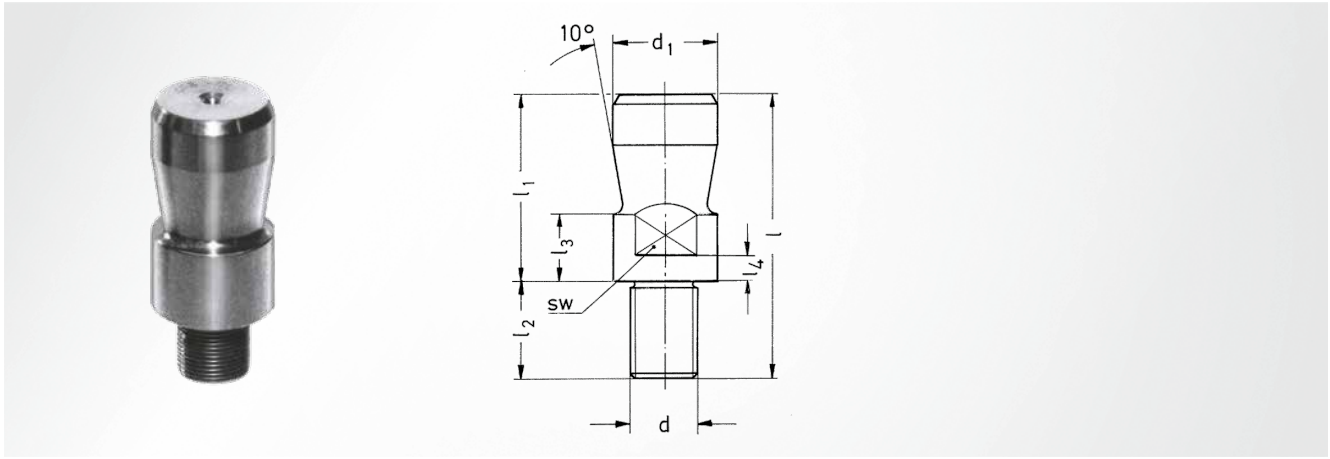
Accessories

- Carrying elements
- Clamping socket, receiving chucks
- Magnets
- Screws and threaded pins
- Gauge strips and foil tapes
- Casting resins and model resin
- Locking agents and adhesives
- High-performance lubricants

SZ4035 9.3
SZ4080 9.4
SZ4125 9.5
SZ4129 9.6
SZ4160 9.7
SZ4161 9.8
SZ4381 9.9
SZ4385 9.10
SZ4390 9.11
SZ4392 9.12
SZ4351 9.13
SZ4371 9.14
SZ4432 9.15
SZ4434 9.16
SZ4512 9.17
SZ4513 9.18
SZ4516 9.19
SZ8510 9.20
SZ8515 9.22
SZ8512 9.24
SZ8530 9.26
SZ9335 9.27
SZ9336 9.28
SZ9337 9.28
SZ7900 9.29
SZ7905 9.31
SZ9511 9.32
SZ9512 9.32
SZ9514 9.33
SZ9515 9.33
SZ9850 9.34
SZ9853 9.34
SZ9006 9.35
SZ9005 9.35
SZ9014 9.36
SZ9740 9.36
SZ9741 9.37
SZ9742 9.37
SZ9743 9.38
SZ9717 9.38
SZ9744 9.39
SZ97042 9.39
SZ960x 9.40
SZ962x 9.41
SZ9800 9.42
SZ9810 9.42

SZ4035 Clamping socket

with thread



DIN ISO 10242

Material
Steel 1.0503 (C45)

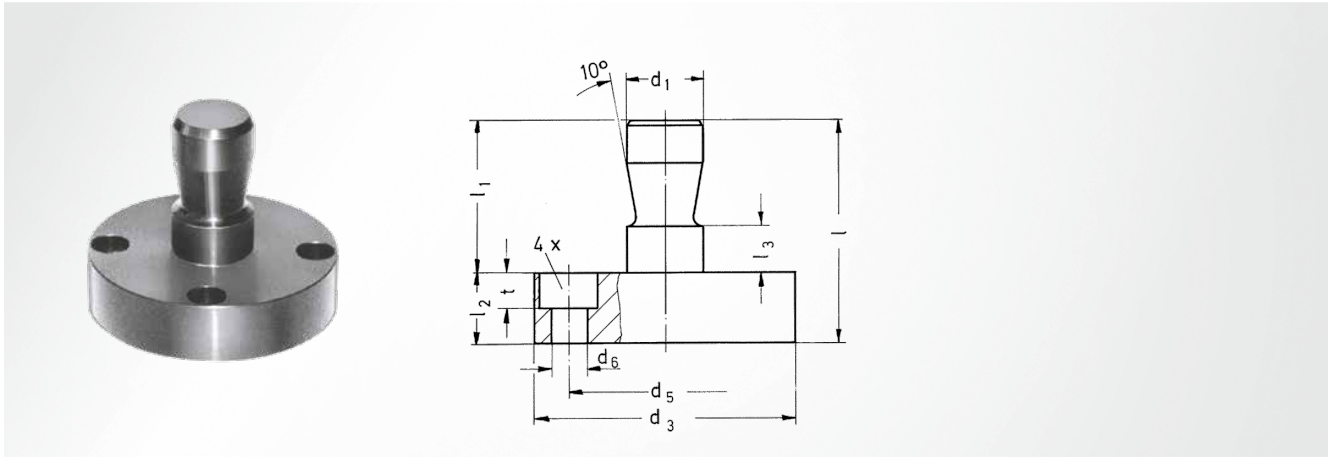
Note
used for tightening the die set upper plate with the press ram; suitable for all die sets with thread in upper plate; plug diameters are in accordance with the standardised press plunger ram holes; clamping sockets are not load attachment equipment as defined in Machinery Directive 2006/42/EC; they are designed for the establishment of a loose or fixed connection between two parts.

d_1^{f9}	d	l	l_1	l_2	l_3	l_4	Item number
20	M16 x 1.5	58	40	18	12	4	SZ4035 **16 x 20**
25	M16 x 1.5	68	45	23	16	6	SZ4035 **16 x 25**
25	M20 x 1.5	68	45	23	16	6	SZ4035 **20 x 25**
32	M20 x 1.5	79	56	23	16	6	SZ4035 **20 x 32**
32	M24 x 1.5	79	56	23	16	6	SZ4035 **24 x 32**

d_1^{f9}	d	l	l_1	l_2	l_3	l_4	Item number
40	M24 x 1.5	93	70	23	26	12	SZ4035 **24 x 40**
40	M27 x 2	93	70	23	26	12	SZ4035 **27 x 40**
40	M30 x 2	93	70	23	26	12	SZ4035 **30 x 40**
50	M30 x 2	108	80	28	26	12	SZ4035 **30 x 50**
65	M42 x 3	128	100	28	26	12	SZ4035 **42 x 65**

SZ4080 Clamping socket

with flange



DIN 9859 / ISO 10242

Material

Steel 1.0503 (C45)

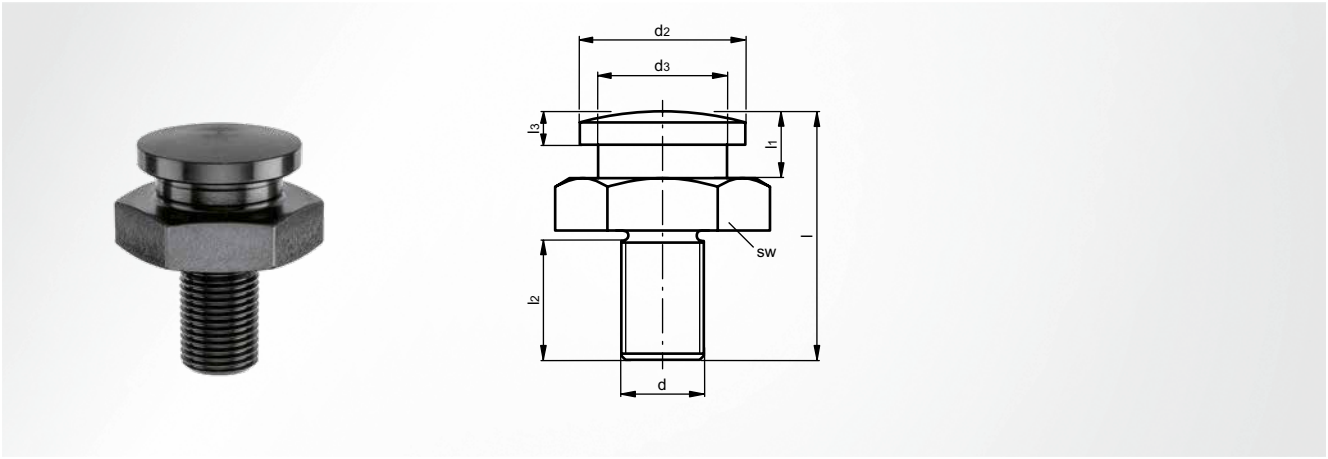
Note

Are screwed together with the die set upper plate; achieve more favourable guide rates with a large stroke due to the use of longer guide pillars; clamping sockets are not load attachment equipment as defined in Machinery Directive 2006/42/EC; they are designed for the establishment of a loose or fixed connection between two parts.

d_1^{f9}	d_3	d_5	d_6	l	l_1	l_2	l_3	t	Item number
20	68	50	9	58	40	18	12	9	SZ4080 **20 x 068**
25	83	65	9	63	45	18	16	9	SZ4080 **25 x 083**
32	98	80	9	79	56	23	16	9	SZ4080 **32 x 098**
40	123	105	9	93	70	23	26	9	SZ4080 **40 x 123**

SZ4125 Receiving chucks

with thread



Material
Steel 1.0503 (C45)

Suitable for receiving chuck
SZ4160; SZ4161

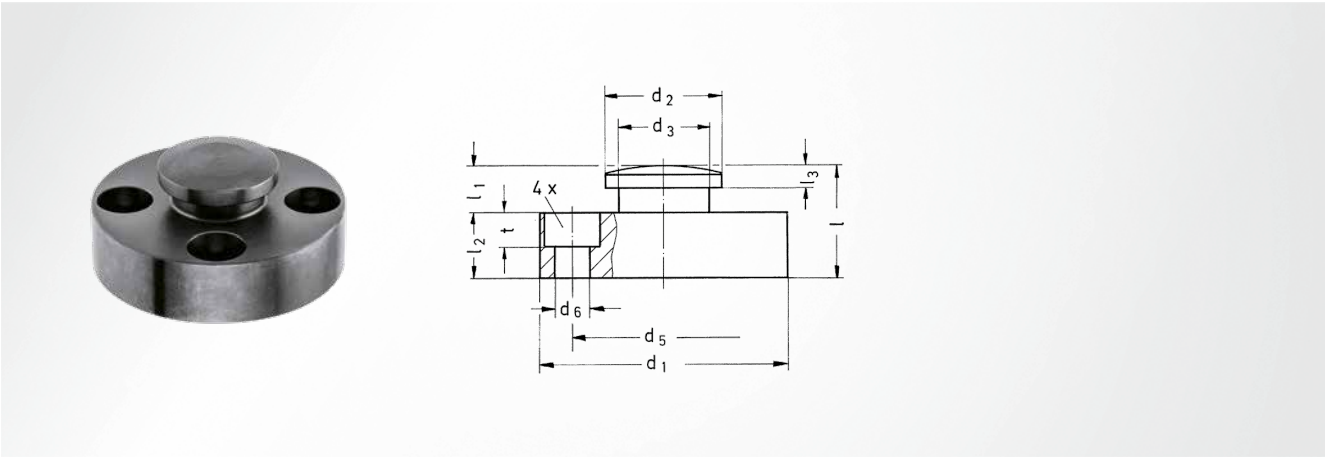
Note
Suitable for all die sets with thread in upper plate; receiving chucks are not load attachment equipment as defined in Machinery Directive 2006/42/EC; they are designed for the establishment of a loose or fixed connection between two parts.

d_2	d_3	d	l	l_1	l_2	l_3	Item number
32	25	M16 x 1.5	48	13	25	6.5	SZ4125 **16 x 32**
48	32	M20 x 1.5	65	19	34	9.5	SZ4125 **20 x 48**

d_2	d_3	d	l	l_1	l_2	l_3	Item number
48	32	M24 x 1.5	69	19	38	9.5	SZ4125 **24 x 48**
48	32	M30 x 2	75	19	42	9.5	SZ4125 **30 x 48**

SZ4129 Receiving chucks

with flange



Material
Steel 1.0503 (C45)

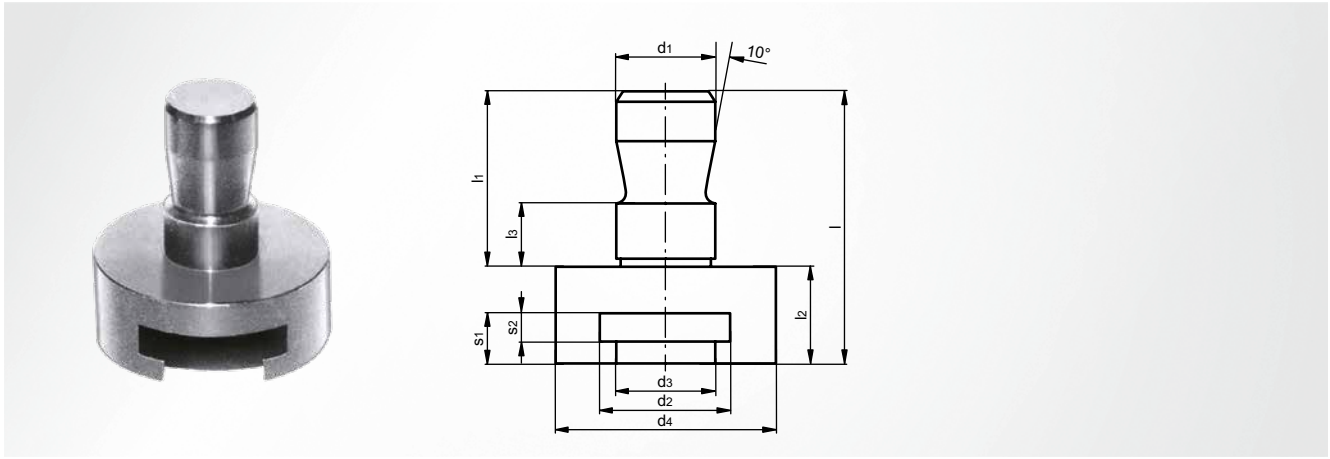
Suitable for receiving chuck
SZ4160; SZ4161

Note
Are screwed together with the die set upper plate; receiving chucks are not load attachment equipment as defined in Machinery Directive 2006/42/EC; they are designed for the establishment of a loose or fixed connection between two parts.

d_1	d_2	d_3	d_5	d_6	l	l_1	l_2	l_3	t	Item number
68	32	25	50	9	31	13	18	6.5	9	SZ4129 **068 x 32**
83	48	32	65	9	37	19	18	9.5	9	SZ4129 **083 x 48**
98	48	32	80	9	42	19	23	9.5	9	SZ4129 **098 x 48**
123	48	32	105	9	42	19	23	9.5	9	SZ4129 **123 x 48**

SZ4160 Receiving chuck

for receiving chucks



Material
Steel 1.0503 (C45)

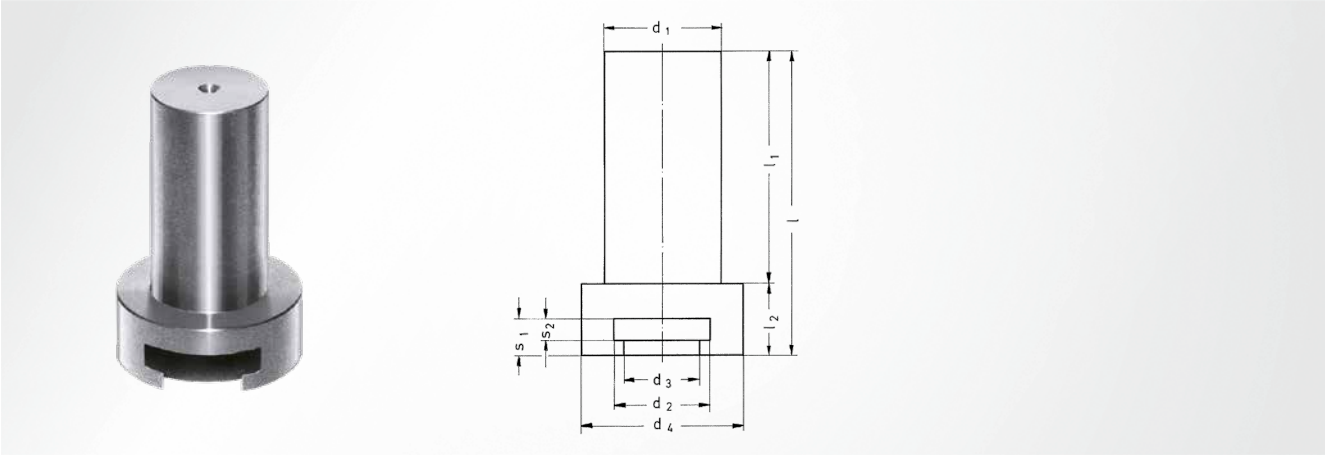
Suitable for receiving chucks
SZ4125; SZ4129

Note
Receiving chucks with wobblers are used for the loose connection of the top part of a pillar guide tool with the press ram; plug diameters are in accordance with the standardised press plunger ram holes; receiving chuck are not load attachment equipment as defined in Machinery Directive 2006/42/EC; they are designed for the establishment of a loose or fixed connection between two parts.

d_1^{f9}	d_2	d_3	d_4	l	l_1	l_2	l_3	s_1	s_2	Item number
25	33	26	56	70	45	25	16	13	7	SZ4160 **25 x 33**
32	49	33	80	86	56	30	16	19	10	SZ4160 **32 x 49**
40	49	33	80	100	70	30	26	19	10	SZ4160 **40 x 49**

SZ4161 Receiving chuck

blank



Material
Steel 1.0503 (C45)

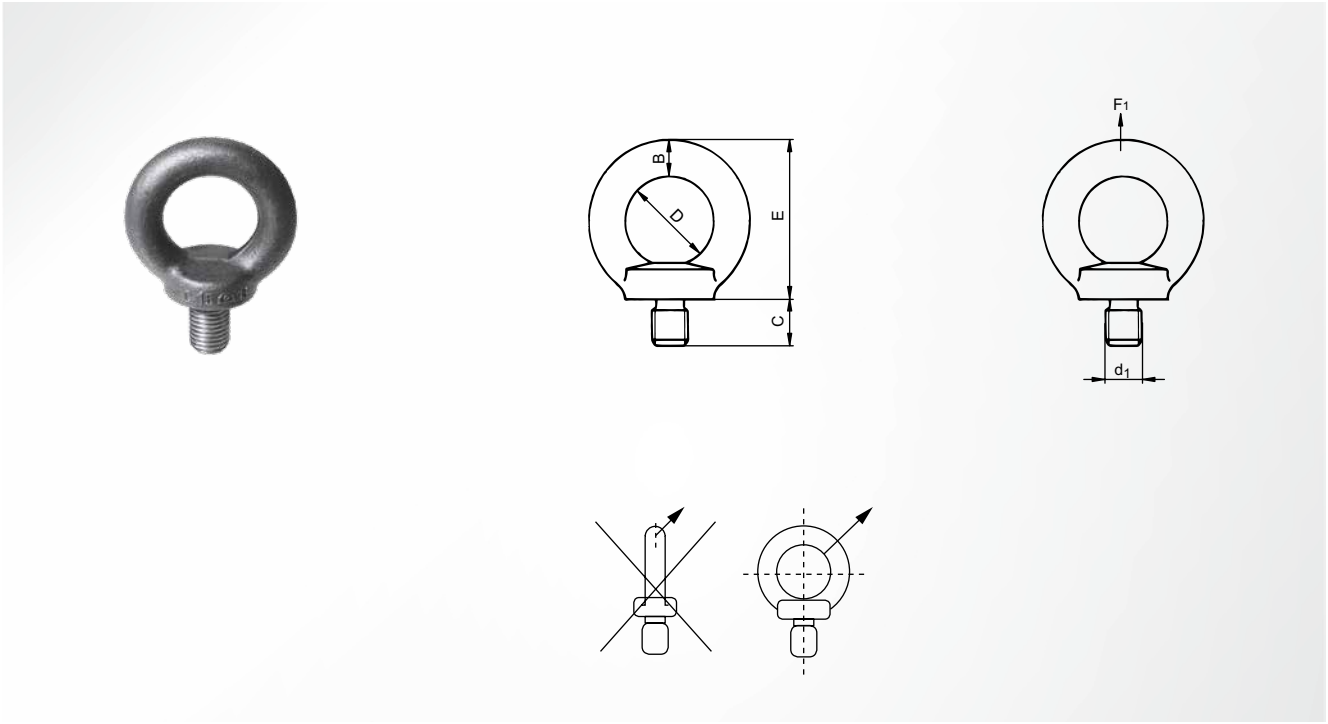
Suitable for receiving chucks
SZ4125; SZ4129

Note
Mounting blank with centring for individual rework; receiving chuck are not load attachment equipment as defined in Machinery Directive 2006/42/EC; they are designed for the establishment of a loose or fixed connection between two parts.

d_1	d_2	d_3	d_4	l	l_1	l_2	s_1	s_2	Item number
40	33	26	56	105	80	25	13	7	SZ4161 **40 x 33**
50	49	33	80	120	90	30	19	10	SZ4161 **50 x 49**
60	49	33	80	130	100	30	19	10	SZ4161 **60 x 49**

SZ4381 Eye-bolt

static



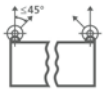
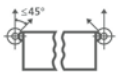
DIN 580

Material
Steel 1.1141 (C15-E)

Note
Attention: Completely screw in the eye-bolt; must lie completely and evenly on the contact surface; must be positioned in order to avoid side drag; must be loaded in the direction of the eye-bolt

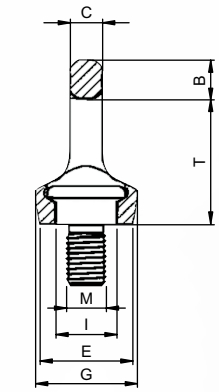
d_1	F_1 t	B	C	D	E	Item number
M8	0.14	8	13.0	20	36	SZ4381 **08**
M10	0.23	10	17.0	25	45	SZ4381 **10**
M12	0.34	12	20.5	30	53	SZ4381 **12**
M16	0.70	14	27.0	35	62	SZ4381 **16**
M20	1.20	16	30.0	40	71	SZ4381 **20**
M24	1.80	20	36.0	50	90	SZ4381 **24**

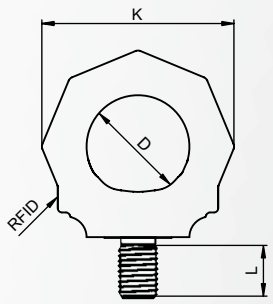
Loads according to norm table DIN 580

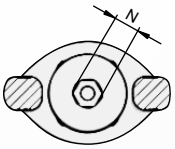
Thread (d_1)		M8	M10	M12	M16	M20	M24
Axial (WLL) load capacity for each eye-bolt in kg		140	230	340	700	1200	1800
Load capacity for each eye-bolt ≤ 45° in kg		100	170	240	500	860	1290
Laterally screwed load capacity for each eye-bolt ≤ 45° in kg		70	115	170	350	600	900

SZ4385 Eye-bolt

with key, hexagon shape







Material

Steel 1.6541; forged

Minimum screw-in length

1 x M in steel; 1.25 x M in cast;
2 x M in aluminium alloys;
2.5 x M in aluminium-magnesium alloys

Note

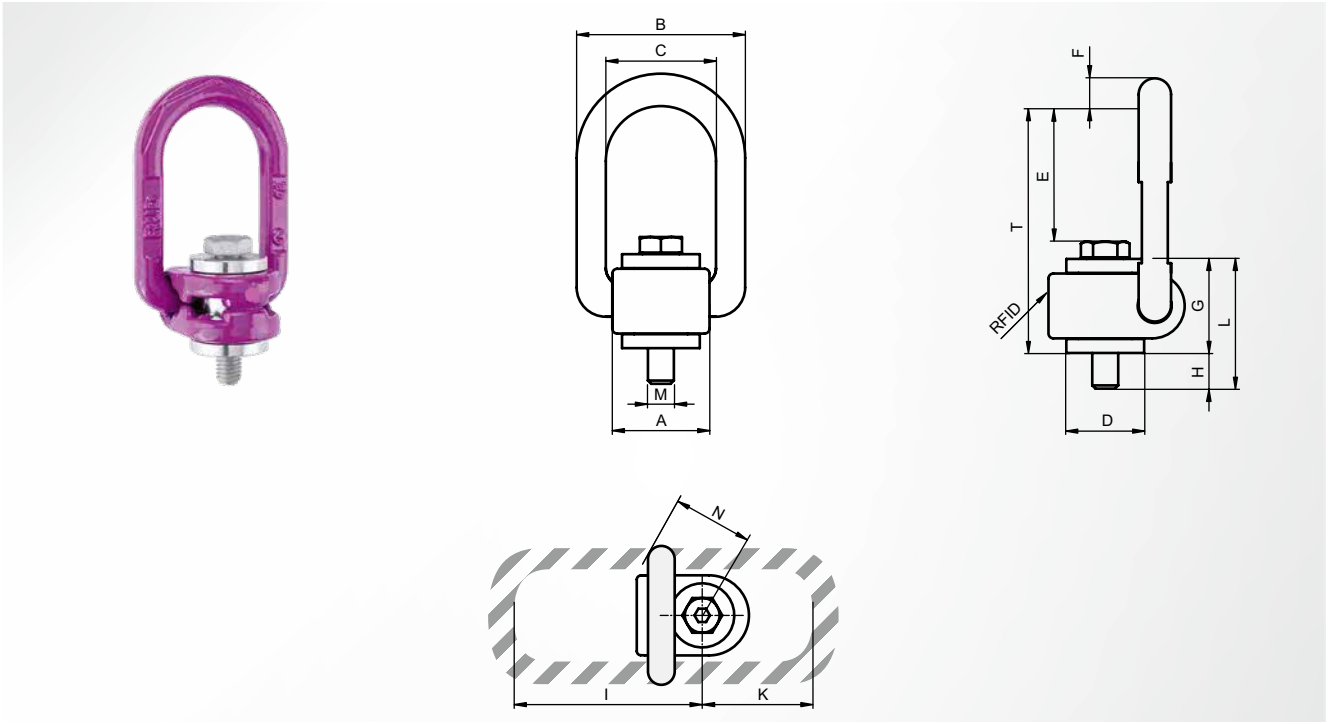
Attention: Completely screw in the eye-bolt; must lie completely and evenly on the contact surface; electromagnetic crack testing in accordance with DIN EN 1677-1; rotatable in screwed condition; not suitable for rotating under load; before mounting the lifting accessory, adjust to the direction of the force; rotatable by 360°;
the integrated RFID transponder is used for the unique identification of the lifting accessory

M	Load capacity t	B	C	D	E	G	I	K	L	N	T	Item number
M8	0.40	11	8.5	25	25	28	16.0	47	12	6	34	SZ4385 **08**
M10	0.40	11	8.5	25	25	28	15.0	47	15	6	34	SZ4385 **10**
M12	0.75	13	10.0	30	30	34	18.0	56	18	8	42	SZ4385 **12**
M16	1.50	15	14.0	35	35	40	22.0	65	24	10	49	SZ4385 **16**
M20	2.30	17	16.0	40	40	50	27.5	75	30	12	57	SZ4385 **20**
M24	3.20	21	19.0	48	48	60	33.0	90	36	14	69	SZ4385 **24**
M30	4.50	26	24.0	60	60	75	41.5	112	45	17	86	SZ4385 **30**

Type of stop	G1	G	G	G	<ß G	G	<ß G	<ß G
Number of rope lines	1	2	1	2	2	2	2	3 and 4	3 and 4	3 and 4
Inclination angle <ß	0°	0°	90°	90°	0–45°	45–60°	Asymmetrical	0–45°	45–60°	Asymmetrical
Maximum transport weight "G" in t for the types of stop listed above										
SZ4385.08	1	2	0.30	0.6	0.42	0.30	0.30	0.63	0.45	0.30
SZ4385.10	1	2	0.40	0.8	0.56	0.40	0.40	0.84	0.60	0.40
SZ4385.12	2	4	0.75	1.5	1.00	0.75	0.75	1.60	1.12	0.75
SZ4385.16	4	8	1.50	3.0	2.10	1.50	1.50	3.15	2.25	1.50
SZ4385.20	6	12	2.30	4.6	3.22	2.30	2.30	4.83	3.45	2.30
SZ4385.24	8	16	3.20	6.4	4.48	3.20	3.20	6.70	4.80	3.20
SZ4385.30	12	24	4.50	9.0	6.30	4.50	4.50	9.40	6.70	4.50

SZ4390 Side-load hoist ring

rotatable



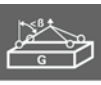
Minimum screw-in length

1 x M in steel; 1.25 x M in cast;
2 x M in aluminium alloys;
2.5 x M in aluminium-magnesium alloys

Note

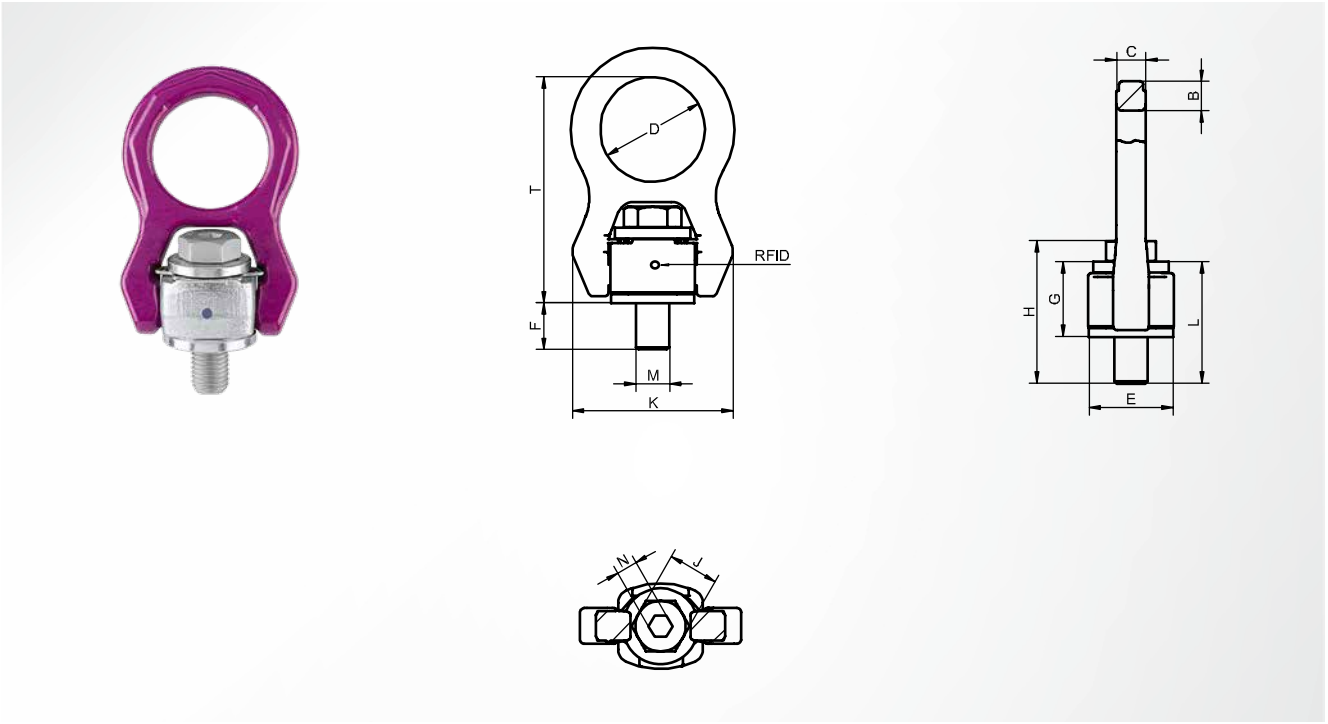
Attention: Completely screw in the side-load hoist ring; must lie completely and evenly on the contact surface; the side-load hoist ring is collapsible, rotatable through 360 degrees from all directions and carries the full load in the pulling direction; before mounting the lifting accessory, adjust to the direction of the force; the supplied screw is crack tested; the integrated RFID transponder is used for the unique identification of the lifting accessory

M	Load capacity t	A	B	C	D	E	F	G	H	I	K	L	N	T	Troque Nm	Item number
M8	0.63	30	54	34	24	40	12.0	29	11	75	45	40	32	75	30	SZ4390 **08**
M10	0.90	30	54	34	24	39	12.0	29	15	75	45	44	32	75	60	SZ4390 **10**
M12	1.35	32	54	34	26	38	12.0	29	18	75	45	47	32	75	150	SZ4390 **12**
M16	2.00	33	56	36	30	39	13.5	36	22	86	47	58	38	85	150	SZ4390 **16**
M20	3.50	50	82	54	45	55	16.5	43	32	113	64	75	48	110	400	SZ4390 **20**
M24	4.50	50	82	54	45	67	18.0	43	37	130	78	80	48	125	760	SZ4390 **24**
M30	6.70	60	103	65	60	67	22.5	61	49	151	80	110	67	147	1000	SZ4390 **30**

Type of stop										
Number of rope lines	1	2	1	2	2	2	2	3 and 4	3 and 4	3 and 4
Inclination angle <ß	0°	0°	90°	90°	0–45°	45–60°	Asymmetrical	0–45°	45–60°	Asymmetrical
Maximum transport weight "G" in t for the types of stop listed above										
SZ4390.08	0.63	1.26	0.63	1.26	0.88	0.63	0.63	1.32	0.95	0.63
SZ4390.10	0.90	1.80	0.90	1.80	1.30	0.90	0.90	1.90	1.35	0.90
SZ4390.12	1.35	2.70	1.35	2.70	1.90	1.35	1.35	2.80	2.00	1.35
SZ4390.16	2.00	4.00	2.00	4.00	2.80	2.00	2.00	4.20	3.00	2.00
SZ4390.20	3.50	7.00	3.50	7.00	4.90	3.50	3.50	7.40	5.25	3.50
SZ4390.24	4.50	9.00	4.50	9.00	6.30	4.50	4.50	9.50	6.75	4.50
SZ4390.30	6.70	13.40	6.70	13.40	9.40	6.70	6.70	14.20	10.00	6.70

SZ4392 Lifting point

screwable



Minimum screw-in length

1 x M in steel; 1.25 x M in cast;
2 x M in aluminium alloys;
2.5 x M in aluminium-magnesium alloys

Note

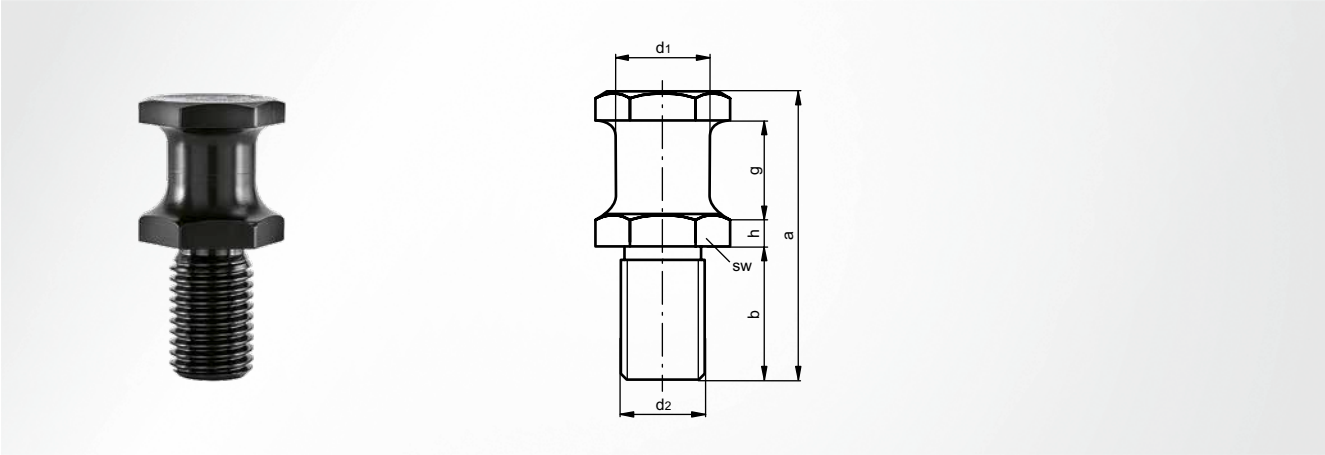
Screwing in can be carried out safely in the pulling direction, thereby preventing the bracket from standing still; the bracket automatically reaches the optimal position for safe lifting before the load is lifted; which prevents the load from suddenly slipping after it has been lifted;
the integrated RFID transponder is used for the unique identification of the lifting accessory

M	B	C	D	E	F	G	H	J	K	L	N	T	Item number
M12	11	10.5	38	30	19.0	28.0	54.4	19	58.0	47	8	83	SZ4392 **12**
M16	14	14.0	50	40	22.0	36.0	68.0	24	76.0	58	10	107	SZ4392 **16**
M20	17	17.2	50	45	26.5	43.5	82.0	30	89.0	70	12	118	SZ4392 **20**
M24	23	23.0	66	60	34.0	55.0	104.0	36	120.5	89	14	154	SZ4392 **24**

Type of stop										
Number of rope lines	1	2	1	2	2	2	2	3 and 4	3 and 4	3 and 4
Inclination angle <ß	0°–7°	0°–7°	90°	90°	0–45°	45–60°	Asymmetrical	0–45°	45–60°	Asymmetrical
Factor	1	2	1	2	1.4	1	1	2.1	1.5	1
Safety factor 4:1	**Maximum transport weight "G" in t for the types of stop listed above**									
	Tightly screwed and adjusted to the pulling direction									
SZ4392 12	1.35	2.7	1.35	2.7	1.9	1.35	1.35	2.84	2.00	1.35
SZ4392 16	2.50	5.0	2.50	5.0	3.5	2.50	2.50	5.25	3.75	2.50
SZ4392 20	4.00	8.0	4.00	8.0	5.6	4.00	4.00	8.40	6.00	4.00
SZ4392 24	6.30	12.6	6.30	12.6	8.8	6.30	6.30	13.20	9.50	6.30
Safety factor 5:1	**Maximum transport weight "G" in t for the types of stop listed above**									
	Tightly screwed and adjusted to the pulling direction									
SZ4392 12	1.1	2.2	1.1	2.2	1.5	1.1	1.1	2.30	1.6	1.1
SZ4392 16	2.0	4.0	2.0	4.0	2.8	2.0	2.0	4.25	3.0	2.0
SZ4392 20	3.2	6.4	3.2	6.4	4.5	3.2	3.2	6.70	4.8	3.2
SZ4392 24	5.0	10.0	5.0	10.0	7.1	5.0	5.0	10.60	7.5	5.0

SZ4351 Carrying screw

with thread



VDI 3366

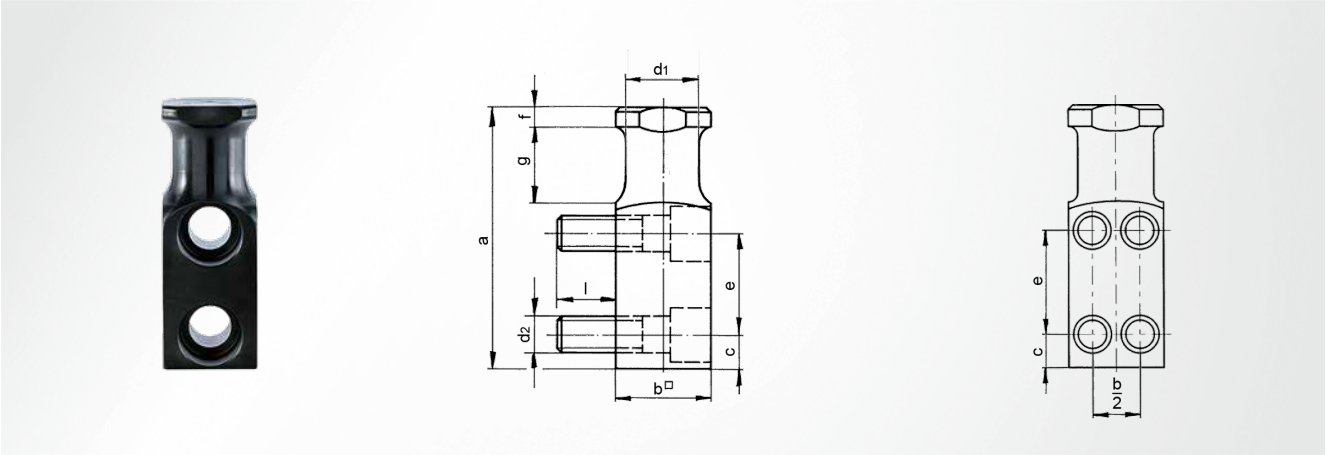
Material
Steel 1.0503 (C45)

Note
Lateral screwing in on the part; arrange 4 carrying screws on the part; the load can be distributed over 2 carrying screws when turning the part

d_1	d_2	a	b	g	h	Tool weight $kg_{max.}$	Item number
16	M16	58	28	20	5	640	SZ4351 **16**
20	M20	68	34	22	6	1000	SZ4351 **20**
25	M24	78	38	25	8	2000	SZ4351 **25**
32	M30	95	45	32	10	3000	SZ4351 **32**
40	M36	118	56	40	12	5000	SZ4351 **40**

SZ4371 Lifting lug

with screws



VDI 3366

Material
Steel 1.0503 (C45)

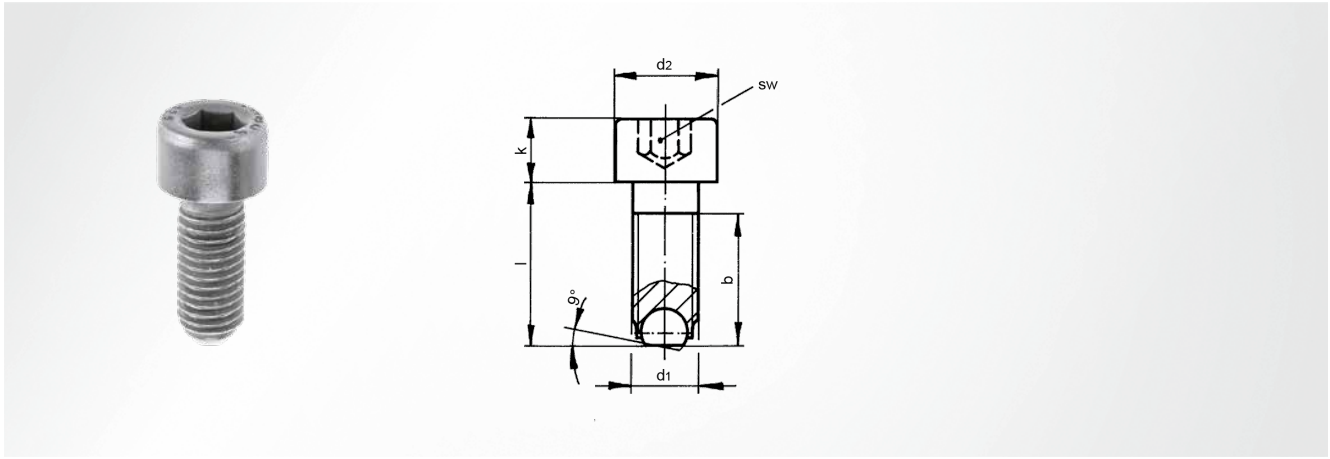
Scope of supply
SZ8510

Note
Fixing via hexagon socket screws (included in the scope of delivery); arrange 4 carrying screws on the part; the load can be distributed over 2 carrying screws when turning the part; hob the lifting lugs into the tool part; lifting lugs from d_1 = 63 mm have 4 screws

d_1	d_2	l	a	b	c	e	f	g	h	Tool weight $kg_{max.}$	Item number
16	M8 x 25	14.0	80	20	10	34	6	20	6	640	SZ4371 **16**
20	M10 x 30	16.0	90	25	10	37	8	25	8	1260	SZ4371 **20**
25	M12 x 40	18.0	100	35	12	38	8	30	10	2500	SZ4371 **25**
32	M16 x 45	22.5	120	40	16	46	10	32	10	4000	SZ4371 **32**
40	M20 x 60	31.5	140	50	18	54	10	40	12	6400	SZ4371 **40**
50	M24 x 70	35.5	160	60	22	59	12	45	14	10000	SZ4371 **50**
63	M20 x 100	41.5	200	80	20	78	12	50	16	16000	SZ4371 **63**
80	M24 x 120	45.5	250	100	25	100	15	65	18	25000	SZ4371 **80**
100	M30 x 140	52.0	300	120	30	125	15	80	20	40000	SZ4371 **100**

SZ4432 Ball pressure screws

with cylindrical head and hexagon socket



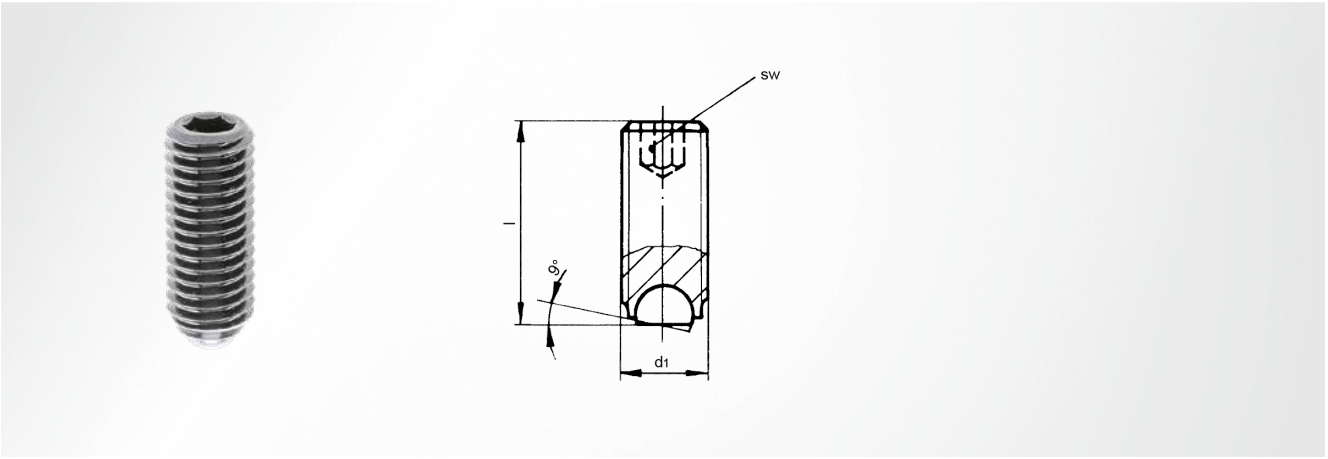
Note

Strength class 12.9 with hardened ball; ball flattened and movably mounted up to 9°; for the clamping of surfaces that are not plane-parallel

d_1	d_2	k	Ball Ø	l	b	Item number
M6	10	6	4.0	20	17.0	SZ4432 **06 x 20**
				30	27.0	SZ4432 **06 x 30**
				40	24.0	SZ4432 **06 x 40**
M8	13	8	5.5	20	16.5	SZ4432 **08 x 20**
				35	31.5	SZ4432 **08 x 35**
				50	28.0	SZ4432 **08 x 50**
M10	16	10	7.0	25	20.5	SZ4432 **10 x 25**
				40	35.5	SZ4432 **10 x 40**
				60	32.0	SZ4432 **10 x 60**
M12	18	12	8.5	30	25.0	SZ4432 **12 x 30**
				50	36.0	SZ4432 **12 x 50**
				80	36.0	SZ4432 **12 x 80**
M16	24	16	12.0	40	34.0	SZ4432 **16 x 40**
				60	44.0	SZ4432 **16 x 60**
				80	44.0	SZ4432 **16 x 80**

SZ4434 Ball pressure screws

without head, with hexagon socket

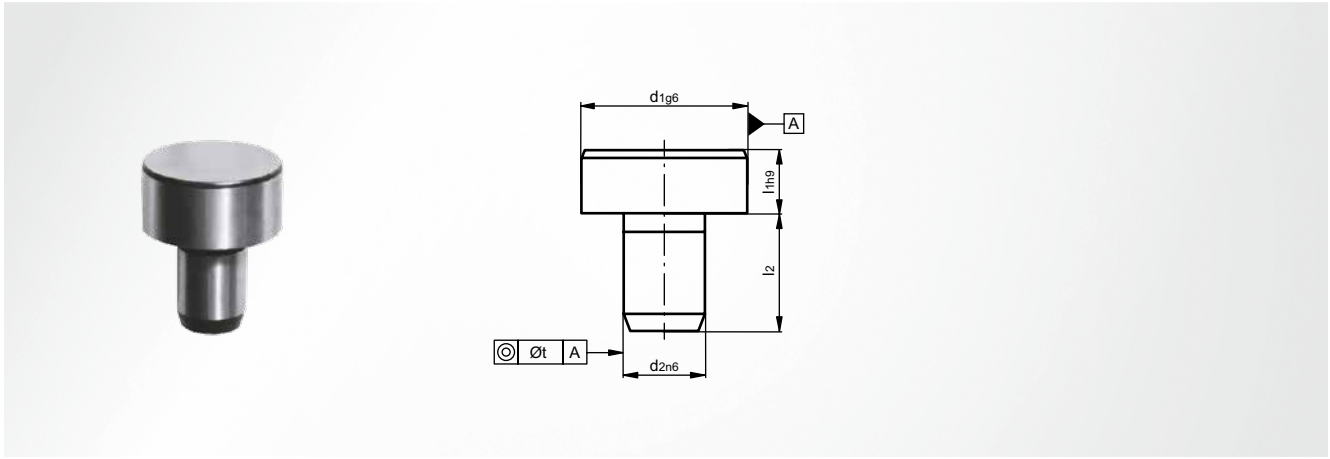


Note

Strength class 12.9 with hardened ball; ball flattened and movably mounted up to 9°; for the clamping of surfaces that are not plane-parallel

d_1	Ball Ø	l	Item number
M6	4.0	10	SZ4434 **06 x 10**
		16	SZ4434 **06 x 16**
		25	SZ4434 **06 x 25**
M8	5.5	12	SZ4434 **08 x 12**
		20	SZ4434 **08 x 20**
		30	SZ4434 **08 x 30**
M10	7.0	16	SZ4434 **10 x 16**
		25	SZ4434 **10 x 25**
		35	SZ4434 **10 x 35**
M12	8.5	20	SZ4434 **12 x 20**
		30	SZ4434 **12 x 30**
		40	SZ4434 **12 x 40**
M16	12.0	25	SZ4434 **16 x 25**
		35	SZ4434 **16 x 35**
		50	SZ4434 **16 x 50**

SZ4512 Supporting bolt



DIN 6321

Shape
A

Material
Tool steel; hardened

Hardness
56 ±2 HRC

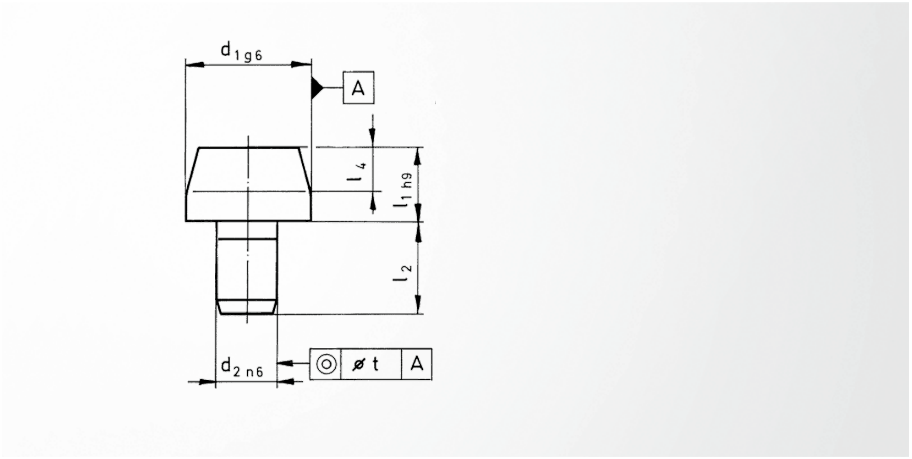
Installation in mounting bore
ISO H7

d_1^{g6}	d_2^{n6}	l_1^{h9}	l_2	t	Item number
6	4	5	6	0.02	SZ4512 **06 x 05**
10	6	6	9	0.02	SZ4512 **10 x 06**

d_1^{g6}	d_2^{n6}	l_1^{h9}	l_2	t	Item number
16	8	8	12	0.04	SZ4512 **16 x 08**
25	12	10	18	0.04	SZ4512 **25 x 10**

SZ4513 Locating bolt

cylindrical



DIN 6321

Shape
B

Material
Tool steel; hardened

Hardness
56 ±2 HRC

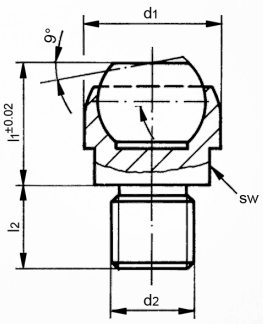
Installation in mounting bore
ISO H7

d_1^{g6}	l_2	l_4	t	d_2^{n6}	l_1	Item number
6	6	4	0.02	4	7	SZ4513 **06 x 07**
				4	12	SZ4513 **06 x 12**
8	9	6	0.02	6	10	SZ4513 **08 x 10**
				6	16	SZ4513 **08 x 16**
10	9	6	0.02	6	10	SZ4513 **10 x 10**
				6	18	SZ4513 **10 x 18**
12	9	6	0.02	6	10	SZ4513 **12 x 10**

d_1^{g6}	l_2	l_4	t	d_2^{n6}	l_1	Item number
12	9	6	0.02	6	18	SZ4513 **12 x 18**
16	12	8	0.04	8	13	SZ4513 **16 x 13**
				8	22	SZ4513 **16 x 22**
20	18	9	0.04	12	15	SZ4513 **20 x 15**
				12	25	SZ4513 **20 x 25**
25	18	9	0.04	12	15	SZ4513 **25 x 15**
				12	25	SZ4513 **25 x 25**

SZ4516 Supporting bolt

swinging



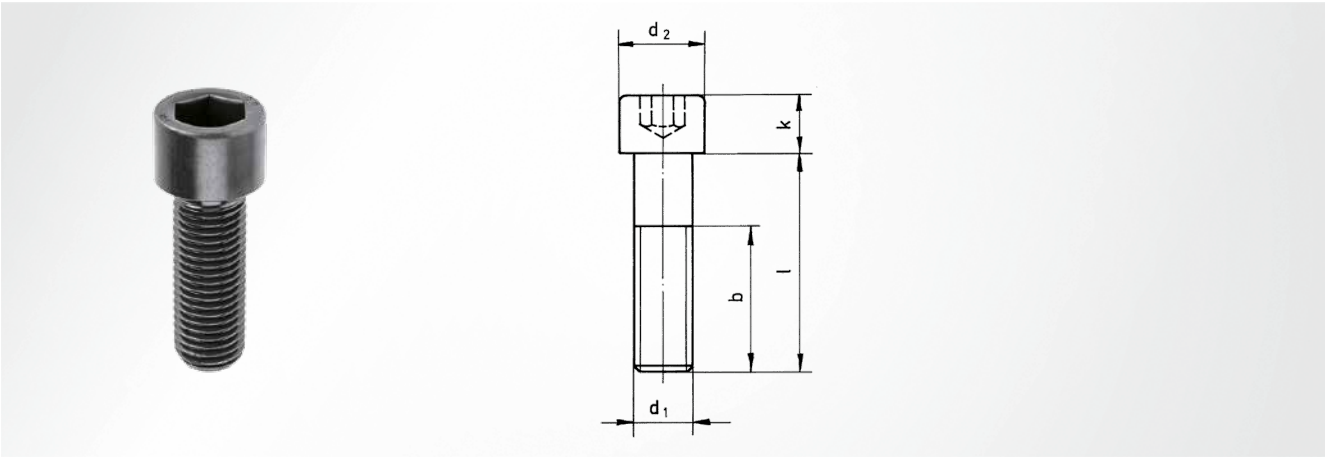
Note

Ball flattened and movably mounted up to 9°; ball, hardened; for the clamping of surfaces that are not plane-parallel; mounting body tempered

d_1	d_2	l_1 ±0.02	l_2	Ball Ø	Item number
13	M8	13	8	10	SZ4516 **13 x 08**
20	M12	18	12	16	SZ4516 **20 x 12**
30	M16	27	16	25	SZ4516 **30 x 16**

SZ8510 Socket-head screw

with hexagon socket



DIN EN ISO 4762

Note

Strength class 8.8

d_1	d_2	k	l	b	Standard packaging piece	Item number
M4	7.0	4	6	4	50	SZ8510 **04 x 006**
			8	6	50	SZ8510 **04 x 008**
			10	8	50	SZ8510 **04 x 010**
			12	10	50	SZ8510 **04 x 012**
			16	14	50	SZ8510 **04 x 016**
			20	18	50	SZ8510 **04 x 020**
			25	23	50	SZ8510 **04 x 025**
			30	20	50	SZ8510 **04 x 030**
M5	8.5	5	8	6	50	SZ8510 **05 x 008**
			10	8	50	SZ8510 **05 x 010**
			12	10	50	SZ8510 **05 x 012**
			16	14	50	SZ8510 **05 x 016**
			20	18	50	SZ8510 **05 x 020**
			25	23	50	SZ8510 **05 x 025**
			30	22	50	SZ8510 **05 x 030**
			35	22	50	SZ8510 **05 x 035**
			40	22	50	SZ8510 **05 x 040**
			45	22	50	SZ8510 **05 x 045**
			50	22	50	SZ8510 **05 x 050**
M6	10.0	6	10	7	50	SZ8510 **06 x 010**
			12	9	50	SZ8510 **06 x 012**
			16	13	50	SZ8510 **06 x 016**
			20	17	50	SZ8510 **06 x 020**
			25	22	50	SZ8510 **06 x 025**
			30	27	50	SZ8510 **06 x 030**
			35	24	50	SZ8510 **06 x 035**
			40	24	50	SZ8510 **06 x 040**
			45	24	50	SZ8510 **06 x 045**
			50	24	50	SZ8510 **06 x 050**
			60	24	50	SZ8510 **06 x 060**
			70	24	50	SZ8510 **06 x 070**
			80	24	50	SZ8510 **06 x 080**
M8	13.0	8	12	8	25	SZ8510 **08 x 012**
			16	12	25	SZ8510 **08 x 016**
			20	16	25	SZ8510 **08 x 020**
			25	21	25	SZ8510 **08 x 025**
			30	26	25	SZ8510 **08 x 030**
			35	31	25	SZ8510 **08 x 035**
			40	28	25	SZ8510 **08 x 040**
			45	28	25	SZ8510 **08 x 045**

d_1	d_2	k	l	b	Standard packaging piece	Item number
M8	13.0	8	50	28	25	SZ8510 **08 x 050**
			60	28	25	SZ8510 **08 x 060**
			70	28	25	SZ8510 **08 x 070**
			80	28	25	SZ8510 **08 x 080**
			90	28	25	SZ8510 **08 x 090**
			100	28	25	SZ8510 **08 x 100**
			110	28	25	SZ8510 **08 x 110**
			120	28	25	SZ8510 **08 x 120**
M10	16.0	10	16	11	25	SZ8510 **10 x 016**
			20	15	25	SZ8510 **10 x 020**
			25	20	25	SZ8510 **10 x 025**
			30	25	25	SZ8510 **10 x 030**
			35	30	25	SZ8510 **10 x 035**
			40	35	25	SZ8510 **10 x 040**
			45	32	25	SZ8510 **10 x 045**
			50	32	25	SZ8510 **10 x 050**
			60	32	25	SZ8510 **10 x 060**
			70	32	25	SZ8510 **10 x 070**
			80	32	25	SZ8510 **10 x 080**
			90	32	25	SZ8510 **10 x 090**
			100	32	25	SZ8510 **10 x 100**
			110	32	25	SZ8510 **10 x 110**
			120	32	25	SZ8510 **10 x 120**
			130	32	25	SZ8510 **10 x 130**
			140	32	25	SZ8510 **10 x 140**
			150	32	25	SZ8510 **10 x 150**
			160	32	25	SZ8510 **10 x 160**
M12	18.0	12	20	14	10	SZ8510 **12 x 020**
			25	19	10	SZ8510 **12 x 025**
			30	24	10	SZ8510 **12 x 030**
			35	29	10	SZ8510 **12 x 035**
			40	34	10	SZ8510 **12 x 040**
			45	39	10	SZ8510 **12 x 045**
			50	44	10	SZ8510 **12 x 050**
			60	36	10	SZ8510 **12 x 060**
			70	36	10	SZ8510 **12 x 070**
			80	36	10	SZ8510 **12 x 080**
			90	36	10	SZ8510 **12 x 090**
			100	36	10	SZ8510 **12 x 100**
			110	36	10	SZ8510 **12 x 110**

SZ8510 Socket-head screw

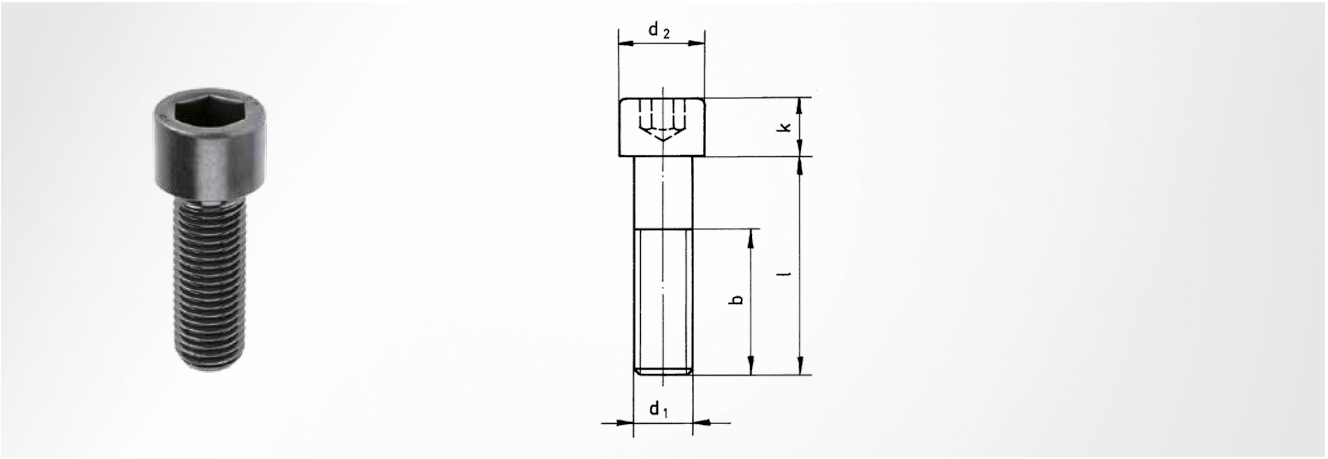
with hexagon socket

d_1	d_2	k	l	b	Standard packaging piece	Item number
M12	18.0	12	120	36	10	SZ8510 **12 x 120**
			130	36	10	SZ8510 **12 x 130**
			140	36	10	SZ8510 **12 x 140**
			150	36	10	SZ8510 **12 x 150**
			160	36	10	SZ8510 **12 x 160**
M16	24.0	16	30	24	10	SZ8510 **16 x 030**
			35	29	10	SZ8510 **16 x 035**
			40	34	10	SZ8510 **16 x 040**
			45	39	10	SZ8510 **16 x 045**
			50	44	10	SZ8510 **16 x 050**
			60	54	10	SZ8510 **16 x 060**
			70	44	10	SZ8510 **16 x 070**
			80	44	10	SZ8510 **16 x 080**

d_1	d_2	k	l	b	Standard packaging piece	Item number
M16	24.0	16	90	44	10	SZ8510 **16 x 090**
			100	44	10	SZ8510 **16 x 100**
			110	44	10	SZ8510 **16 x 110**
			120	44	10	SZ8510 **16 x 120**
			130	44	10	SZ8510 **16 x 130**
			140	44	10	SZ8510 **16 x 140**
			150	44	10	SZ8510 **16 x 150**
			160	44	10	SZ8510 **16 x 160**
M20	30.0	20	50	42	10	SZ8510 **20 x 050**
			60	52	10	SZ8510 **20 x 060**
			70	62	10	SZ8510 **20 x 070**
			80	52	10	SZ8510 **20 x 080**

SZ8515 Socket-head screw

with hexagon socket



DIN EN ISO 4762

Note

Strength class 12.9

d_1	d_2	k	l	b	Standard packaging piece	Item number
M4	7.0	4	6	4	50	SZ8515 **04 x 006**
			8	6	50	SZ8515 **04 x 008**
			10	8	50	SZ8515 **04 x 010**
			12	10	50	SZ8515 **04 x 012**
			16	14	50	SZ8515 **04 x 016**
			20	18	50	SZ8515 **04 x 020**
			25	23	50	SZ8515 **04 x 025**
			30	20	50	SZ8515 **04 x 030**
M5	8.5	5	8	6	50	SZ8515 **05 x 008**
			10	8	50	SZ8515 **05 x 010**
			12	10	50	SZ8515 **05 x 012**
			16	14	50	SZ8515 **05 x 016**
			20	18	50	SZ8515 **05 x 020**
			25	23	50	SZ8515 **05 x 025**
			30	22	50	SZ8515 **05 x 030**
			35	22	50	SZ8515 **05 x 035**
			40	22	50	SZ8515 **05 x 040**
			45	22	50	SZ8515 **05 x 045**
			50	22	50	SZ8515 **05 x 050**
M6	10.0	6	10	7	50	SZ8515 **06 x 010**
			12	9	50	SZ8515 **06 x 012**
			16	13	50	SZ8515 **06 x 016**
			20	17	50	SZ8515 **06 x 020**
			25	22	50	SZ8515 **06 x 025**
			30	27	50	SZ8515 **06 x 030**
			35	24	50	SZ8515 **06 x 035**
			40	24	50	SZ8515 **06 x 040**
			45	24	50	SZ8515 **06 x 045**
			50	24	50	SZ8515 **06 x 050**
			60	24	50	SZ8515 **06 x 060**
			70	24	50	SZ8515 **06 x 070**
			80	24	50	SZ8515 **06 x 080**
M8	13.0	8	12	8	25	SZ8515 **08 x 012**
			16	12	25	SZ8515 **08 x 016**
			20	16	25	SZ8515 **08 x 020**
			25	21	25	SZ8515 **08 x 025**
			30	26	25	SZ8515 **08 x 030**
			35	31	25	SZ8515 **08 x 035**
			40	28	25	SZ8515 **08 x 040**
			45	28	25	SZ8515 **08 x 045**

d_1	d_2	k	l	b	Standard packaging piece	Item number
M8	13.0	8	50	28	25	SZ8515 **08 x 050**
			60	28	25	SZ8515 **08 x 060**
			70	28	25	SZ8515 **08 x 070**
			80	28	25	SZ8515 **08 x 080**
			90	28	25	SZ8515 **08 x 090**
			100	28	25	SZ8515 **08 x 100**
			110	28	25	SZ8515 **08 x 110**
			120	28	25	SZ8515 **08 x 120**
M10	16.0	10	16	11	25	SZ8515 **10 x 016**
			20	15	25	SZ8515 **10 x 020**
			25	20	25	SZ8515 **10 x 025**
			30	25	25	SZ8515 **10 x 030**
			35	30	25	SZ8515 **10 x 035**
			40	35	25	SZ8515 **10 x 040**
			45	32	25	SZ8515 **10 x 045**
			50	32	25	SZ8515 **10 x 050**
			60	32	25	SZ8515 **10 x 060**
			70	32	25	SZ8515 **10 x 070**
			80	32	25	SZ8515 **10 x 080**
			90	32	25	SZ8515 **10 x 090**
			100	32	25	SZ8515 **10 x 100**
			110	32	25	SZ8515 **10 x 110**
			120	32	25	SZ8515 **10 x 120**
			130	32	25	SZ8515 **10 x 130**
			140	32	25	SZ8515 **10 x 140**
			150	32	25	SZ8515 **10 x 150**
			160	32	25	SZ8515 **10 x 160**
M12	18.0	12	20	14	10	SZ8515 **12 x 020**
			25	19	10	SZ8515 **12 x 025**
			30	24	10	SZ8515 **12 x 030**
			35	29	10	SZ8515 **12 x 035**
			40	34	10	SZ8515 **12 x 040**
			45	39	10	SZ8515 **12 x 045**
			50	44	10	SZ8515 **12 x 050**
			60	36	10	SZ8515 **12 x 060**
			70	36	10	SZ8515 **12 x 070**
			80	36	10	SZ8515 **12 x 080**
			90	36	10	SZ8515 **12 x 090**
			100	36	10	SZ8515 **12 x 100**
			110	36	10	SZ8515 **12 x 110**

SZ8515 Socket-head screw

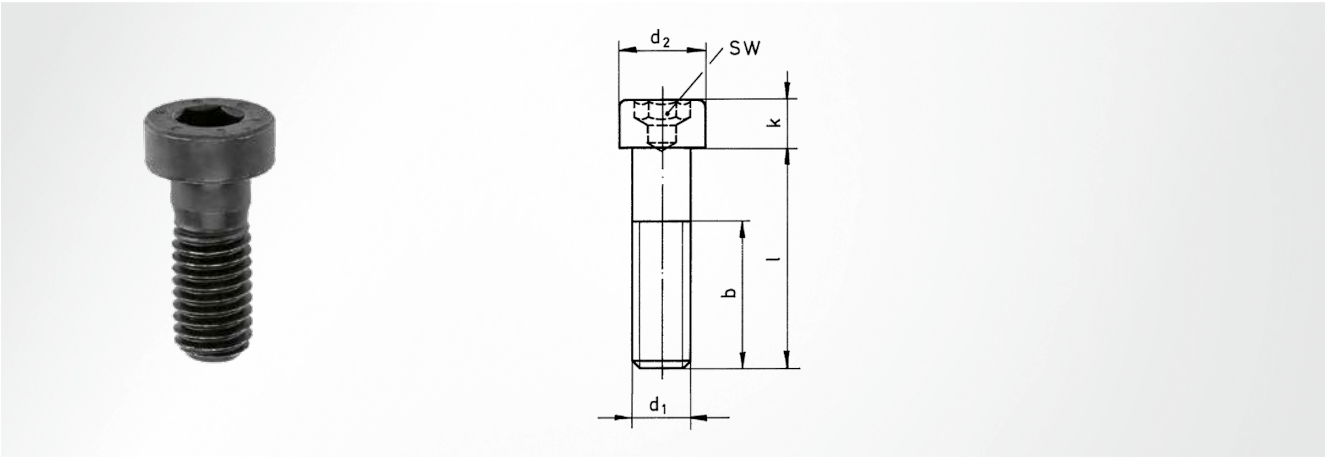
with hexagon socket

d_1	d_2	k	l	b	Standard packaging piece	Item number
M12	18.0	12	120	36	10	SZ8515 **12 x 120**
			130	36	10	SZ8515 **12 x 130**
			140	36	10	SZ8515 **12 x 140**
			150	36	10	SZ8515 **12 x 150**
			160	36	10	SZ8515 **12 x 160**
M16	24.0	16	30	24	10	SZ8515 **16 x 030**
			35	29	10	SZ8515 **16 x 035**
			40	34	10	SZ8515 **16 x 040**
			45	39	10	SZ8515 **16 x 045**
			50	44	10	SZ8515 **16 x 050**
			60	54	10	SZ8515 **16 x 060**
			70	44	10	SZ8515 **16 x 070**
			80	44	10	SZ8515 **16 x 080**

d_1	d_2	k	l	b	Standard packaging piece	Item number
M16	24.0	16	90	44	10	SZ8515 **16 x 090**
			100	44	10	SZ8515 **16 x 100**
			110	44	10	SZ8515 **16 x 110**
			120	44	10	SZ8515 **16 x 120**
			130	44	10	SZ8515 **16 x 130**
			140	44	10	SZ8515 **16 x 140**
			150	44	10	SZ8515 **16 x 150**
			160	44	10	SZ8515 **16 x 160**
M20	30.0	20	50	42	10	SZ8515 **20 x 050**
			60	52	10	SZ8515 **20 x 060**
			70	62	10	SZ8515 **20 x 070**
			80	52	10	SZ8515 **20 x 080**

SZ8512 Socket-head screw

flat head, with hexagon socket



DIN 6912

Note
Strength class 8.8

d_1	d_2	k	l	b	Standard packaging piece	Item number
M6	10	4.0	12	9	50	SZ8512 **06 x 012**
			16	13	50	SZ8512 **06 x 016**
			20	17	50	SZ8512 **06 x 020**
			25	18	50	SZ8512 **06 x 025**
			30	18	50	SZ8512 **06 x 030**
			35	18	50	SZ8512 **06 x 035**
			40	18	50	SZ8512 **06 x 040**
			45	18	50	SZ8512 **06 x 045**
			50	18	50	SZ8512 **06 x 050**
			55	18	50	SZ8512 **06 x 055**
			60	18	50	SZ8512 **06 x 060**
			65	18	50	SZ8512 **06 x 065**
			70	18	50	SZ8512 **06 x 070**
			75	18	50	SZ8512 **06 x 075**
			80	18	50	SZ8512 **06 x 080**
			90	18	50	SZ8512 **06 x 090**
			100	18	50	SZ8512 **06 x 100**
			110	18	50	SZ8512 **06 x 110**
			120	18	50	SZ8512 **06 x 120**
M8	13	5.0	12	8	50	SZ8512 **08 x 012**
			16	12	50	SZ8512 **08 x 016**
			20	16	50	SZ8512 **08 x 020**
			25	21	50	SZ8512 **08 x 025**
			30	22	50	SZ8512 **08 x 030**
			35	22	50	SZ8512 **08 x 035**
			40	22	50	SZ8512 **08 x 040**
			45	22	25	SZ8512 **08 x 045**
			50	22	25	SZ8512 **08 x 050**
			55	22	25	SZ8512 **08 x 055**
			60	22	25	SZ8512 **08 x 060**
			65	22	25	SZ8512 **08 x 065**
			70	22	25	SZ8512 **08 x 070**
			75	22	25	SZ8512 **08 x 075**
			80	22	25	SZ8512 **08 x 080**
			90	22	25	SZ8512 **08 x 090**
			100	22	25	SZ8512 **08 x 100**
			110	22	25	SZ8512 **08 x 110**
			120	22	25	SZ8512 **08 x 120**
M10	16	6.5	16	11	25	SZ8512 **10 x 016**

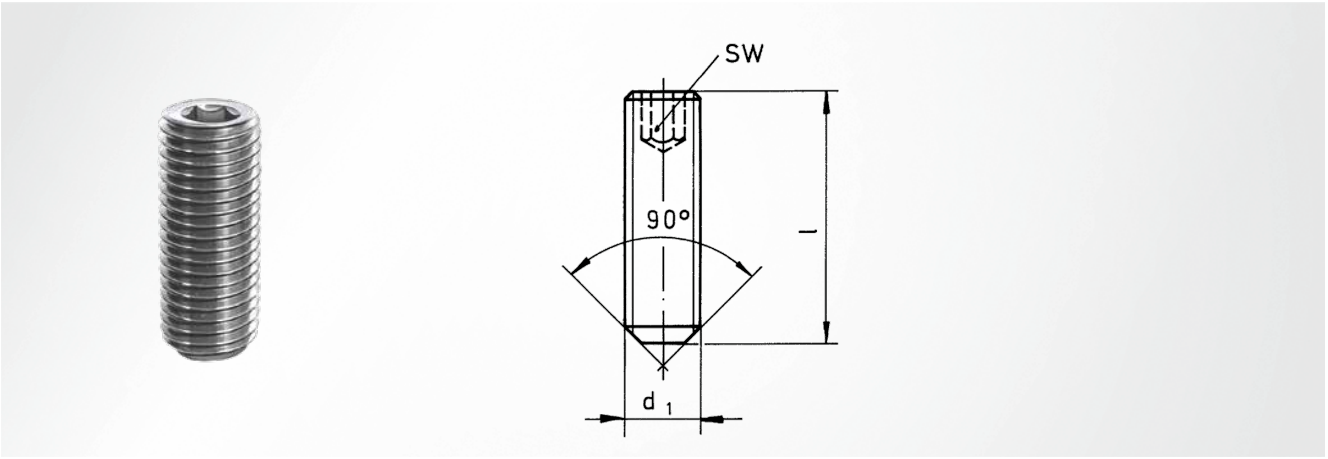
SZ8512 Socket-head screw

flat head, with hexagon socket

d_1	d_2	k	l	b	Standard packaging piece	Item number
M10	16	6.5	20	15	25	SZ8512 **10 x 020**
			25	20	25	SZ8512 **10 x 025**
			30	25	25	SZ8512 **10 x 030**
			35	26	25	SZ8512 **10 x 035**
			40	26	25	SZ8512 **10 x 040**
			45	26	25	SZ8512 **10 x 045**
			50	26	25	SZ8512 **10 x 050**
			55	26	25	SZ8512 **10 x 055**
			60	26	25	SZ8512 **10 x 060**
			65	26	25	SZ8512 **10 x 065**
			70	26	25	SZ8512 **10 x 070**
			75	26	25	SZ8512 **10 x 075**
			80	26	25	SZ8512 **10 x 080**
			85	26	25	SZ8512 **10 x 085**
			90	26	25	SZ8512 **10 x 090**
			100	26	25	SZ8512 **10 x 100**
			110	26	25	SZ8512 **10 x 110**
			120	26	25	SZ8512 **10 x 120**
			150	32	25	SZ8512 **10 x 150**
M12	18	7.5	20	14	10	SZ8512 **12 x 020**
			25	19	10	SZ8512 **12 x 025**
			30	24	10	SZ8512 **12 x 030**
			35	29	10	SZ8512 **12 x 035**
			40	30	10	SZ8512 **12 x 040**
			45	30	10	SZ8512 **12 x 045**
			50	30	10	SZ8512 **12 x 050**
			55	30	10	SZ8512 **12 x 055**
			60	30	10	SZ8512 **12 x 060**
			65	30	10	SZ8512 **12 x 065**
			70	30	10	SZ8512 **12 x 070**
			75	30	10	SZ8512 **12 x 075**
			80	30	10	SZ8512 **12 x 080**
			85	30	10	SZ8512 **12 x 085**
			90	30	10	SZ8512 **12 x 090**
			100	30	10	SZ8512 **12 x 100**
			110	30	10	SZ8512 **12 x 110**
			120	30	10	SZ8512 **12 x 120**
			130	36	10	SZ8512 **12 x 130**
			140	36	10	SZ8512 **12 x 140**
			180	36	10	SZ8512 **12 x 180**
			200	36	10	SZ8512 **12 x 200**

SZ8530 Threaded pin

with hexagon socket



DIN 913 / ISO 4026

Note

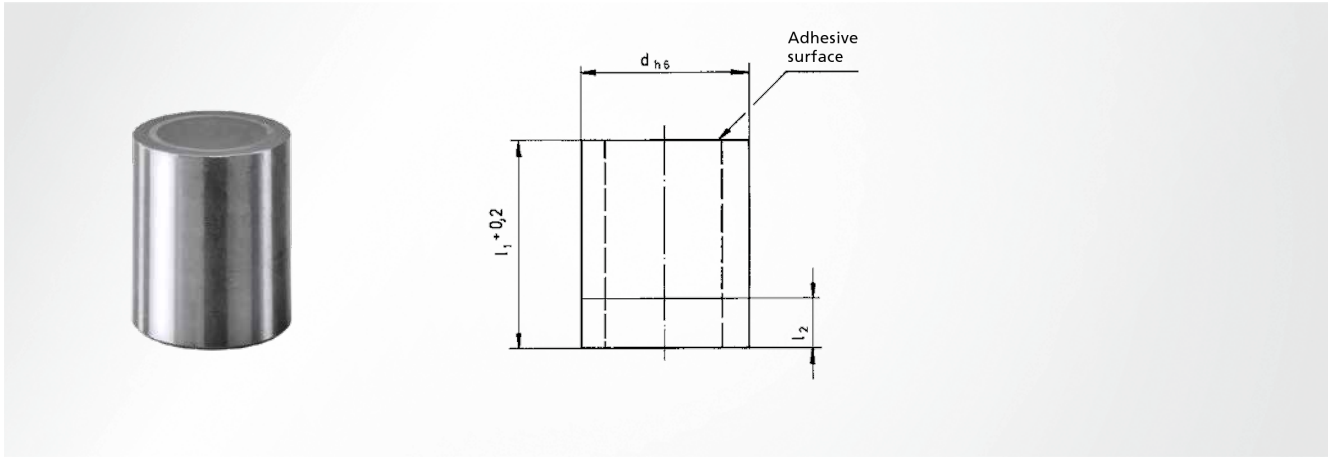
Strength class 14.9

d_1	SW	l	Standard packaging piece	Item number
M3	1.5	8	100	SZ8530 **03 x 08**
		10	100	SZ8530 **03 x 10**
		12	100	SZ8530 **03 x 12**
M4	2.0	8	100	SZ8530 **04 x 08**
		10	100	SZ8530 **04 x 10**
		12	100	SZ8530 **04 x 12**
		16	100	SZ8530 **04 x 16**
M5	2.5	8	100	SZ8530 **05 x 08**
		10	100	SZ8530 **05 x 10**
		12	100	SZ8530 **05 x 12**
		16	100	SZ8530 **05 x 16**
		20	100	SZ8530 **05 x 20**
		25	100	SZ8530 **05 x 25**
M6	3.0	8	100	SZ8530 **06 x 08**
		10	100	SZ8530 **06 x 10**
		12	100	SZ8530 **06 x 12**
		16	100	SZ8530 **06 x 16**
		20	100	SZ8530 **06 x 20**
		25	100	SZ8530 **06 x 25**
		30	100	SZ8530 **06 x 30**

d_1	SW	l	Standard packaging piece	Item number
M8	4.0	10	50	SZ8530 **08 x 10**
		12	50	SZ8530 **08 x 12**
		16	50	SZ8530 **08 x 16**
		20	50	SZ8530 **08 x 20**
		25	50	SZ8530 **08 x 25**
		30	50	SZ8530 **08 x 30**
M10	5.0	12	50	SZ8530 **10 x 12**
		16	50	SZ8530 **10 x 16**
		20	50	SZ8530 **10 x 20**
		25	50	SZ8530 **10 x 25**
		30	50	SZ8530 **10 x 30**
		35	50	SZ8530 **10 x 35**
		40	50	SZ8530 **10 x 40**
M12	6.0	16	25	SZ8530 **12 x 16**
		20	25	SZ8530 **12 x 20**
		25	25	SZ8530 **12 x 25**
		30	25	SZ8530 **12 x 30**
		35	25	SZ8530 **12 x 35**
		40	25	SZ8530 **12 x 40**
		50	25	SZ8530 **12 x 50**

SZ9335 Holding magnet

round



Installation instruction

press in, shrink in or stick in; the holding magnets can be shortened by the dimension l_2 without reducing the adhesive force; the adhesive surface must not be reduced by more than 2 mm, otherwise the adhesive force would be significantly reduced

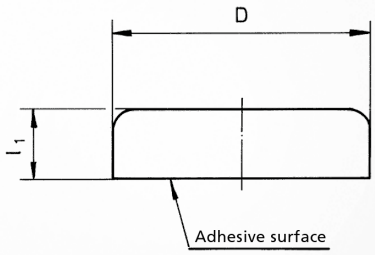
Note

Screened system

d^{h6}	$l_1^{\pm 0.2}$	l_2	Adhesive force N	Item number
6	10	2	1.0	SZ9335 **06**
8	12	3	2.5	SZ9335 **08**
10	16	6	5.0	SZ9335 **10**
13	18	7	8.0	SZ9335 **13**
16	20	5	15.0	SZ9335 **16**
20	25	6	35.0	SZ9335 **20**
25	30	5	80.0	SZ9335 **25**
32	35	3	150.0	SZ9335 **32**

SZ9336 Holding magnet

flat



Installation instruction
press in or stick in

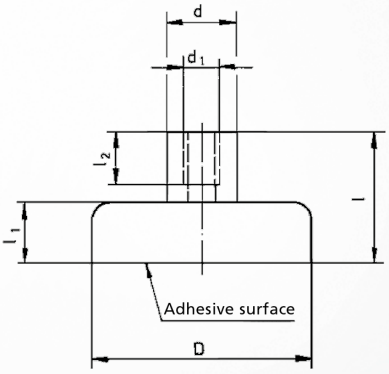
Note
Surface galvanised; screened system

l_1	D	Adhesive force N	Item number
4.5	10	3	SZ9336 **10**
4.5	13	5	SZ9336 **13**
4.5	16	10	SZ9336 **16**
6.0	20	25	SZ9336 **20**

l_1	D	Adhesive force N	Item number
7.0	25	40	SZ9336 **25**
7.0	32	70	SZ9336 **32**
8.0	40	100	SZ9336 **40**
10.0	50	180	SZ9336 **50**

SZ9337 Holding magnet

flat, with threaded pins



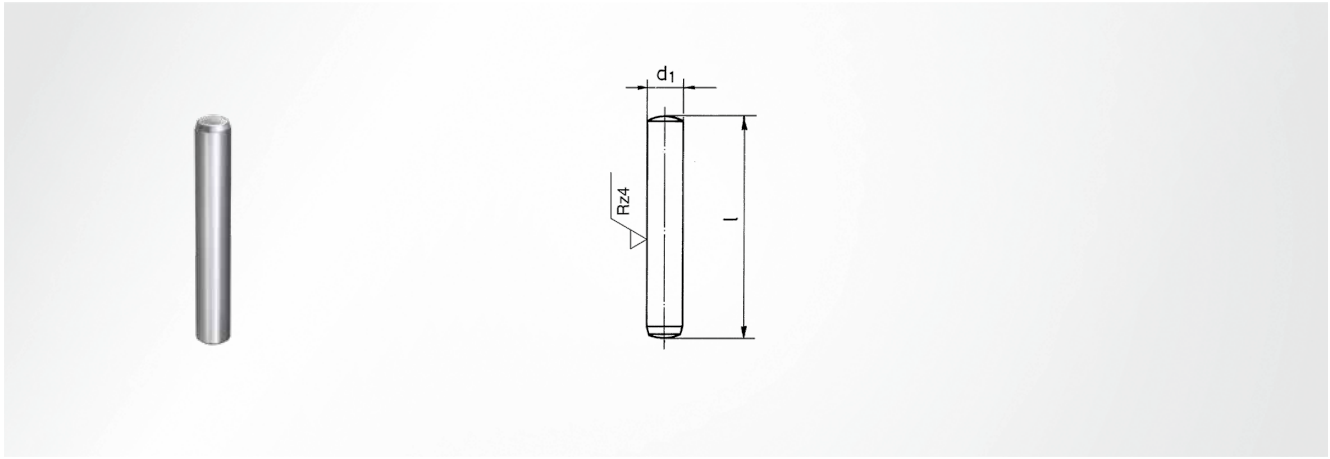
Installation instruction
screw in

Note
Surface galvanised; screened system

d	d_1	l	l_1	l_2	D	Adhesive force N	Item number
6	M3	11.5	4.5	5	10	3	SZ9337 **10**
6	M3	11.5	4.5	5	13	5	SZ9337 **13**
6	M3	11.5	4.5	5	16	10	SZ9337 **16**
6	M3	13.0	6.0	5	20	25	SZ9337 **20**

d	d_1	l	l_1	l_2	D	Adhesive force N	Item number
8	M4	15.0	7.0	6	25	40	SZ9337 **25**
8	M4	15.0	7.0	6	32	70	SZ9337 **32**
10	M5	18.0	8.0	8	40	100	SZ9337 **40**
12	M6	22.0	10.0	10	50	180	SZ9337 **50**

SZ7900 Dowel pin



DIN EN ISO 8734

Material
Tool steel; Chrome-Vanadium alloyed

Hardness
60 ±2 HRC

Note
Hardened, tempered, super-finished to m6; spherical cap and chamfer polished

d_1^{m6}	Standard packaging piece	l	Item number
1.5	50	5	SZ7900 **015 x 005**
		6	SZ7900 **015 x 006**
		8	SZ7900 **015 x 008**
		10	SZ7900 **015 x 010**
		12	SZ7900 **015 x 012**
		14	SZ7900 **015 x 014**
		16	SZ7900 **015 x 016**
		18	SZ7900 **015 x 018**
2.0	50	6	SZ7900 **020 x 006**
		8	SZ7900 **020 x 008**
		10	SZ7900 **020 x 010**
		12	SZ7900 **020 x 012**
		14	SZ7900 **020 x 014**
		16	SZ7900 **020 x 016**
		18	SZ7900 **020 x 018**
		20	SZ7900 **020 x 020**
		24	SZ7900 **020 x 024**
		28	SZ7900 **020 x 028**
		32	SZ7900 **020 x 032**
2.5	50	6	SZ7900 **025 x 006**
		8	SZ7900 **025 x 008**
		10	SZ7900 **025 x 010**
		12	SZ7900 **025 x 012**
		14	SZ7900 **025 x 014**
		16	SZ7900 **025 x 016**
		18	SZ7900 **025 x 018**
		20	SZ7900 **025 x 020**
		24	SZ7900 **025 x 024**
3.0	50	6	SZ7900 **030 x 006**
		8	SZ7900 **030 x 008**
		10	SZ7900 **030 x 010**
		12	SZ7900 **030 x 012**
		14	SZ7900 **030 x 014**
		16	SZ7900 **030 x 016**

d_1^{m6}	Standard packaging piece	l	Item number
3.0	50	18	SZ7900 **030 x 018**
		20	SZ7900 **030 x 020**
		24	SZ7900 **030 x 024**
		28	SZ7900 **030 x 028**
		32	SZ7900 **030 x 032**
		36	SZ7900 **030 x 036**
		40	SZ7900 **030 x 040**
4.0	25	10	SZ7900 **040 x 010**
		12	SZ7900 **040 x 012**
		14	SZ7900 **040 x 014**
		16	SZ7900 **040 x 016**
		18	SZ7900 **040 x 018**
		20	SZ7900 **040 x 020**
		24	SZ7900 **040 x 024**
		28	SZ7900 **040 x 028**
		32	SZ7900 **040 x 032**
		36	SZ7900 **040 x 036**
		40	SZ7900 **040 x 040**
		45	SZ7900 **040 x 045**
		50	SZ7900 **040 x 050**
5.0	25	10	SZ7900 **050 x 010**
		12	SZ7900 **050 x 012**
		14	SZ7900 **050 x 014**
		16	SZ7900 **050 x 016**
		18	SZ7900 **050 x 018**
		20	SZ7900 **050 x 020**
		24	SZ7900 **050 x 024**
		28	SZ7900 **050 x 028**
		32	SZ7900 **050 x 032**
		36	SZ7900 **050 x 036**
		40	SZ7900 **050 x 040**
		45	SZ7900 **050 x 045**
		50	SZ7900 **050 x 050**
		55	SZ7900 **050 x 055**

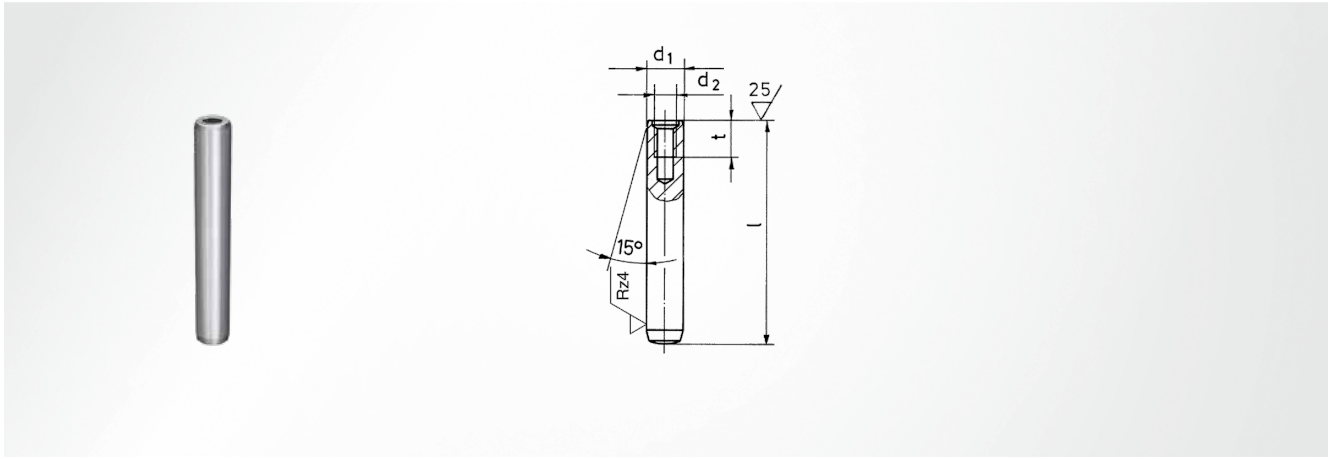
SZ7900 Dowel pin

d_1^{m6}	Standard packaging piece	l	Item number
5.0	25	60	SZ7900 **050 x 060**
6.0	25	12	SZ7900 **060 x 012**
		14	SZ7900 **060 x 014**
		16	SZ7900 **060 x 016**
		18	SZ7900 **060 x 018**
		20	SZ7900 **060 x 020**
		24	SZ7900 **060 x 024**
		28	SZ7900 **060 x 028**
		32	SZ7900 **060 x 032**
		36	SZ7900 **060 x 036**
		40	SZ7900 **060 x 040**
		45	SZ7900 **060 x 045**
		50	SZ7900 **060 x 050**
		55	SZ7900 **060 x 055**
		60	SZ7900 **060 x 060**
		70	SZ7900 **060 x 070**
		80	SZ7900 **060 x 080**
8.0	25	18	SZ7900 **080 x 018**
		20	SZ7900 **080 x 020**
		24	SZ7900 **080 x 024**
		28	SZ7900 **080 x 028**
		32	SZ7900 **080 x 032**
		36	SZ7900 **080 x 036**
		40	SZ7900 **080 x 040**
		45	SZ7900 **080 x 045**
		50	SZ7900 **080 x 050**
		55	SZ7900 **080 x 055**
		60	SZ7900 **080 x 060**
		70	SZ7900 **080 x 070**
		80	SZ7900 **080 x 080**
		90	SZ7900 **080 x 090**
		100	SZ7900 **080 x 100**
10.0	10	20	SZ7900 **100 x 020**
		24	SZ7900 **100 x 024**
		28	SZ7900 **100 x 028**
		32	SZ7900 **100 x 032**
		36	SZ7900 **100 x 036**
		40	SZ7900 **100 x 040**

d_1^{m6}	Standard packaging piece	l	Item number
10.0	10	45	SZ7900 **100 x 045**
		50	SZ7900 **100 x 050**
		55	SZ7900 **100 x 055**
		60	SZ7900 **100 x 060**
		70	SZ7900 **100 x 070**
		80	SZ7900 **100 x 080**
		90	SZ7900 **100 x 090**
		100	SZ7900 **100 x 100**
12.0	10	24	SZ7900 **120 x 024**
		28	SZ7900 **120 x 028**
		32	SZ7900 **120 x 032**
		36	SZ7900 **120 x 036**
		40	SZ7900 **120 x 040**
		45	SZ7900 **120 x 045**
		50	SZ7900 **120 x 050**
		55	SZ7900 **120 x 055**
		60	SZ7900 **120 x 060**
		70	SZ7900 **120 x 070**
		80	SZ7900 **120 x 080**
		90	SZ7900 **120 x 090**
		100	SZ7900 **120 x 100**
14.0	10	36	SZ7900 **140 x 036**
		40	SZ7900 **140 x 040**
		45	SZ7900 **140 x 045**
		50	SZ7900 **140 x 050**
		55	SZ7900 **140 x 055**
		60	SZ7900 **140 x 060**
		70	SZ7900 **140 x 070**
		80	SZ7900 **140 x 080**
		90	SZ7900 **140 x 090**
		100	SZ7900 **140 x 100**
16.0	10	40	SZ7900 **160 x 040**
		50	SZ7900 **160 x 050**
		60	SZ7900 **160 x 060**
		70	SZ7900 **160 x 070**
		80	SZ7900 **160 x 080**
		90	SZ7900 **160 x 090**
		100	SZ7900 **160 x 100**

SZ7905 Dowel pin

with internal thread



DIN EN ISO 8735

Material
Tool steel; Chrome-Vanadium alloyed

Hardness
60 ±2 HRC

Application
with blind-end bores if the drive-out of the pin from the rear side is not possible.

Note
Hardened, tempered, super-finished to m6; with air leakage surface

d_1^{m6}	d_2	t	Standard packaging piece	l	Item number
6	M4	6	25	24	SZ7905 **06 x 024**
				32	SZ7905 **06 x 032**
				40	SZ7905 **06 x 040**
				50	SZ7905 **06 x 050**
8	M5	8	25	28	SZ7905 **08 x 028**
				32	SZ7905 **08 x 032**
				40	SZ7905 **08 x 040**
				50	SZ7905 **08 x 050**
				60	SZ7905 **08 x 060**
				80	SZ7905 **08 x 080**
10	M6	10	10	32	SZ7905 **10 x 032**
				40	SZ7905 **10 x 040**
				50	SZ7905 **10 x 050**
				60	SZ7905 **10 x 060**
				80	SZ7905 **10 x 080**
12	M6	10	10	32	SZ7905 **12 x 032**
				40	SZ7905 **12 x 040**
				50	SZ7905 **12 x 050**
				60	SZ7905 **12 x 060**
				80	SZ7905 **12 x 080**
				100	SZ7905 **12 x 100**
14	M8	12	10	50	SZ7905 **14 x 050**
				60	SZ7905 **14 x 060**
				80	SZ7905 **14 x 080**
				100	SZ7905 **14 x 100**
16	M8	12	10	60	SZ7905 **16 x 060**
				80	SZ7905 **16 x 080**
				100	SZ7905 **16 x 100**

SZ9511 Foil tape

non-corrosive, Steel

Material
Steel

Length m	Foil thickness	Width	Item number
2.5	0.025	150	SZ9511 **025**
2.5	0.050	150	SZ9511 **050**

Length m	Foil thickness	Width	Item number
2.5	0.075	150	SZ9511 **075**
2.5	0.100	150	SZ9511 **100**

SZ9512 Foil tape

Brass

Material
Brass Ms63

Length m	Foil thickness	Width	Item number
2.5	0.025	150	SZ9512 **025**
2.5	0.050	150	SZ9512 **050**

Length m	Foil thickness	Width	Item number
2.5	0.075	150	SZ9512 **075**
2.5	0.100	150	SZ9512 **100**

SZ9514 Foil tape

Steel, non-alloy

Material
Steel

Length m	Foil thickness	Width	Item number
2.5	0.025	150	SZ9514 **025**
2.5	0.050	150	SZ9514 **050**

Length m	Foil thickness	Width	Item number
2.5	0.075	150	SZ9514 **075**
2.5	0.100	150	SZ9514 **100**

SZ9515 Precision gauge

polished surface

Material
Tracer gauge strip steel; cold-rolled; hardened

Length m	Thickness	Width	Item number
2	0.01	12.7	SZ9515 **12.7 x 001**
2	0.02	12.7	SZ9515 **12.7 x 002**
2	0.03	12.7	SZ9515 **12.7 x 003**
2	0.04	12.7	SZ9515 **12.7 x 004**

Length m	Thickness	Width	Item number
2	0.05	12.7	SZ9515 **12.7 x 005**
2	0.10	12.7	SZ9515 **12.7 x 010**
2	0.20	12.7	SZ9515 **12.7 x 020**
2	0.30	12.7	SZ9515 **12.7 x 030**

SZ9850 High-performance oil

The high-performance oil with molybdenum disulphide (MoS_2) additive is especially well suited for highly stressed narrow dynamic seatings due to its viscosity and composition.

The molybdenum additive has a friction-relieving effect, and creates a bearing armouring with excellent dry-running properties.

Application field
Lubrication of die sets, sliding guides, etc.

Filling quantity
5000 ml

Item number
SZ9850

SZ9853 Slideway oil

Modern demulsifying slideway oil with excellent anti-stick and slip properties to lubricate metal and plastic sliding guides, slideways with solid lubrication as well as ball and roller guides.

It is also suitable as a universal oil to lubricate machine tools.

Application field
Lubrication of die sets, sliding guides, etc.

Filling quantity
5000 ml

Item number
SZ9853

SZ9006 High-performance lubricant

Performance optimised long-term lubricating grease, highest anti-corrosion protection, best water resistance and high viscosity properties. Temperature range -30 °C to 120 °C

Suitable greas gun
SZ9810

Filling quantity kg	Item number
0.4	SZ9006
18.0	SZ9006 **15**

SZ9005 Roller bearing grease

Superior wear protection, good temperature resistance up to 140 °C, best water and medium resistance, good anti-corrosion protection and very good durability.

Application field
Lubrication of ball and roller guides

Suitable greas gun
SZ9810

Filling quantity
0.4 kg

Item number
SZ9005

SZ9014 Multi function spray

WD-40

Eliminates squeaking, displaces moisture, protects against corrosion, loosens corroded parts and stuck mechanisms, and cleans, protects and lubricates

Filling quantity
400 ml

Item number
SZ9014

SZ9740 Curing accelerator

LOCTITE 7649

A hardening accelerator for the anaerobic products SZ9717 (LOCTITE 542), SZ9742 (LOCTITE 603) and SZ9743 (LOCTITE 270). Reduces time required for hardening.

Easy to use: Spray on, allow to dry, and then apply the LOCTITE product.

Product colour
light yellow

Note
Contains acetone; easily combustible

Filling quantity
500 ml

Item number
SZ9740

Suitability for storage
1 year

SZ9741 Surface adhesive

LOCTITE 496

An adhesive for the gluing of difficult components such as steel plates, bushes and ceramics with and among each other

Adhesive gap max.
0.10 mm

Adhesive gap optimal
0.05 mm

Hand-tight
20-40 sec.

Final strength
~ 12 h

Product colour
colourless

Filling quantity
100 ml

Suitability for storage
1 year

Note
Hand-tight with activator 7649 (LOCTITE 7649)

Optional accessories
SZ9740

Item number
SZ9741

SZ9742 Bearing mounting

LOCTITE 603

For tension-free durable fastening of parts with radial and axial force loads with loose fit, e.g. bearings, bushes, shafts, bolts, rotors, gear wheels, rings, tyres and sinter bearings.

The extrusion force of the press fits increases by approximately 100 % and more.

Fitting rust and leakage are avoided. Thin liquid, poorly solvable compounds.

Adhesive gap max.
0.15 mm

Adhesive gap optimal
0.05 mm

Hand-tight
10-30 min

Functional strength
30-60 min

Final strength
~ 6 h

Product colour
green

Filling quantity
50 ml

Optional accessories
SZ9740

Item number
SZ9742

SZ9743 Screw locking

LOCTITE 270

A highly viscous adhesive for the fixing of bushes, bearings and spacer bolts, as well as for the securing and simultaneous sealing of stud bolts and screws. Highly resistant to vibrations and pressure. Crucially higher friction value increase between fitting surfaces. Reliable sealing of hydraulic and pneumatic lines as well as other highly stressed pipe connections.

High resistance to pressure and solvents, poorly solvable compounds.

Adhesive gap max.
0.15 mm

Adhesive gap optimal
0.05 mm

Hand-tight
10-30 min

Functional strength
1-3 sec.

Final strength
3-6 h

Product colour
green

Filling quantity
50 ml

Note
Thread up to M20

Optional accessories
SZ9740

Item number
SZ9743

SZ9717 Joint connection

LOCTITE 542

Medium tight seal for hydraulic and pneumatic lines for the securing of parts that will need to be able to be loosened with normal tools. SZ9740 (LOCTITE 542) seals threaded connections against all standard hydraulic fluids. It is thixotropic, and does not run.

To be used for hydraulic and pneumatic fittings as well as pipe threads up to R 1/2".

Adhesive gap max.
0.12 mm

Hand-tight
10-30 min

Final strength
~3 h

Product colour
brown

Filling quantity
50 ml

Note
Easily removable connection

Optional accessories
SZ9740

Item number
SZ9717

SZ9744 Instant adhesive gel

LOCTITE 454

A drip and run-free adhesive for gluing metal, plastic, wood, paper, rubber, leather etc. It can be used to glue substances with uneven surfaces.

Adhesive gap max.
0.20 mm

Adhesive gap optimal
0.05 mm

Hand-tight
5-20 sec.

Final strength
12 h

Product colour
colourless

Filling quantity
0.02 kg

Item number
SZ9744

SZ97042 Separating spray

for casting and model resin

Separating agent in spray form, suitable for epoxy resin

Note
Protect against cold and heat; use at room temperature; tank is under pressure; protect against direct sunlight and temperatures higher than 50 °C

Attention
Please read and follow the notes on the can

Item number
SZ97042

SZ960x Casting resin

with hardener

Black, low viscosity casting resin that hardens at room temperature. It is distinguished by its castability and low sedimentation. Coating thicknesses up to approximately 10 mm can be poured in one process. A hard, relatively wear resistant surface with good machinability is the result.

Application field
Pouring in of punches; pouring out of guides with cutting and punching tools; foundries and contour milling models; general mould making; tools for sheet metal conversion

Suitability for storage
at 6-28 °C: 1 year

Scope of supply
Epoxy resin CW 2418-1;
Polyamine activator HY 5162-1 (reactive)

Optional accessories
SZ97042

Attention
Further information on this product can be found in the safety- and product data sheet on our homepage: www.steinel.com/en/service/data-sheets

Resin	Activator	Item number
1 tube à 150 g	1 tube à 22.5 g	**SZ9601**
3 cans à 1.0 kg	3 cans à 0.15 kg	**SZ9603**

Resin	Activator	Item number
1 can à 1.0 kg	1 can à 0.15 kg	**SZ9606**

Version 08.2022

SZ962x Model resin

with hardener

Mineral-filled, light beige, low viscosity model resin that hardens at room temperature. It is distinguished by its castability and low sedimentation. Coating thicknesses up to approximately 20 mm can be poured in one process.

Application field
Foundries and contour milling models; screw thread models; core bushes; calibrators; moulding plates

Suitability for storage
at 18-25 °C: 1 year

Scope of supply
Epoxy resin CW 2215;
Polyaminoamide activator HY 5161-1

Optional accessories
SZ97042

Attention
Further information on this product can be found in the safety- and product data sheet on our homepage: www.steinel.com/en/service/data-sheets

Resin	Activator	Item number
6 cans à 0.75 kg	6 cans à 0.15 kg	**SZ9620**
1 can à 0.75 kg	1 can à 0.15 kg	**SZ9621**

Resin	Activator	Item number
3 cans à 2.25 kg	3 cans à 0.15 kg	**SZ9622**

SZ9800 High pressure lubrication gun

High pressure lubrication gun with pointed mouth piece for funnel-type lubricating nipple incorporated in sliding guides

DIN 1282

Filling quantity
60 cm^3

Output per lifted
ca. 0.7 cm^3

Item number
SZ9800

SZ9810 Lever press

with tube for conical lubricating nipple

A hand-lever made of steel. Lubrication of every opening possible. No wearing parts in high-pressure area.

Secure piston rod fastening, universal filling possibilities, suitable for grease cartridges.

Suitable grease cartridges
SZ9005; SZ9006

Item number
SZ9810