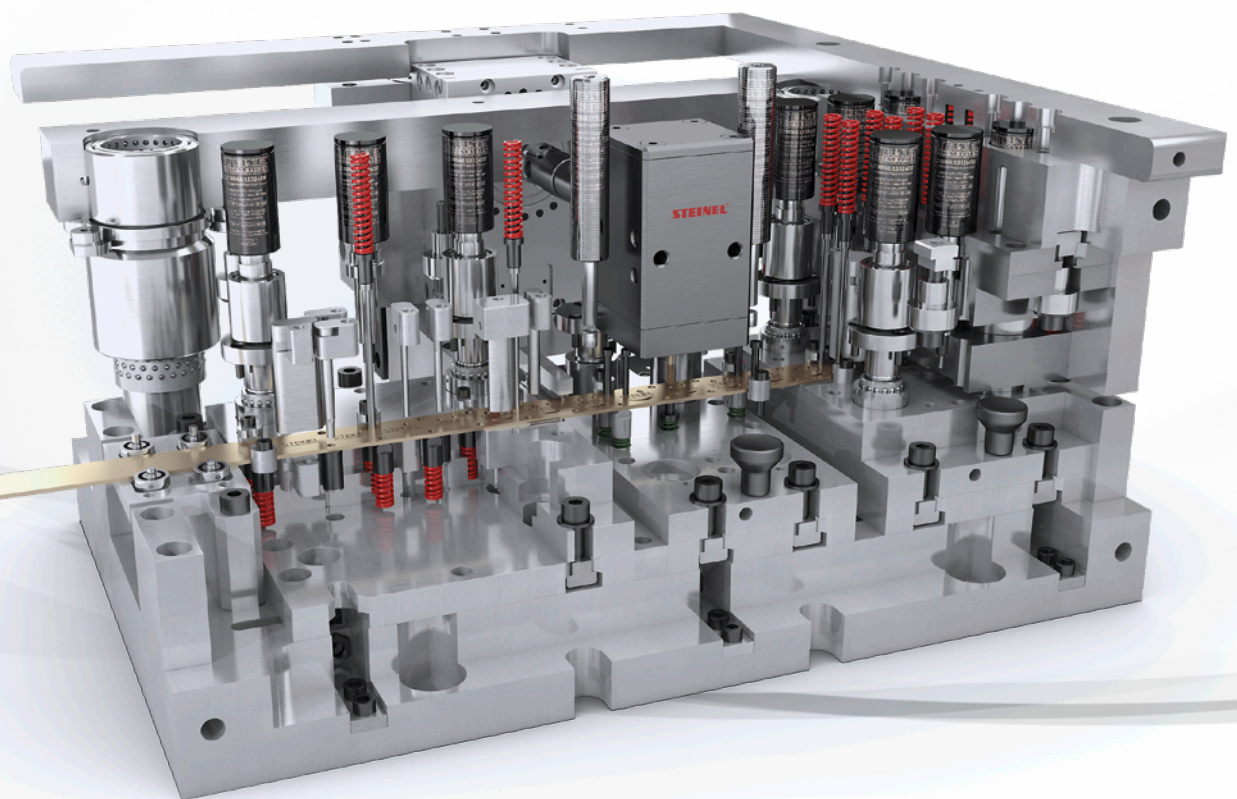


# All you need for tools

Your partner for punching and bending technology







Introduction

Introduction



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Die sets



Guide units

Guide units



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Active elements



Spring elements

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## All you need for tools – since 1925

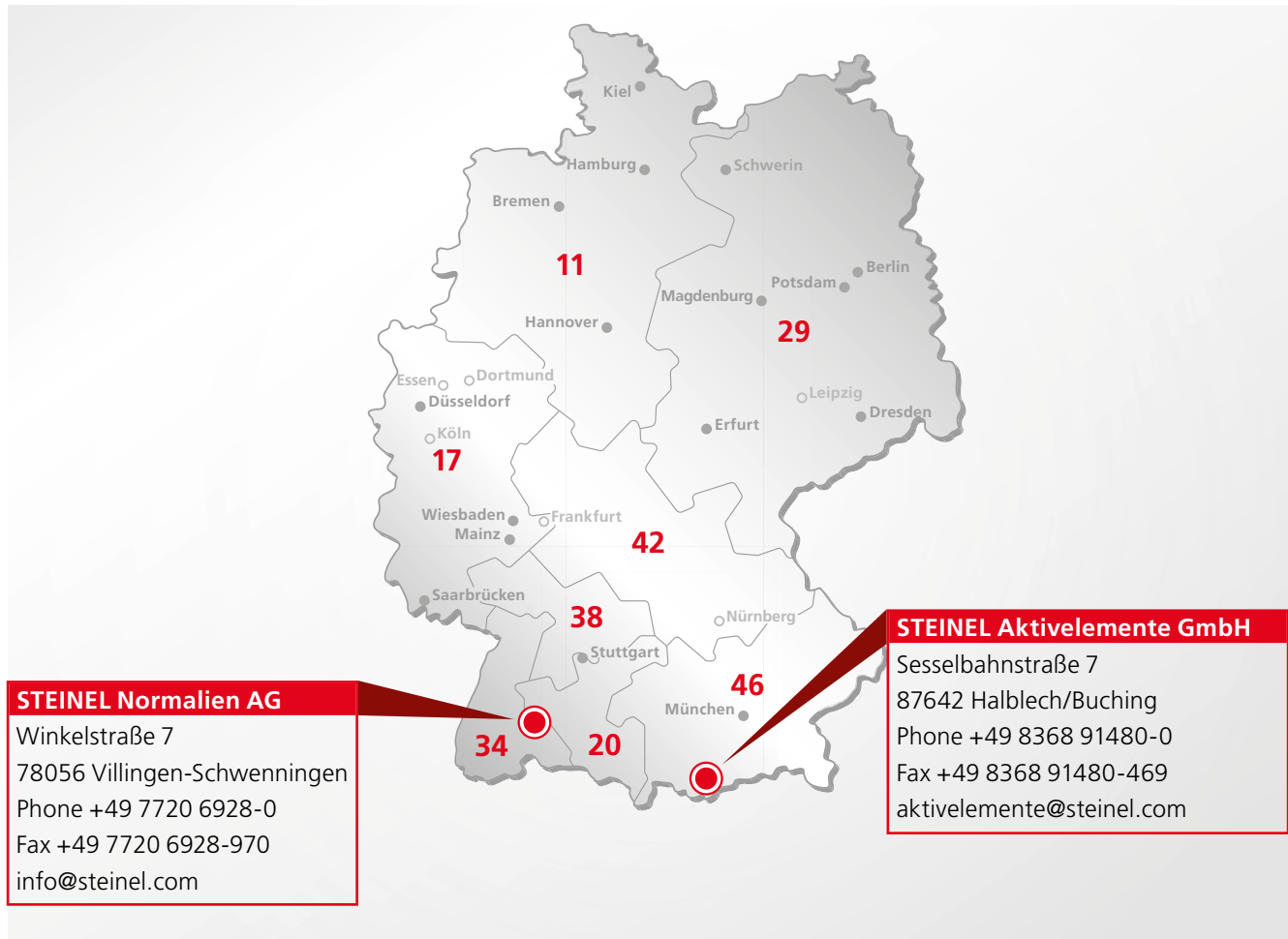
### Over 90 years of quality and tradition

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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## 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.steinell.com](https://www.cad.steinell.com).

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

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SZ6121 Cutting punch	3.17	SZ704406 Quick coupling connector	5.111	SZ8080.2.B Nitrogen cylinder	5.66
SZ6129 Cutting punch	3.16	SZ7045 Charging adapter	5.88	SZ8080.2.V Connecting nitrogen cylinder	5.68
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Die Sets

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

Machine elements

Accessories

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# Die sets

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



Guide units

Active elements

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Tapping units

Module system

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# 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.

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

Machine elements

Accessories

# 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

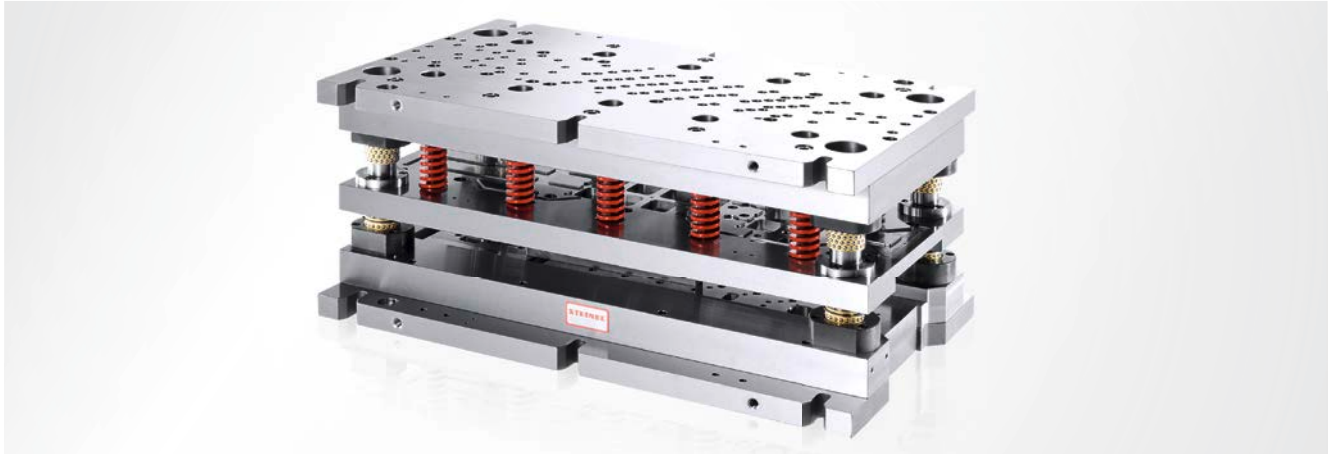


The steel plates – made from the material 1.1730 (C45) – are available in various sizes. They are low-tension annealed, machined on all sides and plane-parallel ground.



# 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

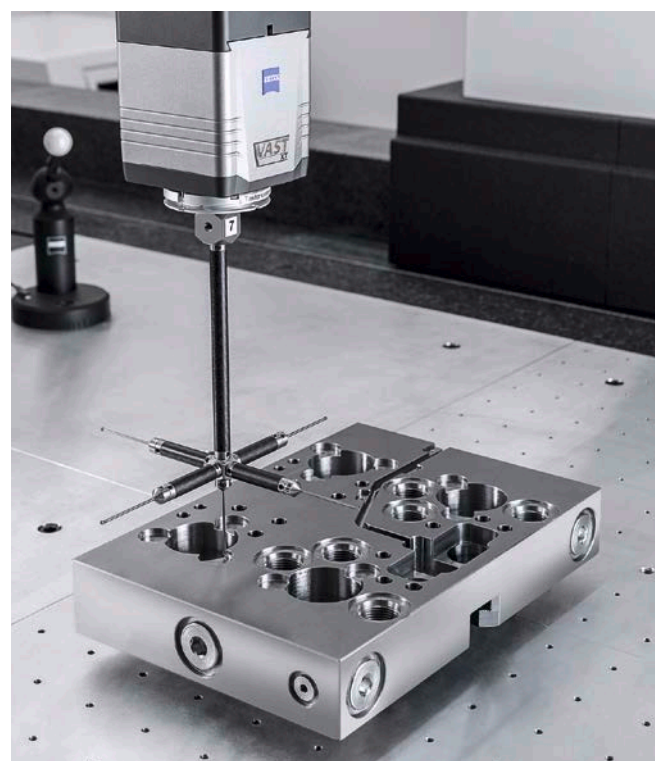
State-of-the-art measurement machines allow us to measure and document parts to the highest degree of precision.

	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



Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

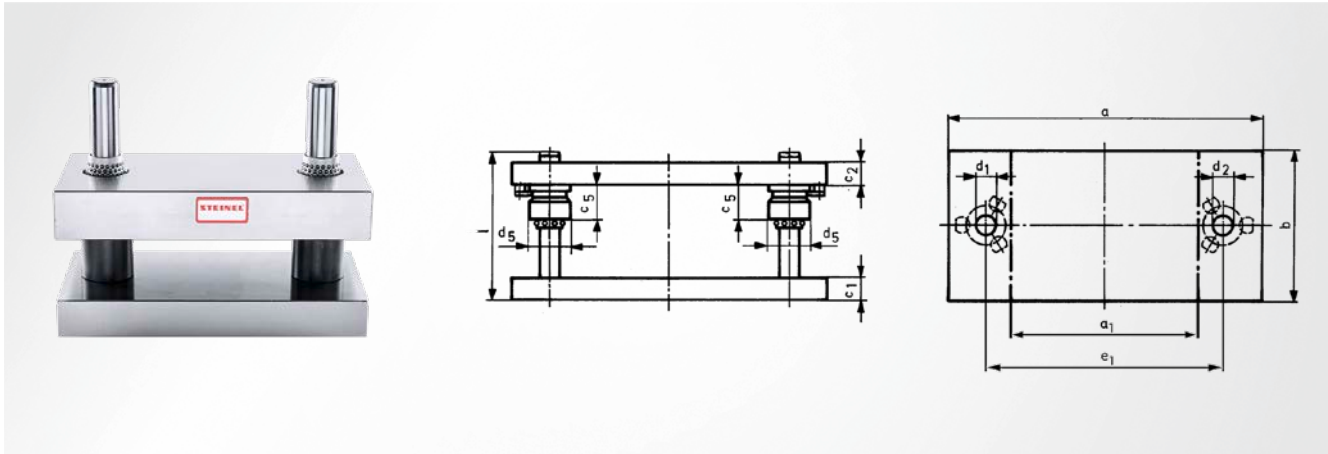
Machine elements

Accessories

# ST3532 Die set



with ball guide



Referring to DIN 9868

Pillar position  
parallel centred

Material  
Steel 1.1730

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

Type of guidance  
Ball guide

a x b	a <sub>1</sub>	c <sub>5</sub>	d <sub>1</sub> / d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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

with ball guide

a x b	a <sub>1</sub>	c <sub>5</sub>	d <sub>1</sub> /d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

Machine elements

Accessories

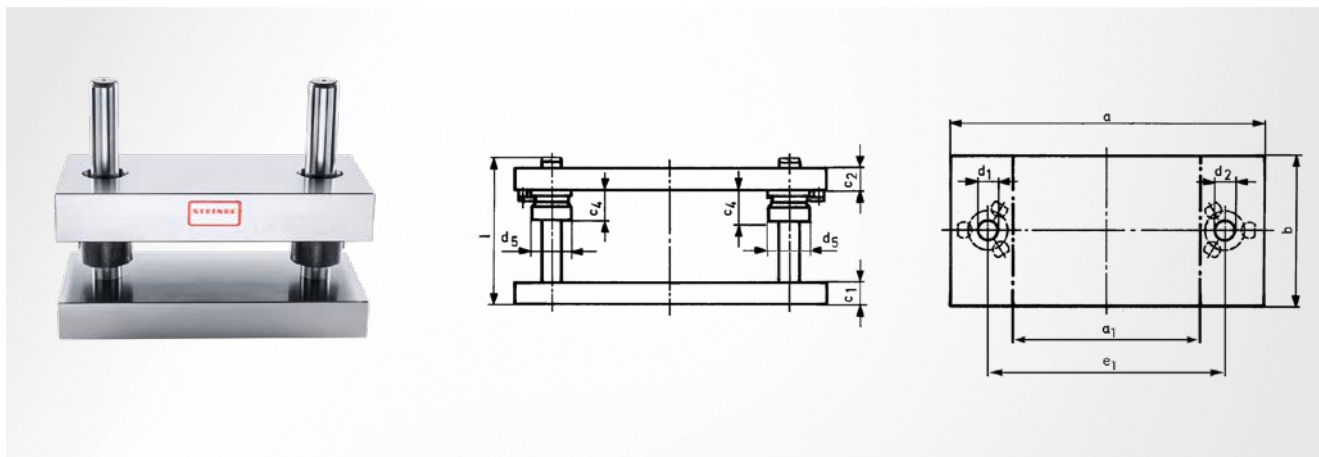
# ST3532 Die set

with ball guide

a x b	a <sub>1</sub>	c <sub>5</sub>	d <sub>1</sub> / d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Pillar position  
parallel centred

Material

Steel 1.1730

Note

Size  $c_1, c_2 +0.2$  to  $+0.5$

Type of guidance

Sliding guide with bronze coating

a x b	a <sub>1</sub>	c <sub>4</sub>	d <sub>1</sub> / d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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 <sub>1</sub>	c <sub>4</sub>	d <sub>1</sub> / d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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 <sub>1</sub>	c <sub>4</sub>	d <sub>1</sub> / d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

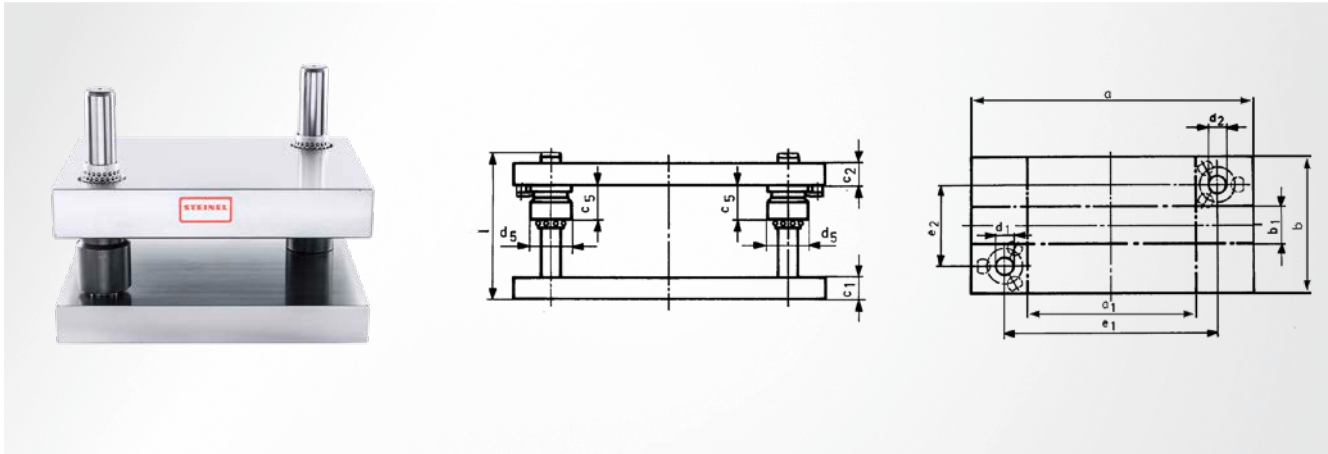
Machine elements

Accessories

# ST3542 Die set



with ball guide



Referring to DIN 9868

Pillar position  
diagonal

Material  
Steel 1.1730

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

Type of guidance  
Ball guide

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>5</sub>	d <sub>1</sub> / d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>2</sub>	c <sub>1</sub>	c <sub>2</sub>	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



with ball guide

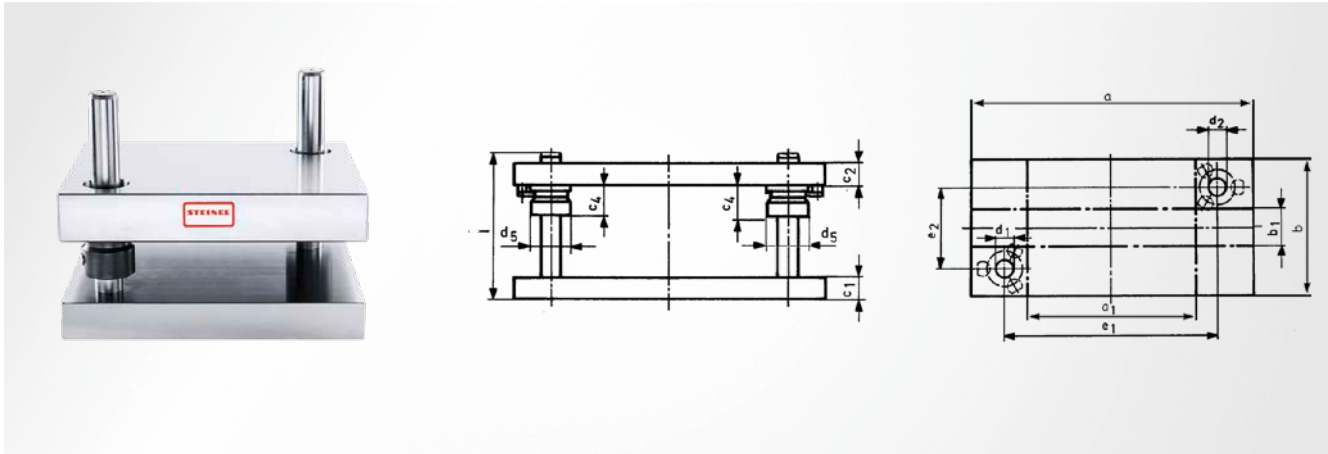
a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>5</sub>	d <sub>1</sub> / d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>2</sub>	c <sub>1</sub>	c <sub>2</sub>	Item number
400 x 315	250	165	63	30 / 32 x 200	56	310	225	40	40	ST3542 400 x 315.4
400 x 400	250	250	63	30 / 32 x 200	56	310	310	50	50	ST3542 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

Guide units  
Active elements  
Spring elements  
Nitrogen systems  
Tapping units  
Module system  
Machine elements  
Accessories

# ST3549 Die set



with sliding guide, bronze coating



Referring to DIN 9868

Pillar position  
diagonal

Material  
Steel 1.1730

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

Type of guidance  
Sliding guide with bronze coating

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>4</sub>	d <sub>1</sub> / d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>2</sub>	c <sub>1</sub>	c <sub>2</sub>	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

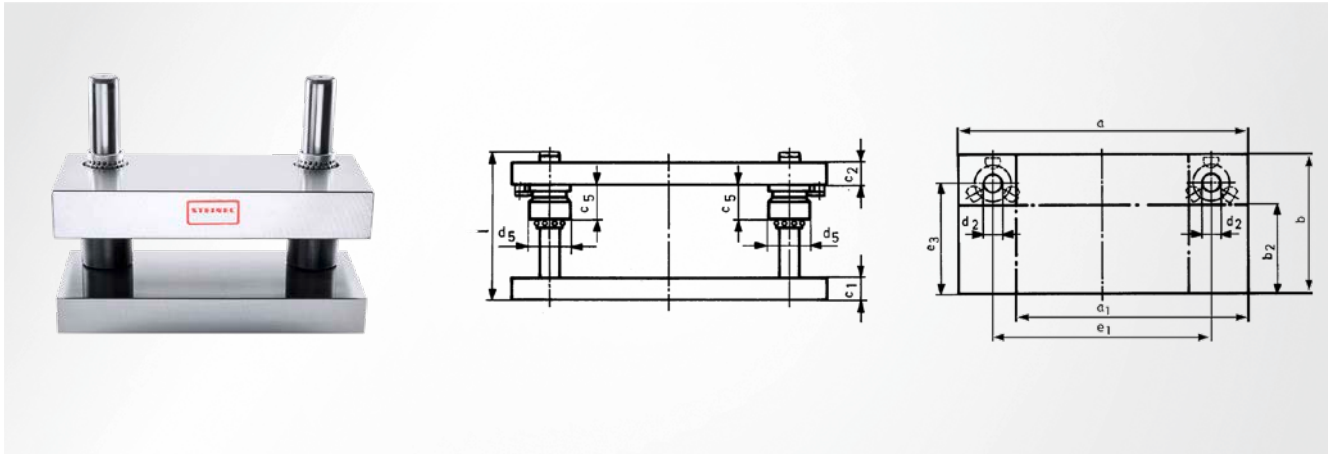
with sliding guide, bronze coating

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>4</sub>	d <sub>1</sub> / d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>2</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Guide units  
Active elements  
Spring elements  
Nitrogen systems  
Tapping units  
Module system  
Machine elements  
Accessories

# ST3552 Die set

with ball guide



Referring to DIN 9868

Pillar position  
rear standing

Material

Steel 1.1730

Note

Size  $c_1, c_2 +0.2$  to  $+0.5$

Type of guidance

Ball guide

a x b	a <sub>1</sub>	b <sub>2</sub>	c <sub>5</sub>	d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>3</sub>	c <sub>1</sub>	c <sub>2</sub>	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

with ball guide

a x b	a <sub>1</sub>	b <sub>2</sub>	c <sub>5</sub>	d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>3</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

Machine elements

Accessories

# ST3552 Die set

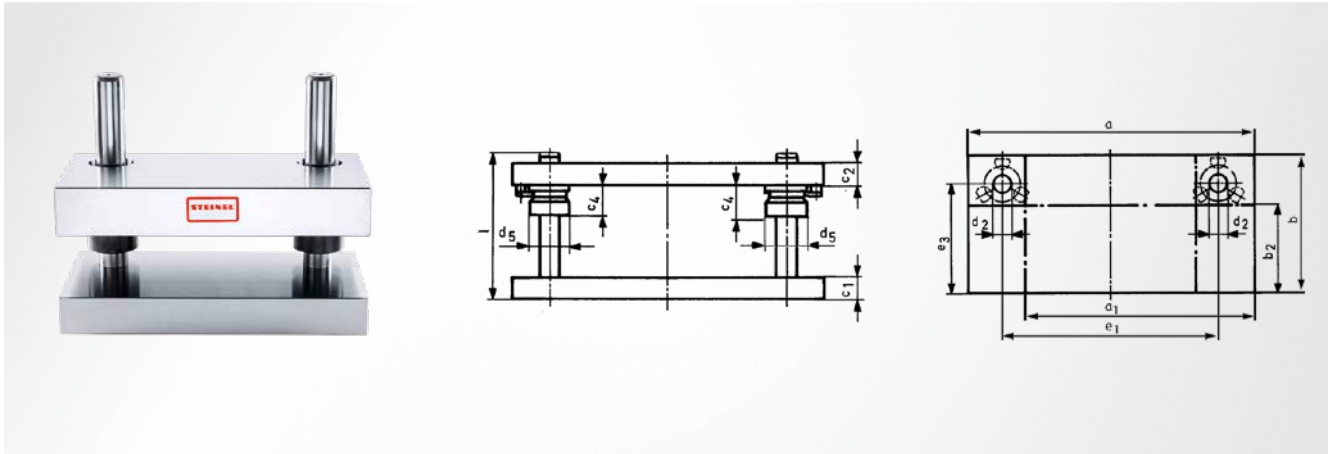


with ball guide

a x b	a <sub>1</sub>	b <sub>2</sub>	c <sub>5</sub>	d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>3</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Pillar position  
rear standing

Material

Steel 1.1730

Note

Size  $c_1, c_2 +0.2$  to  $+0.5$

Type of guidance

Sliding guide with bronze coating

a x b	a <sub>1</sub>	b <sub>2</sub>	c <sub>4</sub>	d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>3</sub>	c <sub>1</sub>	c <sub>2</sub>	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 <sub>1</sub>	b <sub>2</sub>	c <sub>4</sub>	d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>3</sub>	c <sub>1</sub>	c <sub>2</sub>	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 <sub>1</sub>	b <sub>2</sub>	c <sub>4</sub>	d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>3</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

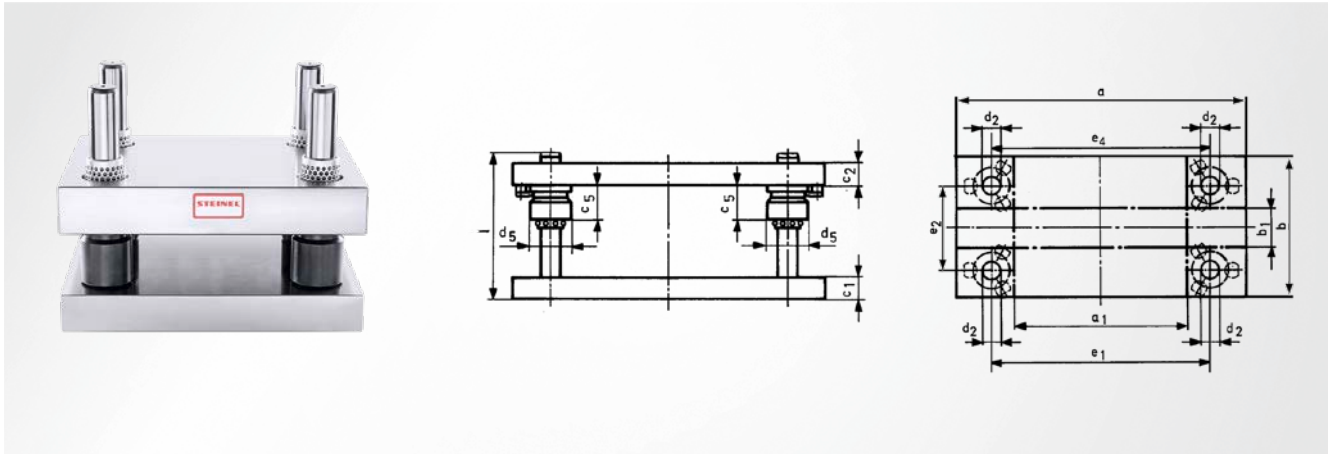
Machine elements

Accessories

# ST3562 Die set



with ball guide, four pillars



Referring to DIN 9868

Pillar position  
rectangular

Material  
Steel 1.1730

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

Type of guidance  
Ball guide

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>5</sub>	d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>2</sub>	e <sub>4</sub>	c <sub>1</sub>	c <sub>2</sub>	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

# ST3562 Die set



with ball guide, four pillars

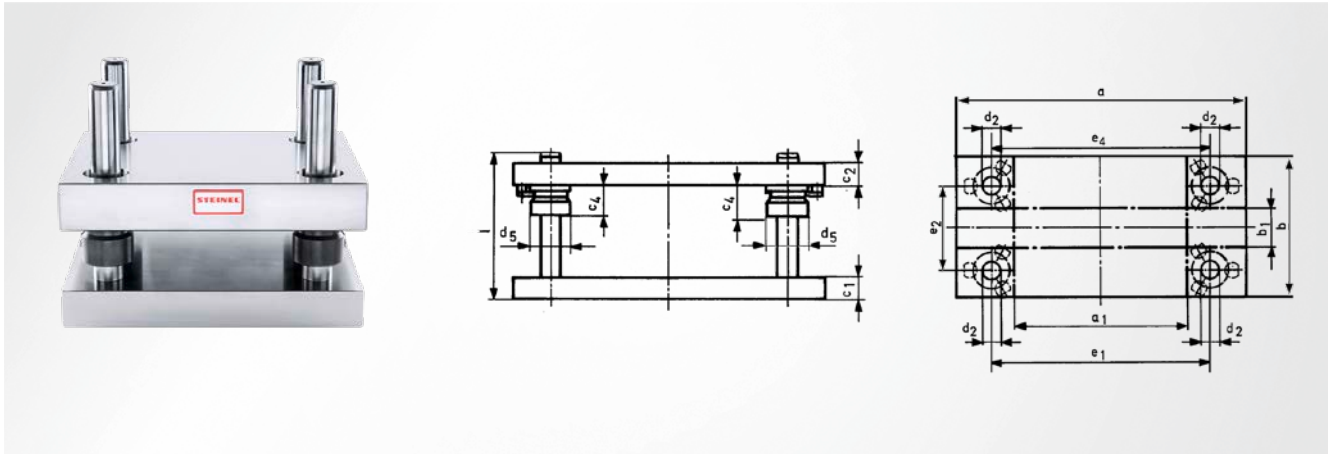
a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>5</sub>	d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>2</sub>	e <sub>4</sub>	c <sub>1</sub>	c <sub>2</sub>	Item number
400 x 315	250	165	63	32 x 200	56	310	225	313	40	40	ST3562 400 x 315.4
400 x 400	250	250	63	32 x 200	56	310	310	313	50	50	ST3562 400 x 400.1
									40	50	ST3562 400 x 400.2
									50	40	ST3562 400 x 400.3
									40	40	ST3562 400 x 400.4
500 x 250	330	80	70	40 x 200	66	400	150	403	50	50	ST3562 500 x 250.1
									40	50	ST3562 500 x 250.2
									50	40	ST3562 500 x 250.3
									40	40	ST3562 500 x 250.4
500 x 315	330	145	70	40 x 200	66	400	215	403	50	50	ST3562 500 x 315.1
									40	50	ST3562 500 x 315.2
									50	40	ST3562 500 x 315.3
									40	40	ST3562 500 x 315.4
500 x 400	330	230	70	40 x 200	66	400	300	403	50	50	ST3562 500 x 400.1
									40	50	ST3562 500 x 400.2
									50	40	ST3562 500 x 400.3
									40	40	ST3562 500 x 400.4
500 x 500	330	330	70	40 x 200	66	400	400	403	50	50	ST3562 500 x 500.1
									40	50	ST3562 500 x 500.2
									50	40	ST3562 500 x 500.3
									40	40	ST3562 500 x 500.4
630 x 315	430	115	80	50 x 250	80	510	195	513	63	63	ST3562 630 x 315.1
									63	50	ST3562 630 x 315.3
630 x 315	430	115	80	50 x 224	80	510	195	513	50	63	ST3562 630 x 315.2
									50	50	ST3562 630 x 315.4
630 x 400	430	200	80	50 x 250	80	510	280	513	63	63	ST3562 630 x 400.1
									63	50	ST3562 630 x 400.3
630 x 400	430	200	80	50 x 224	80	510	280	513	50	63	ST3562 630 x 400.2
									50	50	ST3562 630 x 400.4
630 x 500	430	300	80	50 x 250	80	510	380	513	63	63	ST3562 630 x 500.1
									63	50	ST3562 630 x 500.3
630 x 500	430	300	80	50 x 224	80	510	380	513	50	63	ST3562 630 x 500.2
									50	50	ST3562 630 x 500.4
630 x 630	430	430	80	50 x 250	80	510	510	513	63	63	ST3562 630 x 630.1
									63	50	ST3562 630 x 630.3
630 x 630	430	430	80	50 x 224	80	510	510	513	50	63	ST3562 630 x 630.2
									50	50	ST3562 630 x 630.4
710 x 400	510	200	80	50 x 250	80	590	280	593	63	63	ST3562 710 x 400.1
									63	50	ST3562 710 x 400.3
710 x 400	510	200	80	50 x 224	80	590	280	593	50	63	ST3562 710 x 400.2
									50	50	ST3562 710 x 400.4
710 x 500	510	300	80	50 x 250	80	590	380	593	63	63	ST3562 710 x 500.1
									63	50	ST3562 710 x 500.3
710 x 500	510	300	80	50 x 224	80	590	380	593	50	63	ST3562 710 x 500.2
									50	50	ST3562 710 x 500.4
710 x 630	510	430	80	50 x 250	80	590	510	593	63	63	ST3562 710 x 630.1
									63	50	ST3562 710 x 630.3
710 x 630	510	430	80	50 x 224	80	590	510	593	50	63	ST3562 710 x 630.2
									50	50	ST3562 710 x 630.4
800 x 400	600	200	80	50 x 250	80	680	280	683	63	63	ST3562 800 x 400.1
									63	50	ST3562 800 x 400.3
800 x 400	600	200	80	50 x 224	80	680	280	683	50	63	ST3562 800 x 400.2
									50	50	ST3562 800 x 400.4
800 x 500	600	300	80	50 x 250	80	680	380	683	63	63	ST3562 800 x 500.1
									63	50	ST3562 800 x 500.3
800 x 500	600	300	80	50 x 224	80	680	380	683	50	63	ST3562 800 x 500.2
									50	50	ST3562 800 x 500.4
800 x 630	600	430	80	50 x 250	80	680	510	683	63	63	ST3562 800 x 630.1
									63	50	ST3562 800 x 630.3
800 x 630	600	430	80	50 x 224	80	680	510	683	50	63	ST3562 800 x 630.2
									50	50	ST3562 800 x 630.4

Guide units  
Active elements  
Spring elements  
Nitrogen systems  
Tapping units  
Module system  
Machine elements  
Accessories

# ST3569 Die set



with sliding guide, bronze coating, four pillars



Referring to DIN 9868

Pillar position  
square

Material  
Steel 1.1730

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

Type of guidance  
Sliding guide with bronze coating

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>4</sub>	d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>2</sub>	e <sub>4</sub>	c <sub>1</sub>	c <sub>2</sub>	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
									40	40	ST3569 400 x 315.4

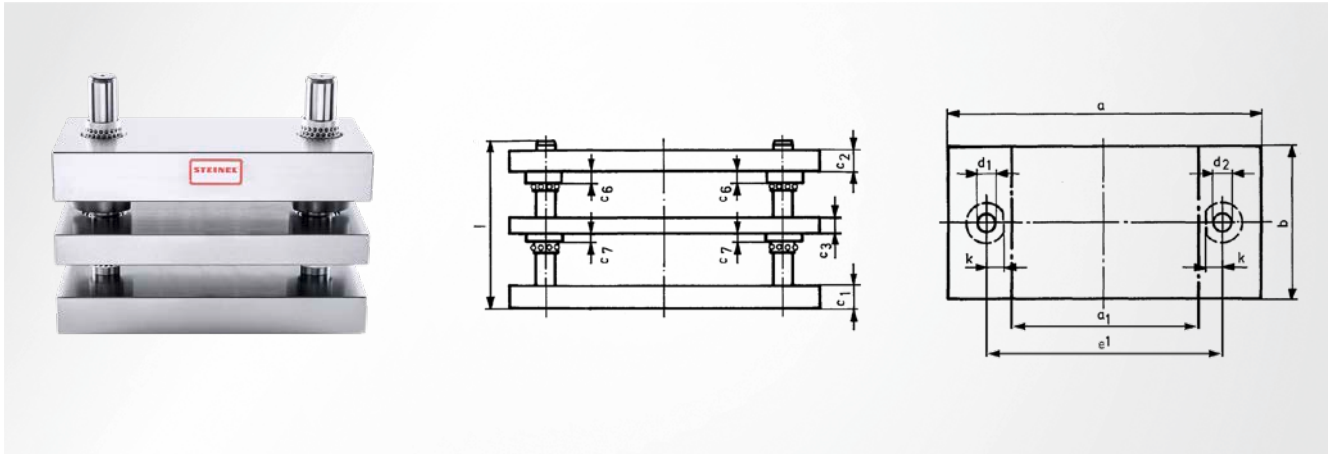
with sliding guide, bronze coating, four pillars

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>4</sub>	d <sub>2</sub> x l	d <sub>5</sub>	e <sub>1</sub>	e <sub>2</sub>	e <sub>4</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Guide units  
Active elements  
Spring elements  
Nitrogen systems  
Tapping units  
Module system  
Machine elements  
Accessories

# ST3572 Die set

with ball guide, with guide plate



Referring to DIN 9868

Pillar position  
parallel centred

Material  
Steel 1.1730

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

Type of guidance  
Ball guide

a x b	a <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	k	d <sub>1</sub> /d <sub>2</sub> x l	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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

with ball guide, with guide plate

a x b	a <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	k	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Guide units  
Active elements  
Spring elements  
Nitrogen systems  
Tapping units  
Module system  
Machine elements  
Accessories

# ST3572 Die set

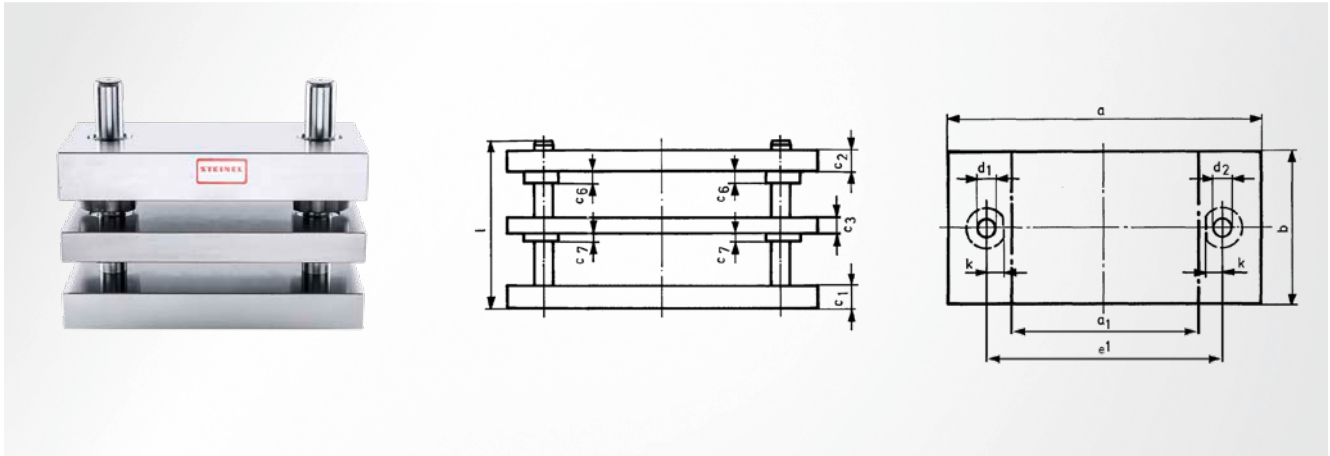
with ball guide, with guide plate

a x b	a <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	k	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Pillar position  
parallel centred

Material

Steel 1.1730

Note

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

Type of guidance

Sliding guide with bronze coating

a x b	a <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	k	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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 <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	k	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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 <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	k	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

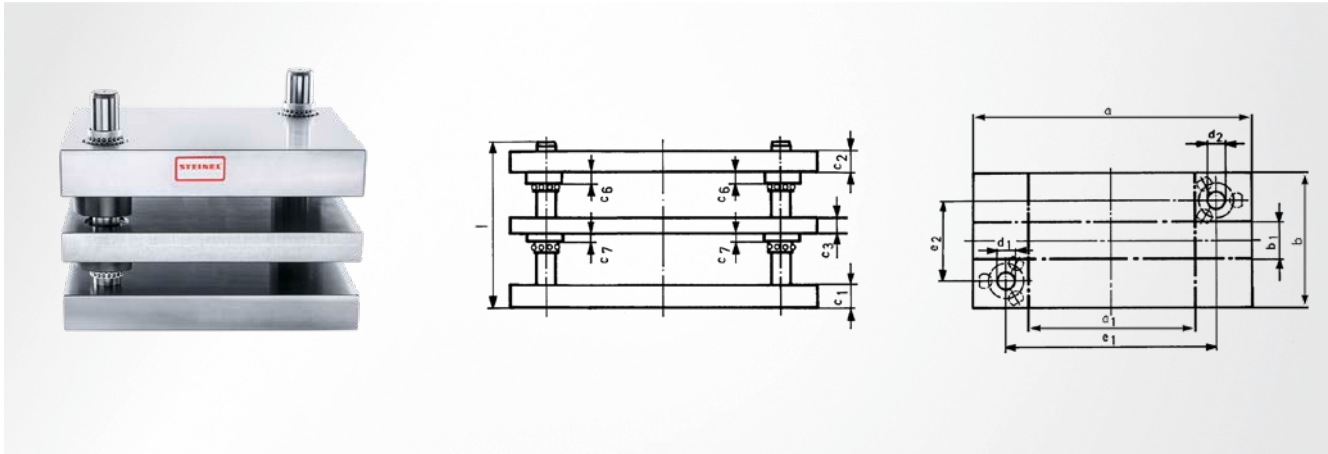
Machine elements

Accessories

# ST3582 Die set



with ball guide, with guide plate



Referring to DIN 9868

Pillar position  
diagonal

Material  
Steel 1.1730

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

Type of guidance  
Ball guide

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>2</sub>	c <sub>1</sub>	c <sub>2</sub>	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
									40	40	ST3582 400 x 315.4

with ball guide, with guide plate

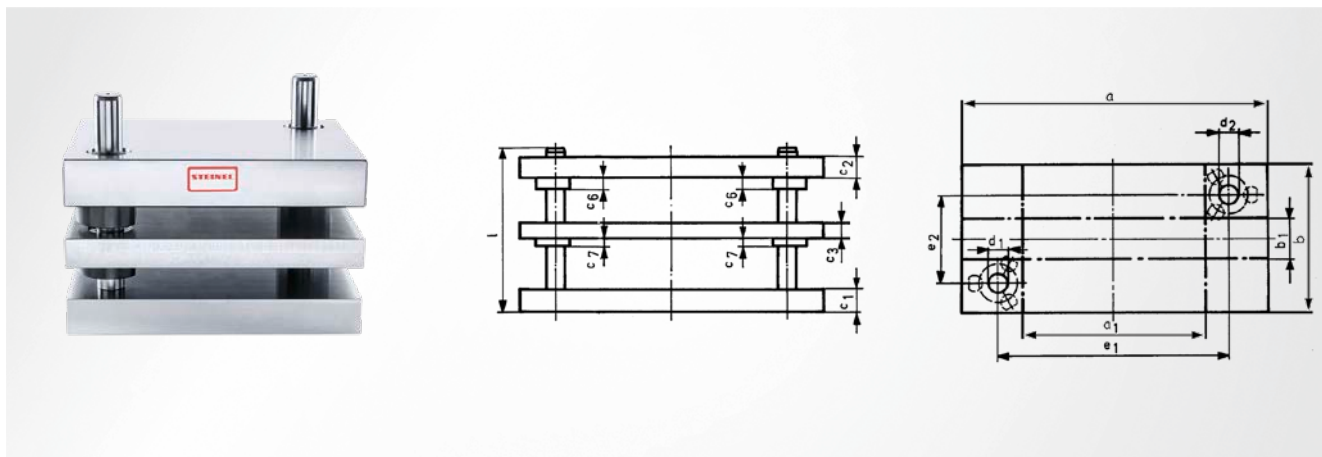
a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>2</sub>	c <sub>1</sub>	c <sub>2</sub>	Item number
400 x 315	250	165	32	25	15	30 / 32 x 224	310	225	40	40	ST3582 400 x 315.4
400 x 400	250	250	32	25	15	30 / 32 x 224	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

Guide units  
Active elements  
Spring elements  
Nitrogen systems  
Tapping units  
Module system  
Machine elements  
Accessories

# ST3589 Die set



with sliding guide, bronze coating, with guide plate



Referring to DIN 9868

Pillar position  
diagonal

Material

Steel 1.1730

Note

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

Type of guidance

Sliding guide with bronze coating

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>2</sub>	c <sub>1</sub>	c <sub>2</sub>	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
									40	40	ST3589 400 x 315.4

with sliding guide, bronze coating, with guide plate

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>2</sub>	c <sub>1</sub>	c <sub>2</sub>	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

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

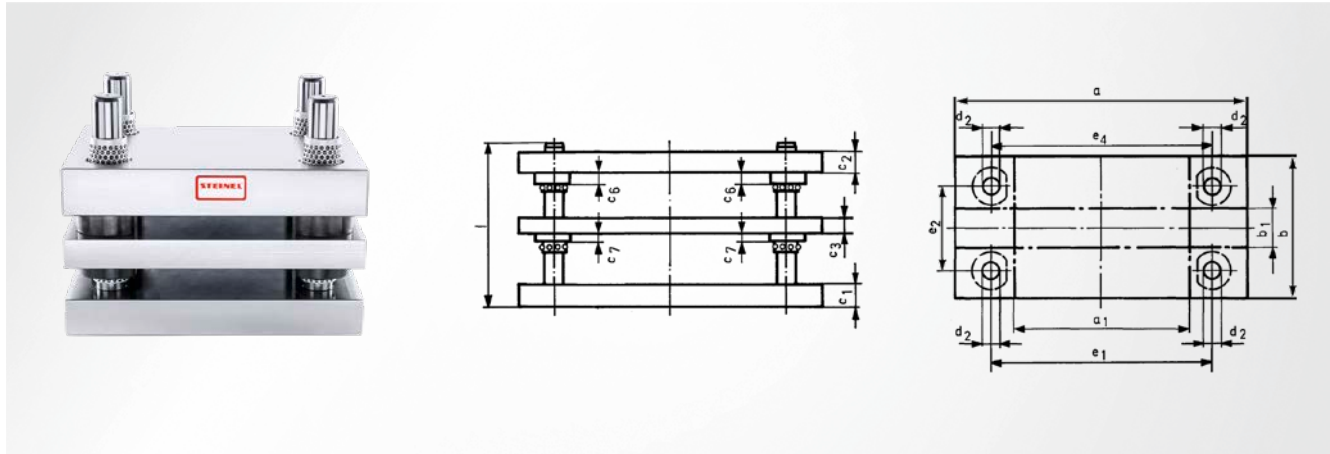
Machine elements

Accessories

# ST3592 Die set



with ball guide, with guide plate, four pillars



Referring to DIN 9868

Pillar position  
square

Material  
Steel 1.1730

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

Type of guidance  
Ball guide

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	d <sub>2</sub> x l	e <sub>1</sub>	e <sub>2</sub>	e <sub>4</sub>	c <sub>1</sub>	c <sub>2</sub>	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
										40	40	ST3592 400 x 315.4



with ball guide, with guide plate, four pillars

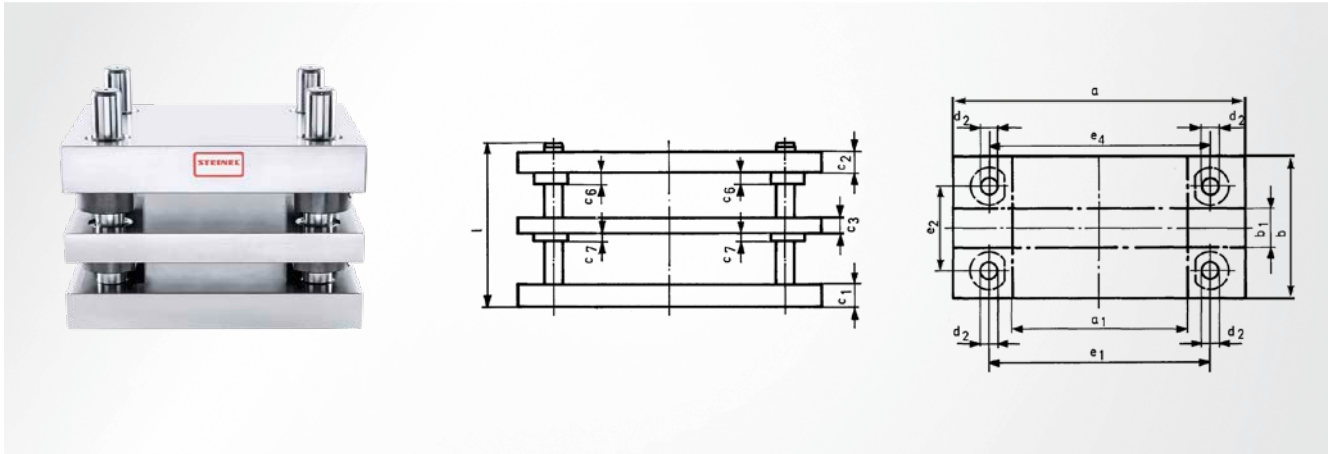
a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	d <sub>2</sub> x l	e <sub>1</sub>	e <sub>2</sub>	e <sub>4</sub>	c <sub>1</sub>	c <sub>2</sub>	Item number
400 x 315	250	165	32	25	15	32 x 224	310	225	313	40	40	ST3592 400 x 315.4
400 x 400	250	250	32	25	15	32 x 224	310	310	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

Guide units  
Active elements  
Spring elements  
Nitrogen systems  
Tapping units  
Module system  
Machine elements  
Accessories

# ST3599 Die set



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



Referring to DIN 9868

Pillar position  
square

Material  
Steel 1.1730

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

Type of guidance  
Sliding guide with bronze coating

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	d <sub>2</sub> x l	e <sub>1</sub>	e <sub>2</sub>	e <sub>4</sub>	c <sub>1</sub>	c <sub>2</sub>	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
										40	40	ST3599 400 x 315.4

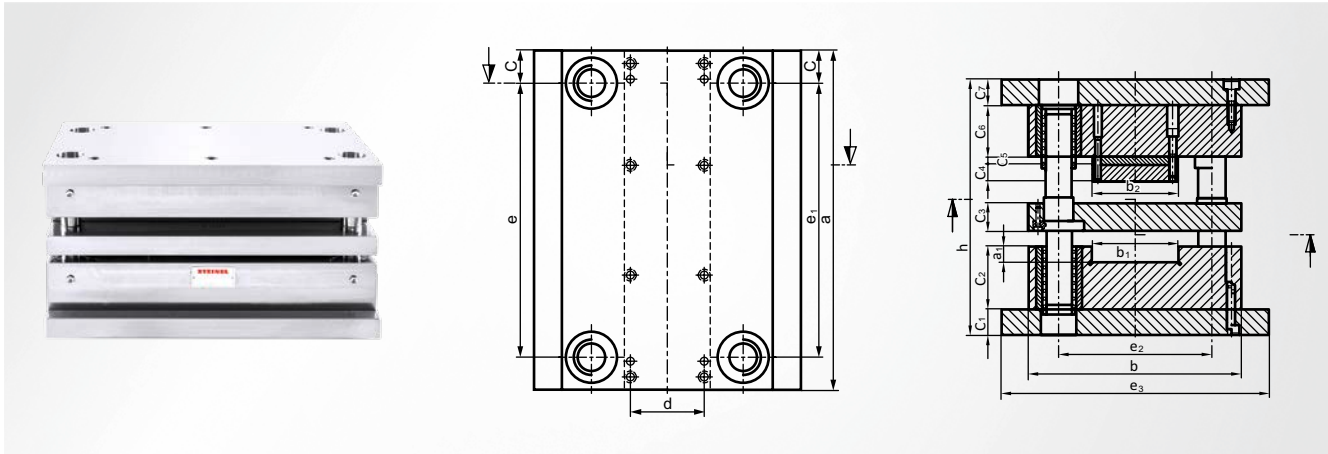
with sliding guide, bronze coating, with guide plate, four pillars

a x b	a <sub>1</sub>	b <sub>1</sub>	c <sub>3</sub>	c <sub>6</sub>	c <sub>7</sub>	d <sub>2</sub> x l	e <sub>1</sub>	e <sub>2</sub>	e <sub>4</sub>	c <sub>1</sub>	c <sub>2</sub>	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

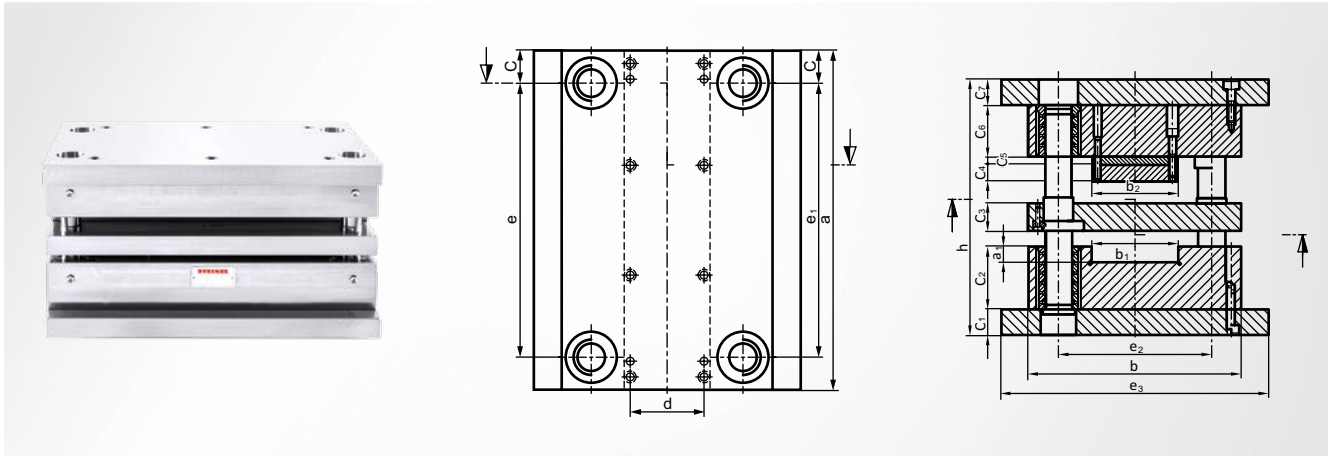
Optional accessories  
SZ8565.10; SZ8565.20; SZ8565.30; SZ8565.40

a <sub>1</sub>	b <sub>1</sub>	b <sub>2</sub>	c	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	c <sub>5</sub>	c <sub>6</sub>	c <sub>7</sub>	d	d <sub>1</sub> x l	e <sub>2</sub>	e <sub>3</sub>	h	a x b	e	e <sub>1</sub>	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

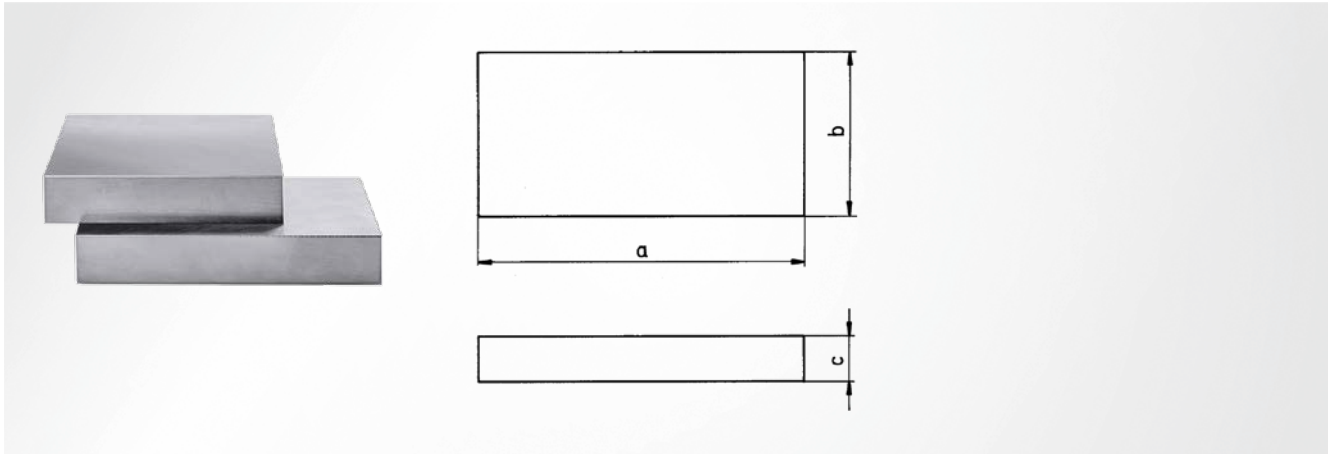
## Note

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 <sub>1</sub>	b <sub>1</sub>	b <sub>2</sub>	c	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	c <sub>5</sub>	c <sub>6</sub>	c <sub>7</sub>	d	d <sub>1</sub> x l	e <sub>2</sub>	e <sub>3</sub>	h	a x b	e	e <sub>1</sub>	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



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

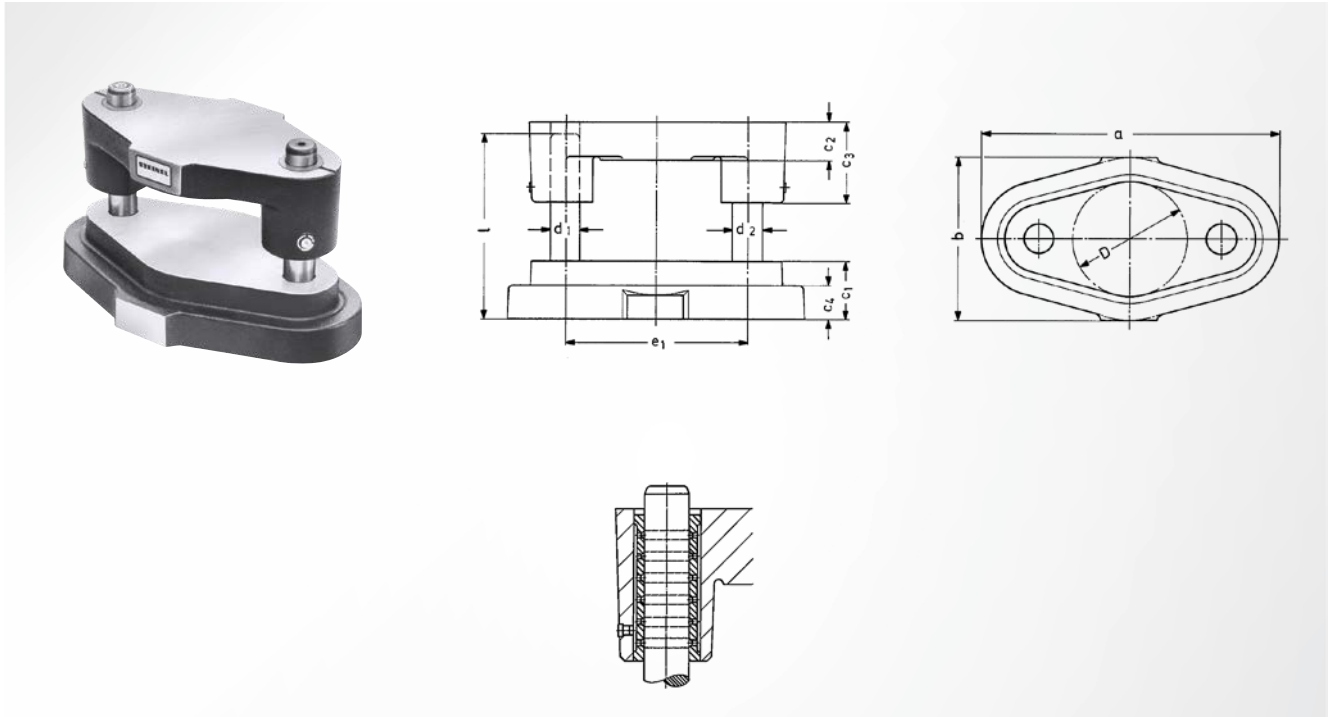
$a^{\pm 0.15} \times b^{\pm 0.15}$	c	Item number
160 x 80	25	ST3500 160 x 080 x 25
	32	ST3500 160 x 080 x 32
160 x 100	25	ST3500 160 x 100 x 25
	32	ST3500 160 x 100 x 32
160 x 125	25	ST3500 160 x 125 x 25
	32	ST3500 160 x 125 x 32
160 x 160	25	ST3500 160 x 160 x 25
	32	ST3500 160 x 160 x 32
200 x 100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

$a^{\pm 0.15} \times b^{\pm 0.15}$	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
	63	ST3500 315 x 315 x 63
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

$a^{\pm 0.15} \times b^{\pm 0.15}$	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

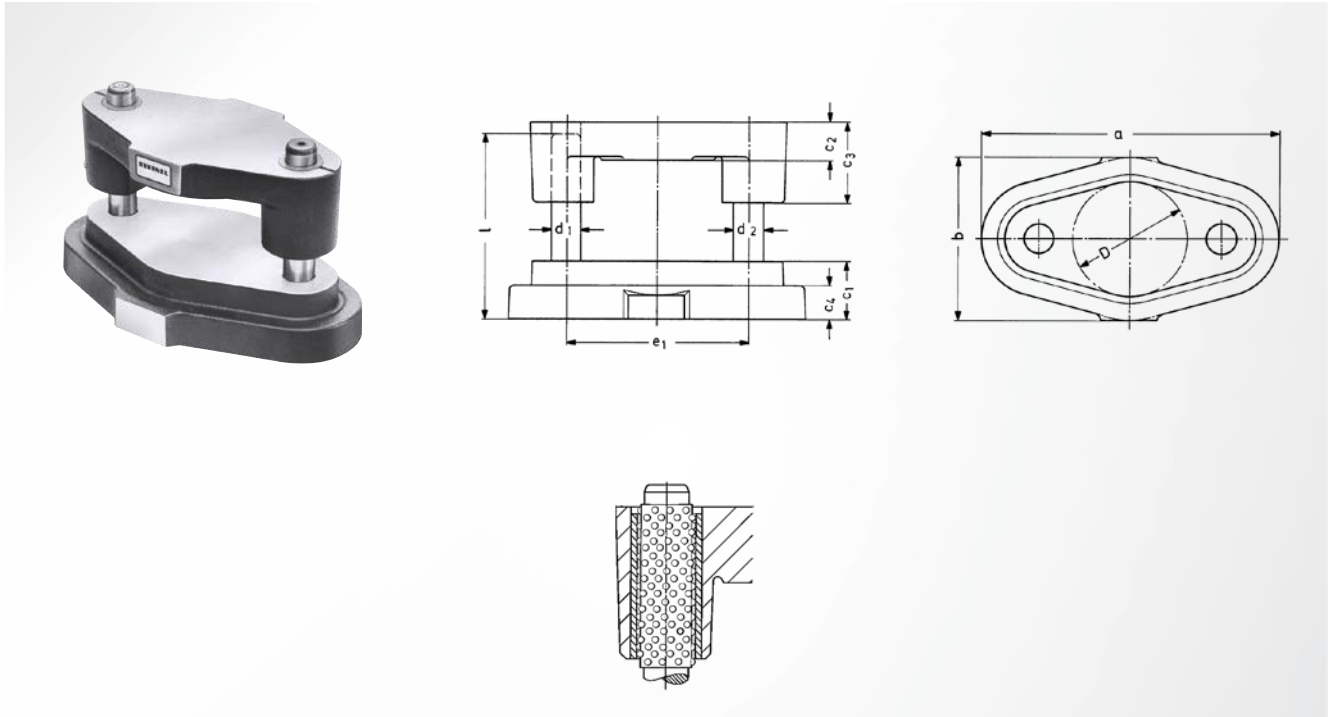
parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	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

Guide units  
Active elements  
Spring elements  
Nitrogen systems  
Tapping units  
Module system  
Machine elements  
Accessories

# 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

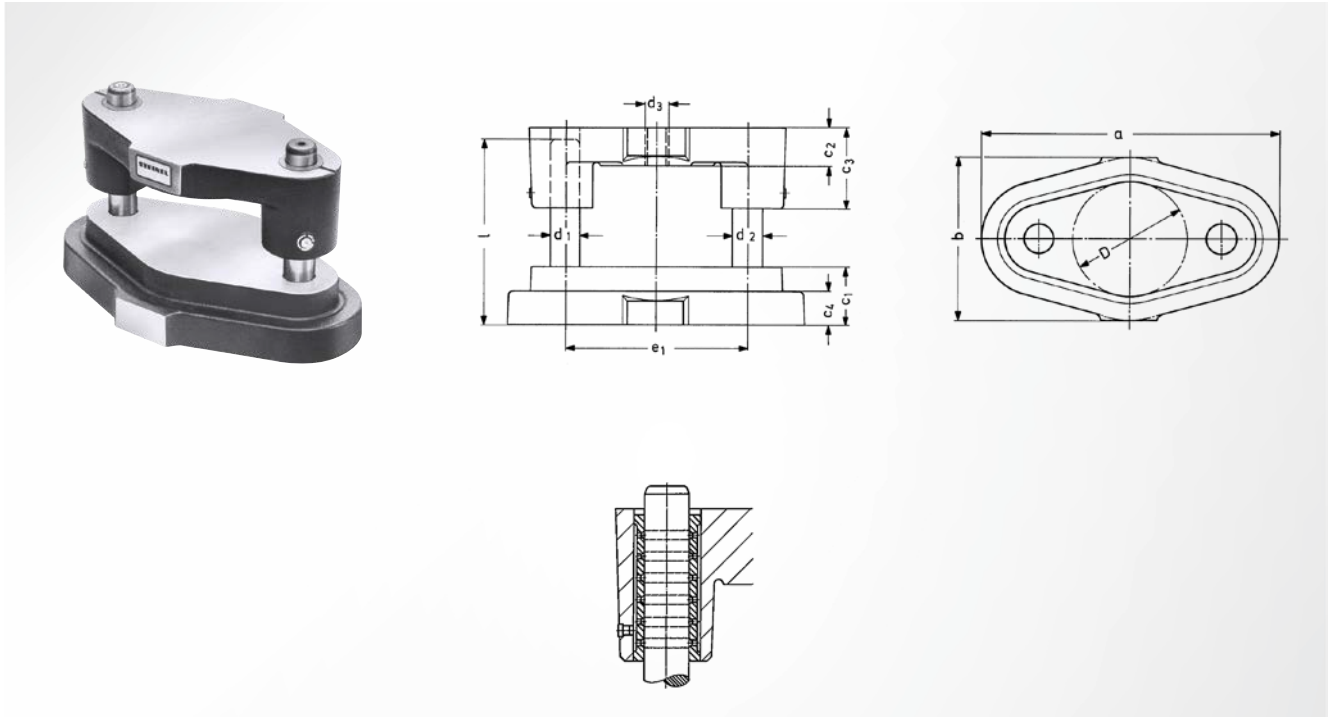
parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	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

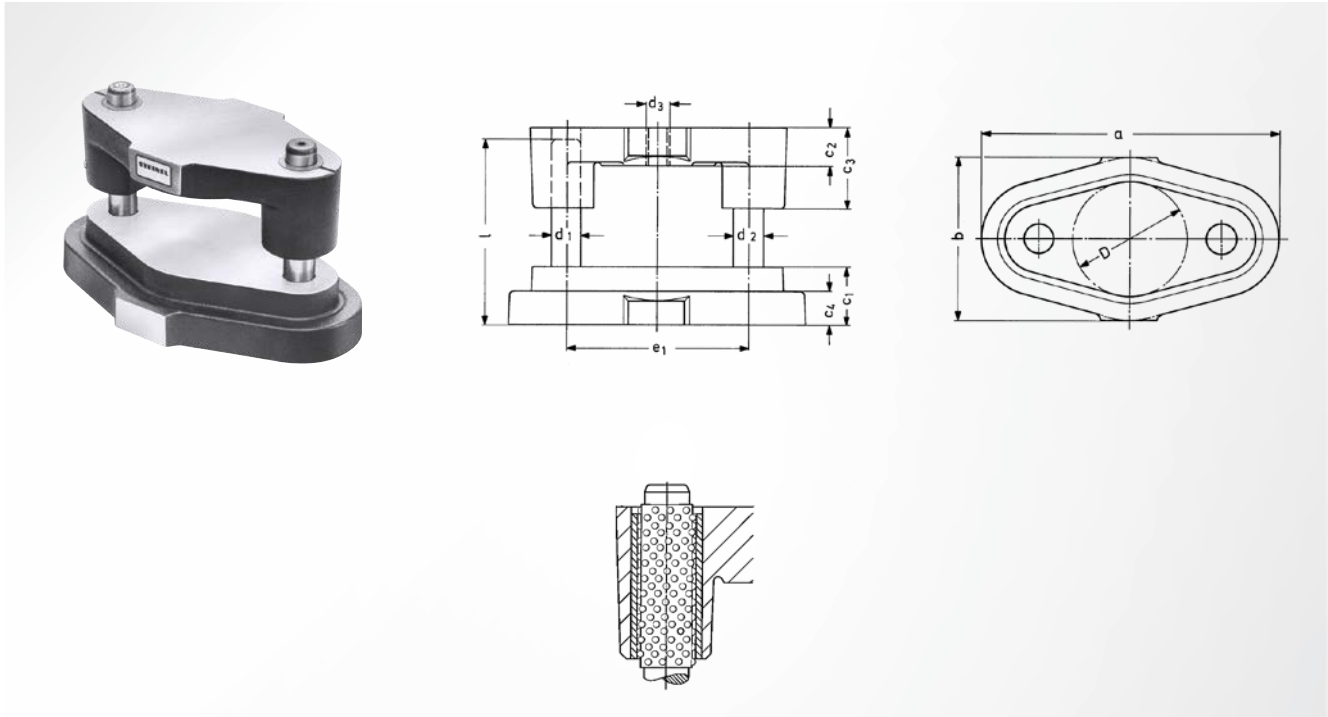
Working surface  
round

Pillar position  
parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	d <sub>3</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	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

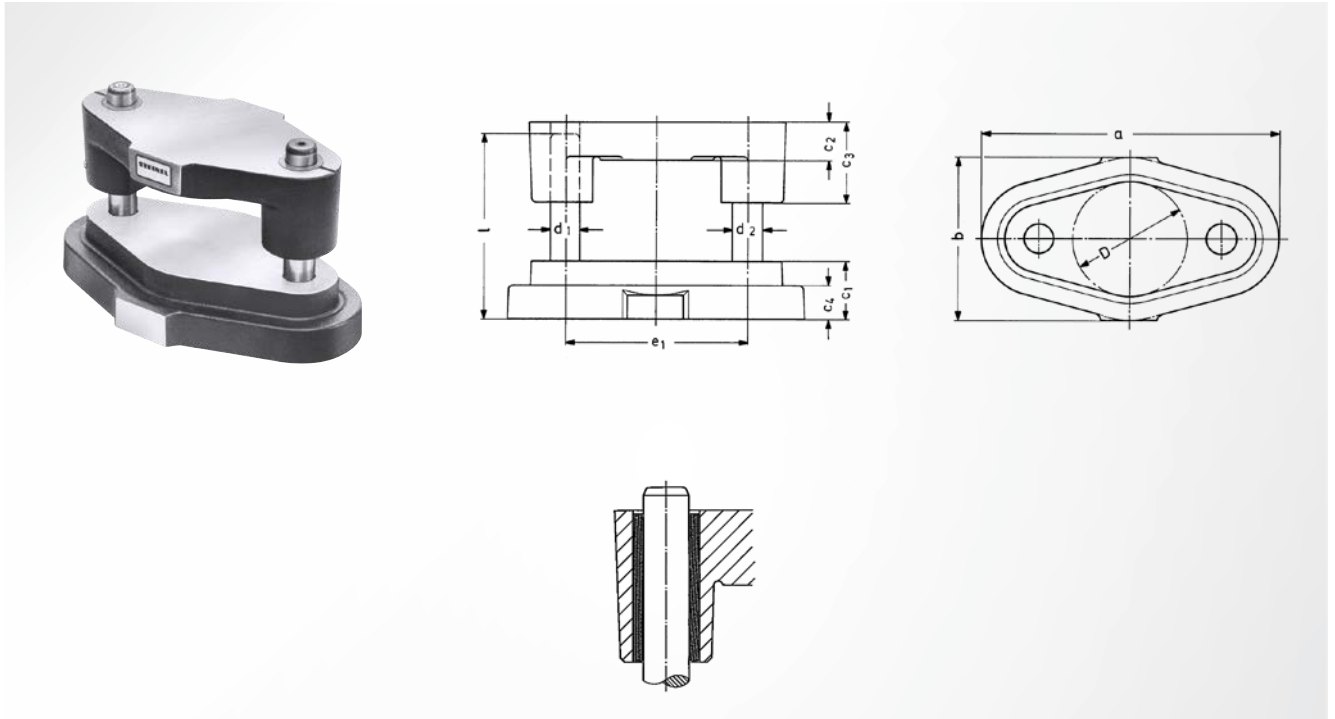
Working surface  
round

Pillar position  
parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	d <sub>3</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	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

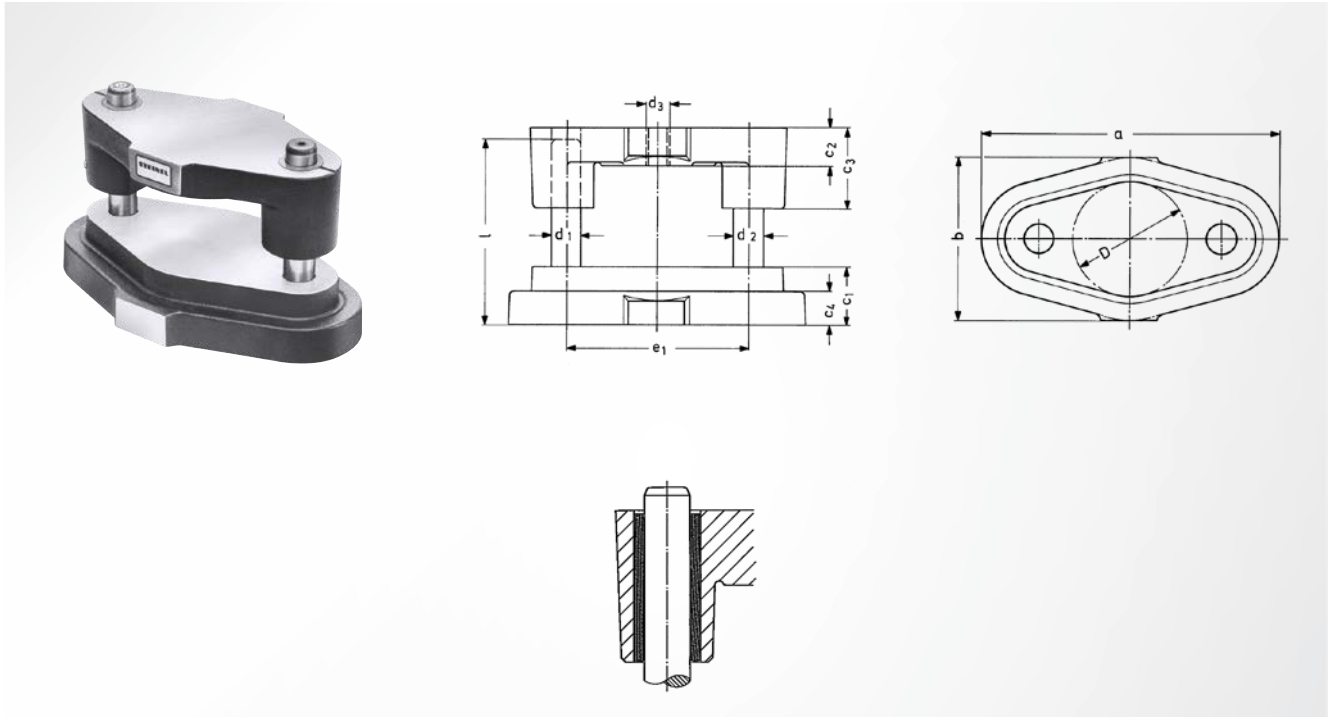
Pillar position

parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	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

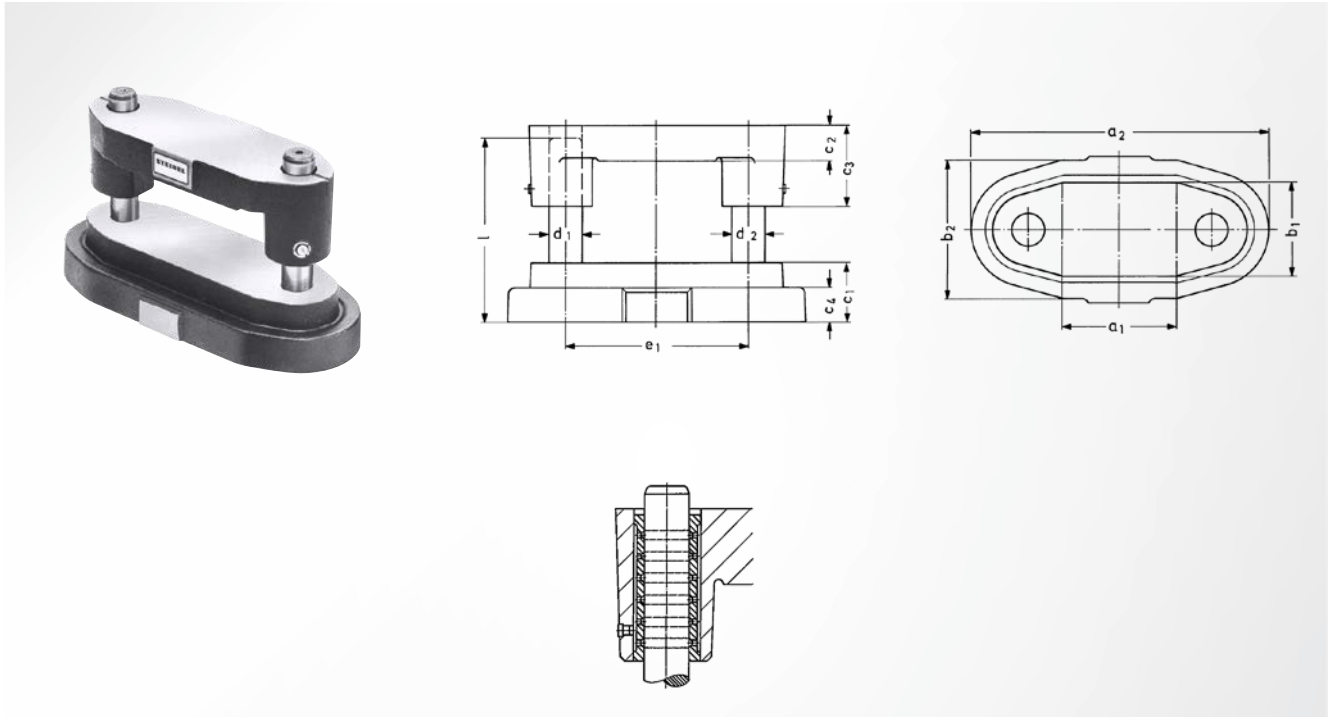
Working surface  
round

Pillar position  
parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	d <sub>3</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	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

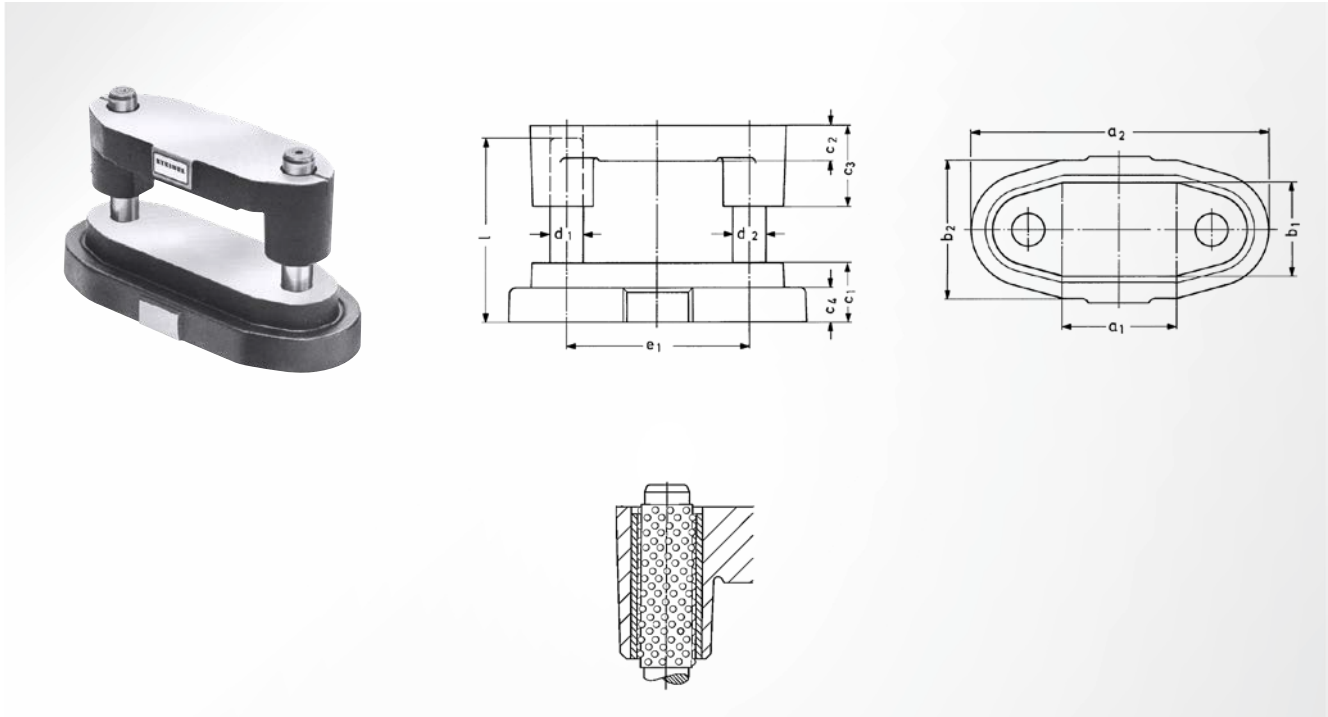
Pillar position

parallel centred

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_1 / d_2 \times l$	$e_1$	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

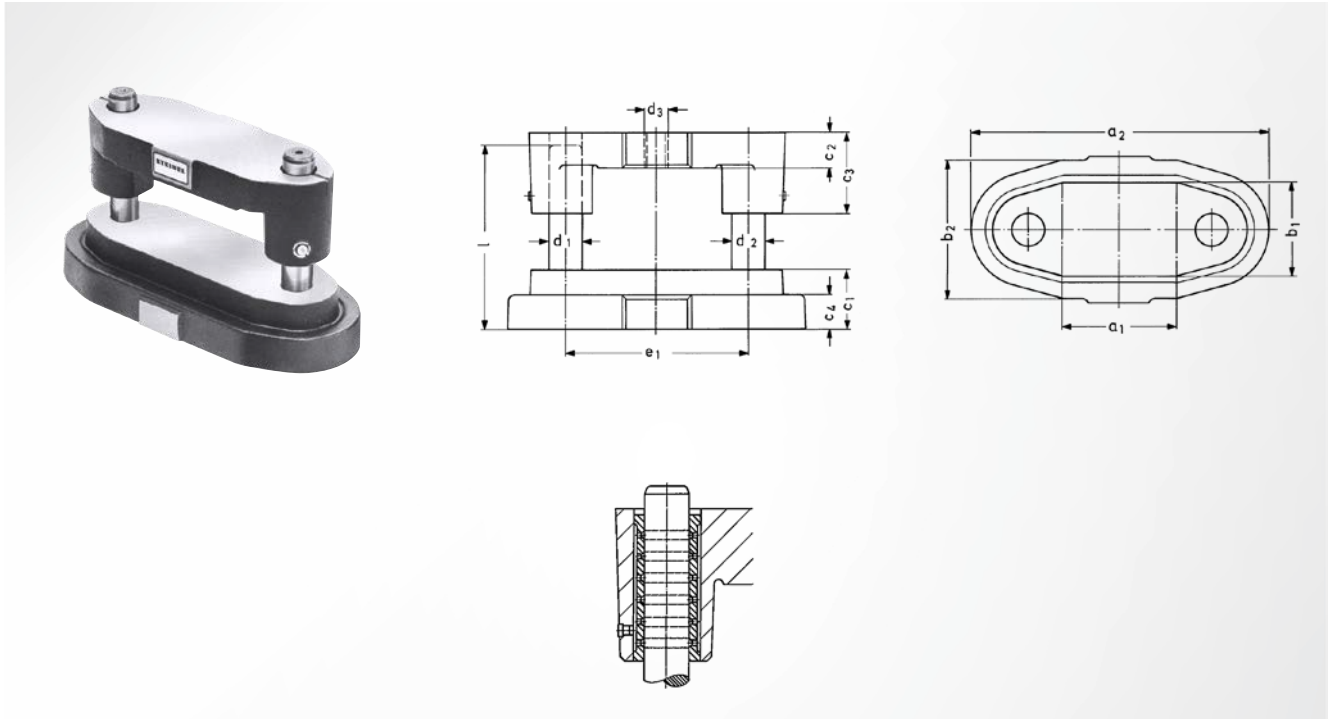
Pillar position

parallel centred

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_1 / d_2 \times l$	$e_1$	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

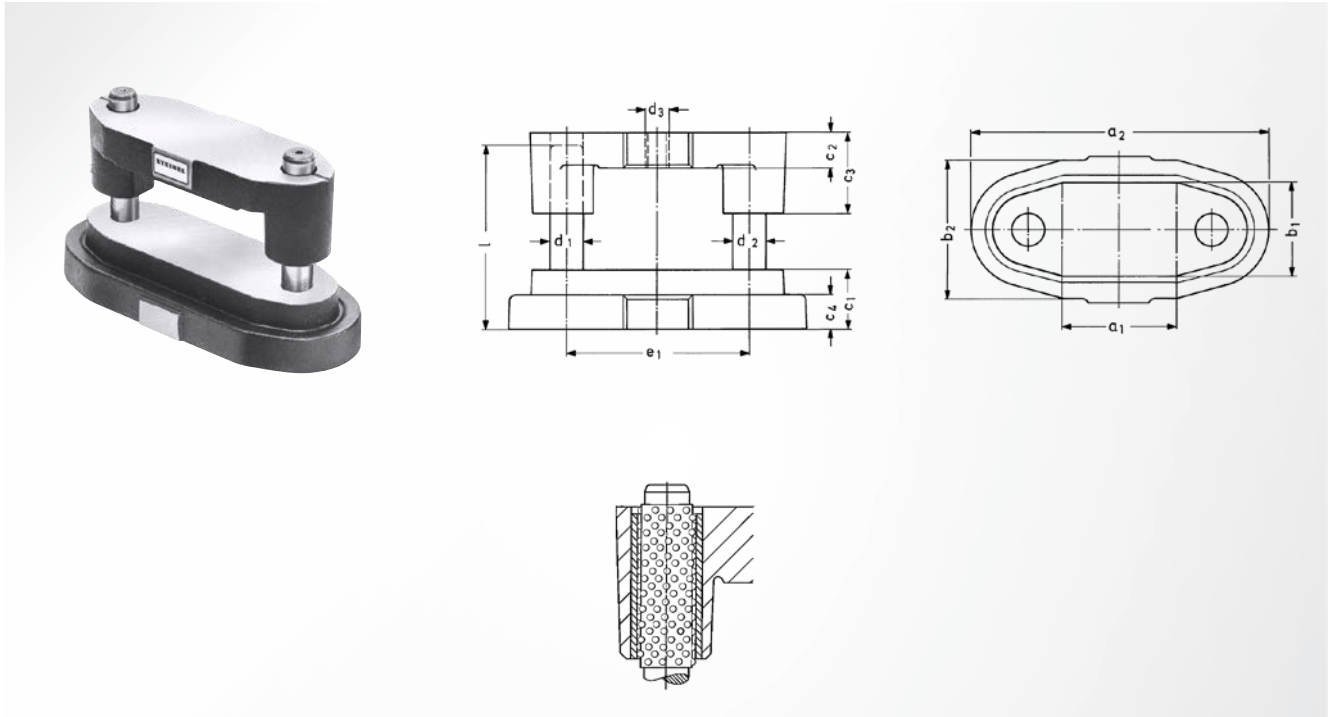
Working surface  
rectangular

Pillar position  
parallel centred

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_3$	$d_1 / d_2 \times l$	$e_1$	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

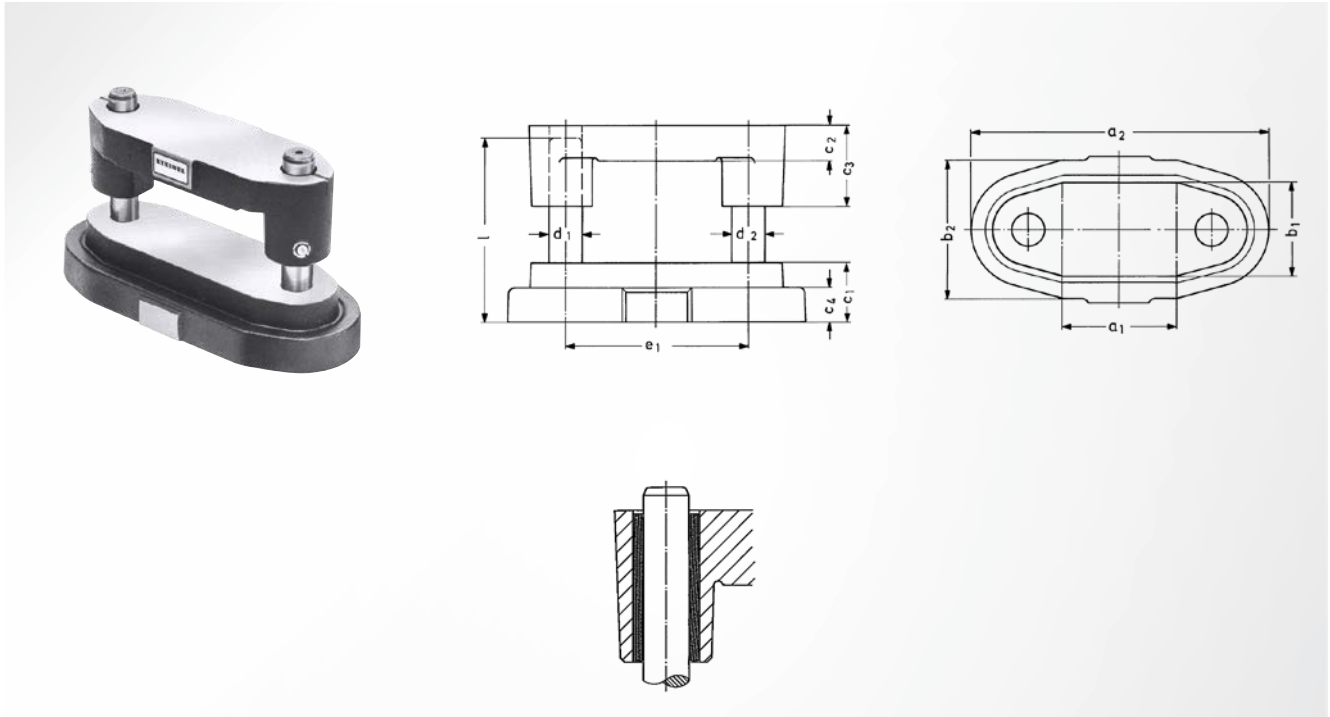
Working surface  
rectangular

Pillar position  
parallel centred

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_3$	$d_1 / d_2 \times l$	$e_1$	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



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

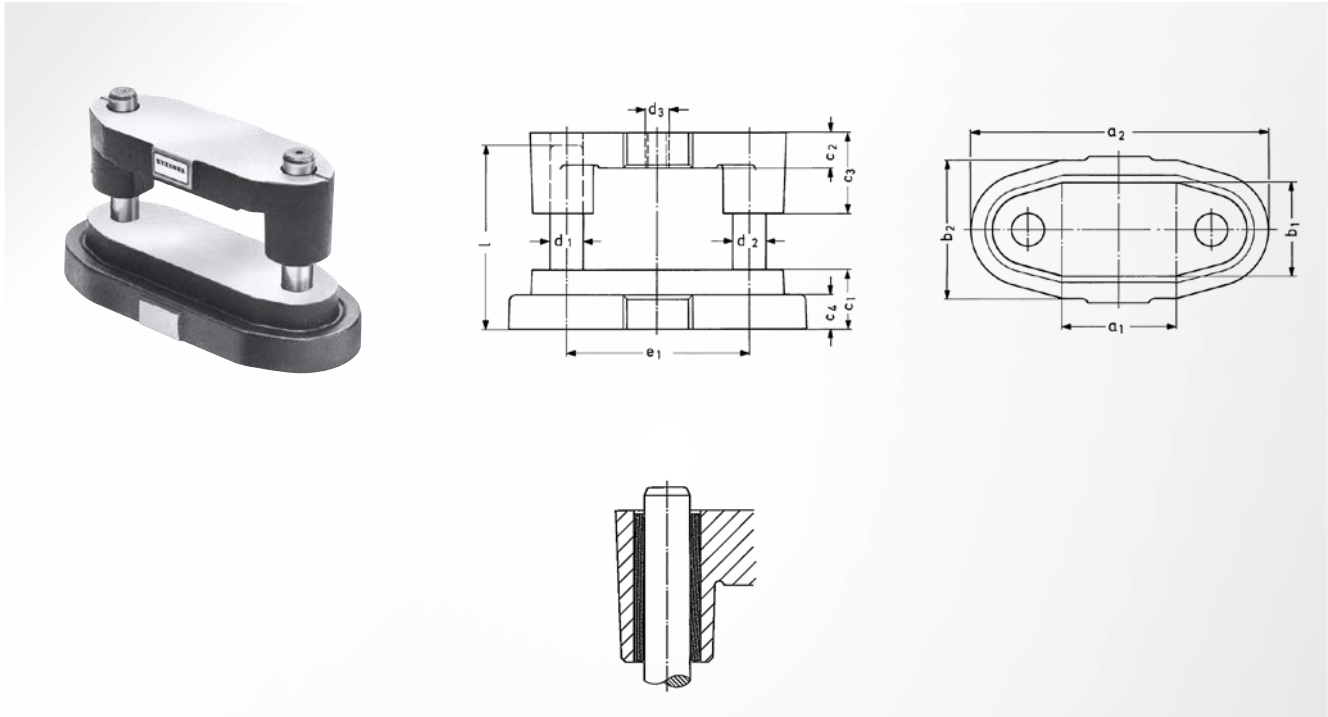
Pillar position

parallel centred

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_1 / d_2 \times l$	$e_1$	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

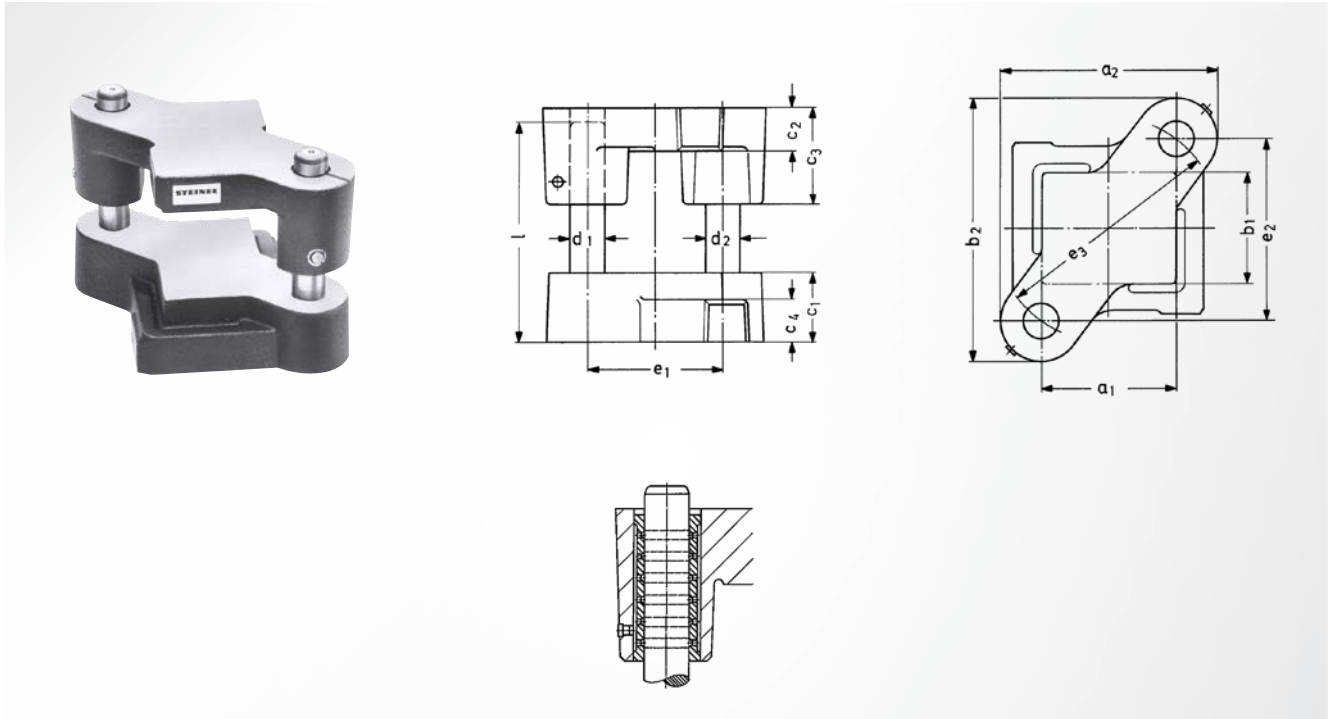
Working surface  
rectangular

Pillar position  
parallel centred

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_3$	$d_1 / d_2 \times l$	$e_1$	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

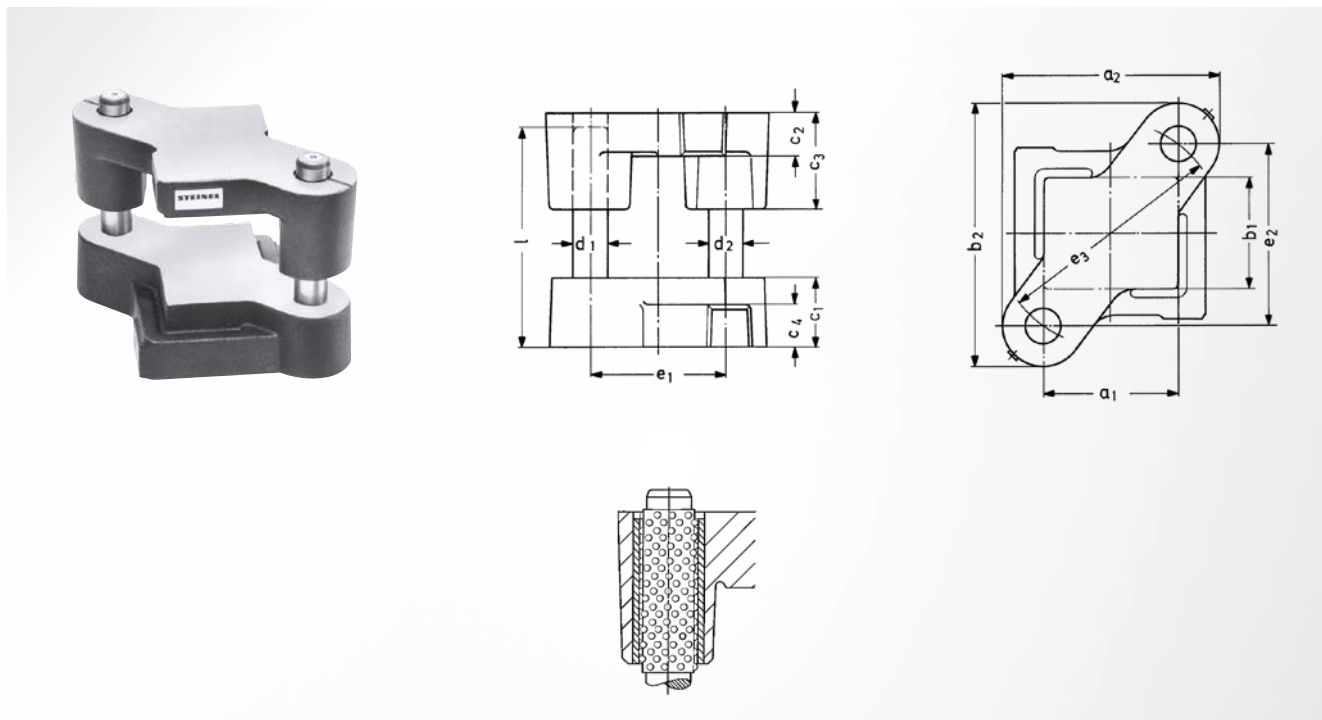
diagonal

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_1 / d_2 \times l$	$e_1$	$e_2$	$e_3$	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

Guide units  
Active elements  
Spring elements  
Nitrogen systems  
Tapping units  
Module system  
Machine elements  
Accessories

# 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

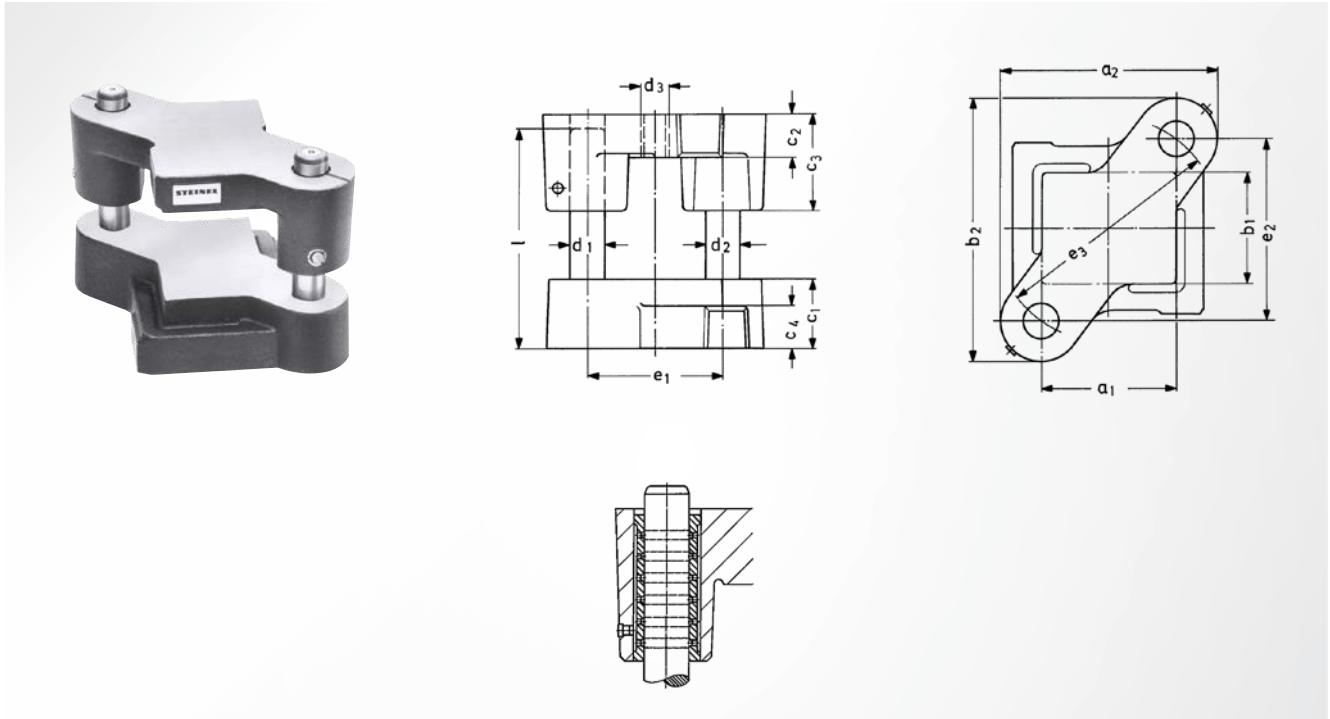
Pillar position

diagonal

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_1 / d_2 \times l$	$e_1$	$e_2$	$e_3$	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

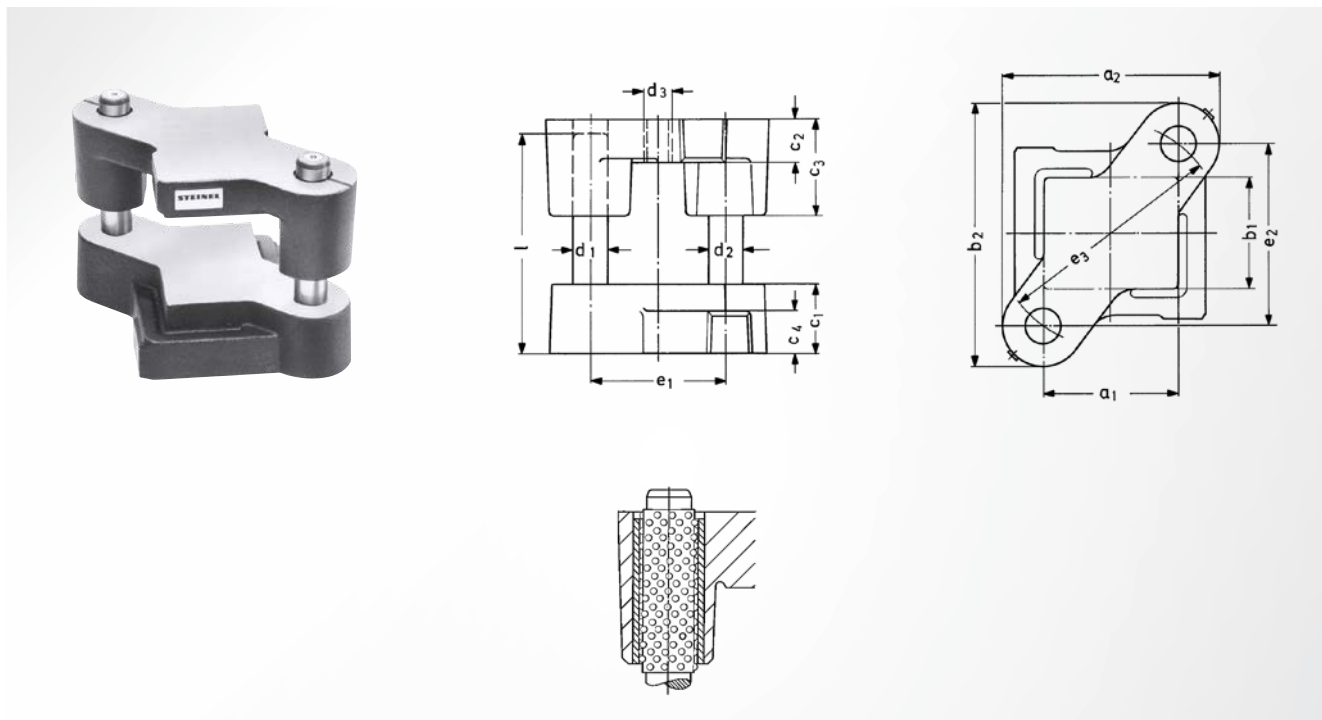
Working surface  
rectangular

Pillar position  
diagonal

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_3$	$d_1 / d_2 \times l$	$e_1$	$e_2$	$e_3$	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

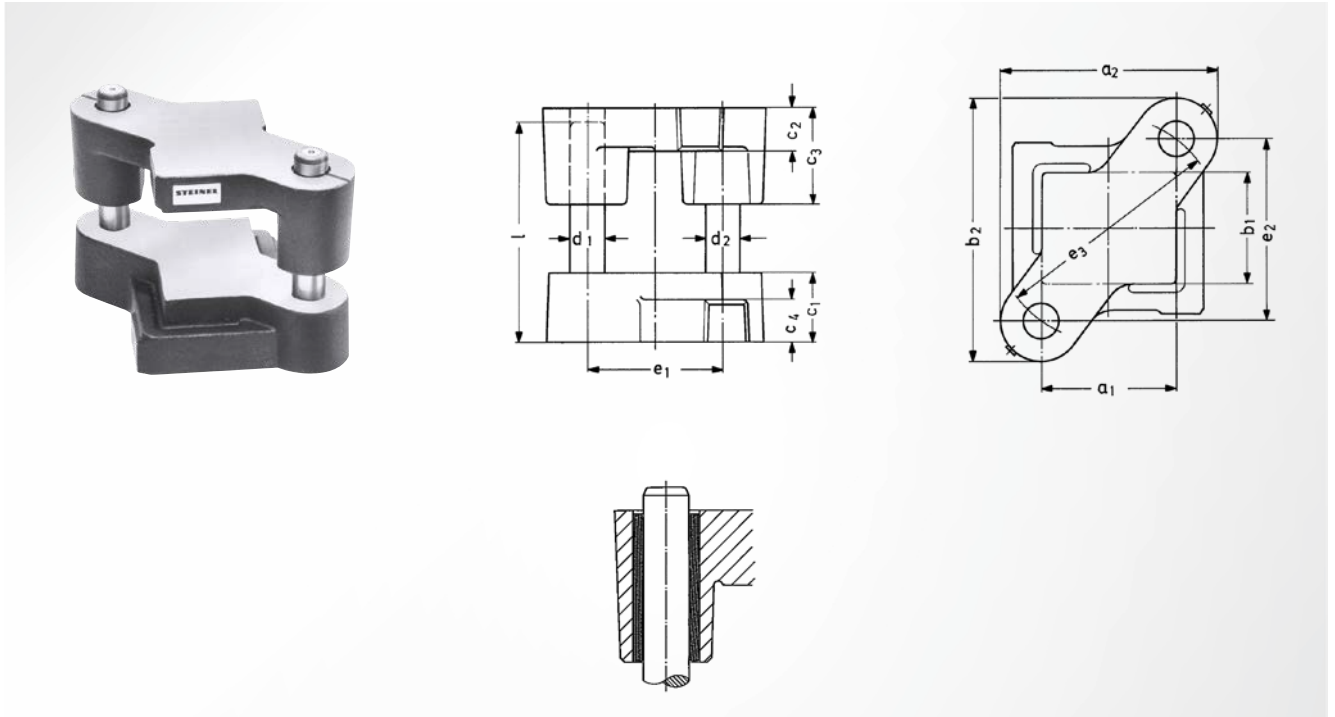
Pillar position

diagonal

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_3$	$d_1 / d_2 \times l$	$e_1$	$e_2$	$e_3$	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

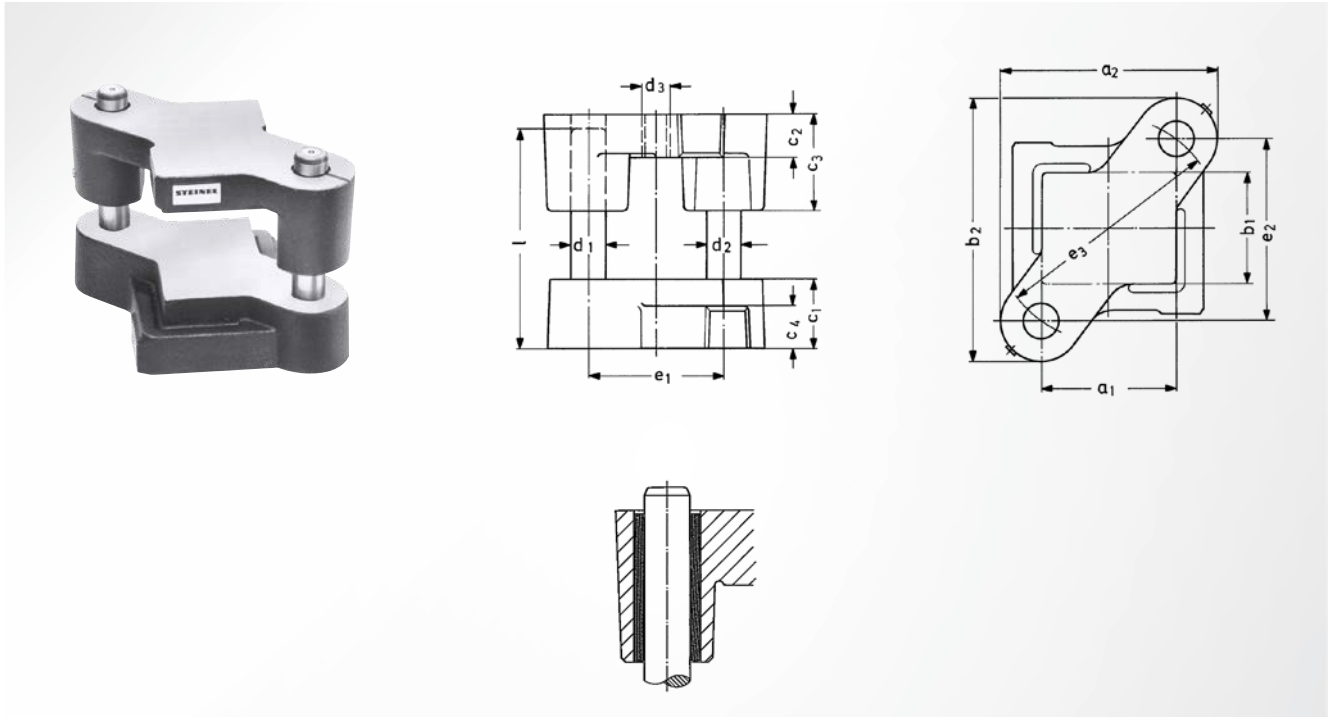
Pillar position

diagonal

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_1 / d_2 \times l$	$e_1$	$e_2$	$e_3$	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

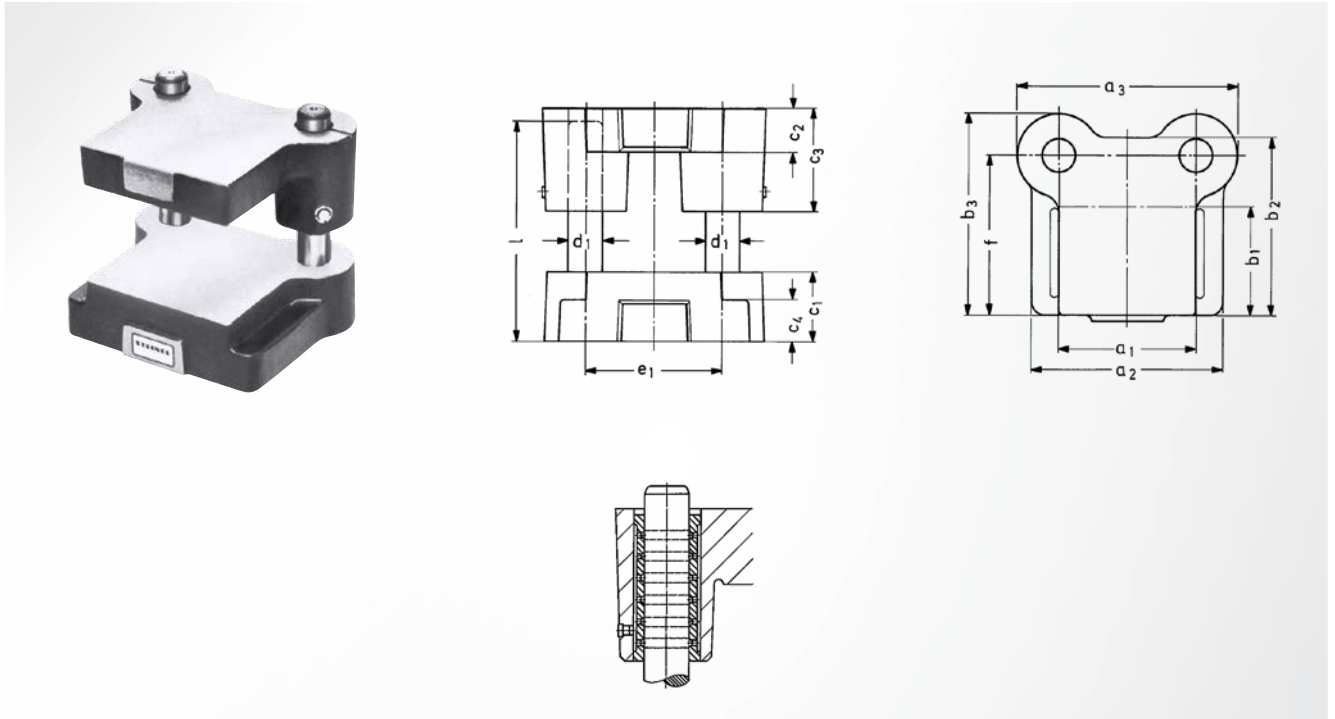
Pillar position  
diagonal

$a_1 \times b_1$	$a_2$	$b_2$	$c_1$	$c_2$	$c_3$	$c_4$	$d_3$	$d_1 / d_2 \times l$	$e_1$	$e_2$	$e_3$	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

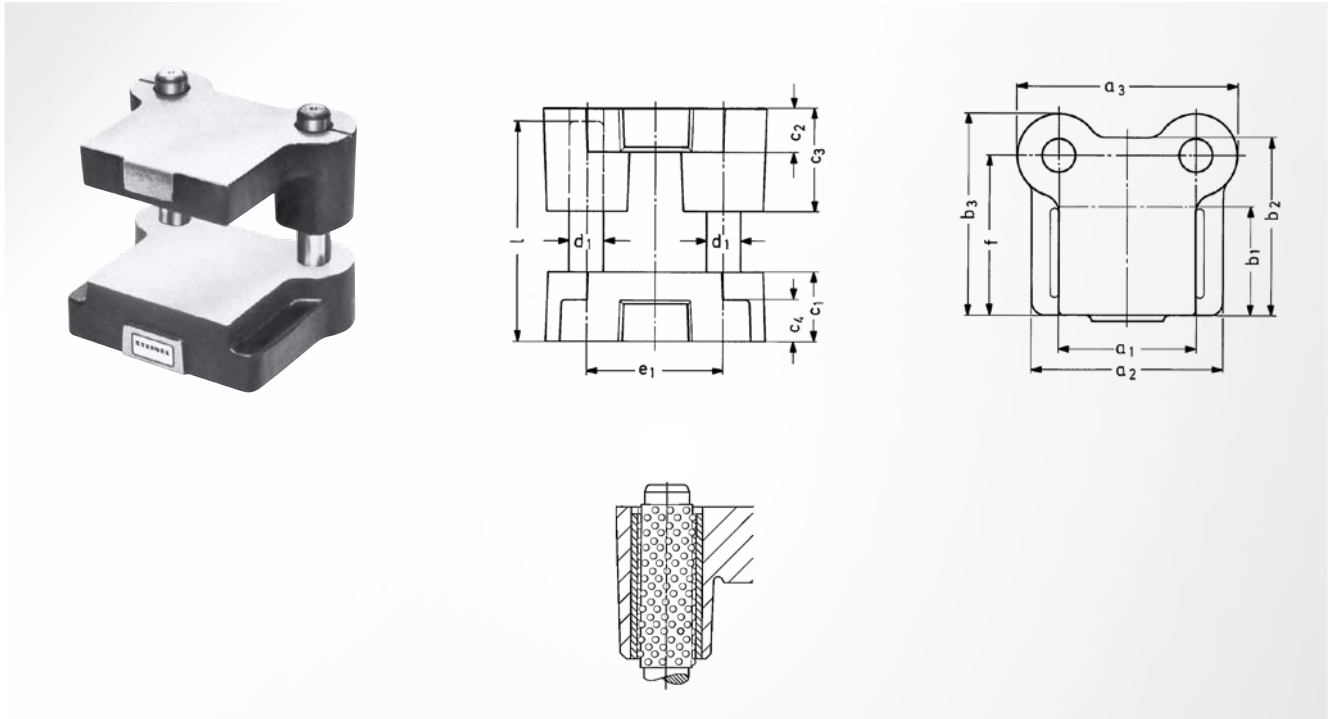
Pillar position

rear standing

$a_1 \times b_1$	$a_2$	$a_3$	$b_2$	$b_3$	$c_1$	$c_2$	$c_3$	$c_4$	$d_1 \times l$	$e_1$	$f$	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

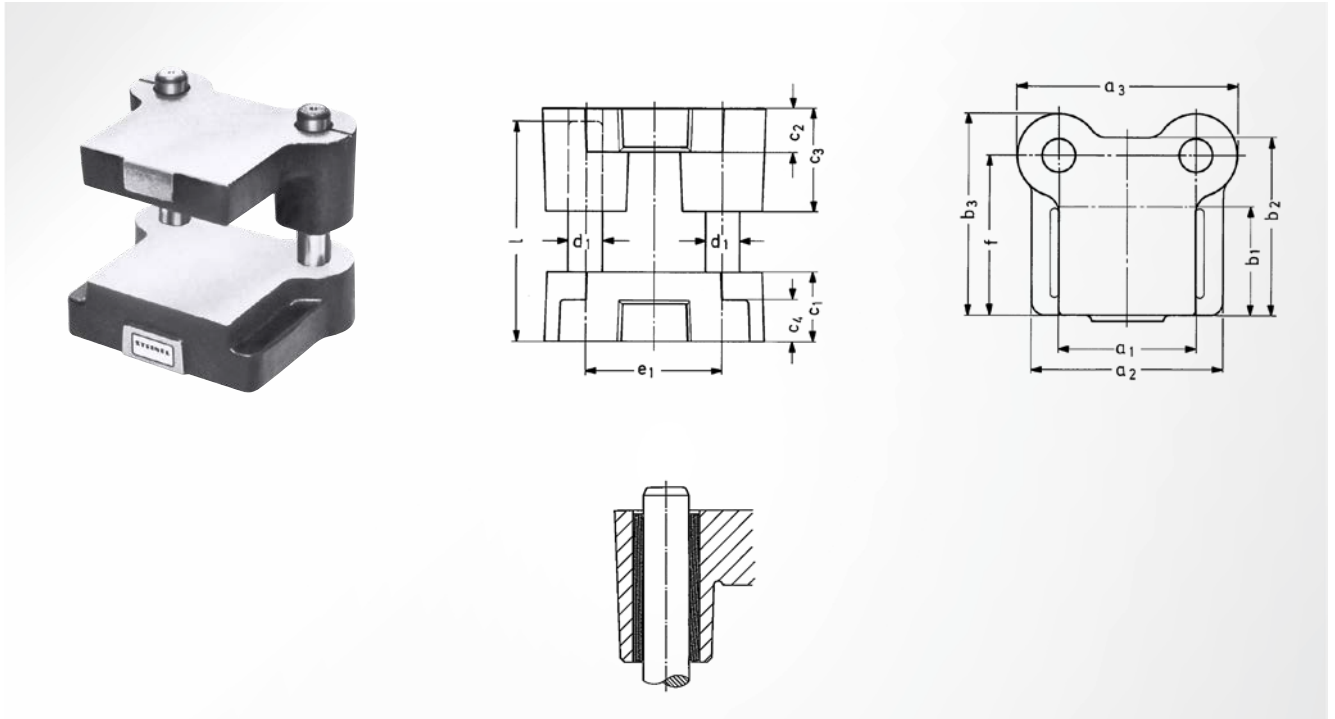
rectangular

Pillar position

rear standing

$a_1 \times b_1$	$a_2$	$a_3$	$b_2$	$b_3$	$c_1$	$c_2$	$c_3$	$c_4$	$d_1 \times l$	$e_1$	$f$	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

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

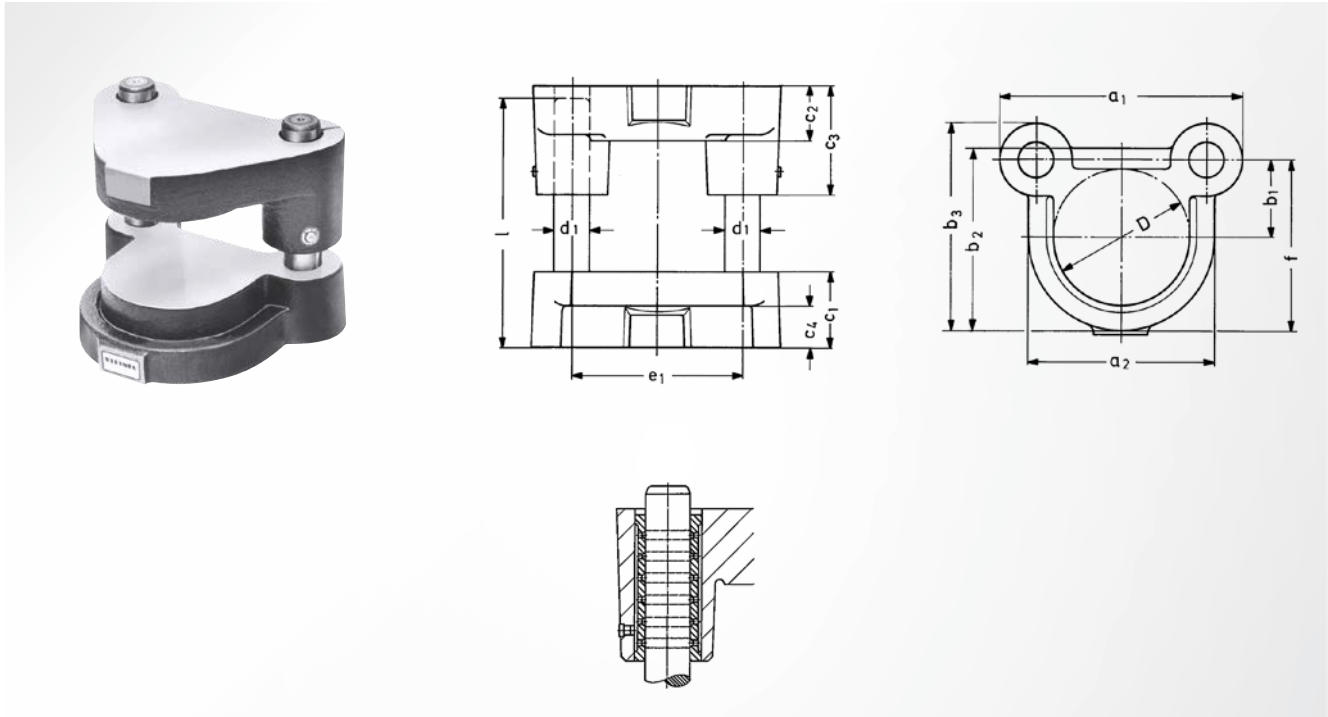
Pillar position

rear standing

$a_1 \times b_1$	$a_2$	$a_3$	$b_2$	$b_3$	$c_1$	$c_2$	$c_3$	$c_4$	$d_1 \times l$	$e_1$	$f$	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

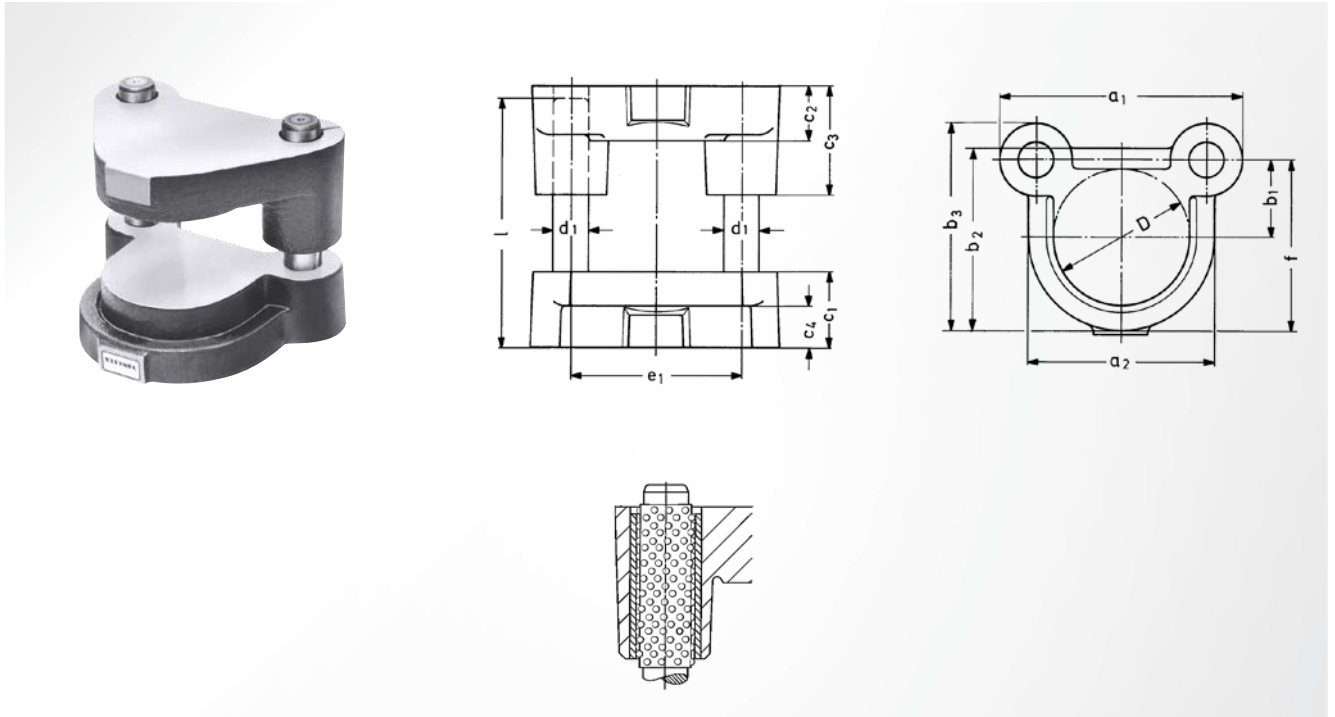
**Pillar position**  
rear standing

**Type of guidance**  
Sliding guide with bronze coating

D	a <sub>1</sub>	a <sub>2</sub>	b <sub>1</sub>	b <sub>2</sub>	b <sub>3</sub>	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	d <sub>1</sub> x l	e <sub>1</sub>	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 <sub>1</sub>	a <sub>2</sub>	b <sub>1</sub>	b <sub>2</sub>	b <sub>3</sub>	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	d <sub>1</sub> x l	e <sub>1</sub>	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

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

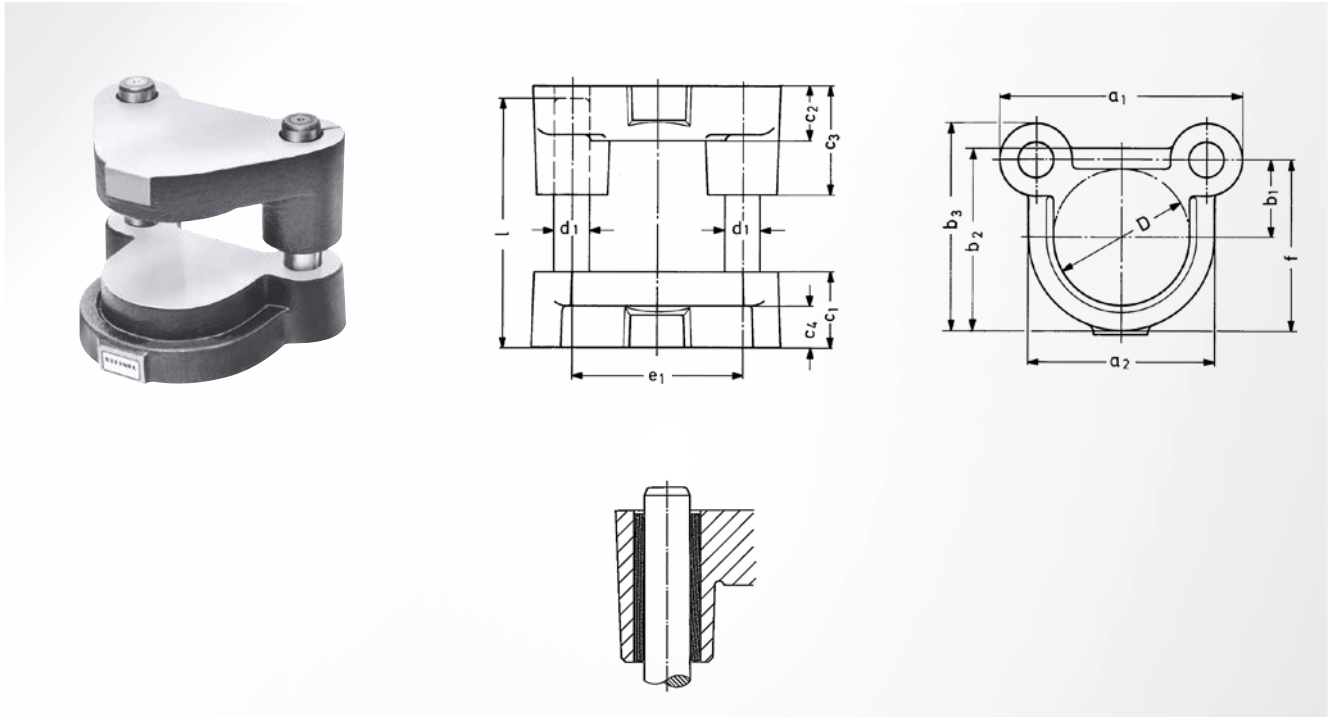
Module system

Machine elements

Accessories

# 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

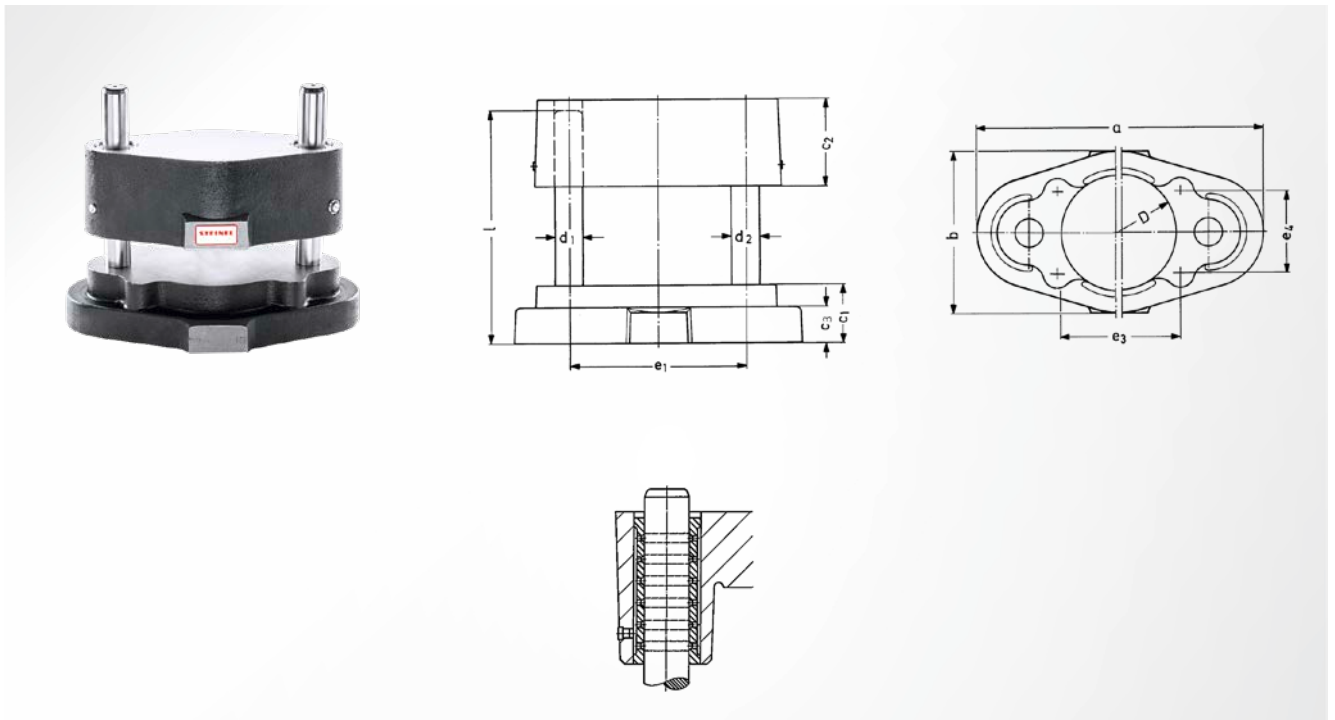
Pillar position  
rear standing

Type of guidance  
Sliding guide with solid lubricant

D	a <sub>1</sub>	a <sub>2</sub>	b <sub>1</sub>	b <sub>2</sub>	b <sub>3</sub>	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	d <sub>1</sub> x l	e <sub>1</sub>	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 <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>3</sub>	e <sub>4</sub>	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

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

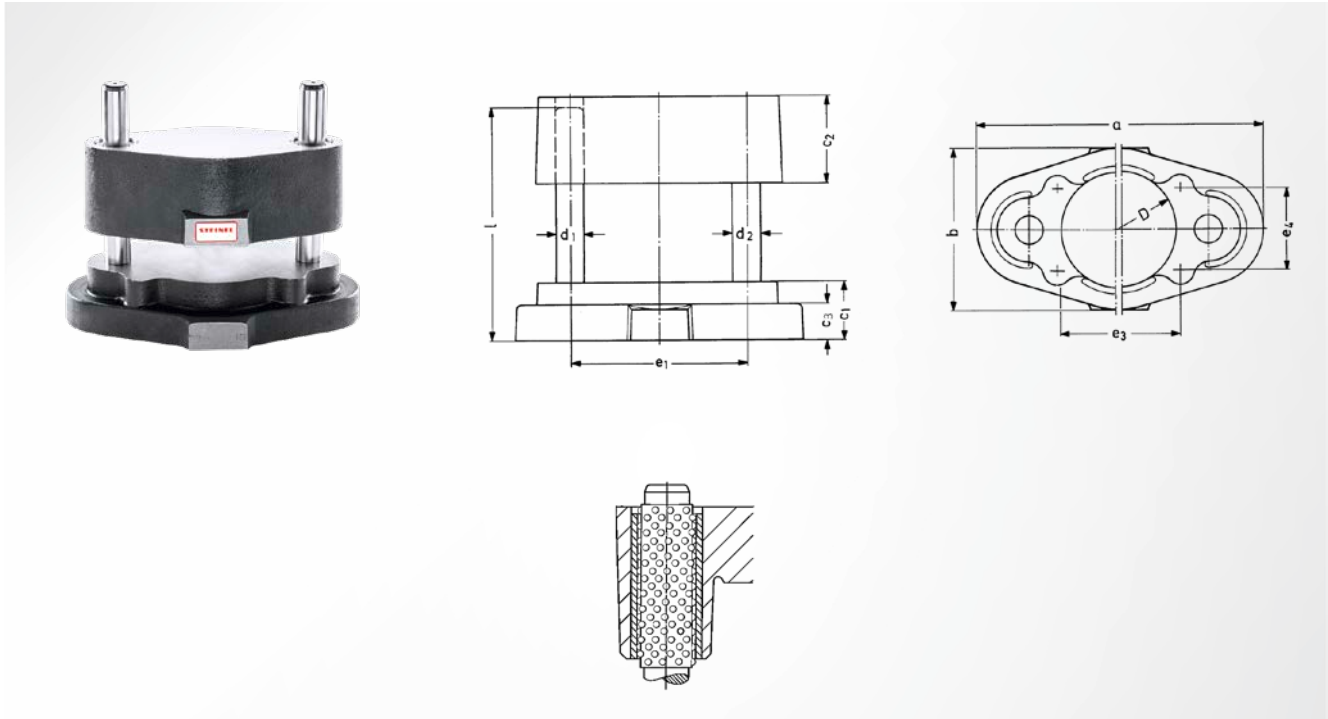
Module system

Machine elements

Accessories

# 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

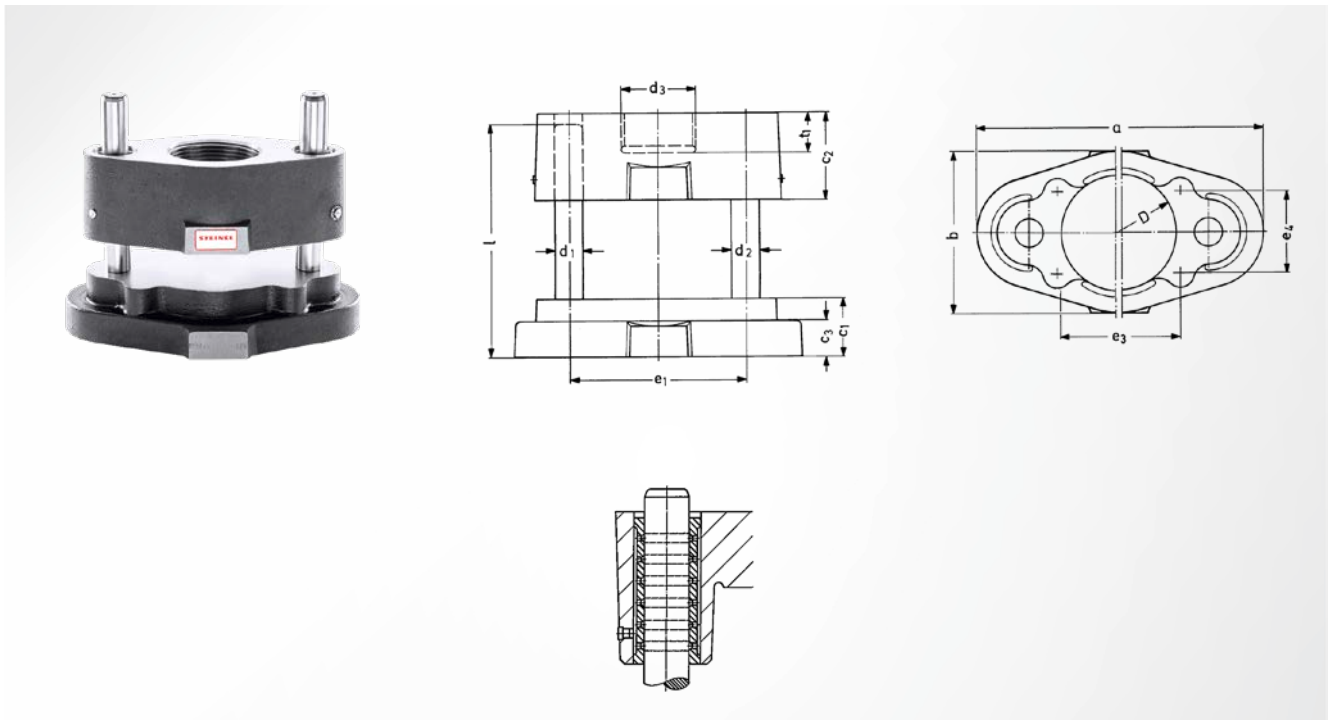
parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>3</sub>	e <sub>4</sub>	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

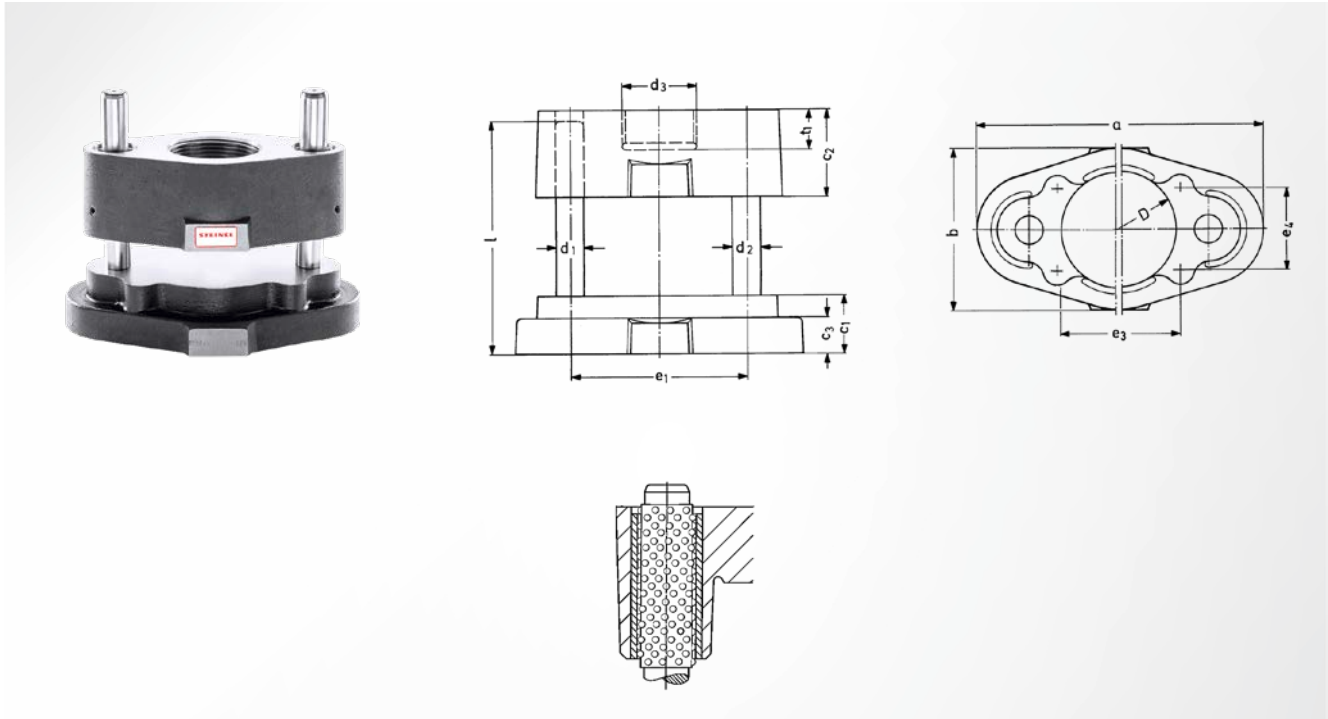
Pillar position

parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	d <sub>3</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>3</sub>	e <sub>4</sub>	t <sub>1</sub>	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

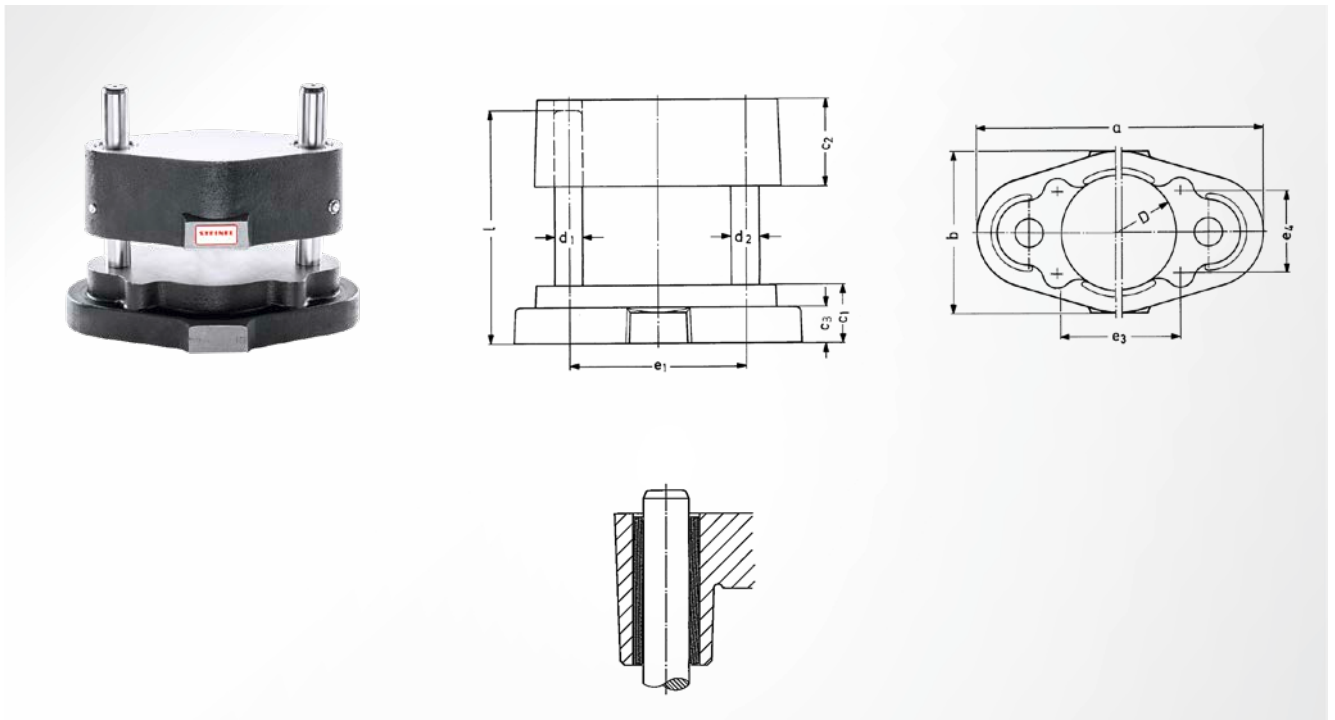
Working surface  
round

Pillar position  
parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	d <sub>3</sub>	d <sub>1</sub> /d <sub>2</sub> x l	e <sub>1</sub>	e <sub>3</sub>	e <sub>4</sub>	t <sub>1</sub>	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 <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>3</sub>	e <sub>4</sub>	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

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

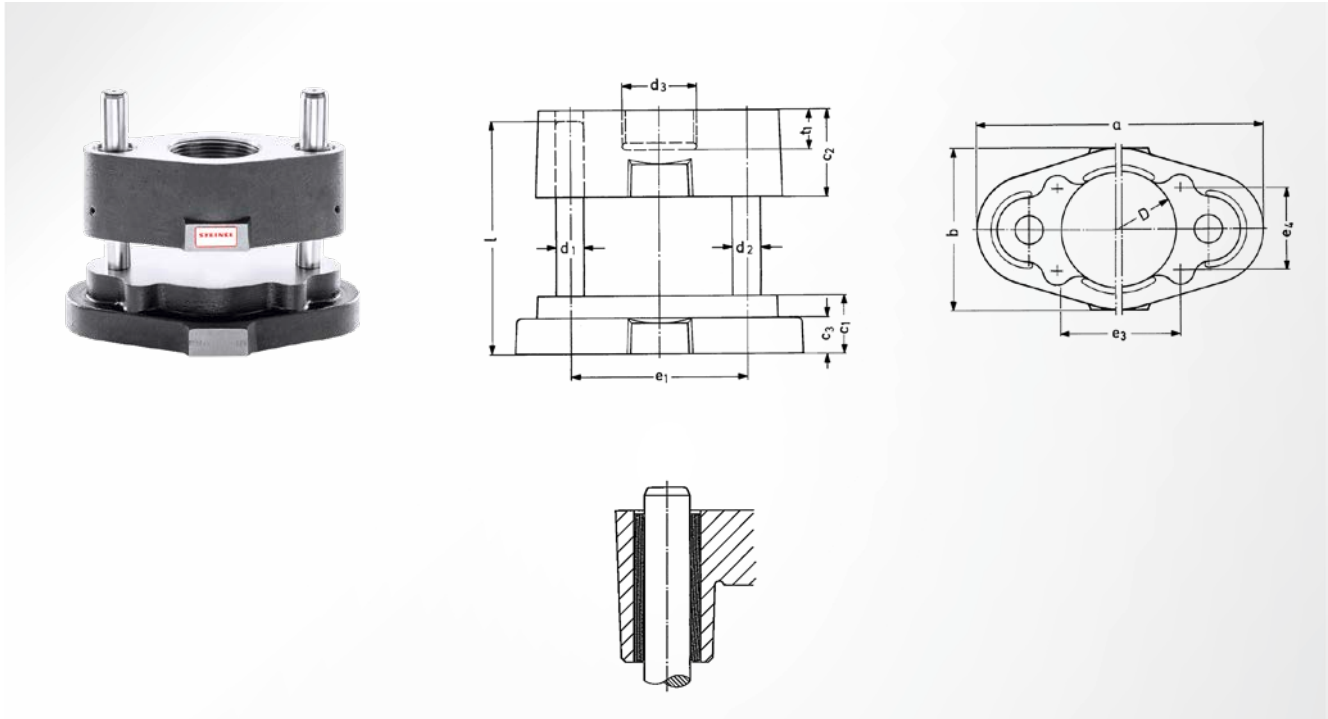
Module system

Machine elements

Accessories

# 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

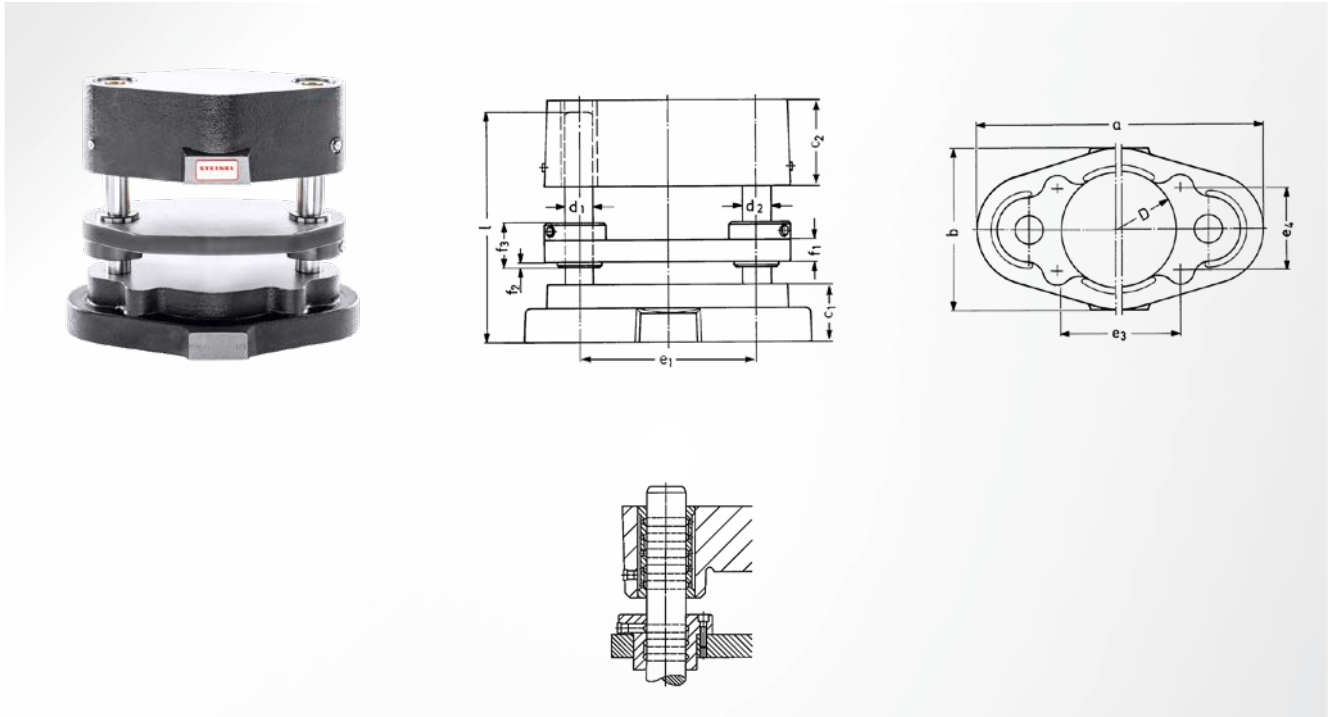
Working surface  
round

Pillar position  
parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	d <sub>3</sub>	d <sub>1</sub> /d <sub>2</sub> x l	e <sub>1</sub>	e <sub>3</sub>	e <sub>4</sub>	t <sub>1</sub>	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

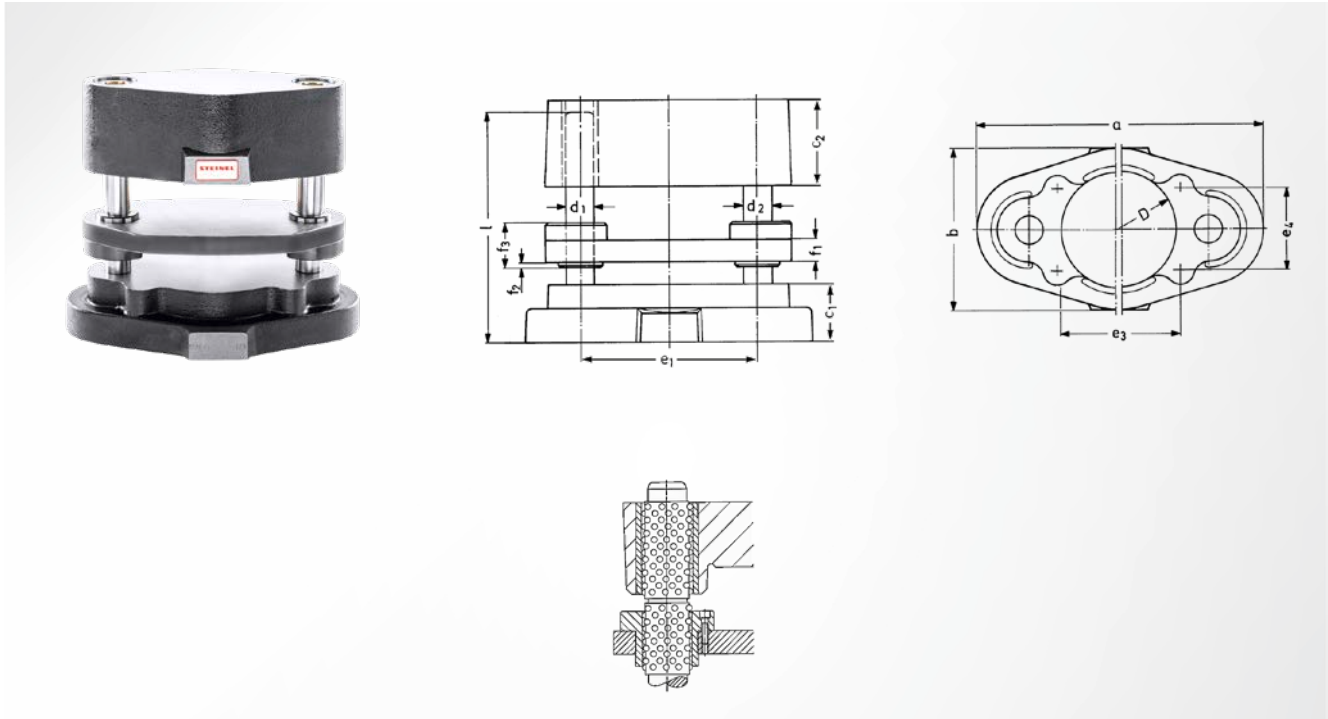
Pillar position

parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>3</sub>	e <sub>4</sub>	f <sub>1</sub>	f <sub>2</sub>	f <sub>3</sub>	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

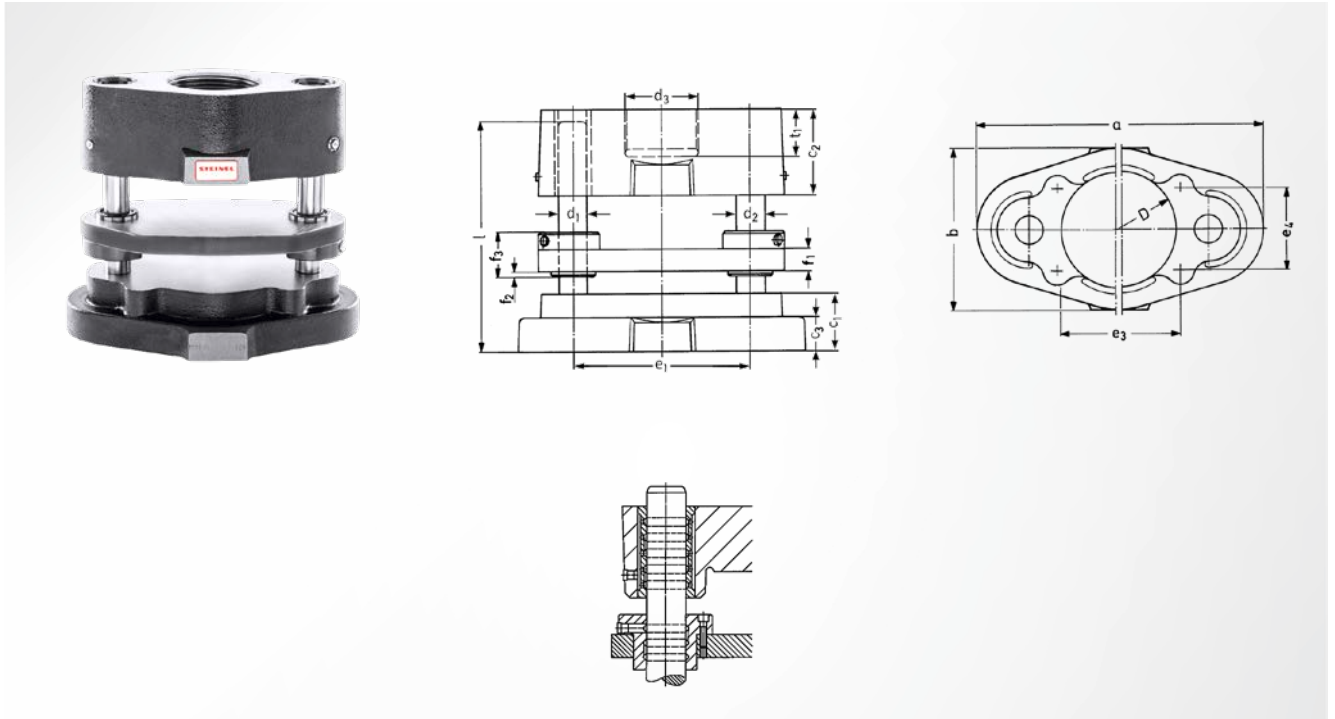
Pillar position

parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>3</sub>	e <sub>4</sub>	f <sub>1</sub>	f <sub>2</sub>	f <sub>3</sub>	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

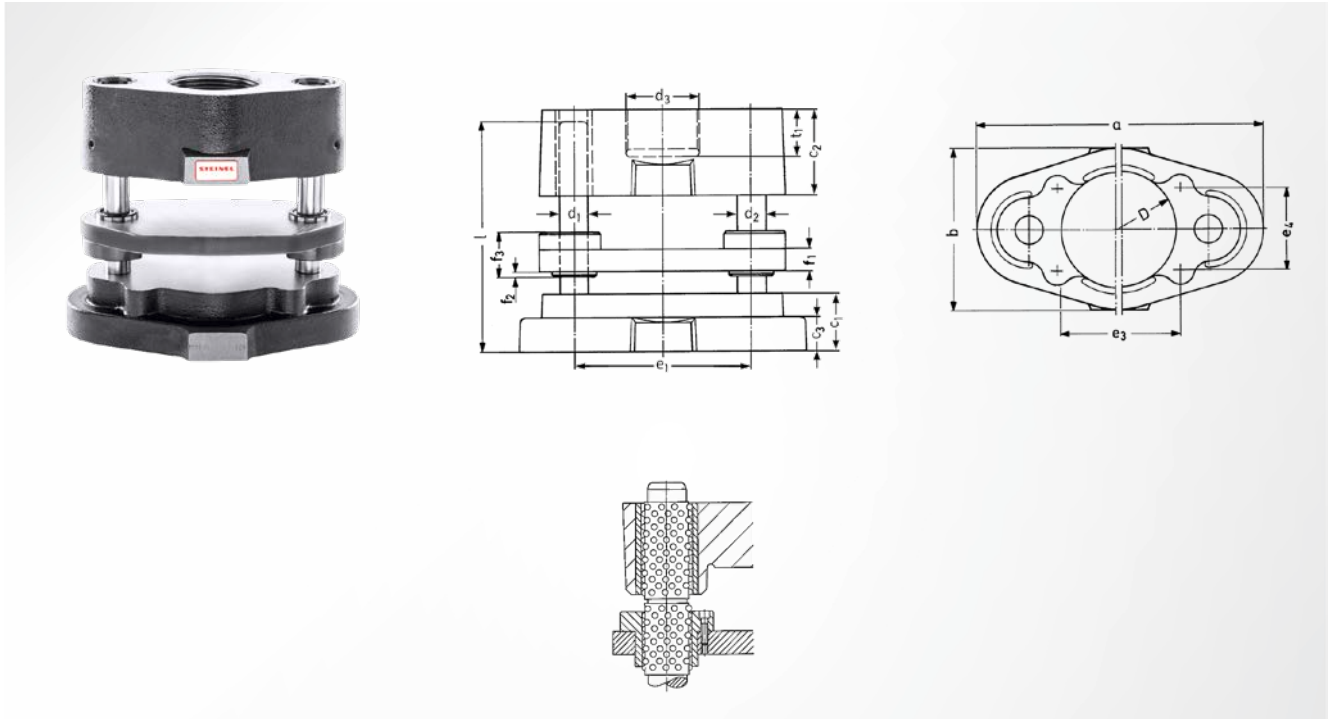
Pillar position

parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	d <sub>3</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>3</sub>	e <sub>4</sub>	f <sub>1</sub>	f <sub>2</sub>	f <sub>3</sub>	t <sub>1</sub>	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

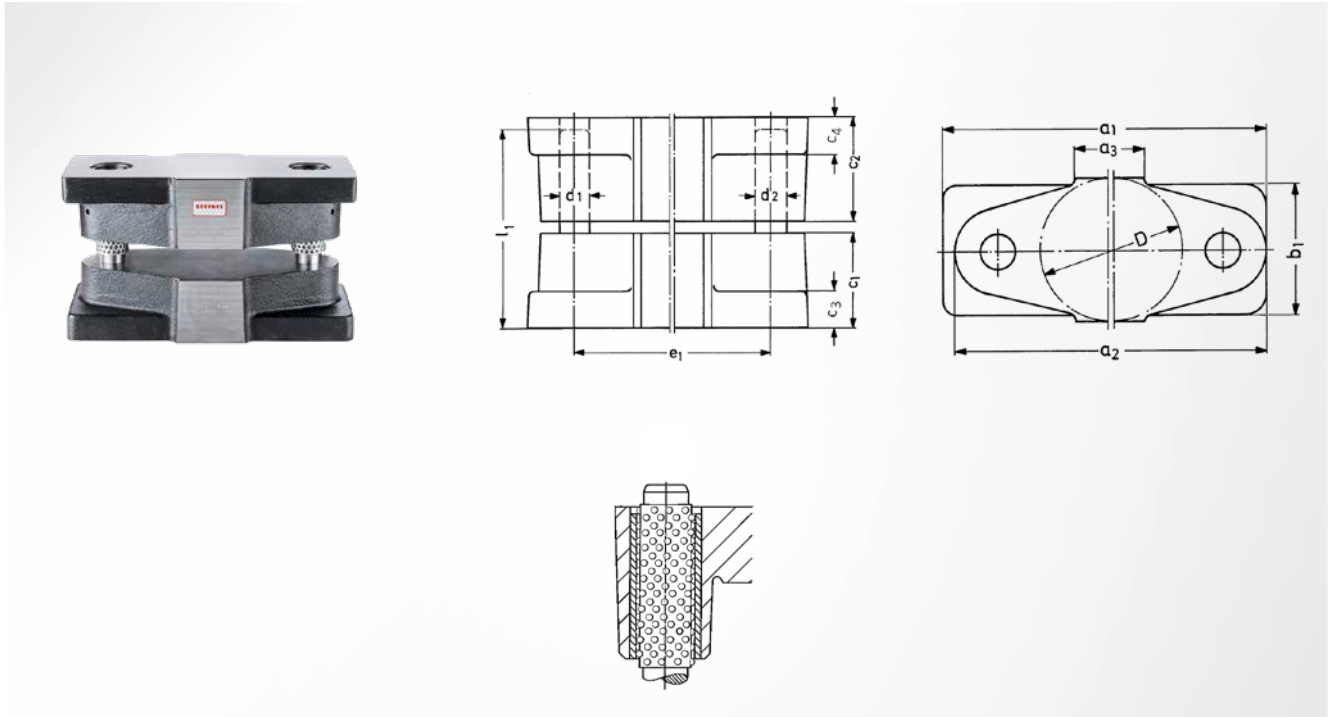
Pillar position  
parallel centred

D	a	b	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	d <sub>3</sub>	d <sub>1</sub> / d <sub>2</sub> x l	e <sub>1</sub>	e <sub>3</sub>	e <sub>4</sub>	f <sub>1</sub>	f <sub>2</sub>	f <sub>3</sub>	t <sub>1</sub>	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 <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	b <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	d <sub>1</sub> / d <sub>2</sub> x l <sub>1</sub>	e <sub>1</sub>	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

Guide units

Active elements

Spring elements

Nitrogen systems

Tapping units

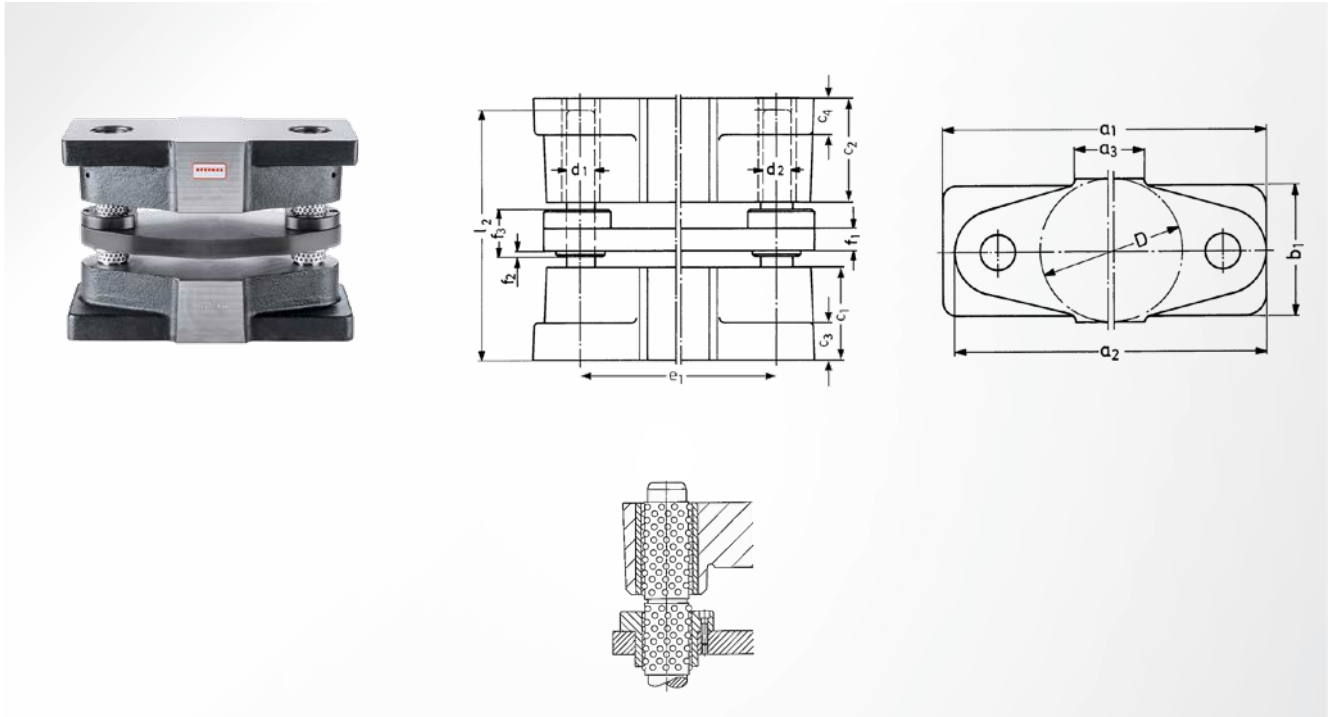
Module system

Machine elements

Accessories

# 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 <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	b <sub>1</sub>	c <sub>1</sub>	c <sub>2</sub>	c <sub>3</sub>	c <sub>4</sub>	d <sub>1</sub> / d <sub>2</sub> x l <sub>2</sub>	e <sub>1</sub>	f <sub>1</sub>	f <sub>2</sub>	f <sub>3</sub>	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



Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

Machine elements

Accessories



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	ST7561 2.119	ST7111 2.121	ST7112 2.122	ST7361 2.123	ST7360 2.124
ST7366 2.125	ST7367 2.126	ST7377 2.126	ST7387 2.127	SZ7368 2.127	ST7108 (inch) 2.128
ST7120 (inch) 2.129	ST7130 (inch) 2.131	ST7406 (inch) 2.132	ST7419 (inch) 2.133	ST7416 (inch) 2.134	ST7132 (inch) 2.135
SZ8514 (inch) 2.136					

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

Machine elements

Accessories

## 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

### 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.

### 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

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 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,
with small middle mount shoulder	12-50	90-520		Fitting diameter ISO js4, Installation in mounting bore ISO H6
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

Active  
elements

Spring  
elements

Nitrogen  
systems

Tapping  
units

Module  
system

Machine  
elements

Accessories

## Roller guides (roller and ball guides)



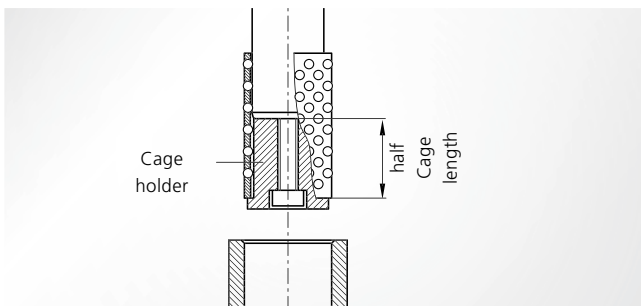
STEINEL roller guides (roller and ball guides) consist of a guide pillar, a roller or ball guide and a guide bush, which are paired together free of clearance. The cage travel is only half as long as the stroke of the guide.

### 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

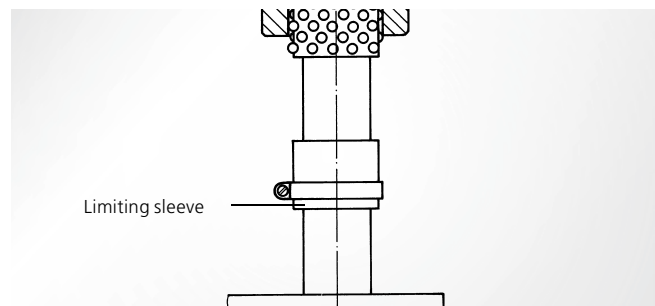
### Accessories and options

#### 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

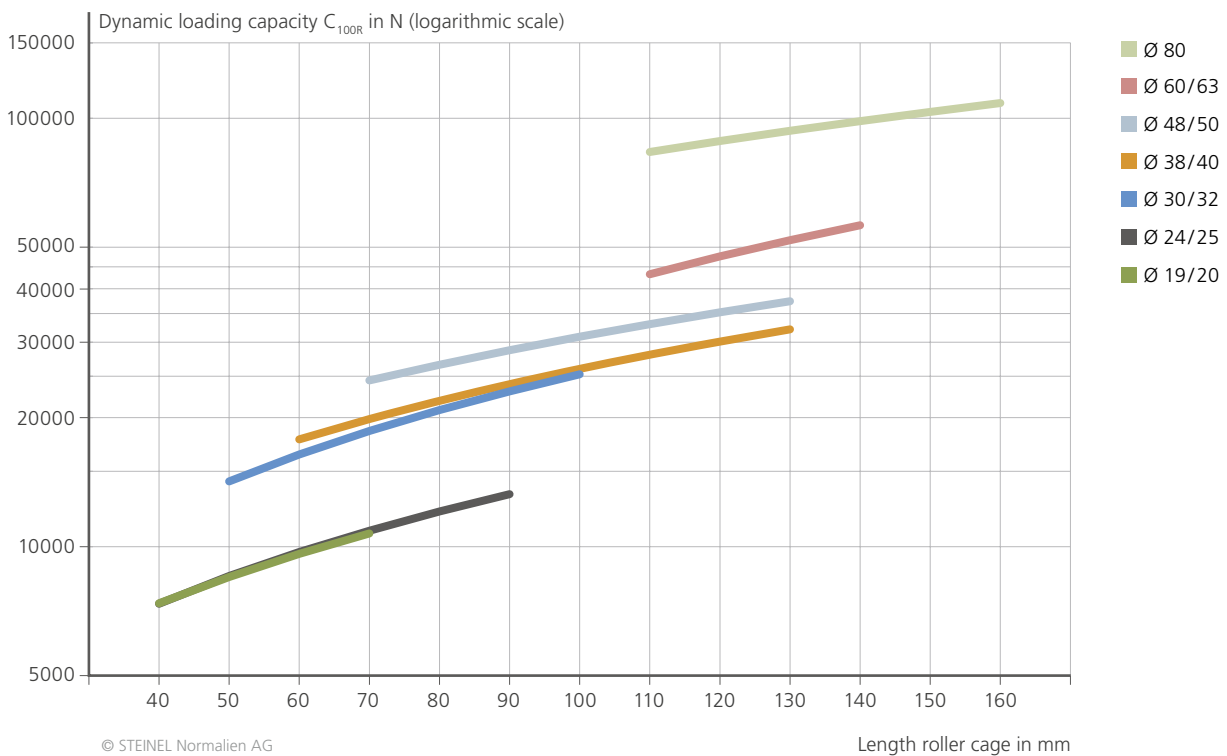


### Application

#### 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



## Ball guides



### 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

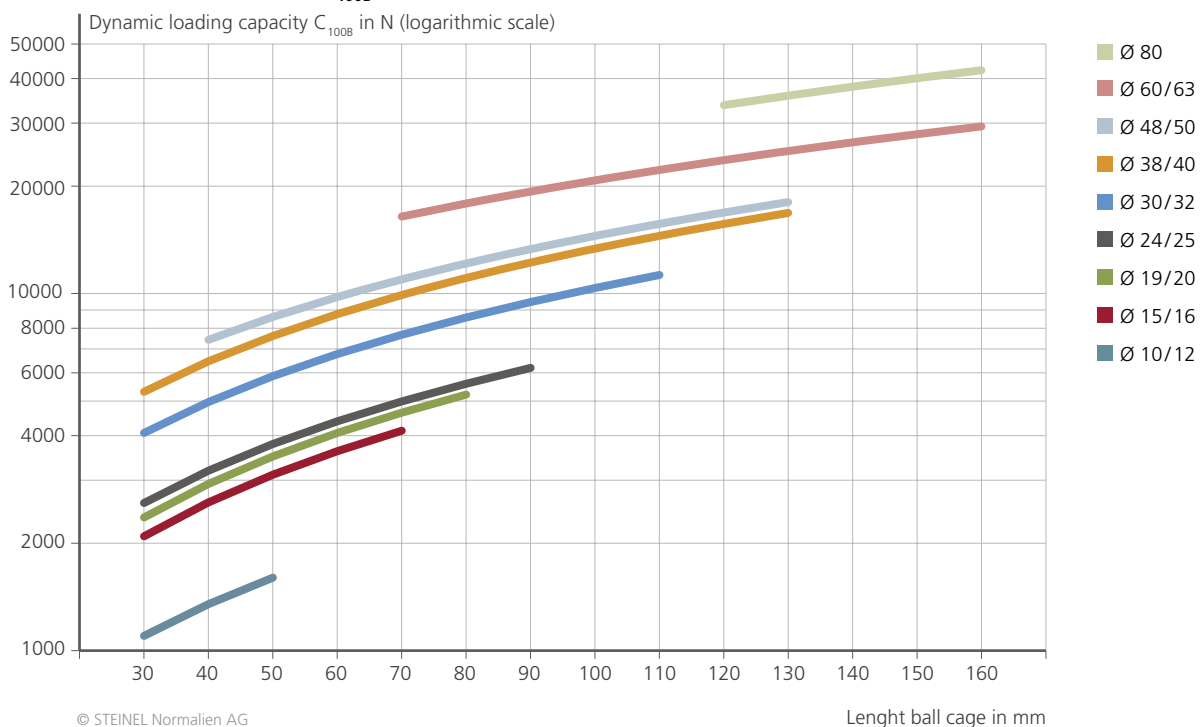
#### brass ball cage

- 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



## Ball guides

### 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.



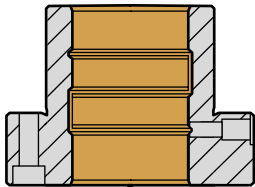
## Sliding guides (steel with bronze coating, solid lubricant, solid lubricant rings)



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

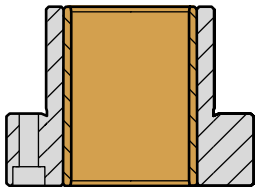
### Sliding guides

#### Steel with bronze coating



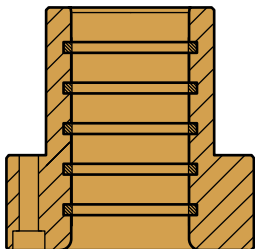
A bronze layer is galvanically applied to the running surfaces of the hardened steel guide bushes. The hard, extremely low-wear bronze layer is honed to the highest surface quality.

#### 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

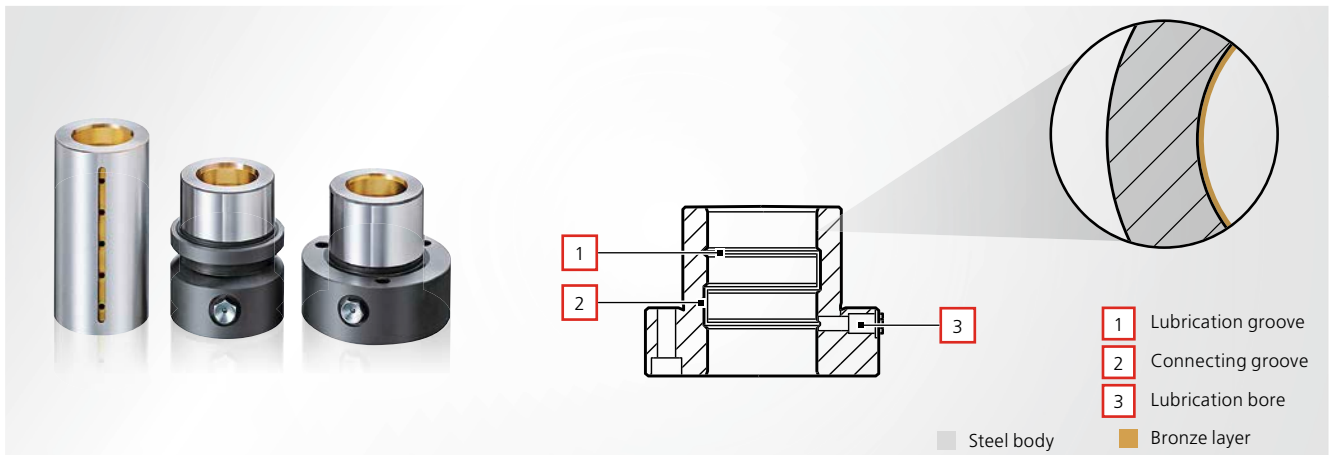


The low-maintenance bronze guide bushes are equipped with solid lubricant rings; these create a lubricating film between the bush and guide pillar. In the case of strokes which are smaller than the distance between these rings, no dry-running properties are provided.

### 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

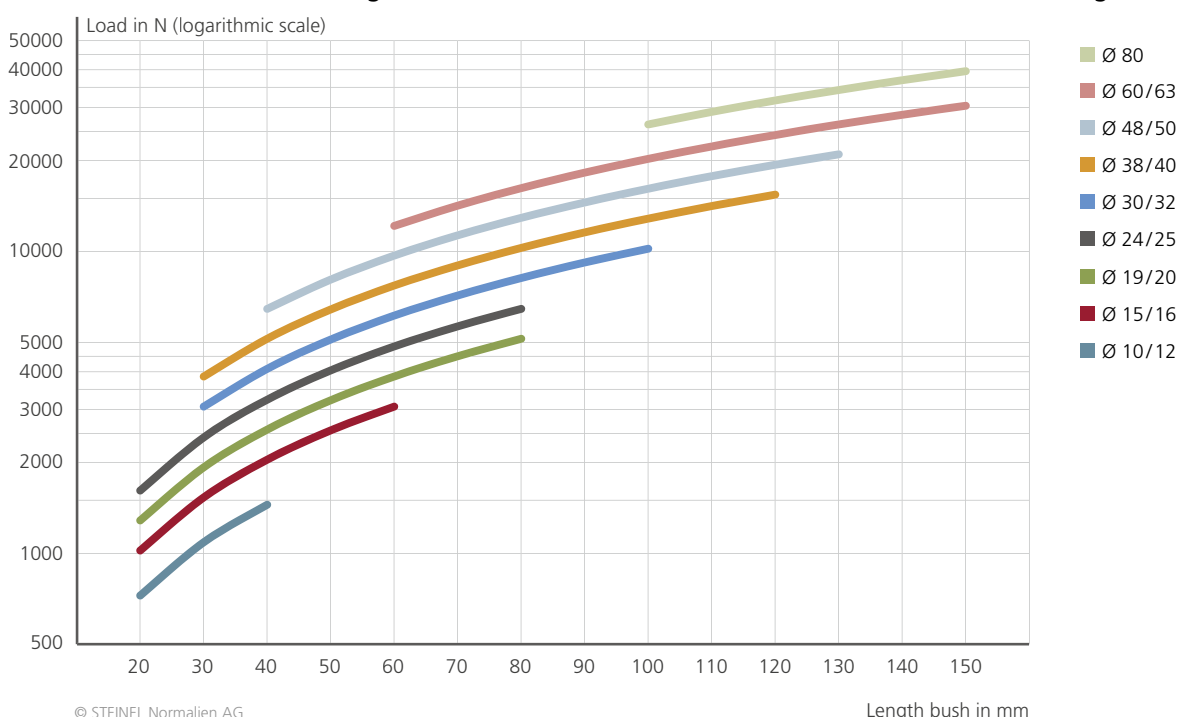
- The design of the internal lubrication system guarantees an even distribution of lubricant on the entire sliding surface and provides an effective shielding against dirt.

- 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

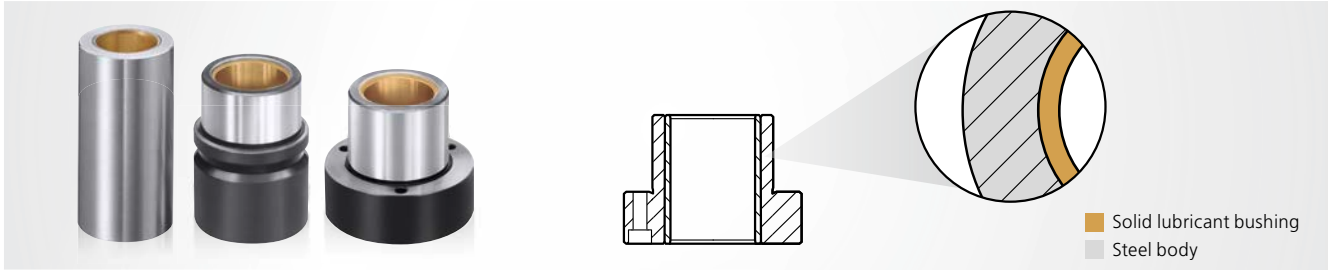
- Suitable for applications with all large strokes, high lateral forces as well as within environments susceptible to contamination.
- Sliding speed up to 20 m/min
- With an optimal design of the lubrication, guide clearance, stroke length, radial load and heat dissipation, high stroke frequencies of up to 800 strokes/min are possible
- Guide clearance of 2–7  $\mu\text{m}$  (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



## 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 (MoS<sub>2</sub>) 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

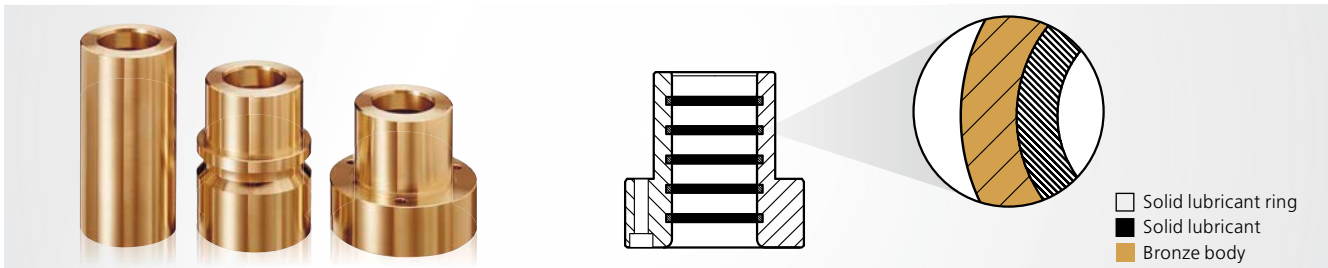
- The sintered bronze solid lubricant assumes the lubricating function between the bush and pillar.

- 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.

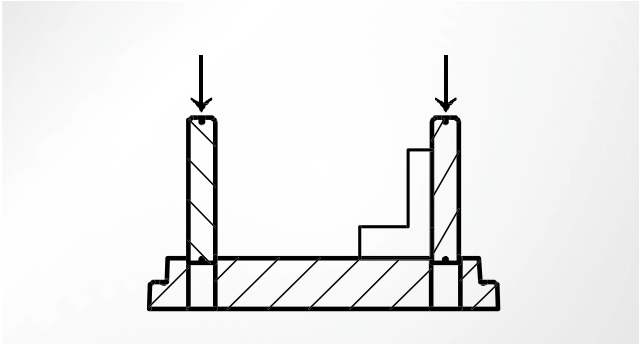
#### Application

- 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

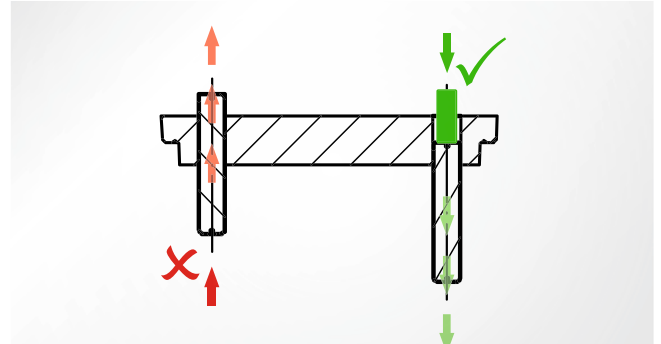
### Installation instructions for smooth pillars

Installation of the guide pillar



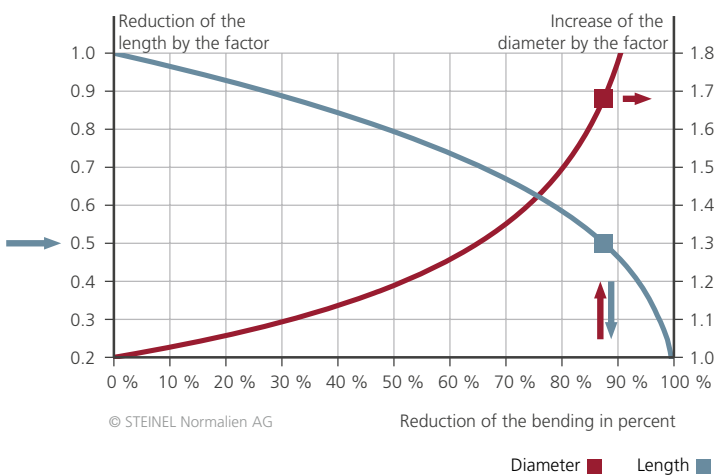
Carefully clean the boreholes in the top and bottom parts and apply oil to them (no grease). Slide the pillars in the top part. Place plane-parallel ground bars between the upper and bottom part. Drive the pillars approx. 3 mm deep into the bottom part. Push in the pillars using a hydraulic press or 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.

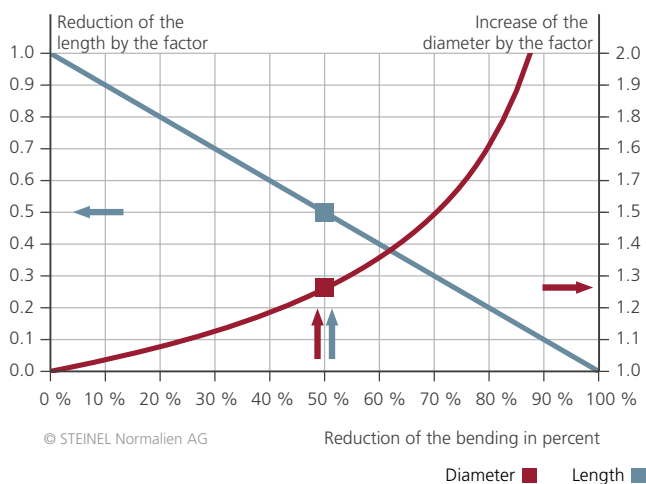
### Pillars = bending subject to the length or diameter of the pillar



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.

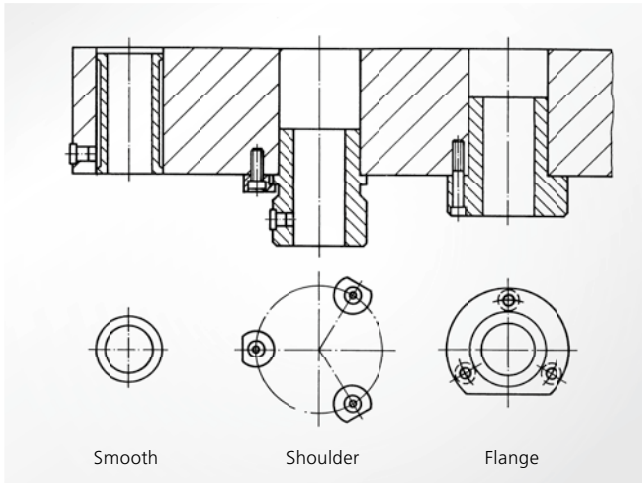
### Pillars = bending stress subject to the length or diameter of the pillar



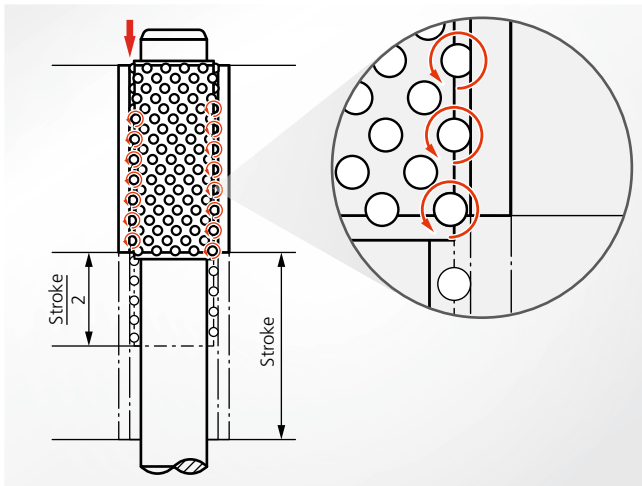
There are two possibilities for the reduction of the bending stress in a pillar by 50 %;

- 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.





## 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	17 2	20 2	24 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

# Guide units

## 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

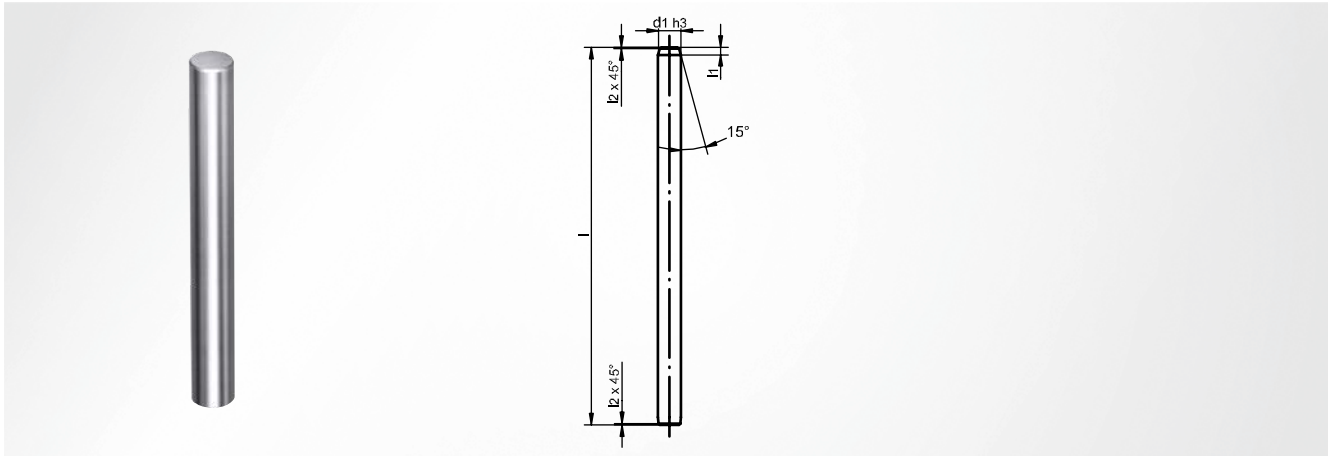
Tensile strength N/mm <sup>2</sup>	Vickers hardness HV	Brinell hardness HB	Rockwell hardness	
			HRB	HRC
255	80	76.0		
270	85	80.7	41.0	
285	90	85.5	48.0	
305	95	90.2	52.0	
320	100	95.0	56.2	
335	105	99.8		
350	110	105	62.3	
370	115	109		
385	120	114	66.7	
400	125	119		
415	130	124	71.2	
430	135	128		
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

Tensile strength N/mm <sup>2</sup>	Vickers hardness HV	Brinell hardness HB	Rockwell hardness	
			HRB	HRC
1125	350	333		35.5
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 <b>03 x 030</b>
	40	1.5	0.2	ST7190 <b>03 x 040</b>
	60	1.5	0.2	ST7190 <b>03 x 060</b>
	80	1.5	0.2	ST7190 <b>03 x 080</b>
4	50	1.5	0.2	ST7190 <b>04 x 050</b>
	60	1.5	0.2	ST7190 <b>04 x 060</b>
	80	1.5	0.2	ST7190 <b>04 x 080</b>
	100	1.5	0.2	ST7190 <b>04 x 100</b>
5	50	1.5	0.2	ST7190 <b>05 x 050</b>
	60	1.5	0.2	ST7190 <b>05 x 060</b>
	80	1.5	0.2	ST7190 <b>05 x 080</b>
	100	1.5	0.2	ST7190 <b>05 x 100</b>
6	60	2.0	0.4	ST7190 <b>06 x 060</b>
	80	2.0	0.4	ST7190 <b>06 x 080</b>
	100	2.0	0.4	ST7190 <b>06 x 100</b>
	125	2.0	0.4	ST7190 <b>06 x 125</b>
8	80	2.0	0.4	ST7190 <b>08 x 080</b>
	100	2.0	0.4	ST7190 <b>08 x 100</b>
	125	2.0	0.4	ST7190 <b>08 x 125</b>
	160	2.0	0.4	ST7190 <b>08 x 160</b>
10	80	3.0	0.6	ST7190 <b>10 x 080</b>
	100	3.0	0.6	ST7190 <b>10 x 100</b>
	125	3.0	0.6	ST7190 <b>10 x 125</b>
	160	3.0	0.6	ST7190 <b>10 x 160</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

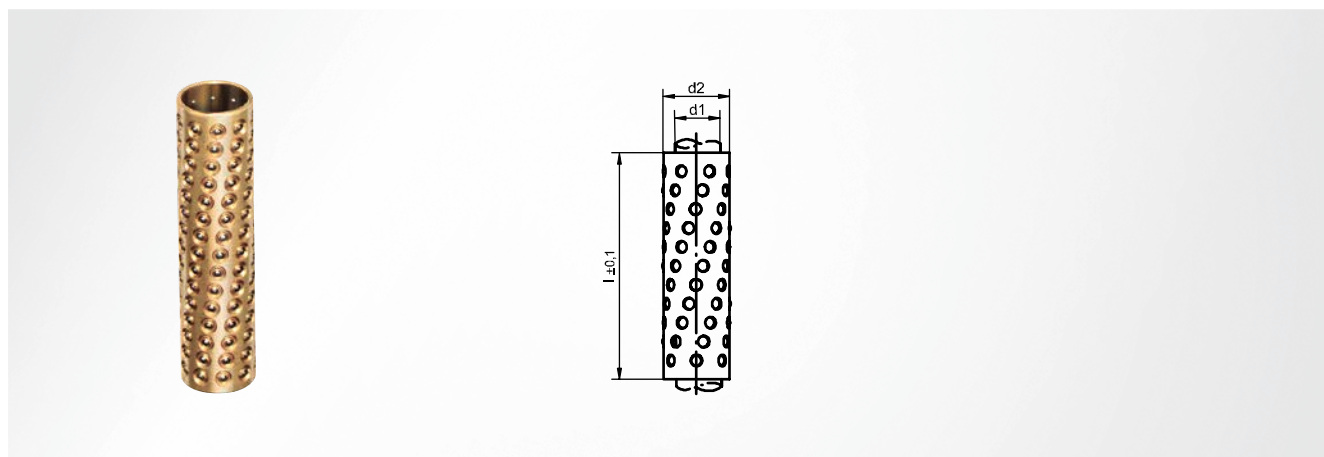
Module system

Machine elements

Accessories

# ST7192 Ball cage

Brass, Mini-series



## Material

Brass 2.0401

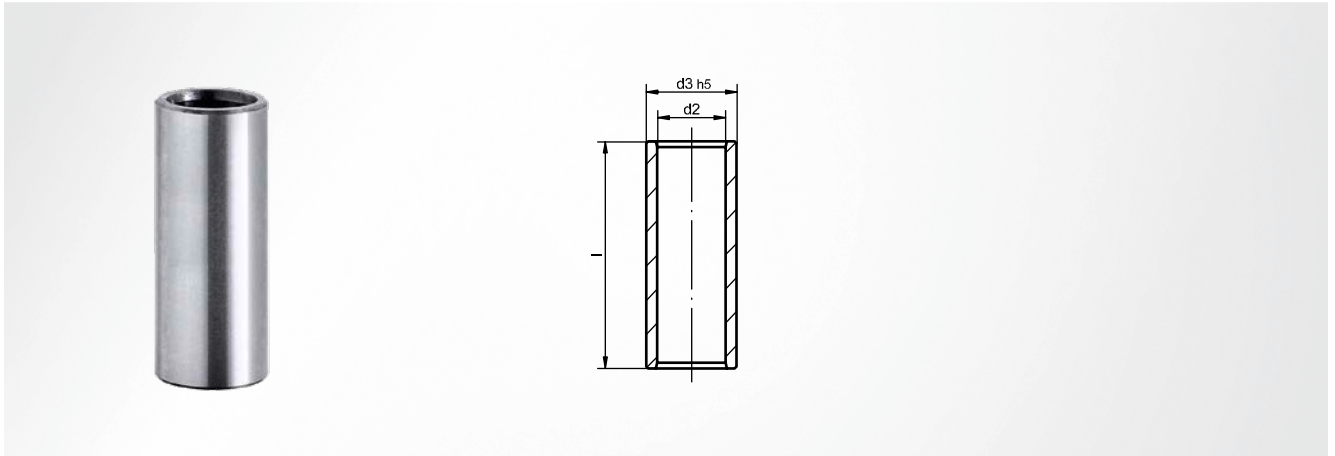
## Ball property

Steel; hardened; quality class 1; sorted

$d_1$	$d_2$	$l \pm 0.1$	Item number
3	5	10	ST7192 <b>03 x 10</b>
		20	ST7192 <b>03 x 20</b>
		30	ST7192 <b>03 x 30</b>
4	6	10	ST7192 <b>04 x 10</b>
		20	ST7192 <b>04 x 20</b>
		30	ST7192 <b>04 x 30</b>
5	7	10	ST7192 <b>05 x 10</b>
		20	ST7192 <b>05 x 20</b>
		30	ST7192 <b>05 x 30</b>
6	9	20	ST7192 <b>06 x 20</b>
		30	ST7192 <b>06 x 30</b>
		40	ST7192 <b>06 x 40</b>
8	11	20	ST7192 <b>08 x 20</b>
		30	ST7192 <b>08 x 30</b>
		40	ST7192 <b>08 x 40</b>
10	13	20	ST7192 <b>10 x 20</b>
		30	ST7192 <b>10 x 30</b>
		40	ST7192 <b>10 x 40</b>

# ST7191 Guide bush

smooth, Mini-series



**Material**

Steel 1.3505 (100 Cr6); hardened

**Installation in mounting bore**

ISO H6

**Hardness**

62 ±1 HRC

**Optional accessories**

SZ9742

**Installation instruction**

Secure with adhesive; do not press in

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

Active elements

Spring elements

Nitrogen systems

Tapping units

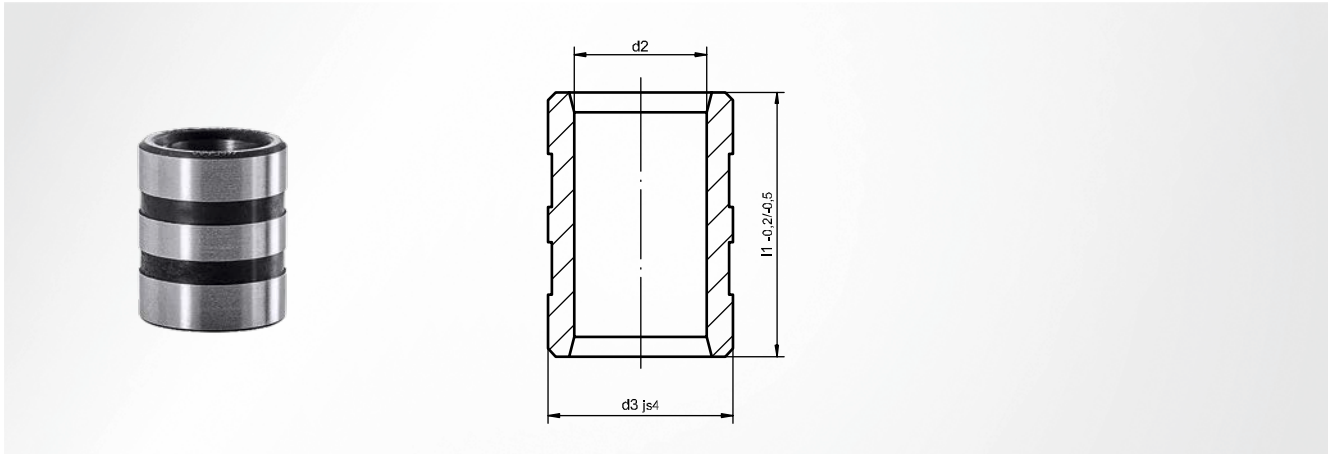
Module system

Machine elements

Accessories

# ST7197 Guide bush

smooth with adhesive grooves, Mini-series



Referring to DIN 9831 / ISO 9448

**Hardness**

62 ±1 HRC

**Material**

Steel 1.3505 (100 Cr6); hardened

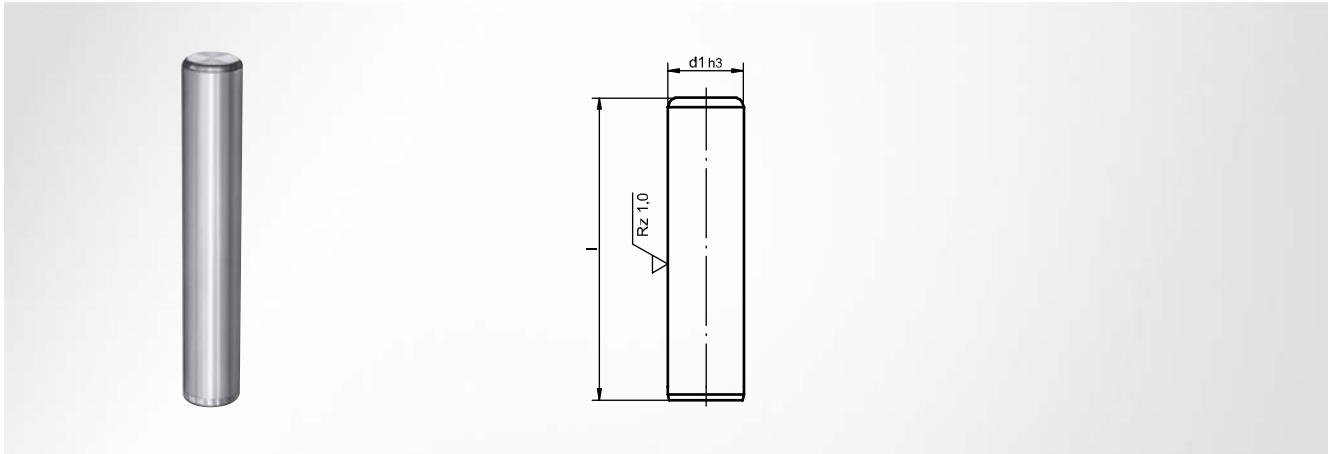
**Installation instruction**

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 <b>06 x 015</b>
			20	ST7197 <b>06 x 020</b>
			25	ST7197 <b>06 x 025</b>
			30	ST7197 <b>06 x 030</b>
			40	ST7197 <b>06 x 040</b>
8	11	15	20	ST7197 <b>08 x 020</b>
			25	ST7197 <b>08 x 025</b>
			30	ST7197 <b>08 x 030</b>
			35	ST7197 <b>08 x 035</b>
			40	ST7197 <b>08 x 040</b>
10	13	19	20	ST7197 <b>10 x 020</b>
			25	ST7197 <b>10 x 025</b>
			30	ST7197 <b>10 x 030</b>
			40	ST7197 <b>10 x 040</b>
			45	ST7197 <b>10 x 045</b>

# 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
20	280	ST7100 19 x 280
	100	ST7100 20 x 100
	112	ST7100 20 x 112
20	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
24	315	ST7100 24 x 315
	355	ST7100 24 x 355
	400	ST7100 24 x 400
	112	ST7100 25 x 112
	125	ST7100 25 x 125
	140	ST7100 25 x 140
	160	ST7100 25 x 160

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

Machine elements

Accessories

smooth

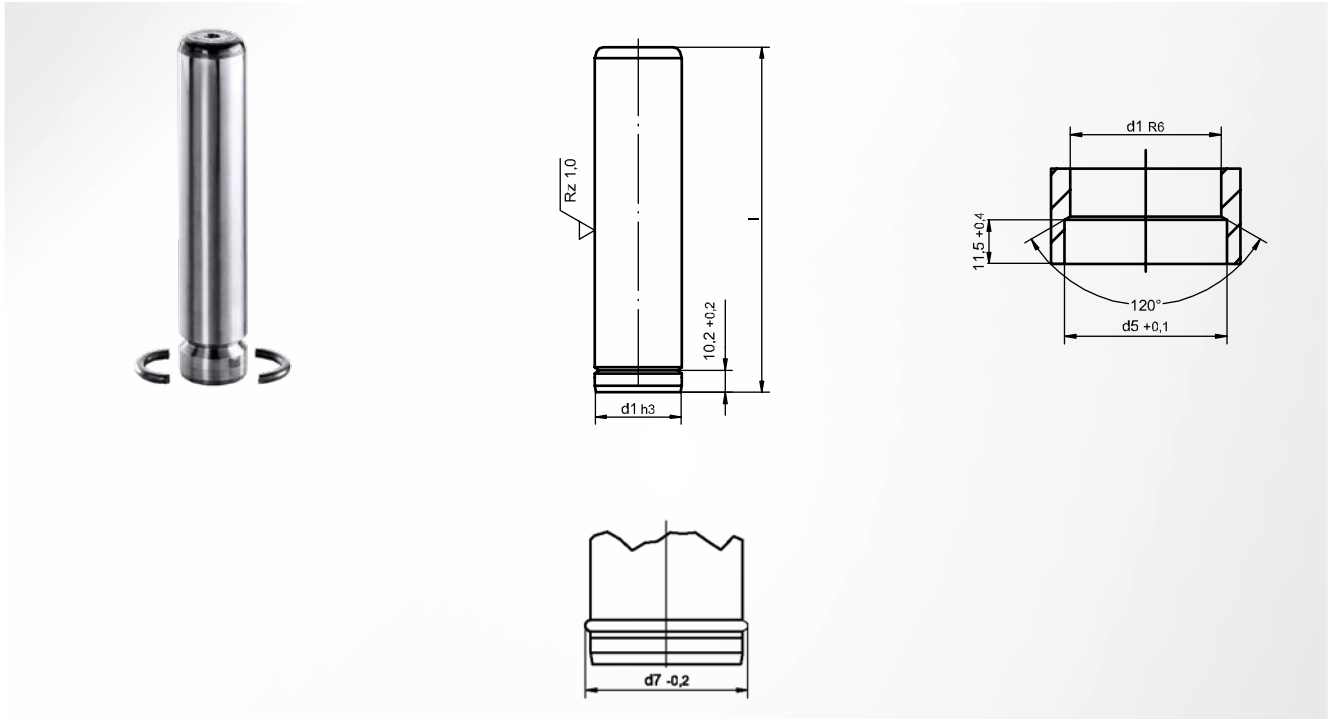
$d_1^{h3}$	l	Item number	
25	180	ST7100 <b>25 x 180</b>	
	200	ST7100 <b>25 x 200</b>	
	224	ST7100 <b>25 x 224</b>	
	250	ST7100 <b>25 x 250</b>	
	280	ST7100 <b>25 x 280</b>	
	315	ST7100 <b>25 x 315</b>	
	355	ST7100 <b>25 x 355</b>	
	400	ST7100 <b>25 x 400</b>	
30	125	ST7100 <b>30 x 125</b>	
	140	ST7100 <b>30 x 140</b>	
	160	ST7100 <b>30 x 160</b>	
	180	ST7100 <b>30 x 180</b>	
	200	ST7100 <b>30 x 200</b>	
	224	ST7100 <b>30 x 224</b>	
	250	ST7100 <b>30 x 250</b>	
	280	ST7100 <b>30 x 280</b>	
	315	ST7100 <b>30 x 315</b>	
	355	ST7100 <b>30 x 355</b>	
	400	ST7100 <b>30 x 400</b>	
	32	125	ST7100 <b>32 x 125</b>
140		ST7100 <b>32 x 140</b>	
160		ST7100 <b>32 x 160</b>	
180		ST7100 <b>32 x 180</b>	
200		ST7100 <b>32 x 200</b>	
224		ST7100 <b>32 x 224</b>	
250		ST7100 <b>32 x 250</b>	
280		ST7100 <b>32 x 280</b>	
315		ST7100 <b>32 x 315</b>	
355		ST7100 <b>32 x 355</b>	
400		ST7100 <b>32 x 400</b>	
38		160	ST7100 <b>38 x 160</b>
	180	ST7100 <b>38 x 180</b>	
	200	ST7100 <b>38 x 200</b>	
	224	ST7100 <b>38 x 224</b>	
	250	ST7100 <b>38 x 250</b>	
	280	ST7100 <b>38 x 280</b>	
	315	ST7100 <b>38 x 315</b>	
	355	ST7100 <b>38 x 355</b>	
	400	ST7100 <b>38 x 400</b>	
	450	ST7100 <b>38 x 450</b>	
	40	160	ST7100 <b>40 x 160</b>
		180	ST7100 <b>40 x 180</b>
200		ST7100 <b>40 x 200</b>	
224		ST7100 <b>40 x 224</b>	
250		ST7100 <b>40 x 250</b>	
280		ST7100 <b>40 x 280</b>	

$d_1^{h3}$	l	Item number	
40	315	ST7100 <b>40 x 315</b>	
	355	ST7100 <b>40 x 355</b>	
	400	ST7100 <b>40 x 400</b>	
	450	ST7100 <b>40 x 450</b>	
	500	ST7100 <b>40 x 500</b>	
48	180	ST7100 <b>48 x 180</b>	
	200	ST7100 <b>48 x 200</b>	
	224	ST7100 <b>48 x 224</b>	
	250	ST7100 <b>48 x 250</b>	
	280	ST7100 <b>48 x 280</b>	
	315	ST7100 <b>48 x 315</b>	
	355	ST7100 <b>48 x 355</b>	
	400	ST7100 <b>48 x 400</b>	
50	180	ST7100 <b>50 x 180</b>	
	200	ST7100 <b>50 x 200</b>	
	224	ST7100 <b>50 x 224</b>	
	250	ST7100 <b>50 x 250</b>	
	280	ST7100 <b>50 x 280</b>	
	315	ST7100 <b>50 x 315</b>	
	355	ST7100 <b>50 x 355</b>	
	400	ST7100 <b>50 x 400</b>	
	450	ST7100 <b>50 x 450</b>	
	500	ST7100 <b>50 x 500</b>	
	60	224	ST7100 <b>60 x 224</b>
		250	ST7100 <b>60 x 250</b>
280		ST7100 <b>60 x 280</b>	
315		ST7100 <b>60 x 315</b>	
355		ST7100 <b>60 x 355</b>	
400		ST7100 <b>60 x 400</b>	
450		ST7100 <b>60 x 450</b>	
500		ST7100 <b>60 x 500</b>	
63		224	ST7100 <b>63 x 224</b>
		250	ST7100 <b>63 x 250</b>
	280	ST7100 <b>63 x 280</b>	
	315	ST7100 <b>63 x 315</b>	
	355	ST7100 <b>63 x 355</b>	
	400	ST7100 <b>63 x 400</b>	
	450	ST7100 <b>63 x 450</b>	
	500	ST7100 <b>63 x 500</b>	
80	280	ST7100 <b>80 x 280</b>	
	315	ST7100 <b>80 x 315</b>	
	355	ST7100 <b>80 x 355</b>	
	400	ST7100 <b>80 x 400</b>	
	450	ST7100 <b>80 x 450</b>	
	500	ST7100 <b>80 x 500</b>	



# 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 <b>10 x 090</b>
			100	ST7105 <b>10 x 100</b>
			112	ST7105 <b>10 x 112</b>
			125	ST7105 <b>10 x 125</b>
			140	ST7105 <b>10 x 140</b>
			12	15
100	ST7105 <b>12 x 100</b>			
112	ST7105 <b>12 x 112</b>			
125	ST7105 <b>12 x 125</b>			
140	ST7105 <b>12 x 140</b>			
15	18	18	90	
			100	ST7105 <b>15 x 100</b>
			112	ST7105 <b>15 x 112</b>
			125	ST7105 <b>15 x 125</b>
			140	ST7105 <b>15 x 140</b>
			160	ST7105 <b>15 x 160</b>
			180	ST7105 <b>15 x 180</b>
			200	ST7105 <b>15 x 200</b>
			224	ST7105 <b>15 x 224</b>
			250	ST7105 <b>15 x 250</b>
16	19	19	90	ST7105 <b>16 x 090</b>
			100	ST7105 <b>16 x 100</b>
			112	ST7105 <b>16 x 112</b>
			125	ST7105 <b>16 x 125</b>
			140	ST7105 <b>16 x 140</b>

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

# ST7105 Guide pillar

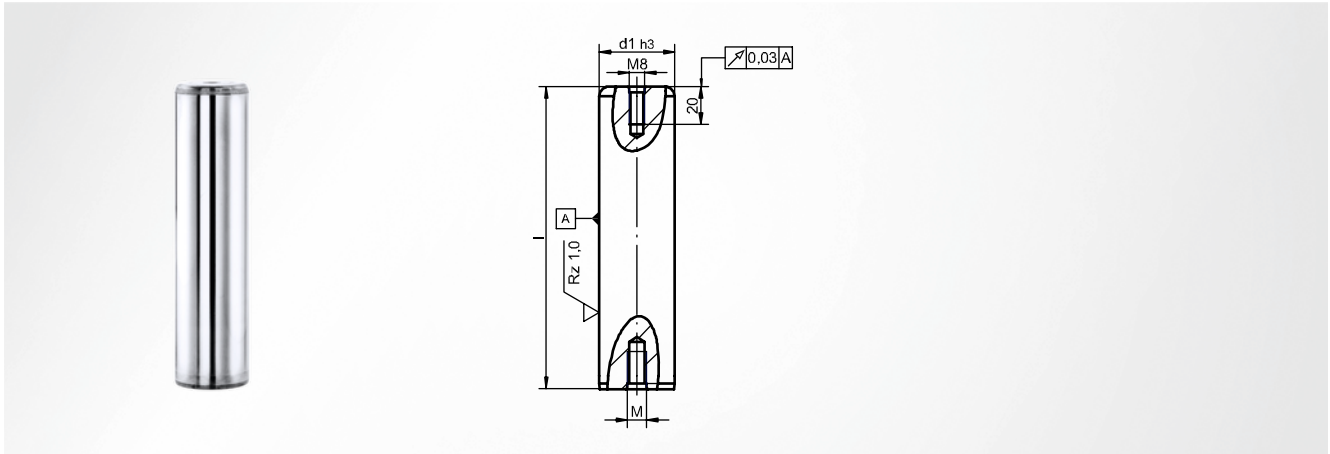
smooth, with recess and holding ring

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

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

# 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 <sub>1</sub> <sup>h3</sup>	Thread pressing site M	l	Item number
19	M8	100	ST7106 <b>19 x 100</b>
		112	ST7106 <b>19 x 112</b>
		125	ST7106 <b>19 x 125</b>
		140	ST7106 <b>19 x 140</b>
		160	ST7106 <b>19 x 160</b>
		180	ST7106 <b>19 x 180</b>
		200	ST7106 <b>19 x 200</b>
		224	ST7106 <b>19 x 224</b>
		250	ST7106 <b>19 x 250</b>
		280	ST7106 <b>19 x 280</b>
20	M8	100	ST7106 <b>20 x 100</b>
		112	ST7106 <b>20 x 112</b>
		125	ST7106 <b>20 x 125</b>
		140	ST7106 <b>20 x 140</b>
		160	ST7106 <b>20 x 160</b>
		180	ST7106 <b>20 x 180</b>
		200	ST7106 <b>20 x 200</b>
		224	ST7106 <b>20 x 224</b>
		250	ST7106 <b>20 x 250</b>
		280	ST7106 <b>20 x 280</b>
24	M8	112	ST7106 <b>24 x 112</b>
		125	ST7106 <b>24 x 125</b>
		140	ST7106 <b>24 x 140</b>
		160	ST7106 <b>24 x 160</b>
		180	ST7106 <b>24 x 180</b>
		200	ST7106 <b>24 x 200</b>
		224	ST7106 <b>24 x 224</b>
		250	ST7106 <b>24 x 250</b>
		280	ST7106 <b>24 x 280</b>
		315	ST7106 <b>24 x 315</b>
25	M8	355	ST7106 <b>24 x 355</b>
		400	ST7106 <b>24 x 400</b>
		112	ST7106 <b>25 x 112</b>

d <sub>1</sub> <sup>h3</sup>	Thread pressing site M	l	Item number
25	M8	125	ST7106 <b>25 x 125</b>
		140	ST7106 <b>25 x 140</b>
		160	ST7106 <b>25 x 160</b>
		180	ST7106 <b>25 x 180</b>
		200	ST7106 <b>25 x 200</b>
		224	ST7106 <b>25 x 224</b>
		250	ST7106 <b>25 x 250</b>
		280	ST7106 <b>25 x 280</b>
		315	ST7106 <b>25 x 315</b>
		355	ST7106 <b>25 x 355</b>
30	M8	400	ST7106 <b>25 x 400</b>
		125	ST7106 <b>30 x 125</b>
		140	ST7106 <b>30 x 140</b>
		160	ST7106 <b>30 x 160</b>
		180	ST7106 <b>30 x 180</b>
		200	ST7106 <b>30 x 200</b>
		224	ST7106 <b>30 x 224</b>
		250	ST7106 <b>30 x 250</b>
		280	ST7106 <b>30 x 280</b>
		315	ST7106 <b>30 x 315</b>
32	M8	355	ST7106 <b>30 x 355</b>
		400	ST7106 <b>30 x 400</b>
		125	ST7106 <b>32 x 125</b>
		140	ST7106 <b>32 x 140</b>
		160	ST7106 <b>32 x 160</b>
		180	ST7106 <b>32 x 180</b>
		200	ST7106 <b>32 x 200</b>
		224	ST7106 <b>32 x 224</b>
		250	ST7106 <b>32 x 250</b>
		280	ST7106 <b>32 x 280</b>
		315	ST7106 <b>32 x 315</b>
		355	ST7106 <b>32 x 355</b>
		400	ST7106 <b>32 x 400</b>

# ST7106 Guide pillar

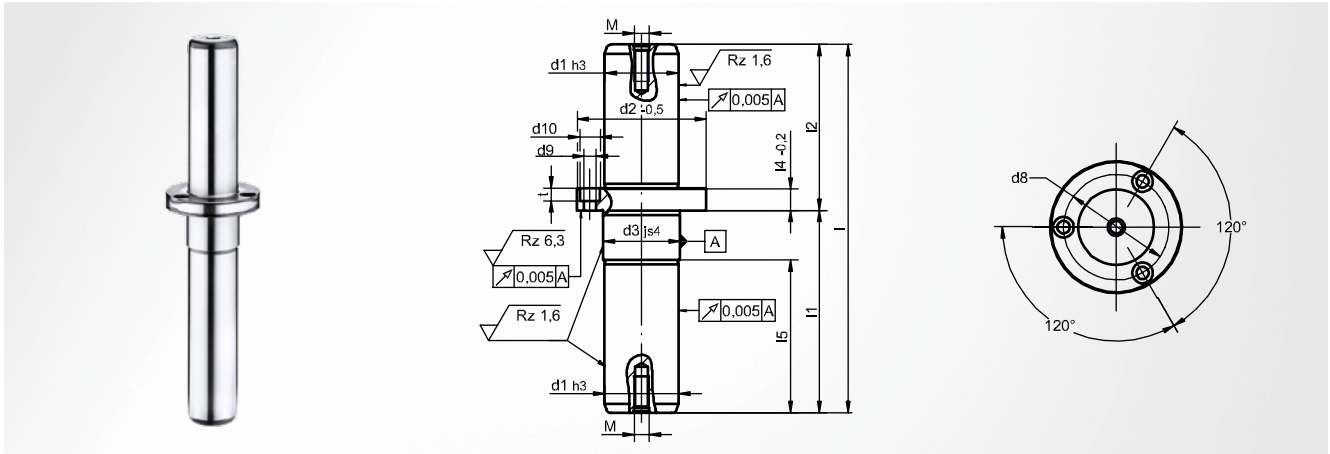
smooth, with internal thread, both-sided

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

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

# 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

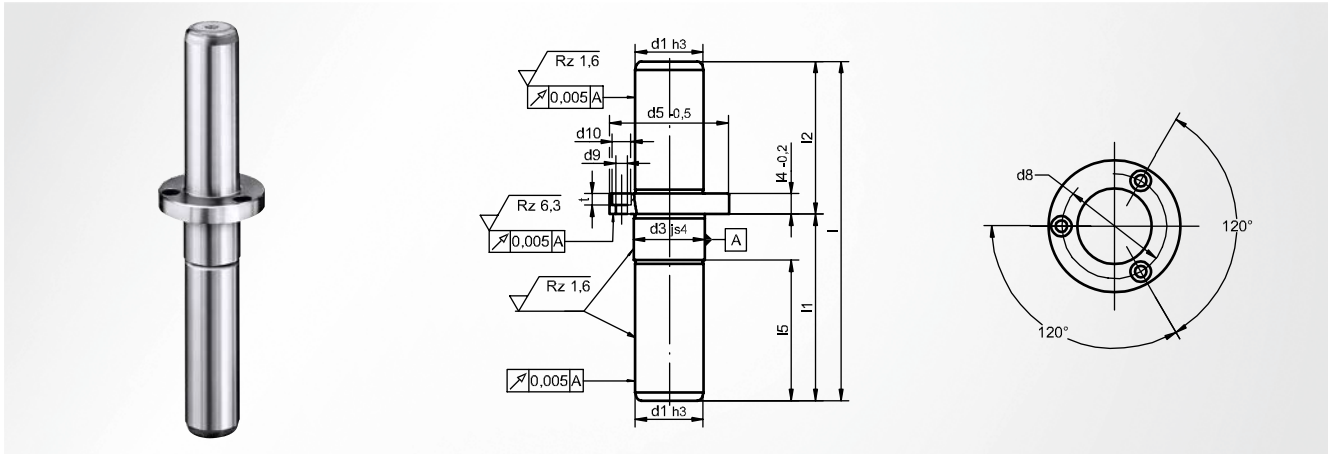
# ST7114 Guide pillar

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 <b>32 x 130 x 110</b>
									260	130	130	115	ST7114 <b>32 x 130 x 130</b>
									250	140	110	115	ST7114 <b>32 x 140 x 110</b>
									350	190	160	165	ST7114 <b>32 x 190 x 160</b>
40	70	42	56	6.6	11	12	M8	6.8	200	110	90	83	ST7114 <b>40 x 110 x 090</b>
									210	120	90	93	ST7114 <b>40 x 120 x 090</b>
									220	120	100	93	ST7114 <b>40 x 120 x 100</b>
									230	130	100	103	ST7114 <b>40 x 130 x 100</b>
									240	130	110	103	ST7114 <b>40 x 130 x 110</b>
									250	140	110	113	ST7114 <b>40 x 140 x 110</b>
									260	140	120	113	ST7114 <b>40 x 140 x 120</b>
									380	200	180	173	ST7114 <b>40 x 200 x 180</b>
50	80	52	66	6.6	11	15	M8	6.8	260	150	110	113	ST7114 <b>50 x 150 x 110</b>
									280	160	120	123	ST7114 <b>50 x 160 x 120</b>
									300	170	130	133	ST7114 <b>50 x 170 x 130</b>
									320	180	140	143	ST7114 <b>50 x 180 x 140</b>
									360	200	160	163	ST7114 <b>50 x 200 x 160</b>
									400	220	180	183	ST7114 <b>50 x 220 x 180</b>
									520	280	240	243	ST7114 <b>50 x 280 x 240</b>

# 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

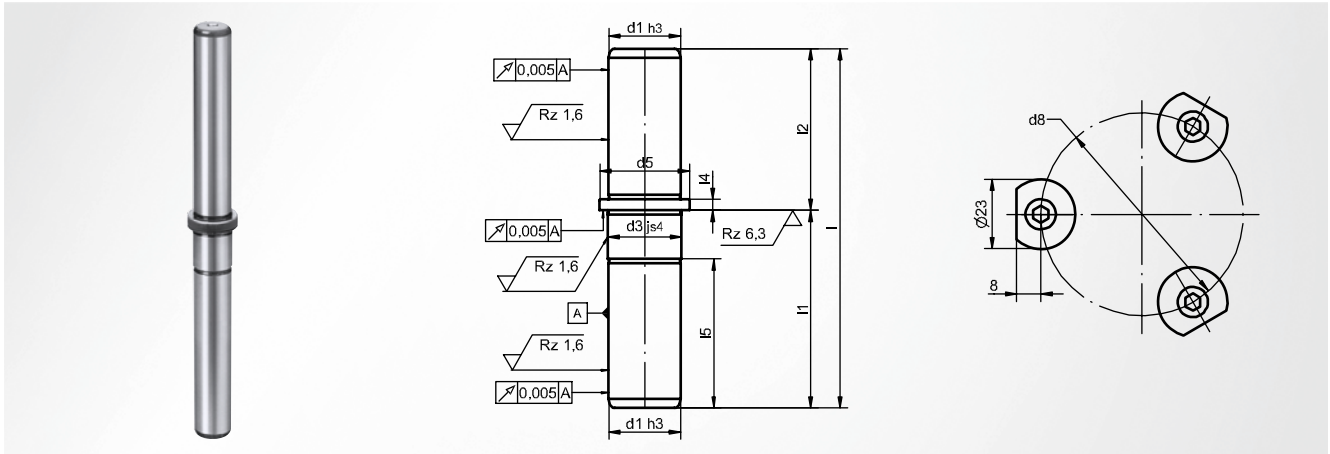
with middle mount shoulder

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



# 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
					240	130	110	105	ST7118 25 x 130 x 110
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

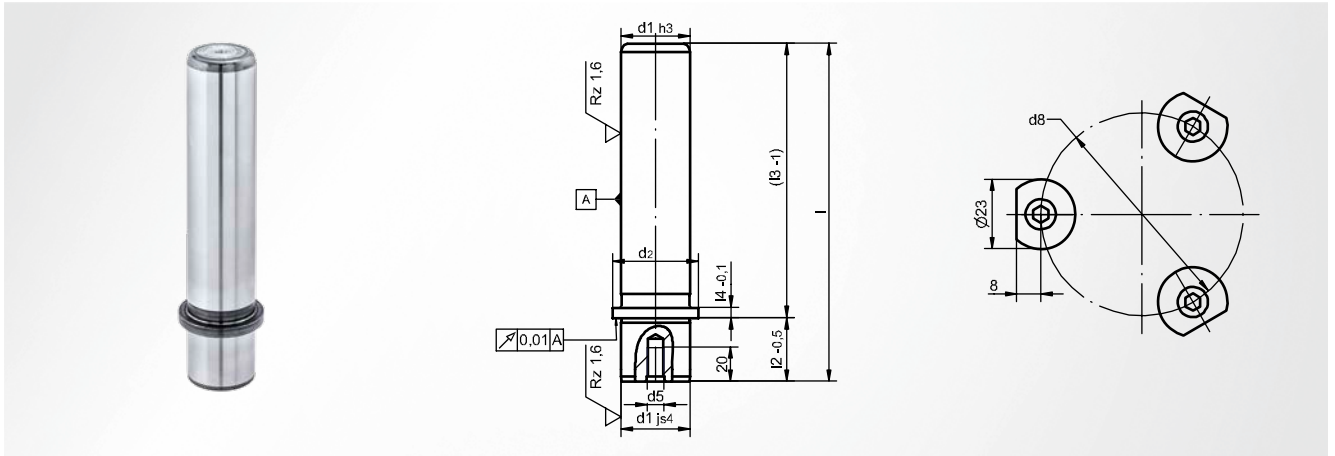
# ST7118 Guide pillar

with middle mount shoulder, small

$d_1^{h3}$	$d_3^{j54}$	$d_5$	$d_8$	$l_4$	$l$	$l_1$	$l_2$	$l_5$	Item number
32	33	40	57	6.1	250	140	110	115	ST7118 <b>32 x 140 x 110</b>
					350	190	160	165	ST7118 <b>32 x 190 x 160</b>
40	41	50	67	6.1	200	110	90	83	ST7118 <b>40 x 110 x 090</b>
					210	120	90	93	ST7118 <b>40 x 120 x 090</b>
					220	120	100	93	ST7118 <b>40 x 120 x 100</b>
					230	130	100	103	ST7118 <b>40 x 130 x 100</b>
					240	130	110	103	ST7118 <b>40 x 130 x 110</b>
					250	140	110	113	ST7118 <b>40 x 140 x 110</b>
					260	140	120	113	ST7118 <b>40 x 140 x 120</b>
					380	200	180	173	ST7118 <b>40 x 200 x 180</b>
50	51	63	80	6.1	260	150	110	113	ST7118 <b>50 x 150 x 110</b>
					280	160	120	123	ST7118 <b>50 x 160 x 120</b>
					300	170	130	133	ST7118 <b>50 x 170 x 130</b>
					320	180	140	143	ST7118 <b>50 x 180 x 140</b>
					360	200	160	163	ST7118 <b>50 x 200 x 160</b>
					400	220	180	183	ST7118 <b>50 x 220 x 180</b>
					520	280	240	243	ST7118 <b>50 x 280 x 240</b>

# 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
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												
24	32	M8	49	27	6.1	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												
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						
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

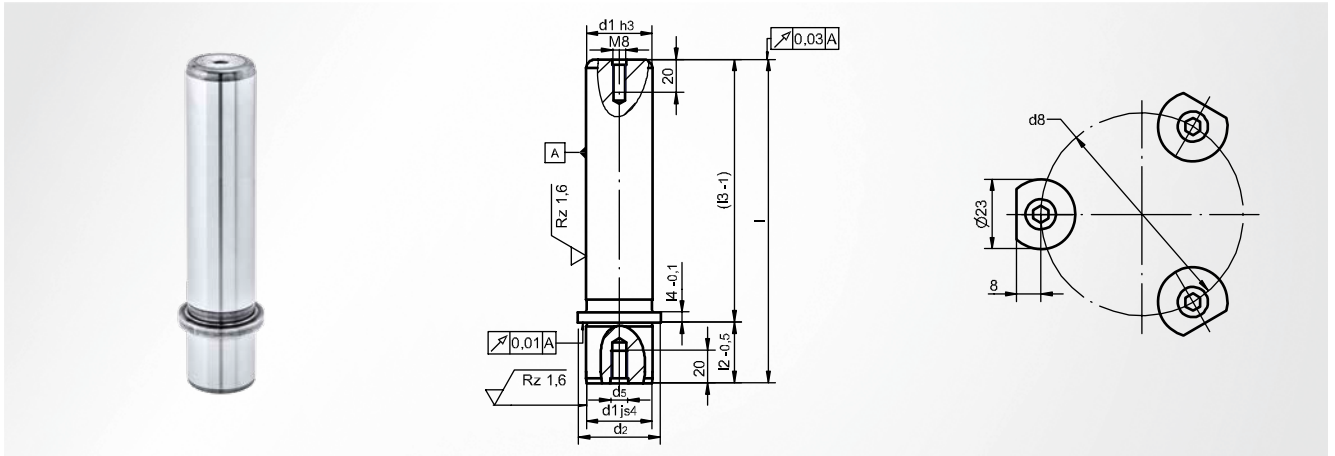
with shoulder and internal thread

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

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

# 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
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						
24	32	M8	49	27	6.1	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												
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						

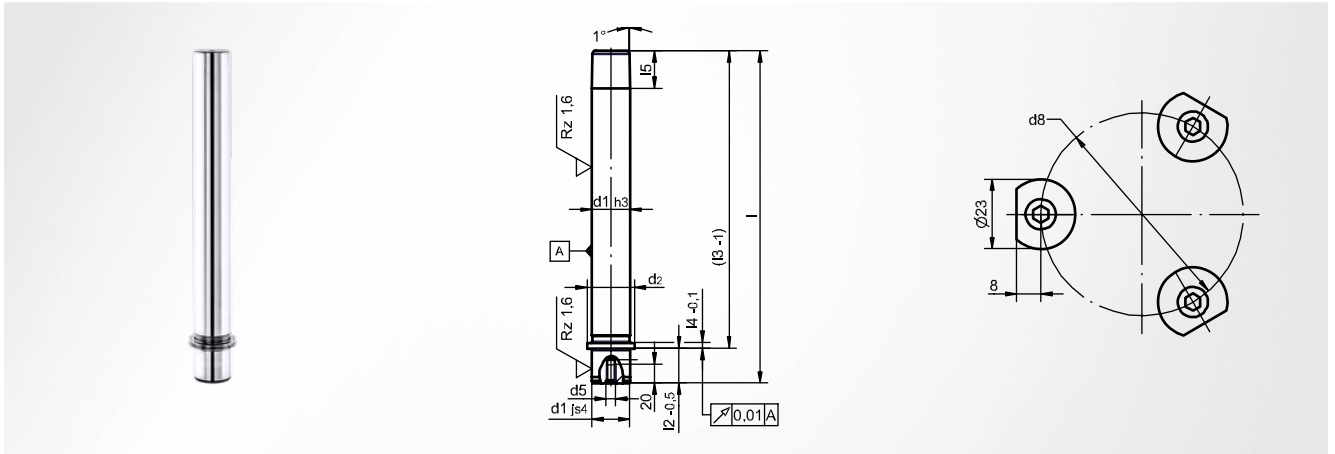
with shoulder and internal thread, both-sided

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

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

# 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

Active elements

Spring elements

Nitrogen systems

Tapping units

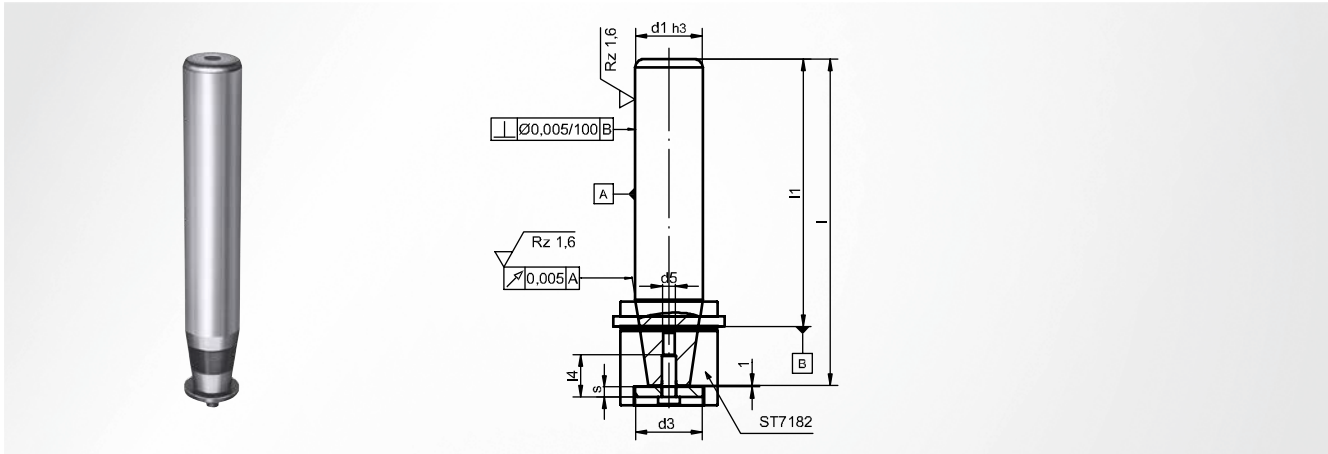
Module system

Machine elements

Accessories

# ST7181 Quick-change guide pillar

with mounting taper and internal thread



Referring to DIN 9825 / ISO 9182

**Hardness**

63 ±1 HRC

**Material**

Steel 1.1221 (C60E); inductively hardened

**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 <b>19 x 112 x 130</b>
					143.4	125	ST7181 <b>19 x 125 x 143</b>
					158.4	140	ST7181 <b>19 x 140 x 158</b>
					178.4	160	ST7181 <b>19 x 160 x 178</b>
					198.4	180	ST7181 <b>19 x 180 x 198</b>
20	18	M5	16	4	130.4	112	ST7181 <b>20 x 112 x 130</b>
					143.4	125	ST7181 <b>20 x 125 x 143</b>
					158.4	140	ST7181 <b>20 x 140 x 158</b>
					178.4	160	ST7181 <b>20 x 160 x 178</b>
					198.4	180	ST7181 <b>20 x 180 x 198</b>
24	24	M6	20	5	151.4	125	ST7181 <b>24 x 125 x 151</b>
					166.4	140	ST7181 <b>24 x 140 x 166</b>
					186.4	160	ST7181 <b>24 x 160 x 186</b>
					206.4	180	ST7181 <b>24 x 180 x 206</b>
					226.4	200	ST7181 <b>24 x 200 x 226</b>
					250.4	224	ST7181 <b>24 x 224 x 250</b>
					276.4	250	ST7181 <b>24 x 250 x 276</b>
25	24	M6	20	5	151.4	125	ST7181 <b>25 x 125 x 151</b>
					166.4	140	ST7181 <b>25 x 140 x 166</b>
					186.4	160	ST7181 <b>25 x 160 x 186</b>
					206.4	180	ST7181 <b>25 x 180 x 206</b>
					226.4	200	ST7181 <b>25 x 200 x 226</b>
					250.4	224	ST7181 <b>25 x 224 x 250</b>
					276.4	250	ST7181 <b>25 x 250 x 276</b>
30	30	M6	20	5	151.4	125	ST7181 <b>30 x 125 x 151</b>
					166.4	140	ST7181 <b>30 x 140 x 166</b>
					186.4	160	ST7181 <b>30 x 160 x 186</b>
					206.4	180	ST7181 <b>30 x 180 x 206</b>
					226.4	200	ST7181 <b>30 x 200 x 226</b>
					250.4	224	ST7181 <b>30 x 224 x 250</b>
					276.4	250	ST7181 <b>30 x 250 x 276</b>
					306.4	280	ST7181 <b>30 x 280 x 306</b>
32	30	M6	20	5	151.4	125	ST7181 <b>32 x 125 x 151</b>
					166.4	140	ST7181 <b>32 x 140 x 166</b>
					186.4	160	ST7181 <b>32 x 160 x 186</b>
					206.4	180	ST7181 <b>32 x 180 x 206</b>



# 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 <b>32 x 200 x 226</b>
					250.4	224	ST7181 <b>32 x 224 x 250</b>
					276.4	250	ST7181 <b>32 x 250 x 276</b>
					306.4	280	ST7181 <b>32 x 280 x 306</b>
38	40	M8	25	6	174.4	140	ST7181 <b>38 x 140 x 174</b>
					194.4	160	ST7181 <b>38 x 160 x 194</b>
					214.4	180	ST7181 <b>38 x 180 x 214</b>
					234.4	200	ST7181 <b>38 x 200 x 234</b>
					258.4	224	ST7181 <b>38 x 224 x 258</b>
					284.4	250	ST7181 <b>38 x 250 x 284</b>
40	40	M8	25	6	314.4	280	ST7181 <b>38 x 280 x 314</b>
					174.4	140	ST7181 <b>40 x 140 x 174</b>
					194.4	160	ST7181 <b>40 x 160 x 194</b>
					214.4	180	ST7181 <b>40 x 180 x 214</b>
					234.4	200	ST7181 <b>40 x 200 x 234</b>
					258.4	224	ST7181 <b>40 x 224 x 258</b>
48	50	M10	30	6	284.4	250	ST7181 <b>40 x 250 x 284</b>
					314.4	280	ST7181 <b>40 x 280 x 314</b>
					192.3	160	ST7181 <b>48 x 160 x 192</b>
					212.3	180	ST7181 <b>48 x 180 x 212</b>
					232.3	200	ST7181 <b>48 x 200 x 232</b>
					256.3	224	ST7181 <b>48 x 224 x 256</b>
50	50	M10	30	6	282.3	250	ST7181 <b>48 x 250 x 282</b>
					312.3	280	ST7181 <b>48 x 280 x 312</b>
					347.3	315	ST7181 <b>48 x 315 x 347</b>
					192.3	160	ST7181 <b>50 x 160 x 192</b>
					212.3	180	ST7181 <b>50 x 180 x 212</b>
					232.3	200	ST7181 <b>50 x 200 x 232</b>
60	56	M12	30	6	256.3	224	ST7181 <b>50 x 224 x 256</b>
					282.3	250	ST7181 <b>50 x 250 x 282</b>
					312.3	280	ST7181 <b>50 x 280 x 312</b>
					347.3	315	ST7181 <b>50 x 315 x 347</b>
					229.8	180	ST7181 <b>60 x 180 x 230</b>
					249.8	200	ST7181 <b>60 x 200 x 250</b>
63	56	M12	30	6	273.8	224	ST7181 <b>60 x 224 x 274</b>
					299.8	250	ST7181 <b>60 x 250 x 300</b>
					329.8	280	ST7181 <b>60 x 280 x 330</b>
					364.8	315	ST7181 <b>60 x 315 x 365</b>
					404.8	355	ST7181 <b>60 x 355 x 405</b>
					229.8	180	ST7181 <b>63 x 180 x 230</b>
63	56	M12	30	6	249.8	200	ST7181 <b>63 x 200 x 250</b>
					273.8	224	ST7181 <b>63 x 224 x 274</b>
					299.8	250	ST7181 <b>63 x 250 x 300</b>
					329.8	280	ST7181 <b>63 x 280 x 330</b>
					364.8	315	ST7181 <b>63 x 315 x 365</b>
					404.8	355	ST7181 <b>63 x 355 x 405</b>

Active elements

Spring elements

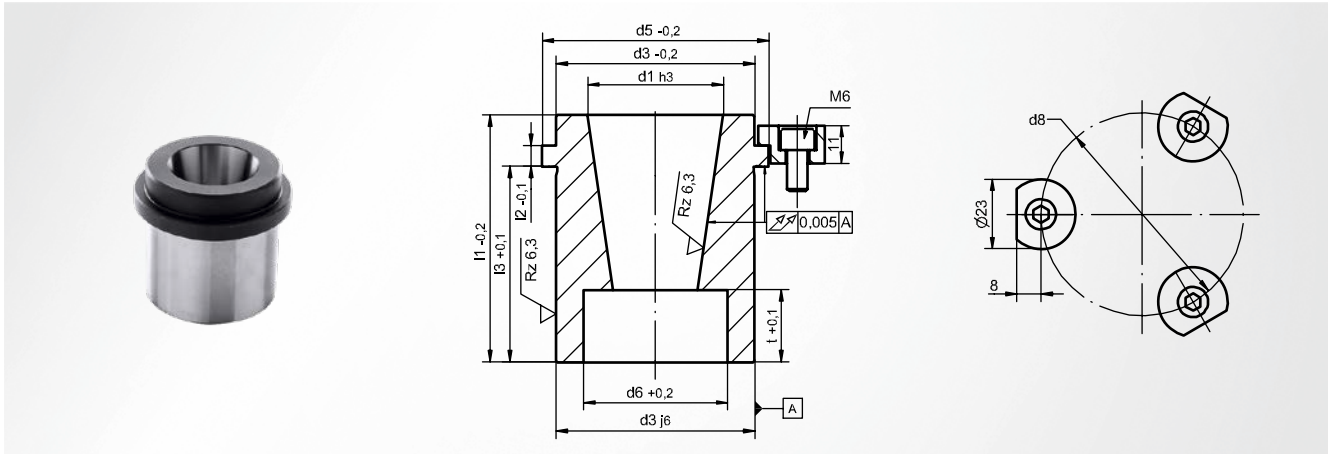
Nitrogen systems

Tapping units

Module system

Machine elements

Accessories



## 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

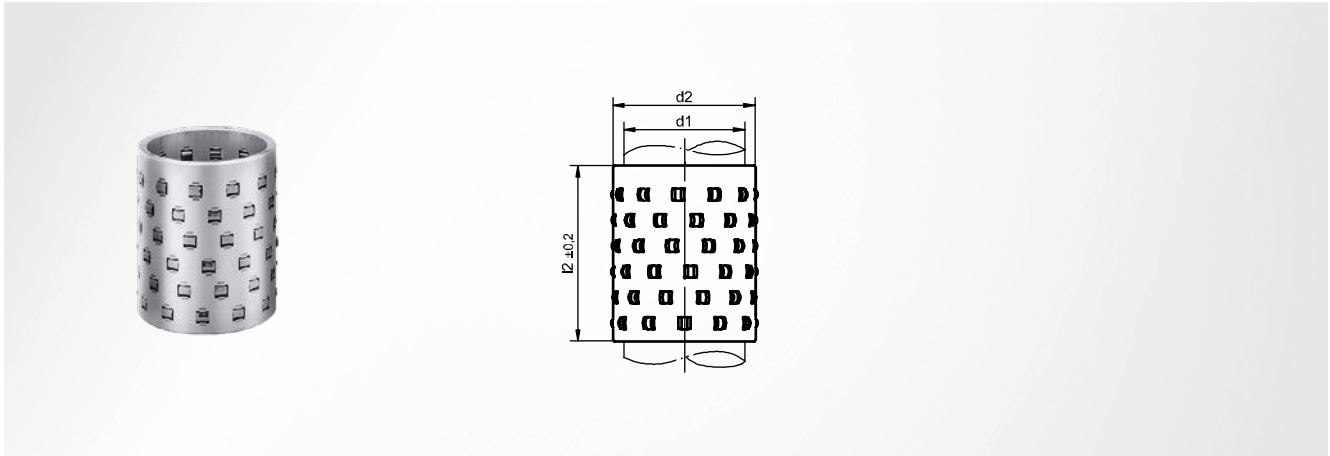
### Scope of supply

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 <b>20 x 27</b>
						49	37	17.5	ST7182 <b>20 x 37</b>
24 and 25	40	48	26	65	6.1	49	37	9.0	ST7182 <b>25 x 37</b>
						59	47	19.0	ST7182 <b>25 x 47</b>
30 and 32	48	56	32	73	6.1	52	37	9.0	ST7182 <b>32 x 37</b>
						62	47	19.0	ST7182 <b>32 x 47</b>
38 and 40	58	66	42	83	6.1	62	47	11.0	ST7182 <b>40 x 47</b>
						72	57	21.0	ST7182 <b>40 x 57</b>
48 and 50	70	80	52	97	6.1	65	47	13.0	ST7182 <b>50 x 47</b>
						75	57	23.0	ST7182 <b>50 x 57</b>
60 and 63	85	95	58	112	6.1	85	67	15.0	ST7182 <b>63 x 67</b>
						95	77	25.0	ST7182 <b>63 x 77</b>

# ST7140 Roller cage

Aluminium



## Material

Aluminium 3.1645

## Characteristic of roller

Steel; hardened; quality class 1; sorted

d <sub>1</sub>	d <sub>2</sub>	Roller Ø	l <sub>2</sub> ±0.2	Item number
19	25	3	43	ST7140 <b>19 x 043</b>
			54	ST7140 <b>19 x 054</b>
			63	ST7140 <b>19 x 063</b>
			74	ST7140 <b>19 x 074</b>
20	26	3	43	ST7140 <b>20 x 043</b>
			54	ST7140 <b>20 x 054</b>
			63	ST7140 <b>20 x 063</b>
			74	ST7140 <b>20 x 074</b>
24	30	3	43	ST7140 <b>24 x 043</b>
			63	ST7140 <b>24 x 063</b>
			74	ST7140 <b>24 x 074</b>
			90	ST7140 <b>24 x 090</b>
25	31	3	43	ST7140 <b>25 x 043</b>
			63	ST7140 <b>25 x 063</b>
			74	ST7140 <b>25 x 074</b>
			90	ST7140 <b>25 x 090</b>
30	38	4	54	ST7140 <b>30 x 054</b>
			74	ST7140 <b>30 x 074</b>
			83	ST7140 <b>30 x 083</b>
			103	ST7140 <b>30 x 103</b>
32	40	4	54	ST7140 <b>32 x 054</b>
			74	ST7140 <b>32 x 074</b>
			83	ST7140 <b>32 x 083</b>
			103	ST7140 <b>32 x 103</b>

d <sub>1</sub>	d <sub>2</sub>	Roller Ø	l <sub>2</sub> ±0.2	Item number
38	46	4	58	ST7140 <b>38 x 058</b>
			88	ST7140 <b>38 x 088</b>
			94	ST7140 <b>38 x 094</b>
			128	ST7140 <b>38 x 128</b>
40	48	4	58	ST7140 <b>40 x 058</b>
			88	ST7140 <b>40 x 088</b>
			94	ST7140 <b>40 x 094</b>
			128	ST7140 <b>40 x 128</b>
48	56	4	74	ST7140 <b>48 x 074</b>
			108	ST7140 <b>48 x 108</b>
			128	ST7140 <b>48 x 128</b>
			128	ST7140 <b>48 x 128</b>
50	58	4	74	ST7140 <b>50 x 074</b>
			108	ST7140 <b>50 x 108</b>
			128	ST7140 <b>50 x 128</b>
60	70	5	113	ST7140 <b>60 x 113</b>
			128	ST7140 <b>60 x 128</b>
			139	ST7140 <b>60 x 139</b>
63	73	5	113	ST7140 <b>63 x 113</b>
			128	ST7140 <b>63 x 128</b>
			139	ST7140 <b>63 x 139</b>
80	92	6	113	ST7140 <b>80 x 113</b>
			138	ST7140 <b>80 x 138</b>
			156	ST7140 <b>80 x 156</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

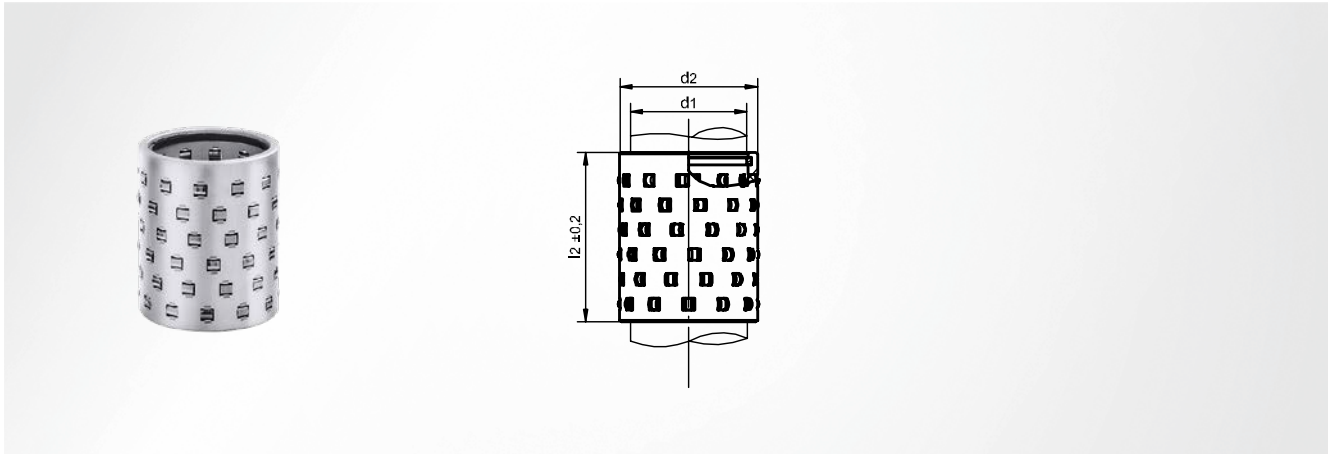
Module system

Machine elements

Accessories

# ST7141 Roller cage

Aluminium, with installation assistance



## Material

Aluminium 3.1645

## Characteristic of roller

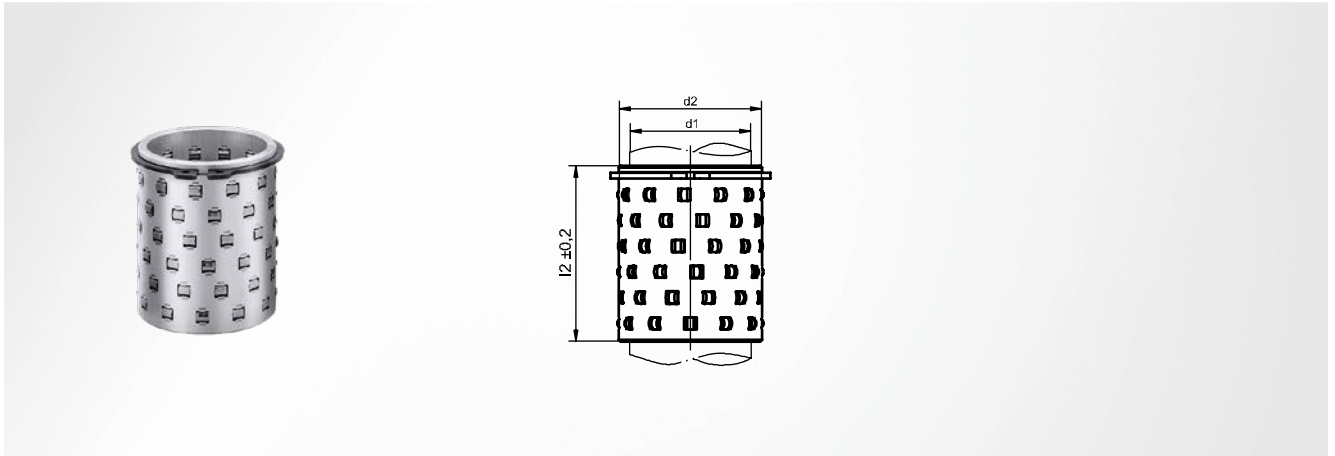
Steel; hardened; quality class 1; sorted

d <sub>1</sub>	d <sub>2</sub>	Roller Ø	l <sub>2</sub> ±0.2	Item number
19	25	3	43	ST7141 <b>19 x 043</b>
			54	ST7141 <b>19 x 054</b>
			63	ST7141 <b>19 x 063</b>
			74	ST7141 <b>19 x 074</b>
20	26	3	43	ST7141 <b>20 x 043</b>
			54	ST7141 <b>20 x 054</b>
			63	ST7141 <b>20 x 063</b>
			74	ST7141 <b>20 x 074</b>
24	30	3	43	ST7141 <b>24 x 043</b>
			63	ST7141 <b>24 x 063</b>
			74	ST7141 <b>24 x 074</b>
			90	ST7141 <b>24 x 090</b>
25	31	3	43	ST7141 <b>25 x 043</b>
			63	ST7141 <b>25 x 063</b>
			74	ST7141 <b>25 x 074</b>
			90	ST7141 <b>25 x 090</b>
30	38	4	54	ST7141 <b>30 x 054</b>
			74	ST7141 <b>30 x 074</b>
			83	ST7141 <b>30 x 083</b>
			103	ST7141 <b>30 x 103</b>
32	40	4	54	ST7141 <b>32 x 054</b>
			74	ST7141 <b>32 x 074</b>
			83	ST7141 <b>32 x 083</b>
			103	ST7141 <b>32 x 103</b>

d <sub>1</sub>	d <sub>2</sub>	Roller Ø	l <sub>2</sub> ±0.2	Item number
38	46	4	58	ST7141 <b>38 x 058</b>
			88	ST7141 <b>38 x 088</b>
			94	ST7141 <b>38 x 094</b>
			128	ST7141 <b>38 x 128</b>
			58	ST7141 <b>38 x 158</b>
40	48	4	58	ST7141 <b>40 x 058</b>
			88	ST7141 <b>40 x 088</b>
			94	ST7141 <b>40 x 094</b>
			128	ST7141 <b>40 x 128</b>
48	56	4	74	ST7141 <b>48 x 074</b>
			108	ST7141 <b>48 x 108</b>
			128	ST7141 <b>48 x 128</b>
			158	ST7141 <b>48 x 158</b>
50	58	4	74	ST7141 <b>50 x 074</b>
			108	ST7141 <b>50 x 108</b>
			128	ST7141 <b>50 x 128</b>
60	70	5	113	ST7141 <b>60 x 113</b>
			128	ST7141 <b>60 x 128</b>
			139	ST7141 <b>60 x 139</b>
63	73	5	113	ST7141 <b>63 x 113</b>
			128	ST7141 <b>63 x 128</b>
			139	ST7141 <b>63 x 139</b>
80	92	6	113	ST7141 <b>80 x 113</b>
			138	ST7141 <b>80 x 138</b>
			156	ST7141 <b>80 x 156</b>

# ST7142 Roller cage

Aluminium, with lock ring



## Material

Aluminium 3.1645

## Characteristic of roller

Steel; hardened; quality class 1; sorted

d <sub>1</sub>	d <sub>2</sub>	Roller Ø	l <sub>2</sub> ±0.2	Item number
19	25	3	43	ST7142 <b>19 x 043</b>
			54	ST7142 <b>19 x 054</b>
			63	ST7142 <b>19 x 063</b>
			74	ST7142 <b>19 x 074</b>
20	26	3	43	ST7142 <b>20 x 043</b>
			54	ST7142 <b>20 x 054</b>
			63	ST7142 <b>20 x 063</b>
			74	ST7142 <b>20 x 074</b>
24	30	3	43	ST7142 <b>24 x 043</b>
			63	ST7142 <b>24 x 063</b>
			74	ST7142 <b>24 x 074</b>
			90	ST7142 <b>24 x 090</b>
25	31	3	43	ST7142 <b>25 x 043</b>
			63	ST7142 <b>25 x 063</b>
			74	ST7142 <b>25 x 074</b>
			90	ST7142 <b>25 x 090</b>
30	38	4	54	ST7142 <b>30 x 054</b>
			74	ST7142 <b>30 x 074</b>
			83	ST7142 <b>30 x 083</b>
			103	ST7142 <b>30 x 103</b>
32	40	4	54	ST7142 <b>32 x 054</b>
			74	ST7142 <b>32 x 074</b>
			83	ST7142 <b>32 x 083</b>
			103	ST7142 <b>32 x 103</b>

d <sub>1</sub>	d <sub>2</sub>	Roller Ø	l <sub>2</sub> ±0.2	Item number
38	46	4	58	ST7142 <b>38 x 058</b>
			88	ST7142 <b>38 x 088</b>
			94	ST7142 <b>38 x 094</b>
			128	ST7142 <b>38 x 128</b>
40	48	4	58	ST7142 <b>40 x 058</b>
			88	ST7142 <b>40 x 088</b>
			94	ST7142 <b>40 x 094</b>
			128	ST7142 <b>40 x 128</b>
48	56	4	74	ST7142 <b>48 x 074</b>
			108	ST7142 <b>48 x 108</b>
			128	ST7142 <b>48 x 128</b>
			128	ST7142 <b>48 x 128</b>
50	58	4	74	ST7142 <b>50 x 074</b>
			108	ST7142 <b>50 x 108</b>
			128	ST7142 <b>50 x 128</b>
60	70	5	113	ST7142 <b>60 x 113</b>
			128	ST7142 <b>60 x 128</b>
			139	ST7142 <b>60 x 139</b>
63	73	5	113	ST7142 <b>63 x 113</b>
			128	ST7142 <b>63 x 128</b>
			139	ST7142 <b>63 x 139</b>
80	92	6	113	ST7142 <b>80 x 113</b>
			138	ST7142 <b>80 x 138</b>
			156	ST7142 <b>80 x 156</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

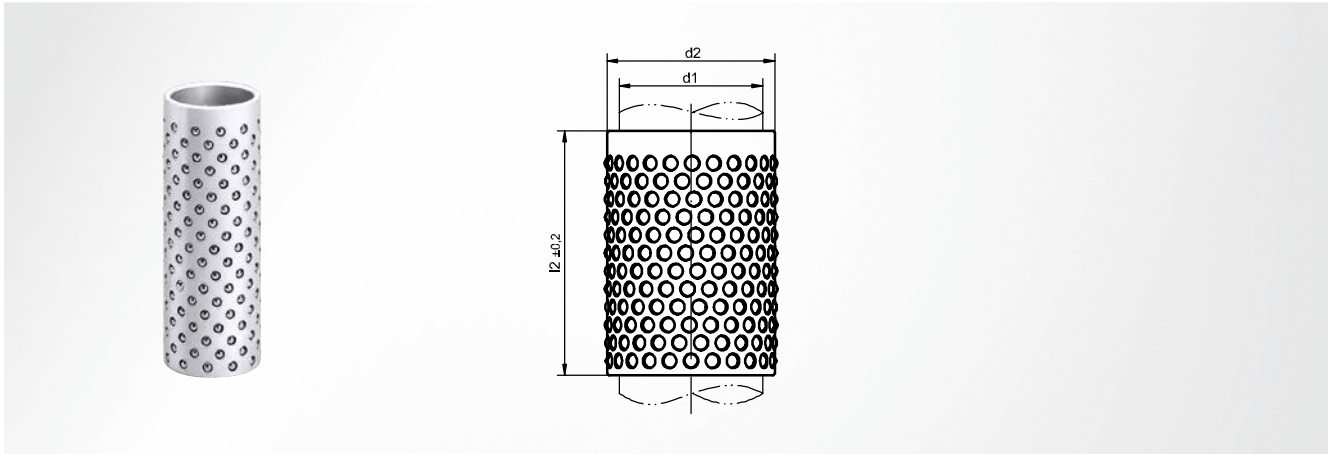
Module system

Machine elements

Accessories

# ST7130 Ball cage

## Aluminium



### Material

Aluminium 3.1645

### Note

Cage travel = 1/2 stroke length

### Ball property

Steel; hardened; quality class 1; sorted

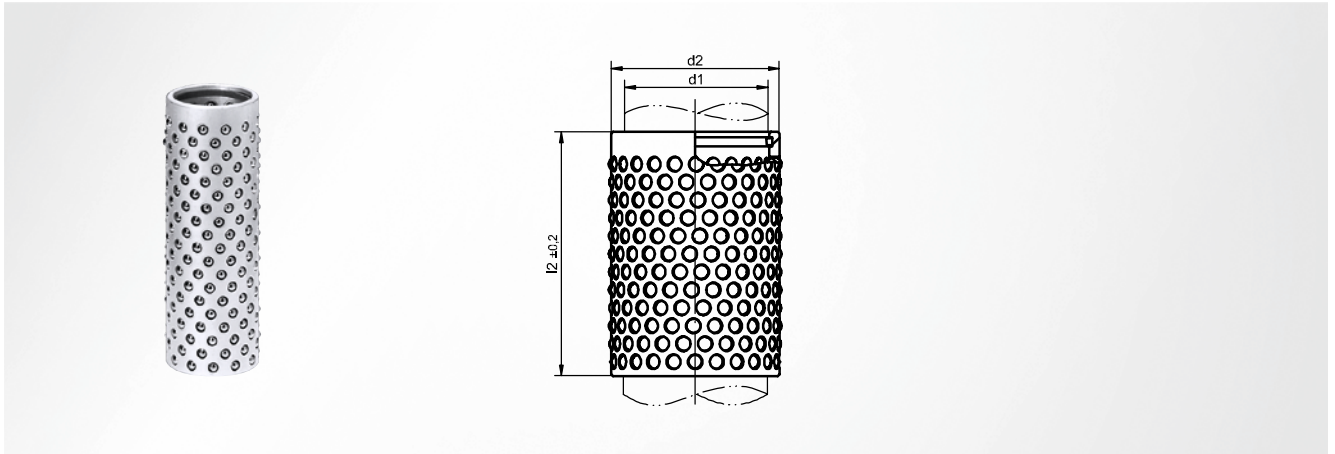
d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
10	14	30	ST7130 <b>10 x 030</b>
		38	ST7130 <b>10 x 038</b>
		43	ST7130 <b>10 x 043</b>
12	16	30	ST7130 <b>12 x 030</b>
		38	ST7130 <b>12 x 038</b>
		43	ST7130 <b>12 x 043</b>
15	21	30	ST7130 <b>15 x 030</b>
		38	ST7130 <b>15 x 038</b>
		43	ST7130 <b>15 x 043</b>
		54	ST7130 <b>15 x 054</b>
16	22	24	ST7130 <b>16 x 024</b>
		30	ST7130 <b>16 x 030</b>
		35	ST7130 <b>16 x 035</b>
		38	ST7130 <b>16 x 038</b>
		43	ST7130 <b>16 x 043</b>
19	25	30	ST7130 <b>19 x 030</b>
		38	ST7130 <b>19 x 038</b>
		43	ST7130 <b>19 x 043</b>
		54	ST7130 <b>19 x 054</b>
		63	ST7130 <b>19 x 063</b>
20	26	30	ST7130 <b>20 x 030</b>
		38	ST7130 <b>20 x 038</b>
		43	ST7130 <b>20 x 043</b>
		54	ST7130 <b>20 x 054</b>
		63	ST7130 <b>20 x 063</b>
		74	ST7130 <b>20 x 074</b>
		83	ST7130 <b>20 x 083</b>
24	30	30	ST7130 <b>24 x 030</b>
		38	ST7130 <b>24 x 038</b>
		43	ST7130 <b>24 x 043</b>
		54	ST7130 <b>24 x 054</b>
		63	ST7130 <b>24 x 063</b>
		74	ST7130 <b>24 x 074</b>
		83	ST7130 <b>24 x 083</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
25	31	30	ST7130 <b>25 x 030</b>
		38	ST7130 <b>25 x 038</b>
		43	ST7130 <b>25 x 043</b>
		54	ST7130 <b>25 x 054</b>
		63	ST7130 <b>25 x 063</b>
30	38	38	ST7130 <b>30 x 038</b>
		43	ST7130 <b>30 x 043</b>
		54	ST7130 <b>30 x 054</b>
		58	ST7130 <b>30 x 058</b>
		68	ST7130 <b>30 x 068</b>
32	40	74	ST7130 <b>30 x 074</b>
		83	ST7130 <b>30 x 083</b>
		88	ST7130 <b>30 x 088</b>
		103	ST7130 <b>30 x 103</b>
		108	ST7130 <b>30 x 108</b>
		38	ST7130 <b>32 x 038</b>
		43	ST7130 <b>32 x 043</b>
		54	ST7130 <b>32 x 054</b>
		58	ST7130 <b>32 x 058</b>
		68	ST7130 <b>32 x 068</b>
38	46	74	ST7130 <b>32 x 074</b>
		83	ST7130 <b>32 x 083</b>
		88	ST7130 <b>32 x 088</b>
		103	ST7130 <b>32 x 103</b>
		108	ST7130 <b>32 x 108</b>
		38	ST7130 <b>38 x 038</b>
		43	ST7130 <b>38 x 043</b>
		58	ST7130 <b>38 x 058</b>
40	48	68	ST7130 <b>38 x 068</b>
		88	ST7130 <b>38 x 088</b>
		94	ST7130 <b>38 x 094</b>
		108	ST7130 <b>38 x 108</b>
		128	ST7130 <b>38 x 128</b>
		38	ST7130 <b>40 x 038</b>
		43	ST7130 <b>40 x 043</b>
		58	ST7130 <b>40 x 058</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
40	48	58	ST7130 <b>40 x 058</b>
		68	ST7130 <b>40 x 068</b>
		88	ST7130 <b>40 x 088</b>
		94	ST7130 <b>40 x 094</b>
		108	ST7130 <b>40 x 108</b>
48	56	128	ST7130 <b>40 x 128</b>
		43	ST7130 <b>48 x 043</b>
		58	ST7130 <b>48 x 058</b>
		68	ST7130 <b>48 x 068</b>
		74	ST7130 <b>48 x 074</b>
50	58	88	ST7130 <b>48 x 088</b>
		108	ST7130 <b>48 x 108</b>
		128	ST7130 <b>48 x 128</b>
		43	ST7130 <b>50 x 043</b>
		58	ST7130 <b>50 x 058</b>
60	70	68	ST7130 <b>50 x 068</b>
		74	ST7130 <b>50 x 074</b>
		88	ST7130 <b>50 x 088</b>
		108	ST7130 <b>50 x 108</b>
		128	ST7130 <b>50 x 128</b>
		75	ST7130 <b>60 x 075</b>
		94	ST7130 <b>60 x 094</b>
		113	ST7130 <b>60 x 113</b>
63	73	128	ST7130 <b>60 x 128</b>
		139	ST7130 <b>60 x 139</b>
		154	ST7130 <b>60 x 154</b>
		170	ST7130 <b>60 x 170</b>
		75	ST7130 <b>63 x 075</b>
		94	ST7130 <b>63 x 094</b>
		113	ST7130 <b>63 x 113</b>
80	92	128	ST7130 <b>63 x 128</b>
		139	ST7130 <b>63 x 139</b>
		154	ST7130 <b>63 x 154</b>
		113	ST7130 <b>80 x 113</b>
		138	ST7130 <b>80 x 138</b>
80	92	156	ST7130 <b>80 x 156</b>
		156	ST7130 <b>80 x 156</b>

# ST7170 Ball cage

Aluminium, with installation assistance



### Material

Aluminium 3.1645

### Note

Cage travel = 1/2 stroke length

### Ball property

Steel; hardened; quality class 1; sorted

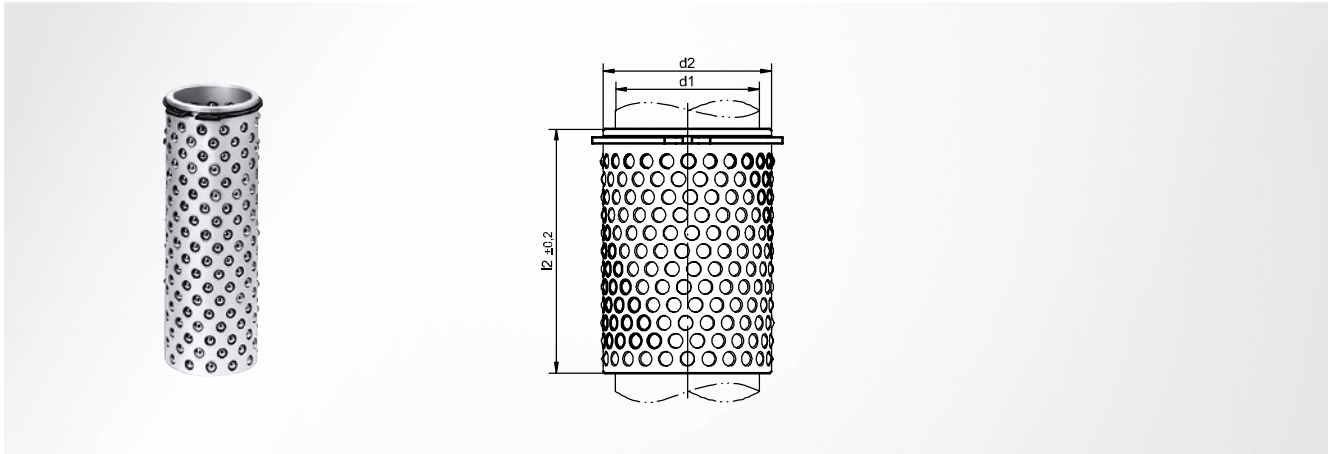
d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
15	21	30	ST7170 15 x 030
		38	ST7170 15 x 038
		43	ST7170 15 x 043
		54	ST7170 15 x 054
		63	ST7170 15 x 063
16	22	24	ST7170 16 x 024
		30	ST7170 16 x 030
		35	ST7170 16 x 035
		38	ST7170 16 x 038
		43	ST7170 16 x 043
		54	ST7170 16 x 054
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
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
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
25	31	30	ST7170 25 x 030
		38	ST7170 25 x 038
		43	ST7170 25 x 043

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±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
30	38	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
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		
103	ST7170 32 x 103		
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 <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±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
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
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
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
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
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 = 1/2 stroke length

## Ball property

Steel; hardened; quality class 1; sorted

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
15	21	30	ST7171 <b>15 x 030</b>
		38	ST7171 <b>15 x 038</b>
		43	ST7171 <b>15 x 043</b>
		54	ST7171 <b>15 x 054</b>
16	22	63	ST7171 <b>15 x 063</b>
		30	ST7171 <b>16 x 030</b>
		38	ST7171 <b>16 x 038</b>
		43	ST7171 <b>16 x 043</b>
19	25	54	ST7171 <b>16 x 054</b>
		63	ST7171 <b>16 x 063</b>
		30	ST7171 <b>19 x 030</b>
		38	ST7171 <b>19 x 038</b>
20	26	43	ST7171 <b>19 x 043</b>
		54	ST7171 <b>19 x 054</b>
		63	ST7171 <b>19 x 063</b>
		74	ST7171 <b>19 x 074</b>
24	30	74	ST7171 <b>20 x 074</b>
		30	ST7171 <b>20 x 030</b>
		38	ST7171 <b>20 x 038</b>
		43	ST7171 <b>20 x 043</b>
		54	ST7171 <b>20 x 054</b>
		63	ST7171 <b>20 x 063</b>
		74	ST7171 <b>20 x 074</b>
		30	ST7171 <b>24 x 030</b>
25	31	38	ST7171 <b>24 x 038</b>
		43	ST7171 <b>24 x 043</b>
		54	ST7171 <b>24 x 054</b>
		63	ST7171 <b>24 x 063</b>
		74	ST7171 <b>24 x 074</b>
		83	ST7171 <b>24 x 083</b>

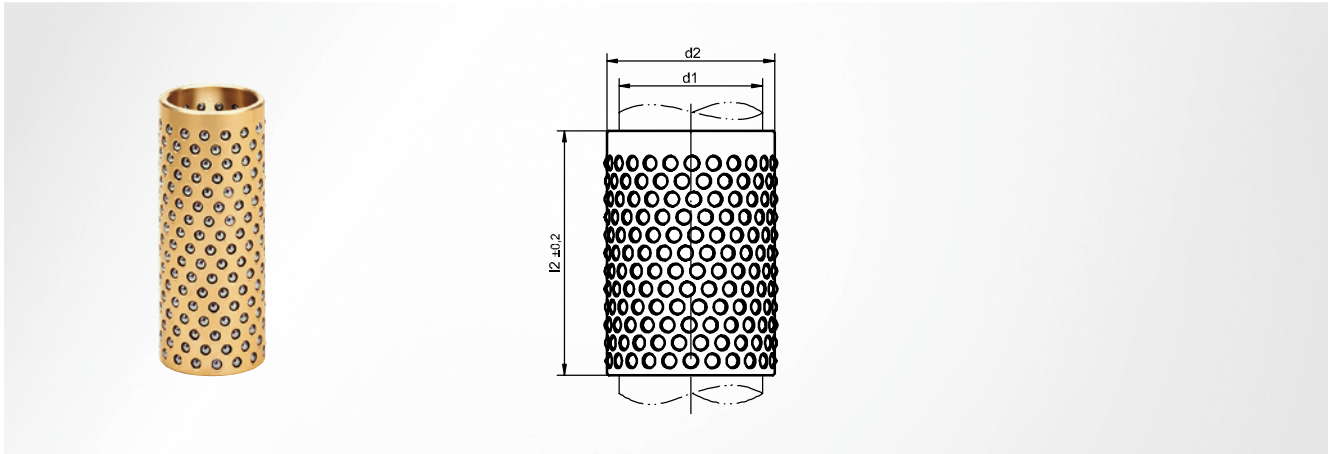
d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
25	31	74	ST7171 <b>25 x 074</b>
		83	ST7171 <b>25 x 083</b>
		90	ST7171 <b>25 x 090</b>
30	38	38	ST7171 <b>30 x 038</b>
		43	ST7171 <b>30 x 043</b>
		54	ST7171 <b>30 x 054</b>
		58	ST7171 <b>30 x 058</b>
		68	ST7171 <b>30 x 068</b>
		74	ST7171 <b>30 x 074</b>
		83	ST7171 <b>30 x 083</b>
		88	ST7171 <b>30 x 088</b>
32	40	103	ST7171 <b>30 x 103</b>
		108	ST7171 <b>30 x 108</b>
		38	ST7171 <b>32 x 038</b>
		43	ST7171 <b>32 x 043</b>
		54	ST7171 <b>32 x 054</b>
		58	ST7171 <b>32 x 058</b>
38	46	68	ST7171 <b>32 x 068</b>
		74	ST7171 <b>32 x 074</b>
		83	ST7171 <b>32 x 083</b>
		88	ST7171 <b>32 x 088</b>
		103	ST7171 <b>32 x 103</b>
		108	ST7171 <b>32 x 108</b>
		38	ST7171 <b>38 x 038</b>
		43	ST7171 <b>38 x 043</b>
		58	ST7171 <b>38 x 058</b>
		68	ST7171 <b>38 x 068</b>
		88	ST7171 <b>38 x 088</b>
40	48	94	ST7171 <b>38 x 094</b>
		108	ST7171 <b>38 x 108</b>
		128	ST7171 <b>38 x 128</b>
		38	ST7171 <b>40 x 038</b>
		43	ST7171 <b>40 x 043</b>
		58	ST7171 <b>40 x 058</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
40	48	88	ST7171 <b>40 x 088</b>
		94	ST7171 <b>40 x 094</b>
		108	ST7171 <b>40 x 108</b>
		128	ST7171 <b>40 x 128</b>
48	56	43	ST7171 <b>48 x 043</b>
		58	ST7171 <b>48 x 058</b>
		68	ST7171 <b>48 x 068</b>
		74	ST7171 <b>48 x 074</b>
		88	ST7171 <b>48 x 088</b>
		108	ST7171 <b>48 x 108</b>
50	58	128	ST7171 <b>48 x 128</b>
		43	ST7171 <b>50 x 043</b>
		58	ST7171 <b>50 x 058</b>
		68	ST7171 <b>50 x 068</b>
		74	ST7171 <b>50 x 074</b>
		88	ST7171 <b>50 x 088</b>
60	70	108	ST7171 <b>50 x 108</b>
		128	ST7171 <b>50 x 128</b>
		75	ST7171 <b>60 x 075</b>
		94	ST7171 <b>60 x 094</b>
		113	ST7171 <b>60 x 113</b>
		128	ST7171 <b>60 x 128</b>
63	73	139	ST7171 <b>60 x 139</b>
		154	ST7171 <b>60 x 154</b>
		75	ST7171 <b>63 x 075</b>
		94	ST7171 <b>63 x 094</b>
		113	ST7171 <b>63 x 113</b>
		128	ST7171 <b>63 x 128</b>
80	92	139	ST7171 <b>63 x 139</b>
		154	ST7171 <b>63 x 154</b>
		113	ST7171 <b>80 x 113</b>
		138	ST7171 <b>80 x 138</b>
		156	ST7171 <b>80 x 156</b>



# ST7150 Ball cage

Brass



## Material

Brass 2.0401

## Note

Cage travel = 1/2 stroke length

## Ball property

Steel; hardened; quality class 1; sorted

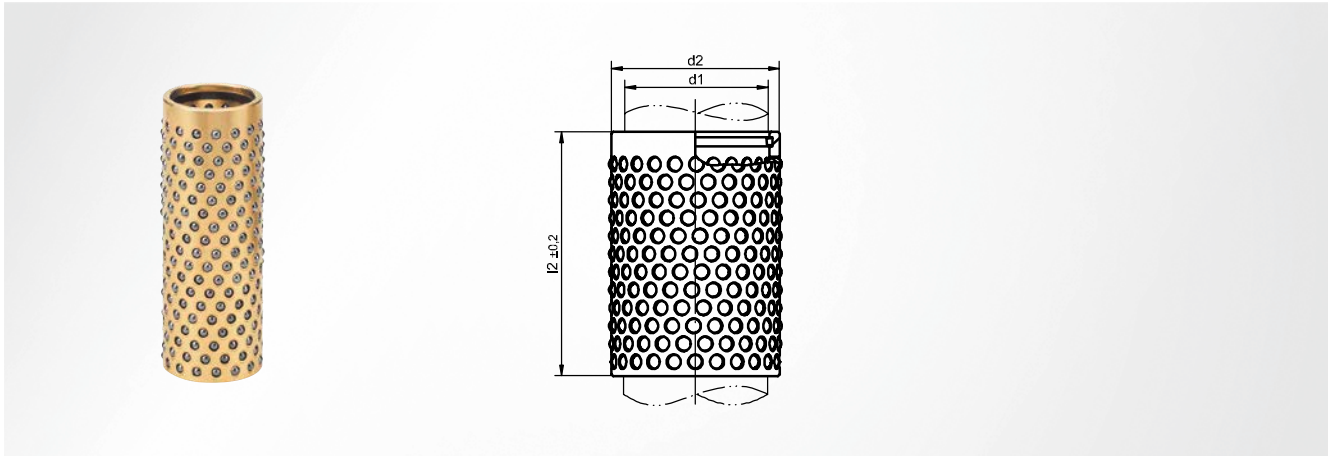
d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
10	14	30	ST7150 10 x 030
		38	ST7150 10 x 038
		43	ST7150 10 x 043
12	16	30	ST7150 12 x 030
		38	ST7150 12 x 038
		43	ST7150 12 x 043
15	21	30	ST7150 15 x 030
		38	ST7150 15 x 038
		43	ST7150 15 x 043
		54	ST7150 15 x 054
		63	ST7150 15 x 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
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
		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
25	31	30	ST7150 25 x 030
		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

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±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
30	38	90	ST7150 25 x 090
		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
32	40	88	ST7150 30 x 088
		103	ST7150 30 x 103
		108	ST7150 30 x 108
		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
38	46	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	ST7150 38 x 038
		43	ST7150 38 x 043
		58	ST7150 38 x 058
		68	ST7150 38 x 068
		88	ST7150 38 x 088
40	48	94	ST7150 38 x 094
		108	ST7150 38 x 108
		128	ST7150 38 x 128
		38	ST7150 40 x 038
		43	ST7150 40 x 043

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±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
48	56	128	ST7150 40 x 128
		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
		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
80	92	154	ST7150 63 x 154
		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 = 1/2 stroke length

## Ball property

Steel; hardened; quality class 1; sorted

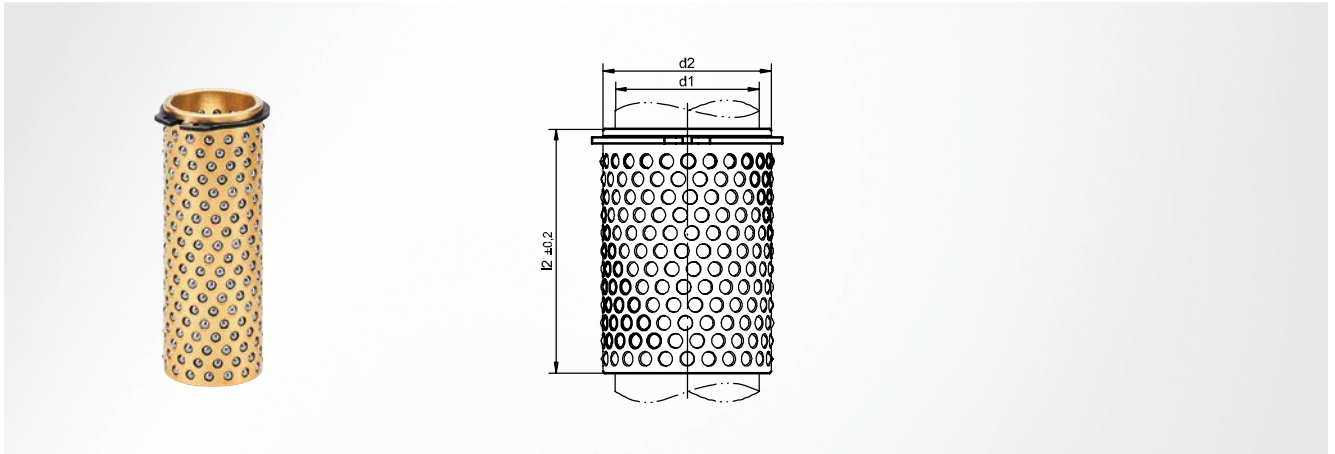
d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
15	21	30	ST7151 <b>15 x 030</b>
		38	ST7151 <b>15 x 038</b>
		43	ST7151 <b>15 x 043</b>
		54	ST7151 <b>15 x 054</b>
		63	ST7151 <b>15 x 063</b>
16	22	30	ST7151 <b>16 x 030</b>
		38	ST7151 <b>16 x 038</b>
		43	ST7151 <b>16 x 043</b>
		54	ST7151 <b>16 x 054</b>
		63	ST7151 <b>16 x 063</b>
19	25	30	ST7151 <b>19 x 030</b>
		38	ST7151 <b>19 x 038</b>
		43	ST7151 <b>19 x 043</b>
		54	ST7151 <b>19 x 054</b>
		63	ST7151 <b>19 x 063</b>
20	26	30	ST7151 <b>20 x 030</b>
		38	ST7151 <b>20 x 038</b>
		43	ST7151 <b>20 x 043</b>
		54	ST7151 <b>20 x 054</b>
		63	ST7151 <b>20 x 063</b>
24	30	30	ST7151 <b>24 x 030</b>
		38	ST7151 <b>24 x 038</b>
		43	ST7151 <b>24 x 043</b>
		54	ST7151 <b>24 x 054</b>
		63	ST7151 <b>24 x 063</b>
25	31	30	ST7151 <b>25 x 030</b>
		38	ST7151 <b>25 x 038</b>
		43	ST7151 <b>25 x 043</b>
		54	ST7151 <b>25 x 054</b>
		63	ST7151 <b>25 x 063</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
25	31	74	ST7151 <b>25 x 074</b>
		83	ST7151 <b>25 x 083</b>
		90	ST7151 <b>25 x 090</b>
30	38	38	ST7151 <b>30 x 038</b>
		43	ST7151 <b>30 x 043</b>
		54	ST7151 <b>30 x 054</b>
		58	ST7151 <b>30 x 058</b>
		68	ST7151 <b>30 x 068</b>
32	40	74	ST7151 <b>32 x 074</b>
		83	ST7151 <b>32 x 083</b>
		88	ST7151 <b>32 x 088</b>
		103	ST7151 <b>32 x 103</b>
		108	ST7151 <b>32 x 108</b>
38	46	38	ST7151 <b>38 x 038</b>
		43	ST7151 <b>38 x 043</b>
		54	ST7151 <b>32 x 054</b>
		58	ST7151 <b>32 x 058</b>
		68	ST7151 <b>32 x 068</b>
40	48	74	ST7151 <b>32 x 074</b>
		83	ST7151 <b>32 x 083</b>
		88	ST7151 <b>32 x 088</b>
		103	ST7151 <b>32 x 103</b>
		108	ST7151 <b>32 x 108</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
40	48	88	ST7151 <b>40 x 088</b>
		94	ST7151 <b>40 x 094</b>
		108	ST7151 <b>40 x 108</b>
48	56	128	ST7151 <b>40 x 128</b>
		43	ST7151 <b>48 x 043</b>
		58	ST7151 <b>48 x 058</b>
		68	ST7151 <b>48 x 068</b>
		74	ST7151 <b>48 x 074</b>
50	58	88	ST7151 <b>48 x 088</b>
		108	ST7151 <b>48 x 108</b>
		128	ST7151 <b>48 x 128</b>
		43	ST7151 <b>50 x 043</b>
		58	ST7151 <b>50 x 058</b>
50	58	68	ST7151 <b>50 x 068</b>
		74	ST7151 <b>50 x 074</b>
		88	ST7151 <b>50 x 088</b>
		108	ST7151 <b>50 x 108</b>
		128	ST7151 <b>50 x 128</b>
60	70	128	ST7151 <b>50 x 128</b>
		75	ST7151 <b>60 x 075</b>
		94	ST7151 <b>60 x 094</b>
		113	ST7151 <b>60 x 113</b>
		128	ST7151 <b>60 x 128</b>
63	73	139	ST7151 <b>60 x 139</b>
		154	ST7151 <b>60 x 154</b>
		75	ST7151 <b>63 x 075</b>
		94	ST7151 <b>63 x 094</b>
		113	ST7151 <b>63 x 113</b>
80	92	128	ST7151 <b>63 x 128</b>
		139	ST7151 <b>63 x 139</b>
		154	ST7151 <b>63 x 154</b>
		113	ST7151 <b>80 x 113</b>
		138	ST7151 <b>80 x 138</b>
80	92	156	ST7151 <b>80 x 156</b>

# ST7152 Ball cage

Brass, with lock ring



## Material

Brass 2.0401

## Note

Cage travel = 1/2 stroke length

## Ball property

Steel; hardened; quality class 1; sorted

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±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
16	22	63	ST7152 15 x 063
		30	ST7152 16 x 030
		38	ST7152 16 x 038
		43	ST7152 16 x 043
19	25	54	ST7152 16 x 054
		63	ST7152 16 x 063
		30	ST7152 19 x 030
		38	ST7152 19 x 038
20	26	43	ST7152 19 x 043
		54	ST7152 19 x 054
		63	ST7152 19 x 063
		74	ST7152 19 x 074
24	30	74	ST7152 19 x 074
		30	ST7152 20 x 030
		38	ST7152 20 x 038
		43	ST7152 20 x 043
25	31	54	ST7152 20 x 054
		63	ST7152 20 x 063
		74	ST7152 20 x 074
		30	ST7152 24 x 030
38	46	38	ST7152 24 x 038
		43	ST7152 24 x 043
		54	ST7152 24 x 054
		63	ST7152 24 x 063
40	48	74	ST7152 24 x 074
		83	ST7152 24 x 083
		90	ST7152 24 x 090
		30	ST7152 25 x 030
48	56	38	ST7152 25 x 038
		43	ST7152 25 x 043
		54	ST7152 25 x 054
		63	ST7152 25 x 063
60	70	74	ST7152 25 x 074
		83	ST7152 25 x 083
		90	ST7152 25 x 090
		30	ST7152 25 x 030
63	73	38	ST7152 25 x 038
		43	ST7152 25 x 043
		54	ST7152 25 x 054
		63	ST7152 25 x 063
80	92	74	ST7152 25 x 074
		83	ST7152 25 x 083
		90	ST7152 25 x 090
		30	ST7152 25 x 030

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.2	Item number
25	31	74	ST7152 25 x 074
		83	ST7152 25 x 083
		90	ST7152 25 x 090
		30	ST7152 30 x 038
30	38	43	ST7152 30 x 043
		54	ST7152 30 x 054
		58	ST7152 30 x 058
		68	ST7152 30 x 068
32	40	74	ST7152 30 x 074
		83	ST7152 30 x 083
		88	ST7152 30 x 088
		103	ST7152 30 x 103
38	46	108	ST7152 30 x 108
		38	ST7152 32 x 038
		43	ST7152 32 x 043
		54	ST7152 32 x 054
40	48	58	ST7152 32 x 058
		68	ST7152 32 x 068
		74	ST7152 32 x 074
		83	ST7152 32 x 083
48	56	88	ST7152 32 x 088
		103	ST7152 32 x 103
		108	ST7152 32 x 108
		38	ST7152 38 x 038
60	70	43	ST7152 38 x 043
		58	ST7152 38 x 058
		68	ST7152 38 x 068
		88	ST7152 38 x 088
63	73	94	ST7152 38 x 094
		108	ST7152 38 x 108
		128	ST7152 38 x 128
		38	ST7152 40 x 038
80	92	43	ST7152 40 x 043
		58	ST7152 40 x 058
		68	ST7152 40 x 068
		38	ST7152 40 x 038

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±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
50	58	88	ST7152 48 x 088
		108	ST7152 48 x 108
		128	ST7152 48 x 128
		43	ST7152 50 x 043
60	70	58	ST7152 50 x 058
		68	ST7152 50 x 068
		74	ST7152 50 x 074
		88	ST7152 50 x 088
63	73	108	ST7152 50 x 108
		128	ST7152 50 x 128
		75	ST7152 60 x 075
		94	ST7152 60 x 094
80	92	113	ST7152 60 x 113
		128	ST7152 60 x 128
		139	ST7152 60 x 139
		154	ST7152 60 x 154
80	92	75	ST7152 63 x 075
		94	ST7152 63 x 094
		113	ST7152 63 x 113
		128	ST7152 63 x 128
80	92	139	ST7152 63 x 139
		154	ST7152 63 x 154
		113	ST7152 80 x 113
		138	ST7152 80 x 138
80	92	156	ST7152 80 x 156

Active elements

Spring elements

Nitrogen systems

Tapping units

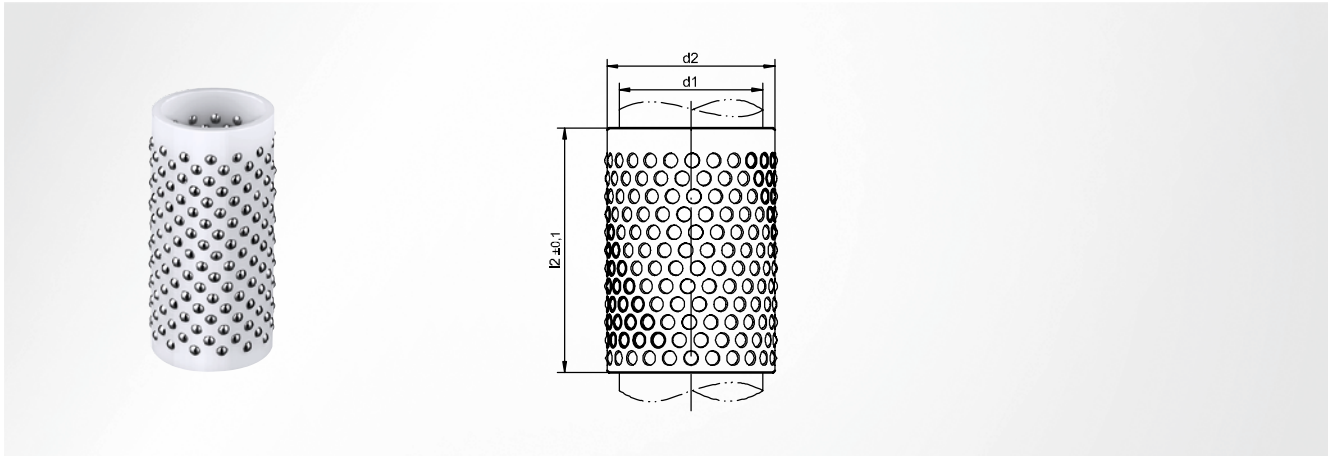
Module system

Machine elements

Accessories

# ST7133 Ball cage

Polyurethane



## Material

POM M25

## Note

Cage travel = 1/2 stroke length

## Ball property

Steel; hardened; quality class 1; sorted

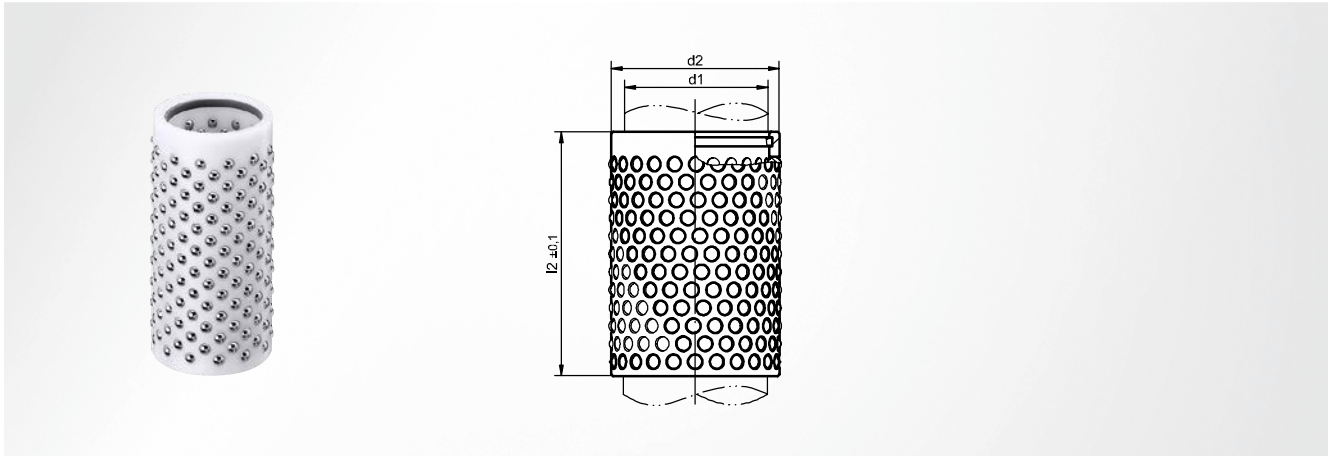
d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.1	Item number
10	14	30	ST7133 <b>10 x 030</b>
		38	ST7133 <b>10 x 038</b>
		43	ST7133 <b>10 x 043</b>
12	16	30	ST7133 <b>12 x 030</b>
		38	ST7133 <b>12 x 038</b>
		43	ST7133 <b>12 x 043</b>
15	21	30	ST7133 <b>15 x 030</b>
		38	ST7133 <b>15 x 038</b>
		43	ST7133 <b>15 x 043</b>
		54	ST7133 <b>15 x 054</b>
16	22	30	ST7133 <b>16 x 030</b>
		38	ST7133 <b>16 x 038</b>
		43	ST7133 <b>16 x 043</b>
		63	ST7133 <b>16 x 063</b>
19	25	30	ST7133 <b>19 x 030</b>
		38	ST7133 <b>19 x 038</b>
		43	ST7133 <b>19 x 043</b>
		54	ST7133 <b>19 x 054</b>
		74	ST7133 <b>19 x 074</b>
20	26	30	ST7133 <b>20 x 030</b>
		38	ST7133 <b>20 x 038</b>
		43	ST7133 <b>20 x 043</b>
		54	ST7133 <b>20 x 054</b>
		74	ST7133 <b>20 x 074</b>
24	30	30	ST7133 <b>24 x 030</b>
		38	ST7133 <b>24 x 038</b>
		43	ST7133 <b>24 x 043</b>
		54	ST7133 <b>24 x 054</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.1	Item number
24	30	63	ST7133 <b>24 x 063</b>
		74	ST7133 <b>24 x 074</b>
		83	ST7133 <b>24 x 083</b>
		90	ST7133 <b>24 x 090</b>
25	31	30	ST7133 <b>25 x 030</b>
		38	ST7133 <b>25 x 038</b>
		43	ST7133 <b>25 x 043</b>
		54	ST7133 <b>25 x 054</b>
30	38	38	ST7133 <b>30 x 038</b>
		43	ST7133 <b>30 x 043</b>
		54	ST7133 <b>30 x 054</b>
		58	ST7133 <b>30 x 058</b>
		68	ST7133 <b>30 x 068</b>
32	40	38	ST7133 <b>32 x 038</b>
		43	ST7133 <b>32 x 043</b>
		54	ST7133 <b>32 x 054</b>
		58	ST7133 <b>32 x 058</b>
		68	ST7133 <b>32 x 068</b>
		74	ST7133 <b>32 x 074</b>
		83	ST7133 <b>32 x 083</b>
		108	ST7133 <b>32 x 108</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.1	Item number
38	46	38	ST7133 <b>38 x 038</b>
		43	ST7133 <b>38 x 043</b>
		58	ST7133 <b>38 x 058</b>
		68	ST7133 <b>38 x 068</b>
		88	ST7133 <b>38 x 088</b>
40	48	38	ST7133 <b>40 x 038</b>
		43	ST7133 <b>40 x 043</b>
		58	ST7133 <b>40 x 058</b>
		68	ST7133 <b>40 x 068</b>
		88	ST7133 <b>40 x 088</b>
48	56	43	ST7133 <b>48 x 043</b>
		58	ST7133 <b>48 x 058</b>
		68	ST7133 <b>48 x 068</b>
		74	ST7133 <b>48 x 074</b>
		88	ST7133 <b>48 x 088</b>
50	58	43	ST7133 <b>50 x 043</b>
		58	ST7133 <b>50 x 058</b>
		68	ST7133 <b>50 x 068</b>
		74	ST7133 <b>50 x 074</b>
		88	ST7133 <b>50 x 088</b>

# ST7173 Ball cage

Polyurethane, with installation assistance



### Material

POM M25

### Note

Cage travel = 1/2 stroke length

### Ball property

Steel; hardened; quality class 1; sorted

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.1	Item number
15	21	30	ST7173 <b>15 x 030</b>
		38	ST7173 <b>15 x 038</b>
		43	ST7173 <b>15 x 043</b>
		54	ST7173 <b>15 x 054</b>
		63	ST7173 <b>15 x 063</b>
16	22	30	ST7173 <b>16 x 030</b>
		38	ST7173 <b>16 x 038</b>
		43	ST7173 <b>16 x 043</b>
		54	ST7173 <b>16 x 054</b>
19	25	30	ST7173 <b>19 x 030</b>
		38	ST7173 <b>19 x 038</b>
		43	ST7173 <b>19 x 043</b>
		54	ST7173 <b>19 x 054</b>
		63	ST7173 <b>19 x 063</b>
20	26	30	ST7173 <b>20 x 030</b>
		38	ST7173 <b>20 x 038</b>
		43	ST7173 <b>20 x 043</b>
		54	ST7173 <b>20 x 054</b>
		63	ST7173 <b>20 x 063</b>
24	30	30	ST7173 <b>24 x 030</b>
		38	ST7173 <b>24 x 038</b>
		43	ST7173 <b>24 x 043</b>
		54	ST7173 <b>24 x 054</b>
		63	ST7173 <b>24 x 063</b>
74	30	74	ST7173 <b>24 x 074</b>
		83	ST7173 <b>24 x 083</b>
		90	ST7173 <b>24 x 090</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.1	Item number
25	31	30	ST7173 <b>25 x 030</b>
		38	ST7173 <b>25 x 038</b>
		43	ST7173 <b>25 x 043</b>
		54	ST7173 <b>25 x 054</b>
		63	ST7173 <b>25 x 063</b>
		74	ST7173 <b>25 x 074</b>
		83	ST7173 <b>25 x 083</b>
30	38	38	ST7173 <b>30 x 038</b>
		43	ST7173 <b>30 x 043</b>
		54	ST7173 <b>30 x 054</b>
		68	ST7173 <b>30 x 068</b>
		74	ST7173 <b>30 x 074</b>
32	40	38	ST7173 <b>32 x 038</b>
		43	ST7173 <b>32 x 043</b>
		54	ST7173 <b>32 x 054</b>
		58	ST7173 <b>32 x 058</b>
		68	ST7173 <b>32 x 068</b>
38	46	38	ST7173 <b>38 x 038</b>
		43	ST7173 <b>38 x 043</b>
		103	ST7173 <b>30 x 103</b>
		108	ST7173 <b>30 x 108</b>
		43	ST7173 <b>38 x 043</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.1	Item number
38	46	58	ST7173 <b>38 x 058</b>
		68	ST7173 <b>38 x 068</b>
		88	ST7173 <b>38 x 088</b>
		94	ST7173 <b>38 x 094</b>
		108	ST7173 <b>38 x 108</b>
40	48	38	ST7173 <b>40 x 038</b>
		43	ST7173 <b>40 x 043</b>
		58	ST7173 <b>40 x 058</b>
		68	ST7173 <b>40 x 068</b>
		88	ST7173 <b>40 x 088</b>
48	56	43	ST7173 <b>48 x 043</b>
		58	ST7173 <b>48 x 058</b>
		68	ST7173 <b>48 x 068</b>
		74	ST7173 <b>48 x 074</b>
		88	ST7173 <b>48 x 088</b>
50	58	43	ST7173 <b>50 x 043</b>
		58	ST7173 <b>50 x 058</b>
		68	ST7173 <b>50 x 068</b>
		74	ST7173 <b>50 x 074</b>
		88	ST7173 <b>50 x 088</b>
108	58	108	ST7173 <b>50 x 108</b>
		128	ST7173 <b>50 x 128</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

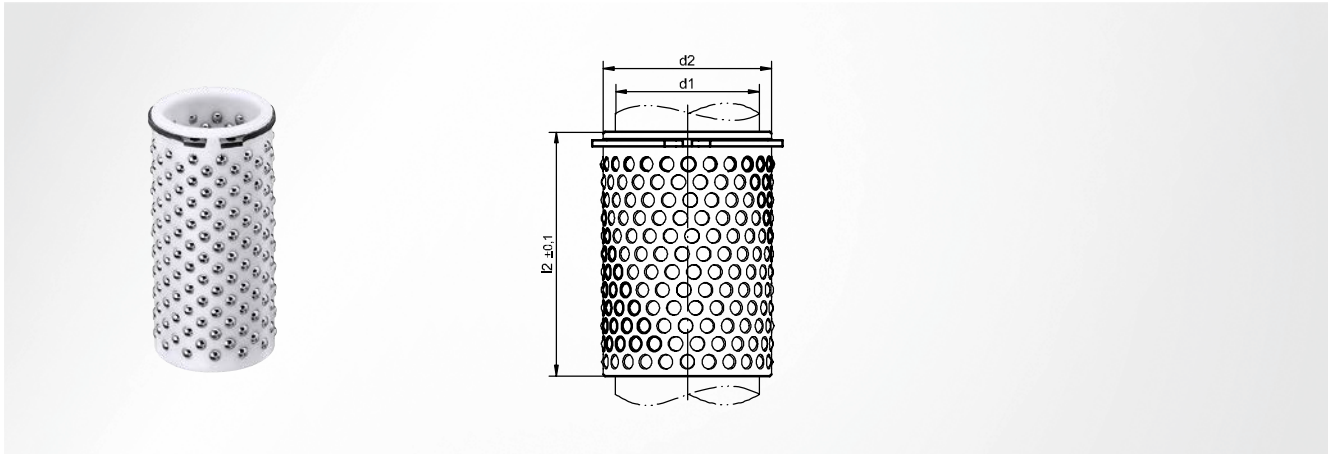
Module system

Machine elements

Accessories

# ST7174 Ball cage

Polyurethane, with lock ring



## Material

POM M25

## Note

Cage travel = 1/2 stroke length

## Ball property

Steel; hardened; quality class 1; sorted

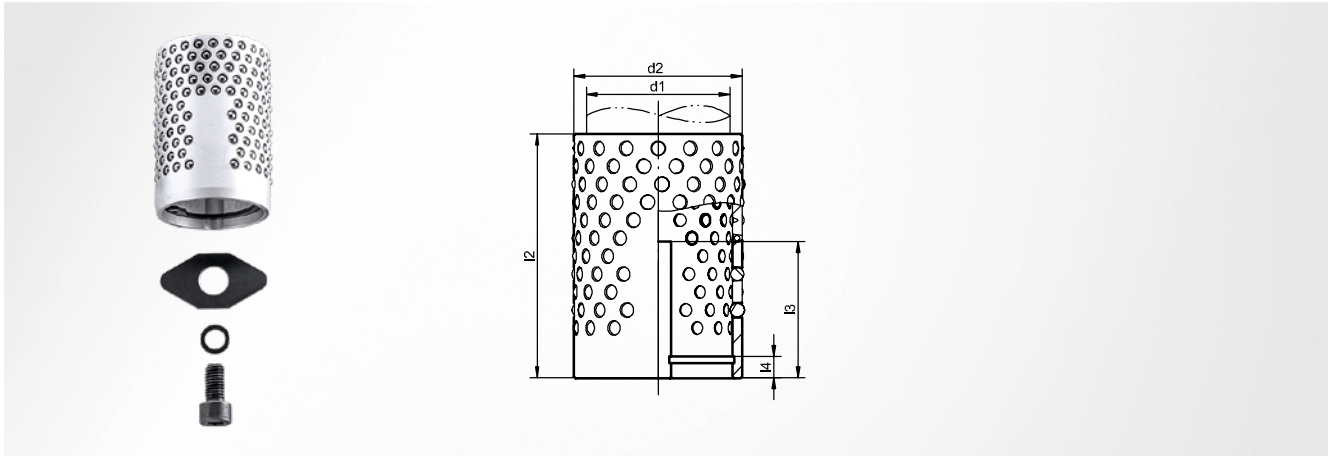
d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.1	Item number
15	21	30	ST7174 <b>15 x 030</b>
		38	ST7174 <b>15 x 038</b>
		43	ST7174 <b>15 x 043</b>
		54	ST7174 <b>15 x 054</b>
		63	ST7174 <b>15 x 063</b>
16	22	30	ST7174 <b>16 x 030</b>
		38	ST7174 <b>16 x 038</b>
		43	ST7174 <b>16 x 043</b>
		54	ST7174 <b>16 x 054</b>
19	25	30	ST7174 <b>19 x 030</b>
		38	ST7174 <b>19 x 038</b>
		43	ST7174 <b>19 x 043</b>
		54	ST7174 <b>19 x 054</b>
		63	ST7174 <b>19 x 063</b>
20	26	30	ST7174 <b>20 x 030</b>
		38	ST7174 <b>20 x 038</b>
		43	ST7174 <b>20 x 043</b>
		54	ST7174 <b>20 x 054</b>
		63	ST7174 <b>20 x 063</b>
24	30	30	ST7174 <b>24 x 030</b>
		38	ST7174 <b>24 x 038</b>
		43	ST7174 <b>24 x 043</b>
		54	ST7174 <b>24 x 054</b>
		63	ST7174 <b>24 x 063</b>
74		74	ST7174 <b>20 x 074</b>
		83	ST7174 <b>24 x 083</b>
		90	ST7174 <b>24 x 090</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.1	Item number		
25	31	30	ST7174 <b>25 x 030</b>		
		38	ST7174 <b>25 x 038</b>		
		43	ST7174 <b>25 x 043</b>		
		54	ST7174 <b>25 x 054</b>		
		63	ST7174 <b>25 x 063</b>		
		74	ST7174 <b>25 x 074</b>		
		83	ST7174 <b>25 x 083</b>		
30	38	90	ST7174 <b>25 x 090</b>		
		38	ST7174 <b>30 x 038</b>		
		43	ST7174 <b>30 x 043</b>		
		54	ST7174 <b>30 x 054</b>		
		58	ST7174 <b>30 x 058</b>		
30	38	68	ST7174 <b>30 x 068</b>		
		74	ST7174 <b>30 x 074</b>		
		83	ST7174 <b>30 x 083</b>		
		88	ST7174 <b>30 x 088</b>		
		103	ST7174 <b>30 x 103</b>		
		108	ST7174 <b>30 x 108</b>		
		32	40	38	ST7174 <b>32 x 038</b>
43	ST7174 <b>32 x 043</b>				
54	ST7174 <b>32 x 054</b>				
58	ST7174 <b>32 x 058</b>				
68	ST7174 <b>32 x 068</b>				
74	ST7174 <b>32 x 074</b>				
83	ST7174 <b>32 x 083</b>				
32	40	88	ST7174 <b>32 x 088</b>		
		103	ST7174 <b>32 x 103</b>		
		108	ST7174 <b>32 x 108</b>		
		38	46	38	ST7174 <b>38 x 038</b>
				43	ST7174 <b>38 x 043</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> ±0.1	Item number
38	46	58	ST7174 <b>38 x 058</b>
		68	ST7174 <b>38 x 068</b>
		88	ST7174 <b>38 x 088</b>
		94	ST7174 <b>38 x 094</b>
		108	ST7174 <b>38 x 108</b>
38	46	128	ST7174 <b>38 x 128</b>
		40	ST7174 <b>40 x 038</b>
		43	ST7174 <b>40 x 043</b>
		58	ST7174 <b>40 x 058</b>
		68	ST7174 <b>40 x 068</b>
40	48	88	ST7174 <b>40 x 088</b>
		94	ST7174 <b>40 x 094</b>
		108	ST7174 <b>40 x 108</b>
		128	ST7174 <b>40 x 128</b>
		48	56
58	ST7174 <b>48 x 058</b>		
68	ST7174 <b>48 x 068</b>		
74	ST7174 <b>48 x 074</b>		
88	ST7174 <b>48 x 088</b>		
48	56	108	ST7174 <b>48 x 108</b>
		128	ST7174 <b>48 x 128</b>
		50	ST7174 <b>50 x 043</b>
		58	ST7174 <b>50 x 058</b>
		68	ST7174 <b>50 x 068</b>
50	58	74	ST7174 <b>50 x 074</b>
		88	ST7174 <b>50 x 088</b>
		108	ST7174 <b>50 x 108</b>
		128	ST7174 <b>50 x 128</b>

# ST7134 Ball cage

Aluminium, with locking device and fixing screw



### Material

Aluminium 3.1645

### Note

Cage travel = 1/2 stroke length

### Ball property

Steel; hardened; quality class 1; sorted

d <sub>1</sub>	d <sub>2</sub>	l <sub>4</sub>	l <sub>2</sub>	l <sub>3</sub>	Item number
24	30	4.5	63	34	ST7134 <b>24 x 063</b>
			74	44	ST7134 <b>24 x 074</b>
			83	46	ST7134 <b>24 x 083</b>
25	31	4.5	63	34	ST7134 <b>25 x 063</b>
			74	44	ST7134 <b>25 x 074</b>
			83	46	ST7134 <b>25 x 083</b>
30	38	4.5	68	38	ST7134 <b>30 x 068</b>
			74	44	ST7134 <b>30 x 074</b>
			83	46	ST7134 <b>30 x 083</b>
			88	47	ST7134 <b>30 x 088</b>
			98	53	ST7134 <b>30 x 098</b>
108			58		ST7134 <b>30 x 108</b>
32	40	4.5	68	38	ST7134 <b>32 x 068</b>
			74	44	ST7134 <b>32 x 074</b>
			83	46	ST7134 <b>32 x 083</b>
			88	47	ST7134 <b>32 x 088</b>
			98	53	ST7134 <b>32 x 098</b>
108			58		ST7134 <b>32 x 108</b>
38	46	6.0	68	38	ST7134 <b>38 x 068</b>

d <sub>1</sub>	d <sub>2</sub>	l <sub>4</sub>	l <sub>2</sub>	l <sub>3</sub>	Item number
38	46	6.0	88	47	ST7134 <b>38 x 088</b>
			108	58	ST7134 <b>38 x 108</b>
			128	78	ST7134 <b>38 x 128</b>
40	48	6.0	68	38	ST7134 <b>40 x 068</b>
			88	47	ST7134 <b>40 x 088</b>
			108	58	ST7134 <b>40 x 108</b>
128			78		ST7134 <b>40 x 128</b>
48	56	7.0	88	47	ST7134 <b>48 x 088</b>
			108	58	ST7134 <b>48 x 108</b>
			128	78	ST7134 <b>48 x 128</b>
50	58	7.0	88	47	ST7134 <b>50 x 088</b>
			108	58	ST7134 <b>50 x 108</b>
			128	78	ST7134 <b>50 x 128</b>
60	70	7.0	113	65	ST7134 <b>60 x 113</b>
			128	78	ST7134 <b>60 x 128</b>
			139	86	ST7134 <b>60 x 139</b>
63	73	7.0	113	65	ST7134 <b>63 x 113</b>
			128	78	ST7134 <b>63 x 128</b>
			139	86	ST7134 <b>63 x 139</b>

Active elements

Spring elements

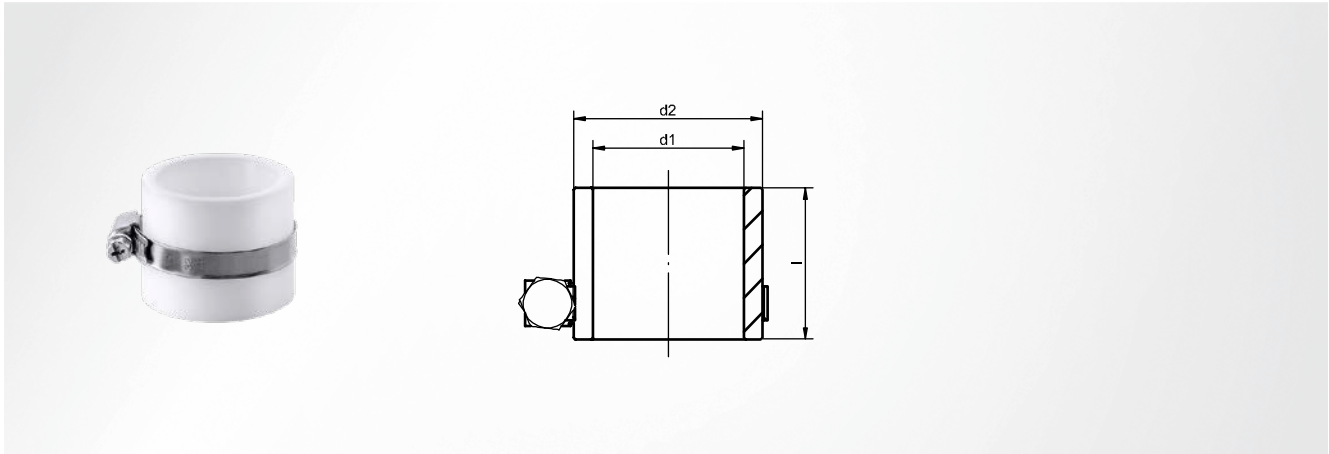
Nitrogen systems

Tapping units

Module system

Machine elements

Accessories

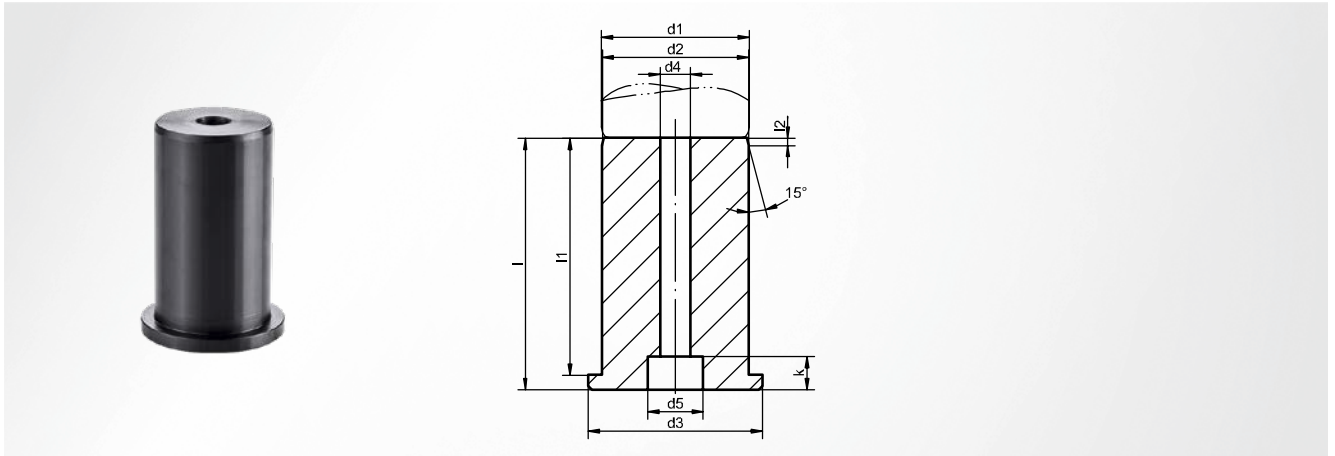


## Material

Polyurethane

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





### 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 <b>15</b>
16	15.5	21.5	8.1	13.5	34	31	3	9	ST7132 <b>16</b>
19	18.5	24.5	8.1	15.0	40	37	3	9	ST7132 <b>19</b>
20	19.5	25.5	8.1	15.0	40	37	3	9	ST7132 <b>20</b>
24	23.5	29.5	8.1	15.0	48	45	3	9	ST7132 <b>24</b>
25	24.5	30.5	8.1	15.0	48	45	3	9	ST7132 <b>25</b>
30	29.5	37.0	8.1	15.0	58	54	4	9	ST7132 <b>30</b>
32	31.5	39.0	8.1	15.0	58	54	4	9	ST7132 <b>32</b>
38	37.5	45.0	8.1	15.0	68	64	4	9	ST7132 <b>38</b>
40	39.5	47.0	8.1	15.0	68	64	4	9	ST7132 <b>40</b>
48	47.5	55.0	8.1	15.0	68	64	4	9	ST7132 <b>48</b>
50	49.5	57.0	8.1	15.0	68	64	4	9	ST7132 <b>50</b>
60	59.5	69.0	8.1	15.0	80	75	5	9	ST7132 <b>60</b>
63	62.5	72.0	8.1	15.0	80	75	5	9	ST7132 <b>63</b>
80	79.0	91.0	8.1	15.0	80	75	5	9	ST7132 <b>80</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

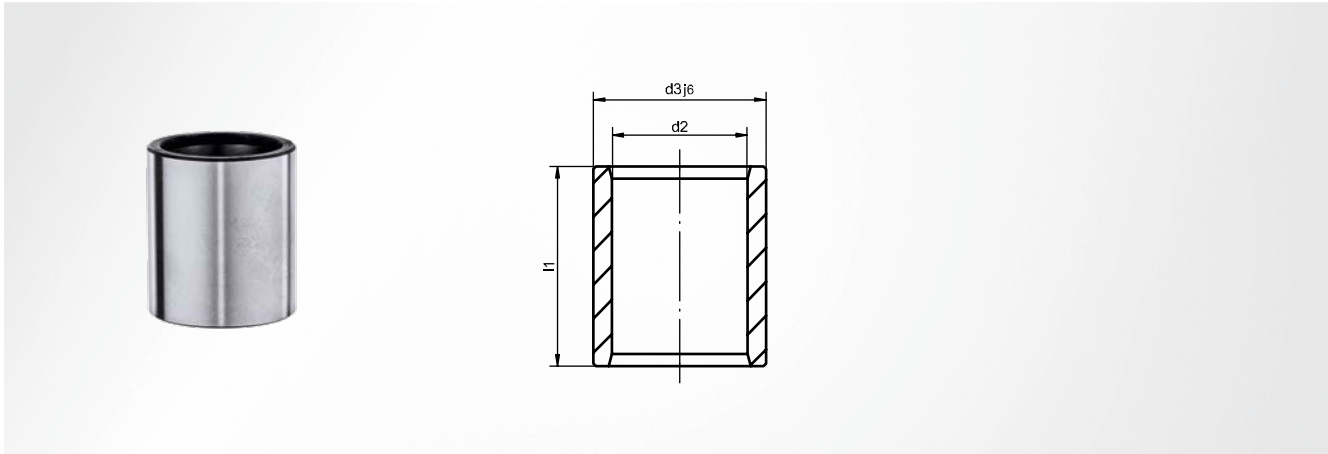
Module system

Machine elements

Accessories

# 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

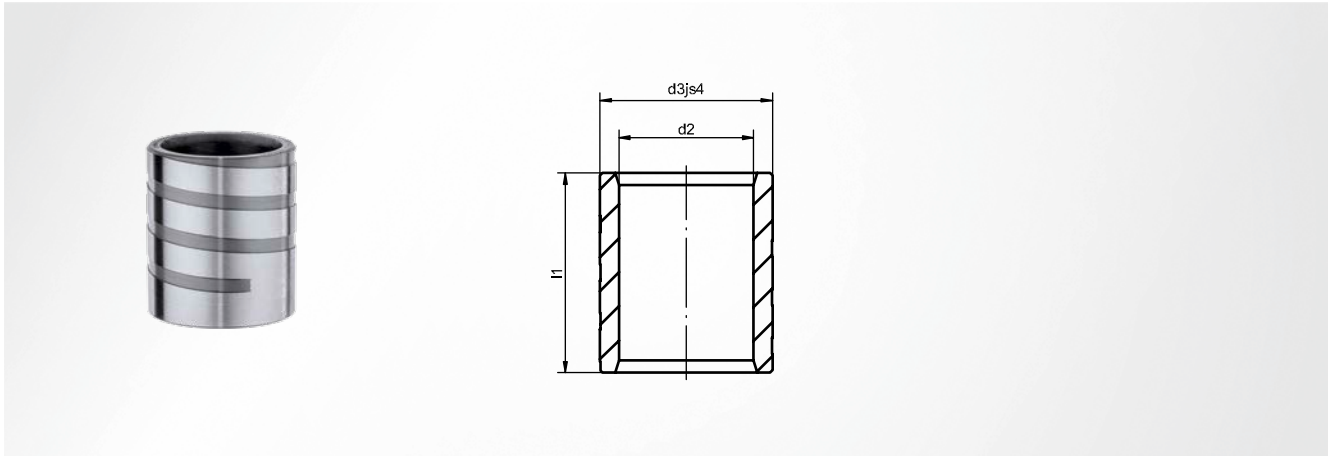
$d_1^{h3}$	$d_2$	$d_3^{j6}$	$l_1$	Item number
10	14	22	23	ST7406 <b>10 x 023</b>
			30	ST7406 <b>10 x 030</b>
			37	ST7406 <b>10 x 037</b>
12	16	22	23	ST7406 <b>12 x 023</b>
			30	ST7406 <b>12 x 030</b>
			37	ST7406 <b>12 x 037</b>
15	21	28	23	ST7406 <b>15 x 023</b>
			30	ST7406 <b>15 x 030</b>
			37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

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

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

# 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

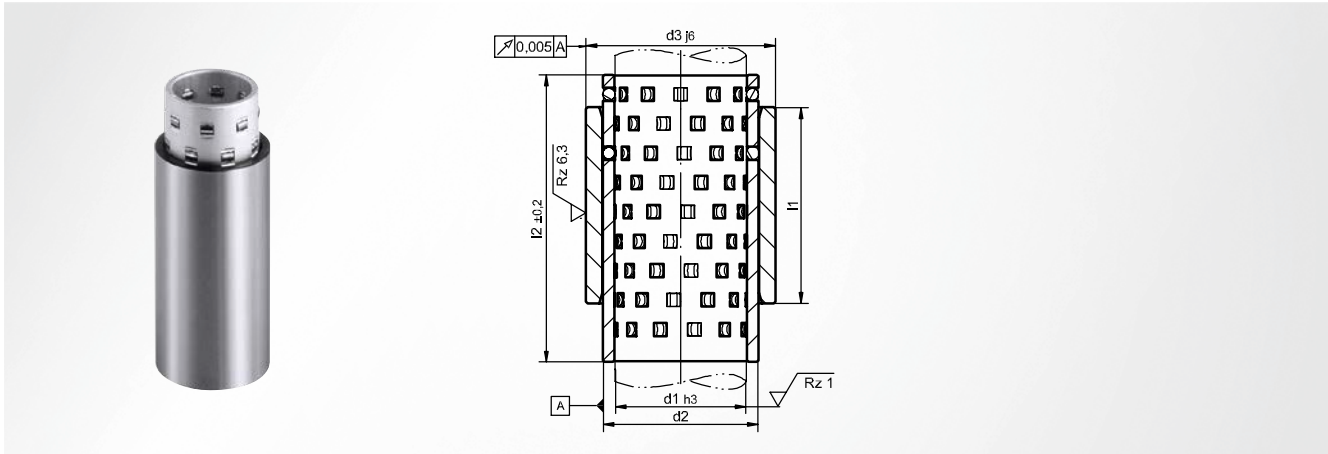
d <sub>1</sub> <sup>h3</sup>	d <sub>2</sub>	d <sub>3</sub> <sup>js4</sup>	l <sub>1</sub>	Item number
10	14	22	23	ST7407 <b>10 x 023</b>
			30	ST7407 <b>10 x 030</b>
			37	ST7407 <b>10 x 037</b>
12	16	22	23	ST7407 <b>12 x 023</b>
			30	ST7407 <b>12 x 030</b>
			37	ST7407 <b>12 x 037</b>
15	21	28	23	ST7407 <b>15 x 023</b>
			30	ST7407 <b>15 x 030</b>
			37	ST7407 <b>15 x 037</b>
			47	ST7407 <b>15 x 047</b>
16	22	28	23	ST7407 <b>16 x 023</b>
			30	ST7407 <b>16 x 030</b>
			37	ST7407 <b>16 x 037</b>
			47	ST7407 <b>16 x 047</b>
19	25	32	23	ST7407 <b>19 x 023</b>
			30	ST7407 <b>19 x 030</b>
			37	ST7407 <b>19 x 037</b>
			43	ST7407 <b>19 x 043</b>
			47	ST7407 <b>19 x 047</b>
20	26	32	23	ST7407 <b>20 x 023</b>
			30	ST7407 <b>20 x 030</b>
			37	ST7407 <b>20 x 037</b>
			47	ST7407 <b>20 x 047</b>
			60	ST7407 <b>20 x 060</b>

d <sub>1</sub> <sup>h3</sup>	d <sub>2</sub>	d <sub>3</sub> <sup>js4</sup>	l <sub>1</sub>	Item number			
20	26	32	60	ST7407 <b>20 x 060</b>			
			24	30	40	23	ST7407 <b>24 x 023</b>
						30	ST7407 <b>24 x 030</b>
						37	ST7407 <b>24 x 037</b>
						47	ST7407 <b>24 x 047</b>
25	31	40	60	ST7407 <b>24 x 060</b>			
			77	ST7407 <b>24 x 077</b>			
			25	31	40	23	ST7407 <b>25 x 023</b>
						30	ST7407 <b>25 x 030</b>
						37	ST7407 <b>25 x 037</b>
47	ST7407 <b>25 x 047</b>						
30	38	48	60	ST7407 <b>25 x 060</b>			
			77	ST7407 <b>25 x 077</b>			
			30	38	48	30	ST7407 <b>30 x 030</b>
						37	ST7407 <b>30 x 037</b>
						47	ST7407 <b>30 x 047</b>
60	ST7407 <b>30 x 060</b>						
32	40	48	77	ST7407 <b>30 x 077</b>			
			95	ST7407 <b>30 x 095</b>			
			32	40	48	30	ST7407 <b>32 x 030</b>
						37	ST7407 <b>32 x 037</b>
						47	ST7407 <b>32 x 047</b>
60	ST7407 <b>32 x 060</b>						
38	46	58	77	ST7407 <b>32 x 077</b>			
			95	ST7407 <b>32 x 095</b>			
			38	46	58	30	ST7407 <b>38 x 030</b>
						37	ST7407 <b>38 x 037</b>
						47	ST7407 <b>38 x 047</b>
60	ST7407 <b>38 x 060</b>						

d <sub>1</sub> <sup>h3</sup>	d <sub>2</sub>	d <sub>3</sub> <sup>js4</sup>	l <sub>1</sub>	Item number			
38	46	58	37	ST7407 <b>38 x 037</b>			
			47	ST7407 <b>38 x 047</b>			
			60	ST7407 <b>38 x 060</b>			
			77	ST7407 <b>38 x 077</b>			
40	48	58	95	ST7407 <b>38 x 095</b>			
			120	ST7407 <b>38 x 120</b>			
			40	48	58	30	ST7407 <b>40 x 030</b>
						37	ST7407 <b>40 x 037</b>
47	ST7407 <b>40 x 047</b>						
60	ST7407 <b>40 x 060</b>						
48	56	70	77	ST7407 <b>40 x 077</b>			
			95	ST7407 <b>40 x 095</b>			
			120	ST7407 <b>40 x 120</b>			
			48	56	70	37	ST7407 <b>48 x 037</b>
47	ST7407 <b>48 x 047</b>						
60	ST7407 <b>48 x 060</b>						
77	ST7407 <b>48 x 077</b>						
50	58	70	95	ST7407 <b>48 x 095</b>			
			120	ST7407 <b>48 x 120</b>			
			50	58	70	37	ST7407 <b>50 x 037</b>
						47	ST7407 <b>50 x 047</b>
60	ST7407 <b>50 x 060</b>						
77	ST7407 <b>50 x 077</b>						
58	70	70	95	ST7407 <b>50 x 095</b>			
			120	ST7407 <b>50 x 120</b>			

# ST7403 Guide unit

smooth, roller guide aluminium



Referring to DIN 9831 / ISO 9448

Scope of supply

ST7406; ST7140

### Installation instruction

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

Optional accessories

SZ9742

### Installation in mounting bore

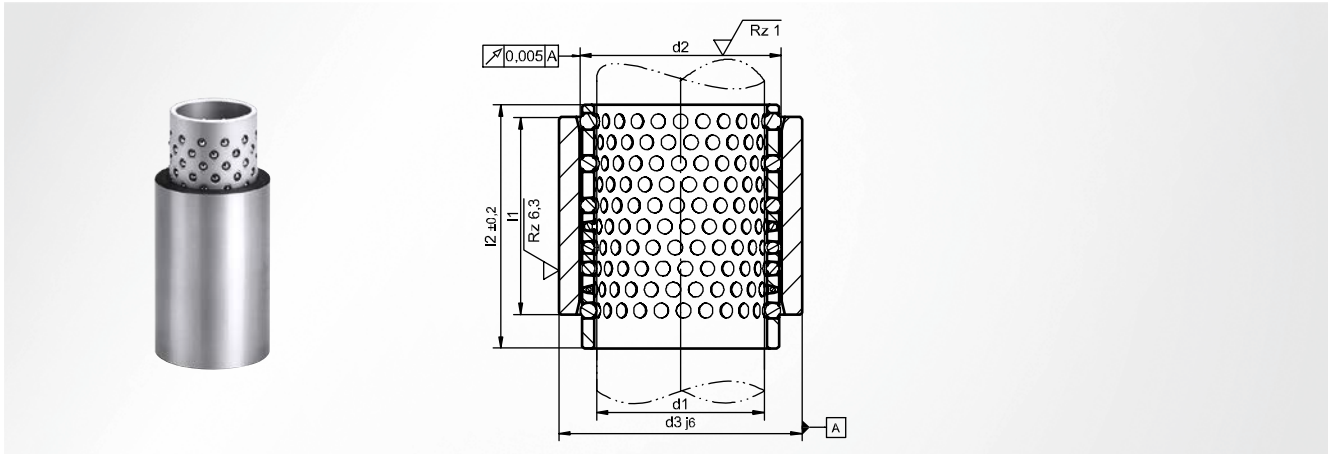
ISO G6

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

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

# ST7402 Guide unit

smooth, ball guide aluminium



Referring to DIN 9831 / ISO 9448

Scope of supply

ST7406; ST7130

### Installation instruction

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

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
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
25	31	40	77	83	ST7402 24 x 077 x 083
			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

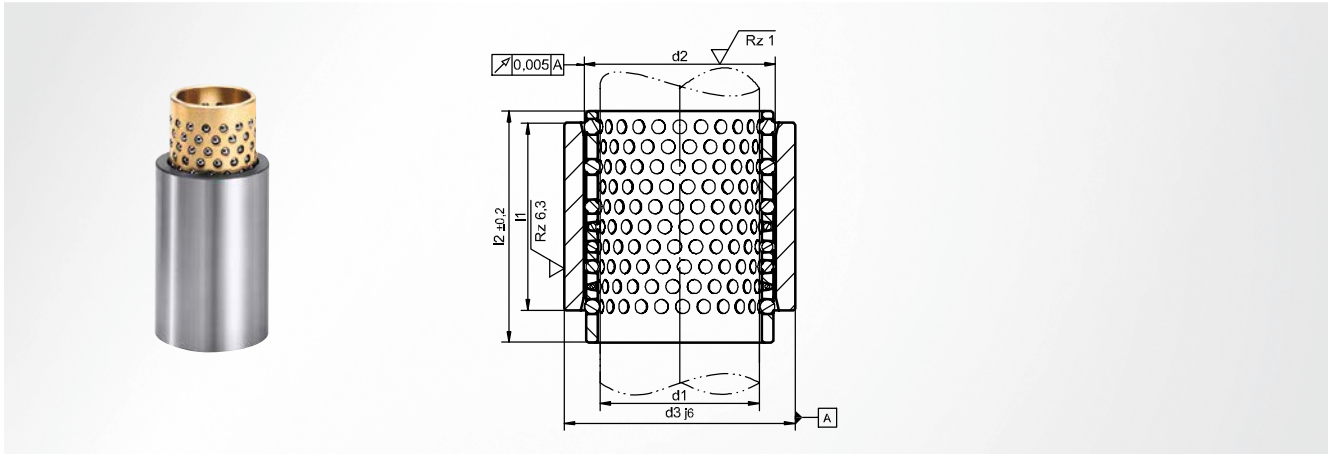


smooth, ball guide aluminium

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

# ST7404 Guide unit

smooth, ball guide brass



Referring to DIN 9831 / ISO 9448

Scope of supply

ST7406; ST7150

### Installation instruction

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

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
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
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
			77	83	ST7404 24 x 077 x 083
			77	83	ST7404 24 x 077 x 083

# ST7404 Guide unit



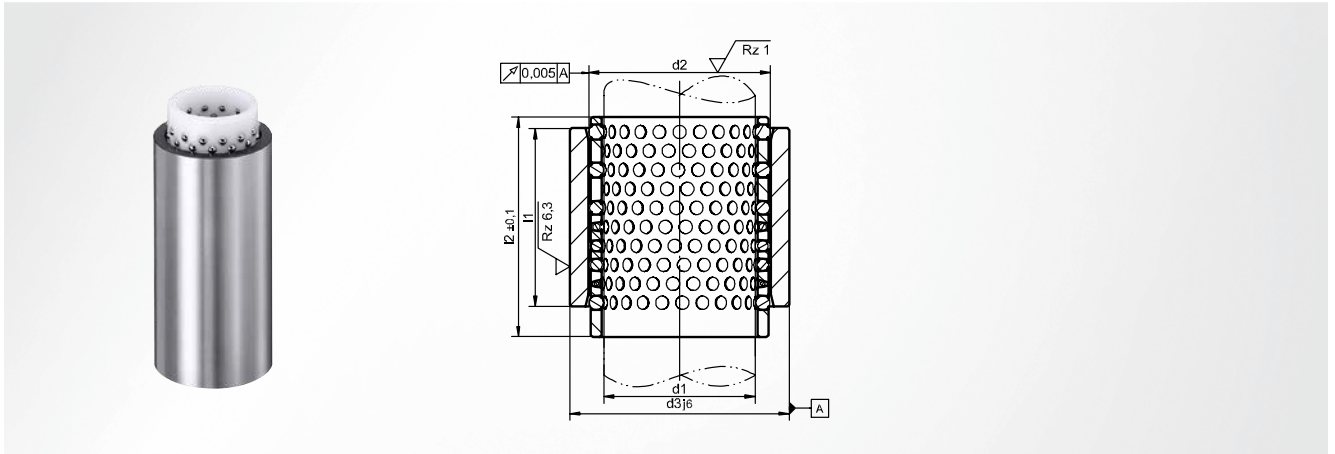
smooth, ball guide brass

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



# ST7405 Guide unit

smooth, ball guide polyurethan



Referring to DIN 9831 / ISO 9448

Scope of supply

ST7406; ST7133

### Installation instruction

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

Optional accessories

SZ9742

### Installation in mounting bore

ISO G6

$d_1^{h3}$	$d_2$	$d_3^{j6}$	$l_1$	$l_2 \pm 0.1$	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
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
			77	83	ST7405 24 x 077 x 083
			37	43	ST7405 25 x 037 x 043

# ST7405 Guide unit

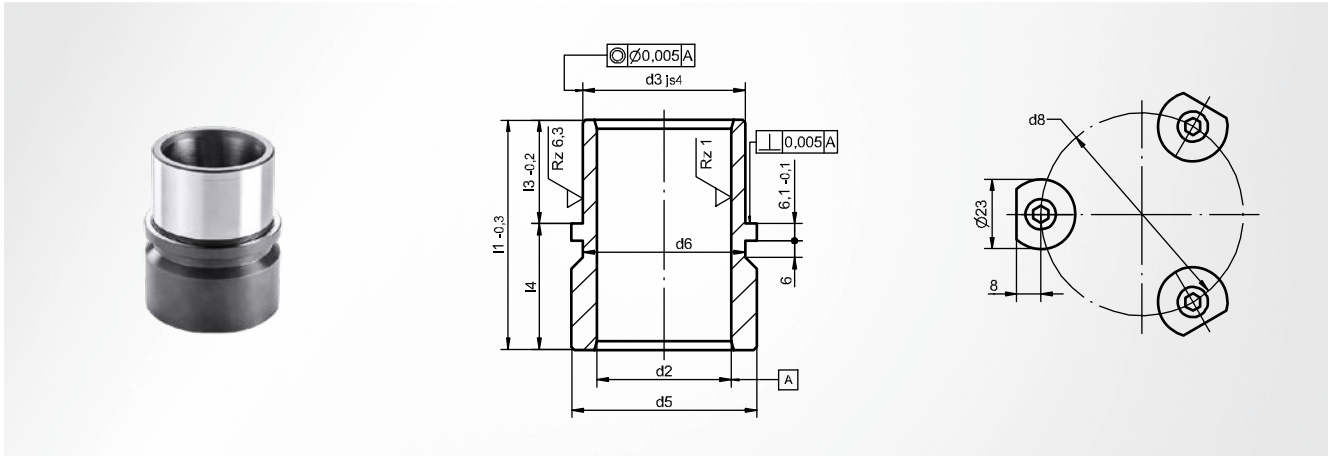


smooth, ball guide polyurethan

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

# 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 <sub>1</sub>	d <sub>2</sub>	d <sub>3 js4</sub>	d <sub>5</sub>	d <sub>6</sub>	d <sub>8</sub>	l <sub>3 -0.2</sub>	l <sub>1 -0.3</sub>	l <sub>4</sub>	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

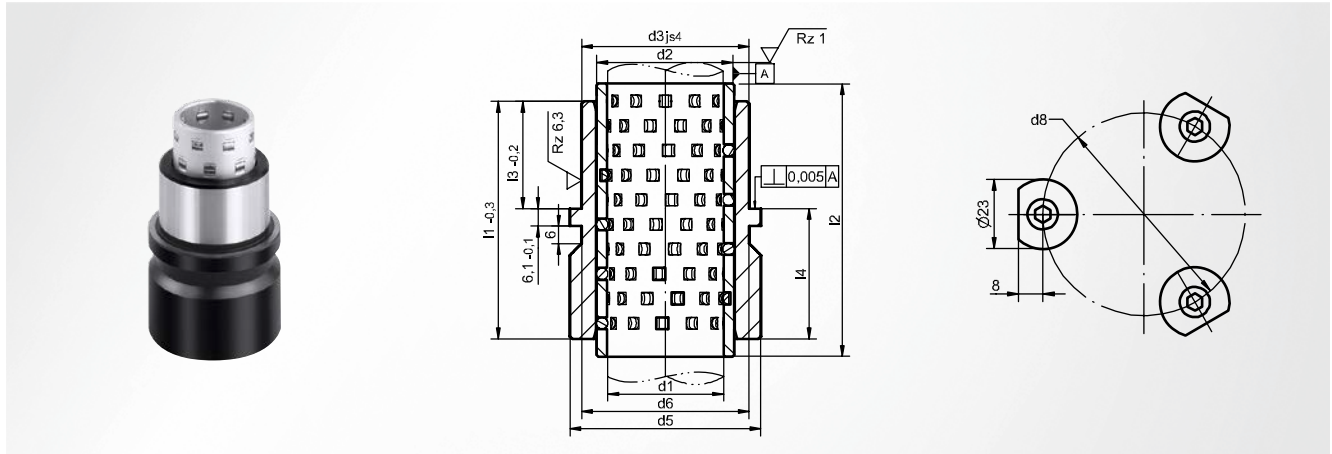
with shoulder

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

# ST7413 Guide unit



roller guide aluminium, with shoulder



Referring to DIN 9831 / ISO 9448

Installation in mounting bore

ISO H6

## Installation instruction

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

## Scope of supply

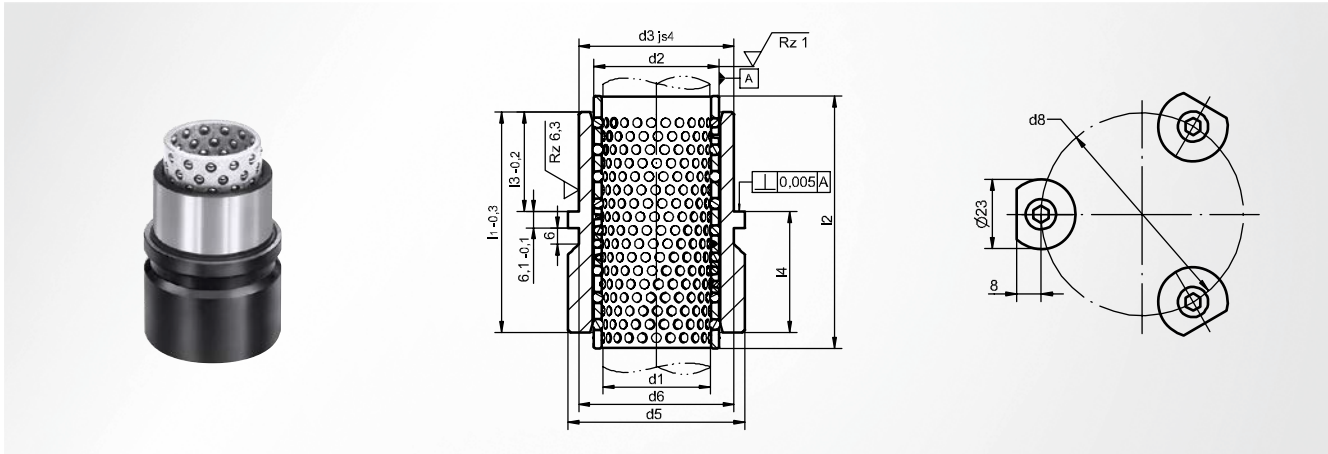
ST7367; ST7140; ST7416

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

# ST7412 Guide unit



ball guide aluminium, with shoulder



Referring to DIN 9831 / ISO 9448

Installation in mounting bore

ISO H6

### Installation instruction

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

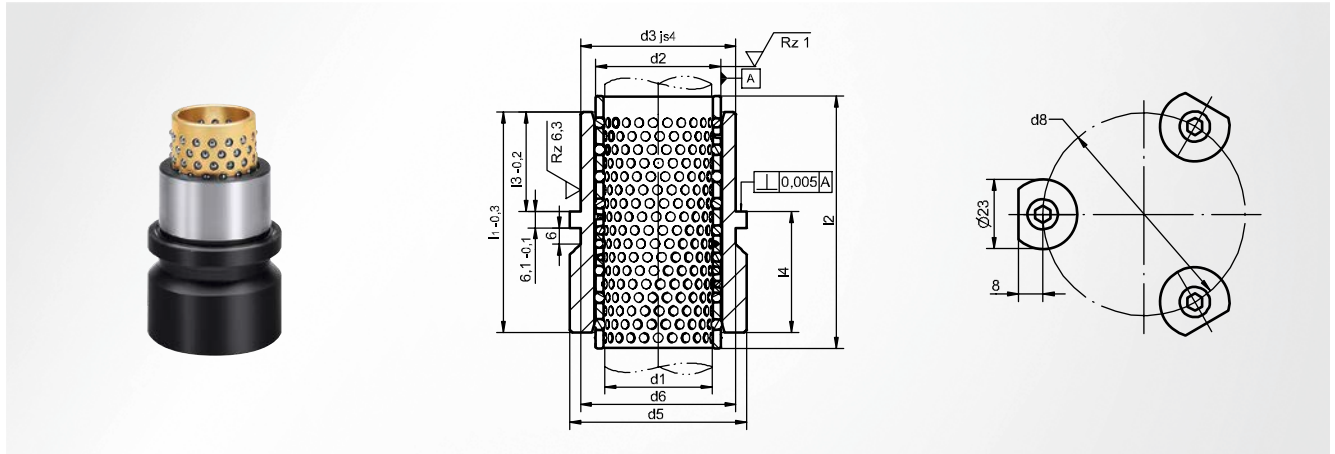
### Scope of supply

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 in mounting bore

ISO H6

### Installation instruction

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

### Scope of supply

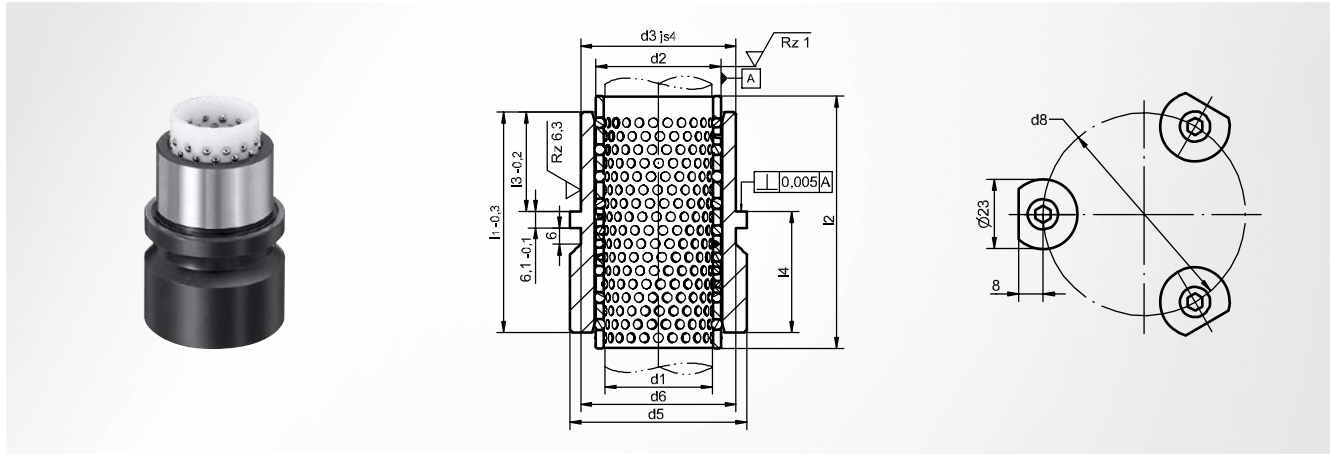
ST7367; ST7150; ST7416

$d_1^{h3}$	$d_2$	$d_3^{js4}$	$d_5$	$d_6$	$d_8$	$l_3^{-0.2}$	$l_1^{-0.3}$	$l_2^{\pm 0.2}$	$l_4$	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 in mounting bore

ISO H6

## Installation instruction

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

## Scope of supply

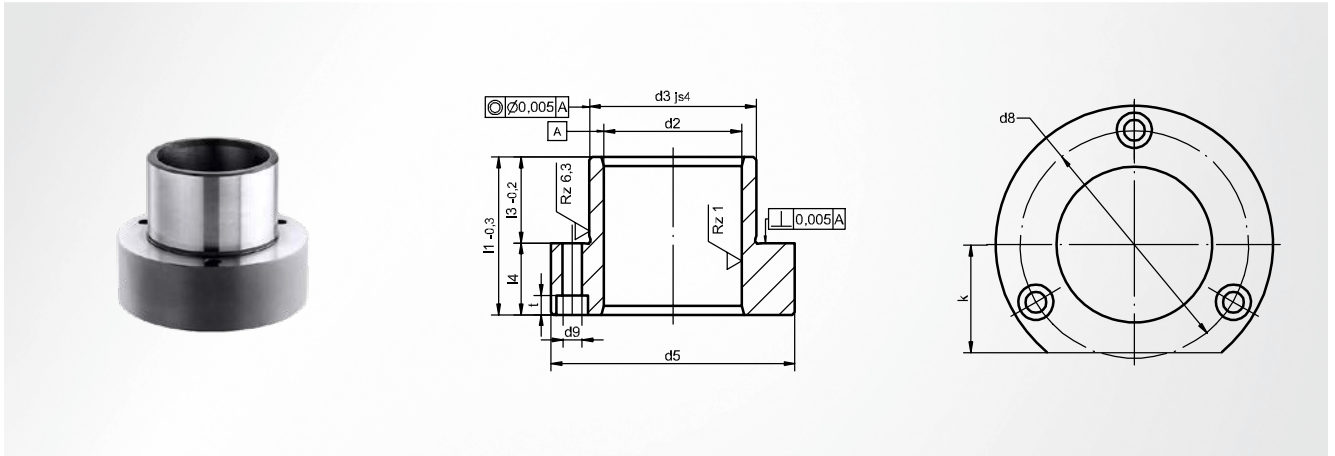
ST7367; ST7133; ST7416

$d_1^{h3}$	$d_2$	$d_3^{js4}$	$d_5$	$d_6$	$d_8$	$l_3^{-0.2}$	$l_1^{-0.3}$	$l_2^{\pm 0.1}$	$l_4$	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

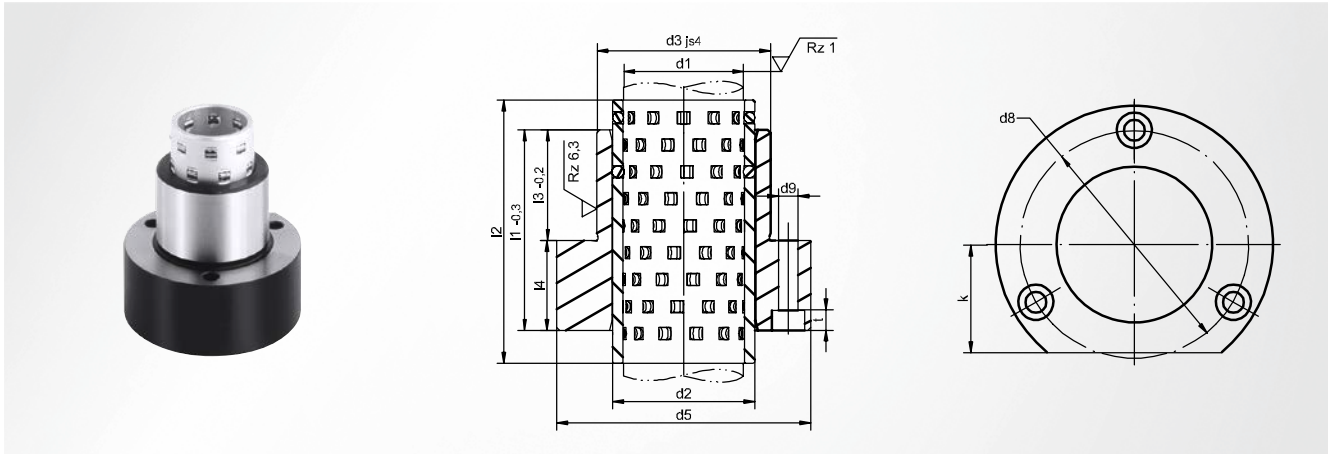
# ST7426 Guide bush

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 <b>50 x 062</b>
								89	47	42	ST7426 <b>50 x 089</b>
								102	60	42	ST7426 <b>50 x 102</b>
60	70	85	120	100	9.0	9.0	46	89	47	42	ST7426 <b>60 x 089</b>
								102	60	42	ST7426 <b>60 x 102</b>
63	73	85	120	100	9.0	9.0	46	89	47	42	ST7426 <b>63 x 089</b>
								102	60	42	ST7426 <b>63 x 102</b>
80	92	105	148	125	11.0	11.0	56	125	75	50	ST7426 <b>80 x 125</b>

# ST7423 Guide unit

roller guide aluminium, with flange



Referring to DIN 9831 / ISO 9448

Installation in mounting bore

ISO H6

### Installation instruction

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

### 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

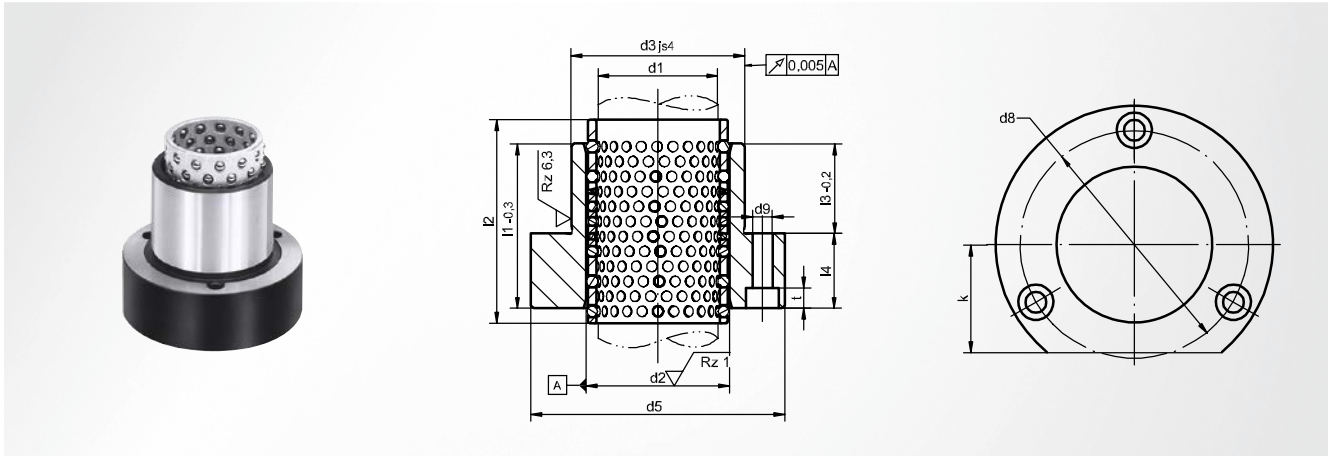
# ST7423 Guide unit

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 <b>63 x 102 x 128</b>
80	92	105	148	125	11.0	11.0	56	125	138	75	50	ST7423 <b>80 x 125 x 138</b>

# ST7422 Guide unit

ball guide aluminium, with flange



Referring to DIN 9831 / ISO 9448

Scope of supply

ST7130; ST7426

### Installation instruction

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

Optional accessories

SZ8510

### Installation in mounting bore

ISO H6

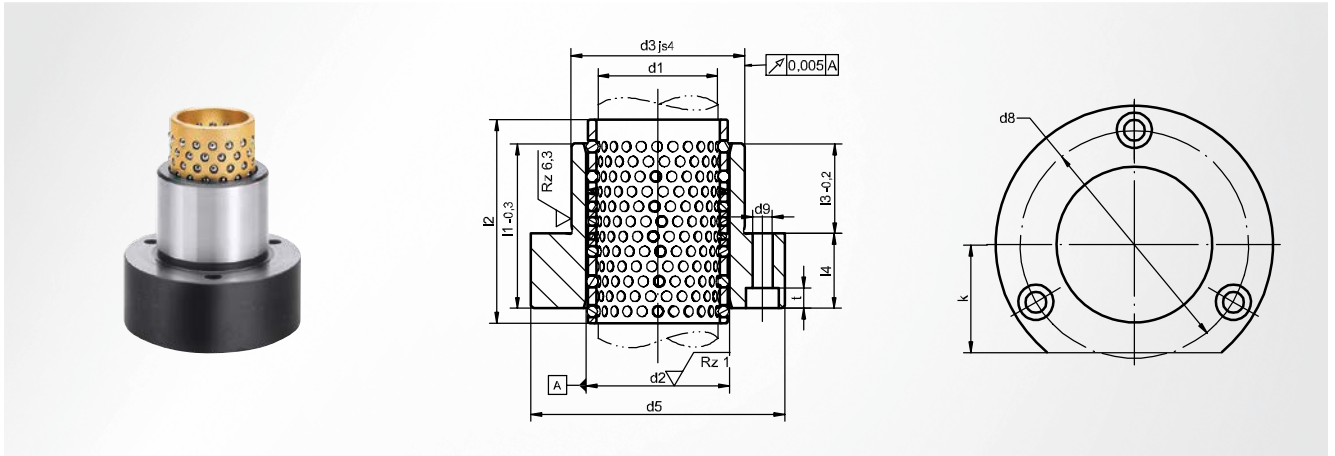
$d_1^{h3}$	$d_2$	$d_3^{js4}$	$d_5$	$d_8$	$d_9$	$t$	$k$	$l_1^{-0.3}$	$l_2^{\pm 0.2}$	$l_3^{-0.2}$	$l_4$	Item number
15	21	28	45	35	4.5	3.5	15	29	43	23	6	ST7422 15 x 029 x 043
								36	43	30	6	ST7422 15 x 036 x 043
16	22	28	45	35	4.5	3.5	15	29	43	23	6	ST7422 16 x 029 x 043
								36	43	30	6	ST7422 16 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

## 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 <b>50 x 102 x 128</b>
60	70	85	120	100	9.0	9.0	46	89	113	47	42	ST7422 <b>60 x 089 x 113</b>
								102	128	60	42	ST7422 <b>60 x 102 x 128</b>
63	73	85	120	100	9.0	9.0	46	89	113	47	42	ST7422 <b>63 x 089 x 113</b>
								102	128	60	42	ST7422 <b>63 x 102 x 128</b>
80	92	105	148	125	11.0	11.0	56	125	138	75	50	ST7422 <b>80 x 125 x 138</b>

# ST7424 Guide unit

ball guide brass, with flange



Referring to DIN 9831 / ISO 9448

Installation in mounting bore

ISO H6

### Installation instruction

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

### 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

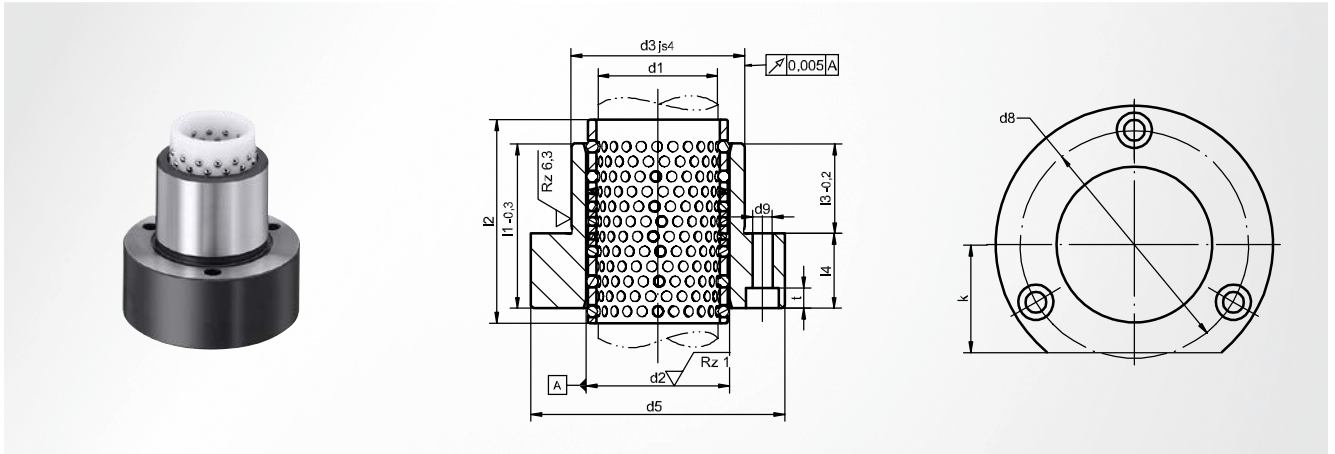
ball guide brass, with flange

$d_1^{h3}$	$d_2$	$d_3^{js4}$	$d_5$	$d_8$	$d_9$	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 <b>50 x 102 x 128</b>
60	70	85	120	100	9.0	9.0	46	89	113	47	42	ST7424 <b>60 x 089 x 113</b>
								102	128	60	42	ST7424 <b>60 x 102 x 128</b>
63	73	85	120	100	9.0	9.0	46	89	113	47	42	ST7424 <b>63 x 089 x 113</b>
								102	128	60	42	ST7424 <b>63 x 102 x 128</b>
80	92	105	148	125	11.0	11.0	56	125	138	75	50	ST7424 <b>80 x 125 x 138</b>



# ST7425 Guide unit

ball guide polyurethan, with flange



Referring to DIN 9831 / ISO 9448

Installation in mounting bore

ISO H6

### Installation instruction

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

### Scope of supply

ST7133; ST7426

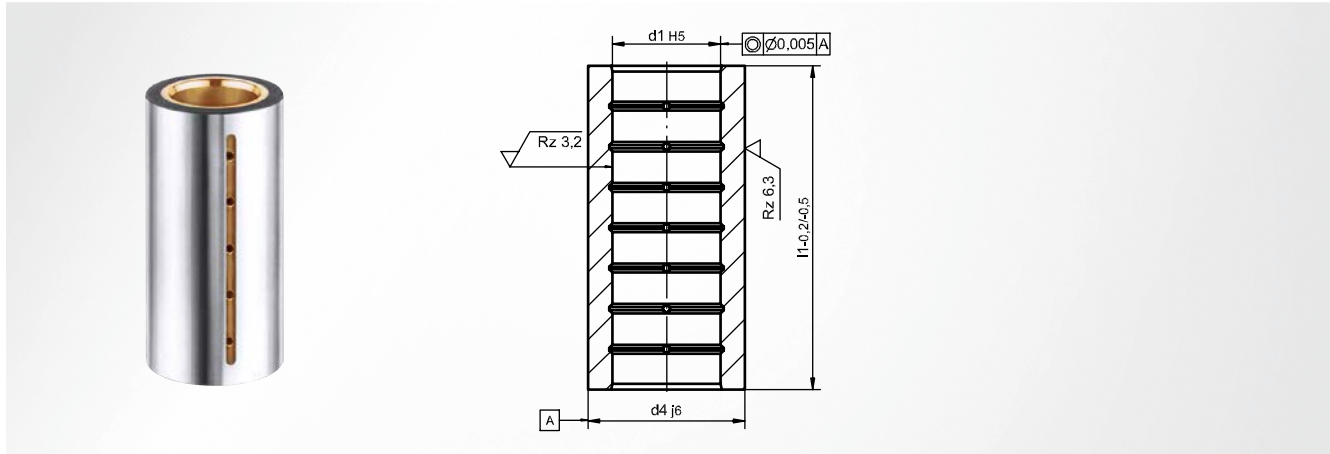
### Optional accessories

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
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
24	40	23	ST7409 24 x 023
		30	ST7409 24 x 030
		37	ST7409 24 x 037
		47	ST7409 24 x 047
		60	ST7409 24 x 060

$d_1^{H5}$	$d_4^{j6}$	$l_1^{-0.2 - 0.5}$	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
30	48	30	ST7409 30 x 030
		37	ST7409 30 x 037
		47	ST7409 30 x 047
		60	ST7409 30 x 060
32	48	30	ST7409 32 x 030
		37	ST7409 32 x 037
		47	ST7409 32 x 047
		60	ST7409 32 x 060
38	58	30	ST7409 38 x 030
		37	ST7409 38 x 037
		47	ST7409 38 x 047
		60	ST7409 38 x 060
40	58	30	ST7409 40 x 030
		37	ST7409 40 x 037
		47	ST7409 40 x 047
		60	ST7409 40 x 060

# 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 <b>40 x 037</b>
		47	ST7409 <b>40 x 047</b>
		60	ST7409 <b>40 x 060</b>
		77	ST7409 <b>40 x 077</b>
		95	ST7409 <b>40 x 095</b>
		120	ST7409 <b>40 x 120</b>
48	70	37	ST7409 <b>48 x 037</b>
		47	ST7409 <b>48 x 047</b>
		60	ST7409 <b>48 x 060</b>
		77	ST7409 <b>48 x 077</b>
		95	ST7409 <b>48 x 095</b>
		120	ST7409 <b>48 x 120</b>
50	70	37	ST7409 <b>50 x 037</b>
		47	ST7409 <b>50 x 047</b>

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

Active elements

Spring elements

Nitrogen systems

Tapping units

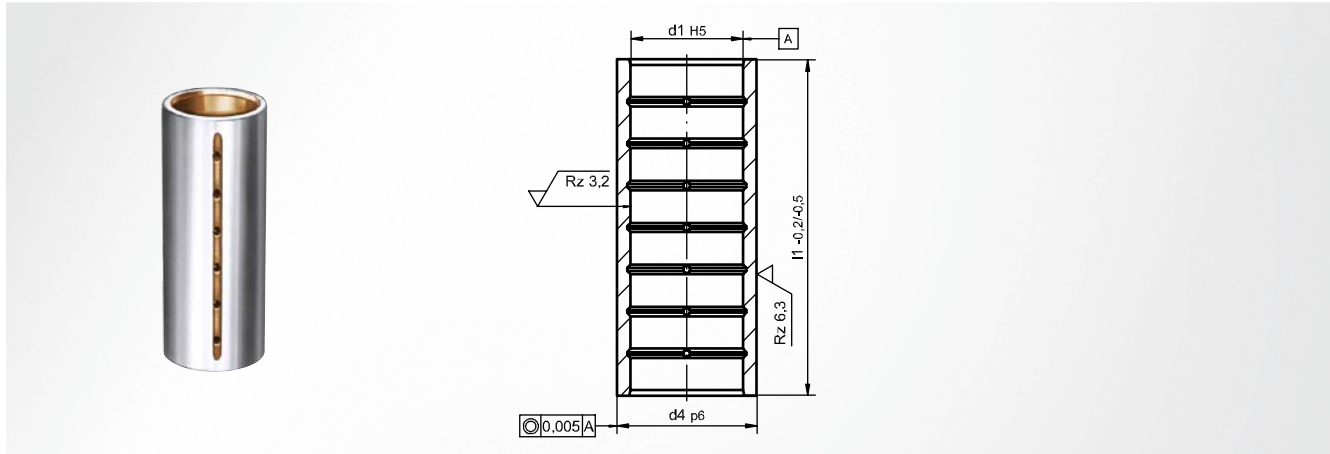
Module system

Machine elements

Accessories

# 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

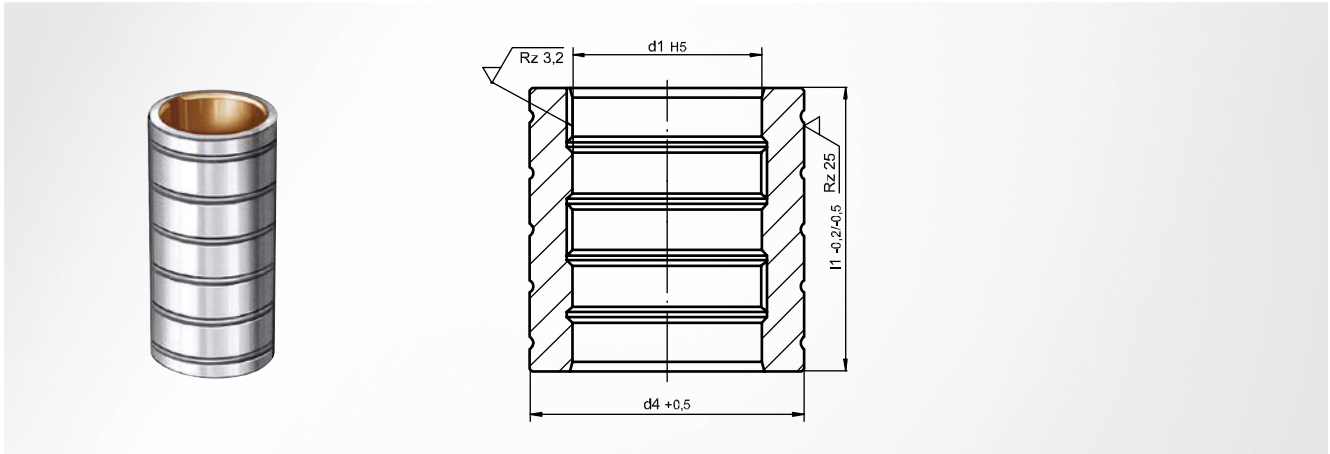
ISO E6

$d_1^{H5}$	$d_4^{p6}$	$l_1^{-0.2 - 0.5}$	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
30	38	77	ST7319 25 x 077
		37	ST7319 30 x 037
		47	ST7319 30 x 047
32	40	60	ST7319 30 x 060
		77	ST7319 30 x 077
		95	ST7319 30 x 095
		37	ST7319 32 x 037
		47	ST7319 32 x 047
38	48	60	ST7319 32 x 060
		77	ST7319 32 x 077
		95	ST7319 32 x 095
		120	ST7319 32 x 120
40	50	47	ST7319 38 x 047
		60	ST7319 38 x 060
		77	ST7319 38 x 077
		95	ST7319 38 x 095
40	50	120	ST7319 38 x 120
		47	ST7319 40 x 047
		60	ST7319 40 x 060
		77	ST7319 40 x 077
40	50	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
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
30	48	77	ST7411 25 x 077
		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
32	48	95	ST7411 30 x 095
		30	ST7411 32 x 030
		37	ST7411 32 x 037
		47	ST7411 32 x 047
		60	ST7411 32 x 060
38	58	77	ST7411 32 x 077
		95	ST7411 32 x 095
		30	ST7411 38 x 030
		37	ST7411 38 x 037
		47	ST7411 38 x 047
		60	ST7411 38 x 060
40	58	77	ST7411 38 x 077
		95	ST7411 38 x 095
		120	ST7411 38 x 120
		30	ST7411 40 x 030
		37	ST7411 40 x 037
48	70	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
47	70	37	ST7411 48 x 037
		47	ST7411 48 x 047

# ST7411 Guide bush

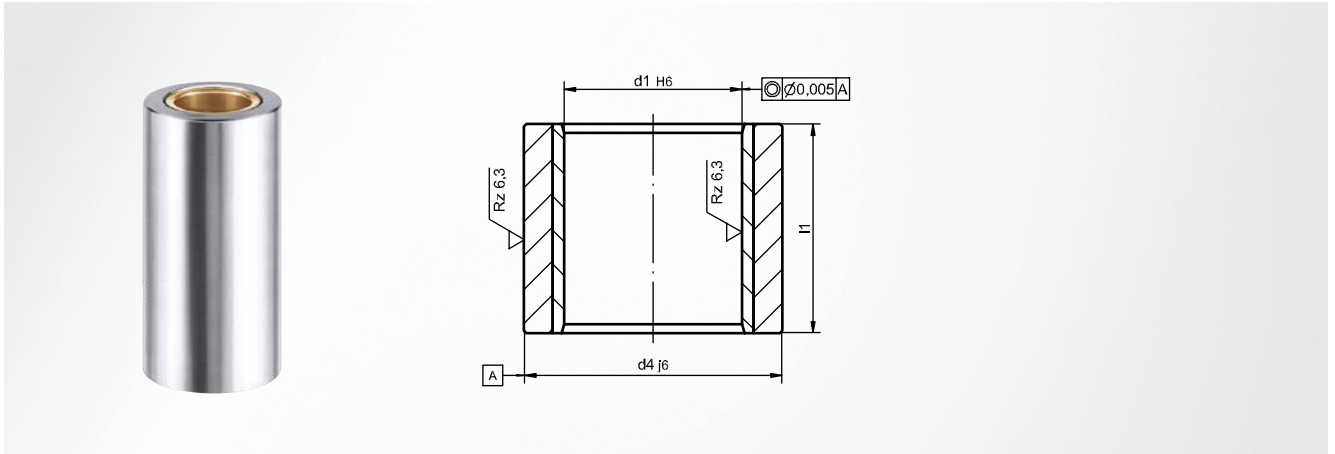
smooth, sliding guide steel bronze plated, for pouring

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

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

# 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
32	48	77	ST7491 30 x 077
		95	ST7491 30 x 095
		30	ST7491 32 x 030
		37	ST7491 32 x 037
		47	ST7491 32 x 047
38	58	60	ST7491 32 x 060
		77	ST7491 32 x 077
		95	ST7491 32 x 095
		30	ST7491 38 x 030
		37	ST7491 38 x 037
40	58	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
		30	ST7491 40 x 030
48	70	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
		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

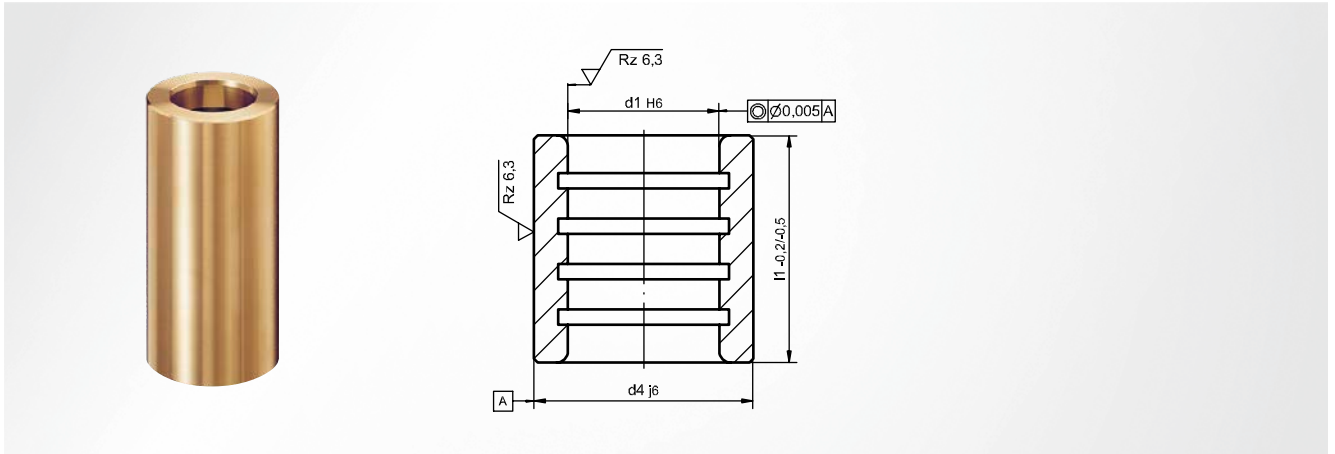
$d_1^{H6}$	$d_4^{j6}$	$l_1$	Item number
48	70	95	ST7491 <b>48 x 095</b>
		120	ST7491 <b>48 x 120</b>
50	70	37	ST7491 <b>50 x 037</b>
		47	ST7491 <b>50 x 047</b>
		60	ST7491 <b>50 x 060</b>
		77	ST7491 <b>50 x 077</b>
		95	ST7491 <b>50 x 095</b>
		120	ST7491 <b>50 x 120</b>
60	85	60	ST7491 <b>60 x 060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

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



# 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
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
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
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
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
30	48	23	ST7451 30 x 023
		30	ST7451 30 x 030
		37	ST7451 30 x 037
		47	ST7451 30 x 047
		60	ST7451 30 x 060

# ST7451 Guide bush

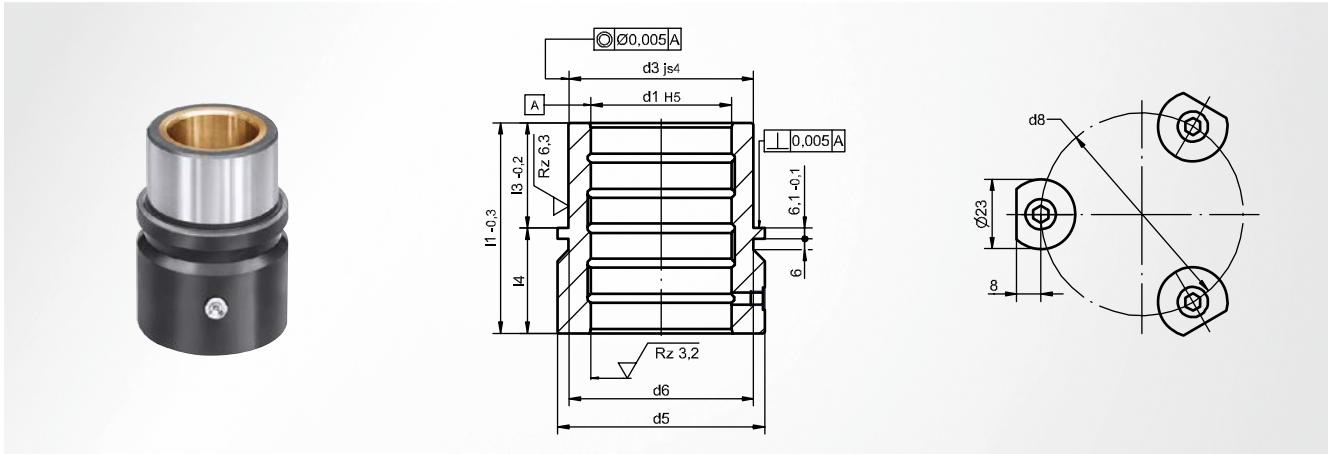


smooth, sliding guide with solid lubricant

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

# 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

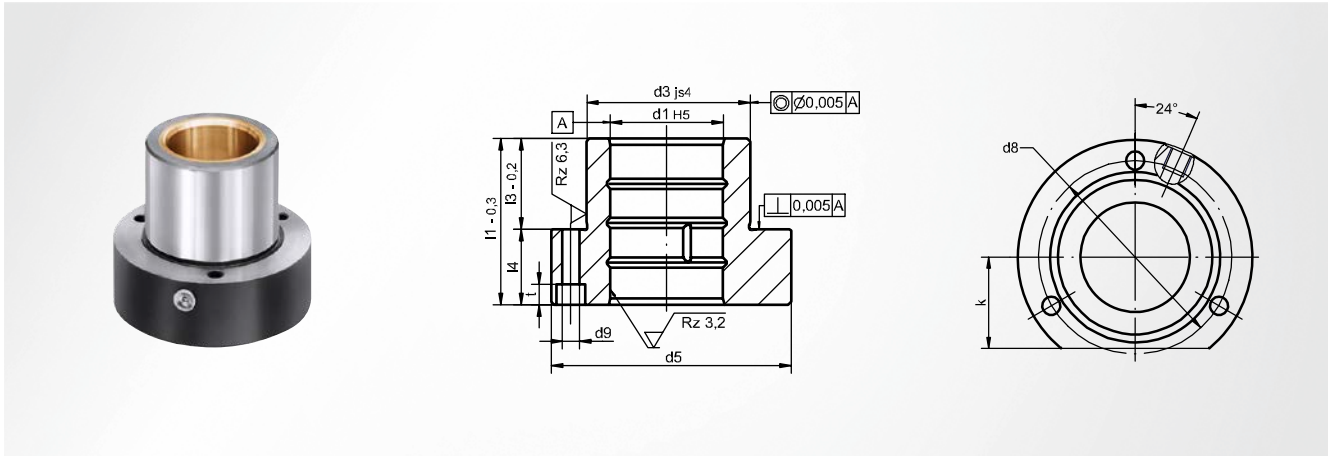
ST7367

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

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

# 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**

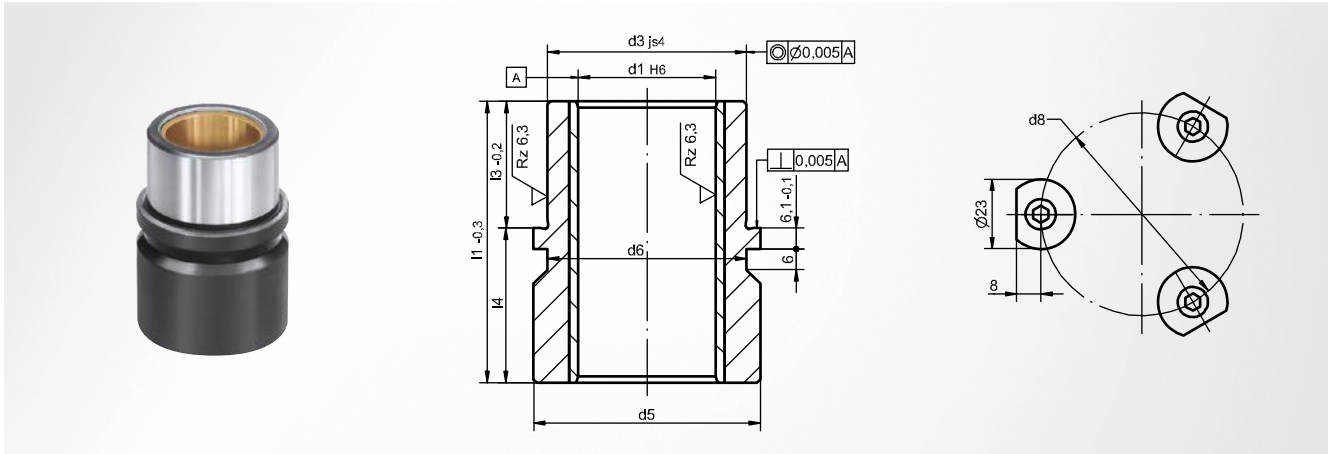
For diameters 15 and 16 the borehole for lubrication is on d<sub>3</sub>.

d <sub>1</sub> <sup>H5</sup>	d <sub>3</sub> <sup>js4</sup>	d <sub>5</sub>	d <sub>8</sub>	d <sub>9</sub>	t	k	l <sub>1</sub> <sup>-0.3</sup>	l <sub>3</sub> <sup>-0.2</sup>	l <sub>4</sub>	Item number
15	28	45	35	4.5	3.5	15	29	23	6	ST7429 <b>15 x 029</b>
							36	30	6	ST7429 <b>15 x 036</b>
16	28	45	35	4.5	3.5	15	29	23	6	ST7429 <b>16 x 029</b>
							36	30	6	ST7429 <b>16 x 036</b>
19	32	50	40	4.5	4.6	18	38	23	15	ST7429 <b>19 x 038</b>
							45	30	15	ST7429 <b>19 x 045</b>
							51	37	15	ST7429 <b>19 x 051</b>
20	32	50	40	4.5	4.6	18	38	23	15	ST7429 <b>20 x 038</b>
							45	30	15	ST7429 <b>20 x 045</b>
							51	37	15	ST7429 <b>20 x 051</b>
24	40	63	50	5.5	5.7	23	38	23	15	ST7429 <b>24 x 038</b>
							55	30	25	ST7429 <b>24 x 055</b>
							62	37	25	ST7429 <b>24 x 062</b>
25	40	63	50	5.5	5.7	23	38	23	15	ST7429 <b>25 x 038</b>
							55	30	25	ST7429 <b>25 x 055</b>
							62	37	25	ST7429 <b>25 x 062</b>
30	48	72	58	5.5	5.7	28	45	30	15	ST7429 <b>30 x 045</b>
							62	37	25	ST7429 <b>30 x 062</b>
							72	47	25	ST7429 <b>30 x 072</b>
32	48	72	58	5.5	5.7	28	45	30	15	ST7429 <b>32 x 045</b>

d <sub>1</sub> <sup>H5</sup>	d <sub>3</sub> <sup>js4</sup>	d <sub>5</sub>	d <sub>8</sub>	d <sub>9</sub>	t	k	l <sub>1</sub> <sup>-0.3</sup>	l <sub>3</sub> <sup>-0.2</sup>	l <sub>4</sub>	Item number
32	48	72	58	5.5	5.7	28	62	37	25	ST7429 <b>32 x 062</b>
							72	47	25	ST7429 <b>32 x 072</b>
38	58	85	70	6.6	6.8	33	55	30	25	ST7429 <b>38 x 055</b>
							67	37	30	ST7429 <b>38 x 067</b>
							77	47	30	ST7429 <b>38 x 077</b>
40	58	85	70	6.6	6.8	33	55	30	25	ST7429 <b>40 x 055</b>
							67	37	30	ST7429 <b>40 x 067</b>
							77	47	30	ST7429 <b>40 x 077</b>
48	70	104	86	9.0	9.0	38	62	37	25	ST7429 <b>48 x 062</b>
							89	47	42	ST7429 <b>48 x 089</b>
							102	60	42	ST7429 <b>48 x 102</b>
50	70	104	86	9.0	9.0	38	62	37	25	ST7429 <b>50 x 062</b>
							89	47	42	ST7429 <b>50 x 089</b>
							102	60	42	ST7429 <b>50 x 102</b>
60	85	120	100	9.0	9.0	46	89	47	42	ST7429 <b>60 x 089</b>
							102	60	42	ST7429 <b>60 x 102</b>
63	85	120	100	9.0	9.0	46	89	47	42	ST7429 <b>63 x 089</b>
							102	60	42	ST7429 <b>63 x 102</b>
							125	75	50	ST7429 <b>63 x 125</b>
80	105	148	125	11.0	11.0	56	125	75	50	ST7429 <b>80 x 125</b>

# 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

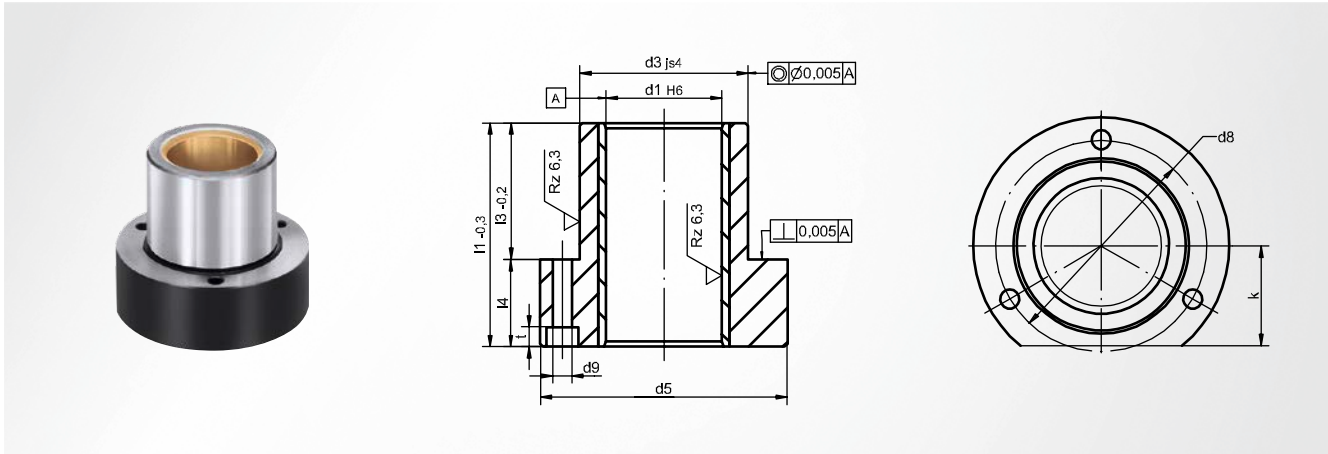
ST7367

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

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

# 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

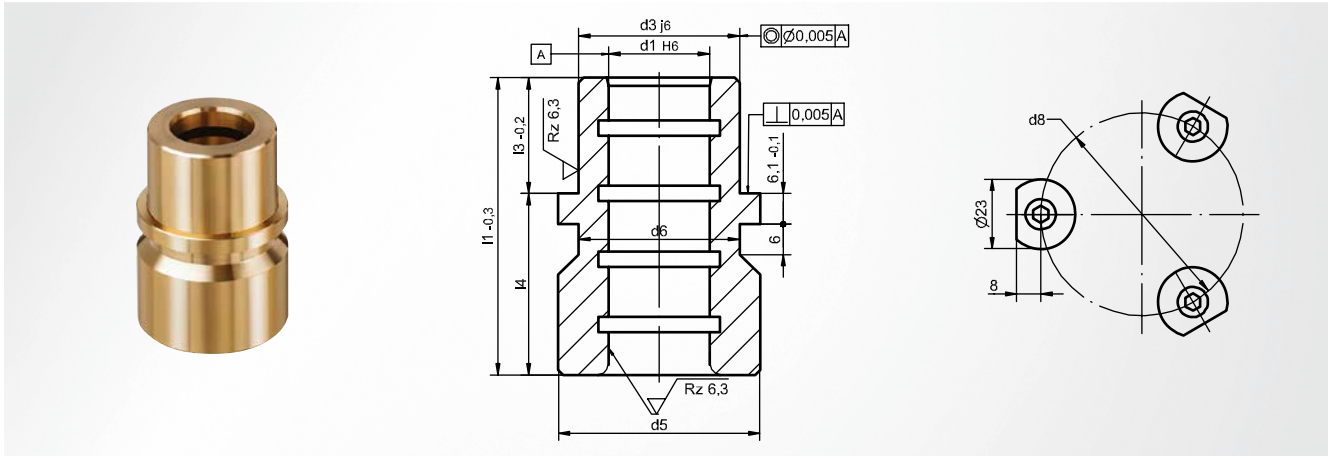
SZ8510

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

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

# 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**

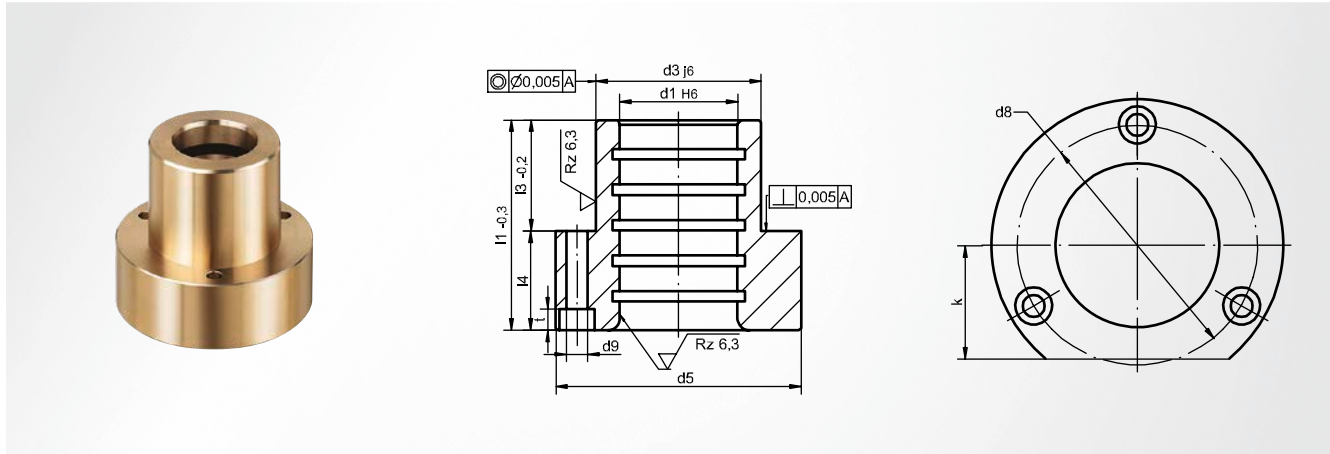
ST7367

$d_1^{H6}$	$d_3^{j6}$	$d_5$	$d_6$	$d_8$	$l_3^{-0.2}$	$l_1^{-0.3}$	$l_4$	Item number		
19	32	40	32	59	23	35	12	ST7431 <b>19 x 035</b>		
								43	20	ST7431 <b>19 x 043</b>
								59	36	ST7431 <b>19 x 059</b>
20	32	40	32	59	23	35	12	ST7431 <b>20 x 035</b>		
								43	20	ST7431 <b>20 x 043</b>
								59	36	ST7431 <b>20 x 059</b>
24	40	48	40	65	23	35	12	ST7431 <b>24 x 035</b>		
								60	37	ST7431 <b>24 x 060</b>
								80	57	ST7431 <b>24 x 080</b>
25	40	48	40	65	23	35	12	ST7431 <b>25 x 035</b>		
								60	37	ST7431 <b>25 x 060</b>
								80	57	ST7431 <b>25 x 080</b>
30	48	56	48	73	30	42	12	ST7431 <b>30 x 042</b>		
								75	45	ST7431 <b>30 x 075</b>
								93	63	ST7431 <b>30 x 093</b>
								120	81	ST7431 <b>30 x 120</b>
32	48	56	48	73	30	42	12	ST7431 <b>32 x 042</b>		
								75	45	ST7431 <b>32 x 075</b>
								93	63	ST7431 <b>32 x 093</b>
38	58	66	58	83	37	52	15	ST7431 <b>38 x 052</b>		
								82	45	ST7431 <b>38 x 082</b>
								108	71	ST7431 <b>38 x 108</b>

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

# 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

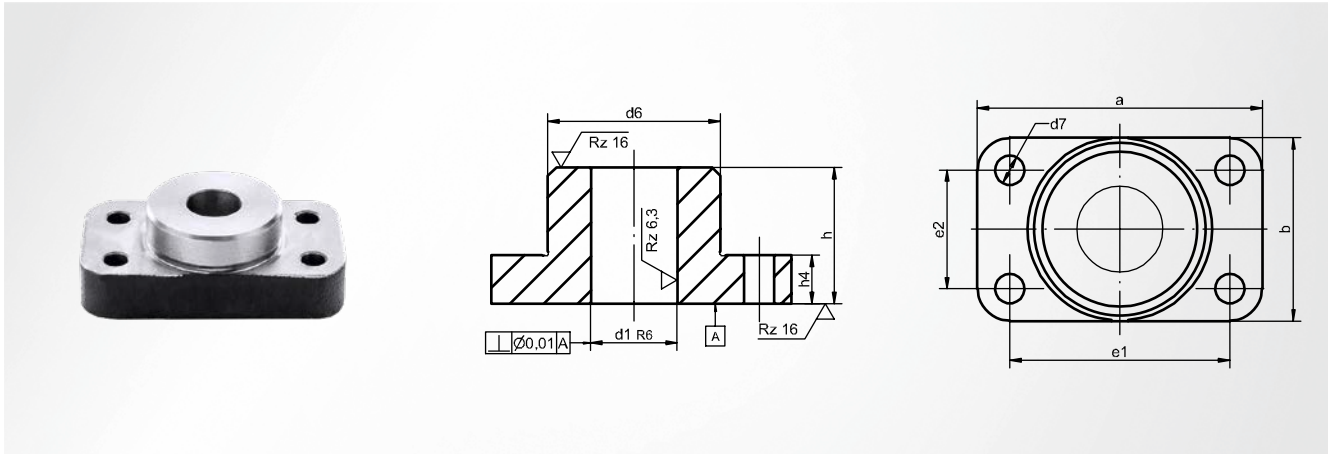
$d_1^{H6}$	$d_3^{j6}$	$d_5$	$d_8$	$d_9$	$t$	$k$	$l_1^{-0.3}$	$l_3^{-0.2}$	$l_4$	Item number
15	28	45	35	4.5	3.5	15	29	23	6	ST7441 <b>15 x 029</b>
							36	30	6	ST7441 <b>15 x 036</b>
16	28	45	35	4.5	3.5	15	29	23	6	ST7441 <b>16 x 029</b>
							36	30	6	ST7441 <b>16 x 036</b>
19	32	50	40	4.5	4.6	18	38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

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



# 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 <sub>6</sub>	d <sub>7</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>4</sub>	d <sub>1</sub> <sup>R6</sup>	Item number
71	40	37	6.6	53	22	25	14.0	15	ST7210 <b>15</b>
								16	ST7210 <b>16</b>
80	45	42	9.0	60	25	32	16.0	19	ST7210 <b>19</b>
								20	ST7210 <b>20</b>
90	56	52	9.0	69	35	40	16.0	24	ST7210 <b>24</b>
								25	ST7210 <b>25</b>
112	71	65	11.0	86	45	50	17.5	30	ST7210 <b>30</b>
								32	ST7210 <b>32</b>
132	85	80	14.0	102	55	63	22.5	38	ST7210 <b>38</b>
								40	ST7210 <b>40</b>
160	112	107	18.0	126	78	80	25.0	48	ST7210 <b>48</b>
								50	ST7210 <b>50</b>
200	132	125	18.0	154	86	100	33.0	60	ST7210 <b>60</b>
								63	ST7210 <b>63</b>
224	140	130	22.0	172	88	125	36.5	80	ST7210 <b>80</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

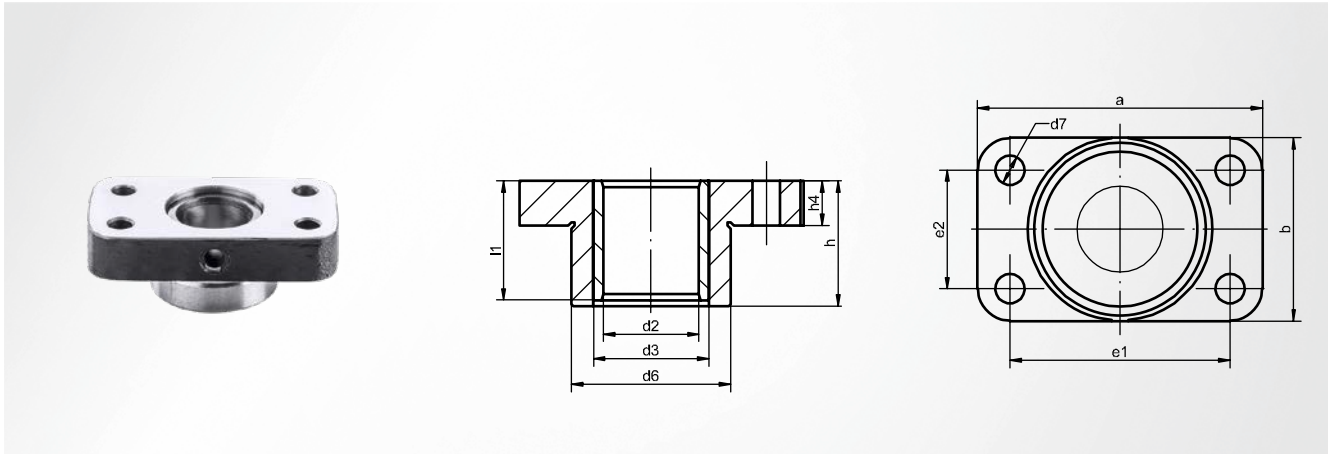
Module system

Machine elements

Accessories

# 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

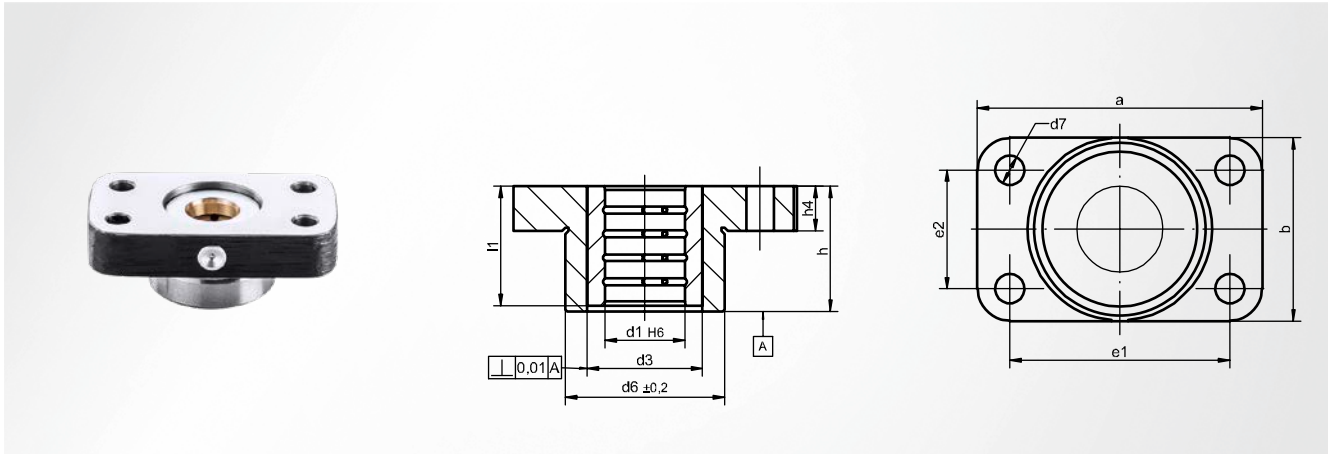
**Scope of supply**

ST7406

a	b	d <sub>3</sub>	d <sub>6</sub>	d <sub>7</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>4</sub>	l <sub>1</sub>	d <sub>1</sub>	d <sub>2</sub>	Item number
71	40	28	37	6.6	53	22	25	14.0	23	15	21	ST7216 <b>15</b>
										16	22	ST7216 <b>16</b>
80	45	32	42	9.0	60	25	32	16.0	30	19	25	ST7216 <b>19</b>
										20	26	ST7216 <b>20</b>
90	56	40	52	9.0	69	35	40	16.0	37	24	30	ST7216 <b>24</b>
										25	31	ST7216 <b>25</b>
112	71	48	65	11.0	86	45	50	17.5	47	30	38	ST7216 <b>30</b>
										32	40	ST7216 <b>32</b>
132	85	58	80	14.0	102	55	63	22.5	60	38	46	ST7216 <b>38</b>
										40	48	ST7216 <b>40</b>
160	112	70	107	18.0	126	78	80	25.0	77	48	56	ST7216 <b>48</b>
										50	58	ST7216 <b>50</b>
200	132	85	125	18.0	154	86	100	33.0	95	60	70	ST7216 <b>60</b>
										63	73	ST7216 <b>63</b>
224	140	105	130	22.0	172	88	125	36.5	120	80	92	ST7216 <b>80</b>

# 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 <sub>3</sub>	d <sub>6</sub> <sup>±0.2</sup>	d <sub>7</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>4</sub>	l <sub>1</sub>	d <sub>1</sub> <sup>H6</sup>	Item number
71	40	28	37	6.6	53	22	25	14.0	23	15	ST7219 <b>15</b>
										16	ST7219 <b>16</b>
80	45	32	42	9.0	60	25	32	16.0	30	19	ST7219 <b>19</b>
										20	ST7219 <b>20</b>
90	56	40	52	9.0	69	35	40	16.0	37	24	ST7219 <b>24</b>
										25	ST7219 <b>25</b>
112	71	48	65	11.0	86	45	50	17.5	47	30	ST7219 <b>30</b>
										32	ST7219 <b>32</b>
132	85	58	80	14.0	102	55	63	22.5	60	38	ST7219 <b>38</b>
										40	ST7219 <b>40</b>
160	112	70	107	18.0	126	78	80	25.0	77	48	ST7219 <b>48</b>
										50	ST7219 <b>50</b>
200	132	85	125	18.0	154	86	100	33.0	95	60	ST7219 <b>60</b>
										63	ST7219 <b>63</b>
224	140	105	130	22.0	172	88	125	36.5	120	80	ST7219 <b>80</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

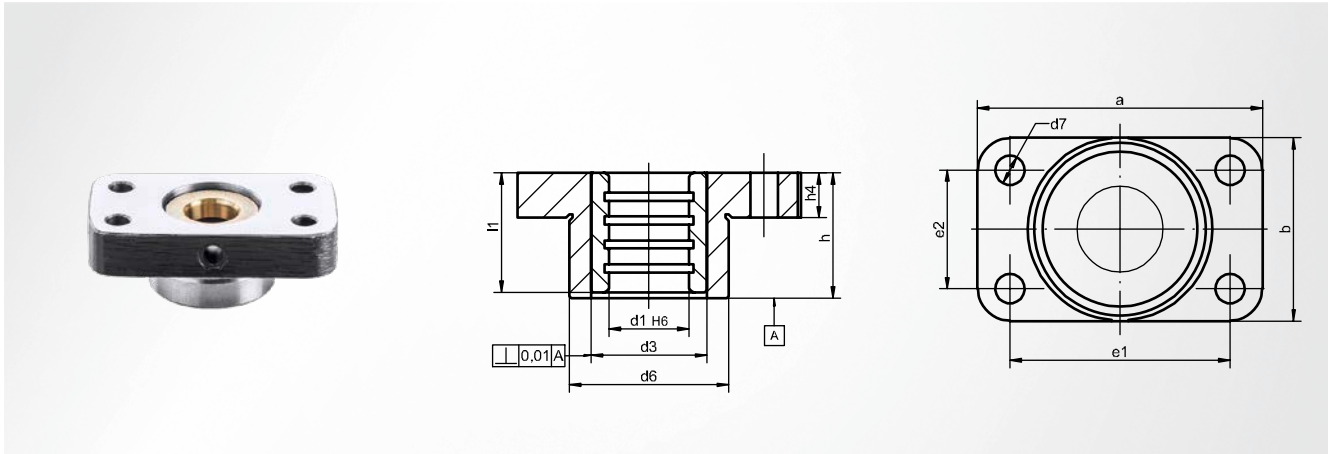
Module system

Machine elements

Accessories

# 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

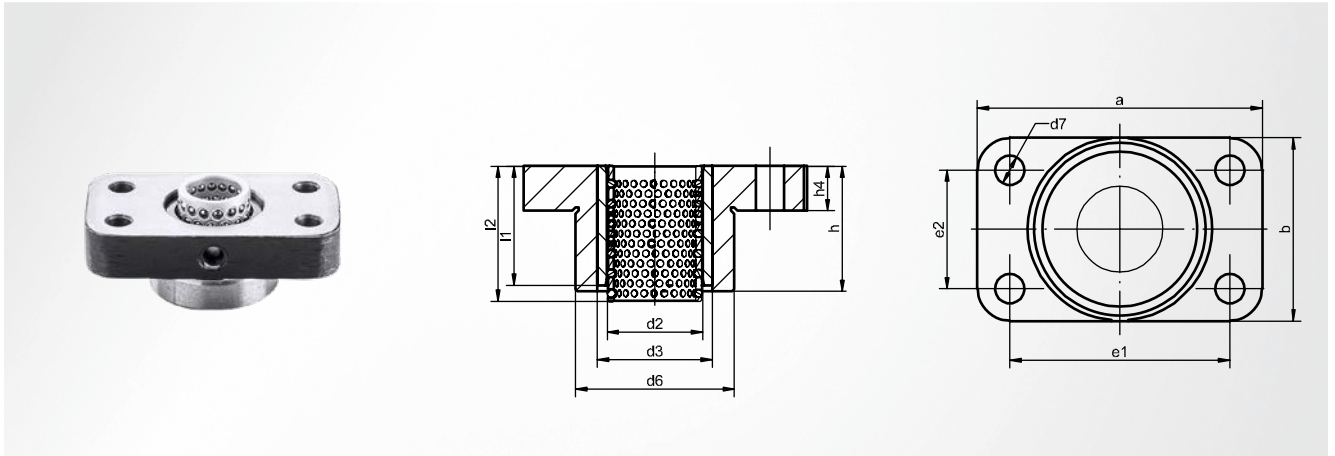
**Scope of supply**

ST7451

a	b	d <sub>3</sub>	d <sub>6</sub>	d <sub>7</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>4</sub>	l <sub>1</sub>	d <sub>1</sub> <sup>H6</sup>	Item number
71	40	28	37	6.6	53	22	25	14.0	23	15	ST7211 <b>15</b>
										16	ST7211 <b>16</b>
80	45	32	42	9.0	60	25	32	16.0	30	19	ST7211 <b>19</b>
										20	ST7211 <b>20</b>
90	56	40	52	9.0	69	35	40	16.0	37	24	ST7211 <b>24</b>
										25	ST7211 <b>25</b>
112	71	48	65	11.0	86	45	50	17.5	47	30	ST7211 <b>30</b>
										32	ST7211 <b>32</b>
132	85	58	80	14.0	102	55	63	22.5	60	38	ST7211 <b>38</b>
										40	ST7211 <b>40</b>
160	112	70	107	18.0	126	78	80	25.0	77	48	ST7211 <b>48</b>
										50	ST7211 <b>50</b>
200	132	85	125	18.0	154	86	100	33.0	95	60	ST7211 <b>60</b>
										63	ST7211 <b>63</b>
224	140	105	130	22.0	172	88	125	36.5	120	80	ST7211 <b>80</b>

# 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 <sub>3</sub>	d <sub>6</sub>	d <sub>7</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	Item number
71	40	28	37	6.6	53	22	25	14.0	23	30	15	21	ST7212 <b>15</b>
											16	22	ST7212 <b>16</b>
80	45	32	42	9.0	60	25	32	16.0	30	38	19	25	ST7212 <b>19</b>
											20	26	ST7212 <b>20</b>
90	56	40	52	9.0	69	35	40	16.0	37	43	24	30	ST7212 <b>24</b>
											25	31	ST7212 <b>25</b>
112	71	48	65	11.0	86	45	50	17.5	47	58	30	38	ST7212 <b>30</b>
											32	40	ST7212 <b>32</b>
132	85	58	80	14.0	102	55	63	22.5	60	68	38	46	ST7212 <b>38</b>
											40	48	ST7212 <b>40</b>
160	112	70	107	18.0	126	78	80	25.0	77	88	48	56	ST7212 <b>48</b>
											50	58	ST7212 <b>50</b>
200	132	85	125	18.0	154	86	100	33.0	95	113	60	70	ST7212 <b>60</b>
											63	73	ST7212 <b>63</b>
224	140	105	130	22.0	172	88	125	36.5	120	138	80	92	ST7212 <b>80</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

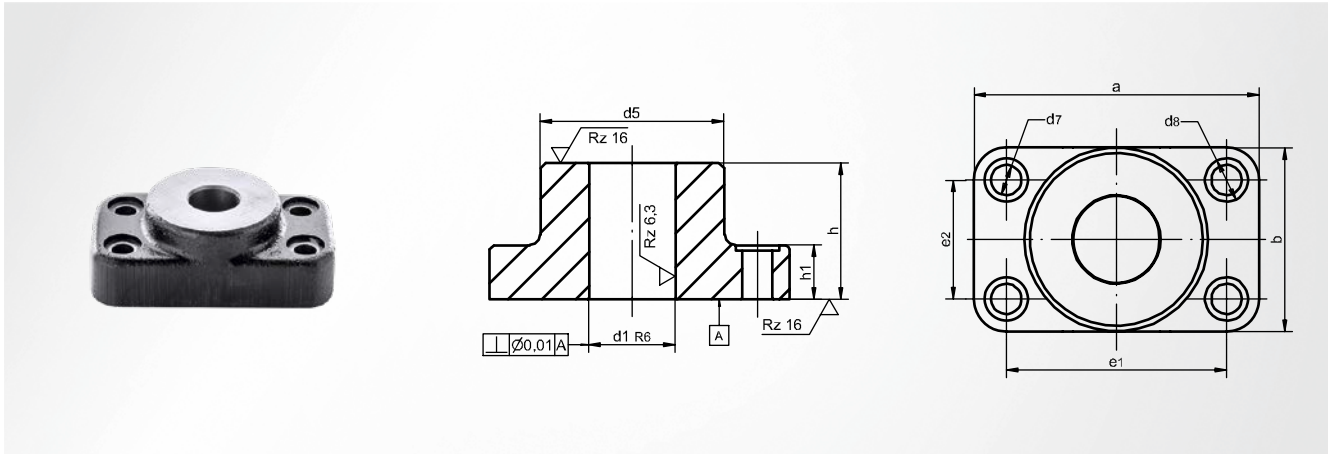
Module system

Machine elements

Accessories

# ST7200 Pillar bearing

with rectangular flange



Referring to ISO 11903

**Guide diameter**

ISO H5

**Material**

Grey cast irons EN-GJL-250

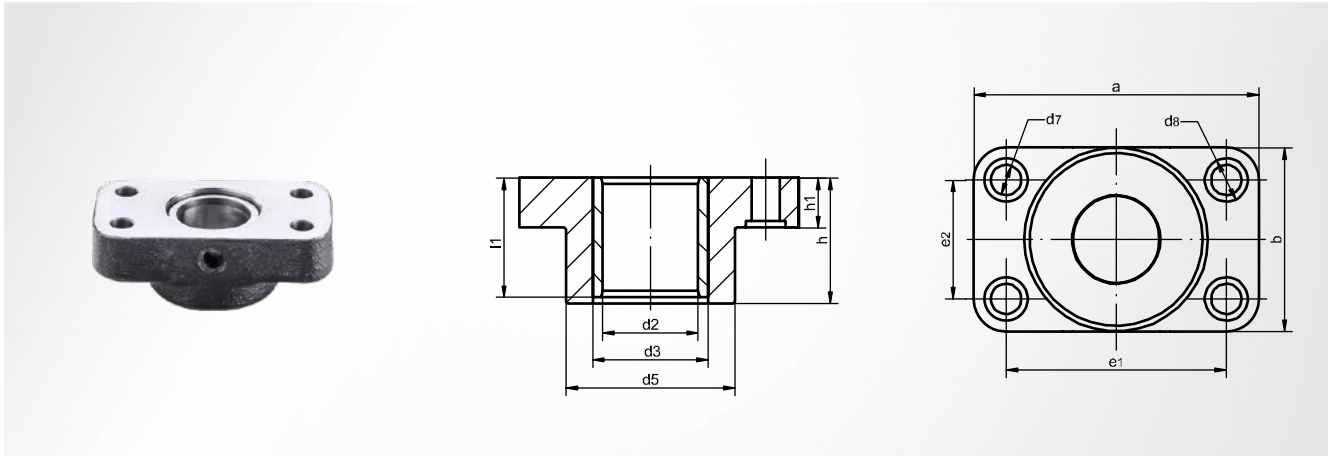
**Mounting bore**

ISO R6

a	b	d <sub>5</sub>	d <sub>7</sub>	d <sub>8</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>1</sub>	d <sub>1</sub> <sup>R6</sup>	Item number
71	40	40	6.6	11	53	22	25	16	15	ST7200 <b>15</b>
									16	ST7200 <b>16</b>
80	45	45	9.0	15	60	25	32	18	19	ST7200 <b>19</b>
									20	ST7200 <b>20</b>
90	56	56	9.0	15	69	35	40	18	24	ST7200 <b>24</b>
									25	ST7200 <b>25</b>
112	71	71	11.0	18	86	45	50	20	30	ST7200 <b>30</b>
									32	ST7200 <b>32</b>
132	85	85	14.0	20	102	55	63	25	38	ST7200 <b>38</b>
									40	ST7200 <b>40</b>
160	112	112	18.0	26	126	78	80	28	48	ST7200 <b>48</b>
									50	ST7200 <b>50</b>
200	132	132	18.0	26	154	86	100	36	60	ST7200 <b>60</b>
									63	ST7200 <b>63</b>
224	140	140	22.0	33	172	88	125	40	80	ST7200 <b>80</b>

# ST7206 Guide bearing

ball guide without ball cage, with rectangular flange



**Referring to ISO 11903**

**Guide diameter**

ISO H5

**Material**

Grey cast irons EN-GJL-250

**Scope of supply**

ST7406

a	b	d <sub>3</sub>	d <sub>5</sub>	d <sub>7</sub>	d <sub>8</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>1</sub>	l <sub>1</sub>	d <sub>1</sub>	d <sub>2</sub>	Item number
71	40	28	40	6.6	11	53	22	25	16	23	15	21	ST7206 <b>15</b>
											16	22	ST7206 <b>16</b>
80	45	32	45	9.0	15	60	25	32	18	30	19	25	ST7206 <b>19</b>
											20	26	ST7206 <b>20</b>
90	56	40	56	9.0	15	69	35	40	18	37	24	30	ST7206 <b>24</b>
											25	31	ST7206 <b>25</b>
112	71	48	71	11.0	18	86	45	50	20	47	30	38	ST7206 <b>30</b>
											32	40	ST7206 <b>32</b>
132	85	58	85	14.0	20	102	55	63	25	60	38	46	ST7206 <b>38</b>
											40	48	ST7206 <b>40</b>
160	112	70	112	18.0	26	126	78	80	28	77	48	56	ST7206 <b>48</b>
											50	58	ST7206 <b>50</b>
200	132	85	132	18.0	26	154	86	100	36	95	60	70	ST7206 <b>60</b>
											63	73	ST7206 <b>63</b>
224	140	105	140	22.0	33	172	88	125	40	120	80	92	ST7206 <b>80</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

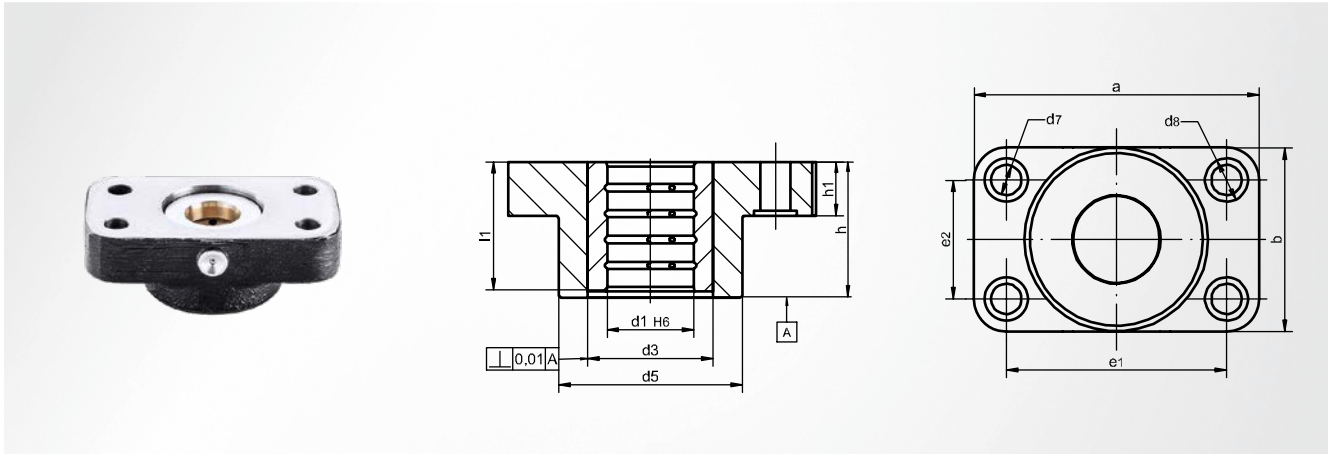
Module system

Machine elements

Accessories

# 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**

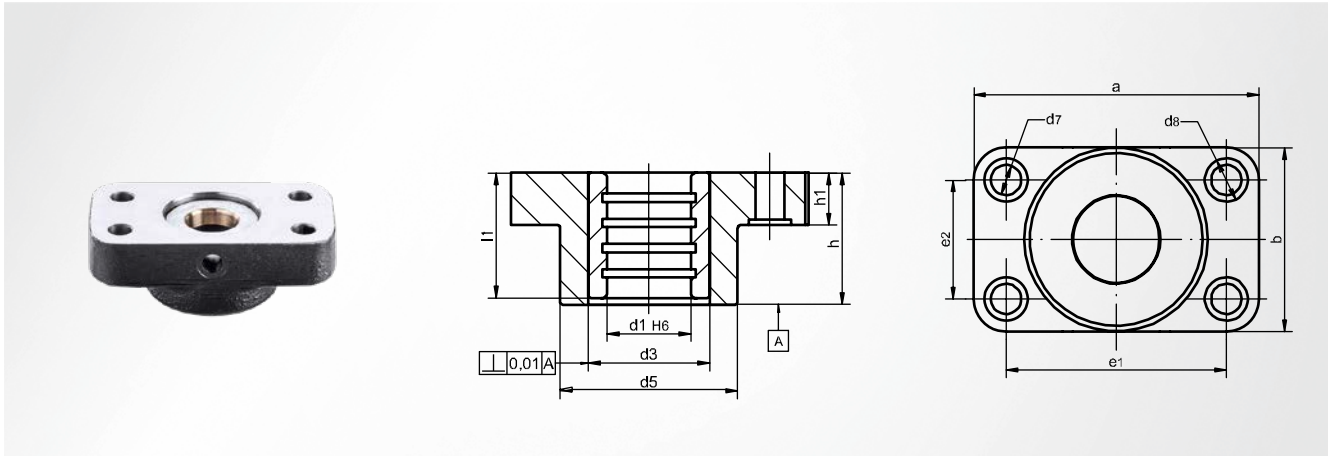
ST7409

a	b	d <sub>3</sub>	d <sub>5</sub>	d <sub>7</sub>	d <sub>8</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>1</sub>	l <sub>1</sub>	d <sub>1</sub> <sup>H6</sup>	Item number
71	40	28	40	6.6	11	53	22	25	16	23	15	ST7209 <b>15</b>
											16	ST7209 <b>16</b>
80	45	32	45	9.0	15	60	25	32	18	30	19	ST7209 <b>19</b>
											20	ST7209 <b>20</b>
90	56	40	56	9.0	15	69	35	40	18	37	24	ST7209 <b>24</b>
											25	ST7209 <b>25</b>
112	71	48	71	11.0	18	86	45	50	20	47	30	ST7209 <b>30</b>
											32	ST7209 <b>32</b>
132	85	58	85	14.0	20	102	55	63	25	60	38	ST7209 <b>38</b>
											40	ST7209 <b>40</b>
160	112	70	112	18.0	26	126	78	80	28	77	48	ST7209 <b>48</b>
											50	ST7209 <b>50</b>
200	132	85	132	18.0	26	154	86	100	36	95	60	ST7209 <b>60</b>
											63	ST7209 <b>63</b>
224	140	105	140	22.0	33	172	88	125	40	120	80	ST7209 <b>80</b>



# ST7201 Guide bearing

sliding guide with solid lubricant, with rectangular flange



Referring to ISO 11903

Guide diameter

ISO H5

Material

Grey cast irons EN-GJL-250

Scope of supply

ST7451

a	b	d <sub>3</sub>	d <sub>5</sub>	d <sub>7</sub>	d <sub>8</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>1</sub>	l <sub>1</sub>	d <sub>1</sub> H6	Item number
71	40	28	40	6.6	11	53	22	25	16	23	15	ST7201 <b>15</b>
											16	ST7201 <b>16</b>
80	45	32	45	9.0	15	60	25	32	18	30	19	ST7201 <b>19</b>
											20	ST7201 <b>20</b>
90	56	40	56	9.0	15	69	35	40	18	37	24	ST7201 <b>24</b>
											25	ST7201 <b>25</b>
112	71	48	71	11.0	18	86	45	50	20	47	30	ST7201 <b>30</b>
											32	ST7201 <b>32</b>
132	85	58	85	14.0	20	102	55	63	25	60	38	ST7201 <b>38</b>
											40	ST7201 <b>40</b>
160	112	70	112	18.0	26	126	78	80	28	77	48	ST7201 <b>48</b>
											50	ST7201 <b>50</b>
200	132	85	132	18.0	26	154	86	100	36	95	60	ST7201 <b>60</b>
											63	ST7201 <b>63</b>
224	140	105	140	22.0	33	172	88	125	40	120	80	ST7201 <b>80</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

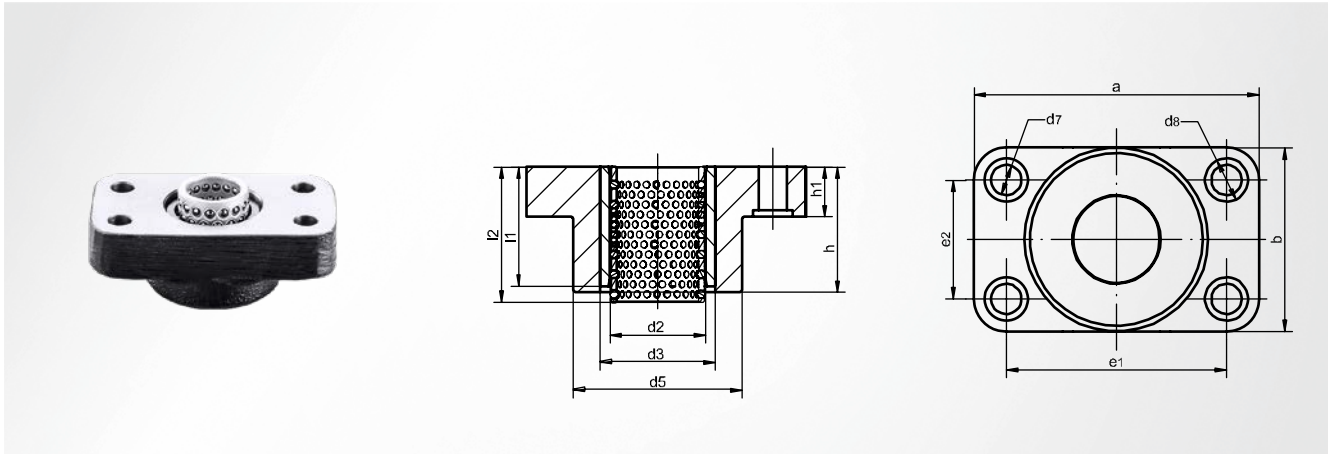
Module system

Machine elements

Accessories

# ST7202 Guide bearing

ball guide with ball cage, with rectangular flange



Referring to ISO 11903

Guide diameter

ISO H5

Material

Grey cast irons EN-GJL-250

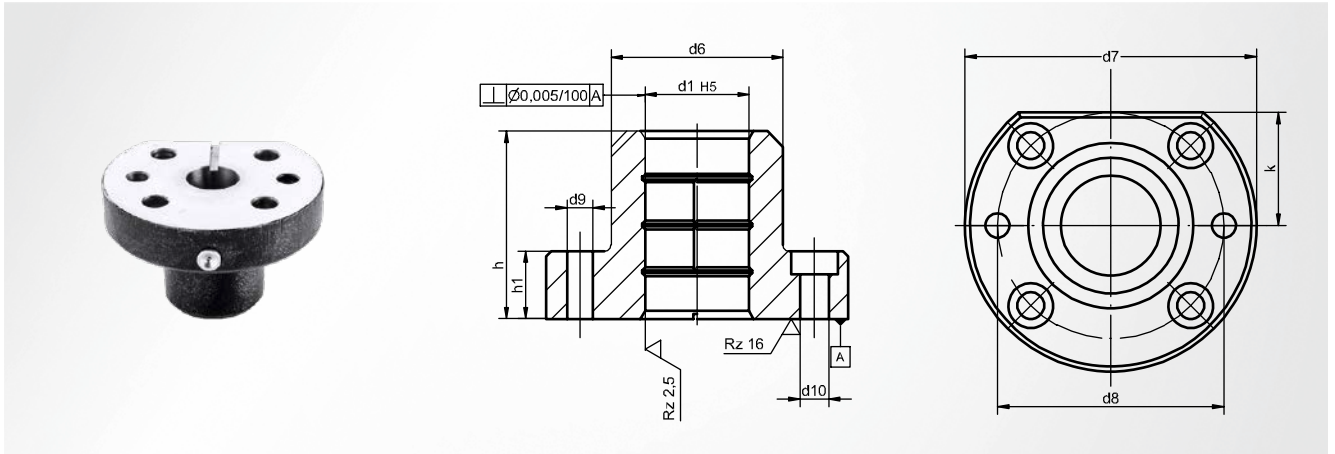
Scope of supply

ST7130; ST7406

a	b	d <sub>3</sub>	d <sub>5</sub>	d <sub>7</sub>	d <sub>8</sub>	e <sub>1</sub>	e <sub>2</sub>	h	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	d <sub>2</sub>	Item number
71	40	28	40	6.6	11	53	22	25	16	23	30	21	ST7202 <b>15</b>
												22	ST7202 <b>16</b>
80	45	32	45	9.0	15	60	25	32	18	30	38	25	ST7202 <b>19</b>
												26	ST7202 <b>20</b>
90	56	40	56	9.0	15	69	35	40	18	37	43	30	ST7202 <b>24</b>
												31	ST7202 <b>25</b>
112	71	48	71	11.0	18	86	45	50	20	47	58	38	ST7202 <b>30</b>
												40	ST7202 <b>32</b>
132	85	58	85	14.0	20	102	55	63	25	60	68	46	ST7202 <b>38</b>
												48	ST7202 <b>40</b>
160	112	70	112	18.0	26	126	78	80	28	77	88	56	ST7202 <b>48</b>
												58	ST7202 <b>50</b>
200	132	85	132	18.0	26	154	86	100	36	95	113	70	ST7202 <b>60</b>
												73	ST7202 <b>63</b>
224	140	105	140	22.0	33	172	88	125	40	120	138	92	ST7202 <b>80</b>

# 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

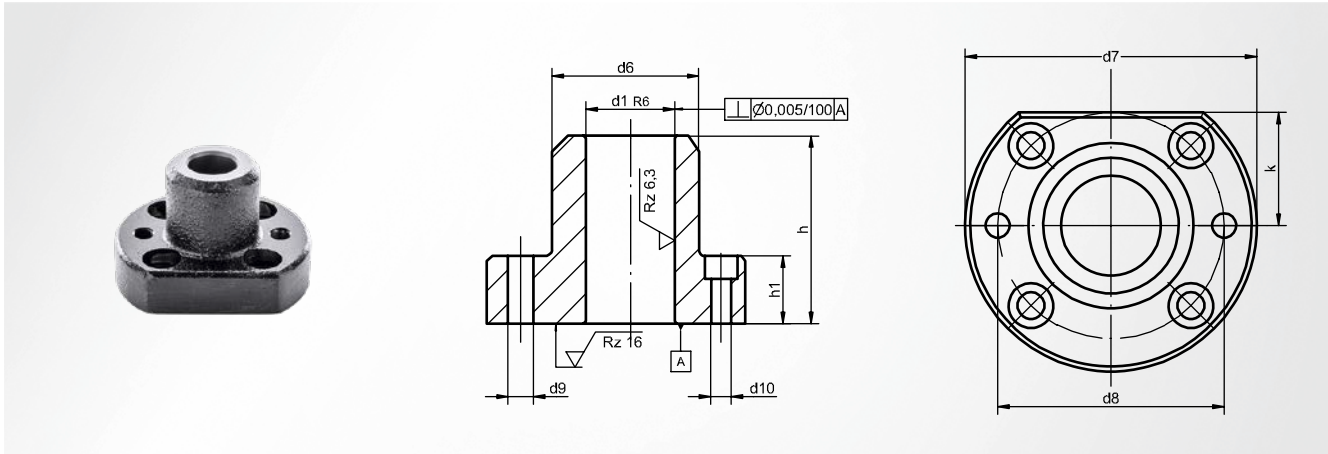
## Guide diameter

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 <b>19</b>
								20	ST7250 <b>20</b>
46	86	64	7.8	9.0	55	20	33	24	ST7250 <b>24</b>
								25	ST7250 <b>25</b>
56	106	80	9.8	11.0	63	22	41	30	ST7250 <b>30</b>
								32	ST7250 <b>32</b>
66	116	90	9.8	11.0	72	26	45	38	ST7250 <b>38</b>
								40	ST7250 <b>40</b>
80	140	108	11.8	13.5	80	30	54	48	ST7250 <b>48</b>
								50	ST7250 <b>50</b>

# ST7260 Pillar bearing

with round flange



## Material

Grey cast irons EN-GJL-250

## Mounting bore

ISO R6

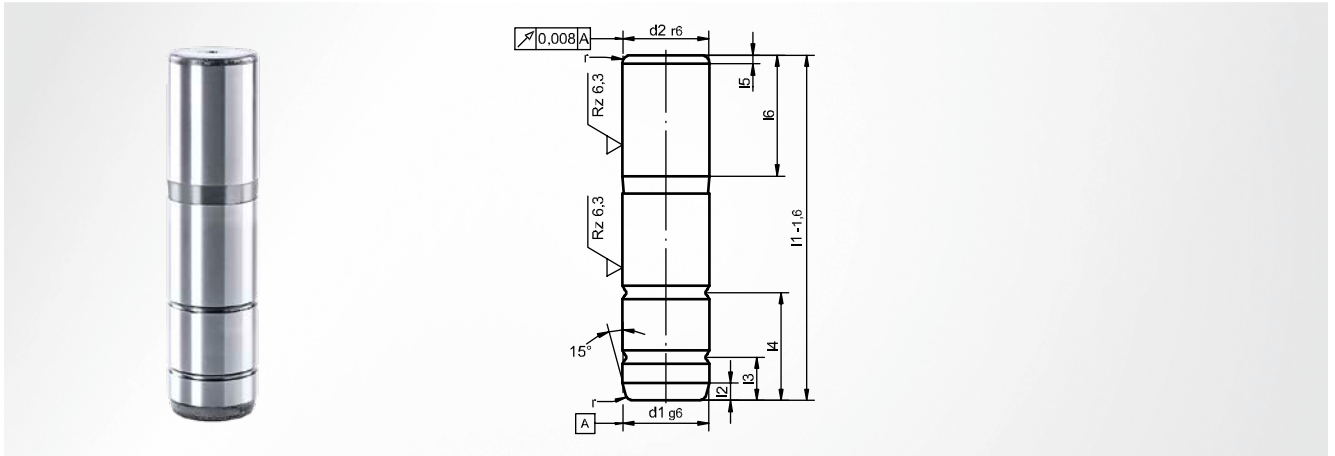
## Guide diameter

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 <b>19</b>
								20	ST7260 <b>20</b>
46	86	64	7.8	9.0	55	20	33	24	ST7260 <b>24</b>
								25	ST7260 <b>25</b>
56	106	80	9.8	11.0	63	22	41	30	ST7260 <b>30</b>
								32	ST7260 <b>32</b>
66	116	90	9.8	11.0	72	26	45	38	ST7260 <b>38</b>
								40	ST7260 <b>40</b>
80	140	108	11.8	13.5	80	30	54	48	ST7260 <b>48</b>
								50	ST7260 <b>50</b>

# 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 <sub>1</sub> <sup>g6</sup>	d <sub>2</sub> <sup>r6</sup>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	l <sub>6</sub>	r	l <sub>1</sub> <sup>-1.6</sup>	Item number
25	25	8	20	45	4	40	2.0	125	ST7160 <b>025 x 125</b>
								140	ST7160 <b>025 x 140</b>
								160	ST7160 <b>025 x 160</b>
								180	ST7160 <b>025 x 180</b>
								200	ST7160 <b>025 x 200</b>
								224	ST7160 <b>025 x 224</b>
32	32	8	20	50	4	45	2.0	140	ST7160 <b>032 x 140</b>
								160	ST7160 <b>032 x 160</b>
								180	ST7160 <b>032 x 180</b>
								200	ST7160 <b>032 x 200</b>
								224	ST7160 <b>032 x 224</b>
								250	ST7160 <b>032 x 250</b>
40	40	8	20	50	4	56	2.0	160	ST7160 <b>040 x 160</b>
								180	ST7160 <b>040 x 180</b>
								200	ST7160 <b>040 x 200</b>
								224	ST7160 <b>040 x 224</b>
								250	ST7160 <b>040 x 250</b>
								280	ST7160 <b>040 x 280</b>
50	50	10	25	65	4	70	2.5	180	ST7160 <b>050 x 180</b>
								200	ST7160 <b>050 x 200</b>
								224	ST7160 <b>050 x 224</b>
								240	ST7160 <b>050 x 240</b>

d <sub>1</sub> <sup>g6</sup>	d <sub>2</sub> <sup>r6</sup>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	l <sub>6</sub>	r	l <sub>1</sub> <sup>-1.6</sup>	Item number
50	50	10	25	65	4	70	2.5	250	ST7160 <b>050 x 250</b>
								280	ST7160 <b>050 x 280</b>
								315	ST7160 <b>050 x 315</b>
								355	ST7160 <b>050 x 355</b>
63	63	10	32	72	4	80	2.5	200	ST7160 <b>063 x 200</b>
								224	ST7160 <b>063 x 224</b>
								250	ST7160 <b>063 x 250</b>
								280	ST7160 <b>063 x 280</b>
								315	ST7160 <b>063 x 315</b>
								355	ST7160 <b>063 x 355</b>
80	80	10	32	82	4	100	3.0	224	ST7160 <b>080 x 224</b>
								250	ST7160 <b>080 x 250</b>
								280	ST7160 <b>080 x 280</b>
								315	ST7160 <b>080 x 315</b>
								355	ST7160 <b>080 x 355</b>
								400	ST7160 <b>080 x 400</b>
100	100	10	32	82	4	125	3.0	250	ST7160 <b>100 x 250</b>
								280	ST7160 <b>100 x 280</b>
								315	ST7160 <b>100 x 315</b>
								355	ST7160 <b>100 x 355</b>
								400	ST7160 <b>100 x 400</b>
								450	ST7160 <b>100 x 450</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

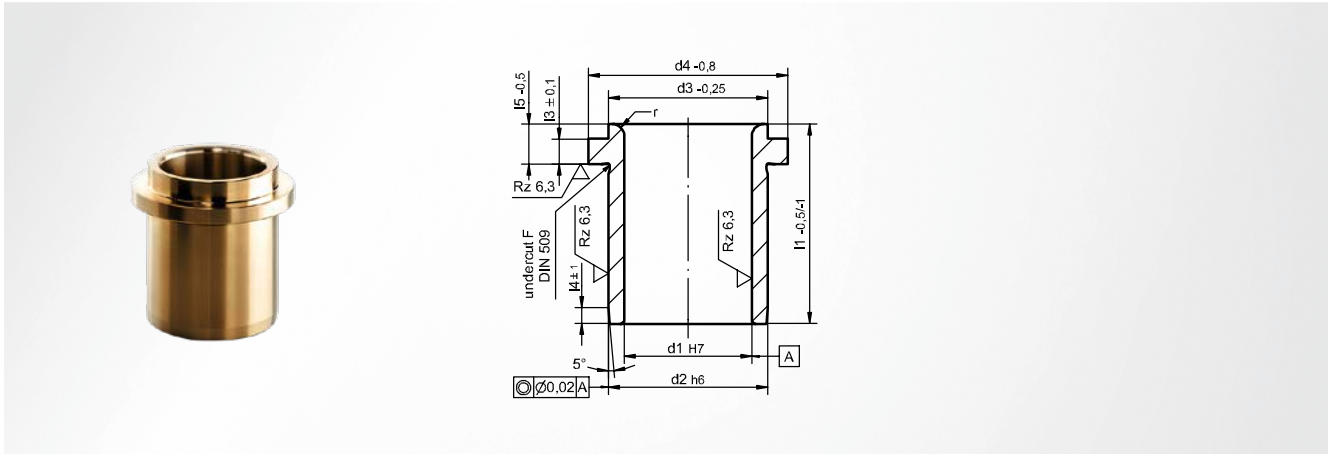
Module system

Machine elements

Accessories

# ST7460 Guide bush

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



Referring to DIN 9834 / ISO 9448

Installation in mounting bore

**Material**

Bronze CuZn25Al5

ISO H7

**Optional accessories**

ST7377

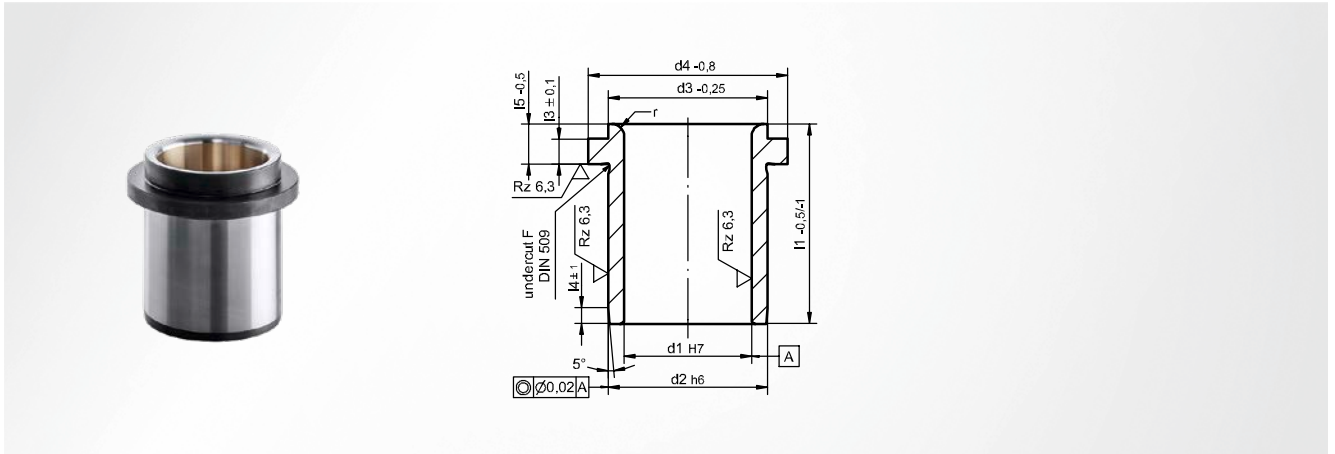
**Installation instruction**

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

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

# 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

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

Active elements

Spring elements

Nitrogen systems

Tapping units

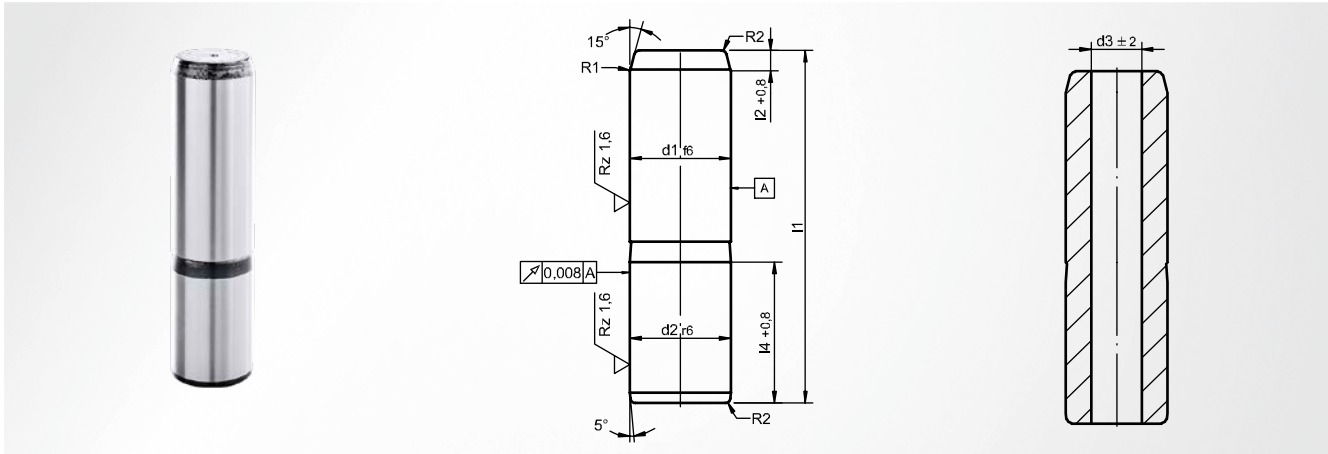
Module system

Machine elements

Accessories

# 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

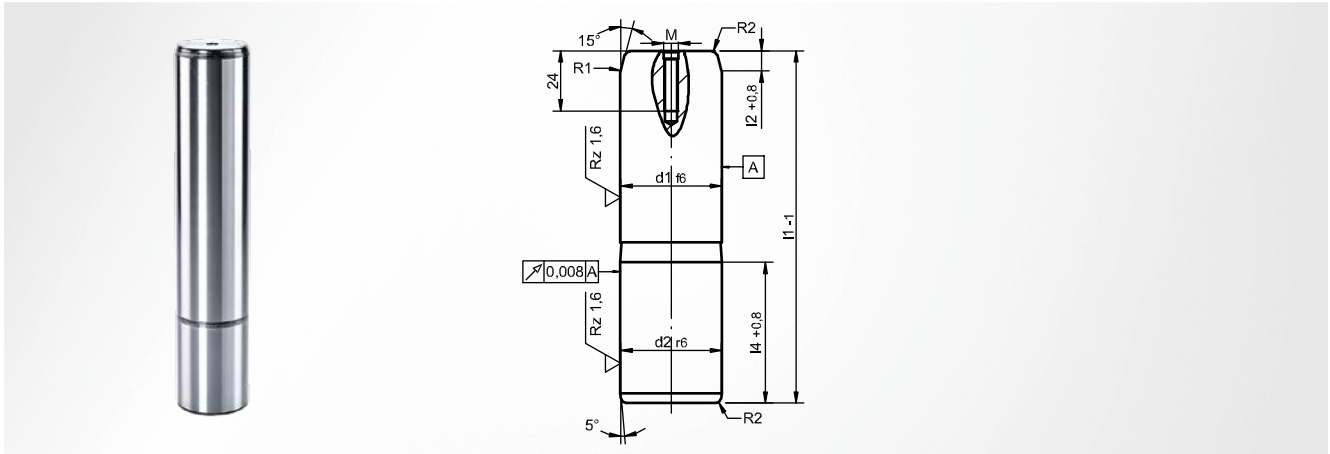
$d_1^{f6}$	$d_2^{r6}$	$d_3^{\pm 2}$	$l_2^{+0.8}$	$l_4^{+0.8}$	$r_1$	$r_2$	$l_1$	Item number
25	25		8	40	3	2.0	125	ST9833 <b>025 x 125</b>
							140	ST9833 <b>025 x 140</b>
							160	ST9833 <b>025 x 160</b>
							180	ST9833 <b>025 x 180</b>
							200	ST9833 <b>025 x 200</b>
							224	ST9833 <b>025 x 224</b>
32	32		8	45	3	2.0	140	ST9833 <b>032 x 140</b>
							160	ST9833 <b>032 x 160</b>
							180	ST9833 <b>032 x 180</b>
							200	ST9833 <b>032 x 200</b>
							224	ST9833 <b>032 x 224</b>
							250	ST9833 <b>032 x 250</b>
40	40		8	56	3	2.0	140	ST9833 <b>040 x 140</b>
							160	ST9833 <b>040 x 160</b>
							180	ST9833 <b>040 x 180</b>
							200	ST9833 <b>040 x 200</b>
							224	ST9833 <b>040 x 224</b>
							250	ST9833 <b>040 x 250</b>
50	50		10	70	5	2.5	160	ST9833 <b>050 x 160</b>
							180	ST9833 <b>050 x 180</b>
							200	ST9833 <b>050 x 200</b>
							224	ST9833 <b>050 x 224</b>
							250	ST9833 <b>050 x 250</b>
							280	ST9833 <b>050 x 280</b>
63	63		10	80	6	2.5	180	ST9833 <b>063 x 180</b>
							200	ST9833 <b>063 x 200</b>
							224	ST9833 <b>063 x 224</b>

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



# 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

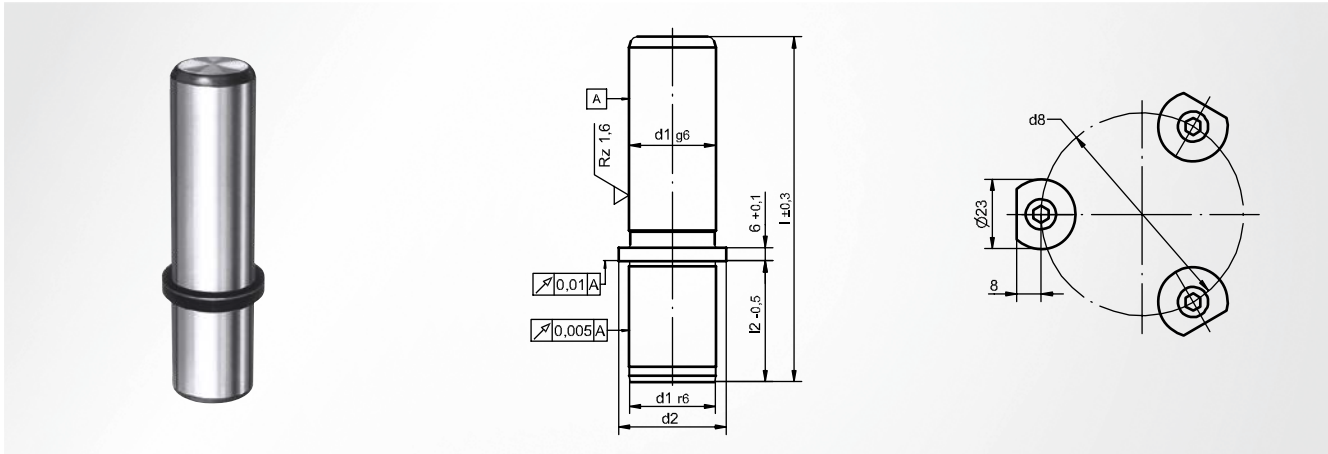
### Attention

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 <b>080 x 224T</b>
								250	ST9833 <b>080 x 250T</b>
								280	ST9833 <b>080 x 280T</b>
								315	ST9833 <b>080 x 315T</b>
								355	ST9833 <b>080 x 355T</b>
								400	ST9833 <b>080 x 400T</b>
100	100	50	10	125	M12 x 24	10	3.0	280	ST9833 <b>100 x 280T</b>
								315	ST9833 <b>100 x 315T</b>
								355	ST9833 <b>100 x 355T</b>
								400	ST9833 <b>100 x 400T</b>
								450	ST9833 <b>100 x 450T</b>

# 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

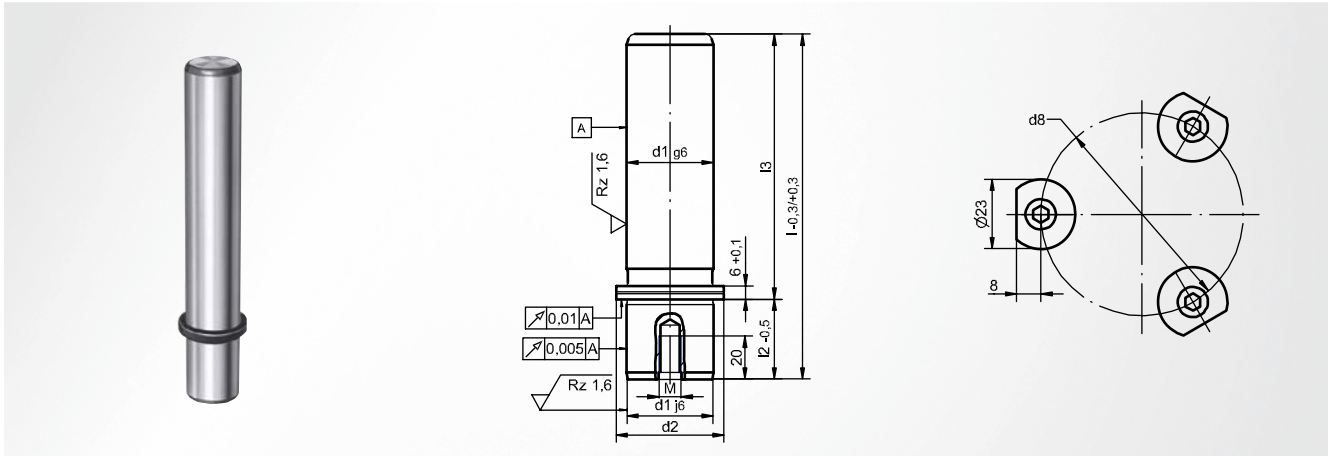
Use for sliding guide only

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

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

# 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	$l \pm 0.3$	$l_3$	Item number
15	21	38	20	M8	115	95	ST9827 <b>15 x 115</b>
					125	105	ST9827 <b>15 x 125</b>
					140	120	ST9827 <b>15 x 140</b>
					160	140	ST9827 <b>15 x 160</b>
					180	160	ST9827 <b>15 x 180</b>
					200	180	ST9827 <b>15 x 200</b>
					224	204	ST9827 <b>15 x 224</b>
16	21	38	20	M8	115	95	ST9827 <b>16 x 115</b>
					125	105	ST9827 <b>16 x 125</b>
					140	120	ST9827 <b>16 x 140</b>
					160	140	ST9827 <b>16 x 160</b>
					180	160	ST9827 <b>16 x 180</b>
					200	180	ST9827 <b>16 x 200</b>
19	25	42	23	M8	115	92	ST9827 <b>19 x 115</b>
					125	102	ST9827 <b>19 x 125</b>
					140	117	ST9827 <b>19 x 140</b>
					160	137	ST9827 <b>19 x 160</b>
					180	157	ST9827 <b>19 x 180</b>
					200	177	ST9827 <b>19 x 200</b>
20	25	42	23	M8	115	92	ST9827 <b>20 x 115</b>
					125	102	ST9827 <b>20 x 125</b>
					140	117	ST9827 <b>20 x 140</b>
					160	137	ST9827 <b>20 x 160</b>
					180	157	ST9827 <b>20 x 180</b>
					200	177	ST9827 <b>20 x 200</b>
24	32	49	27	M8	115	92	ST9827 <b>24 x 115</b>
					125	102	ST9827 <b>24 x 125</b>
					140	117	ST9827 <b>24 x 140</b>
					160	137	ST9827 <b>24 x 160</b>
					180	157	ST9827 <b>24 x 180</b>
					200	177	ST9827 <b>24 x 200</b>

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

# ST9827 Guide pillar

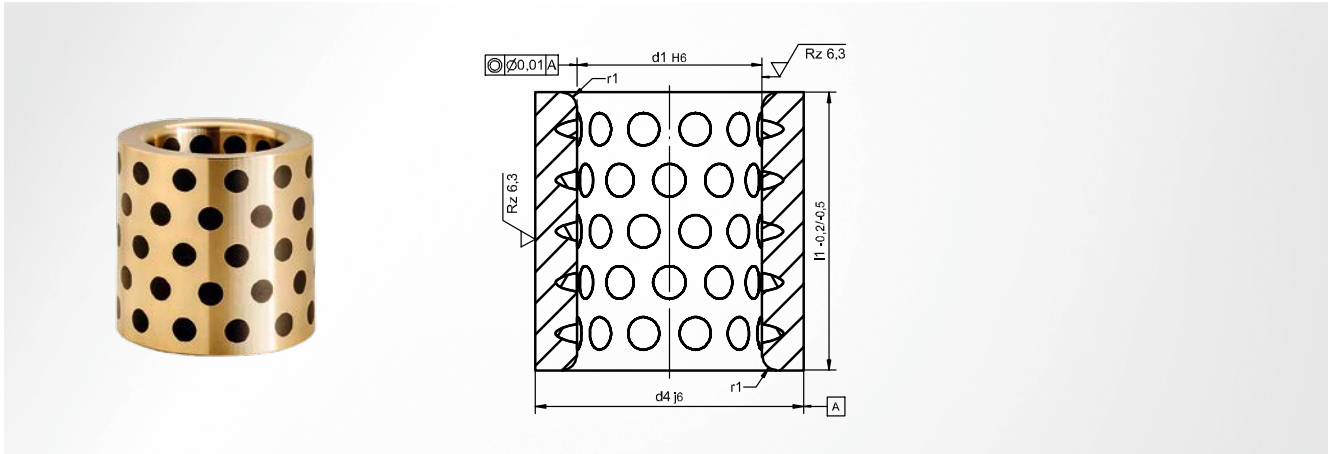
with shoulder

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

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

# 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 <b>25 x 023</b>
			30	ST9831 <b>25 x 030</b>
			37	ST9831 <b>25 x 037</b>
			47	ST9831 <b>25 x 047</b>
			60	ST9831 <b>25 x 060</b>
			77	ST9831 <b>25 x 077</b>
32	48	3	30	ST9831 <b>32 x 030</b>
			37	ST9831 <b>32 x 037</b>
			47	ST9831 <b>32 x 047</b>
			60	ST9831 <b>32 x 060</b>
			77	ST9831 <b>32 x 077</b>
40	58	3	30	ST9831 <b>40 x 030</b>
			37	ST9831 <b>40 x 037</b>
			47	ST9831 <b>40 x 047</b>
			60	ST9831 <b>40 x 060</b>

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

Active elements

Spring elements

Nitrogen systems

Tapping units

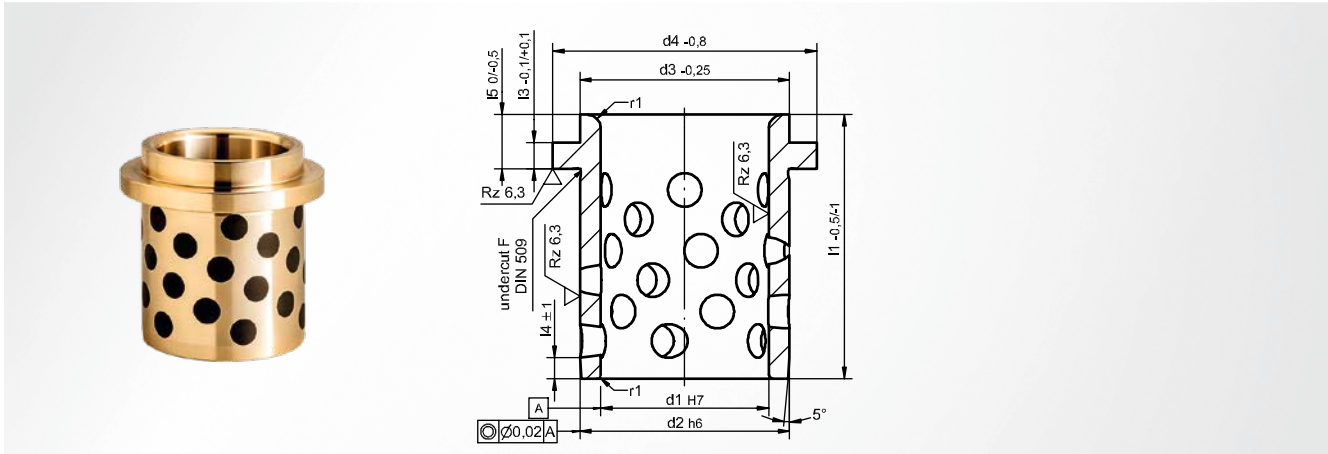
Module system

Machine elements

Accessories

# ST9834 Guide bush

sliding guide with solid lubricant, with shoulder



**Referring to DIN 9834**

**Installation in mounting bore**

**Material**

Bronze CuZn25Al5; with solid lubricant insert

ISO H7

**Optional accessories**

ST7377

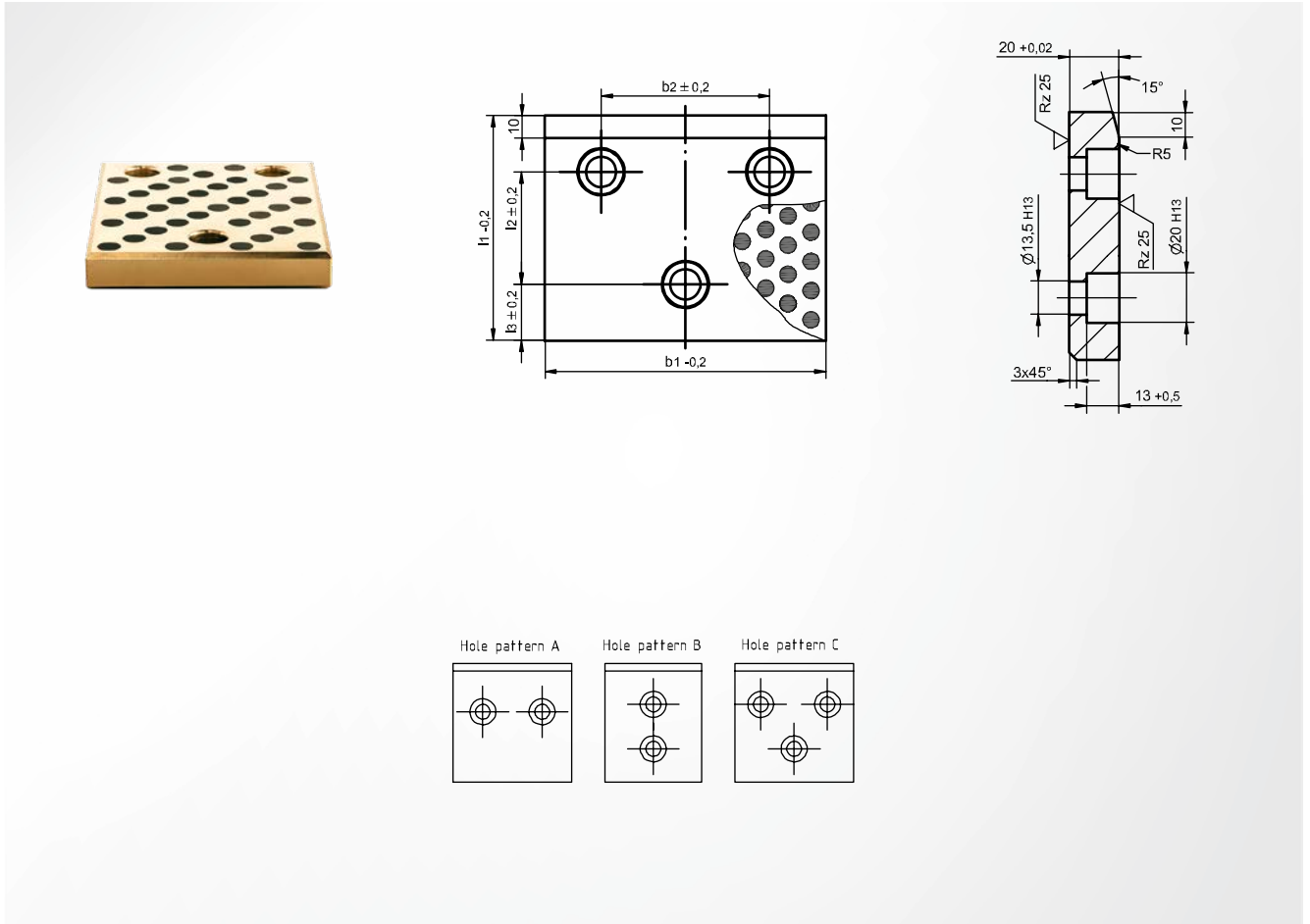
**Installation instruction**

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

$d_1^{H7}$	$d_2^{h6}$	$d_3^{0-0.25}$	$d_4^{0-0.8}$	$l_1^{-0.5/-1}$	$l_3^{\pm 0.1}$	$l_4^{\pm 1}$	$l_5^{0/-0.5}$	$r_1$	Item number
25	32	32	40	40	6.3	3.0	10	3	ST9834 <b>025</b>
32	40	40	50	50	6.3	4.0	12	3	ST9834 <b>032</b>
40	50	50	63	63	6.3	5.0	15	3	ST9834 <b>040</b>
50	63	63	71	71	6.3	6.3	17	5	ST9834 <b>050</b>
63	80	80	90	80	10.0	8.0	19	6	ST9834 <b>063</b>
80	100	100	112	100	10.0	10.0	22	8	ST9834 <b>080</b>
100	125	125	140	125	10.0	12.5	21	10	ST9834 <b>100</b>
125	160	160	180	160	10.0	16.0	30	12	ST9834 <b>125</b>
160	200	200	220	200	10.0	16.0	32	18	ST9834 <b>160</b>

# 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 <b>050 x 080</b>
		100	50	25	B	M12 x 25	ST7571 <b>050 x 100</b>
		125	75	25	B	M12 x 25	ST7571 <b>050 x 125</b>
		160	110	25	B	M12 x 25	ST7571 <b>050 x 160</b>
		200	150	25	B	M12 x 25	ST7571 <b>050 x 200</b>
80	30	50		25	A	M8 x 25	ST7571 <b>080 x 050</b>
		80	30	25	B	M12 x 25	ST7571 <b>080 x 080</b>
		100	50	25	B	M12 x 25	ST7571 <b>080 x 100</b>
		125	75	25	B	M12 x 25	ST7571 <b>080 x 125</b>
		160	110	25	B	M12 x 25	ST7571 <b>080 x 160</b>
		200	150	25	B	M12 x 25	ST7571 <b>080 x 200</b>
100	50	50		25	A	M12 x 25	ST7571 <b>100 x 050</b>
		80		40	A	M12 x 25	ST7571 <b>100 x 080</b>
		100	50	25	B	M12 x 25	ST7571 <b>100 x 100</b>
		125	75	25	B	M12 x 25	ST7571 <b>100 x 125</b>
		160	110	25	B	M12 x 25	ST7571 <b>100 x 160</b>
		200	150	25	B	M12 x 25	ST7571 <b>100 x 200</b>
125	75	50		25	A	M12 x 25	ST7571 <b>125 x 050</b>
		80		40	A	M12 x 25	ST7571 <b>125 x 080</b>
		100	50	25	C	M12 x 25	ST7571 <b>125 x 100</b>
		125	75	25	C	M12 x 25	ST7571 <b>125 x 125</b>

# ST7571 Guide plate

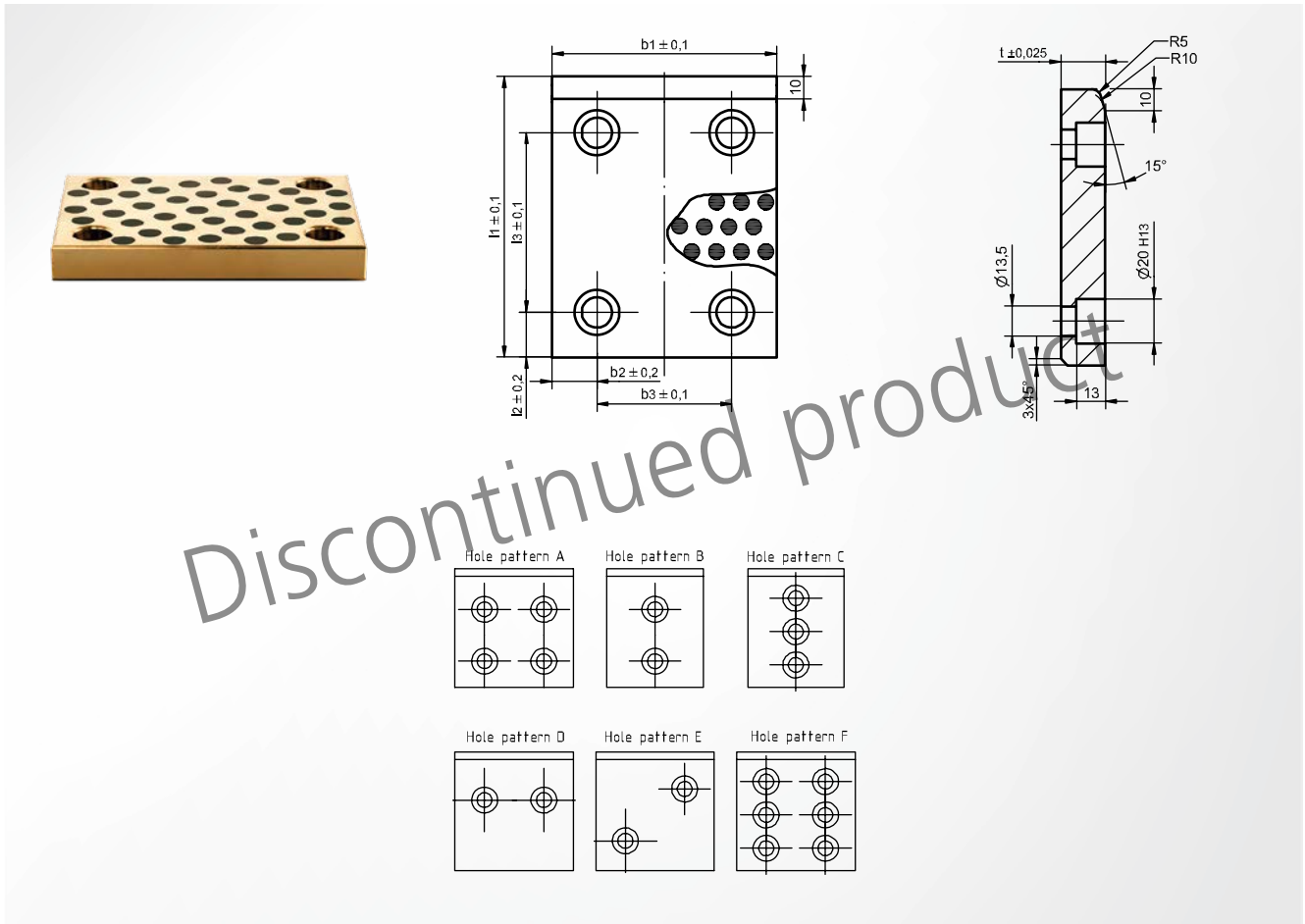
with solid lubricant, solid bronze

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



# ST7561 Guide plate

with solid lubricant, solid bronze



Discontinued product

Referring to ISO 9183

### Installation instruction

Fixing with socket screws DIN EN ISO 4762

### Material

Bronze WF 750 1A

### Optional accessories

SZ8510

$b_1 \pm 0.1$	$b_2 \pm 0.2$	$t \pm 0.025$	$b_3 \pm 0.1$	$l_1 \pm 0.1$	$l_2 \pm 0.2$	$l_3 \pm 0.1$	Hole pattern	Screw	Item number
50	25	20		80	20	35	B	M12 x 25	ST7561 <b>050 x 080 x 20</b>
				100	20	55	B	M12 x 25	ST7561 <b>050 x 100 x 20</b>
				125	20	80	B	M12 x 25	ST7561 <b>050 x 125 x 20</b>
				160	20	115	B	M12 x 25	ST7561 <b>050 x 160 x 20</b>
				200	20	155	B	M12 x 25	ST7561 <b>050 x 200 x 20</b>
				250	20	100	C	M12 x 25	ST7561 <b>050 x 250 x 20</b>
80	20	20	40	50	25		D	M12 x 25	ST7561 <b>080 x 050 x 20</b>
				80	20	35	E	M12 x 25	ST7561 <b>080 x 080 x 20</b>
				100	20	55	E	M12 x 25	ST7561 <b>080 x 100 x 20</b>
				125	20	80	E	M12 x 25	ST7561 <b>080 x 125 x 20</b>
				160	20	115	A	M12 x 25	ST7561 <b>080 x 160 x 20</b>
				200	20	155	A	M12 x 25	ST7561 <b>080 x 200 x 20</b>
				250	20	100	F	M12 x 25	ST7561 <b>080 x 250 x 20</b>
				315	20	132	F	M12 x 25	ST7561 <b>080 x 315 x 20</b>
100	20	20	60	50	25		D	M12 x 25	ST7561 <b>100 x 050 x 20</b>
				80	20	35	E	M12 x 25	ST7561 <b>100 x 080 x 20</b>
				100	20	55	E	M12 x 25	ST7561 <b>100 x 100 x 20</b>
				125	20	80	A	M12 x 25	ST7561 <b>100 x 125 x 20</b>
				160	20	115	A	M12 x 25	ST7561 <b>100 x 160 x 20</b>
				200	20	155	A	M12 x 25	ST7561 <b>100 x 200 x 20</b>
				250	20	100	F	M12 x 25	ST7561 <b>100 x 250 x 20</b>

# ST7561 Guide plate

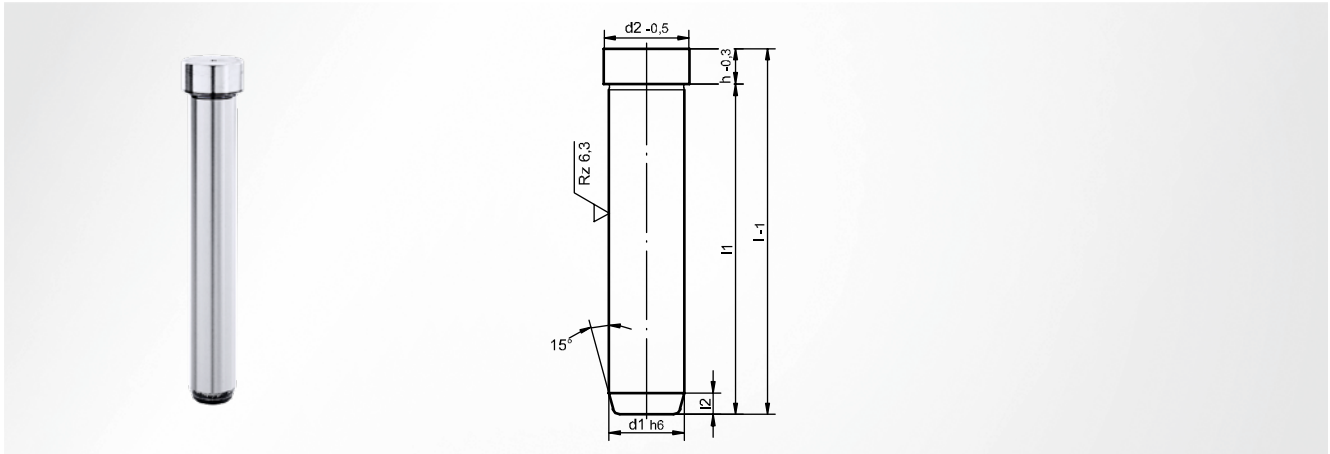
with solid lubricant, solid bronze

$b_1 \pm 0.1$	$b_2 \pm 0.2$	$t \pm 0.025$	$b_3 \pm 0.1$	$l_1 \pm 0.1$	$l_2 \pm 0.2$	$l_3 \pm 0.1$	Hole pattern	Screw	Item number
100	20	20	60	315	20	132	F	M12 x 25	ST7561 <b>100 x 315 x 20</b>
125	20	20	85	50	25		D	M12 x 25	ST7561 <b>125 x 050 x 20</b>
			85	80	20	35	E	M12 x 25	ST7561 <b>125 x 080 x 20</b>
			85	100	20	55	A	M12 x 25	ST7561 <b>125 x 100 x 20</b>
			85	125	20	80	A	M12 x 25	ST7561 <b>125 x 125 x 20</b>
			85	160	20	115	A	M12 x 25	ST7561 <b>125 x 160 x 20</b>
			85	200	20	155	A	M12 x 25	ST7561 <b>125 x 200 x 20</b>
			85	250	20	100	F	M12 x 25	ST7561 <b>125 x 250 x 20</b>
			85	315	20	132	F	M12 x 25	ST7561 <b>125 x 315 x 20</b>
160	20	20	120	50	25		D	M12 x 25	ST7561 <b>160 x 050 x 20</b>
			120	80	20	35	A	M12 x 25	ST7561 <b>160 x 080 x 20</b>
			120	100	20	55	A	M12 x 25	ST7561 <b>160 x 100 x 20</b>
			120	125	20	80	A	M12 x 25	ST7561 <b>160 x 125 x 20</b>
			120	160	20	115	A	M12 x 25	ST7561 <b>160 x 160 x 20</b>
			120	200	20	155	A	M12 x 25	ST7561 <b>160 x 200 x 20</b>
			120	250	20	100	F	M12 x 25	ST7561 <b>160 x 250 x 20</b>
			120	315	20	132	F	M12 x 25	ST7561 <b>160 x 315 x 20</b>

Discontinued product

# 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 <b>10 x 060</b>
				86	80	ST7111 <b>10 x 080</b>
				106	100	ST7111 <b>10 x 100</b>
				131	125	ST7111 <b>10 x 125</b>
12	16	6	5	66	60	ST7111 <b>12 x 060</b>
				86	80	ST7111 <b>12 x 080</b>
				106	100	ST7111 <b>12 x 100</b>
				131	125	ST7111 <b>12 x 125</b>
15	20	8	7	88	80	ST7111 <b>15 x 080</b>
				108	100	ST7111 <b>15 x 100</b>
				133	125	ST7111 <b>15 x 125</b>
				168	160	ST7111 <b>15 x 160</b>
16	20	8	8	208	200	ST7111 <b>15 x 200</b>
				88	80	ST7111 <b>16 x 080</b>
				108	100	ST7111 <b>16 x 100</b>
				133	125	ST7111 <b>16 x 125</b>
16	20	8	8	168	160	ST7111 <b>16 x 160</b>
				208	200	ST7111 <b>16 x 200</b>
				208	200	ST7111 <b>16 x 200</b>
				208	200	ST7111 <b>16 x 200</b>
19	24	8	8	88	80	ST7111 <b>19 x 080</b>
				108	100	ST7111 <b>19 x 100</b>
				133	125	ST7111 <b>19 x 125</b>
				168	160	ST7111 <b>19 x 160</b>
				188	180	ST7111 <b>19 x 180</b>
				228	220	ST7111 <b>19 x 220</b>

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

Active elements

Spring elements

Nitrogen systems

Tapping units

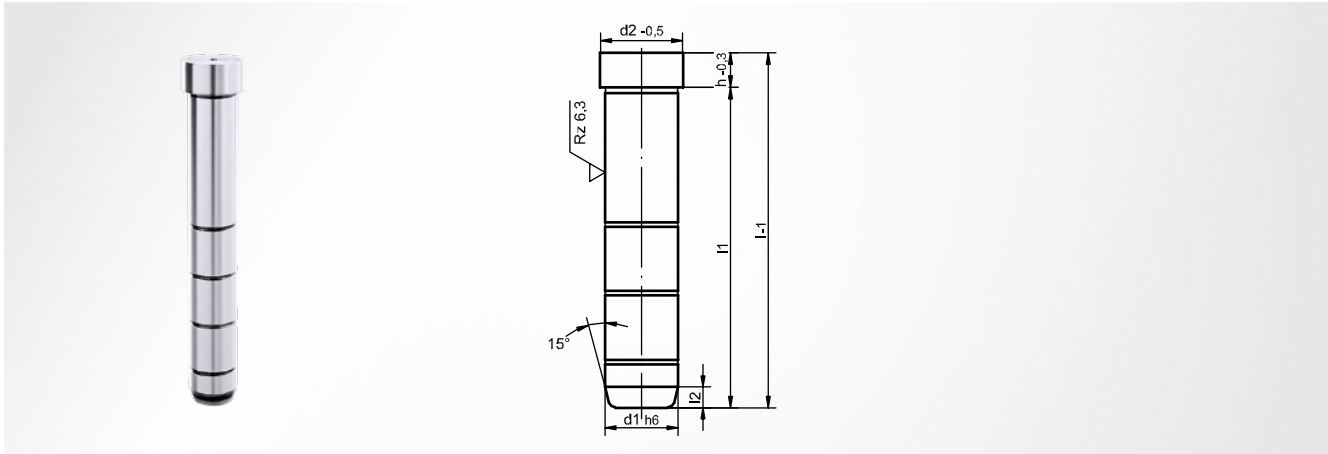
Module system

Machine elements

Accessories

# 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**

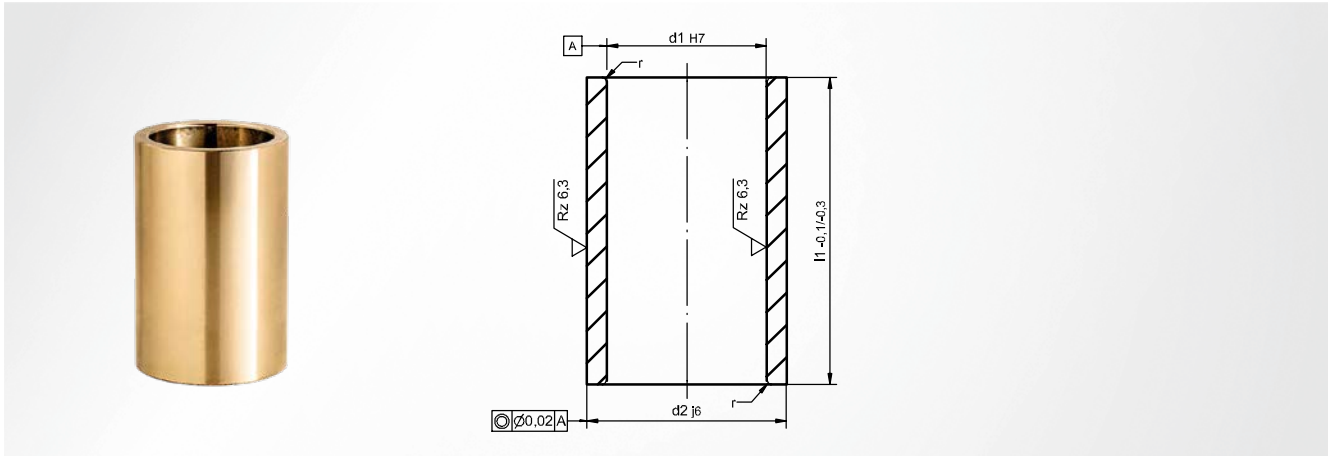
Use for sliding guide only

d <sub>1</sub> h <sub>6</sub>	d <sub>2</sub> -0,5	h -0,3	l <sub>2</sub>	l <sup>-1</sup>	l <sub>1</sub>	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
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
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
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	180	180	188	180	ST7112 19 x 180
				228	220	ST7112 19 x 220

d <sub>1</sub> h <sub>6</sub>	d <sub>2</sub> -0,5	h -0,3	l <sub>2</sub>	l <sup>-1</sup>	l <sub>1</sub>	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
24	30	15	8	228	220	ST7112 20 x 220
				115	100	ST7112 24 x 100
				140	125	ST7112 24 x 125
				175	160	ST7112 24 x 160
				215	200	ST7112 24 x 200
25	30	15	8	255	240	ST7112 24 x 240
				115	100	ST7112 25 x 100
				140	125	ST7112 25 x 125
				175	160	ST7112 25 x 160
				215	200	ST7112 25 x 200
30	36	15	9	255	240	ST7112 25 x 240
				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

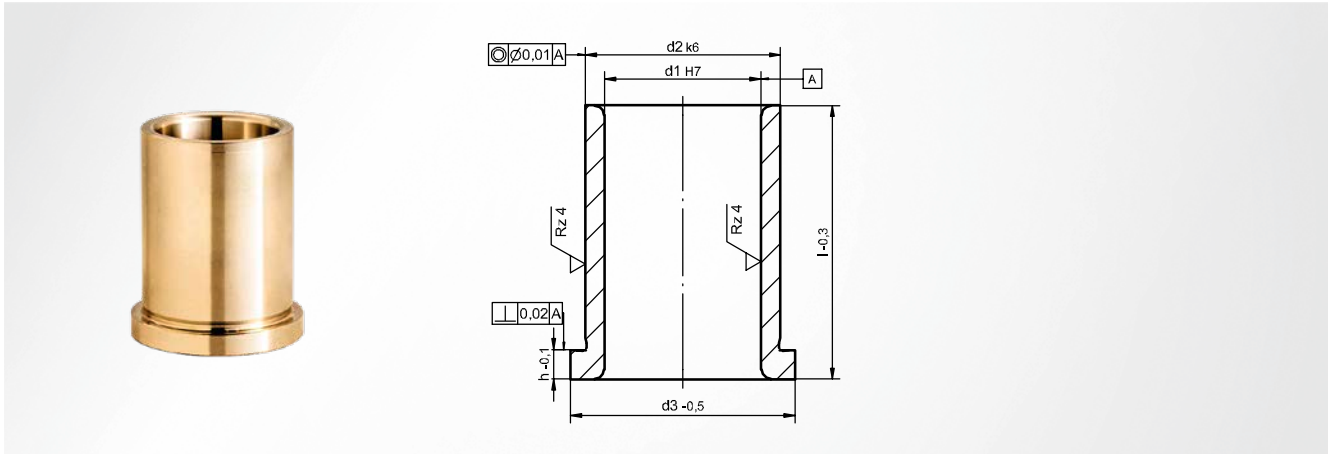
SZ9742

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

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

# 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

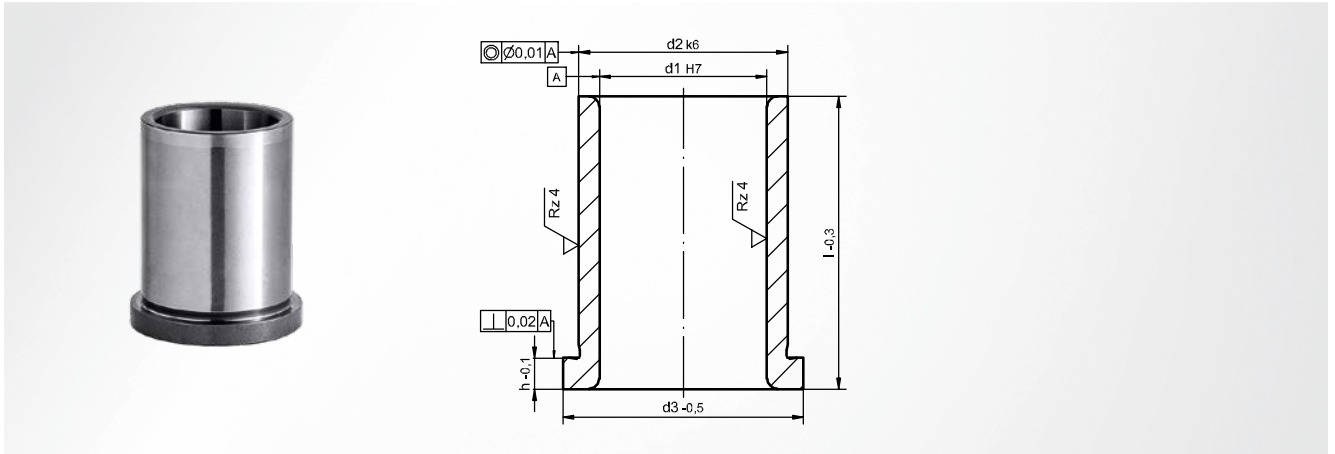
ISO H7

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

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

# 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**

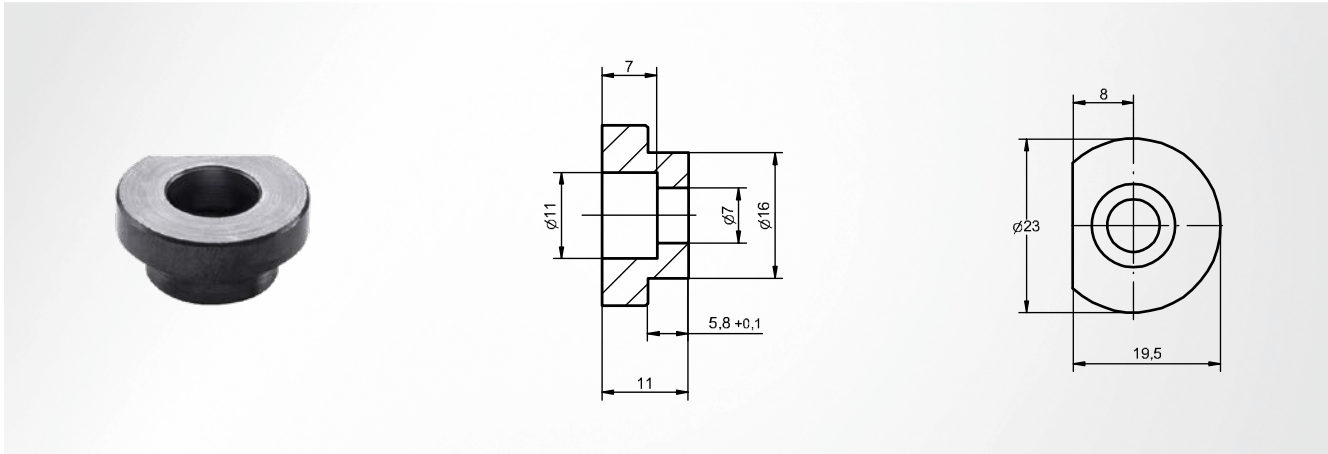
ISO H7

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

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

# ST7367 Holding clamp

round



**Material**

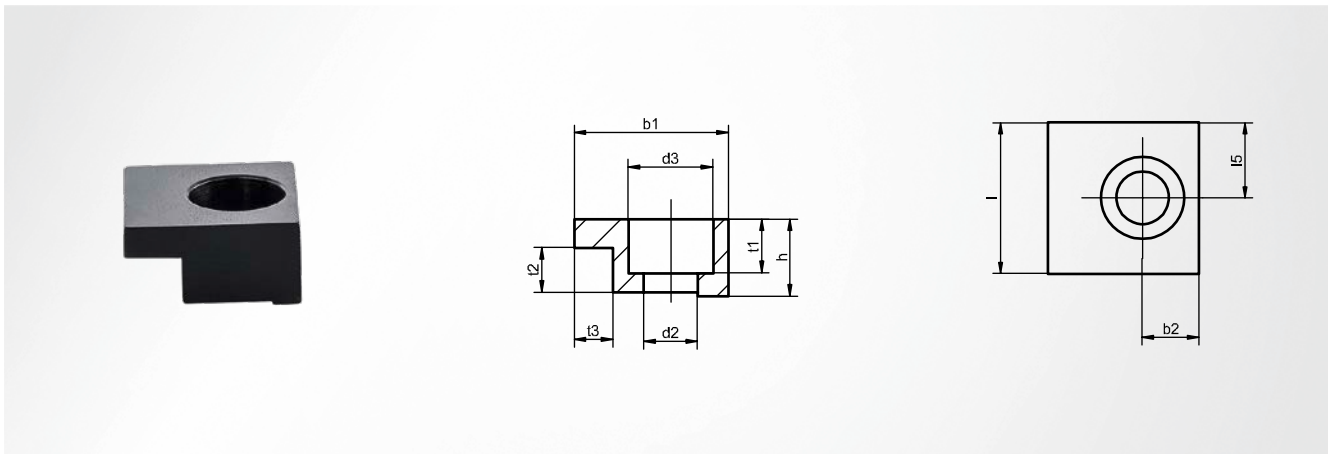
Steel 1.0715 (9SMn28K)

**Item number**

ST7367

# ST7377 Holding clamp

rectangular



**Referring to DIN 9832**

**Optional accessories**

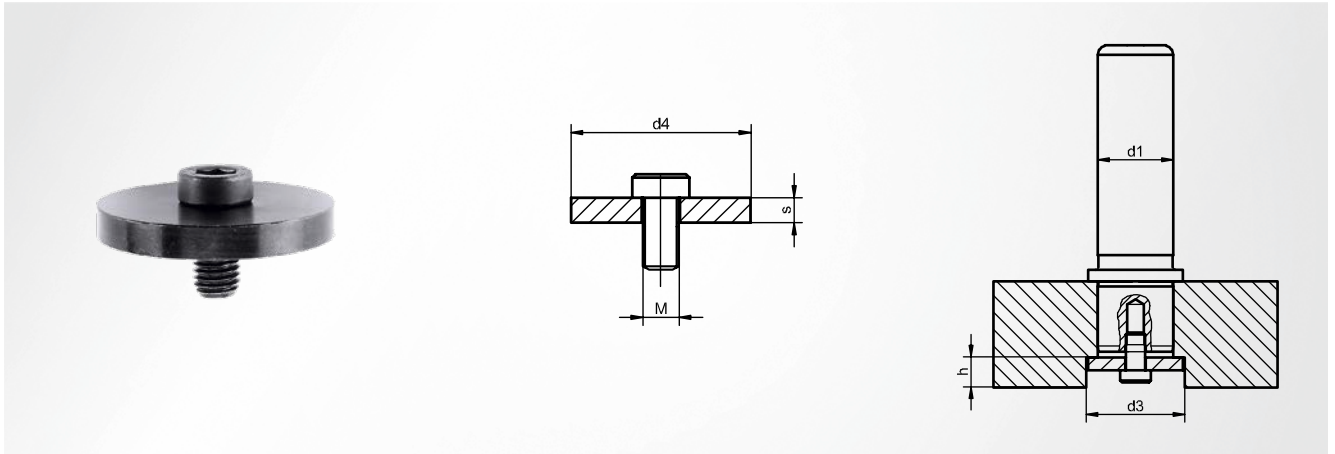
SZ8510

**Material**

Steel 1.0122

$d_1$	$d_2$	$d_3$	$b_1$	$b_2$	$h$	$l$	$l_5$	$t_1$	$t_2$	$t_3$	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





### Material

Steel 1.0503 (C45)

### Scope of supply

SZ8512

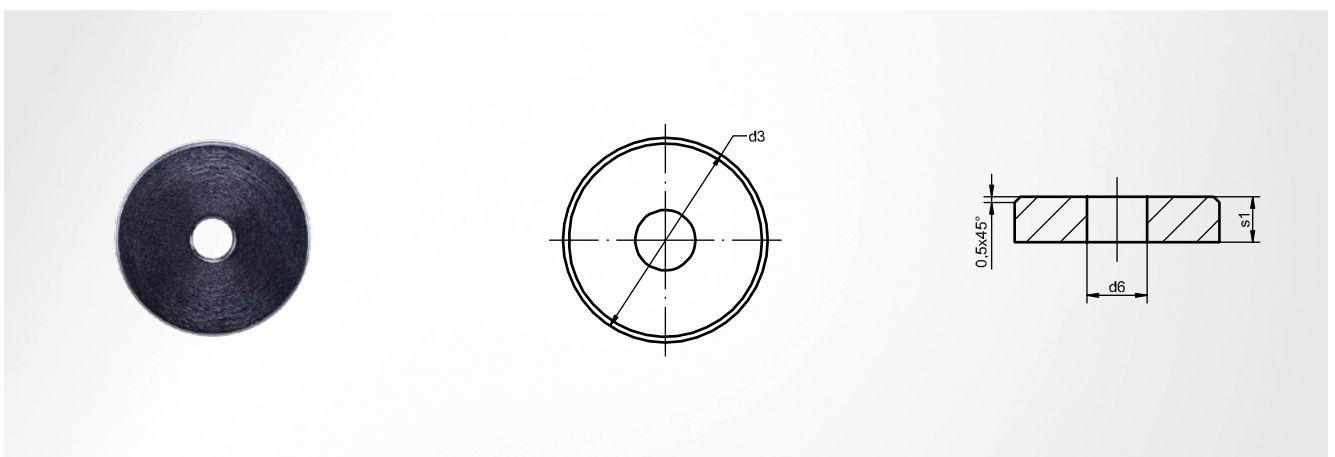
### Note

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 <b>16</b>
19 and 20	27	25	8	6	13	ST7387 <b>20</b>
24 and 25	34	32	8	6	13	ST7387 <b>25</b>
30 and 32	42	40	8	7	14	ST7387 <b>32</b>

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

# SZ7368 Holding disc



### Material

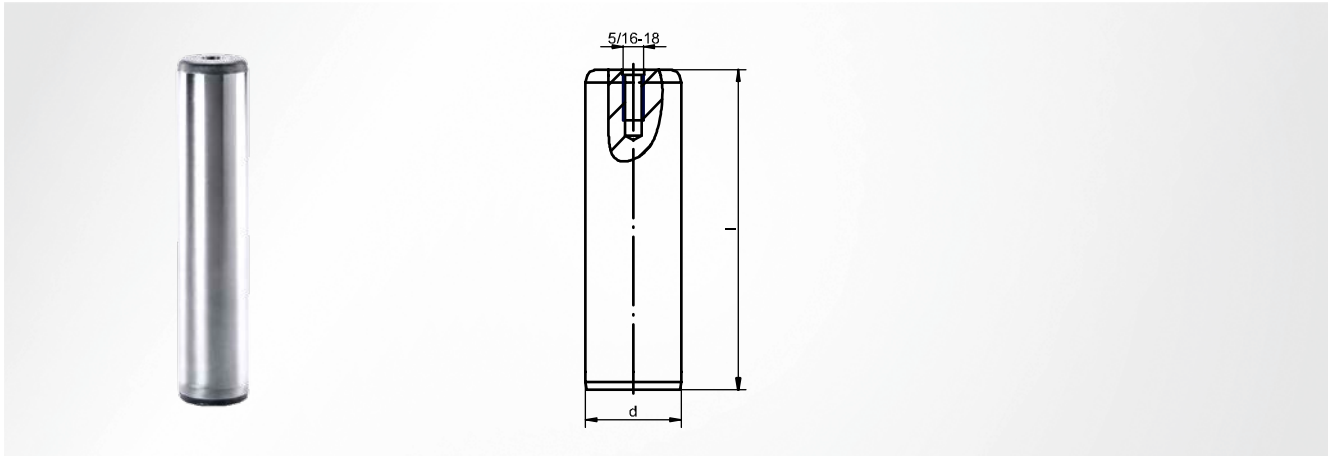
Steel 1.0727 (45S20K)

$d_3$	$d_6$	$s_1$	Item number
18	5.3	4	SZ7368 <b>20</b>
24	6.4	5	SZ7368 <b>24</b>
30	6.4	5	SZ7368 <b>30</b>

$d_3$	$d_6$	$s_1$	Item number
40	8.4	6	SZ7368 <b>40</b>
50	10.5	6	SZ7368 <b>50</b>
56	13.0	6	SZ7368 <b>63</b>

# ST7108 (inch) Guide pillar

smooth, with internal thread



### Material

Steel 1.1221 (C60E); hardened

### Installation instruction

press in; one-sided entry chamfer or centring attachment

### Hardness

63 ±1 HRC

### Installation in mounting bore

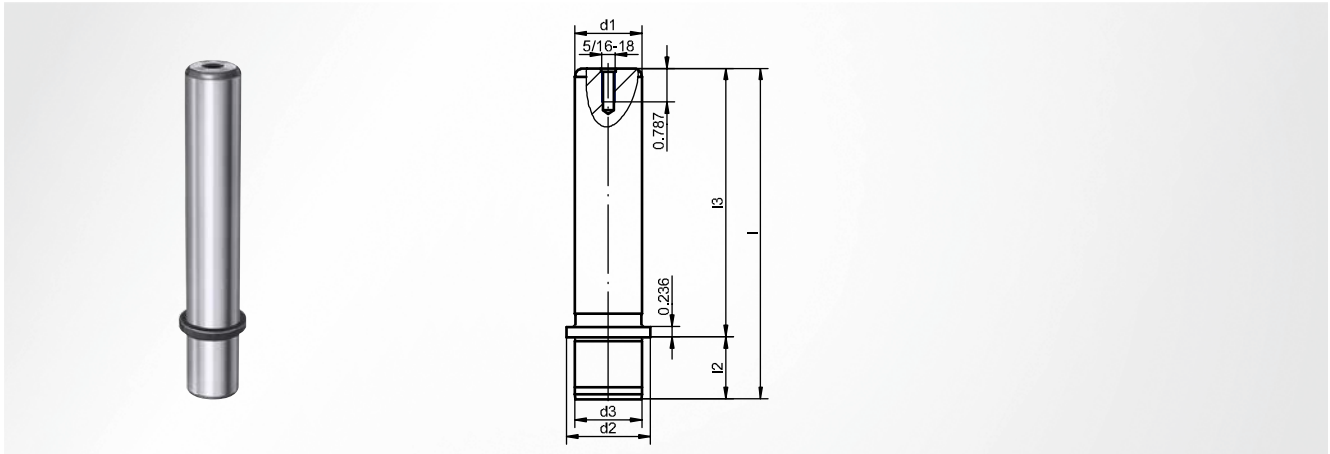
ISO R6

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
1 1/4	9	ST7108 -1.00X09.000
	10	ST7108 -1.00X10.000
	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
1 1/2	8	ST7108 -1.25X08.000
	8 1/2	ST7108 -1.25X08.500
	9	ST7108 -1.25X09.000
	10	ST7108 -1.25X10.000
	11	ST7108 -1.25X11.000
	12	ST7108 -1.25X12.000
	13	ST7108 -1.25X13.000
	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 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
2	17	ST7108 -1.75X17.000
	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

**Scope of supply**

ST7367

**Hardness**

63 ±1 HRC

**Optional accessories**

ST7132 (inch)

**Installation instruction**

Fixing with 3 holding clamps

d <sub>1</sub> "	d <sub>2</sub> "	d <sub>3</sub> "	l <sub>2</sub> "	l "	l <sub>3</sub> "	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

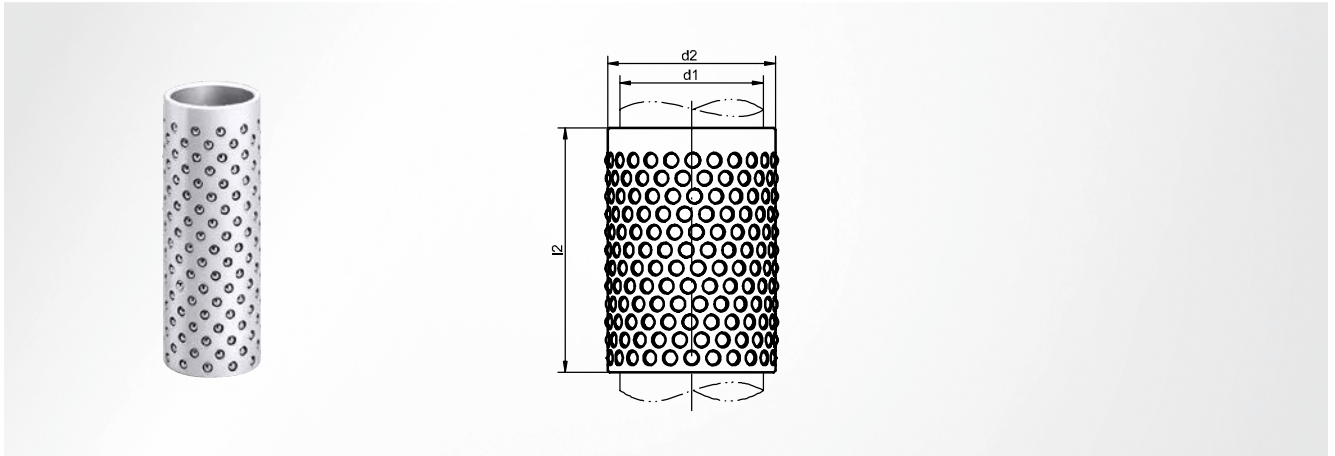
# ST7120 (inch) Guide pillar

with shoulder and internal thread

d <sub>1</sub> "	d <sub>2</sub> "	d <sub>3</sub> "	l <sub>2</sub> "	l "	l <sub>3</sub> "	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
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 = 1/2 stroke length

**Ball property**

Steel; hardened; quality class 1; sorted

d <sub>1</sub> "	d <sub>2</sub> "	l <sub>2</sub> "	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
1 1/2	1.8150	3 1/4	ST7130 -1.25X03.250
		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
1 1/2	1.8150	3 1/2	ST7130 -1.50X03.500

d <sub>1</sub> "	d <sub>2</sub> "	l <sub>2</sub> "	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
2	2.3150	4	ST7130 -1.75X04.000
		4 1/4	ST7130 -1.75X04.250
		3 1/4	ST7130 -2.00X03.250
		3 1/2	ST7130 -2.00X03.500
		3 3/4	ST7130 -2.00X03.750
2	2.3150	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

Active elements

Spring elements

Nitrogen systems

Tapping units

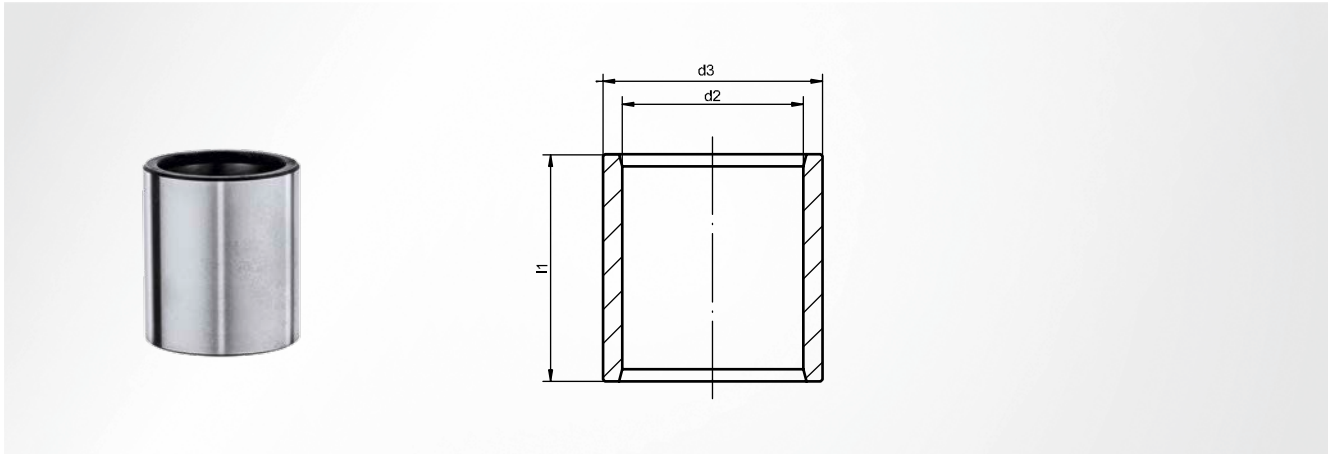
Module system

Machine elements

Accessories

# ST7406 (inch) Guide bush

smooth



**Material**

Steel 1.3505 (100 Cr6)

**Installation in mounting bore**

ISO G6

**Hardness**

62 ±1 HRC

**Optional accessories**

SZ9742

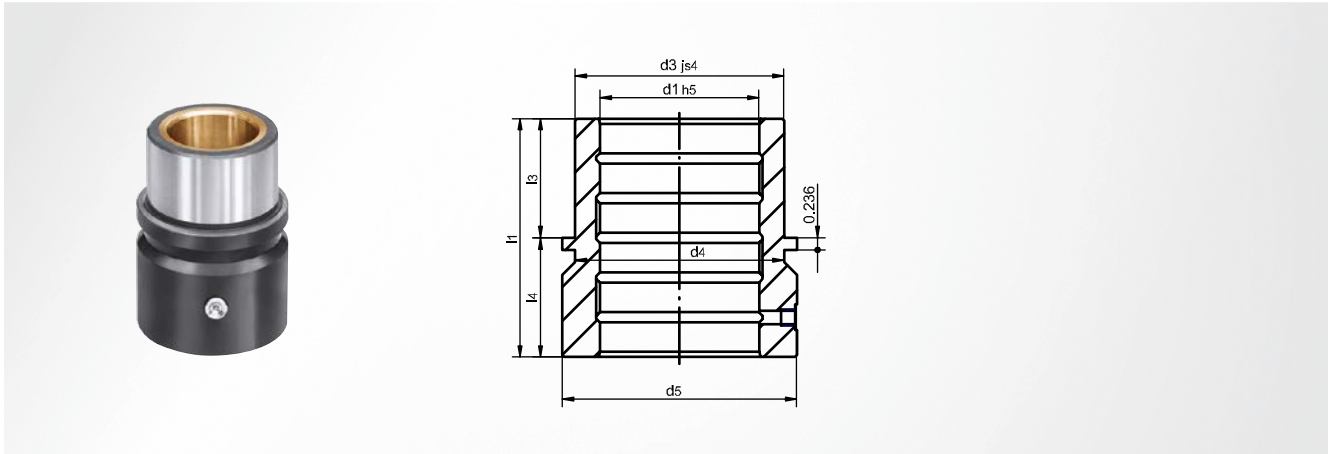
**Installation instruction**

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

$d_1$	$d_2$	$d_3$	$l_1$	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

# ST7419 (inch) Guide bush

bronze coating, steel sliding guide, hardened, with shoulder



### Material

Steel 1.7139 (16MnCrS5); case-hardened

### Installation in mounting bore

ISO H6

### Hardness

62 ±1 HRC

### Scope of supply

ST7367

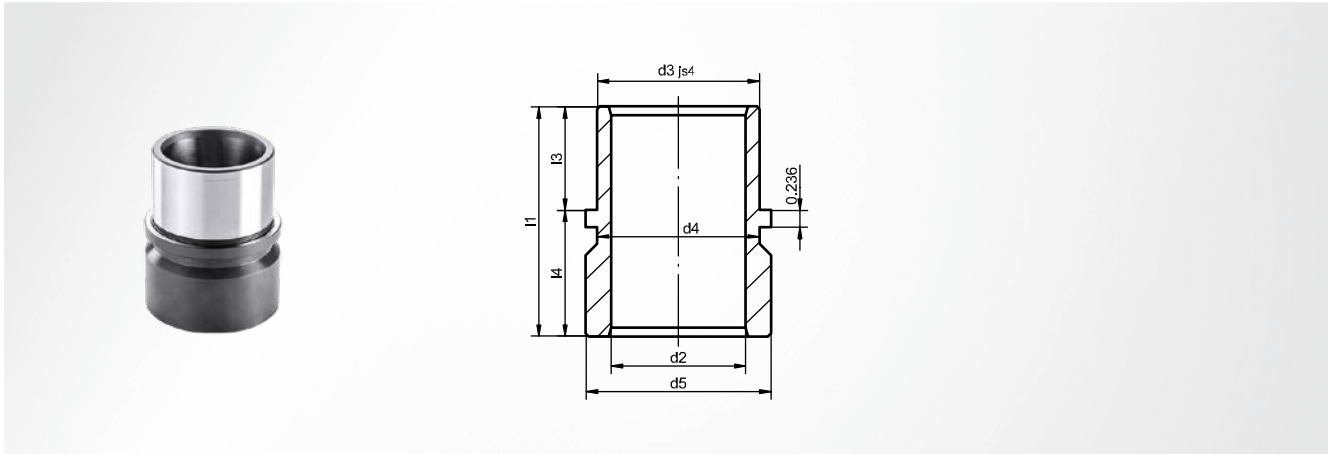
### Installation instruction

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

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

# ST7416 (inch) Guide bush

with shoulder



**Material**

Steel 1.7139 (16MnCrS5); case-hardened

**Installation in mounting bore**

ISO H6

**Hardness**

62 ±1 HRC

**Scope of supply**

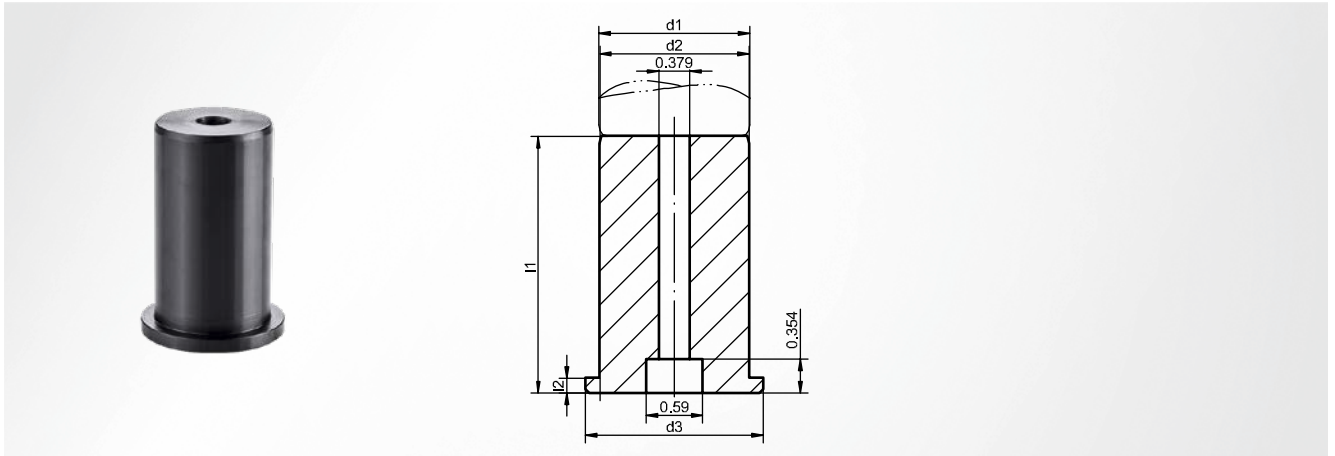
ST7367

**Installation instruction**

Fixing with 3 holding clamps

d "	d <sub>2</sub> "	d <sub>3</sub> <sup>js4</sup> "	d <sub>4</sub> "	l <sub>3</sub> "	d <sub>5</sub> "	l <sub>1</sub> "	l <sub>4</sub> "	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





### Material

Steel 1.0503 (C45)

### Note

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

d <sub>1</sub> "	d <sub>2</sub> "	d <sub>3</sub> "	l <sub>1</sub> "	l <sub>2</sub> "	Screw "	Item number
1	0.9803	1.2165	2	0.118	5/16-20-UNC x 2 1/4	ST7132 - <b>1.00X02.000</b>
1 1/4	1.2303	1.5433	2	0.157	5/16-20-UNC x 2 1/4	ST7132 - <b>1.25X02.000</b>
1 1/2	1.4803	1.7953	2 1/5	0.157	5/16-20-UNC x 2 3/4	ST7132 - <b>1.50X02.500</b>
1 3/4	1.7303	2.0827	2 1/5	0.157	5/16-20-UNC x 2 3/4	ST7132 - <b>1.75X02.500</b>
2	1.9803	2.2953	2 1/5	0.157	5/16-20-UNC x 2 3/4	ST7132 - <b>2.00X02.500</b>

Active elements

Spring elements

Nitrogen systems

Tapping units

Module system

Machine elements

Accessories

# 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



Spring elements

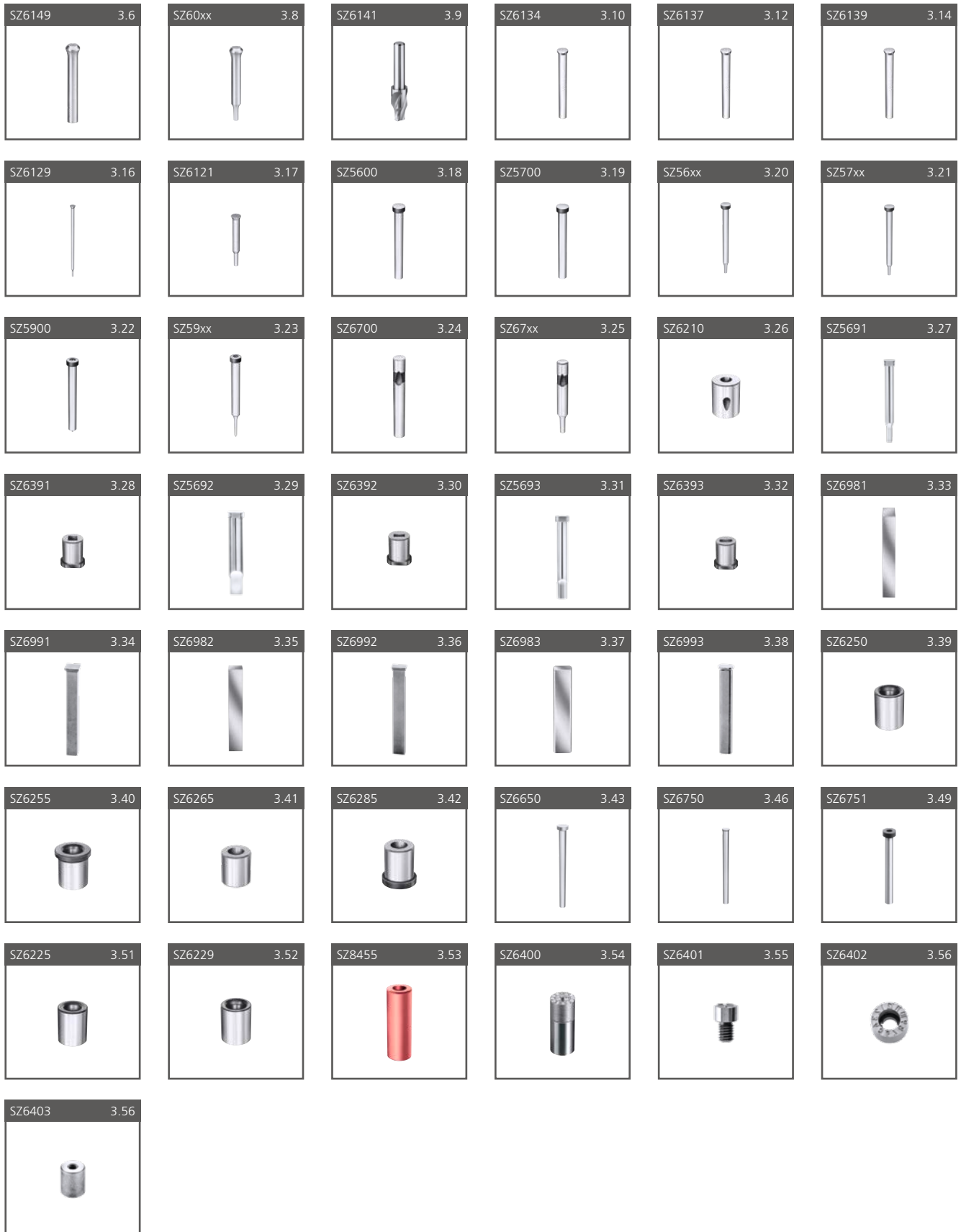
Nitrogen systems

Tapping units

Module system

Machine elements

Accessories



## 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

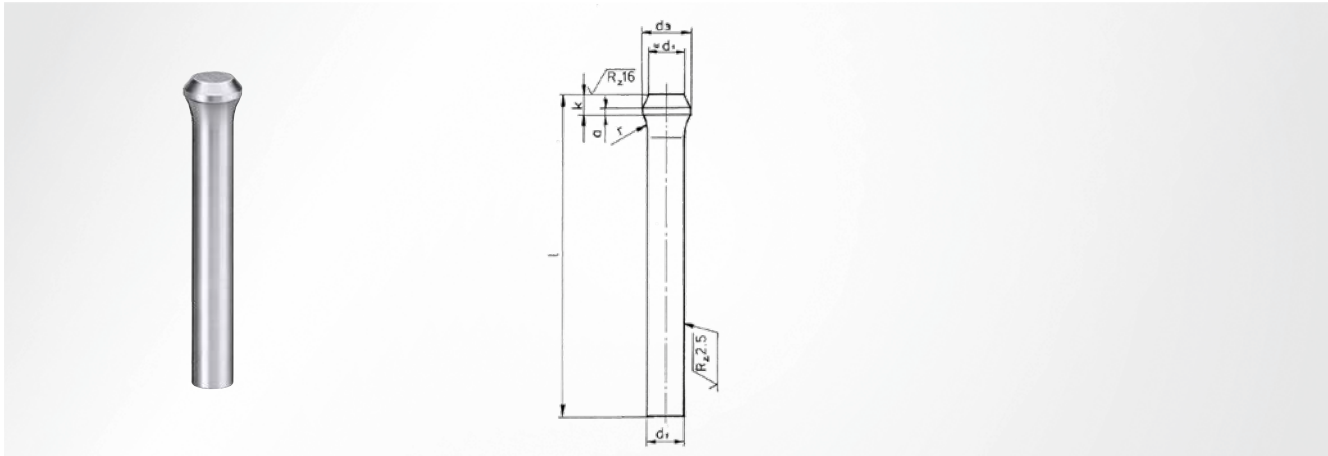


Shape-cutting bushes*	Standard	Shape	Length	Material
with shoulder, with twisting surface	DIN ISO 8977	square, rectangular, oval	32	HSS

\*available in several versions, and as a special design

# SZ6149 Cutting punch

with elongated neck



**Shape**

D

**Shank hardness**

64 ±2 HRC

**Material**

HSS

**Note**

deliverable with PVD coating upon request

**Head hardness**

50 ±5 HRC

d <sub>1</sub> <sup>h6</sup>	d <sub>3</sub>	a	k <sup>+0.2</sup>	r <sup>-0.2</sup>	l <sup>+0.5</sup>	Item number
2.0	3.0	1.0	3	3.5	71	SZ6149 <b>020 x 071</b>
					80	SZ6149 <b>020 x 080</b>
					100	SZ6149 <b>020 x 100</b>
2.5	4.0	1.0	3	5.0	71	SZ6149 <b>025 x 071</b>
					80	SZ6149 <b>025 x 080</b>
					100	SZ6149 <b>025 x 100</b>
3.0	4.5	1.0	3	6.5	71	SZ6149 <b>030 x 071</b>
					80	SZ6149 <b>030 x 080</b>
					100	SZ6149 <b>030 x 100</b>
3.5	5.0	1.0	3	8.0	80	SZ6149 <b>035 x 080</b>
					100	SZ6149 <b>035 x 100</b>
					71	SZ6149 <b>040 x 071</b>
4.0	5.5	1.5	4	8.0	80	SZ6149 <b>040 x 080</b>
					100	SZ6149 <b>040 x 100</b>
					71	SZ6149 <b>045 x 071</b>
4.5	6.0	1.5	4	8.0	80	SZ6149 <b>045 x 080</b>
					100	SZ6149 <b>045 x 100</b>
					71	SZ6149 <b>050 x 071</b>
5.0	7.0	1.5	4	10.0	80	SZ6149 <b>050 x 080</b>
					100	SZ6149 <b>050 x 100</b>
					71	SZ6149 <b>055 x 071</b>
5.5	8.0	1.5	4	10.0	80	SZ6149 <b>055 x 080</b>
					100	SZ6149 <b>055 x 100</b>
					71	SZ6149 <b>060 x 071</b>
6.0	9.0	1.5	4	10.0	80	SZ6149 <b>060 x 080</b>
					100	SZ6149 <b>060 x 100</b>
					71	SZ6149 <b>065 x 100</b>
6.5	10.0	1.5	4	12.0	71	SZ6149 <b>070 x 071</b>
					80	SZ6149 <b>070 x 080</b>
					100	SZ6149 <b>070 x 100</b>
7.0	10.0	1.5	4	10.0	80	SZ6149 <b>075 x 080</b>
					100	SZ6149 <b>075 x 100</b>
					71	SZ6149 <b>080 x 071</b>
7.5	11.0	1.5	4	12.0	80	SZ6149 <b>080 x 080</b>
					100	SZ6149 <b>080 x 100</b>
					71	SZ6149 <b>085 x 071</b>
8.0	11.0	1.5	4	12.0	80	SZ6149 <b>085 x 080</b>
					100	SZ6149 <b>085 x 100</b>
					71	SZ6149 <b>090 x 071</b>

d <sub>1</sub> <sup>h6</sup>	d <sub>3</sub>	a	k <sup>+0.2</sup>	r <sup>-0.2</sup>	l <sup>+0.5</sup>	Item number
8.5	13.0	1.5	4	15.0	71	SZ6149 <b>085 x 071</b>
					80	SZ6149 <b>085 x 100</b>
					100	SZ6149 <b>090 x 071</b>
9.0	13.0	1.5	4	15.0	80	SZ6149 <b>090 x 080</b>
					100	SZ6149 <b>090 x 100</b>
					71	SZ6149 <b>095 x 071</b>
9.5	14.0	1.5	4	15.0	80	SZ6149 <b>095 x 080</b>
					100	SZ6149 <b>095 x 100</b>
					71	SZ6149 <b>100 x 071</b>
10.0	14.0	1.5	4	15.0	80	SZ6149 <b>100 x 080</b>
					100	SZ6149 <b>100 x 100</b>
					71	SZ6149 <b>105 x 071</b>
10.5	15.0	1.5	4	15.0	80	SZ6149 <b>105 x 080</b>
					100	SZ6149 <b>105 x 100</b>
					71	SZ6149 <b>110 x 071</b>
11.0	15.0	1.5	4	15.0	80	SZ6149 <b>110 x 080</b>
					100	SZ6149 <b>110 x 100</b>
					71	SZ6149 <b>115 x 071</b>
11.5	16.0	1.5	4	15.0	80	SZ6149 <b>115 x 080</b>
					100	SZ6149 <b>115 x 100</b>
					71	SZ6149 <b>120 x 071</b>
12.0	16.0	1.5	4	15.0	80	SZ6149 <b>120 x 080</b>
					100	SZ6149 <b>120 x 100</b>
					71	SZ6149 <b>125 x 071</b>
12.5	17.0	1.5	4	15.0	80	SZ6149 <b>125 x 080</b>
					100	SZ6149 <b>125 x 100</b>
					71	SZ6149 <b>130 x 071</b>
13.0	17.0	1.5	4	15.0	80	SZ6149 <b>130 x 080</b>
					100	SZ6149 <b>130 x 100</b>
					71	SZ6149 <b>135 x 071</b>
13.5	18.0	1.5	4	15.0	80	SZ6149 <b>135 x 080</b>
					100	SZ6149 <b>135 x 100</b>
					71	SZ6149 <b>140 x 071</b>
14.0	18.0	1.5	4	15.0	80	SZ6149 <b>140 x 080</b>
					100	SZ6149 <b>140 x 100</b>
					71	SZ6149 <b>145 x 071</b>
14.5	19.0	1.5	4	15.0	80	SZ6149 <b>145 x 080</b>
					100	SZ6149 <b>145 x 100</b>
					71	SZ6149 <b>150 x 071</b>



# SZ6149 Cutting punch

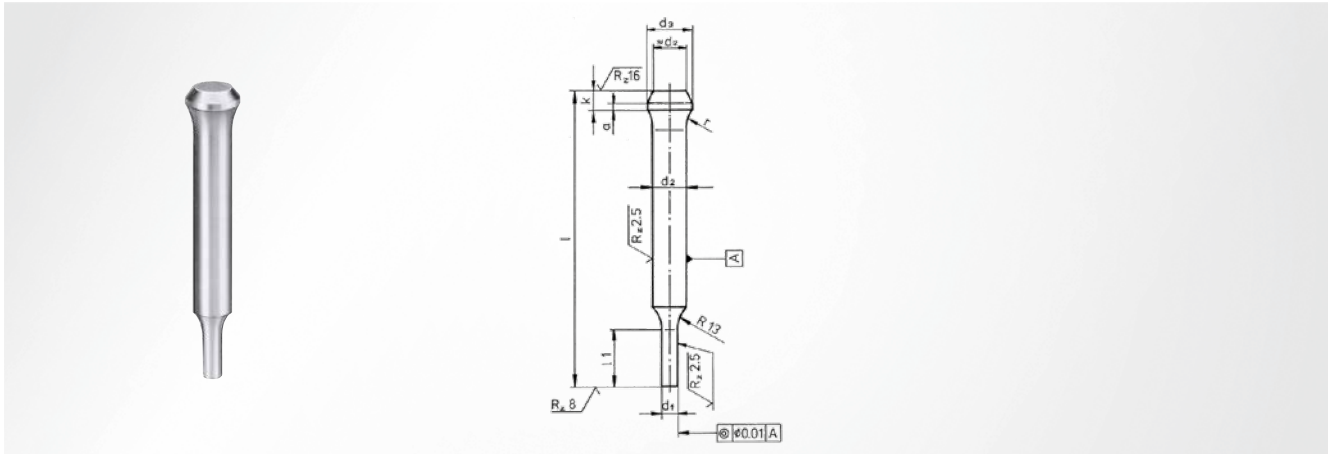
with elongated neck

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

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

# SZ60xx Cutting punch

with elongated neck, reduced



**Shape**

C

**Shank hardness**

64 ±2 HRC

**Material**

HSS

**Note**

deliverable with PVD coating upon request

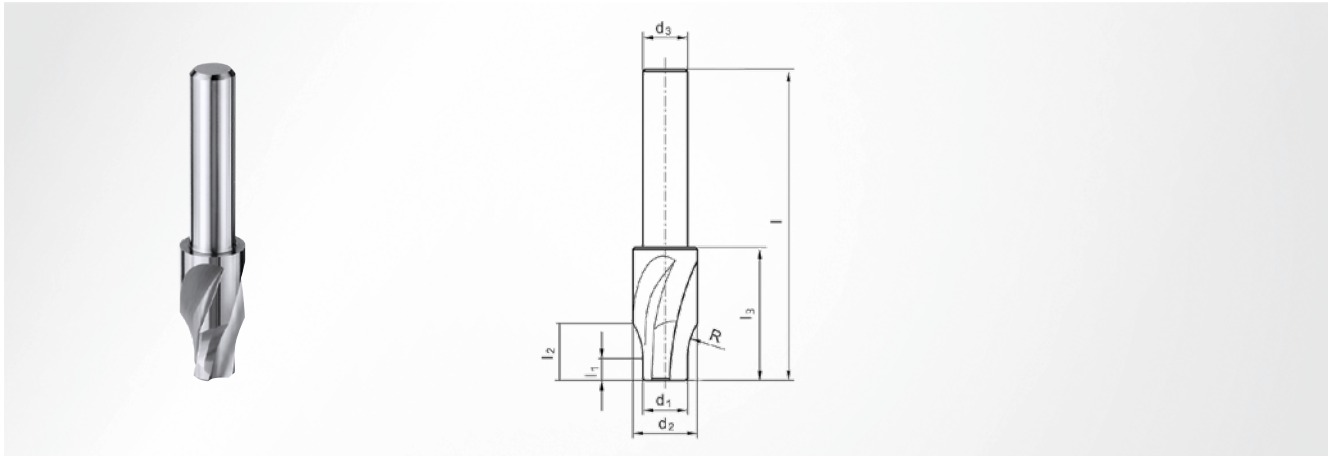
**Head hardness**

50 ±5 HRC

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

# 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 <b>03</b>
4	5.9	8	70	5	8.8	30	8.0	SZ6141 <b>04</b>
5	7.4	8	70	5	9.7	30	10.0	SZ6141 <b>05</b>
6	9.5	8	70	5	10.6	30	10.0	SZ6141 <b>06</b>
8	11.5	8	70	5	11.2	30	12.0	SZ6141 <b>08</b>
10	14.5	10	70	8	15.9	30	15.0	SZ6141 <b>10</b>
13	17.5	10	70	8	15.9	30	15.0	SZ6141 <b>13</b>
16	20.5	10	70	8	15.8	30	15.0	SZ6141 <b>16</b>
20	25.5	16	70	8	16.7	30	15.0	SZ6141 <b>20</b>

Spring elements

Nitrogen systems

Tapping units

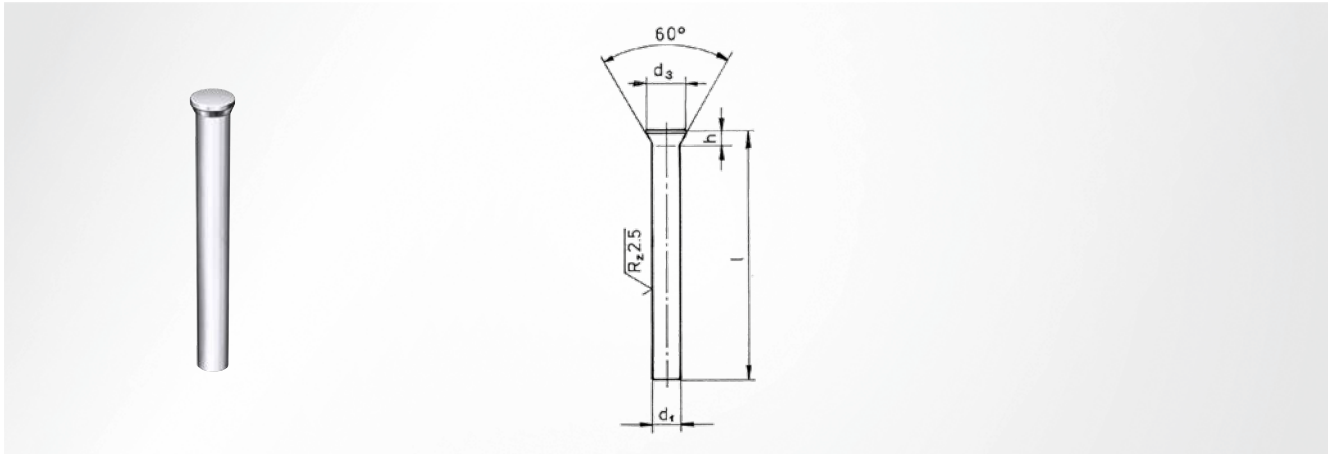
Module system

Machine elements

Accessories

# 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 lengths 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 <b>005 x 071</b>
0.6	1.1	0.63	71	SZ6134 <b>006 x 071</b>
0.7	1.3	0.72	71	SZ6134 <b>007 x 071</b>
0.8	1.4	0.92	71	SZ6134 <b>008 x 071</b>
0.9	1.6	1.01	71	SZ6134 <b>009 x 071</b>
			80	SZ6134 <b>009 x 080</b>
1.0	1.8	1.19	71	SZ6134 <b>010 x 071</b>
			80	SZ6134 <b>010 x 080</b>
1.1	1.8	1.11	71	SZ6134 <b>011 x 071</b>
			80	SZ6134 <b>011 x 080</b>
1.2	2.0	1.19	71	SZ6134 <b>012 x 071</b>
			80	SZ6134 <b>012 x 080</b>
1.3	2.0	1.11	71	SZ6134 <b>013 x 071</b>
			80	SZ6134 <b>013 x 080</b>
1.4	2.2	1.19	71	SZ6134 <b>014 x 071</b>
			80	SZ6134 <b>014 x 080</b>
1.5	2.2	1.11	71	SZ6134 <b>015 x 071</b>
			80	SZ6134 <b>015 x 080</b>
1.6	2.5	1.28	71	SZ6134 <b>016 x 071</b>
			80	SZ6134 <b>016 x 080</b>
1.7	2.5	1.19	71	SZ6134 <b>017 x 071</b>
			80	SZ6134 <b>017 x 080</b>
1.8	2.8	1.37	71	SZ6134 <b>018 x 071</b>
			80	SZ6134 <b>018 x 080</b>
1.9	2.8	1.28	71	SZ6134 <b>019 x 071</b>
			80	SZ6134 <b>019 x 080</b>
2.0	3.0	1.37	71	SZ6134 <b>020 x 071</b>
			80	SZ6134 <b>020 x 080</b>
2.1	3.2	1.45	71	SZ6134 <b>021 x 071</b>
			80	SZ6134 <b>021 x 080</b>
2.2	3.2	1.37	71	SZ6134 <b>022 x 071</b>
			80	SZ6134 <b>022 x 080</b>
2.3-2.5	3.5	1.37	71	SZ6134 <b>023 - 025 x 071</b>

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

# 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 <b>080 - 084 x 071</b>
			80	SZ6134 <b>080 - 084 x 080</b>
			100	SZ6134 <b>080 - 084 x 100</b>
8.5-8.9	11.0	3.17	71	SZ6134 <b>080 - 089 x 071</b>
			80	SZ6134 <b>080 - 089 x 080</b>
			100	SZ6134 <b>080 - 089 x 100</b>
9.0-9.4	11.0	2.73	71	SZ6134 <b>090 - 094 x 071</b>
			80	SZ6134 <b>090 - 094 x 080</b>
			100	SZ6134 <b>090 - 094 x 100</b>
9.5-9.9	12.0	3.17	71	SZ6134 <b>095 - 099 x 071</b>
			80	SZ6134 <b>095 - 099 x 080</b>
			100	SZ6134 <b>095 - 099 x 100</b>
10.0	12.0	2.73	71	SZ6134 <b>100 x 071</b>
			80	SZ6134 <b>100 x 080</b>
			100	SZ6134 <b>100 x 100</b>
10.5	13.0	3.17	71	SZ6134 <b>105 x 071</b>
			100	SZ6134 <b>105 x 100</b>
11.0	13.0	2.73	71	SZ6134 <b>110 x 071</b>
			80	SZ6134 <b>110 x 080</b>
			100	SZ6134 <b>110 x 100</b>
11.5	14.0	3.17	71	SZ6134 <b>115 x 071</b>
			80	SZ6134 <b>115 x 080</b>

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

Spring elements

Nitrogen systems

Tapping units

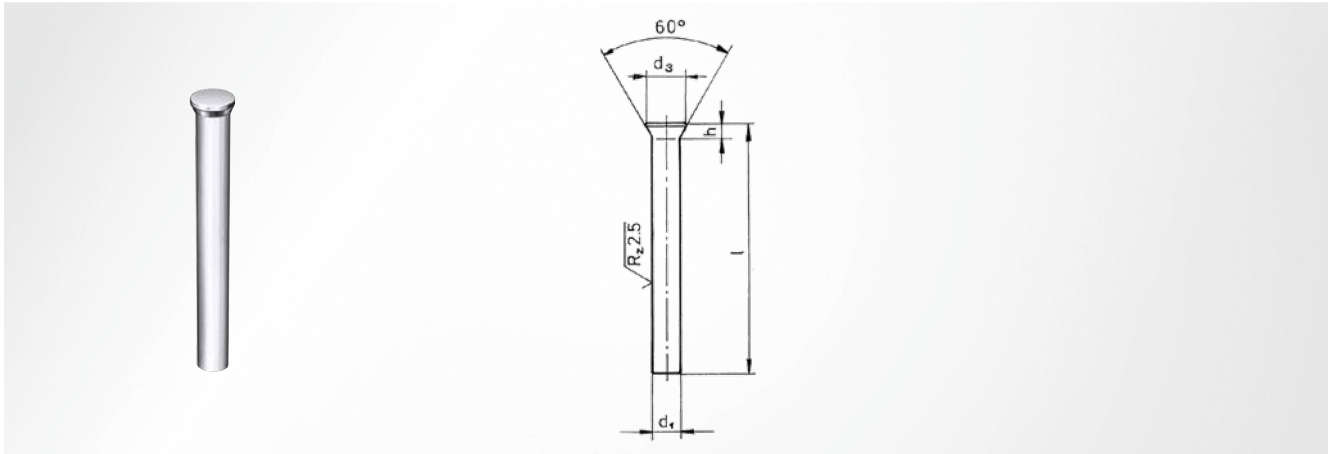
Module system

Machine elements

Accessories

# 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 <b>010 x 071</b>
			80	SZ6137 <b>010 x 080</b>
1.5	2.2	1.11	71	SZ6137 <b>015 x 071</b>
			80	SZ6137 <b>015 x 080</b>
2.0	3.0	1.37	71	SZ6137 <b>020 x 071</b>
			80	SZ6137 <b>020 x 080</b>
2.5	3.5	1.37	71	SZ6137 <b>025 x 071</b>
			80	SZ6137 <b>025 x 080</b>
3.0	4.5	1.80	71	SZ6137 <b>030 x 071</b>
			80	SZ6137 <b>030 x 080</b>
			100	SZ6137 <b>030 x 100</b>
3.5	5.0	1.80	71	SZ6137 <b>035 x 071</b>
			80	SZ6137 <b>035 x 080</b>
			100	SZ6137 <b>035 x 100</b>
4.0	5.5	1.80	71	SZ6137 <b>040 x 071</b>
			80	SZ6137 <b>040 x 080</b>
			100	SZ6137 <b>040 x 100</b>
4.5	6.0	1.80	71	SZ6137 <b>045 x 071</b>
			80	SZ6137 <b>045 x 080</b>
			100	SZ6137 <b>045 x 100</b>
5.0	6.5	1.80	71	SZ6137 <b>050 x 071</b>
			80	SZ6137 <b>050 x 080</b>
			100	SZ6137 <b>050 x 100</b>
5.5	7.0	1.80	71	SZ6137 <b>055 x 071</b>
			80	SZ6137 <b>055 x 080</b>
			100	SZ6137 <b>055 x 100</b>
6.0	8.0	2.23	71	SZ6137 <b>060 x 071</b>
			80	SZ6137 <b>060 x 080</b>
			100	SZ6137 <b>060 x 100</b>
6.5	9.0	3.17	71	SZ6137 <b>065 x 071</b>
			80	SZ6137 <b>065 x 080</b>
			100	SZ6137 <b>065 x 100</b>
7.0	9.0	2.73	71	SZ6137 <b>070 x 071</b>
			80	SZ6137 <b>070 x 080</b>

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

# 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 <b>130 x 071</b>
			80	SZ6137 <b>130 x 080</b>
			100	SZ6137 <b>130 x 100</b>
13.5	16.0	3.67	71	SZ6137 <b>135 x 071</b>
			80	SZ6137 <b>135 x 080</b>
			100	SZ6137 <b>135 x 100</b>
14.0	16.0	3.23	71	SZ6137 <b>140 x 071</b>
			80	SZ6137 <b>140 x 080</b>
			100	SZ6137 <b>140 x 100</b>
14.5	17.0	3.67	71	SZ6137 <b>145 x 071</b>
			80	SZ6137 <b>145 x 080</b>

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

Spring elements

Nitrogen systems

Tapping units

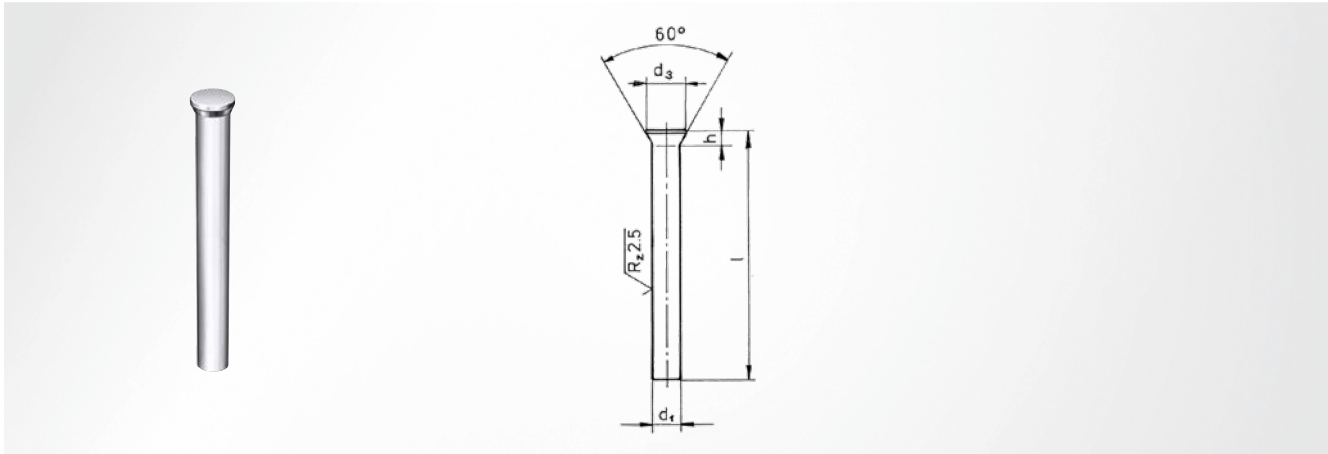
Module system

Machine elements

Accessories

# 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 <b>005 x 071</b>
			80	SZ6139 <b>005 x 080</b>
0.6	1.1	0.63	71	SZ6139 <b>006 x 071</b>
			80	SZ6139 <b>006 x 080</b>
0.7	1.3	0.72	71	SZ6139 <b>007 x 071</b>
			80	SZ6139 <b>007 x 080</b>
0.8	1.4	0.92	71	SZ6139 <b>008 x 071</b>
			80	SZ6139 <b>008 x 080</b>
0.9	1.6	1.01	71	SZ6139 <b>009 x 071</b>
			80	SZ6139 <b>009 x 080</b>
1.0	1.8	1.19	71	SZ6139 <b>010 x 071</b>
			80	SZ6139 <b>010 x 080</b>
1.1	1.8	1.11	71	SZ6139 <b>011 x 071</b>
			80	SZ6139 <b>011 x 080</b>
1.2	2.0	1.19	71	SZ6139 <b>012 x 071</b>
			80	SZ6139 <b>012 x 080</b>
1.3	2.0	1.11	71	SZ6139 <b>013 x 071</b>
			80	SZ6139 <b>013 x 080</b>
1.4	2.2	1.19	71	SZ6139 <b>014 x 071</b>
			80	SZ6139 <b>014 x 080</b>
1.5	2.2	1.11	71	SZ6139 <b>015 x 071</b>
			80	SZ6139 <b>015 x 080</b>
1.6	2.5	1.28	71	SZ6139 <b>016 x 071</b>
			80	SZ6139 <b>016 x 080</b>
1.7	2.5	1.19	71	SZ6139 <b>017 x 071</b>
			80	SZ6139 <b>017 x 080</b>
1.8	2.8	1.37	71	SZ6139 <b>018 x 071</b>
			80	SZ6139 <b>018 x 080</b>
1.9	2.8	1.28	71	SZ6139 <b>019 x 071</b>
			80	SZ6139 <b>019 x 080</b>
2.0	3.0	1.37	71	SZ6139 <b>020 x 071</b>
			80	SZ6139 <b>020 x 080</b>
2.1	3.2	1.45	71	SZ6139 <b>021 x 071</b>
			80	SZ6139 <b>021 x 080</b>

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



# 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 <b>075 - 079 x 080</b>
			100	SZ6139 <b>075 - 079 x 100</b>
8.0-8.4	10.0	2.73	71	SZ6139 <b>080 - 084 x 071</b>
			80	SZ6139 <b>080 - 084 x 080</b>
			100	SZ6139 <b>080 - 084 x 100</b>
8.5-8.9	11.0	3.17	71	SZ6139 <b>085 - 089 x 071</b>
			80	SZ6139 <b>085 - 089 x 080</b>
			100	SZ6139 <b>085 - 089 x 100</b>
9.0-9.4	11.0	2.73	71	SZ6139 <b>090 - 094 x 071</b>
			80	SZ6139 <b>090 - 094 x 080</b>
			100	SZ6139 <b>090 - 094 x 100</b>
9.5-9.9	12.0	3.17	71	SZ6139 <b>095 - 099 x 071</b>
			80	SZ6139 <b>095 - 099 x 080</b>
			100	SZ6139 <b>095 - 099 x 100</b>
10.0	12.0	2.73	71	SZ6139 <b>100 x 071</b>
			80	SZ6139 <b>100 x 080</b>
			100	SZ6139 <b>100 x 100</b>
10.5	13.0	3.17	71	SZ6139 <b>105 x 071</b>
			80	SZ6139 <b>105 x 080</b>
			100	SZ6139 <b>105 x 100</b>
11.0	13.0	2.73	71	SZ6139 <b>110 x 071</b>
			80	SZ6139 <b>110 x 080</b>
			100	SZ6139 <b>110 x 100</b>
11.5	14.0	3.17	71	SZ6139 <b>115 x 071</b>
			80	SZ6139 <b>115 x 080</b>
			100	SZ6139 <b>115 x 100</b>
12.0	14.0	2.73	71	SZ6139 <b>120 x 071</b>

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

Spring elements

Nitrogen systems

Tapping units

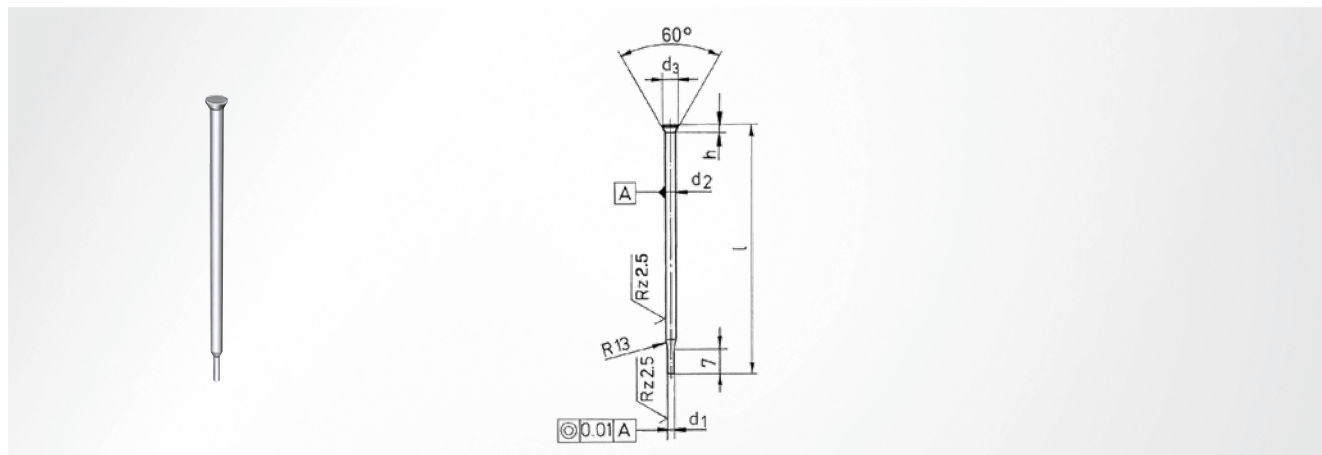
Module system

Machine elements

Accessories

# 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

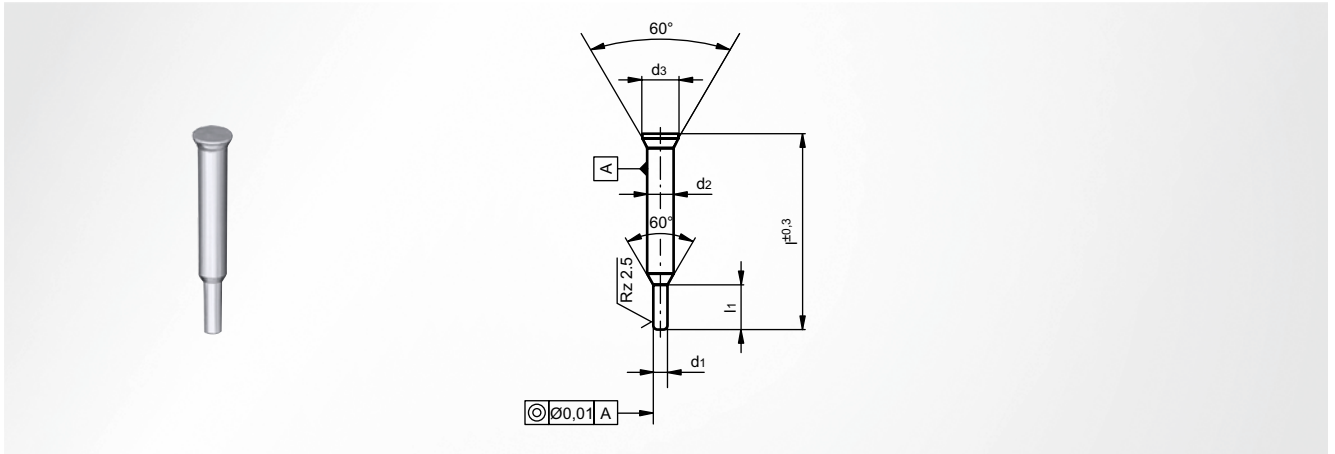
**Note**

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 <b>005 - 015 x 71</b>
					80	SZ6129 <b>005 - 015 x 80</b>
1.6-2.9	3	4.5	1.80	0.1	71	SZ6129 <b>016 - 029 x 71</b>
					80	SZ6129 <b>016 - 029 x 80</b>

# 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 <b>020 x 30</b>
				2.1	SZ6121 <b>021 x 30</b>
				2.2	SZ6121 <b>022 x 30</b>
				2.3	SZ6121 <b>023 x 30</b>
				2.4	SZ6121 <b>024 x 30</b>
				2.5	SZ6121 <b>025 x 30</b>
				2.6	SZ6121 <b>026 x 30</b>
				2.7	SZ6121 <b>027 x 30</b>
				2.8	SZ6121 <b>028 x 30</b>
				2.9	SZ6121 <b>029 x 30</b>
				3.0	SZ6121 <b>030 x 30</b>
				3.1	SZ6121 <b>031 x 30</b>
				3.2	SZ6121 <b>032 x 30</b>
				3.3	SZ6121 <b>033 x 30</b>
				3.4	SZ6121 <b>034 x 30</b>
				3.5	SZ6121 <b>035 x 30</b>
				3.6	SZ6121 <b>036 x 30</b>
				3.7	SZ6121 <b>037 x 30</b>
				3.8	SZ6121 <b>038 x 30</b>
				3.9	SZ6121 <b>039 x 30</b>
				4.0	SZ6121 <b>040 x 30</b>

Spring elements

Nitrogen systems

Tapping units

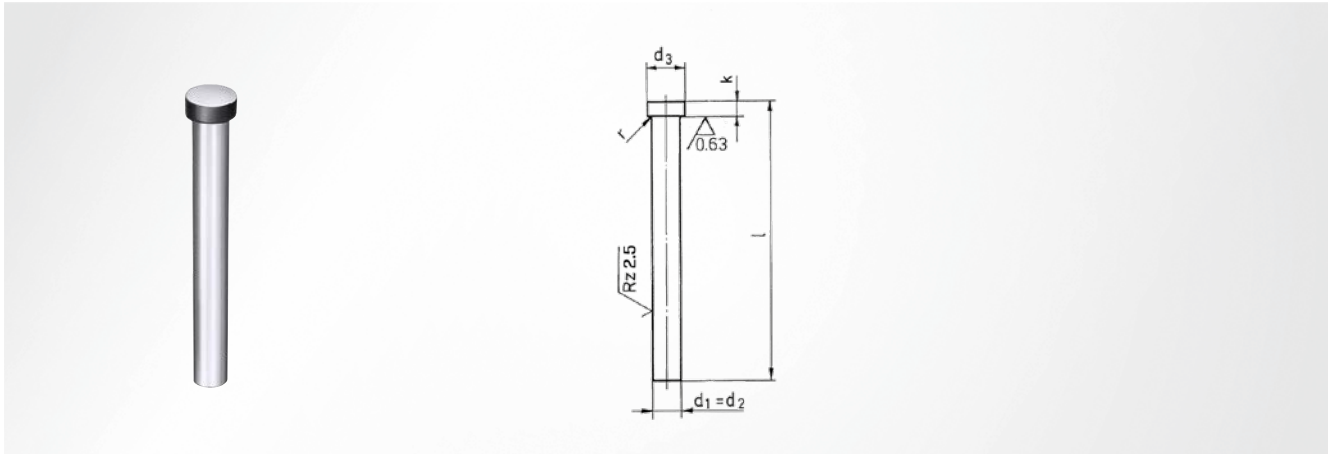
Module system

Machine elements

Accessories

# SZ5600 Cutting punch

with cylindrical head



**ISO 8020**

**Shape**

A

**Material**

HSS

**Head hardness**

50 ±5 HRC

**Shank hardness**

64 ±2 HRC

**Note**

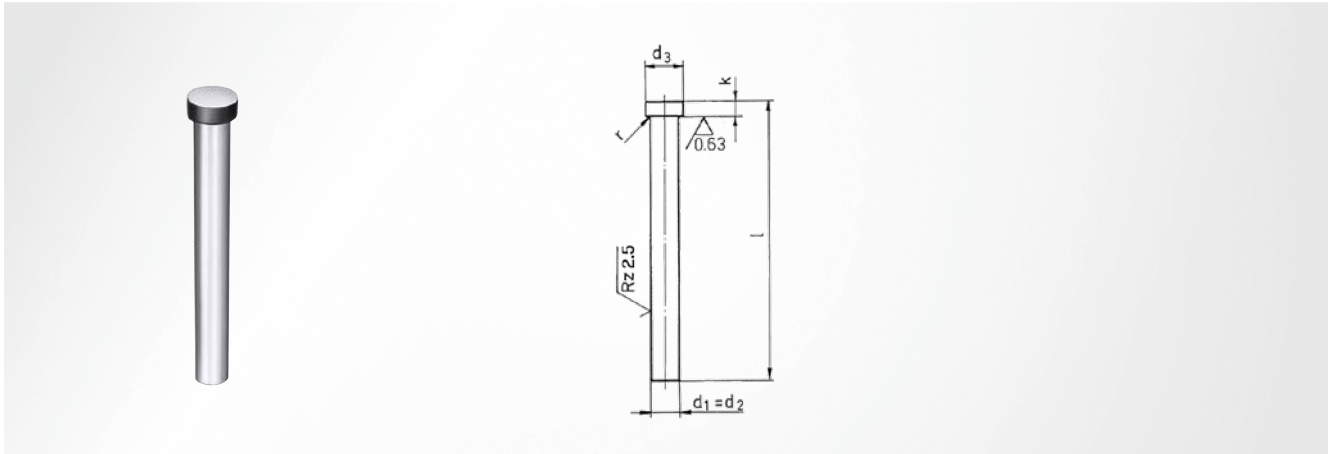
deliverable with PVD coating upon request

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

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

# 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 <b>030 x 063</b>
				71	SZ5700 <b>030 x 071</b>
				80	SZ5700 <b>030 x 080</b>
4	6	3	0.2	63	SZ5700 <b>040 x 063</b>
				71	SZ5700 <b>040 x 071</b>
				80	SZ5700 <b>040 x 080</b>
5	8	5	0.3	63	SZ5700 <b>050 x 063</b>
				71	SZ5700 <b>050 x 071</b>
				80	SZ5700 <b>050 x 080</b>
6	9	5	0.3	63	SZ5700 <b>060 x 063</b>
				71	SZ5700 <b>060 x 071</b>
				80	SZ5700 <b>060 x 080</b>
8	11	5	0.3	63	SZ5700 <b>080 x 063</b>
				71	SZ5700 <b>080 x 071</b>
				80	SZ5700 <b>080 x 080</b>

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

Spring elements

Nitrogen systems

Tapping units

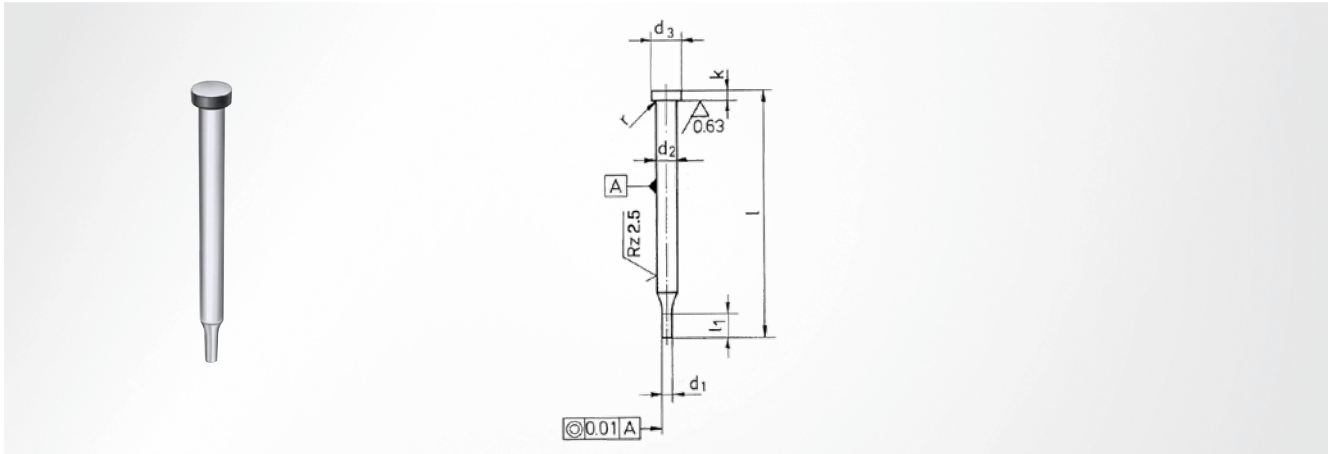
Module system

Machine elements

Accessories

# SZ56xx Cutting punch

## with cylindrical head, reduced



**ISO 8020**

**Shape**

B

**Material**

HSS

**Head hardness**

50 ±5 HRC

**Shank hardness**

64 ±2 HRC

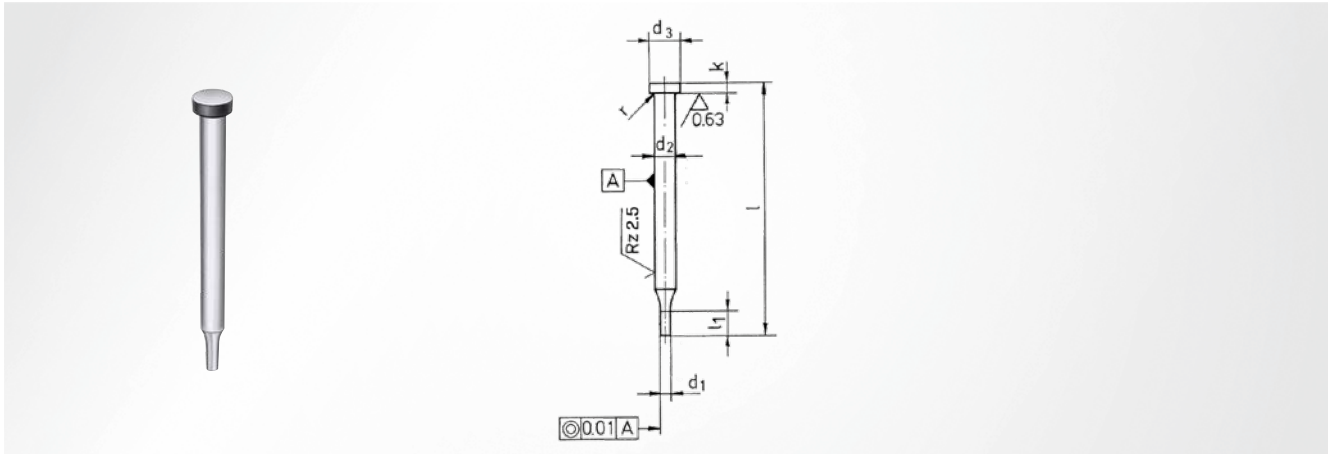
**Note**

deliverable with PVD coating upon request

$d_1^{+0.06}$	$d_2^{+0.05}$	$d_3$	$k^{+0.1 - +0.2}$	$l_1^{+0.5}$	$r^{0 - +0.1}$	Grading	$l^{+0.5}$	Item number
1.0-2.5	3	5	3	10	0.2	0.1	71	SZ5613 <b>010 - 025 x 071</b>
							80	SZ5613 <b>010 - 025 x 080</b>
1.0-3.5	4	6	3	10	0.2	0.1	71	SZ5614 <b>010 - 035 x 071</b>
							80	SZ5614 <b>010 - 035 x 080</b>
2.0-4.5	5	8	5	10	0.3	0.1	71	SZ5615 <b>020 - 045 x 071</b>
							80	SZ5615 <b>020 - 045 x 080</b>
2.5-5.5	6	9	5	10	0.3	0.1	71	SZ5616 <b>025 - 055 x 071</b>
							80	SZ5616 <b>025 - 055 x 080</b>
							90	SZ5616 <b>025 - 055 x 090</b>
							100	SZ5616 <b>025 - 055 x 100</b>
3.0-7.5	8	11	5	13	0.3	0.1	71	SZ5628 <b>030 - 075 x 071</b>
							80	SZ5628 <b>030 - 075 x 080</b>
							90	SZ5628 <b>030 - 075 x 090</b>
							100	SZ5628 <b>030 - 075 x 100</b>
5.0-9.5	10	13	5	17	0.4	0.1	71	SZ5640 <b>050 - 095 x 071</b>
							80	SZ5640 <b>050 - 095 x 080</b>
							90	SZ5640 <b>050 - 095 x 090</b>
							100	SZ5640 <b>050 - 095 x 100</b>
7.5-12.5	13	16	5	17	0.4	0.1	71	SZ5643 <b>075 - 125 x 071</b>
							80	SZ5643 <b>075 - 125 x 080</b>
							90	SZ5643 <b>075 - 125 x 090</b>
							100	SZ5643 <b>075 - 125 x 100</b>
10.0-15.5	16	19	5	17	0.4	0.1	80	SZ5646 <b>100 - 155 x 080</b>
							90	SZ5646 <b>100 - 155 x 090</b>
							100	SZ5646 <b>100 - 155 x 100</b>
15.0-19.5	20	23	5	17	0.4	0.5	80	SZ5650 <b>150 - 195 x 080</b>
							90	SZ5650 <b>150 - 195 x 090</b>
							100	SZ5650 <b>150 - 195 x 100</b>
20.0-24.5	25	28	5	17	0.4	0.5	80	SZ5655 <b>200 - 245 x 080</b>
							90	SZ5655 <b>200 - 245 x 090</b>
							100	SZ5655 <b>200 - 245 x 100</b>

# SZ57xx Cutting punch

## with cylindrical head, reduced



**ISO 8020**

**Shape**

B

**Material**

PM

**Head hardness**

50 ±5 HRC

**Shank hardness**

64 ±2 HRC

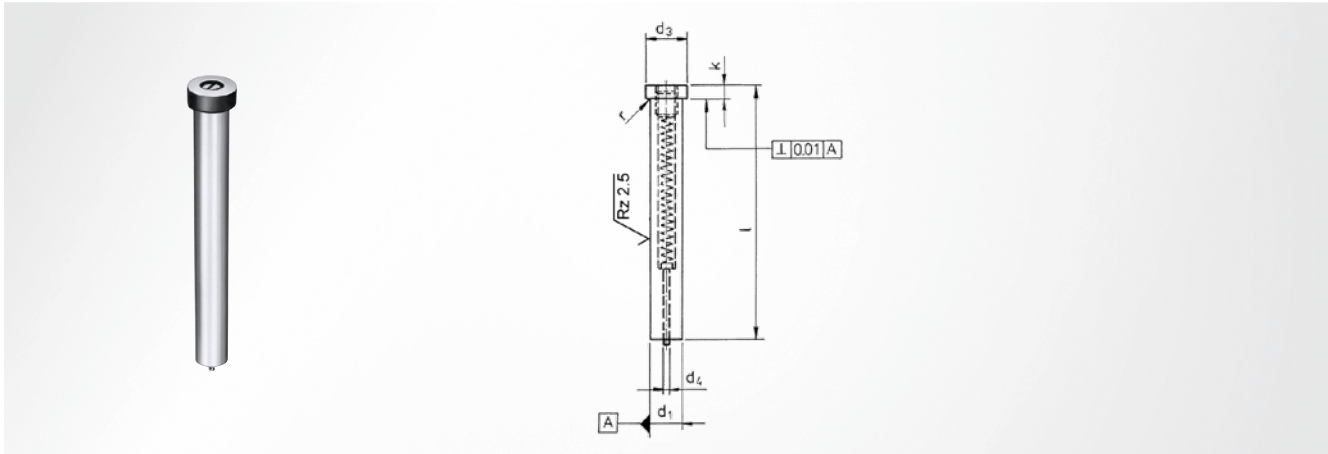
**Note**

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 <b>010 - 025 x 071</b>
							80	SZ5713 <b>010 - 025 x 080</b>
1.0-3.5	4	6	3	10	0.2	0.1	71	SZ5714 <b>010 - 035 x 071</b>
							80	SZ5714 <b>010 - 035 x 080</b>
2.0-4.5	5	8	5	10	0.3	0.1	71	SZ5715 <b>020 - 045 x 071</b>
							80	SZ5715 <b>020 - 045 x 080</b>
2.5-5.5	6	9	5	10	0.3	0.1	71	SZ5716 <b>025 - 055 x 071</b>
							80	SZ5716 <b>025 - 055 x 080</b>
							90	SZ5716 <b>025 - 055 x 090</b>
							100	SZ5716 <b>025 - 055 x 100</b>
3.0-7.5	8	11	5	13	0.3	0.1	71	SZ5728 <b>030 - 075 x 071</b>
							80	SZ5728 <b>030 - 075 x 080</b>
							90	SZ5728 <b>030 - 075 x 090</b>
							100	SZ5728 <b>030 - 075 x 100</b>
5.0-9.5	10	13	5	17	0.4	0.1	71	SZ5740 <b>050 - 095 x 071</b>
							80	SZ5740 <b>050 - 095 x 080</b>
							90	SZ5740 <b>050 - 095 x 090</b>
							100	SZ5740 <b>050 - 095 x 100</b>
7.5-12.5	13	16	5	17	0.4	0.1	71	SZ5743 <b>075 - 125 x 071</b>
							80	SZ5743 <b>075 - 125 x 080</b>
							90	SZ5743 <b>075 - 125 x 090</b>
							100	SZ5743 <b>075 - 125 x 100</b>
10.0-15.5	16	19	5	17	0.4	0.1	80	SZ5746 <b>100 - 155 x 080</b>
							90	SZ5746 <b>100 - 155 x 090</b>
							100	SZ5746 <b>100 - 155 x 100</b>
15.0-19.5	20	23	5	17	0.4	0.5	80	SZ5750 <b>150 - 195 x 080</b>
							90	SZ5750 <b>150 - 195 x 090</b>
							100	SZ5750 <b>150 - 195 x 100</b>
20.0-24.5	25	28	5	17	0.4	0.5	80	SZ5755 <b>200 - 245 x 080</b>
							90	SZ5755 <b>200 - 245 x 090</b>
							100	SZ5755 <b>200 - 245 x 100</b>

# 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**

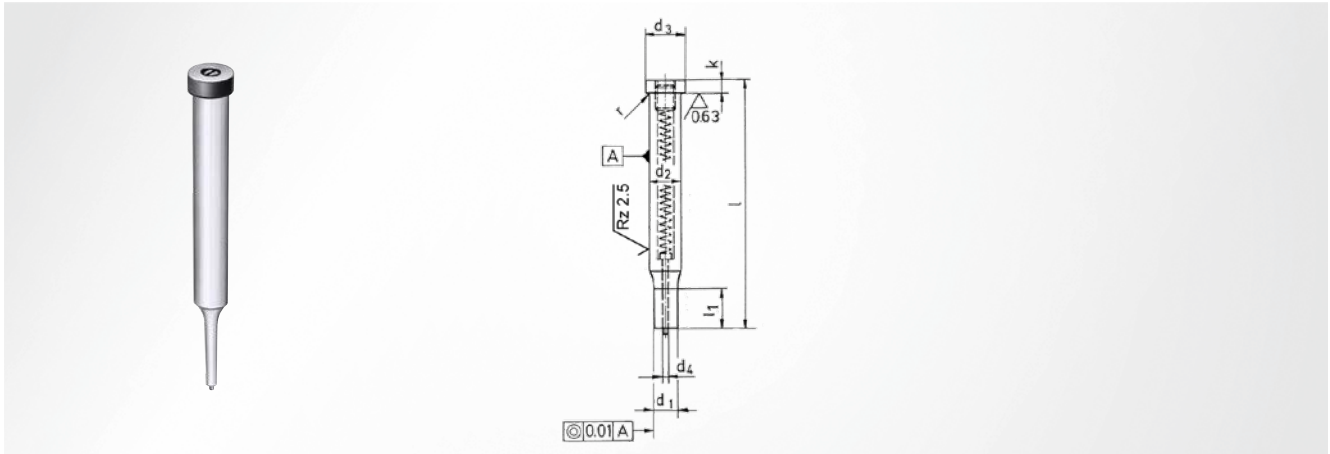
deliverable with PVD coating upon request

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



# 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 <b>016 - 059 x 071</b>
								80	SZ5906 <b>016 - 059 x 080</b>
								90	SZ5906 <b>016 - 059 x 090</b>
								100	SZ5906 <b>016 - 059 x 100</b>
2.5-7.9	8	11	1.2	5	13	0.3	0.1	71	SZ5908 <b>025 - 079 x 071</b>
								80	SZ5908 <b>025 - 079 x 080</b>
								90	SZ5908 <b>025 - 079 x 090</b>
								100	SZ5908 <b>025 - 079 x 100</b>
5.0-9.9	10	13	1.5	5	17	0.4	0.1	71	SZ5910 <b>050 - 099 x 071</b>
								80	SZ5910 <b>050 - 099 x 080</b>
								90	SZ5910 <b>050 - 099 x 090</b>
								100	SZ5910 <b>050 - 099 x 100</b>
6.0-12.9	13	16	1.5	5	17	0.4	0.1	71	SZ5913 <b>060 - 129 x 071</b>
								80	SZ5913 <b>060 - 129 x 080</b>
								90	SZ5913 <b>060 - 129 x 090</b>
								100	SZ5913 <b>060 - 129 x 100</b>
8.0-15.9	16	19	2.0	5	17	0.4	0.1	80	SZ5916 <b>080 - 159 x 080</b>
								90	SZ5916 <b>080 - 159 x 090</b>
								100	SZ5916 <b>080 - 159 x 100</b>
								80	SZ5920 <b>120 - 195 x 080</b>
12.0-19.5	20	23	2.5	5	17	0.4	0.5	90	SZ5920 <b>120 - 195 x 090</b>
								100	SZ5920 <b>120 - 195 x 100</b>
								80	SZ5925 <b>165 - 245 x 080</b>
16.5-24.5	25	28	2.5	5	17	0.4	0.5	90	SZ5925 <b>165 - 245 x 090</b>
								100	SZ5925 <b>165 - 245 x 100</b>

Spring elements

Nitrogen systems

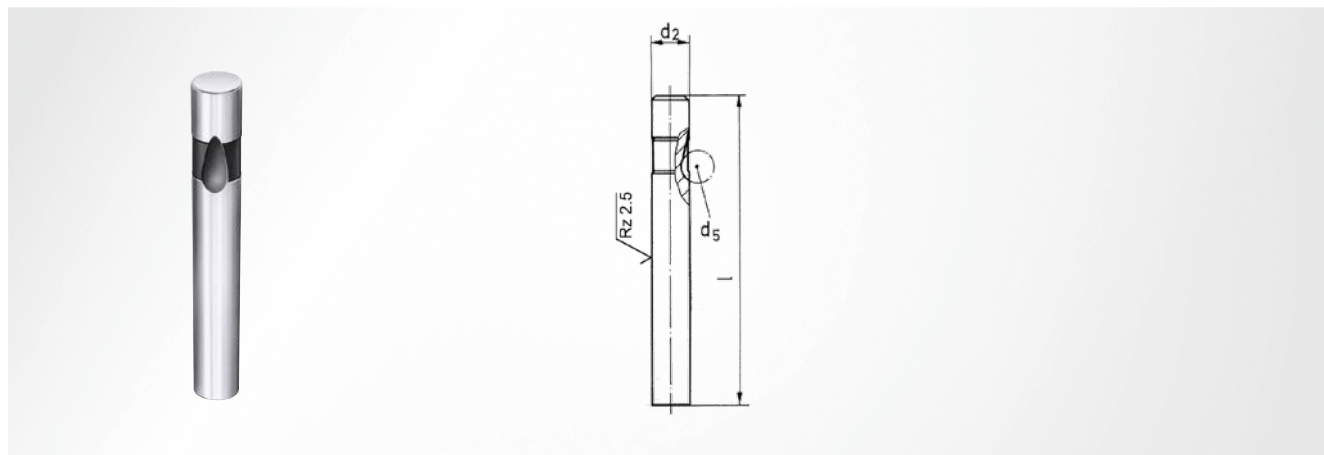
Tapping units

Module system

Machine elements

Accessories

# SZ6700 Cutting punch with quick-change mounting



**DIN ISO 10071**

**Material**  
HWS

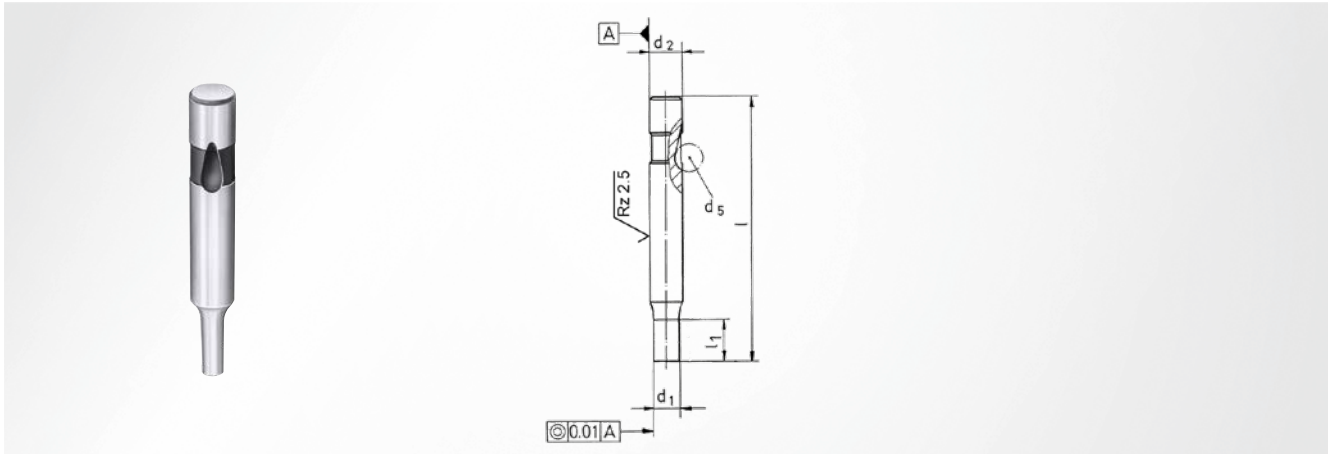
**Shank hardness**  
62 ±2 HRC

**Note**  
deliverable with PVD coating upon request

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

# 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 <b>025 - 045 x 63</b>
					71	SZ6706 <b>025 - 045 x 71</b>
					80	SZ6706 <b>025 - 045 x 80</b>
5.0-5.5	6	6	13	0.1	63	SZ6706 <b>050 - 055 x 63</b>
					71	SZ6706 <b>050 - 055 x 71</b>
					80	SZ6706 <b>050 - 055 x 80</b>
5.0-5.5	10	8	13	0.1	63	SZ6710 <b>050 - 055 x 63</b>
					71	SZ6710 <b>050 - 055 x 71</b>
					80	SZ6710 <b>050 - 055 x 80</b>
6.0-6.5	10	8	13	0.1	63	SZ6710 <b>060 - 065 x 63</b>
					71	SZ6710 <b>060 - 065 x 71</b>
					80	SZ6710 <b>060 - 065 x 80</b>
7.0-7.5	10	8	13	0.1	63	SZ6710 <b>070 - 075 x 63</b>
					71	SZ6710 <b>070 - 075 x 71</b>
					80	SZ6710 <b>070 - 075 x 80</b>
8.0-8.5	10	8	13	0.1	63	SZ6710 <b>080 - 085 x 63</b>
					71	SZ6710 <b>080 - 085 x 71</b>
					80	SZ6710 <b>080 - 085 x 80</b>
6.0-6.5	13	8	13	0.1	71	SZ6713 <b>060 - 065 x 71</b>
					80	SZ6713 <b>060 - 065 x 80</b>
7.0-12.0	13	8	13	0.5	71	SZ6713 <b>070 - 120 x 71</b>
					80	SZ6713 <b>070 - 120 x 80</b>
12.0-15.5	16	8	13	0.5	80	SZ6716 <b>120 - 155 x 80</b>
16.0-19.5	20	8	13	0.5	80	SZ6720 <b>160 - 195 x 80</b>
20.0-24.5	25	8	13	0.5	80	SZ6725 <b>200 - 245 x 80</b>

Spring elements

Nitrogen systems

Tapping units

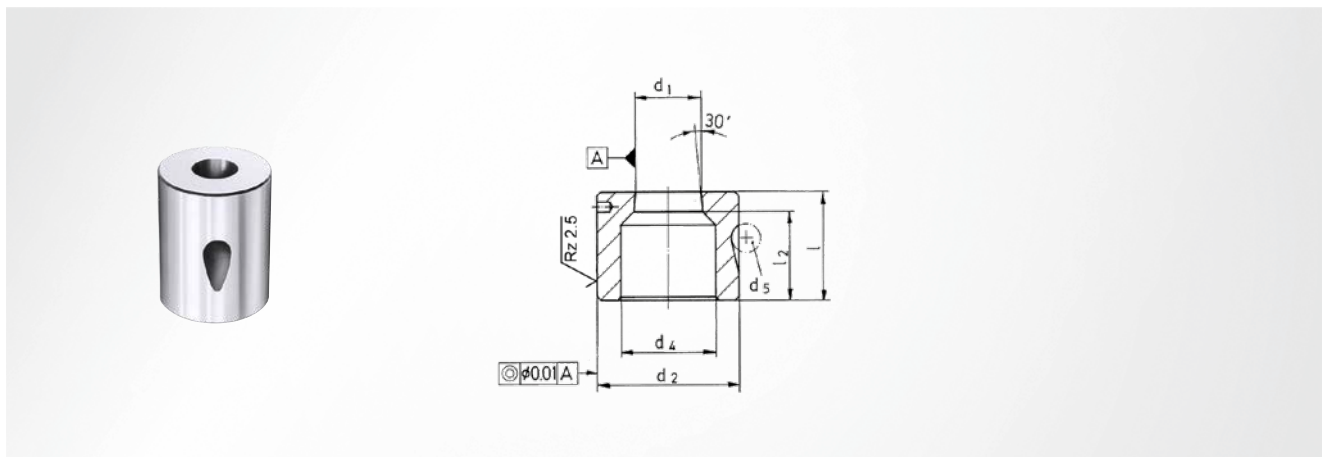
Module system

Machine elements

Accessories

# SZ6210 Cutting bush

with quick-change mounting, tapered cutting bore



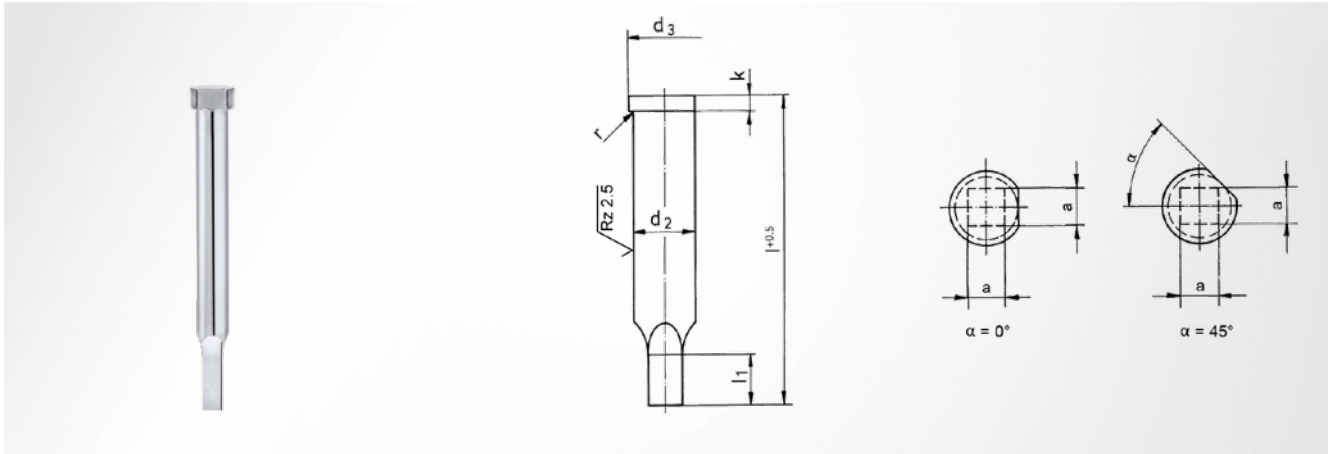
**Material**  
HWS

**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 <b>020 - 039 x 32</b>
4.0-7.9	20	10	8	32	28	0.1	SZ6210 <b>040 - 079 x 32</b>
8.0-9.9	25	14	8	32	28	0.1	SZ6210 <b>080 - 099 x 32</b>
10.0-11.5	25	14	8	32	28	0.5	SZ6210 <b>100 - 115 x 32</b>
12.0-15.5	32	18	8	32	27	0.5	SZ6210 <b>120 - 155 x 32</b>
16.0-19.5	42	22	8	32	26	0.5	SZ6210 <b>160 - 195 x 32</b>
20.0-25.0	42	28	8	32	26	1.0	SZ6210 <b>200 - 250 x 32</b>

# 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**

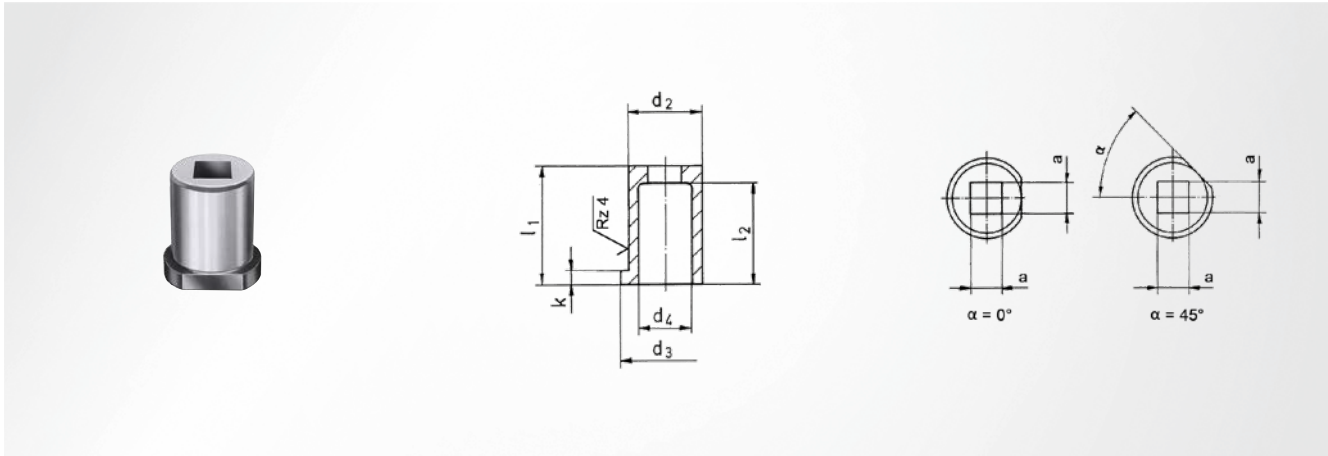
diagonal dimension, however, max.  $d_2 - 0.2$  mm; free choice of size  $a$ ; please specify the position of the protection against torsion  $\alpha$  when ordering; deliverable with PVD coating upon request

$a^{l6}$	$d_2^{m5}$	$d_3$	$k^{+0.1 - +0.2}$	$l^{+0.5}$	$l_1$	$r^{0 - +0.1}$	Item number
1.6-4.1	6	9	5	80	13	0.3	SZ5691 <b>.06</b>
2.0-5.5	8	11	5	80	13	0.3	SZ5691 <b>.08</b>
2.0-6.9	10	13	5	80	13	0.3	SZ5691 <b>.10</b>

$a^{l6}$	$d_2^{m5}$	$d_3$	$k^{+0.1 - +0.2}$	$l^{+0.5}$	$l_1$	$r^{0 - +0.1}$	Item number
2.5-9.0	13	16	5	80	13	0.4	SZ5691 <b>.13</b>
3.2-11.1	16	19	5	80	13	0.4	SZ5691 <b>.16</b>
4.0-14.0	20	23	5	80	13	0.4	SZ5691 <b>.20</b>

# 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  $\alpha$  when ordering

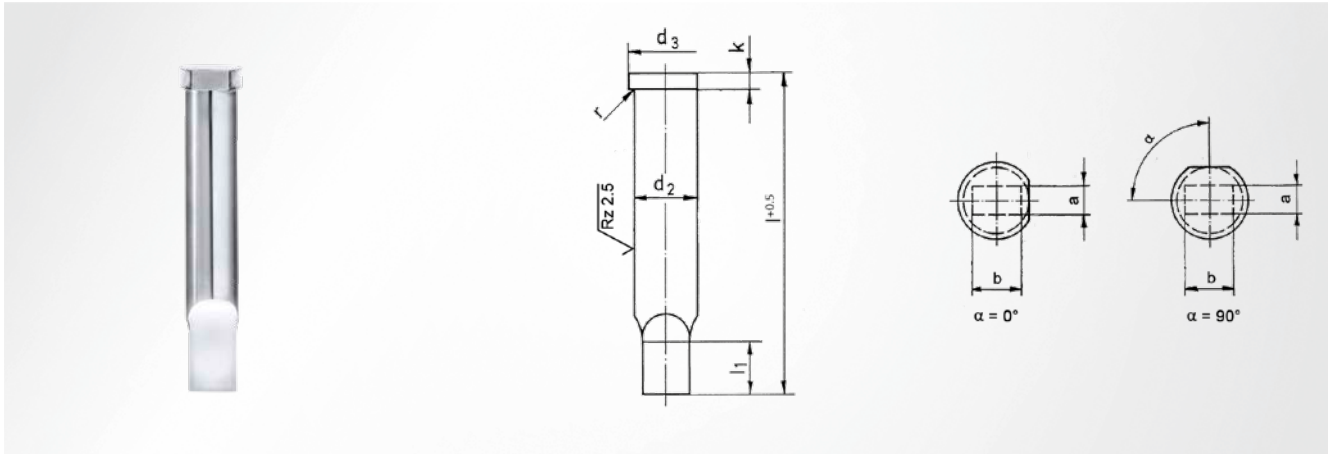
$a^{H8}$	$d_2^{m5}$	$d_3$	$d_4$	$k^{+0.25}$	$l_1^{+0.5}$	$l_2$	Item number
1.6-3.8	10	13	6.5	5	32	29	SZ6391 <b>.10</b>
2.0-5.3	13	16	8.5	5	32	28	SZ6391 <b>.13</b>
2.0-7.0	16	19	11.0	5	32	28	SZ6391 <b>.16</b>
2.5-9.1	20	24	14.0	5	32	27	SZ6391 <b>.20</b>

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

# SZ5692 Shape-cutting punch

**STEINEL®**

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  $\alpha$  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 <b>.06</b>
2.0-7.3	2.5-7.5	8	11	5	80	13	0.3	SZ5692 <b>.08</b>
2.0-9.3	2.5-9.5	10	13	5	80	13	0.3	SZ5692 <b>.10</b>
1.5-12.3	3.2-12.5	13	16	5	80	13	0.4	SZ5692 <b>.13</b>
3.2-15.2	4.0-15.4	16	19	5	80	13	0.4	SZ5692 <b>.16</b>
4.0-19.1	5.0-19.3	20	23	5	80	13	0.4	SZ5692 <b>.20</b>
5.0-23.9	6.3-24.2	25	28	5	80	13	0.4	SZ5692 <b>.25</b>

Spring elements

Nitrogen systems

Tapping units

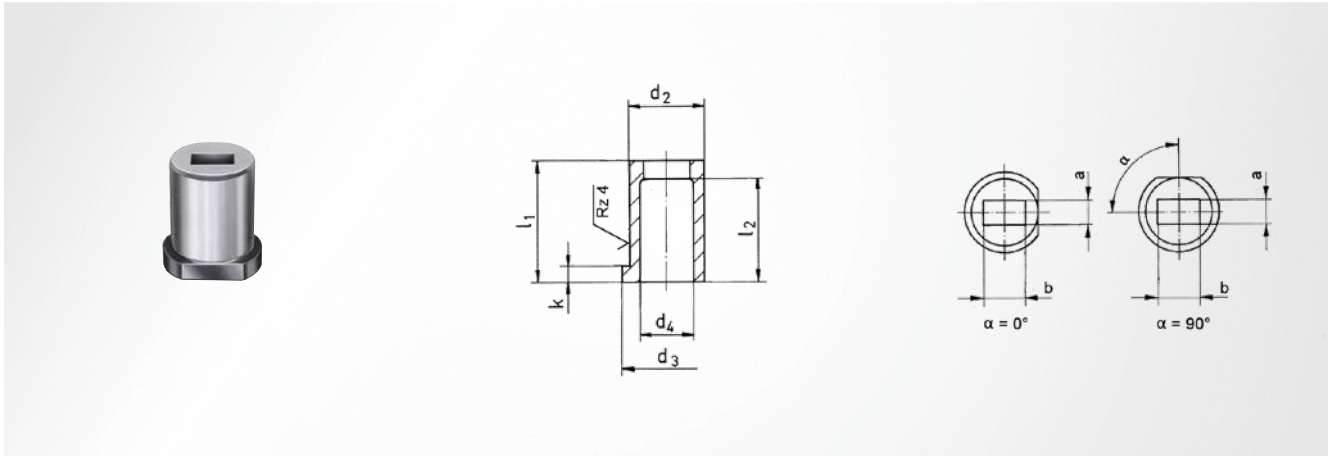
Module system

Machine elements

Accessories

# SZ6392 Shape-cutting bush

with shoulder, rectangular, with protection against torsion



**DIN ISO 8977**

**Material**

HSS

**Hardness**

62 ±2 HRC

**Note**

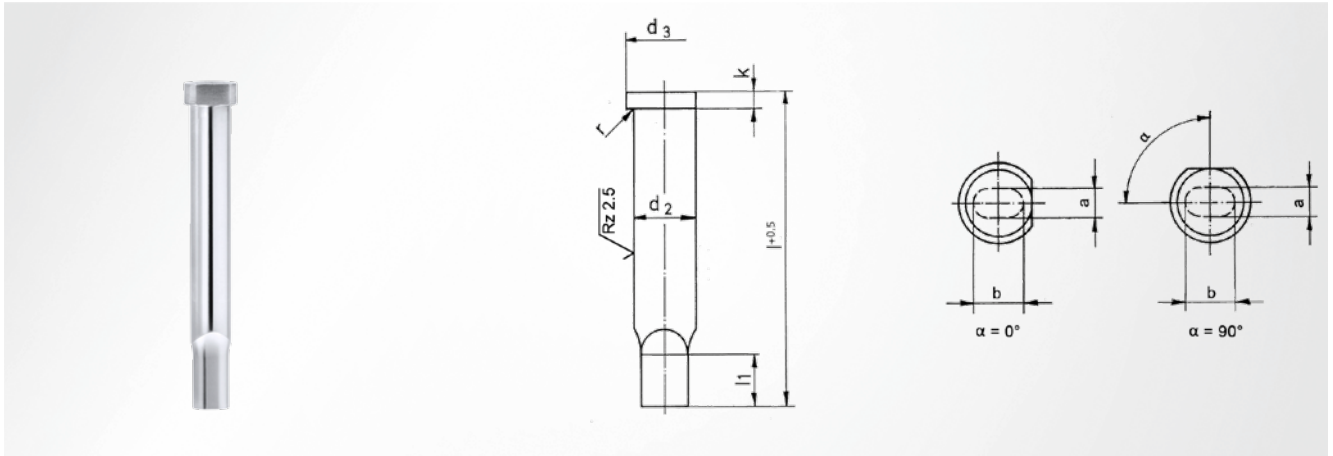
Free choice of sizes a x b; diagonal dimension, however, max.  $d_4 - 1.0$  mm; please specify the position of the protection against torsion  $\alpha$  when ordering

$a^{H8}$	$b^{H8}$	$d_2^{m5}$	$d_3$	$d_4$	$k^{+0.25}$	$l_1^{+0.5}$	$l_2$	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

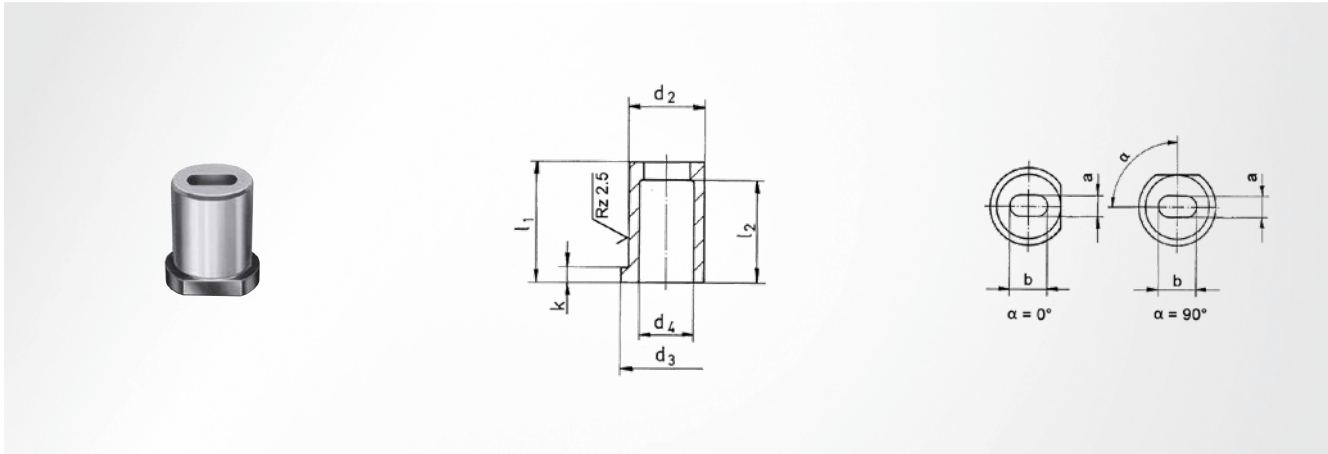
**Note**

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

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

# SZ6393 Shape-cutting bush

with shoulder, oval, with protection against torsion



**DIN ISO 8977**

**Material**

HSS

**Hardness**

63 ±1 HRC

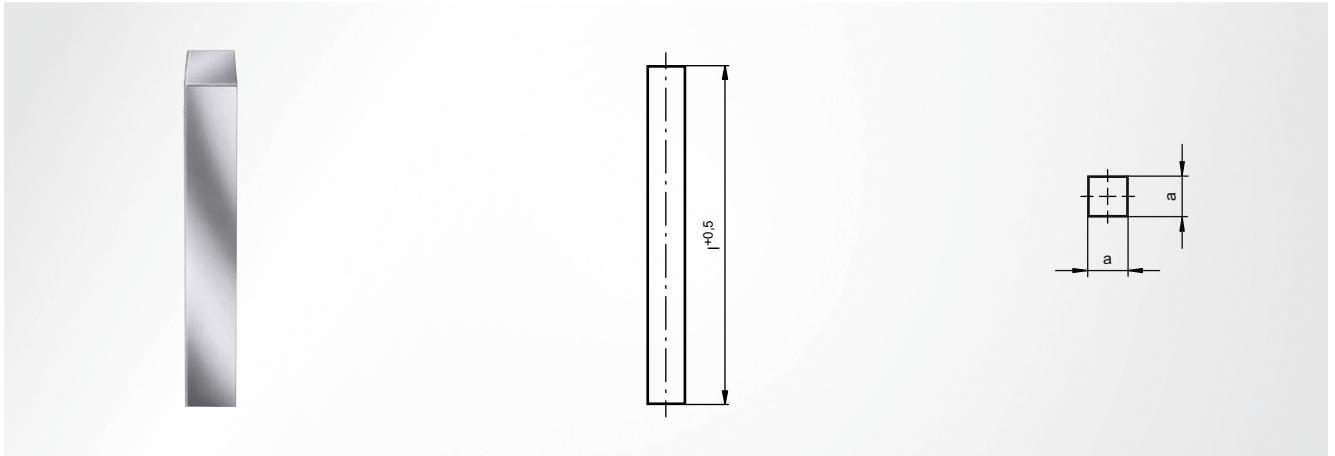
**Note**

Free choice of sizes a x b; please specify the position of the protection against torsion  $\alpha$  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

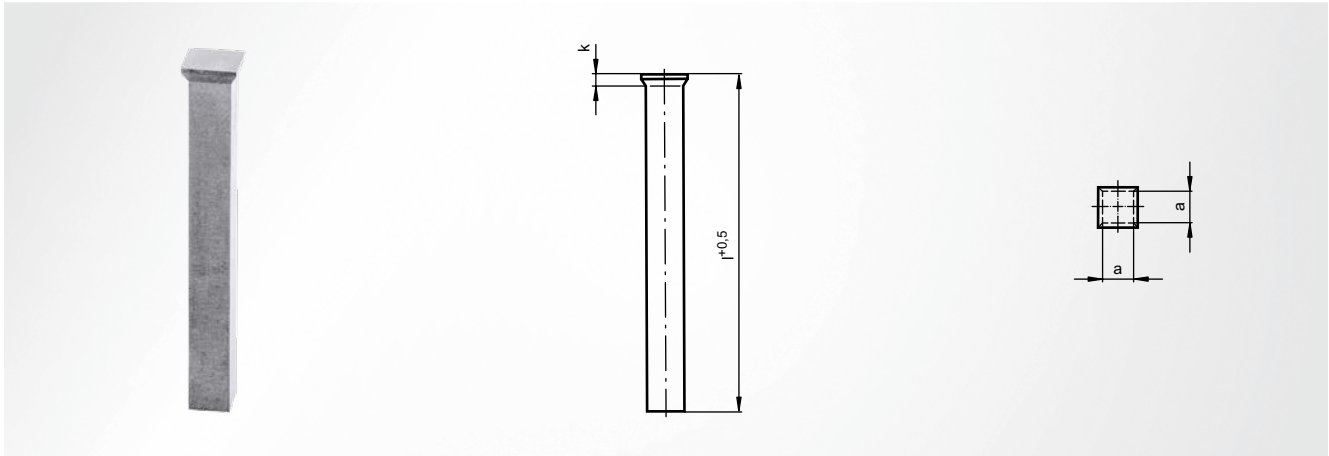
$a \pm 0.01$	$ +0.5$	Item number
1.0	80	SZ6981 <b>010 x 80</b>
2.0	80	SZ6981 <b>020 x 80</b>
3.0	80	SZ6981 <b>030 x 80</b>
4.0	80	SZ6981 <b>040 x 80</b>
5.0	80	SZ6981 <b>050 x 80</b>

$a \pm 0.01$	$ +0.5$	Item number
6.0	80	SZ6981 <b>060 x 80</b>
7.0	80	SZ6981 <b>070 x 80</b>
9.0	80	SZ6981 <b>090 x 80</b>
10.0	80	SZ6981 <b>100 x 80</b>

# SZ6991 Shape-cutting punch

**STEINEL®**

square, with head, continuously shaped



## Material

HSS

## Shank hardness

64 ±2 HRC

## Head hardness

52 ±3 HRC

## Note

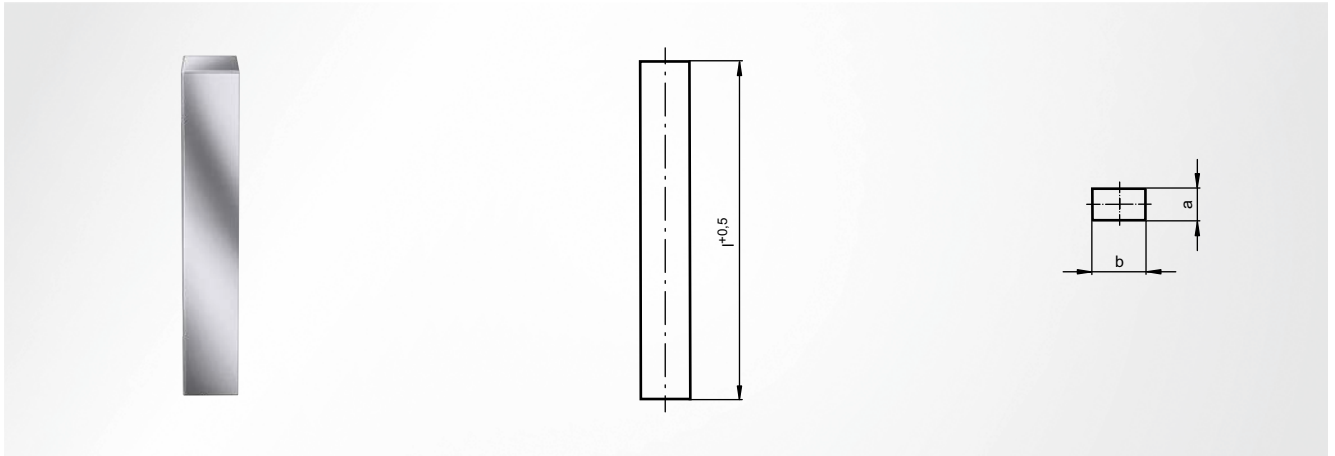
Shank, super-finished, head hot upset and annealed; free choice of size a; deliverable with PVD coating upon request

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

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

# 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 <b>010 x 020 - 080</b>
2.0	3.0-10.0	80	SZ6982 <b>020 x 030 - 100</b>
3.0	4.0-10.0	80	SZ6982 <b>030 x 040 - 100</b>
4.0	5.0-12.0	80	SZ6982 <b>040 x 050 - 120</b>
5.0	6.0-15.0	80	SZ6982 <b>050 x 060 - 150</b>
6.0	7.0-16.0	80	SZ6982 <b>060 x 070 - 160</b>
6.0	16.0-20.0	80	SZ6982 <b>060 x 160 - 200</b>
7.0	8.0-16.0	80	SZ6982 <b>070 x 080 - 160</b>
7.0	16.0-24.0	80	SZ6982 <b>070 x 160 - 240</b>
8.0	9.0-16.0	80	SZ6982 <b>080 x 090 - 160</b>
8.0	16.0-24.0	80	SZ6982 <b>080 x 160 - 240</b>
9.0	10.0-16.0	80	SZ6982 <b>090 x 100 - 160</b>
9.0	16.0-28.0	80	SZ6982 <b>090 x 160 - 280</b>
10.0	11.0-16.0	80	SZ6982 <b>100 x 110 - 160</b>
10.0	16.0-34.0	80	SZ6982 <b>100 x 160 - 340</b>

Spring elements

Nitrogen systems

Tapping units

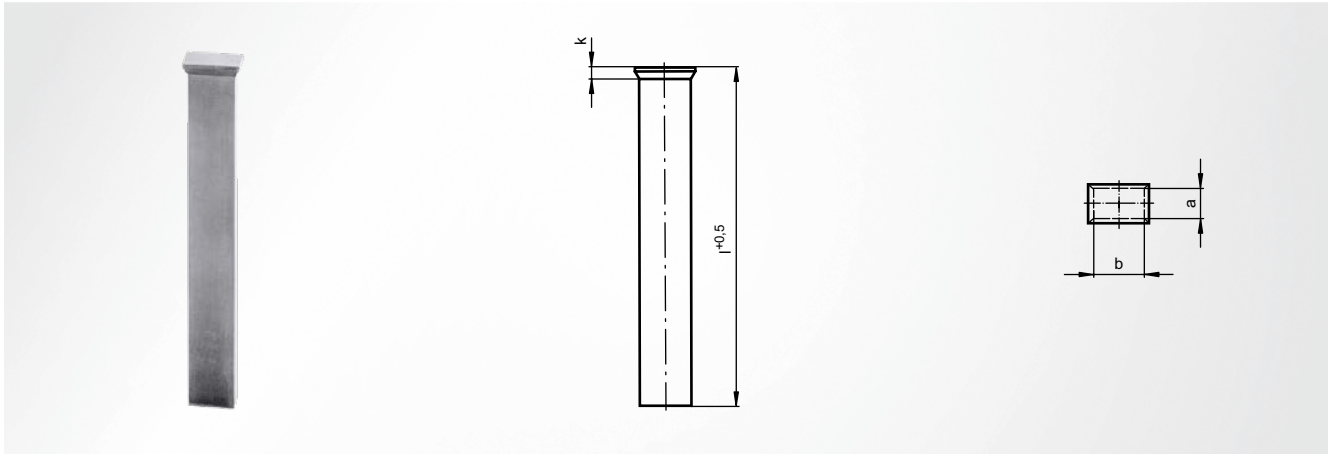
Module system

Machine elements

Accessories

# SZ6992 Shape-cutting punch

rectangular, with head, continuously shaped



**Material**

HSS

**Shank hardness**

64 ±2 HRC

**Head hardness**

52 ±3 HRC

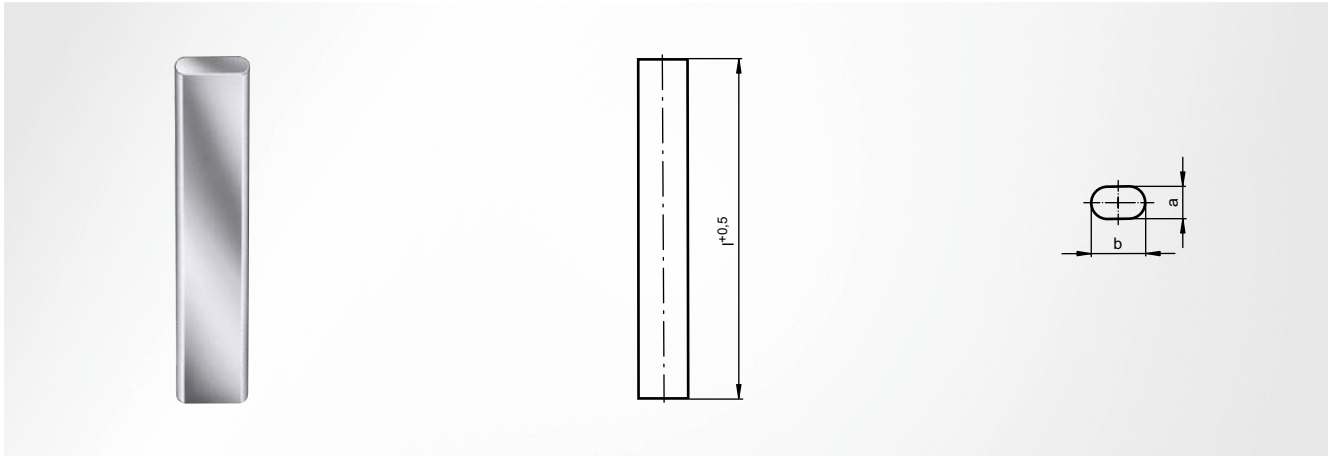
**Note**

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 <b>010 x 020 - 080</b>
2.0	3.0-10.0	1.4	80	SZ6992 <b>020 x 030 - 100</b>
3.0	4.0-10.0	1.8	80	SZ6992 <b>030 x 040 - 100</b>
4.0	5.0-12.0	1.8	80	SZ6992 <b>040 x 050 - 120</b>
5.0	6.0-15.0	1.8	80	SZ6992 <b>050 x 060 - 150</b>
6.0	7.0-16.0	2.2	80	SZ6992 <b>060 x 070 - 160</b>
6.0	16.0-20.0	2.2	80	SZ6992 <b>060 x 160 - 200</b>
7.0	8.0-16.0	2.8	80	SZ6992 <b>070 x 080 - 160</b>
7.0	16.0-24.0	2.8	80	SZ6992 <b>070 x 160 - 240</b>
8.0	9.0-16.0	2.8	80	SZ6992 <b>080 x 090 - 160</b>
8.0	16.0-24.0	2.8	80	SZ6992 <b>080 x 160 - 240</b>
9.0	10.0-16.0	2.8	80	SZ6992 <b>090 x 100 - 160</b>
9.0	16.0-28.0	2.8	80	SZ6992 <b>090 x 160 - 280</b>
10.0	11.0-16.0	2.8	80	SZ6992 <b>100 x 110 - 160</b>
10.0	16.0-34.0	2.8	80	SZ6992 <b>100 x 160 - 340</b>

# 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 <b>010 x 020 - 080</b>
2.0	3.0-10.0	80	SZ6983 <b>020 x 030 - 100</b>
3.0	4.0-10.0	80	SZ6983 <b>030 x 040 - 100</b>
4.0	5.0-12.0	80	SZ6983 <b>040 x 050 - 120</b>
5.0	6.0-15.0	80	SZ6983 <b>050 x 060 - 150</b>
6.0	7.0-16.0	80	SZ6983 <b>060 x 070 - 160</b>
6.0	16.0-20.0	80	SZ6983 <b>060 x 160 - 200</b>
7.0	8.0-16.0	80	SZ6983 <b>070 x 080 - 160</b>
7.0	16.0-24.0	80	SZ6983 <b>070 x 160 - 240</b>
8.0	9.0-16.0	80	SZ6983 <b>080 x 090 - 160</b>
8.0	16.0-24.0	80	SZ6983 <b>080 x 160 - 240</b>
9.0	10.0-16.0	80	SZ6983 <b>090 x 100 - 160</b>
9.0	16.0-28.0	80	SZ6983 <b>090 x 160 - 280</b>
10.0	11.0-16.0	80	SZ6983 <b>100 x 110 - 160</b>
10.0	16.0-34.0	80	SZ6983 <b>100 x 160 - 340</b>

Spring elements

Nitrogen systems

Tapping units

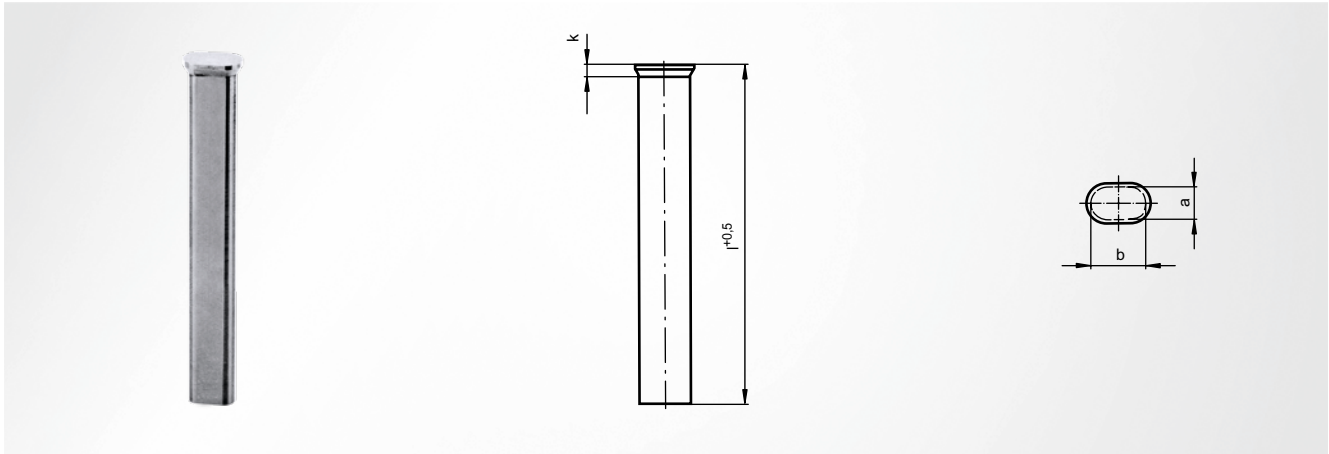
Module system

Machine elements

Accessories

# SZ6993 Shape-cutting punch

oval, with head, continuously shaped



**Material**

HSS

**Shank hardness**

64 ±2 HRC

**Head hardness**

52 ±3 HRC

**Note**

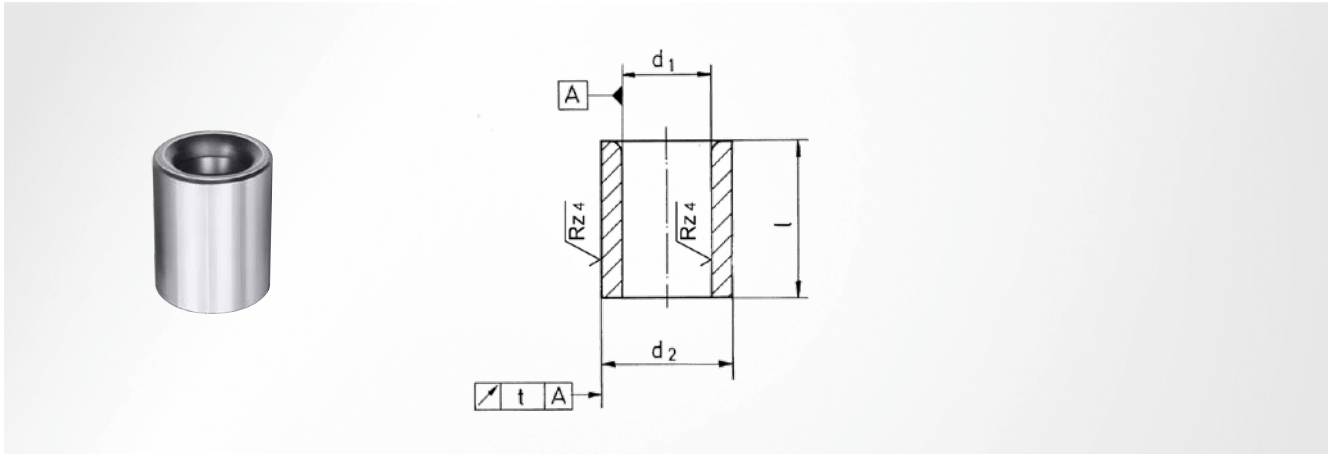
Shank, super-finished, head hot upset and annealed; free choice of sizes a x b; deliverable with PVD coating upon request

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



# 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 <b>005 - 006 x 06</b>
0.8	3	0.01	0.1	6	SZ6250 <b>008 x 06</b>
0.9-1.0	3	0.01	0.1	6	SZ6250 <b>009 - 010 x 06</b>
				9	SZ6250 <b>009 - 010 x 09</b>
1.1-1.8	4	0.01	0.1	6	SZ6250 <b>011 - 018 x 06</b>
				9	SZ6250 <b>011 - 018 x 09</b>
1.9-2.6	5	0.01	0.1	6	SZ6250 <b>019 - 026 x 06</b>
				9	SZ6250 <b>019 - 026 x 09</b>
2.7-3.3	6	0.01	0.1	8	SZ6250 <b>027 - 033 x 08</b>
				12	SZ6250 <b>027 - 033 x 12</b>
3.4-4.0	7	0.01	0.1	8	SZ6250 <b>034 - 040 x 08</b>
				12	SZ6250 <b>034 - 040 x 12</b>
4.1-5.0	8	0.01	0.1	8	SZ6250 <b>041 - 050 x 08</b>
				12	SZ6250 <b>041 - 050 x 12</b>
5.1-6.0	10	0.02	0.1	10	SZ6250 <b>051 - 060 x 10</b>
				16	SZ6250 <b>051 - 060 x 16</b>
6.1-8.0	12	0.02	0.1	10	SZ6250 <b>061 - 080 x 10</b>
				16	SZ6250 <b>061 - 080 x 16</b>
8.1-10.0	15	0.02	0.1	12	SZ6250 <b>081 - 100 x 12</b>
				20	SZ6250 <b>081 - 100 x 20</b>

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

Spring elements

Nitrogen systems

Tapping units

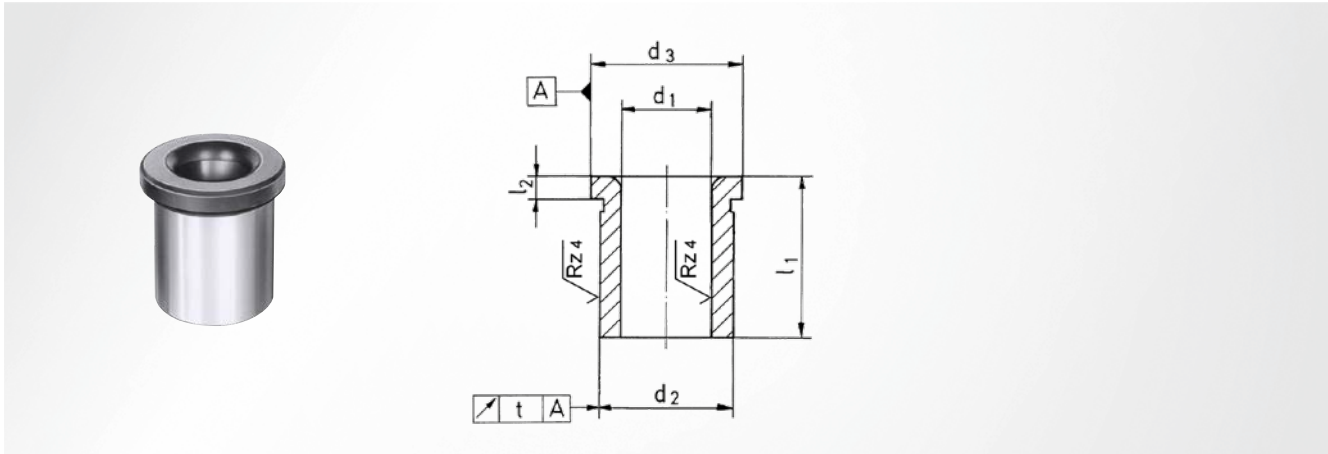
Module system

Machine elements

Accessories

# SZ6255 Drill Bush

with shoulder, for pressing-in



**DIN 172 / ISO 4247**

**Shape**

A

**Material**

Case-hardening steel

**Hardness**

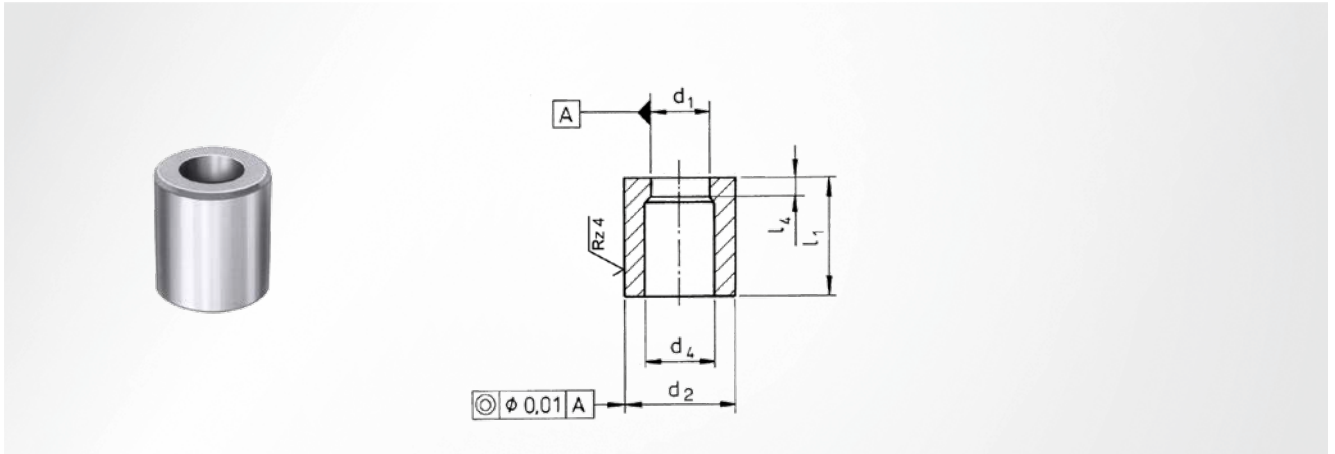
62 ±2 HRC

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

$d_1^{F7}$	$d_2^{n6}$	$d_3$	$l_2$	Grading	l	Item number
10,1-12,0	18	22	4.0	0.1	20	SZ6255 <b>101 - 120 x 20</b>
12,5-15,0	22	26	4.0	0.5	16	SZ6255 <b>125 - 150 x 16</b>
					28	SZ6255 <b>125 - 150 x 28</b>
15,5-18,0	26	30	4.0	0.5	16	SZ6255 <b>155 - 180 x 16</b>
					28	SZ6255 <b>155 - 180 x 28</b>
18,5-20,0	30	34	5.0	0.5	20	SZ6255 <b>185 - 200 x 20</b>
					36	SZ6255 <b>185 - 200 x 36</b>
21,0-22,0	30	34	5.0	1.0	20	SZ6255 <b>210 - 220 x 20</b>
					36	SZ6255 <b>210 - 220 x 36</b>
23,0-26,0	35	39	5.0	1.0	20	SZ6255 <b>230 - 260 x 20</b>
					36	SZ6255 <b>230 - 260 x 36</b>
27,0-30,0	42	46	5.0	1.0	25	SZ6255 <b>270 - 300 x 25</b>
					45	SZ6255 <b>270 - 300 x 45</b>
31,0-35,0	48	52	5.0	1.0	25	SZ6255 <b>310 - 350 x 25</b>
					45	SZ6255 <b>310 - 350 x 45</b>
36,0-42,0	55	59	5.0	1.0	30	SZ6255 <b>360 - 420 x 30</b>
					56	SZ6255 <b>360 - 420 x 56</b>
43,0-48,0	62	66	6.0	1.0	30	SZ6255 <b>430 - 480 x 30</b>
					56	SZ6255 <b>430 - 480 x 56</b>

# SZ6265 Cutting bush

for pressing-in



**DIN ISO 8977**

**Shape**

A

**Material**

HSS

**Hardness**

62 ±2 HRC

$d_1^{0 - +0.02}$	$d_2^{h5}$	$d_4$	$l_4$	Grading	$l_1^{+0.5}$	Item number
1.0-2.0	5	2.8	2	0.1	20	SZ6265 <b>010 - 020 x 20</b>
					25	SZ6265 <b>010 - 020 x 25</b>
2.1-3.0	6	3.5	3	0.1	20	SZ6265 <b>021 - 030 x 20</b>
					25	SZ6265 <b>021 - 030 x 25</b>
3.1-3.5	8	4.0	4	0.1	20	SZ6265 <b>031 - 035 x 20</b>
					25	SZ6265 <b>031 - 035 x 25</b>
3.6-5.0	10	5.8	4	0.1	20	SZ6265 <b>036 - 050 x 20</b>
					25	SZ6265 <b>036 - 050 x 25</b>
5.1-7.0	13	8.0	5	0.1	20	SZ6265 <b>051 - 070 x 20</b>
					25	SZ6265 <b>051 - 070 x 25</b>
7.1-8.8	16	9.5	5	0.1	20	SZ6265 <b>071 - 088 x 20</b>
					25	SZ6265 <b>071 - 088 x 25</b>
8.9-11.0	20	12.0	8	0.1	20	SZ6265 <b>089 - 110 x 20</b>
					25	SZ6265 <b>089 - 110 x 25</b>
11.1-15.0	25	17.3	8	0.1	20	SZ6265 <b>111 - 150 x 20</b>
					25	SZ6265 <b>111 - 150 x 25</b>
15.5-20.0	32	20.7	8	0.5	20	SZ6265 <b>155 - 200 x 20</b>
					25	SZ6265 <b>155 - 200 x 25</b>
20.5-25.0	40	27.7	8	0.5	20	SZ6265 <b>205 - 250 x 20</b>
					25	SZ6265 <b>205 - 250 x 25</b>

Spring elements

Nitrogen systems

Tapping units

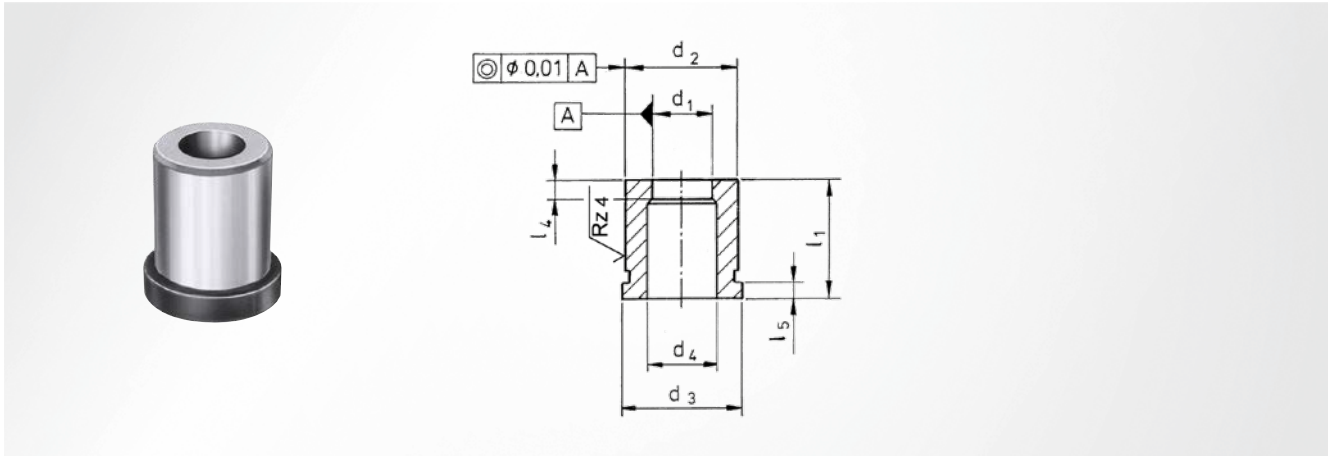
Module system

Machine elements

Accessories

# SZ6285 Cutting bush

with shoulder, for pressing-in



**DIN ISO 8977**

**Shape**

B

**Material**

HSS

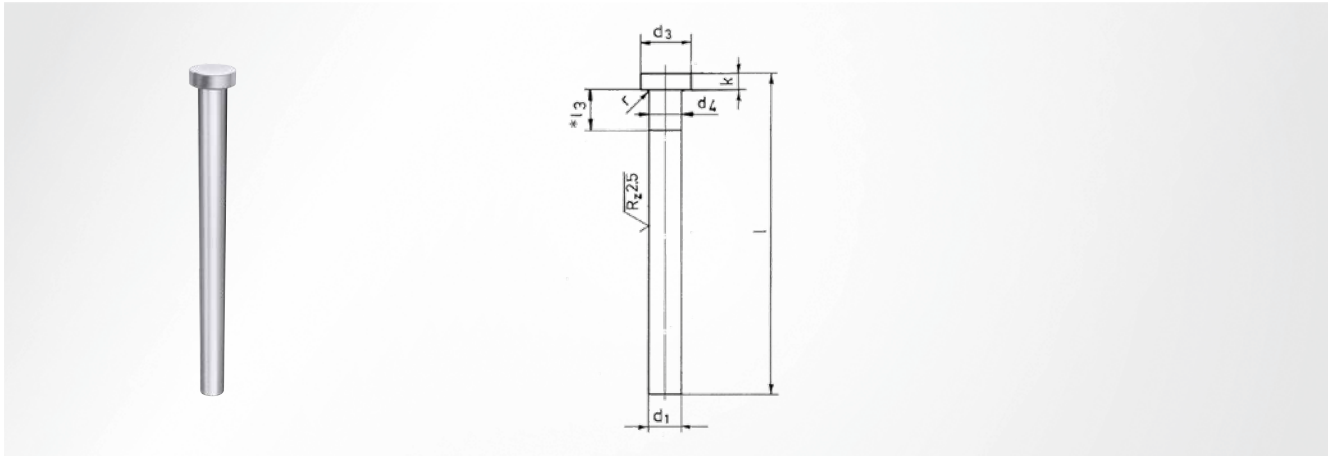
**Hardness**

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 <b>010 - 020 x 25</b>
2.1-3.0	6	9	3.5	3	5	0.1	25	SZ6285 <b>021 - 030 x 25</b>
3.1-3.5	8	11	4.0	4	5	0.1	25	SZ6285 <b>031 - 035 x 25</b>
							32	SZ6285 <b>031 - 035 x 32</b>
3.6-5.0	10	13	5.8	4	5	0.1	25	SZ6285 <b>036 - 050 x 25</b>
							32	SZ6285 <b>036 - 050 x 32</b>
5.1-7.0	13	16	8.0	5	5	0.1	25	SZ6285 <b>051 - 070 x 25</b>
							32	SZ6285 <b>051 - 070 x 32</b>
7.1-8.8	16	19	9.5	5	5	0.1	25	SZ6285 <b>071 - 088 x 25</b>
							32	SZ6285 <b>071 - 088 x 32</b>
8.9-11.0	20	23	12.0	8	5	0.1	25	SZ6285 <b>089 - 110 x 25</b>
							32	SZ6285 <b>089 - 110 x 32</b>
11.1-15.0	25	28	17.3	8	5	0.1	25	SZ6285 <b>111 - 150 x 25</b>
							32	SZ6285 <b>111 - 150 x 32</b>
15.5-20.0	32	35	20.7	8	5	0.5	25	SZ6285 <b>155 - 200 x 25</b>
							32	SZ6285 <b>155 - 200 x 32</b>
20.5-25.0	40	43	27.7	8	5	0.5	25	SZ6285 <b>205 - 250 x 25</b>
							32	SZ6285 <b>205 - 250 x 32</b>

# 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
						100	SZ6650 017 x 100
1.7	3.0	1.73	2.0	5	0.2	125	SZ6650 017 x 125
						160	SZ6650 017 x 160
						200	SZ6650 017 x 200
						100	SZ6650 018 x 100
1.8	3.0	1.83	2.0	5	0.2	125	SZ6650 018 x 125
						160	SZ6650 018 x 160
						200	SZ6650 018 x 200
						100	SZ6650 019 x 100
1.9	3.0	1.93	2.0	5	0.2	125	SZ6650 019 x 125
						160	SZ6650 019 x 160
						200	SZ6650 019 x 200
						100	SZ6650 020 x 100
2.0	4.0	2.03	2.0	5	0.2	125	SZ6650 020 x 125
						160	SZ6650 020 x 160
						200	SZ6650 020 x 200
						100	SZ6650 021 x 100
2.1	4.0	2.13	2.0	5	0.2	125	SZ6650 021 x 125
						160	SZ6650 021 x 160
						200	SZ6650 021 x 200
						100	SZ6650 022 x 100
2.2	4.0	2.23	2.0	5	0.2	125	SZ6650 022 x 125
						160	SZ6650 022 x 160
						200	SZ6650 022 x 200
						100	SZ6650 023 x 100
2.3	4.0	2.33	2.0	5	0.2	125	SZ6650 023 x 125
						160	SZ6650 023 x 160
						200	SZ6650 023 x 200
						100	SZ6650 024 x 100
2.4	4.0	2.43	2.0	5	0.2	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 <b>024 x 160</b>
							200
2.5	5.0	2.53	2.0	5	0.3	100	SZ6650 <b>025 x 100</b>
						125	SZ6650 <b>025 x 125</b>
						160	SZ6650 <b>025 x 160</b>
						200	SZ6650 <b>025 x 200</b>
2.6	5.0	2.63	2.0	5	0.3	100	SZ6650 <b>026 x 100</b>
						125	SZ6650 <b>026 x 125</b>
						160	SZ6650 <b>026 x 160</b>
						200	SZ6650 <b>026 x 200</b>
2.7	5.0	2.73	2.0	5	0.3	100	SZ6650 <b>027 x 100</b>
						125	SZ6650 <b>027 x 125</b>
						160	SZ6650 <b>027 x 160</b>
						200	SZ6650 <b>027 x 200</b>
2.8	5.0	2.83	2.0	5	0.3	100	SZ6650 <b>028 x 100</b>
						125	SZ6650 <b>028 x 125</b>
						200	SZ6650 <b>028 x 200</b>
						160	SZ6650 <b>028 x 160</b>
2.9	5.0	2.93	2.0	5	0.3	100	SZ6650 <b>029 x 100</b>
						125	SZ6650 <b>029 x 125</b>
						160	SZ6650 <b>029 x 160</b>
						200	SZ6650 <b>029 x 200</b>
3.0	6.0	3.03	3.0	6	0.3	100	SZ6650 <b>030 x 100</b>
						125	SZ6650 <b>030 x 125</b>
						160	SZ6650 <b>030 x 160</b>
						200	SZ6650 <b>030 x 200</b>
3.1	6.0	3.13	3.0	5	0.3	100	SZ6650 <b>031 x 100</b>
						125	SZ6650 <b>031 x 125</b>
						160	SZ6650 <b>031 x 160</b>
						200	SZ6650 <b>031 x 200</b>
3.2	6.0	3.23	3.0	5	0.3	100	SZ6650 <b>032 x 100</b>
						125	SZ6650 <b>032 x 125</b>
						160	SZ6650 <b>032 x 160</b>
						200	SZ6650 <b>032 x 200</b>
3.3	6.0	3.33	3.0	5	0.3	100	SZ6650 <b>033 x 100</b>
						125	SZ6650 <b>033 x 125</b>
						160	SZ6650 <b>033 x 160</b>
						200	SZ6650 <b>033 x 200</b>
3.4	6.0	3.43	3.0	5	0.3	100	SZ6650 <b>034 x 100</b>
						125	SZ6650 <b>034 x 125</b>
						160	SZ6650 <b>034 x 160</b>
						200	SZ6650 <b>034 x 200</b>
3.5	7.0	3.53	3.0	5	0.3	100	SZ6650 <b>035 x 100</b>
						125	SZ6650 <b>035 x 125</b>
						160	SZ6650 <b>035 x 160</b>
						200	SZ6650 <b>035 x 200</b>
3.6	7.0	3.63	3.0	5	0.3	100	SZ6650 <b>036 x 100</b>
						125	SZ6650 <b>036 x 125</b>
						160	SZ6650 <b>036 x 160</b>
						200	SZ6650 <b>036 x 200</b>
3.7	7.0	3.73	3.0	5	0.3	100	SZ6650 <b>037 x 100</b>
						125	SZ6650 <b>037 x 125</b>
						160	SZ6650 <b>037 x 160</b>
						200	SZ6650 <b>037 x 200</b>
3.8	7.0	3.83	3.0	5	0.3	100	SZ6650 <b>038 x 100</b>
						125	SZ6650 <b>038 x 125</b>
						160	SZ6650 <b>038 x 160</b>
						200	SZ6650 <b>038 x 200</b>
3.9	7.0	3.93	3.0	5	0.3	100	SZ6650 <b>039 x 100</b>
						125	SZ6650 <b>039 x 125</b>

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

# 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 <b>053 x 160</b>
						200	SZ6650 <b>053 x 200</b>
5.4	10.0	5.43	3.0	5	0.3	100	SZ6650 <b>054 x 100</b>
						125	SZ6650 <b>054 x 125</b>
						160	SZ6650 <b>054 x 160</b>
						200	SZ6650 <b>054 x 200</b>
5.5	10.0	5.53	3.0	5	0.3	100	SZ6650 <b>055 x 100</b>
						125	SZ6650 <b>055 x 125</b>
						160	SZ6650 <b>055 x 160</b>
						200	SZ6650 <b>055 x 200</b>
5.6	10.0	5.63	3.0	5	0.3	100	SZ6650 <b>056 x 100</b>
						125	SZ6650 <b>056 x 125</b>
						160	SZ6650 <b>056 x 160</b>
						200	SZ6650 <b>056 x 200</b>
5.7	10.0	5.73	3.0	5	0.3	100	SZ6650 <b>057 x 100</b>
						125	SZ6650 <b>057 x 125</b>
						160	SZ6650 <b>057 x 160</b>
						200	SZ6650 <b>057 x 200</b>
5.8	10.0	5.83	3.0	5	0.3	100	SZ6650 <b>058 x 100</b>
						125	SZ6650 <b>058 x 125</b>
						160	SZ6650 <b>058 x 160</b>
						200	SZ6650 <b>058 x 200</b>
5.9	10.0	5.93	3.0	5	0.3	100	SZ6650 <b>059 x 100</b>
						125	SZ6650 <b>059 x 125</b>
						160	SZ6650 <b>059 x 160</b>
						200	SZ6650 <b>059 x 200</b>
6.0	12.0	6.03	5.0	6	0.5	100	SZ6650 <b>060 x 100</b>
						125	SZ6650 <b>060 x 125</b>
						160	SZ6650 <b>060 x 160</b>
						200	SZ6650 <b>060 x 200</b>
						250	SZ6650 <b>060 x 250</b>
6.2	12.0	6.23	5.0	8	0.5	100	SZ6650 <b>062 x 100</b>
						125	SZ6650 <b>062 x 125</b>
						160	SZ6650 <b>062 x 160</b>
						200	SZ6650 <b>062 x 200</b>
						250	SZ6650 <b>062 x 250</b>
6.5	12.0	6.53	5.0	8	0.5	100	SZ6650 <b>065 x 100</b>
						125	SZ6650 <b>065 x 125</b>
						160	SZ6650 <b>065 x 160</b>
						200	SZ6650 <b>065 x 200</b>
7.0	12.0	7.03	5.0	8	0.5	100	SZ6650 <b>070 x 100</b>
						125	SZ6650 <b>070 x 125</b>
						160	SZ6650 <b>070 x 160</b>
						200	SZ6650 <b>070 x 200</b>
						250	SZ6650 <b>070 x 250</b>
7.5	12.0	7.53	5.0	8	0.5	100	SZ6650 <b>075 x 100</b>
						125	SZ6650 <b>075 x 125</b>
						160	SZ6650 <b>075 x 160</b>
						200	SZ6650 <b>075 x 200</b>
8.0	14.0	8.03	5.0	8	0.5	100	SZ6650 <b>080 x 100</b>
						125	SZ6650 <b>080 x 125</b>
						160	SZ6650 <b>080 x 160</b>
						200	SZ6650 <b>080 x 200</b>
8.2	14.0	8.23	5.0	8	0.5	100	SZ6650 <b>082 x 100</b>
						125	SZ6650 <b>082 x 125</b>
						160	SZ6650 <b>082 x 160</b>
						200	SZ6650 <b>082 x 200</b>
8.5	14.0	8.53	5.0	8	0.5	100	SZ6650 <b>085 x 100</b>

$d_1^{g6}$	$d_3^{-0.2}$	$d_4$	$k^{-0.05}$	$l_3$	$r^{+0.2}$	$l^{+2}$	Item number
8.5	14.0	8.53	5.0	8	0.5	125	SZ6650 <b>085 x 125</b>
						160	SZ6650 <b>085 x 160</b>
						200	SZ6650 <b>085 x 200</b>
9.0	14.0	9.03	5.0	8	0.5	100	SZ6650 <b>090 x 100</b>
						125	SZ6650 <b>090 x 125</b>
						160	SZ6650 <b>090 x 160</b>
						200	SZ6650 <b>090 x 200</b>
						250	SZ6650 <b>090 x 250</b>
9.5	14.0	9.53	5.0	10	0.5	100	SZ6650 <b>095 x 100</b>
						125	SZ6650 <b>095 x 125</b>
						160	SZ6650 <b>095 x 160</b>
10.0	16.0	10.03	5.0	10	0.5	100	SZ6650 <b>100 x 100</b>
						125	SZ6650 <b>100 x 125</b>
						160	SZ6650 <b>100 x 160</b>
						200	SZ6650 <b>100 x 200</b>
10.2	16.0	10.24	5.0	10	0.5	100	SZ6650 <b>102 x 100</b>
						125	SZ6650 <b>102 x 125</b>
						160	SZ6650 <b>102 x 160</b>
						200	SZ6650 <b>102 x 200</b>
10.5	16.0	10.53	5.0	10	0.5	100	SZ6650 <b>105 x 100</b>
						125	SZ6650 <b>105 x 125</b>
						160	SZ6650 <b>105 x 160</b>
						200	SZ6650 <b>105 x 200</b>
11.0	16.0	11.03	5.0	10	0.5	100	SZ6650 <b>110 x 100</b>
						125	SZ6650 <b>110 x 125</b>
						160	SZ6650 <b>110 x 160</b>
						200	SZ6650 <b>110 x 200</b>
						250	SZ6650 <b>110 x 250</b>
12.0	18.0	12.03	7.0	12	0.8	100	SZ6650 <b>120 x 100</b>
						125	SZ6650 <b>120 x 125</b>
						160	SZ6650 <b>120 x 160</b>
						200	SZ6650 <b>120 x 200</b>
						250	SZ6650 <b>120 x 250</b>
12.5	18.0	12.53	7.0	12	0.8	160	SZ6650 <b>125 x 160</b>
						200	SZ6650 <b>125 x 200</b>
						250	SZ6650 <b>125 x 250</b>
13.0	18.0	13.03	7.0	13	0.8	250	SZ6650 <b>130 x 250</b>
						200	SZ6650 <b>130 x 200</b>
						160	SZ6650 <b>130 x 160</b>
14.0	22.0	14.03	7.0	14	0.8	160	SZ6650 <b>140 x 160</b>
						200	SZ6650 <b>140 x 200</b>
						250	SZ6650 <b>140 x 250</b>
15.0	22.0	15.03	7.0	14	0.8	160	SZ6650 <b>150 x 160</b>
						200	SZ6650 <b>150 x 200</b>
						250	SZ6650 <b>150 x 250</b>
16.0	22.0	16.03	7.0	16	0.8	160	SZ6650 <b>160 x 160</b>
						200	SZ6650 <b>160 x 200</b>
						250	SZ6650 <b>160 x 250</b>
18.0	24.0	18.03	7.0	18	0.8	160	SZ6650 <b>180 x 160</b>
						200	SZ6650 <b>180 x 200</b>
						250	SZ6650 <b>180 x 250</b>
20.0	26.0	20.03	8.0	20	0.8	160	SZ6650 <b>200 x 160</b>
						200	SZ6650 <b>200 x 200</b>
						250	SZ6650 <b>200 x 250</b>
25.0	32.0	25.03	10.0	25	1.1	160	SZ6650 <b>250 x 160</b>
						200	SZ6650 <b>250 x 200</b>
						250	SZ6650 <b>250 x 250</b>

Spring elements

Nitrogen systems

Tapping units

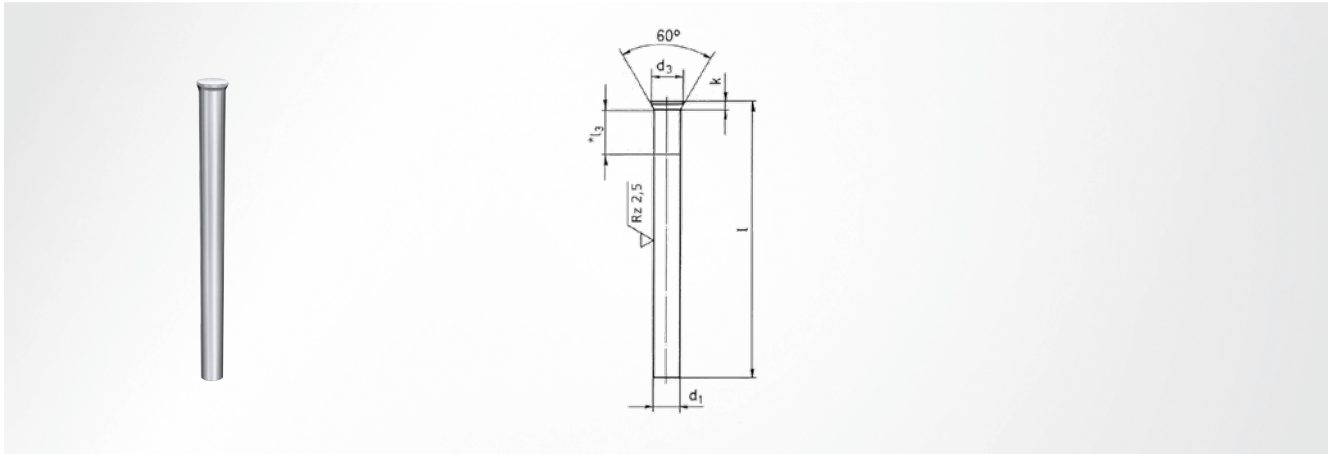
Module system

Machine elements

Accessories

# 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 <b>008 x 100</b>
				160	SZ6750 <b>008 x 160</b>
0.9	1.6	1.01	5	100	SZ6750 <b>009 x 100</b>
				160	SZ6750 <b>009 x 160</b>
1.0	1.8	1.19	5	100	SZ6750 <b>010 x 100</b>
				160	SZ6750 <b>010 x 160</b>
1.1	1.8	1.11	5	100	SZ6750 <b>011 x 100</b>
				160	SZ6750 <b>011 x 160</b>
1.2	2.0	1.19	5	100	SZ6750 <b>012 x 100</b>
				160	SZ6750 <b>012 x 160</b>
1.3	2.0	1.11	5	100	SZ6750 <b>013 x 100</b>
				160	SZ6750 <b>013 x 160</b>
1.4	2.2	1.19	5	100	SZ6750 <b>014 x 100</b>
				160	SZ6750 <b>014 x 160</b>
1.5	2.2	1.11	5	100	SZ6750 <b>015 x 100</b>
				160	SZ6750 <b>015 x 160</b>
1.6	2.5	1.28	5	100	SZ6750 <b>016 x 100</b>
				160	SZ6750 <b>016 x 160</b>
1.7	2.5	1.19	5	100	SZ6750 <b>017 x 100</b>
				160	SZ6750 <b>017 x 160</b>
1.8	2.8	1.37	5	100	SZ6750 <b>018 x 100</b>
				160	SZ6750 <b>018 x 160</b>
1.9	2.8	1.28	5	100	SZ6750 <b>019 x 100</b>
				160	SZ6750 <b>019 x 160</b>
2.0	3.0	1.37	5	100	SZ6750 <b>020 x 100</b>
				125	SZ6750 <b>020 x 125</b>
				160	SZ6750 <b>020 x 160</b>
2.1	3.2	1.45	5	100	SZ6750 <b>021 x 100</b>
				125	SZ6750 <b>021 x 125</b>
				200	SZ6750 <b>021 x 200</b>

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



# SZ6750 Ejector pin

## with 60° head, hardened

**STEINEL®**

d <sub>1</sub> <sup>g6</sup>	d <sub>3</sub> <sup>-0.2</sup>	k	l <sub>3</sub>	l <sup>+2</sup>	Item number
3.1	4.5	1.71	5	200	SZ6750 <b>031 x 200</b>
3.2	4.5	1.63	5	100	SZ6750 <b>032 x 100</b>
				125	SZ6750 <b>032 x 125</b>
				200	SZ6750 <b>032 x 200</b>
3.3	4.5	1.54	5	100	SZ6750 <b>033 x 100</b>
				125	SZ6750 <b>033 x 125</b>
				200	SZ6750 <b>033 x 200</b>
3.4	4.5	1.45	5	100	SZ6750 <b>034 x 100</b>
				125	SZ6750 <b>034 x 125</b>
				200	SZ6750 <b>034 x 200</b>
3.5	5.0	1.80	5	100	SZ6750 <b>035 x 100</b>
				125	SZ6750 <b>035 x 125</b>
				160	SZ6750 <b>035 x 160</b>
3.6	5.0	1.71	5	200	SZ6750 <b>035 x 200</b>
				100	SZ6750 <b>036 x 100</b>
				160	SZ6750 <b>036 x 160</b>
3.7	5.0	1.63	5	200	SZ6750 <b>036 x 200</b>
				100	SZ6750 <b>037 x 100</b>
				125	SZ6750 <b>037 x 125</b>
3.9	5.0	1.45	5	200	SZ6750 <b>037 x 200</b>
				100	SZ6750 <b>039 x 100</b>
				125	SZ6750 <b>039 x 125</b>
4.0	5.0	1.80	5	200	SZ6750 <b>039 x 200</b>
				100	SZ6750 <b>040 x 100</b>
				125	SZ6750 <b>040 x 125</b>
4.1	5.5	1.71	5	160	SZ6750 <b>040 x 160</b>
				200	SZ6750 <b>040 x 200</b>
				100	SZ6750 <b>041 x 100</b>
4.2	5.5	1.63	5	125	SZ6750 <b>041 x 125</b>
				200	SZ6750 <b>041 x 200</b>
				100	SZ6750 <b>042 x 100</b>
4.3	5.5	1.54	5	125	SZ6750 <b>042 x 125</b>
				200	SZ6750 <b>042 x 200</b>
				100	SZ6750 <b>043 x 100</b>
4.4	5.5	1.45	5	125	SZ6750 <b>043 x 125</b>
				200	SZ6750 <b>043 x 200</b>
				100	SZ6750 <b>044 x 100</b>
4.5	6.0	1.80	5	125	SZ6750 <b>044 x 125</b>
				200	SZ6750 <b>044 x 200</b>
				100	SZ6750 <b>045 x 100</b>
4.6	6.0	1.71	5	160	SZ6750 <b>045 x 160</b>
				200	SZ6750 <b>045 x 200</b>
				100	SZ6750 <b>046 x 100</b>
4.7	6.0	1.63	5	125	SZ6750 <b>046 x 125</b>
				200	SZ6750 <b>046 x 200</b>
				100	SZ6750 <b>047 x 100</b>
4.8	6.0	1.54	5	125	SZ6750 <b>047 x 125</b>
				200	SZ6750 <b>047 x 200</b>
				100	SZ6750 <b>048 x 100</b>
4.9	6.0	1.45	5	125	SZ6750 <b>048 x 125</b>
				200	SZ6750 <b>048 x 200</b>
				100	SZ6750 <b>049 x 100</b>
5.0	6.5	1.80	6	125	SZ6750 <b>049 x 125</b>
				200	SZ6750 <b>049 x 200</b>
				100	SZ6750 <b>050 x 100</b>
5.1	6.5	1.71	6	125	SZ6750 <b>050 x 125</b>
				200	SZ6750 <b>050 x 200</b>
				100	SZ6750 <b>051 x 100</b>

d <sub>1</sub> <sup>g6</sup>	d <sub>3</sub> <sup>-0.2</sup>	k	l <sub>3</sub>	l <sup>+2</sup>	Item number
5.1	6.5	1.71	6	100	SZ6750 <b>051 x 100</b>
				125	SZ6750 <b>051 x 125</b>
				160	SZ6750 <b>051 x 160</b>
				200	SZ6750 <b>051 x 200</b>
5.2	6.5	1.63	6	100	SZ6750 <b>052 x 100</b>
				125	SZ6750 <b>052 x 125</b>
				160	SZ6750 <b>052 x 160</b>
				200	SZ6750 <b>052 x 200</b>
5.3	6.5	1.54	6	100	SZ6750 <b>053 x 100</b>
				125	SZ6750 <b>053 x 125</b>
				160	SZ6750 <b>053 x 160</b>
				200	SZ6750 <b>053 x 200</b>
5.4	6.5	1.45	6	100	SZ6750 <b>053 x 200</b>
				100	SZ6750 <b>054 x 100</b>
				125	SZ6750 <b>054 x 125</b>
				200	SZ6750 <b>054 x 200</b>
5.5	7.0	1.80	6	100	SZ6750 <b>054 x 200</b>
				125	SZ6750 <b>055 x 100</b>
				160	SZ6750 <b>055 x 125</b>
				200	SZ6750 <b>055 x 160</b>
5.6	7.0	1.71	6	200	SZ6750 <b>055 x 200</b>
				100	SZ6750 <b>056 x 100</b>
				125	SZ6750 <b>056 x 125</b>
				200	SZ6750 <b>056 x 200</b>
5.7	7.0	1.63	6	100	SZ6750 <b>056 x 200</b>
				125	SZ6750 <b>057 x 100</b>
				200	SZ6750 <b>057 x 125</b>
				100	SZ6750 <b>057 x 200</b>
5.8	7.0	1.54	6	125	SZ6750 <b>057 x 125</b>
				200	SZ6750 <b>057 x 200</b>
				125	SZ6750 <b>058 x 100</b>
				200	SZ6750 <b>058 x 125</b>
5.9	7.0	1.45	6	200	SZ6750 <b>058 x 200</b>
				125	SZ6750 <b>059 x 100</b>
				200	SZ6750 <b>059 x 125</b>
				100	SZ6750 <b>059 x 200</b>
6.0	8.0	2.23	6	100	SZ6750 <b>059 x 200</b>
				125	SZ6750 <b>060 x 100</b>
				160	SZ6750 <b>060 x 125</b>
				200	SZ6750 <b>060 x 160</b>
6.2	8.0	2.06	6	200	SZ6750 <b>060 x 200</b>
				100	SZ6750 <b>062 x 100</b>
				125	SZ6750 <b>062 x 125</b>
				160	SZ6750 <b>062 x 160</b>
6.5	9.0	3.16	6	200	SZ6750 <b>062 x 200</b>
				100	SZ6750 <b>065 x 100</b>
				125	SZ6750 <b>065 x 125</b>
				160	SZ6750 <b>065 x 160</b>
7.0	9.0	2.73	6	200	SZ6750 <b>065 x 200</b>
				100	SZ6750 <b>070 x 100</b>
				125	SZ6750 <b>070 x 125</b>
				160	SZ6750 <b>070 x 160</b>
7.5	9.0	3.17	6	200	SZ6750 <b>070 x 200</b>
				100	SZ6750 <b>075 x 100</b>
				125	SZ6750 <b>075 x 125</b>
				160	SZ6750 <b>075 x 160</b>
8.0	10.0	2.73	6	200	SZ6750 <b>075 x 200</b>
				100	SZ6750 <b>080 x 100</b>
				125	SZ6750 <b>080 x 125</b>
				160	SZ6750 <b>080 x 160</b>
8.5	10.0	3.17	8	200	SZ6750 <b>080 x 200</b>
				100	SZ6750 <b>085 x 100</b>
				125	SZ6750 <b>085 x 125</b>
				160	SZ6750 <b>085 x 160</b>
9.0	11.0	2.73	8	200	SZ6750 <b>085 x 200</b>
				100	SZ6750 <b>090 x 100</b>
				125	SZ6750 <b>090 x 125</b>
				160	SZ6750 <b>090 x 160</b>

Spring  
elements

Nitrogen  
systems

Tapping  
units

Module  
system

Machine  
elements

Accessories

# SZ6750 Ejector pin

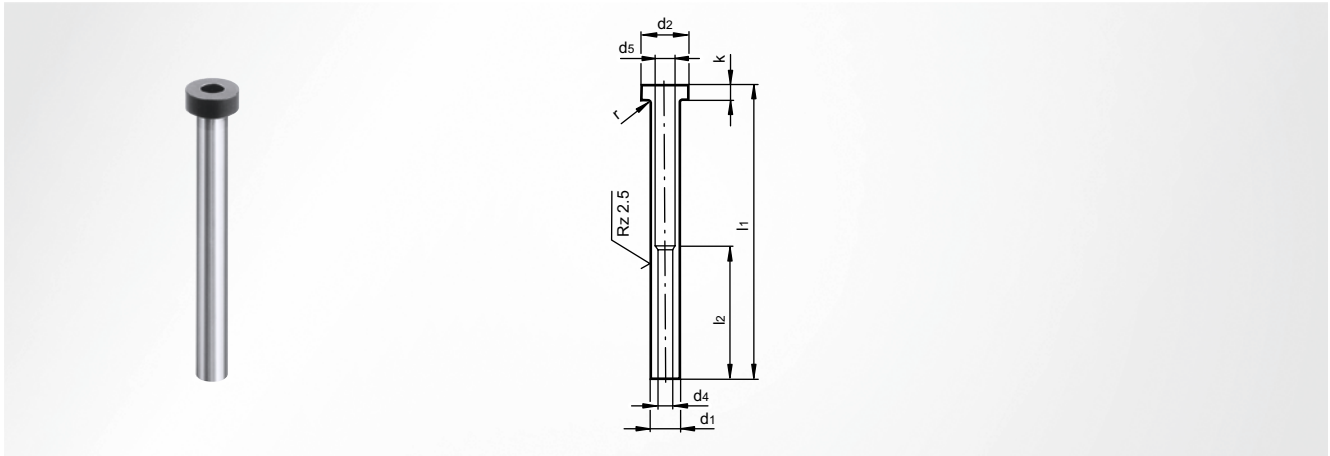
with 60° head, hardened

$d_1^{g6}$	$d_3^{-0.2}$	k	$l_3$	$l^{+2}$	Item number
9.5	11.0	3.17	8	100	SZ6750 <b>095 x 100</b>
				125	SZ6750 <b>095 x 125</b>
				160	SZ6750 <b>095 x 160</b>
				200	SZ6750 <b>095 x 200</b>
10.0	12.0	2.73	8	100	SZ6750 <b>100 x 100</b>
				125	SZ6750 <b>100 x 125</b>
				160	SZ6750 <b>100 x 160</b>
				200	SZ6750 <b>100 x 200</b>
11.0	12.0	2.73	10	100	SZ6750 <b>110 x 100</b>
				125	SZ6750 <b>110 x 125</b>
				160	SZ6750 <b>110 x 160</b>
				200	SZ6750 <b>110 x 200</b>
12.0	14.0	2.73	10	100	SZ6750 <b>120 x 100</b>

$d_1^{g6}$	$d_3^{-0.2}$	k	$l_3$	$l^{+2}$	Item number
12.0	14.0	2.73	10	125	SZ6750 <b>120 x 125</b>
				160	SZ6750 <b>120 x 160</b>
				200	SZ6750 <b>120 x 200</b>
				13.0	15.0
13.0	15.0	2.73	10	100	SZ6750 <b>130 x 100</b>
				160	SZ6750 <b>130 x 160</b>
				200	SZ6750 <b>130 x 200</b>
				14.0	16.0
14.0	16.0	3.23	10	125	SZ6750 <b>140 x 125</b>
				160	SZ6750 <b>140 x 160</b>
				200	SZ6750 <b>140 x 200</b>
				16.0	18.0
16.0	18.0	3.23	10	125	SZ6750 <b>160 x 125</b>

# 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
8	14	5.2	5.6	5	0.5	200	45	SZ6751 050 x 080 x 200
						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
10	16	6.0	6.4	5	0.5	200	45	SZ6751 052 x 080 x 200
						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
10	16	6.2	6.6	5	0.5	200	45	SZ6751 060 x 100 x 200
						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
10	16	6.2	6.6	5	0.5	200	45	SZ6751 062 x 100 x 200
						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

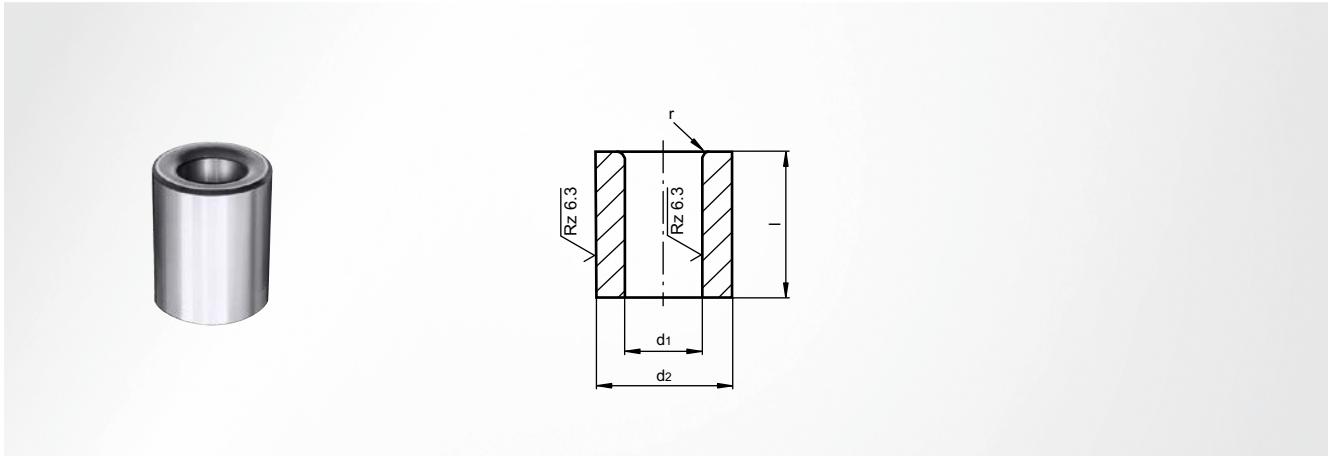
# SZ6751 Ejector sleeve

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 <b>080 x 120 x 100</b>
						125	45	SZ6751 <b>080 x 120 x 125</b>
						150	45	SZ6751 <b>080 x 120 x 150</b>
						175	45	SZ6751 <b>080 x 120 x 175</b>
						200	45	SZ6751 <b>080 x 120 x 200</b>
12	20	8.2	8.6	7	0.8	100	45	SZ6751 <b>082 x 120 x 100</b>
						125	45	SZ6751 <b>082 x 120 x 125</b>
						150	45	SZ6751 <b>082 x 120 x 150</b>
						175	45	SZ6751 <b>082 x 120 x 175</b>
						200	45	SZ6751 <b>082 x 120 x 200</b>

# SZ6225 Punch guide bush

for pressing-in



**ISO 8978**

**Material**

Case-hardening steel

**Hardness**

62 ±2 HRC

**Note**

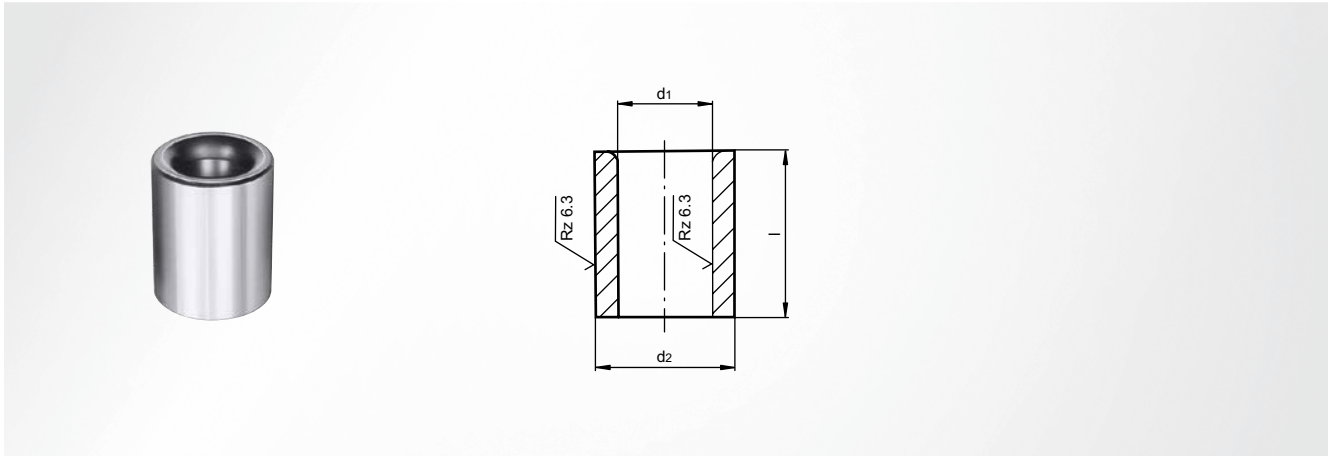
for cutting punches DIN 9861

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

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

# SZ6229 Punch guide bush

for pressing-in



## Material

Case-hardening steel

## Note

for cutting punches ISO 8020

## Hardness

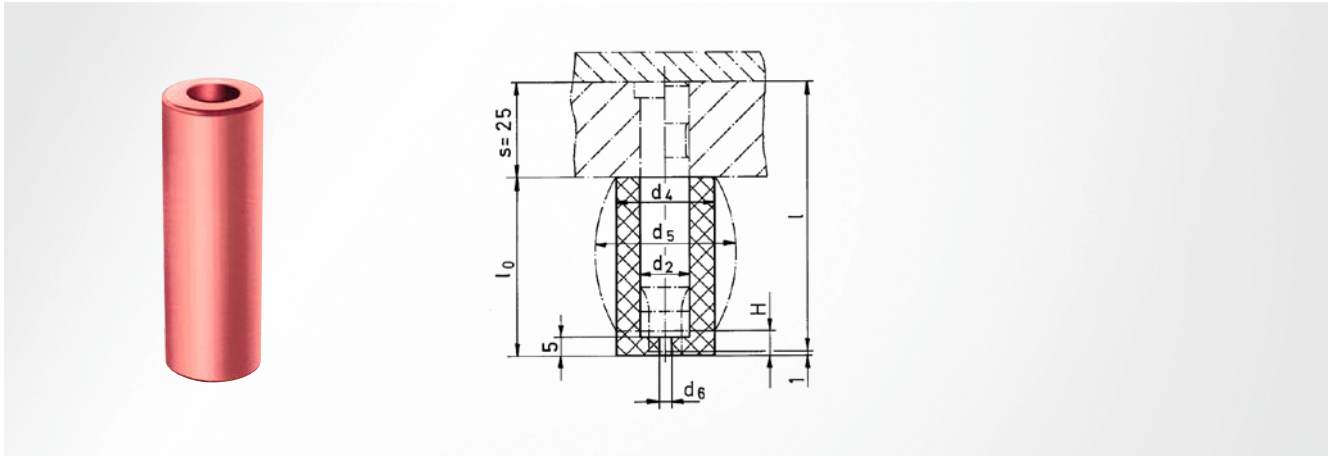
62 ±2 HRC

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

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

# SZ8455 Stripper

self-adhesive



**Material**

Vulkollan Desmodur 15

**Hardness**

90 ±5 Shore A

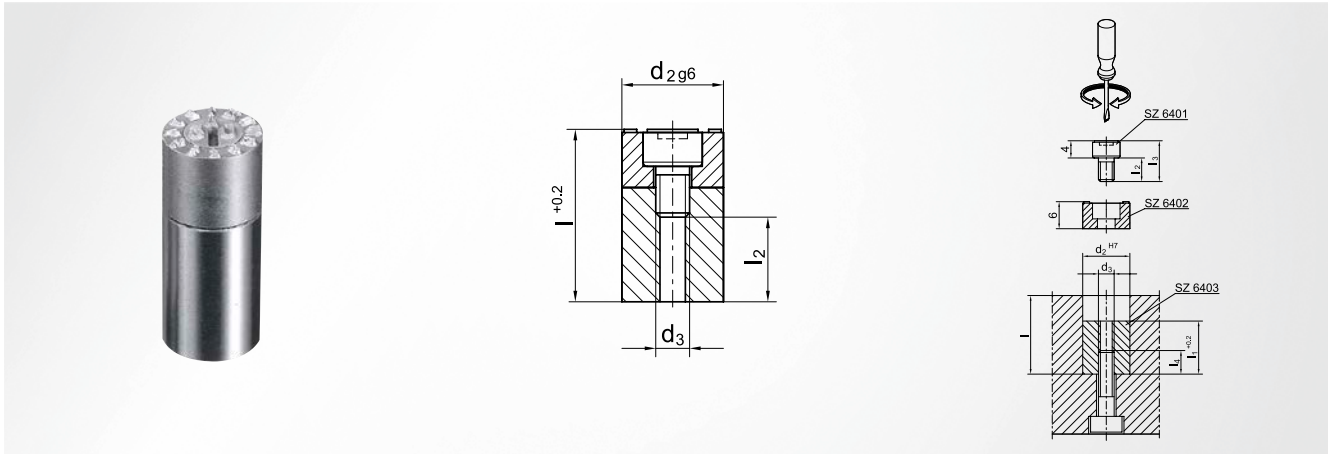
**Note**

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

# SZ6400 Embossing die

## complete embossing die



**Material**

HWS

**Hardness**

60 HRC

**Note**

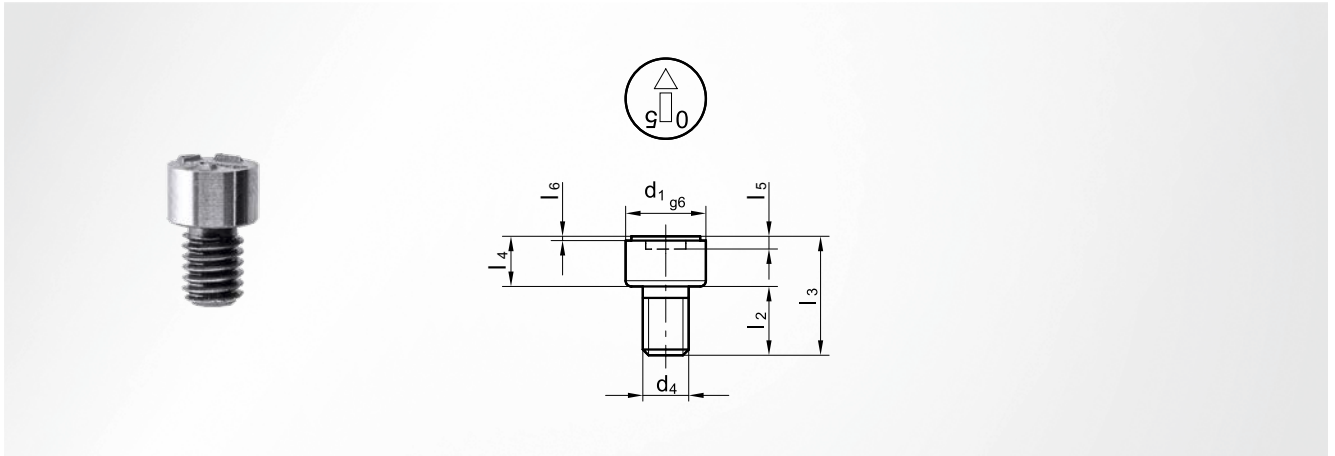
Period (months) = 1 number sleeve;  
 period (weeks) = 5 number sleeves;  
 please quote the year when ordering

**Scope of supply**

SZ6401; SZ6402; SZ6403

d <sub>2</sub>	d <sub>3</sub>	l	l <sub>2</sub>	Period	Item number
6	M3	15	6	1-12 months	SZ6400 <b>06 x 12</b>
6	M3	15	6	1-52 weeks	SZ6400 <b>06 x 52</b>
10	M4	18	8	1-12 months	SZ6400 <b>10 x 12</b>
10	M4	18	8	1-52 weeks	SZ6400 <b>10 x 52</b>





**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 <b>06</b>
5.9	M4	5.5	9.5	4	1	0.25	SZ6401 <b>10</b>

Spring elements

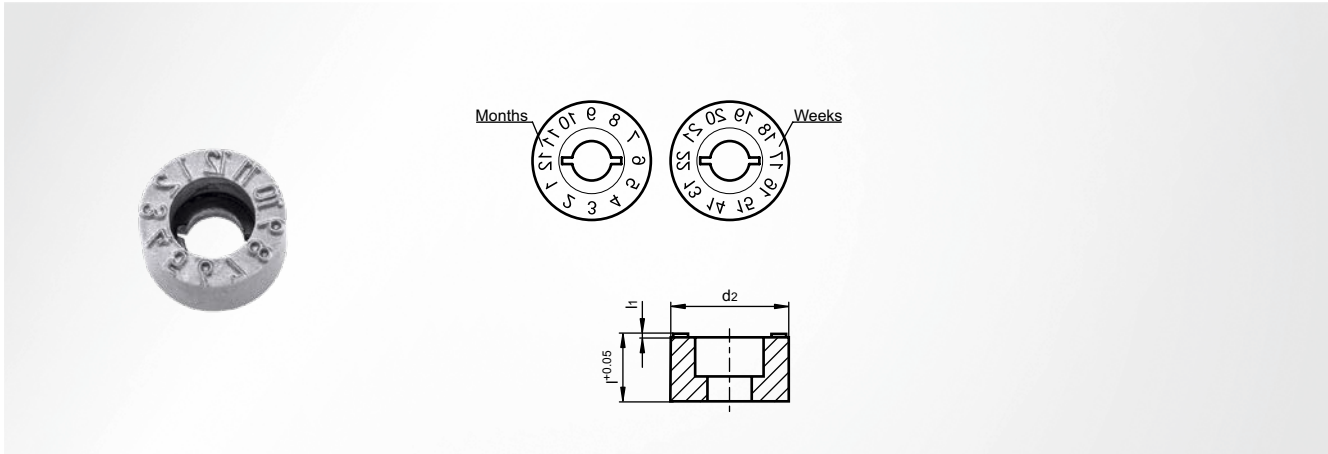
Nitrogen systems

Tapping units

Module system

Machine elements

Accessories



### Material

HWS

### Hardness

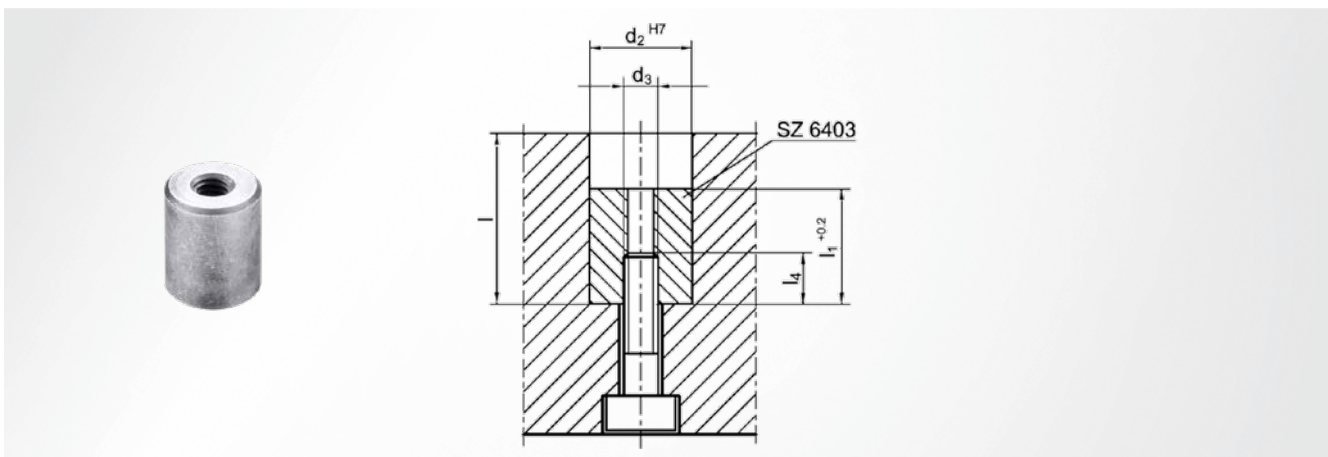
60 HRC

### 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 <b>06 x 12</b>
6	6	0.25	1-52 weeks	SZ6402 <b>06 x 52</b>
10	6	0.25	1-12 months	SZ6402 <b>10 x 12</b>
10	6	0.25	1-52 weeks	SZ6402 <b>10 x 52</b>

# SZ6403 Spacer



$d_2^{H7}$	$l$	$l_1^{+0.2}$	$l_4$	Item number
6	15	9	5.0	SZ6403 <b>06</b>
10	18	12	6.5	SZ6403 <b>10</b>

# Spring elements

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



















































Nitrogen systems

Tapping units

Module system

Machine elements

Accessories

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 	SZ8131 4.64 	SZ8130 4.65 

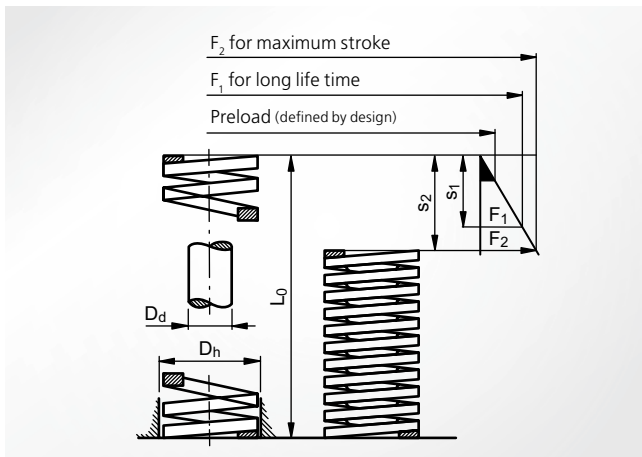


STEINEL system springs are available in eight types of load, as well as various diameters and lengths. Types of load are colour-marked so that they can be immediately told apart.

### 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



$D_d$  = 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)

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  $\pm 1\%$ , at least  $\pm 0.75$  mm.

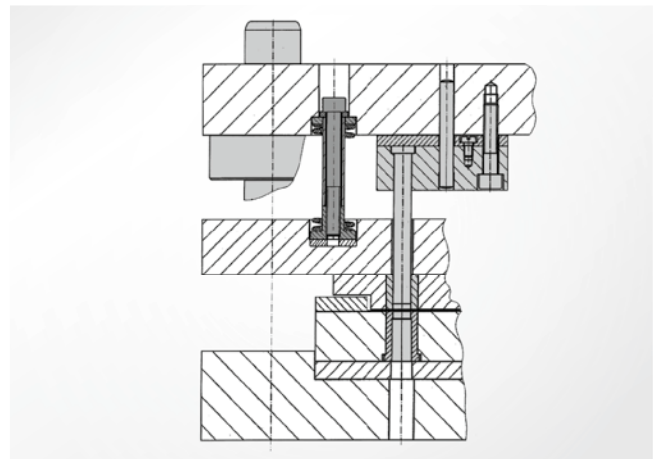
# Spring elements

## System spring units



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.

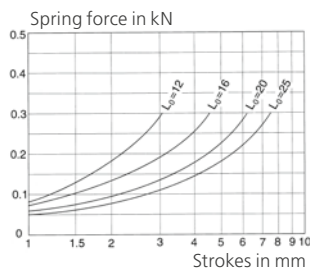
### Rubber springs

The material is high-quality chloroprene elastomer (CR) with a hardness value of  $70 \pm 3$  Shore-A. It is distinguished by its

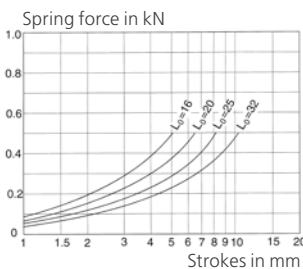
high level of elasticity and resistance to breakage, as well as its good resistance to oil.

### Force path diagrams for rubber springs

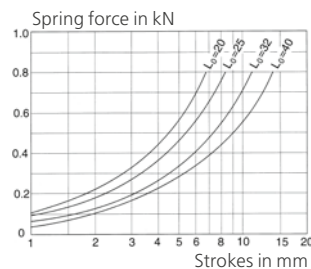
D<sub>a</sub> 16



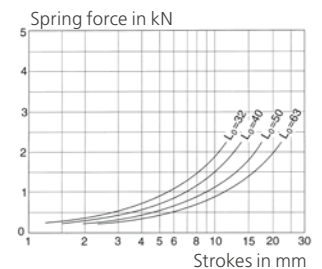
D<sub>a</sub> 20



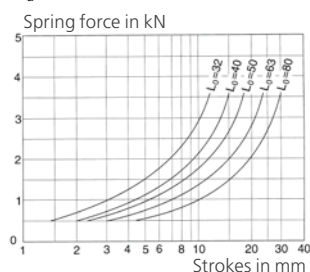
D<sub>a</sub> 25



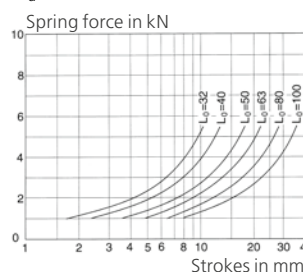
D<sub>a</sub> 32



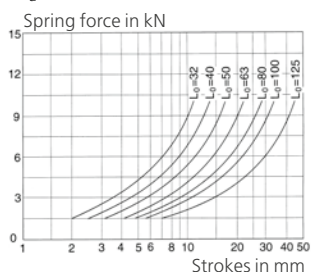
D<sub>a</sub> 40



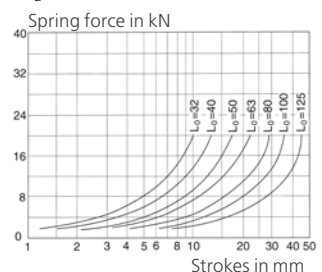
D<sub>a</sub> 50



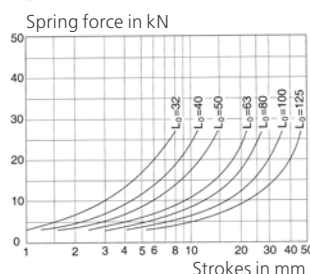
D<sub>a</sub> 63



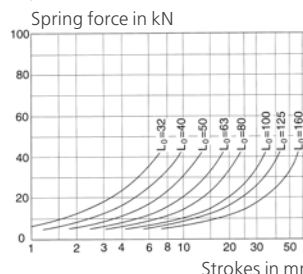
D<sub>a</sub> 80



D<sub>a</sub> 100



D<sub>a</sub> 125



## Elastomer springs

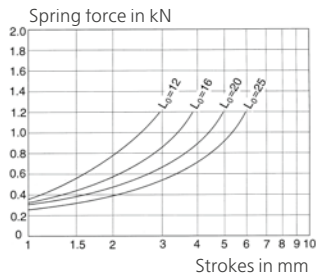
### Elastomer springs

This material is a high-quality polyurethane elastomer (PUR) with a hardness value of  $90 \pm 5$  Shore-A. It is distinguished by its imperviousness to chemical and mechanical influences. At

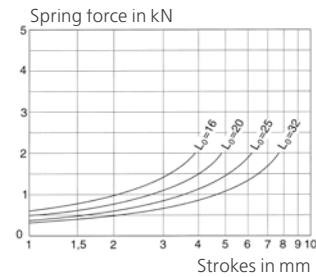
the same sizes, elastomer springs have a greater spring force than rubber springs. They are ideally suitable for use wherever high forces are required for small dimensions.

### Force path diagrams for elastomer springs

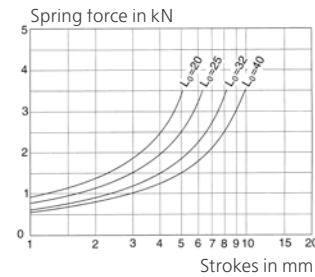
D<sub>a</sub> 16



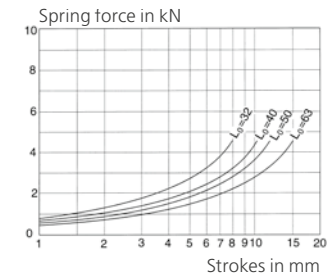
D<sub>a</sub> 20



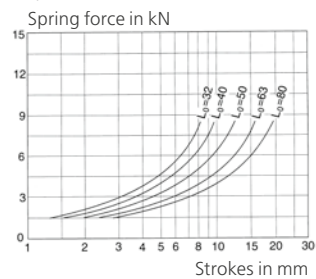
D<sub>a</sub> 25



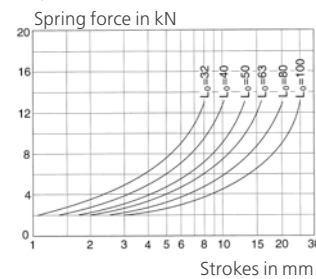
D<sub>a</sub> 32



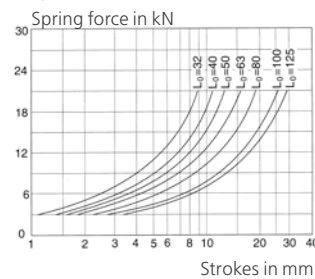
D<sub>a</sub> 40



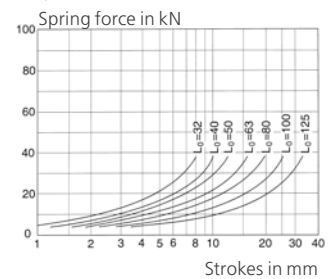
D<sub>a</sub> 50



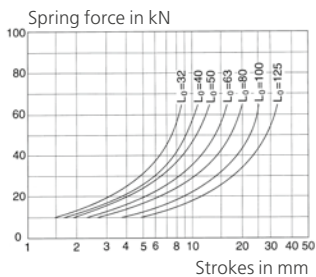
D<sub>a</sub> 63



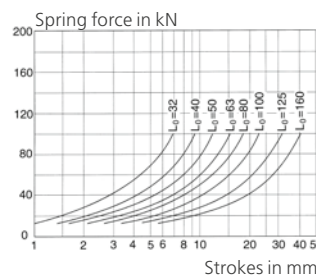
D<sub>a</sub> 80



D<sub>a</sub> 100



D<sub>a</sub> 125

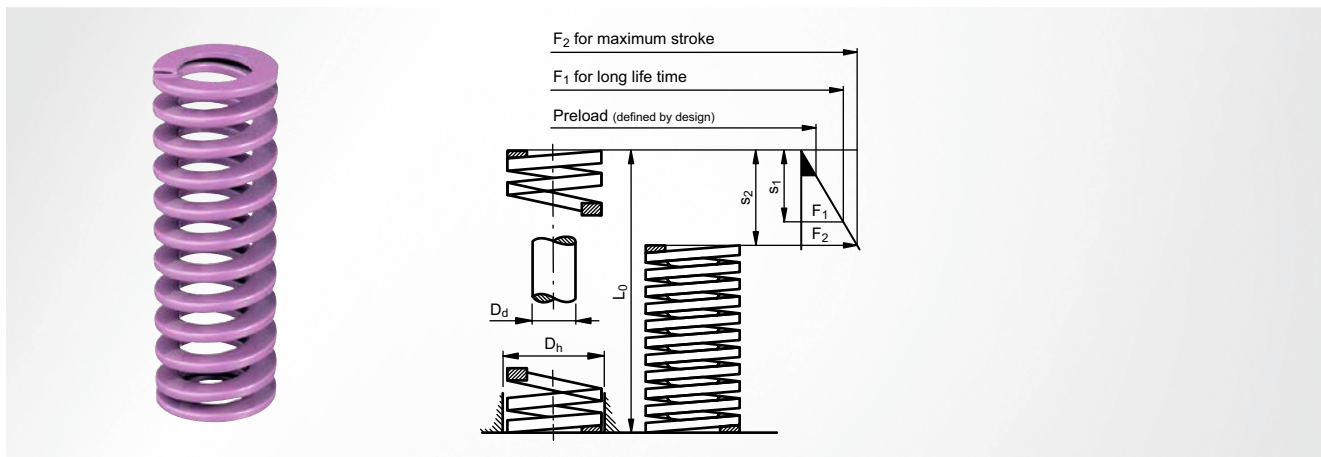


In addition to their usual round design, elastomer springs are also available as rectangular rods or plate material. Mechanical reworking tasks such as water jet cutting, turning, drilling and milling can be carried out without any problems.



# 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 $c \pm 10\%$	long life time		max. stroke		Item number
					$s_1^{35\%}$	$F_1$ N	$s_2^{50\%}$	$F_2$ N	
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
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

extra light load, identification colour lilac

Sleeve Ø D <sub>h</sub> <sup>H15</sup>	Pin Ø D <sub>d</sub> <sup>h15</sup>	Wire	L <sub>0</sub>	Spring rate N/mm c ±10 %	long life time		max. stroke		Item number
					s <sub>1</sub> <sup>35 %</sup>	F <sub>1</sub> N	s <sub>2</sub> <sup>50 %</sup>	F <sub>2</sub> N	
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
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
			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

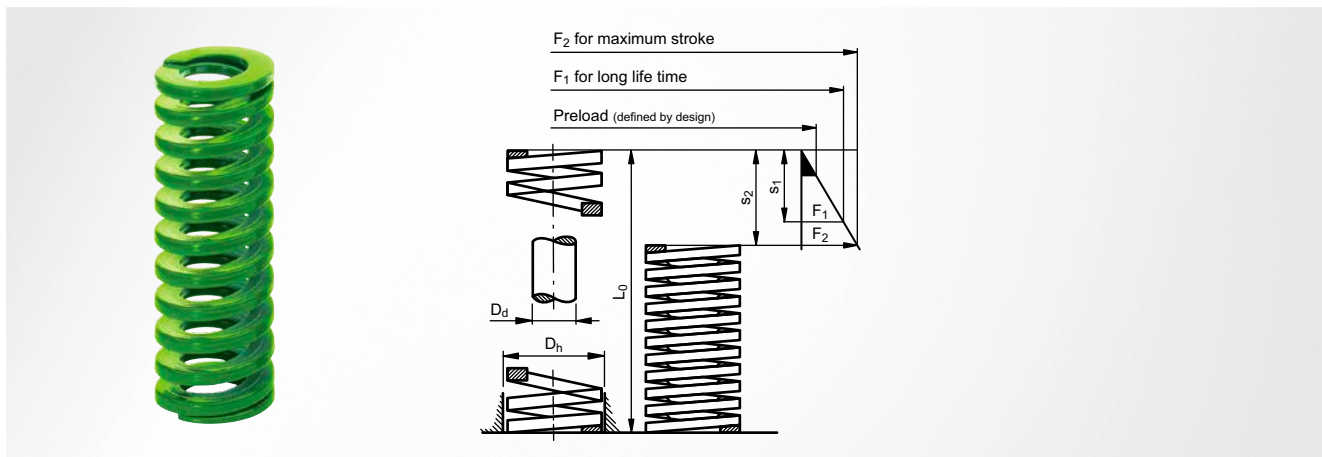
# SZ8005 System spring

extra light load, identification colour lilac

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

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

light load, identification colour green

Sleeve Ø D <sub>h</sub> H15	Pin Ø D <sub>d</sub> h15	Wire	L <sub>0</sub>	Spring rate N/mm c ±10 %	long life time		max. stroke		Item number
					s <sub>1</sub> <sup>30 %</sup>	F <sub>1</sub> N	s <sub>2</sub> <sup>40 %</sup>	F <sub>2</sub> N	
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
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
			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
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

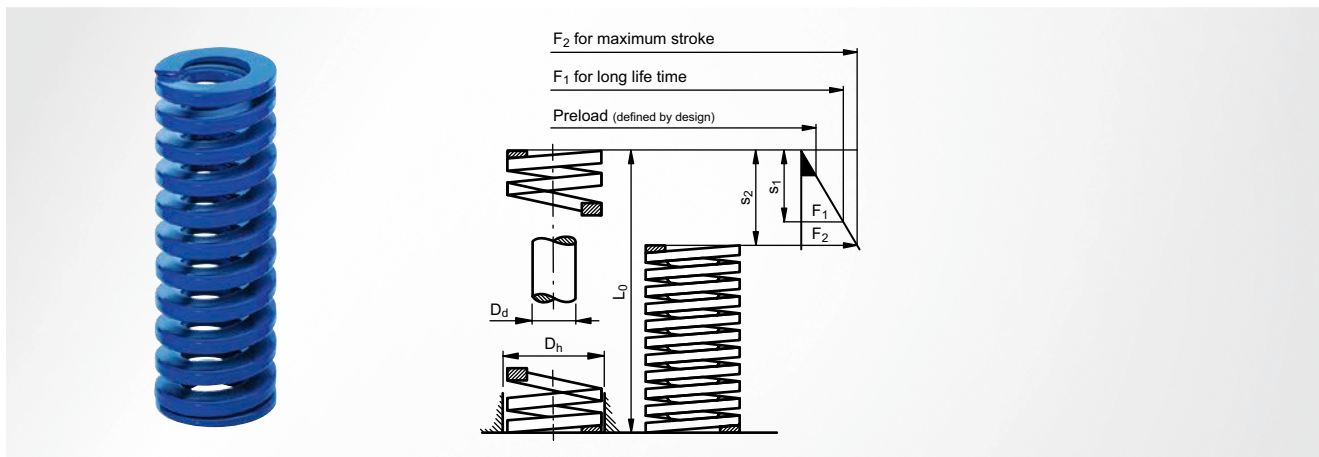
# SZ8010 System spring

light load, identification colour green

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

# SZ8020 System spring

medium load, identification colour blue



**ISO 10243**

**Wire cross-section**

rectangular

**Material**

Profiled valve spring steel wire (52SiCrNi5)

**Note**

Spring is set, closed and rectangular ground

**Spring type**

Helical compression spring

Sleeve Ø $D_h^{H15}$	Pin Ø $D_d^{h15}$	Wire	$L_0$	Spring rate N/mm $c \pm 10\%$	long life time		max. stroke		Item number			
					$s_1^{25\%}$	$F_1$ N	$s_2^{37.5\%}$	$F_2$ N				
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			

medium load, identification colour blue

Sleeve Ø D <sub>h</sub> <sup>H15</sup>	Pin Ø D <sub>d</sub> <sup>h15</sup>	Wire	L <sub>0</sub>	Spring rate N/mm c ±10 %	long life time		max. stroke		Item number
					s <sub>1</sub> <sup>25 %</sup>	F <sub>1</sub> N	s <sub>2</sub> <sup>37.5 %</sup>	F <sub>2</sub> N	
20.0	10.0	4.0 x 2.4	64	32.3	16.0	517	24.0	775	SZ8020 <b>20 x 064</b>
			76	25.1	19.0	477	28.5	715	SZ8020 <b>20 x 076</b>
			89	22.0	22.3	490	33.3	733	SZ8020 <b>20 x 089</b>
			102	19.8	25.5	505	38.2	756	SZ8020 <b>20 x 102</b>
			115	18.1	28.8	520	43.1	780	SZ8020 <b>20 x 115</b>
			127	16.6	31.8	527	47.6	790	SZ8020 <b>20 x 127</b>
			139	15.1	34.8	525	52.1	787	SZ8020 <b>20 x 139</b>
			152	13.2	38.0	502	57.0	752	SZ8020 <b>20 x 152</b>
			305	6.1	76.3	465	114.4	695	SZ8020 <b>20 x 305</b>
25.0	12.5	5.3 x 3.1	25	157.0	6.3	981	9.4	1476	SZ8020 <b>25 x 025</b>
			32	118.0	8.0	944	12.0	1416	SZ8020 <b>25 x 032</b>
			38	93.0	9.5	884	14.2	1321	SZ8020 <b>25 x 038</b>
			44	80.8	11.0	889	16.5	1333	SZ8020 <b>25 x 044</b>
			51	68.6	12.8	875	19.1	1310	SZ8020 <b>25 x 051</b>
			64	53.0	16.0	848	24.0	1272	SZ8020 <b>25 x 064</b>
			76	43.2	19.0	821	28.5	1231	SZ8020 <b>25 x 076</b>
			89	38.2	22.3	850	33.3	1272	SZ8020 <b>25 x 089</b>
			102	33.0	25.5	842	38.2	1272	SZ8020 <b>25 x 102</b>
			115	28.0	28.8	805	43.1	1207	SZ8020 <b>25 x 115</b>
			127	25.9	31.8	822	47.6	1233	SZ8020 <b>25 x 127</b>
			139	23.2	34.8	806	52.1	1209	SZ8020 <b>25 x 139</b>
			152	20.8	38.0	790	57.0	1186	SZ8020 <b>25 x 152</b>
			178	17.8	44.5	792	66.7	1187	SZ8020 <b>25 x 178</b>
			203	15.8	50.8	802	76.1	1202	SZ8020 <b>25 x 203</b>
			305	10.2	76.3	778	114.4	1163	SZ8020 <b>25 x 305</b>
32.0	16.0	6.8 x 4.0	38	185.0	9.5	1758	14.2	2627	SZ8020 <b>32 x 038</b>
			44	158.0	11.0	1738	16.5	2607	SZ8020 <b>32 x 044</b>
			51	134.0	12.8	1709	19.1	2559	SZ8020 <b>32 x 051</b>
			64	99.0	16.0	1584	24.0	2376	SZ8020 <b>32 x 064</b>
			76	80.5	19.0	1530	28.5	2294	SZ8020 <b>32 x 076</b>
			89	69.1	22.3	1537	33.3	2301	SZ8020 <b>32 x 089</b>
			102	58.8	25.5	1499	38.2	2246	SZ8020 <b>32 x 102</b>
			115	51.5	28.8	1481	43.1	2220	SZ8020 <b>32 x 115</b>
			127	44.8	31.8	1422	47.6	2132	SZ8020 <b>32 x 127</b>
			139	42.3	34.8	1470	52.1	2204	SZ8020 <b>32 x 139</b>
			152	37.8	38.0	1436	57.0	2155	SZ8020 <b>32 x 152</b>
			178	32.5	44.5	1446	66.7	2168	SZ8020 <b>32 x 178</b>
			203	28.9	50.8	1467	76.1	2199	SZ8020 <b>32 x 203</b>
			254	22.2	63.5	1410	95.2	2113	SZ8020 <b>32 x 254</b>
			305	18.3	76.3	1395	114.4	2086	SZ8020 <b>32 x 305</b>
			40.0	20.0	8.1 x 4.8	51	181.6	12.8	2315
64	140.0	16.0				2240	24.0	3360	SZ8020 <b>40 x 064</b>
76	108.0	19.0				2052	28.5	3078	SZ8020 <b>40 x 076</b>
89	90.7	22.3				2018	33.3	3020	SZ8020 <b>40 x 089</b>
102	81.0	25.5				2066	38.2	3094	SZ8020 <b>40 x 102</b>
115	71.8	28.8				2064	43.1	3095	SZ8020 <b>40 x 115</b>
127	62.7	31.8				1991	47.6	2985	SZ8020 <b>40 x 127</b>
139	57.5	34.8				1998	52.1	2996	SZ8020 <b>40 x 139</b>
152	51.6	38.0				1961	57.0	2941	SZ8020 <b>40 x 152</b>
160	47.5	40.0				1900	60.0	2850	SZ8020 <b>40 x 160</b>
178	44.1	44.5				1962	66.7	2941	SZ8020 <b>40 x 178</b>
203	36.7	50.8				1863	76.1	2793	SZ8020 <b>40 x 203</b>
254	30.1	63.5				1911	95.2	2866	SZ8020 <b>40 x 254</b>
305	24.6	76.3				1876	114.4	2804	SZ8020 <b>40 x 305</b>
50.0	25.0	10.9 x 6.0	64	209.0	16.0	3344	24.0	5016	SZ8020 <b>50 x 064</b>
			76	168.0	19.0	3192	28.5	4788	SZ8020 <b>50 x 076</b>
			89	140.0	22.3	3115	33.3	4662	SZ8020 <b>50 x 089</b>
			102	119.0	25.5	3035	38.2	4546	SZ8020 <b>50 x 102</b>
			115	106.0	28.8	3048	43.1	4569	SZ8020 <b>50 x 115</b>



# SZ8020 System spring

medium load, identification colour blue

Sleeve Ø D <sub>h</sub> <sup>H15</sup>	Pin Ø D <sub>d</sub> <sup>h15</sup>	Wire	L <sub>0</sub>	Spring rate N/mm c ±10 %	long life time		max. stroke		Item number
					ε <sub>1</sub> <sup>25 %</sup>	F <sub>1</sub> N	ε <sub>2</sub> <sup>37.5 %</sup>	F <sub>2</sub> N	
50.0	25.0	10.9 x 6.0	127	97.0	31.8	3080	47.6	4617	SZ8020 <b>50 x 127</b>
			139	87.0	34.8	3023	52.1	4533	SZ8020 <b>50 x 139</b>
			152	80.0	38.0	3040	57.0	4560	SZ8020 <b>50 x 152</b>
			160	76.0	40.0	3040	60.0	4560	SZ8020 <b>50 x 160</b>
			178	69.5	44.5	3093	66.7	4636	SZ8020 <b>50 x 178</b>
			203	59.8	50.8	3035	76.1	4551	SZ8020 <b>50 x 203</b>
			229	50.9	57.3	2914	85.8	4367	SZ8020 <b>50 x 229</b>
			254	46.0	63.5	2921	95.2	4379	SZ8020 <b>50 x 254</b>
			305	38.6	76.3	2943	114.4	4400	SZ8020 <b>50 x 305</b>
			63.0	38.0	11.5 x 9.3	76	320.0	19.0	6080
89	260.0	22.3				5785	33.3	8658	SZ8020 <b>63 x 089</b>
102	221.0	25.5				5636	38.2	8442	SZ8020 <b>63 x 102</b>
115	187.0	28.8				5376	43.1	8060	SZ8020 <b>63 x 115</b>
127	168.0	31.8				5334	47.6	7997	SZ8020 <b>63 x 127</b>
152	136.0	38.0				5168	57.0	7752	SZ8020 <b>63 x 152</b>
160	128.0	40.0				5120	60.0	7680	SZ8020 <b>63 x 160</b>
178	114.0	44.5				5073	66.7	7604	SZ8020 <b>63 x 178</b>
203	100.0	50.8				5075	76.1	7610	SZ8020 <b>63 x 203</b>
229	89.2	57.3				5107	85.8	7653	SZ8020 <b>63 x 229</b>
254	78.4	63.5				4978	95.2	7464	SZ8020 <b>63 x 254</b>
305	64.7	76.3				4933	114.4	7376	SZ8020 <b>63 x 305</b>
315	62.8	78.8				4946	118.1	7418	SZ8020 <b>63 x 315</b>
400	48.5	100.0				4850	150.0	7275	SZ8020 <b>63 x 400</b>

Nitrogen systems

Tapping units

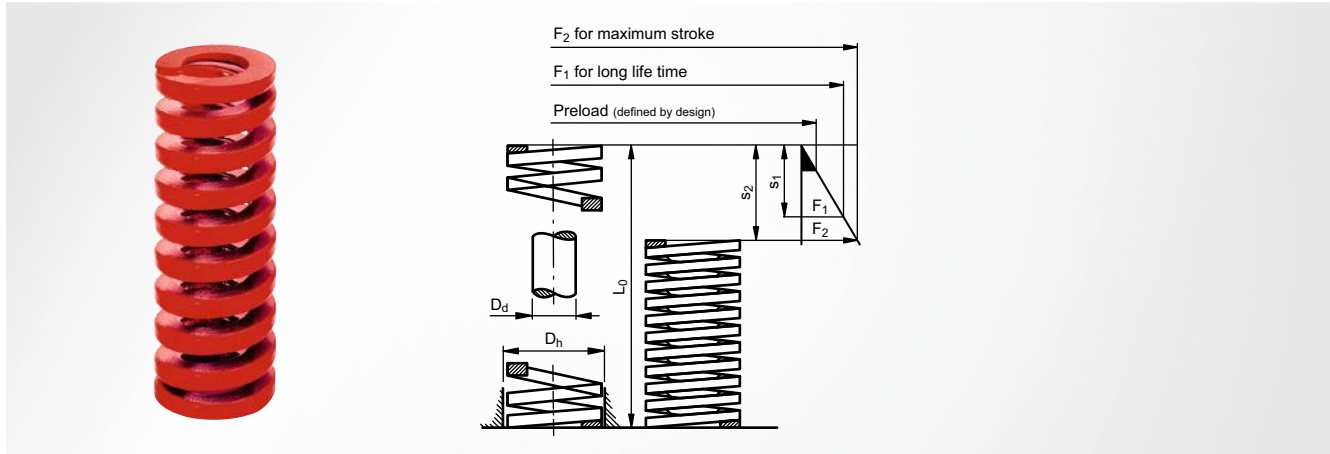
Module system

Machine elements

Accessories

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

heavy load, identification colour red

Sleeve Ø D <sub>h</sub> H15	Pin Ø D <sub>d</sub> h15	Wire	L <sub>0</sub>	Spring rate N/mm c ±10 %	long life time		max. stroke		Item number
					s <sub>1</sub> <sup>20 %</sup>	F <sub>1</sub> N	s <sub>2</sub> <sup>30 %</sup>	F <sub>2</sub> N	
20.0	10.0	4.0 x 3.2	64	72.1	12.8	923	19.2	1384	SZ8030 <b>20 x 064</b>
			76	59.7	15.2	907	22.8	1361	SZ8030 <b>20 x 076</b>
			89	50.5	17.8	899	26.7	1348	SZ8030 <b>20 x 089</b>
			102	44.2	20.4	902	30.6	1353	SZ8030 <b>20 x 102</b>
			115	38.4	23.0	883	34.5	1325	SZ8030 <b>20 x 115</b>
			127	34.1	25.4	866	38.1	1299	SZ8030 <b>20 x 127</b>
			139	31.0	27.8	862	41.7	1293	SZ8030 <b>20 x 139</b>
			152	28.2	30.4	857	45.6	1286	SZ8030 <b>20 x 152</b>
			305	14.0	61.0	854	91.5	1281	SZ8030 <b>20 x 305</b>
			25.0	12.5	5.6 x 4.1	25	375.0	5.0	1875
32	297.0	6.4				1901	9.6	2851	SZ8030 <b>25 x 032</b>
38	219.0	7.6				1664	11.4	2497	SZ8030 <b>25 x 038</b>
44	187.0	8.8				1646	13.2	2468	SZ8030 <b>25 x 044</b>
51	156.0	10.2				1591	15.3	2387	SZ8030 <b>25 x 051</b>
64	123.0	12.8				1574	19.2	2362	SZ8030 <b>25 x 064</b>
76	99.0	15.2				1505	22.8	2257	SZ8030 <b>25 x 076</b>
89	84.0	17.8				1495	26.7	2243	SZ8030 <b>25 x 089</b>
102	73.0	20.4				1489	30.6	2234	SZ8030 <b>25 x 102</b>
115	65.0	23.0				1495	34.5	2243	SZ8030 <b>25 x 115</b>
127	57.7	25.4				1466	38.1	2198	SZ8030 <b>25 x 127</b>
139	52.7	27.8				1465	41.7	2198	SZ8030 <b>25 x 139</b>
152	47.8	30.4				1453	45.6	2180	SZ8030 <b>25 x 152</b>
178	41.0	35.6				1460	53.4	2189	SZ8030 <b>25 x 178</b>
203	35.8	40.6				1453	60.9	2180	SZ8030 <b>25 x 203</b>
305	22.9	61.0				1397	91.5	2095	SZ8030 <b>25 x 305</b>
32.0	16.0	6.9 x 5.3	38	388.0	7.6	2949	11.4	4423	SZ8030 <b>32 x 038</b>
			44	324.0	8.8	2851	13.2	4277	SZ8030 <b>32 x 044</b>
			51	272.0	10.2	2774	15.3	4162	SZ8030 <b>32 x 051</b>
			64	212.0	12.8	2714	19.2	4070	SZ8030 <b>32 x 064</b>
			76	172.0	15.2	2614	22.8	3922	SZ8030 <b>32 x 076</b>
			89	141.0	17.8	2510	26.7	3765	SZ8030 <b>32 x 089</b>
			102	122.0	20.4	2489	30.6	3733	SZ8030 <b>32 x 102</b>
			115	107.0	23.0	2461	34.5	3692	SZ8030 <b>32 x 115</b>
			127	93.0	25.4	2362	38.1	3543	SZ8030 <b>32 x 127</b>
			139	86.0	27.8	2391	41.7	3586	SZ8030 <b>32 x 139</b>
			152	78.0	30.4	2371	45.6	3557	SZ8030 <b>32 x 152</b>
			178	67.2	35.6	2392	53.4	3558	SZ8030 <b>32 x 178</b>
			203	59.1	40.6	2399	60.9	3599	SZ8030 <b>32 x 203</b>
			254	46.4	50.8	2357	76.2	3536	SZ8030 <b>32 x 254</b>
305	38.0	61.0	2318	91.5	3477	SZ8030 <b>32 x 305</b>			
40.0	20.0	8.4 x 6.2	51	350.0	10.2	3570	15.3	5355	SZ8030 <b>40 x 051</b>
			64	269.0	12.8	3443	19.2	5165	SZ8030 <b>40 x 064</b>
			76	219.0	15.2	3329	22.8	4993	SZ8030 <b>40 x 076</b>
			89	190.0	17.8	3382	26.7	5073	SZ8030 <b>40 x 089</b>
			102	163.0	20.4	3325	30.6	4988	SZ8030 <b>40 x 102</b>
			115	142.0	23.0	3266	34.5	4899	SZ8030 <b>40 x 115</b>
			127	128.0	25.4	3251	38.1	4877	SZ8030 <b>40 x 127</b>
			139	115.0	27.8	3197	41.7	4796	SZ8030 <b>40 x 139</b>
			152	105.0	30.4	3192	45.6	4788	SZ8030 <b>40 x 152</b>
			178	89.0	35.6	3168	53.4	4753	SZ8030 <b>40 x 178</b>
			203	77.0	40.6	3126	60.9	4689	SZ8030 <b>40 x 203</b>
			254	61.0	50.8	3099	76.2	4648	SZ8030 <b>40 x 254</b>
			305	51.0	61.0	3111	91.5	4667	SZ8030 <b>40 x 305</b>
50.0	25.0	11.3 x 7.4	64	413.0	12.8	5286	19.2	7930	SZ8030 <b>50 x 064</b>
			76	339.0	15.2	5153	22.8	7729	SZ8030 <b>50 x 076</b>
			89	288.0	17.8	5126	26.7	7690	SZ8030 <b>50 x 089</b>
			102	245.0	20.4	4998	30.6	7497	SZ8030 <b>50 x 102</b>
			115	215.0	23.0	4945	34.5	7418	SZ8030 <b>50 x 115</b>
			127	192.0	25.4	4877	38.1	7315	SZ8030 <b>50 x 127</b>

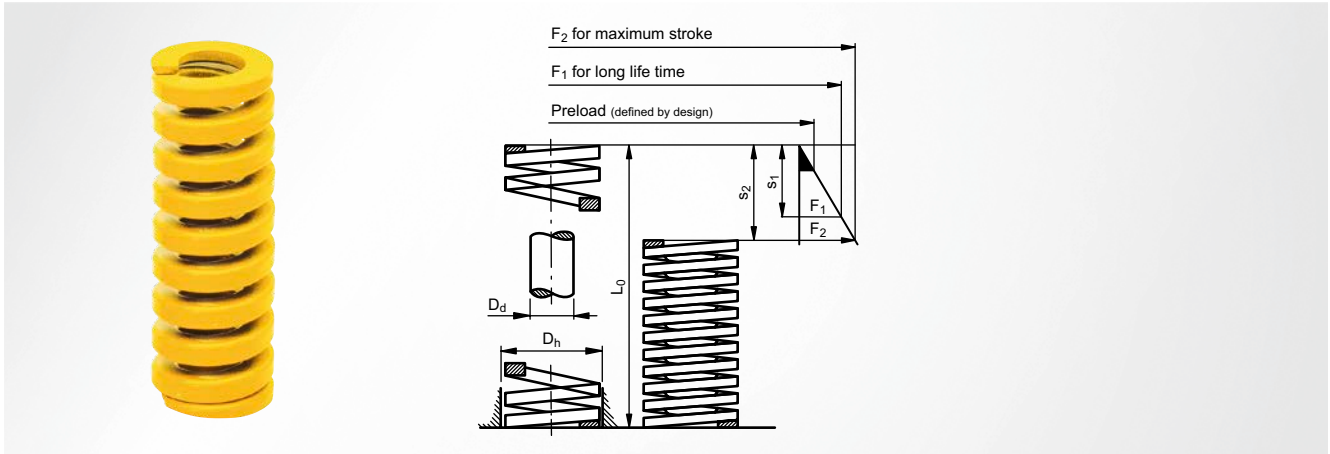
# SZ8030 System spring

heavy load, identification colour red

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

# 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 $c_{\pm 10\%}$	long life time		max. stroke		Item number
					$s_{1^{17\%}}$	$F_1$ N	$s_{2^{25\%}}$	$F_2$ N	
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 <sub>h</sub> <sup>H15</sup>	Pin Ø D <sub>d</sub> <sup>h15</sup>	Wire	L <sub>0</sub>	Spring rate N/mm c ±10 %	long life time		max. stroke		Item number			
					s <sub>1</sub> <sup>17 %</sup>	F <sub>1</sub> N	s <sub>2</sub> <sup>25 %</sup>	F <sub>2</sub> N				
20.0	10.0	4.1 x 3.7	64	99.0	10.9	1077	16.0	1584	SZ8040 <b>20 x 064</b>			
			76	81.7	12.9	1056	19.0	1552	SZ8040 <b>20 x 076</b>			
			89	69.5	15.1	1052	22.2	1543	SZ8040 <b>20 x 089</b>			
			102	60.6	17.3	1051	25.5	1545	SZ8040 <b>20 x 102</b>			
			115	53.0	19.6	1036	28.7	1521	SZ8040 <b>20 x 115</b>			
			127	47.5	21.6	1026	31.7	1506	SZ8040 <b>20 x 127</b>			
			139	43.0	23.6	1016	34.7	1492	SZ8040 <b>20 x 139</b>			
			152	39.0	25.8	1008	38.0	1482	SZ8040 <b>20 x 152</b>			
			305	20.0	51.9	1037	76.3	1526	SZ8040 <b>20 x 305</b>			
			25.0	12.5	5.6 x 4.6	25	488.0	4.3	2098	6.3	3074	SZ8040 <b>25 x 025</b>
32	374.4	5.4				2037	8.0	2992	SZ8040 <b>25 x 032</b>			
38	300.0	6.5				1938	9.5	2850	SZ8040 <b>25 x 038</b>			
44	244.0	7.5				1825	11.0	2684	SZ8040 <b>25 x 044</b>			
51	207.5	8.7				1799	12.7	2642	SZ8040 <b>25 x 051</b>			
64	161.0	10.9				1752	16.0	2576	SZ8040 <b>25 x 064</b>			
76	130.8	12.9				1690	19.0	2489	SZ8040 <b>25 x 076</b>			
89	110.5	15.1				1672	22.2	2464	SZ8040 <b>25 x 089</b>			
102	96.3	17.3				1670	25.5	2456	SZ8040 <b>25 x 102</b>			
115	85.7	19.6				1675	28.7	2460	SZ8040 <b>25 x 115</b>			
127	76.3	21.6				1647	31.7	2419	SZ8040 <b>25 x 127</b>			
139	66.0	23.6				1560	34.7	2290	SZ8040 <b>25 x 139</b>			
152	63.5	25.8				1641	38.0	2413	SZ8040 <b>25 x 152</b>			
178	53.9	30.3				1631	44.5	2399	SZ8040 <b>25 x 178</b>			
203	47.0	34.5				1622	50.7	2383	SZ8040 <b>25 x 203</b>			
305	30.9	51.9				1602	76.3	2358	SZ8040 <b>25 x 305</b>			
32.0	16.0	7.2 x 5.6	38	480.0	6.5	3101	9.5	4560	SZ8040 <b>32 x 038</b>			
			44	390.0	7.5	2917	11.0	4290	SZ8040 <b>32 x 044</b>			
			51	336.0	8.7	2913	12.7	4267	SZ8040 <b>32 x 051</b>			
			64	269.2	10.9	2929	16.0	4304	SZ8040 <b>32 x 064</b>			
			76	218.5	12.9	2823	19.0	4161	SZ8040 <b>32 x 076</b>			
			89	180.3	15.1	2728	22.2	3996	SZ8040 <b>32 x 089</b>			
			102	155.0	17.3	2688	25.5	3953	SZ8040 <b>32 x 102</b>			
			115	140.0	19.6	2737	28.7	4018	SZ8040 <b>32 x 115</b>			
			127	124.0	21.6	2677	31.7	3931	SZ8040 <b>32 x 127</b>			
			139	112.0	23.6	2647	34.7	3886	SZ8040 <b>32 x 139</b>			
			152	102.0	25.8	2636	38.0	3876	SZ8040 <b>32 x 152</b>			
			178	88.2	30.3	2669	44.5	3925	SZ8040 <b>32 x 178</b>			
			203	76.0	34.5	2623	50.7	3853	SZ8040 <b>32 x 203</b>			
			254	60.8	43.2	2625	63.5	3891	SZ8040 <b>32 x 254</b>			
			305	49.0	51.9	2541	76.3	3739	SZ8040 <b>32 x 305</b>			
			40.0	20.0	8.7 x 7.3	51	628.0	8.7	5445	12.7	7976	SZ8040 <b>40 x 051</b>
64	487.0	10.9				5299	16.0	7792	SZ8040 <b>40 x 064</b>			
76	379.0	12.9				4897	19.0	7201	SZ8040 <b>40 x 076</b>			
89	321.0	15.1				4857	22.2	7126	SZ8040 <b>40 x 089</b>			
102	281.0	17.3				4873	25.5	7166	SZ8040 <b>40 x 102</b>			
115	245.0	19.6				4790	28.7	7032	SZ8040 <b>40 x 115</b>			
127	221.0	21.6				4771	31.7	7006	SZ8040 <b>40 x 127</b>			
139	185.0	23.6				4372	34.7	6420	SZ8040 <b>40 x 139</b>			
152	168.0	25.8				4341	38.0	6384	SZ8040 <b>40 x 152</b>			
178	150.0	30.3				4539	44.5	6675	SZ8040 <b>40 x 178</b>			
203	132.0	34.5				4555	50.7	6692	SZ8040 <b>40 x 203</b>			
254	107.0	43.2				4620	63.5	6848	SZ8040 <b>40 x 254</b>			
305	87.8	51.9				4552	76.6	6725	SZ8040 <b>40 x 305</b>			
50.0	25.0	11.4 x 9.1				64	709.0	10.9	7714	16.0	11344	SZ8040 <b>50 x 064</b>
						76	572.0	12.9	7390	19.0	10868	SZ8040 <b>50 x 076</b>
						89	475.0	15.1	7187	22.3	10569	SZ8040 <b>50 x 089</b>
			102	405.0	17.3	7023	25.5	10328	SZ8040 <b>50 x 102</b>			
			115	352.0	19.6	6882	28.7	10102	SZ8040 <b>50 x 115</b>			
			127	316.0	21.6	6822	31.7	10017	SZ8040 <b>50 x 127</b>			

# SZ8040 System spring

very heavy load, identification colour yellow

Sleeve Ø D <sub>h</sub> <sup>H15</sup>	Pin Ø D <sub>d</sub> <sup>h15</sup>	Wire	L <sub>0</sub>	Spring rate N/mm c ±10 %	long life time		max. stroke		Item number
					s <sub>1</sub> <sup>17 %</sup>	F <sub>1</sub> N	s <sub>2</sub> <sup>25 %</sup>	F <sub>2</sub> N	
50.0	25.0	11.4 x 9.1	139	289.0	23.6	6829	34.7	10028	SZ8040 <b>50 x 139</b>
			152	255.0	25.8	6589	38.0	9690	SZ8040 <b>50 x 152</b>
			178	215.0	30.3	6506	44.5	9568	SZ8040 <b>50 x 178</b>
			203	187.0	34.5	6453	50.7	9481	SZ8040 <b>50 x 203</b>
			254	153.0	43.2	6607	63.5	9792	SZ8040 <b>50 x 254</b>
			305	127.0	51.9	6585	76.3	9690	SZ8040 <b>50 x 305</b>
63.0	38.0	11.8 x 13.4	76	842.0	12.9	10879	19.0	15998	SZ8040 <b>63 x 076</b>
			89	726.0	15.1	10984	22.3	16154	SZ8040 <b>63 x 089</b>
			102	656.0	17.3	11375	25.5	16728	SZ8040 <b>63 x 102</b>
			115	534.0	19.6	10440	28.8	15353	SZ8040 <b>63 x 115</b>
			127	480.0	21.6	10363	31.8	15240	SZ8040 <b>63 x 127</b>
			152	396.0	25.8	10233	38.0	15048	SZ8040 <b>63 x 152</b>
			178	335.0	30.3	10137	44.5	14908	SZ8040 <b>63 x 178</b>
			203	297.0	34.5	10249	50.8	15073	SZ8040 <b>63 x 203</b>
			254	235.0	43.2	10147	63.5	14923	SZ8040 <b>63 x 254</b>
			305	194.0	51.9	10059	76.3	14793	SZ8040 <b>63 x 305</b>

Nitrogen systems

Tapping units

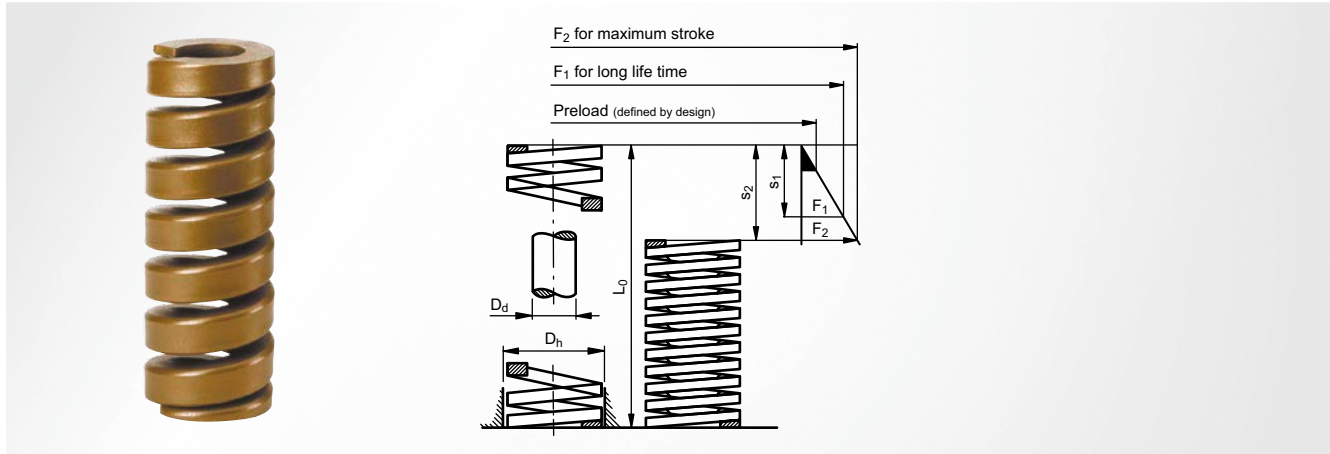
Module system

Machine elements

Accessories

# 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 $c \pm 10\%$	long life time		max. stroke		Item number
					$s_1^{10\%}$	$F_1$ N	$s_2^{15\%}$	$F_2$ N	
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
16.0	8.0	3.5 x 4.6	102	61	10.2	622	15.3	933	SZ8045 13 x 102
			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
20.0	10.0	4.1 x 5.9	152	69	15.2	1049	22.8	1573	SZ8045 16 x 152
			305	37	30.5	1129	45.8	1693	SZ8045 16 x 305
			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

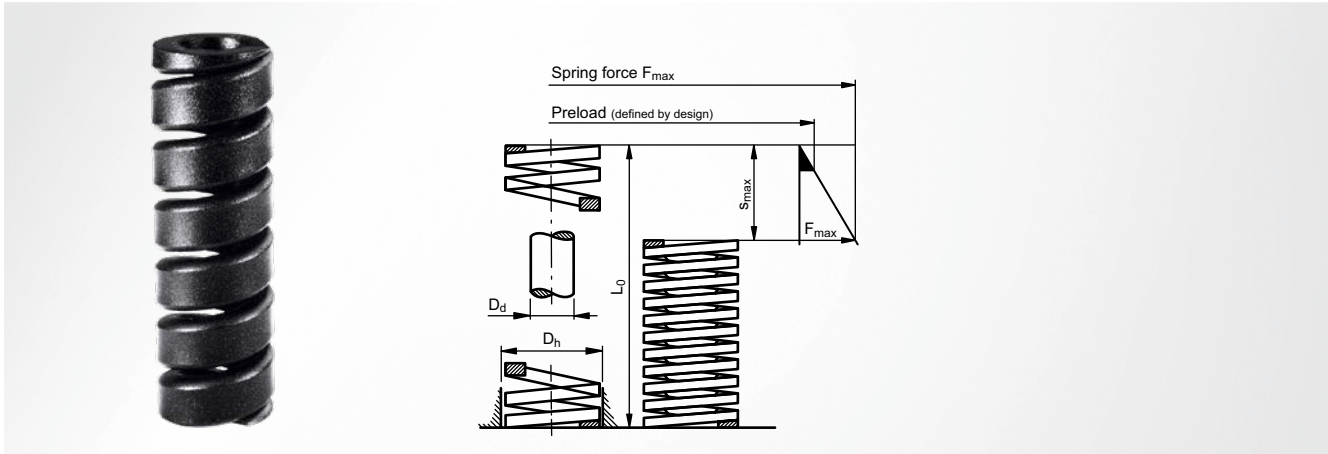


extra heavy load, identification colour bronze

Sleeve Ø D <sub>h</sub> <sup>H15</sup>	Pin Ø D <sub>d</sub> <sup>H15</sup>	Wire	L <sub>0</sub>	Spring rate N/mm c ±10 %	long life time		max. stroke		Item number			
					s <sub>1</sub> <sup>10 %</sup>	F <sub>1</sub> N	s <sub>2</sub> <sup>15 %</sup>	F <sub>2</sub> N				
20.0	10.0	4.1 x 5.9	152	121	15.2	1839	22.8	2759	SZ8045 <b>20 x 152</b>			
			305	60	30.5	1830	45.8	2745	SZ8045 <b>20 x 305</b>			
25.0	12.5	5.7 x 7.4	44	1158	4.4	5095	6.6	7643	SZ8045 <b>25 x 044</b>			
			51	933	5.1	4758	7.7	7137	SZ8045 <b>25 x 051</b>			
			64	730	6.4	4672	9.6	7008	SZ8045 <b>25 x 064</b>			
			76	556	7.6	4226	11.4	6338	SZ8045 <b>25 x 076</b>			
			89	462	8.9	4112	13.4	6168	SZ8045 <b>25 x 089</b>			
			102	390	10.2	3978	15.3	5967	SZ8045 <b>25 x 102</b>			
			115	360	11.5	4140	17.3	6210	SZ8045 <b>25 x 115</b>			
			127	326	12.7	4140	19.1	6210	SZ8045 <b>25 x 127</b>			
			152	255	15.2	3876	22.8	5814	SZ8045 <b>25 x 152</b>			
			178	230	17.8	4094	26.7	6141	SZ8045 <b>25 x 178</b>			
			203	202	20.3	4101	30.5	6151	SZ8045 <b>25 x 203</b>			
			305	136	30.5	4148	45.8	6222	SZ8045 <b>25 x 305</b>			
			32.0	16.0	7.4 x 8.8	44	1300	4.4	5720	6.6	8580	SZ8045 <b>32 x 044</b>
						51	1150	5.1	5865	7.7	8798	SZ8045 <b>32 x 051</b>
64	887	6.4				5677	9.6	8515	SZ8045 <b>32 x 064</b>			
76	733	7.6				5571	11.4	8356	SZ8045 <b>32 x 076</b>			
89	612	8.9				5447	13.4	8170	SZ8045 <b>32 x 089</b>			
102	544	10.2				5549	15.3	8323	SZ8045 <b>32 x 102</b>			
115	494	11.5				5681	17.3	8522	SZ8045 <b>32 x 115</b>			
127	432	12.7				5486	19.1	8230	SZ8045 <b>32 x 127</b>			
152	356	15.2				5411	22.8	8117	SZ8045 <b>32 x 152</b>			
178	304	17.8				5411	26.7	8117	SZ8045 <b>32 x 178</b>			
203	265	20.3				5380	30.5	8069	SZ8045 <b>32 x 203</b>			
254	214	25.4				5436	38.1	8153	SZ8045 <b>32 x 254</b>			
305	177	30.5				5399	45.8	8098	SZ8045 <b>32 x 305</b>			
40.0	20.0	8.4 x 10.9				64	1228	6.4	7859	9.6	11789	SZ8045 <b>40 x 064</b>
			76	1017	7.6	7729	11.4	11594	SZ8045 <b>40 x 076</b>			
			89	880	8.9	7832	13.4	11748	SZ8045 <b>40 x 089</b>			
			102	762	10.2	7772	15.3	11659	SZ8045 <b>40 x 102</b>			
			115	679	11.5	7809	17.3	11713	SZ8045 <b>40 x 115</b>			
			127	622	12.7	7899	19.1	11849	SZ8045 <b>40 x 127</b>			
			152	509	15.2	7737	22.8	11605	SZ8045 <b>40 x 152</b>			
			178	429	17.8	7636	26.7	11454	SZ8045 <b>40 x 178</b>			
			203	374	20.3	7592	30.5	11388	SZ8045 <b>40 x 203</b>			
			254	296	25.4	7518	38.1	11278	SZ8045 <b>40 x 254</b>			
			305	246	30.5	7503	45.8	11255	SZ8045 <b>40 x 305</b>			
			50.0	25.0	11.8 x 13.4	64	1980	6.4	12672	9.6	19008	SZ8045 <b>50 x 064</b>
						76	1811	7.6	13764	11.4	20645	SZ8045 <b>50 x 076</b>
						89	1410	8.9	12549	13.4	18824	SZ8045 <b>50 x 089</b>
102	1215	10.2				12393	15.3	18590	SZ8045 <b>50 x 102</b>			
115	1076	11.5				12374	17.3	18561	SZ8045 <b>50 x 115</b>			
127	968	12.7				12294	19.1	18440	SZ8045 <b>50 x 127</b>			
152	806	15.2				12251	22.8	18377	SZ8045 <b>50 x 152</b>			
178	698	17.8				12424	26.7	18637	SZ8045 <b>50 x 178</b>			
203	612	20.3				12424	30.5	18635	SZ8045 <b>50 x 203</b>			
254	472	25.4				11989	38.1	17983	SZ8045 <b>50 x 254</b>			
305	388	30.5				11834	45.8	17751	SZ8045 <b>50 x 305</b>			
63.0	38.0	11.8 x 17.8				89	1560	10.0	15600	17.4	27144	SZ8045 <b>63 x 089</b>
						102	1298	12.0	15576	20.9	27128	SZ8045 <b>63 x 102</b>
						115	1078	14.1	15200	25.2	27166	SZ8045 <b>63 x 115</b>
			127	970	15.7	15229	28.0	27160	SZ8045 <b>63 x 127</b>			
			152	801	18.9	15139	33.9	27154	SZ8045 <b>63 x 152</b>			
			178	655	23.4	15327	41.4	27117	SZ8045 <b>63 x 178</b>			
			203	552	27.0	14904	49.0	27048	SZ8045 <b>63 x 203</b>			
			254	423	35.0	14805	64.0	27072	SZ8045 <b>63 x 254</b>			
			305	349	42.5	14833	77.5	27048	SZ8045 <b>63 x 305</b>			

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

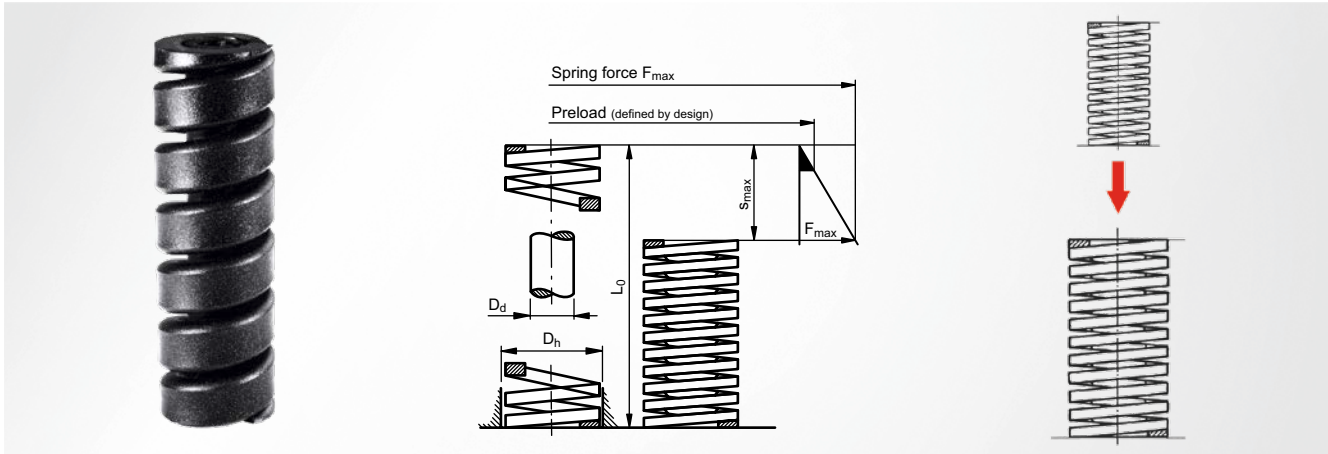
# SZ8047 System spring

extra heavy load, identification colour black

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

# 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**

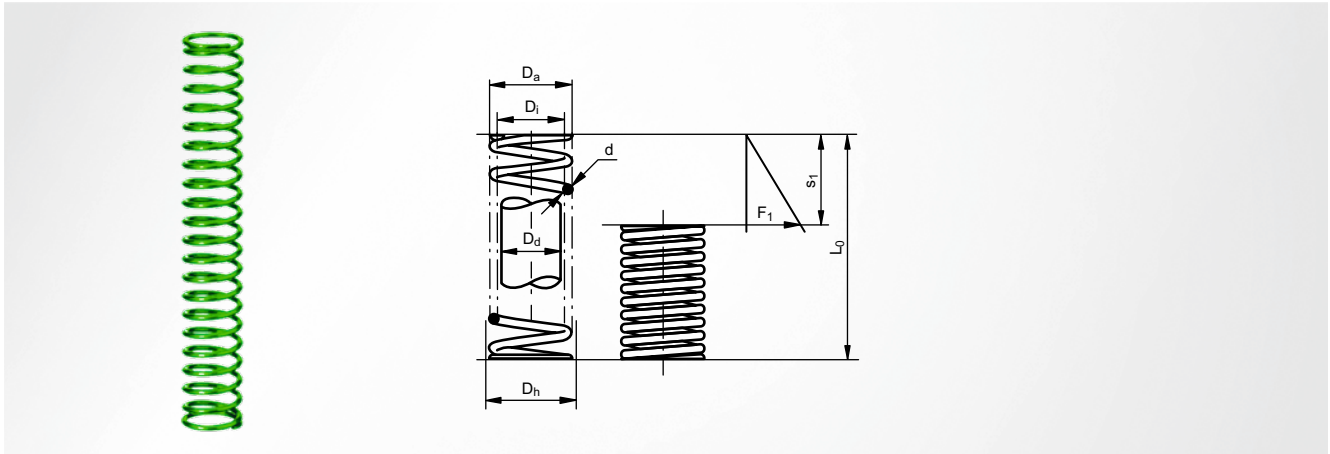
Helical compression spring

**Note**

Spring is set, closed and rectangular ground

Sleeve Ø D <sub>h</sub> <sup>H15</sup>	Pin Ø D <sub>d</sub> <sup>h15</sup>	L <sub>0</sub> ± 0.5 % min ± 0.2 mm	Spring rate N/mm c ± 10 %	long life time		Item number
				s <sub>max</sub>	F <sub>max</sub> N	
32	8.0	35	6280	3.0	18500	SZ8049 <b>32 x 035</b>
		50	3580	5.2	18500	SZ8049 <b>32 x 050</b>
		75	2080	9.0	18500	SZ8049 <b>32 x 075</b>
		100	1480	12.5	18500	SZ8049 <b>32 x 100</b>
38	10.0	40	6880	3.6	25000	SZ8049 <b>40 x 040</b>
		50	4830	5.2	25000	SZ8049 <b>40 x 050</b>
		75	2720	9.2	25000	SZ8049 <b>40 x 075</b>
		100	1900	13.2	25000	SZ8049 <b>40 x 100</b>
50	12.5	60	6105	7.4	45000	SZ8049 <b>50 x 060</b>
		75	5182	8.7	45000	SZ8049 <b>50 x 075</b>
		100	3550	12.7	45000	SZ8049 <b>50 x 100</b>
		125	2710	16.6	45000	SZ8049 <b>50 x 125</b>

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

Nitrogen systems

Tapping units

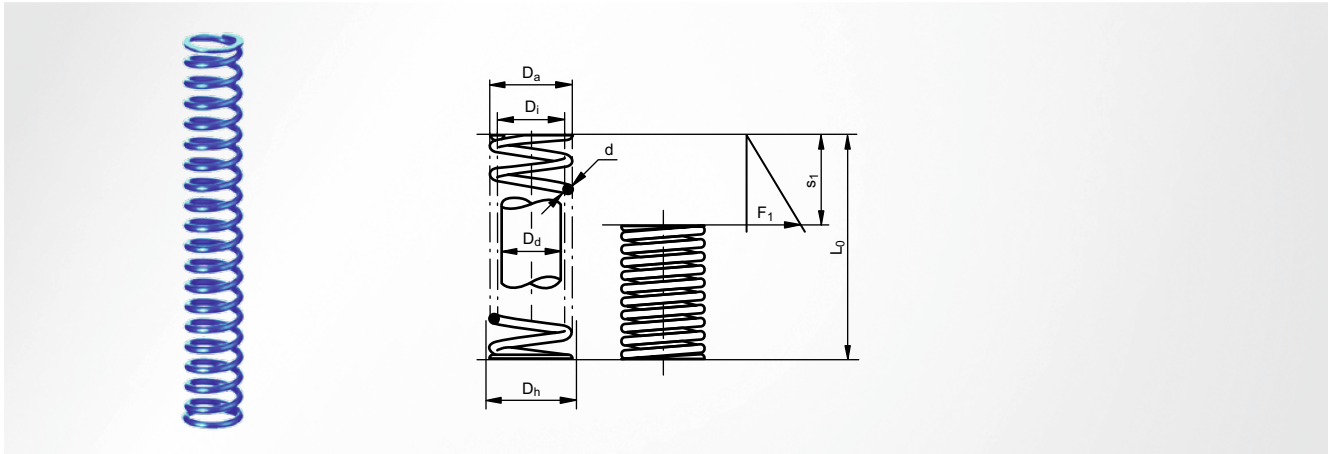
Module system

Machine elements

Accessories

# 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

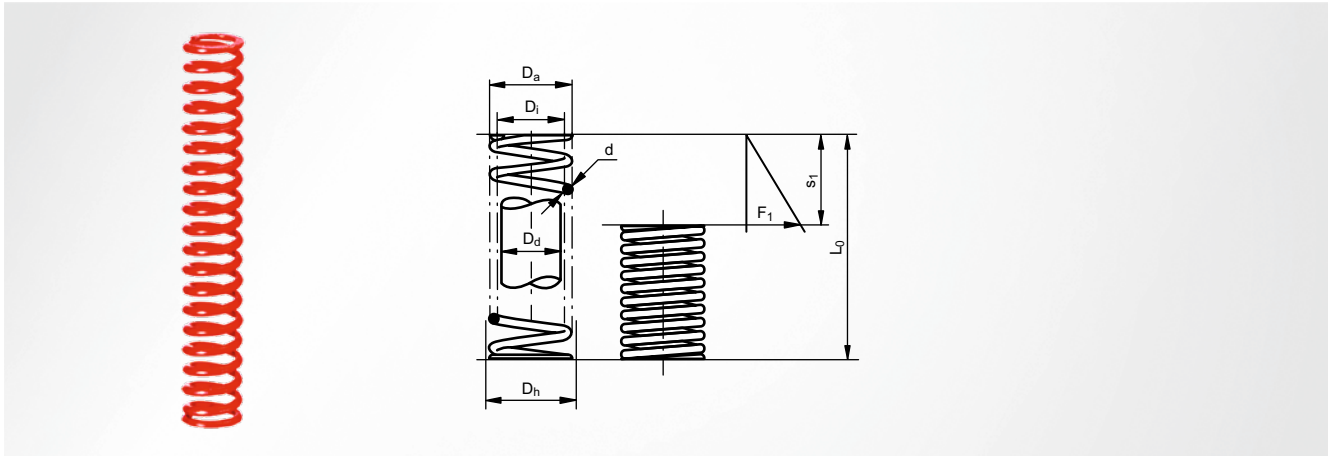
### Note

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

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

Nitrogen systems

Tapping units

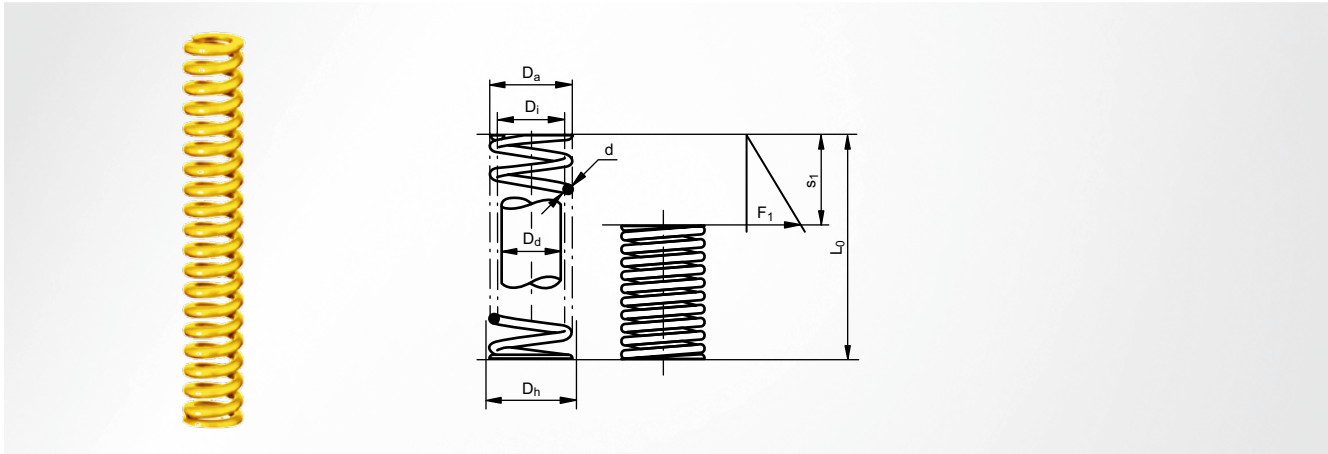
Module system

Machine elements

Accessories

# 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

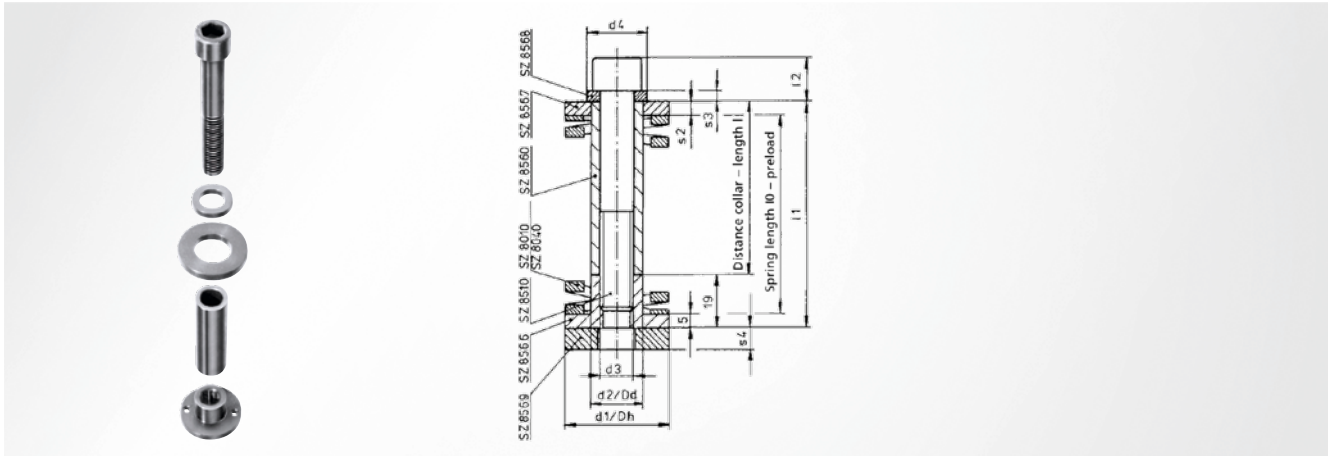
Table specifications refer to the maximum permissible stroke at 1 mm preload for a long life time; if the preload is greater than 1 mm, the maximum working stroke is decreased; DIN EN 13906 must be observed for the design

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



# 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. <b>20 x 039</b>
							30	49	SZ8565.00. <b>20 x 049</b>
							50	69	SZ8565.00. <b>20 x 069</b>
							63	82	SZ8565.00. <b>20 x 082</b>
25	12.5	M8	16	4	11	3	20	39	SZ8565.00. <b>25 x 039</b>
							30	49	SZ8565.00. <b>25 x 049</b>
							50	69	SZ8565.00. <b>25 x 069</b>
							63	82	SZ8565.00. <b>25 x 082</b>
32	16.0	M10	19	4	13	3	100	119	SZ8565.00. <b>25 x 119</b>
							30	49	SZ8565.00. <b>32 x 049</b>
							50	69	SZ8565.00. <b>32 x 069</b>
							63	82	SZ8565.00. <b>32 x 082</b>
40	20.0	M12	23	5	16	4	100	119	SZ8565.00. <b>32 x 119</b>
							50	69	SZ8565.00. <b>40 x 069</b>
							63	82	SZ8565.00. <b>40 x 082</b>
50	25.0	M16	28	5	20	4	100	119	SZ8565.00. <b>40 x 119</b>
							50	69	SZ8565.00. <b>50 x 069</b>
							63	82	SZ8565.00. <b>50 x 082</b>
							100	119	SZ8565.00. <b>50 x 119</b>

Nitrogen systems

Tapping units

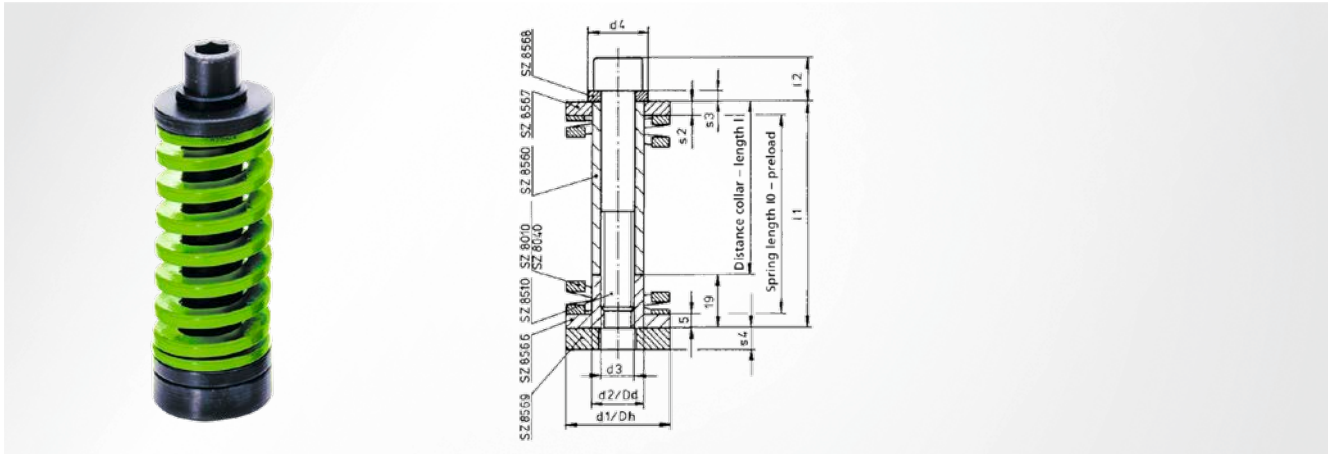
Module system

Machine elements

Accessories

# SZ8565.10 System spring unit

light load, identification colour green, preloaded



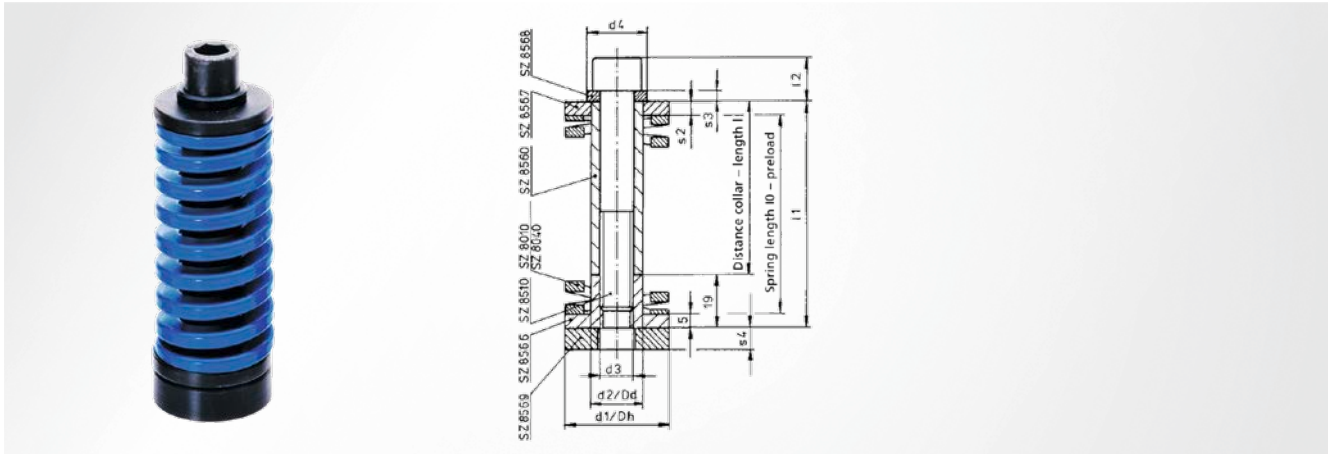
## Scope of supply

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. <b>20 x 039</b>
20 x 044	4	9	120	13.6	528	SZ8565.10. <b>20 x 049</b>
20 x 064	4	6	80	21.6	512	SZ8565.10. <b>20 x 069</b>
20 x 076	3	4	48	27.4	486	SZ8565.10. <b>20 x 082</b>
25 x 032	2	6	160	10.8	1027	SZ8565.10. <b>25 x 039</b>
25 x 044	4	9	211	13.6	931	SZ8565.10. <b>25 x 049</b>
25 x 064	4	6	140	21.6	901	SZ8565.10. <b>25 x 069</b>
25 x 076	3	4	84	27.4	851	SZ8565.10. <b>25 x 082</b>
25 x 115	5	4	93	41.0	860	SZ8565.10. <b>25 x 119</b>
32 x 044	4	9	318	13.6	1399	SZ8565.10. <b>32 x 049</b>
32 x 064	4	6	212	21.6	1356	SZ8565.10. <b>32 x 069</b>
32 x 076	3	4	132	27.4	1337	SZ8565.10. <b>32 x 082</b>
32 x 115	5	4	145	41.0	1334	SZ8565.10. <b>32 x 119</b>
40 x 064	5	8	365	20.6	1868	SZ8565.10. <b>40 x 069</b>
40 x 076	4	5	252	26.4	1915	SZ8565.10. <b>40 x 082</b>
40 x 115	6	5	237	40.0	1821	SZ8565.10. <b>40 x 119</b>
50 x 064	5	8	780	20.6	3993	SZ8565.10. <b>50 x 069</b>
50 x 076	4	5	500	26.4	3800	SZ8565.10. <b>50 x 082</b>
50 x 115	6	5	486	40.0	3726	SZ8565.10. <b>50 x 119</b>

# 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. <b>20 x 039</b>
20 x 044	4	9	190	11.4	731	SZ8565.20. <b>20 x 049</b>
20 x 064	4	6	129	18.4	723	SZ8565.20. <b>20 x 069</b>
20 x 076	3	4	75	23.6	667	SZ8565.20. <b>20 x 082</b>
25 x 032	2	6	236	9.2	1321	SZ8565.20. <b>25 x 039</b>
25 x 044	4	9	323	11.4	1244	SZ8565.20. <b>25 x 049</b>
25 x 064	4	6	212	18.4	1187	SZ8565.20. <b>25 x 069</b>
25 x 076	3	4	129	23.6	1149	SZ8565.20. <b>25 x 082</b>
25 x 115	5	4	40	35.3	1128	SZ8565.20. <b>25 x 119</b>
32 x 044	4	9	632	11.4	2433	SZ8565.20. <b>32 x 049</b>
32 x 064	4	6	396	18.4	2217	SZ8565.20. <b>32 x 069</b>
32 x 076	3	4	241	23.6	2141	SZ8565.20. <b>32 x 082</b>
32 x 115	5	4	257	35.3	2058	SZ8565.20. <b>32 x 119</b>
40 x 064	5	8	700	17.4	3136	SZ8565.20. <b>40 x 069</b>
40 x 076	4	5	432	22.6	2872	SZ8565.20. <b>40 x 082</b>
40 x 115	6	5	430	34.3	2893	SZ8565.20. <b>40 x 119</b>
50 x 064	5	8	1045	17.4	4681	SZ8565.20. <b>50 x 069</b>
50 x 076	4	5	672	22.6	4468	SZ8565.20. <b>50 x 082</b>
50 x 115	6	5	636	34.3	4271	SZ8565.20. <b>50 x 119</b>

Nitrogen  
systems

Tapping  
units

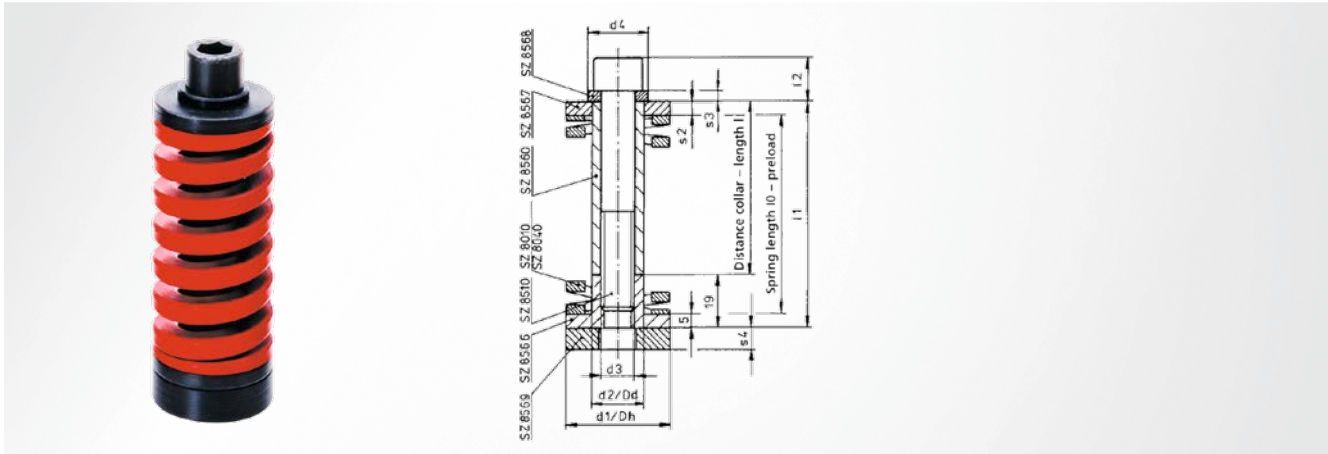
Module  
system

Machine  
elements

Accessories

# SZ8565.30 System spring unit

heavy load, identification colour red, preloaded



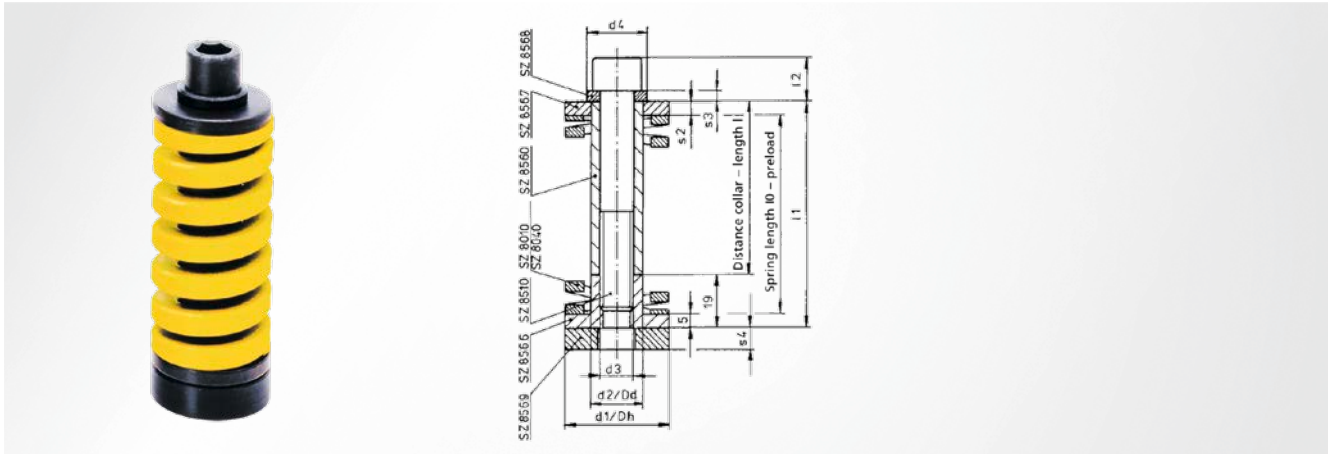
## Scope of supply

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. <b>20 x 039</b>
20 x 044	4	9	448	9.2	1478	SZ8565.30. <b>20 x 049</b>
20 x 064	4	6	288	15.2	1384	SZ8565.30. <b>20 x 069</b>
20 x 076	3	4	179	19.8	1361	SZ8565.30. <b>20 x 082</b>
25 x 032	2	6	594	7.6	2851	SZ8565.30. <b>25 x 039</b>
25 x 044	4	9	748	9.2	2468	SZ8565.30. <b>25 x 049</b>
25 x 064	4	6	492	15.2	2361	SZ8565.30. <b>25 x 069</b>
25 x 076	3	4	297	19.8	2257	SZ8565.30. <b>25 x 082</b>
25 x 115	5	4	325	29.5	2242	SZ8565.30. <b>25 x 119</b>
32 x 044	4	9	1296	9.2	4276	SZ8565.30. <b>32 x 049</b>
32 x 064	4	6	848	15.2	4070	SZ8565.30. <b>32 x 069</b>
32 x 076	3	4	516	19.8	3921	SZ8565.30. <b>32 x 082</b>
32 x 115	5	4	535	29.5	3691	SZ8565.30. <b>32 x 119</b>
40 x 064	5	8	1345	14.2	5164	SZ8565.30. <b>40 x 069</b>
40 x 076	4	5	876	18.8	4993	SZ8565.30. <b>40 x 082</b>
40 x 115	6	5	852	28.5	4899	SZ8565.30. <b>40 x 119</b>
50 x 064	5	8	2065	14.2	7929	SZ8565.30. <b>50 x 069</b>
50 x 076	4	5	1356	18.8	7729	SZ8565.30. <b>50 x 082</b>
50 x 115	6	5	1290	28.5	7417	SZ8565.30. <b>50 x 119</b>

# 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. <b>20 x 039</b>
20 x 044	4	9	596	7.0	1639	SZ8565.40. <b>20 x 049</b>
20 x 064	4	6	396	12.0	1584	SZ8565.40. <b>20 x 069</b>
20 x 076	3	4	245	16.0	1552	SZ8565.40. <b>20 x 082</b>
25 x 032	2	6	748	6.0	2995	SZ8565.40. <b>25 x 039</b>
25 x 044	4	9	976	7.0	2684	SZ8565.40. <b>25 x 049</b>
25 x 064	4	6	644	12.0	2576	SZ8565.40. <b>25 x 069</b>
25 x 076	3	4	392	16.0	2485	SZ8565.40. <b>25 x 082</b>
25 x 115	5	4	428	23.8	2468	SZ8565.40. <b>25 x 119</b>
32 x 044	4	9	1976	7.0	4668	SZ8565.40. <b>32 x 049</b>
32 x 064	4	6	1076	12.0	4307	SZ8565.40. <b>32 x 069</b>
32 x 076	3	4	655	16.0	4151	SZ8565.40. <b>32 x 082</b>
32 x 115	5	4	700	23.8	4032	SZ8565.40. <b>32 x 119</b>
40 x 064	5	8	2435	11.0	7792	SZ8565.40. <b>40 x 069</b>
40 x 076	4	5	1516	15.0	7201	SZ8565.40. <b>40 x 082</b>
40 x 115	6	5	1470	22.8	7056	SZ8565.40. <b>40 x 119</b>
50 x 064	5	8	3545	11.0	11344	SZ8565.40. <b>50 x 069</b>
50 x 076	4	5	2288	15.0	10868	SZ8565.40. <b>50 x 082</b>
50 x 115	6	5	2112	22.8	10137	SZ8565.40. <b>50 x 119</b>

Nitrogen  
systems

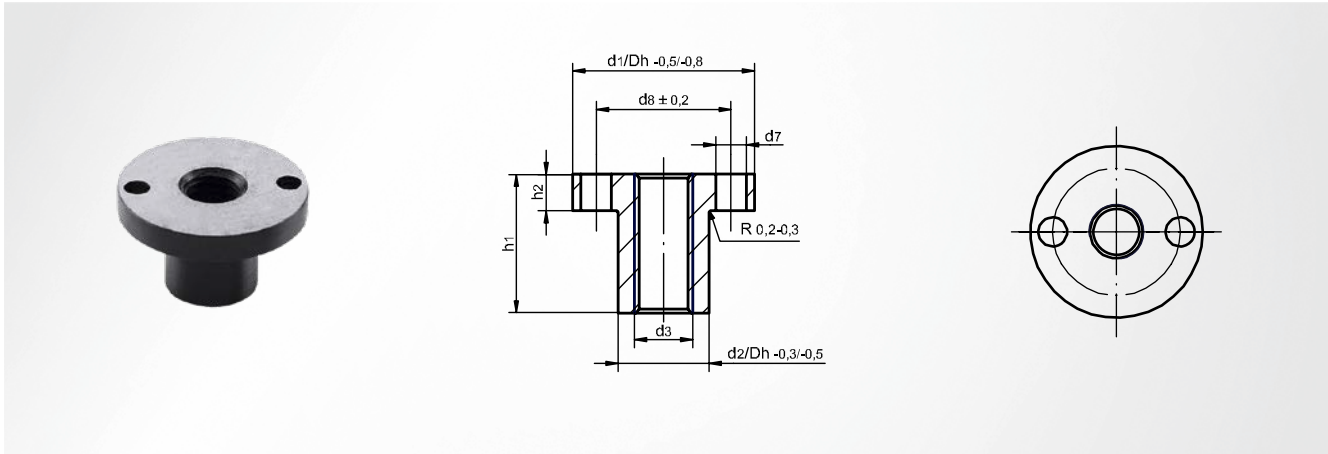
Tapping  
units

Module  
system

Machine  
elements

Accessories

# SZ8566 Threaded disc

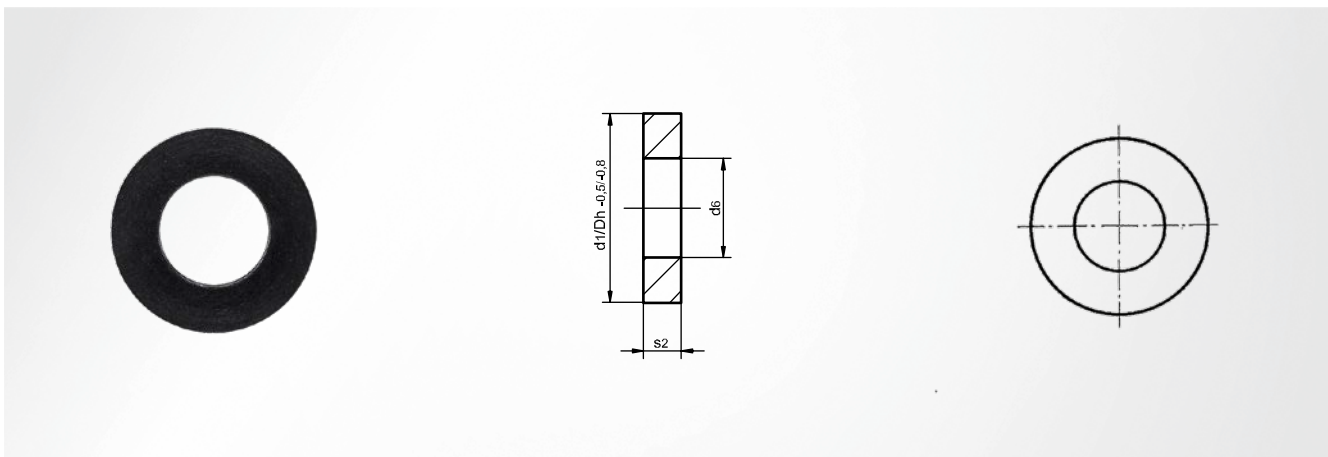


## Material

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 <b>20</b>
25	12.5	M8	4.2	18.5	19	5	SZ8566 <b>25</b>
32	16.0	M10	4.2	25.0	19	5	SZ8566 <b>32</b>
40	20.0	M12	4.2	30.0	19	5	SZ8566 <b>40</b>
50	25.0	M16	4.2	40.0	19	5	SZ8566 <b>50</b>

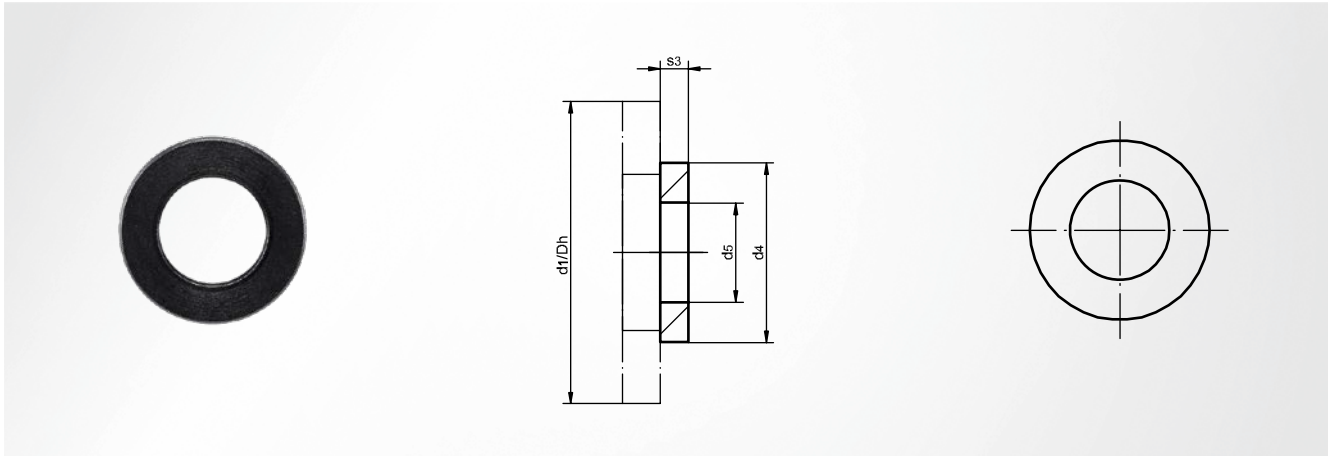
# SZ8567 Adapting disc



## Material

Steel 1.0503 (C45)

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

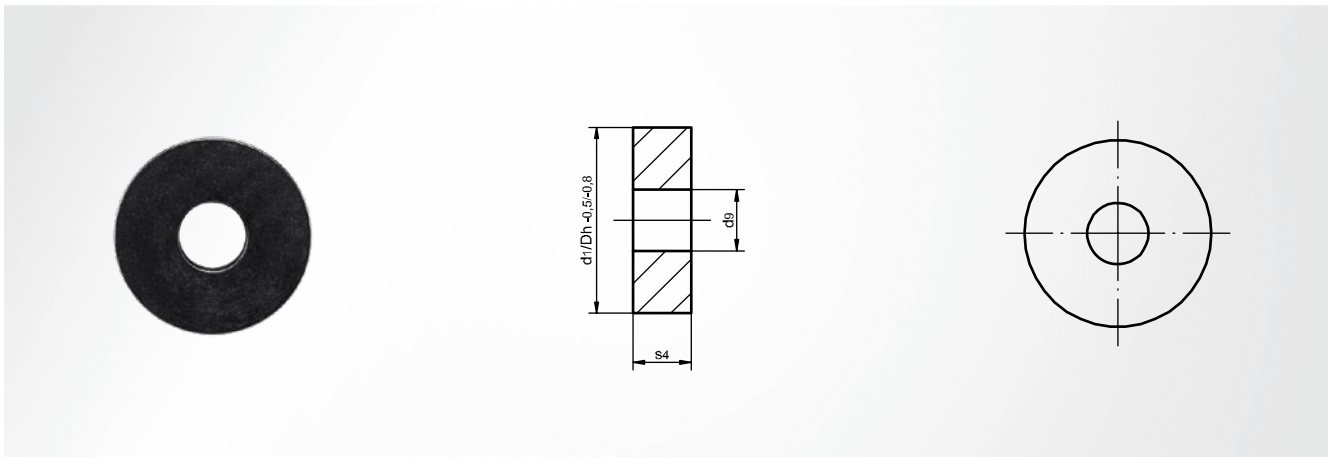


## Material

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 <b>20</b>
25	16	8.5	3	SZ8568 <b>25</b>
32	19	10.5	3	SZ8568 <b>32</b>
40	23	12.5	4	SZ8568 <b>40</b>
50	28	16.5	4	SZ8568 <b>50</b>

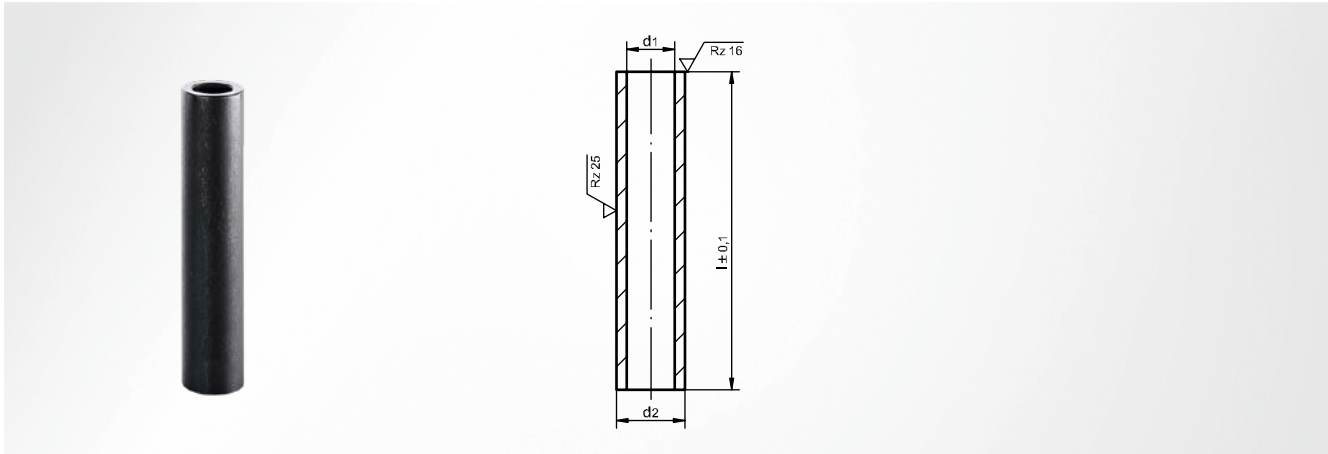
# SZ8569 Regrinding disc



## Material

Steel 1.0503 (C45)

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



### Material

Steel 1.0308 (St35); hardened

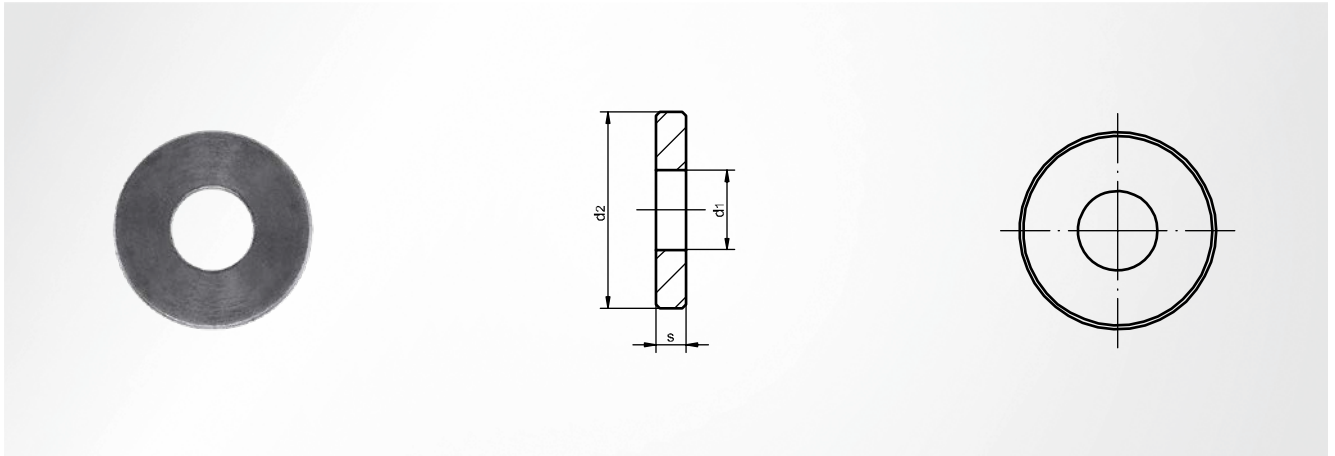
### Hardness

57 ± 1 HRC

$d_1$	$d_2$	$l \pm 0.1$	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		
9	13.0	100	SZ8560 12 x 100		
		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		
9	13.0	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		
		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				

$d_1$	$d_2$	$l \pm 0.1$	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				
13	20.0	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)

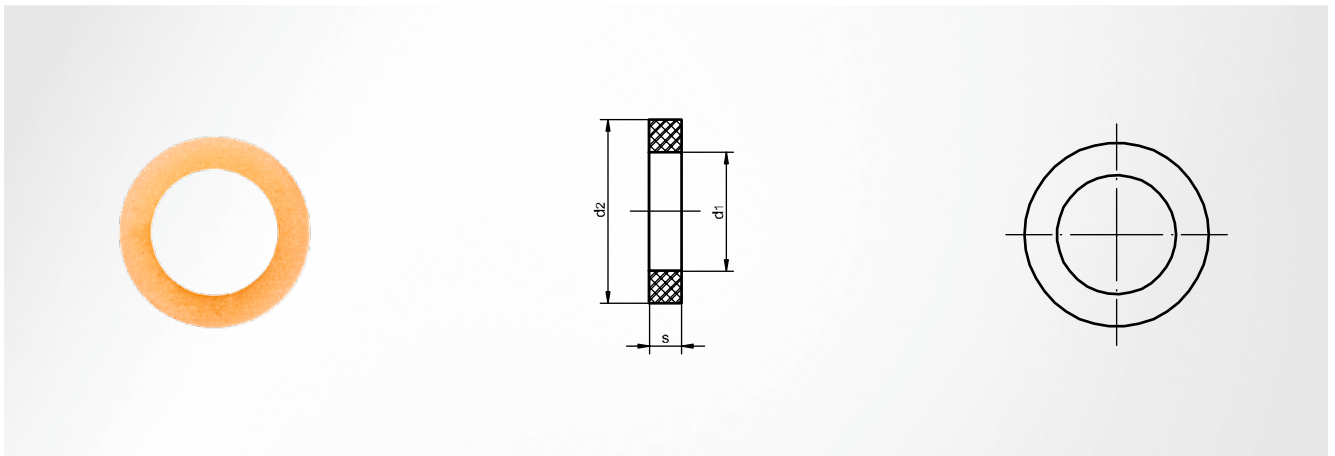
### Hardness

48 ±2 HRC

d <sub>1</sub>	d <sub>2</sub>	s	Item number
6.4	17	3	SZ8561 <b>06.4</b>
8.4	23	4	SZ8561 <b>08.4</b>
10.5	26	4	SZ8561 <b>10.5</b>
13.0	30	5	SZ8561 <b>13</b>

d <sub>1</sub>	d <sub>2</sub>	s	Item number
17.0	35	6	SZ8561 <b>17</b>
21.0	42	8	SZ8561 <b>21</b>
25.0	46	10	SZ8561 <b>25</b>

# SZ8563 Damping spring



### Material

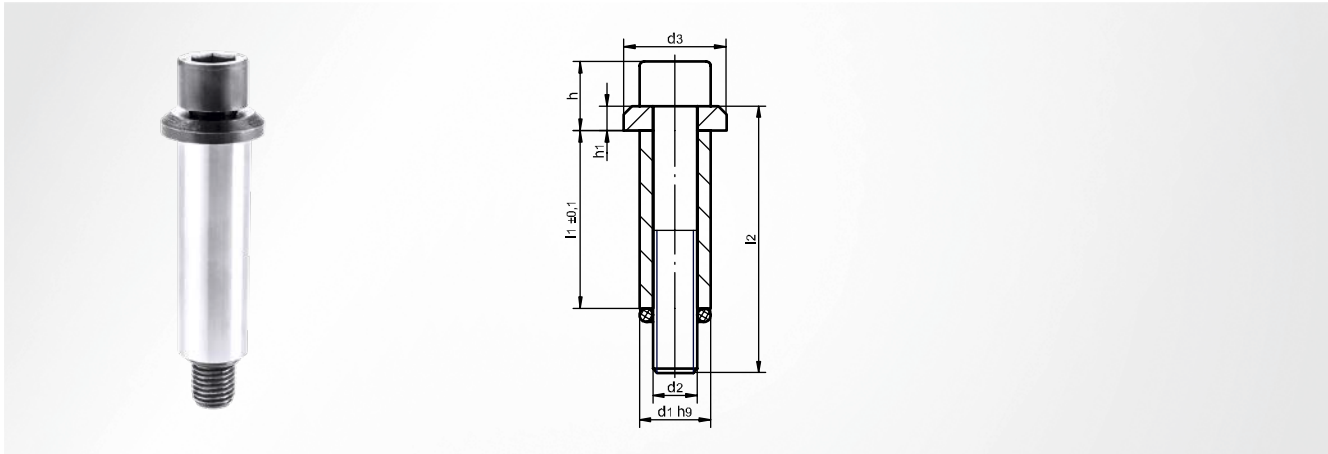
Polyurethane (PUR)

### Hardness

90 ±5 Shore A

d <sub>1</sub>	d <sub>2</sub>	s	Item number
11	17	3	SZ8563 <b>11</b>
14	23	4	SZ8563 <b>14</b>
17	26	4	SZ8563 <b>17</b>
21	30	5	SZ8563 <b>21</b>

d <sub>1</sub>	d <sub>2</sub>	s	Item number
26	35	6	SZ8563 <b>26</b>
31	42	6	SZ8563 <b>31</b>
37	46	6	SZ8563 <b>37</b>



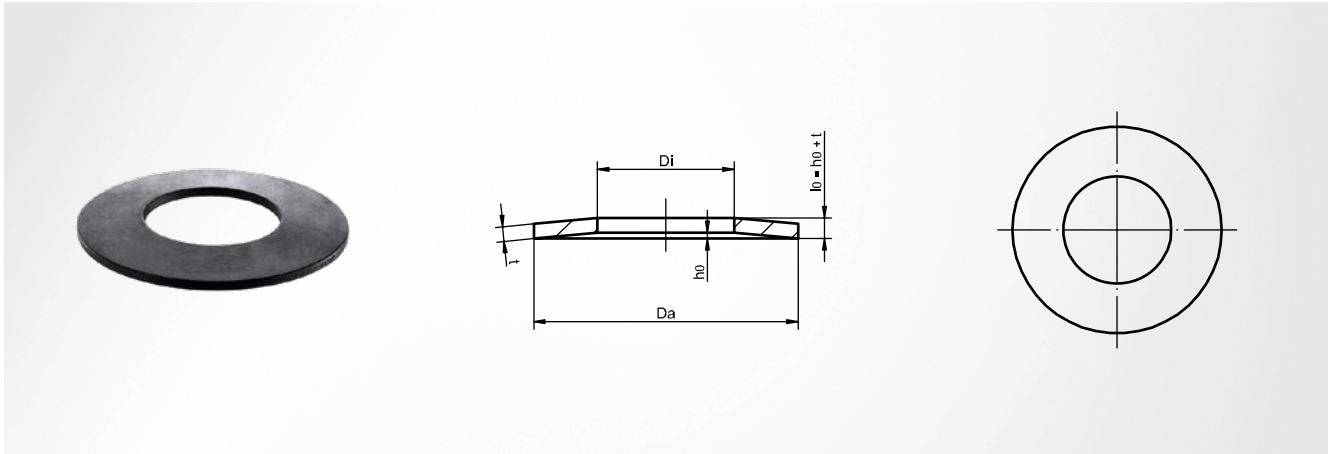
### Note

The distance collar and fitting unit is delivered with a mounted O-ring. Please remove this before installation.

### Scope of supply

O-ring; 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
16	M10	23	15.5	5.5	100	120	SZ8580 12 x 100
					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
20	M12	27	19.0	7.0	100	120	SZ8580 16 x 100
					125	150	SZ8580 16 x 125
					30	50	SZ8580 20 x 030
					40	60	SZ8580 20 x 040
					50	70	SZ8580 20 x 050
					63	90	SZ8580 20 x 063
25	M16	34	23.0	7.0	80	100	SZ8580 20 x 080
					100	120	SZ8580 20 x 100
					125	150	SZ8580 20 x 125
					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



## DIN EN 16983/ Series A and B

### Note

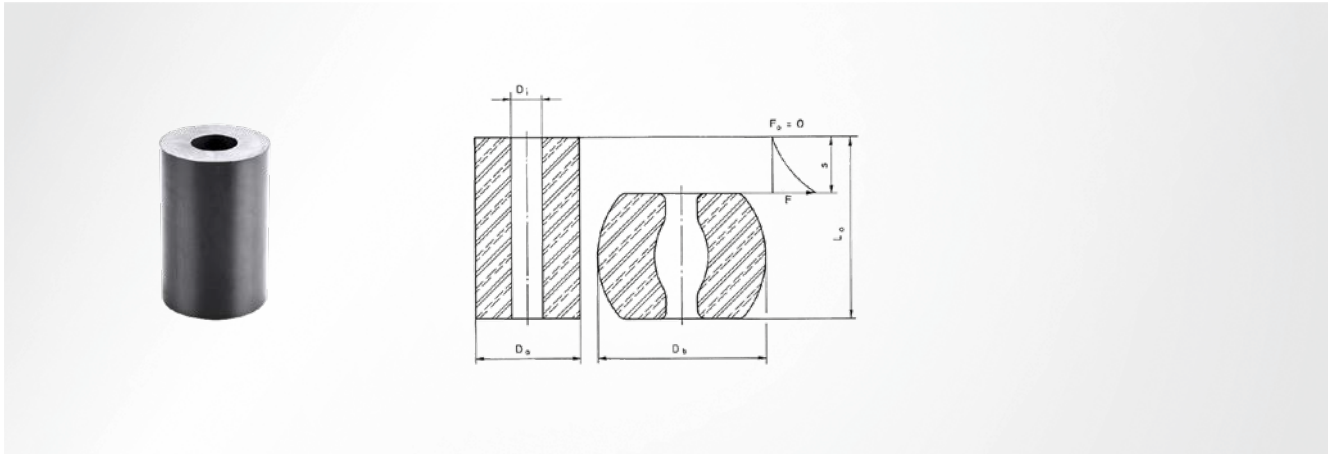
s = stroke of a single disc

### Spring type

Disc spring

D <sub>a</sub>	D <sub>i</sub>	t	h <sub>0</sub>	l <sub>0</sub>	s = 0.2 h <sub>0</sub>		s = 0.4 h <sub>0</sub>		s = 0.6 h <sub>0</sub>		s = 0.75 h <sub>0</sub>		Standard packaging piece	Item number
					F N	s	F N	s	F N	s	F N	s		
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 0.8
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 1.2
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 1.2
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 1.7
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 1.2
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
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

D <sub>a</sub>	D <sub>i</sub>	t	h <sub>0</sub>	l <sub>0</sub>	s = 0.2 h <sub>0</sub>		s = 0.4 h <sub>0</sub>		s = 0.6 h <sub>0</sub>		s = 0.75 h <sub>0</sub>		Standard packaging piece	Item number
					F N	s	F N	s	F N	s	F N	s		
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 <b>56 x 28.5X2</b>
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 <b>56 x 28.5X3</b>
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 <b>63 x 31X2.5</b>
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 <b>63 x 31X3.5</b>



## 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 <b>016 x 012</b>
			16	10	SZ8500 <b>016 x 016</b>
			20	10	SZ8500 <b>016 x 020</b>
			25	10	SZ8500 <b>016 x 025</b>
20	8.5	27	16	10	SZ8500 <b>020 x 016</b>
			20	10	SZ8500 <b>020 x 020</b>
			25	10	SZ8500 <b>020 x 025</b>
25	10.5	34	20	5	SZ8500 <b>025 x 020</b>
			25	5	SZ8500 <b>025 x 025</b>
			32	5	SZ8500 <b>025 x 032</b>
			40	5	SZ8500 <b>025 x 040</b>
32	13.5	43	32	5	SZ8500 <b>032 x 032</b>
			40	5	SZ8500 <b>032 x 040</b>
			50	5	SZ8500 <b>032 x 050</b>
40	13.5	54	32	3	SZ8500 <b>040 x 032</b>
			40	3	SZ8500 <b>040 x 040</b>
			50	3	SZ8500 <b>040 x 050</b>
			63	3	SZ8500 <b>040 x 063</b>
50	17.0	68	32	3	SZ8500 <b>050 x 032</b>
			40	3	SZ8500 <b>050 x 040</b>
			50	3	SZ8500 <b>050 x 050</b>
			63	2	SZ8500 <b>050 x 063</b>
			80	2	SZ8500 <b>050 x 080</b>
63	17.0	85	100	2	SZ8500 <b>050 x 100</b>
			32	2	SZ8500 <b>063 x 032</b>

$D_a$	$D_i$	$D_b$	$L_0$	Standard packaging piece	Item number
63	17.0	85	40	2	SZ8500 <b>063 x 040</b>
			50	2	SZ8500 <b>063 x 050</b>
			63	2	SZ8500 <b>063 x 063</b>
			80	1	SZ8500 <b>063 x 080</b>
			100	1	SZ8500 <b>063 x 100</b>
80	21.0	108	125	1	SZ8500 <b>063 x 125</b>
			32	1	SZ8500 <b>080 x 032</b>
			40	1	SZ8500 <b>080 x 040</b>
50	10.5	34	50	1	SZ8500 <b>080 x 050</b>
			63	1	SZ8500 <b>080 x 063</b>
			80	1	SZ8500 <b>080 x 080</b>
			100	1	SZ8500 <b>080 x 100</b>
			125	1	SZ8500 <b>080 x 125</b>
100	21.0	135	32	1	SZ8500 <b>100 x 032</b>
			40	1	SZ8500 <b>100 x 040</b>
			50	1	SZ8500 <b>100 x 050</b>
			63	1	SZ8500 <b>100 x 063</b>
			80	1	SZ8500 <b>100 x 080</b>
125	27.0	169	100	1	SZ8500 <b>100 x 100</b>
			125	1	SZ8500 <b>100 x 125</b>
			32	1	SZ8500 <b>125 x 032</b>
			40	1	SZ8500 <b>125 x 040</b>
			50	1	SZ8500 <b>125 x 050</b>
63	17.0	85	63	1	SZ8500 <b>125 x 063</b>
			80	1	SZ8500 <b>125 x 080</b>
			100	1	SZ8500 <b>125 x 100</b>
			125	1	SZ8500 <b>125 x 125</b>
			160	1	SZ8500 <b>125 x 160</b>

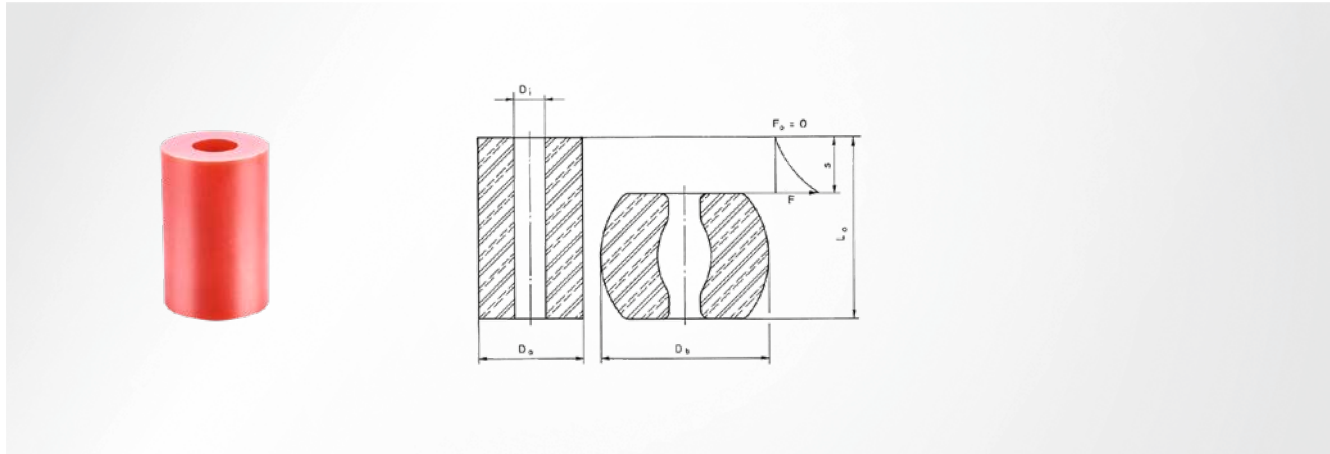
Nitrogen systems

Tapping units

Module system

Machine elements

Accessories



## DIN ISO 10069-1

### Material

Polyurethane elastomer (PUR)

### Hardness

90 ±5 Shore A

## Spring type

Elastomer spring

### Note

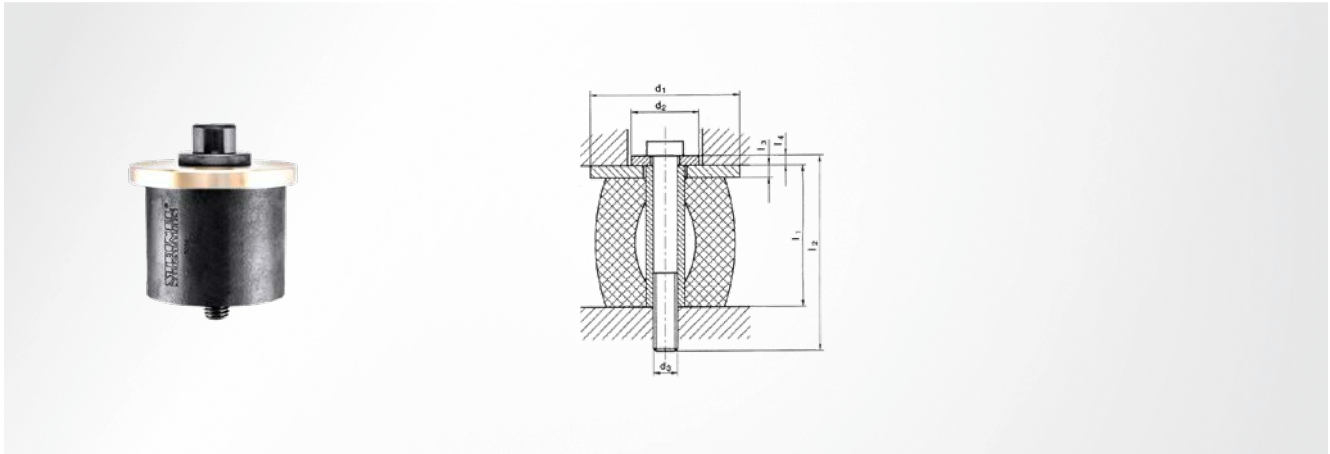
Permissible spring deflection  $s_{max} = 0.25 L_0$ ; setting inclination 8-10 % of  $L_0$ ; thermal stability up to +80°, +120° for short periods

$D_a$	$D_i$	$D_b$	$L_0$	Standard packaging piece	Item number
16	6.5	20	12	10	SZ8590 <b>016 x 012</b>
			16	10	SZ8590 <b>016 x 016</b>
			20	10	SZ8590 <b>016 x 020</b>
			25	10	SZ8590 <b>016 x 025</b>
20	8.5	25	16	10	SZ8590 <b>020 x 016</b>
			20	10	SZ8590 <b>020 x 020</b>
			25	10	SZ8590 <b>020 x 025</b>
25	10.5	31	20	5	SZ8590 <b>025 x 020</b>
			25	5	SZ8590 <b>025 x 025</b>
			32	5	SZ8590 <b>025 x 032</b>
			40	5	SZ8590 <b>025 x 040</b>
32	13.5	40	32	5	SZ8590 <b>032 x 032</b>
			40	5	SZ8590 <b>032 x 040</b>
			50	5	SZ8590 <b>032 x 050</b>
			63	5	SZ8590 <b>032 x 063</b>
40	13.5	50	32	3	SZ8590 <b>040 x 032</b>
			40	3	SZ8590 <b>040 x 040</b>
			50	3	SZ8590 <b>040 x 050</b>
			63	3	SZ8590 <b>040 x 063</b>
			80	3	SZ8590 <b>040 x 080</b>
50	17.0	63	32	3	SZ8590 <b>050 x 032</b>
			40	3	SZ8590 <b>050 x 040</b>
			50	3	SZ8590 <b>050 x 050</b>
			63	2	SZ8590 <b>050 x 063</b>
			80	2	SZ8590 <b>050 x 080</b>
			100	2	SZ8590 <b>050 x 100</b>
63	17.0	79	32	2	SZ8590 <b>063 x 032</b>

$D_a$	$D_i$	$D_b$	$L_0$	Standard packaging piece	Item number
63	17.0	79	40	2	SZ8590 <b>063 x 040</b>
			50	2	SZ8590 <b>063 x 050</b>
			63	2	SZ8590 <b>063 x 063</b>
			80	1	SZ8590 <b>063 x 080</b>
			100	1	SZ8590 <b>063 x 100</b>
80	21.0	100	125	1	SZ8590 <b>063 x 125</b>
			32	1	SZ8590 <b>080 x 032</b>
			40	1	SZ8590 <b>080 x 040</b>
50	10.5	31	50	1	SZ8590 <b>080 x 050</b>
			63	1	SZ8590 <b>080 x 063</b>
			80	1	SZ8590 <b>080 x 080</b>
			100	1	SZ8590 <b>080 x 100</b>
			125	1	SZ8590 <b>080 x 125</b>
100	21.0	125	32	1	SZ8590 <b>100 x 032</b>
			40	1	SZ8590 <b>100 x 040</b>
			50	1	SZ8590 <b>100 x 050</b>
			63	1	SZ8590 <b>100 x 063</b>
			80	1	SZ8590 <b>100 x 080</b>
125	27.0	156	100	1	SZ8590 <b>100 x 100</b>
			125	1	SZ8590 <b>100 x 125</b>
			32	1	SZ8590 <b>125 x 032</b>
			40	1	SZ8590 <b>125 x 040</b>
			50	1	SZ8590 <b>125 x 050</b>
63	17.0	79	63	1	SZ8590 <b>125 x 063</b>
			80	1	SZ8590 <b>125 x 080</b>
			100	1	SZ8590 <b>125 x 100</b>
			125	1	SZ8590 <b>125 x 125</b>
			160	1	SZ8590 <b>125 x 160</b>

# 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 <b>030 x 020</b>
					30	40	025 x 032	SZ8526 <b>030 x 032</b>
					40	50	025 x 040	SZ8526 <b>030 x 040</b>
40	23	M8	5	4	30	50	032 x 032	SZ8526 <b>040 x 032</b>
					40	60	032 x 040	SZ8526 <b>040 x 040</b>
					50	70	032 x 050	SZ8526 <b>040 x 050</b>
					63	80	032 x 063	SZ8526 <b>040 x 063</b>
50	23	M8	5	4	30	50	040 x 032	SZ8526 <b>050 x 032</b>
					40	60	040 x 040	SZ8526 <b>050 x 040</b>
					50	70	040 x 050	SZ8526 <b>050 x 050</b>
					63	80	040 x 063	SZ8526 <b>050 x 063</b>
					80	100	040 x 080	SZ8526 <b>050 x 080</b>
60	26	M10	6	4	30	50	050 x 032	SZ8526 <b>060 x 032</b>
					40	60	050 x 040	SZ8526 <b>060 x 040</b>
					50	70	050 x 050	SZ8526 <b>060 x 050</b>
					63	80	050 x 063	SZ8526 <b>060 x 063</b>
					80	100	050 x 080	SZ8526 <b>060 x 080</b>
					100	120	050 x 100	SZ8526 <b>060 x 100</b>
80	26	M10	6	4	30	50	063 x 032	SZ8526 <b>080 x 032</b>
					40	60	063 x 040	SZ8526 <b>080 x 040</b>
					50	70	063 x 050	SZ8526 <b>080 x 050</b>
					63	80	063 x 063	SZ8526 <b>080 x 063</b>
					80	100	063 x 080	SZ8526 <b>080 x 080</b>
					100	120	063 x 100	SZ8526 <b>080 x 100</b>
					125	140	063 x 125	SZ8526 <b>080 x 125</b>
100	30	M12	8	5	30	50	080 x 032	SZ8526 <b>100 x 032</b>
					40	60	080 x 040	SZ8526 <b>100 x 040</b>
					50	70	080 x 050	SZ8526 <b>100 x 050</b>
					63	80	080 x 063	SZ8526 <b>100 x 063</b>
					80	100	080 x 080	SZ8526 <b>100 x 080</b>
					100	120	080 x 100	SZ8526 <b>100 x 100</b>
					125	140	080 x 125	SZ8526 <b>100 x 125</b>
120	30	M12	8	5	30	50	100 x 032	SZ8526 <b>120 x 032</b>
					40	60	100 x 040	SZ8526 <b>120 x 040</b>
					50	70	100 x 050	SZ8526 <b>120 x 050</b>
					63	80	100 x 063	SZ8526 <b>120 x 063</b>
					80	100	100 x 080	SZ8526 <b>120 x 080</b>
					100	120	100 x 100	SZ8526 <b>120 x 100</b>
					125	140	100 x 125	SZ8526 <b>120 x 125</b>

Nitrogen systems

Tapping units

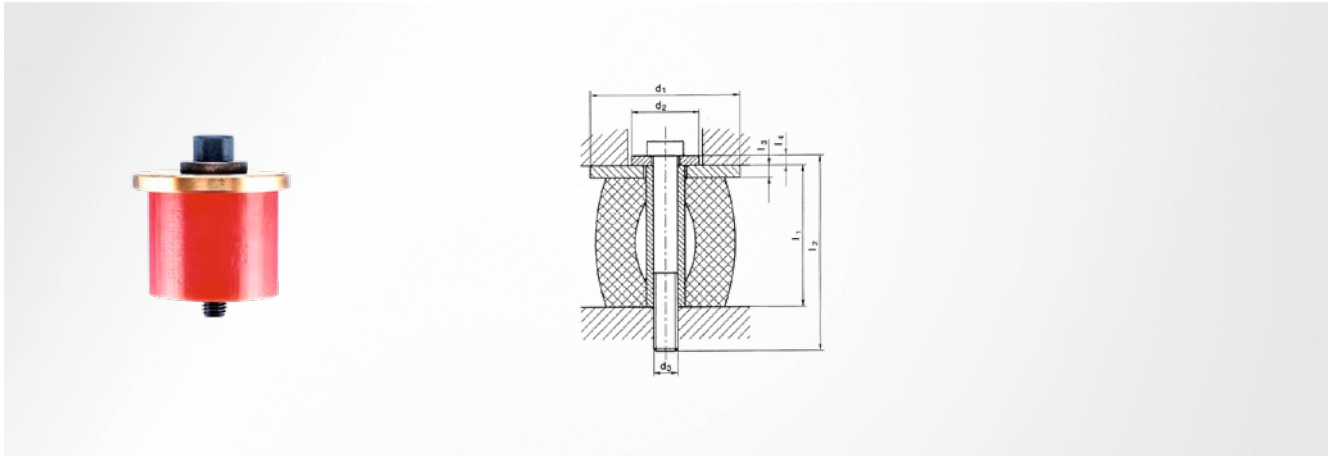
Module system

Machine elements

Accessories

# 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**

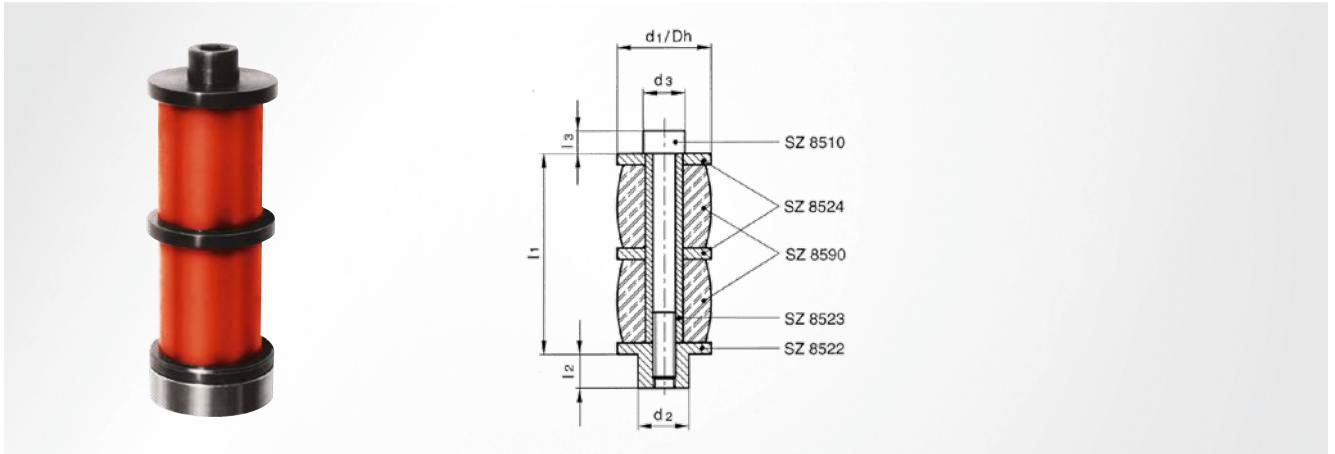
SZ8510; SZ8556; SZ8560; SZ8561; SZ8590

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



# 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 $\varnothing$ $d_1/D_h$	$d_2$	$d_3$	$l_2$	$l_3$	$l_1$	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 <b>25 x 053</b>
					67	06 x 080	25	08 x 064	25	020 x 032	SZ8520 <b>25 x 067</b>
32	16	13	11	8	53	08 x 060	32	10 x 050	32	025 x 025	SZ8520 <b>32 x 053</b>
					67	08 x 080	32	10 x 064	32	025 x 032	SZ8520 <b>32 x 067</b>
					83	08 x 090	32	10 x 080	32	025 x 040	SZ8520 <b>32 x 083</b>
40	20	16	14	10	67	10 x 080	40	13 x 064	40	032 x 032	SZ8520 <b>40 x 067</b>
					83	10 x 090	40	13 x 080	40	032 x 040	SZ8520 <b>40 x 083</b>
					103	10 x 110	40	13 x 100	40	032 x 050	SZ8520 <b>40 x 103</b>
50	25	16	14	10	86	10 x 090	50	13 x 082	50	040 x 040	SZ8520 <b>50 x 086</b>
					106	10 x 110	50	13 x 102	50	040 x 050	SZ8520 <b>50 x 106</b>
					132	10 x 140	50	13 x 128	50	040 x 063	SZ8520 <b>50 x 132</b>

Nitrogen systems

Tapping units

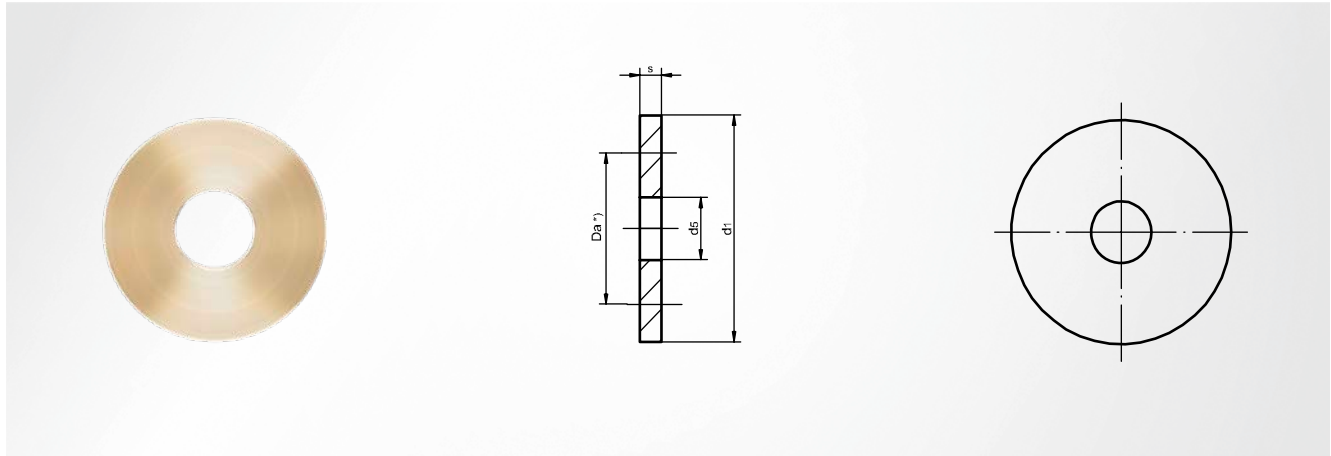
Module system

Machine elements

Accessories

# SZ8556 Spring washer

for elastomer spring



**DIN ISO 10069-1**

**Note**

$D_a$  = spring diameter

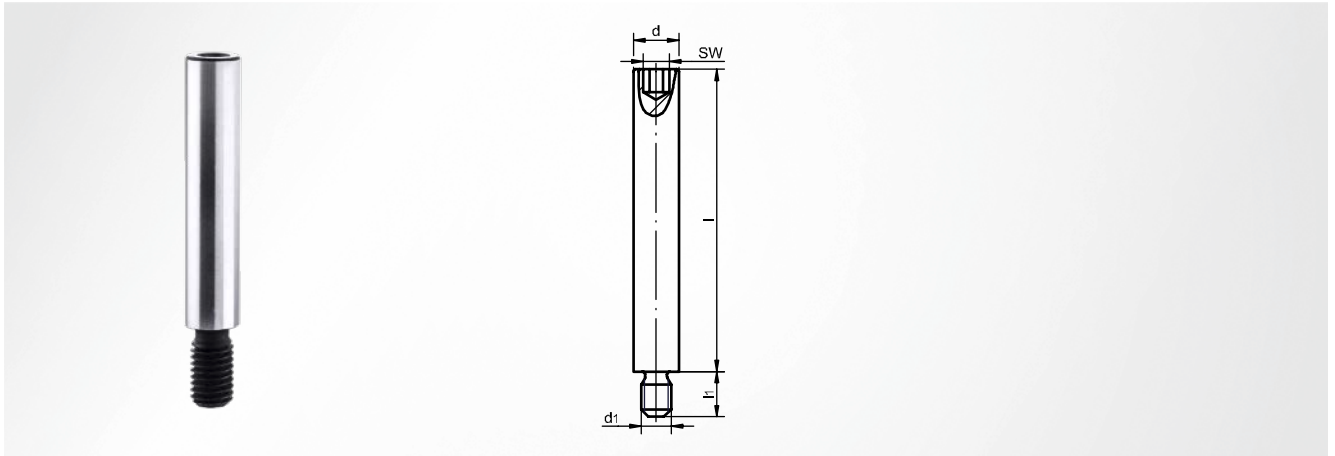
**Material**

Brass

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

# 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 <b>06 x 020</b>
				25	10	SZ8555 <b>06 x 025</b>
				32	10	SZ8555 <b>06 x 032</b>
M6	8	9	4	20	10	SZ8555 <b>08 x 020</b>
				25	10	SZ8555 <b>08 x 025</b>
				32	10	SZ8555 <b>08 x 032</b>
				40	10	SZ8555 <b>08 x 040</b>
				50	10	SZ8555 <b>08 x 050</b>
M8	10	15	5	20	10	SZ8555 <b>10 x 020</b>
				25	10	SZ8555 <b>10 x 025</b>
				32	5	SZ8555 <b>10 x 032</b>
				40	5	SZ8555 <b>10 x 040</b>
				50	5	SZ8555 <b>10 x 050</b>
				63	5	SZ8555 <b>10 x 063</b>
M10	13	15	6	32	5	SZ8555 <b>13 x 032</b>
				40	5	SZ8555 <b>13 x 040</b>
				50	5	SZ8555 <b>13 x 050</b>
				63	5	SZ8555 <b>13 x 063</b>
				80	5	SZ8555 <b>13 x 080</b>
M12	16	18	8	32	5	SZ8555 <b>16 x 032</b>

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

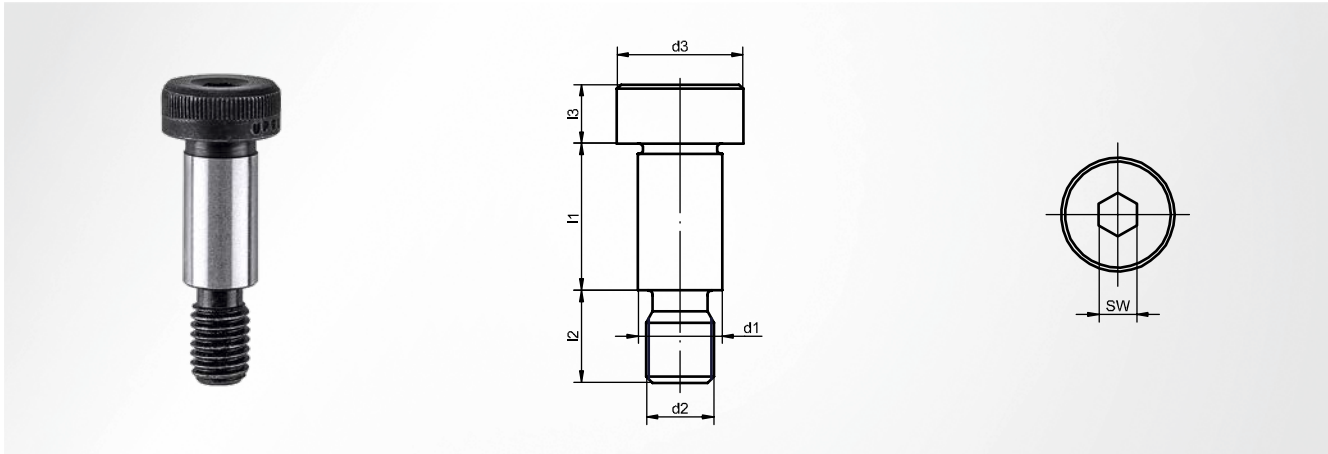
Nitrogen systems

Tapping units

Module system

Machine elements

Accessories



ISO 7379

Note

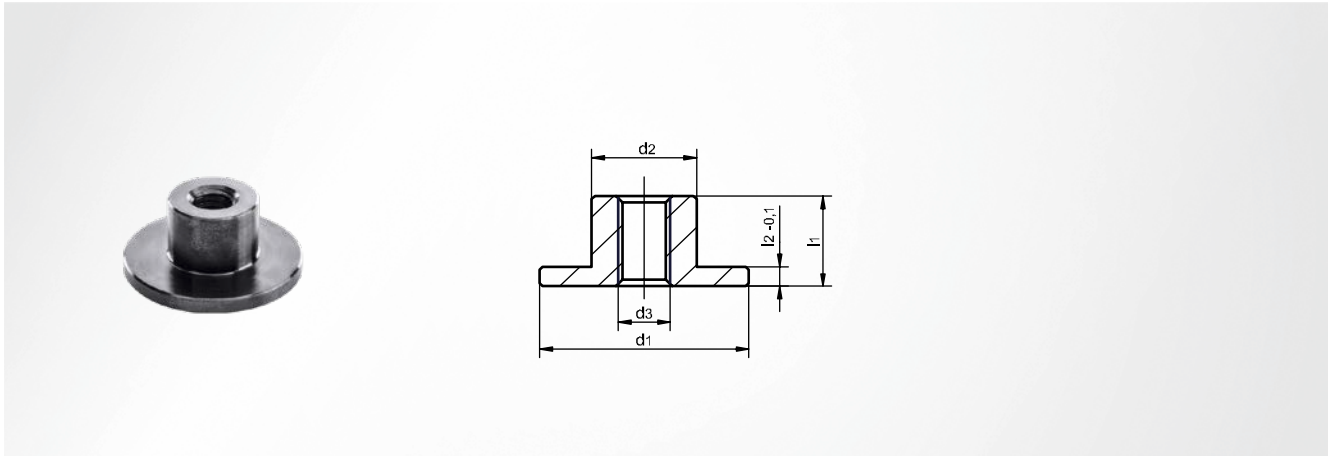
Strength class 12.9

$d_1^{f9}$	$d_2$	$d_3$	$l_2$	$l_3$	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
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
						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												
10	M8	16	13.0	7.0	5.0	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						
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						

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

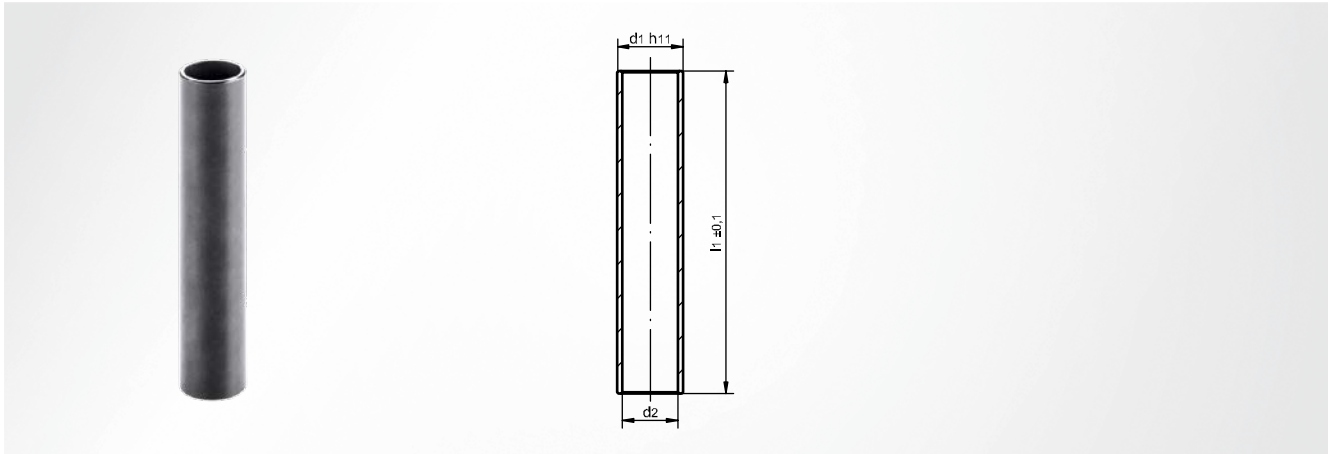
$d_1^{f9}$	$d_2$	$d_3$	$l_2$	$l_3$	SW	$l_1^{+0.25}$	Item number
20	M16	30	27.0	16.0	10.0	65	SZ8558 <b>20 x 065</b>
						70	SZ8558 <b>20 x 070</b>
						80	SZ8558 <b>20 x 080</b>
						90	SZ8558 <b>20 x 090</b>
						100	SZ8558 <b>20 x 100</b>
24	M20	36	27.0	16.0	12.0	50	SZ8558 <b>24 x 050</b>
					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



## Material

Steel 1.0503 (C45)

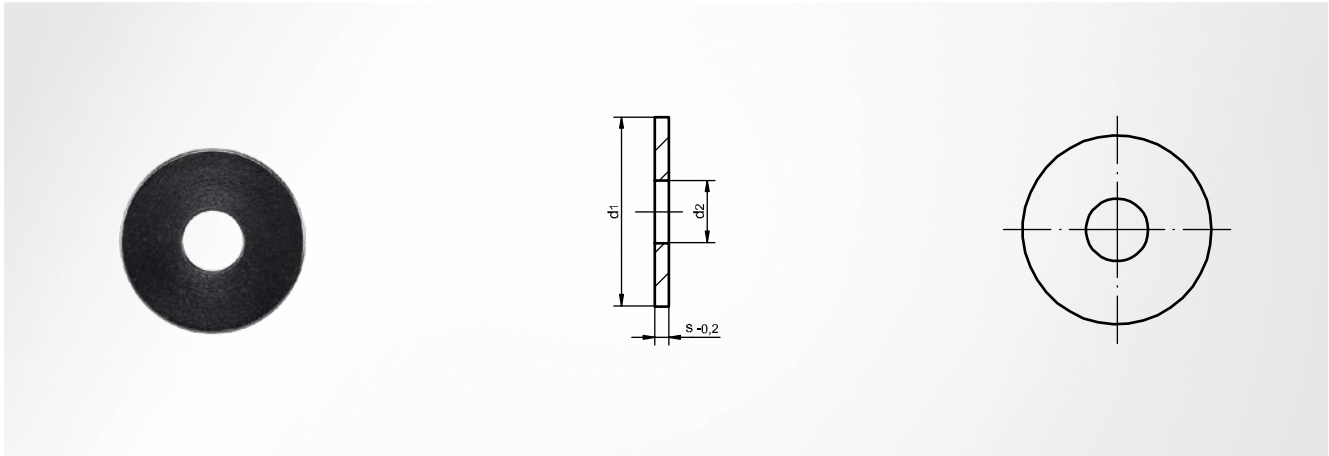
$d_1$	$d_2$	$d_3$	$l_1$	$l_2^{-0.1}$	Item number
25	13	M6	12	3	SZ8522 <b>25</b>
32	16	M8	14	3	SZ8522 <b>32</b>
40	20	M10	17	3	SZ8522 <b>40</b>
50	25	M10	18	4	SZ8522 <b>50</b>



## Material

Steel 1.0715 (9SMn28K)

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

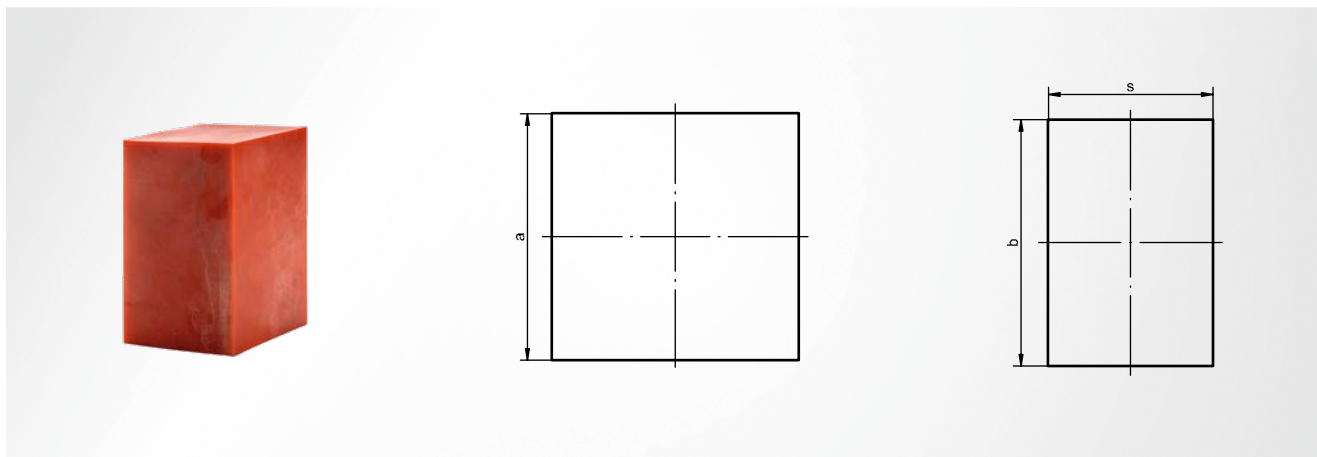


## Material

Steel 1.0503 (C45)

$d_1$	$d_2$	$s^{0.2}$	Item number
25	8	3	SZ8524 <b>25</b>
32	10	3	SZ8524 <b>32</b>
40	13	3	SZ8524 <b>40</b>
50	13	4	SZ8524 <b>50</b>





## Material

Polyurethane elastomer (PUR)

## Spring type

Elastomer spring

## Hardness

90 ±5 Shore A

a x b	s	Item number
75 x 75	25.0	SZ5190 <b>075 x 075 x 25</b>
	50.0	SZ5190 <b>075 x 075 x 50</b>
100 x 75	12.5	SZ5190 <b>100 x 075 x 12.5</b>
	25.0	SZ5190 <b>100 x 075 x 25</b>
100 x 100	50.0	SZ5190 <b>100 x 075 x 50</b>
	12.5	SZ5190 <b>100 x 100 x 12.5</b>
125 x 100	25.0	SZ5190 <b>100 x 100 x 25</b>
	50.0	SZ5190 <b>100 x 100 x 50</b>
125 x 125	12.5	SZ5190 <b>125 x 100 x 12.5</b>
	25.0	SZ5190 <b>125 x 100 x 25</b>
	50.0	SZ5190 <b>125 x 100 x 50</b>
150 x 75	12.5	SZ5190 <b>125 x 125 x 12.5</b>
	25.0	SZ5190 <b>125 x 125 x 25</b>
	50.0	SZ5190 <b>125 x 125 x 50</b>
150 x 100	12.5	SZ5190 <b>150 x 075 x 12.5</b>
	25.0	SZ5190 <b>150 x 075 x 25</b>
	50.0	SZ5190 <b>150 x 075 x 50</b>
150 x 125	12.5	SZ5190 <b>150 x 100 x 12.5</b>
	25.0	SZ5190 <b>150 x 100 x 25</b>
	50.0	SZ5190 <b>150 x 100 x 50</b>
150 x 150	12.5	SZ5190 <b>150 x 125 x 12.5</b>
	25.0	SZ5190 <b>150 x 125 x 25</b>
	50.0	SZ5190 <b>150 x 125 x 50</b>
200 x 100	12.5	SZ5190 <b>150 x 150 x 12.5</b>
	25.0	SZ5190 <b>150 x 150 x 25</b>
	50.0	SZ5190 <b>150 x 150 x 50</b>
200 x 125	12.5	SZ5190 <b>200 x 100 x 12.5</b>
	25.0	SZ5190 <b>200 x 100 x 25</b>
	50.0	SZ5190 <b>200 x 100 x 50</b>
200 x 150	12.5	SZ5190 <b>200 x 125 x 12.5</b>
	25.0	SZ5190 <b>200 x 125 x 25</b>
	50.0	SZ5190 <b>200 x 125 x 50</b>
200 x 200	12.5	SZ5190 <b>200 x 150 x 12.5</b>
	25.0	SZ5190 <b>200 x 150 x 25</b>
	50.0	SZ5190 <b>200 x 150 x 50</b>
200 x 200	12.5	SZ5190 <b>200 x 200 x 12.5</b>

a x b	s	Item number
200 x 200	25.0	SZ5190 <b>200 x 200 x 25</b>
	50.0	SZ5190 <b>200 x 200 x 50</b>
250 x 125	12.5	SZ5190 <b>250 x 125 x 12.5</b>
	25.0	SZ5190 <b>250 x 125 x 25</b>
	50.0	SZ5190 <b>250 x 125 x 50</b>
250 x 150	12.5	SZ5190 <b>250 x 150 x 12.5</b>
	25.0	SZ5190 <b>250 x 150 x 25</b>
	50.0	SZ5190 <b>250 x 150 x 50</b>
250 x 200	12.5	SZ5190 <b>250 x 200 x 12.5</b>
	25.0	SZ5190 <b>250 x 200 x 25</b>
	50.0	SZ5190 <b>250 x 200 x 50</b>
250 x 250	12.5	SZ5190 <b>250 x 250 x 12.5</b>
	25.0	SZ5190 <b>250 x 250 x 25</b>
	50.0	SZ5190 <b>250 x 250 x 50</b>
300 x 150	12.5	SZ5190 <b>300 x 150 x 12.5</b>
	25.0	SZ5190 <b>300 x 150 x 25</b>
	50.0	SZ5190 <b>300 x 150 x 50</b>
300 x 200	12.5	SZ5190 <b>300 x 200 x 12.5</b>
	25.0	SZ5190 <b>300 x 200 x 25</b>
	50.0	SZ5190 <b>300 x 200 x 50</b>
300 x 250	12.5	SZ5190 <b>300 x 250 x 12.5</b>
	25.0	SZ5190 <b>300 x 250 x 25</b>
	50.0	SZ5190 <b>300 x 250 x 50</b>
300 x 300	12.5	SZ5190 <b>300 x 300 x 12.5</b>
	25.0	SZ5190 <b>300 x 300 x 25</b>
	50.0	SZ5190 <b>300 x 300 x 50</b>
400 x 200	12.5	SZ5190 <b>400 x 200 x 12.5</b>
	25.0	SZ5190 <b>400 x 200 x 25</b>
	50.0	SZ5190 <b>400 x 200 x 50</b>
400 x 250	12.5	SZ5190 <b>400 x 250 x 12.5</b>
	25.0	SZ5190 <b>400 x 250 x 25</b>
	50.0	SZ5190 <b>400 x 250 x 50</b>
400 x 300	12.5	SZ5190 <b>400 x 300 x 12.5</b>
	25.0	SZ5190 <b>400 x 300 x 25</b>
	50.0	SZ5190 <b>400 x 300 x 50</b>
500 x 250	12.5	SZ5190 <b>500 x 250 x 12.5</b>

Nitrogen systems

Tapping units

Module system

Machine elements

Accessories

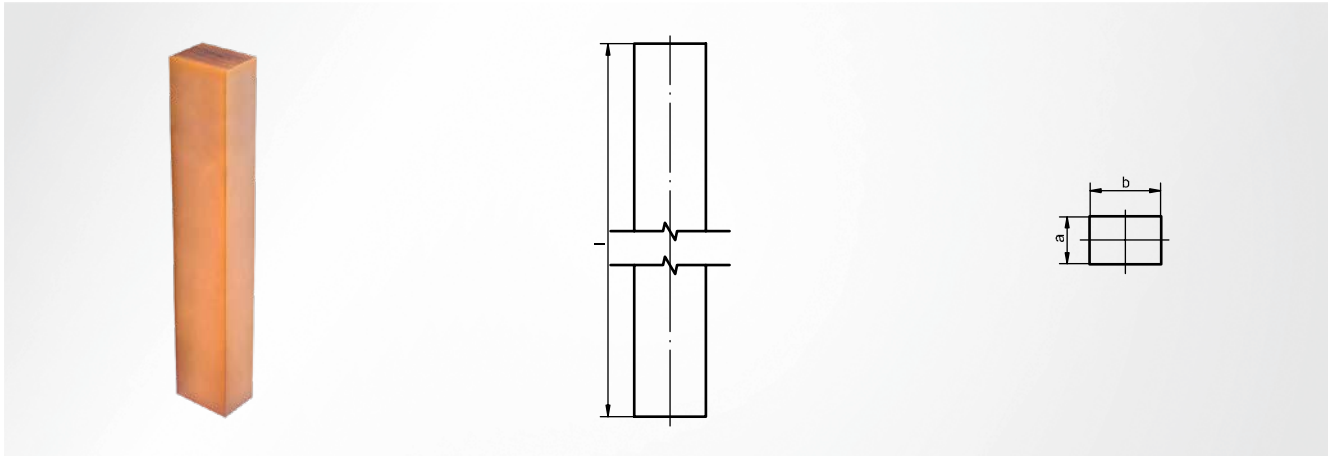
# SZ5190 Polyurethane plates

a x b	s	Item number
500 x 250	25.0	SZ5190 <b>500 x 250 x 25</b>
	50.0	SZ5190 <b>500 x 250 x 50</b>
500 x 300	12.5	SZ5190 <b>500 x 300 x 12.5</b>
	25.0	SZ5190 <b>500 x 300 x 25</b>

a x b	s	Item number
500 x 300	50.0	SZ5190 <b>500 x 300 x 50</b>
600 x 300	12.5	SZ5190 <b>600 x 300 x 12.5</b>
	25.0	SZ5190 <b>600 x 300 x 25</b>
	50.0	SZ5190 <b>600 x 300 x 50</b>

# SZ5290 Polyurethane rod

rectangular rod



**Material**

Polyurethane elastomer (PUR)

**Spring type**

Elastomer spring

**Hardness**

90 ±5 Shore A

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

Nitrogen systems

Tapping units

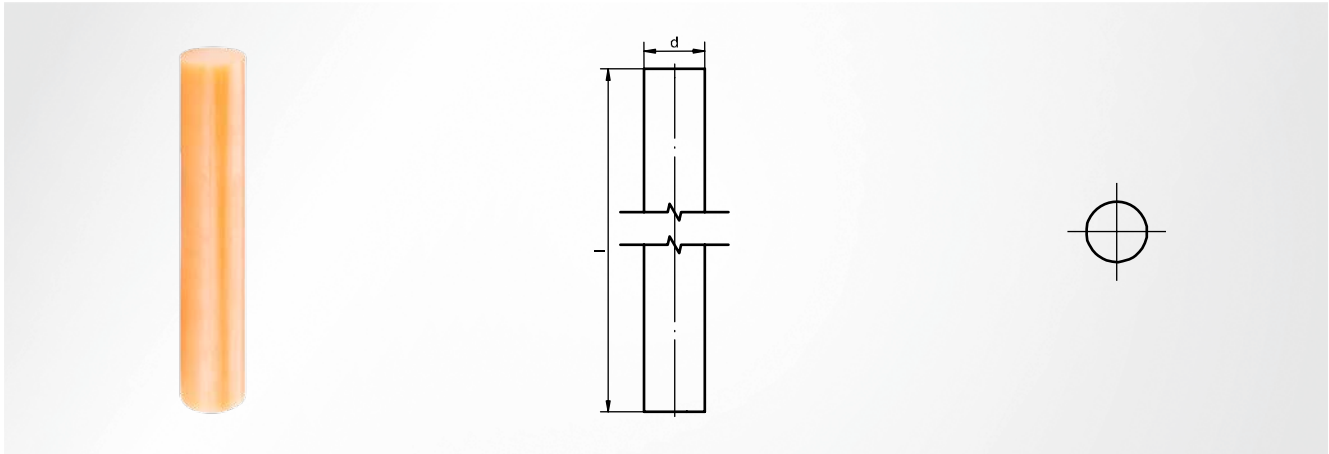
Module system

Machine elements

Accessories

# SZ5390 Polyurethane rod

round rod



## Material

Polyurethane elastomer (PUR)

## Spring type

Elastomer spring

## Hardness

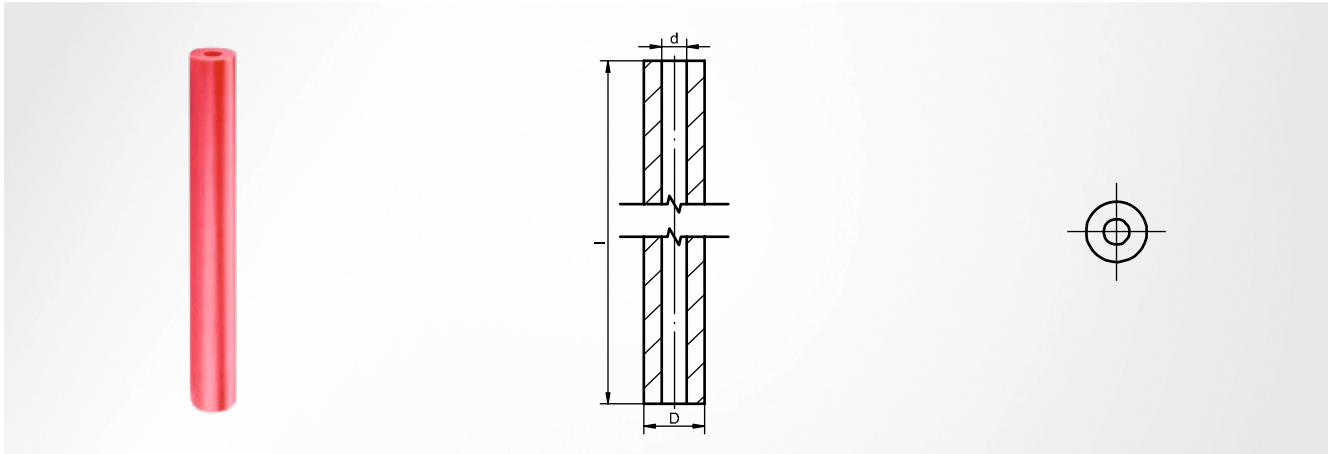
90 ±5 Shore A

d	l	Item number
25	200	SZ5390 <b>25 x 200</b>
	300	SZ5390 <b>25 x 300</b>
32	100	SZ5390 <b>32 x 100</b>
	200	SZ5390 <b>32 x 200</b>
50	300	SZ5390 <b>32 x 300</b>
	63	SZ5390 <b>50 x 063</b>
	80	SZ5390 <b>50 x 080</b>
	100	SZ5390 <b>50 x 100</b>

d	l	Item number
50	160	SZ5390 <b>50 x 160</b>
	200	SZ5390 <b>50 x 200</b>
75	300	SZ5390 <b>50 x 300</b>
	80	SZ5390 <b>75 x 080</b>
	100	SZ5390 <b>75 x 100</b>
	160	SZ5390 <b>75 x 160</b>
	200	SZ5390 <b>75 x 200</b>
	300	SZ5390 <b>75 x 300</b>

# SZ5391 Polyurethane rod

## hollow round rod



### Material

Polyurethane elastomer (PUR)

### Hardness

90 ±5 Shore A

### Spring type

Elastomer spring

### Note

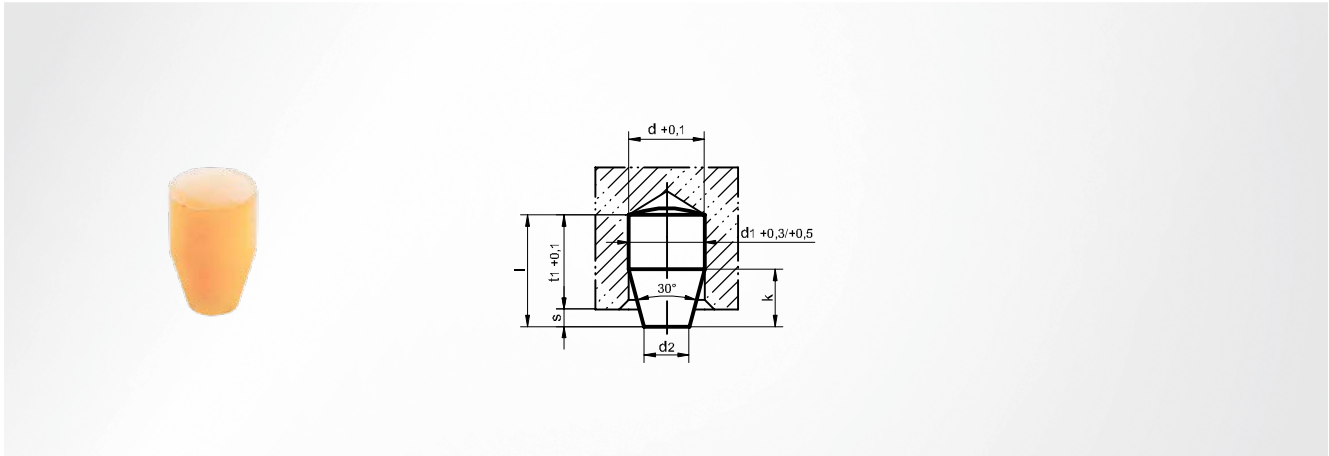
Permissible spring deflection  $s_{\max} = 30\%$ ; setting inclination 6-8 %; thermal stability -20° to +80°, -40° to +120° for short periods; resistant against: oil (lubricant oil), grease, alcohol, benzene, ozone

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

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

# SZ8460 Thrust piece

Polyurethane



## Material

Polyurethane elastomer (PUR)

## Installation in mounting bore

d +0.1

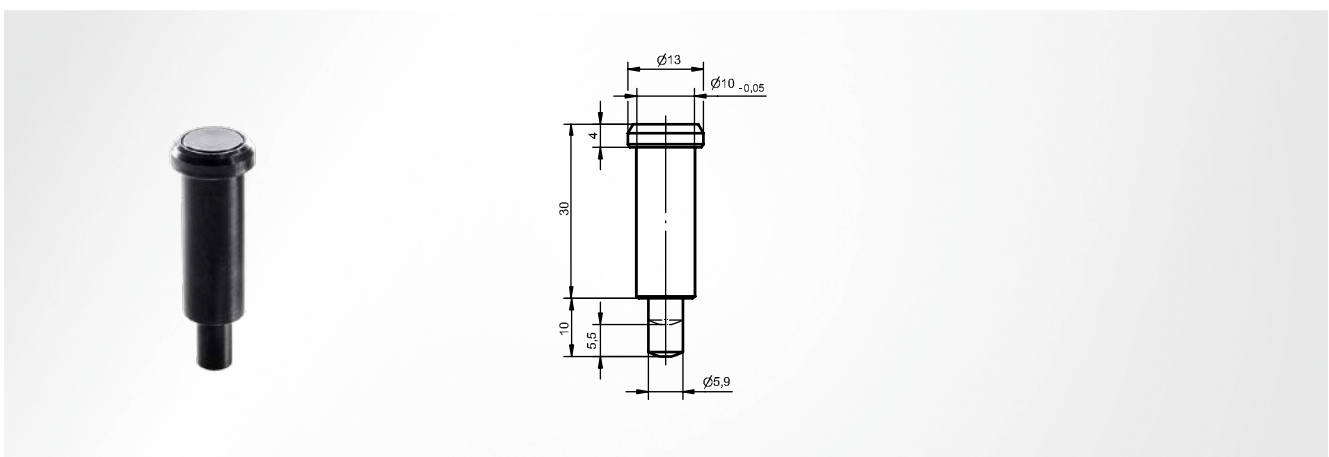
## Hardness

90 ±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 <b>06</b>
350	10	6.0	15.5	7.5	13	2.5	20	SZ8460 <b>10</b>
1500	16	9.5	25.0	12.0	21	4.0	10	SZ8460 <b>16</b>

# SZ8135 Thrust piece

with bolt



## Material

Free-cutting steel

## Installation in mounting bore

10 H7

## Note

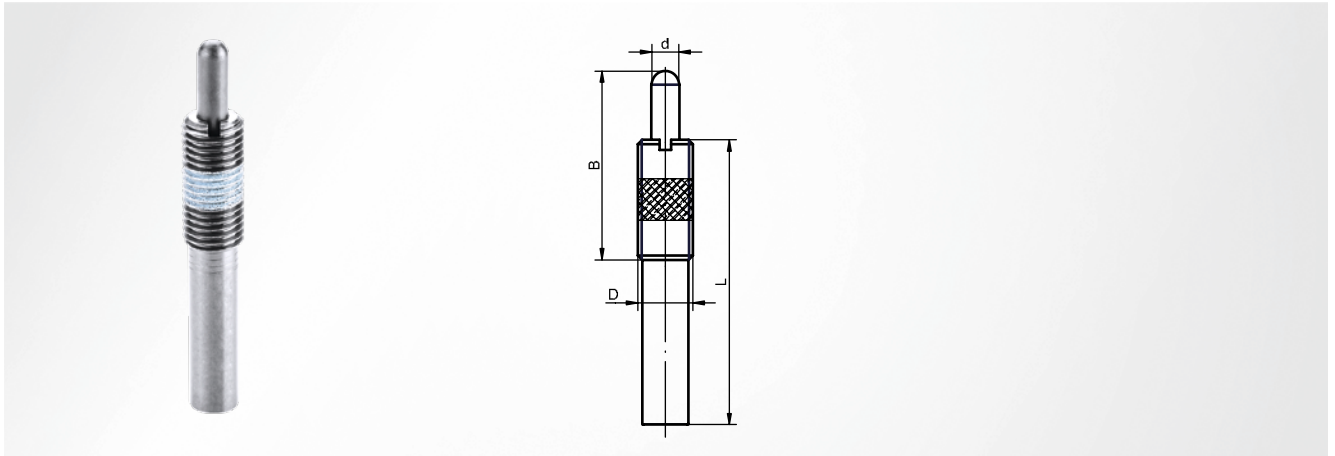
Pressure: Start ~45 N - end ~100 N; thrust bolt, hardened

## Item number

SZ813510

# SZ8140 Thrust piece

light series



### Material

Free-cutting steel

### Optional accessories

SZ8146

### Installation instruction

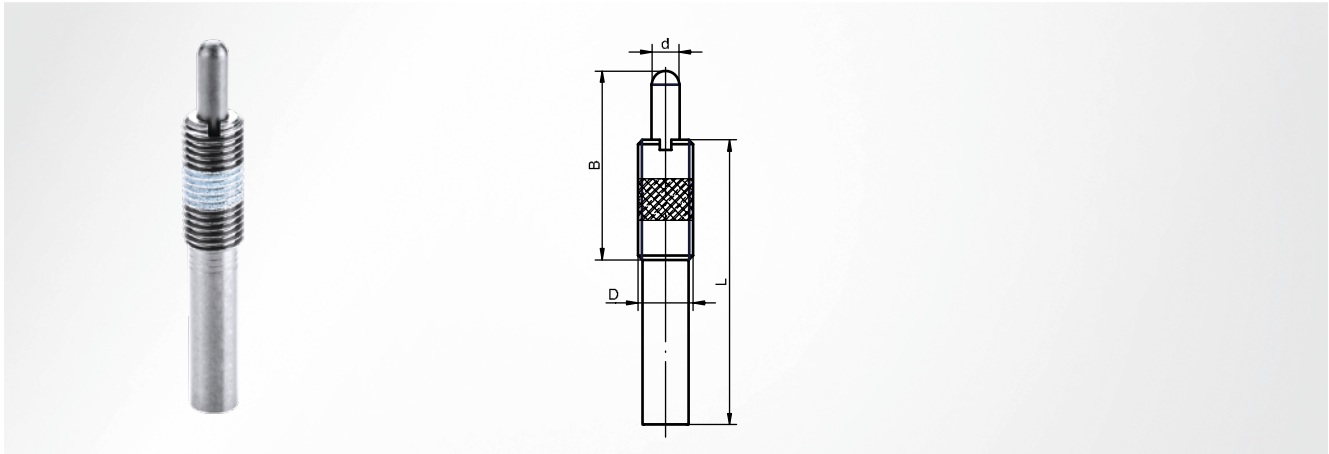
Installation and disassembly only with suitable key;  
coloured thread marking also serves to secure the thread

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

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

# 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 <b>12 x 010</b>
8	M16	35	7.5	2.7	10	60	SZ8145 <b>16 x 010</b>
				1.5	15	60	SZ8145 <b>16 x 015</b>
				1.7	20	80	SZ8145 <b>16 x 020</b>

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



# SZ8146 Mounting key

for thrust piece



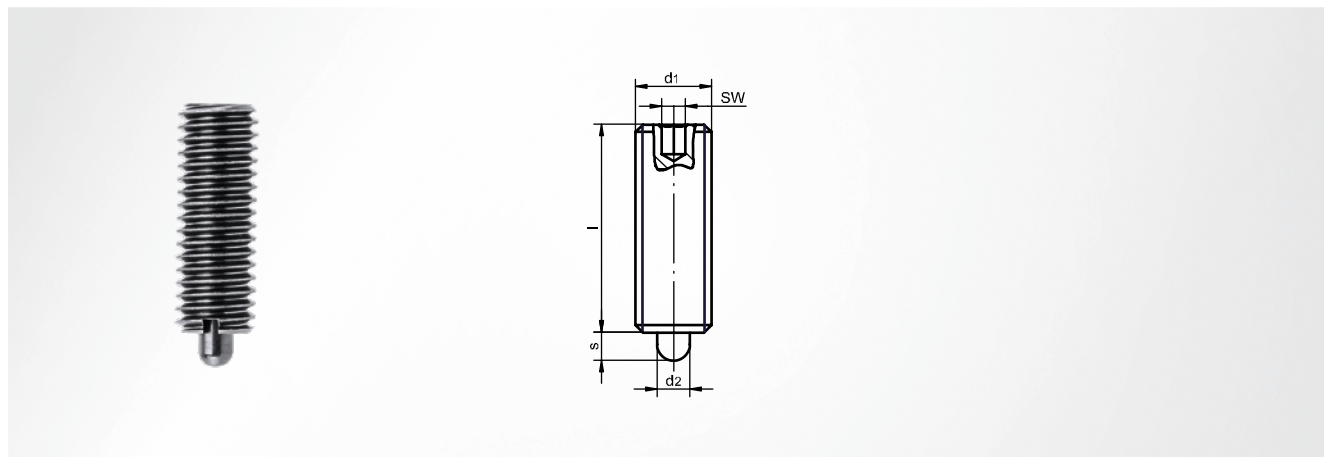
## Installation instruction

for installation and disassembly of the thrust pieces  
SZ8140 and SZ8145

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

# SZ8131 Thrust piece

with bolt, hexagon socket



## Material

Free-cutting steel

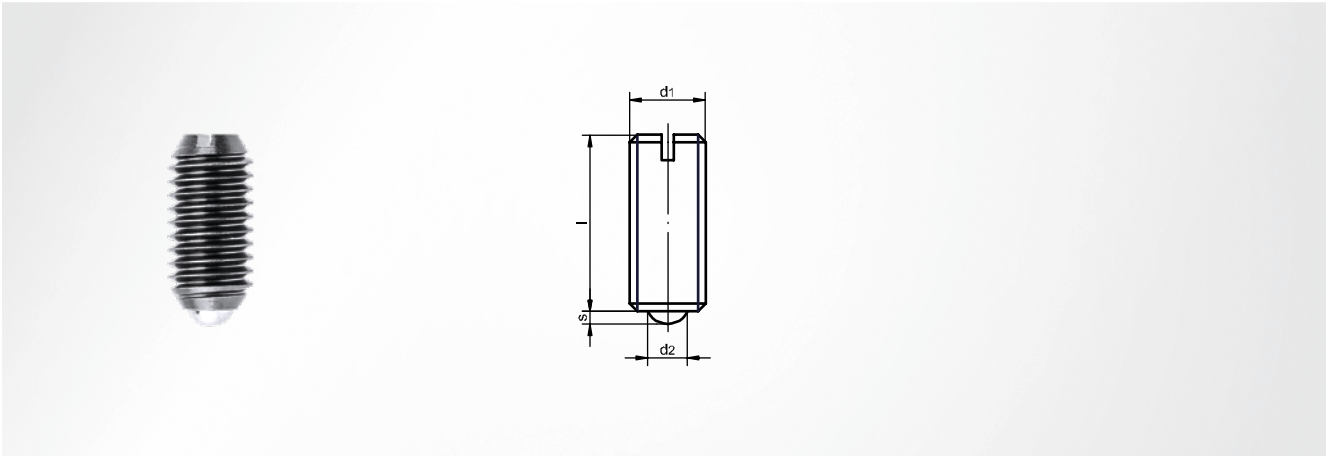
## Note

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 <b>03</b>
M4	1.5	15	1.5	5.0	15.0	25	1.3	SZ8131 <b>04</b>
M5	2.4	18	2.3	7.0	20.0	25	1.5	SZ8131 <b>05</b>
M6	2.7	20	2.5	7.0	20.0	25	2.0	SZ8131 <b>06</b>
M8	3.5	22	3.0	9.0	35.0	10	2.5	SZ8131 <b>08</b>
M10	4.0	22	3.0	9.0	35.0	10	3.0	SZ8131 <b>10</b>
M12	6.0	28	4.0	15.0	55.0	10	4.0	SZ8131 <b>12</b>
M16	7.5	32	5.0	45.0	100.0	10	5.0	SZ8131 <b>16</b>

# SZ8130 Thrust piece

with ball, slot



## Material

Free-cutting steel

## Note

Ball, hardened

d <sub>1</sub>	d <sub>2</sub>	l	s	Initial pressure N	Final pressure N	Standard packaging piece	Item number
M3	1.5	7	0.5	2.2	3	50	SZ8130 <b>03</b>
M4	2.5	9	0.8	6.0	12	50	SZ8130 <b>04</b>
M5	3.0	12	0.9	7.0	13	50	SZ8130 <b>05</b>
M6	3.5	14	1.0	9.0	15	50	SZ8130 <b>06</b>
M8	5.0	16	1.5	20.0	35	50	SZ8130 <b>08</b>
M10	6.0	19	2.0	25.0	45	50	SZ8130 <b>10</b>
M12	8.0	22	2.5	35.0	60	25	SZ8130 <b>12</b>
M16	10.0	24	3.5	65.0	110	25	SZ8130 <b>16</b>



# Nitrogen systems

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



Tapping units

Module system

Machine elements

Accessories

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 	SZ701706 5.109 	SZ702406 5.110 	SZ704531 5.110 	SZ704302 5.111 
SZ704406 5.111 	SZ704204 5.112 	SZ704303 5.112 	SZ704301 5.113 	SZ704404 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 5.124 	ST8842 5.125 
ST8842-WKZ-5 5.126 	ST8841-WKZ-3 5.126 	ST8841-WKZ-41 5.127 			

Tapping units


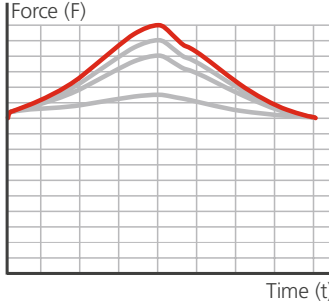

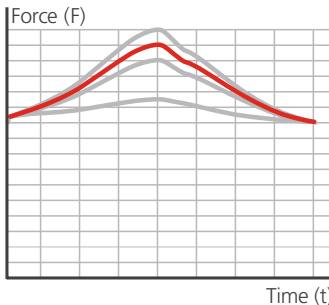

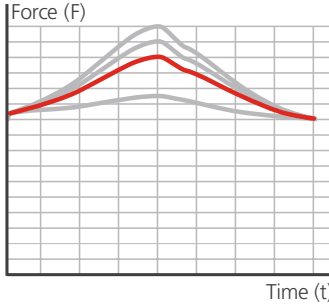
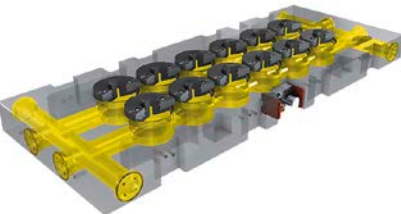
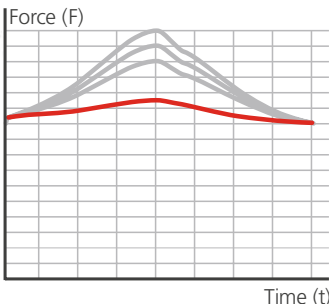
Module system

Machine elements

Accessories

## 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.steinell.com](http://www.steinell.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

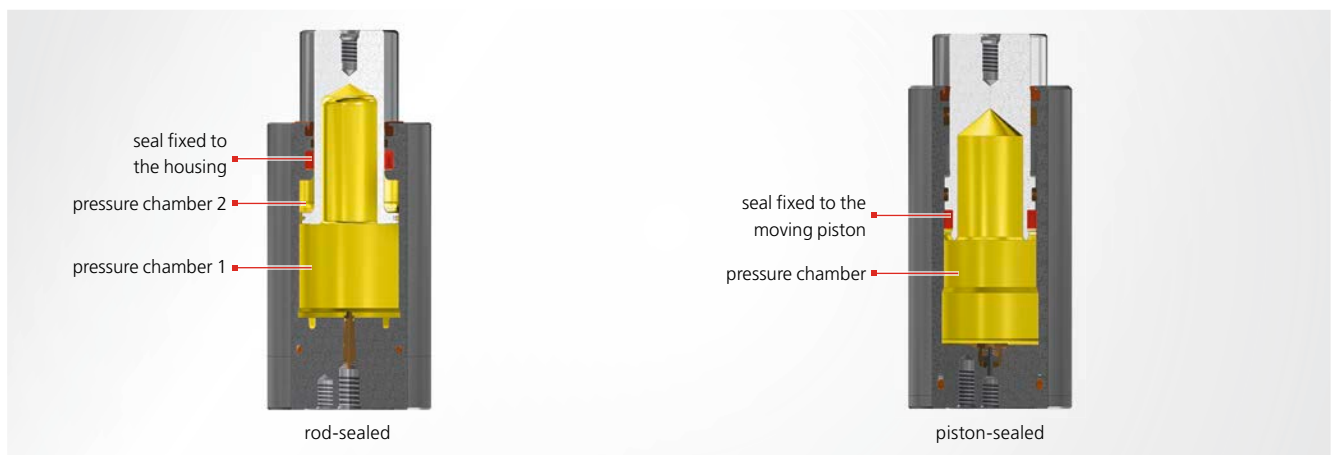
- outstanding lifetimes due to innovative sealing materials, lifetime lubrication and two-point piston support
- large product range for each installation situation and application
- rapid availability of all products thanks to in-house production and extensive warehousing

### 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 <sub>2</sub> 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.

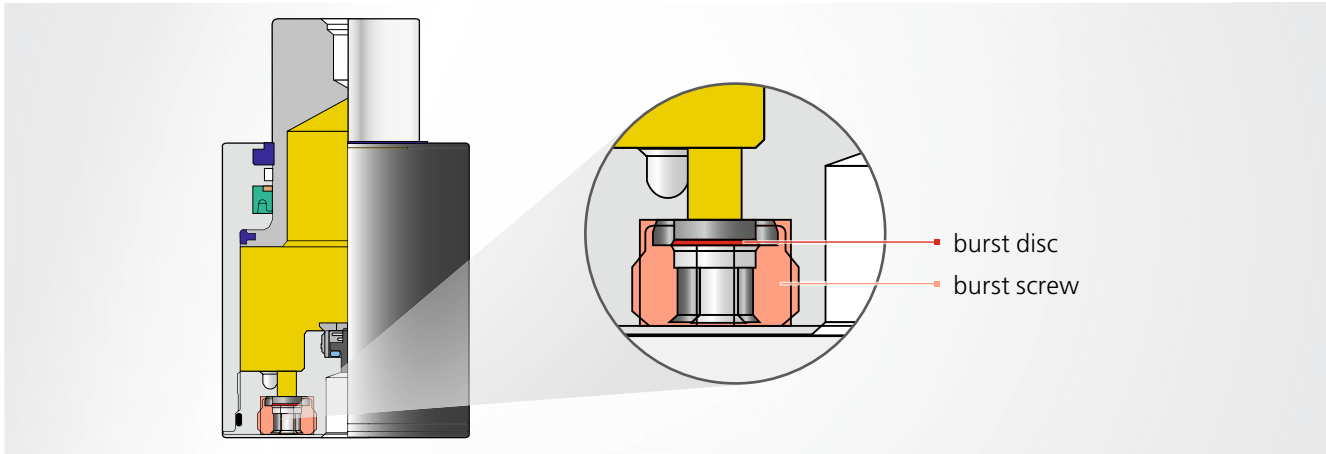
### Piston-sealed springs

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.

## 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 retrofittable 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



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 <sub>2</sub> min. 2.8
permissible temperature (TS)	
min.	5 °C
max.	80 °C
min. filling pressure	50 bar

## Composite plate systems



Composite plate systems consist of several nitrogen cylinders, a control panel 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

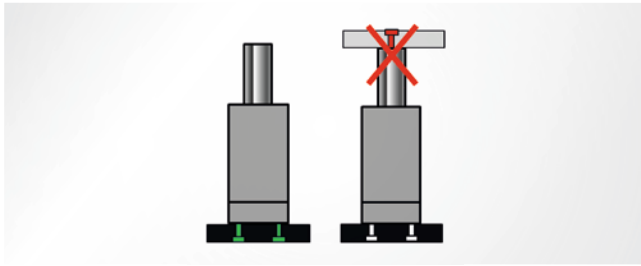
- No additional space is required in the tool for external tube lines, as all of the connecting boreholes are in the interior of the composite plate.
- It is possible to temporarily compensate for a small pressure drop by replenishing nitrogen levels without having to interrupt the production process.
- 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 <sub>2</sub> min. 2.8
permissible temperature (TS)	
min.	5 °C
max.	75 °C
min. filling pressure	50 bar

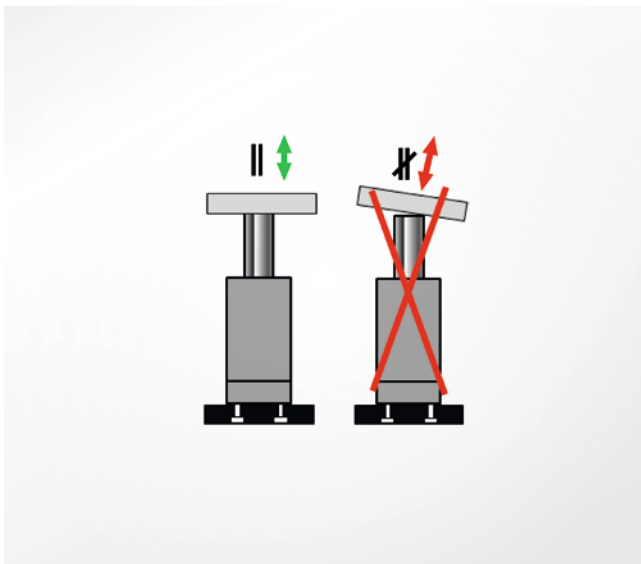
# Nitrogen systems

## Installation instructions



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.

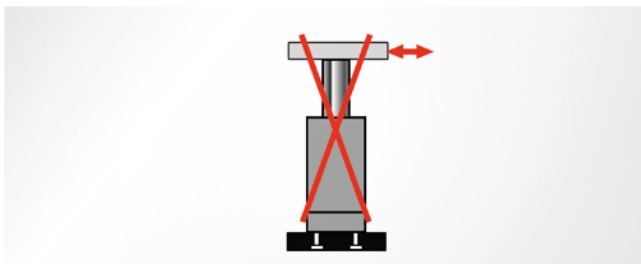


The nitrogen cylinders must be installed coaxial to the acting force.

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

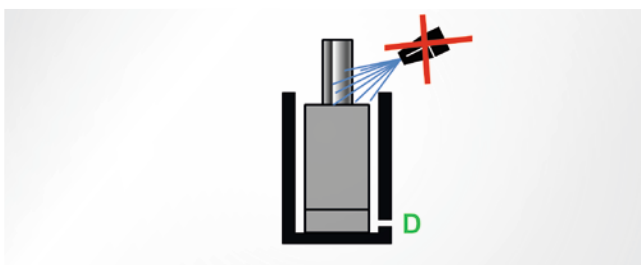
The screw-on surface must be flat and parallel to the pressure surface.

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.

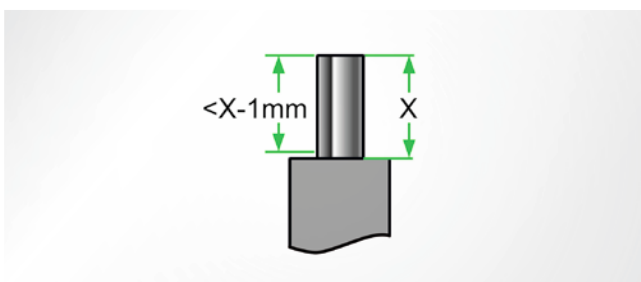


Lateral forces should be avoided.

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

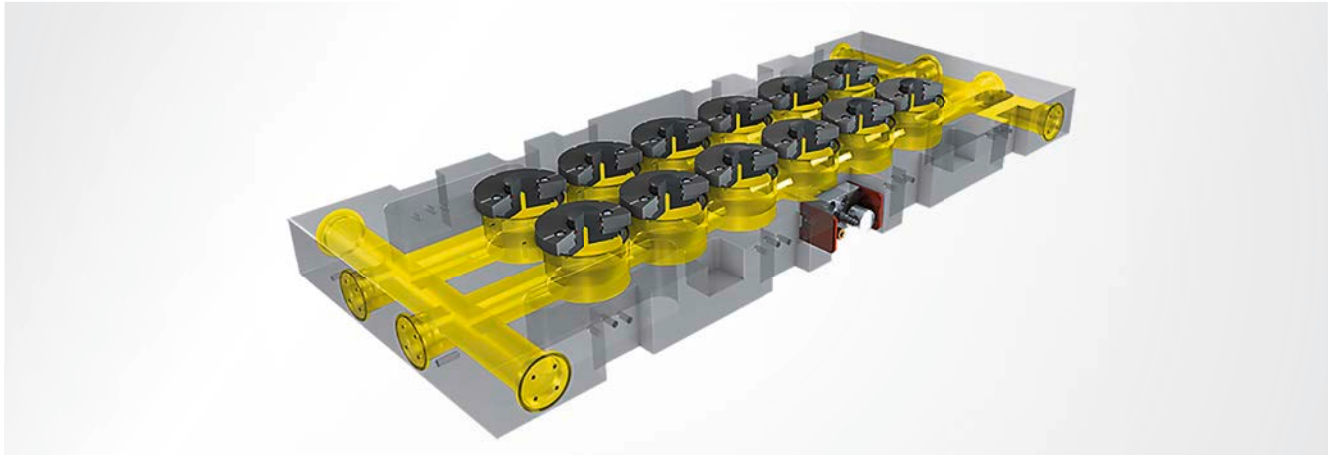


When installed in counterbores, the nitrogen cylinders must be provided with a circumferential gap of at least 1.5 mm between the nitrogen cylinder and the walls. The release of liquid by means of a drainage bore (D) must be possible. The piston rod must be protected from contact with liquids and mechanical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



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

X = maximum stroke



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.

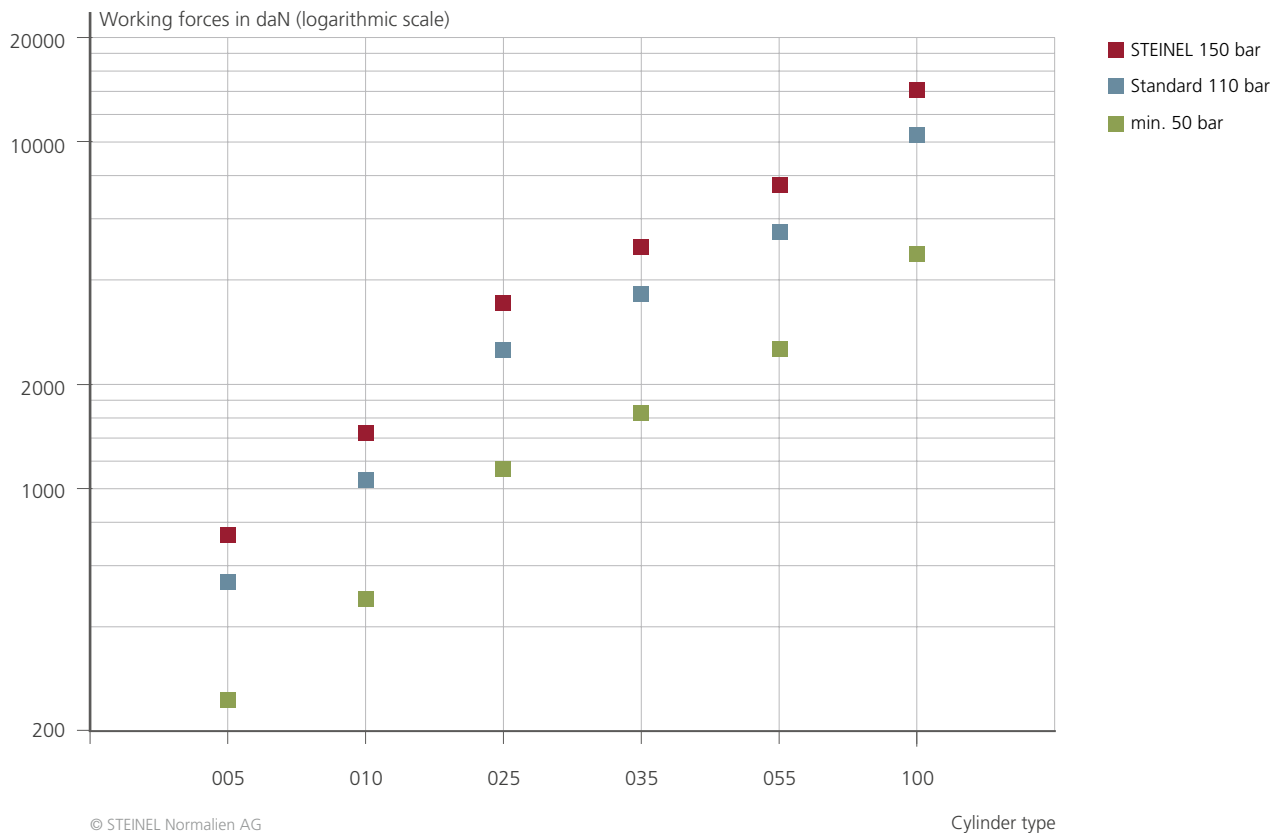
Operating parameters	
pressure medium	gaseous nitrogen N <sub>2</sub> min. 2.8
permissible temperature (TS)	
min.	5 °C
max.	75 °C
Filling pressure	
min.	50 bar
max.	150 bar
max. permissible pressure (PS)	180 bar

## 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 <sub>2</sub> 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

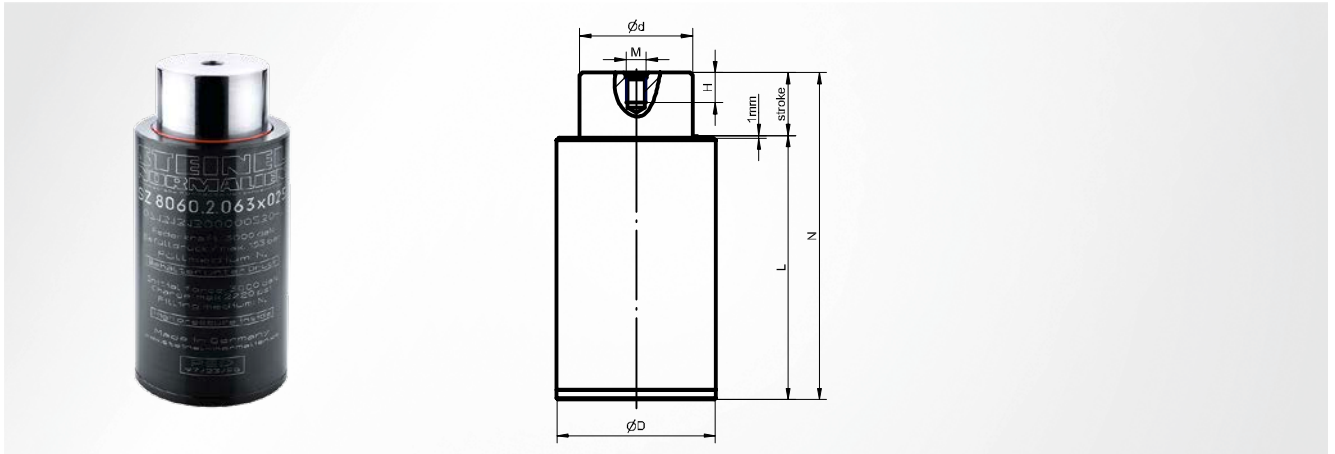


Type	Version	Burst pressure bar	Connection possibilities				Remarks
			G 1/8" Tube system	G 1/4" universal	Connections for composite plate	Connections for manifold plate	
ST8845-01-01	standard	180	3	2	–	–	<ul style="list-style-type: none"> <li>with tube connection to manifold plate</li> <li>both rear boreholes with sealing plugs</li> </ul>
ST8845-32-01	standard	180	3	2	–	1	<ul style="list-style-type: none"> <li>Direct installation at manifold plates from 32 mm width possible</li> <li>rear upper borehole with sealing plug</li> <li>Connection possibility via rear lower borehole</li> </ul>
ST8845-80-01	standard	180	3	2	–	1	<ul style="list-style-type: none"> <li>Direct installation at manifold plates from 80 mm width possible</li> <li>rear lower borehole with sealing plug</li> <li>Connection possibility via rear upper borehole</li> </ul>
ST8845-8	mini	180	3	2	–	1	<ul style="list-style-type: none"> <li>only for direct installation at manifold plates</li> </ul>
ST8845-02-01	standard	450	3	2	2	–	<ul style="list-style-type: none"> <li>for all composite systems</li> </ul>
ST8845-9	mini	450	3	1	1	–	<ul style="list-style-type: none"> <li>for all composite systems</li> </ul>
ST8845-444	maxi	450	12	1	–	–	<ul style="list-style-type: none"> <li>only for composite tube systems</li> </ul>



# SZ8060.2. Nitrogen cylinder

self-sufficient



**Base**

Standard base

**Filling**



with standard nitrogen

**Burst protection**

not integrated

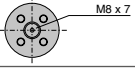
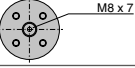
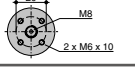
**Delivery**

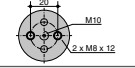
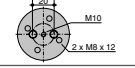
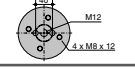
will be supplied filled

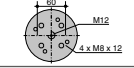
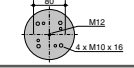
D	d	Filling thread	Position filling thread	Filling pressure max. bar	 daN	 daN	M	H	N	Stroke	L	Item number
25	14	M8	centred	157	400	730	M6	6	75	10	65	SZ8060.2 .025 x 010
									90	15	75	SZ8060.2 .025 x 015
									120	25	95	SZ8060.2 .025 x 025
									195	50	145	SZ8060.2 .025 x 050
32	18	M8	centred	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	

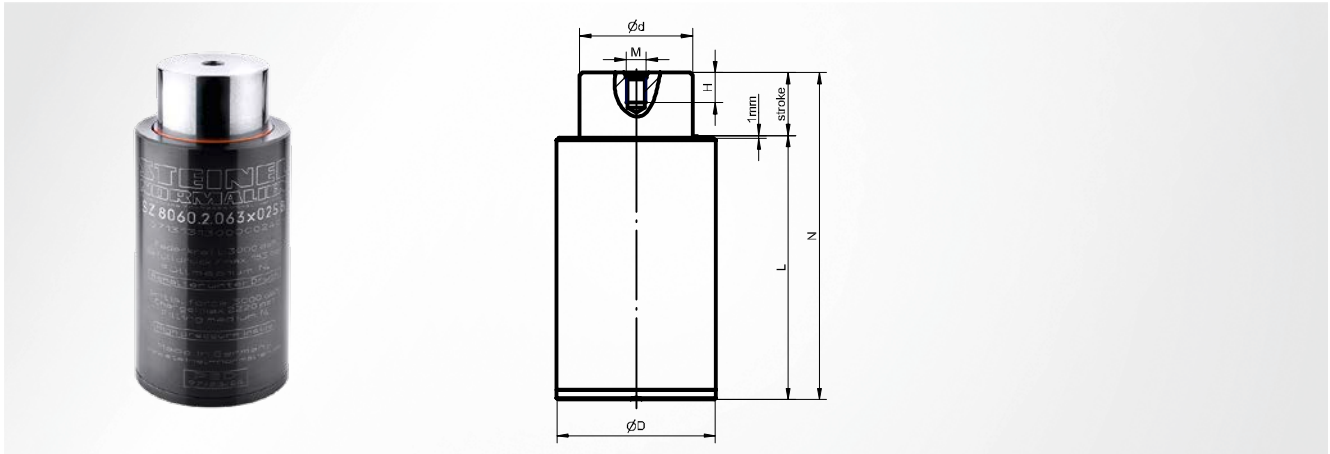
D	Cylinder mounting
50	
63	
75	

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	Burst pressure bar	Filling pressure max. bar	 daN	 daN	M	H	N	Stroke	L	Item number
32	18	M8	centred	450	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	450	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	400	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	400	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	380	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	450	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	380	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

Tapping units

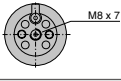
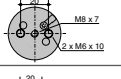
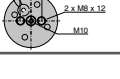
Module system

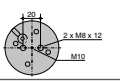
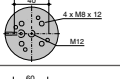
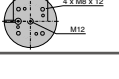
Machine elements

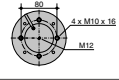
Accessories

# SZ8060.2.B Nitrogen cylinder

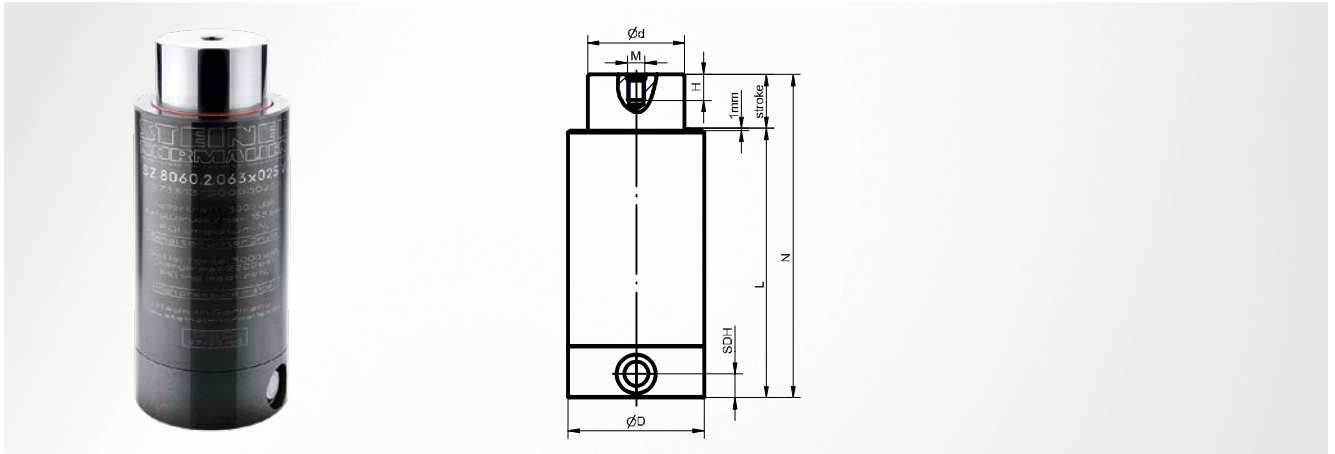
self-sufficient, with burst protection

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



### 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
										15	95	SZ8060.2 .038 x 015V
										25	115	SZ8060.2 .038 x 025V
										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
										15	100	SZ8060.2 .050 x 015V
										25	120	SZ8060.2 .050 x 025V
										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
										15	105	SZ8060.2 .063 x 015V
										25	125	SZ8060.2 .063 x 025V
										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
										15	105	SZ8060.2 .075 x 015V
										25	125	SZ8060.2 .075 x 025V
										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
										15	110	SZ8060.2 .095 x 015V
										25	130	SZ8060.2 .095 x 025V
										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
										15	120	SZ8060.2 .120 x 015V
										25	140	SZ8060.2 .120 x 025V
										50	190	SZ8060.2 .120 x 050V

D	Cylinder mounting	Connection to
38		90°
50		90°

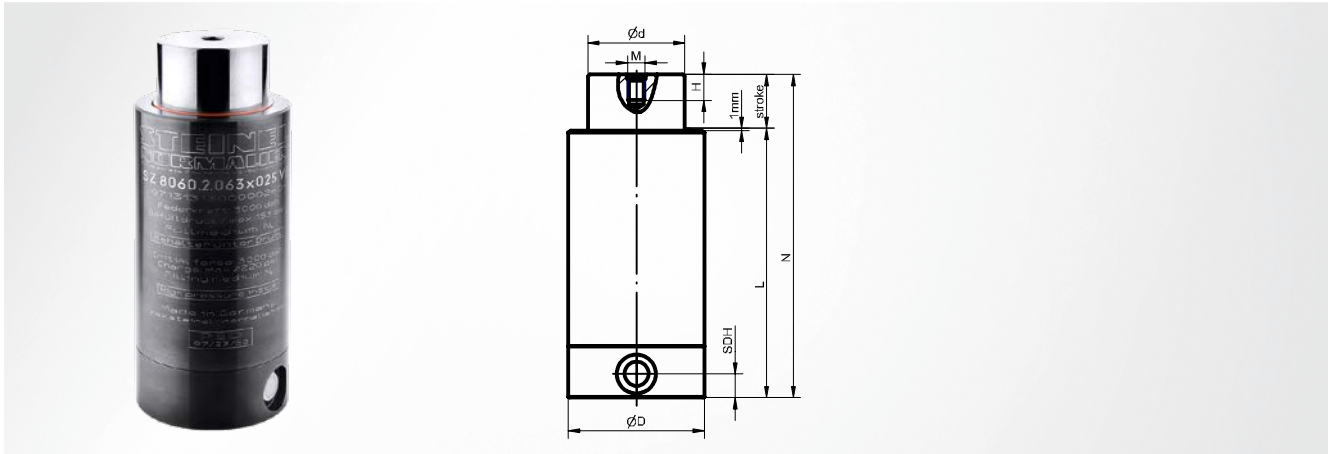
D	Cylinder mounting	Connection to
63		90°
75		45°

D	Cylinder mounting	Connection to
95		45°
120		45°

# 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	Burst pressure bar	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number		
38	22	G1/8	on the side	450	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	400	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	400	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	380	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	450	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	380	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	Connection to
38		90°
50		90°

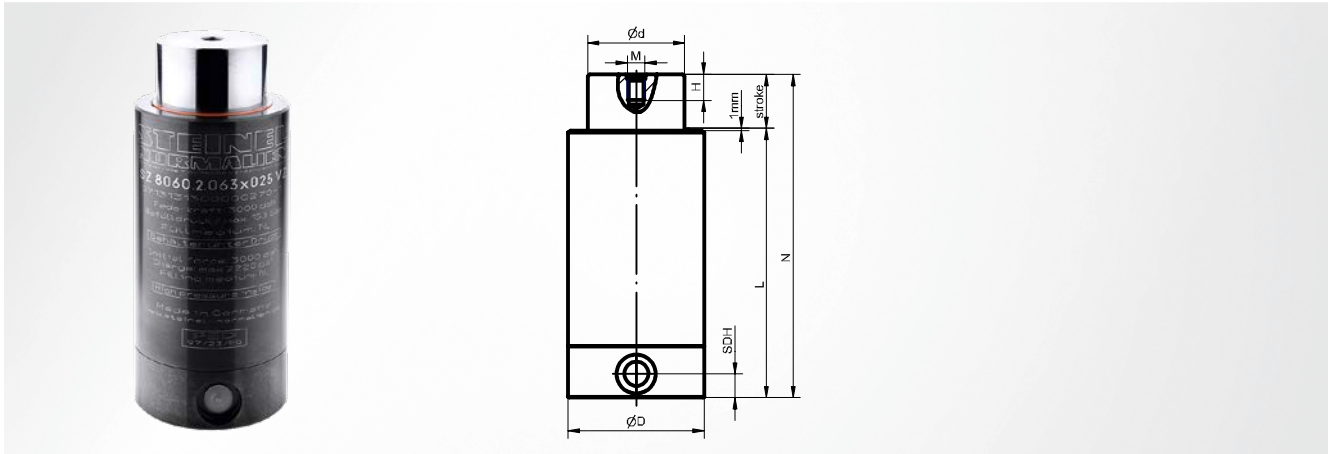
D	Cylinder mounting	Connection to
63		90°
75		45°

D	Cylinder mounting	Connection to
95		45°
120		45°

# SZ8060.2.VZ Connecting nitrogen cylinder



2 connections, with burst protection



## Base

Composite base; with burst protection; 2 connections

## Delivery

will be supplied unfilled

## Burst protection

integrated

## 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

## Filling

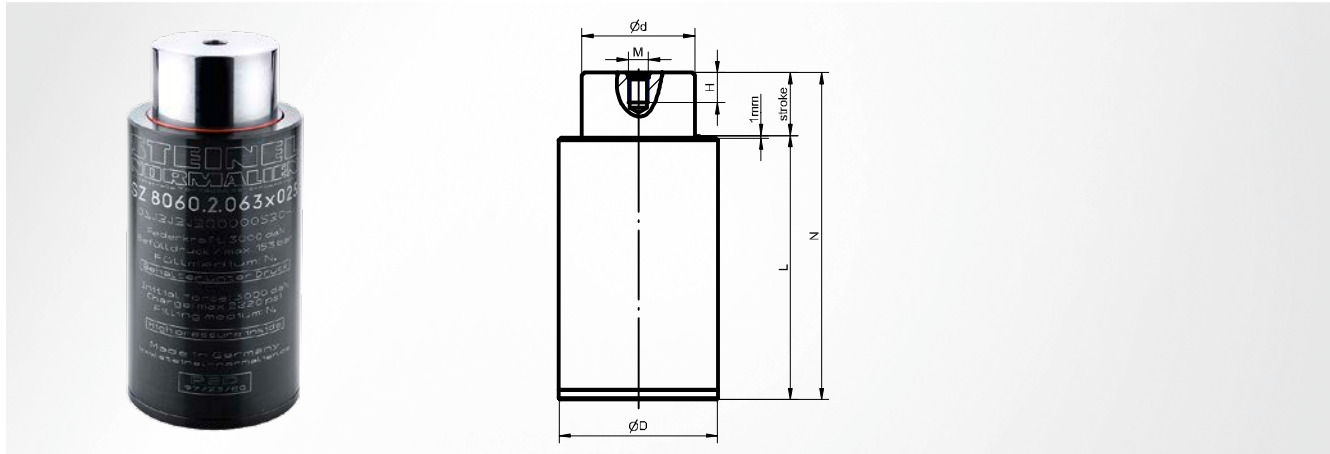
carried out via composite system

D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar	daN	daN	M	H	N	Stroke	L	Item number
38	22	G1/8	on the side	450	162	1000	1710	M6	6	95	10	85	SZ8060.2. <b>.038 x 010VZ</b>
											15	95	SZ8060.2. <b>.038 x 015VZ</b>
											25	115	SZ8060.2. <b>.038 x 025VZ</b>
											50	165	SZ8060.2. <b>.038 x 050VZ</b>
50	35	G1/8	on the side	400	159	2000	3400	M8	8	100	10	90	SZ8060.2. <b>.050 x 010VZ</b>
											15	100	SZ8060.2. <b>.050 x 015VZ</b>
											25	120	SZ8060.2. <b>.050 x 025VZ</b>
											50	170	SZ8060.2. <b>.050 x 050VZ</b>
63	45	G1/8	on the side	400	153	3000	4800	M8	8	105	10	95	SZ8060.2. <b>.063 x 010VZ</b>
											15	105	SZ8060.2. <b>.063 x 015VZ</b>
											25	125	SZ8060.2. <b>.063 x 025VZ</b>
											50	175	SZ8060.2. <b>.063 x 050VZ</b>
75	55	G1/8	on the side	380	142	4000	6400	M8	8	105	10	95	SZ8060.2. <b>.075 x 010VZ</b>
											15	105	SZ8060.2. <b>.075 x 015VZ</b>
											25	125	SZ8060.2. <b>.075 x 025VZ</b>
											50	175	SZ8060.2. <b>.075 x 050VZ</b>
95	65	G1/8	on the side	450	158	7000	11200	M8	8	110	10	100	SZ8060.2. <b>.095 x 010VZ</b>
											15	110	SZ8060.2. <b>.095 x 015VZ</b>
											25	130	SZ8060.2. <b>.095 x 025VZ</b>
											50	180	SZ8060.2. <b>.095 x 050VZ</b>
120	85	G1/8	on the side	380	141	10000	16000	M8	8	120	10	110	SZ8060.2. <b>.120 x 010VZ</b>
											15	120	SZ8060.2. <b>.120 x 015VZ</b>
											25	140	SZ8060.2. <b>.120 x 025VZ</b>
											50	190	SZ8060.2. <b>.120 x 050VZ</b>

D	Cylinder mounting	Connection to
38		90°
50		90°

D	Cylinder mounting	Connection to
63		90°
75		45°

D	Cylinder mounting	Connection to
95		45°
120		45°



### 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 <sup>±0.2</sup>	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



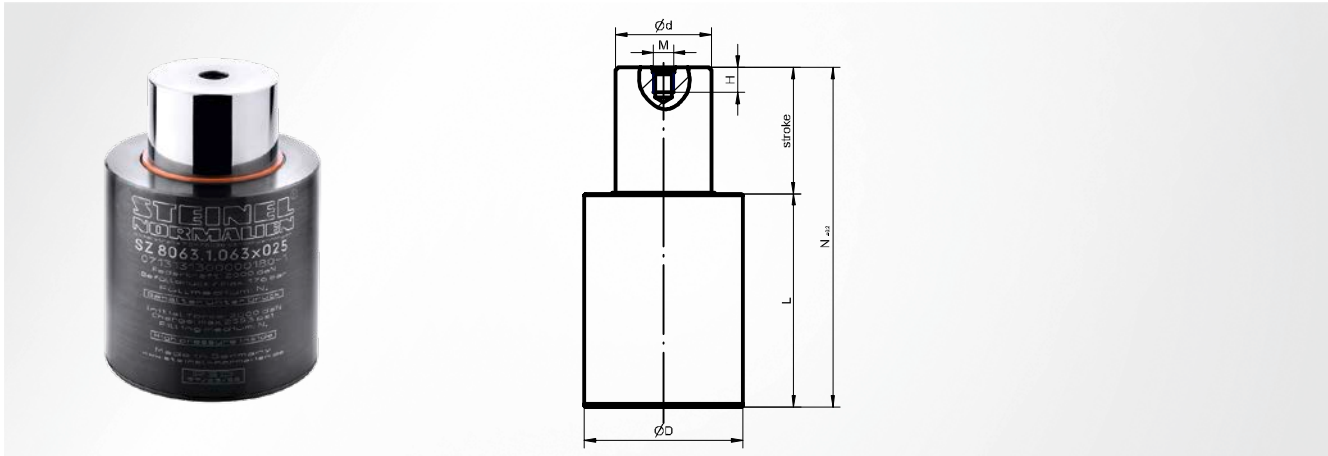
D	Cylinder mounting
32	
38	
50	

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	
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

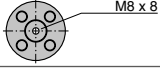
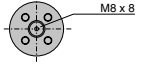
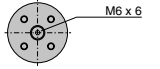
# SZ8063.1. Nitrogen cylinder

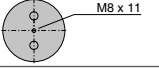
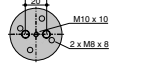
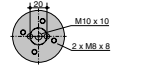
self-sufficient

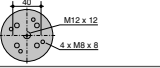
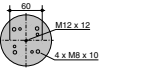
D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN		M	H	Stroke	L	N ±0.2	Item number
38	22	M8	centred	197		1050			5	35	40	SZ8063.1 .038 x 005
						1155	M6	6	10	40	50	SZ8063.1 .038 x 010
						1200	M6	6	15	45	60	SZ8063.1 .038 x 015
						1200	M6	6	19	49	68	SZ8063.1 .038 x 019
		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

# SZ8063.1. Nitrogen cylinder

self-sufficient

D	Cylinder mounting
19	 M8 x 8
25	 M8 x 8
32	 M6 x 6

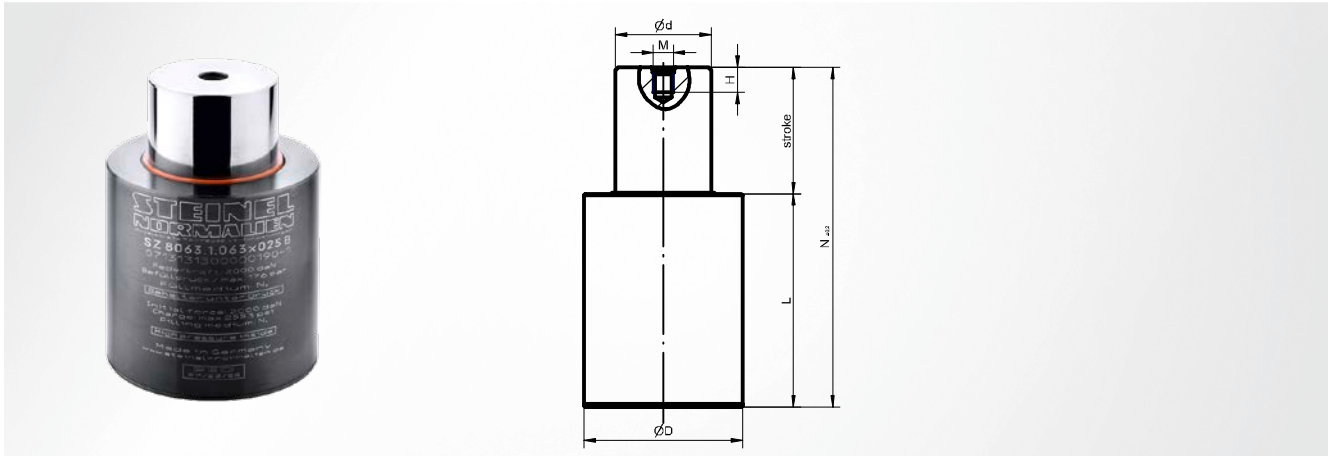
D	Cylinder mounting
38	 M8 x 11
50	 M10 x 10 2 x M8 x 8
63	 M10 x 10 2 x M8 x 8

D	Cylinder mounting
75	 M12 x 12 4 x M8 x 8
95	 M12 x 12 4 x M8 x 10

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**

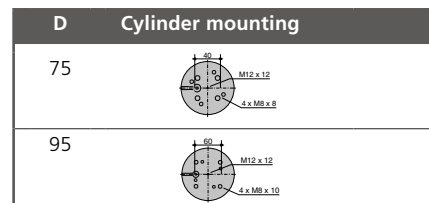
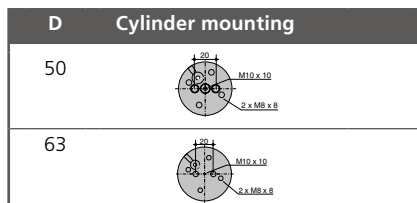
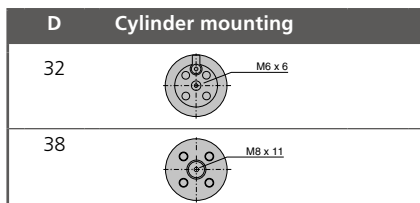
will be supplied filled

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number
								daN	daN				
32	18	M6	centred	470	196			500	700	5	35	40	SZ8063.1 .032 x 005B
32	18	M6	centred	470	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	470	197			750	1050	5	35	40	SZ8063.1 .038 x 005B
38	22	M8	centred	470	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	500	212			1500	2130	5	40	45	SZ8063.1 .050 x 005B
50	30	M10	centred	500	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	430	176			2000	2720	5	40	45	SZ8063.1 .063 x 005B

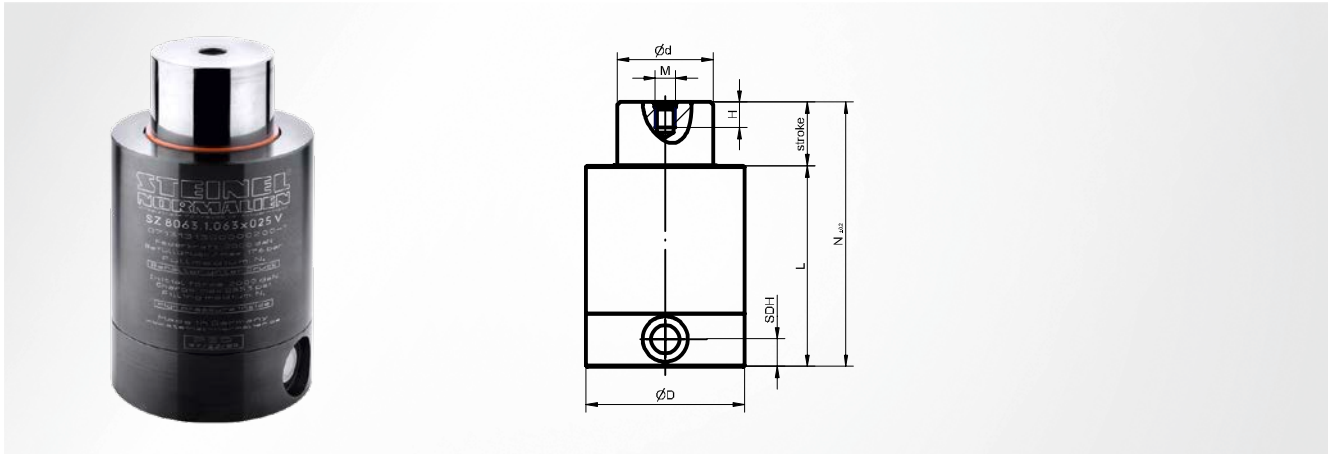
# SZ8063.1.B Nitrogen cylinder

self-sufficient, with burst protection

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N $\pm 0.2$	Item number	
								daN	daN					
63	38	M10	centred	430	176	M8	8	2000	3080	10	45	55	SZ8063.1. <b>.063 x 010B</b>	
								2000	3200	15	50	65	SZ8063.1. <b>.063 x 015B</b>	
								2000	3200	19	54	73	SZ8063.1. <b>.063 x 019B</b>	
								2000	3200	25	60	85	SZ8063.1. <b>.063 x 025B</b>	
								2000	3200	32	67	99	SZ8063.1. <b>.063 x 032B</b>	
								2000	3200	38	73	111	SZ8063.1. <b>.063 x 038B</b>	
								2000	3200	50	85	135	SZ8063.1. <b>.063 x 050B</b>	
								2000	3200	63	98	161	SZ8063.1. <b>.063 x 063B</b>	
								2000	3200	80	120	200	SZ8063.1. <b>.063 x 080B</b>	
								2000	3200	100	135	235	SZ8063.1. <b>.063 x 100B</b>	
2000	3200	125	160	285	SZ8063.1. <b>.063 x 125B</b>									
75	45	M12	centred	450	189			3000	4050	5	45	50	SZ8063.1. <b>.075 x 005B</b>	
75	45	M12	centred	450	189	M8	8	3000	4590	10	50	60	SZ8063.1. <b>.075 x 010B</b>	
								3000	4800	15	55	70	SZ8063.1. <b>.075 x 015B</b>	
								3000	4800	19	59	78	SZ8063.1. <b>.075 x 019B</b>	
								3000	4800	25	65	90	SZ8063.1. <b>.075 x 025B</b>	
								3000	4800	32	72	104	SZ8063.1. <b>.075 x 032B</b>	
								3000	4800	38	78	116	SZ8063.1. <b>.075 x 038B</b>	
								3000	4800	50	90	140	SZ8063.1. <b>.075 x 050B</b>	
								3000	4800	63	103	166	SZ8063.1. <b>.075 x 063B</b>	
								3000	4800	80	125	205	SZ8063.1. <b>.075 x 080B</b>	
								3000	4800	100	145	245	SZ8063.1. <b>.075 x 100B</b>	
3000	4800	125	170	295	SZ8063.1. <b>.075 x 125B</b>									
95	55	M12	centred	500	210			5000	7000	5	55	60	SZ8063.1. <b>.095 x 005B</b>	
95	55	M12	centred	500	210	M8	8	5000	7800	10	60	70	SZ8063.1. <b>.095 x 010B</b>	
								5000	8000	15	65	80	SZ8063.1. <b>.095 x 015B</b>	
								5000	8000	19	69	88	SZ8063.1. <b>.095 x 019B</b>	
								5000	8000	25	75	100	SZ8063.1. <b>.095 x 025B</b>	
								5000	8000	32	82	114	SZ8063.1. <b>.095 x 032B</b>	
								5000	8000	38	87	125	SZ8063.1. <b>.095 x 038B</b>	
								5000	8000	50	100	150	SZ8063.1. <b>.095 x 050B</b>	
								5000	8000	63	113	176	SZ8063.1. <b>.095 x 063B</b>	
								5000	8000	80	130	210	SZ8063.1. <b>.095 x 080B</b>	
								5000	8000	100	150	250	SZ8063.1. <b>.095 x 100B</b>	
5000	8000	125	175	300	SZ8063.1. <b>.095 x 125B</b>									



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



### Base

Composite base

### Burst protection

not integrated

### Filling

carried out via composite system



### Delivery

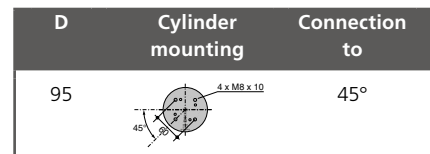
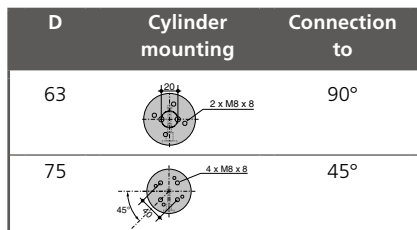
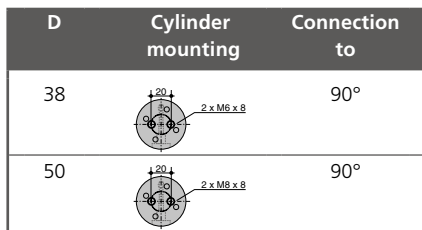
will be supplied unfilled

### 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

D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H			Stroke	L	N <sup>±0.2</sup>	Item number
							daN	daN				
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	M8	8	3000	4050	5	65	70	SZ8063.1 .075 x 005V
75	45	G1/8	on the side	189			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	M8	8	5000	7000	5	75	80	SZ8063.1 .095 x 005V
95	55	G1/8	on the side	210			5000	8000	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							

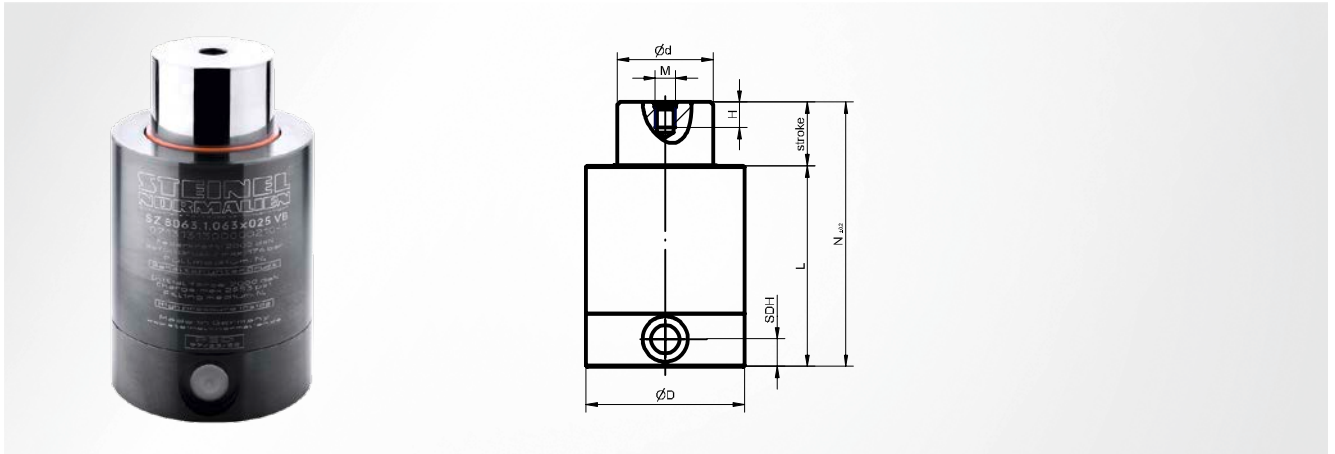




# SZ8063.1.VB Connecting nitrogen cylinder



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

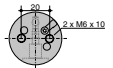
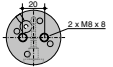
D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N <sup>±0.2</sup>	Item number
38	22	G1/8	on the side	470	197			750	1050	5	55	60	SZ8063.1 .038 x 005VB
38	22	G1/8	on the side	470	197	M6	6	750	1155	10	60	70	SZ8063.1 .038 x 010VB
								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	500	212			1500	2130	5	60	65	SZ8063.1 .050 x 005VB
50	30	G1/8	on the side	500	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	430	176			2000	2720	5	60	65	SZ8063.1 .063 x 005VB
63	38	G1/8	on the side	430	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

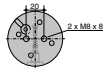
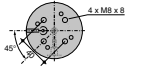
# SZ8063.1.VB Connecting nitrogen cylinder

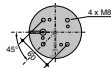


with burst protection

D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number	
								daN	daN					
63	38	G1/8	on the side	430	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	450	189	M8	8	3000	4050	5	65	70	SZ8063.1 .075 x 005VB	
75	45	G1/8	on the side	450	189			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	500	210	M8
95	55	G1/8	on the side	500	210	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	Connection to
38		90°
50		90°

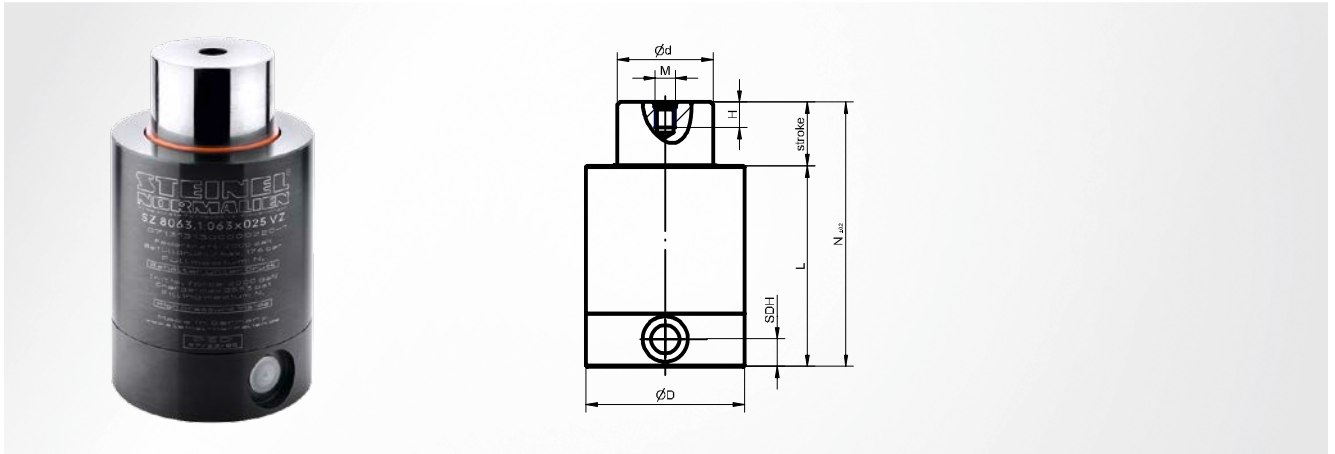
D	Cylinder mounting	Connection to
63		90°
75		45°

D	Cylinder mounting	Connection to
95		45°

# SZ8063.1.VZ Connecting nitrogen cylinder



2 connections, with burst protection



## Base

Composite base; with burst protection; 2 connections

## Delivery

will be supplied unfilled

## Burst protection

integrated

## 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

## Filling



carried out via composite system

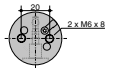
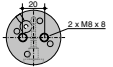
D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N <sup>±0.2</sup>	Item number
38	22	G1/8	on the side	470	197			750	1050	5	55	60	SZ8063.1 .038 x 005VZ
38	22	G1/8	on the side	470	197	M6	6	750	1155	10	60	70	SZ8063.1 .038 x 010VZ
								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	500	212			1500	2130	5	60	65	SZ8063.1 .050 x 005VZ
50	30	G1/8	on the side	500	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	430	176			2000	2720	5	60	65	SZ8063.1 .063 x 005VZ
63	38	G1/8	on the side	430	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

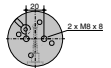
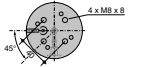
# SZ8063.1.VZ Connecting nitrogen cylinder

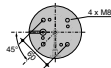


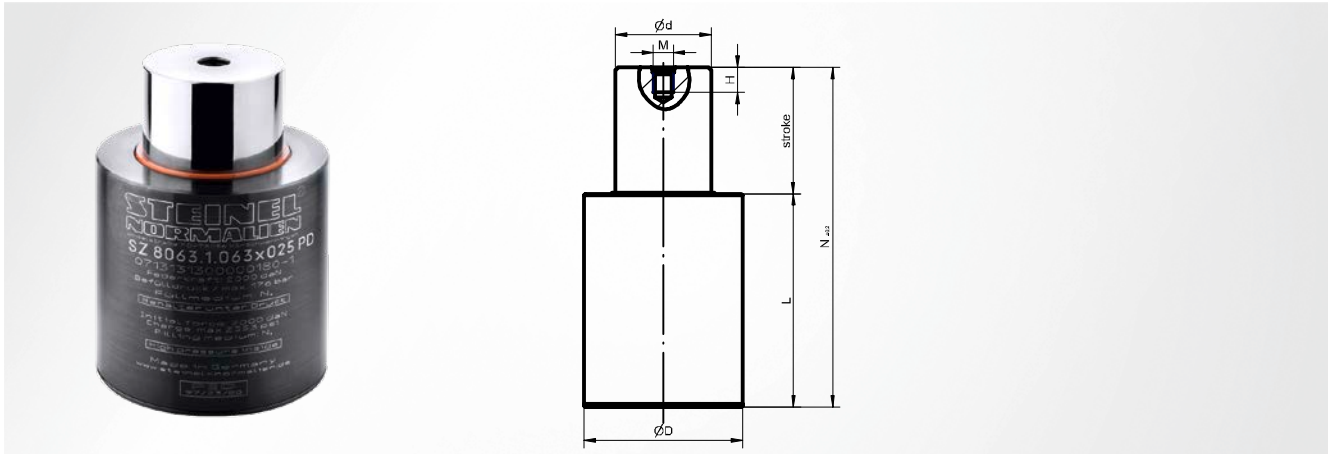
2 connections, with burst protection

D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number	
								daN	daN					
63	38	G1/8	on the side	430	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	450	189	M8	8	3000	4050	5	65	70	SZ8063.1 .075 x 005VZ	
75	45	G1/8	on the side	450	189			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	500	210	M8
95	55	G1/8	on the side	500	210	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	Connection to
38		90°
50		90°

D	Cylinder mounting	Connection to
63		90°
75		45°

D	Cylinder mounting	Connection to
95		45°



### Base

Composite plate floor

### Burst protection

not integrated

### Filling

carried out via composite system

### Delivery

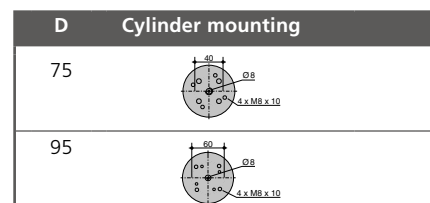
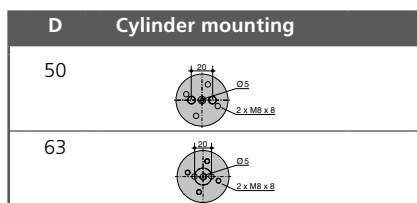
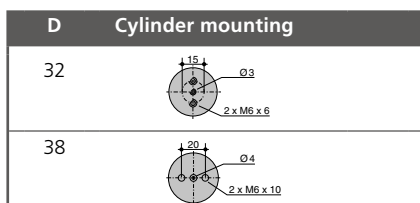
will be supplied unfilled

### 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

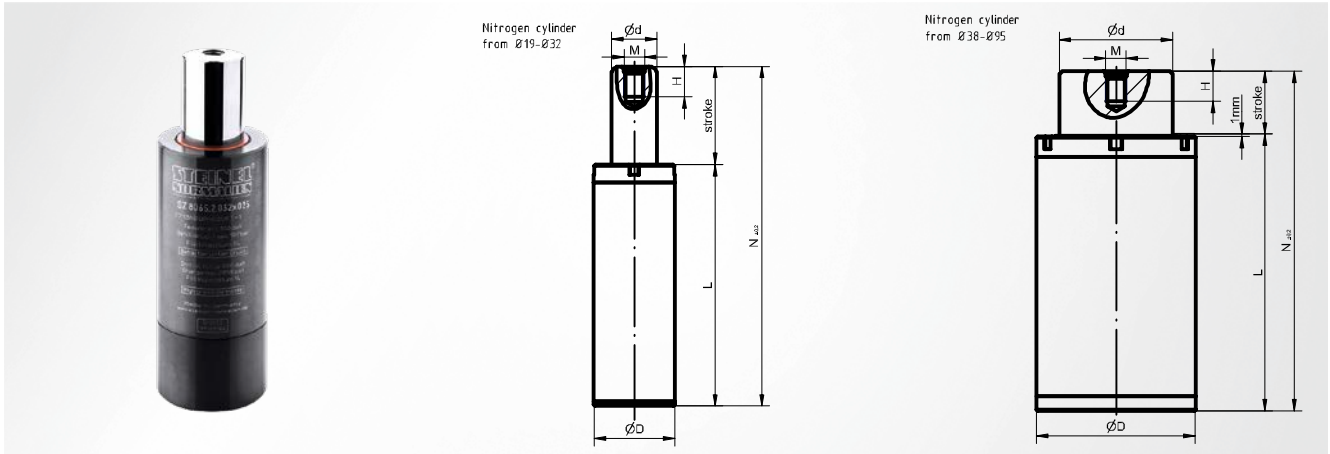
D	d	Filling pressure max. bar	M	H			N	Stroke	L	Item number
					daN	daN				
32	18	196			500	700	40	5	35	SZ8063.1 .032 x 005PD
32	18	196	M6	6	500	760	50	10	40	SZ8063.1 .032 x 010PD
					500	800	56	13	43	SZ8063.1 .032 x 013PD
					500	800	60	15	45	SZ8063.1 .032 x 015PD
					500	800	68	19	49	SZ8063.1 .032 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

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	M8	8	2000	2720	45	5	40	SZ8063.1 .063 x 005PD					
63	38	176			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	M8	8	3000	4050	50	5	45	SZ8063.1 .075 x 005PD
75	45	189	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	M8	8			5000	7000	60	5	55	SZ8063.1 .095 x 005PD
			95	55	210					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										



# SZ8065.2. Nitrogen cylinder

self-sufficient



### Base

Standard base

### Filling

with standard nitrogen

### Burst protection

not integrated

### Delivery

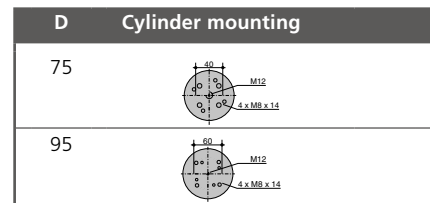
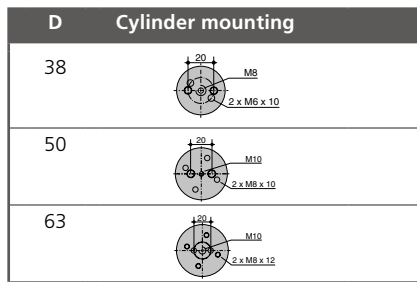
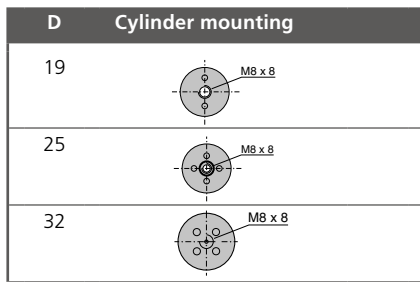
will be supplied filled

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
25	14	M8	centred	196	300	480			80	140	220	SZ8065.2 .019 x 080
									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
32	18	M6	centred	196	500	800			63	127	190	SZ8065.2 .025 x 063
									60	145	225	SZ8065.2 .025 x 080
							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
38	25	M8	centred	205	1000	1600			50	110	160	SZ8065.2 .032 x 050
									63	132	195	SZ8065.2 .032 x 063
									80	150	230	SZ8065.2 .032 x 080
							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
50	35	M10	centred	209	2000	3200			38	97	135	SZ8065.2 .038 x 038
									50	110	160	SZ8065.2 .038 x 050
									63	142	205	SZ8065.2 .038 x 063
									80	160	240	SZ8065.2 .038 x 080
							M8	8	10	95	105	SZ8065.2 .050 x 010
							M8	8	15	100	115	SZ8065.2 .050 x 015
63	45	M10	centred	189	3000	4800			25	110	135	SZ8065.2 .050 x 025
									38	127	165	SZ8065.2 .050 x 038
									50	140	190	SZ8065.2 .050 x 050
									63	157	220	SZ8065.2 .050 x 063
									80	175	255	SZ8065.2 .050 x 080
							M8	8	10	95	105	SZ8065.2 .063 x 010
		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 $\pm 0.2$	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

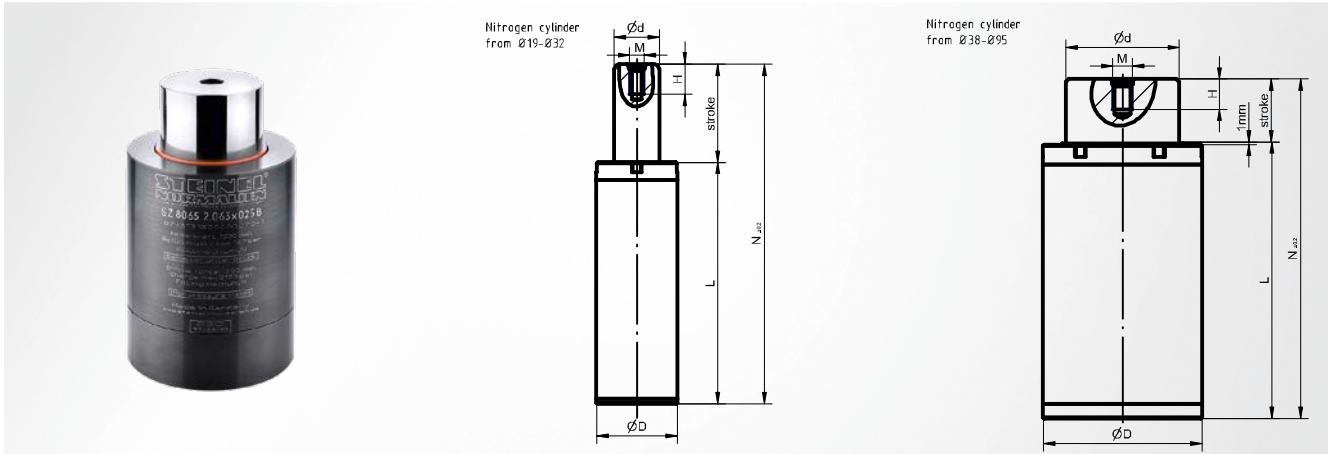


from D 38, the medium thread is only used for filling



# SZ8065.2.B Nitrogen cylinder

self-sufficient, with burst protection



## Base

Standard base; with burst protection

## Filling

with standard nitrogen

## Burst protection

integrated



## Delivery

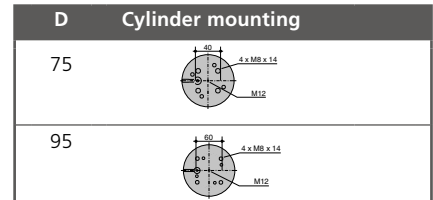
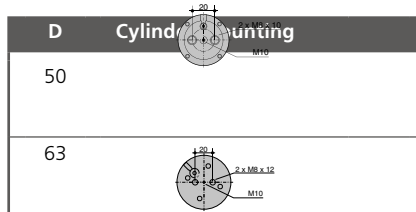
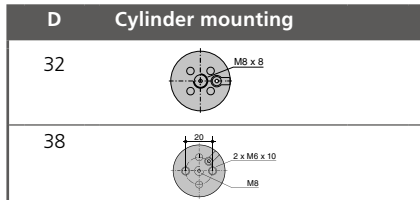
will be supplied filled

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	daN	daN	M	H	Stroke	L	N ±0.2	Item number
32	18	M6	centred	470	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	550	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	600	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	500	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	500	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	470	182	8000	12800	M8	8	10	115	125	SZ8065.2 .095 x 010B
										15	120	135	SZ8065.2 .095 x 015B
										15	120	135	SZ8065.2 .095 x 015B

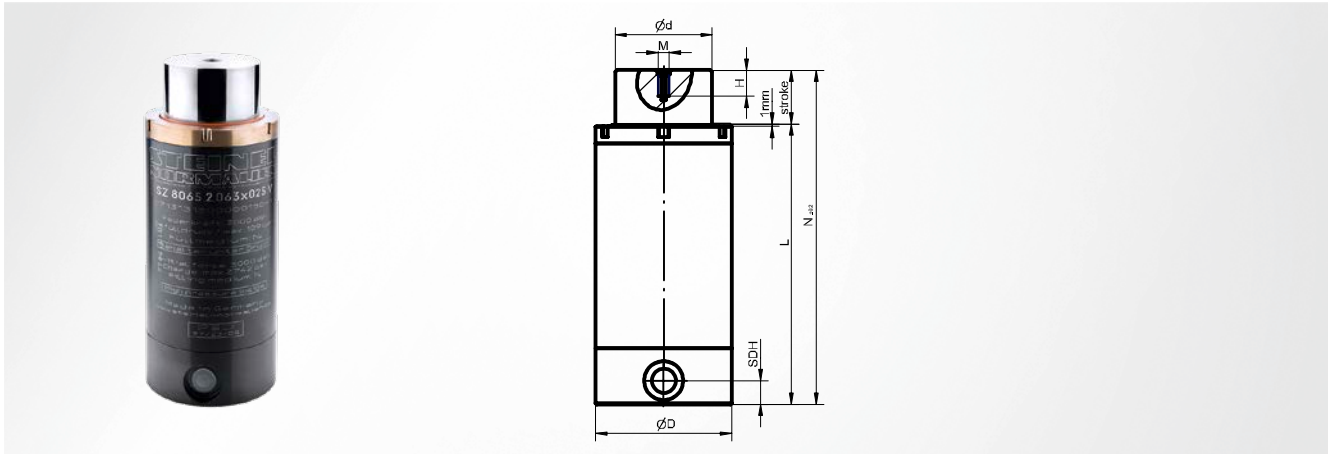
# SZ8065.2.B Nitrogen cylinder

self-sufficient, with burst protection

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	 daN	 daN	M	H	Stroke	L	N $\pm 0.2$	Item number
95	75	M8	centred	470	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



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



### 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
										15	90	SZ8065.2 .038 x 015V
										25	100	SZ8065.2 .038 x 025V
										38	117	SZ8065.2 .038 x 038V
										50	130	SZ8065.2 .038 x 050V
										63	162	SZ8065.2 .038 x 063V
										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
										15	120	SZ8065.2 .050 x 015V
										25	130	SZ8065.2 .050 x 025V
										38	147	SZ8065.2 .050 x 038V
										50	160	SZ8065.2 .050 x 050V
										63	177	SZ8065.2 .050 x 063V
										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
										15	120	SZ8065.2 .063 x 015V
										25	130	SZ8065.2 .063 x 025V
										38	147	SZ8065.2 .063 x 038V
										50	160	SZ8065.2 .063 x 050V
										63	177	SZ8065.2 .063 x 063V
										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
										15	130	SZ8065.2 .075 x 015V
										25	140	SZ8065.2 .075 x 025V
										38	157	SZ8065.2 .075 x 038V
										50	170	SZ8065.2 .075 x 050V
										63	197	SZ8065.2 .075 x 063V
										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
										15	140	SZ8065.2 .095 x 015V
										25	150	SZ8065.2 .095 x 025V
										38	167	SZ8065.2 .095 x 038V
										50	185	SZ8065.2 .095 x 050V

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	Connection to
38		90°
50		90°

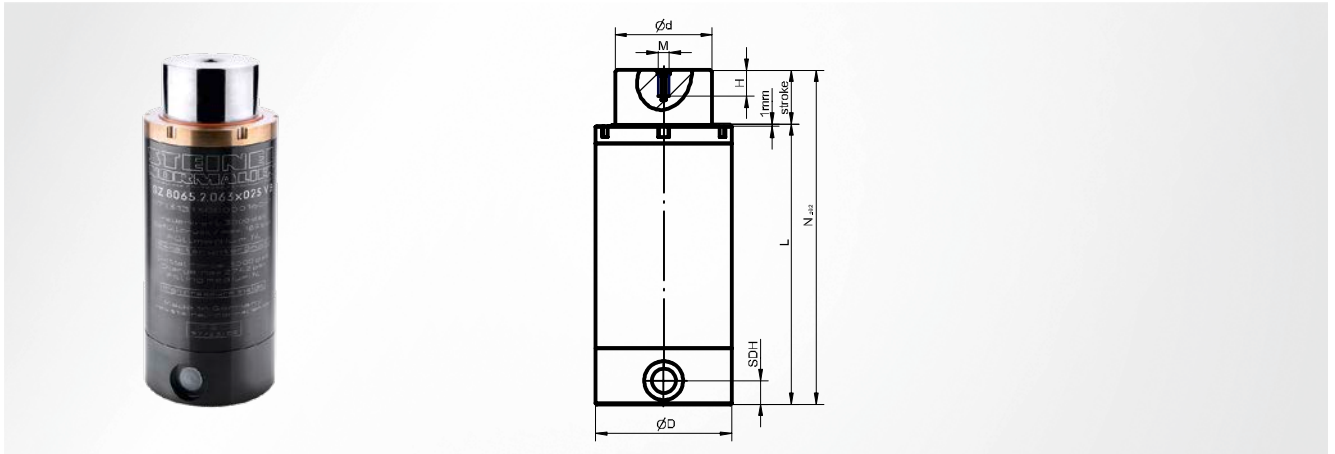
D	Cylinder mounting	Connection to
63		90°
75		45°

D	Cylinder mounting	Connection to
95		45°

# 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

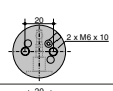
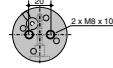
D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar			M	H	N	Stroke	L	Item number
38	25	G1/8	on the side	550	205	1000	1600	M6	6	95	10	85	SZ8065.2 .038 x 010VB
											15	90	SZ8065.2 .038 x 015VB
											25	100	SZ8065.2 .038 x 025VB
											38	117	SZ8065.2 .038 x 038VB
											50	130	SZ8065.2 .038 x 050VB
											63	162	SZ8065.2 .038 x 063VB
50	35	G1/8	on the side	600	209	2000	3200	M8	8	125	10	115	SZ8065.2 .050 x 010VB
										15	120	SZ8065.2 .050 x 015VB	
										25	130	SZ8065.2 .050 x 025VB	
										38	147	SZ8065.2 .050 x 038VB	
										50	160	SZ8065.2 .050 x 050VB	
										63	177	SZ8065.2 .050 x 063VB	
63	45	G1/8	on the side	500	189	3000	4800	M8	8	125	10	115	SZ8065.2 .063 x 010VB
										15	120	SZ8065.2 .063 x 015VB	
										25	130	SZ8065.2 .063 x 025VB	
										38	147	SZ8065.2 .063 x 038VB	
										50	160	SZ8065.2 .063 x 050VB	
										63	177	SZ8065.2 .063 x 063VB	
75	56	G1/8	on the side	500	203	5000	8000	M8	8	135	10	125	SZ8065.2 .075 x 010VB
										15	130	SZ8065.2 .075 x 015VB	
										25	140	SZ8065.2 .075 x 025VB	
										38	157	SZ8065.2 .075 x 038VB	
										50	170	SZ8065.2 .075 x 050VB	
										63	197	SZ8065.2 .075 x 063VB	
95	75	G1/8	on the side	470	182	8000	12800	M8	8	145	10	135	SZ8065.2 .095 x 010VB
										15	140	SZ8065.2 .095 x 015VB	
										25	150	SZ8065.2 .095 x 025VB	
										38	167	SZ8065.2 .095 x 038VB	
										50	185	SZ8065.2 .095 x 050VB	

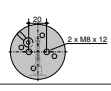
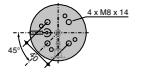
# SZ8065.2.VB Connecting nitrogen cylinder

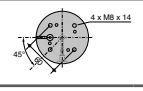


with burst protection

D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar	 daN	 daN	M	H	N	Stroke	L	Item number
95	75	G1/8	on the side	470	182	8000	12800	M8	8	275	63	212	SZ8065.2 .095 x 063VB
										310	80	230	SZ8065.2 .095 x 080VB

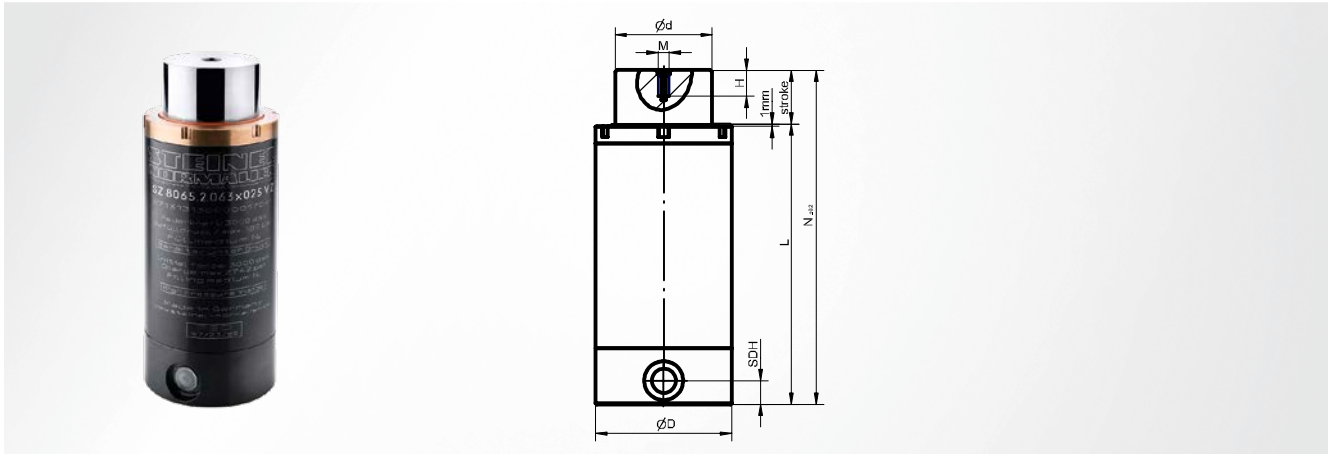
D	Cylinder mounting	Connection to
38		90°
50		90°

D	Cylinder mounting	Connection to
63		90°
75		45°

D	Cylinder mounting	Connection to
95		45°

# SZ8065.2.VZ Connecting nitrogen cylinder

2 connections, with burst protection



### Base

Composite base; with burst protection; 2 connections

### Delivery

will be supplied unfilled

### Burst protection

integrated

### 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

### Filling



carried out via composite system

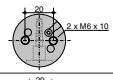
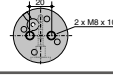
D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar			M	H	N	Stroke	L	Item number
38	25	G1/8	on the side	550	205	1000	1600	M6	6	95	10	85	SZ8065.2 .038 x 010VZ
											15	90	SZ8065.2 .038 x 015VZ
											25	100	SZ8065.2 .038 x 025VZ
											38	117	SZ8065.2 .038 x 038VZ
											50	130	SZ8065.2 .038 x 050VZ
											63	162	SZ8065.2 .038 x 063VZ
50	35	G1/8	on the side	600	209	2000	3200	M8	8	125	10	115	SZ8065.2 .050 x 010VZ
											15	120	SZ8065.2 .050 x 015VZ
											25	130	SZ8065.2 .050 x 025VZ
											38	147	SZ8065.2 .050 x 038VZ
											50	160	SZ8065.2 .050 x 050VZ
											63	177	SZ8065.2 .050 x 063VZ
63	45	G1/8	on the side	500	189	3000	4800	M8	8	125	10	115	SZ8065.2 .063 x 010VZ
											15	120	SZ8065.2 .063 x 015VZ
											25	130	SZ8065.2 .063 x 025VZ
											38	147	SZ8065.2 .063 x 038VZ
											50	160	SZ8065.2 .063 x 050VZ
											63	177	SZ8065.2 .063 x 063VZ
75	56	G1/8	on the side	500	203	5000	8000	M8	8	135	10	125	SZ8065.2 .075 x 010VZ
											15	130	SZ8065.2 .075 x 015VZ
											25	140	SZ8065.2 .075 x 025VZ
											38	157	SZ8065.2 .075 x 038VZ
											50	170	SZ8065.2 .075 x 050VZ
											63	197	SZ8065.2 .075 x 063VZ
95	75	G1/8	on the side	470	182	8000	12800	M8	8	145	10	135	SZ8065.2 .095 x 010VZ
											15	140	SZ8065.2 .095 x 015VZ
											25	150	SZ8065.2 .095 x 025VZ
											38	167	SZ8065.2 .095 x 038VZ
											50	185	SZ8065.2 .095 x 050VZ

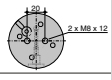
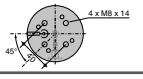
# SZ8065.2.VZ Connecting nitrogen cylinder

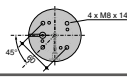


2 connections, with burst protection

D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar	 daN	 daN	M	H	N	Stroke	L	Item number
95	75	G1/8	on the side	470	182	8000	12800	M8	8	275	63	212	SZ8065.2 .095 x 063VZ
										310	80	230	SZ8065.2 .095 x 080VZ

D	Cylinder mounting	Connection to
38		90°
50		90°

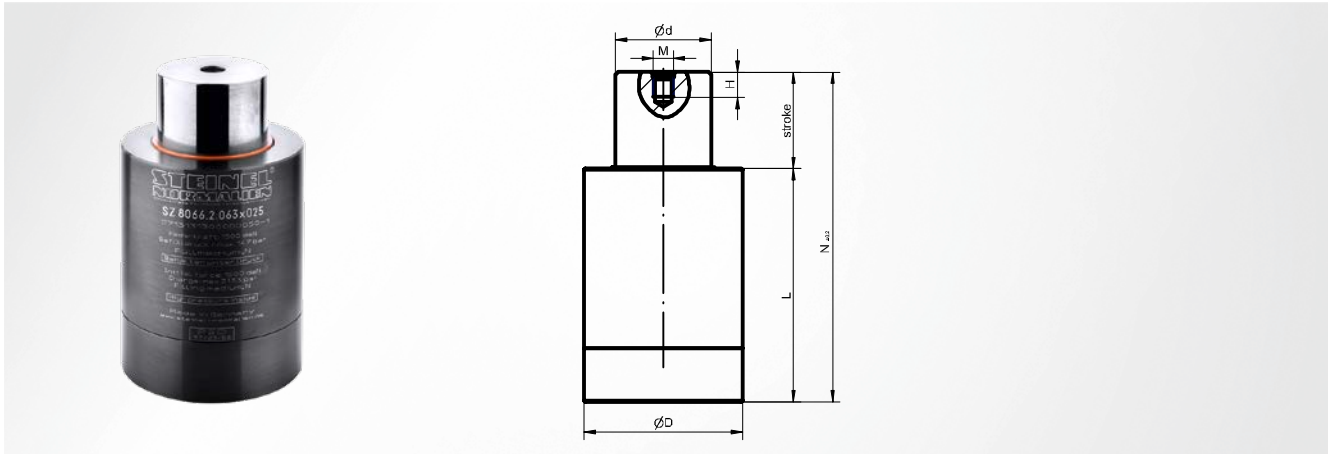
D	Cylinder mounting	Connection to
63		90°
75		45°

D	Cylinder mounting	Connection to
95		45°



# 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		M	H	Stroke	L	N ±0.2	Item number
					daN	daN						
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

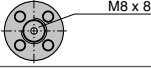
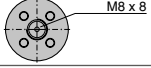
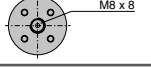
# SZ8066.2. Nitrogen cylinder

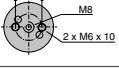
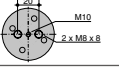
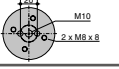
self-sufficient

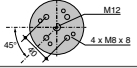
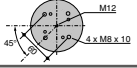
D	d	Filling thread	Position filling thread	Filling pressure max. bar	 daN	 daN	M	H	Stroke	L	N <sup>±0.2</sup>	Item number
38	22	M8	centred	131	500	770	M6	6	10	55	65	SZ8066.2 .038 x 010
					500	800	M6	6	15	60	75	SZ8066.2 .038 x 015
					500	800	M6	6	19	64	83	SZ8066.2 .038 x 019
					500	800	M6	6	25	70	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	
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	
					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	 M8 x 8
25	 M8 x 8
32	 M8 x 8

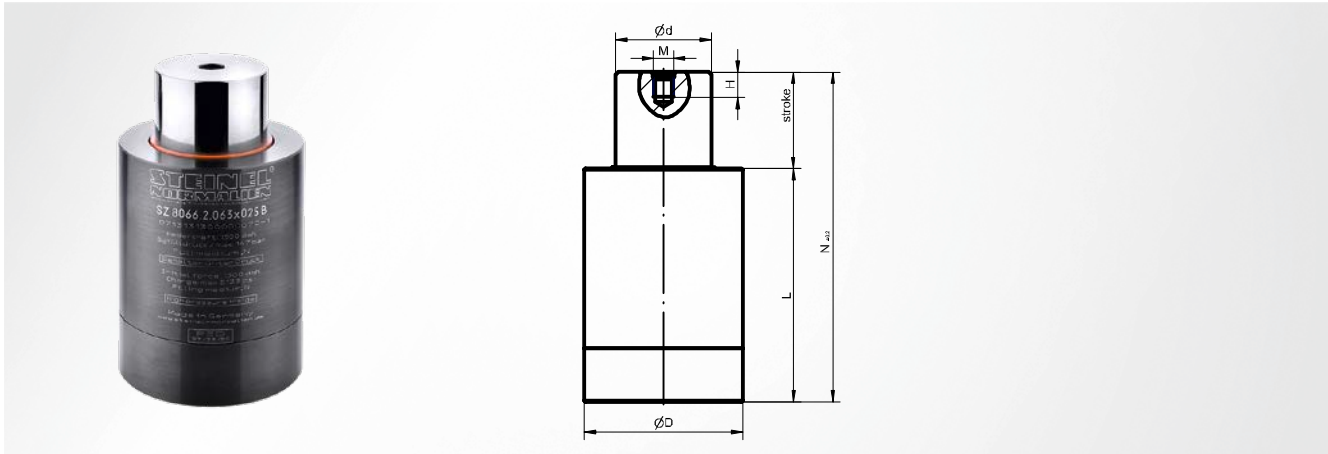
D	Cylinder mounting
38	 M8 2 x M6 x 10
50	 M10 2 x M8 x 8
63	 M10 2 x M8 x 8

D	Cylinder mounting
75	 M12 4 x M8 x 8
95	 M12 4 x M8 x 10

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

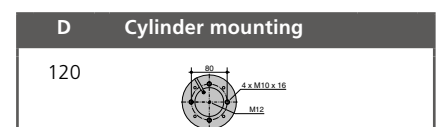
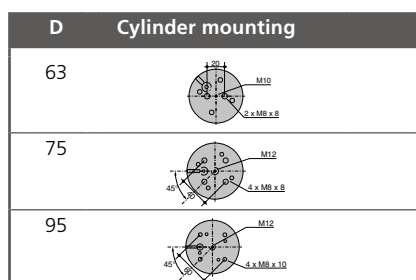
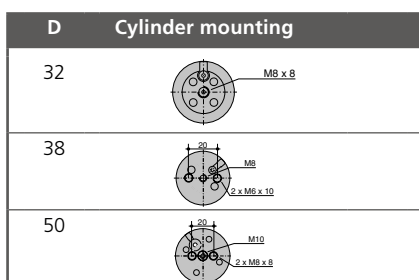
will be supplied filled

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H	 daN	 daN	Stroke	L	N <sup>±0.2</sup>	Item number
32	18	M8	centred	380	137			350	490	5	50	55	SZ8066.2 .032 x 005B
32	18	M8	centred	380	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	380	131			500	700	5	50	55	SZ8066.2 .038 x 005B
38	22	M8	centred	380	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	380	141			1000	1420	5	55	60	SZ8066.2 .050 x 005B
50	30	M10	centred	380	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	380	132			1500	2040	5	60	65	SZ8066.2 .063 x 005B

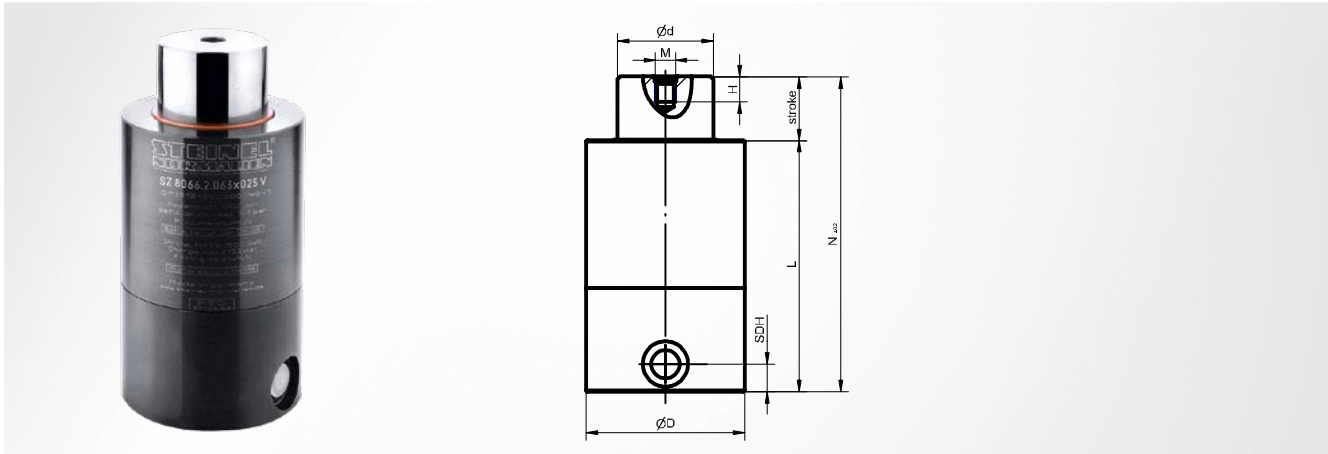
# SZ8066.2.B Nitrogen cylinder

self-sufficient, with burst protection

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N <sup>±0.2</sup>	Item number	
								daN	daN					
63	38	M10	centred	380	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	400	157			2500	3375	5	60	65	SZ8066.2 .075 x 005B	
75	45	M12	centred	400	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	470	168			4000	5600	5	70	75	SZ8066.2 .095 x 005B	
95	55	M12	centred	470	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	350	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									



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



### Base

Composite base

### Burst protection

not integrated

### Filling

carried out via composite system



### Delivery

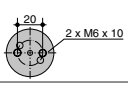
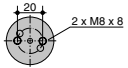
will be supplied unfilled

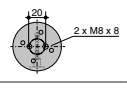
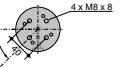
### Installation instruction

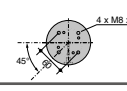
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

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

D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number
							daN	daN				
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	Connection to
38		90°
50		90°

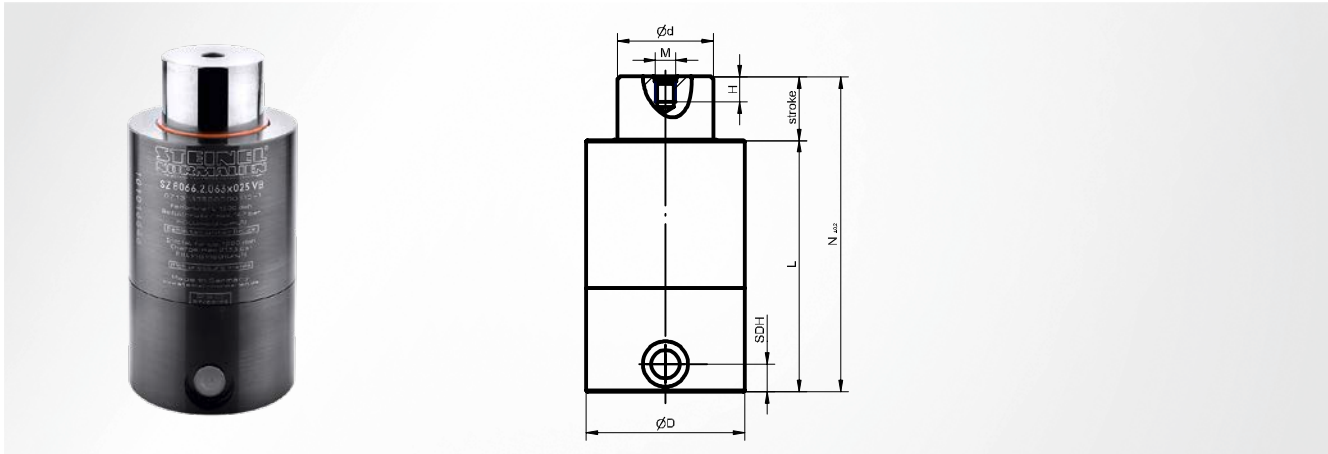
D	Cylinder mounting	Connection to
63		90°
75		45°

D	Cylinder mounting	Connection to
95		45°

# 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

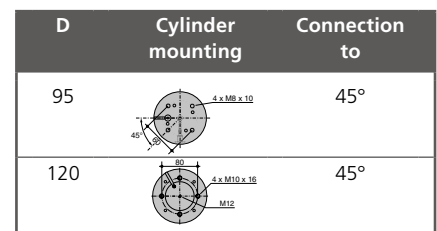
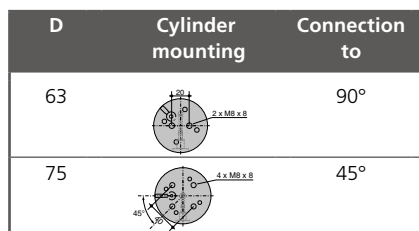
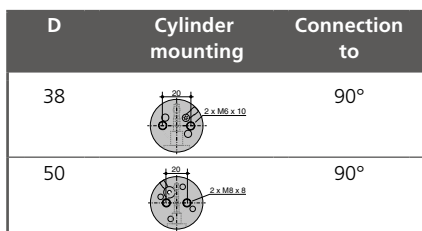
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
38	22	G1/8	on the side	380	131			500	700	5	70	75	SZ8066.2. <b>.038 x 005VB</b>
38	22	G1/8	on the side	380	131	M6	6	500	770	10	75	85	SZ8066.2. <b>.038 x 010VB</b>
								500	800	15	80	95	SZ8066.2. <b>.038 x 015VB</b>
								500	800	19	84	103	SZ8066.2. <b>.038 x 019VB</b>
								500	800	25	90	115	SZ8066.2. <b>.038 x 025VB</b>
								500	800	32	97	129	SZ8066.2. <b>.038 x 032VB</b>
								500	800	38	103	141	SZ8066.2. <b>.038 x 038VB</b>
								500	800	50	115	165	SZ8066.2. <b>.038 x 050VB</b>
								500	800	63	128	191	SZ8066.2. <b>.038 x 063VB</b>
								500	800	80	145	225	SZ8066.2. <b>.038 x 080VB</b>
								500	800	100	165	265	SZ8066.2. <b>.038 x 100VB</b>
								500	800	125	190	315	SZ8066.2. <b>.038 x 125VB</b>
50	30	G1/8	on the side	380	141			1000	1420	5	75	80	SZ8066.2. <b>.050 x 005VB</b>
50	30	G1/8	on the side	380	141	M8	8	1000	1540	10	80	90	SZ8066.2. <b>.050 x 010VB</b>
								1000	1600	15	85	100	SZ8066.2. <b>.050 x 015VB</b>
								1000	1600	19	89	108	SZ8066.2. <b>.050 x 019VB</b>
								1000	1600	25	95	120	SZ8066.2. <b>.050 x 025VB</b>
								1000	1600	32	102	134	SZ8066.2. <b>.050 x 032VB</b>
								1000	1600	38	108	146	SZ8066.2. <b>.050 x 038VB</b>
								1000	1600	50	120	170	SZ8066.2. <b>.050 x 050VB</b>
								1000	1600	63	133	196	SZ8066.2. <b>.050 x 063VB</b>
								1000	1600	80	150	230	SZ8066.2. <b>.050 x 080VB</b>
								1000	1600	100	170	270	SZ8066.2. <b>.050 x 100VB</b>
								1000	1600	125	210	335	SZ8066.2. <b>.050 x 125VB</b>
63	38	G1/8	on the side	380	132			1500	2040	5	80	85	SZ8066.2. <b>.063 x 005VB</b>
63	38	G1/8	on the side	380	132	M8	8	1500	2310	10	85	95	SZ8066.2. <b>.063 x 010VB</b>
								1500	2400	15	90	105	SZ8066.2. <b>.063 x 015VB</b>
								1500	2400	19	94	113	SZ8066.2. <b>.063 x 019VB</b>
								1500	2400	25	100	125	SZ8066.2. <b>.063 x 025VB</b>
								1500	2400	32	107	139	SZ8066.2. <b>.063 x 032VB</b>
								1500	2400	38	113	151	SZ8066.2. <b>.063 x 038VB</b>
								1500	2400	50	125	175	SZ8066.2. <b>.063 x 050VB</b>
								1500	2400	63	138	201	SZ8066.2. <b>.063 x 063VB</b>



with burst protection

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number
								daN	daN				
63	38	G1/8	on the side	380	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	400	157	M8	8	2500	3375	5	80	85	SZ8066.2 .075 x 005VB
75	45	G1/8	on the side	400	157			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	470	168	M8	8	4000	5600	5	90	95	SZ8066.2 .095 x 005VB
95	55	G1/8	on the side	470	168			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	350	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



Tapping units

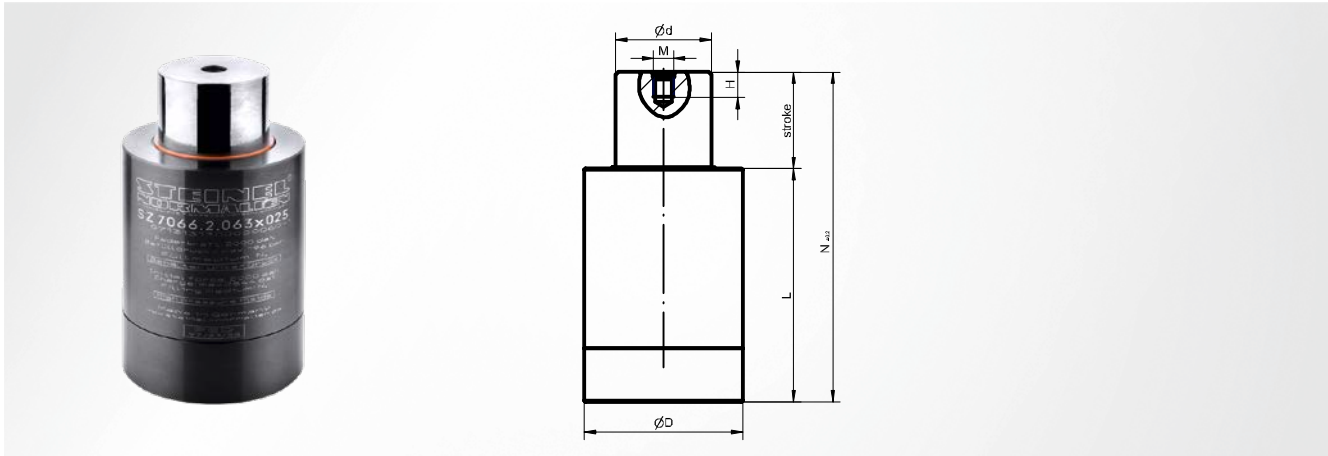
Module system

Machine elements

Accessories

# 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		M	H	Stroke	L	N <sup>±0.2</sup>	Item number
19	11	M8	centred	158					5	45	50	SZ7066.2 .019 x 005
							10	50	60	SZ7066.2 .019 x 010		
							15	55	70	SZ7066.2 .019 x 015		
							19	59	78	SZ7066.2 .019 x 019		
							25	65	90	SZ7066.2 .019 x 025		
							32	72	104	SZ7066.2 .019 x 032		
							38	78	116	SZ7066.2 .019 x 038		
							50	90	140	SZ7066.2 .019 x 050		
							63	103	166	SZ7066.2 .019 x 063		
							80	120	200	SZ7066.2 .019 x 080		
							100	140	240	SZ7066.2 .019 x 100		
		125	165	290	SZ7066.2 .019 x 125							
25	14	M8	centred	195					5	45	50	SZ7066.2 .025 x 005
							10	50	60	SZ7066.2 .025 x 010		
							15	55	70	SZ7066.2 .025 x 015		
							19	59	78	SZ7066.2 .025 x 019		
							25	65	90	SZ7066.2 .025 x 025		
							32	72	104	SZ7066.2 .025 x 032		
							38	78	116	SZ7066.2 .025 x 038		
							50	90	140	SZ7066.2 .025 x 050		
							63	103	166	SZ7066.2 .025 x 063		
							80	120	200	SZ7066.2 .025 x 080		
							100	140	240	SZ7066.2 .025 x 100		
		125	165	290	SZ7066.2 .025 x 125							
32	18	M8	centred	196					5	50	55	SZ7066.2 .032 x 005
							10	55	65	SZ7066.2 .032 x 010		
							15	60	75	SZ7066.2 .032 x 015		
							19	64	83	SZ7066.2 .032 x 019		
							25	70	95	SZ7066.2 .032 x 025		
							32	77	109	SZ7066.2 .032 x 032		
							38	83	121	SZ7066.2 .032 x 038		
							50	95	145	SZ7066.2 .032 x 050		
							63	108	171	SZ7066.2 .032 x 063		
							80	125	205	SZ7066.2 .032 x 080		
							100	145	245	SZ7066.2 .032 x 100		
		125	170	295	SZ7066.2 .032 x 125							
38	22	M8	centred	197					5	50	55	SZ7066.2 .038 x 005

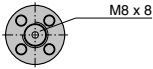
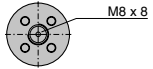
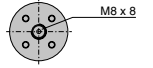
# SZ7066.2. Nitrogen cylinder

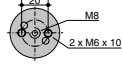
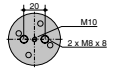
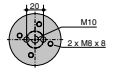
self-sufficient, version extra heavy

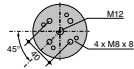
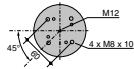
D	d	Filling thread	Position filling thread	Filling pressure max. bar	daN		M	H	Stroke	L	N ±0.2	Item number					
38	22	M8	centred	197	750	1155	M6	6	10	55	65	SZ7066.2 .038 x 010					
					750	1200	M6	6	15	60	75	SZ7066.2 .038 x 015					
					750	1200	M6	6	19	64	83	SZ7066.2 .038 x 019					
					750	1200	M6	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	

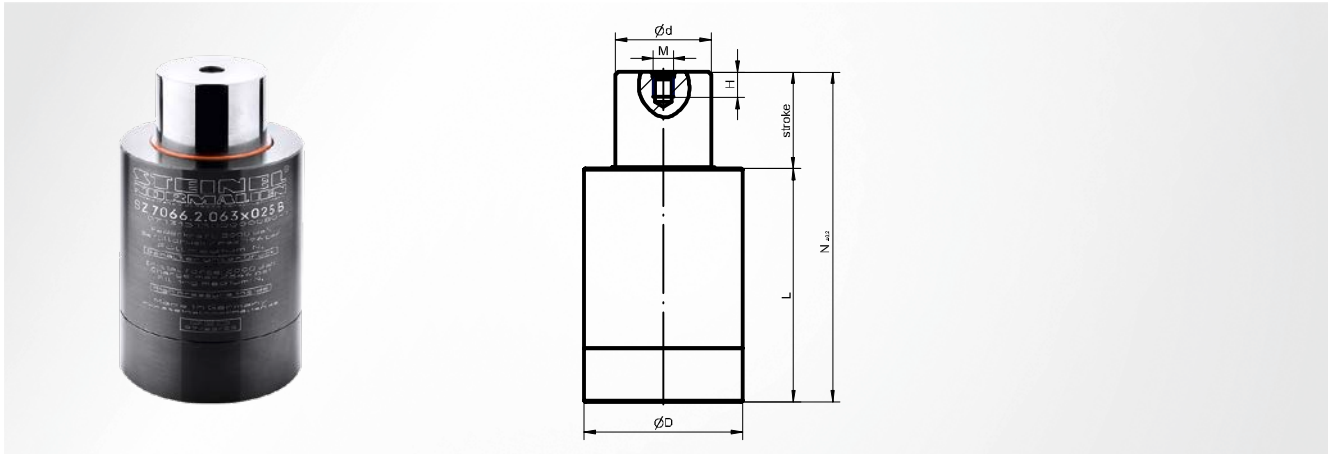
D	Cylinder mounting
38	
50	
63	

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**

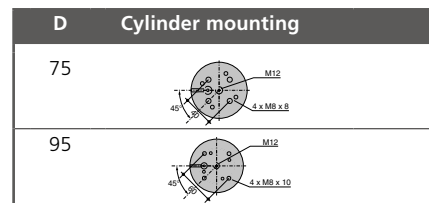
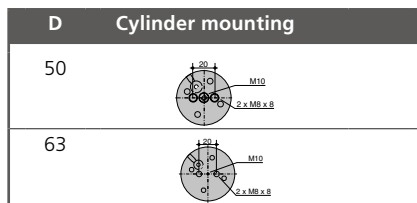
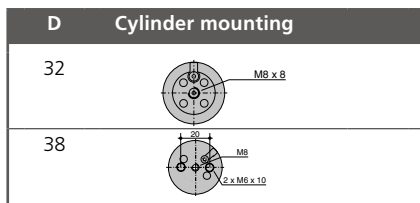
will be supplied filled

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H	 daN daN		Stroke	L	N ±0.2	Item number
32	18	M8	centred	470	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	470	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	500	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	430	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

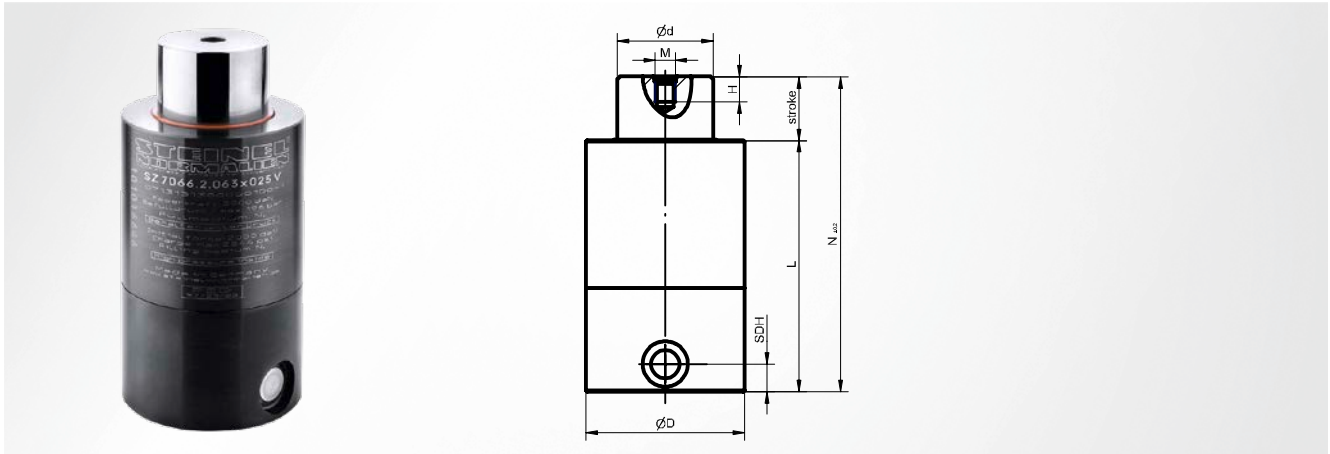
D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number
								daN	daN				
63	38	M10	centred	430	176	M8	8	2000	3080	10	65	75	SZ7066.2 .063 x 010B
								2000	3200	15	70	85	SZ7066.2 .063 x 015B
								2000	3200	19	74	93	SZ7066.2 .063 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
75	45	M12	centred	450	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
95	55	M12	centred	500	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								



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

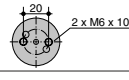
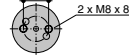
D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number
							daN	daN				
38	22	G1/8	on the side	197	M6	6	750	1050	5	70	75	SZ7066.2 .038 x 005V
							750	1155	10	75	85	SZ7066.2 .038 x 010V
							750	1200	15	80	95	SZ7066.2 .038 x 015V
							750	1200	19	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

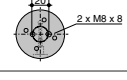

# SZ7066.2.V Connecting nitrogen cylinder

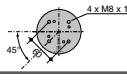


version extra heavy

D	d	Filling thread	Position filling thread	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number
							daN	daN				
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
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	Connection to
38		90°
50		90°

D	Cylinder mounting	Connection to
63		90°
75		45°

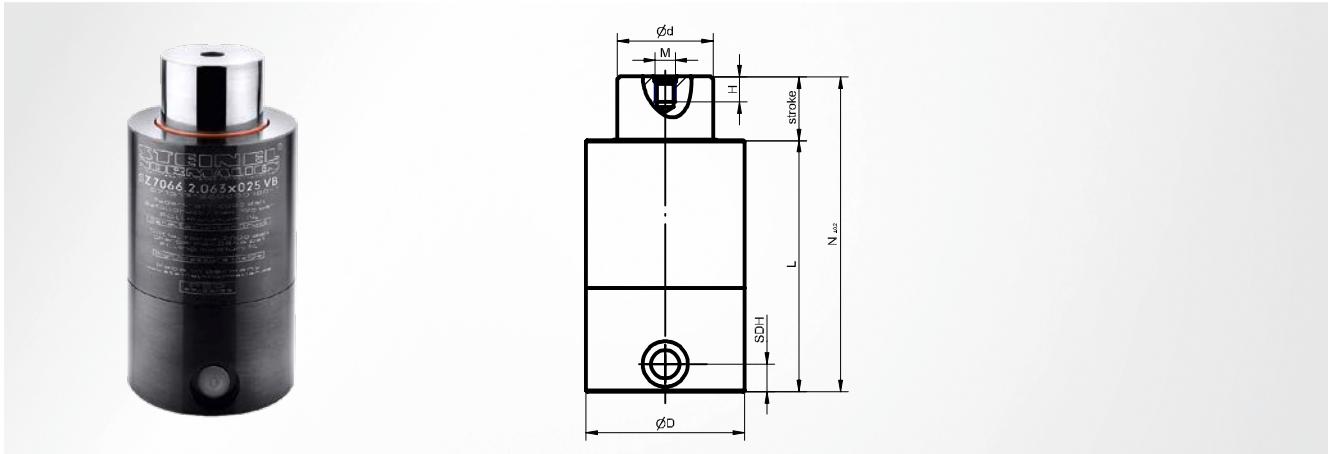
D	Cylinder mounting	Connection to
95		45°



# 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

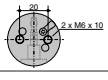
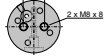
D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number
								daN	daN				
38	22	G1/8	on the side	470	197	M6	6	750	1050	5	70	75	SZ7066.2 .038 x 005VB
								750	1155	10	75	85	SZ7066.2 .038 x 010VB
								750	1200	15	80	95	SZ7066.2 .038 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	500	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	430	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

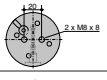

# SZ7066.2.VB Connecting nitrogen cylinder

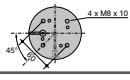


version extra heavy, with burst protection

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number
								daN	daN				
63	38	G1/8	on the side	430	176	M8	8	2000	3200	80	155	235	SZ7066.2. <b>.063 x 080VB</b>
								2000	3200	100	180	280	SZ7066.2. <b>.063 x 100VB</b>
								2000	3200	125	210	335	SZ7066.2. <b>.063 x 125VB</b>
75	45	G1/8	on the side	450	189	M8	8	3000	4050	5	80	85	SZ7066.2. <b>.075 x 005VB</b>
								3000	4590	10	85	95	SZ7066.2. <b>.075 x 010VB</b>
								3000	4800	15	90	105	SZ7066.2. <b>.075 x 015VB</b>
								3000	4800	19	94	113	SZ7066.2. <b>.075 x 019VB</b>
								3000	4800	25	100	125	SZ7066.2. <b>.075 x 025VB</b>
								3000	4800	32	107	139	SZ7066.2. <b>.075 x 032VB</b>
								3000	4800	38	113	151	SZ7066.2. <b>.075 x 038VB</b>
								3000	4800	50	125	175	SZ7066.2. <b>.075 x 050VB</b>
								3000	4800	63	138	201	SZ7066.2. <b>.075 x 063VB</b>
								3000	4800	80	155	235	SZ7066.2. <b>.075 x 080VB</b>
								3000	4800	100	175	275	SZ7066.2. <b>.075 x 100VB</b>
								3000	4800	125	220	345	SZ7066.2. <b>.075 x 125VB</b>
95	55	G1/8	on the side	500	210	M8	8	5000	7000	5	90	95	SZ7066.2. <b>.095 x 005VB</b>
								5000	7800	10	95	105	SZ7066.2. <b>.095 x 010VB</b>
								5000	8000	15	100	115	SZ7066.2. <b>.095 x 015VB</b>
								5000	8000	19	104	123	SZ7066.2. <b>.095 x 019VB</b>
								5000	8000	25	110	135	SZ7066.2. <b>.095 x 025VB</b>
								5000	8000	32	117	149	SZ7066.2. <b>.095 x 032VB</b>
								5000	8000	38	123	161	SZ7066.2. <b>.095 x 038VB</b>
								5000	8000	50	135	185	SZ7066.2. <b>.095 x 050VB</b>
								5000	8000	63	148	211	SZ7066.2. <b>.095 x 063VB</b>
								5000	8000	80	175	255	SZ7066.2. <b>.095 x 080VB</b>
								5000	8000	100	205	305	SZ7066.2. <b>.095 x 100VB</b>
								5000	8000	125	240	365	SZ7066.2. <b>.095 x 125VB</b>

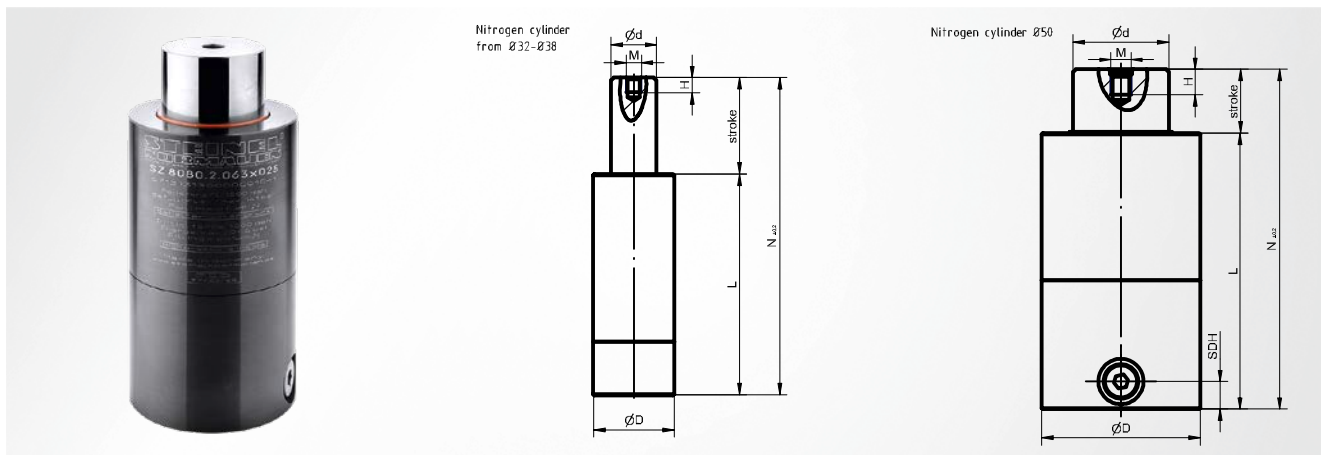
D	Cylinder mounting	Connection to
38		90°
50		90°

D	Cylinder mounting	Connection to
63		90°
75		45°

D	Cylinder mounting	Connection to
95		45°

# 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		M	H	Stroke	L	N ±0.2	Item number
19	11	M8	centred	105					5	65	70	SZ8080.2 .019 x 005
									10	70	80	SZ8080.2 .019 x 010
									15	75	90	SZ8080.2 .019 x 015
									19	79	98	SZ8080.2 .019 x 019
									25	85	110	SZ8080.2 .019 x 025
									32	92	124	SZ8080.2 .019 x 032
									38	98	136	SZ8080.2 .019 x 038
									50	110	160	SZ8080.2 .019 x 050
									63	123	186	SZ8080.2 .019 x 063
									80	140	220	SZ8080.2 .019 x 080
									100	160	260	SZ8080.2 .019 x 100
25	14	M8	centred	129					5	65	70	SZ8080.2 .025 x 005
									10	70	80	SZ8080.2 .025 x 010
									15	75	90	SZ8080.2 .025 x 015
									19	79	98	SZ8080.2 .025 x 019
							M6	6	25	85	110	SZ8080.2 .025 x 025
							M6	6	32	92	124	SZ8080.2 .025 x 032
							M6	6	38	98	136	SZ8080.2 .025 x 038
							M6	6	50	110	160	SZ8080.2 .025 x 050
							M6	6	63	123	186	SZ8080.2 .025 x 063
							M6	6	80	140	220	SZ8080.2 .025 x 080
							M6	6	100	160	260	SZ8080.2 .025 x 100
							M6	6	125	185	310	SZ8080.2 .025 x 125
					32	18	M8	centred	137			
		M6	6	10						60	70	SZ8080.2 .032 x 010
		M6	6	15						65	80	SZ8080.2 .032 x 015
		M6	6	19						69	88	SZ8080.2 .032 x 019
		M6	6	25						75	100	SZ8080.2 .032 x 025
		M6	6	32						82	114	SZ8080.2 .032 x 032
		M6	6	38						88	126	SZ8080.2 .032 x 038
		M6	6	50						100	150	SZ8080.2 .032 x 050
		M6	6	63						113	176	SZ8080.2 .032 x 063
		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		M	H	Stroke	L	N ±0.2	Item number
					 daN							
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	
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	
					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	
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	
					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		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	

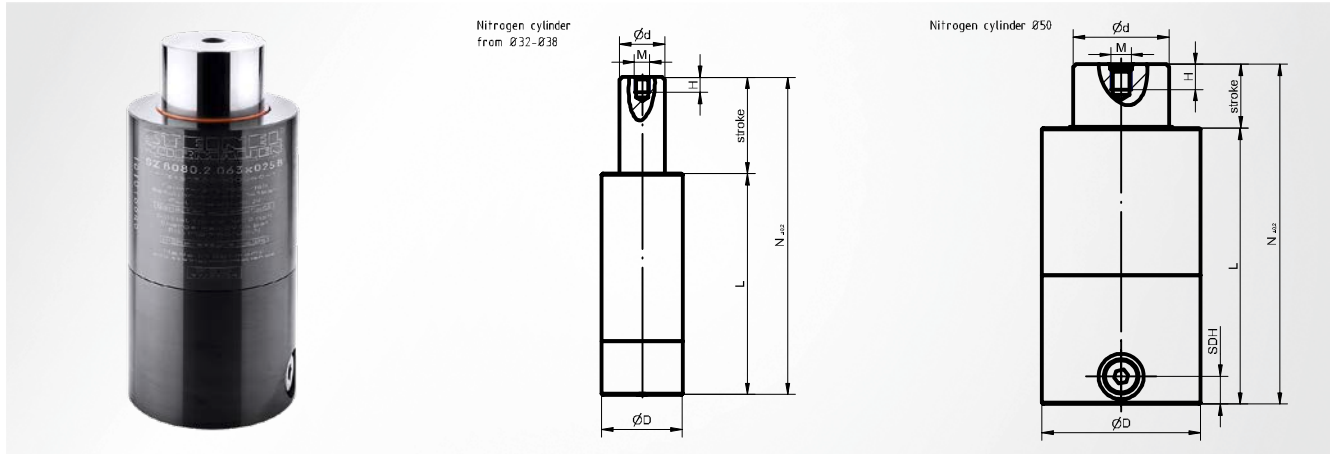
D	Cylinder mounting
38	
50	
63	

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

## Delivery

will be supplied filled

## Burst protection

integrated

## Installation instruction

SDH = the height of the lateral connection is 11 mm



## Filling

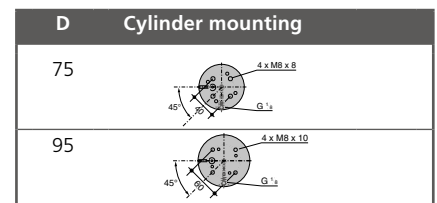
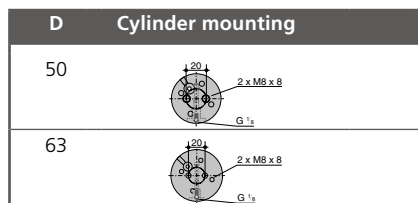
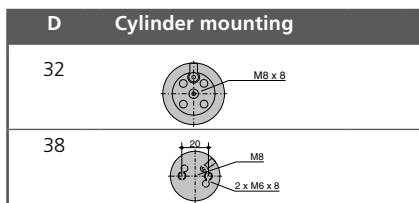
with standard nitrogen

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number
								daN	daN				
32	18	M8	centred	380	137			350	490	5	55	60	SZ8080.2 .032 x 005B
32	18	M8	centred	380	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	380	131			500	700	5	60	65	SZ8080.2 .038 x 005B
38	22	M8	centred	380	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	380	141			1000	1420	5	90	95	SZ8080.2 .050 x 005B
50	30	G1/8	on the side	380	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

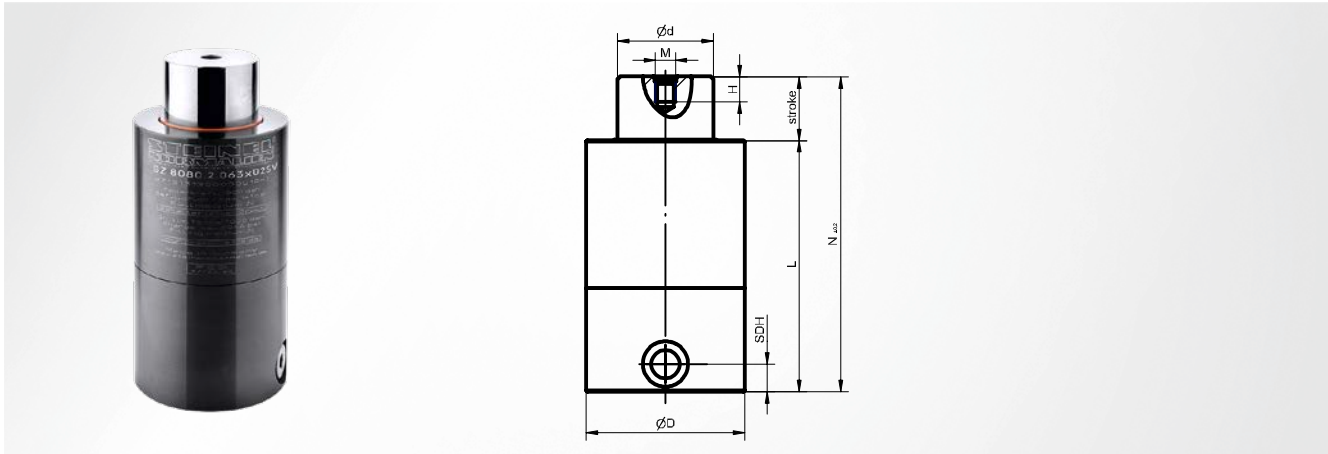
# SZ8080.2.B Nitrogen cylinder

self-sufficient, with burst protection

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N $\pm 0.2$	Item number	
								daN	daN					
50	30	G1/8	on the side	380	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	380	132	M8	8	1500	2040	5	90	95	SZ8080.2 .063 x 005B	
63	38	G1/8	on the side	380	132			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	400	157	M8	8	2500	3375	5	100	105	SZ8080.2 .075 x 005B	
75	45	G1/8	on the side	400	157			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	470	168	M8
95	55	G1/8	on the side	470	168	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			



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



### Base

Composite base

### Burst protection

not integrated

### Filling

carried out via composite system

### Delivery



will be supplied unfilled

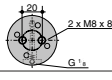
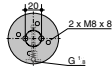
### Installation instruction

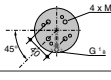
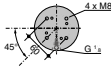
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

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



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	M8	8	4000	5600	5	110	115	SZ8080.2 .095 x 005V
95	55	G1/8	on the side	168			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							

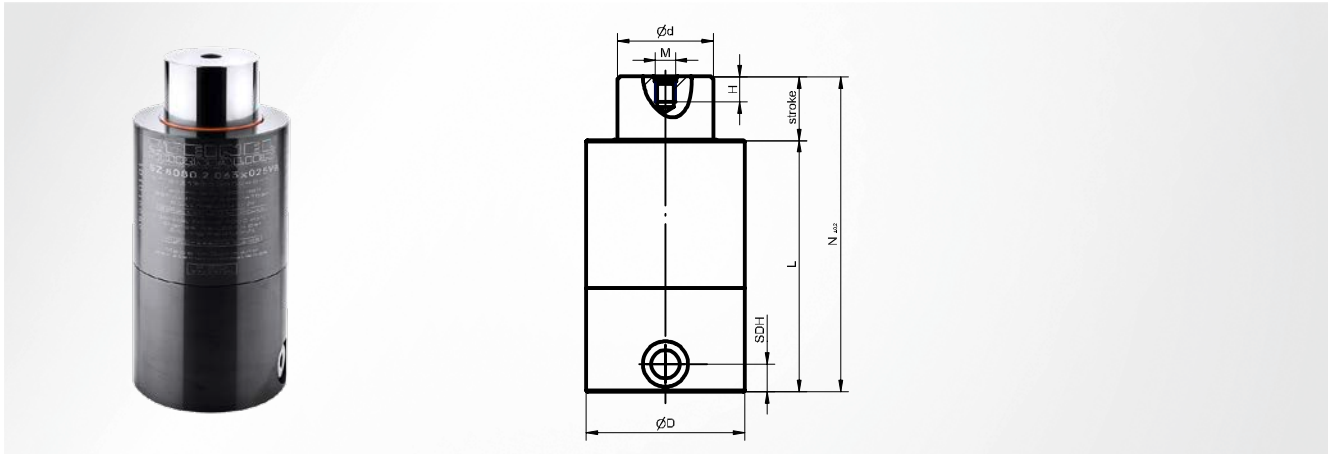
D	Cylinder mounting	Connection to
50		90°
63		90°

D	Cylinder mounting	Connection to
75		45°
95		45°

# 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	Burst pressure bar	Filling pressure max. bar	M	H	daN	daN	Stroke	L	N ±0.2	Item number
50	30	G1/8	on the side	380	141			1000	1420	5	90	95	SZ8080.2 .050 x 005VB
50	30	G1/8	on the side	380	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	380	132			1500	2040	5	90	95	SZ8080.2 .063 x 005VB
63	38	G1/8	on the side	380	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	400	157			2500	3375	5	100	105	SZ8080.2 .075 x 005VB
75	45	G1/8	on the side	400	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

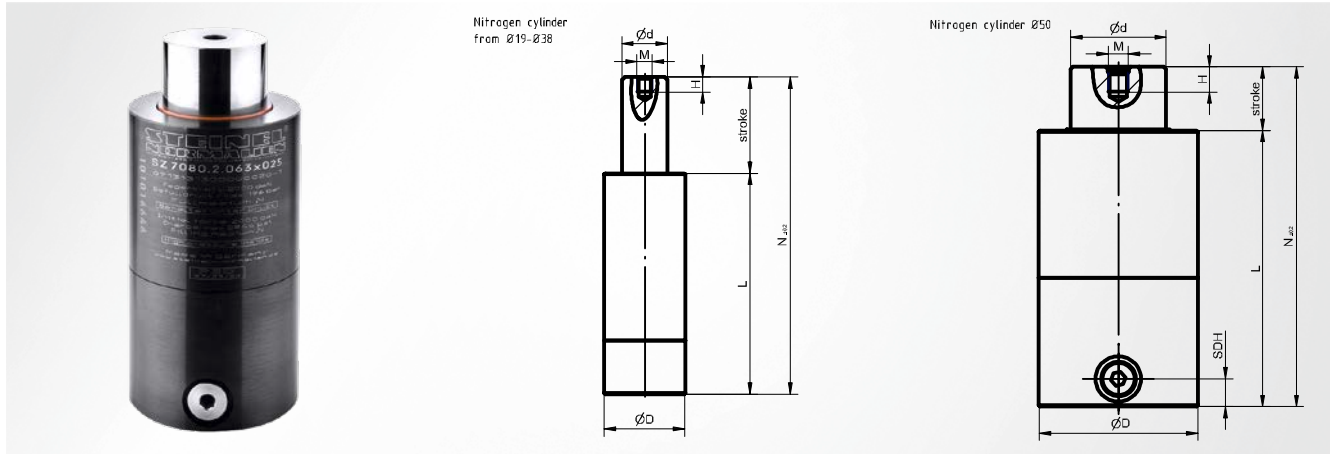
D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N $\pm 0.2$	Item number
								daN	daN				
75	45	G1/8	on the side	400	157	M8	8	2500	4000	80	175	255	SZ8080.2 .075 x 080VB
								2500	4000	100	200	300	SZ8080.2 .075 x 100VB
								2500	4000	125	225	350	SZ8080.2 .075 x 125VB
95	55	G1/8	on the side	470	168	M8	8	4000	5600	5	110	115	SZ8080.2 .095 x 005VB
95	55	G1/8	on the side	470	168			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	Connection to
50		90°
63		90°

D	Cylinder mounting	Connection to
75		45°
95		45°

# 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		M	H	Stroke	L	N ±0.2	Item number					
					daN	daN											
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		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		M	H	Stroke	L	N ±0.2	Item number
					5000	8000						
95	55	G1/8	on the side	210	5000	8000	M8	8	100	210	310	SZ7080.2 <b>.095 x 100</b>
					5000	8000	M8	8	125	245	370	SZ7080.2 <b>.095 x 125</b>

D	Cylinder mounting
19	M8 x 8
25	M8 x 8
32	M8 x 8

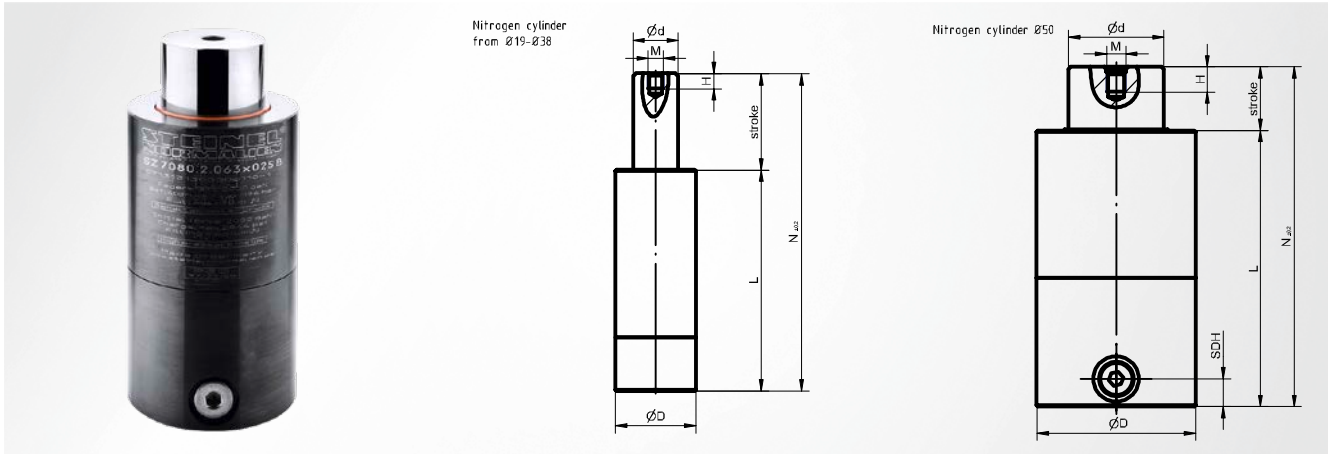
D	Cylinder mounting
38	M8 2 x M6 x 10
50	2 x M8 x 8 G 1/2
63	2 x M8 x 8 G 1/2

D	Cylinder mounting
75	4 x M8 x 8 G 1/2
95	4 x M8 x 10 G 1/2

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

### Delivery

will be supplied filled

### Burst protection

integrated

### Installation instruction

SDH = the height of the lateral connection is 11 mm

### Filling

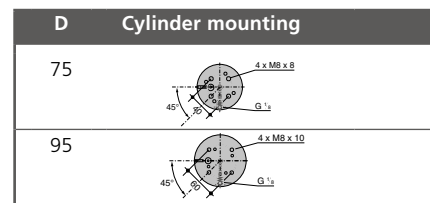
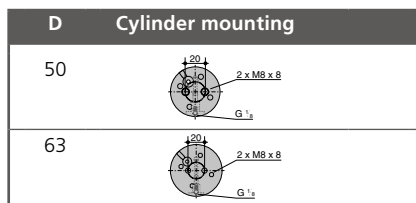
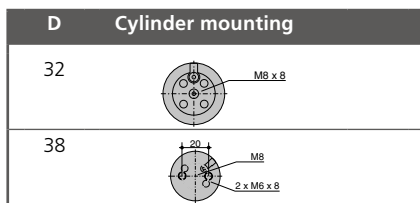
with standard nitrogen

D	d	Filling thread	Position filling thread	Burst pressure bar	Filling pressure max. bar	M	H	daN		Stroke	L	N ±0.2	Item number
								500	700				
32	18	M8	centred	470	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
38	22	M8	centred	470	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
50	30	G1/8	on the side	500	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	Burst pressure bar	Filling pressure max. bar	M	H	daN		Stroke	L	N ±0.2	Item number
50	30	G1/8	on the side	500	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	430	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
75	45	G1/8	on the side	450	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
95	55	G1/8	on the side	500	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								



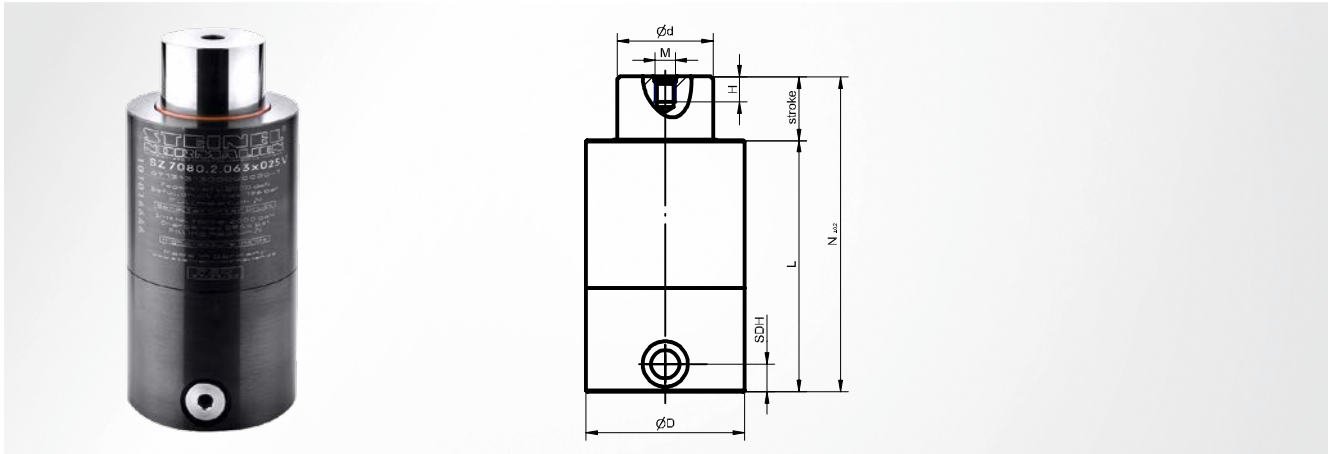
for D 38, the medium thread is only used for filling



# 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

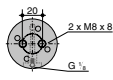
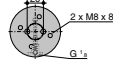
Spring is equipped to be connected on its side with G1/8 male stud couplings; filling is carried out via the connected control panel; SDH = the height of the lateral connection is 11 mm

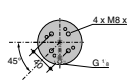
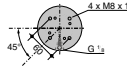
D	d	Connecting thread	Position connecting thread	Filling pressure max. bar	M	H	Stroke		L	N ±0.2	Item number	
							daN	daN				
50	30	G1/8	on the side	212	M8	8	1500	2130	5	90	95	SZ7080.2 .050 x 005V
							1500	2310	10	95	105	SZ7080.2 .050 x 010V
							1500	2400	15	100	115	SZ7080.2 .050 x 015V
							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			Stroke	L	N $\pm 0.2$	Item number
							daN	daN				
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

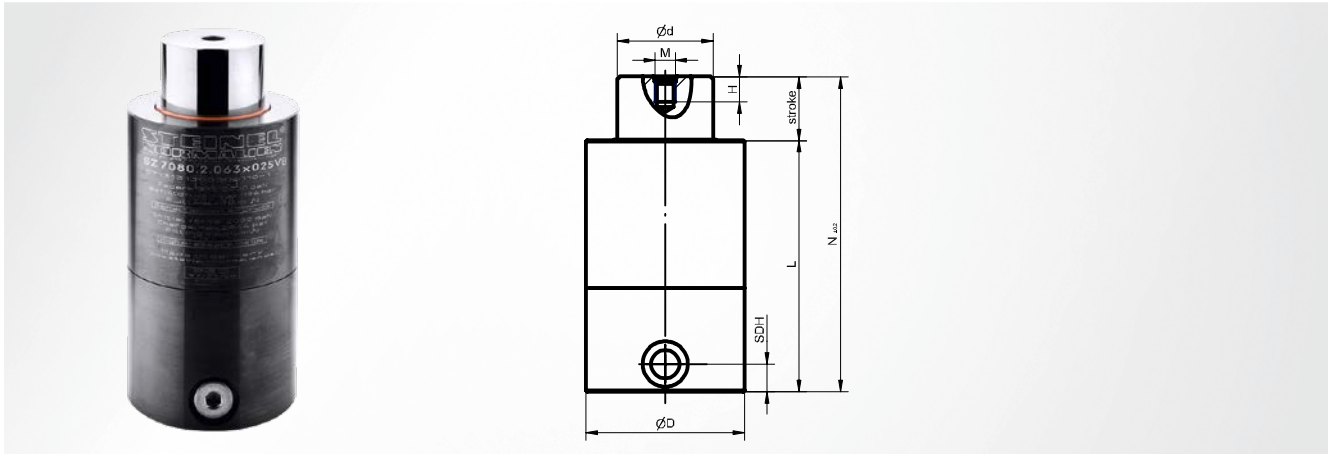
D	Cylinder mounting	Connection to
50		90°
63		90°

D	Cylinder mounting	Connection to
75		45°
95		45°

# 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

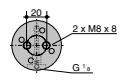
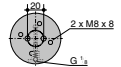
D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar	M	H	Stroke		L	N <sup>±0.2</sup>	Item number	
								daN	daN				
50	30	G1/8	on the side	500	212	M8	8	1500	2130	5	90	95	SZ7080.2 .050 x 005VB
								1500	2310	10	95	105	SZ7080.2 .050 x 010VB
								1500	2400	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	430	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	450	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

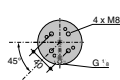
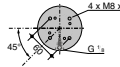
# SZ7080.2.VB Connecting nitrogen cylinder



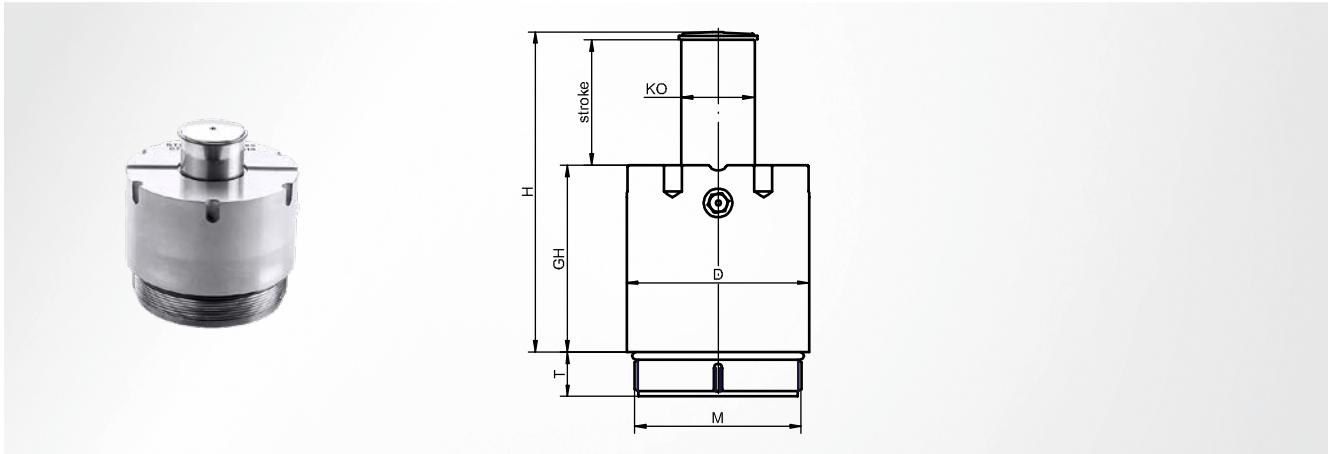
version extra heavy, with burst protection

D	d	Connecting thread	Position connecting thread	Burst pressure bar	Filling pressure max. bar	M	H			Stroke	L	N ±0.2	Item number
								daN	daN				
75	45	G1/8	on the side	450	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	500	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	Connection to
50		90°
63		90°

D	Cylinder mounting	Connection to
75		45°
95		45°

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

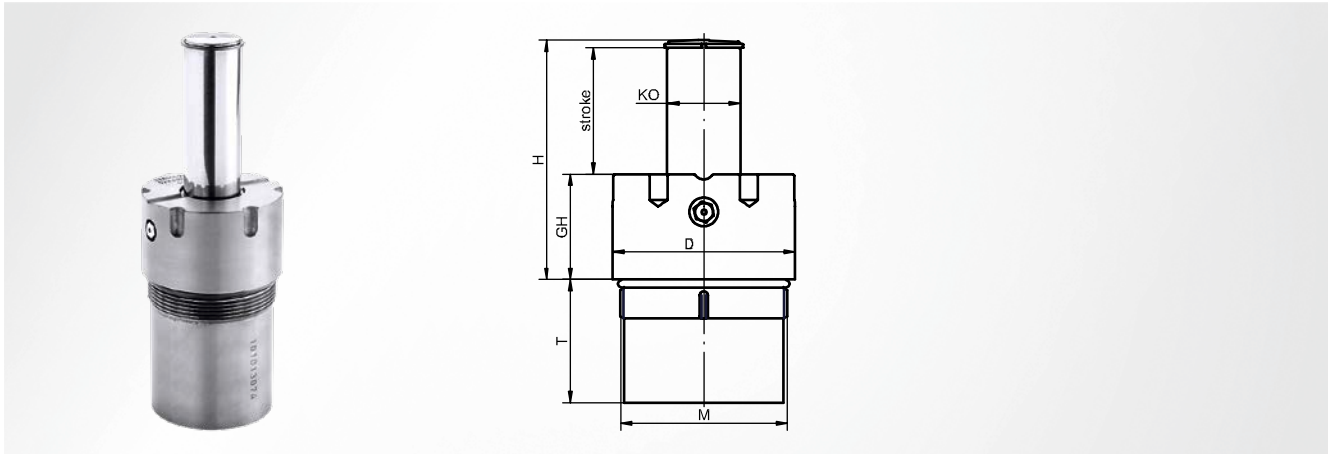
# ST8841-1 Manifold cylinder

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

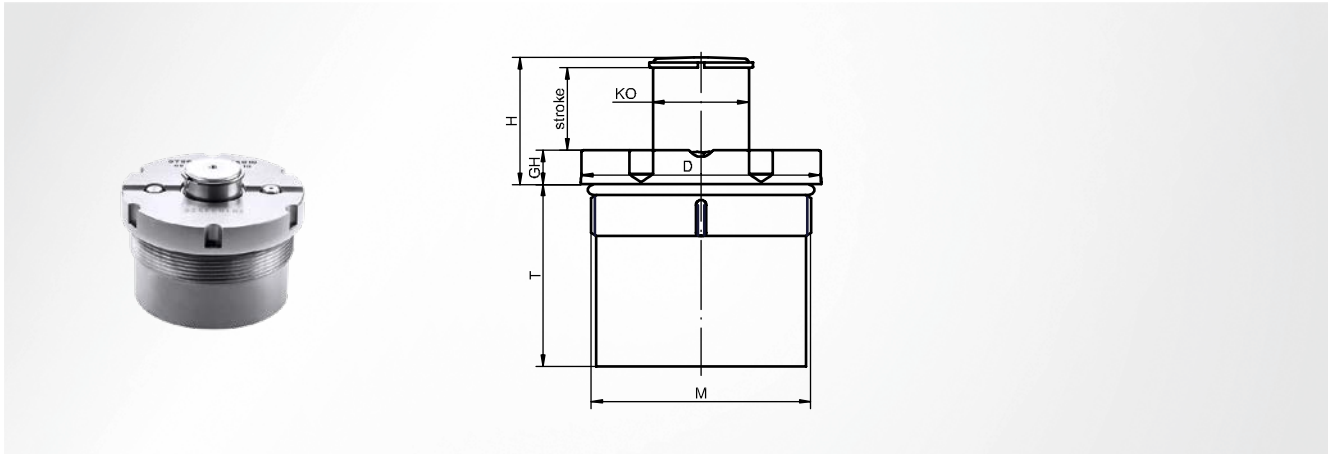
# ST8841-2 Manifold cylinder

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 <b>-100 x 075</b>
						164.5	100.0	106.0	ST8841-2 <b>-100 x 100</b>
						214.5	150.0	156.0	ST8841-2 <b>-100 x 150</b>



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

Tapping units

Module system

Machine elements

Accessories



**Note**

A nitrogen bottle and a cylinder pressure regulator (only for SZ8085.8) are required on the customer side

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

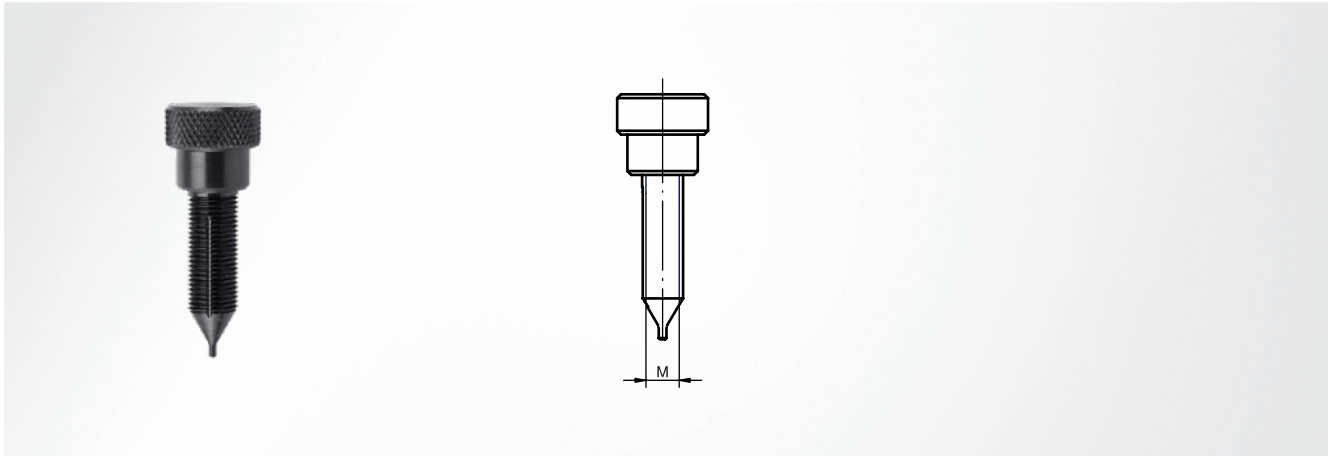
## SZ80855-1 Filling Unit



**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



**Note**

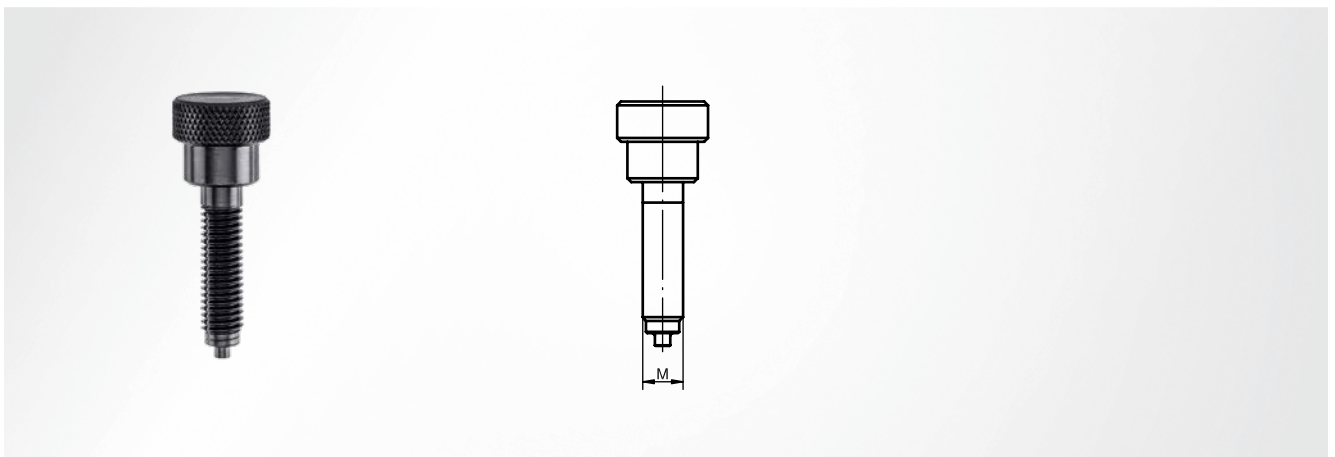
for the venting of the nitrogen cylinder prior to disassembly

M	Item number
M4	SZ7046 <b>2</b>
M6	SZ7046 <b>3</b>
M8	SZ7046 <b>4</b>

M	Item number
M10	SZ7046 <b>5</b>
M12	SZ7046 <b>6</b>
G1/8	SZ7046 <b>7</b>

# SZ7046 Discharging screw

for VG5 valve

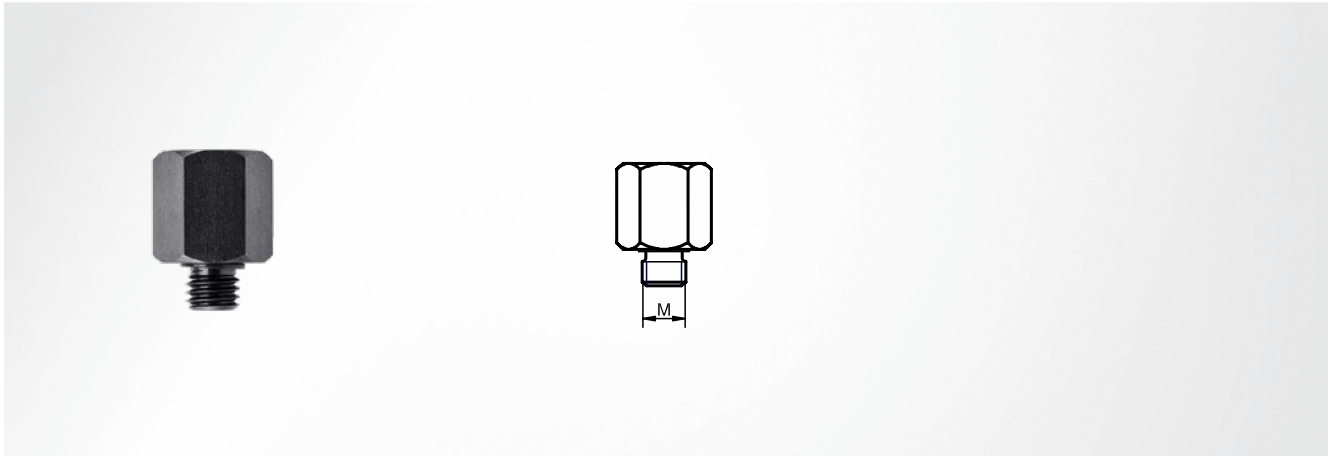


**Note**

for the venting of the nitrogen cylinder prior to disassembly

M	Item number
M8	SZ7046 <b>14</b>
M10	SZ7046 <b>15</b>

M	Item number
M12	SZ7046 <b>16</b>
G1/8	SZ7046 <b>17</b>



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

M	Use of nitrogen cylinder	Item number
M12	SZ8063.1.063-095	SZ7045 <b>24</b>
	all .2 GDF 075-120	
G1/8	all .2 GDF V, VB	SZ7045 <b>25</b>

**Note**

Suitable for pressure reducer  
SZ8085.6 on base body  
SZ8085.5 and control panel  
SZ8098

**Item number**

SZ8085.4

# SZ8085.6 Pressure reducer

**Note**

Connecting piece for 300 bar nitrogen  
bottles (assembled) and for 200 bar  
(included as loose piece)

**Item number**

SZ8085.6



**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

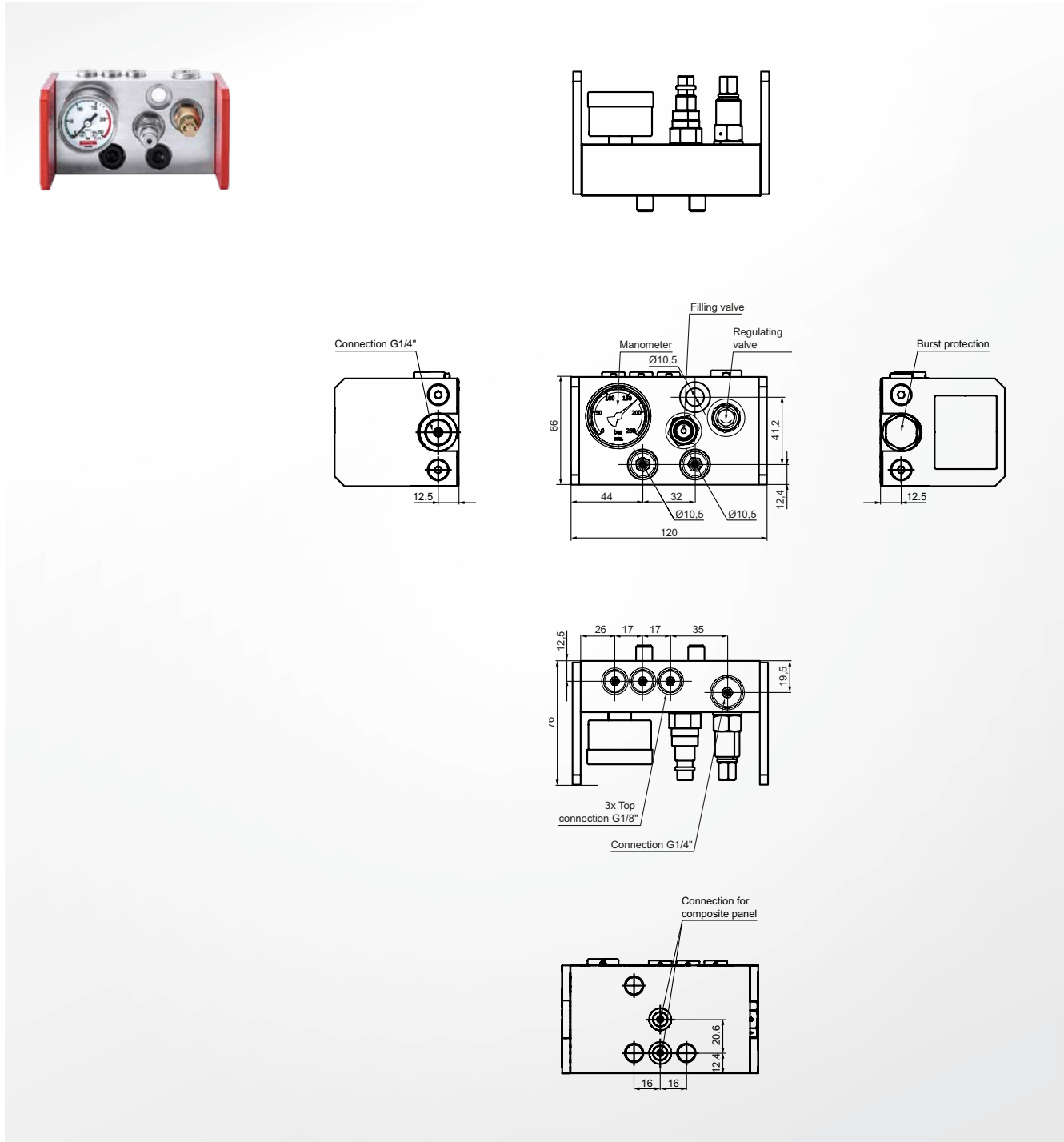
Measuring range daN	Item number
25-250	SZ8078 <b>00250</b>
100-1000	SZ8078 <b>01000</b>

Measuring range daN	Item number
630-6300	SZ8078 <b>06300</b>
1600-16000	SZ8078 <b>16000</b>

# ST8845-01-01 Control panel

**STEINEL®**

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

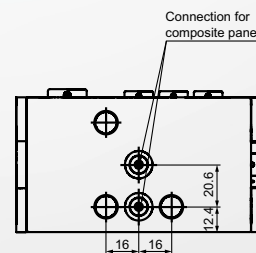
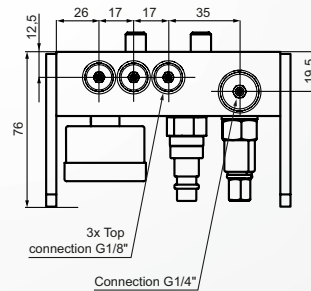
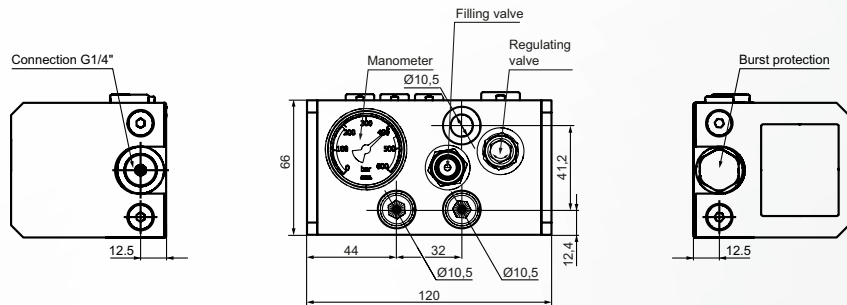
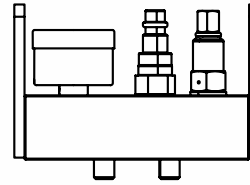
**Item number**

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

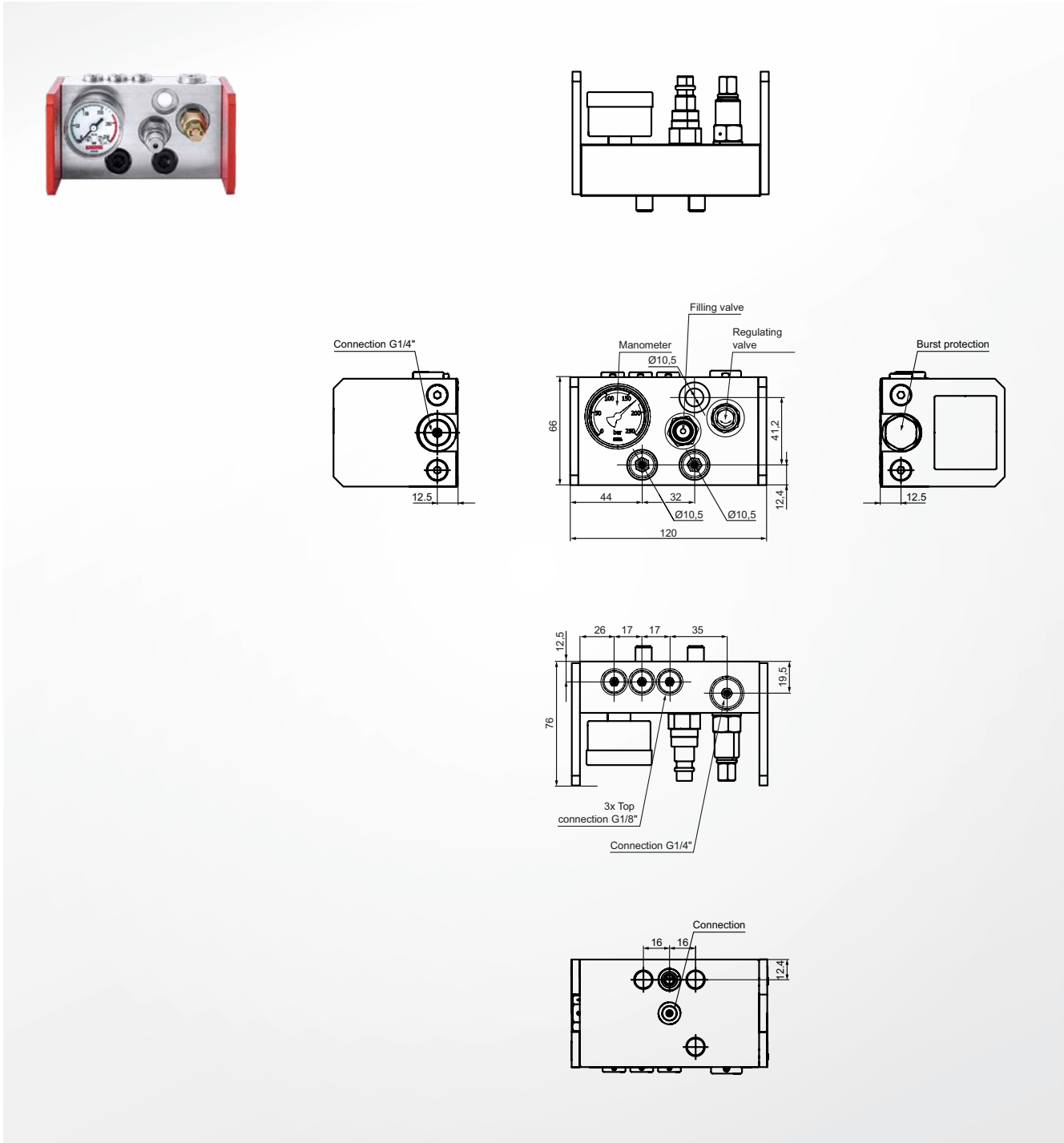
## **Item number**

ST8845-02-01

# ST8845-32-01 Control panel

**STEINEL®**

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

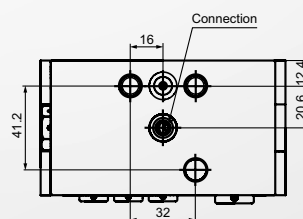
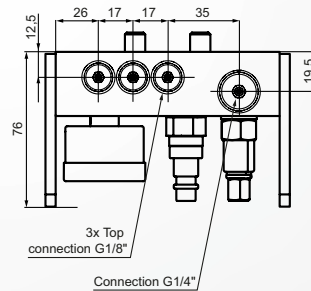
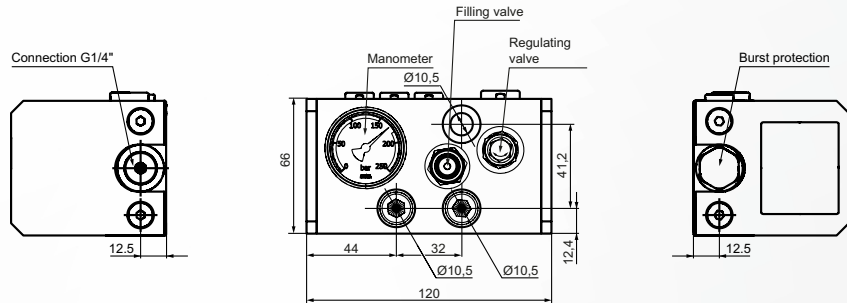
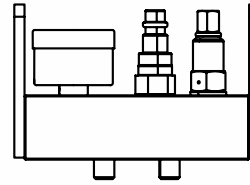
## Item number

ST8845-32-01

# ST8845-80-01 Control panel

**STEINEL®**

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

Tapping  
units

Module  
system

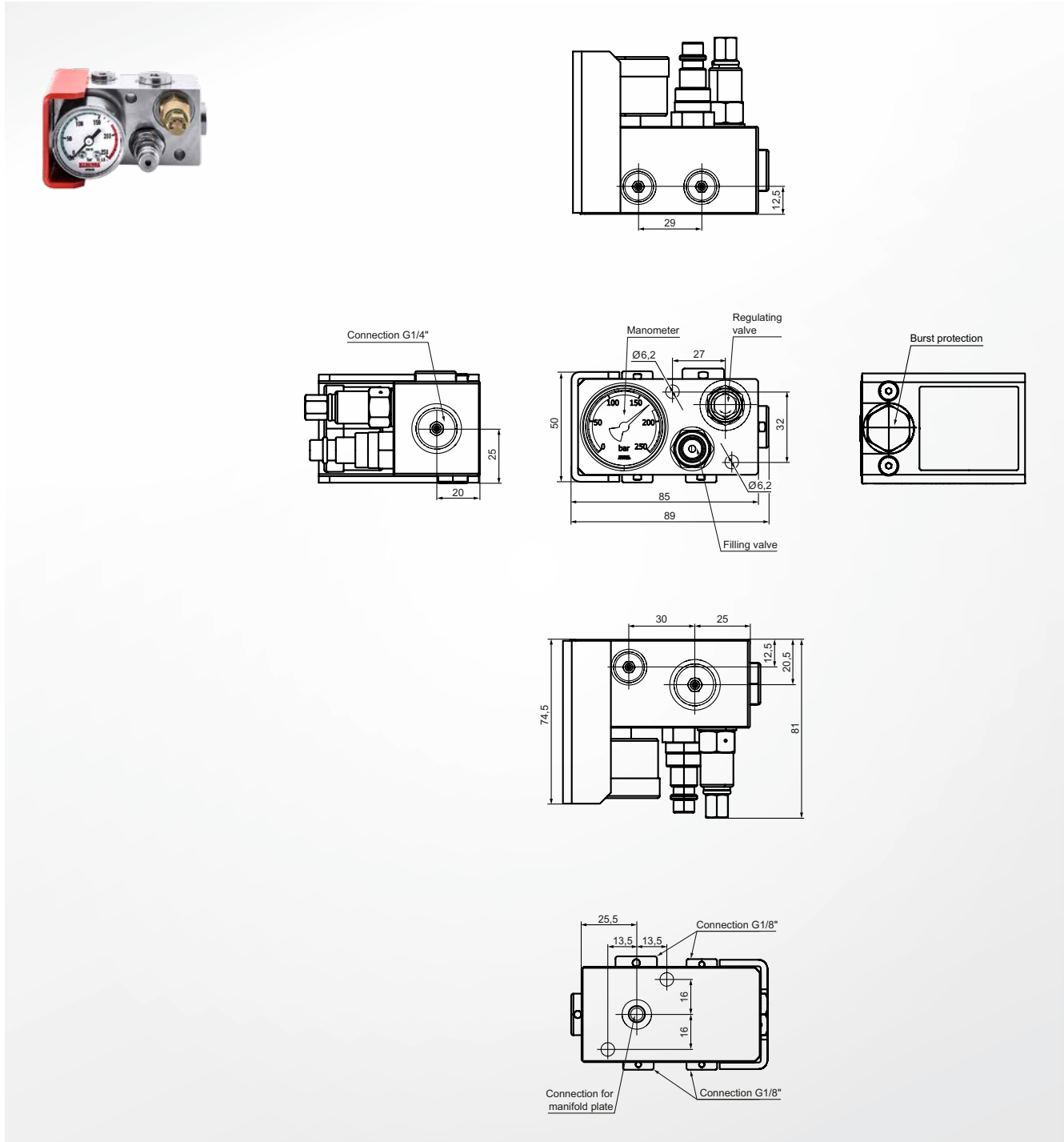
Machine  
elements

Accessories

# ST8845-8 Control panel

**STEINEL®**

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

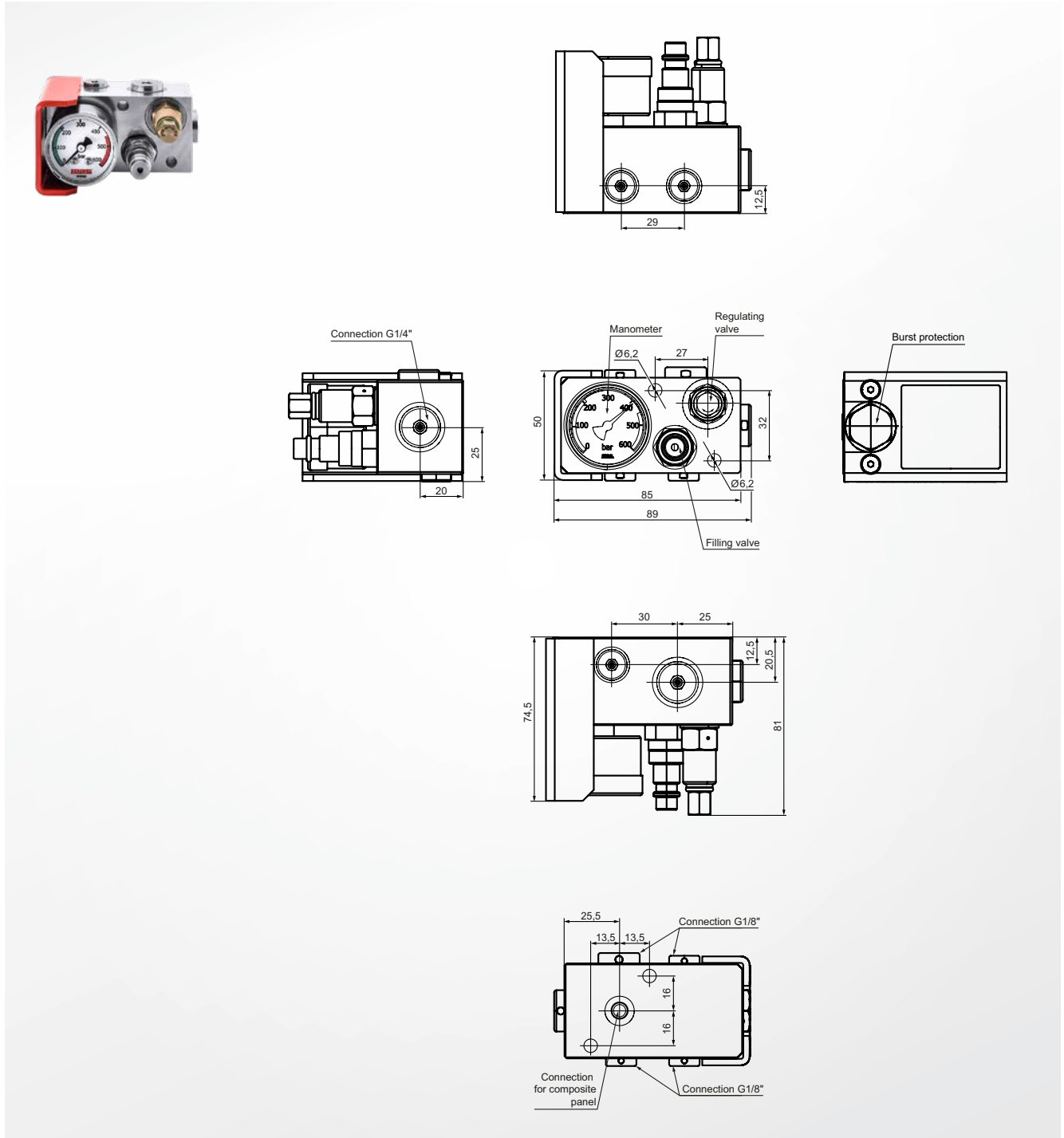
## Item number

ST8845-8

# ST8845-9 Control panel

**STEINEL®**

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

Tapping  
units

Module  
system

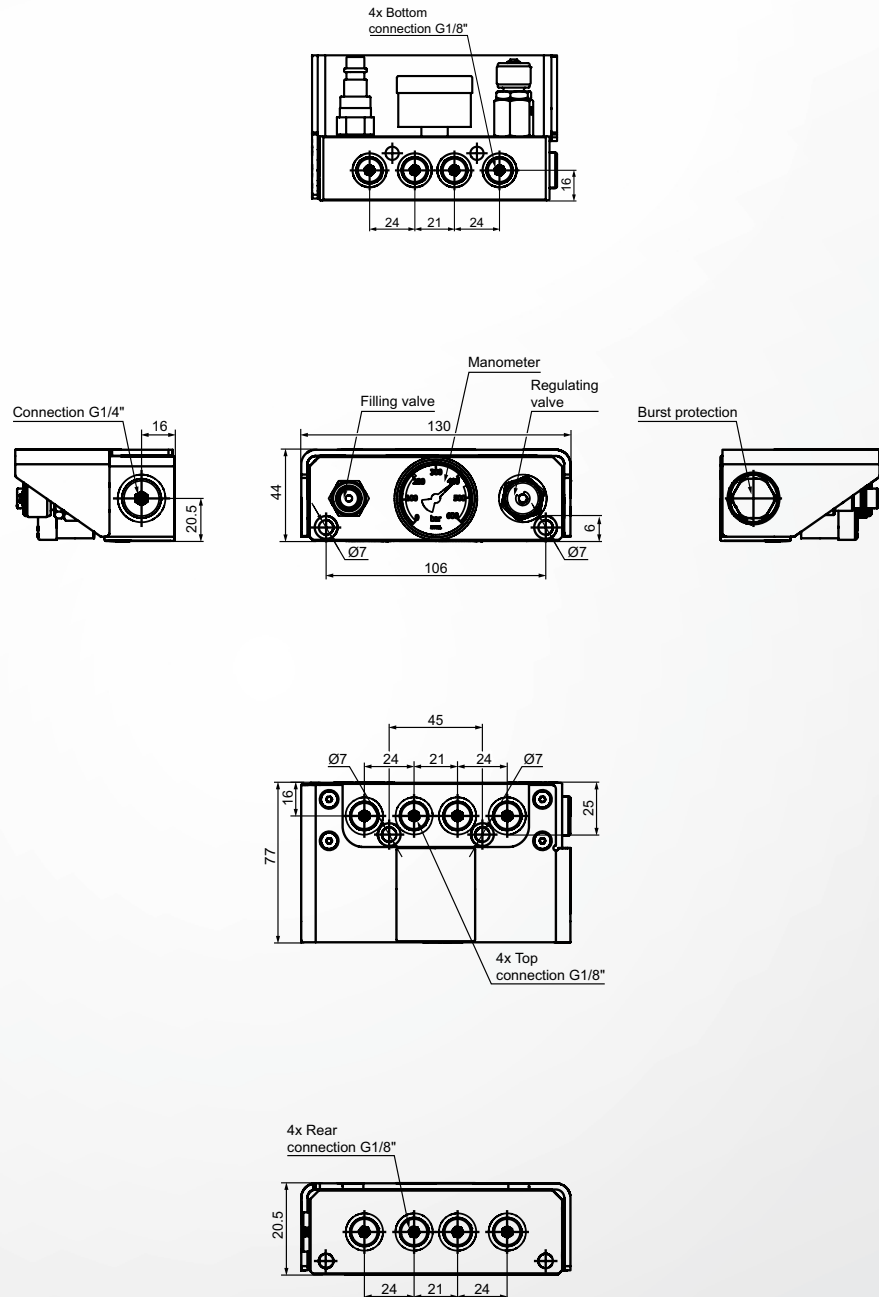
Machine  
elements

Accessories

# ST8845-444 Control panel

maxi, with burst protection

**STEINEL®**



## Burst protection

integrated

## Burst pressure

450 bar

## Mounting screw

2x M6 x 45

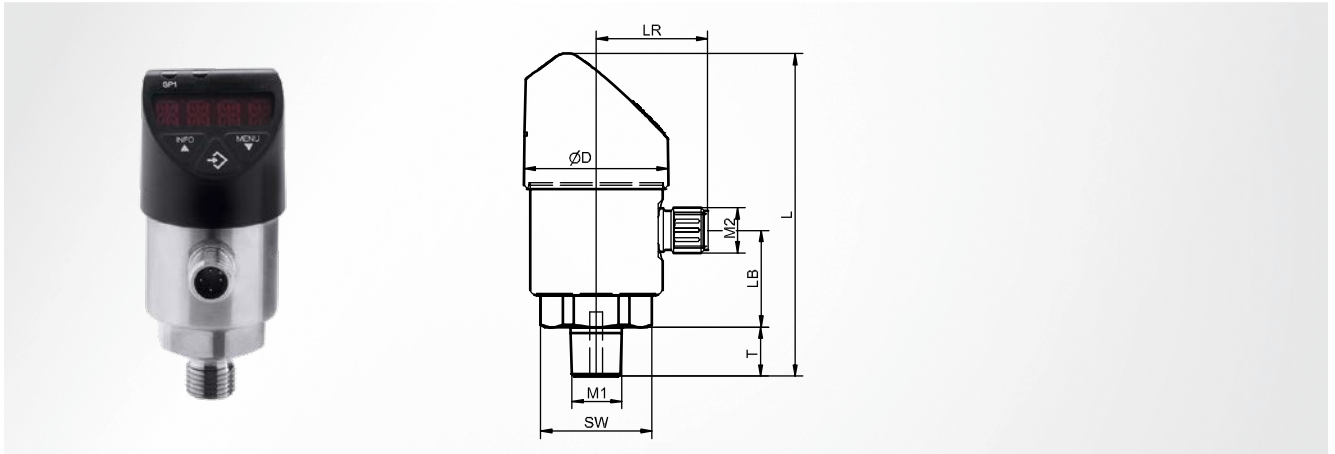
## Connection

12x G1/8"; 1x G1/4"

## Item number

ST8845-444

## pressure controller



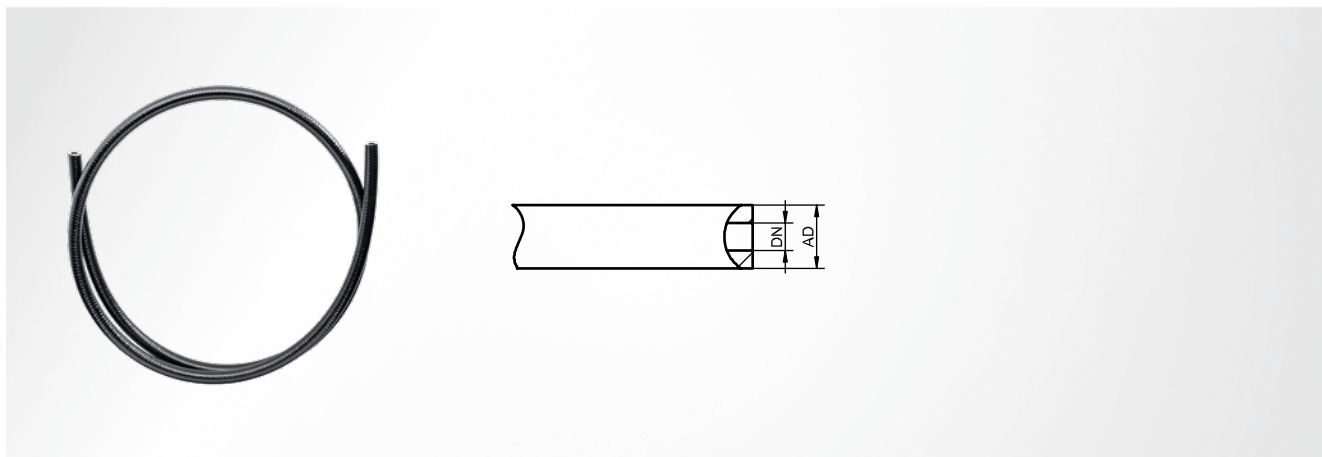
### Note

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:  $\pm 0.5\%$  of span

D	adjustment range	T	LB	LR	SW	M <sub>1</sub>	M <sub>2</sub>	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

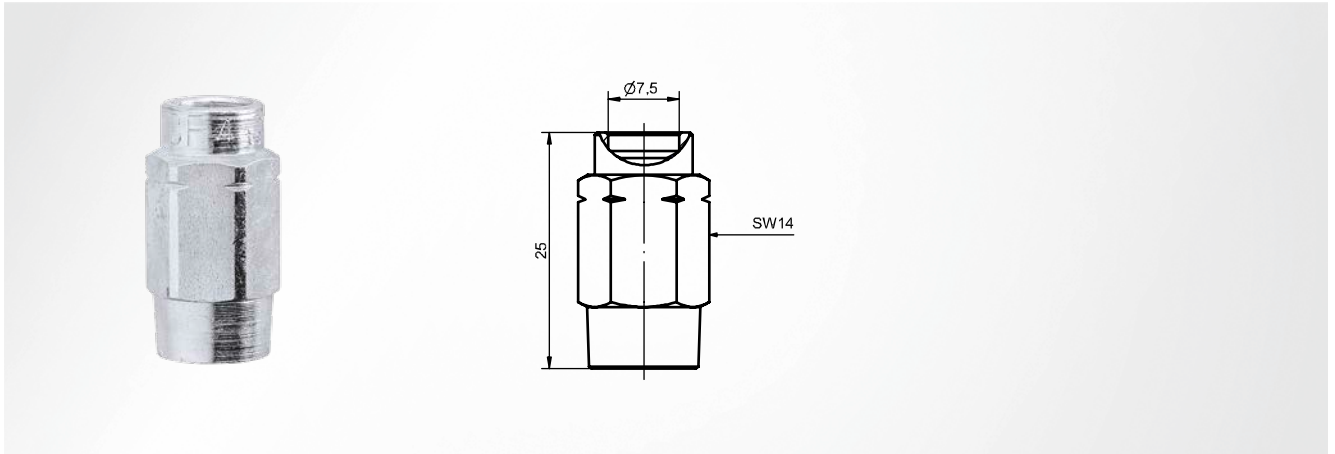
The fitting, consisting of the F-Dorn and screw sleeve, is required for assembly; tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

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**

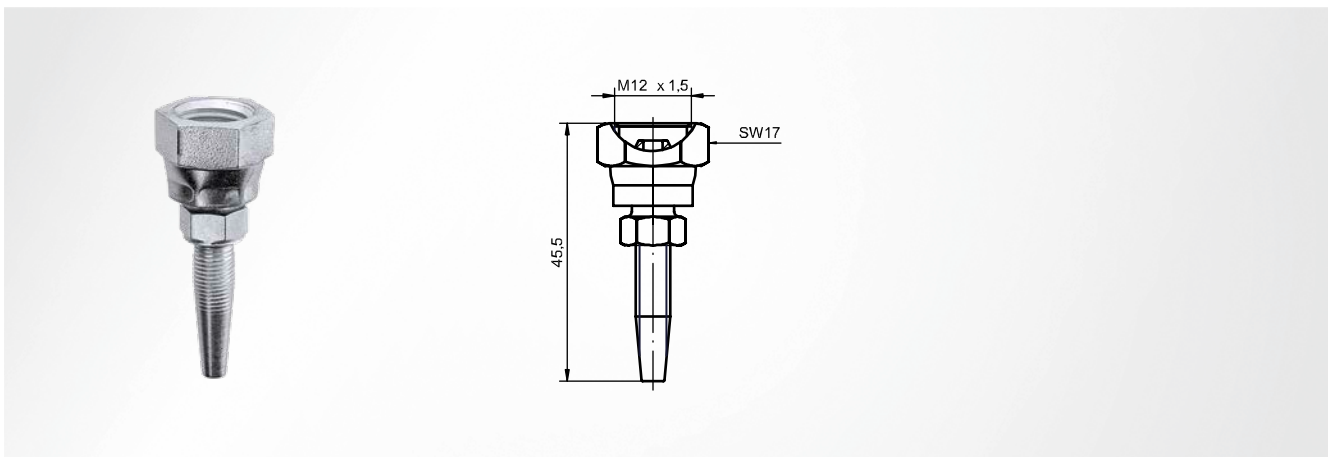
SZ701008

**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

Tapping units

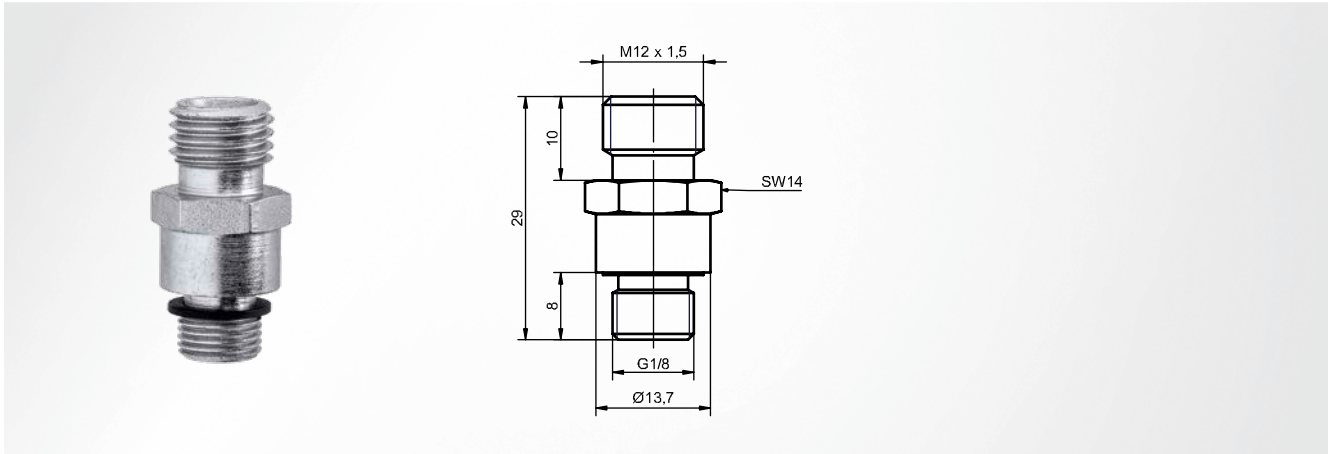
Module system

Machine elements

Accessories

# SZ702006 Screw connection

straight, long



**Note**

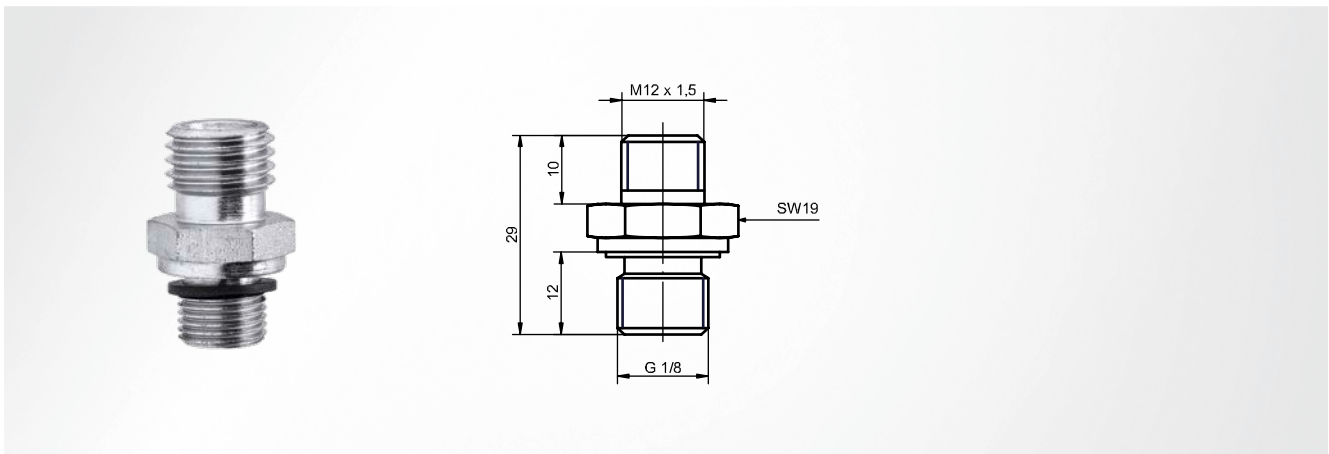
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ702006

# SZ701306 Screw connection

short



**Note**

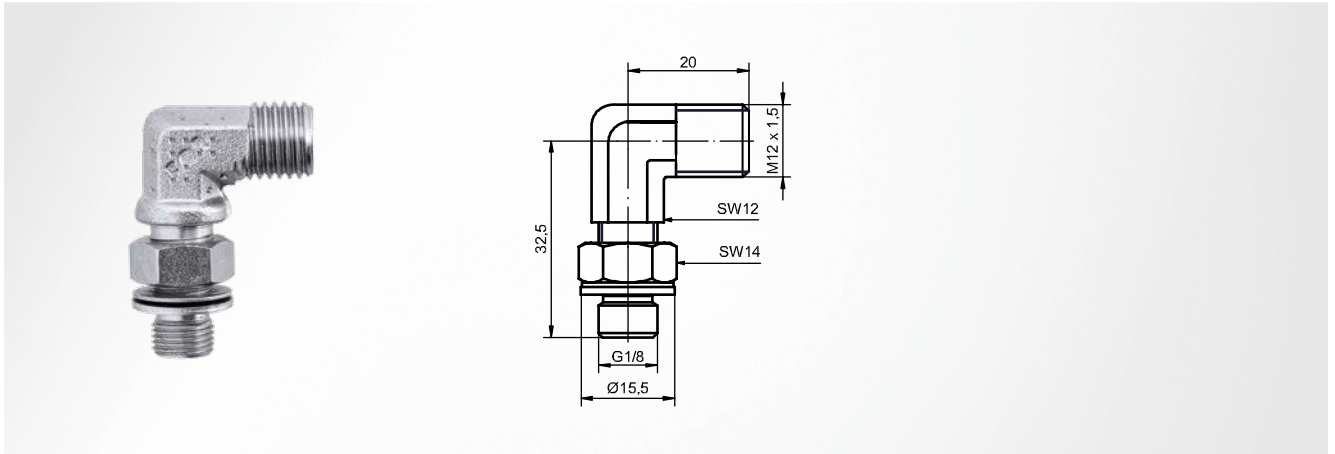
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ701306

# SZ701406 Elbow screw connection

90°, adjustable



**Note**

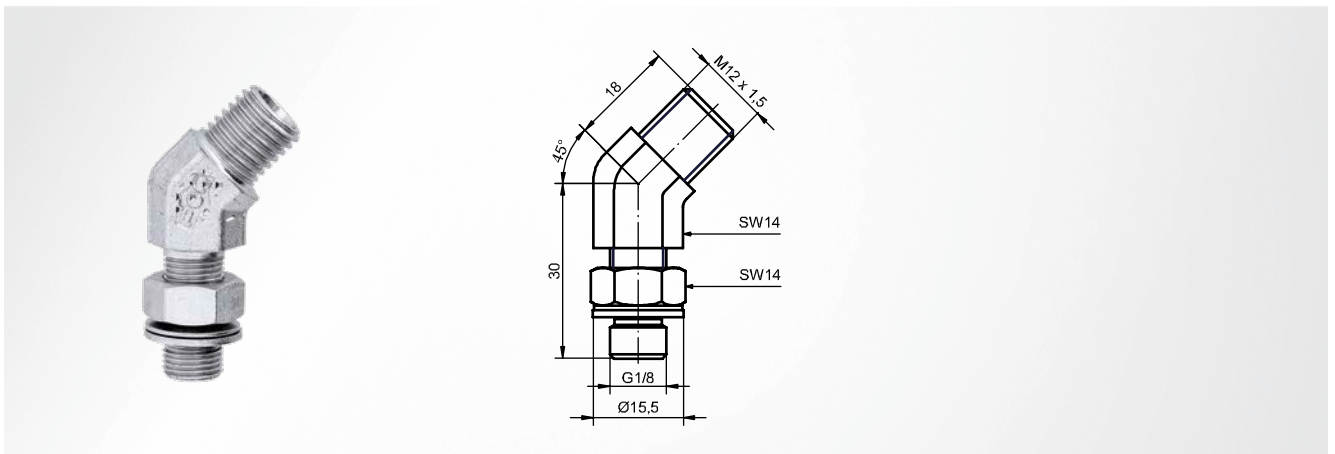
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ701406

# SZ701606 Elbow 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

Tapping units

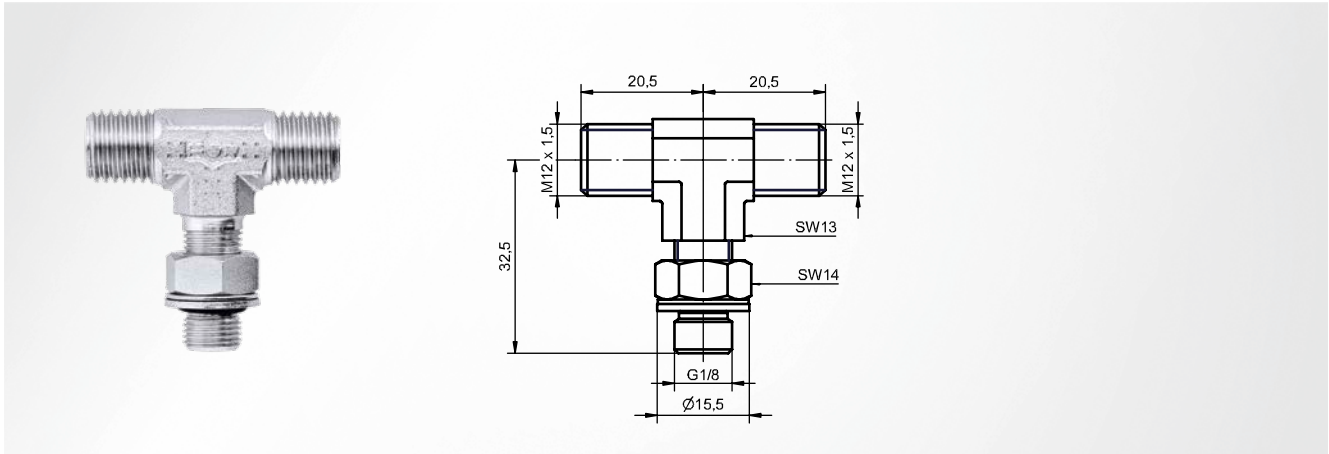
Module system

Machine elements

Accessories

# SZ701506 T-screw connection

adjustable



**Note**

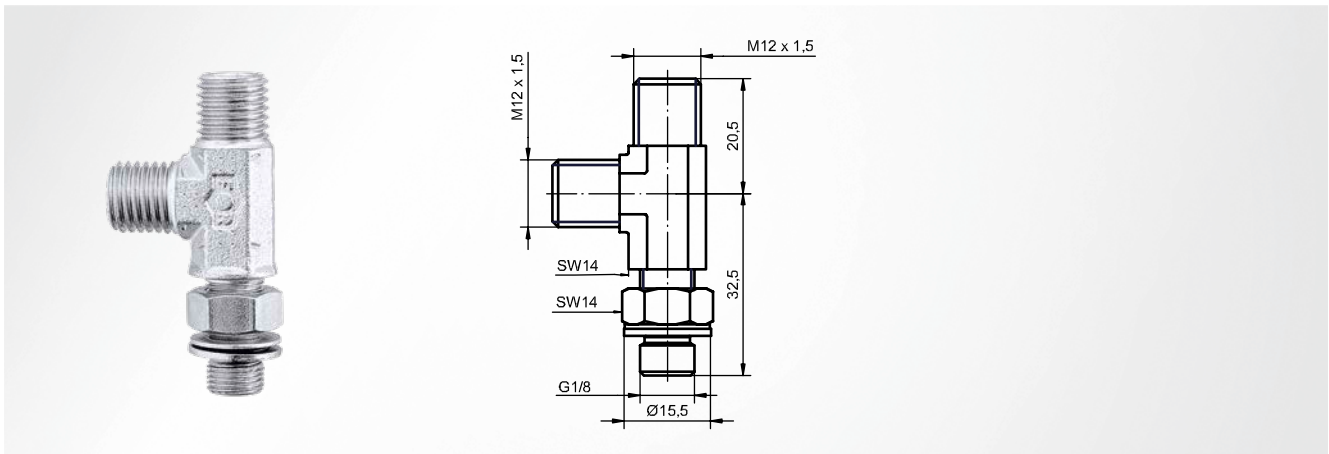
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ701506

# SZ701706 L-screw connection

adjustable, with lock nut



**Note**

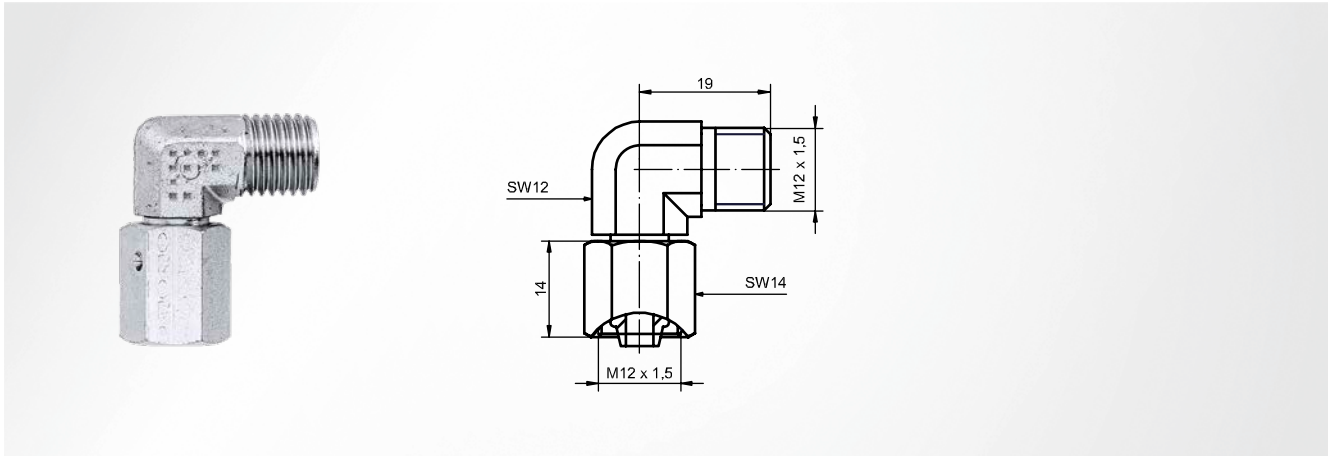
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ701706

# SZ703406 Ellbow screw connection

90°



**Note**

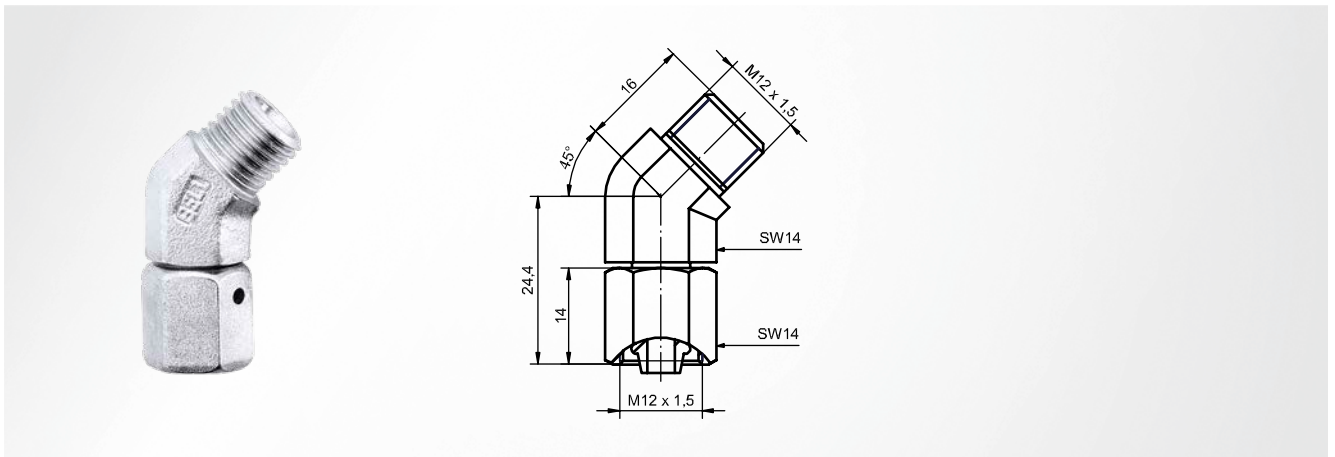
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**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

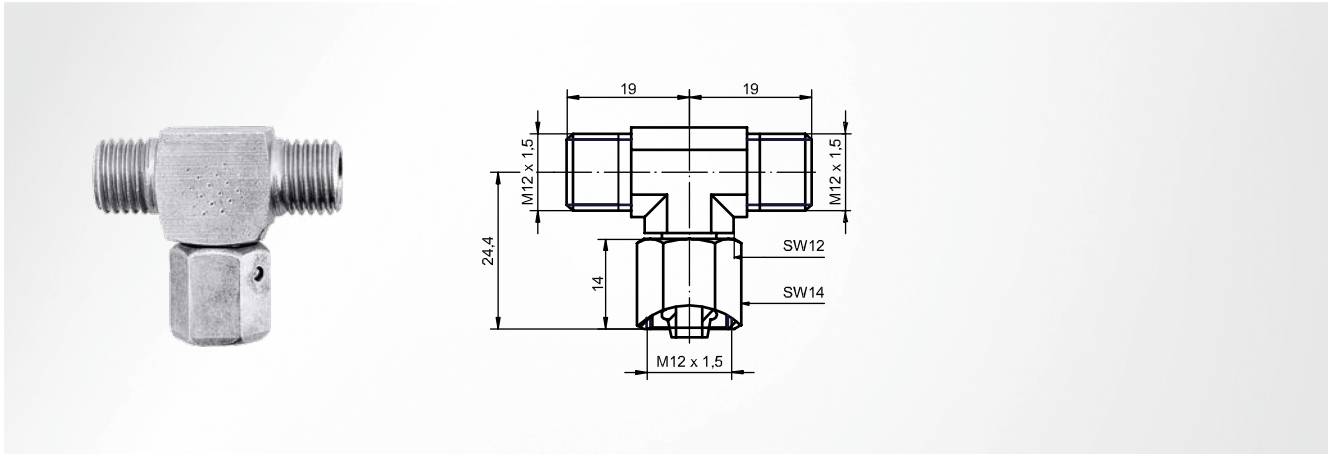
Tapping units

Module system

Machine elements

Accessories

# SZ703506 T-screw connection



**Note**

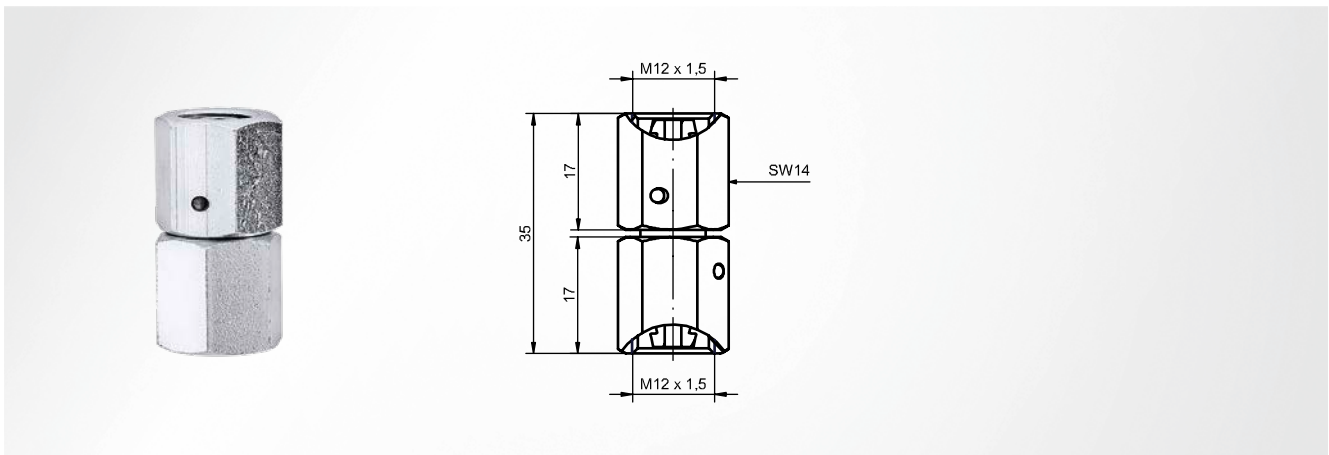
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ703506

# SZ703306 Intermediate adapter

straight



**Note**

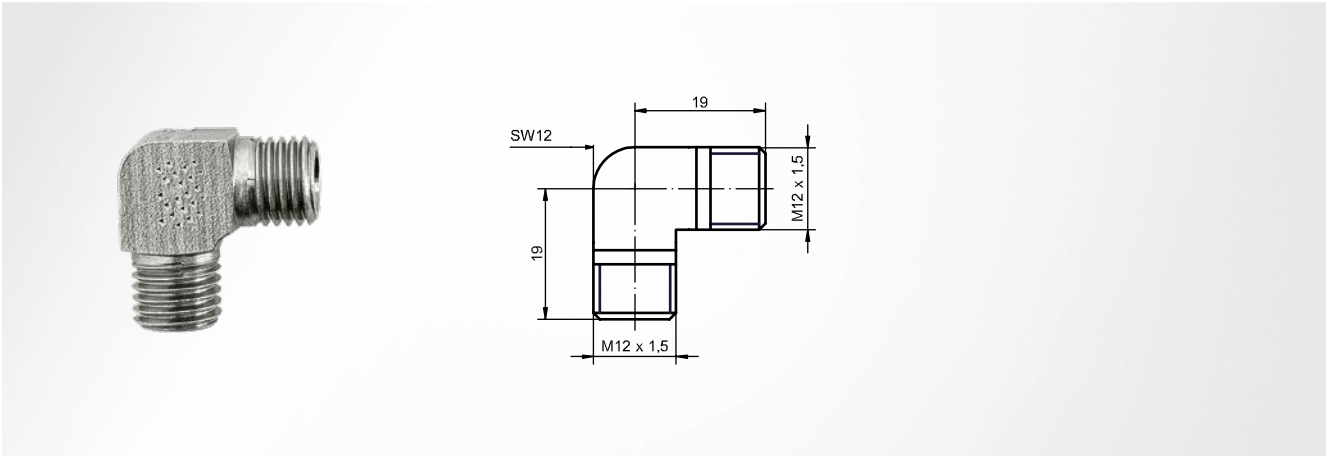
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ703306

# SZ702106 Elbow screw connection

90°



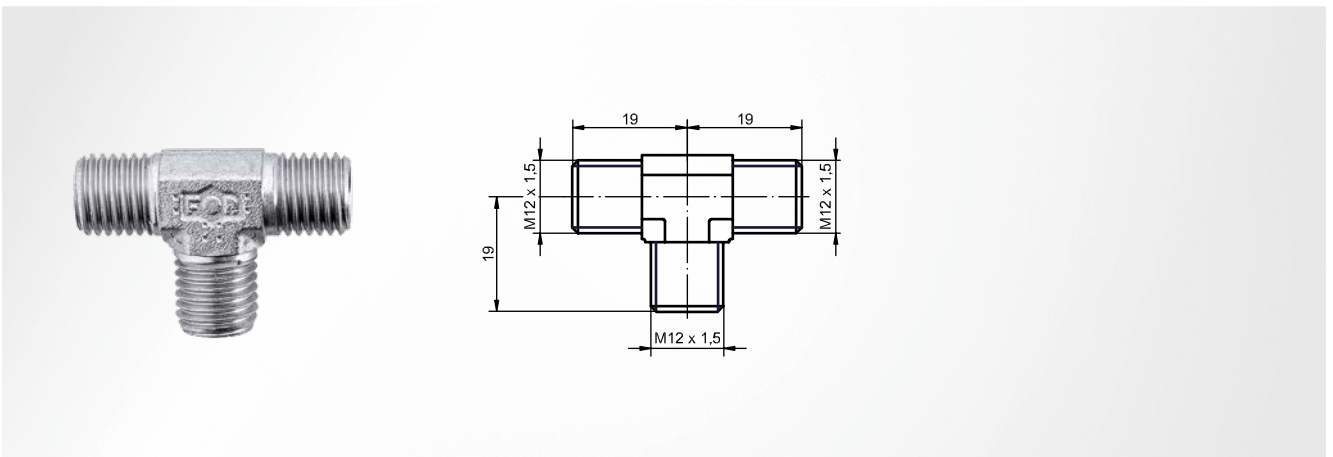
**Note**

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



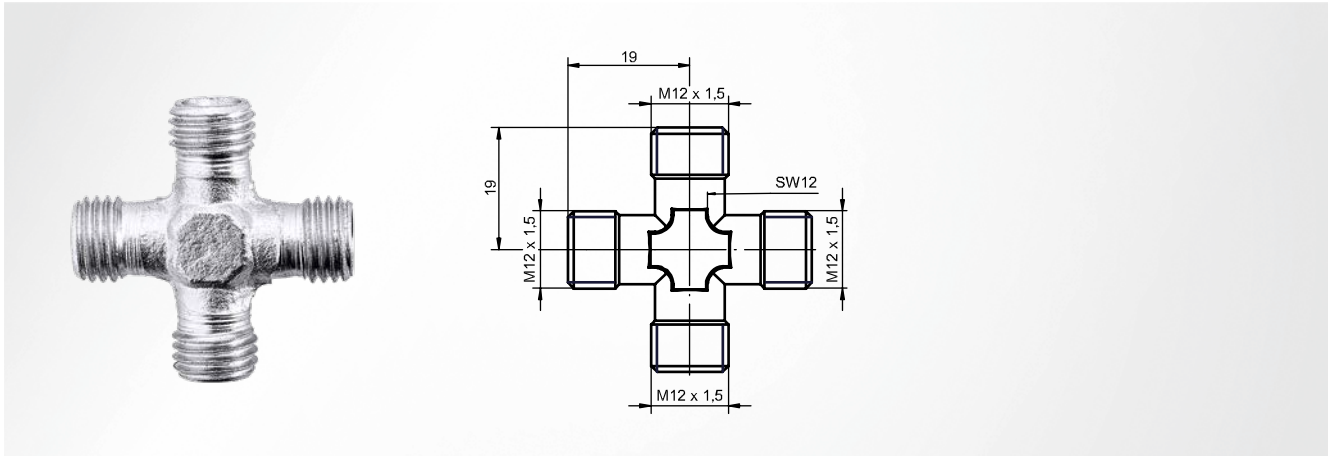
**Note**

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**

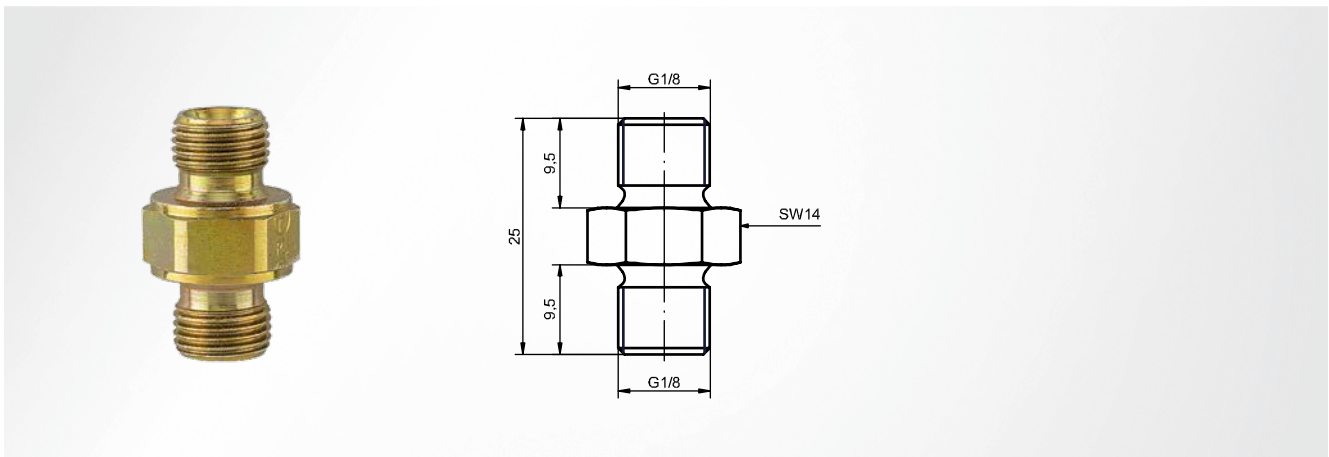
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**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

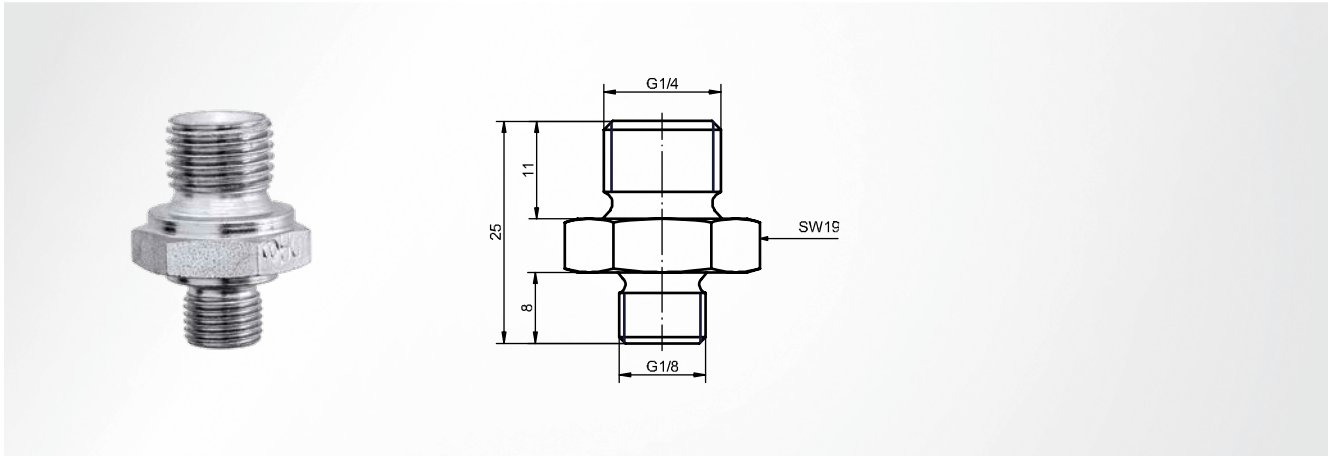
**Item number**

SZ701906



# SZ704530 Screw connection

straight, G1/4-G1/8



**Note**

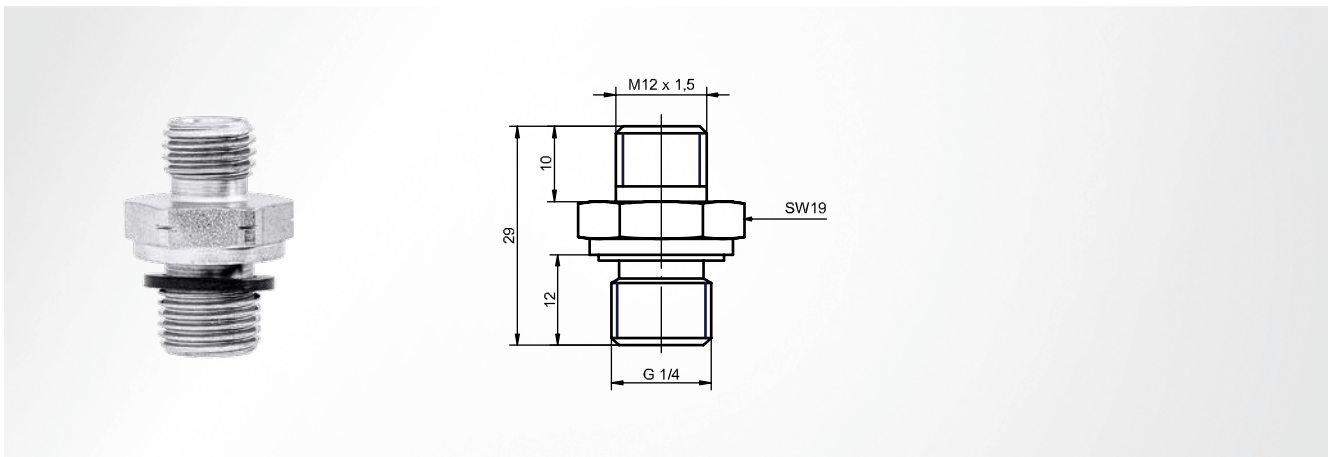
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**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

Tapping units

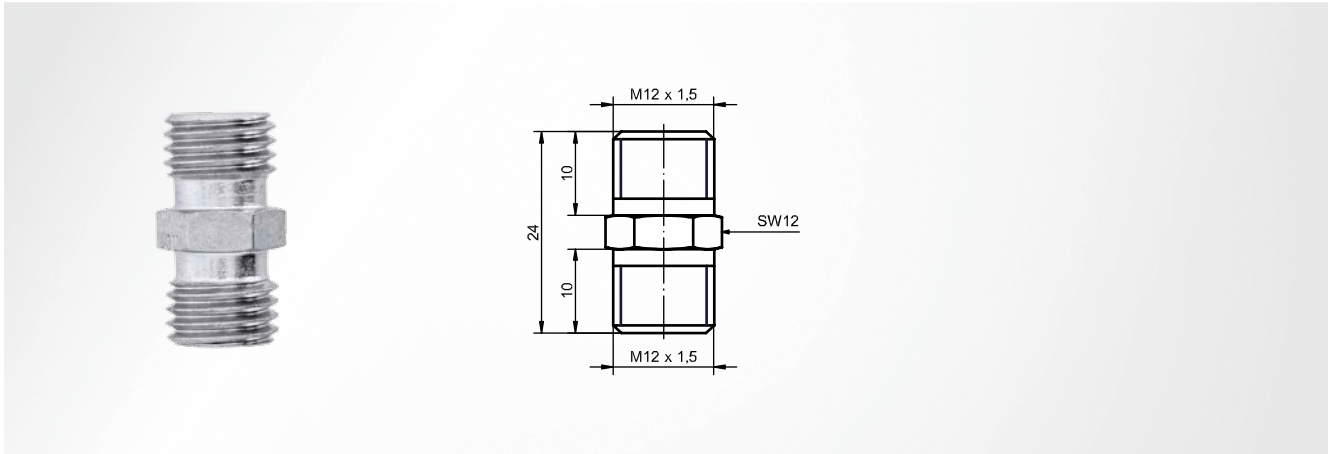
Module system

Machine elements

Accessories

## SZ702406 Screw connection

straight, M12 x 1.5



### Note

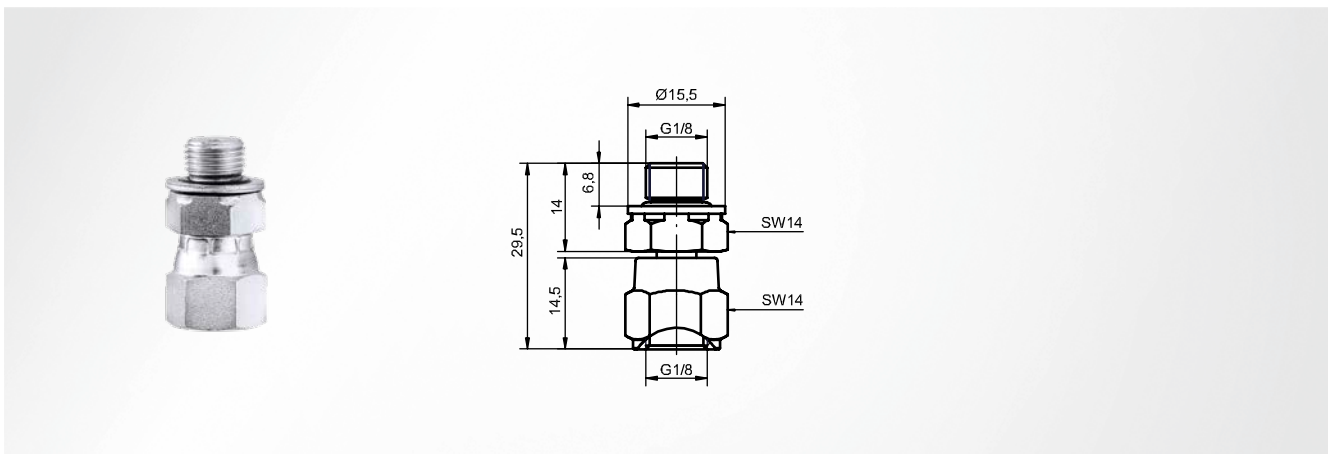
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

### Item number

SZ702406

## SZ704531 Screw connection

straight, G1/8-G1/8



### Note

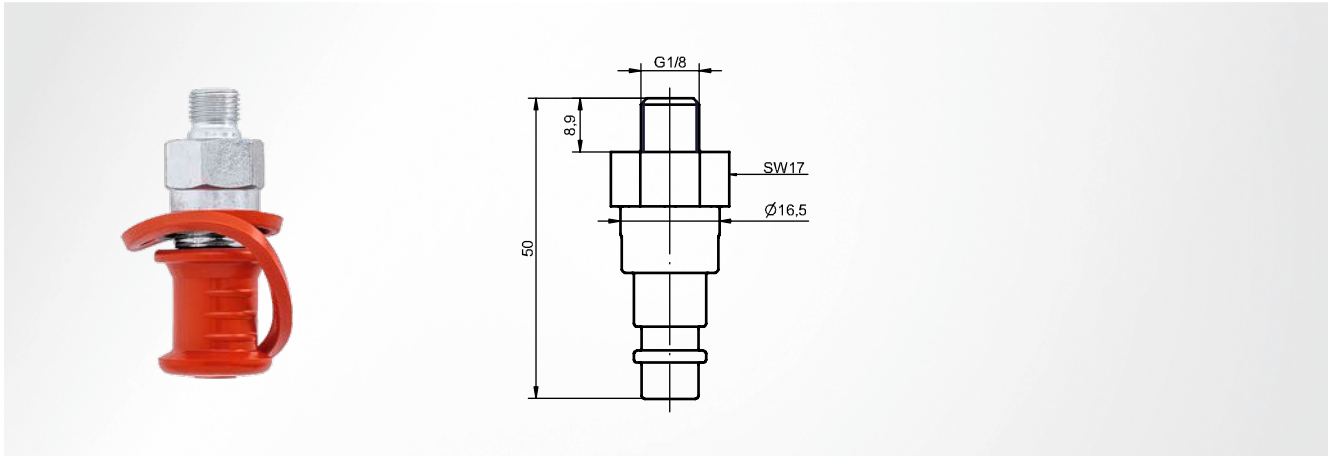
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

### Item number

SZ704531

# SZ704302 Quick coupling connector

G1/8



**Note**

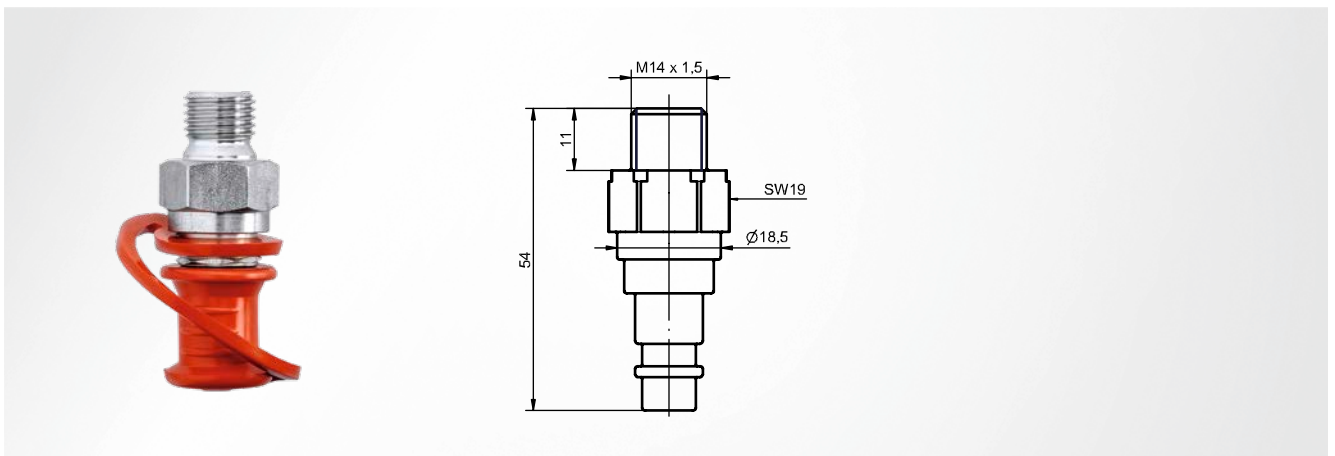
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ704302

# SZ704406 Quick coupling connector

M14 x 1.5



**Note**

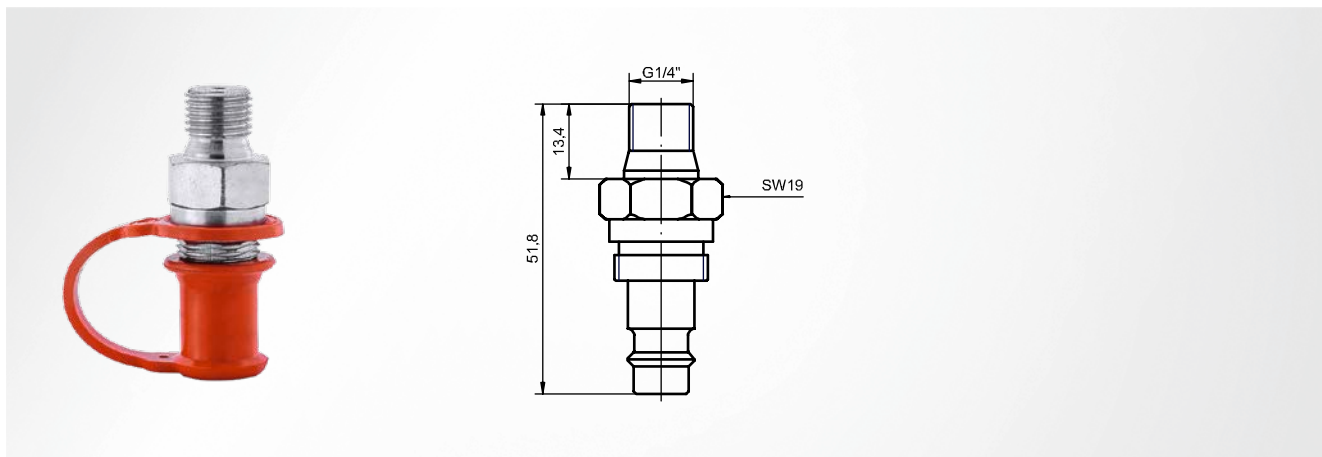
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ704406

# SZ704204 Quick coupling connector

G1/4



**Note**

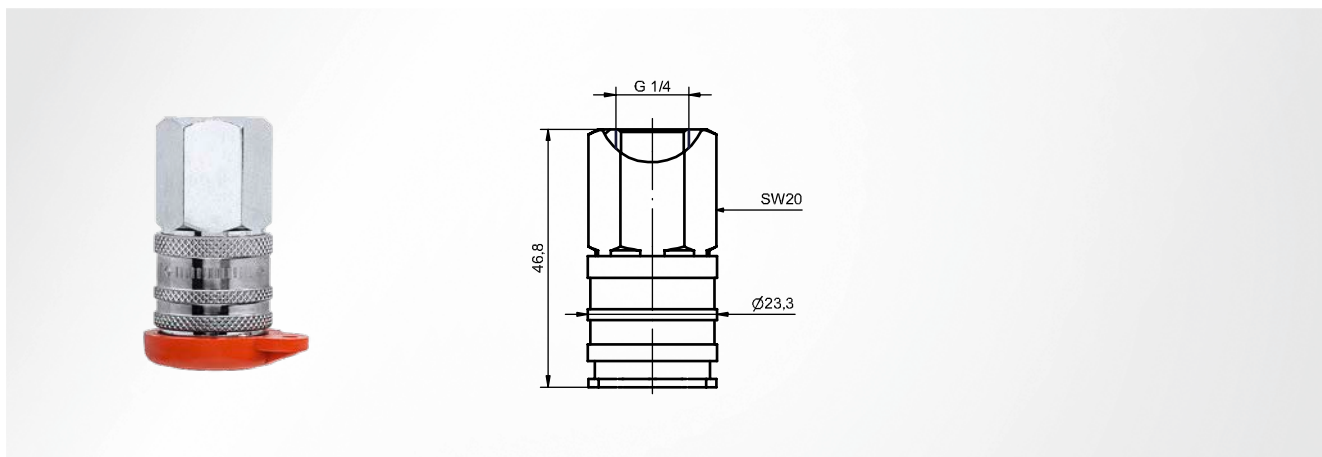
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ704204

# SZ704303 Quick coupling sleeve

G1/4



**Note**

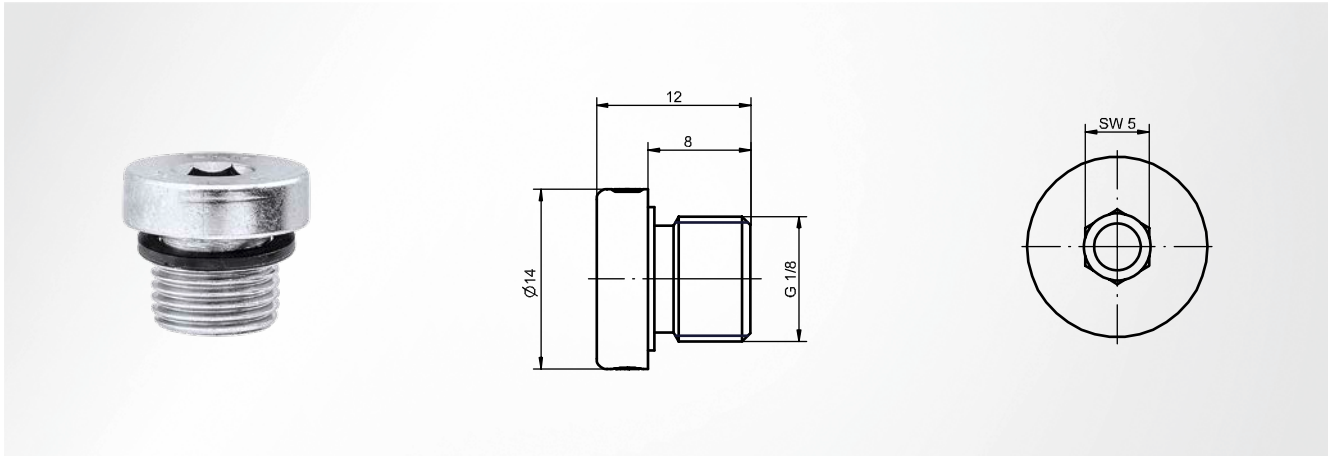
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ704303

# SZ704301 Sealing plug

G1/8



**Note**

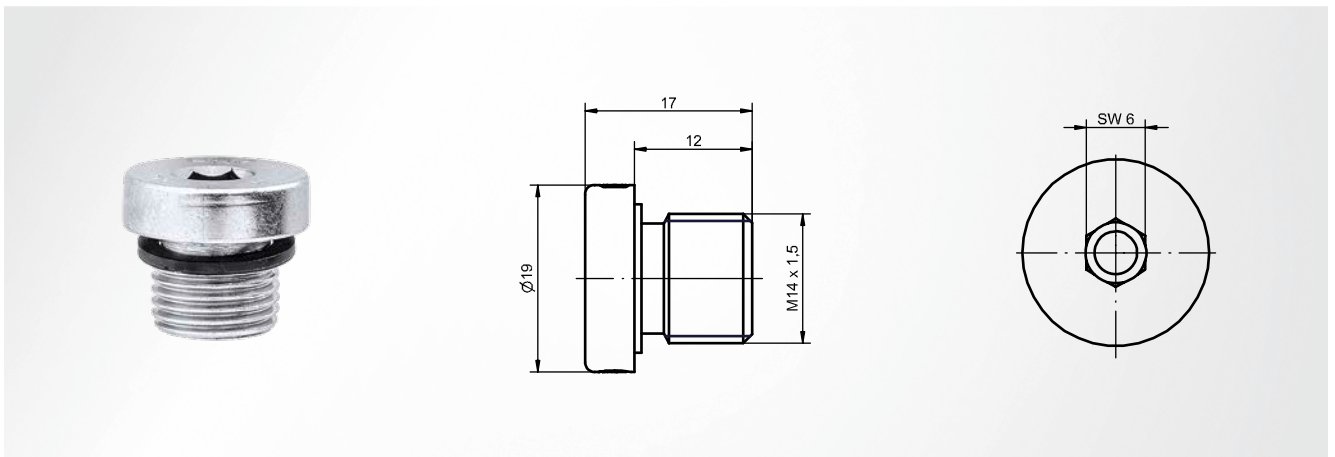
Tubing items may only be used for STEINEL nitrogen systems; assembly may only be carried out by trained personnel

**Item number**

SZ704301

# 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**

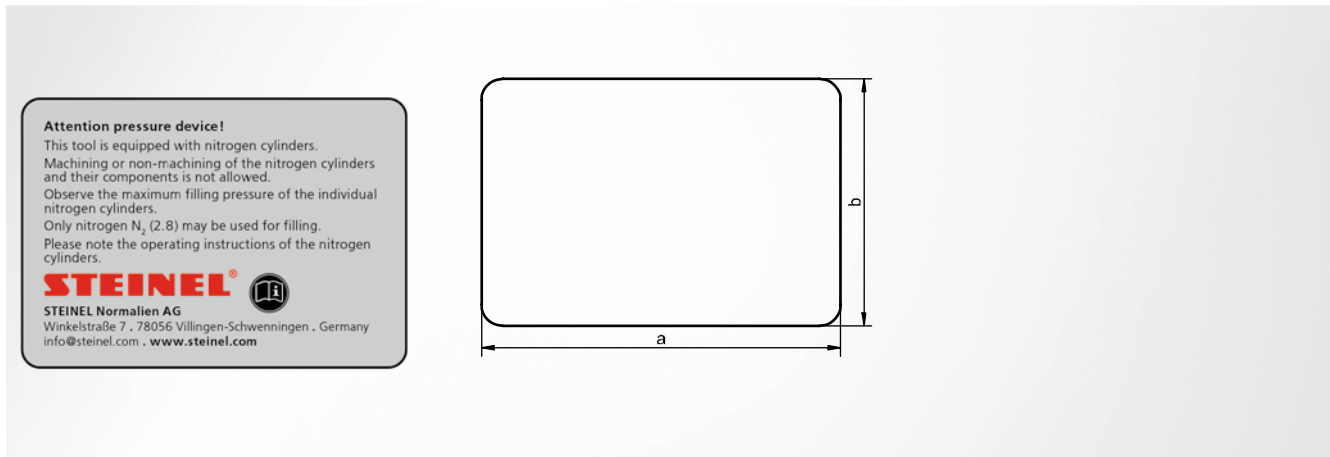
SZ704404

Tapping units

Module system

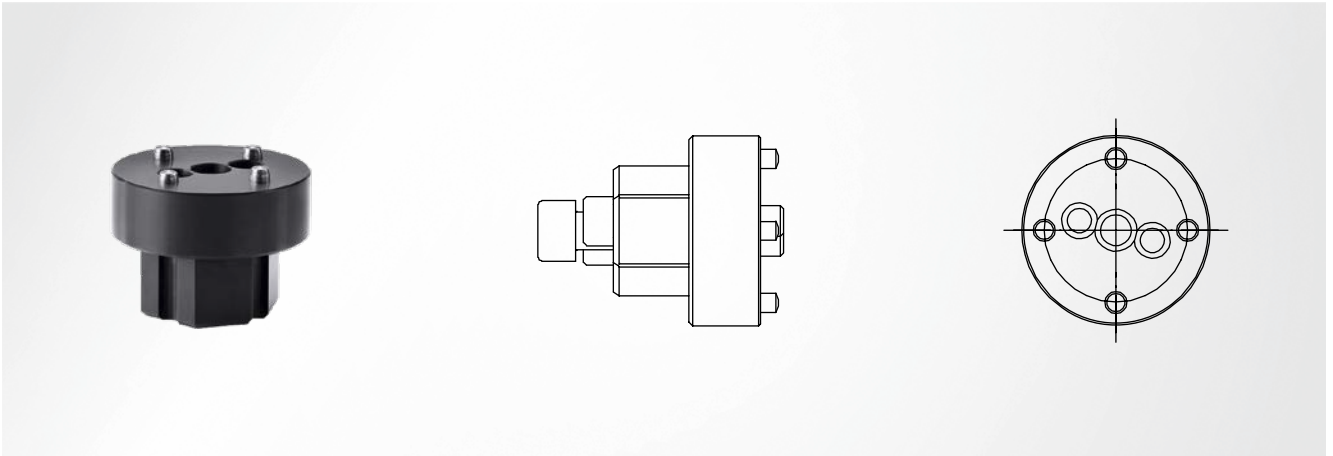
Machine elements

Accessories



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

base



### Compatible series

all series

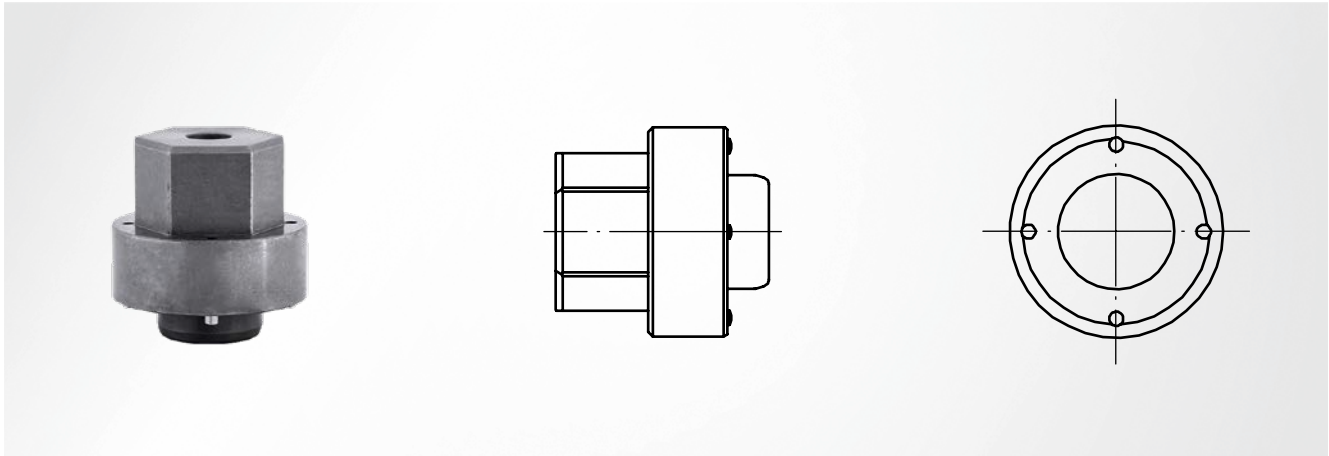
### Note

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 <b>WKZ019</b>
25	SZ8000 <b>WKZ025</b>
32	SZ8000 <b>WKZ032</b>
38	SZ8000 <b>WKZ038-1</b>
50	SZ8000 <b>WKZ050</b>

D	Item number
63	SZ8000 <b>WKZ063</b>
75	SZ8000 <b>WKZ075</b>
95	SZ8000 <b>WKZ095</b>
120	SZ8000 <b>WKZ120</b>

## DS-fixture



### Compatibel series

SZ8065.1.; SZ8065.2.038-095

### Note

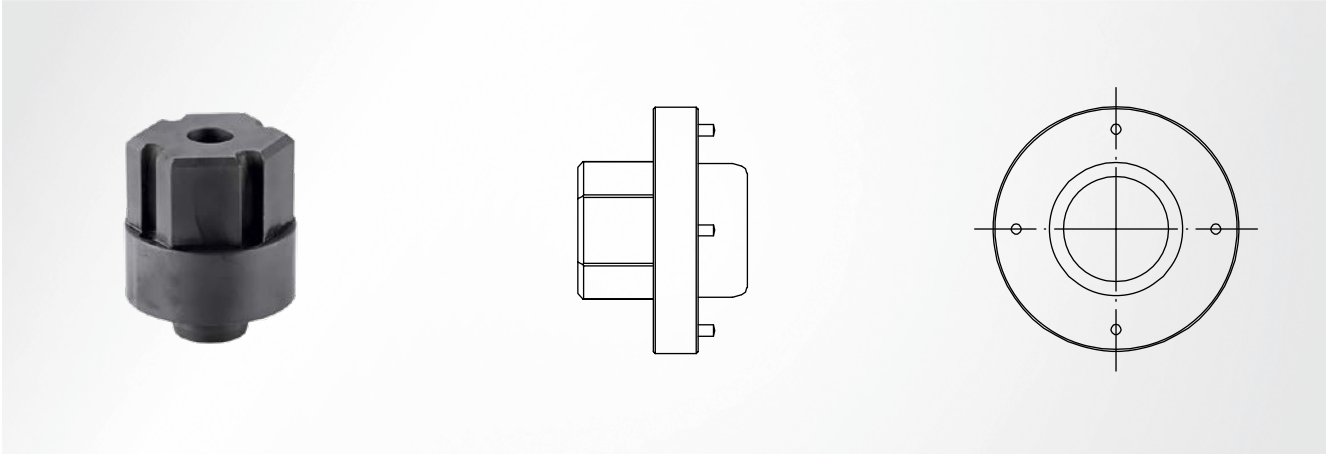
Assembly and disassembly of the DS fixture; repair of nitrogen systems must only be carried out by trained personnel; please observe our operating and safety instructions

D	Item number
19	SZ8000 <b>WKZ8065DS19</b>
25	SZ8000 <b>WKZ8065DS25</b>
32	SZ8000 <b>WKZ8065DS32</b>
38	SZ8000 <b>WKZ8065DS38</b>

D	Item number
50	SZ8000 <b>WKZ8065DS50</b>
63	SZ8000 <b>WKZ8065DS63</b>
75	SZ8000 <b>WKZ8065DS75</b>
95	SZ8000 <b>WKZ8065DS95</b>



## 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 <b>WKZ8066DS19</b>
25	SZ8000 <b>WKZ8066DS25</b>
32	SZ8000 <b>WKZ8066DS32</b>
38	SZ8000 <b>WKZ8066DS38</b>

D	Item number
50	SZ8000 <b>WKZ8066DS50</b>
63	SZ8000 <b>WKZ8066DS63</b>
75	SZ8000 <b>WKZ8066DS75</b>
95	SZ8000 <b>WKZ8066DS95</b>



### 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 <b>REP001019</b>
25	SZ8000 <b>REP001025</b>
32	SZ8000 <b>REP001032</b>
38	SZ8000 <b>REP001038</b>
50	SZ8000 <b>REP001050</b>

D	Item number
63	SZ8000 <b>REP001063</b>
75	SZ8000 <b>REP001075</b>
95	SZ8000 <b>REP001095</b>
120	SZ8000 <b>REP001120</b>



### 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 <b>REP002019</b>
25	SZ8000 <b>REP002025</b>
32	SZ8000 <b>REP002032</b>
38	SZ8000 <b>REP002038</b>

D	Item number
50	SZ8000 <b>REP002050</b>
63	SZ8000 <b>REP002063</b>
75	SZ8000 <b>REP002075</b>
95	SZ8000 <b>REP002095</b>



### 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 <b>REP003019</b>
25	SZ8000 <b>REP003025</b>
32	SZ8000 <b>REP003032</b>
38	SZ8000 <b>REP003038</b>

D	Item number
50	SZ8000 <b>REP003050</b>
63	SZ8000 <b>REP003063</b>
75	SZ8000 <b>REP003075</b>
95	SZ8000 <b>REP003095</b>



### 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 <b>REP004019</b>
25	SZ8000 <b>REP004025</b>
32	SZ8000 <b>REP004032</b>
38	SZ8000 <b>REP004038</b>
50	SZ8000 <b>REP004050</b>

D	Item number
63	SZ8000 <b>REP004063</b>
75	SZ8000 <b>REP004075</b>
95	SZ8000 <b>REP004095</b>
120	SZ8000 <b>REP002120</b>



## 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 <b>06350</b>
	380	SZ7087 <b>06380</b>
	430	SZ7087 <b>06430</b>
	450	SZ7087 <b>06450</b>
	470	SZ7087 <b>06470</b>
	500	SZ7087 <b>06500</b>
from Ø50	350	SZ7087 <b>12350</b>

Nitrogen cylinder	Burst pressure bar	Item number
from Ø50	380	SZ7087 <b>12380</b>
	400	SZ7087 <b>12400</b>
	430	SZ7087 <b>12430</b>
	450	SZ7087 <b>12450</b>
	470	SZ7087 <b>12470</b>
	500	SZ7087 <b>12500</b>
	600	SZ7087 <b>12600</b>

# 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 <b>-005-DS</b>
ST8841-1-010, ST8841-2-010, ST8841-3-010	ST8841 <b>-010-DS</b>
ST8841-1-025, ST8841-2-025, ST8841-3-025	ST8841 <b>-025-DS</b>

Compatibel cylinder	Item number
ST8841-1-035, ST8841-2-035, ST8841-3-035	ST8841 <b>-035-DS</b>
ST8841-1-055, ST8841-2-055, ST8841-3-055	ST8841 <b>-055-DS</b>
ST8841-1-100, ST8841-2-100, ST8841-3-100	ST8841 <b>-100-DS</b>

# 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 <b>-1-005-ZB</b>
ST8841-1-010, ST8841-2-010	ST8841 <b>-1-010-ZB</b>
ST8841-1-025, ST8841-2-025	ST8841 <b>-1-025-ZB</b>
ST8841-1-035, ST8841-2-035	ST8841 <b>-1-035-ZB</b>

Compatibel cylinder	Item number
ST8841-1-055, ST8841-2-055	ST8841 <b>-1-055-ZB</b>
ST8841-1-100, ST8841-2-100	ST8841 <b>-1-100-ZB</b>
ST8841-3-003	ST8841 <b>-3-005-ZB</b>
ST8841-3-010	ST8841 <b>-3-010-ZB</b>

Tapping units

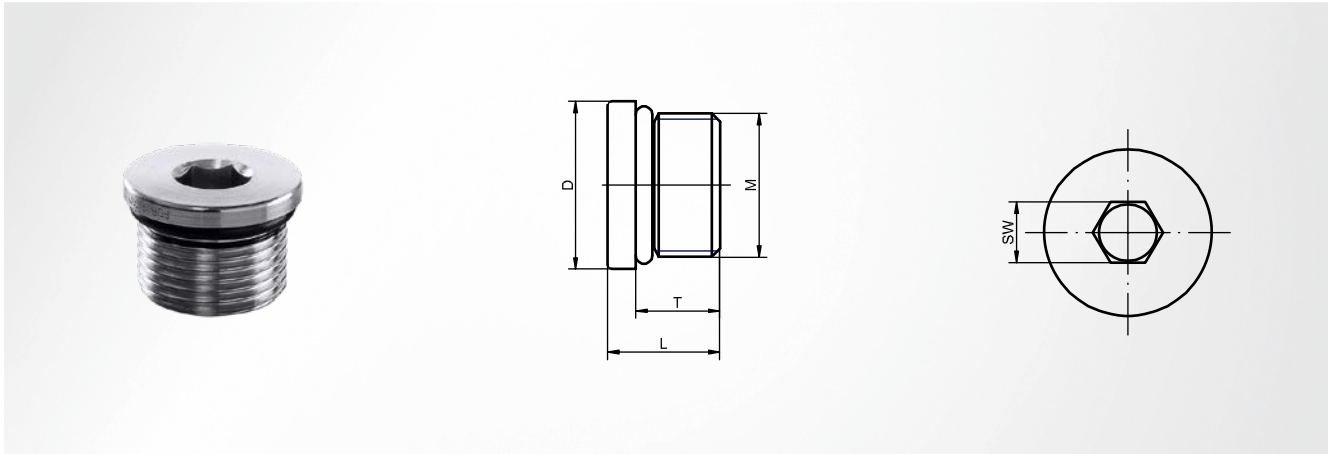
Module system

Machine elements

Accessories

# ST8842 Sealing plug

with six pans creux

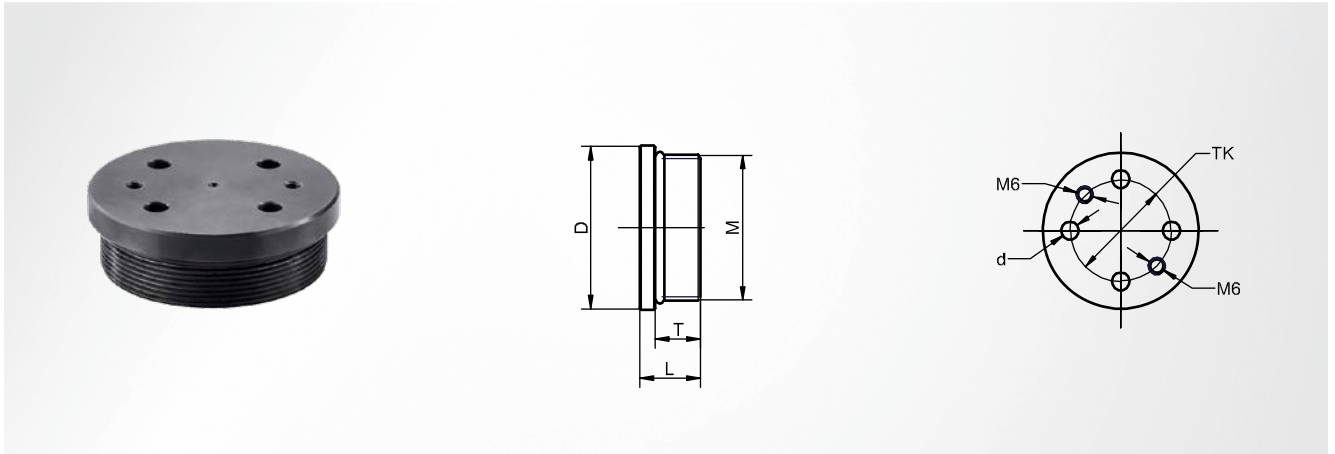


## Note

is used for sealing the volume or connecting holes

D	M	L	SW	Torque Nm	Bore hole diameter	Circular area cm <sup>2</sup>	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	18	2.545	14.0	ST8842 -020
32	M27 x 2	22.5	12	160	24	4.524	18.5	ST8842 -027





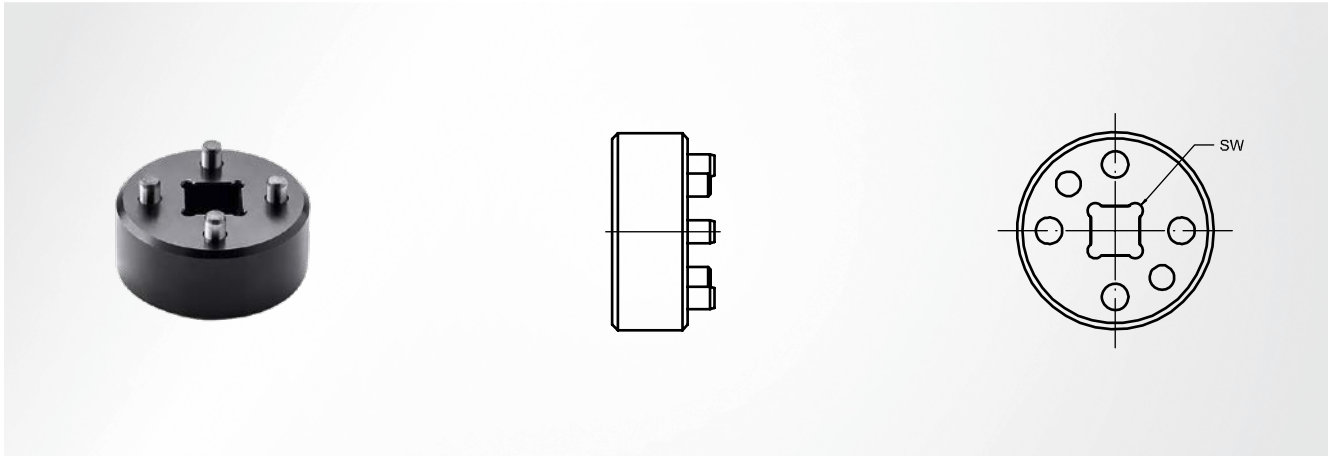
**Note**

is used for sealing the volume or connecting holes

D	M	d	T	TK	Torque Nm	Bore hole diameter	Circular area cm <sup>2</sup>	L	Item number
42	M36 x 2	5.2	15	25	300	33	8.553	20	ST8842 <b>-036</b>
48	M42 x 2	5.2	15	30	330	39	11.946	20	ST8842 <b>-042</b>
54	M48 x 2	6.2	15	35	440	45	15.904	20	ST8842 <b>-048</b>
70	M64 x 2	6.2	15	45	440	61	28.274	20	ST8842 <b>-064</b>
88	M80 x 2	8.2	20	55	800	77	45.365	30	ST8842 <b>-080</b>
108	M100 x 2	8.2	20	70	1000	97	72.382	30	ST8842 <b>-100</b>
145	M130 x 2	8.2	20	90	1200	127	124.69	30	ST8842 <b>-130</b>

# ST8842-WKZ-5 Assembly tool

for sealing plug

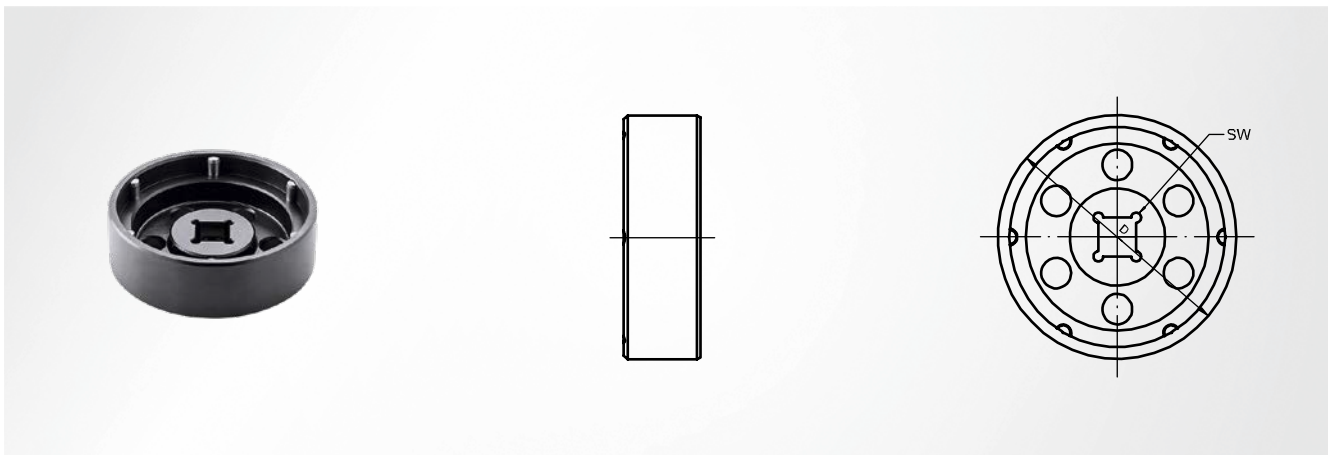


M	SW	Item number
M36 x 2	12.7	ST8842 - <b>WKZ-5-036</b>
M42 x 2	12.7	ST8842 - <b>WKZ-5-042</b>
M48 x 2	12.7	ST8842 - <b>WKZ-5-048</b>
M64 x 2	19.0	ST8842 - <b>WKZ-5-064</b>

M	SW	Item number
M80 x 2	19.0	ST8842 - <b>WKZ-5-080</b>
M100 x 2	19.0	ST8842 - <b>WKZ-5-100</b>
M130 x 2	19.0	ST8842 - <b>WKZ-5-130</b>

# ST8841-WKZ-3 Socket

for manifold cylinder



**Note**

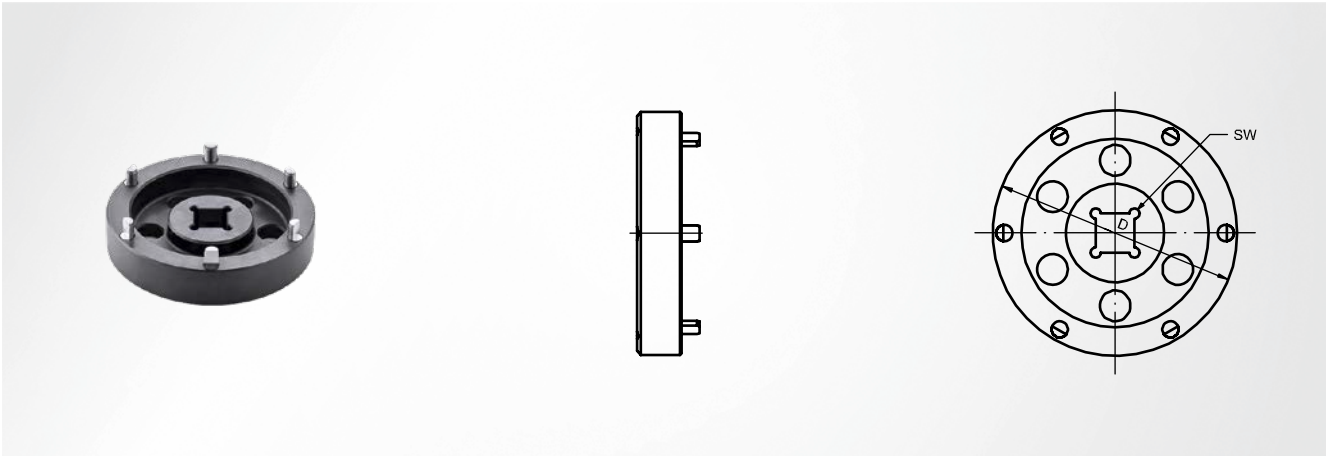
is used when there is an open installation space and standard installation clearance in the event of several cylinders on a manifold plate; when there is a sufficient depression diameter in the event of recessed installation

Cylinder type	D	SW	Item number
005	52	12.7	ST8841 - <b>WKZ-3-005</b>
010	64	12.7	ST8841 - <b>WKZ-3-010</b>
025	82	12.7	ST8841 - <b>WKZ-3-025</b>

Cylinder type	D	SW	Item number
035	100	12.7	ST8841 - <b>WKZ-3-035</b>
055	120	19.0	ST8841 - <b>WKZ-3-055</b>
100	165	19.0	ST8841 - <b>WKZ-3-100</b>

# 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 <b>-WKZ-41-005</b>
010	64	12.7	ST8841 <b>-WKZ-41-010</b>
025	82	12.7	ST8841 <b>-WKZ-41-025</b>

Cylinder type	D	SW	Item number
035	100	19.0	ST8841 <b>-WKZ-41-035</b>
055	120	19.0	ST8841 <b>-WKZ-41-055</b>
100	165	19.0	ST8841 <b>-WKZ-41-100</b>



# Tapping units

- S-Former Z
- S-Former E



Module  
system

Machine  
elements

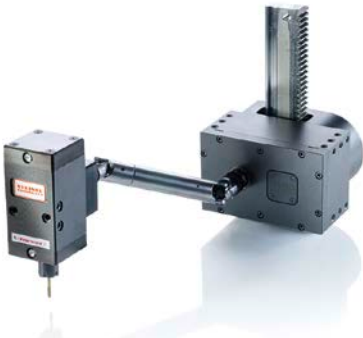

Accessories



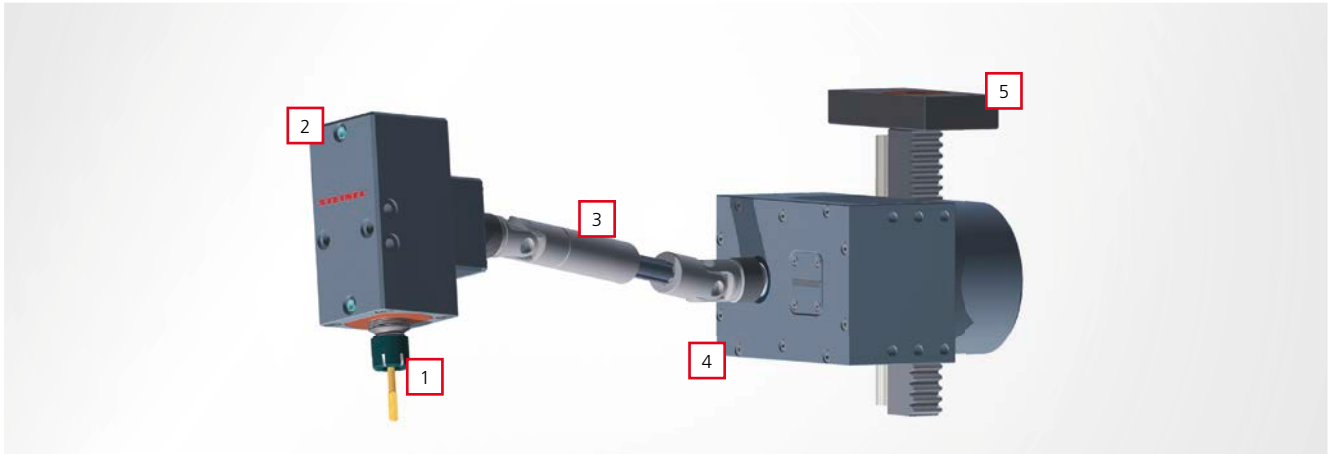
# Tapping units

## 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	–	✓

## 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.steinell.com](http://www.steinell.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



## 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.steinell.com](http://www.steinell.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

## S-Former E

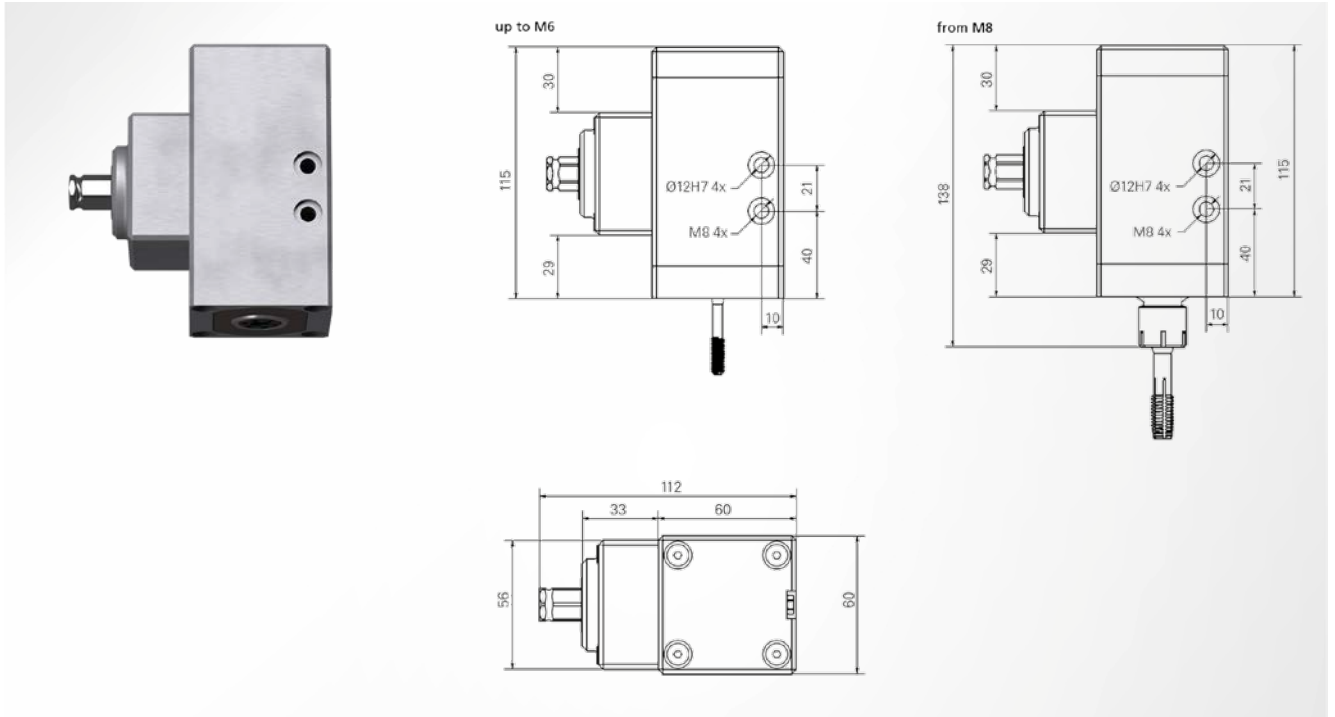
Five tapping unit head sizes cover the thread area from 1 mm to 26 mm diameter. The tapping units are powered by powerful AC Servodrives providing up to 2.25 kW (400 V).

S-Former E	E0	E1.1	E1	E2	E3
					
Ø thread [mm]	1-4	4-8	4-8	8-16	8-26
Ø tap shaft [mm]	1-4	4-8	4-8	8-12	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	10	20	40
Rotation speed $n_F$ [t/min]	Up to 5000	Up to 3250	Up to 2500	Up to 2500	Up to 1000

\* 120° feed and fixing angle (which corresponds to a thread form angle of 240°), steel < 600 N/mm<sup>2</sup>; F = roll tap

# SZ8881.01-0007 Tapping unit

## S-Former Z



**Note**

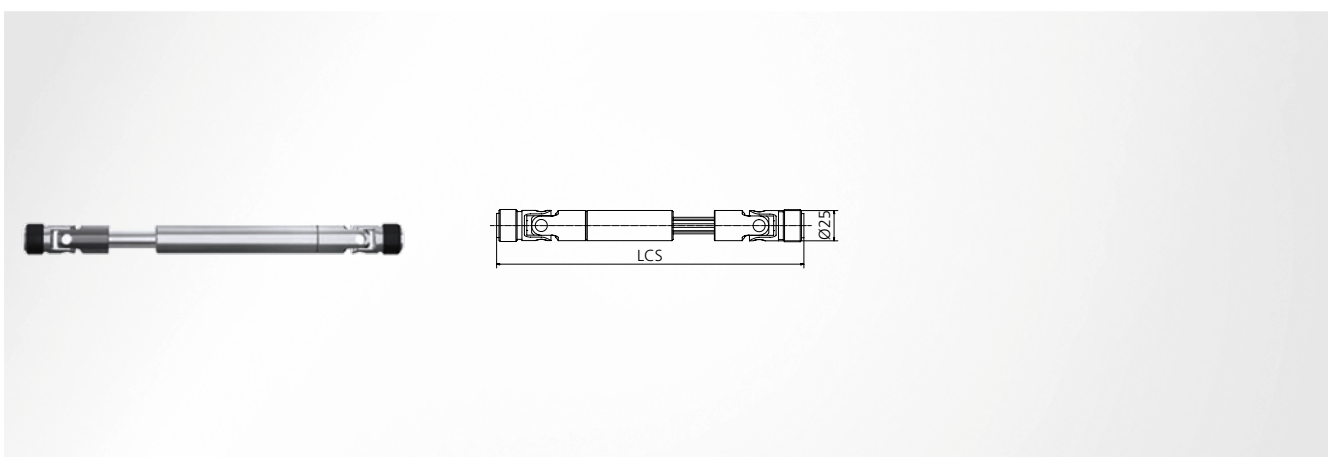
Guide cartridge (SZ8881.01-0004) must also be specified for the tapping unit

**Item number**

SZ8881.07-0007

# SZ8881.01-0001 Cardan shaft

## S-Former Z



**Note**

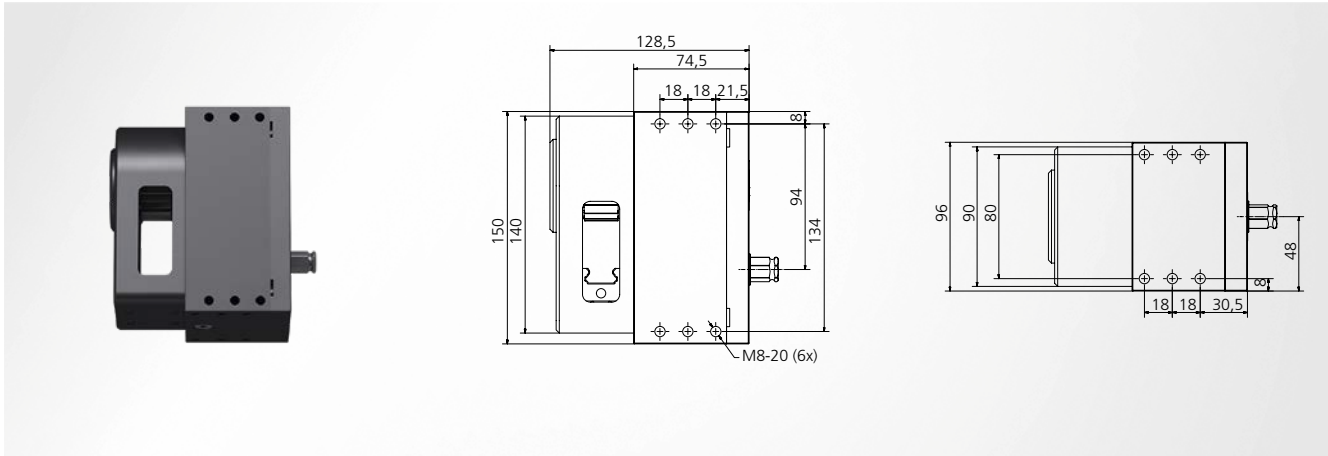
LCS = length of the Cardan shaft

**Item number**

SZ8881.01-0001

# SZ8881.01-0002 Gear

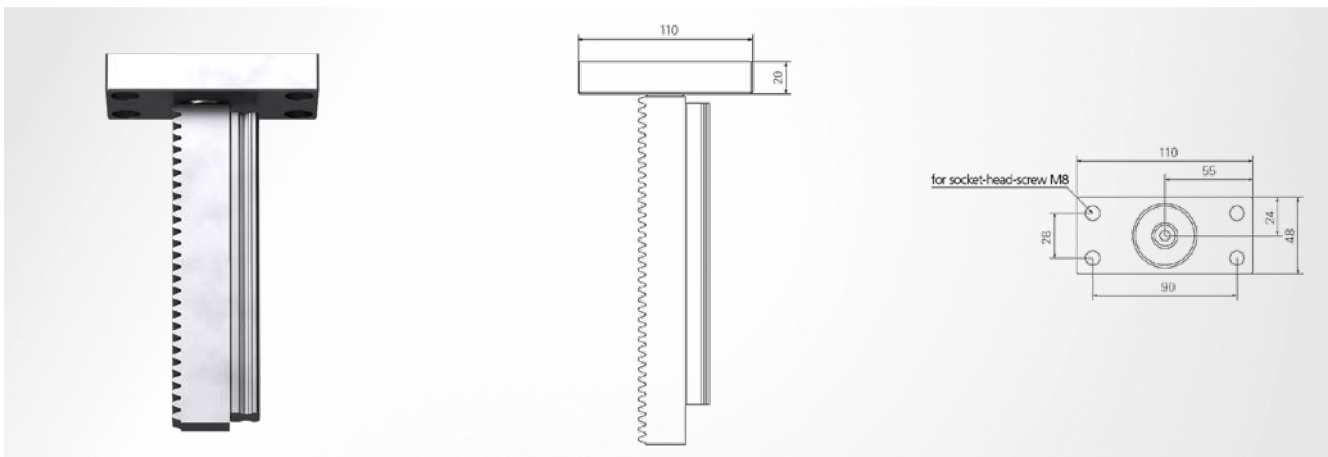
S-Former Z



Item number  
SZ8881.01-0002

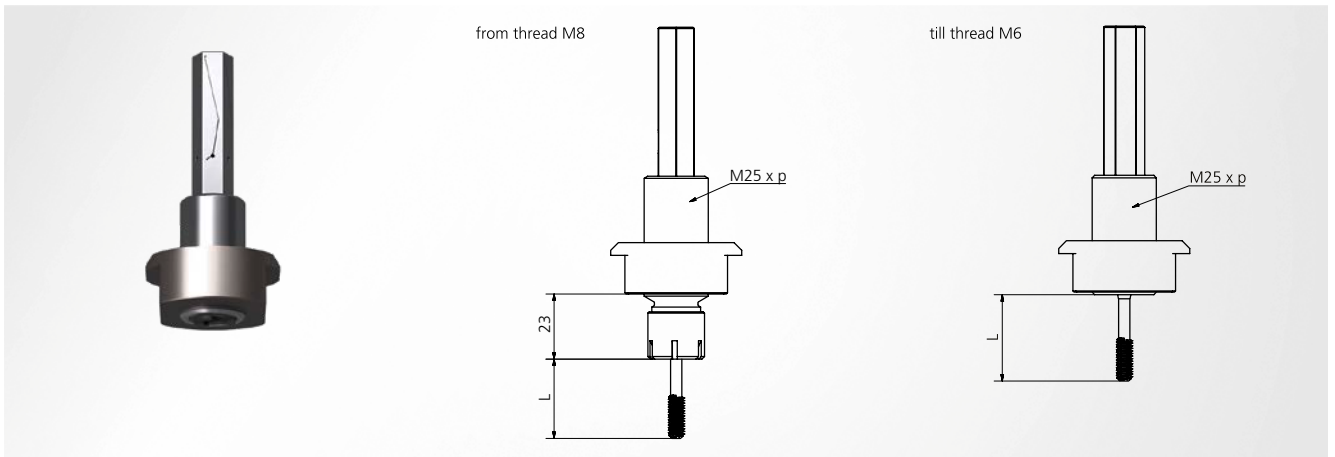
# SZ8881.01-0003 Gear rod

S-Former Z



Item number  
SZ8881.01-0003

## 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



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

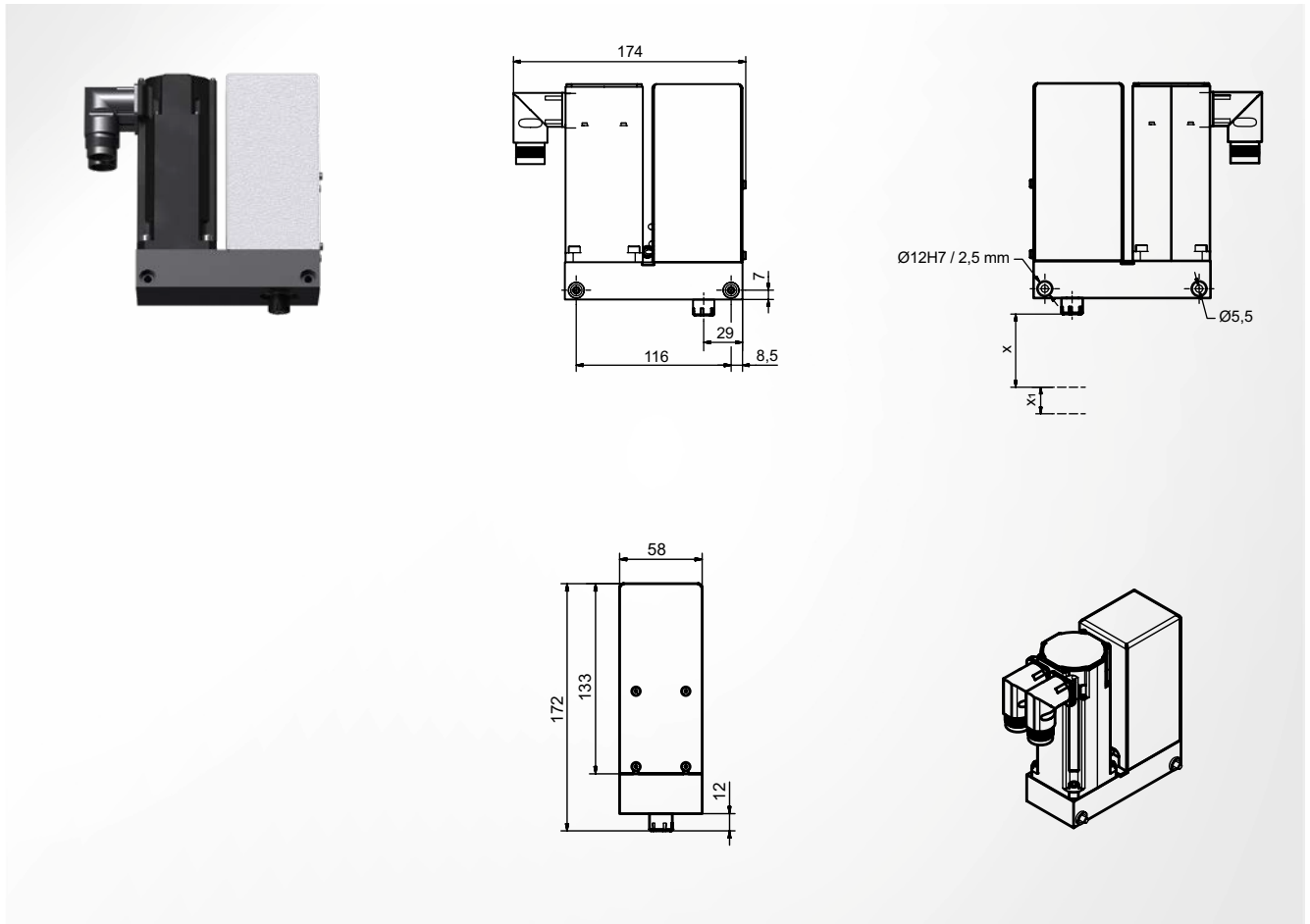
Connection S-Former E  
singel, double, triple, fourfold

Size incl. control cabinet (W x H x D)  
600 x 1530 x 350 mm

Weight incl. control cabinet  
35-50 kg

# SZ8871.00 Tapping unit E0

thread M1-M4, max. thread form distance 20 mm



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  
Each roll tap can be used in accordance with DIN 2174

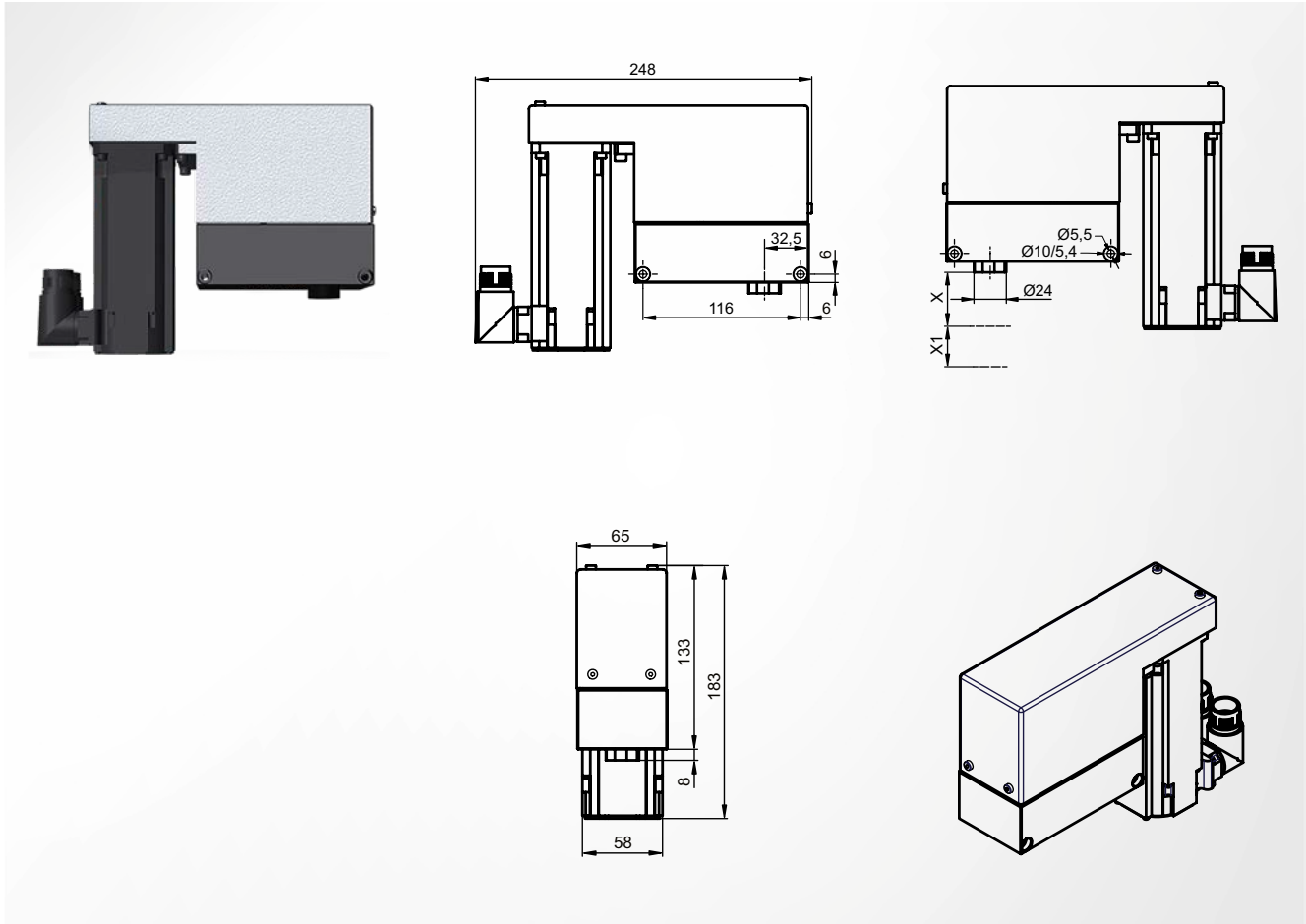
Optional accessories  
SZ9400

Item number  
SZ8871.00

# SZ2701 Tapping unit E1.1

**STEINEL®**

thread M4-M8, max. thread form distance 30 mm



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

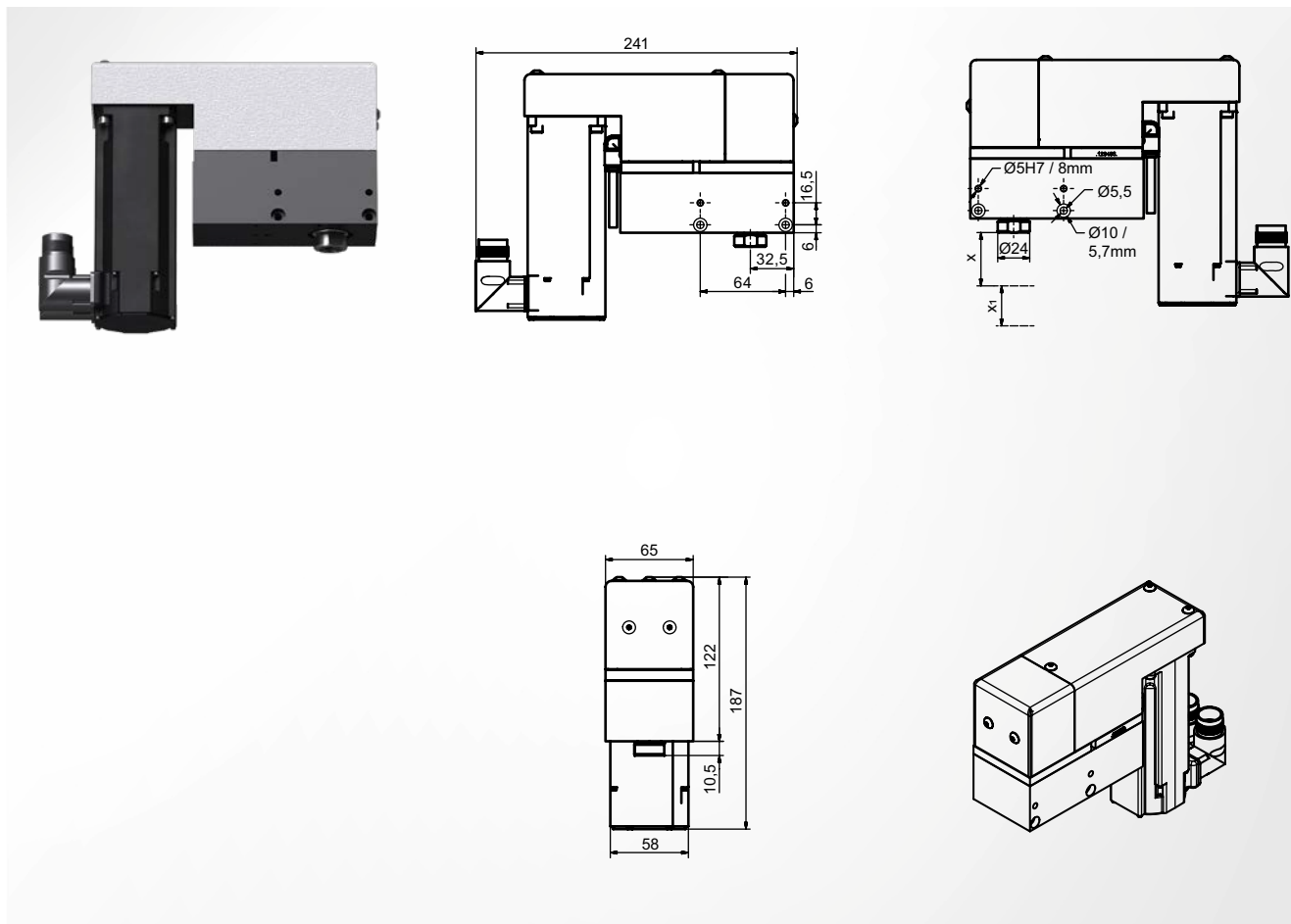
Optional accessories  
SZ9400

Item number  
SZ2701



# SZ8871.01 Tapping unit E1

thread M4-M8, max. thread form distance 30 mm



Ø Thread  
4-8 mm

Number of strokes  
up to max. 80 H/min depending on the application

Max. torque  
10 Nm

Max. distance  
X1 = 30 mm

Max. overhang  
X = 40 mm

Ø Thread former shaft  
4-8 mm

Rotational speed up to  
2500 1/min

Note  
Each roll tap can be used in accordance with DIN 2174

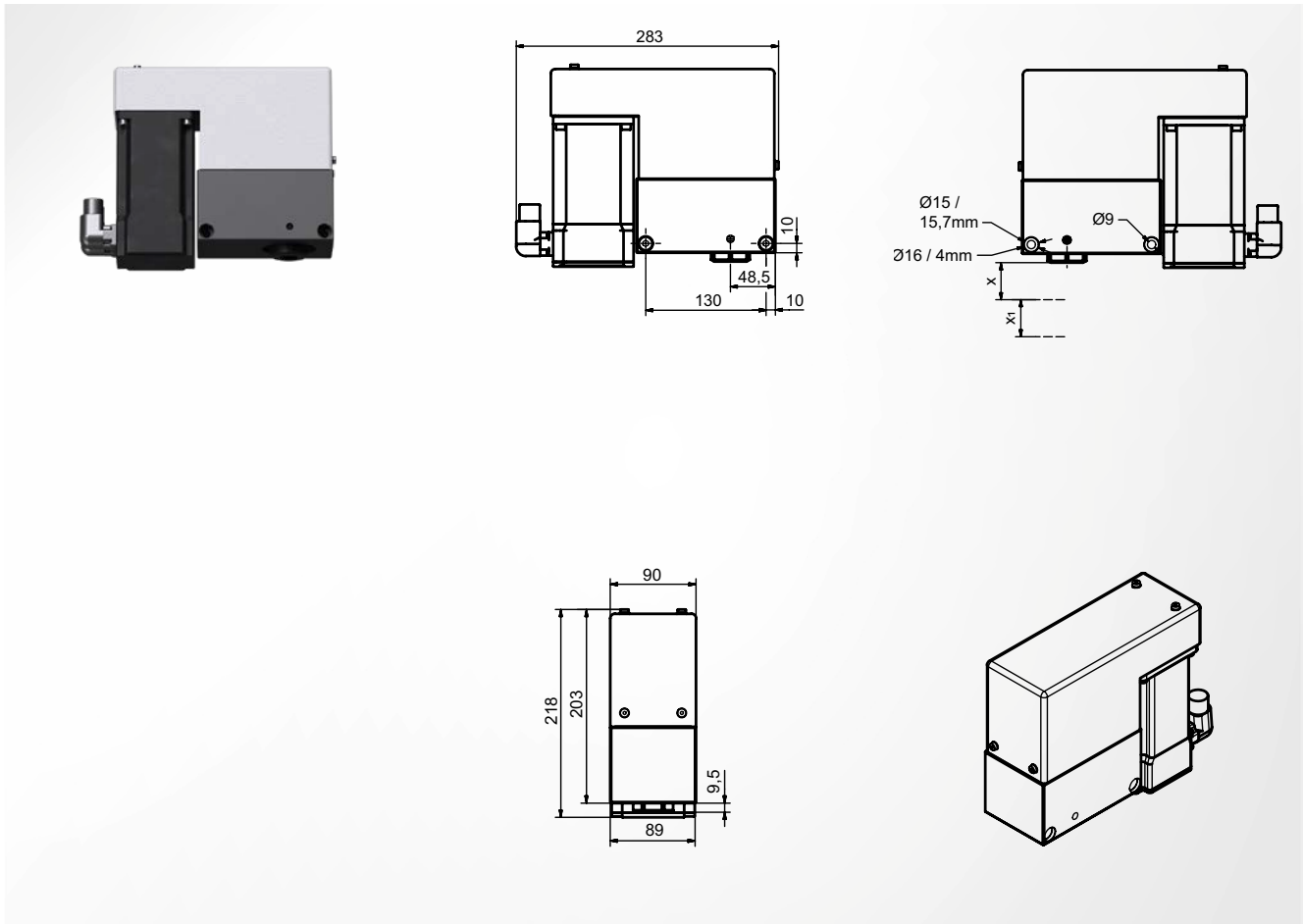
Optional accessories  
SZ9400

Item number  
SZ8871.01

# SZ8871.02 Tapping unit E2

**STEINEL®**

thread M8-M16, max. thread form distance 40 mm



Ø Thread  
8-16 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  
8-12 mm

Rotational speed up to  
2500 1/min

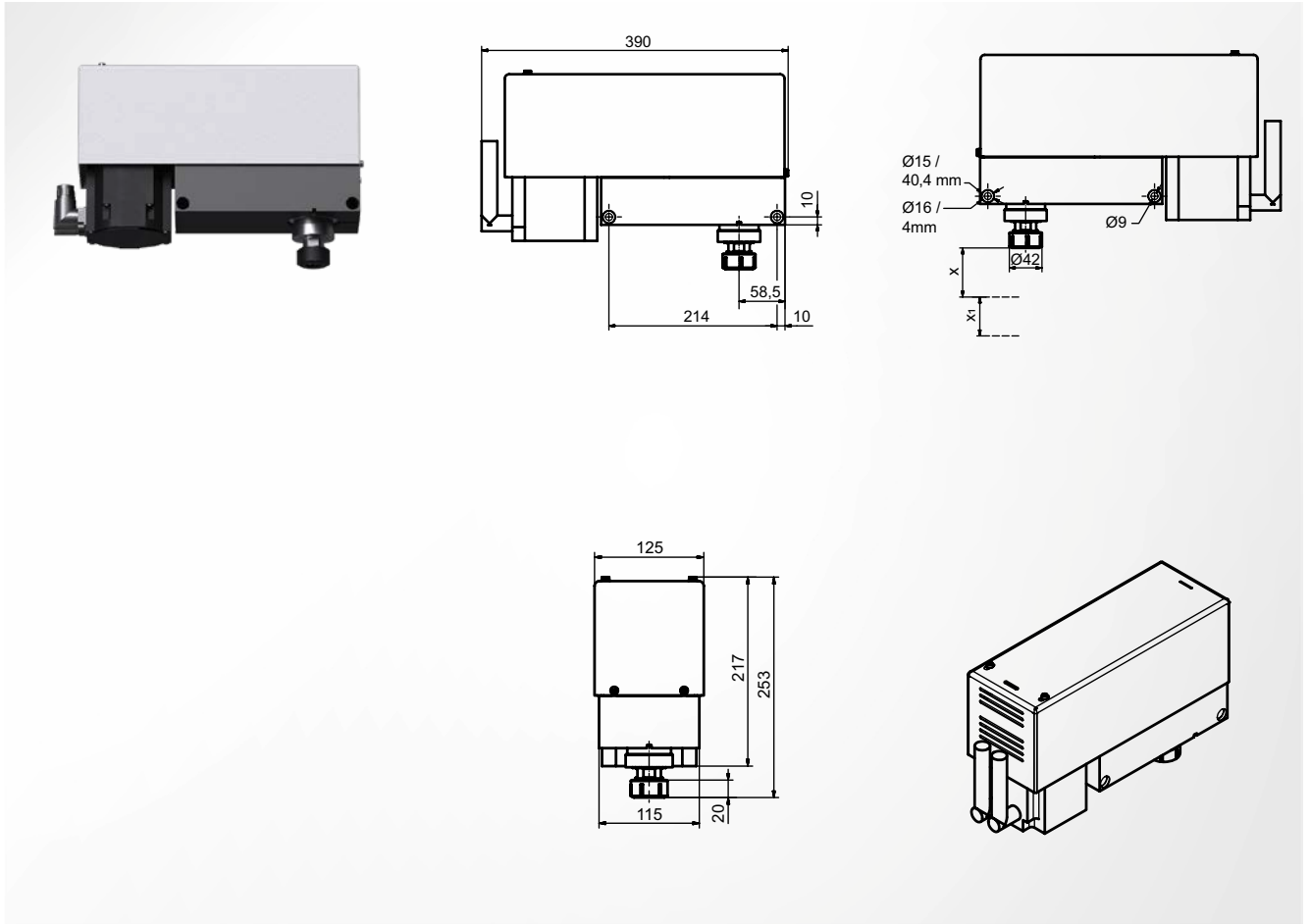
Note  
Each roll tap can be used in accordance with DIN 2174

Optional accessories  
SZ9400

Item number  
SZ8871.02

# SZ8871.03 Tapping unit E3

thread M8-M26, max. thread form distance 50 mm



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  
Each roll tap can be used in accordance with DIN 2174

Optional accessories  
SZ9400

Item number  
SZ8871.03



Clamping range  
2.5-4.5 mm

Note  
Collet with integrated square; no reducer required; each  
roll tap can be used in accordance with DIN 2174

Shaft diameter x square dimension	Item number
2.5 x 2.1	K300 -001-1923
2.8 x 2.1	K300 -001-1924
3.5 x 2.7	K300 -001-1925

Shaft diameter x square dimension	Item number
4.0 x 3.0	K300 -001-1926
4.5 x 3.4	K300 -001-1987



Clamping range  
3.5-8 mm

Note  
Each roll tap can be used in accordance with DIN 2174

Shaft diameter	Item number
3.5	SZ2702 -00001
4.5	SZ2702 -00002
6	SZ2702 -00003

Shaft diameter	Item number
7	SZ2702 -00004
8	SZ2702 -00005

**Note**

Adapter and square dimension adjustment for consistent tap protrusion

Reducer	Item number
M3	SZ2703 -00001
M4	SZ2703 -00002
M5	SZ2703 -00003

Reducer	Item number
M6	SZ2703 -00004
M3.5	SZ2703 -00005



### Note

Adapter and square dimension adjustment for consistent tap protrusion

Reducer	Item number
M4	SZ8871 .01-2033
M5	SZ8871 .01-2034

Reducer	Item number
M6	SZ8871 .01-1974



Clamping range  
6-20 mm

Note  
Each roll tap can be used in accordance with DIN 2174

Shaft diameter	Item number
6	K300 -001-1959
7	K300 -001-1960
8	K300 -001-1908
9	K300 -001-1909
10	K300 -001-1910

Shaft diameter	Item number
11	K300 -001-1911
12	K300 -001-1912
14	K300 -001-1914
16	K300 -001-1916





**Note**

Adapter and square dimension adjustment for consistent tap protrusion

Reducer	Item number
M9	SZ8871 .02-1699
M8, M11 fine, UNF 7/16	SZ8871 .02-1698
M7, M10 fine	SZ8871 .02-1697
M6 fine, M8 fine	SZ8871 .02-1696
M14 fine, M16 fine	SZ8871 .02-1704

Reducer	Item number
M14, M16	SZ8871 .02-1705
M12 fine	SZ8871 .02-1702
M12	SZ8871 .02-1703
M11	SZ8871 .02-1701
M10	SZ8871 .02-1700



Clamping range  
6-20 mm

Note  
Each roll tap can be used in accordance with DIN 2174

Shaft diameter	Item number
6	K300 -001-1959
7	K300 -001-1960
8	K300 -001-1908
9	K300 -001-1909
10	K300 -001-1910

Shaft diameter	Item number
11	K300 -001-1911
12	K300 -001-1912
14	K300 -001-1914
16	K300 -001-1916



**Note**

Adapter and square dimension adjustment for consistent tap protrusion

Reducer	Item number
M10	SZ8871 .03-1222
M11	SZ8871 .03-1221
M12	SZ8871 .03-1219
M12 fine	SZ8871 .03-1218
M14, M16	SZ8871 .03-1216
M14 fine, M16 fine	SZ8871 .03-1217
M18	SZ8871 .03-1215

Reducer	Item number
M18 fine	SZ8871 .03-1213
M20 fine	SZ8871 .03-1212
M22 fine	SZ8871 .03-1211
M24 fine	SZ8871 .03-1210
M8, M11 fine	SZ8871 .03-1220
M9	SZ8871 .03-1223



DIN 2174

Note

Carbide tap deliverable upon request

Coating

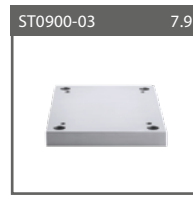
TIN – Tensile strengths up to 1000 N/mm<sup>2</sup>, good sliding characteristics and wear-resistant;TICN – Tensile strengths > 800 N/mm<sup>2</sup>, high hardness and wear resistance when toughness properties are good

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





## General



The modular tool system from STEINEL consists of a machine-specific basic structure, a tool-specific adapter plate and standardised tool modules.

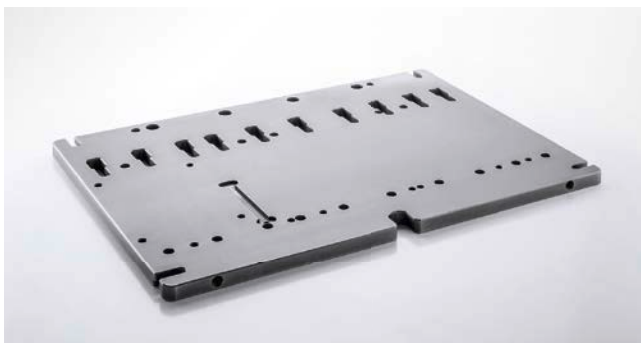
### The machine-specific basic structure



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



not mounted

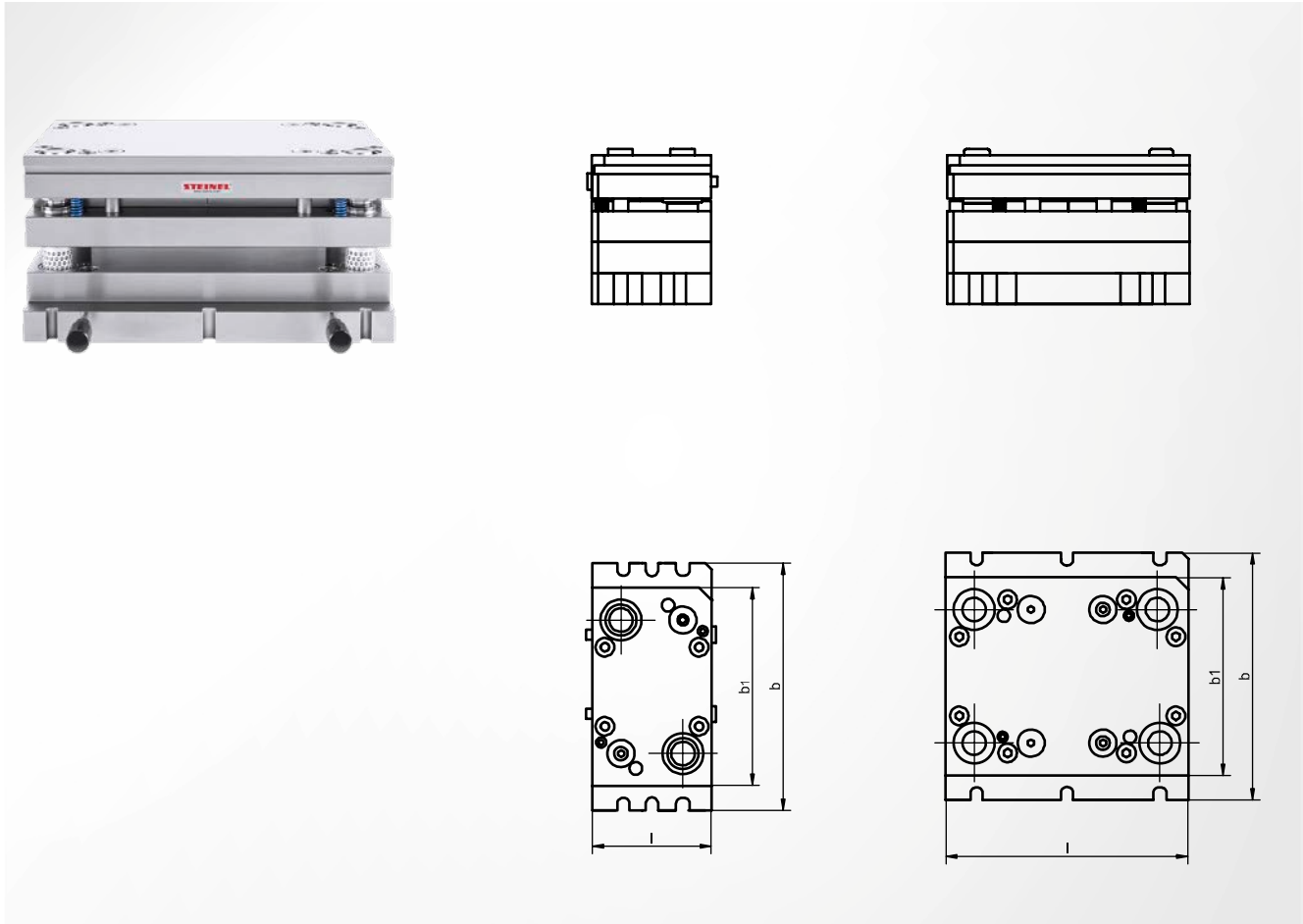


**Material**  
Steel 1.2379

**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

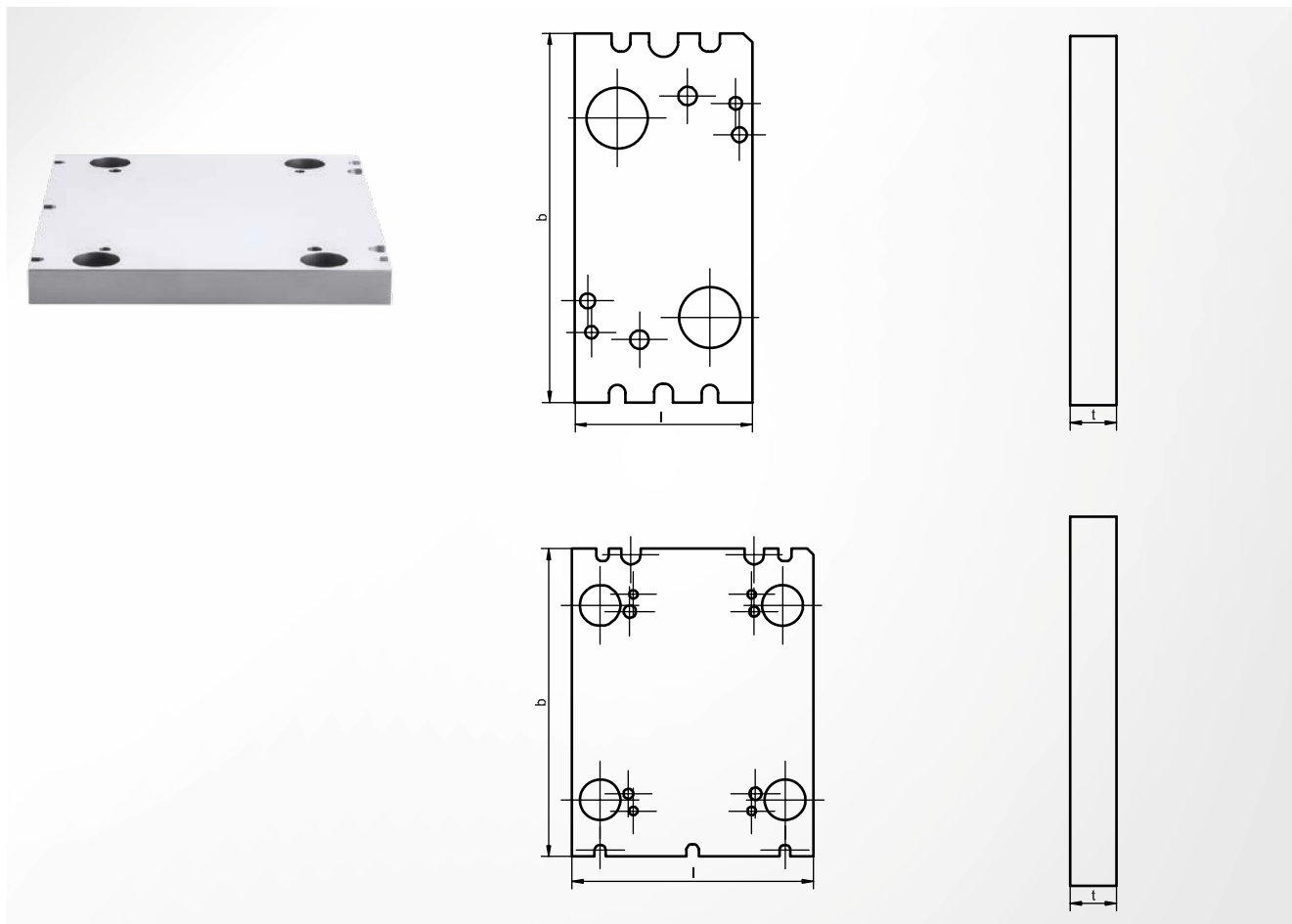
b	l	Number of guides	Item number
200	100	2	ST0900 100 x 200
	150	2	ST0900 150 x 200
	200	4	ST0900 200 x 200
	250	4	ST0900 250 x 200
	300	4	ST0900 300 x 200
	350	4	ST0900 350 x 200
250	100	2	ST0900 100 x 250
	150	2	ST0900 150 x 250
	200	4	ST0900 200 x 250
	250	4	ST0900 250 x 250
	300	4	ST0900 300 x 250
	350	4	ST0900 350 x 250

mounted



Material  
Steel 1.2379

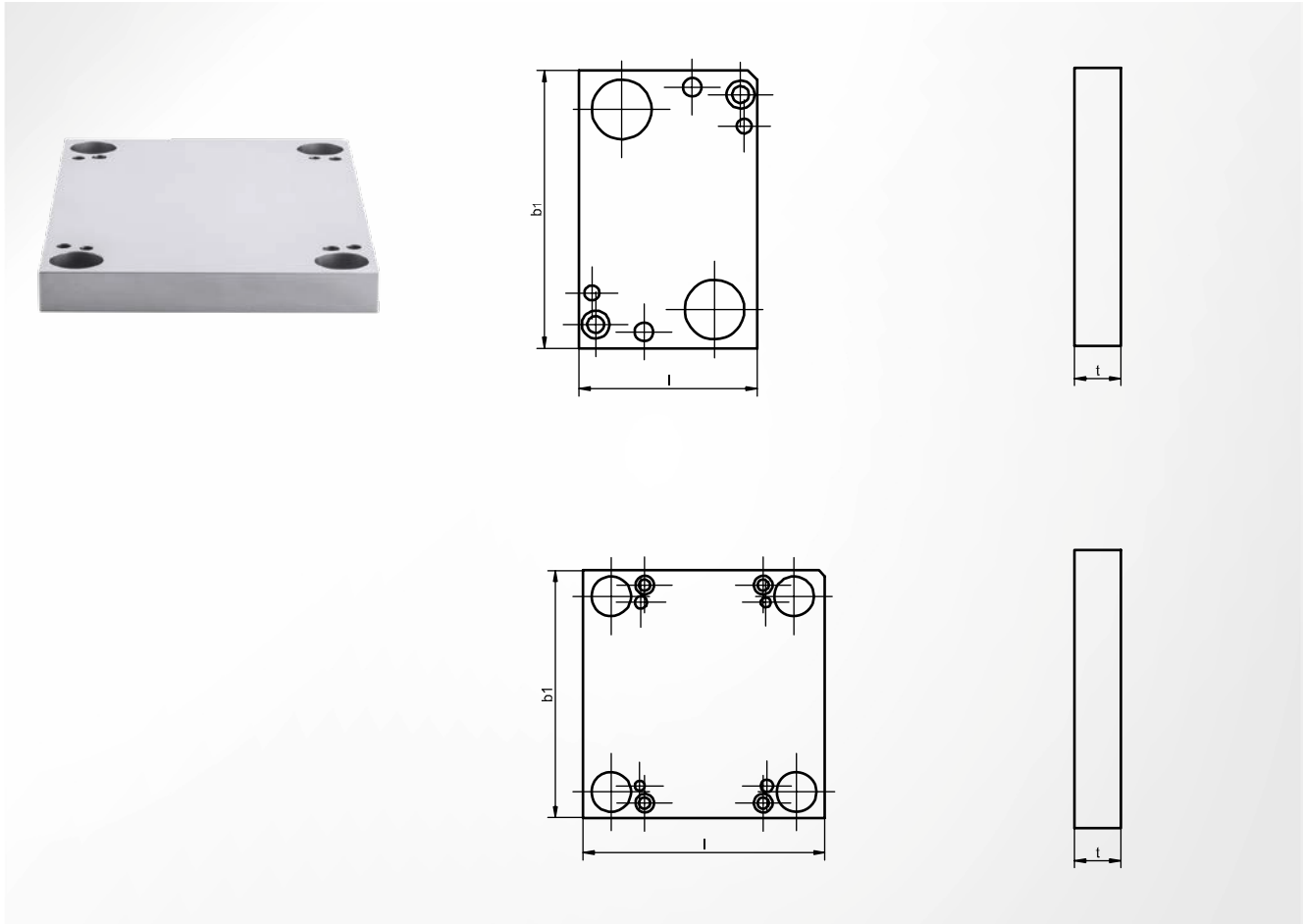
b	b <sub>1</sub>	l	Number of guides	Item number
200	150	100	2	ST0901 100 x 200
		150	2	ST0901 150 x 200
		200	4	ST0901 200 x 200
		250	4	ST0901 250 x 200
		300	4	ST0901 300 x 200
		350	4	ST0901 350 x 200
250	200	100	2	ST0901 100 x 250
		150	2	ST0901 150 x 250
		200	4	ST0901 200 x 250
		250	4	ST0901 250 x 250
		300	4	ST0901 300 x 250
		350	4	ST0901 350 x 250



Material  
Steel 1.2379

Hardness  
58+2 HRC

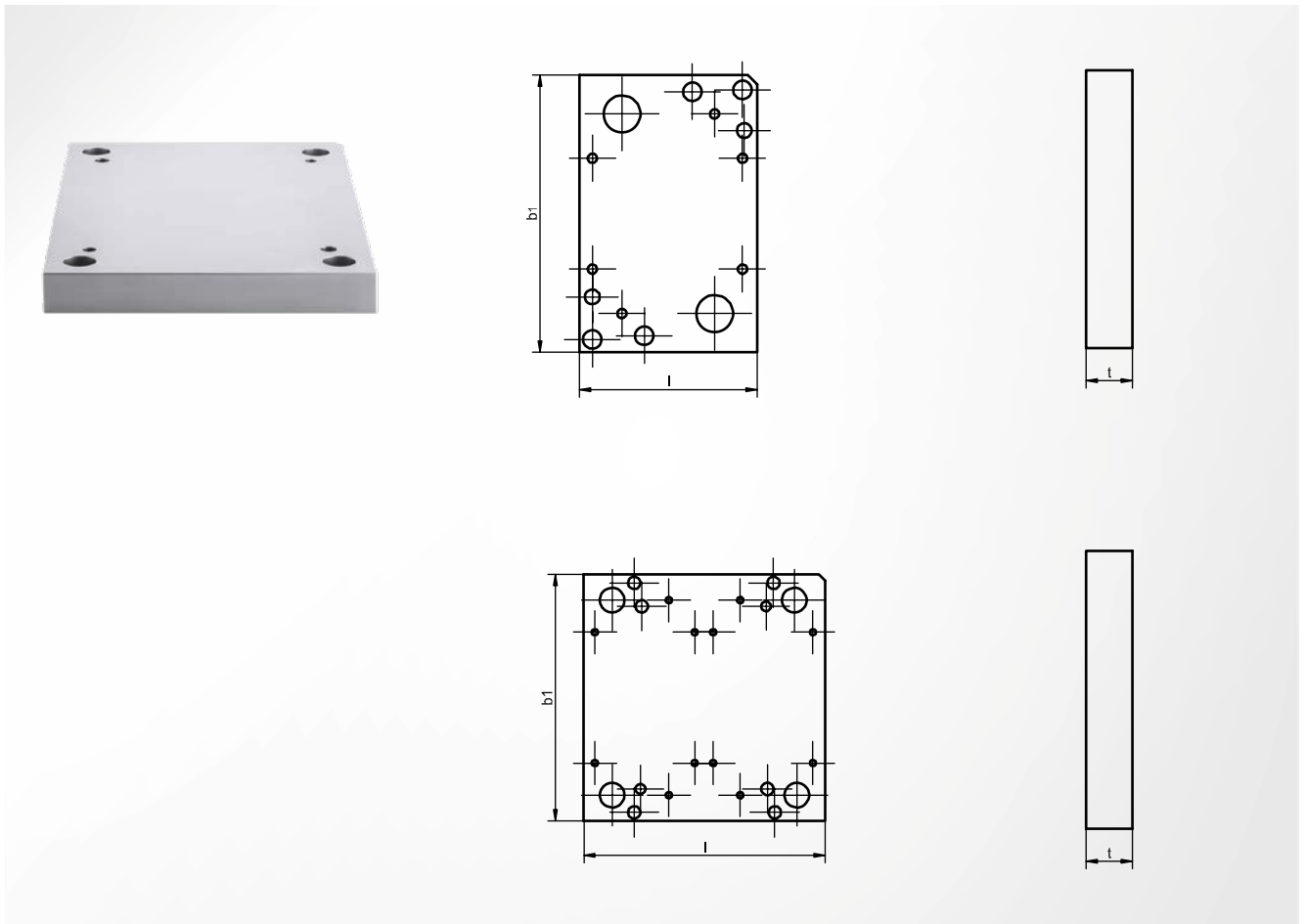
b	l	t	Item number
200	100	25	ST0900 100 x 200-01
	150	25	ST0900 150 x 200-01
	200	25	ST0900 200 x 200-01
	250	25	ST0900 250 x 200-01
	300	25	ST0900 300 x 200-01
	350	25	ST0900 350 x 200-01
250	100	25	ST0900 100 x 250-01
	150	25	ST0900 150 x 250-01
	200	25	ST0900 200 x 250-01
	250	25	ST0900 250 x 250-01
	300	25	ST0900 300 x 250-01
	350	25	ST0900 350 x 250-01



Material  
Steel 1.2379; frozen

Hardness  
58+2 HRC

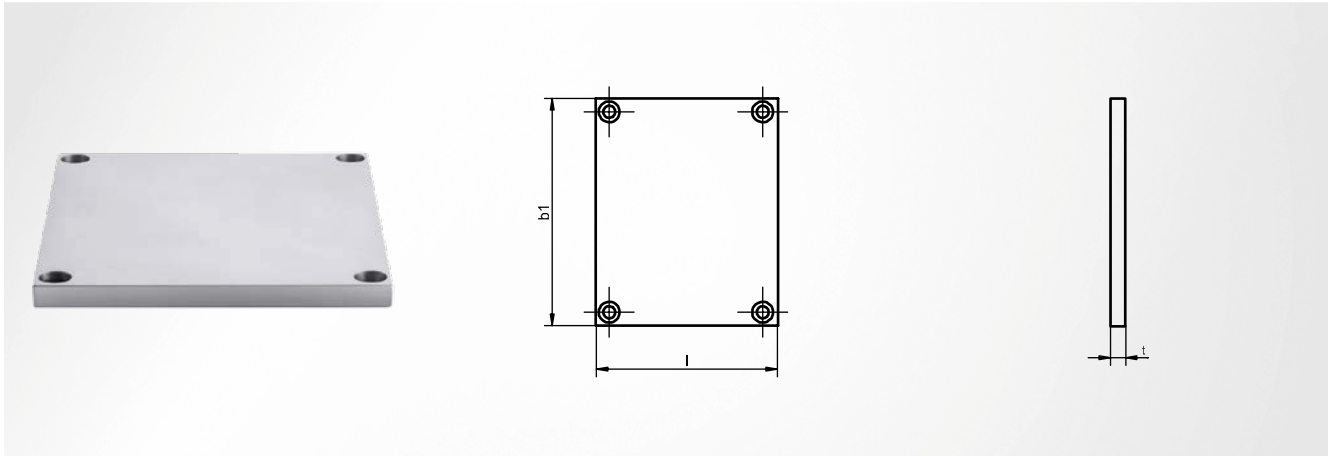
b	b <sub>1</sub>	l	t	Item number
200	150	100	25	ST0900 100 x 200-02
		150	25	ST0900 150 x 200-02
		200	25	ST0900 200 x 200-02
		250	25	ST0900 250 x 200-02
		300	25	ST0900 300 x 200-02
		350	25	ST0900 350 x 200-02
250	200	100	25	ST0900 100 x 250-02
		150	25	ST0900 150 x 250-02
		200	25	ST0900 200 x 250-02
		250	25	ST0900 250 x 250-02
		300	25	ST0900 300 x 250-02
		350	25	ST0900 350 x 250-02



**Material**  
Steel 1.2379; frozen

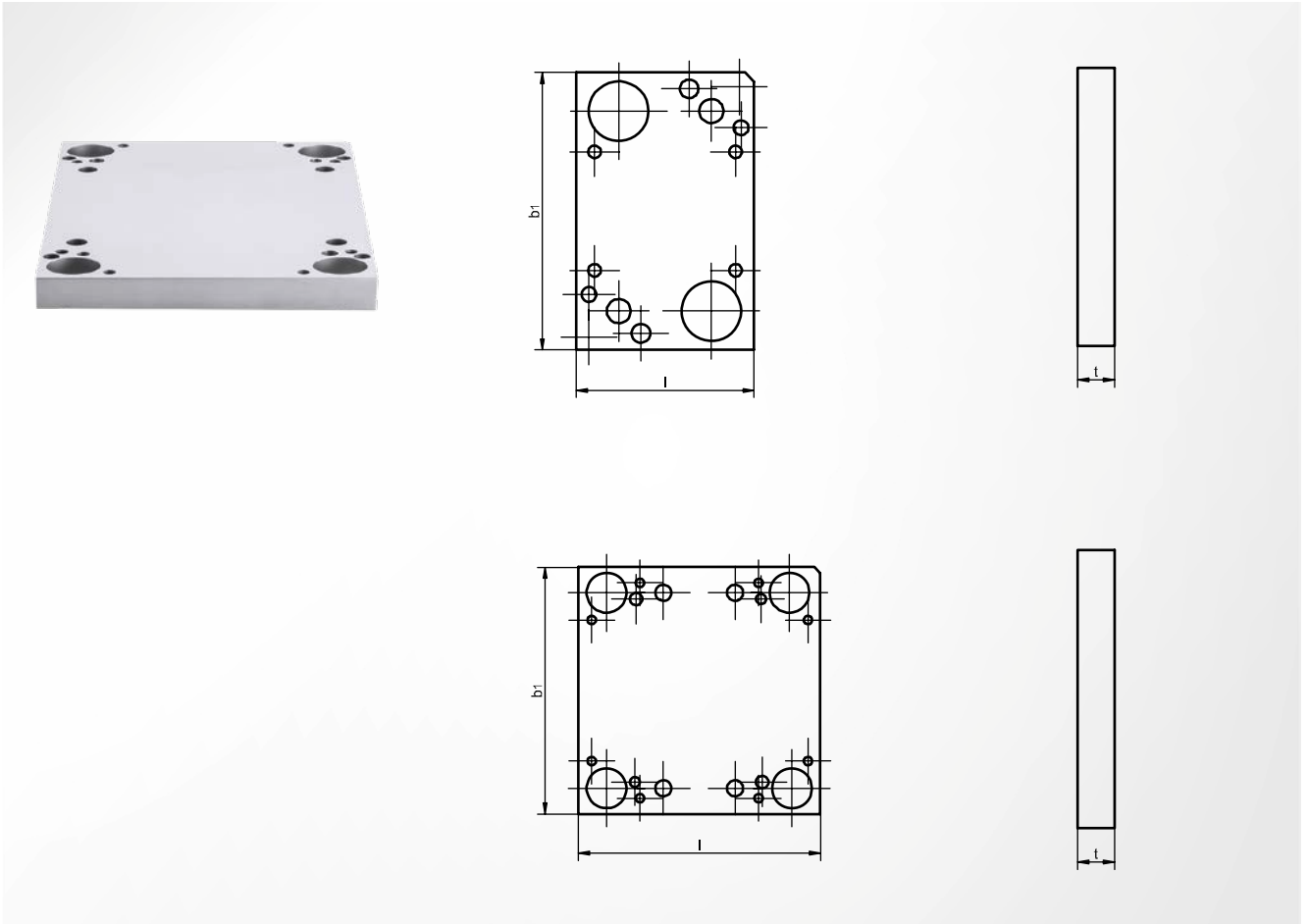
**Hardness**  
58+2 HRC

b	b <sub>1</sub>	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



Material  
Steel 1.2379

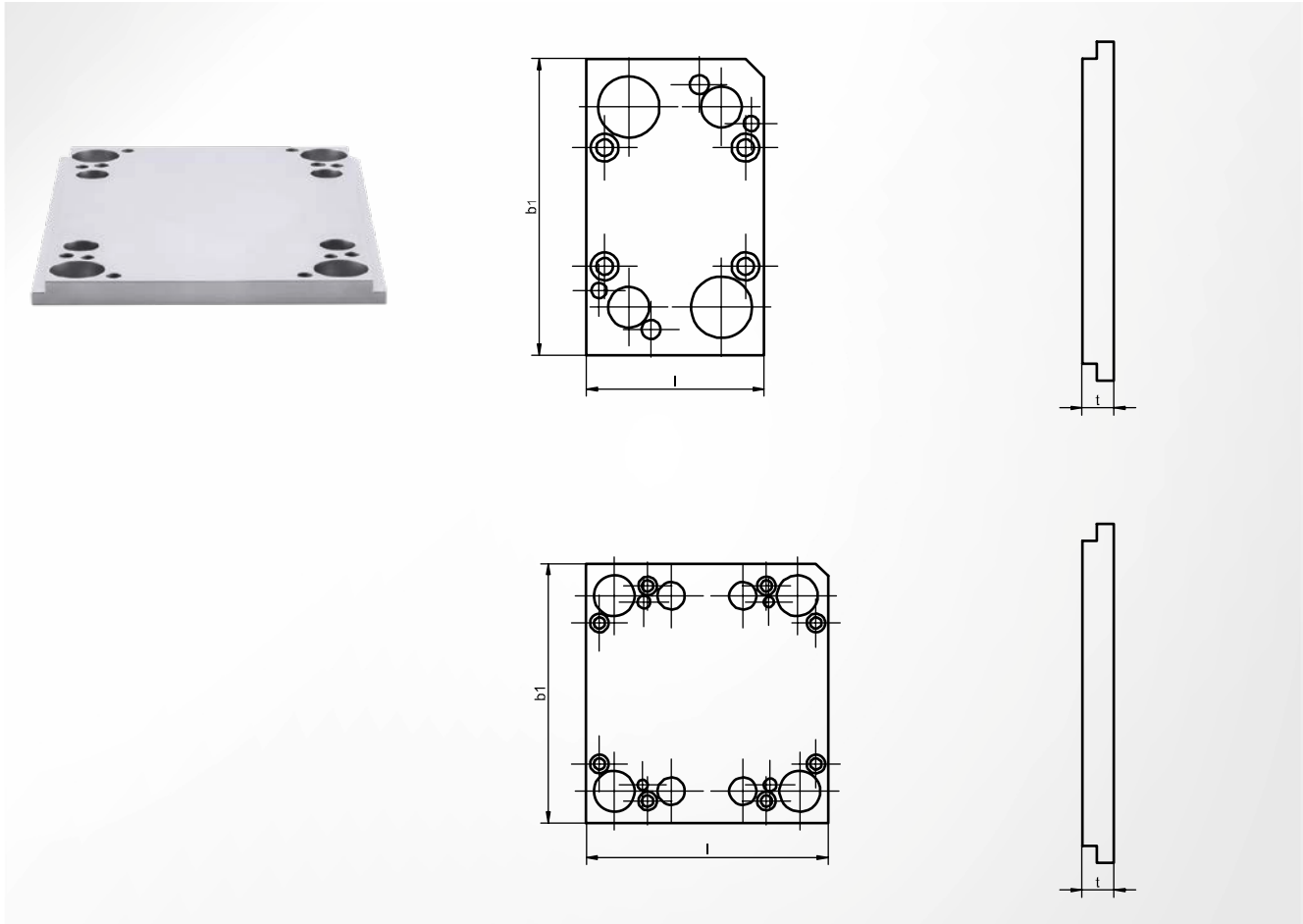
b	$b_1$	l	t	Item number
200	74	100	8	ST0900 100 x 200-04
		150	8	ST0900 150 x 200-07
250	120	100	8	ST0900 100 x 250-04
		150	8	ST0900 150 x 250-07



**Material**  
Steel 1.2379; frozen

**Hardness**  
58+2 HRC

b	b <sub>1</sub>	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



Material  
Steel 1.2379

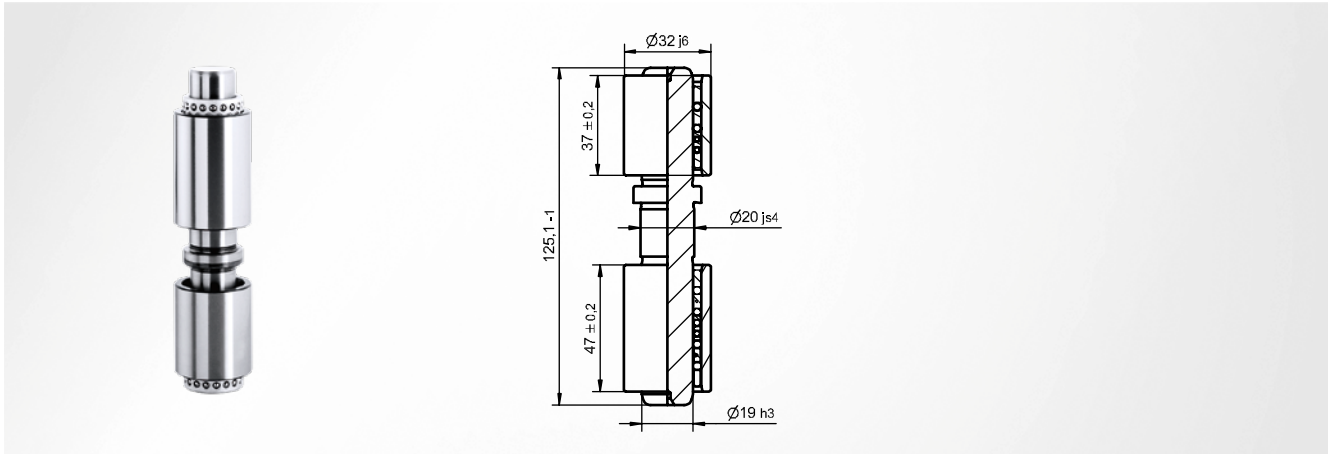
Hardness  
58+2 HRC

b	b <sub>1</sub>	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

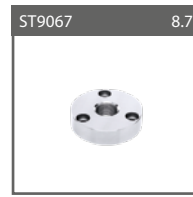
ST0900-12



# Machine elements

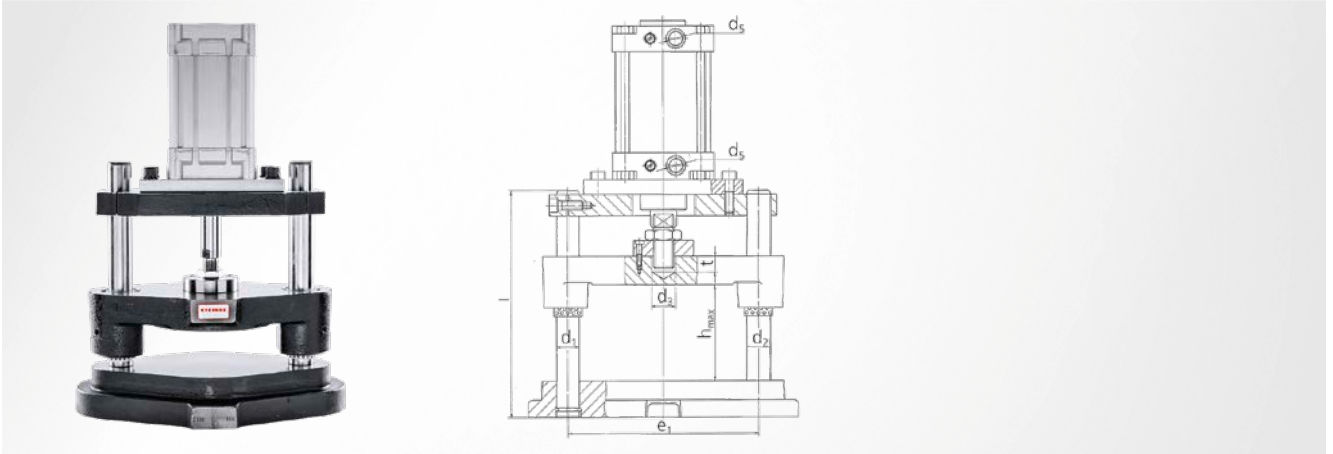
- Pneumatic stamping unit
- Toggle-lever presses





# ST1092 Pneumatic stamping unit

with round working surface



**Note**

Consisting of pneumatic cylinder, threaded flange, die set with ball guide, traverse

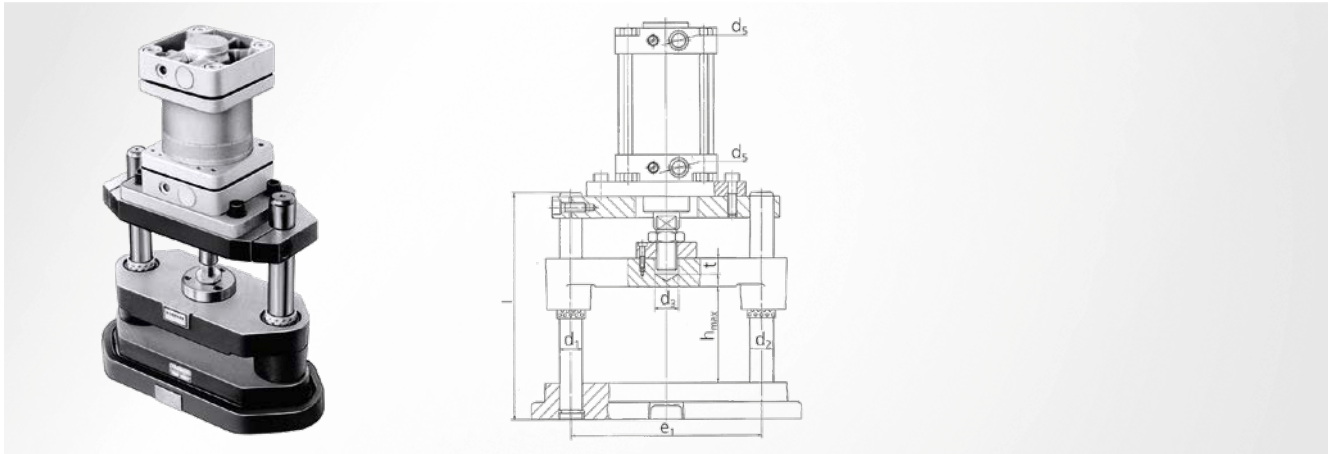
**Scope of supply**

ST1002; ST9062; ST9067; ST9041

$d_1 / d_2 \times l$	D	$d_3$	$d_5$	$e_1$	t	$\varnothing_{Cylinder}$	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



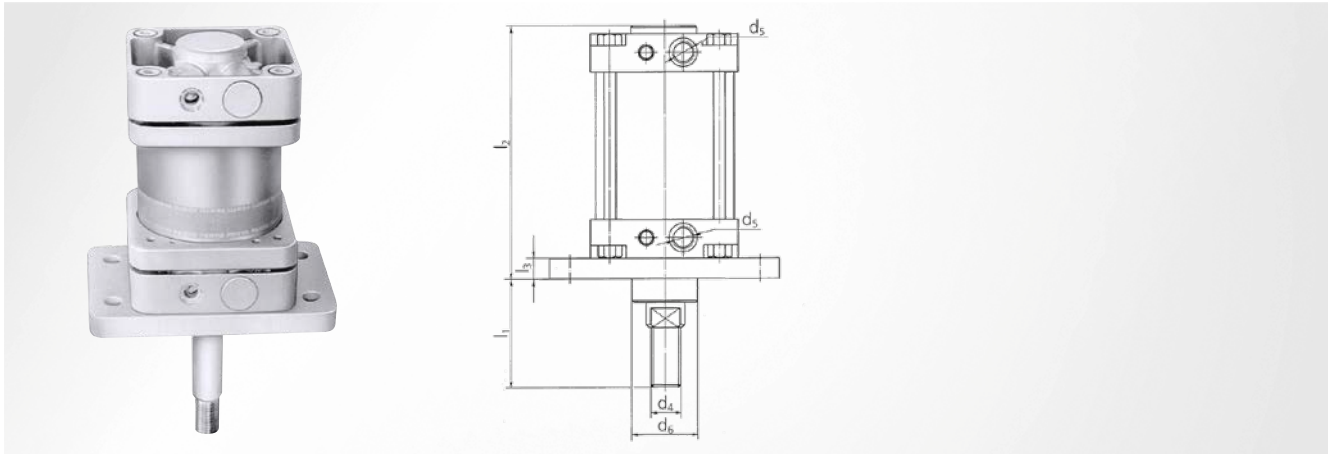
**Note**

Consisting of pneumatic cylinder, threaded flange, die set with ball guide, traverse

**Scope of supply**

ST1202; ST9062; ST9067; ST9041

$d_1 / d_2 \times l$	$a_1 \times b_1$	$d_3$	$d_5$	$e_1$	$l$	$t$	$\varnothing_{\text{Cylinder}}$	Compressive force F at 6 bar N	Stroke <sub>Cylinder</sub>	$h_{\text{max}}$	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

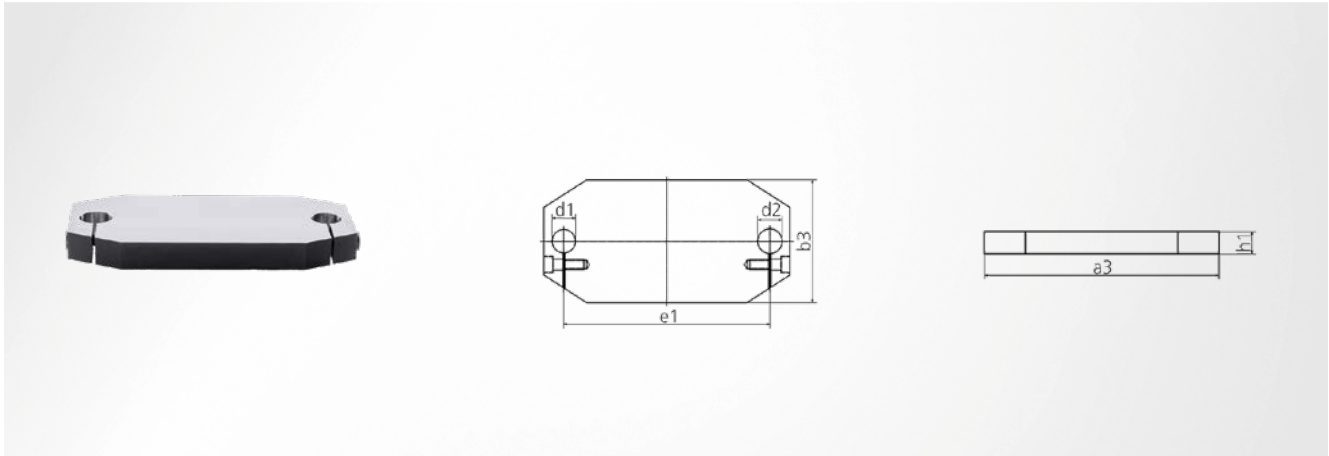
### Note

Hydro-supported pneumatic cylinders available upon request; diameter 200 has no flange

Compressive force N	D	Stroke	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	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

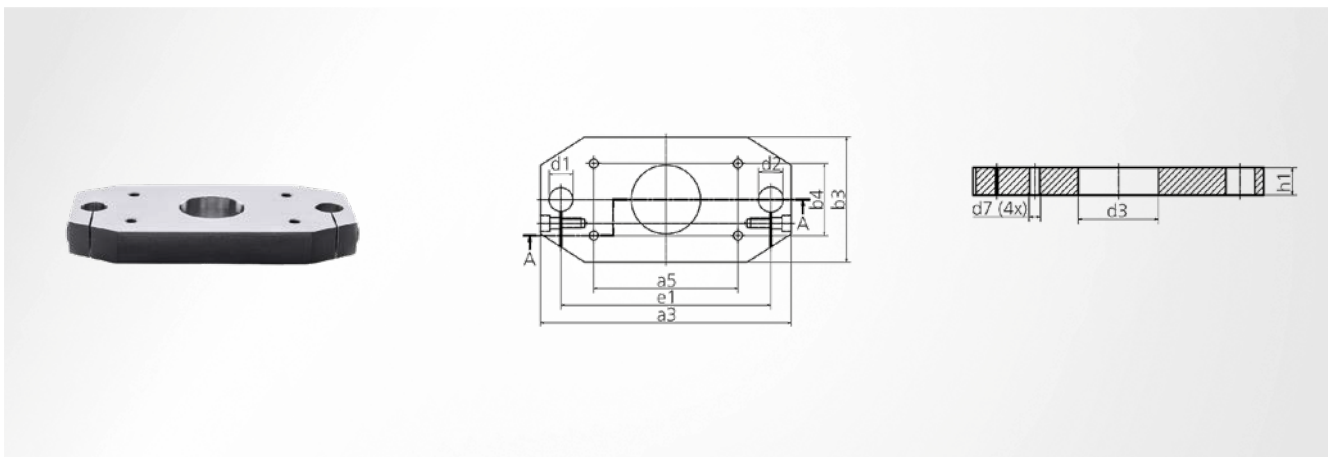


Material  
Steel 1.1730

$a_3$	$b_3$	$d_1$	$d_2$	$e_1$	$h_1$	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

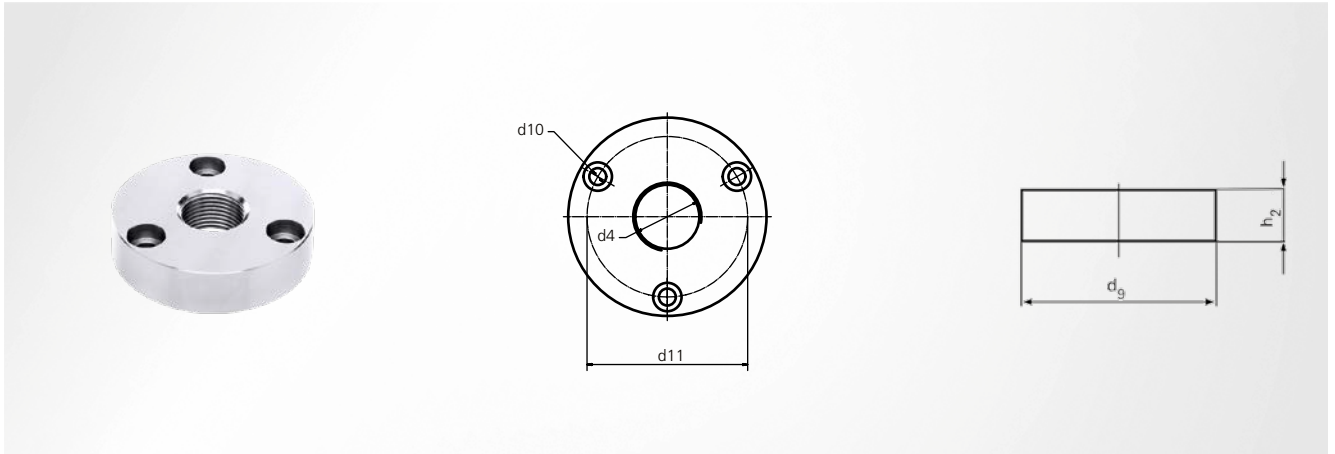
# ST9062 Traverse

bored



Material  
Steel 1.1730





$d_4$	$d_9$	$d_{10}$	$d_{11}$	$h_2$	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

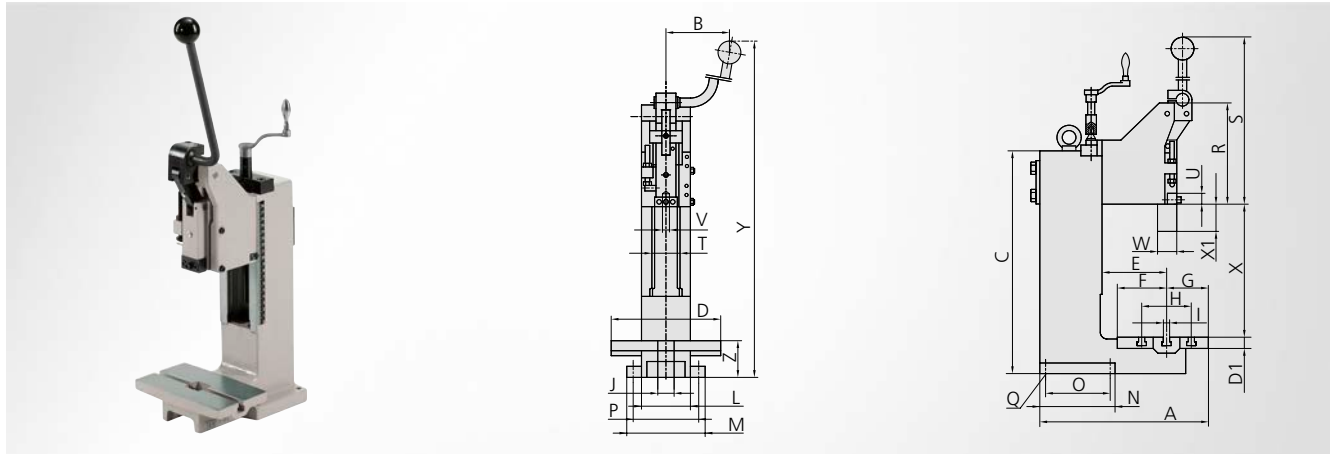
for pneumatic stamping unit



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



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

	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



























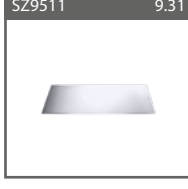
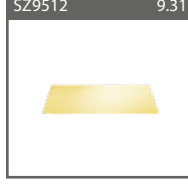












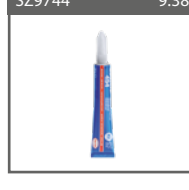





	ST9120	ST9122	ST9124	ST9126
ram stroke (X1)	0-42	0-40	0-45	0-58
distance between tabel and ram	33-195	25-195	30-243	42-325
pitch range (X)	75-190	70-195	75-240	100-320
centre borehole in the tabel (J)	25	30	40	80



# Accessories

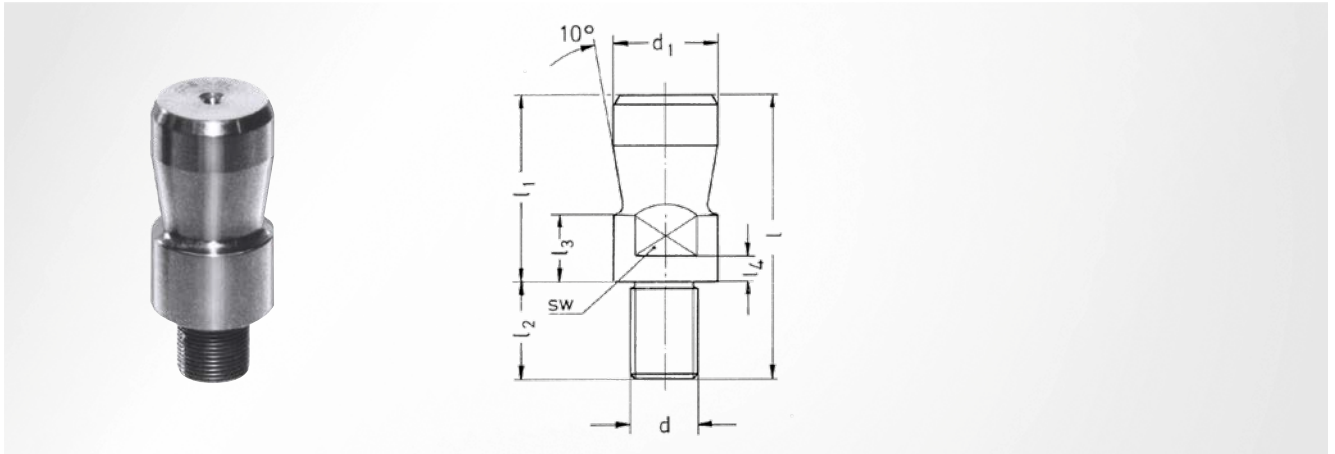
- Carrying elements
- Clamping socket, receiving chucks
- Magnets
- Screws and threaded pins
- Gauge strips and foil tapes
- Casting resins and model resin
- Locking agents and adhesives
- High-performance lubricants



 SZ4035 9.3	 SZ4080 9.4	 SZ4125 9.5	 SZ4129 9.5 - 1	 SZ4160 9.6	 SZ4161 9.7
 SZ4381 9.8	 SZ4385 9.9	 SZ4390 9.10	 SZ4392 9.11	 SZ4351 9.12	 SZ4371 9.13
 SZ4432 9.14	 SZ4434 9.15	 SZ4512 9.16	 SZ4513 9.17	 SZ4516 9.18	 SZ8510 9.19
 SZ8515 9.21	 SZ8512 9.23	 SZ8530 9.25	 SZ9335 9.26	 SZ9336 9.27	 SZ9337 9.27
 SZ7900 9.28	 SZ7905 9.30	 SZ9511 9.31	 SZ9512 9.31	 SZ9514 9.32	 SZ9515 9.32
 SZ9850 9.33	 SZ9853 9.33	 SZ9006 9.34	 SZ9005 9.34	 SZ9014 9.35	 SZ9740 9.35
 SZ9741 9.36	 SZ9742 9.36	 SZ9743 9.37	 SZ9717 9.37	 SZ9744 9.38	 SZ97042 9.38
 SZ960x 9.39	 SZ962x 9.40	 SZ9800 9.41	 SZ9810 9.41		

# SZ4035 Clamping socket

with thread



DIN ISO 10242

Material

Steel 1.0503 (C45)

Note

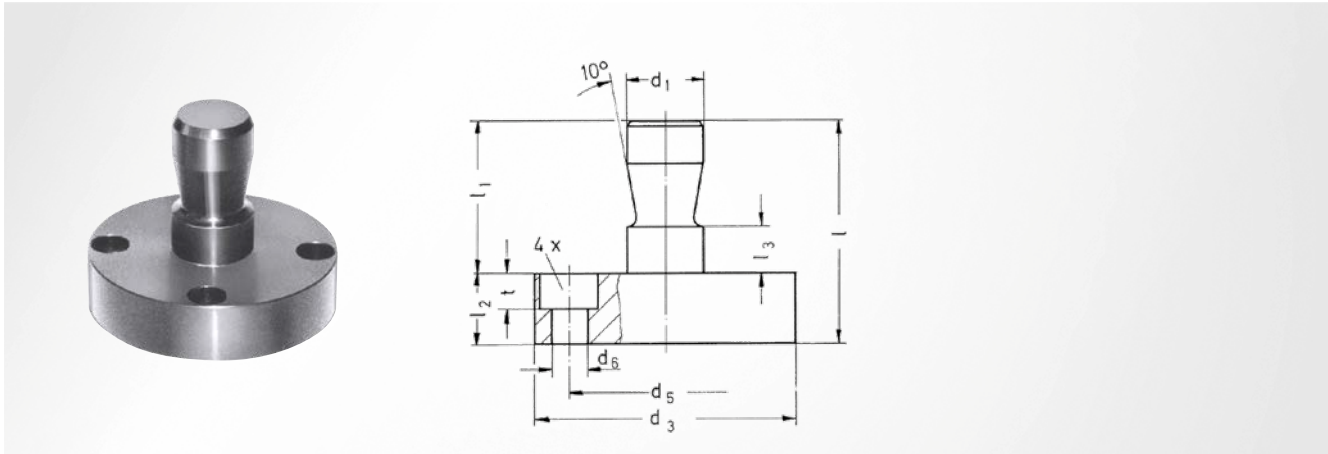
Used for tightening the die set upper plate with the press ram; suitable for all die sets with thread in upper plate; plug diameters are in accordance with the standardised press plunger ram holes; clamping sockets are not load attachment equipment as defined in Machinery Directive 2006/42/EC; they are 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**

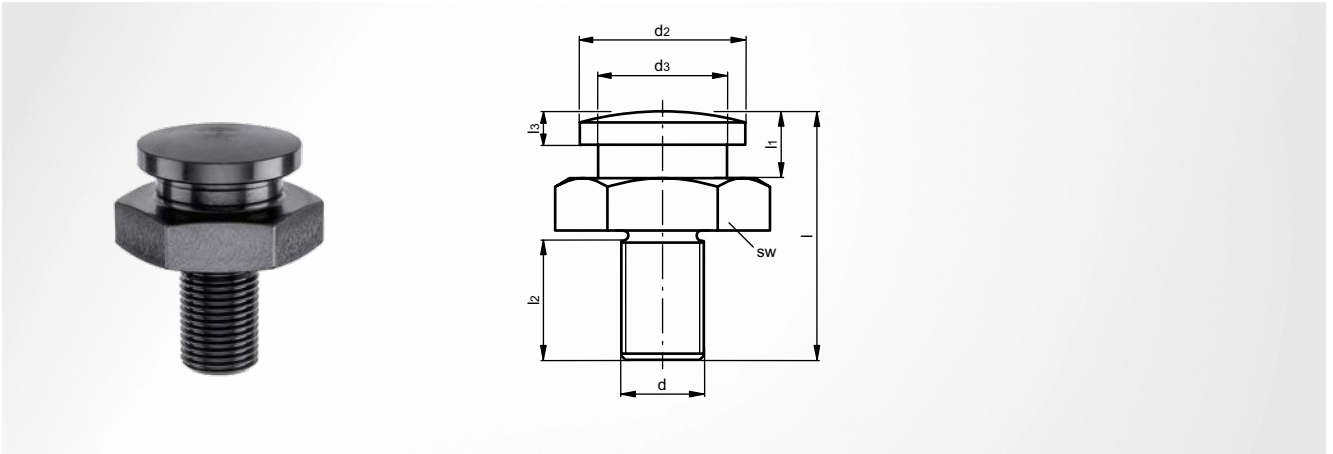
Are screwed together with the die set upper plate; achieve more favourable guide rates with a large stroke due to the use of longer guide pillars; clamping sockets are not load attachment equipment as defined in Machinery Directive 2006/42/EC; they are designed for the establishment of a loose or fixed 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)

**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.

Suitable for receiving chuck

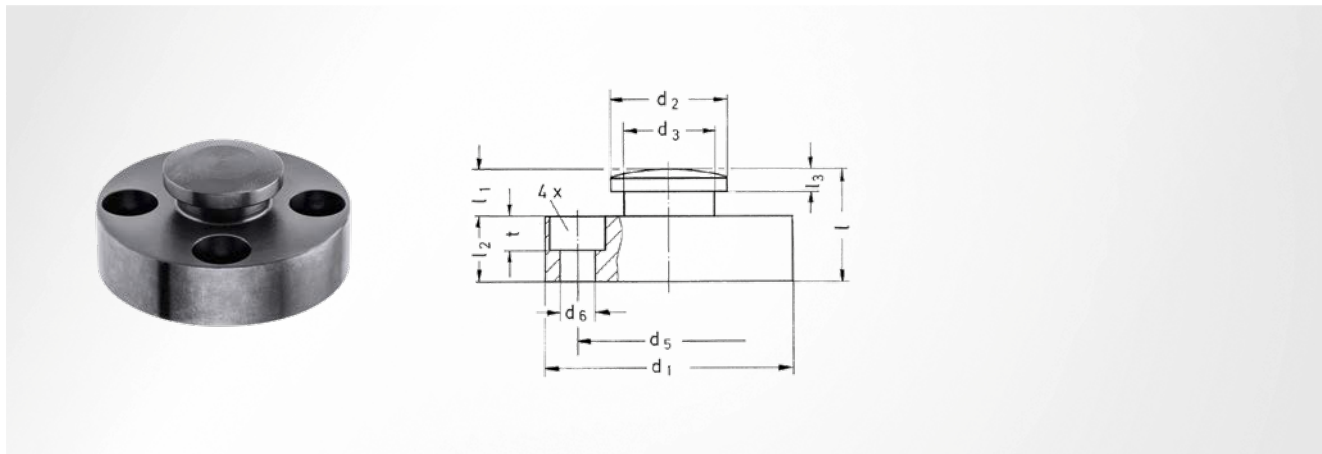
SZ4160; SZ4161

d <sub>2</sub>	d <sub>3</sub>	d	l	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	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 <sub>2</sub>	d <sub>3</sub>	d	l	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	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)

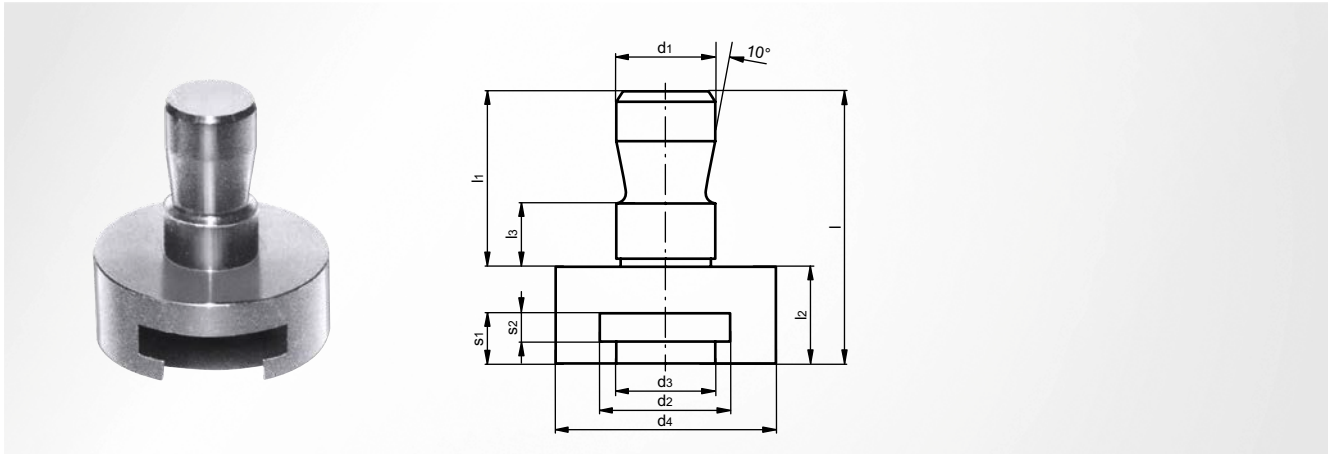
**Note**  
Are screwed together with the die set upper plate; receiving chucks are not load attachment equipment as defined in Machinery Directive 2006/42/EC; they are designed for the establishment of a loose or fixed connection between two parts.

Suitable for receiving chuck  
SZ4160; SZ4161

d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>5</sub>	d <sub>6</sub>	l	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	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

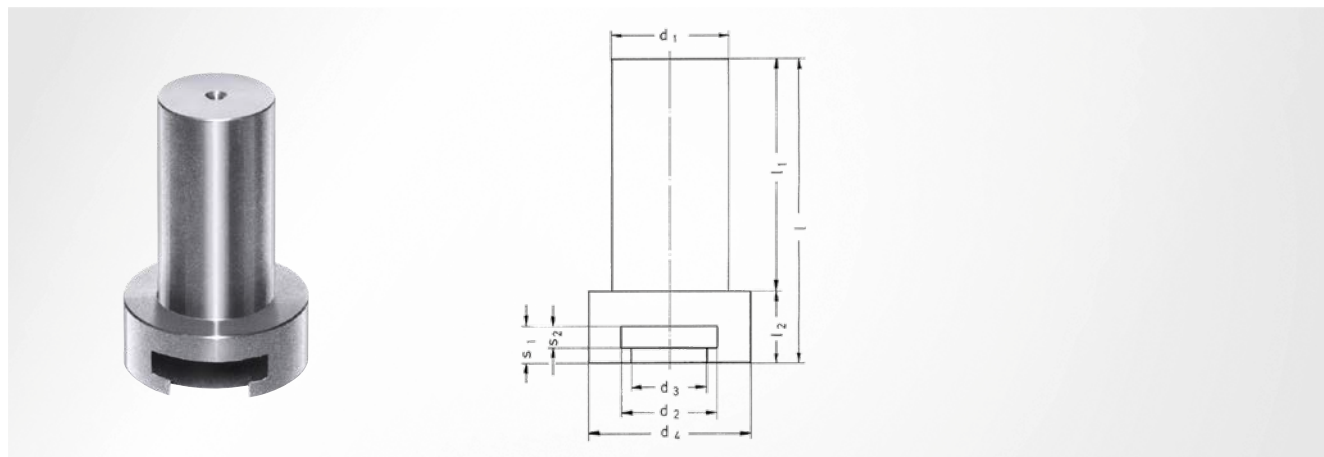
**Note**

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

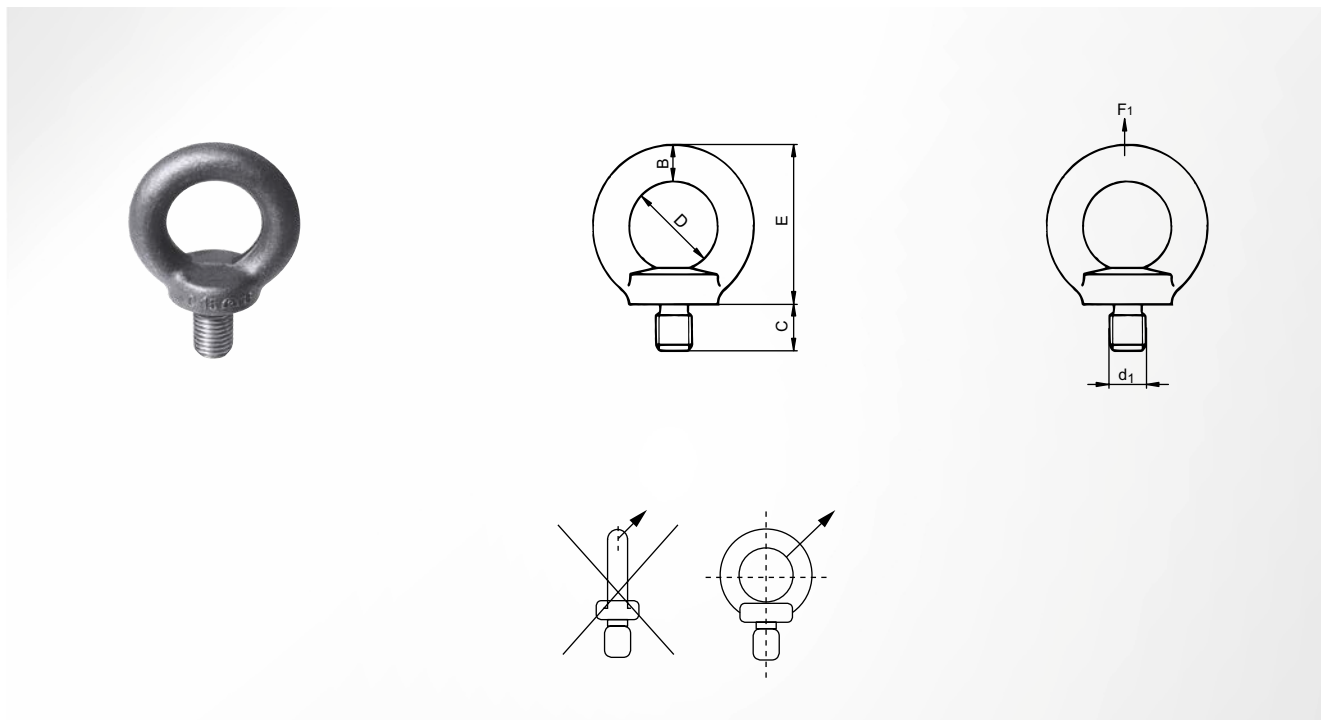
## Note

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

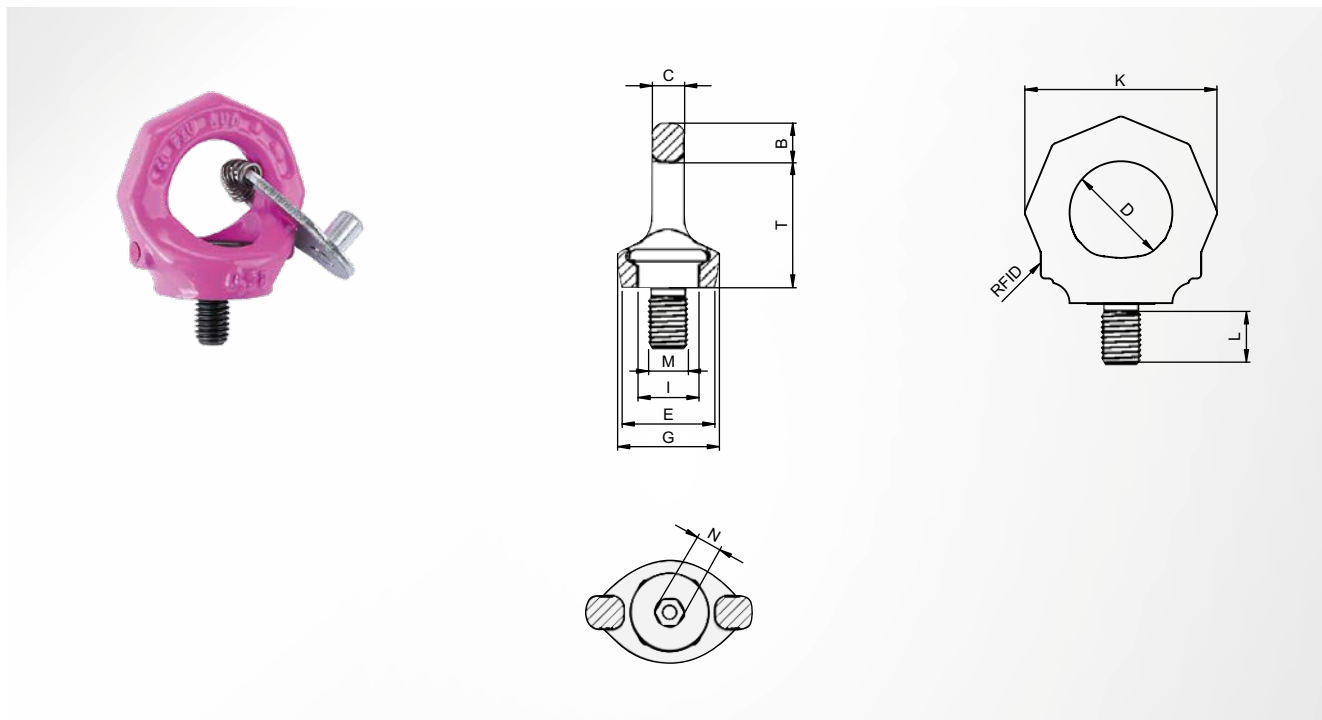
$d_1$	$F_1$ t	B	C	D	E	Item number
M8	0.14	8	13.0	20	36	SZ4381 08
M10	0.23	10	17.0	25	45	SZ4381 10
M12	0.34	12	20.5	30	53	SZ4381 12
M16	0.70	14	27.0	35	62	SZ4381 16
M20	1.20	16	30.0	40	71	SZ4381 20
M24	1.80	20	36.0	50	90	SZ4381 24

## 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 $\leq 45^\circ$ in kg	100	170	240	500	860	1290
Laterally screwed load capacity for each eye-bolt $\leq 45^\circ$ 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

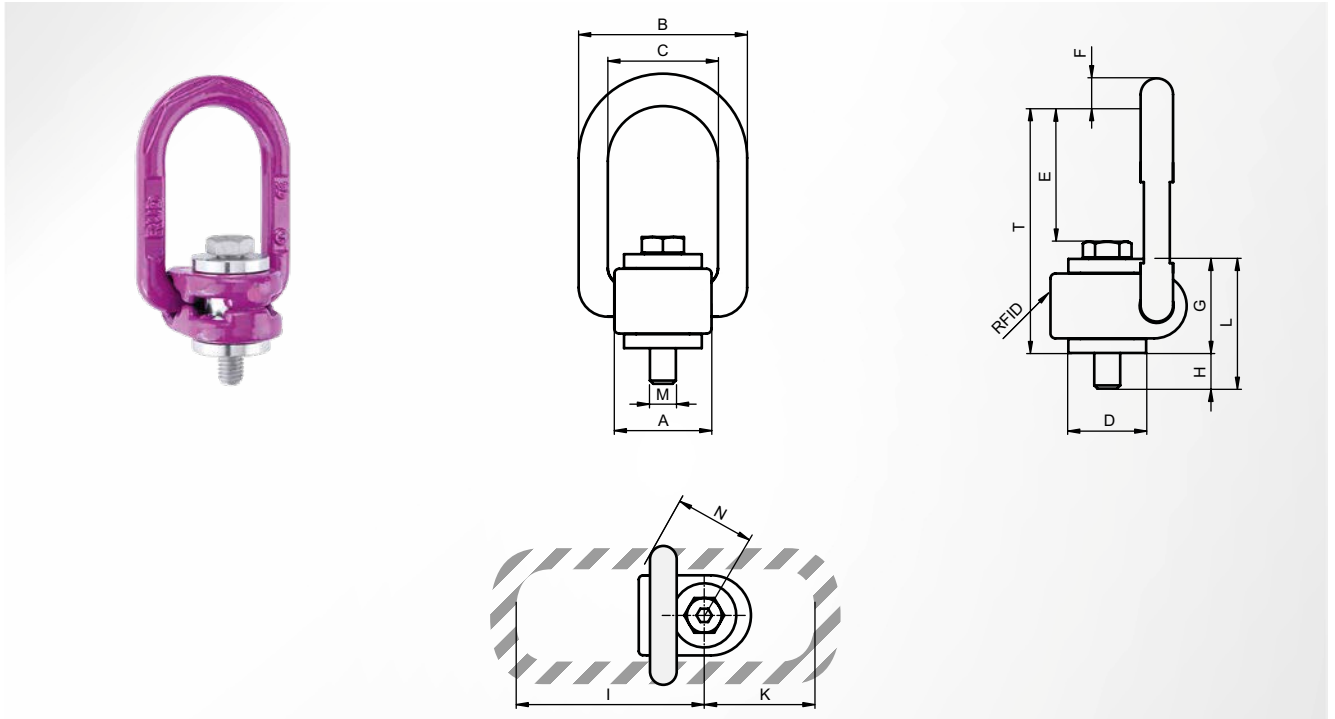
Attention: Completely screw in the eye-bolt; must lie completely and evenly on the contact surface; electromagnetic crack testing in accordance with DIN EN 1677-1; rotatable in screwed condition; not suitable for rotating under load; before mounting the lifting accessory, adjust to the direction of the 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										
Number of rope lines	1	2	1	2	2	2	2	3 and 4	3 and 4	3 and 4
Inclination angle <math>\beta</math>	0°	0°	90°	90°	0–45°	45–60°	Asymmetrical	0–45°	45–60°	Asymmetrical
<b>Maximum transport weight "G" in t for the types of stop listed above</b>										
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

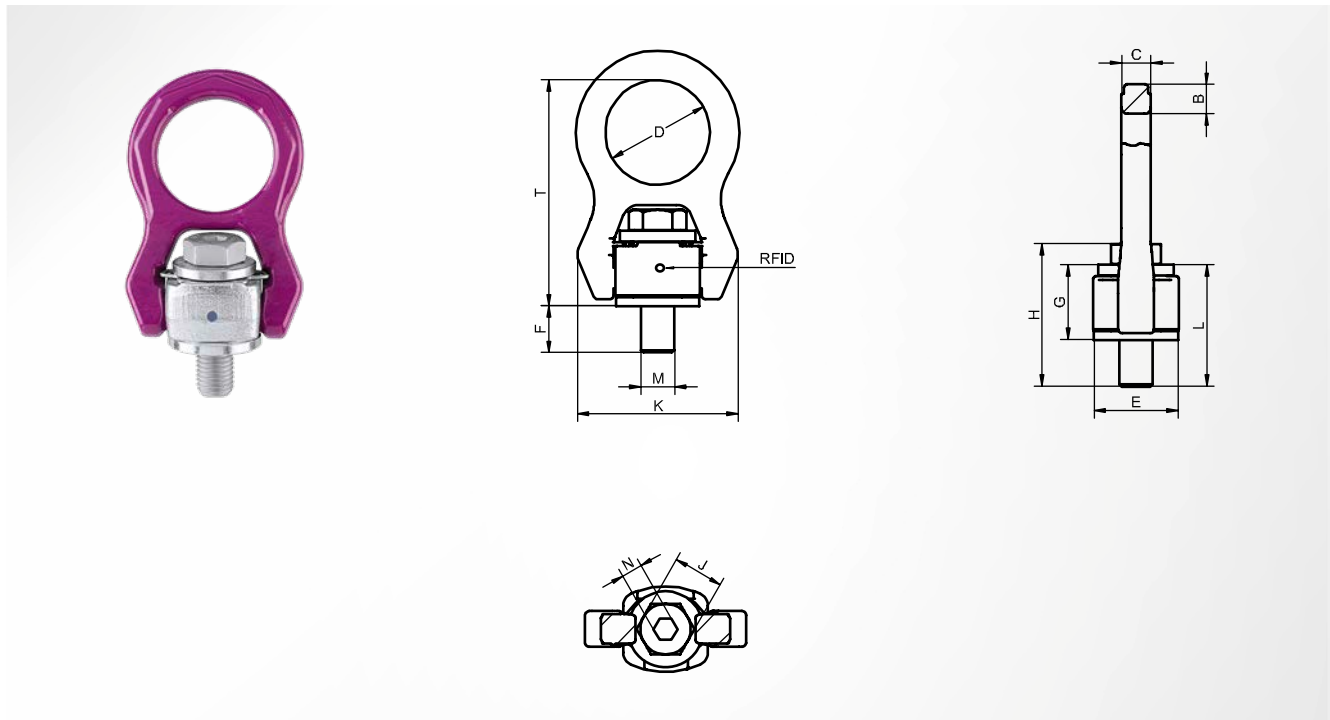
Attention: Completely screw in the side-load hoist ring; must lie completely and evenly on the contact surface; the side-load hoist ring is collapsible, rotatable through 360 degrees from all directions and carries the full load in the pulling direction; before mounting the lifting accessory, adjust 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	Torque 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 <math>\alpha</math>	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

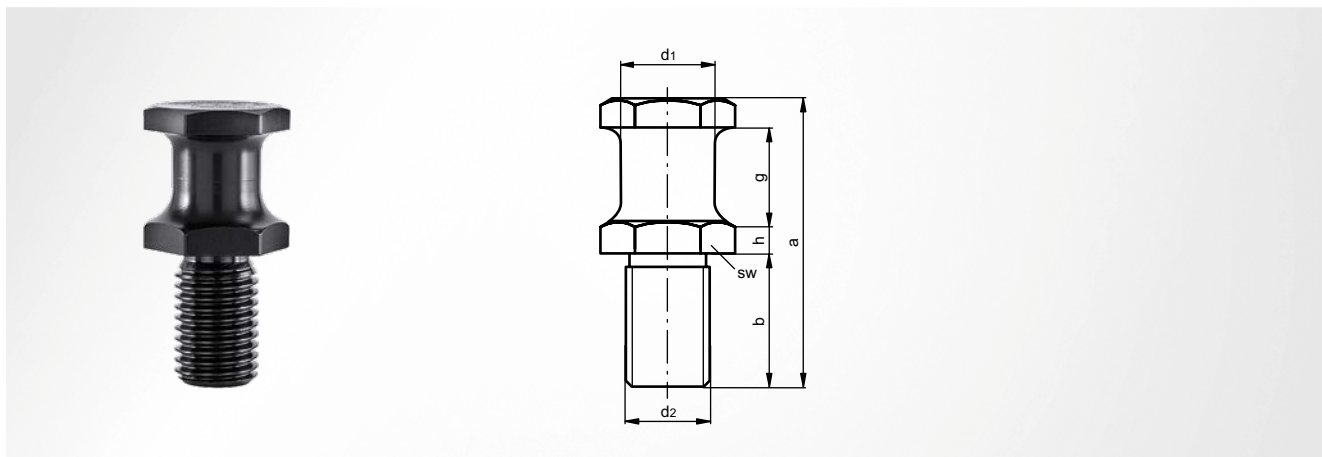
M	B	C	D	E	F	G	H	J	K	L	N	T	Item number
M12	11	10.5	38	30	19.0	28.0	54.4	19	58.0	47	8	83	SZ4392 12
M16	14	14.0	50	40	22.0	36.0	68.0	24	76.0	58	10	107	SZ4392 16
M20	17	17.2	50	45	26.5	43.5	82.0	30	89.0	70	12	118	SZ4392 20
M24	23	23.0	66	60	34.0	55.0	104.0	36	120.5	89	14	154	SZ4392 24

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 <math>\alpha</math>	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
<b>Safety factor 4:1</b>	<b>Maximum transport weight "G" in t for the types of stop listed above</b>									
	<b>Tightly screwed and adjusted to the pulling direction</b>									
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
<b>Safety factor 5:1</b>	<b>Maximum transport weight "G" in t for the types of stop listed above</b>									
	<b>Tightly screwed and adjusted to the pulling direction</b>									
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)

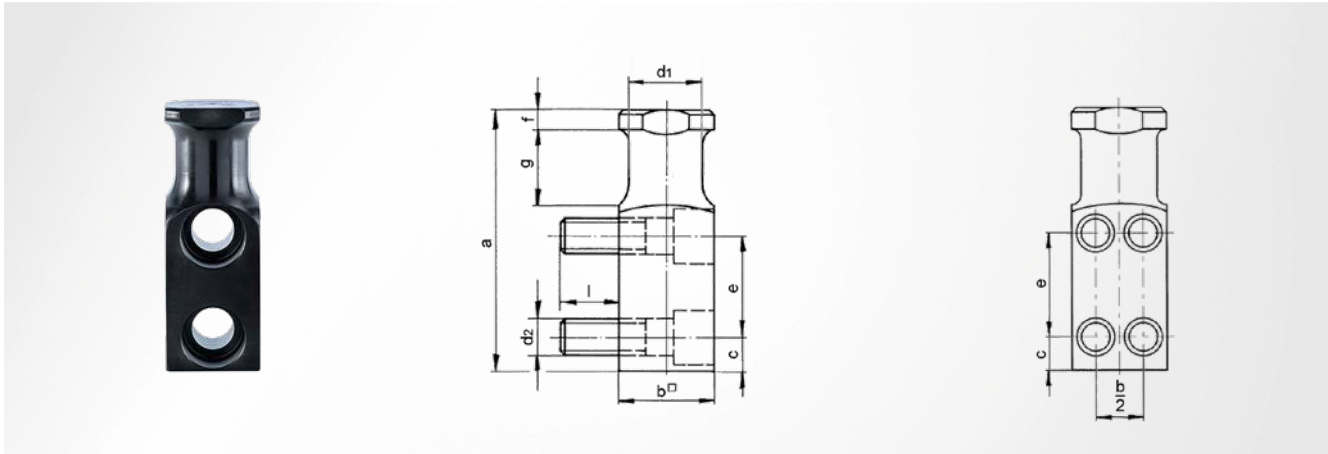
Note

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 <sub>1</sub>	d <sub>2</sub>	a	b	g	h	Tool weight kg <sub>max.</sub>	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

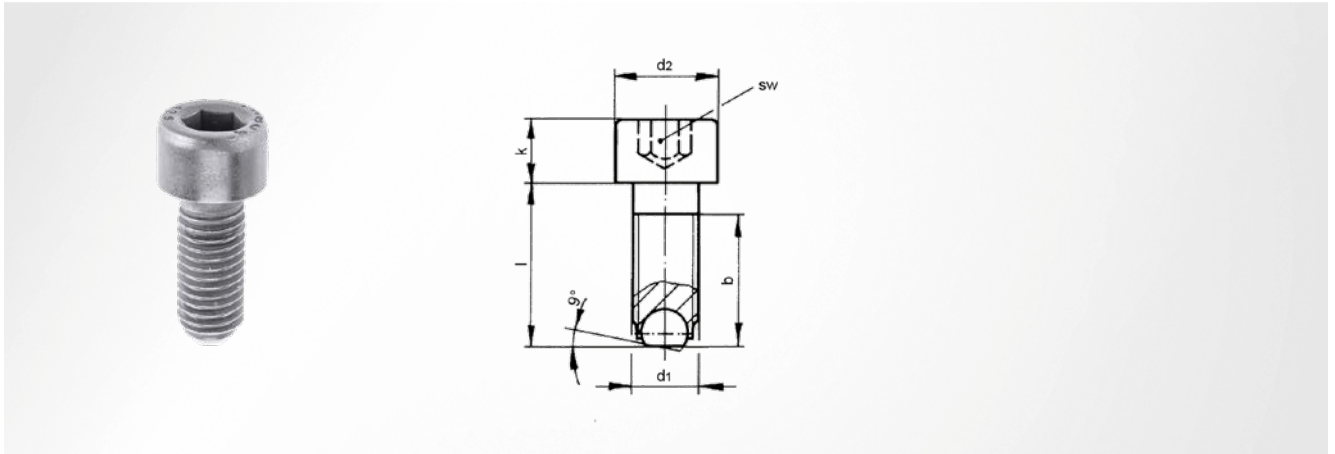
**Note**

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 <sub>max.</sub>	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



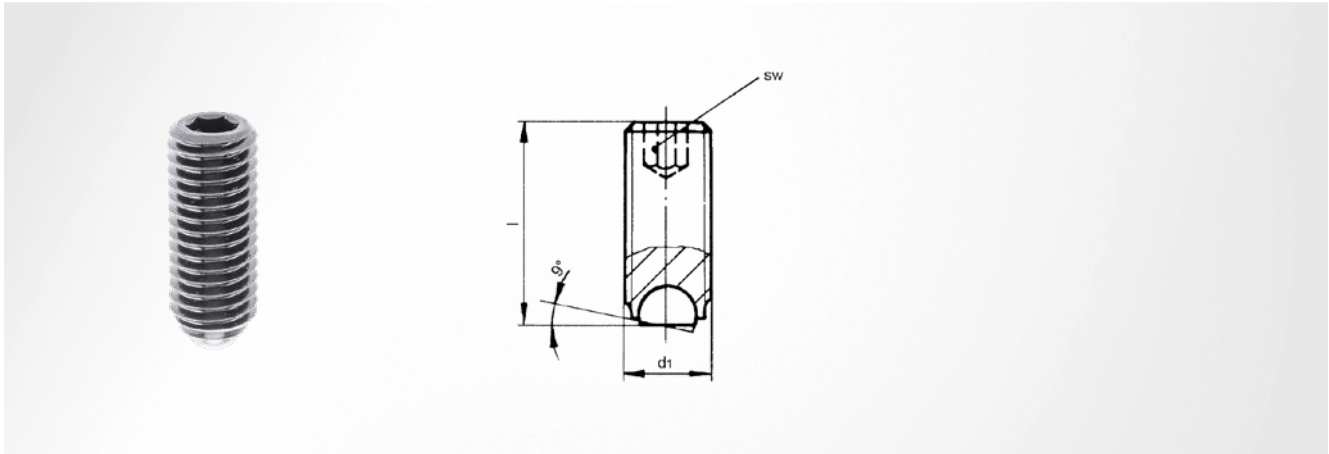
**Note**

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 <sub>1</sub>	d <sub>2</sub>	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

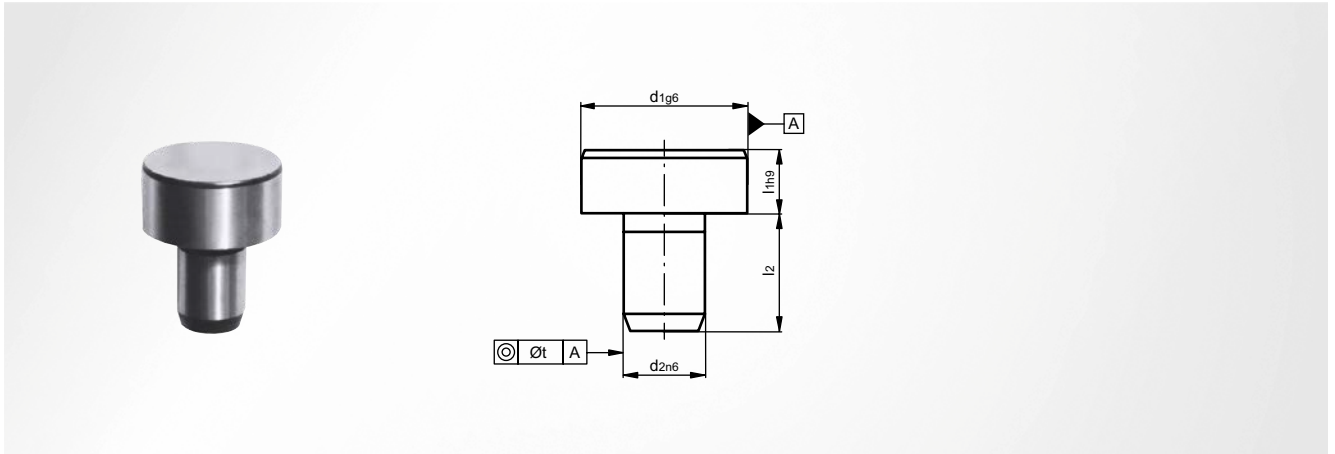
without head, with hexagon socket



**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 <sub>i</sub>	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



DIN 6321

Hardness

Shape

56 ±2 HRC

A

Installation in mounting bore

ISO H7

Material

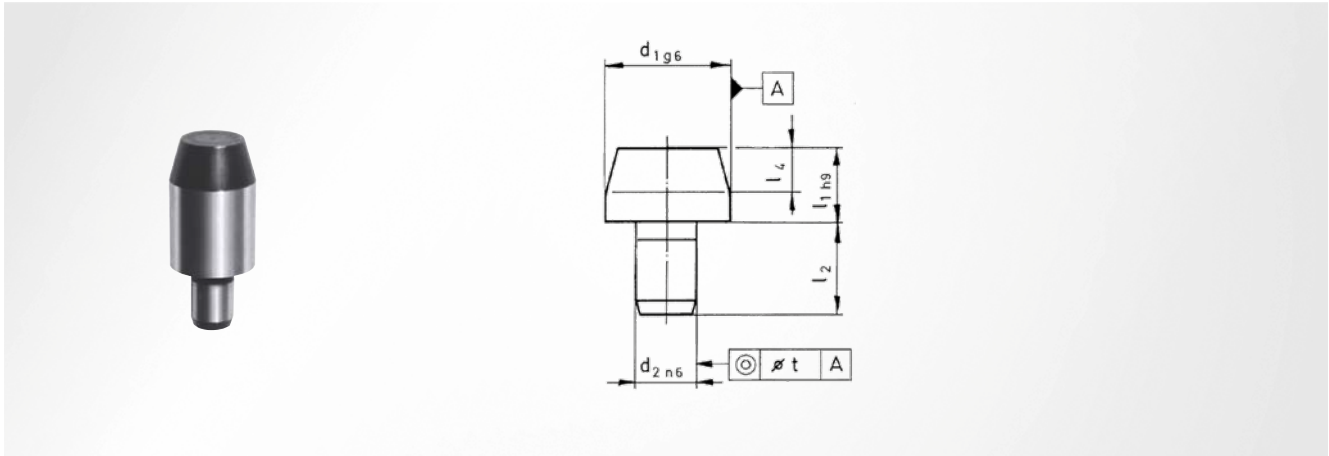
Tool steel; hardened

$d_1^{g6}$	$d_2^{n6}$	$l_1^{h9}$	$l_2$	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

Hardness  
56 ±2 HRC

Shape

B

Installation in mounting bore  
ISO H7

Material

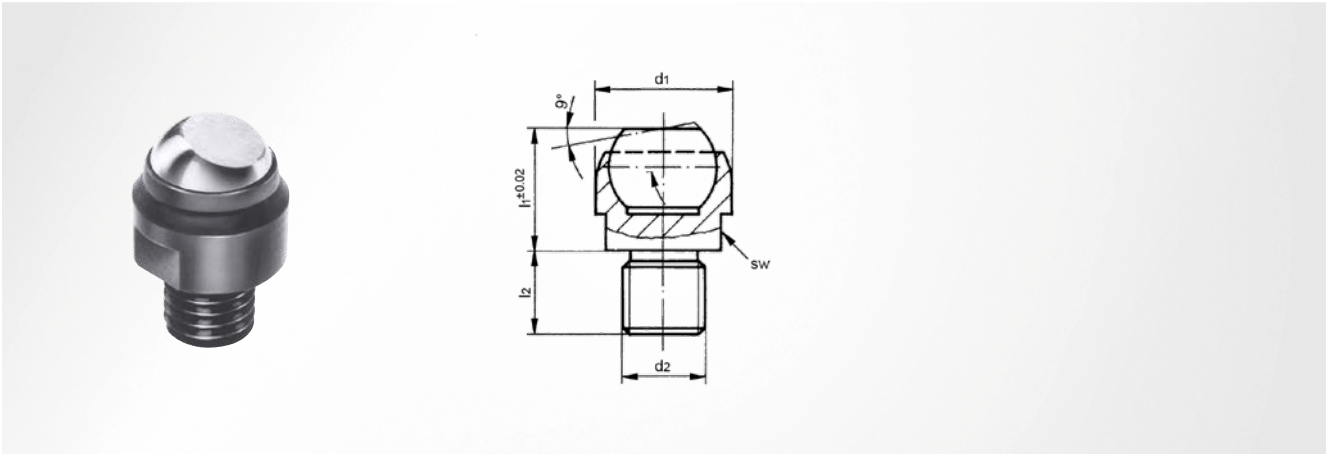
Tool steel; hardened

$d_1^{g6}$	$l_2$	$l_4$	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
				8	13	SZ4513 16 x 13
16	12	8	0.04	8	22	SZ4513 16 x 22
				12	15	SZ4513 20 x 15
20	18	9	0.04	12	25	SZ4513 20 x 25
				12	15	SZ4513 25 x 15
25	18	9	0.04	12	25	SZ4513 25 x 25

# SZ4516 Supporting bolt

swinging



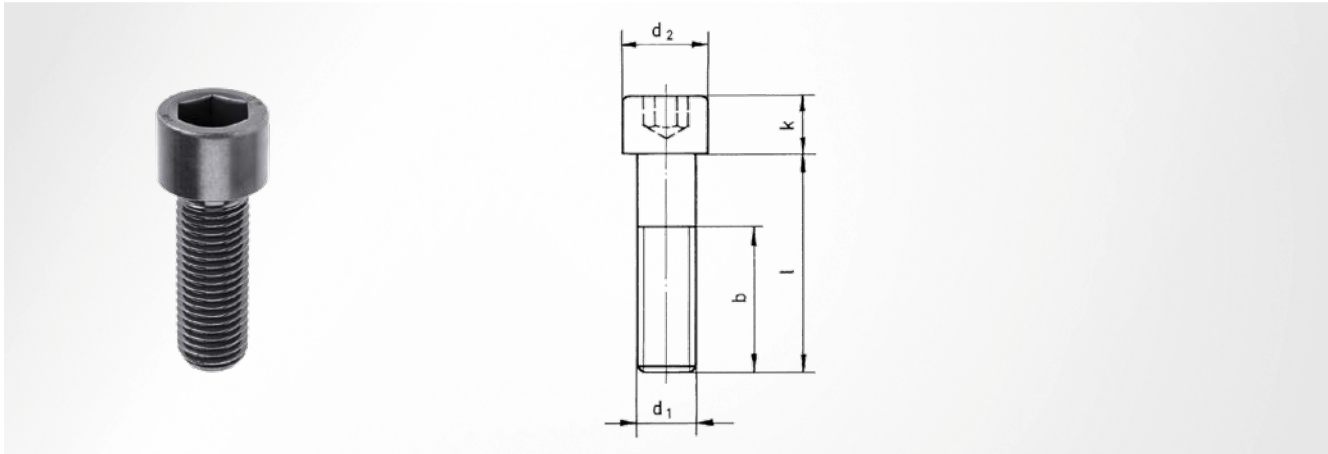
## Note

Ball flattened and movably mounted up to 9°; ball, hardened; for the clamping of surfaces that are not plane-parallel; mounting body tempered

$d_1$	$d_2$	$l_1 \pm 0.02$	$l_2$	Ball $\varnothing$	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 <sub>1</sub>	d <sub>2</sub>	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
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
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 <sub>1</sub>	d <sub>2</sub>	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

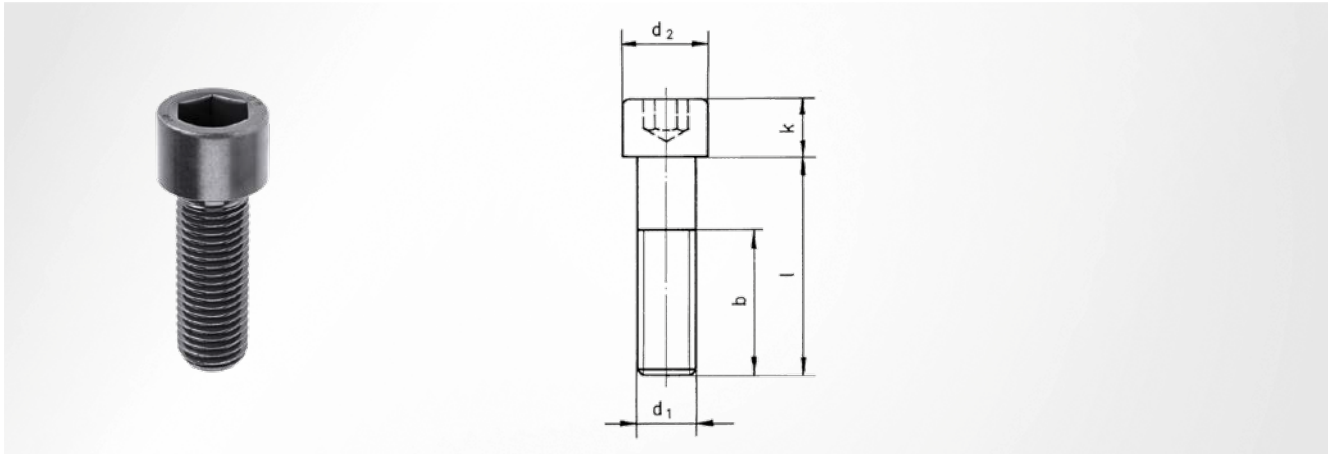
with hexagon socket

d <sub>1</sub>	d <sub>2</sub>	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 <sub>1</sub>	d <sub>2</sub>	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 <sub>1</sub>	d <sub>2</sub>	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
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
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 <sub>1</sub>	d <sub>2</sub>	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

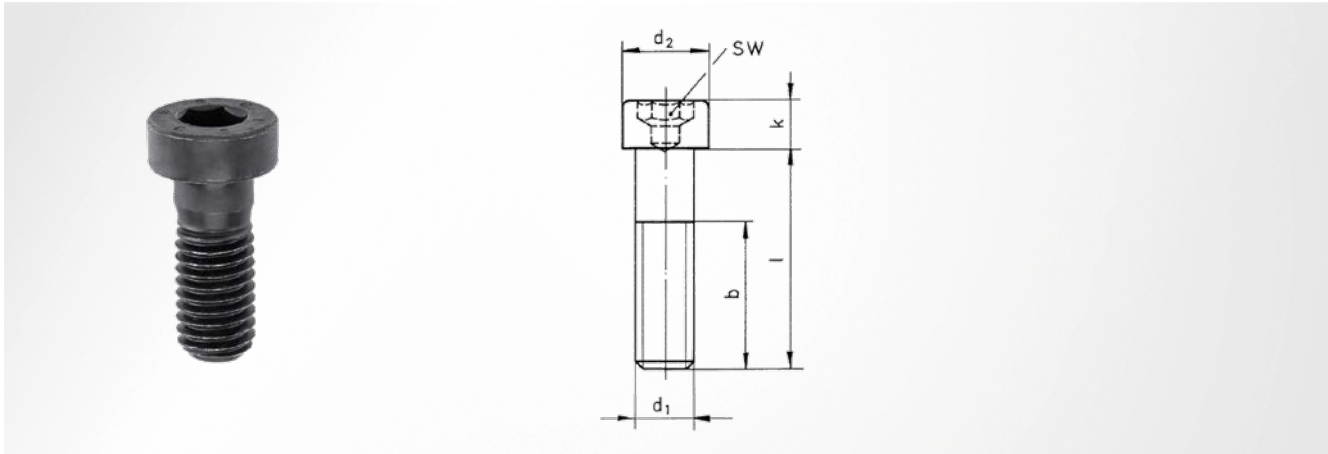
with hexagon socket

d <sub>1</sub>	d <sub>2</sub>	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 <sub>1</sub>	d <sub>2</sub>	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
M20	30.0	20	160	44	10	SZ8515 16 x 160
			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
			M8	13	5.0	12
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
M10	16	6.5				16

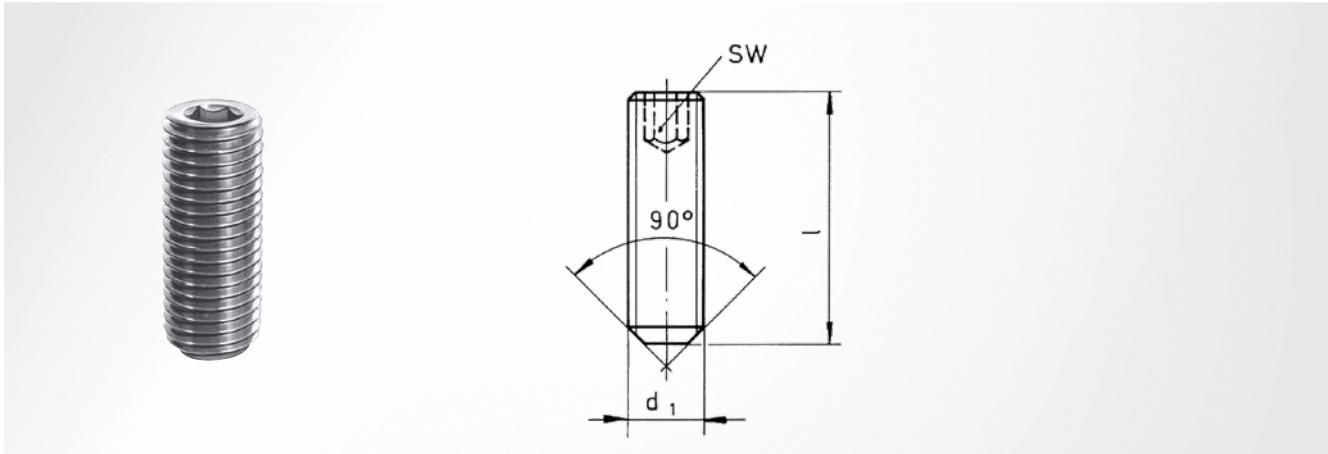
# SZ8512 Socket-head screw

flat head, with hexagon socket

d <sub>1</sub>	d <sub>2</sub>	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



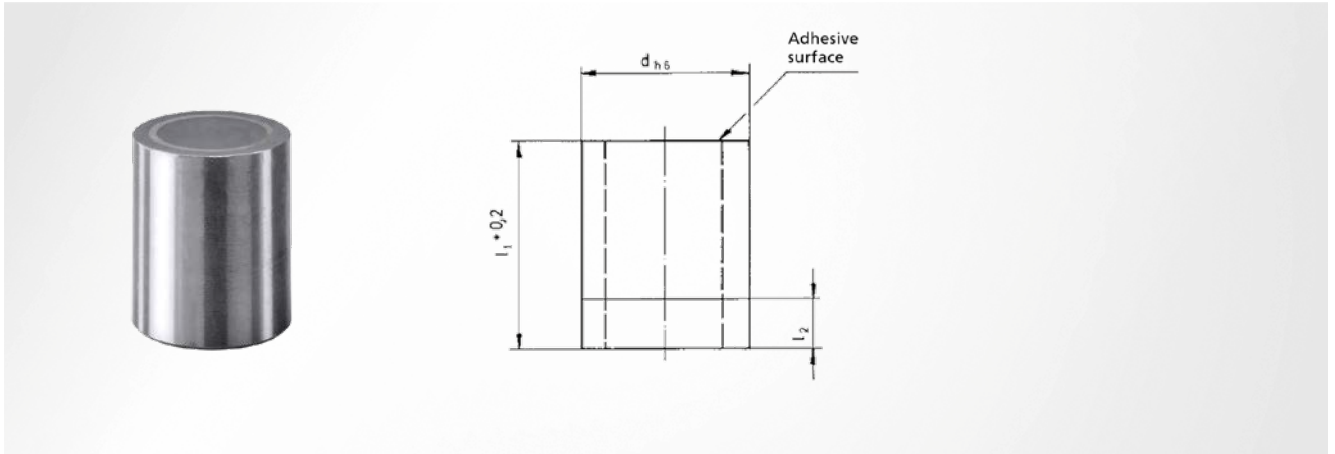
DIN 913 / ISO 4026

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
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
M10	5.0	30	50	SZ8530 08 x 30
		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
M12	6.0	35	50	SZ8530 10 x 35
		40	50	SZ8530 10 x 40
		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

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

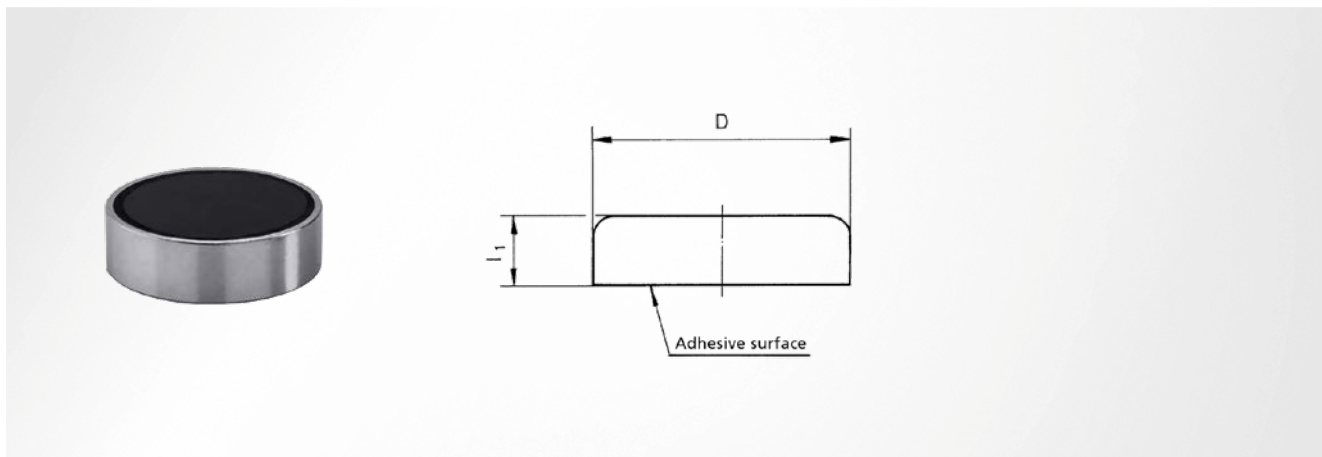
### Note

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

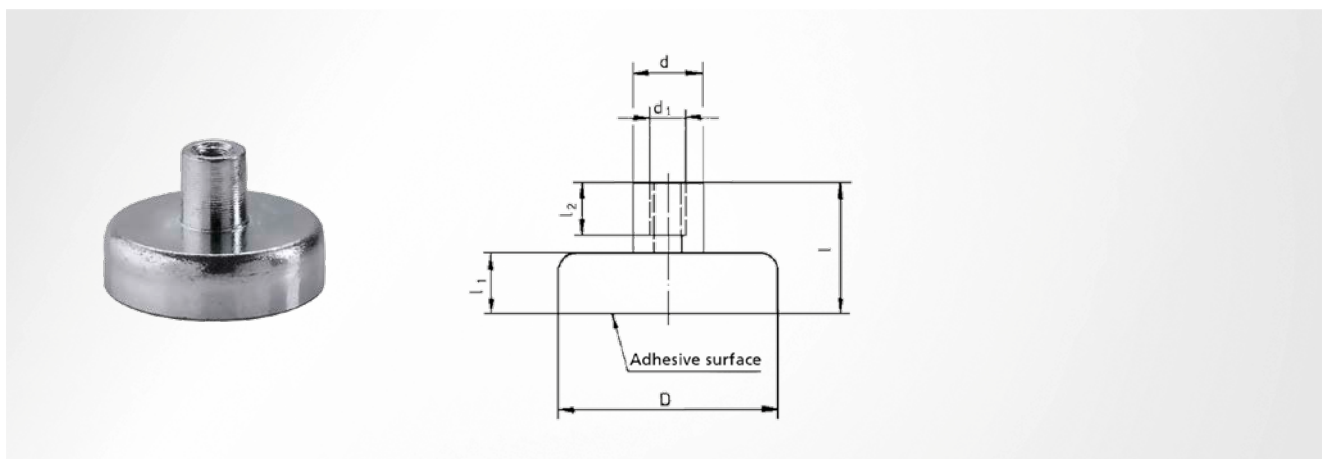
Note  
Surface galvanised; screened system

$l_1$	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



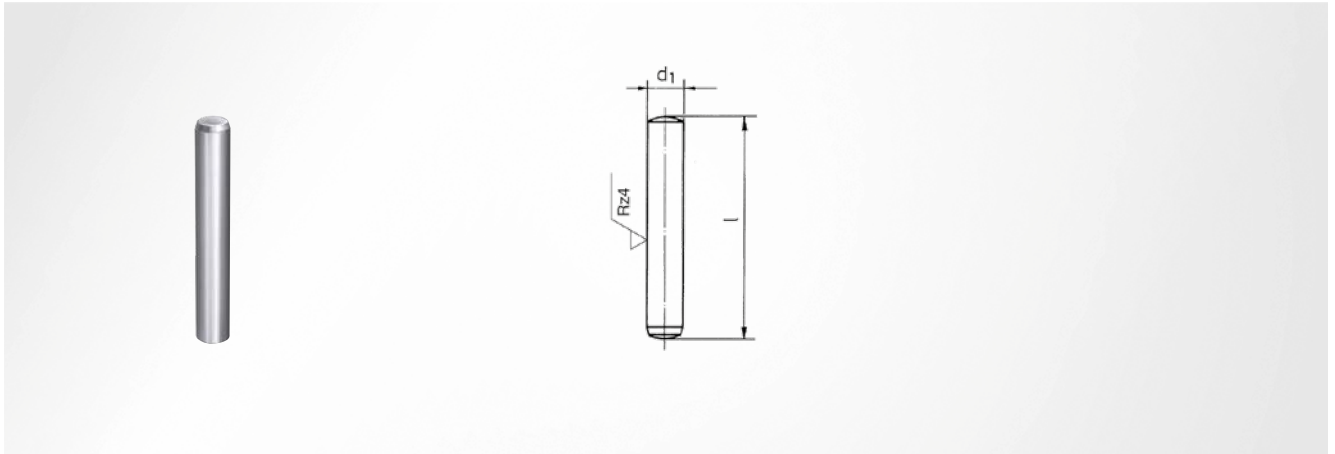
Installation instruction  
screw in

Note  
Surface galvanised; screened system

d	d <sub>1</sub>	l	l <sub>1</sub>	l <sub>2</sub>	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 <sub>1</sub>	l	l <sub>1</sub>	l <sub>2</sub>	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





DIN EN ISO 8734

Hardness  
60 ±2 HRC

Material

Tool steel; Chrome-Vanadium alloyed

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
2.0	50	18	SZ7900 015 x 018
		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
2.5	50	32	SZ7900 020 x 032
		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

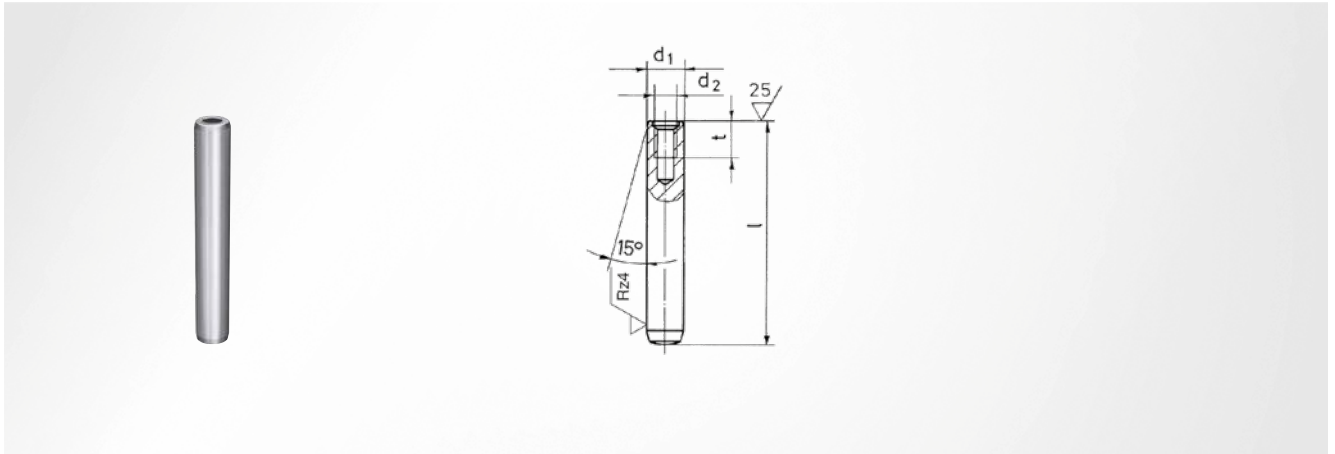
$d_1^{m6}$	Standard packaging piece	l	Item number
3.0	50	18	SZ7900 030 x 018
		20	SZ7900 030 x 020
		24	SZ7900 030 x 024
		28	SZ7900 030 x 028
		32	SZ7900 030 x 032
		36	SZ7900 030 x 036
		40	SZ7900 030 x 040
4.0	25	10	SZ7900 040 x 010
		12	SZ7900 040 x 012
		14	SZ7900 040 x 014
		16	SZ7900 040 x 016
		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

$d_1^{m6}$	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				
14.0	10	80	SZ7900 120 x 080		
		90	SZ7900 120 x 090		
		100	SZ7900 120 x 100		
		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		
16.0	10	80	SZ7900 140 x 080		
		90	SZ7900 140 x 090		
		100	SZ7900 140 x 100		
		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 ( $\text{MoS}_2$ ) 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



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	
	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

Filling quantity  
100 ml

Adhesive gap optimal  
0.05 mm

Suitability for storage  
1 year

Hand-tight  
20-40 sec.

Note  
Hand-tight with activator 7649  
(LOCTITE 7649)

Final strength  
~ 12 h

Optional accessories  
SZ9740

Product colour  
colourless

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

Product colour  
green

Adhesive gap optimal  
0.05 mm

Filling quantity  
50 ml

Hand-tight  
10-30 min

Optional accessories  
SZ9740

Functional strength  
30-60 min

Item number  
SZ9742

Final strength  
~ 6 h

# 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

Product colour  
green

Adhesive gap optimal  
0.05 mm

Filling quantity  
50 ml

Hand-tight  
10-30 min

Note  
Thread up to M20

Functional strength  
1-3 sec.

Optional accessories  
SZ9740

Final strength  
3-6 h

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

Filling quantity  
50 ml

Hand-tight  
10-30 min

Note  
Easily removable connection

Final strength  
~3 h

Optional accessories  
SZ9740

Product colour  
brown

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

Product colour  
colourless

Adhesive gap optimal  
0.05 mm

Filling quantity  
0.02 kg

Hand-tight  
5-20 sec.

Item number  
SZ9744

Final strength  
12 h

# 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](http://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

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.steinell.com/en/service/data-sheets](http://www.steinell.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 0.45 kg	SZ9622



High pressure lubrication gun with pointed mouth piece for funnel-type lubricating nipple incorporated in sliding guides

DIN 1282

Output per lifted  
ca. 0.7 cm<sup>3</sup>

Filling quantity  
60 cm<sup>3</sup>

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