

## Guide units

- For toolmaking, fixture manufacturing and machine engineering
- Guide units in compliance with DIN, ISO and STEINEL standards or according to your specifications
- Guide pillars
- Guide and pillar bearings
- Hardened steel guide bushes, with bronze coating, for particularly high stress levels
- Solid bronze guide bushes with solid lubricant inserts
- Ball guide bushes and ball cages for radial and axial movements
- Roller cages for axial movements
- Guide plates with solid lubricant inserts
- Mini guide units



# Guide units

**STEINEL®**



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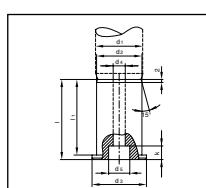
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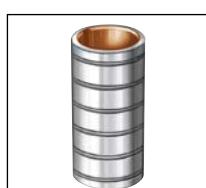
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# Guide units

**STEINEL®**



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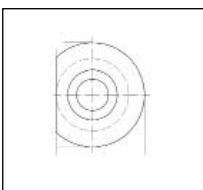
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# Guide bushes DIN 9831, ISO 9448

**STEINEL®**

**advantages:** standardised installation diameter,  
constant interchangeability

## Sliding guide, steel with bronze coating



### Interchangeability of all guide bushes

Each mounting bore can be used:

**Two** guide diameters e.g. 30/32

**Seven** types of guidance, e.g. three sliding guide and four roller guide types

**Three** bush types, e.g. shoulder, flange or smooth bushes

**Three** bush lengths (for guide diameters from 19 to 80)

Therefore it is possible to use **2 x 7 x 3 x 3 = 126** different guide bushes for each mounting bore.

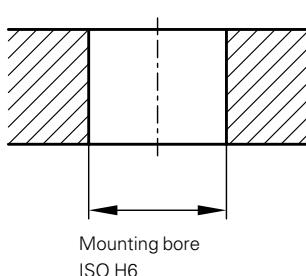
## Sliding guide with solid lubricant



### Mounting diameter ISO j6 or js 4

Pillar diameter $d_1$	Fixture diameter
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

## Sliding guide with solid lubricant rings



## Roller guide



### Application fields:

In toolmaking, fixture manufacturing, machine and apparatus engineering, measuring device design as well as the automobile industry, STEINEL precision guide units are suitable for use in any installation position. They are characterised by high loading capacity and wear resistance.

## Aluminium ball guide



## Brass ball guide



## Plastic ball guide



### Advantages:

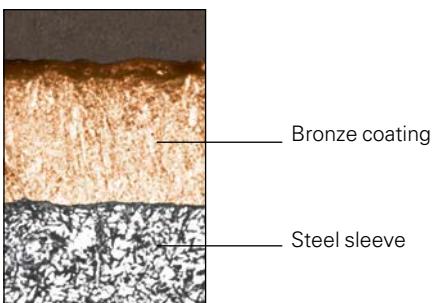
Due to the standard mounting diameter, all bushes can be interchanged. A die set with a sliding guide can always be converted into a ball or roller guide without additional work, and only by changing the guide bushes.

# STEINEL precision sliding guides

## steel with bronze coating or solid lubricant

STEINEL®

### Sliding guide, steel with bronze coating



#### Application fields:

In toolmaking, fixture manufacturing, machine and apparatus engineering as well as the automobile industry, STEINEL precision sliding guides, "steel with bronze coating or solid lubricant" are suitable for use in any installation position for longitudinal movements. They are particularly characterised by high loading capacity.

#### Design configuration:

The STEINEL precision sliding guides "steel with bronze coating or solid lubricant" comprise of: Guide pillars and guide bush with honed guide clearance.

### Sliding guide with solid lubricant



#### Maintenance-free guide bushes:

During the sliding movements, the solid lubricant ensures an adherent, coherent lubricating film between the guide units. This film also sticks to the sliding surfaces during standstill or when starting, and therefore prevents corrosion between the guide bush and guide pillar. Our lubrication and maintenance-free guide bushes are complex, highly wear-resistant sliding elements of the highest precision. Our guide bushes also experience no deformation when exposed to long-lasting load, due to the good durability of the metal basic materials.

#### Lubrication:

The solid lubricant lubrication is designated as a lubrication condition in which solid lubricant particles that have a low cutting resistance in their crystal structure are present between two surfaces and assume the lubricating function.

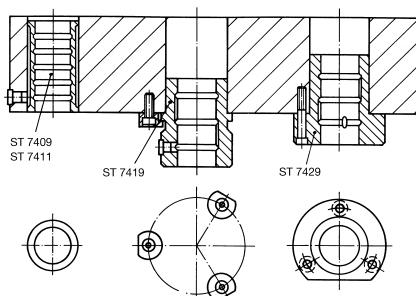
#### Sliding speed:

The maximum sliding speed is 30 m/min.

With an optimal design of the guide clearance, stroke length, radial load and heat dissipation, the STEINEL precision sliding guide allows stroke speeds of 300 to 400 strokes/min.

#### Guide clearance:

The guide clearance is 2–7 µm. If more clearance is desired, this is to be specified in the order, e.g. smooth-running honed.



The guide bushes ST 7419 and ST 7429 are equipped with M 8 x 1 connecting threads and allow connection to the central lubrication system.

#### Sliding speed:

The recommended sliding speed is 15–30 m/min.

With an optimal design of the lubrication, guide clearance, stroke length, radial load and heat dissipation, the STEINEL precision sliding guide "steel with bronze coating" allows an extremely high stroke speed of 600 to 800 strokes/min.

#### Guide clearance:

The guide bushes are precision-turned and honed. An additional compression of the running surface occurs during retraction, and this results in improved sliding characteristics. The guide clearance is 2–7 µm. If more clearance is desired, this is to be specified in the order, e.g. smooth-running honed.

### Sliding guide with solid lubricant rings



# STEINEL precision roller guides

## ball guides

**STEINEL®**

### Special features of the STEINEL precision ball guides:

- **Accuracy** due to super-finished running surfaces and precision steel balls of the same sort
- **Smooth-running** due to rolling motions
- **Clearance-free guidance** due to friction-fit rolling of the ball between the guide pillar and bush at an optimum preload
- **Long life time** due to mounted balls in the mounting bore that are free wheeling and helically arranged in an axial direction. Therefore, each ball has its own track.
- **High loading capacity, guide accuracy and quick stroke movements** are achieved by the highest accuracy of the precision steel balls of the same sort, the honed guide bushes and the super-finished, subfined guide pillars. The large number of load-bearing balls on the aforementioned running surfaces and an even force distribution in the guide allow quick stroke movements of 30–40 m/min and more.

▪ **Interchangeability** is guaranteed by precision steel balls of the same sort.

▪ **Special designs** can be produced according to the drawing.

### Loading capacities:

Guide pillar diameter $d_1$	Ball diameter $dK$	F (stat.) in N/cm bearing guide length
10/12	2	450
15/16	3	580
19/20	3	800
24/25	3	950
30/32	4	1350
38/40	4	1900
48/50	4	2400
60/63	5	3000
80	6	3300



**Aluminium ball cages** are distinguished from the brass by the significantly lower weight. Due to the cage's mere carrier function, each reduction in weight (with the same level of stability) means smaller inertial forces, especially in the movement turning points.

### Loading capacity – preload

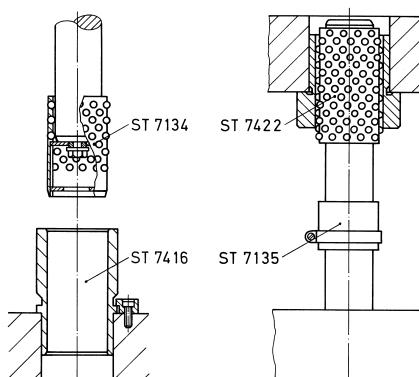
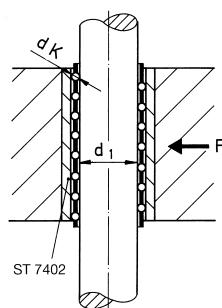
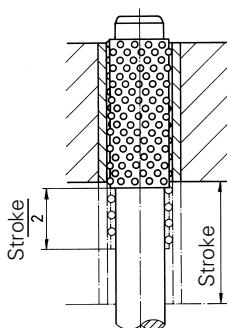
The radial loading capacity of the ball guide increases with an increasing preload, with a simultaneous decline in smooth-running. However, if the preload is too high, the ball guide is overloaded due to the ball surface pressure being too high.

The preload for matched ball guides depends on the guide diameter:

From  $\varnothing 10\text{--}12 = 3\text{--}5 \mu\text{m}$   
From  $\varnothing 15\text{--}20 = 4\text{--}6 \mu\text{m}$   
From  $\varnothing 24\text{--}32 = 6\text{--}9 \mu\text{m}$   
From  $\varnothing 38\text{--}50 = 9\text{--}12 \mu\text{m}$   
From  $\varnothing 60\text{--}80 = 11\text{--}14 \mu\text{m}$



**Brass ball cages** are universally suitable. They have a high mechanical strength and the best sliding characteristics, as well as high wear resistance and stability. Due to their optimal thermal stability, they are suitable for temperatures above 80 °C/176 °F. Very robust versions, suitable for machines and tools with high accuracy requirements.



### Design configuration and function:

The STEINEL precision ball guide comprises of: Guide pillar, guide bush and ball cage that are matched in a friction-fit manner via the preload.

Due to this friction-fit motion of the balls, the ball cage only takes part in the movement of the ball guide at half speed. The cage travel is therefore only half as long as the stroke of the guide bush/pillar.

### Application fields:

In toolmaking, fixture manufacturing, measuring device design, machine and apparatus engineering as well as the automotive industry, STEINEL precision ball guides are suitable for use in any installation position for longitudinal and/or rotational motions.



**Plastic ball cages** are particularly distinguished from other materials by the lower weight. They are used wherever there are high stroke frequencies. In addition, the plastic is suitable for aggressive ambient influences.

# STEINEL precision roller guides

## roller guides

**STEINEL®**



### Special features of the STEINEL precision roller guides:

- **Accuracy** due to super-finished running surfaces and precision profile rollers of the same sort
- **Smooth-running** due to rolling motions
- **Clearance-free guidance** due to friction-fit rolling of the profile roller between the guide pillar and bush at an optimum preload
- **Long life time** due to mounted balls in the mounting bore that are free wheeling and helically arranged in an axial direction. Therefore, each roller has its own track.

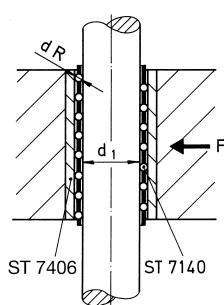
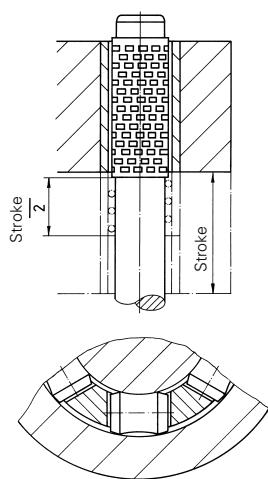
### Application fields:

In toolmaking, fixture manufacturing, measuring device design, machine and apparatus engineering as well as the automobile industry, STEINEL precision roller guides are suitable for use in any installation position for longitudinal movements. A rotational motion is not possible!

### Design configuration and function:

The STEINEL precision roller guide comprises of: Guide pillar, guide bush and roller cage that are matched in a friction-fit manner via the preload.

Due to this friction-fit motion of the profile rollers, the roller cage only takes part in the movement of the roller guide at half speed. The cage travel is therefore only half as long as the stroke of the guide bush/pillar.



### Loading capacity – preload:

The radial loading capacity of the roller guide increases with an increasing preload, with a simultaneous decline in smooth-running. However, if the preload is too high, the roller guide is overloaded due to the profile roller surface pressure being too high.

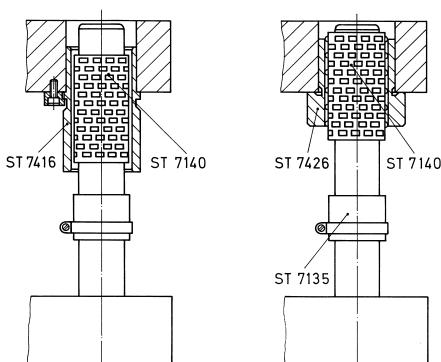
The preload for match roller guides depends on the guide diameter:  
From  $\varnothing 19\text{--}20 = 2\text{--}4 \mu\text{m}$   
From  $\varnothing 24\text{--}32 = 4\text{--}5 \mu\text{m}$   
From  $\varnothing 38\text{--}50 = 5\text{--}7 \mu\text{m}$   
From  $\varnothing 60\text{--}80 = 7\text{--}9 \mu\text{m}$

### Limiting sleeve:

Special features: End stop for cage travel

### Stroke movements:

At optimum use, stroke movements of up to 40 m/min and more can be achieved.



**Roller cages** are distinguished from other materials by the significantly lower weight. Due to the cage's mere carrier function, each reduction in weight (with the same level of stability) means smaller inertial forces, especially in the movement turning points. The undesired slip effect of the roller cage that results during large stroke movements is significantly reduced by the aluminium cage, and this increases the life time of the guide.

**Minimal maintenance** of the practically maintenance-free roller guides. Oiling suffices for longer continuous operation.

**A profile roller** can bear a load of six times the weight compared to a ball of the same size before a deformation occurs.

The contact radii of the saddle shape are manufactured in such a way that critical loadings on the edge area will be avoided, which results in extended life.

The bending as a result of the load in the middle surface to the outer track will lead to a deflection below 0.05  $\mu\text{m}$ , which can be neglected.

The relatively higher expense in comparison to the normal ball guide is more than compensated for by the technical advantages.

### Loading capacities:

Guide pillar diameter $d_1$	Roller diameter $dR$	F (stat.) in N/cm per roller and cage assembly
19/20	3	1700
24/25	3	2250
30/32	4	3450
38/40	4	4700
48/50	4	4700
60/63	5	5900
80	6	8750

**High loading capacity, guide accuracy and quick stroke movements** are achieved by the highest accuracy of the precision profile rollers of the same sort, the honed guide bushes and the super-finished, subfined guide pillars. The large number of load-bearing rollers on the aforementioned running surfaces and an even force distribution in the guide allow quick stroke movements.

**Interchangeability** is guaranteed by precision profile rollers of the same sort.

**Special designs** can be produced according to the drawing.

# Guide pillars ST 7190

mini-series

**STEINEL®**



**Material:**

Ø d 3–6 mm	Steel 1.2379 hardened, hardness 60 + 4 HRC
from Ø d 8 mm	Steel, 1.7131, use hardened, depth of hardening 0.8–1.2 mm, depending on Ø hardness 60–64 HRC

STEINEL guide pillars are ground on all sides. The guide diameter is super-finished and lapped to tolerance ISO h3. Press-in in borehole ISO P6

**Order example:** Guide pillar **ST 7190**

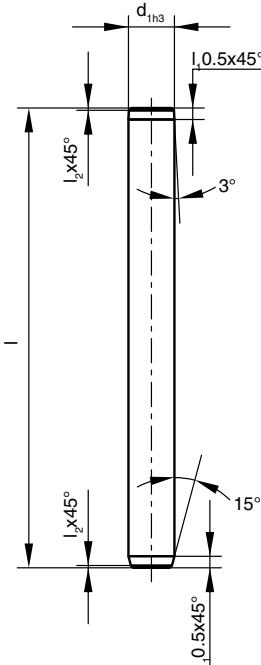
d<sub>1</sub> = 8, l = 80 mm

Add size to order number

Order number **ST 7190.08 x 080**

Order number **ST 7190.**

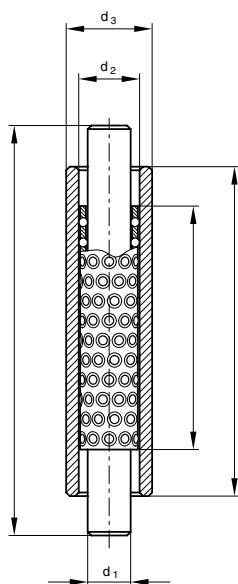
x



d <sub>1h3</sub>	l <sub>1</sub>		
3	30	1.5	<b>03 x 030</b>
	40	1.5	<b>03 x 040</b>
	60	1.5	<b>03 x 060</b>
	80	1.5	<b>03 x 080</b>
4	50	1.5	<b>04 x 050</b>
	60	1.5	<b>04 x 060</b>
	80	1.5	<b>04 x 080</b>
	100	1.5	<b>04 x 100</b>
5	50	1.5	<b>05 x 050</b>
	60	1.5	<b>05 x 060</b>
	80	1.5	<b>05 x 080</b>
	100	1.5	<b>05 x 100</b>
6	60	2	<b>06 x 060</b>
	80	2	<b>06 x 080</b>
	100	2	<b>06 x 100</b>
	125	2	<b>06 x 125</b>
8	80	2	<b>08 x 080</b>
	100	2	<b>08 x 100</b>
	125	2	<b>08 x 125</b>
	160	2	<b>08 x 160</b>
10	80	3	<b>10 x 080</b>
	100	3	<b>10 x 100</b>
	125	3	<b>10 x 125</b>
	160	3	<b>10 x 160</b>

# Ball guides

mini-series



STEINEL ball guides are characterised by particular precision and smooth-running. Therefore, they get particular recognition as a design element for optical and electronic measuring devices and facilities. They are successfully used for highly precise machines, instruments and technical facilities.

**Special features of the STEINEL precision ball guides:**

- **Smooth-running** due to rolling motions
- **Clearance-free guidance** due to friction-fit rolling of the ball between the guide pillar and bush at an optimum preload
- **Interchangeability** is guaranteed by precision steel balls of the same sort
- **Special designs** can be produced according to the drawing

# Guide bushes ST 7191

## mini-series

**STEINEL®**



### Material:

Steel 1.3505 (100 Cr 6) hardened,  
hardness 63 + 2 HRC

### Explanation:

STEINEL guide pillars are ground on all sides. The guide diameter (borehole) is finely honed and matched with the pillars in order to guarantee an optimal preload.

**Order example:** Guide bush **ST 7191**

$d_1 = 8, l = 30 \text{ mm}$

Addition **08 x 030**

Order number **ST 7191.08 x 30**

### Installation method:

Avoid pressing in as far as possible. Fit into mounting bore ISO H6 (tension-free) and secure with adhesive.

Add size to  
order number

Order number **ST 7191.**

<b>d<sub>1h3</sub></b>	<b>d<sub>2</sub></b>	<b>d<sub>3h5</sub></b>	<b>l</b>	
3	5	7	10	<b>03 x 10</b>
			20	<b>03 x 20</b>
			30	<b>03 x 30</b>
4	6	8	10	<b>04 x 10</b>
			20	<b>04 x 20</b>
			30	<b>04 x 30</b>
5	7	10	10	<b>05 x 10</b>
			20	<b>05 x 20</b>
			30	<b>05 x 30</b>
6	9	12	20	<b>06 x 20</b>
			30	<b>06 x 30</b>
			40	<b>06 x 40</b>
8	11	15	20	<b>08 x 20</b>
			30	<b>08 x 30</b>
			40	<b>08 x 40</b>
10	13	19	20	<b>10 x 20</b>
			30	<b>10 x 30</b>
			40	<b>10 x 40</b>

# Ball cages ST 7192

## mini-series



### Material:

Brass ball cage, steel balls, hardened, quality classification 1, sorting

### Explanation:

The STEINEL ball cages are absolutely tension-free mounted and are guaranteed to move freely. The careful production and control guarantee an extremely smooth-running axial and radial movement.

**Order example:** Ball cage **ST 7192**

made from brass

$d_1 = 8, l = 30 \text{ mm}$

Addition **08 x 030**

Order number **ST 7192.08 x 30**

Add size to  
order number

Order number **ST 7192.**

<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l</b>	
3	5	10	<b>03 x 10</b>
		20	<b>03 x 20</b>
		30	<b>03 x 30</b>
4	10	10	<b>04 x 10</b>
		20	<b>04 x 20</b>
		30	<b>04 x 30</b>
5	7	10	<b>05 x 10</b>
		20	<b>05 x 20</b>
		30	<b>05 x 30</b>
6	9	20	<b>06 x 20</b>
		30	<b>06 x 30</b>
		40	<b>06 x 40</b>
8	11	20	<b>08 x 20</b>
		30	<b>08 x 30</b>
		40	<b>08 x 40</b>
10	13	20	<b>10 x 20</b>
		30	<b>10 x 30</b>
		40	<b>10 x 40</b>

# Guide pillars ST 7100

smooth, for pressing-in

**STEINEL®**



## DIN 9825, ISO 9182

### Material:

Steel 1.1221 (Ck 60) inductively hardened, hardness 62–64 HRC

Guide diameter ISO h3, super-finished and subfined, installation in mounting bore ISO R6, from plate thickness 50 mm N6

### Use:

Because of their high accuracy, guide pillars ST 7100 are suitable for all STEINEL guide bushes for sliding, ball and roller guides.

Also deliverable with recess for holding ring upon request. When ordering, please specify the following after the order number in the plain text:

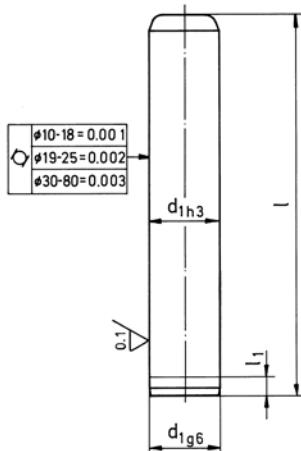
With recess and holding ring ST 7105.

### Order example: Guide pillar ST 7100

$d_1 = 25, l = 180 \text{ mm}$

Addition **25 x 180**

Order number **ST 7100.25 x 180**

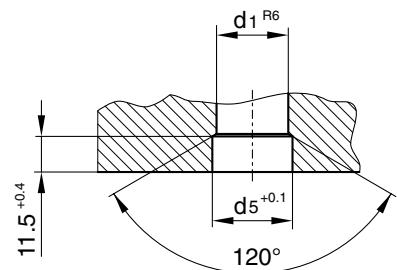


Add size to order number			Add size to order number		
Order number <b>ST 7100.</b> <input type="text"/> x <input type="text"/>			Order number <b>ST 7100.</b> <input type="text"/> x <input type="text"/>		
<b><math>d_{1h3}</math></b>	<b><math>l</math></b>	<b><math>l_1</math></b>	<b><math>d_{1h3}</math></b>	<b><math>l</math></b>	<b><math>l_1</math></b>
10	90	4	<b>10 x 090</b>	19	<b>100</b>
	100		<b>10 x 100</b>		<b>112</b>
	112		<b>10 x 112</b>		<b>125</b>
	125		<b>10 x 125</b>		<b>140</b>
	140		<b>10 x 140</b>		<b>160</b>
12	90	4	<b>12 x 090</b>		<b>180</b>
	100		<b>12 x 100</b>		<b>200</b>
	112		<b>12 x 112</b>		<b>224</b>
	125		<b>12 x 125</b>		<b>250</b>
	140		<b>12 x 140</b>		<b>280</b>
15	90	5	<b>15 x 090</b>	20	<b>100</b>
	100		<b>15 x 100</b>		<b>112</b>
	112		<b>15 x 112</b>		<b>125</b>
	125		<b>15 x 125</b>		<b>140</b>
	140		<b>15 x 140</b>		<b>160</b>
	160		<b>15 x 160</b>		<b>180</b>
	180		<b>15 x 180</b>		<b>200</b>
	200		<b>15 x 200</b>		<b>224</b>
	224		<b>15 x 224</b>		<b>250</b>
	250		<b>15 x 250</b>		<b>280</b>
16		5	<b>16 x 090</b>	24	<b>112</b>
	100		<b>16 x 100</b>		<b>125</b>
	112		<b>16 x 112</b>		<b>140</b>
	125		<b>16 x 125</b>		<b>160</b>
	140		<b>16 x 140</b>		<b>180</b>
	160		<b>16 x 160</b>		<b>200</b>
	180		<b>16 x 180</b>		<b>224</b>
	200		<b>16 x 200</b>		<b>250</b>
	224		<b>16 x 224</b>		<b>280</b>
	250		<b>16 x 250</b>		<b>315</b>
					<b>355</b>
					<b>400</b>
25		6	<b>25 x 112</b>		
	125		<b>25 x 125</b>		
	140		<b>25 x 140</b>		
	160		<b>25 x 160</b>		
	180		<b>25 x 180</b>		
	200		<b>25 x 200</b>		
	224		<b>25 x 224</b>		
	250		<b>25 x 250</b>		
	280		<b>25 x 280</b>		
	315		<b>25 x 315</b>		
	355		<b>25 x 355</b>		
	400		<b>25 x 400</b>		

**Special lengths:**

Special lengths upon request. Inductively hardened version, super-finished to ISO h4. See table for max. producible lengths.

Diameter	10/12	15/16	19/20	24/25	30/32	38/40	48/50	60/63	80
Max. length	200	350	400	500	750	1000	1000	1200	1500

**Version for pillars with holding ring ST 7105**


Rework drawing  
for pillar holding plates

Add size to  
order number

Order number **ST 7100.**  x

**d<sub>1h3</sub>**    I    I<sub>1</sub>

30      125      7      **30 x 125**

140      **30 x 140**

160      **30 x 160**

180      **30 x 180**

200      **30 x 200**

224      **30 x 224**

250      **30 x 250**

280      **30 x 280**

315      **30 x 315**

355      **30 x 355**

400      **30 x 400**

32      125      7      **32 x 125**

140      **32 x 140**

160      **32 x 160**

180      **32 x 180**

200      **32 x 200**

224      **32 x 224**

250      **32 x 250**

280      **32 x 280**

315      **32 x 315**

355      **32 x 355**

400      **32 x 400**

38      160      7      **38 x 160**

180      **38 x 180**

200      **38 x 200**

224      **38 x 224**

250      **38 x 250**

280      **38 x 280**

315      **38 x 315**

355      **38 x 355**

400      **38 x 400**

450      **38 x 450**

40      160      7      **40 x 160**

180      **40 x 180**

200      **40 x 200**

224      **40 x 224**

250      **40 x 250**

280      **40 x 280**

315      **40 x 315**

355      **40 x 355**

400      **40 x 400**

450      **40 x 450**

Add size to  
order number

Order number **ST 7100.**  x

**d<sub>1h3</sub>**    I    I<sub>1</sub>

48      180      7      **48 x 180**

200      **48 x 200**

224      **48 x 224**

250      **48 x 250**

280      **48 x 280**

315      **48 x 315**

355      **48 x 355**

400      **48 x 400**

450      **48 x 450**

500      **48 x 500**

50      180      7      **50 x 180**

200      **50 x 200**

224      **50 x 224**

250      **50 x 250**

280      **50 x 280**

315      **50 x 315**

355      **50 x 355**

400      **50 x 400**

450      **50 x 450**

500      **50 x 500**

60      224      8      **60 x 224**

250      **60 x 250**

280      **60 x 280**

315      **60 x 315**

355      **60 x 355**

400      **60 x 400**

450      **60 x 450**

63      224      8      **63 x 224**

250      **63 x 250**

280      **63 x 280**

315      **63 x 315**

355      **63 x 355**

400      **63 x 400**

450      **63 x 450**

80      280      8      **80 x 280**

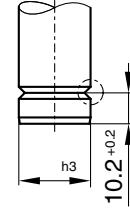
315      **80 x 315**

355      **80 x 355**

400      **80 x 400**

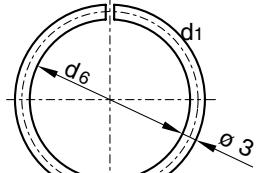
450      **80 x 450**

500      **80 x 500**



Rework drawing  
for guide pillars

Order example: **ST 7105.25**



<b>d<sub>1</sub></b>	<b>d<sub>5</sub></b>	<b>d<sub>6</sub></b>	<b>d<sub>7</sub></b>
10	13	7	13
12	15	9	15
15	18	12	18
16	19	13	19
19	22	16	22
20	23	17	23
24	27	21	27
25	28	22	28
30	33	27	33
32	35	29	35
38	41	35	41
40	43	37	43
48	51	45	51
50	53	47	53
60	63	57	63
63	66	60	66
80	83	77	83

# Guide pillars ST 7106

smooth, for pressing-in, with internal thread

**STEINEL®**



Similar DIN 9825, ISO 9182

**Material:**

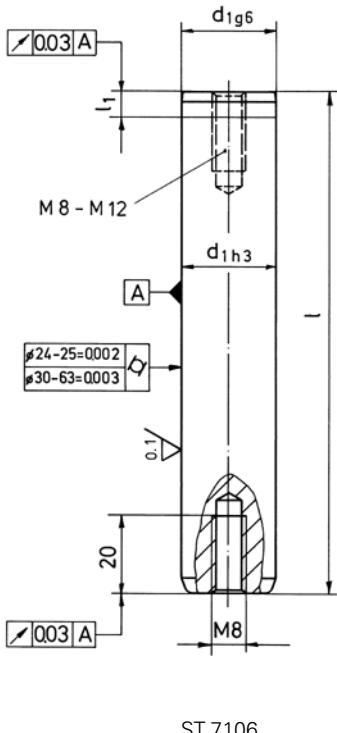
Steel 1.1221 (Ck 60) inductively hardened, hardness 62–64 HRC

Guide diameter ISO h3, super-finished and subfined, installation in mounting bore ISO R6, from plate thickness 50 mm N6

**Use:**

Because of their high accuracy, guide pillars ST 710 are suitable for all STEINEL guide bushes for sliding, ball and roller guides. Particularly in connection with ball cages ST 7134.

Smooth guide pillars with two internal threads



ST 7106

Internal thread both-sided	Add size to order number	Internal thread both-sided	Add size to order number
-------------------------------	-----------------------------	-------------------------------	-----------------------------

Order number <b>ST 7106.</b>	<input type="checkbox"/> x <input type="checkbox"/>	Order number <b>ST 7106.</b>	<input type="checkbox"/> x <input type="checkbox"/>
------------------------------	---	------------------------------	---

<b>d<sub>1h3</sub></b>	<b>I</b>	<b>I<sub>1</sub></b>		<b>d<sub>1h3</sub></b>	<b>I</b>	<b>I<sub>1</sub></b>	
19	100	5	<b>19 x 100</b>	30	125	7	<b>30 x 125</b>
	112		<b>19 x 112</b>		140		<b>30 x 140</b>
	125		<b>19 x 125</b>		160		<b>30 x 160</b>
	140		<b>19 x 140</b>		180		<b>30 x 180</b>
	160		<b>19 x 160</b>		200		<b>30 x 200</b>
	180		<b>19 x 180</b>		224		<b>30 x 224</b>
	200		<b>19 x 200</b>		250		<b>30 x 250</b>
	224		<b>19 x 224</b>		280		<b>30 x 280</b>
	250		<b>19 x 250</b>		315		<b>30 x 315</b>
	280		<b>19 x 280</b>		355		<b>30 x 355</b>
20	100	5	<b>20 x 100</b>		400		<b>30 x 400</b>
	112		<b>20 x 112</b>		32	125	<b>32 x 125</b>
	125		<b>20 x 125</b>			140	<b>32 x 140</b>
	140		<b>20 x 140</b>			160	<b>32 x 160</b>
	160		<b>20 x 160</b>			180	<b>32 x 180</b>
	180		<b>20 x 180</b>			200	<b>32 x 200</b>
	200		<b>20 x 200</b>			224	<b>32 x 224</b>
	224		<b>20 x 224</b>			250	<b>32 x 250</b>
	250		<b>20 x 250</b>			280	<b>32 x 280</b>
	280		<b>20 x 280</b>			315	<b>32 x 315</b>
24	112	6	<b>24 x 112</b>			355	<b>32 x 355</b>
	125		<b>24 x 125</b>			400	<b>32 x 400</b>
	140		<b>24 x 140</b>			38	160
	160		<b>24 x 160</b>				<b>38 x 160</b>
	180		<b>24 x 180</b>				<b>38 x 180</b>
	200		<b>24 x 200</b>				<b>38 x 200</b>
	224		<b>24 x 224</b>				<b>38 x 224</b>
	250		<b>24 x 250</b>				<b>38 x 250</b>
	280		<b>24 x 280</b>				<b>38 x 280</b>
	315		<b>24 x 315</b>				<b>38 x 315</b>
	355		<b>24 x 355</b>				<b>38 x 355</b>
	400		<b>24 x 400</b>				<b>38 x 400</b>
25	112	6	<b>25 x 112</b>			450	<b>38 x 450</b>
	125		<b>25 x 125</b>				<b>40 x 160</b>
	140		<b>25 x 140</b>				<b>40 x 180</b>
	160		<b>25 x 160</b>				<b>40 x 200</b>
	180		<b>25 x 180</b>				<b>40 x 224</b>
	200		<b>25 x 200</b>				<b>40 x 250</b>
	224		<b>25 x 224</b>				<b>40 x 280</b>
	250		<b>25 x 250</b>				<b>40 x 315</b>
	280		<b>25 x 280</b>				<b>40 x 355</b>
	315		<b>25 x 315</b>				<b>40 x 400</b>
	355		<b>25 x 355</b>				<b>40 x 450</b>
	400		<b>25 x 400</b>				

**Note:**

The guide pillar ST 7106 replaces the guide pillars ST 7107 and ST 7108.

**Order example:** Guide pillar **ST 7106**

$d_1 = 25, l = 180 \text{ mm}$

Addition **25 x 180**

Order number **ST 7106.25 x 180**

**Special lengths:**

Special lengths upon request. Inductively hardened version, super-finished to ISO h4. See table for max. producible lengths.

Diameter	19/20	24/25	19/20	30/32	38/40	48/50	60/63	80
Max. length	400	500	400	750	1000	1000	1200	1500

Internal thread,  
both-sided

Add size to  
order number

Order number **ST 7106.**

Order number **ST 7106.**

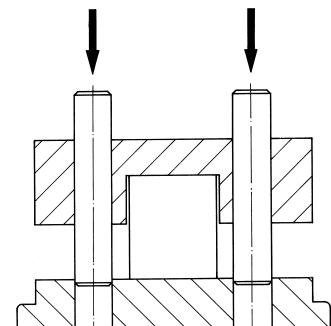
<b>d<sub>1h3</sub></b>	<b>I</b>	<b>I<sub>1</sub></b>	<b>48 x 180</b>
48	180	7	<b>48 x 180</b>
	200		<b>48 x 200</b>
	224		<b>48 x 224</b>
	250		<b>48 x 250</b>
	280		<b>48 x 280</b>
	315		<b>48 x 315</b>
	355		<b>48 x 355</b>
	400		<b>48 x 400</b>
	450		<b>48 x 450</b>
	500		<b>48 x 500</b>
50	180	7	<b>50 x 180</b>
	200		<b>50 x 200</b>
	224		<b>50 x 224</b>
	250		<b>50 x 250</b>
	280		<b>50 x 280</b>
	315		<b>50 x 315</b>
	355		<b>50 x 355</b>
	400		<b>50 x 400</b>
	450		<b>50 x 450</b>
	500		<b>50 x 500</b>

Internal thread,  
both-sided

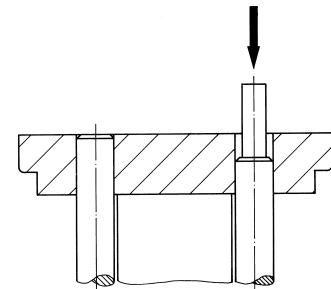
Add size to  
order number

Order number **ST 7106.**

<b>d<sub>1h3</sub></b>	<b>I</b>	<b>I<sub>1</sub></b>	<b>60 x 224</b>
60	224	8	<b>60 x 224</b>
	250		<b>60 x 250</b>
	280		<b>60 x 280</b>
	315		<b>60 x 315</b>
	355		<b>60 x 355</b>
	400		<b>60 x 400</b>
	450		<b>60 x 450</b>
	500		<b>60 x 500</b>
63	224	8	<b>63 x 224</b>
	250		<b>63 x 250</b>
	280		<b>63 x 280</b>
	315		<b>63 x 315</b>
	355		<b>63 x 355</b>
	400		<b>63 x 400</b>
	450		<b>63 x 450</b>
	500		<b>63 x 500</b>
80	280	8	<b>80 x 280</b>
	315		<b>80 x 315</b>
	355		<b>80 x 355</b>
	400		<b>80 x 400</b>
	450		<b>80 x 450</b>
	500		<b>80 x 500</b>

**Installation of guide pillars**

Push the pillars in the upper part, carefully clean the boreholes beforehand and oil them (no grease). Clean the boreholes in the bottom part and oil them. Place plane-parallel ground bars between the upper and bottom part. Drive the pillars approximately 3 mm deep into the bottom part (use rubber mallet). Push in the pillars using a hydraulic press or manual spindle press. (Pillar has fit ISO h3, borehole has fit ISO R6. Therefore, press fit is guaranteed).

**Disassembly of guide pillars**

Never push the pillars out of the bottom part downwards. Push them out upwards, otherwise the high surface quality of the pillar will be destroyed.

**Thread, press-in side:**

Ø 19–32 = M 8

Ø 38–50 = M 10

Ø 60–80 = M 12

# Guide pillars ST 7117

## with middle mount shoulder

**STEINEL®**



### Material:

Steel 1.1221 (Ck 60) inductively hardened, hardness 62–64 HRC

Guide diameter ISO h3,  
super-finished,  
fitting diameter ISO js4,  
installation in mounting bore ISO H6

### Use:

Guide pillars with middle mount shoulders are suitable for all STEINEL guide bushes for sliding and ball guides.

Guide pillars with middle mount shoulders help to improve the lateral load capacity for tools with guide plates.

### Order example:

Guide pillar **ST 7117**

with middle mount shoulder

$d_1 = 25$ ,  $l_1 = 110$  mm,  $l_2 = 90$  mm

Addition **25 x 110 x 090**

Order number **ST 7117.25 x 110 x 090**

Add size to  
order number

Order number **ST 7117.**

x  x

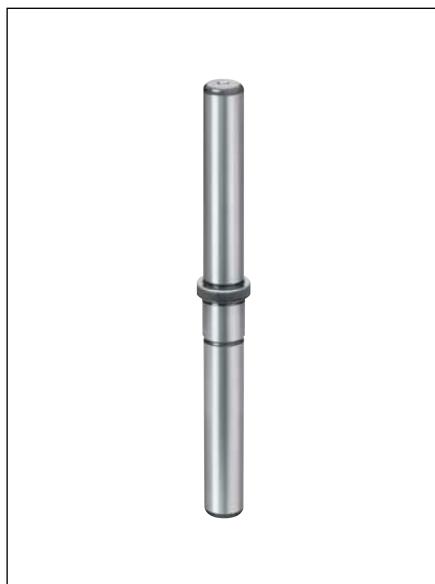
$d_{1h3}$	$d_{3js4}$	$d_5$	$d_8$	$d_9$	$d_{10}$	$l$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_7$	$t$	
12	13	28	20	3.4	6	90	50	40	12	6	38	4	3.4	<b>12 x 050 x 040</b>
						100	60	40			48			<b>12 x 060 x 040</b>
						110	60	50			48			<b>12 x 060 x 050</b>
						120	70	50			58			<b>12 x 070 x 050</b>
						130	70	60			58			<b>12 x 070 x 060</b>
						140	70	70			58			<b>12 x 070 x 070</b>
						200	100	100			88			<b>12 x 100 x 100</b>
16	18	38	28	4.5	8	140	80	60	16	8	64	5	4.6	<b>16 x 080 x 060</b>
						150	90	60			74			<b>16 x 090 x 060</b>
						160	90	70			74			<b>16 x 090 x 070</b>
						170	100	70			84			<b>16 x 100 x 070</b>
						180	100	80			84			<b>16 x 100 x 080</b>
						190	100	90			84			<b>16 x 100 x 090</b>
						270	140	130			124			<b>16 x 140 x 130</b>
19	22	42	32	4.5	8	160	90	70	20	8	70	5	4.6	<b>19 x 090 x 070</b>
						170	100	70			80			<b>19 x 100 x 070</b>
						180	100	80			80			<b>19 x 100 x 080</b>
						190	110	80			90			<b>19 x 110 x 080</b>
						200	110	90			90			<b>19 x 110 x 090</b>
						210	110	100			90			<b>19 x 110 x 100</b>
						310	160	150			140			<b>19 x 160 x 150</b>
25	26	48	38	4.5	8	180	100	80	22	8	78	6	4.6	<b>25 x 100 x 080</b>
						190	110	80			88			<b>25 x 110 x 080</b>
						200	110	90			88			<b>25 x 110 x 090</b>
						210	120	90			98			<b>25 x 120 x 090</b>
						220	120	100			98			<b>25 x 120 x 100</b>
						230	120	110			98			<b>25 x 120 x 110</b>
						330	170	160			148			<b>25 x 170 x 160</b>
32	34	60	48	5.5	10	180	100	80	25	10	75	7	5.7	<b>32 x 100 x 080</b>
						190	110	80			85			<b>32 x 110 x 080</b>
						200	110	90			85			<b>32 x 110 x 090</b>
						210	120	90			95			<b>32 x 120 x 090</b>
						220	120	100			95			<b>32 x 120 x 100</b>
						230	130	100			105			<b>32 x 130 x 100</b>
						240	130	110			105			<b>32 x 130 x 110</b>
						250	140	110			115			<b>32 x 140 x 110</b>
						350	190	160			165			<b>32 x 190 x 160</b>
40	42	70	56	6.6	11	200	110	90	27	12	83	7	6.8	<b>40 x 110 x 090</b>
						210	120	90			93			<b>40 x 120 x 090</b>
						220	120	100			93			<b>40 x 120 x 100</b>
						230	130	100			103			<b>40 x 130 x 100</b>
						240	130	110			103			<b>40 x 130 x 110</b>
						250	140	110			113			<b>40 x 140 x 110</b>
						260	140	120			113			<b>40 x 140 x 120</b>
						380	200	180			173			<b>40 x 200 x 180</b>
50	52	80	66	6.6	11	260	150	110	37	15	113	7	6.8	<b>50 x 150 x 110</b>
						280	160	120			123			<b>50 x 160 x 120</b>
						300	170	130			133			<b>50 x 170 x 130</b>
						320	180	140			143			<b>50 x 180 x 140</b>
						360	200	160			163			<b>50 x 200 x 160</b>
						400	220	180			183			<b>50 x 220 x 180</b>
						520	280	240			243			<b>50 x 280 x 240</b>

Intermediate dimensions deliverable at short notice

# Guide pillars ST 7118

## with small middle mount shoulder

**STEINEL®**



### Material:

Steel 1.1221 (Ck 60) inductively hardened, hardness 62–64 HRC

Guide diameter ISO h3,  
super-finished,  
fitting diameter ISO js4,  
installation in mounting bore ISO H6

Guide pillars with shoulders are secured  
with 3 holding clamps ST 7367 (included in  
the scope of delivery).

### Use:

Guide pillars with middle mount shoulders are  
suitable for all STEINEL guide bushes for sliding  
and ball guides.

Guide pillars with middle mount shoulders  
help to improve the lateral load capacity for  
tools with guide plates.

### Order example: Guide pillar ST 7118

with middle mount shoulder

$d_1 = 25$ ,  $l_1 = 110$  mm,  $l_2 = 90$  mm

Addition **25 x 110 x 090**

Order number **ST 7118.25 x 110 x 090**

Add size to  
order number

Order number **ST 7118.**

x  x

$d_{1h3}$	$d_{3js4}$	$d_5$	$d_8$	$l$	$l_1$	$l_2$	$l_3$	$l_5$	$l_7$	
12	13	18	35	90	50	40	12	38	4	<b>12 x 050 x 040</b>
				100	60	40		48		<b>12 x 060 x 040</b>
				110	60	50		48		<b>12 x 060 x 050</b>
				120	70	50		58		<b>12 x 070 x 050</b>
				130	70	60		58		<b>12 x 070 x 060</b>
				140	70	70		58		<b>12 x 070 x 070</b>
				200	100	100		88		<b>12 x 100 x 100</b>
16	17	22	39	140	80	60	16	64	5	<b>16 x 080 x 060</b>
				150	90	60		74		<b>16 x 090 x 060</b>
				160	90	70		74		<b>16 x 090 x 070</b>
				170	100	70		84		<b>16 x 100 x 070</b>
				180	100	80		84		<b>16 x 100 x 080</b>
				190	100	90		84		<b>16 x 100 x 090</b>
				270	140	130		124		<b>16 x 140 x 130</b>
19	20	25	42	160	90	70	20	70	5	<b>19 x 090 x 070</b>
				170	100	70		80		<b>19 x 100 x 070</b>
				180	100	80		80		<b>19 x 100 x 080</b>
				190	110	80		90		<b>19 x 110 x 080</b>
				200	110	90		90		<b>19 x 110 x 090</b>
				210	110	100		90		<b>19 x 110 x 100</b>
				310	160	150		140		<b>19 x 160 x 150</b>
25	26	32	49	180	100	80	22	78	6	<b>25 x 100 x 080</b>
				190	110	80		88		<b>25 x 110 x 080</b>
				200	110	90		88		<b>25 x 110 x 090</b>
				210	120	90		98		<b>25 x 120 x 090</b>
				220	120	100		98		<b>25 x 120 x 100</b>
				230	120	110		98		<b>25 x 120 x 110</b>
				330	170	160		148		<b>25 x 170 x 160</b>
32	33	40	57	180	100	80	25	75	7	<b>32 x 100 x 080</b>
				190	110	80		85		<b>32 x 110 x 080</b>
				200	110	90		85		<b>32 x 110 x 090</b>
				210	120	90		95		<b>32 x 120 x 090</b>
				220	120	100		95		<b>32 x 120 x 100</b>
				230	130	100		105		<b>32 x 130 x 100</b>
				240	130	110		105		<b>32 x 130 x 110</b>
				250	140	110		115		<b>32 x 140 x 110</b>
				350	190	160		165		<b>32 x 190 x 160</b>
40	41	50	67	200	110	90	27	83	7	<b>40 x 110 x 090</b>
				210	120	90		93		<b>40 x 120 x 090</b>
				220	120	100		93		<b>40 x 120 x 100</b>
				230	130	100		103		<b>40 x 130 x 100</b>
				240	130	110		103		<b>40 x 130 x 110</b>
				250	140	110		113		<b>40 x 140 x 110</b>
				260	140	120		113		<b>40 x 140 x 120</b>
				380	200	180		173		<b>40 x 200 x 180</b>
50	51	63	80	260	150	110	37	113	7	<b>50 x 150 x 110</b>
				280	160	120		123		<b>50 x 160 x 120</b>
				300	170	130		133		<b>50 x 170 x 130</b>
				320	180	140		143		<b>50 x 180 x 140</b>
				360	200	160		163		<b>50 x 200 x 160</b>
				400	220	180		183		<b>50 x 220 x 180</b>
				520	280	240		243		<b>50 x 280 x 240</b>

Intermediate dimensions deliverable at  
short notice

# Guide pillars ST 7120, ST 7126 with shoulder

**STEINEL®**



ST 7120



ST 7126

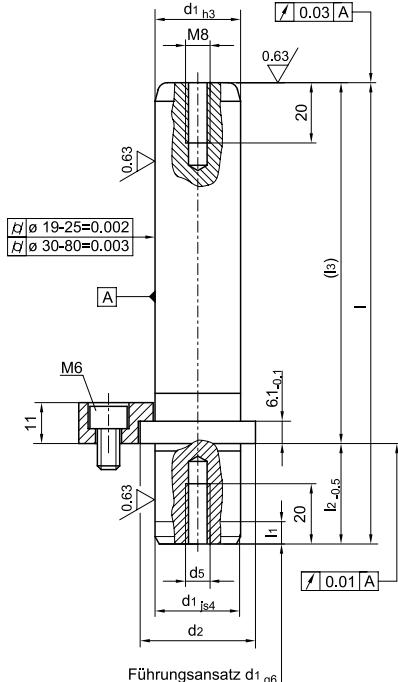
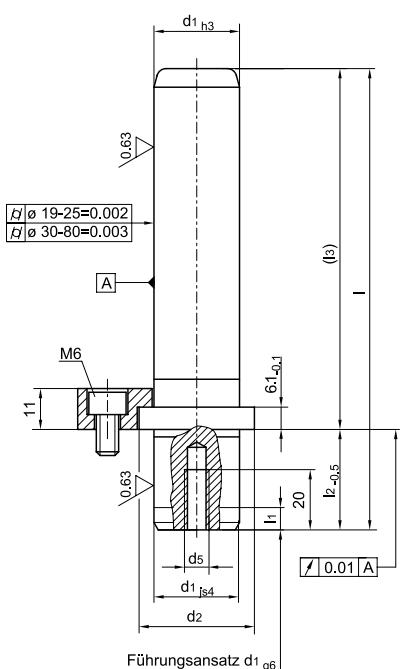


Fig. 1

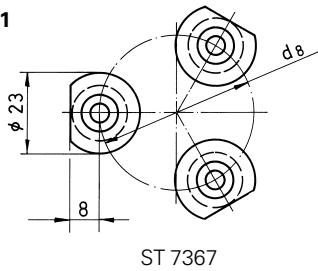
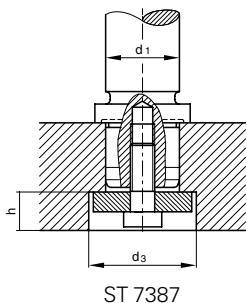


Fig. 2



For dimensions, see page 3.82

Use example for guide pillars  
with threads on the guide side ST 7126.  
For pillar sizes 24 mm to 63 mm.

DIN 9825, ISO 9182

Produced from solid material

#### Material:

Steel 1.1221 (Ck 60) inductively hardened,  
hardness 62–64 HRC

Guide diameter ISO h3,  
super-finished,  
fitting diameter ISO js4,  
installation in mounting bore ISO H6

Guide pillars with shoulders allow a quick and  
easy installation (and removal) of the pillars,  
e.g. when sharpening of cutting tools on the  
surface grinding machine is desired.

Guide pillars with shoulders are secured with  
3 holding clamps ST 7367 (included in the  
scope of delivery). (Fig. 1)

Alternatively, the guide pillar can be fixed with  
the holding disc ST 7387. (Fig. 2)  
(Please order holding disc separately)

#### Use:

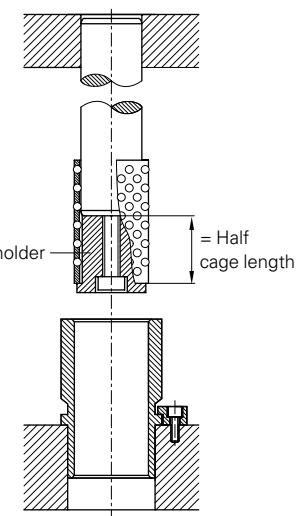
Guide pillars with shoulders are suitable for  
all STEINEL guide bushes for sliding, ball and  
roller guides.

#### Order example: Guide pillar ST 7120

with shoulder  
 $d_1 = 19$ ,  $l_3 = 140$  mm,  $l = 163$  mm  
Addition **19 x 140 x 163**  
Order number **ST 7120.19 x 140 x 163**

#### Order example: Guide pillar ST 7126

with shoulder and 2 internal threads  
 $d_1 = 24$ ,  $l_3 = 200$  mm,  $l = 227$  mm  
Addition **24 x 200 x 227**  
Order number **ST 7126.24 x 200 x 227**



Use example for all guide pillars

Add size to  
order number**ST 7120.****ST 7126.****d<sub>1h3</sub>\*) d<sub>2</sub> d<sub>5</sub> d<sub>8</sub> I I<sub>1</sub> I<sub>2-0.5</sub> I<sub>3-1</sub>**

15	21	M8	38	110	5	20	90	<b>15 x 090 x 110</b>
				120			100	<b>15 x 100 x 120</b>
				132			112	<b>15 x 112 x 132</b>
				145			125	<b>15 x 125 x 145</b>
				160			140	<b>15 x 140 x 160</b>
				180			160	<b>15 x 160 x 180</b>
				200			180	<b>15 x 180 x 200</b>
				220			200	<b>15 x 200 x 220</b>
16	21	M8	38	110	5	20	90	<b>16 x 090 x 110</b>
				120			100	<b>16 x 100 x 120</b>
				132			112	<b>16 x 112 x 132</b>
				145			125	<b>16 x 125 x 145</b>
				160			140	<b>16 x 140 x 160</b>
				180			160	<b>16 x 160 x 180</b>
				200			180	<b>16 x 180 x 200</b>
				220			200	<b>16 x 200 x 220</b>
19	25	M8	42	123	5	23	100	<b>19 x 100 x 123</b>
				135			112	<b>19 x 112 x 135</b>
				148			125	<b>19 x 125 x 148</b>
				163			140	<b>19 x 140 x 163</b>
				183			160	<b>19 x 160 x 183</b>
				203			180	<b>19 x 180 x 203</b>
				223			200	<b>19 x 200 x 223</b>
				247			224	<b>19 x 224 x 247</b>
				273			250	<b>19 x 250 x 273</b>
20	25	M8	42	123	5	23	100	<b>20 x 100 x 123</b>
				135			112	<b>20 x 112 x 135</b>
				148			125	<b>20 x 125 x 148</b>
				163			140	<b>20 x 140 x 163</b>
				183			160	<b>20 x 160 x 183</b>
				203			180	<b>20 x 180 x 203</b>
				223			200	<b>20 x 200 x 223</b>
				247			224	<b>20 x 224 x 247</b>
				273			250	<b>20 x 250 x 273</b>
24	32	M8	49	127	6	27	100	<b>24 x 100 x 127</b>
				139			112	<b>24 x 112 x 139</b>
				152			125	<b>24 x 125 x 152</b>
				167			140	<b>24 x 140 x 167</b>
				187			160	<b>24 x 160 x 187</b>
				207			180	<b>24 x 180 x 207</b>
				227			200	<b>24 x 200 x 227</b>
				251			224	<b>24 x 224 x 251</b>
				277			250	<b>24 x 250 x 277</b>
				307			280	<b>24 x 280 x 307</b>
				342			315	<b>24 x 315 x 342</b>
25	32	M8	49	127	6	27	100	<b>25 x 100 x 127</b>
				139			112	<b>25 x 112 x 139</b>
				152			125	<b>25 x 125 x 152</b>
				167			140	<b>25 x 140 x 167</b>
				187			160	<b>25 x 160 x 187</b>
				207			180	<b>25 x 180 x 207</b>
				227			200	<b>25 x 200 x 227</b>
				251			224	<b>25 x 224 x 251</b>
				277			250	<b>25 x 250 x 277</b>
				307			280	<b>25 x 280 x 307</b>
				342			315	<b>25 x 315 x 342</b>
30	40	M8	57	149	7	37	112	<b>30 x 112 x 149</b>
				162			125	<b>30 x 125 x 162</b>
				177			140	<b>30 x 140 x 177</b>
				197			160	<b>30 x 160 x 197</b>
				217			180	<b>30 x 180 x 217</b>
				237			200	<b>30 x 200 x 237</b>
				261			224	<b>30 x 224 x 261</b>
				287			250	<b>30 x 250 x 287</b>
				317			280	<b>30 x 280 x 317</b>
				352			315	<b>30 x 315 x 352</b>
				392			355	<b>30 x 355 x 392</b>
32	40	M8	57	149	7	37	112	<b>32 x 112 x 149</b>
				162			125	<b>32 x 125 x 162</b>
				177			140	<b>32 x 140 x 177</b>
				197			160	<b>32 x 160 x 197</b>
				217			180	<b>32 x 180 x 217</b>
				237			200	<b>32 x 200 x 237</b>
				261			224	<b>32 x 224 x 261</b>
				287			250	<b>32 x 250 x 287</b>
				317			280	<b>32 x 280 x 317</b>
				352			315	<b>32 x 315 x 352</b>
				392			355	<b>32 x 355 x 392</b>

Add size to  
order number**ST 7120.****ST 7126.****d<sub>1h3</sub>\*) d<sub>2</sub> d<sub>5</sub> d<sub>8</sub> I I<sub>1</sub> I<sub>2-0.5</sub> I<sub>3-1</sub>**

38	50	M10	67	162	7	37	125	<b>38 x 125 x 162</b>
				177			140	<b>38 x 140 x 177</b>
				197			160	<b>38 x 160 x 197</b>
				217			180	<b>38 x 180 x 217</b>
				237			200	<b>38 x 200 x 237</b>
				261			224	<b>38 x 224 x 261</b>
				287			250	<b>38 x 250 x 287</b>
				317			280	<b>38 x 280 x 317</b>
				352			315	<b>38 x 315 x 352</b>
				392			355	<b>38 x 355 x 392</b>
				437			400	<b>38 x 400 x 437</b>
40	50	M10	67	162	7	37	125	<b>40 x 125 x 162</b>
				177			140	<b>40 x 140 x 177</b>
				197			160	<b>40 x 160 x 197</b>
				217			180	<b>40 x 180 x 217</b>
				237			200	<b>40 x 200 x 237</b>
				261			224	<b>40 x 224 x 261</b>
				287			250	<b>40 x 250 x 287</b>
				317			280	<b>40 x 280 x 317</b>
				352			315	<b>40 x 315 x 352</b>
				392			355	<b>40 x 355 x 392</b>
				437			400	<b>40 x 400 x 437</b>
48	63	M10	80	187	7	47	140	<b>48 x 140 x 187</b>
				207			160	<b>48 x 160 x 207</b>
				227			180	<b>48 x 180 x 227</b>
				247			200	<b>48 x 200 x 247</b>
				271			224	<b>48 x 224 x 271</b>
				297			250	<b>48 x 250 x 297</b>
				327			280	<b>48 x 280 x 327</b>
				362			315	<b>48 x 315 x 362</b>
				402			355	<b>48 x 355 x 402</b>
				447			400	<b>48 x 400 x 447</b>
				497			450	<b>48 x 450 x 497</b>
50	63	M10	80	187	7	47	140	<b>50 x 140 x 187</b>
				207			160	<b>50 x 160 x 207</b>
				227			180	<b>50 x 180 x 227</b>
				247			200	<b>50 x 200 x 247</b>
				271			224	<b>50 x 224 x 271</b>
				297			250	<b>50 x 250 x 297</b>
				327			280	<b>50 x 280 x 327</b>
				362			315	<b>50 x 315 x 362</b>
				402			355	<b>50 x 355 x 402</b>
				447			400	<b>50 x 400 x 447</b>
				497			450	<b>50 x 450 x 497</b>
63	80	M12	97	247	8	47	200	<b>63 x 200 x 247</b>
				271			224	<b>63 x 224 x 271</b>
				297			250	<b>63 x 250 x 297</b>
				327			280	<b>63 x 280 x 327</b>
				362			315	<b>63 x 315 x 362</b>
				402			355	<b>63 x 355 x 402</b>
				447			400	<b>63 x 400 x 447</b>
				497			450	<b>63 x 450 x 497</b>
80	95	M12	112	310	8	60	250	<b>80 x 250 x 310</b>
				340			280	<b>80 x 280 x 340</b>
				375			315	<b>80 x 315 x 375</b>
				415			355	<b>80 x 355 x 415</b>
				460			400	<b>80 x 400 x 460</b>
				510			450	<b>80 x 450 x 510</b>
				560			500	<b>80 x 500 x 560</b>

\*) Guide diameter d<sub>1h3</sub>  
Mounting diameter d<sub>1js4</sub>

# Quick-change pillars ST 7181

## with disc and screw

**STEINEL®**



### DIN 9825, ISO 9182

#### Material:

Steel 1.1221 (Ck 60) inductively hardened, hardness 62–64 HRC

Guide diameter ISO h3 super-finished, mounting taper ground  
Disc SZ 7368 and socket-head screw with hexagon socket SZ 8512 are included in the scope of delivery.

#### Use:

Quick-change guide pillars with taper shanks allow a quick installation (and removal) of the pillars. The work of the toolmaker is made significantly easier in all cases where the pillars must frequently be removed (because they are in the way), such as, for example, the sharpening of cutting tools on the surface grinding machine.

The hardened and true-to-gauge ground mounting tapers guarantee that the pillar will always be fixed in the same position. Dispatch and angle errors do not occur.

In connection with the disc and screw, the thin taper ensures absolute chucking of the pillar.

Quick-change guide pillars are suitable for all STEINEL guide bushes for sliding, ball and roller guides. All STEINEL die sets can be equipped with quick-change guide pillars and holding bushes upon request.

#### Suitable holding bushes: ST 7182

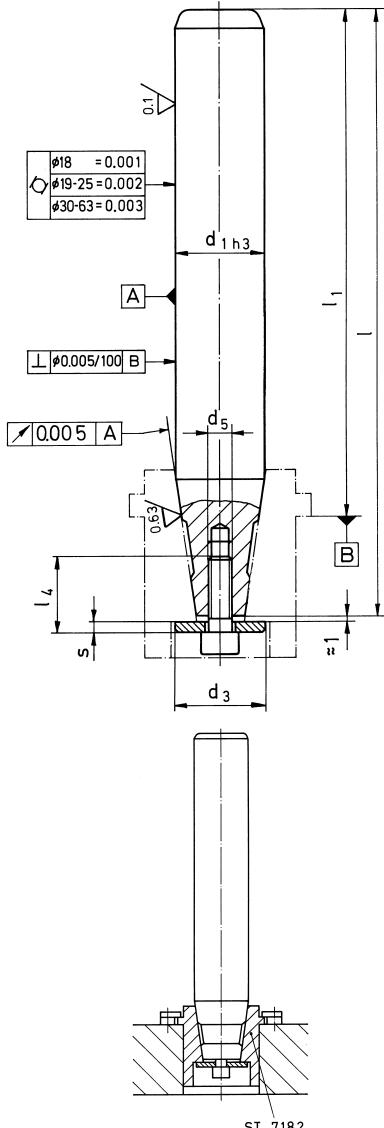
#### Order example:

Quick-change guide pillar **ST 7181**

$d_1 = 30$ ,  $l_1 = 200$  mm,  $l = 226$  mm

Addition **30 x 200 x 226**

Order number **ST 7181.30 x 200 x 226**



Installation example

Add size to order number

Order number **ST 7181.**  x  x

$d_{1h3}$	$d_3$	$d_5$	$s$	$l$	$l_1$	$l_4$
19	18	M5	4	130.4	112	16
				143.4	125	<b>19 x 125 x 143</b>
				158.4	140	<b>19 x 140 x 158</b>
				178.4	160	<b>19 x 160 x 178</b>
				198.4	180	<b>19 x 180 x 198</b>
20	18	M5	4	130.4	112	16
				143.4	125	<b>20 x 112 x 130</b>
				158.4	140	<b>20 x 125 x 143</b>
				178.4	160	<b>20 x 140 x 158</b>
				198.4	180	<b>20 x 160 x 178</b>
24	24	M6	5	151.4	125	20
				166.4	140	<b>24 x 125 x 151</b>
				186.4	160	<b>24 x 140 x 166</b>
				206.4	180	<b>24 x 160 x 186</b>
				226.4	200	<b>24 x 200 x 226</b>
				250.4	224	<b>24 x 224 x 250</b>
				276.4	250	<b>24 x 250 x 276</b>
25	24	M6	5	151.4	125	20
				166.4	140	<b>25 x 125 x 151</b>
				186.4	160	<b>25 x 140 x 166</b>
				206.4	180	<b>25 x 160 x 186</b>
				226.4	200	<b>25 x 200 x 226</b>
				250.4	224	<b>25 x 224 x 250</b>
				276.4	250	<b>25 x 250 x 276</b>
30	30	M6	5	151.4	125	20
				166.4	140	<b>30 x 125 x 151</b>
				186.4	160	<b>30 x 140 x 166</b>
				206.4	180	<b>30 x 160 x 186</b>
				226.4	200	<b>30 x 200 x 226</b>
				250.4	224	<b>30 x 224 x 250</b>
				276.4	250	<b>30 x 250 x 276</b>
				306.4	280	<b>30 x 280 x 306</b>
32	30	M6	5	151.4	125	20
				166.4	140	<b>32 x 125 x 151</b>
				186.4	160	<b>32 x 140 x 166</b>
				206.4	180	<b>32 x 160 x 186</b>
				226.4	200	<b>32 x 200 x 226</b>
				250.4	224	<b>32 x 224 x 250</b>
				276.4	250	<b>32 x 250 x 276</b>
				306.4	280	<b>32 x 280 x 306</b>

Add size to order number

Order number **ST 7181.**  x  x

$d_{1h3}$	$d_3$	$d_5$	$s$	$l$	$l_1$	$l_4$
38	40	M8	6	174.4	140	25
				194.4	160	<b>38 x 140 x 174</b>
				214.4	180	<b>38 x 160 x 194</b>
				234.4	200	<b>38 x 180 x 214</b>
				258.4	224	<b>38 x 200 x 234</b>
				284.4	250	<b>38 x 224 x 258</b>
				314.4	280	<b>38 x 250 x 284</b>
40	40	M8	6	174.4	140	25
				194.4	160	<b>40 x 140 x 174</b>
				214.4	180	<b>40 x 160 x 194</b>
				234.4	200	<b>40 x 180 x 214</b>
				258.4	224	<b>40 x 200 x 234</b>
				284.4	250	<b>40 x 224 x 258</b>
				314.4	280	<b>40 x 250 x 284</b>
48	50	M10	6	192.3	160	30
				212.3	180	<b>48 x 160 x 192</b>
				232.3	200	<b>48 x 180 x 212</b>
				256.3	224	<b>48 x 200 x 232</b>
				282.3	250	<b>48 x 224 x 256</b>
				312.3	280	<b>48 x 250 x 282</b>
				347.3	315	<b>48 x 280 x 312</b>
50	50	M10	6	192.3	160	30
				212.3	180	<b>50 x 160 x 192</b>
				232.3	200	<b>50 x 180 x 212</b>
				256.3	224	<b>50 x 200 x 232</b>
				282.3	250	<b>50 x 224 x 256</b>
				312.3	280	<b>50 x 250 x 282</b>
				347.3	315	<b>50 x 280 x 312</b>
60	56	M12	6	229.8	180	30
				249.8	200	<b>60 x 180 x 230</b>
				273.8	224	<b>60 x 200 x 250</b>
				299.8	250	<b>60 x 224 x 274</b>
				329.8	280	<b>60 x 250 x 300</b>
				364.8	315	<b>60 x 280 x 330</b>
				404.8	355	<b>60 x 315 x 365</b>
63	56	M12	6	229.8	180	30
				249.8	200	<b>63 x 180 x 230</b>
				273.8	224	<b>63 x 200 x 250</b>
				299.8	250	<b>63 x 224 x 274</b>
				329.8	280	<b>63 x 250 x 300</b>
				364.8	315	<b>63 x 280 x 330</b>
				404.8	355	<b>63 x 315 x 365</b>

# **Pillar holding bushes ST 7182**

## **with holding clamps**

**STEINEL®**



DIN 9825, ISO 9182

## **Material:**

Steel 1.7131 (16 Mn Cr 5) case-hardened,  
hardness 58–60 HRC,  
inside cone ground,  
mounting diameter ISO j6, ground,  
suitable for quick-change guide pillars ST 7181

#### **Installation instructions:**

Installation in mounting bore ISO H6,  
secure with 3 holding clamps ST 7367  
(included in the scope of delivery).

Mounting diameter  $d_3$ , corresponds with the diameter of the guide bush with flange ST 742, and with shoulder ST 741.

Advantage: The same mounting bores in all plates.

### **Holding clamps:**

When re-ordering holding clamps,  
please specify: 1 set = 3 units,  
Order number **ST 7367**

**Order example:** Pillar holding bush **ST 7182**

$$d_1 = 24 \text{ or } 25, l_3 = 37 \text{ mm}$$

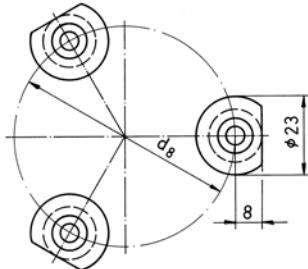
### Addition **25 x 37**

Order number **ST 7182.25 x 37**

Add size to  
order number

The technical drawing shows a cross-section of a mechanical part labeled 'A'. Key dimensions include:  
- Total height:  $l_1$   
- Top horizontal distance from base:  $l_3$   
- Vertical distance from base to a feature:  $61_{+0.1}$   
- Tolerance for the vertical distance:  $[0.005]A$   
- Top horizontal distance from base:  $d_1$   
- Distance between two parallel top surfaces:  $d_5$   
- Distance between two parallel top surfaces:  $d_3 - 0.2$   
- Bottom horizontal distance from base:  $d_6$   
- Bottom horizontal distance from base:  $d_3 \text{ j } 6$   
- Surface finish:  $Rz6.3$  for the top surface and  $Rz6.3$  for the bottom surface.  
- A callout 'M 6' indicates a thread size of M6.

Order number <b>ST 7182</b>								<input type="checkbox"/> x <input type="checkbox"/>
<b>d<sub>1h3</sub></b>	<b>d<sub>3j6</sub></b>	<b>d<sub>5 -0.2</sub></b>	<b>d<sub>6 +0.2</sub></b>	<b>d<sub>8</sub></b>	<b>I<sub>1 -0.2</sub></b>	<b>I<sub>3 -0.2ww</sub></b>	<b>t<sub>+0.1</sub></b>	
19 and 20	32	40	20	59	39	27	7.5	<b>20 x 27</b>
					49	37	17.5	<b>20 x 37</b>
24 and 25	40	48	26	65	49	37	9	<b>25 x 37</b>
					59	47	19	<b>25 x 47</b>
30 and 32	48	56	32	73	52	37	9	<b>32 x 37</b>
					62	47	19	<b>32 x 47</b>
38 and 40	58	66	42	83	62	47	11	<b>40 x 47</b>
					72	57	21	<b>40 x 57</b>
48 and 50	70	80	52	97	65	47	13	<b>50 x 47</b>
					75	57	23	<b>50 x 57</b>
60 and 63	85	95	58	112	85	67	15	<b>63 x 67</b>
					95	77	25	<b>63 x 77</b>



# **Guide pillars ST 7111, ST 7112**

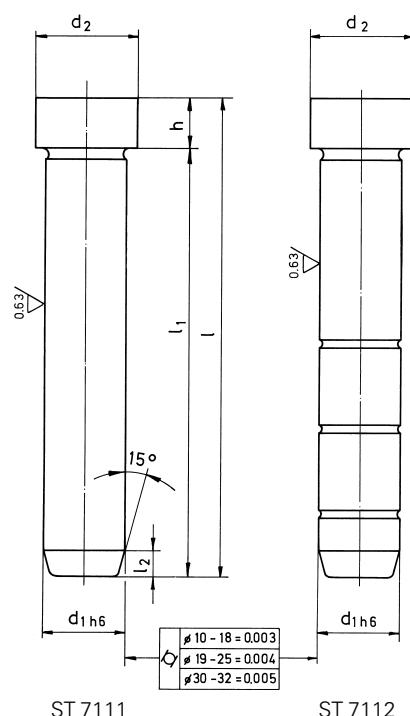
## **with head, with or without oil grooves**

**STEINEL®**

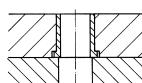
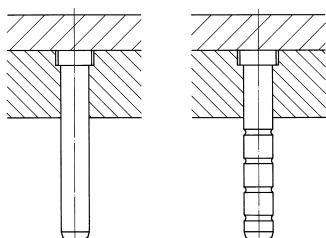
### **with head, with or without oil grooves**



ST 7111, ST 7112



ST 7111



## **Similar ISO 9182**

## **Material:**

Steel 1.1221 (Ck 60) inductively hardened,  
hardness 62–64 HRC

Guide diameter ISO h6,  
super-finished,  
installation in mounting bore ISO N7 (press fit)  
or ISO H7, when guide pillar is secured against  
slipping out

#### **Suitable guide bushes:**

ST 7366, ST 7360

**Order example:** Guide pillar **ST 7112**

with head and oil grooves

$$d_1 = 15, l_1 = 100 \text{ mm}$$

## Addition **15 x 100**

Order number **ST 7112.15 x 100**

Add size to order number							Add size to order number						
Without oil grooves Order number <b>ST 7111.</b> <input type="text"/> x <input type="text"/>							Without oil grooves Order number <b>ST 7111.</b> <input type="text"/> x <input type="text"/>						
With oil grooves Order number <b>ST 7112.</b> <input type="text"/> x <input type="text"/>							With oil grooves Order number <b>ST 7112.</b> <input type="text"/> x <input type="text"/>						
<b>d<sub>1h6</sub></b>	<b>d<sub>2-0.5</sub></b>	<b>l<sub>-1</sub></b>	<b>l<sub>1</sub></b>	<b>l<sub>2</sub></b>	<b>h<sub>-0.3</sub></b>		<b>d<sub>1h6</sub></b>	<b>d<sub>2-0.5</sub></b>	<b>l<sub>-1</sub></b>	<b>l<sub>1</sub></b>	<b>l<sub>2</sub></b>	<b>h<sub>-0.3</sub></b>	
10	14	66	60	5	6	<b>10 x 060</b>	20	24	88	80	8	8	<b>20 x 080</b>
		86	80			<b>10 x 080</b>			108	100			<b>20 x 100</b>
		106	100			<b>10 x 100</b>			133	125			<b>20 x 125</b>
		131	125			<b>10 x 125</b>			168	160			<b>20 x 160</b>
12	16	66	60	5	6	<b>12 x 060</b>			188	180			<b>20 x 180</b>
		86	80			<b>12 x 080</b>			228	220			<b>20 x 220</b>
		106	100			<b>12 x 100</b>	24	30	115	100	8	15	<b>24 x 100</b>
		131	125			<b>12 x 125</b>			140	125			<b>24 x 125</b>
		166	160			<b>12 x 160</b>			175	160			<b>24 x 160</b>
15	20	88	80	7	8	<b>15 x 080</b>			215	200			<b>24 x 200</b>
		108	100			<b>15 x 100</b>			255	240			<b>24 x 240</b>
		133	125			<b>15 x 125</b>	25	30	115	100	8	15	<b>25 x 100</b>
		168	160			<b>15 x 160</b>			140	125			<b>25 x 125</b>
		208	200			<b>15 x 200</b>			175	160			<b>25 x 160</b>
16	20	88	80	8	8	<b>16 x 080</b>			215	200			<b>25 x 200</b>
		108	100			<b>16 x 100</b>			255	240			<b>25 x 240</b>
		133	125			<b>16 x 125</b>	30	36	155	140	9	15	<b>30 x 140</b>
		168	160			<b>16 x 160</b>			195	180			<b>30 x 180</b>
		208	200			<b>16 x 200</b>			235	220			<b>30 x 220</b>
19	24	88	80	8	8	<b>19 x 080</b>			275	260			<b>30 x 260</b>
		108	100			<b>19 x 100</b>	32	36	155	140	9	15	<b>32 x 140</b>
		133	125			<b>19 x 125</b>			195	180			<b>32 x 180</b>
		168	160			<b>19 x 160</b>			235	220			<b>32 x 220</b>
		188	180			<b>19 x 180</b>			275	260			<b>32 x 260</b>
		228	220			<b>19 x 220</b>							

## Installation example

# Guide bushes ST 7366, ST 7360 with shoulder

**STEINEL®**



ST 7366



ST 7360

Similar DIN 16716, ISO 8018

## Sliding guide steel ST 7366

### Material:

Steel 1.7131 (16MnCr 5) case-hardened, hardness 60–62 HRC

Guide diameter ISO H7, ground, mounting diameter ISO k6, ground, installation in mounting bore ISO H7

## Sliding guide solid bronze ST 7360

### Material:

CuSn8

**Order example:** Guide bush **ST 7366**

with shoulder, sliding guide steel

$d_2 = 16$ ,  $d_1 = 10$ ,  $l = 12$  mm

Addition **16.10 x 012**

Order number **ST 7366.16.10 x 012**

**Suitable guide pillars:** ST 7111, ST 7112

**Order example:** Guide bush **ST 7360**

with shoulder, sliding guide solid bronze

$d_2 = 16$ ,  $d_1 = 10$ ,  $l = 12$  mm

Addition **16.10 x 012**

Order number **ST 7360.16.10 x 012**

Sliding guide  
steel

Add size to  
order number

Sliding guide  
steel

Add size to  
order number

Order number **ST 7366.**   x

Order number **ST 7366.**   x

Sliding guide  
solid bronze

Add size to  
order number

Sliding guide  
solid bronze

Add size to  
order number

Order number **ST 7360.**   x

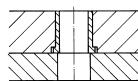
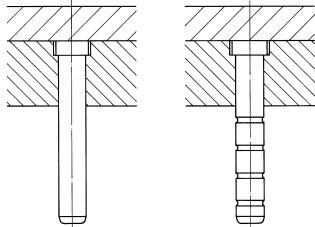
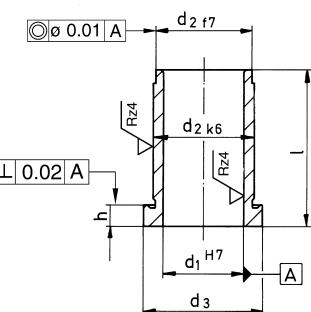
Order number **ST 7360.**   x

$d_1^{H7}$   $d_{2k6}$   $d_{3-0.5}$   $h_{-0.1}$   $l_{-0.3}$

$d_1^{H7}$   $d_{2k6}$   $d_{3-0.5}$   $h_{-0.1}$

10	16	20	3.5	12	<b>16.10 x 012</b>
				17	<b>16.10 x 017</b>
				22	<b>16.10 x 022</b>
				27	<b>16.10 x 027</b>
				36	<b>16.10 x 036</b>
12	16	20	3.5	12	<b>16.12 x 012</b>
				17	<b>16.12 x 017</b>
				22	<b>16.12 x 022</b>
				27	<b>16.12 x 027</b>
				36	<b>16.12 x 036</b>
15	20	25	6	17	<b>20.15 x 017</b>
				22	<b>20.15 x 022</b>
				27	<b>20.15 x 027</b>
				36	<b>20.15 x 036</b>
				46	<b>20.15 x 046</b>
16	20	25	6	17	<b>20.16 x 017</b>
				22	<b>20.16 x 022</b>
				27	<b>20.16 x 027</b>
				36	<b>20.16 x 036</b>
				46	<b>20.16 x 046</b>
19	26	31	6	22	<b>26.19 x 022</b>
				27	<b>26.19 x 027</b>
				36	<b>26.19 x 036</b>
				46	<b>26.19 x 046</b>

20	26	31	6	22	<b>26.20 x 022</b>
				27	<b>26.20 x 027</b>
				36	<b>26.20 x 036</b>
				46	<b>26.20 x 046</b>
24	30	35	6	27	<b>30.24 x 027</b>
				36	<b>30.24 x 036</b>
				46	<b>30.24 x 046</b>
				56	<b>30.24 x 056</b>
25	30	35	6	27	<b>30.25 x 027</b>
				36	<b>30.25 x 036</b>
				46	<b>30.25 x 046</b>
				56	<b>30.25 x 056</b>
30	40	46	6	36	<b>40.30 x 036</b>
				46	<b>40.30 x 046</b>
				56	<b>40.30 x 056</b>
32	40	46	6	36	<b>40.32 x 036</b>
				46	<b>40.32 x 046</b>
				56	<b>40.32 x 056</b>



Installation example

# Guide bushes ST 7361

## solid bronze

**STEINEL®**



### Sliding guide solid bronze

#### Material:

CuSn8/CuZn25Al5

Guide diameter ISO H7, precision-turned,  
mounting diameter ISO j6, precision-turned

#### Installation instruction:

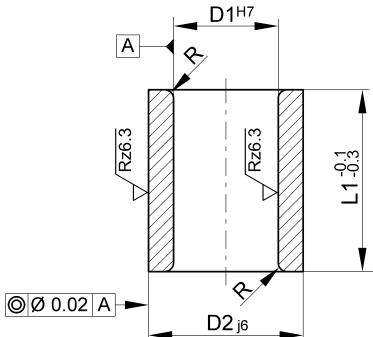
Stick into mounting bore ISO G6  
Avoid pressing in because it reduces the  
internal diameter.

#### Order example: Guide bush ST 7361

D<sub>1</sub> = 16, L<sub>1</sub> = 37 mm

Addition **16 x 037**

Order number **ST 7361.16 x 037**



Order number <b>ST 7361.</b> <input type="text"/> x <input type="text"/>				Order number <b>ST 7361.</b> <input type="text"/> x <input type="text"/>			
D <sub>1H7</sub>	D <sub>2j6</sub>	L <sub>1</sub>	R	D <sub>1H7</sub>	D <sub>2j6</sub>	L <sub>1</sub>	R
8	12	10	0.5	<b>08 x 010</b>		24	32
		15		<b>08 x 015</b>		30	<b>24 x 023</b>
		20		<b>08 x 020</b>		37	<b>24 x 030</b>
10	16	10	0.5	<b>10 x 010</b>		47	<b>24 x 037</b>
		15		<b>10 x 015</b>		60	<b>24 x 047</b>
		23		<b>10 x 023</b>		25	<b>24 x 060</b>
		30		<b>10 x 030</b>		30	<b>25 x 023</b>
		37		<b>10 x 037</b>		37	<b>25 x 030</b>
12	18	10	0.5	<b>12 x 010</b>		47	<b>25 x 037</b>
		15		<b>12 x 015</b>		60	<b>25 x 047</b>
		23		<b>12 x 023</b>		30	<b>25 x 060</b>
		30		<b>12 x 030</b>		37	<b>30 x 023</b>
		37		<b>12 x 037</b>		47	<b>30 x 030</b>
15	21	15	0.75	<b>15 x 015</b>		60	<b>30 x 037</b>
		23		<b>15 x 023</b>		47	<b>30 x 047</b>
		30		<b>15 x 030</b>		60	<b>30 x 060</b>
		37		<b>15 x 037</b>		32	<b>32 x 023</b>
		47		<b>15 x 047</b>		30	<b>32 x 030</b>
16	22	15	0.75	<b>16 x 015</b>		37	<b>32 x 037</b>
		23		<b>16 x 023</b>		47	<b>32 x 047</b>
		30		<b>16 x 030</b>		60	<b>32 x 060</b>
		37		<b>16 x 037</b>		38	<b>38 x 023</b>
		47		<b>16 x 047</b>		37	<b>38 x 030</b>
19	26	23	0.75	<b>19 x 023</b>		47	<b>38 x 037</b>
		30		<b>19 x 030</b>		60	<b>38 x 047</b>
		37		<b>19 x 037</b>		77	<b>38 x 060</b>
		47		<b>19 x 047</b>		40	<b>40 x 023</b>
		60		<b>19 x 060</b>		37	<b>40 x 030</b>
20	28	23	0.75	<b>20 x 023</b>		47	<b>40 x 037</b>
		30		<b>20 x 030</b>		60	<b>40 x 047</b>
		37		<b>20 x 037</b>		77	<b>40 x 060</b>
		47		<b>20 x 047</b>			
		60		<b>20 x 060</b>			

# Guide pillars ST 7160

## for industrial tools

**STEINEL®**



DIN 9833, ISO 9182

**Material:**

Steel 1.1221 (Ck 60),  
hardness 62–64 HRC

Guide diameter ISO g6,  
super-finished,  
fitting diameter ISO r6,  
installation in mounting bore ISO H7

**Suitable guide bushes for ST 7160:**  
ST 7460, ST 7469

**Order example:** Guide pillar ST 7160

$d_1 = 32, l_1 = 200 \text{ mm}$

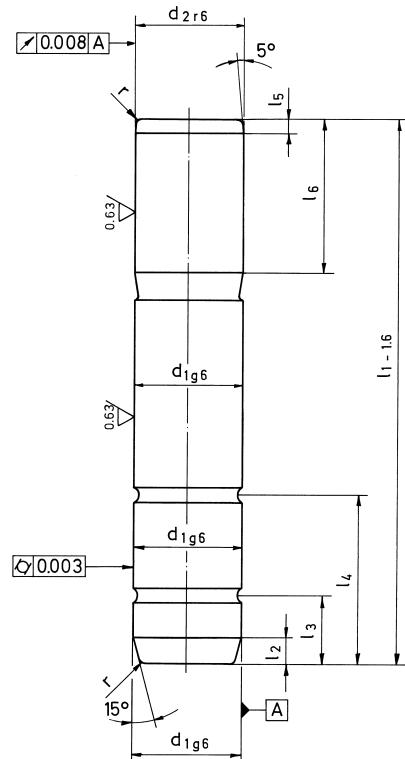
Addition **032 x 200**

Order number **ST 7160.032 x 200**

Add size to  
order number

With lubrication grooves      Order number **ST 7160.**

x



$d_{1g6}$	$d_{2r6}$	$l_{1-1.6}$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	r	
25	125	8	20	45	4	40	2	025 x 125	
	140							025 x 140	
	160							025 x 160	
	180							025 x 180	
	200							025 x 200	
	224							025 x 224	
32	32	140	8	20	50	4	45	2	032 x 140
	160							032 x 160	
	180							032 x 180	
	200							032 x 200	
	224							032 x 224	
	250							032 x 250	
40	40	160	8	20	50	4	56	2	040 x 160
	180							040 x 180	
	200							040 x 200	
	224							040 x 224	
	250							040 x 250	
	280							040 x 280	
50	50	180	10	25	65	4	70	2.5	050 x 180
	200							050 x 200	
	224							050 x 224	
	250							050 x 250	
	280							050 x 280	
	315							050 x 315	
63	63	200	10	32	72	4	80	2.5	063 x 200
	224							063 x 224	
	250							063 x 250	
	280							063 x 280	
	315							063 x 315	
	355							063 x 355	
80	80	224	10	32	82	4	100	3	080 x 224
	250							080 x 250	
	280							080 x 280	
	315							080 x 315	
	355							080 x 355	
	400							080 x 400	
100	100	250	10	32	82	4	125	3	100 x 250
	280							100 x 280	
	315							100 x 315	
	355							100 x 355	
	400							100 x 400	
	450							100 x 450	

# Guide bushes ST 746.

## sliding guide for industrial tools

**STEINEL®**



DIN 9834, ISO 9448

### Technical description:

Guide diameter ISO H7, precision-turned, mounting diameter ISO h6, ground

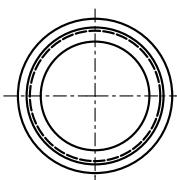
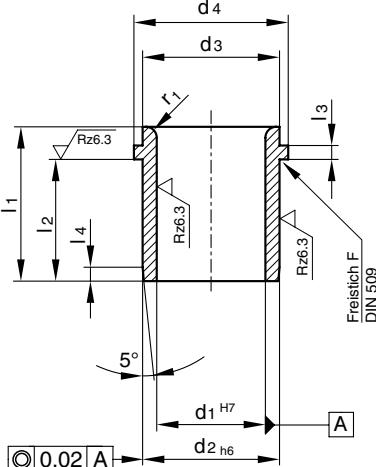
### ST 7460 CuSn8/CuZn25Al5:

To be used for normal loads, whereby sufficient lubrication must be ensured.

### ST 7469 steel, bronze coating:

Steel 1.7131 (16MnCr5) case-hardened, hardness 61–63 HRC, running surface, bronze coating

Due to the galvanically spread bronze running surface on the hardened steel sleeve, this bush is particularly suitable for high sliding speeds and strong lateral loads. Sufficient lubrication must be ensured.



### Sliding guide:

Solid bronze for normal loading capacity  
external lubrication



### Sliding guide:

Steel (hardened, bronze coating) for highest loading capacity and external lubrication



Add size to  
order number

Order number <b>ST 7460.</b>		Order number <b>ST 7469.</b>							
<b>d<sub>1</sub><sup>H7</sup></b>	<b>d<sub>2h6</sub></b>	<b>d<sub>3</sub><sup>0 -0.25</sup></b>	<b>d<sub>4</sub><sup>0 -0.8</sup></b>	<b>l<sub>1</sub><sup>0 -1.6</sup></b>	<b>l<sub>2</sub><sup>-2</sup></b>	<b>l<sub>3</sub><sup>+0.1</sup></b>	<b>l<sub>4</sub><sup>±1</sup></b>	<b>r<sub>1</sub></b>	
25	32	32	40	40	32	6.3	3.0	3	<b>025</b>
32	40	40	50	50	40	6.3	4.0	3	<b>032</b>
40	50	50	63	63	50	6.3	5.0	3	<b>040</b>
50	63	63	71	71	56	6.3	6.3	5	<b>050</b>
63	80	80	90	80	63	10.0	8.0	6	<b>063</b>
80	100	100	112	100	80	10.0	10.0	8	<b>080</b>
100	125	125	140	125	106	10.0	12.5	10	<b>100</b>

## Holding clamps ST 7377



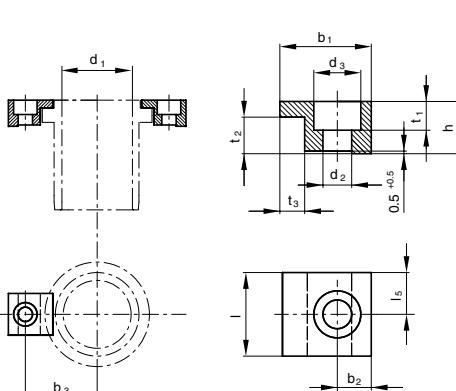
DIN 9832

### Material:

Steel

### Fixing:

Suitable socket screws DIN 912  
Order number **SZ 8510**



### Order example: Holding clamp ST 7377

Nominal diameter  $d_1 = 32$  mm

Addition **01**

Order number **ST 7377.01**

Add size to  
order number

Order number <b>ST 7377.</b>												
<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>d<sub>3</sub></b>	<b>b<sub>1</sub></b>	<b>b<sub>2</sub></b>	<b>b<sub>3</sub></b>	<b>h</b>	<b>l</b>	<b>l<sub>5</sub></b>	<b>t<sub>1</sub></b>	<b>t<sub>2</sub></b>	<b>t<sub>3</sub></b>	<b>Screw</b>
25	7	11	20	7.5	29	10	20	10	7	6.3	5	M6 x 16 <b>01</b>
32					33							<b>01</b>
40					39.5							<b>01</b>
50					44.5							<b>01</b>
63	11.5	17.5	32	11	61.5	16	32	16	11.5	10	10	M10 x 25 <b>02</b>
80					71.5							<b>02</b>
100					84							<b>02</b>
125					101.5							<b>02</b>
160					121.5							<b>02</b>

# Guide pillars ST 9833

**STEINEL®**



## DIN 9833

### Material:

Steel 1.1221 (Ck 60), hardness 60 + 4 HRC

Guide diameter ISO f6,  
super-finished,  
fitting diameter ISO r6,  
installation in mounting bore ISO H7

### Note:

The full pillar transport hole  $d_1 = 80$  mm  
and  $d_1 = 100$  mm has the dimension  
a) = M 12, 24 mm deep.

**Order example:** Guide pillar **ST 9833**

$d_1 = 32$ ,  $l_1 = 200$  mm

Addition **032 x 200**

Order number **ST 9833.032 x 200**

Guide pillars with  $d_1 = 80$  mm and  
 $d_1 = 100$  mm can also be delivered as full pillar  
with transport hole (T).  
Please specify in the order.

**Add T (e.g. guide pillar ST 9833.100 x 400 T)**  
**to order number.**

Add size to  
order number

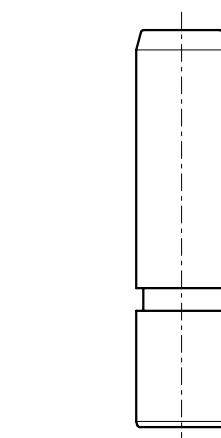
Order number **ST 9833.**

x

$d_{f6}$	$d_{2r6}$	$d_{3\pm 2}$	$l_1 \text{ } 0$	$l_2 \text{ } +0.8 \text{ } 0$	$l_3 \text{ } +0.8 \text{ } 0$	$l_4 \text{ } +0.8 \text{ } 0$	$r_1$	$r_2$	
25	25	—	125	8	4	40	3	2	<b>025 x 125</b>
			140						<b>025 x 140</b>
			160						<b>025 x 160</b>
			180						<b>025 x 180</b>
			200						<b>025 x 200</b>
			224						<b>025 x 224</b>
32	32	—	140	8	4	45	3	2	<b>032 x 140</b>
			160						<b>032 x 160</b>
			180						<b>032 x 180</b>
			200						<b>032 x 200</b>
			224						<b>032 x 224</b>
			250						<b>032 x 250</b>
40	40	—	140	8	4	56	3	2	<b>040 x 140</b>
			160						<b>040 x 160</b>
			180						<b>040 x 180</b>
			200						<b>040 x 200</b>
			224						<b>040 x 224</b>
			250						<b>040 x 250</b>
			280						<b>040 x 280</b>
50	50	—	160	10	4	70	5	2.5	<b>050 x 160</b>
			180						<b>050 x 180</b>
			200						<b>050 x 200</b>
			224						<b>050 x 224</b>
			250						<b>050 x 250</b>
			280						<b>050 x 280</b>
			315						<b>050 x 315</b>
			355						<b>050 x 355</b>
63	63	—	180	10	4	80	6	2.5	<b>063 x 180</b>
			200						<b>063 x 200</b>
			224						<b>063 x 224</b>
			250						<b>063 x 250</b>
			280						<b>063 x 280</b>
			315						<b>063 x 315</b>
			355						<b>063 x 355</b>
			400						<b>063 x 400</b>
80	80	40	200	10	4	100	8	3	<b>080 x 200</b>
			224						<b>080 x 224</b>
			250						<b>080 x 250</b>
			280						<b>080 x 280</b>
			315						<b>080 x 315</b>
			355						<b>080 x 355</b>
			400						<b>080 x 400</b>
			450						<b>080 x 450</b>
100	100	50	224	10	4	125	10	3	<b>100 x 224</b>
			250						<b>100 x 250</b>
			280						<b>100 x 280</b>
			315						<b>100 x 315</b>
			355						<b>100 x 355</b>
			400						<b>100 x 400</b>
			450						<b>100 x 450</b>
125	125	65	315	12	5	140	12	4	<b>125 x 315</b>
			355						<b>125 x 355</b>
			400						<b>125 x 400</b>
			450						<b>125 x 450</b>
			500						<b>125 x 500</b>
160	160	95	400	12	5	180	18	4	<b>160 x 400</b>
			450						<b>160 x 450</b>
			500						<b>160 x 500</b>
			560						<b>160 x 560</b>

### Guide pillar with groove

Price and delivery time upon request



# Guide bushes ST 9834

**solid bronze with solid lubricant**



## DIN 9834

### Material:

CuSn8/CuZn25Al5 with solid lubricant

This sliding guide is self-lubricating due to the integrated solid lubricant inserts, and suitable for higher loads.

### Technical description:

Guide diameter ISO H7, precision-turned, mounting diameter ISO h6, ground

### Installation method:

Fit into mounting bore ISO H7, fixing with 2 holding clamps ST 7377 (not included in the scope of delivery)

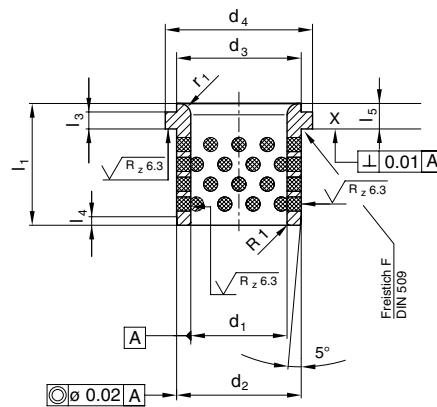
### Order example:

Guide bush **ST 9834**

$d_1 = 32$  mm

Addition **032**

Order number **ST 9834.032**



Add size to  
order number

### Order number **ST 9834.**

$d_1^{H7}$	$d_{2h6}$	$d_3^0 -0.25$	$d_4^0 -0.8$	$l_1^{-0.5}$	$l_3^{+0.1} -0.1$	$l_4 \pm 1$	$l_5^0 -0.5$	$r_1$	
25	32	32	40	40	6.3	3.0	10	3	<b>025</b>
32	40	40	50	50	6.3	4.0	12	3	<b>032</b>
40	50	50	63	63	6.3	5.0	15	3	<b>040</b>
50	63	63	71	71	6.3	6.3	17	5	<b>050</b>
63	80	80	90	80	10.0	8.0	19	6	<b>063</b>
80	100	100	112	100	10.0	10.0	22	8	<b>080</b>
100	125	125	140	125	10.0	12.5	21	10	<b>100</b>
125	160	160	180	160	10.0	16.0	30	12	<b>125</b>
160	200	200	220	200	10.0	16.0	32	18	<b>160</b>

# Holding clamps ST 7377



## DIN 9832

### Material:

Steel

### Fixing:

Suitable socket screws DIN 912

Order number **SZ 8510**

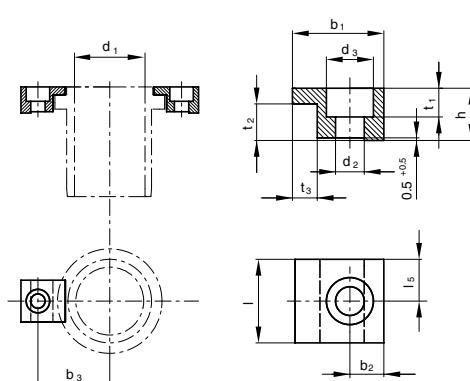
### Order example:

Holding clamp **ST 7377**

Nominal diameter  $d_1 = 32$  mm

Addition **01**

Order number **ST 7377.01**



Add size to  
order number

### Order number **ST 7377.**

$d_1$	$d_2$	$d_3$	$b_1$	$b_2$	$b_3$	$h$	$l$	$l_5$	$t_1$	$t_2$	$t_3$	Screw	
25	7	11	20	7.5	29	10	20	10	7	6.3	5	M6 x 16	<b>01</b>
32					33								<b>01</b>
40					39.5								<b>01</b>
50					44.5								<b>01</b>
63	11.5	17.5	32	11	61.5	16	32	16	11.5	10	10	M10 x 25	<b>02</b>
80					71.5								<b>02</b>
100					84								<b>02</b>
125					101.5								<b>02</b>
160					121.5								<b>02</b>

# **Guide pillars ST 9825**

## **with shoulder (guide tolerance g6)**

**STEINEL®**



#### **Material:**

**Material:** Steel 1.1221 (Ck 60) inductively hardened, hardness 62–64 HRC

Guide diameter ISO g6,  
super-finished,  
fitting diameter ISO r6,  
installation in mounting bore ISO H7

Guide pillars with diameters of 80 and 100 mm are supplied with a thread M12 x 18. This is used for handling during deep freezing.

Guide pillars with shoulders are secured with 3 holding clamps (included in the scope of delivery).

**Order example:** Guide pillar **ST 9825**

with shoulder  
 $d_1 = 32, l = 200 \text{ mm}$

### Addition 032 x 200

Order number ST 9825.032 x 200

Technical drawing of a mechanical part A:

- Overall Length:**  $l \pm 0.3$
- Top Width:**  $d_1 g_6$
- Bottom Width:**  $d_1 r_6$  (inner width) and  $d_1 h_6$  (outer width)
- Bottom Thickness:**  $d_2$
- Bottom Hole Distance:**  $l_1$
- Bottom Hole Diameter:**  $l_2 - 0.5$
- Bottom Hole Tolerance:**  $\pm 0.01$  (A)
- Top Edge Tolerance:**  $0.003$
- Top Edge Radius:**  $0.63$
- Material:** M 6

Below the main drawing is a cross-sectional view showing three concentric circles with a radius of  $d_8$ .

At the bottom is a small detail drawing showing a thickness of  $18$ .

Ø 80 and 100

Order number <b>ST 9825</b>						<input type="checkbox"/> x <input checked="" type="checkbox"/>
<b>d<sub>1g6</sub></b>	<b>I</b>	<b>d<sub>2</sub></b>	<b>d<sub>8</sub></b>	<b>I<sub>1</sub></b>	<b>I<sub>2</sub></b>	
25	125	32	49	6	40	<b>025 x 125</b>
	140					<b>025 x 140</b>
	160					<b>025 x 160</b>
	180					<b>025 x 180</b>
	200					<b>025 x 200</b>
	224					<b>025 x 224</b>
32	140	40	57	7	45	<b>032 x 140</b>
	160					<b>032 x 160</b>
	180					<b>032 x 180</b>
	200					<b>032 x 200</b>
	224					<b>032 x 224</b>
	250					<b>032 x 250</b>
40	160	50	67	7	56	<b>040 x 160</b>
	180					<b>040 x 180</b>
	200					<b>040 x 200</b>
	224					<b>040 x 224</b>
	250					<b>040 x 250</b>
	280					<b>040 x 280</b>
50	180	63	80	7	70	<b>050 x 180</b>
	200					<b>050 x 200</b>
	224					<b>050 x 224</b>
	250					<b>050 x 250</b>
	280					<b>050 x 280</b>
	315					<b>050 x 315</b>
63	200	80	97	8	80	<b>063 x 200</b>
	224					<b>063 x 224</b>
	250					<b>063 x 250</b>
	280					<b>063 x 280</b>
	315					<b>063 x 315</b>
	355					<b>063 x 355</b>
80	224	100	117	8	100	<b>080 x 224</b>
	250					<b>080 x 250</b>
	280					<b>080 x 280</b>
	315					<b>080 x 315</b>
	355					<b>080 x 355</b>
	400					<b>080 x 400</b>
100	280	125	142	8	125	<b>100 x 280</b>
	315					<b>100 x 315</b>
	355					<b>100 x 355</b>
	400					<b>100 x 400</b>

**Installation dimension  $l_2$  can be shortened upon request.**

# Guide bushes ST 9831

smooth, sliding guide with solid lubricant

**STEINEL®**



## Material:

CuSn8/CuZn25Al5 with solid lubricant

This sliding guide is self-lubricating due to the integrated solid lubricant inserts, and suitable for higher loads.

Guide diameter ISO H6, precision-turned, mounting diameter ISO j6, precision-turned

## Suitable guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82, ST 9825

## Installation instructions:

1. Stick into mounting bore ISO G6 (for adhesive, see the relevant page)
2. Avoid pressing in because it reduces the internal diameter

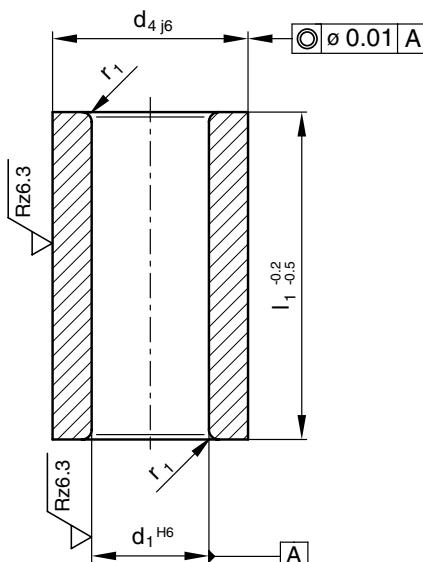
## Order example: Guide bush ST 9831

$d_1 = 25, l_1 = 37 \text{ mm}$

Addition **25 x 037**

Order number **ST 9831.25 x 037**

Add size to  
order number



Order number **ST 9831.**

x

$d_1^{\text{H6}}$	$d_{4j6}$	$r_1$	$l_1$	
25	40	3	23	<b>25 x 023</b>
			30	<b>25 x 030</b>
			37	<b>25 x 037</b>
			47	<b>25 x 047</b>
			60	<b>25 x 060</b>
			77	<b>25 x 077</b>
32	48	3	30	<b>32 x 030</b>
			37	<b>32 x 037</b>
			47	<b>32 x 047</b>
			60	<b>32 x 060</b>
			77	<b>32 x 077</b>
			95	<b>32 x 095</b>
40	58	3	30	<b>40 x 030</b>
			37	<b>40 x 037</b>
			47	<b>40 x 047</b>
			60	<b>40 x 060</b>
			77	<b>40 x 077</b>
			95	<b>40 x 095</b>
			120	<b>40 x 120</b>
50	70	5	37	<b>50 x 037</b>
			47	<b>50 x 047</b>
			60	<b>50 x 060</b>
			77	<b>50 x 077</b>
			95	<b>50 x 095</b>
			120	<b>50 x 120</b>
63	85	6	60	<b>63 x 060</b>
			77	<b>63 x 077</b>
			95	<b>63 x 095</b>
			120	<b>63 x 120</b>
80	105	8	120	<b>80 x 120</b>
			135	<b>80 x 135</b>

# Guide pillars ST 9827

## with shoulder (guide tolerance g6)

**STEINEL®**



### Produced from solid material

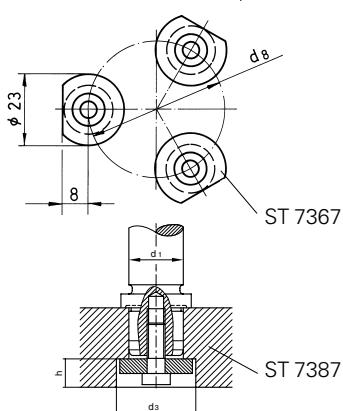
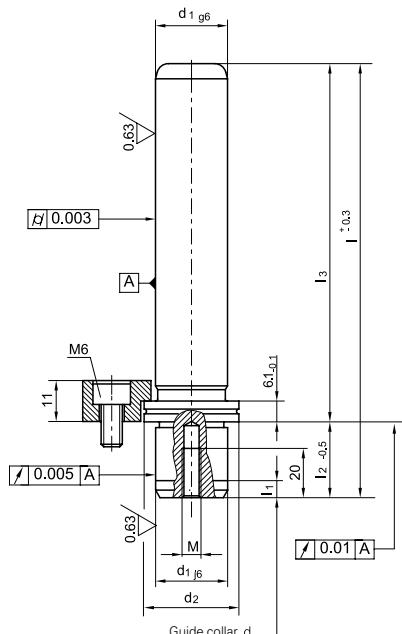
#### Material:

Steel 1.1221 (Ck 60) inductively hardened, hardness 62–64 HRC

Guide diameter ISO g6, super-finished, fitting diameter ISO j6,  
installation in mounting bore ISO H6

Guide pillars with shoulders are secured with 3 holding clamps ST 7367 (included in the scope of delivery).

Alternatively, the guide pillar can be fixed with the holding disc ST 7387. (please order separately).



For dimensions, see page 3.82

Add size to  
order number

Order number **ST 9827.**   x  

$d_{g6}^*$ )	$d_2$	$d_3$	$l$	$l_1$	$l_{2-0.5}$	$l_3$	
15	21	38	115	5	20	95	<b>15 x 115</b>
			125			105	<b>15 x 125</b>
			140			120	<b>15 x 140</b>
			160			140	<b>15 x 160</b>
			180			160	<b>15 x 180</b>
			200			180	<b>15 x 200</b>
			224			204	<b>15 x 224</b>
16	21	38	115	5	20	95	<b>16 x 115</b>
			125			105	<b>16 x 125</b>
			140			120	<b>16 x 140</b>
			160			140	<b>16 x 160</b>
			180			160	<b>16 x 180</b>
			200			180	<b>16 x 200</b>
			224			204	<b>16 x 224</b>
19	25	42	115	5	23	92	<b>19 x 115</b>
			125			102	<b>19 x 125</b>
			140			117	<b>19 x 140</b>
			160			137	<b>19 x 160</b>
			180			157	<b>19 x 180</b>
			200			177	<b>19 x 200</b>
			224			201	<b>19 x 224</b>
			250			227	<b>19 x 250</b>
20	25	42	115	5	23	92	<b>20 x 115</b>
			125			102	<b>20 x 125</b>
			140			117	<b>20 x 140</b>
			160			137	<b>20 x 160</b>
			180			157	<b>20 x 180</b>
			200			177	<b>20 x 200</b>
			224			201	<b>20 x 224</b>
			250			227	<b>20 x 250</b>
24	32	49	125	6	27	98	<b>24 x 125</b>
			140			113	<b>24 x 140</b>
			160			133	<b>24 x 160</b>
			180			153	<b>24 x 180</b>
			200			173	<b>24 x 200</b>
			224			197	<b>24 x 224</b>
			250			223	<b>24 x 250</b>
			280			253	<b>24 x 280</b>
			315			288	<b>24 x 315</b>
25	32	49	125	6	27	98	<b>25 x 125</b>
			140			113	<b>25 x 140</b>
			160			133	<b>25 x 160</b>
			180			153	<b>25 x 180</b>
			200			173	<b>25 x 200</b>
			224			197	<b>25 x 224</b>
			250			223	<b>25 x 250</b>
			280			253	<b>25 x 280</b>
			315			288	<b>25 x 315</b>
30	40	57	140	7	37	103	<b>30 x 140</b>
			160			123	<b>30 x 160</b>
			180			143	<b>30 x 180</b>
			200			163	<b>30 x 200</b>
			224			187	<b>30 x 224</b>
			250			213	<b>30 x 250</b>
			280			243	<b>30 x 280</b>
			315			278	<b>30 x 315</b>
			355			318	<b>30 x 355</b>
32	40	57	140	7	37	103	<b>32 x 140</b>
			160			123	<b>32 x 160</b>
			180			143	<b>32 x 180</b>
			200			163	<b>32 x 200</b>
			224			187	<b>32 x 224</b>
			250			213	<b>32 x 250</b>
			280			243	<b>32 x 280</b>
			315			278	<b>32 x 315</b>
			355			318	<b>32 x 355</b>
36	40	57	140	7	37	103	<b>36 x 140</b>
			160			123	<b>36 x 160</b>
			180			143	<b>36 x 180</b>
			200			163	<b>36 x 200</b>
			224			187	<b>36 x 224</b>
			250			213	<b>36 x 250</b>
			280			243	<b>36 x 280</b>
			315			278	<b>36 x 315</b>
			355			318	<b>36 x 355</b>
38	50	67	160	7	37	123	<b>38 x 160</b>
			180			143	<b>38 x 180</b>
			200			163	<b>38 x 200</b>
			224			187	<b>38 x 224</b>
			250			213	<b>38 x 250</b>
			280			243	<b>38 x 280</b>
			315			278	<b>38 x 315</b>
			355			318	<b>38 x 355</b>
			390			363	<b>38 x 400</b>
40	50	67	160	7	37	123	<b>40 x 160</b>
			180			143	<b>40 x 180</b>
			200			163	<b>40 x 200</b>
			224			187	<b>40 x 224</b>
			250			213	<b>40 x 250</b>
			280			243	<b>40 x 280</b>
			315			278	<b>40 x 315</b>
			355			318	<b>40 x 355</b>
			400			363	<b>40 x 400</b>
48	63	80	180	7	47	133	<b>48 x 180</b>
			200			153	<b>48 x 200</b>
			224			177	<b>48 x 224</b>
			250			203	<b>48 x 250</b>
			280			233	<b>48 x 280</b>
			315			268	<b>48 x 315</b>
			355			308	<b>48 x 355</b>
			400			353	<b>48 x 400</b>
			450			403	<b>48 x 450</b>
50	63	80	180	7	47	133	<b>50 x 180</b>
			200			153	<b>50 x 200</b>
			224			177	<b>50 x 224</b>
			250			203	<b>50 x 250</b>
			280			233	<b>50 x 280</b>
			315			268	<b>50 x 315</b>
			355			308	<b>50 x 355</b>
			400			353	<b>50 x 400</b>
			450			403	<b>50 x 450</b>
60	80	97	224	8	47	177	<b>60 x 224</b>
			250			203	<b>60 x 250</b>
			280			233	<b>60 x 280</b>
			315			268	<b>60 x 315</b>
			355			308	<b>60 x 355</b>
			400			353	<b>60 x 400</b>
			450			403	<b>60 x 450</b>
63	80	97	224	8	47	177	<b>63 x 224</b>
			250			203	<b>63 x 250</b>
			280			233	<b>63 x 280</b>
			315			268	<b>63 x 315</b>
			355			308	<b>63 x 355</b>
			400			353	<b>63 x 400</b>
			450			403	<b>63 x 450</b>
80	95	112	280	8	60	220	<b>80 x 280</b>
			315			255	<b>80 x 315</b>
			355			295	<b>80 x 355</b>
			400			340	<b>80 x 400</b>
			450			390	<b>80 x 450</b>
			500			440	<b>80 x 500</b>
			560			500	<b>80 x 560</b>

\* ) Guide diameter  $d_{1g6}$   
Mounting diameter  $d_{1j6}$

**Thread press-in side M:**  
 $\emptyset 15\text{--}32 = \text{M 8}$   
 $\emptyset 38\text{--}50 = \text{M 10}$   
 $\emptyset 60\text{--}80 = \text{M 12}$

**Order example:** Guide pillar **ST 9827**  
with shoulder  
 $d_1 = 19$ ,  $l = 160$  mm,  
Addition **19 x 160**  
Order number **ST 9827.19 x 160**

**Attention:**  
**These guide pillars are only to be used for sliding guides.**

# Ball cages ST 7130

## made from aluminium

**STEINEL®**



### Material:

Aluminium ball cage, steel balls, hardened, quality classification 1, sorting

Balls free-wheeling mounted in mounting bore. The balls are helically arranged in an axial direction so that each ball has its own track.

**STEINEL ball cages** are universally suitable. The combination of low weight and the tensile strength of high-quality aluminium guarantees suitability for use within a variety of areas.

### Order example: Ball cage ST 7130

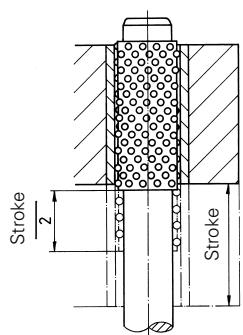
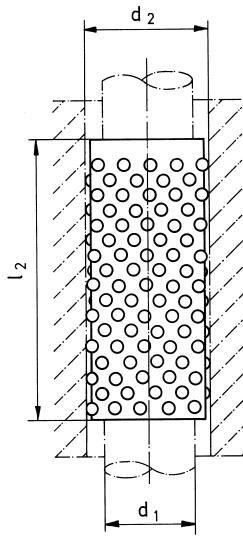
made from aluminium

$d_1 = 16, l_2 = 54 \text{ mm}$

Addition **16 x 054**

Order number **ST 7130.16 x 054**

Add size to order number			Add size to order number		
Order number <b>ST 7130.</b> <input type="text"/> x <input type="text"/>			Order number <b>ST 7130.</b> <input type="text"/> x <input type="text"/>		
<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>	<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>
10	14	30	<b>10 x 030</b>		
		38	<b>10 x 038</b>		
		43	<b>10 x 043</b>		
12	16	30	<b>12 x 030</b>		
		38	<b>12 x 038</b>		
		43	<b>12 x 043</b>		
15	21	30	<b>15 x 030</b>		
		38	<b>15 x 038</b>		
		43	<b>15 x 043</b>		
		54	<b>15 x 054</b>		
			<b>15 x 063</b>		
16	22	30	<b>16 x 030</b>		
		38	<b>16 x 038</b>		
		43	<b>16 x 043</b>		
		54	<b>16 x 054</b>		
		63	<b>16 x 063</b>		
19	25	30	<b>19 x 030</b>		
		38	<b>19 x 038</b>		
		43	<b>19 x 043</b>		
		54	<b>19 x 054</b>		
		63	<b>19 x 063</b>		
		74	<b>19 x 074</b>		
20	26	30	<b>20 x 030</b>		
		38	<b>20 x 038</b>		
		43	<b>20 x 043</b>		
		54	<b>20 x 054</b>		
		63	<b>20 x 063</b>		
		74	<b>20 x 074</b>		
24	30	30	<b>24 x 030</b>		
		38	<b>24 x 038</b>		
		43	<b>24 x 043</b>		
		54	<b>24 x 054</b>		
		63	<b>24 x 063</b>		
		74	<b>24 x 074</b>		
		83	<b>24 x 083</b>		
		90	<b>24 x 090</b>		
25	31	30	<b>25 x 030</b>		
		38	<b>25 x 038</b>		
		43	<b>25 x 043</b>		
		54	<b>25 x 054</b>		
		63	<b>25 x 063</b>		
		74	<b>25 x 074</b>		
		83	<b>25 x 083</b>		
		90	<b>25 x 090</b>		
30	38	38	<b>30 x 038</b>		
		43	<b>30 x 043</b>		
		54	<b>30 x 054</b>		
		58	<b>30 x 058</b>		
		68	<b>30 x 068</b>		
		74	<b>30 x 074</b>		
		83	<b>30 x 083</b>		
		88	<b>30 x 088</b>		
		103	<b>30 x 103</b>		
		108	<b>30 x 108</b>		
63	73				<b>63 x 075</b>
					94
					113
					128
					139
					154
63	73				<b>63 x 075</b>
					94
					113
					128
					139
					154
80	92				<b>80 x 113</b>
					138
					156
					<b>80 x 156</b>



Cage travel = ½ stroke length

### Suitable for guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82 as well as all guide bushes with ball guides

**Technical description:** See page 3.06

Special lengths deliverable upon request.

# Ball cages ST 7170

made from aluminium with installation assistance

**STEINEL®**



## Material:

Aluminium ball cage, steel balls, hardened, quality classification 1, sorting

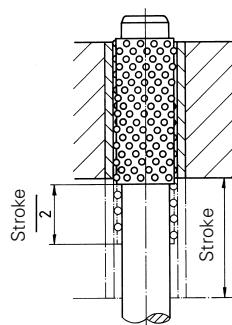
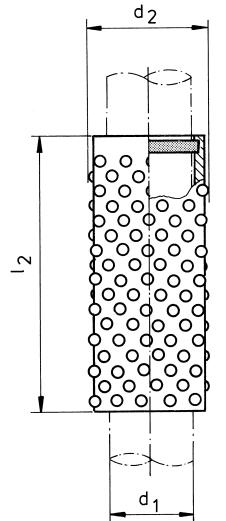
Balls free-wheeling mounted in mounting bore. The balls are helically arranged in an axial direction so that each ball has its own track.

The installation assistance in the ball cage makes the assembly of the die sets with multiple guide units easier.

**STEINEL ball cages** are universally suitable. The combination of low weight and the tensile strength of high-quality aluminium guarantees suitability for use within a variety of areas.

Due to their optimal thermal stability, they are suitable for temperatures above 80 °C/176 °F.

Very robust design, suitable for machines and tools with high accuracy requirements.



Cage travel =  $\frac{1}{2}$  stroke length

## Suitable for guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82 as well as all guide bushes with ball guides

**Technical description:** See page 3.06

Special lengths deliverable upon request.

Add size to order number			Add size to order number		
Order number <b>ST 7170.</b> <input type="text"/> x <input type="text"/>			Order number <b>ST 7170.</b> <input type="text"/> x <input type="text"/>		
<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>	<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>
15	21	30	15	30	<b>15 x 030</b>
		38	15	38	<b>15 x 038</b>
		43	15	43	<b>15 x 043</b>
		54	15	54	<b>15 x 054</b>
		63	15	63	<b>15 x 063</b>
16	22	30	16	30	<b>16 x 030</b>
		38	16	38	<b>16 x 038</b>
		43	16	43	<b>16 x 043</b>
		54	16	54	<b>16 x 054</b>
		63	16	63	<b>16 x 063</b>
19	25	30	19	30	<b>19 x 030</b>
		38	19	38	<b>19 x 038</b>
		43	19	43	<b>19 x 043</b>
		54	19	54	<b>19 x 054</b>
		63	19	63	<b>19 x 063</b>
		74	19	74	<b>19 x 074</b>
20	26	30	20	30	<b>20 x 030</b>
		38	20	38	<b>20 x 038</b>
		43	20	43	<b>20 x 043</b>
		54	20	54	<b>20 x 054</b>
		63	20	63	<b>20 x 063</b>
		74	20	74	<b>20 x 074</b>
24	30	30	24	30	<b>24 x 030</b>
		38	24	38	<b>24 x 038</b>
		43	24	43	<b>24 x 043</b>
		54	24	54	<b>24 x 054</b>
		63	24	63	<b>24 x 063</b>
		74	24	74	<b>24 x 074</b>
		83	24	83	<b>24 x 083</b>
		90	24	90	<b>24 x 090</b>
25	31	30	25	30	<b>25 x 030</b>
		38	25	38	<b>25 x 038</b>
		43	25	43	<b>25 x 043</b>
		54	25	54	<b>25 x 054</b>
		63	25	63	<b>25 x 063</b>
		74	25	74	<b>25 x 074</b>
		83	25	83	<b>25 x 083</b>
		90	25	90	<b>25 x 090</b>
30	38	38	30	38	<b>30 x 038</b>
		43	30	43	<b>30 x 043</b>
		54	30	54	<b>30 x 054</b>
		58	30	58	<b>30 x 058</b>
		68	30	68	<b>30 x 068</b>
		74	30	74	<b>30 x 074</b>
		83	30	83	<b>30 x 083</b>
		88	30	88	<b>30 x 088</b>
		103	30	103	<b>30 x 103</b>
		108	30	108	<b>30 x 108</b>
40	48	38			<b>40 x 038</b>
		43			<b>40 x 043</b>
		58			<b>40 x 058</b>
		68			<b>40 x 068</b>
		94			<b>40 x 094</b>
		108			<b>38 x 108</b>
		128			<b>38 x 128</b>
48	56	43			<b>48 x 043</b>
		88			<b>40 x 088</b>
		108			<b>40 x 108</b>
		128			<b>40 x 128</b>
		108			<b>48 x 094</b>
		128			<b>48 x 128</b>
48	56	43			<b>48 x 043</b>
		88			<b>40 x 088</b>
		108			<b>40 x 108</b>
		128			<b>40 x 128</b>
48	56	43			<b>48 x 043</b>
		108			<b>40 x 088</b>
		128			<b>40 x 108</b>
		108			<b>48 x 094</b>
		128			<b>48 x 128</b>
50	58	43			<b>50 x 043</b>
		58			<b>50 x 058</b>
		68			<b>50 x 068</b>
		74			<b>50 x 074</b>
		88			<b>50 x 088</b>
		108			<b>50 x 108</b>
		128			<b>50 x 128</b>
60	70	75			<b>60 x 075</b>
		94			<b>60 x 094</b>
		113			<b>60 x 113</b>
		128			<b>60 x 128</b>
		139			<b>60 x 139</b>
		154			<b>60 x 154</b>
63	73	75			<b>63 x 075</b>
		94			<b>63 x 094</b>
		113			<b>63 x 113</b>
		128			<b>63 x 128</b>
		139			<b>63 x 139</b>
		154			<b>63 x 154</b>
80	92	113			<b>80 x 113</b>
		138			<b>80 x 138</b>
		156			<b>80 x 156</b>

**Order example:** Ball cage **ST 7170**

made from aluminium

$d_1 = 16$ ,  $l_2 = 54$  mm

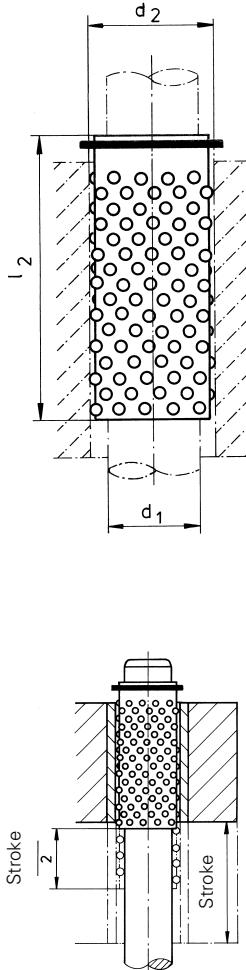
Addition **16 x 054**

Order number **ST 7170.16 x 054**

# Ball cages ST 7171

made from aluminium with lock ring

**STEINEL®**



Cage travel =  $\frac{1}{2}$  stroke length

## Material:

Aluminium ball cage, steel balls, hardened, quality classification 1, sorting

Balls free-wheeling mounted in mounting bore. The balls are helically arranged in an axial direction so that each ball has its own track.

The ball cages are equipped with a lock ring according to DIN 471.

**STEINEL ball cages** are universally suitable. The combination of low weight and the tensile strength of high-quality aluminium guarantees suitability for use within a variety of areas.

Due to their optimal thermal stability, they are suitable for temperatures of over 80 °C/176 °F.

Very robust design, suitable for machines and tools with high accuracy requirements.

Add size to order number			Add size to order number		
Order number <b>ST 7171.</b> <input type="text"/> x <input type="text"/>			Order number <b>ST 7171.</b> <input type="text"/> x <input type="text"/>		
<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>	<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>
15	21	30	15	30	<b>15 x 030</b>
		38	15	38	<b>15 x 038</b>
		43	15	43	<b>15 x 043</b>
		54	15	54	<b>15 x 054</b>
		63	15	63	<b>15 x 063</b>
16	22	30	16	30	<b>16 x 030</b>
		38	16	38	<b>16 x 038</b>
		43	16	43	<b>16 x 043</b>
		54	16	54	<b>16 x 054</b>
		63	16	63	<b>16 x 063</b>
19	25	30	19	30	<b>19 x 030</b>
		38	19	38	<b>19 x 038</b>
		43	19	43	<b>19 x 043</b>
		54	19	54	<b>19 x 054</b>
		63	19	63	<b>19 x 063</b>
		74	19	74	<b>19 x 074</b>
20	26	30	20	30	<b>20 x 030</b>
		38	20	38	<b>20 x 038</b>
		43	20	43	<b>20 x 043</b>
		54	20	54	<b>20 x 054</b>
		63	20	63	<b>20 x 063</b>
		74	20	74	<b>20 x 074</b>
24	30	30	24	30	<b>24 x 030</b>
		38	24	38	<b>24 x 038</b>
		43	24	43	<b>24 x 043</b>
		54	24	54	<b>24 x 054</b>
		63	24	63	<b>24 x 063</b>
		74	24	74	<b>24 x 074</b>
		83	24	83	<b>24 x 083</b>
		90	24	90	<b>24 x 090</b>
25	31	30	25	30	<b>25 x 030</b>
		38	25	38	<b>25 x 038</b>
		43	25	43	<b>25 x 043</b>
		54	25	54	<b>25 x 054</b>
		63	25	63	<b>25 x 063</b>
		74	25	74	<b>25 x 074</b>
		83	25	83	<b>25 x 083</b>
		90	25	90	<b>25 x 090</b>
30	38	38	30	38	<b>30 x 038</b>
		43	30	43	<b>30 x 043</b>
		54	30	54	<b>30 x 054</b>
		58	30	58	<b>30 x 058</b>
		68	30	68	<b>30 x 068</b>
		74	30	74	<b>30 x 074</b>
		83	30	83	<b>30 x 083</b>
		88	30	88	<b>30 x 088</b>
		103	30	103	<b>30 x 103</b>
		108	30	108	<b>30 x 108</b>
60	70	75	60	75	<b>60 x 075</b>
		94	60	94	<b>60 x 094</b>
		113	60	113	<b>60 x 113</b>
		128	60	128	<b>60 x 128</b>
		139	60	139	<b>60 x 139</b>
		154	60	154	<b>60 x 154</b>
63	73	75	63	75	<b>63 x 075</b>
		94	63	94	<b>63 x 094</b>
		113	63	113	<b>63 x 113</b>
		128	63	128	<b>63 x 128</b>
		139	63	139	<b>63 x 139</b>
		154	63	154	<b>63 x 154</b>
80	92	113	80	113	<b>80 x 113</b>
		138	80	138	<b>80 x 138</b>
		156	80	156	<b>80 x 156</b>

**Order example:** Ball cage **ST 7171**

made from aluminium

$d_1 = 16$ ,  $l_2 = 54$  mm

Addition **16 x 054**

Order number **ST 7171.16 x 054**

## Suitable for guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82 as well as all guide bushes with ball guides

**Technical description:** See page 3.06

Special lengths deliverable upon request.

# Roller cage ST 7140

## made from aluminium

**STEINEL®**



### Material:

Aluminium roller cage, steel profile rollers, hardened, quality classification 1, sorting

The profile rollers are free-wheeling mounted in the cage holes. Protection against torsion is therefore guaranteed. The profile rollers are helically arranged in an axial direction so that each roller has its own track.

Very robust design, suitable everywhere.

### Guide pillars and bushes:

Roller cage suitable for guide pillars ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128 as well as all guide bushes with ball guides

Further guide diameters and lengths corresponding to ball cage ST 7130 are deliverable upon request.

**Technical description:** See page 3.07

**Order example:** Roller cage **ST 7140**

made from aluminium

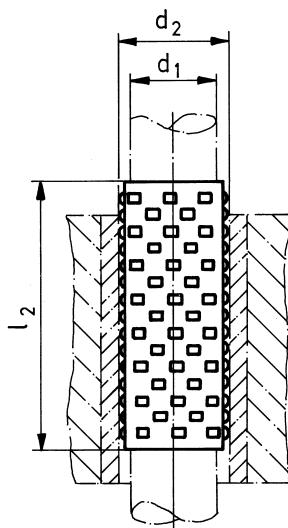
$d_1 = 32$ ,  $l_2 = 54$  mm

Addition **32 x 054**

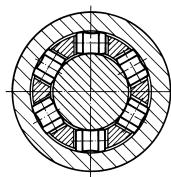
Order number **ST 7140.32 x 054**

**Roller cages can also be delivered with installation assistance or lock ring.**

Price and delivery time upon request.



Cage travel =  $\frac{1}{2}$  stroke length



Add size to  
order number

Order number **ST 7140.**  x

<b><math>d_1</math></b>	<b><math>d_2</math></b>	<b><math>l_2</math></b>	<b><math>m_1</math></b>	<b><math>m_2</math></b>	<b><math>dR</math></b>	
19	25	43	8	5	3	<b>19 x 043</b>
		54		6		<b>19 x 054</b>
		63		7		<b>19 x 063</b>
		74		8		<b>19 x 074</b>
20	26	43	8	5	3	<b>20 x 043</b>
		54		6		<b>20 x 054</b>
		63		7		<b>20 x 063</b>
		74		8		<b>20 x 074</b>
24	30	43	8	5	3	<b>24 x 043</b>
		63		7		<b>24 x 063</b>
		74		8		<b>24 x 074</b>
		90				<b>24 x 090</b>
25	31	43	8	5	3	<b>25 x 043</b>
		63		7		<b>25 x 063</b>
		74		8		<b>25 x 074</b>
		90		10		<b>25 x 090</b>
30	38	54	12	5	4	<b>30 x 054</b>
		74		7		<b>30 x 074</b>
		83		8		<b>30 x 083</b>
		103		10		<b>30 x 103</b>
32	40	54	12	5	4	<b>32 x 054</b>
		74		7		<b>32 x 074</b>
		83		8		<b>32 x 083</b>
		103		10		<b>32 x 103</b>
38	46	58	12	6	4	<b>38 x 058</b>
		88		9		<b>38 x 088</b>
		94		10		<b>38 x 094</b>
		128		13		<b>38 x 128</b>

Add size to  
order number

<b><math>d_1</math></b>	<b><math>d_2</math></b>	<b><math>l_2</math></b>	<b><math>m_1</math></b>	<b><math>m_2</math></b>	<b><math>dR</math></b>	
40	48	58	12	6	4	<b>40 x 058</b>
		88		9		<b>40 x 088</b>
		94		10		<b>40 x 094</b>
		128		13		<b>40 x 128</b>
48	56	74	15	8	4	<b>48 x 074</b>
		108		11		<b>48 x 108</b>
		128		13		<b>48 x 128</b>
50	58	74	15	8	4	<b>50 x 074</b>
		108		11		<b>50 x 108</b>
		128		13		<b>50 x 128</b>
60	70	113	15	9	5	<b>60 x 113</b>
		128		11		<b>60 x 128</b>
		139		12		<b>60 x 139</b>
63	73	113	15	9	5	<b>63 x 113</b>
		128		11		<b>63 x 128</b>
		139		12		<b>63 x 139</b>
80	92	113	16	9	6	<b>80 x 113</b>
		138		11		<b>80 x 138</b>
		156		13		<b>80 x 156</b>

$m_1$  = Rollers per roller and cage assembly

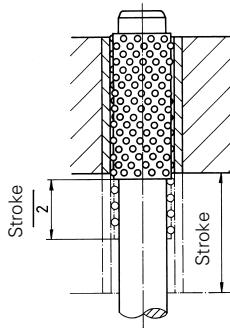
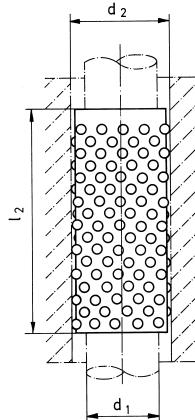
$m_2$  = Number of roller and cage assemblies

$dR$  = Roller diameter

# Ball cages ST 7150

## made from brass

**STEINEL®**



Cage travel =  $\frac{1}{2}$  stroke length

Very robust design, suitable everywhere.

### Suitable for guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82 as well as all guide bushes with ball guides

**Technical description:** See page 3.06

### Order example:

Ball cage **ST 7150**

made from brass

$d_1 = 16$ ,  $l_2 = 54$  mm

Addition **16 x 054**

Order number **ST 7150.16 x 054**

Special lengths deliverable upon request.

### Material:

Brass ball cage, steel balls, hardened, quality classification 1, sorting

Balls free-wheeling mounted in mounting bore. The balls are helically arranged in an axial direction so that each ball has its own track.

**Brass ball cages** are universally suitable. They have a high mechanical strength and the best sliding characteristics, as well as high wear resistance and stability.

Due to their optimal thermal stability, they are suitable for temperatures of over 80 °C/176 °F.

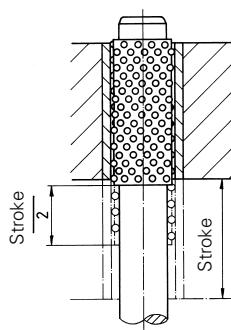
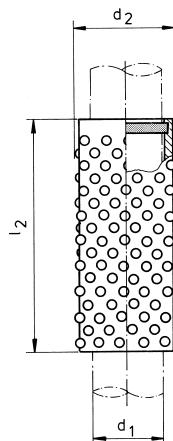
Very robust design, suitable for machines and tools with high accuracy requirements.

Add size to order number			Add size to order number		
Order number <b>ST 7150.</b> <input type="text"/> x <input type="text"/>			Order number <b>ST 7150.</b> <input type="text"/> x <input type="text"/>		
<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>	<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>
10	14	30	<b>10 x 030</b>	32	<b>32 x 038</b>
		38	<b>10 x 038</b>		<b>32 x 043</b>
		43	<b>10 x 043</b>		<b>32 x 054</b>
12	16	30	<b>12 x 030</b>		<b>32 x 058</b>
		38	<b>12 x 038</b>		<b>32 x 068</b>
		43	<b>12 x 043</b>		<b>32 x 074</b>
15	21	30	<b>15 x 030</b>		<b>32 x 083</b>
		38	<b>15 x 038</b>		<b>32 x 088</b>
		43	<b>15 x 043</b>		<b>32 x 103</b>
		54	<b>15 x 054</b>		<b>32 x 108</b>
		63	<b>15 x 063</b>	38	<b>38 x 038</b>
16	22	30	<b>16 x 030</b>		<b>38 x 043</b>
		38	<b>16 x 038</b>		<b>38 x 058</b>
		43	<b>16 x 043</b>		<b>38 x 068</b>
		54	<b>16 x 054</b>		<b>38 x 088</b>
		63	<b>16 x 063</b>		<b>38 x 094</b>
19	25	30	<b>19 x 030</b>		<b>38 x 108</b>
		38	<b>19 x 038</b>		<b>38 x 128</b>
		43	<b>19 x 043</b>	40	<b>40 x 038</b>
		54	<b>19 x 054</b>		<b>40 x 043</b>
		63	<b>19 x 063</b>		<b>40 x 058</b>
		74	<b>19 x 074</b>		<b>40 x 068</b>
20	26	30	<b>20 x 030</b>		<b>40 x 088</b>
		38	<b>20 x 038</b>		<b>40 x 094</b>
		43	<b>20 x 043</b>		<b>40 x 108</b>
		54	<b>20 x 054</b>		<b>40 x 128</b>
		63	<b>20 x 063</b>	48	<b>48 x 043</b>
		74	<b>20 x 074</b>		<b>48 x 058</b>
24	30	30	<b>24 x 030</b>		<b>48 x 068</b>
		38	<b>24 x 038</b>		<b>48 x 074</b>
		43	<b>24 x 043</b>		<b>48 x 088</b>
		54	<b>24 x 054</b>		<b>48 x 108</b>
		63	<b>24 x 063</b>		<b>48 x 128</b>
		74	<b>24 x 074</b>	50	<b>50 x 043</b>
		83	<b>24 x 083</b>		<b>50 x 058</b>
		90	<b>24 x 090</b>		<b>50 x 068</b>
25	31	30	<b>25 x 030</b>		<b>50 x 074</b>
		38	<b>25 x 038</b>		<b>50 x 088</b>
		43	<b>25 x 043</b>		<b>50 x 108</b>
		54	<b>25 x 054</b>		<b>50 x 128</b>
		63	<b>25 x 063</b>	60	<b>60 x 075</b>
		74	<b>25 x 074</b>		<b>60 x 094</b>
		83	<b>25 x 083</b>		<b>60 x 113</b>
		90	<b>25 x 090</b>		<b>60 x 128</b>
30	38	38	<b>30 x 038</b>		<b>60 x 139</b>
		43	<b>30 x 043</b>		<b>60 x 154</b>
		54	<b>30 x 054</b>	63	<b>63 x 075</b>
		58	<b>30 x 058</b>		<b>63 x 094</b>
		68	<b>30 x 068</b>		<b>63 x 113</b>
		74	<b>30 x 074</b>		<b>63 x 128</b>
		83	<b>30 x 083</b>		<b>63 x 139</b>
		88	<b>30 x 088</b>		<b>63 x 154</b>
		103	<b>30 x 103</b>	80	<b>80 x 113</b>
		108	<b>30 x 108</b>		<b>80 x 138</b>

# Ball cages ST 7151

made from brass with installation assistance

**STEINEL®**



Cage travel =  $\frac{1}{2}$  stroke length

#### Suitable for guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82 as well as all guide bushes with ball guides

**Technical description:** See page 3.06

#### Order example: Ball cage ST 7151

made from brass

$d_1 = 16$ ,  $l_2 = 54$  mm

Addition **16 x 054**

Order number **ST 7151.16 x 054**

Special lengths deliverable upon request.

#### Material:

Brass ball cage, steel balls, hardened, quality classification 1, sorting

Balls free-wheeling mounted in mounting bore. The balls are helically arranged in an axial direction so that each ball has its own track.

The installation assistance in the ball cage makes the assembly of the die sets with multiple guide units easier.

**Brass ball cages** are universally suitable. They have a high mechanical strength and the best sliding characteristics, as well as high wear resistance and stability.

Due to their optimal thermal stability, they are suitable for temperatures of over 80 °C/176 °F.

Very robust design, suitable for machines and tools with high accuracy requirements.

			Add size to order number				Add size to order number
Order number <b>ST 7151.</b> <input type="checkbox"/> x <input type="checkbox"/>				Order number <b>ST 7151.</b> <input type="checkbox"/> x <input type="checkbox"/>			
<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>		<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>	
15	21	30	<b>15 x 030</b>	32	40	38	<b>32 x 038</b>
		38	<b>15 x 038</b>			43	<b>32 x 043</b>
		43	<b>15 x 043</b>			54	<b>32 x 054</b>
		54	<b>15 x 054</b>			58	<b>32 x 058</b>
		63	<b>15 x 063</b>			68	<b>32 x 068</b>
16	22	30	<b>16 x 030</b>			74	<b>32 x 074</b>
		38	<b>16 x 038</b>			83	<b>32 x 083</b>
		43	<b>16 x 043</b>			88	<b>32 x 088</b>
		54	<b>16 x 054</b>			103	<b>32 x 103</b>
		63	<b>16 x 063</b>			108	<b>32 x 108</b>
19	25	30	<b>19 x 030</b>	38	46	38	<b>38 x 038</b>
		38	<b>19 x 038</b>			43	<b>38 x 043</b>
		43	<b>19 x 043</b>			58	<b>38 x 058</b>
		54	<b>19 x 054</b>			68	<b>38 x 068</b>
		63	<b>19 x 063</b>			88	<b>38 x 088</b>
		74	<b>19 x 074</b>			94	<b>38 x 094</b>
20	26	30	<b>20 x 030</b>			108	<b>38 x 108</b>
		38	<b>20 x 038</b>			128	<b>38 x 128</b>
		43	<b>20 x 043</b>	40	48	38	<b>40 x 038</b>
		54	<b>20 x 054</b>			43	<b>40 x 043</b>
		63	<b>20 x 063</b>			58	<b>40 x 058</b>
		74	<b>20 x 074</b>			68	<b>40 x 068</b>
24	30	30	<b>24 x 030</b>			88	<b>40 x 088</b>
		38	<b>24 x 038</b>			94	<b>40 x 094</b>
		43	<b>24 x 043</b>			108	<b>40 x 108</b>
		54	<b>24 x 054</b>			128	<b>40 x 128</b>
		63	<b>24 x 063</b>	48	56	43	<b>48 x 043</b>
		74	<b>24 x 074</b>			58	<b>48 x 058</b>
		83	<b>24 x 083</b>			68	<b>48 x 068</b>
		90	<b>24 x 090</b>			74	<b>48 x 074</b>
25	31	30	<b>25 x 030</b>			88	<b>48 x 088</b>
		38	<b>25 x 038</b>			108	<b>48 x 108</b>
		43	<b>25 x 043</b>			128	<b>48 x 128</b>
		54	<b>25 x 054</b>	50	58	43	<b>50 x 043</b>
		63	<b>25 x 063</b>			58	<b>50 x 058</b>
		74	<b>25 x 074</b>			68	<b>50 x 068</b>
		83	<b>25 x 083</b>			74	<b>50 x 074</b>
		90	<b>25 x 090</b>			88	<b>50 x 088</b>
30	38	38	<b>30 x 038</b>			108	<b>50 x 108</b>
		43	<b>30 x 043</b>			128	<b>50 x 128</b>
		54	<b>30 x 054</b>	60	70	75	<b>60 x 075</b>
		58	<b>30 x 058</b>			94	<b>60 x 094</b>
		68	<b>30 x 068</b>			113	<b>60 x 113</b>
		74	<b>30 x 074</b>			128	<b>60 x 128</b>
		83	<b>30 x 083</b>			139	<b>60 x 139</b>
		88	<b>30 x 088</b>			154	<b>60 x 154</b>
		103	<b>30 x 103</b>	63	73	75	<b>63 x 075</b>
		108	<b>30 x 108</b>			94	<b>63 x 094</b>
						113	<b>63 x 113</b>
						128	<b>63 x 128</b>
						139	<b>63 x 139</b>
						154	<b>63 x 154</b>
				80	92	113	<b>80 x 113</b>
						138	<b>80 x 138</b>
						156	<b>80 x 156</b>

# Ball cages ST 7152

## made from brass with lock ring

**STEINEL®**



### Material:

Brass ball cage, steel balls, hardened, quality classification 1, sorting

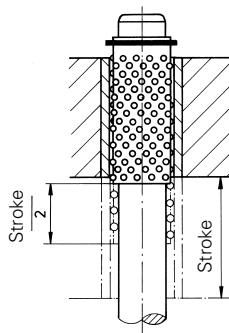
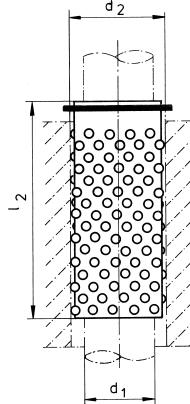
Balls free-wheeling mounted in mounting bore. The balls are helically arranged in an axial direction so that each ball has its own track.

The ball cages are equipped with a lock ring according to DIN 471.

**Brass ball cages** are universally suitable. They have a high mechanical strength and the best sliding characteristics, as well as high wear resistance and stability.

Due to their optimal thermal stability, they are suitable for temperatures of over 80 °C/176 °F.

Very robust design, suitable for machines and tools with high accuracy requirements.



Cage travel =  $\frac{1}{2}$  stroke length

### Suitable for guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82 as well as all guide bushes with ball guides

**Technical description:** See page 3.06

### Order example:

Ball cage **ST 7152**

made from brass

$d_1 = 16$ ,  $l_2 = 54$  mm

Addition **16 x 054**

Order number **ST 7152.16 x 054**

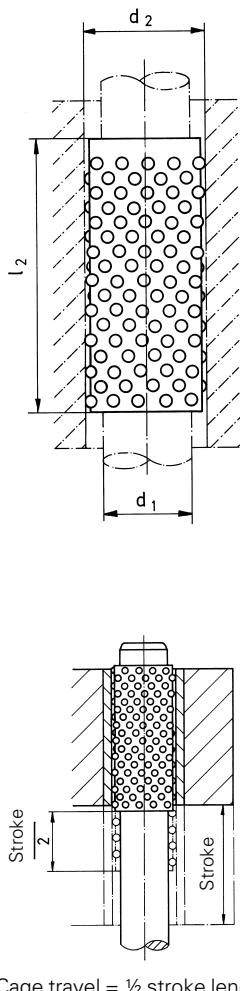
Special lengths deliverable upon request.

Add size to order number			Add size to order number		
Order number <b>ST 7152.</b> <input type="text"/> x <input type="text"/>			Order number <b>ST 7152.</b> <input type="text"/> x <input type="text"/>		
<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>	<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>
15	21	30	15	38	<b>15 x 030</b>
		38	15	43	<b>15 x 038</b>
		43	15	49	<b>15 x 043</b>
		54	15	54	<b>15 x 054</b>
		63	15	63	<b>15 x 063</b>
16	22	30	16	38	<b>16 x 030</b>
		38	16	43	<b>16 x 038</b>
		43	16	49	<b>16 x 043</b>
		54	16	54	<b>16 x 054</b>
		63	16	63	<b>16 x 063</b>
19	25	30	19	38	<b>19 x 030</b>
		38	19	43	<b>19 x 038</b>
		43	19	49	<b>19 x 043</b>
		54	19	54	<b>19 x 054</b>
		63	19	63	<b>19 x 063</b>
		74	19	74	<b>19 x 074</b>
20	26	30	20	38	<b>20 x 030</b>
		38	20	43	<b>20 x 038</b>
		43	20	49	<b>20 x 043</b>
		54	20	54	<b>20 x 054</b>
		63	20	63	<b>20 x 063</b>
		74	20	74	<b>20 x 074</b>
24	30	30	24	38	<b>24 x 030</b>
		38	24	43	<b>24 x 038</b>
		43	24	49	<b>24 x 043</b>
		54	24	54	<b>24 x 054</b>
		63	24	63	<b>24 x 063</b>
		74	24	74	<b>24 x 074</b>
		83	24	83	<b>24 x 083</b>
		90	24	90	<b>24 x 090</b>
25	31	30	25	38	<b>25 x 030</b>
		38	25	43	<b>25 x 038</b>
		43	25	49	<b>25 x 043</b>
		54	25	54	<b>25 x 054</b>
		63	25	63	<b>25 x 063</b>
		74	25	74	<b>25 x 074</b>
		83	25	83	<b>25 x 083</b>
		90	25	90	<b>25 x 090</b>
30	38	38	30	43	<b>30 x 038</b>
		43	30	49	<b>30 x 043</b>
		54	30	54	<b>30 x 054</b>
		58	30	58	<b>30 x 058</b>
		68	30	68	<b>30 x 068</b>
		74	30	74	<b>30 x 074</b>
		83	30	83	<b>30 x 083</b>
		88	30	88	<b>30 x 088</b>
		103	30	103	<b>30 x 103</b>
		108	30	108	<b>30 x 108</b>
32	40	38	32	43	<b>32 x 038</b>
		43	32	49	<b>32 x 043</b>
		54	32	54	<b>32 x 054</b>
		58	32	58	<b>32 x 058</b>
		68	32	68	<b>32 x 068</b>
		74	32	74	<b>32 x 074</b>
		83	32	83	<b>32 x 083</b>
		88	32	88	<b>32 x 088</b>
		103	32	103	<b>32 x 103</b>
		108	32	108	<b>32 x 108</b>
38	46	38	38	43	<b>38 x 038</b>
		43	38	43	<b>38 x 043</b>
		58	38	58	<b>38 x 058</b>
		68	38	68	<b>38 x 068</b>
		88	38	88	<b>38 x 088</b>
		94	38	94	<b>38 x 094</b>
		108	38	108	<b>38 x 108</b>
		128	38	128	<b>38 x 128</b>
40	48	38	40	43	<b>40 x 038</b>
		43	40	43	<b>40 x 043</b>
		58	40	58	<b>40 x 058</b>
		68	40	68	<b>40 x 068</b>
		88	40	88	<b>40 x 088</b>
		94	40	94	<b>40 x 094</b>
		108	40	108	<b>40 x 108</b>
		128	40	128	<b>40 x 128</b>
48	56	43	48	43	<b>48 x 043</b>
		58	48	58	<b>48 x 058</b>
		68	48	68	<b>48 x 068</b>
		74	48	74	<b>48 x 074</b>
		88	48	88	<b>48 x 088</b>
		94	48	94	<b>48 x 094</b>
		108	48	108	<b>48 x 108</b>
		128	48	128	<b>48 x 128</b>
50	58	43	50	43	<b>50 x 043</b>
		58	50	58	<b>50 x 058</b>
		68	50	68	<b>50 x 068</b>
		74	50	74	<b>50 x 074</b>
		88	50	88	<b>50 x 088</b>
		108	50	108	<b>50 x 108</b>
		128	50	128	<b>50 x 128</b>
60	70	75	60	75	<b>60 x 075</b>
		94	60	94	<b>60 x 094</b>
		113	60	113	<b>60 x 113</b>
		128	60	128	<b>60 x 128</b>
		139	60	139	<b>60 x 139</b>
		154	60	154	<b>60 x 154</b>
63	73	75	63	75	<b>63 x 075</b>
		94	63	94	<b>63 x 094</b>
		113	63	113	<b>63 x 113</b>
		128	63	128	<b>63 x 128</b>
		139	63	139	<b>63 x 139</b>
		154	63	154	<b>63 x 154</b>
80	92	113	80	113	<b>80 x 113</b>
		138	80	138	<b>80 x 138</b>
		156	80	156	<b>80 x 156</b>

# Ball cages ST 7133

## made from plastic

**STEINEL®**



### Material:

Plastic ball cage, steel balls, hardened, quality classification 1, sorting

Balls free-wheeling mounted in mounting bore. The balls are helically arranged in an axial direction so that each ball has its own track.

**Technical description:** See page 3.06

**Order example:** Ball cage **ST 7133**

made from plastic

$d_1 = 16, l_2 = 54 \text{ mm}$

Addition **16 x 054**

Order number **ST 7133.16 x 054**

Order number <b>ST 7133.</b>			Add size to order number	Order number <b>ST 7133.</b>			Add size to order number
<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>		<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>	
10	14	30	<b>10 x 030</b>	32	40	38	<b>32 x 038</b>
		38	<b>10 x 038</b>			43	<b>32 x 043</b>
		43	<b>10 x 043</b>			54	<b>32 x 054</b>
12	16	30	<b>12 x 030</b>			58	<b>32 x 058</b>
		38	<b>12 x 038</b>			68	<b>32 x 068</b>
		43	<b>12 x 043</b>			74	<b>32 x 074</b>
15	21	30	<b>15 x 030</b>			83	<b>32 x 083</b>
		38	<b>15 x 038</b>			88	<b>32 x 088</b>
		43	<b>15 x 043</b>			103	<b>32 x 103</b>
		54	<b>15 x 054</b>			108	<b>32 x 108</b>
		63	<b>15 x 063</b>	38	46	38	<b>38 x 038</b>
16	22	30	<b>16 x 030</b>			43	<b>38 x 043</b>
		38	<b>16 x 038</b>			58	<b>38 x 058</b>
		43	<b>16 x 043</b>			68	<b>38 x 068</b>
		54	<b>16 x 054</b>			88	<b>38 x 088</b>
		63	<b>16 x 063</b>			94	<b>38 x 094</b>
19	25	30	<b>19 x 030</b>			108	<b>38 x 108</b>
		38	<b>19 x 038</b>			128	<b>38 x 128</b>
		43	<b>19 x 043</b>	40	48	38	<b>40 x 038</b>
		54	<b>19 x 054</b>			43	<b>40 x 043</b>
		63	<b>19 x 063</b>			58	<b>40 x 058</b>
		74	<b>19 x 074</b>			68	<b>40 x 068</b>
20	26	30	<b>20 x 030</b>			88	<b>40 x 088</b>
		38	<b>20 x 038</b>			94	<b>40 x 094</b>
		43	<b>20 x 043</b>			108	<b>40 x 108</b>
		54	<b>20 x 054</b>			128	<b>40 x 128</b>
		63	<b>20 x 063</b>	48	56	43	<b>48 x 043</b>
		74	<b>20 x 074</b>			58	<b>48 x 058</b>
24	30	30	<b>24 x 030</b>			68	<b>48 x 068</b>
		38	<b>24 x 038</b>			74	<b>48 x 074</b>
		43	<b>24 x 043</b>			88	<b>48 x 088</b>
		54	<b>24 x 054</b>			108	<b>48 x 108</b>
		63	<b>24 x 063</b>			128	<b>48 x 128</b>
		74	<b>24 x 074</b>	50	58	43	<b>50 x 043</b>
		83	<b>24 x 083</b>			58	<b>50 x 058</b>
		90	<b>24 x 090</b>			68	<b>50 x 068</b>
25	31	30	<b>25 x 030</b>			74	<b>50 x 074</b>
		38	<b>25 x 038</b>			88	<b>50 x 088</b>
		43	<b>25 x 043</b>			108	<b>50 x 108</b>
		54	<b>25 x 054</b>			128	<b>50 x 128</b>
		63	<b>25 x 063</b>	50	58	43	<b>50 x 043</b>
		74	<b>25 x 074</b>			58	<b>50 x 058</b>
		83	<b>25 x 083</b>			68	<b>50 x 068</b>
		90	<b>25 x 090</b>			74	<b>50 x 074</b>
30	38	38	<b>30 x 038</b>			88	<b>50 x 088</b>
		43	<b>30 x 043</b>			108	<b>50 x 108</b>
		54	<b>30 x 054</b>			128	<b>50 x 128</b>
		58	<b>30 x 058</b>				
		68	<b>30 x 068</b>				
		74	<b>30 x 074</b>				
		83	<b>30 x 083</b>				
		88	<b>30 x 088</b>				
		103	<b>30 x 103</b>				
		108	<b>30 x 108</b>				

### Suitable for guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82 as well as all guide bushes with ball guides

# Ball cages ST 7173

made from plastic with installation assistance

**STEINEL®**

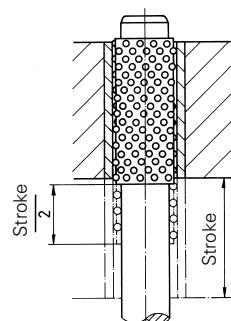
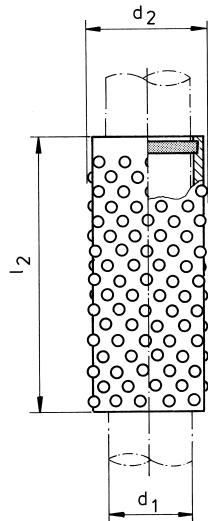


## Material:

Plastic ball cage, steel balls, hardened, quality classification 1, sorting

Balls free-wheeling mounted in mounting bore. The balls are helically arranged in an axial direction so that each ball has its own track.

The installation assistance in the ball cage makes the assembly of the die sets with multiple guide units easier.



Cage travel =  $\frac{1}{2}$  stroke length

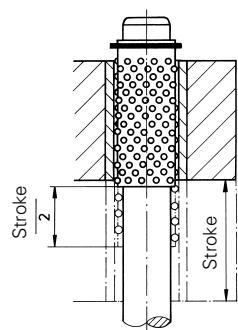
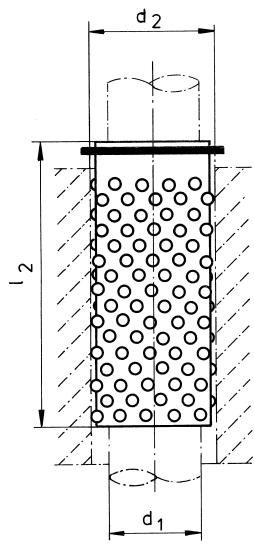
Order number <b>ST 7173.</b>			Add size to order number	Order number <b>ST 7173.</b>			Add size to order number
<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>		<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>	
15	21	30	<b>15 x 030</b>	32	40	38	<b>32 x 038</b>
		38	<b>15 x 038</b>			43	<b>32 x 043</b>
		43	<b>15 x 043</b>			54	<b>32 x 054</b>
		54	<b>15 x 054</b>			58	<b>32 x 058</b>
		63	<b>15 x 063</b>			68	<b>32 x 068</b>
16	22	30	<b>16 x 030</b>			74	<b>32 x 074</b>
		38	<b>16 x 038</b>			83	<b>32 x 083</b>
		43	<b>16 x 043</b>			88	<b>32 x 088</b>
		54	<b>16 x 054</b>			103	<b>32 x 103</b>
		63	<b>16 x 063</b>			108	<b>32 x 108</b>
19	25	30	<b>19 x 030</b>	38	46	38	<b>38 x 038</b>
		38	<b>19 x 038</b>			43	<b>38 x 043</b>
		43	<b>19 x 043</b>			58	<b>38 x 058</b>
		54	<b>19 x 054</b>			68	<b>38 x 068</b>
		63	<b>19 x 063</b>			88	<b>38 x 088</b>
		74	<b>19 x 074</b>			94	<b>38 x 094</b>
20	26	30	<b>20 x 030</b>			108	<b>38 x 108</b>
		38	<b>20 x 038</b>			128	<b>38 x 128</b>
		43	<b>20 x 043</b>	40	48	38	<b>40 x 038</b>
		54	<b>20 x 054</b>			43	<b>40 x 043</b>
		63	<b>20 x 063</b>			58	<b>40 x 058</b>
		74	<b>20 x 074</b>			68	<b>40 x 068</b>
24	30	30	<b>24 x 030</b>			88	<b>40 x 088</b>
		38	<b>24 x 038</b>			94	<b>40 x 094</b>
		43	<b>24 x 043</b>			108	<b>40 x 108</b>
		54	<b>24 x 054</b>			128	<b>40 x 128</b>
		63	<b>24 x 063</b>	48	56	43	<b>48 x 043</b>
		74	<b>24 x 074</b>			58	<b>48 x 058</b>
		83	<b>24 x 083</b>			68	<b>48 x 068</b>
		90	<b>24 x 090</b>			74	<b>48 x 074</b>
25	31	30	<b>25 x 030</b>			88	<b>48 x 088</b>
		38	<b>25 x 038</b>			108	<b>48 x 108</b>
		43	<b>25 x 043</b>			128	<b>48 x 128</b>
		54	<b>25 x 054</b>	50	58	43	<b>50 x 043</b>
		63	<b>25 x 063</b>			58	<b>50 x 058</b>
		74	<b>25 x 074</b>			68	<b>50 x 068</b>
		83	<b>25 x 083</b>			74	<b>50 x 074</b>
		90	<b>25 x 090</b>			88	<b>50 x 088</b>
30	38	38	<b>30 x 038</b>			108	<b>50 x 108</b>
		43	<b>30 x 043</b>			128	<b>50 x 128</b>
		54	<b>30 x 054</b>				
		58	<b>30 x 058</b>				
		68	<b>30 x 068</b>				
		74	<b>30 x 074</b>				
		83	<b>30 x 083</b>				
		88	<b>30 x 088</b>				
		103	<b>30 x 103</b>				
		108	<b>30 x 108</b>				

## Suitable for guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82 as well as all guide bushes with ball guides

# **Ball cages ST 7174**

**made from plastic with lock ring**



Cage travel =  $\frac{1}{2}$  stroke length

## **Material:**

Plastic ball cage, steel balls, hardened, quality classification 1, sorting

Balls free-wheeling mounted in mounting bore. The balls are helically arranged in an axial direction so that each ball has its own track.

The ball cages are equipped with a lock ring according to DIN 471.

**Technical description:** See page 3.06

**Order example:** Ball cage **ST 7174**

made from plastic with lock ring

$$d_1 = 16, l_2 = 54 \text{ mm}$$

## Addition **16 x 054**

Add size to order number			
Order number <b>ST 7174.</b>		<input type="checkbox"/> x <input type="checkbox"/>	
<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>	
15	21	30	<b>15 x 030</b>
		38	<b>15 x 038</b>
		43	<b>15 x 043</b>
		54	<b>15 x 054</b>
		63	<b>15 x 063</b>
16	22	30	<b>16 x 030</b>
		38	<b>16 x 038</b>
		43	<b>16 x 043</b>
		54	<b>16 x 054</b>
		63	<b>16 x 063</b>
19	25	30	<b>19 x 030</b>
		38	<b>19 x 038</b>
		43	<b>19 x 043</b>
		54	<b>19 x 054</b>
		63	<b>19 x 063</b>
		74	<b>19 x 074</b>
20	26	30	<b>20 x 030</b>
		38	<b>20 x 038</b>
		43	<b>20 x 043</b>
		54	<b>20 x 054</b>
		63	<b>20 x 063</b>
		74	<b>20 x 074</b>
24	30	30	<b>24 x 030</b>
		38	<b>24 x 038</b>
		43	<b>24 x 043</b>
		54	<b>24 x 054</b>
		63	<b>24 x 063</b>
		74	<b>24 x 074</b>
		83	<b>24 x 083</b>
		90	<b>24 x 090</b>
25	31	30	<b>25 x 030</b>
		38	<b>25 x 038</b>
		43	<b>25 x 043</b>
		54	<b>25 x 054</b>
		63	<b>25 x 063</b>
		74	<b>25 x 074</b>
		83	<b>25 x 083</b>
		90	<b>25 x 090</b>
30	38	38	<b>30 x 038</b>
		43	<b>30 x 043</b>
		54	<b>30 x 054</b>
		58	<b>30 x 058</b>
		68	<b>30 x 068</b>
		74	<b>30 x 074</b>
		83	<b>30 x 083</b>
		88	<b>30 x 088</b>
		103	<b>30 x 103</b>
		108	<b>30 x 108</b>
Add size to order number			
Order number <b>ST 7174.</b>		<input type="checkbox"/> x <input type="checkbox"/>	
<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>	
32	40	38	<b>32 x 038</b>
		43	<b>32 x 043</b>
		54	<b>32 x 054</b>
		58	<b>32 x 058</b>
		68	<b>32 x 068</b>
		74	<b>32 x 074</b>
		83	<b>32 x 083</b>
		88	<b>32 x 088</b>
		103	<b>32 x 103</b>
		108	<b>32 x 108</b>
38	46	38	<b>38 x 038</b>
		43	<b>38 x 043</b>
		58	<b>38 x 058</b>
		68	<b>38 x 068</b>
		88	<b>38 x 088</b>
		94	<b>38 x 094</b>
		108	<b>38 x 108</b>
		128	<b>38 x 128</b>
40	48	38	<b>40 x 038</b>
		43	<b>40 x 043</b>
		58	<b>40 x 058</b>
		68	<b>40 x 068</b>
		88	<b>40 x 088</b>
		94	<b>40 x 094</b>
		108	<b>40 x 108</b>
		128	<b>40 x 128</b>
48	56	43	<b>48 x 043</b>
		58	<b>48 x 058</b>
		68	<b>48 x 068</b>
		74	<b>48 x 074</b>
		88	<b>48 x 088</b>
		108	<b>48 x 108</b>
		128	<b>48 x 128</b>
50	58	43	<b>50 x 043</b>
		58	<b>50 x 058</b>
		68	<b>50 x 068</b>
		74	<b>50 x 074</b>
		88	<b>50 x 088</b>
		108	<b>50 x 108</b>
		128	<b>50 x 128</b>

#### **Suitable for guide pillars:**

**Suitable for guide pillars:**  
ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82 as well as all guide bushes with ball guides

# Ball cages ST 7134

## made from aluminium

**STEINEL®**



### Ball cage complete with locking device and screw

#### Material:

Aluminium ball cage, steel balls, hardened, quality classification 1, sorting

Balls free-wheeling mounted in mounting bore. The balls are helically arranged in an axial direction so that each ball has its own track. The balls are omitted from the zones of both longitudinal grooves, as well as the area of the locking device recess.

Very robust design, suitable everywhere.

#### Application:

In all die sets where the guide pillars are fixed in the upper part. The locking plate intercepts the ball cage and makes a complete retraction from the guide bush possible.

Suitable for guide pillars ST 7106 and ST 7108 as well as all guide bushes in the ball guide.

**Technical description:** See page 3.06

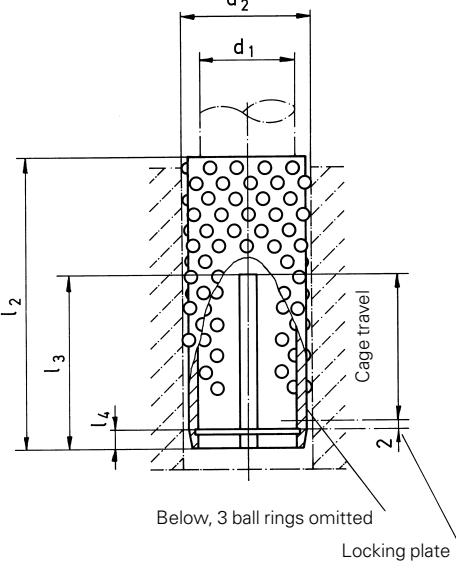
**Order example:** Ball cage **ST 7134**

made from aluminium

$d_1 = 32$ ,  $l_2 = 74$  mm

Addition **32 x 074**

Order number **ST 7134.32 x 074**



Add size to  
order number

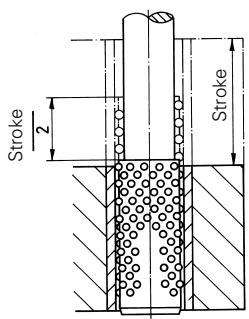
Order number **ST 7134.**  x

<b><math>d_1</math></b>	<b><math>d_2</math></b>	<b><math>l_2</math></b>	<b><math>l_3</math></b>	<b><math>l_4</math></b>	
24	30	63	34	4.5	<b>24 x 063</b>
		74	44		<b>24 x 074</b>
		83	46		<b>24 x 083</b>
25	31	63	34	4.5	<b>25 x 063</b>
		74	44		<b>25 x 074</b>
		83	46		<b>25 x 083</b>
30	38	68	38	4.5	<b>30 x 068</b>
		74	44		<b>30 x 074</b>
		83	46		<b>30 x 083</b>
		88	47		<b>30 x 088</b>
		98	53		<b>30 x 098</b>
32	40	68	38	4.5	<b>32 x 068</b>
		74	44		<b>32 x 074</b>
		83	46		<b>32 x 083</b>
		88	47		<b>32 x 088</b>
		98	53		<b>32 x 098</b>
38	46	68	38	6	<b>38 x 068</b>
		88	47		<b>38 x 088</b>
		108	58		<b>38 x 108</b>
		128	78		<b>38 x 128</b>

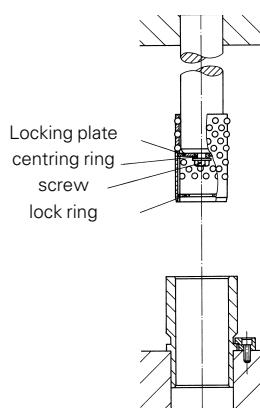
Add size to  
order number

Order number **ST 7134.**  x

<b><math>d_1</math></b>	<b><math>d_2</math></b>	<b><math>l_2</math></b>	<b><math>l_3</math></b>	<b><math>l_4</math></b>	
40	48	68	38	6	<b>40 x 068</b>
		88	47		<b>40 x 088</b>
		108	58		<b>40 x 108</b>
48	56	128	78		<b>48 x 128</b>
		108	58		<b>48 x 108</b>
		128	78		<b>48 x 128</b>
50	58	88	47	7	<b>50 x 088</b>
		108	58		<b>50 x 108</b>
		128	78		<b>50 x 128</b>
60	70	113	65	7	<b>60 x 113</b>
		128	78		<b>60 x 128</b>
		139	86		<b>60 x 139</b>
63	73	113	65	7	<b>63 x 113</b>
		128	78		<b>63 x 128</b>
		139	86		<b>63 x 139</b>



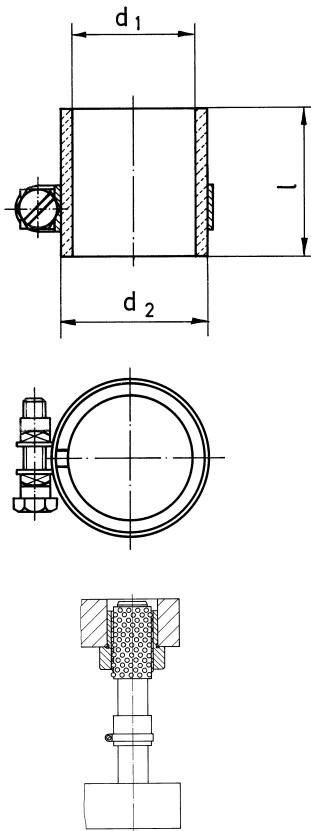
Cage travel =  $\frac{1}{2}$  stroke length



Use example

# Limiting sleeves ST 7135

**STEINEL®**



## Limiting sleeves

**Material:**  
Durethan

Limiting sleeves are pushed and clamped over the guide pillars. They prevent the "wandering" of the ball cage in the stroke direction. In addition, the correct placing of the ball cage during the attachment of the die set upper part is made easier by them.

Add size to  
order number

Order number **ST 7135.**

<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>l<sub>2</sub></b>	
15	20	20	<b>15</b>
16			<b>16</b>
19	25	20	<b>19</b>
20			<b>20</b>
24	30	30	<b>24</b>
25			<b>25</b>
30	40	30	<b>30</b>
32			<b>32</b>
38	50	40	<b>38</b>
40			<b>40</b>
48	60	40	<b>48</b>
50			<b>50</b>
60	70	40	<b>60</b>
63			<b>63</b>
80	90	45	<b>80</b>

**Order example:** Limiting sleeve **ST 7135**

d<sub>1</sub> = 30 mm

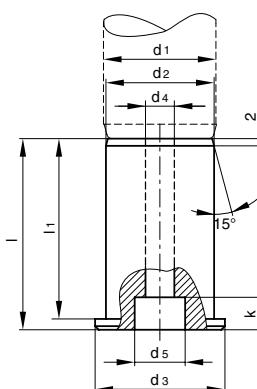
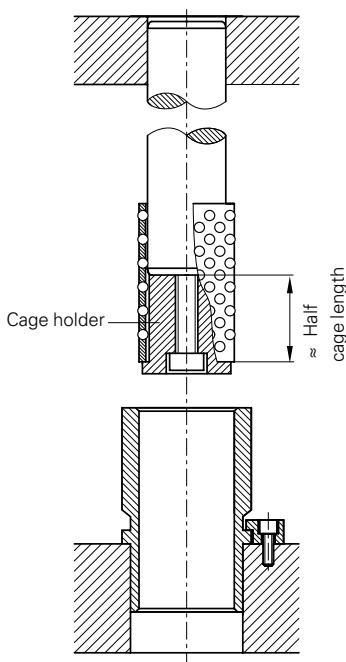
Addition **30**

Order number **ST 7135.30**

**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7120,  
ST 7126, ST 7127, ST 7128, ST 7181

# Cage holder ST 7132



**Material:**  
Steel

The cage holder can be used for all ball and roller cages. The length of the cage holder should be half of that of the cage used (if necessary, please turn).

## Application:

In all die sets where the guide pillars are fixed in the upper part. The cage holder intercepts the ball cage and makes a complete retraction from the guide bush possible.

Add size to  
order number

Cage holder Order number **ST 7132.**

<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>d<sub>3</sub></b>	<b>d<sub>4</sub></b>	<b>d<sub>5</sub></b>	<b>I</b>	<b>I<sub>1</sub></b>	<b>k</b>	
15	14.5	20.5	8.1	13.5	34	31	9	<b>15</b>
16	15.5	21.5	8.1	13.5	34	31	9	<b>16</b>
19	18.5	24.5	8.1	15	40	37	9	<b>19</b>
20	19.5	25.5	8.1	15	40	37	9	<b>20</b>
24	23.5	29.5	8.1	15	48	45	9	<b>24</b>
25	24.5	30.5	8.1	15	48	45	9	<b>25</b>
30	29.5	37	8.1	15	58	54	9	<b>30</b>
32	31.5	39	8.1	15	58	54	9	<b>32</b>
38	37.5	45	8.1	15	68	64	9	<b>38</b>
40	39.5	47	8.1	15	68	64	9	<b>40</b>
48	47.5	55	8.1	15	68	64	9	<b>48</b>
50	49.5	57	8.1	15	68	64	9	<b>50</b>
60	59.5	69	8.1	15	80	75	9	<b>60</b>
63	62.5	72	8.1	15	80	75	9	<b>63</b>
80	79.0	91	8.1	15	80	75	9	<b>80</b>

**Order example:** Cage holder **ST 7132**

d<sub>1</sub> = 30 mm

Addition **30**

Order number **ST 7132.30**

**Suitable guide pillars:**

ST 7106, ST 7108, ST 7126, ST 7128

# Guide and pillar bearings ST 720. with rectangular flange

**STEINEL®**

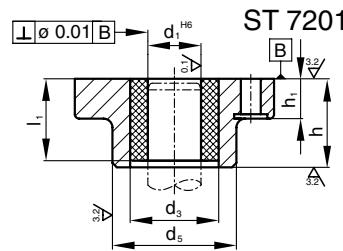


## ISO 11903

### Guide bearing ST 720.

#### Material:

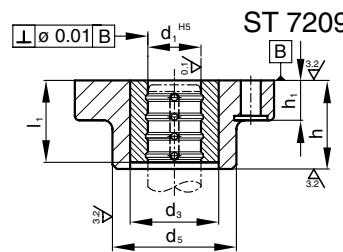
Base body, special grey cast iron GG 25, optionally with adjusted guide bush (see below),  
guide diameter ISO H5, honed,  
for sliding guide lubrication via funnel-type  
lubrication nipple



### Pillar bearing ST 7200

#### Material:

Special grey cast iron GG 25,  
mounting bore ISO R6, precision-turned,  
both flange surfaces machined with  
mounting holes



#### Note:

Suitable guide pillars ST 7100 must be ordered separately.

Centring via protruding guide pillars or guide bushes available upon request. Guide bearings can also be delivered with roller guides.

#### Order example:

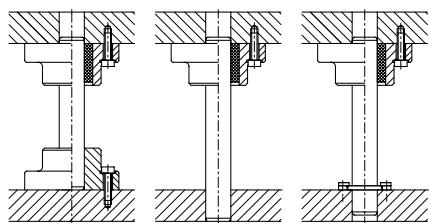
Guide bearing **ST 7202**

with ball guide

$d_1 = 19$  mm

Addition **19**

Order number **ST 7202.19**



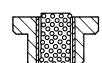
Installation  
examples



**Sliding guide**  
with solid lubricant



**Sliding guide**  
hardened steel  
bush, bronze  
coating



**Ball guide**  
with ball cage,  
cage travel =  
 $\frac{1}{2}$  stroke length

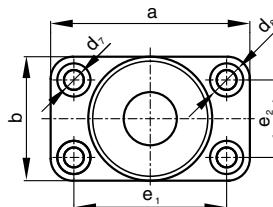
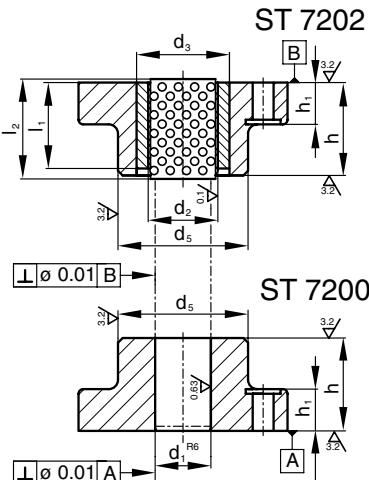


**Ball guide**  
without  
ball cage

Add size to  
order number

ST 7201.	ST 7209.	ST 7202.	ST 7206.	
Pillar bearing <b>ST 7200</b>				

<b>d<sub>1</sub></b>	<b>a</b>	<b>b</b>	<b>e<sub>1</sub></b>	<b>e<sub>2</sub></b>	<b>d<sub>2</sub></b>	<b>d<sub>3</sub></b>	<b>d<sub>5</sub></b>	<b>d<sub>7</sub></b>	<b>d<sub>8</sub></b>	<b>h</b>	<b>h<sub>1</sub></b>	<b>l<sub>1</sub></b>	<b>l<sub>2</sub></b>	<b>30</b>	<b>15</b>
15	71	40	53	22	21	28	40	6.6	11	25	16	23	<b>30</b>	<b>15</b>	
16	71	40	53	22	22	28	40	6.6	11	25	16	23	<b>30</b>	<b>16</b>	
19	80	45	60	25	25	32	45	9	15	32	18	30	<b>38</b>	<b>19</b>	
20	80	45	60	25	26	32	45	9	15	32	18	30	<b>38</b>	<b>20</b>	
24	90	56	69	35	30	40	56	9	15	40	18	37	<b>43</b>	<b>24</b>	
25	90	56	69	35	31	40	56	9	15	40	18	37	<b>43</b>	<b>25</b>	
30	112	71	86	45	38	48	71	11	18	50	20	47	<b>58</b>	<b>30</b>	
32	112	71	86	45	40	48	71	11	18	50	20	47	<b>58</b>	<b>32</b>	
38	132	85	102	55	46	58	85	14	20	63	25	60	<b>68</b>	<b>38</b>	
40	132	85	102	55	48	58	85	14	20	63	25	60	<b>68</b>	<b>40</b>	
48	160	112	126	78	56	70	112	18	26	80	28	77	<b>88</b>	<b>48</b>	
50	160	112	126	78	58	70	112	18	26	80	28	77	<b>88</b>	<b>50</b>	
60	200	132	154	86	70	85	132	18	26	100	36	95	<b>113</b>	<b>60</b>	
63	200	132	154	86	73	85	132	18	26	100	36	95	<b>113</b>	<b>63</b>	
80	224	140	172	88	92	105	140	22	33	125	40	120	<b>138</b>	<b>80</b>	



# Guide and pillar bearings ST 721. with rectangular flange (machined version)

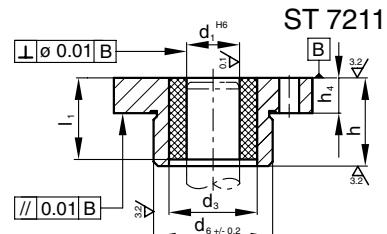
**STEINEL®**



## Guide bearing ST 721.

### Material:

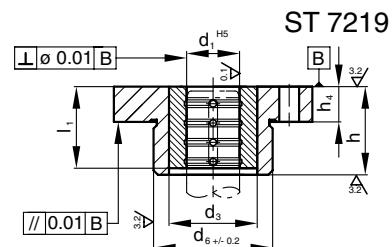
Base body, special grey cast iron GG 25, optionally with adjusted guide bush (see below),  
guide diameter ISO H5, honed,  
for sliding guide lubrication via funnel-type  
lubrication nipple,  
both flange surfaces machined with  
mounting holes



## Pillar bearing ST 7210

### Material:

Special grey cast iron GG 25,  
mounting bore ISO R6,  
precision-turned,  
both flange surfaces machined with  
mounting holes

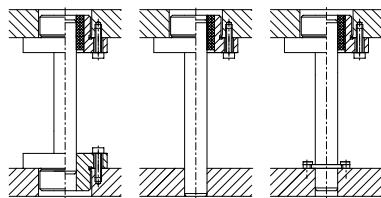


**Order example:** Guide bearing ST 7212  
with ball guide  
 $d_1 = 19$  mm  
Addition **19**  
Order number **ST 7212.19**

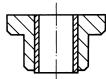
### Note:

Suitable guide pillars ST 7100 must be ordered  
separately.

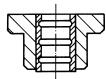
Centring via protruding guide pillars or guide  
bushes available upon request. Guide bearings  
can also be delivered with roller guides.



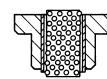
Installation examples



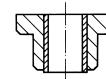
**Sliding guide**  
with solid lubricant



**Sliding guide**  
hardened steel  
bush, bronze  
coating



**Ball guide**  
with ball cage  
cage travel =  
 $\frac{1}{2}$  stroke length



**Ball guide**  
without  
ball cage

Add size to  
order number

### ST 7211.

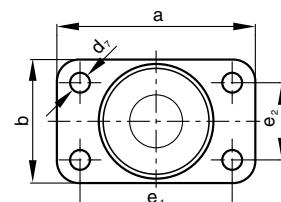
### ST 7219.

### ST 7212.

### ST 7216.

Pillar bearing **ST 7210.**

<b>d<sub>1</sub></b>	<b>a</b>	<b>b</b>	<b>e<sub>1</sub></b>	<b>e<sub>2</sub></b>	<b>d<sub>2</sub></b>	<b>d<sub>3</sub></b>	<b>d<sub>6</sub><sup>±0.2</sup></b>	<b>d<sub>7</sub></b>	<b>h</b>	<b>h<sub>4</sub></b>	<b>l<sub>1</sub></b>	<b>l<sub>2</sub></b>	<b>ST 7211.</b>
15	71	40	53	22	21	28	37	6.6	25	14	23	30	<b>15</b>
16	71	40	53	22	22	28	37	6.6	25	14	23	30	<b>16</b>
19	80	45	60	25	25	32	42	9	32	16	30	38	<b>19</b>
20	80	45	60	25	26	32	42	9	32	16	30	38	<b>20</b>
24	90	56	69	35	30	40	52	9	40	16	37	43	<b>24</b>
25	90	56	69	35	31	40	52	9	40	16	37	43	<b>25</b>
30	112	71	86	45	38	48	65	11	50	17.5	47	58	<b>30</b>
32	112	71	86	45	40	48	65	11	50	17.5	47	58	<b>32</b>
38	132	85	102	55	46	58	80	14	63	22.5	60	68	<b>38</b>
40	132	85	102	55	48	58	80	14	63	22.5	60	68	<b>40</b>
48	160	112	126	78	56	70	107	18	80	25	77	88	<b>48</b>
50	160	112	126	78	58	70	107	18	80	25	77	88	<b>50</b>
60	200	132	154	86	70	85	125	18	100	33	95	113	<b>60</b>
63	200	132	154	86	73	85	125	18	100	33	95	113	<b>63</b>
80	224	140	172	88	92	105	130	22	125	36.5	120	138	<b>80</b>



# Guide and pillar bearings ST 72..

## with small round flange (space-saving version)

**STEINEL®**



### Guide bearing ST 7250

#### Material:

Special grey cast iron GG 25,  
guide diameter ISO H5, honed,  
lubrication via funnel-type lubricating nipple,  
one flange surface machined with mounting  
holes

### Pillar bearing ST 7260

#### Material:

Special grey cast iron GG 25, mounting bore  
ISO R6, precision-turned. One flange surface  
machined with mounting holes (also without  
mounting holes upon request).

#### Note:

Suitable guide pillars ST 7100 must be  
ordered separately.

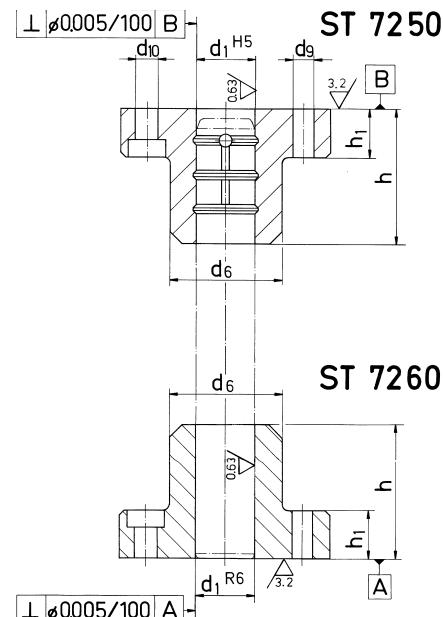
**Technical description:** See page 2.02

**Order example:** Pillar bearing ST 7260

$d_1 = 30 \text{ mm}$

Addition **30**

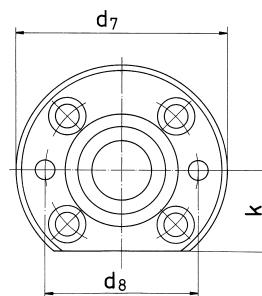
Order number **ST 7260.30**



#### Sliding guide

guide bore directly  
in grey cast iron  
base body

Add size to  
order number



Guide bearing	Order number <b>ST 7250.</b>	<input type="button" value=""/>
Pillar bearing	Order number <b>ST 7260.</b>	

<b><math>d_1</math></b>	<b><math>d_6</math></b>	<b><math>d_7</math></b>	<b><math>d_8</math></b>	<b><math>d_9</math></b>	<b><math>d_{10}</math></b>	<b><math>h</math></b>	<b><math>h_1</math></b>	<b><math>k</math></b>	
19	36	78	54	7.8	9	50	18	30	<b>19</b>
20	36	78	54	7.8	9	50	18	30	<b>20</b>
24	46	86	64	7.8	9	55	20	33	<b>24</b>
25	46	86	64	7.8	9	55	20	33	<b>25</b>
30	56	106	80	9.8	11	63	22	41	<b>30</b>
32	56	106	80	9.8	11	63	22	41	<b>32</b>
38	66	116	90	9.8	11	72	26	45	<b>38</b>
40	66	116	90	9.8	11	72	26	45	<b>40</b>
48	80	140	108	11.8	13.5	80	30	54	<b>48</b>
50	80	140	108	11.8	13.5	80	30	54	<b>50</b>

# Guide bushes ST 7319

smooth, steel sliding guide, bronze coating

**STEINEL®**



## Material:

Steel 1.3505 (199 Cr6), hardened, hardness 63 + 2 HRC running surface, bronze coating

Guide diameter ISO H5, honed, mounting diameter ISO p6, ground

## Important:

Due to the galvanically deposited bronze coating on the hardened steel sleeve, this bush is particularly suitable for high sliding speeds and strong lateral loads.

## Suitable guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

## Installation instructions:

1. Stick into mounting bore ISO E6 (for adhesive, see the relevant page), when sticking in, ensure that the oil distribution groove on the mounting diameter remains free
2. Avoid pressing in, because it reduces the internal diameter
3. Not suitable to pour in, because the oil distribution groove on the mounting diameter becomes blocked

**Technical description:** See page 3.05

**Order example:** Guide bush **ST 7319**

$d_1 = 16, l_1 = 37 \text{ mm}$

Addition **16 x 037**

Order number **ST 7319.16 x 037**

Add size to  
order number

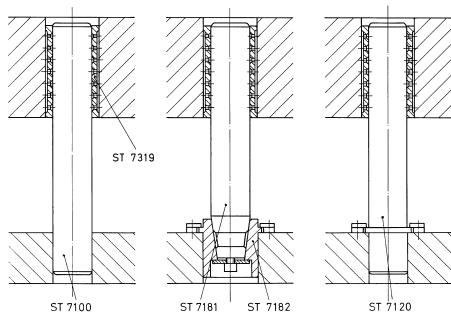
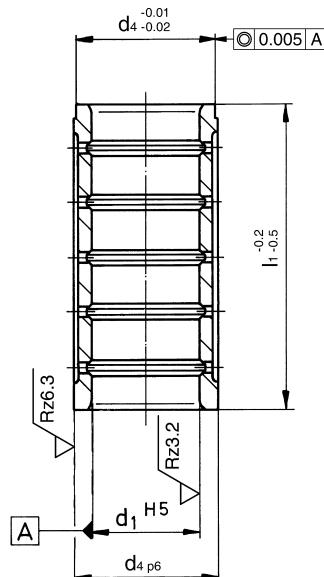
Add size to  
order number

## Order number **ST 7319.** x

$d_1^{\text{H5}}$	$d_4$	$l_1$	
10	16	23	<b>10 x 023</b>
		30	<b>10 x 030</b>
		37	<b>10 x 037</b>
12	18	23	<b>12 x 023</b>
		30	<b>12 x 030</b>
		37	<b>12 x 037</b>
15	21	23	<b>15 x 023</b>
		30	<b>15 x 030</b>
		37	<b>15 x 037</b>
		47	<b>15 x 047</b>
16	22	23	<b>16 x 023</b>
		30	<b>16 x 030</b>
		37	<b>16 x 037</b>
		47	<b>16 x 047</b>
19	26	30	<b>19 x 030</b>
		37	<b>19 x 037</b>
		47	<b>19 x 047</b>
		60	<b>19 x 060</b>
20	28	30	<b>20 x 030</b>
		37	<b>20 x 037</b>
		47	<b>20 x 047</b>
		60	<b>20 x 060</b>
24	32	30	<b>24 x 030</b>
		37	<b>24 x 037</b>
		47	<b>24 x 047</b>
		60	<b>24 x 060</b>
		77	<b>24 x 077</b>

## Order number **ST 7319.** x

$d_1^{\text{H5}}$	$d_4$	$l_1$	
25	33	30	<b>25 x 030</b>
		37	<b>25 x 037</b>
		47	<b>25 x 047</b>
		60	<b>25 x 060</b>
		77	<b>25 x 077</b>
30	38	37	<b>30 x 037</b>
		47	<b>30 x 047</b>
		60	<b>30 x 060</b>
		77	<b>30 x 077</b>
		95	<b>30 x 095</b>
32	40	37	<b>32 x 037</b>
		47	<b>32 x 047</b>
		60	<b>32 x 060</b>
		77	<b>32 x 077</b>
		95	<b>32 x 095</b>
38	48	47	<b>38 x 047</b>
		60	<b>38 x 060</b>
		77	<b>38 x 077</b>
		95	<b>38 x 095</b>
		120	<b>38 x 120</b>
40	50	47	<b>40 x 047</b>
		60	<b>40 x 060</b>
		77	<b>40 x 077</b>
		95	<b>40 x 095</b>
		120	<b>40 x 120</b>



Matching possibilities

# Guide bushes ST 7409

smooth, steel sliding guide, bronze coating

**STEINEL®**



DIN 9831, ISO 9448

**Material:**

Steel 1.3505 (199 Cr6), hardened, hardness 63 + 2 HRC, running surface, bronze coating

Guide diameter ISO H5, honed, mounting diameter ISO j6, ground

**Important:**

Due to the galvanically deposited bronze coating on the hardened steel sleeve, this bush is particularly suitable for high sliding speeds and strong lateral loads.

**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

**Installation instructions:**

1. Stick into mounting bore ISO G6 (for adhesive, see the relevant page), when sticking in, ensure that the oil distribution groove on the mounting diameter remains free
2. Avoid pressing in because it reduces the internal diameter
3. Not suitable to pour in, because the oil distribution groove on the mounting diameter becomes blocked

For guide bushes (for pouring in), see ST 7411

**Technical description:** See page 3.05

**Order example:** Guide bush ST 7409

$d_1 = 16, l_1 = 37 \text{ mm}$

Addition **16 x 037**

Order number **ST 7409.16 x 037**

Order number **ST 7409.**  x

Add size to order number

Order number **ST 7409.**  x

Add size to order number

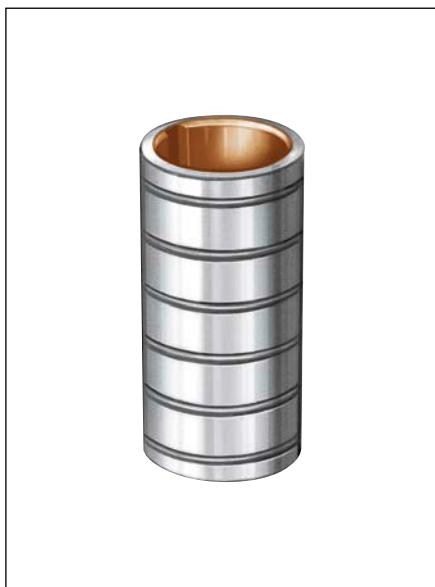
$d_1^{\text{H}5}$	$d_{4j6}$	$l_1$	
10	22	23	<b>10 x 023</b>
		30	<b>10 x 030</b>
		37	<b>10 x 037</b>
12	22	23	<b>12 x 023</b>
		30	<b>12 x 030</b>
		37	<b>12 x 037</b>
15	28	23	<b>15 x 023</b>
		30	<b>15 x 030</b>
		37	<b>15 x 037</b>
		47	<b>15 x 047</b>
		60	<b>15 x 060</b>
16	28	23	<b>16 x 023</b>
		30	<b>16 x 030</b>
		37	<b>16 x 037</b>
		47	<b>16 x 047</b>
		60	<b>16 x 060</b>
19	32	23	<b>19 x 023</b>
		30	<b>19 x 030</b>
		37	<b>19 x 037</b>
		47	<b>19 x 047</b>
		60	<b>19 x 060</b>
		77	<b>19 x 077</b>
20	32	23	<b>20 x 023</b>
		30	<b>20 x 030</b>
		37	<b>20 x 037</b>
		47	<b>20 x 047</b>
		60	<b>20 x 060</b>
		77	<b>20 x 077</b>
24	40	23	<b>24 x 023</b>
		30	<b>24 x 030</b>
		37	<b>24 x 037</b>
		47	<b>24 x 047</b>
		60	<b>24 x 060</b>
		77	<b>24 x 077</b>
25	40	23	<b>25 x 023</b>
		30	<b>25 x 030</b>
		37	<b>25 x 037</b>
		47	<b>25 x 047</b>
		60	<b>25 x 060</b>
		77	<b>25 x 077</b>
30	48	30	<b>30 x 030</b>
		37	<b>30 x 037</b>
		47	<b>30 x 047</b>

Order number **ST 7409.**  x

# Guide bushes ST 7411

smooth, for pouring in, steel sliding guide, bronze coating

**STEINEL®**



DIN 9831, ISO 9448

**Material:**

Steel 1.3505 (199 Cr6), hardened, hardness 63 + 2 HRC, running surface, bronze coating

Guide diameter ISO H5, honed, mounting diameter machined with recesses for casting resin

**Important:**

Due to the galvanically deposited bronze coating on the hardened steel sleeve, this bush is particularly suitable for high sliding speeds and strong lateral loads.

**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

**Installation instructions:**

For lubricating reasons, only install guide bush ST 7411 vertically, with the air groove upward.

**Mounting bore:**

For the casting cap,  $d_4 +1$  up to +4 mm is intended

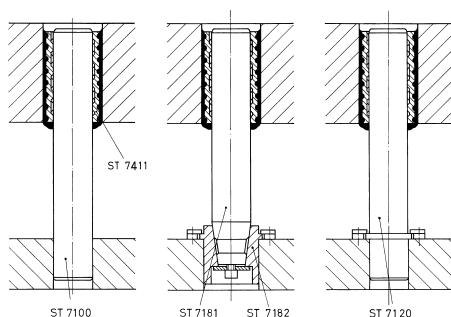
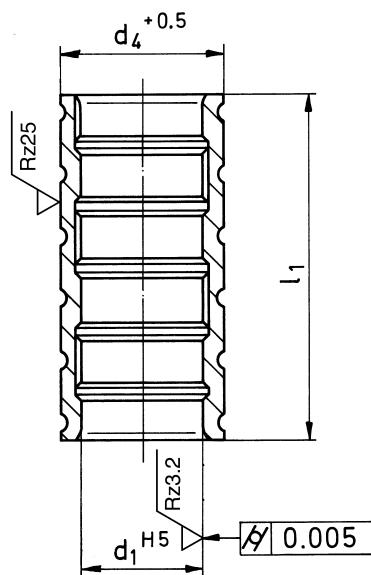
**Technical description:** See page 3.05

**Order example:** Guide bush **ST 7411**

$d_1 = 16, l_1 = 37 \text{ mm}$

Addition **16 x 037**

Order number **ST 7411.16 x 037**



Matching possibilities

Add size to  
order number

Order number **ST 7411.**  x

$d_1^{\text{H5}}$	$d_4^{+0.5}$	$l_1^{-0.2}_{-0.5}$	
10	22	23	<b>10 x 023</b>
		30	<b>10 x 030</b>
		37	<b>10 x 037</b>
12	22	23	<b>12 x 023</b>
		30	<b>12 x 030</b>
		37	<b>12 x 037</b>
15	28	23	<b>15 x 023</b>
		30	<b>15 x 030</b>
		37	<b>15 x 037</b>
		47	<b>15 x 047</b>
		60	<b>15 x 060</b>
16	28	23	<b>16 x 023</b>
		30	<b>16 x 030</b>
		37	<b>16 x 037</b>
		47	<b>16 x 047</b>
		60	<b>16 x 060</b>
19	32	23	<b>19 x 023</b>
		30	<b>19 x 030</b>
		37	<b>19 x 037</b>
		47	<b>19 x 047</b>
		60	<b>19 x 060</b>
		77	<b>19 x 077</b>
20	32	23	<b>20 x 023</b>
		30	<b>20 x 030</b>
		37	<b>20 x 037</b>
		47	<b>20 x 047</b>
		60	<b>20 x 060</b>
		77	<b>20 x 077</b>
24	40	23	<b>24 x 023</b>
		30	<b>24 x 030</b>
		37	<b>24 x 037</b>
		47	<b>24 x 047</b>
		60	<b>24 x 060</b>
		77	<b>24 x 077</b>
25	40	23	<b>25 x 023</b>
		30	<b>25 x 030</b>
		37	<b>25 x 037</b>
		47	<b>25 x 047</b>
		60	<b>25 x 060</b>
		77	<b>25 x 077</b>
30	48	30	<b>30 x 030</b>
		37	<b>30 x 037</b>
		47	<b>30 x 047</b>

Add size to  
order number

Order number **ST 7411.**  x

$d_1^{\text{H5}}$	$d_4^{+0.5}$	$l_1^{-0.2}_{-0.5}$	
30	48	60	<b>30 x 060</b>
		77	<b>30 x 077</b>
		95	<b>30 x 095</b>
32	48	30	<b>32 x 030</b>
		37	<b>32 x 037</b>
		47	<b>32 x 047</b>
		60	<b>32 x 060</b>
		77	<b>32 x 077</b>
		95	<b>32 x 095</b>
38	58	30	<b>38 x 030</b>
		37	<b>38 x 037</b>
		47	<b>38 x 047</b>
		60	<b>38 x 060</b>
		77	<b>38 x 077</b>
		95	<b>38 x 095</b>
		120	<b>38 x 120</b>
40	58	30	<b>40 x 030</b>
		37	<b>40 x 037</b>
		47	<b>40 x 047</b>
		60	<b>40 x 060</b>
		77	<b>40 x 077</b>
		95	<b>40 x 095</b>
		120	<b>40 x 120</b>
48	70	37	<b>48 x 037</b>
		47	<b>48 x 047</b>
		60	<b>48 x 060</b>
		77	<b>48 x 077</b>
		95	<b>48 x 095</b>
		120	<b>48 x 120</b>
50	70	37	<b>50 x 037</b>
		47	<b>50 x 047</b>
		60	<b>50 x 060</b>
		77	<b>50 x 077</b>
		95	<b>50 x 095</b>
		120	<b>50 x 120</b>
60	85	60	<b>60 x 060</b>
		77	<b>60 x 077</b>
		95	<b>60 x 095</b>
		120	<b>60 x 120</b>
63	85	60	<b>63 x 060</b>
		77	<b>63 x 077</b>
		95	<b>63 x 095</b>
		120	<b>63 x 120</b>
80	105	120	<b>80 x 120</b>
		135	<b>80 x 135</b>

# Guide bushes ST 7491

smooth, sliding guide with solid lubricant

**STEINEL®**



## Dimensions according to DIN 9831, ISO 9448

### Material:

Steel hardened to 63 + 2 HRC with solid lubricant insert

This sliding guide is self-lubricating due to the solid lubricant inserts, and suitable for higher loads.

Guide diameter ISO H6, precision-turned, mounting diameter ISO j6, precision-turned

### Suitable guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

Add size to order number      Add size to order number

Order number <b>ST 7491.</b> <input type="text"/> x <input type="text"/>			Order number <b>ST 7491.</b> <input type="text"/> x <input type="text"/>		
<b>d<sub>1</sub><sup>H6</sup></b>	<b>d<sub>4j6</sub></b>	<b>l<sub>1-0.5</sub></b>	<b>d<sub>1</sub><sup>H6</sup></b>	<b>d<sub>4j6</sub></b>	<b>l<sub>1-0.2</sub></b>
15	28	23	38	58	30
		30			37
		37			47
		47			60
		60			77
16	28	23	40	58	95
		30			120
		37			30
		47			37
		60			47
19	32	23	48	70	60
		30			77
		37			95
		47			120
		60			30
		77			37
20	32	23	50	70	48
		30			47
		37			60
		47			77
		60			95
		77			120
24	40	23	60	85	48
		30			50
		37			x 037
		47			x 047
		60			x 060
		77			x 077
25	40	23	63	85	60
		30			x 077
		37			x 095
		47			x 120
		60			x 060
		77			x 077
30	48	30	66	95	60
		37			x 095
		47			x 120
		60			x 060
		77			x 077
		95			x 095
32	48	30	80	105	63
		37			x 120
		47			x 135
		60			x 135
		77			
		95			

95      32 x 095

### Installation instructions:

1. Stick into mounting bore ISO G6  
(for adhesive, see the relevant page)
2. Avoid pressing in because  
it reduces the internal diameter

### Order example: Guide bush **ST 7491**

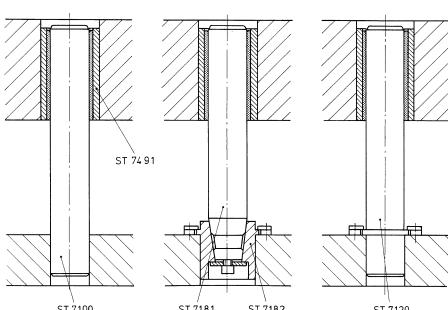
$d_1 = 16, l_1 = 37 \text{ mm}$

Addition **16 x 037**

Order number **ST 7491.16 x 037**



A



Matching possibilities

# Guide bushes ST 7451

smooth, sliding guide with solid lubricant

**STEINEL®**



## Material:

CuSn8/CuZn25Al5 with solid lubricant rings

Due to the integrated solid lubricant rings, this sliding guide is self-lubricating and suitable for higher loads.

Guide diameter ISO H6, precision-turned, mounting diameter ISO j6, precision-turned

## Suitable guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

## Installation instructions:

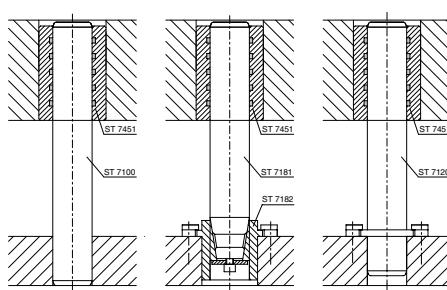
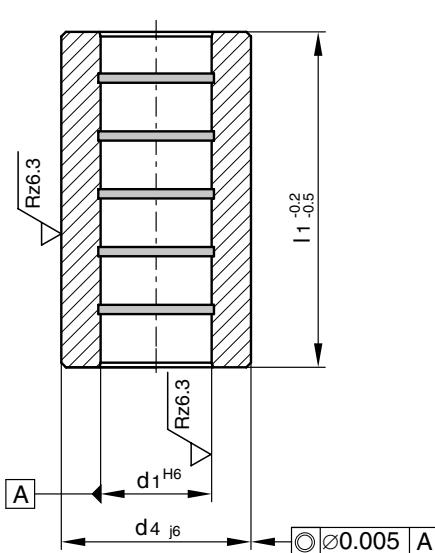
1. Stick into mounting bore ISO G6 (for adhesive, see the relevant page)
2. Avoid pressing in because it reduces the internal diameter

**Order example:** Guide bush **ST 7451**

$d_1 = 16, l_1 = 37 \text{ mm}$

Addition **16 x 037**

Order number **ST 7451.16 x 037**



Matching possibilities

Add size to order number

Order number **ST 7451.**  x

$d_1^{H6}$	$d_{4j6}$	$l_1$	
15	28	23	<b>15 x 023</b>
		30	<b>15 x 030</b>
		37	<b>15 x 037</b>
		47	<b>15 x 047</b>
		60	<b>15 x 060</b>
16	28	23	<b>16 x 023</b>
		30	<b>16 x 030</b>
		37	<b>16 x 037</b>
		47	<b>16 x 047</b>
		60	<b>16 x 060</b>
19	32	23	<b>19 x 023</b>
		30	<b>19 x 030</b>
		37	<b>19 x 037</b>
		47	<b>19 x 047</b>
		60	<b>19 x 060</b>
		77	<b>19 x 077</b>
20	32	23	<b>20 x 023</b>
		30	<b>20 x 030</b>
		37	<b>20 x 037</b>
		47	<b>20 x 047</b>
		60	<b>20 x 060</b>
		77	<b>20 x 077</b>
24	40	23	<b>24 x 023</b>
		30	<b>24 x 030</b>
		37	<b>24 x 037</b>
		47	<b>24 x 047</b>
		60	<b>24 x 060</b>
		77	<b>24 x 077</b>
25	40	23	<b>25 x 023</b>
		30	<b>25 x 030</b>
		37	<b>25 x 037</b>
		47	<b>25 x 047</b>
		60	<b>25 x 060</b>
		77	<b>25 x 077</b>
30	48	30	<b>30 x 030</b>
		37	<b>30 x 037</b>
		47	<b>30 x 047</b>
		60	<b>30 x 060</b>
		77	<b>30 x 077</b>
		95	<b>30 x 095</b>
32	48	30	<b>32 x 030</b>
		37	<b>32 x 037</b>
		47	<b>32 x 047</b>
		60	<b>32 x 060</b>
		77	<b>32 x 077</b>
		95	<b>32 x 095</b>

Add size to order number

Order number **ST 7451.**  x

$d_1^{H6}$	$d_{4j6}$	$l_1$	
38	58	30	<b>38 x 030</b>
		37	<b>38 x 037</b>
		47	<b>38 x 047</b>
		60	<b>38 x 060</b>
		77	<b>38 x 077</b>
		95	<b>38 x 095</b>
		120	<b>38 x 120</b>
40	58	30	<b>40 x 030</b>
		37	<b>40 x 037</b>
		47	<b>40 x 047</b>
		60	<b>40 x 060</b>
		77	<b>40 x 077</b>
		95	<b>40 x 095</b>
		120	<b>40 x 120</b>
48	70	37	<b>48 x 037</b>
		47	<b>48 x 047</b>
		60	<b>48 x 060</b>
		77	<b>48 x 077</b>
		95	<b>48 x 095</b>
		120	<b>48 x 120</b>
50	70	37	<b>50 x 037</b>
		47	<b>50 x 047</b>
		60	<b>50 x 060</b>
		77	<b>50 x 077</b>
		95	<b>50 x 095</b>
		120	<b>50 x 120</b>
60	85	60	<b>60 x 060</b>
		77	<b>60 x 077</b>
		95	<b>60 x 095</b>
		120	<b>60 x 120</b>
63	85	60	<b>63 x 060</b>
		77	<b>63 x 077</b>
		95	<b>63 x 095</b>
		120	<b>63 x 120</b>
80	105	120	<b>80 x 120</b>
		135	<b>80 x 135</b>

## **Guide bushes ST 7402, ST 7406**

**STEINEL®**

**smooth, ball guide, aluminium**



DIN 9831, ISO 9448

## **Material:**

Guide bushes made from steel 1.3505  
(100 Cr6), hardened, hardness 63 + 2 HRC,  
aluminium ball cage, steel balls, hardened,  
quality classification 1, sorting

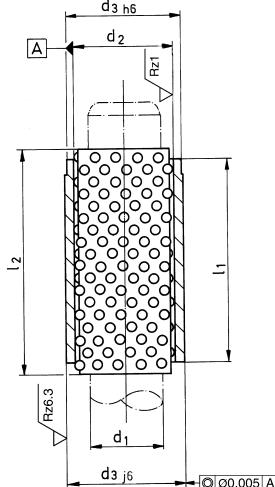
Guide diameter  $d_2$  honed,  
suitable for ball cage and guide pillar,  
mounting diameter ISO j6, ground

### **Important:**

Order ball guide separately, so that it can be matched in the correct fit.

## **Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117,  
ST 7118, ST 7120, ST 7126, ST 7127, ST 7128,  
ST 7181/82



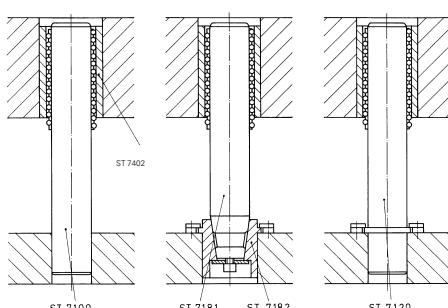
Cage travel =  $\frac{1}{2}$  stroke length



SI 7406



ST 7402  
Guide bush with ball bearing



## Matching possibilities

## **Installation instructions:**

1. Stick into mounting bore ISO G6  
(for adhesive, see the relevant page)
  2. Avoid pressing in because  
it reduces the internal diameter

Guide bush without ball guide ST 7406,  
ball cage alone ST 7130

**Technical description:** See page 3.06

**Order example:** Guide bush **ST 7402**

with ball cage

$$d_1 = 30, l_1 = 47, l_2 = 58 \text{ m}$$

## Addition **30 x 047 x 058**

# Guide bushes ST 7403

## smooth, roller guide

**STEINEL®**



### DIN 9831, ISO 9448

#### Material:

Guide bushes made from steel 1.3505 (100 Cr6), hardened, hardness 61–63 HRC, aluminium roller cage, steel rollers, hardened, quality classification 1, sorting

Guide diameter  $d_2$  honed,  
suitable for roller cage and guide pillar,  
mounting diameter ISO j6, ground

#### Important:

Order roller guide separately, so that it can be  
matched in the correct fit.

#### Suitable guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117,  
ST 7118, ST 7120, ST 7126, ST 7127, ST 7128,  
ST 7181/82

#### Installation instructions:

1. Stick into mounting bore ISO G6  
(for adhesive, see the relevant page)
2. Avoid pressing in, because it reduces the  
internal diameter

Guide bushes without roller cage ST 7406,  
roller cage alone ST 7140

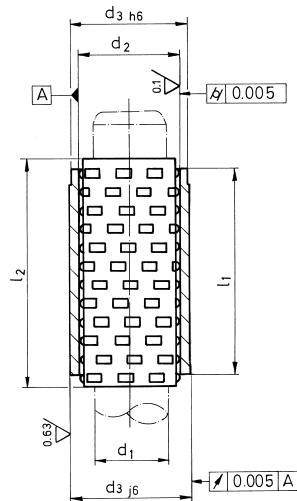
**Technical description:** See page 3.07

#### Order example:

Guide bush **ST 7403**  
with roller cage  
 $d_1 = 30$ ,  $l_1 = 47$ ,  $l_2 = 54$  mm

Addition **30 x 047 x 054**

Order number **ST 7403.30 x 047 x 054**



Cage travel =  $\frac{1}{2}$  stroke length



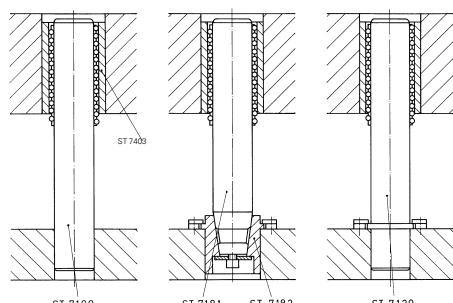
ST 7406

Guide bush, smooth, without roller cage



ST 7403

Guide bush, smooth, with roller cage



Matching possibilities

Without roller cage		<b>ST 7406.</b>			
With roller cage		<b>ST 7403.</b>			
<b>d<sub>1h3</sub></b>	<b>d<sub>2</sub></b>	<b>d<sub>3</sub></b>	<b>l<sub>1</sub></b>	<b>l<sub>2</sub></b>	
19	25	32	37	43	<b>19 x 037 x 043</b>
			47	54	<b>19 x 047 x 054</b>
			60	63	<b>19 x 060 x 063</b>
20	26	32	37	43	<b>20 x 037 x 043</b>
			47	54	<b>20 x 047 x 054</b>
			60	63	<b>20 x 060 x 063</b>
24	30	40	37	43	<b>24 x 037 x 043</b>
			47	63	<b>24 x 047 x 063</b>
			60	74	<b>24 x 060 x 074</b>
25	31	40	37	43	<b>25 x 037 x 043</b>
			47	63	<b>25 x 047 x 063</b>
			60	74	<b>25 x 060 x 074</b>
27	33	40	37	43	<b>27 x 037 x 043</b>
			47	63	<b>27 x 047 x 063</b>
			60	74	<b>27 x 060 x 074</b>
28	34	40	37	43	<b>28 x 037 x 043</b>
			47	63	<b>28 x 047 x 063</b>
			60	74	<b>28 x 060 x 074</b>
30	36	48	37	43	<b>30 x 037 x 043</b>
			47	54	<b>30 x 047 x 054</b>
			60	74	<b>30 x 060 x 074</b>
32	38	48	37	43	<b>32 x 037 x 043</b>
			47	63	<b>32 x 047 x 063</b>
			60	74	<b>32 x 060 x 074</b>
34	40	48	37	43	<b>34 x 037 x 043</b>
			47	63	<b>34 x 047 x 063</b>
			60	74	<b>34 x 060 x 074</b>
36	42	48	37	43	<b>36 x 037 x 043</b>
			47	54	<b>36 x 047 x 054</b>
			60	74	<b>36 x 060 x 074</b>
38	44	48	37	43	<b>38 x 037 x 043</b>
			47	54	<b>38 x 047 x 054</b>
			60	74	<b>38 x 060 x 074</b>
40	46	48	37	43	<b>40 x 037 x 043</b>
			47	54	<b>40 x 047 x 054</b>
			60	74	<b>40 x 060 x 074</b>
42	48	48	37	43	<b>42 x 037 x 043</b>
			47	54	<b>42 x 047 x 054</b>
			60	74	<b>42 x 060 x 074</b>
44	50	48	37	43	<b>44 x 037 x 043</b>
			47	54	<b>44 x 047 x 054</b>
			60	74	<b>44 x 060 x 074</b>
46	52	48	37	43	<b>46 x 037 x 043</b>
			47	54	<b>46 x 047 x 054</b>
			60	74	<b>46 x 060 x 074</b>
48	54	58	37	43	<b>48 x 037 x 043</b>
			47	54	<b>48 x 047 x 054</b>
			60	74	<b>48 x 060 x 074</b>
50	56	58	37	43	<b>50 x 037 x 043</b>
			47	54	<b>50 x 047 x 054</b>
			60	74	<b>50 x 060 x 074</b>
52	58	58	37	43	<b>52 x 037 x 043</b>
			47	54	<b>52 x 047 x 054</b>
			60	74	<b>52 x 060 x 074</b>
54	60	58	37	43	<b>54 x 037 x 043</b>
			47	54	<b>54 x 047 x 054</b>
			60	74	<b>54 x 060 x 074</b>
56	62	58	37	43	<b>56 x 037 x 043</b>
			47	54	<b>56 x 047 x 054</b>
			60	74	<b>56 x 060 x 074</b>
58	64	58	37	43	<b>58 x 037 x 043</b>
			47	54	<b>58 x 047 x 054</b>
			60	74	<b>58 x 060 x 074</b>
60	66	58	37	43	<b>60 x 037 x 043</b>
			47	54	<b>60 x 047 x 054</b>
			60	74	<b>60 x 060 x 074</b>
62	68	58	37	43	<b>62 x 037 x 043</b>
			47	54	<b>62 x 047 x 054</b>
			60	74	<b>62 x 060 x 074</b>
64	70	58	37	43	<b>64 x 037 x 043</b>
			47	54	<b>64 x 047 x 054</b>
			60	74	<b>64 x 060 x 074</b>
66	72	58	37	43	<b>66 x 037 x 043</b>
			47	54	<b>66 x 047 x 054</b>
			60	74	<b>66 x 060 x 074</b>
68	74	58	37	43	<b>68 x 037 x 043</b>
			47	54	<b>68 x 047 x 054</b>
			60	74	<b>68 x 060 x 074</b>
70	76	58	37	43	<b>70 x 037 x 043</b>
			47	54	<b>70 x 047 x 054</b>
			60	74	<b>70 x 060 x 074</b>
72	78	58	37	43	<b>72 x 037 x 043</b>
			47	54	<b>72 x 047 x 054</b>
			60	74	<b>72 x 060 x 074</b>
74	80	58	37	43	<b>74 x 037 x 043</b>
			47	54	<b>74 x 047 x 054</b>
			60	74	<b>74 x 060 x 074</b>
76	82	58	37	43	<b>76 x 037 x 043</b>
			47	54	<b>76 x 047 x 054</b>
			60	74	<b>76 x 060 x 074</b>
78	84	58	37	43	<b>78 x 037 x 043</b>
			47	54	<b>78 x 047 x 054</b>
			60	74	<b>78 x 060 x 074</b>
80	86	58	37	43	<b>80 x 037 x 043</b>
			47	54	<b>80 x 047 x 054</b>
			60	74	<b>80 x 060 x 074</b>
82	88	58	37	43	<b>82 x 037 x 043</b>
			47	54	<b>82 x 047 x 054</b>
			60	74	<b>82 x 060 x 074</b>
84	90	58	37	43	<b>84 x 037 x 043</b>
			47	54	<b>84 x 047 x 054</b>
			60	74	<b>84 x 060 x 074</b>
86	92	58	37	43	<b>86 x 037 x 043</b>
			47	54	<b>86 x 047 x 054</b>
			60	74	<b>86 x 060 x 074</b>
88	94	58	37	43	<b>88 x 037 x 043</b>
			47	54	<b>88 x 047 x 054</b>
			60	74	<b>88 x 060 x 074</b>
90	96	58	37	43	<b>90 x 037 x 043</b>
			47	54	<b>90 x 047 x 054</b>
			60	74	<b>90 x 060 x 074</b>
92	98	58	37	43	<b>92 x 037 x 043</b>
			47	54	<b>92 x 047 x 054</b>
			60	74	<b>92 x 060 x 074</b>
94	100	58	37	43	<b>94 x 037 x 043</b>
			47	54	<b>94 x 047 x 054</b>
			60	74	<b>94 x 060 x 074</b>
96	102	58	37	43	<b>96 x 037 x 043</b>
			47	54	<b>96 x 047 x 054</b>
			60	74	<b>96 x 060 x 074</b>
98	104	58	37	43	<b>98 x 037 x 043</b>
			47	54	<b>98 x 047 x 054</b>
			60	74	<b>98 x 060 x 074</b>

# **Guide bushes ST 7404**

**smooth, ball guide, brass**



DIN 9831, ISO 9448

## **Material:**

Guide bushes made from steel 1.3505  
(100 Cr6), hardened, hardness 61–63 HRC,  
brass ball cage, steel balls, hardened, quality  
classification 1, sorting

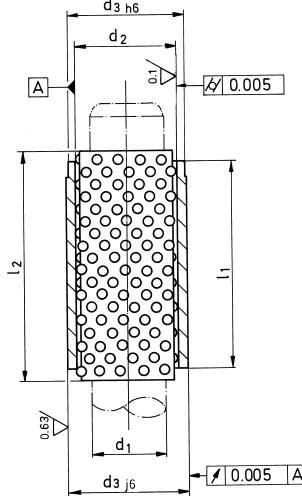
Guide diameter  $d_2$  honed,  
suitable for ball, cage and guide pillar,  
mounting diameter ISO j6, ground

## **Important:**

Order ball guide separately, so that it can be matched in the correct fit.

## **Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117,  
ST 7118, ST 7120, ST 7126, ST 7127, ST 7128,  
ST 7181/82



Cage travel =  $\frac{1}{2}$  stroke length



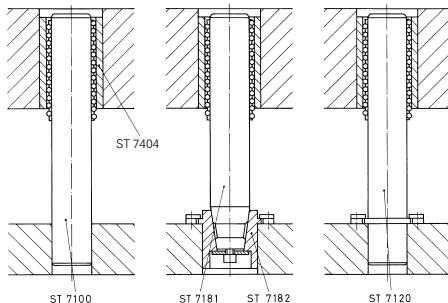
ST 7406

Guide bush, smooth, without ball cage



ST 7404

## Guide bush, smooth, with ball cage



## Matching possibilities

## **Installation instructions:**

1. Stick into mounting bore ISO G6  
(for adhesive, see the relevant page)
  2. Avoid pressing in, because it reduces the internal diameter

Guide bushes without ball cage ST 7406,  
ball cage alone ST 7150

**Technical description:** See page 3.06

**Order example:** Guide bush **ST 7404**

with ball cage

$$d_1 = 30, l_1 = 47, l_2 = 58 \text{ m}$$

## Addition **30 x 047 x 058**

Without ball cage						<b>ST 7406.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
With ball cage						<b>ST 7404.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>d<sub>1h3</sub></b>	<b>d<sub>2</sub></b>	<b>d<sub>3</sub></b>	<b>l<sub>1</sub></b>	<b>l<sub>2</sub></b>					
10	14	22	23	30	<b>10 x 023 x 030</b>				
			30	38	<b>10 x 030 x 038</b>				
			37	43	<b>10 x 037 x 043</b>				
12	16	22	23	30	<b>12 x 023 x 030</b>				
			30	38	<b>12 x 030 x 038</b>				
			37	43	<b>12 x 037 x 043</b>				
15	21	28	23	30	<b>15 x 023 x 030</b>				
			30	38	<b>15 x 030 x 038</b>				
			37	43	<b>15 x 037 x 043</b>				
			47	54	<b>15 x 047 x 054</b>				
			60	63	<b>15 x 060 x 063</b>				
16	22	28	23	30	<b>16 x 023 x 030</b>				
			30	38	<b>16 x 030 x 038</b>				
			37	43	<b>16 x 037 x 043</b>				
			47	54	<b>16 x 047 x 054</b>				
			60	63	<b>16 x 060 x 063</b>				
19	25	32	23	30	<b>19 x 023 x 030</b>				
			30	38	<b>19 x 030 x 038</b>				
			37	43	<b>19 x 037 x 043</b>				
			47	54	<b>19 x 047 x 054</b>				
			60	63	<b>19 x 060 x 063</b>				
20	26	32	23	30	<b>20 x 023 x 030</b>				
			30	38	<b>20 x 030 x 038</b>				
			37	43	<b>20 x 037 x 043</b>				
			47	54	<b>20 x 047 x 054</b>				
			60	63	<b>20 x 060 x 063</b>				
24	30	40	23	30	<b>24 x 023 x 030</b>				
			30	38	<b>24 x 030 x 038</b>				
			37	43	<b>24 x 037 x 043</b>				
			47	54	<b>24 x 047 x 054</b>				
			60	63	<b>24 x 060 x 063</b>				
			77	83	<b>24 x 077 x 083</b>				
25	31	40	23	30	<b>25 x 023 x 030</b>				
			30	38	<b>25 x 030 x 038</b>				
			37	43	<b>25 x 037 x 043</b>				
			47	54	<b>25 x 047 x 054</b>				
			60	63	<b>25 x 060 x 063</b>				
			77	83	<b>25 x 077 x 083</b>				
30	38	48	30	38	<b>30 x 030 x 038</b>				
			37	43	<b>30 x 037 x 043</b>				
			47	58	<b>30 x 047 x 058</b>				
			60	68	<b>30 x 060 x 068</b>				
			77	88	<b>30 x 077 x 088</b>				
			95	108	<b>30 x 095 x 108</b>				
60	70	85	60	75	<b>60 x 060 x 075</b>				
			77	94	<b>60 x 077 x 094</b>				
			95	113	<b>60 x 095 x 113</b>				
			120	139	<b>60 x 120 x 139</b>				
63	73	85	60	75	<b>63 x 060 x 075</b>				
			77	94	<b>63 x 077 x 094</b>				
			95	113	<b>63 x 095 x 113</b>				
			120	139	<b>63 x 120 x 139</b>				
80	92	105	120	138	<b>80 x 120 x 138</b>				
			135	156	<b>80 x 135 x 156</b>				

# Guide bushes ST 7405

## smooth, ball guide, plastic

**STEINEL®**



### DIN 9831, ISO 9448

#### Material:

Guide bushes made from steel 1.3505 (100 Cr6), hardened, hardness 61–63 HRC, plastic ball cage, steel balls, hardened, quality classification 1, sorting

Guide diameter  $d_2$  honed,  
suitable for ball cage and guide pillar,  
mounting diameter ISO j6, ground

#### Important:

Order ball guide separately, so that it can be  
matched in the correct fit.

#### Suitable guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117,  
ST 7118, ST 7120, ST 7126, ST 7127, ST 7128,  
ST 7181/82

#### Installation instructions:

1. Stick into mounting bore ISO G6  
(for adhesive, see the relevant page)
2. Avoid pressing in because it reduces  
the internal diameter

Guide bush without ball cage ST 7406,  
ball cage alone ST 7133

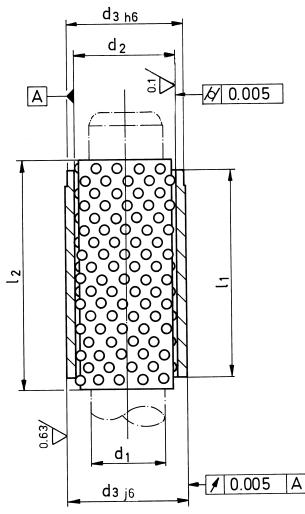
**Technical description:** See page 3.06

**Order example:** Guide bush **ST 7405**  
with ball cage

$d_1 = 30$ ,  $l_1 = 47$  mm,  $l_2 = 58$  mm

Addition **30 x 047 x 058**

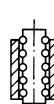
Order number **ST 7405.30 x 047 x 058**



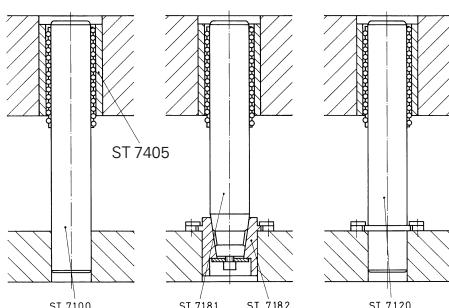
Cage travel = 1/2 stroke length



ST 7406  
Guide bush, smooth, without ball cage



ST 7405  
Guide bush, smooth, with ball cage



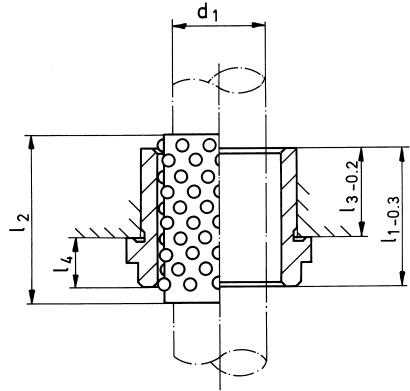
Matching possibilities

Add size to order number						Add size to order number					
Without ball cage ST 7406. <input type="checkbox"/> x <input type="checkbox"/> x <input type="checkbox"/>						Without ball cage ST 7406. <input type="checkbox"/> x <input type="checkbox"/> x <input type="checkbox"/>					
With ball cage ST 7405. <input type="checkbox"/> x <input type="checkbox"/> x <input type="checkbox"/>						With ball cage ST 7405. <input type="checkbox"/> x <input type="checkbox"/> x <input type="checkbox"/>					
$d_{1h3}$	$d_2$	$d_3$	$l_1$	$l_2$		$d_{1h3}$	$d_2$	$d_3$	$l_1$	$l_2$	
10	14	22	23	30	<b>10 x 023 x 030</b>	30	38	48	30	38	<b>30 x 030 x 038</b>
			30	38	<b>10 x 030 x 038</b>		37	43	<b>30 x 037 x 043</b>		
		37	43	<b>10 x 037 x 043</b>			47	58	<b>30 x 047 x 058</b>		
12	16	22	23	30	<b>12 x 023 x 030</b>	30	38	<b>12 x 030 x 038</b>	60	68	<b>30 x 060 x 068</b>
			30	38	<b>12 x 030 x 038</b>		77	88	<b>30 x 077 x 088</b>		
		37	43	<b>12 x 037 x 043</b>			95	108	<b>30 x 095 x 108</b>		
15	21	28	23	30	<b>15 x 023 x 030</b>	30	38	<b>32 x 030 x 038</b>	32	40	<b>32 x 030 x 038</b>
			30	38	<b>15 x 030 x 038</b>		37	43	<b>32 x 037 x 043</b>		
		37	43	<b>15 x 037 x 043</b>			47	58	<b>32 x 047 x 058</b>		
		47	54	<b>15 x 047 x 054</b>			60	68	<b>32 x 060 x 068</b>		
		60	63	<b>15 x 060 x 063</b>			77	88	<b>32 x 077 x 088</b>		
16	22	28	23	30	<b>16 x 023 x 030</b>	30	38	<b>32 x 095 x 108</b>	95	108	<b>32 x 095 x 108</b>
			30	38	<b>16 x 030 x 038</b>		37	43	<b>38 x 030 x 043</b>		
		37	43	<b>16 x 037 x 043</b>			47	58	<b>38 x 047 x 058</b>		
		47	54	<b>16 x 047 x 054</b>			60	68	<b>38 x 060 x 068</b>		
		60	63	<b>16 x 060 x 063</b>			77	88	<b>38 x 077 x 088</b>		
19	25	32	23	30	<b>19 x 023 x 030</b>	30	38	<b>38 x 030 x 043</b>	95	108	<b>38 x 095 x 108</b>
			30	38	<b>19 x 030 x 038</b>		37	43	<b>38 x 037 x 043</b>		
		37	43	<b>19 x 037 x 043</b>			47	58	<b>38 x 047 x 058</b>		
		47	54	<b>19 x 047 x 054</b>			60	68	<b>38 x 060 x 068</b>		
		60	63	<b>19 x 060 x 063</b>			77	88	<b>38 x 077 x 088</b>		
20	26	32	23	30	<b>20 x 023 x 030</b>	30	38	<b>40 x 030 x 038</b>	95	108	<b>38 x 095 x 108</b>
			30	38	<b>20 x 030 x 038</b>		37	43	<b>40 x 037 x 043</b>		
		37	43	<b>20 x 037 x 043</b>			47	58	<b>40 x 047 x 058</b>		
		47	54	<b>20 x 047 x 054</b>			60	68	<b>40 x 060 x 068</b>		
		60	63	<b>20 x 060 x 063</b>			77	88	<b>40 x 077 x 088</b>		
24	30	40	23	30	<b>24 x 023 x 030</b>	30	38	<b>48 x 030 x 038</b>	95	108	<b>48 x 095 x 108</b>
			30	38	<b>24 x 030 x 038</b>		37	43	<b>48 x 037 x 043</b>		
		37	43	<b>24 x 037 x 043</b>			47	58	<b>48 x 047 x 058</b>		
		47	54	<b>24 x 047 x 054</b>			60	68	<b>48 x 060 x 068</b>		
		60	63	<b>24 x 060 x 063</b>			77	88	<b>48 x 077 x 088</b>		
25	31	40	23	30	<b>25 x 023 x 030</b>	30	38	<b>50 x 030 x 038</b>	95	108	<b>48 x 095 x 108</b>
			30	38	<b>25 x 030 x 038</b>		37	43	<b>50 x 037 x 043</b>		
		37	43	<b>25 x 037 x 043</b>			47	58	<b>50 x 047 x 058</b>		
		47	54	<b>25 x 047 x 054</b>			60	68	<b>50 x 060 x 068</b>		
		60	63	<b>25 x 060 x 063</b>			77	88	<b>50 x 077 x 088</b>		
		77	83	<b>25 x 077 x 083</b>			95	108	<b>50 x 095 x 108</b>		
50	58	70	37	43	<b>50 x 037 x 043</b>		37	43	<b>50 x 047 x 058</b>		
			47	58	<b>50 x 047 x 058</b>		47	58	<b>50 x 060 x 068</b>		
		60	68	<b>50 x 060 x 068</b>			60	68	<b>50 x 077 x 088</b>		
		77	88	<b>50 x 077 x 088</b>			77	88	<b>50 x 095 x 108</b>		
		95	108	<b>50 x 095 x 108</b>			120	128	<b>50 x 120 x 128</b>		
		120	128	<b>50 x 120 x 128</b>							

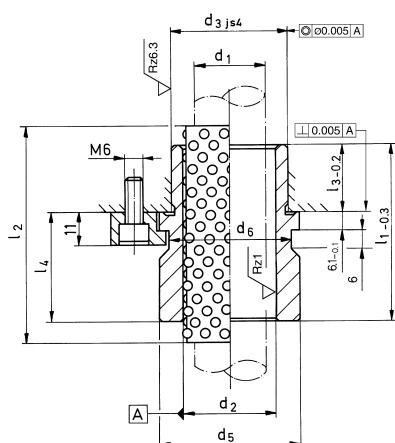
# Guide bushes ST 7412, ST 7416

with shoulder, aluminium ball guide

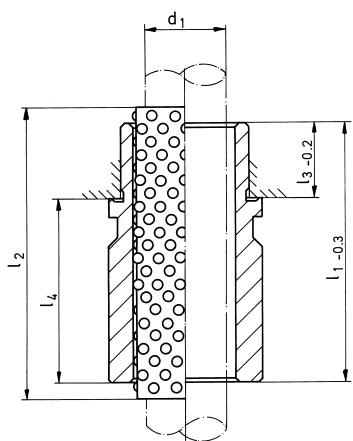
**STEINEL®**



Short version



Medium length version



Long version

Cage travel =  $\frac{1}{2}$  stroke length



DIN 9831, ISO 9448

**Material:**

Steel guide bushes 1.7131 (16 MnCr5), case-hardened, hardness 63 + 2 HRC, aluminium ball cage, steel balls, hardened, quality classification 1, sorting

Guide diameter honed, suitable for ball cage and guide pillar, mounting diameter ISO js4, ground

**Important:**

Order ball guide separately, so that it can be matched in the correct fit.

**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

**Installation instructions:**

Fit into mounting bore ISO H6, fixing with 3 holding clamps ST 7367 (included in the scope of delivery)

The shoulder surface that is ground at a right angle to the guide bore is securely pressed onto the base by the holding clamps and ensures absolute chucking of the guide bush.

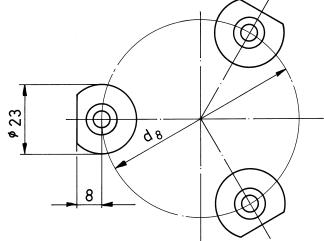
**Holding clamps:**

When re-ordering holding clamps, please specify: 1 set = 3 units, order number ST 7367

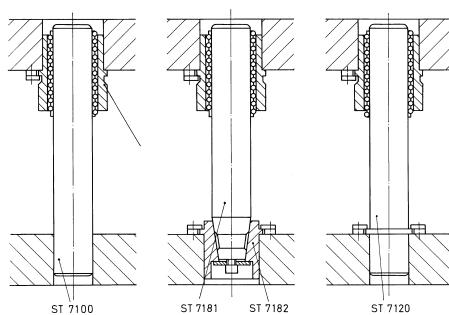


Guide bush without ball cage ST 7416, ball cage alone ST 7130

**Technical description:** See page 3.04



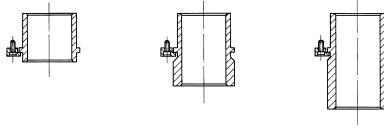
Set-up possibility for holding clamps



Matching possibilities

**Order example:**Guide bush **ST 7416**

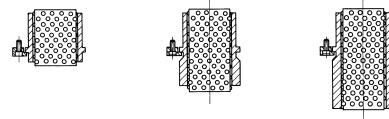
without ball cage

 $d_1 = 30, l_1 = 93 \text{ mm}$ Addition **30 x 093**Order number **ST 7416.30 x 093**Add size to  
order number

Without ball cage

Order number **ST 7416.** x  x **Order example:**Guide bush **ST 7412**

with ball cage

 $d_1 = 40, l_1 = 82, l_2 = 94 \text{ mm}$ Addition **40 x 082 x 094**Add size to  
order number

With ball cage

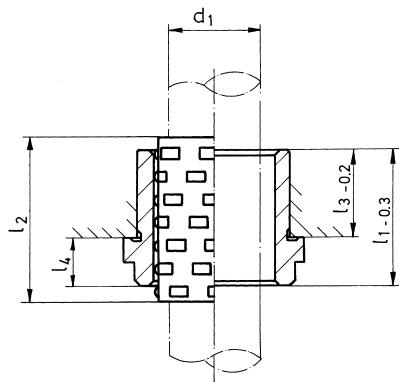
Order number **ST 7412.** x  x 

$d_{1h3}$	$d_2$	$d_{3js4}$	$d_5$	$d_6$	$d_8$	$l_{1 -0.3}$	$l_2$	$l_{3 -0.2}$	$l_4$	
19	25	32	40	32	59	35	43	23	12	<b>19 x 035 x 043</b>
						43	54		20	<b>19 x 043 x 054</b>
						59	74		36	<b>19 x 059 x 074</b>
20	26	32	40	32	59	35	43	23	12	<b>20 x 035 x 043</b>
						43	54		20	<b>20 x 043 x 054</b>
						59	74		36	<b>20 x 059 x 074</b>
24	30	40	48	40	65	35	43	23	12	<b>24 x 035 x 043</b>
						60	74		37	<b>24 x 060 x 074</b>
						80	90		57	<b>24 x 080 x 090</b>
25	31	40	48	40	65	35	43	23	12	<b>25 x 035 x 043</b>
						60	74		37	<b>25 x 060 x 074</b>
						80	90		57	<b>25 x 080 x 090</b>
30	38	48	56	48	73	42	54	30	12	<b>30 x 042 x 054</b>
						75	83		45	<b>30 x 075 x 083</b>
						93	103		63	<b>30 x 093 x 103</b>
32	40	48	56	48	73	42	54	30	12	<b>32 x 042 x 054</b>
						75	83		45	<b>32 x 075 x 083</b>
						93	103		63	<b>32 x 093 x 103</b>
38	46	58	66	58	83	52	58	37	15	<b>38 x 052 x 058</b>
						82	94		45	<b>38 x 082 x 094</b>
						107	128		70	<b>38 x 107 x 128</b>
40	48	58	66	58	83	52	58	37	15	<b>40 x 052 x 058</b>
						82	94		45	<b>40 x 082 x 094</b>
						107	128		70	<b>40 x 107 x 128</b>
48	56	70	80	70	97	65	74	47	18	<b>48 x 065 x 074</b>
						97	108		50	<b>48 x 097 x 108</b>
						127	128		80	<b>48 x 127 x 128</b>
50	58	70	80	70	97	65	74	47	18	<b>50 x 065 x 074</b>
						97	108		50	<b>50 x 097 x 108</b>
						127	128		80	<b>50 x 127 x 128</b>
60	70	85	95	85	112	80	113	60	20	<b>60 x 080 x 113</b>
						115	128		55	<b>60 x 115 x 128</b>
						150	154		90	<b>60 x 150 x 154</b>
63	73	85	95	85	112	80	113	60	20	<b>63 x 080 x 113</b>
						115	128		55	<b>63 x 115 x 128</b>
						150	154		90	<b>63 x 150 x 154</b>
80	92	105	118	105	135	80	113	60	20	<b>80 x 080 x 113</b>
						120	138		60	<b>80 x 120 x 138</b>
						150	156		90	<b>80 x 150 x 156</b>

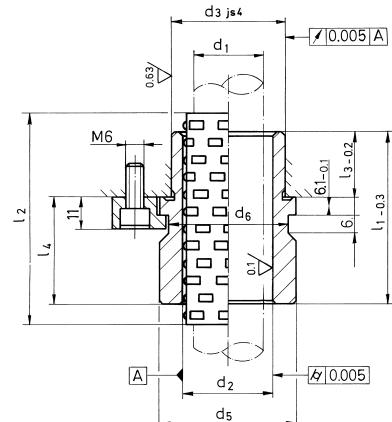
# Guide bushes ST 7413, ST 7416

with shoulder, roller guide

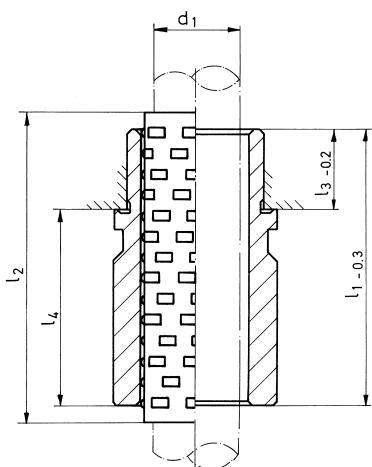
**STEINEL®**



Short version



Medium length version



Long version  
Cage travel =  $\frac{1}{2}$  stroke length



DIN 9831, ISO 9448

**Material:**

Steel guide bushes 1.7131 (16 MnCr5), case-hardened, hardness 61–63 HRC, aluminium ball cage, steel rollers, hardened, quality classification 1, sorting

Guide diameter honed, suitable for roller cage and guide pillar, mounting diameter ISO js4, ground

**Important:**

Order roller guide separately, so that it can be matched in the correct fit.

**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

**Installation instructions:**

Fit into mounting bore ISO H6, fixing with 3 holding clamps ST 7367 (included in the scope of delivery)

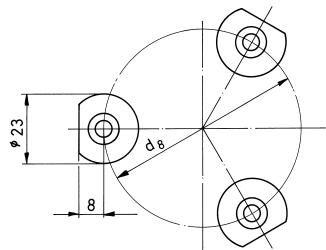
The shoulder surface that is ground at a right angle to the guide bore is securely pressed onto the base by the holding clamps and ensures absolute chucking of the guide bush.

**Holding clamps:**

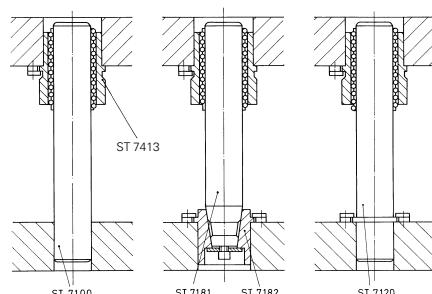
When re-ordering holding clamps, please specify: 1 set = 3 units, order number ST 7367

Guide bush without roller cage ST 7416, roller cage alone ST 7140

**Technical description:** See page 3.04



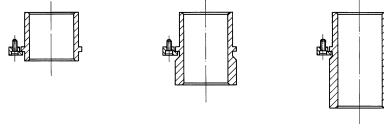
Set-up possibility for holding clamps



Matching possibilities

**Order example:**Guide bush **ST 7416**

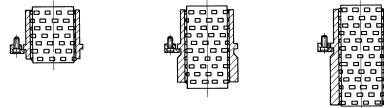
without roller cage

 $d_1 = 30, l_1 = 93 \text{ mm}$ Addition **30 x 093**Order number **ST 7416.30 x 093**Add size to  
order number

Without roller cage

 x  x **Order example:**Guide bush **ST 7413**

with roller cage

 $d_1 = 40, l_1 = 82, l_2 = 94 \text{ mm}$ Addition **40 x 082 x 094**Add size to  
order numberOrder number **ST 7413.40 x 082 x 094**

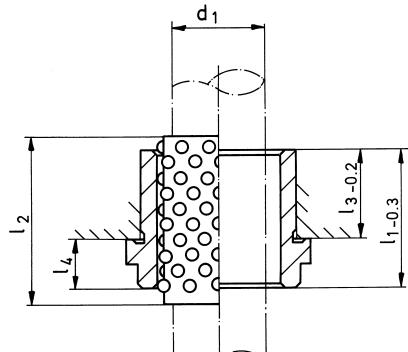
With roller cage

Order number **ST 7413.** x  x 

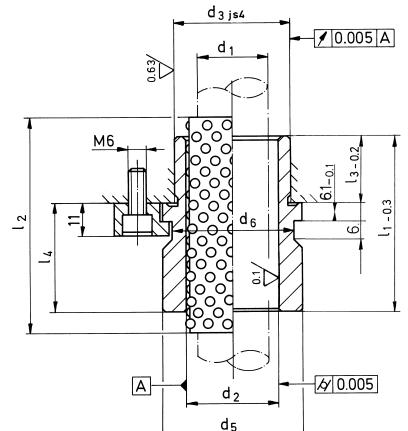
$d_{1h3}$	$d_2$	$d_{3js4}$	$d_5$	$d_6$	$d_8$	$l_{1 -0.3}$	$l_2$	$l_{3 -0.2}$	$l_4$	
19	25	32	40	32	59	35	43	23	12	<b>19 x 035 x 043</b>
						43	54		20	<b>19 x 043 x 054</b>
						59	74		36	<b>19 x 059 x 074</b>
20	26	32	40	32	59	35	43	23	12	<b>20 x 035 x 043</b>
						43	54		20	<b>20 x 043 x 054</b>
						59	74		36	<b>20 x 059 x 074</b>
24	30	40	48	40	65	35	43	23	12	<b>24 x 035 x 043</b>
						60	74		37	<b>24 x 060 x 074</b>
						80	90		57	<b>24 x 080 x 090</b>
25	31	40	48	40	65	35	43	23	12	<b>25 x 035 x 043</b>
						60	74		37	<b>25 x 060 x 074</b>
						80	90		57	<b>25 x 080 x 090</b>
30	38	48	56	48	73	42	54	30	12	<b>30 x 042 x 054</b>
						75	83		45	<b>30 x 075 x 083</b>
						93	103		63	<b>30 x 093 x 103</b>
32	40	48	56	48	73	42	54	30	12	<b>32 x 042 x 054</b>
						75	83		45	<b>32 x 075 x 083</b>
						93	103		63	<b>32 x 093 x 103</b>
38	46	58	66	58	83	52	58	37	15	<b>38 x 052 x 058</b>
						82	94		45	<b>38 x 082 x 094</b>
						107	128		70	<b>38 x 107 x 128</b>
40	48	58	66	58	83	52	58	37	15	<b>40 x 052 x 058</b>
						82	94		45	<b>40 x 082 x 094</b>
						107	128		70	<b>40 x 107 x 128</b>
48	56	70	80	70	97	65	74	47	18	<b>48 x 065 x 074</b>
						97	108		50	<b>48 x 097 x 108</b>
						127	128		80	<b>48 x 127 x 128</b>
50	58	70	80	70	97	65	74	47	18	<b>50 x 065 x 074</b>
						97	108		50	<b>50 x 097 x 108</b>
						127	128		80	<b>50 x 127 x 128</b>
60	70	85	95	85	112	80	113	60	20	<b>60 x 080 x 113</b>
						115	128		55	<b>60 x 115 x 128</b>
						150	139		90	<b>60 x 150 x 139</b>
63	73	85	95	85	112	80	113	60	20	<b>63 x 080 x 113</b>
						115	128		55	<b>63 x 115 x 128</b>
						150	139		90	<b>63 x 150 x 139</b>
80	92	105	118	105	135	80	113	60	20	<b>80 x 080 x 113</b>
						120	138		60	<b>80 x 120 x 138</b>
						150	156		90	<b>80 x 150 x 156</b>

# Guide bushes ST 7414, ST 7416 with shoulder, brass ball guide

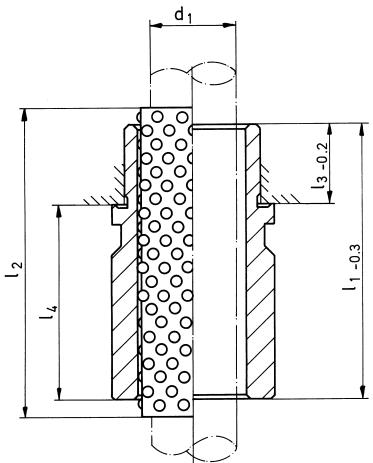
**STEINEL®**



Short version



Medium length version



Long version  
Cage travel = 1/2 stroke length



DIN 9831, ISO 9448

#### Material:

Steel guide bushes 1.7131 (16 MnCr5), case-hardened, hardness 61–63 HRC, brass ball cage, steel balls, hardened, quality classification 1, sorting

Guide diameter honed, suitable for ball cage and guide pillar, mounting diameter ISO js4, ground

#### Important:

Order ball guide separately, so that it can be matched in the correct fit.

#### Suitable guide pillars:

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

#### Installation instructions:

Fit into mounting bore ISO H6, fixing with 3 holding clamps ST 7367 (included in the scope of delivery)

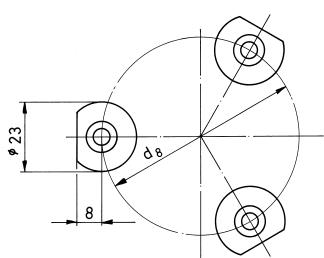
The shoulder surface that is ground at a right angle to the guide bore is securely pressed onto the base by the holding clamps and ensures absolute chucking of the guide bush.

#### Holding clamps:

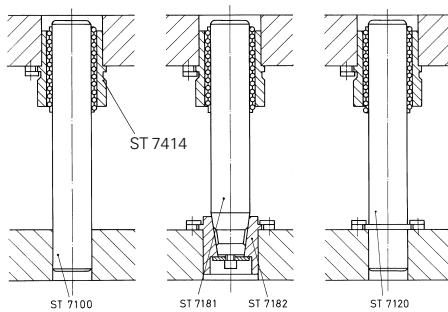
When re-ordering holding clamps, please specify: 1 set = 3 units, order number ST 7367

Guide bush without ball cage ST 7416, ball cage alone ST 7150

**Technical description:** See page 3.04



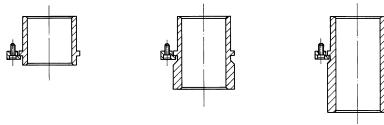
Set-up possibility for holding clamps



Matching possibilities

**Order example:**Guide bush **ST 7416**

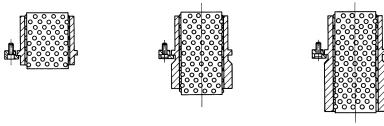
without ball cage

 $d_1 = 30, l_1 = 93 \text{ mm}$ Addition **30 x 093**Order number **ST 7416.30 x 093**Add size to  
order number

Without ball cage

 x  x **Order example:**Guide bush **ST 7414**

with ball cage, brass

 $d_1 = 40, l_1 = 82, l_2 = 94 \text{ mm}$ Addition **40 x 082 x 094**Order number **ST 7414.40 x 082 x 094**Add size to  
order number

With ball cage

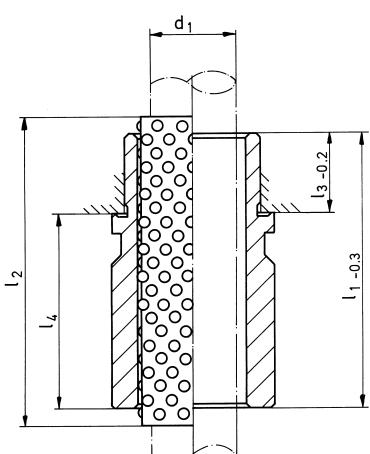
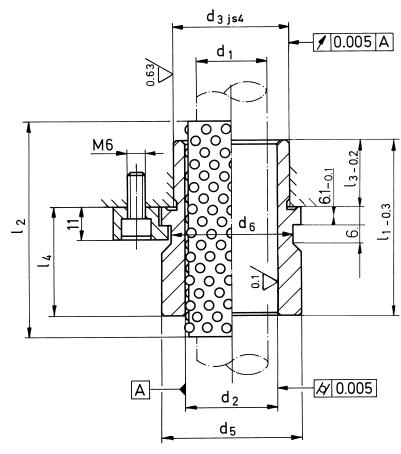
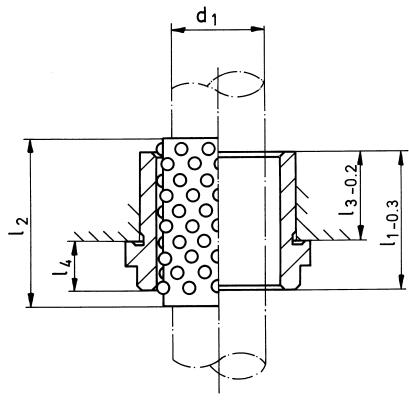
Order number **ST 7414.** x  x 

<b><math>d_{1h3}</math></b>	<b><math>d_2</math></b>	<b><math>d_{3js4}</math></b>	<b><math>d_5</math></b>	<b><math>d_6</math></b>	<b><math>d_8</math></b>	<b><math>l_1 -0.3</math></b>	<b><math>l_2</math></b>	<b><math>l_3 -0.2</math></b>	<b><math>l_4</math></b>	
19	25	32	40	32	59	35	43	23	12	<b>19 x 035 x 043</b>
						43	54	20		<b>19 x 043 x 054</b>
						59	74	36		<b>19 x 059 x 074</b>
20	26	32	40	32	59	35	43	23	12	<b>20 x 035 x 043</b>
						43	54	20		<b>20 x 043 x 054</b>
						59	74	36		<b>20 x 059 x 074</b>
24	30	40	48	40	65	35	43	23	12	<b>24 x 035 x 043</b>
						60	74	37		<b>24 x 060 x 074</b>
						80	90	57		<b>24 x 080 x 090</b>
25	31	40	48	40	65	35	43	23	12	<b>25 x 035 x 043</b>
						60	74	37		<b>25 x 060 x 074</b>
						80	90	57		<b>25 x 080 x 090</b>
30	38	48	56	48	73	42	54	30	12	<b>30 x 042 x 054</b>
						75	83	45		<b>30 x 075 x 083</b>
						93	103	63		<b>30 x 093 x 103</b>
32	40	48	56	48	73	42	54	30	12	<b>32 x 042 x 054</b>
						75	83	45		<b>32 x 075 x 083</b>
						93	103	63		<b>32 x 093 x 103</b>
38	46	58	66	58	83	52	58	37	15	<b>38 x 052 x 058</b>
						82	94	45		<b>38 x 082 x 094</b>
						107	128	70		<b>38 x 107 x 128</b>
40	48	58	66	58	83	52	58	37	15	<b>40 x 052 x 058</b>
						82	94	45		<b>40 x 082 x 094</b>
						107	128	70		<b>40 x 107 x 128</b>
48	56	70	80	70	97	65	74	47	18	<b>48 x 065 x 074</b>
						97	108		50	<b>48 x 097 x 108</b>
						127	128		80	<b>48 x 127 x 128</b>
50	58	70	80	70	97	65	74	47	18	<b>50 x 065 x 074</b>
						97	108		50	<b>50 x 097 x 108</b>
						127	128		80	<b>50 x 127 x 128</b>
60	70	85	95	85	112	80	113	60	20	<b>60 x 080 x 113</b>
						115	128		55	<b>60 x 115 x 128</b>
						150	154		90	<b>60 x 150 x 154</b>
63	73	85	95	85	112	80	113	60	20	<b>63 x 080 x 113</b>
						115	128		55	<b>63 x 115 x 128</b>
						150	154		90	<b>63 x 150 x 154</b>
80	92	105	118	105	135	80	113	60	20	<b>80 x 080 x 113</b>
						120	138		60	<b>80 x 120 x 138</b>
						150	156		90	<b>80 x 150 x 156</b>

# Guide bushes ST 7415, ST 7416

with shoulder, plastic ball guide

**STEINEL®**



DIN 9831, ISO 9448

**Material:**

Steel guide bushes 1.7131 (16MnCr5), case-hardened, hardness 61–63 HRC, plastic ball cage, steel balls, hardened, quality classification 1, sorting

Guide diameter honed, suitable for ball cage and guide pillar, mounting diameter ISO js4, ground

**Important:**

Order ball guide separately, so that it can be matched in the correct fit.

**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

**Installation instructions:**

Fit into mounting bore ISO H6, fixing with 3 holding clamps ST 7367 (included in the scope of delivery)

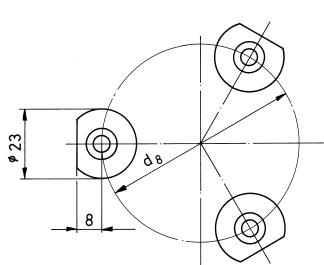
The shoulder surface that is ground at a right angle to the guide bore is securely pressed onto the base by the holding clamps and ensures absolute chucking of the guide bush.

**Holding clamps:**

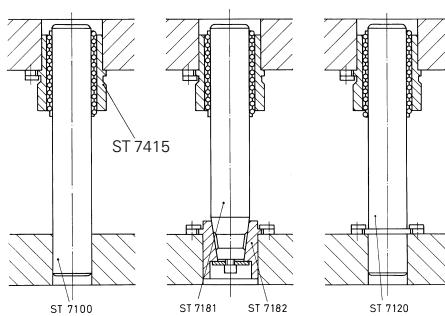
When re-ordering holding clamps, please specify: 1 set = 3 units, order number ST 7367

Guide bush without ball cage ST 7416, ball cage alone ST 7133

**Technical description:** See page 3.04



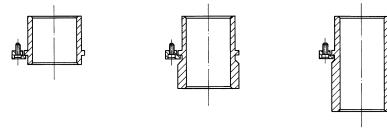
Set-up possibility for holding clamps



Matching possibilities

**Order example:**Guide bush **ST 7416**

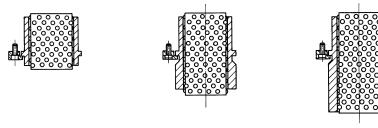
without ball cage

 $d_1 = 30, l_1 = 93 \text{ mm}$ Addition **30 x 093**Order number **ST 7416.30 x 093**Add size to  
order number

Without ball cage

Order number **ST 7416.** x  x **Order example:**Guide bush **ST 7415**

with ball cage, plastic

 $d_1 = 40, l_1 = 82, l_2 = 94 \text{ mm}$ Addition **40 x 082 x 094**Add size to  
order numberOrder number **ST 7415.40 x 082 x 094**

With ball cage

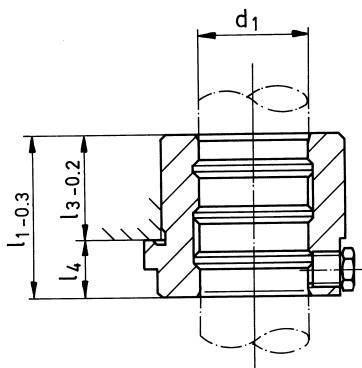
Order number **ST 7415.** x  x 

$d_{1h3}$	$d_2$	$d_{3js4}$	$d_5$	$d_6$	$d_8$	$l_{1-0.3}$	$l_2$	$l_{3-0.2}$	$l_4$	Order number
19	25	32	40	32	59	35	43	23	12	<b>19 x 035 x 043</b>
						43	54	20		<b>19 x 043 x 054</b>
						59	74	36		<b>19 x 059 x 074</b>
20	26	32	40	32	59	35	43	23	12	<b>20 x 035 x 043</b>
						43	54	20		<b>20 x 043 x 054</b>
						59	74	36		<b>20 x 059 x 074</b>
24	30	40	48	40	65	35	43	23	12	<b>24 x 035 x 043</b>
						60	74	37		<b>24 x 060 x 074</b>
						80	90	57		<b>24 x 080 x 090</b>
25	31	40	48	40	65	35	43	23	12	<b>25 x 035 x 043</b>
						60	74	37		<b>25 x 060 x 074</b>
						80	90	57		<b>25 x 080 x 090</b>
30	38	48	56	48	73	42	54	30	12	<b>30 x 042 x 054</b>
						75	83	45		<b>30 x 075 x 083</b>
						93	103	63		<b>30 x 093 x 103</b>
32	40	48	56	48	73	42	54	30	12	<b>32 x 042 x 054</b>
						75	83	45		<b>32 x 075 x 083</b>
						93	103	63		<b>32 x 093 x 103</b>
38	46	58	66	58	83	52	58	37	15	<b>38 x 052 x 058</b>
						82	94	45		<b>38 x 082 x 094</b>
						107	128	70		<b>38 x 107 x 128</b>
40	48	58	66	58	83	52	58	37	15	<b>40 x 052 x 058</b>
						82	94	45		<b>40 x 082 x 094</b>
						107	128	70		<b>40 x 107 x 128</b>
48	56	70	80	70	97	65	74	47	18	<b>48 x 065 x 074</b>
						97	108		50	<b>48 x 097 x 108</b>
						127	128		80	<b>48 x 127 x 128</b>
50	58	70	80	70	97	65	74	47	18	<b>50 x 065 x 074</b>
						97	108		50	<b>50 x 097 x 108</b>
						127	128		80	<b>50 x 127 x 128</b>

# Guide bushes ST 7419

with shoulder, steel sliding guide, bronze coating

**STEINEL®**



Short version



DIN 9831, ISO 9448

**Material:**

Steel guide bush 1.7131 (16 MnCr5), case-hardened, hardness 63 + 2 HRC, running surface, bronze coating

Guide diameter ISO H5, honed, mounting diameter ISO js4, ground

**Important:**

Due to the galvanically deposited bronze on the hardened steel sleeve, this bush is particularly suitable for high sliding speeds and strong lateral loads.

**Lubrication:**

Lubrication via funnel-type lubricating nipple, connection M 8 x 1 intended for central lubrication.

**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

**Installation instructions:**

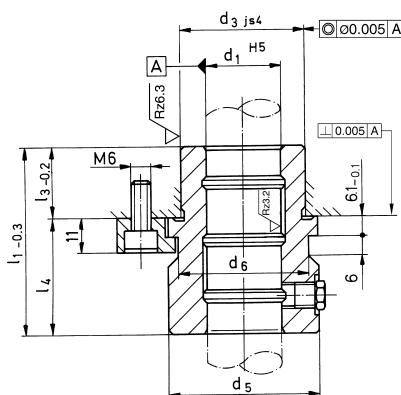
Fit into mounting bore ISO H6, fixing with 3 holding clamps ST 7367 (included in the scope of delivery)

The shoulder surface that is ground at a right angle to the guide bore is securely pressed onto the base by the holding clamps and ensures absolute chucking of the guide bush.

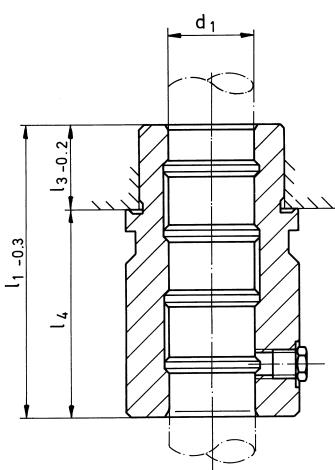
**Holding clamps:**

When re-ordering holding clamps, please specify: 1 set = 3 units, order number ST 7367

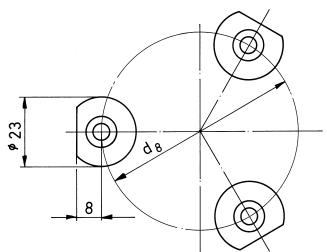
**Technical description:** See page 3.04



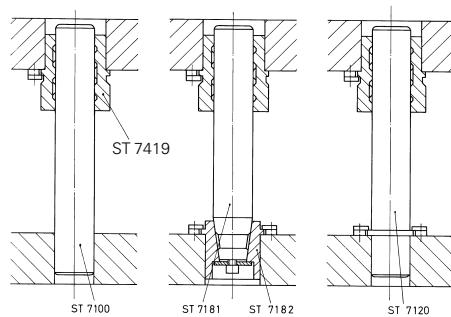
Medium length version



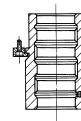
Long version



Set-up possibility for holding clamps



Matching possibilities

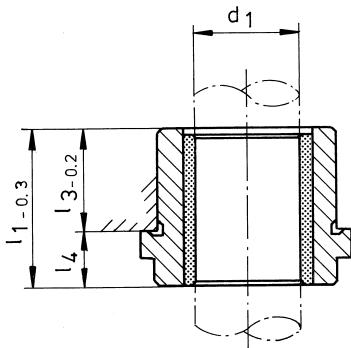
**Order example:**Guide bush **ST 7419** $d_1 = 24, l_1 = 35 \text{ mm}$ Addition **24 x 035**Order number **ST 7419.24 x 035**Add size to  
order numberOrder number **ST 7419.** x 

<b><math>d_1^{H5}</math></b>	<b><math>d_{3js4}</math></b>	<b><math>d_5</math></b>	<b><math>d_6</math></b>	<b><math>d_8</math></b>	<b><math>l_1 -0.2</math></b>	<b><math>l_3 -0.2</math></b>	<b><math>l_4</math></b>	
19	32	40	32	59	35 43 59	23	12 20 36	<b>19 x 035</b> <b>19 x 043</b> <b>19 x 059</b>
20	32	40	32	59	35 43 59	23	12 20 36	<b>20 x 035</b> <b>20 x 043</b> <b>20 x 059</b>
24	40	48	40	65	35 60 80	23	12 37 57	<b>24 x 035</b> <b>24 x 060</b> <b>24 x 080</b>
25	40	48	40	65	35 60 80	23	12 37 57	<b>25 x 035</b> <b>25 x 060</b> <b>25 x 080</b>
30	48	56	48	73	42 75 93	30	12 45 63	<b>30 x 042</b> <b>30 x 075</b> <b>30 x 093</b>
32	48	56	48	73	42 75 93	30	12 45 63	<b>32 x 042</b> <b>32 x 075</b> <b>32 x 093</b>
38	58	66	58	83	52 82 107	37	15 45 70	<b>38 x 052</b> <b>38 x 082</b> <b>38 x 107</b>
40	58	66	58	83	52 82 107	37	15 45 70	<b>40 x 052</b> <b>40 x 082</b> <b>40 x 107</b>
48	70	80	70	97	65 97 127	47	18 50 80	<b>48 x 065</b> <b>48 x 097</b> <b>48 x 127</b>
50	70	80	70	97	65 97 127	47	18 50 80	<b>50 x 065</b> <b>50 x 097</b> <b>50 x 127</b>
60	85	95	85	112	80 115 150	60	20 55 90	<b>60 x 080</b> <b>60 x 115</b> <b>60 x 150</b>
63	85	95	85	112	80 115 150	60	20 55 90	<b>63 x 080</b> <b>63 x 115</b> <b>63 x 150</b>
80	105	118	105	135	80 120 150	60	20 60 90	<b>80 x 080</b> <b>80 x 120</b> <b>80 x 150</b>

# **Guide bushes ST 7471**

## **with shoulder, sliding with solid lubricant**

**STEINEL®**



## Short version



**Dimensions according to  
DIN 9831, ISO 9448**

## **Material:**

Steel with solid lubricant insert,  
hardness 63 + 2 HRC

This sliding guide is self-lubricating due to the integrated solid lubricant inserts, and suitable for higher loads.

Guide diameter ISO H6, precision-turned,  
mounting diameter ISO js4, ground

### **Lubrication:**

The solid lubricant lubrication is designated as a lubrication condition in which solid lubricant particles that have a low cutting resistance in their crystal structure are present between two surfaces and assume the lubricating functions.

### **Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7120,  
ST 7126, ST 7127, ST 7128, ST 7181/82

#### **Installation instructions:**

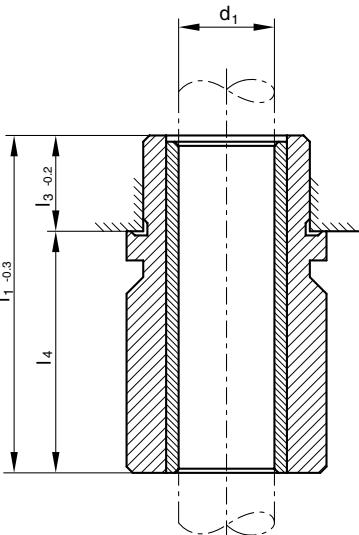
Fit into mounting bore ISO H6,  
fixing with 3 holding clamps ST 7367  
(included in the scope of delivery)

The shoulder surface that is ground at a right angle to the guide bore is securely pressed onto the base by the holding clamps and ensures absolute chucking of the guide bush.

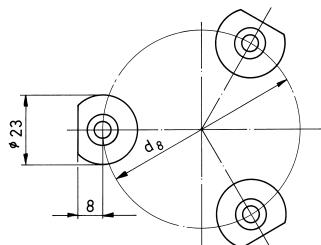
### Holding clamps:

**Holding clamps.**  
When re-ordering holding clamps, please specify: 1 set = 3 units, order number ST 7367

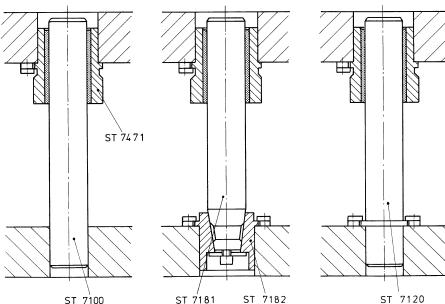
**Technical description:** See page 3.04



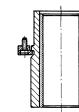
## Long version



Set-up possibility for holding clamps



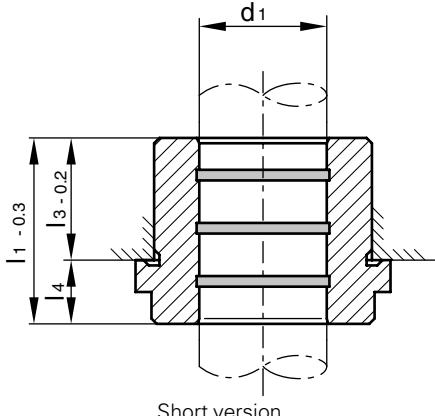
## Matching possibilities

**Order example:**Guide bush **ST 7471** $d_1 = 24, l_1 = 35 \text{ mm}$ Addition **24 x 035**Order number **ST 7471.24 x 035**Add size to  
order numberOrder number **ST 7471.** x 

<b><math>d_1^{H6}</math></b>	<b><math>d_{3js4}</math></b>	<b><math>d_5</math></b>	<b><math>d_6</math></b>	<b><math>d_8</math></b>	<b><math>l_1 - 0.3</math></b>	<b><math>l_3 - 0.2</math></b>	<b><math>l_4</math></b>	
19	32	40	32	59	35	23	12	<b>19 x 035</b>
					43		20	<b>19 x 043</b>
					59		36	<b>19 x 059</b>
20	32	40	32	59	35	23	12	<b>20 x 035</b>
					43		20	<b>20 x 043</b>
					59		36	<b>20 x 059</b>
24	40	48	40	65	35	23	12	<b>24 x 035</b>
					60		37	<b>24 x 060</b>
					80		57	<b>24 x 080</b>
25	40	48	40	65	35	23	12	<b>25 x 035</b>
					60		37	<b>25 x 060</b>
					80		57	<b>25 x 080</b>
30	48	56	48	73	42	30	12	<b>30 x 042</b>
					75		45	<b>30 x 075</b>
					93		63	<b>30 x 093</b>
32	48	56	48	73	42	30	12	<b>32 x 042</b>
					75		45	<b>32 x 075</b>
					93		63	<b>32 x 093</b>
38	58	66	58	83	52	37	15	<b>38 x 052</b>
					82		45	<b>38 x 082</b>
					107		70	<b>38 x 107</b>
40	58	66	58	83	52	37	15	<b>40 x 052</b>
					82		45	<b>40 x 082</b>
					107		70	<b>40 x 107</b>
48	70	80	70	97	65	47	18	<b>48 x 065</b>
					97		50	<b>48 x 097</b>
					127		80	<b>48 x 127</b>
50	70	80	70	97	65	47	18	<b>50 x 065</b>
					97		50	<b>50 x 097</b>
					127		80	<b>50 x 127</b>
60	85	95	85	112	80	60	20	<b>60 x 080</b>
					115		55	<b>60 x 115</b>
					150		90	<b>60 x 150</b>
63	85	95	85	112	80	60	20	<b>63 x 080</b>
					115		55	<b>63 x 115</b>
					150		90	<b>63 x 150</b>
80	105	118	105	135	80	60	20	<b>80 x 080</b>
					120		60	<b>80 x 120</b>
					150		90	<b>80 x 150</b>

# **Guide bushes ST 7431**

### **with shoulder, sliding with solid lubricant**



DIN 9831, ISO 9448

## **Material:**

## CuSn8/CuZn25Al5 with solid lubricant rings

This sliding guide is self-lubricating due to the integrated solid lubricant rings, and suitable for higher loads.

Guide diameter ISO H6, precision-turned,  
mounting diameter ISO j6, precision-turned

### **Lubrication:**

The solid lubricant lubrication is designated as a lubrication condition in which solid lubricant particles that have a low cutting resistance in their crystal structure are present between two surfaces and assume the lubricating functions.

### **Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7120,  
ST 7126, ST 7127, ST 7128, ST 7181/82

## **Installation instructions:**

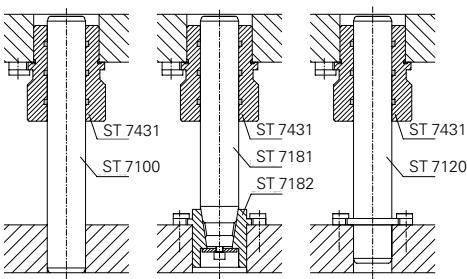
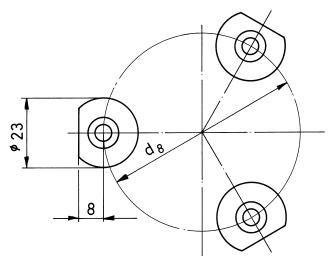
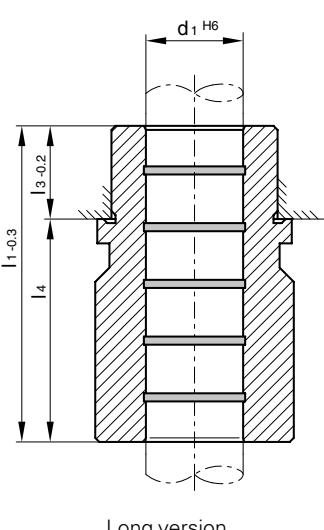
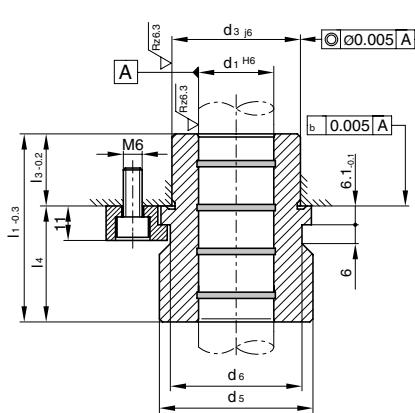
Fit into mounting bore ISO H6,  
fixing with 3 holding clamps ST 7367  
(included in the scope of delivery)

The shoulder surface that is ground at a right angle to the guide bore is securely pressed onto the base by the holding clamps and ensures absolute chucking of the guide bush.

## Holding clamps:

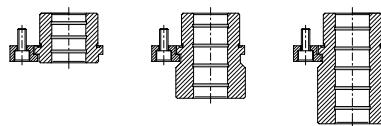
When re-ordering holding clamps, please specify: 1 set = 3 units, order number ST 7367

**Technical description:** See page 3.04



## Set-up possibility for holding clamps

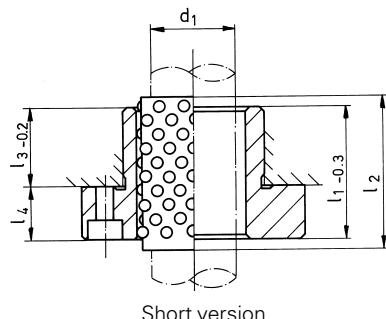
## Matching possibilities

**Order example:**Guide bush **ST 7431** $d_1 = 24, l_1 = 35 \text{ mm}$ Addition **24 x 035**Order number **ST 7431. 24 x 035**Add size to  
order numberOrder number **ST 7431.** 

<b><math>d_1^{\text{H6}}</math></b>	<b><math>d_{3j6}</math></b>	<b><math>d_5</math></b>	<b><math>d_6</math></b>	<b><math>d_8</math></b>	<b><math>l_1 -0.3</math></b>	<b><math>l_3 -0.2</math></b>	<b><math>l_4</math></b>	
19	32	40	32	59	35 43 59	23	12 20 36	<b>19 x 035 19 x 043 19 x 059</b>
20	32	40	32	59	35 43 59	23	12 20 36	<b>20 x 035 20 x 043 20 x 059</b>
24	40	48	40	65	35 60 80	23	12 37 57	<b>24 x 035 24 x 060 24 x 080</b>
25	40	48	40	65	35 60 80	23	12 37 57	<b>25 x 035 25 x 060 25 x 080</b>
30	48	56	48	73	42 75 93	30	12 45 63	<b>30 x 042 30 x 075 30 x 093</b>
32	48	56	48	73	42 75 93	30	12 45 63	<b>32 x 042 32 x 075 32 x 093</b>
38	58	66	58	83	52 82 107	37	15 45 70	<b>38 x 052 38 x 082 38 x 107</b>
40	58	66	58	83	52 82 107	37	15 45 70	<b>40 x 052 40 x 082 40 x 107</b>
48	70	80	70	97	65 97 127	47	18 50 80	<b>48 x 065 48 x 097 48 x 127</b>
50	70	80	70	97	65 97 127	47	18 50 80	<b>50 x 065 50 x 097 50 x 127</b>
60	85	95	85	112	80 115 150	60	20 55 90	<b>60 x 080 60 x 115 60 x 150</b>
63	85	95	85	112	80 115 150	60	20 55 90	<b>63 x 080 63 x 115 63 x 150</b>
80	105	118	105	135	80 120 150	60	20 60 90	<b>80 x 080 80 x 120 80 x 150</b>

# Guide bushes ST 7422, ST 7426 with flange, aluminium ball guide

**STEINEL®**



DIN 9831, ISO 9448

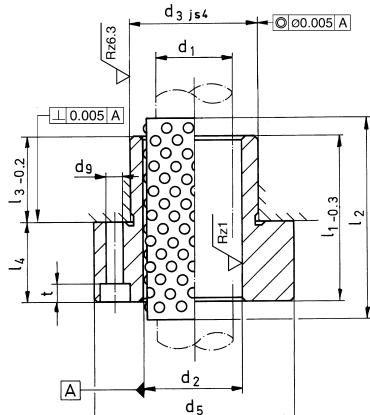
**Material:**

Steel guide bush 1.7131 (16 MnCr5), case-hardened, hardness 63 + 2 HRC, aluminium ball cage, steel balls, hardened, quality classification 1, sorting

Guide diameter  $d_2$  honed, suitable for ball cage and guide pillar, mounting diameter ISO js4, ground

**Important:**

Order ball guide separately, so that it can be matched in the correct fit.



**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

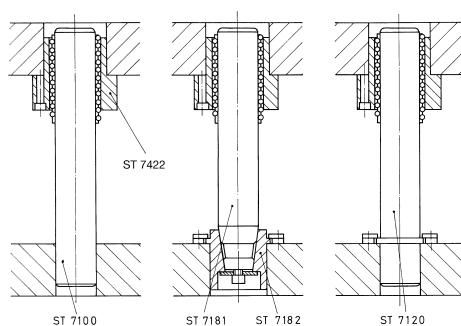
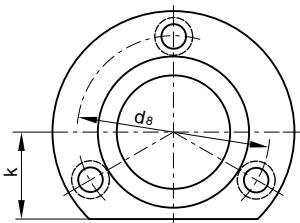
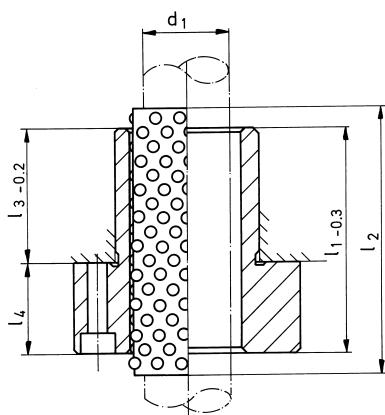
**Installation instructions:**

Fit into mounting bore ISO H6, fixing with 3 socket-head screws

The flange surface that is ground at a right angle to the guide bore is securely pressed onto the base by the screws and ensures absolute chucking of the guide bush.

Guide bush without ball cage ST 7426, ball cage alone ST 7130

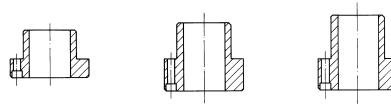
**Technical description:** See page 3.04



Matching possibilities

**Order example:**Guide bush **ST 7426**

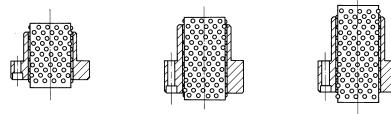
without ball cage

 $d_1 = 30, l_1 = 72 \text{ mm}$ Addition **30 x 072**Order number **ST 7426.30 x 072**Add size to  
order number

Without ball cage

Order number **ST 7426.** x  x **Order example:**Guide bush **ST 7422**

with ball cage

 $d_1 = 40, l_1 = 67, l_2 = 88 \text{ mm}$ Addition **40 x 067 x 088**Add size to  
order numberOrder number **ST 7422.40 x 067 x 088**

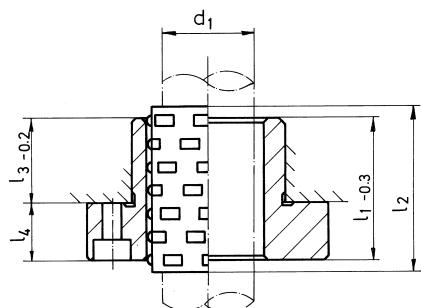
With ball cage

Order number **ST 7422.** x  x 

<b><math>d_{1h3}</math></b>	<b><math>d_2</math></b>	<b><math>d_{3js4}</math></b>	<b><math>d_5</math></b>	<b><math>d_8</math></b>	<b><math>d_9</math></b>	<b>k</b>	<b>t</b>	<b><math>l_{1-0.3}</math></b>	<b><math>l_{2-0.2}</math></b>	<b><math>l_3</math></b>	<b><math>l_4</math></b>	
15	21	28	45	35	4.5	15	3.5	29	43	23	6	<b>15 x 029 x 043</b>
								36	43	30	6	<b>15 x 036 x 043</b>
16	22	28	45	35	4.5	15	3.5	29	43	23	6	<b>16 x 029 x 043</b>
								36	43	30	6	<b>16 x 036 x 043</b>
19	25	32	50	40	4.5	18	4.6	38	43	23	15	<b>19 x 038 x 043</b>
								45	54	30	15	<b>19 x 045 x 054</b>
								51	63	36	15	<b>19 x 051 x 063</b>
20	26	32	50	40	4.5	18	4.6	38	43	23	15	<b>20 x 038 x 043</b>
								45	54	30	15	<b>20 x 045 x 054</b>
								51	63	36	15	<b>20 x 051 x 063</b>
24	30	40	63	50	5.5	23	5.7	38	43	23	15	<b>24 x 038 x 043</b>
								55	63	30	25	<b>24 x 055 x 063</b>
								62	74	37	25	<b>24 x 062 x 074</b>
25	31	40	63	50	5.5	23	5.7	38	43	23	15	<b>25 x 038 x 043</b>
								55	63	30	25	<b>25 x 055 x 063</b>
								62	74	37	25	<b>25 x 062 x 074</b>
30	38	48	72	58	5.5	28	5.7	45	54	30	15	<b>30 x 045 x 054</b>
								62	74	37	25	<b>30 x 062 x 074</b>
								72	83	47	25	<b>30 x 072 x 083</b>
32	40	48	72	58	5.5	28	5.7	45	54	30	15	<b>32 x 045 x 054</b>
								62	74	37	25	<b>32 x 062 x 074</b>
								72	83	47	25	<b>32 x 072 x 083</b>
38	46	58	85	70	6.6	33	6.8	55	58	30	25	<b>38 x 055 x 058</b>
								67	88	37	30	<b>38 x 067 x 088</b>
								77	94	47	30	<b>38 x 077 x 094</b>
40	48	58	85	70	6.6	33	6.8	55	58	30	25	<b>40 x 055 x 058</b>
								67	88	37	30	<b>40 x 067 x 088</b>
								77	94	47	30	<b>40 x 077 x 094</b>
48	56	70	104	86	9	38	9	62	74	37	25	<b>48 x 062 x 074</b>
								89	108	47	42	<b>48 x 089 x 108</b>
								102	128	60	42	<b>48 x 102 x 128</b>
50	58	70	104	86	9	38	9	62	74	37	25	<b>50 x 062 x 074</b>
								89	108	47	42	<b>50 x 089 x 108</b>
								102	128	60	42	<b>50 x 102 x 128</b>
60	70	85	120	100	9	46	9	89	113	47	42	<b>60 x 089 x 113</b>
								102	128	60	42	<b>60 x 102 x 128</b>
63	73	85	120	100	9	46	9	89	113	47	42	<b>63 x 089 x 113</b>
								102	128	60	42	<b>63 x 102 x 128</b>
80	92	105	148	125	11	56	11	125	138	75	50	<b>80 x 125 x 138</b>

# Guide bushes ST 7423, ST 7426 with flange, roller guides

**STEINEL®**



Short version



DIN 9831, ISO 9448

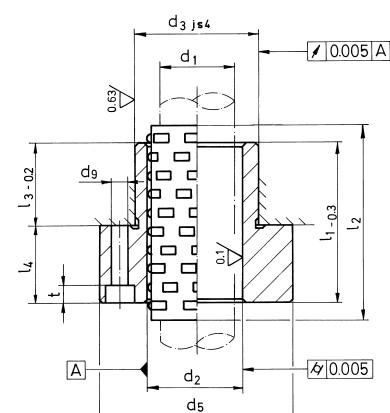
**Material:**

Steel guide bushes 1.7131 (16MnCr5), case-hardened, hardness 61–63 HRC, aluminium roller cage, steel rollers, hardened, quality classification 1, sorting

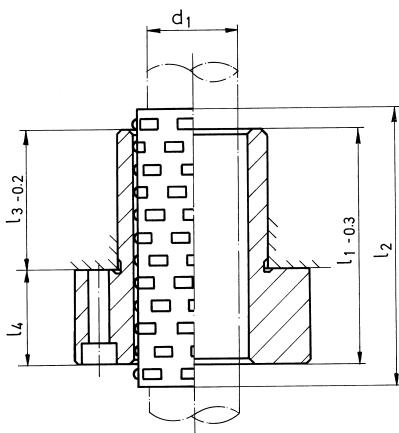
Guide diameter honed, suitable for ball cage and guide pillar, mounting diameter ISO js4, ground

**Important:**

Order roller guide separately, so that it can be matched in the correct fit.



Medium length version



Long version  
Cage travel =  $\frac{1}{2}$  stroke length



**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

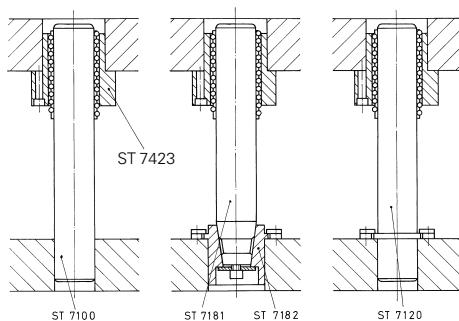
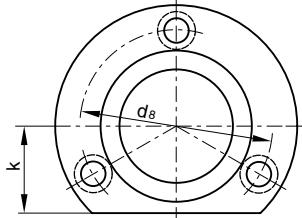
**Installation instructions:**

Fit into mounting bore ISO H6, fixing with 3 socket-head screws.

The flange surface that is ground at a right angle to the guide bore is securely pressed onto the base by the screws and ensures absolute chucking of the guide bush.

Guide bush without roller cage ST 7426, roller cage alone ST 7140

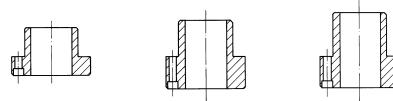
**Technical description:** See page 3.04



Matching possibilities

**Order example:**Guide bush **ST 7426**

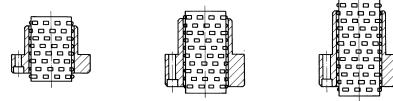
without roller cage

 $d_1 = 30, l_1 = 72 \text{ mm}$ Addition **30 x 072**Order number **ST 7426.30 x 072**Add size to  
order number

Without ball cage

Order number **ST 7426.** x  x **Order example:**Guide bush **ST 7423**

with roller cage

 $d_1 = 40, l_1 = 55, l_2 = 58 \text{ mm}$ Addition **40 x 055 x 058**Add size to  
order numberOrder number **ST 7423.40 x 055 x 058**

With roller cage

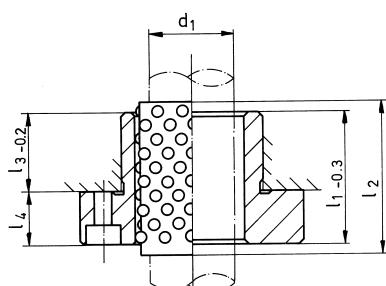
Order number **ST 7423.** x  x 

<b><math>d_{1h3}</math></b>	<b><math>d_2</math></b>	<b><math>d_{3js4}</math></b>	<b><math>d_5</math></b>	<b><math>d_8</math></b>	<b><math>d_9</math></b>	<b>k</b>	<b>t</b>	<b><math>l_1 - 0.3</math></b>	<b><math>l_2 - 0.2</math></b>	<b><math>l_3</math></b>	<b><math>l_4</math></b>	
19	25	32	50	40	4.5	18	4.6	38	43	23	15	<b>19 x 038 x 043</b>
								45	54	30	15	<b>19 x 045 x 054</b>
								51	63	36	15	<b>19 x 051 x 063</b>
20	26	32	50	40	4.5	18	4.6	38	43	23	15	<b>20 x 038 x 043</b>
								45	54	30	15	<b>20 x 045 x 054</b>
								51	63	36	15	<b>20 x 051 x 063</b>
24	30	40	63	50	5.5	23	5.7	38	43	23	15	<b>24 x 038 x 043</b>
								55	63	30	25	<b>24 x 055 x 063</b>
								62	74	37	25	<b>24 x 062 x 074</b>
25	31	40	63	50	5.5	23	5.7	38	43	23	15	<b>25 x 038 x 043</b>
								55	63	30	25	<b>25 x 055 x 063</b>
								62	74	37	25	<b>25 x 062 x 074</b>
30	38	48	72	58	5.5	28	5.7	45	54	30	15	<b>30 x 045 x 054</b>
								62	74	37	25	<b>30 x 062 x 074</b>
								72	83	47	25	<b>30 x 072 x 083</b>
32	40	48	72	58	5.5	28	5.7	45	54	30	15	<b>32 x 045 x 054</b>
								62	74	37	25	<b>32 x 062 x 074</b>
								72	83	47	25	<b>32 x 072 x 083</b>
38	46	58	85	70	6.6	33	6.8	55	58	30	25	<b>38 x 055 x 058</b>
								67	88	37	30	<b>38 x 067 x 088</b>
								77	94	47	30	<b>38 x 077 x 094</b>
40	48	58	85	70	6.6	33	6.8	55	58	30	25	<b>40 x 055 x 058</b>
								67	88	37	30	<b>40 x 067 x 088</b>
								77	94	47	30	<b>40 x 077 x 094</b>
48	56	70	104	86	9	38	9	62	74	37	25	<b>48 x 062 x 074</b>
								89	108	47	42	<b>48 x 089 x 108</b>
								102	128	60	42	<b>48 x 102 x 128</b>
50	58	70	104	86	9	38	9	62	74	37	25	<b>50 x 062 x 074</b>
								89	108	47	42	<b>50 x 089 x 108</b>
								102	128	60	42	<b>50 x 102 x 128</b>
60	70	85	120	100	9	46	9	89	113	47	42	<b>60 x 089 x 113</b>
								102	128	60	42	<b>60 x 102 x 128</b>
								102	128	60	42	<b>63 x 089 x 113</b>
63	73	85	120	100	9	46	9	89	113	47	42	<b>63 x 102 x 128</b>
								102	128	60	42	<b>63 x 125 x 138</b>
								125	138	75	50	<b>80 x 125 x 138</b>

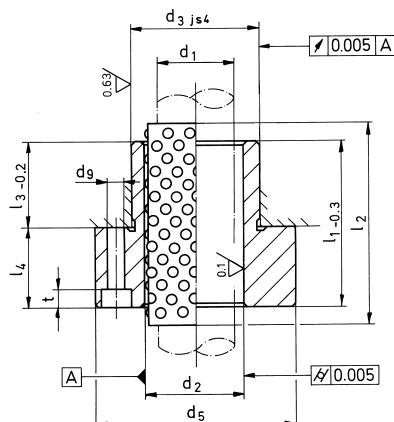
# Guide bushes ST 7424, ST 7426

with flange, brass ball guide

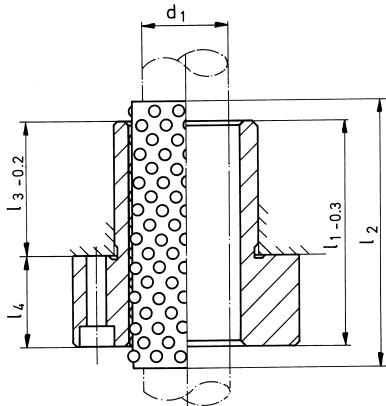
**STEINEL®**



Short version



Medium length version



Long version  
Cage travel =  $\frac{1}{2}$  stroke length



DIN 9831, ISO 9448

**Material:**

Steel guide bushes 1.7131 (16 Mn Cr5), case-hardened, hardness 61–63 HRC, brass ball cage, steel balls, hardened, quality classification 1, sorting

Guide diameter honed, suitable for ball cage and guide pillar, mounting diameter ISO js4, ground

**Important:**

Order ball guide separately, so that it can be matched in the correct fit.

**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

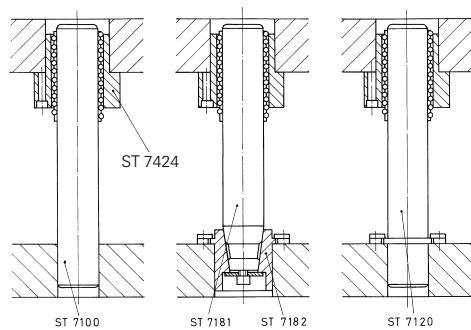
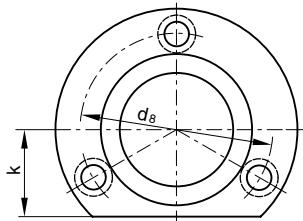
**Installation instructions:**

Fit into mounting bore ISO H6, fixing with 3 socket-head screws

The flange surface that is ground at a right angle to the guide bore is securely pressed onto the base by the screws and ensures absolute chucking of the guide bush.

Guide bush without ball cage ST 7426, ball cage alone ST 7150

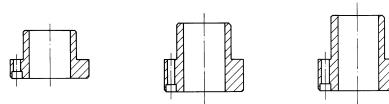
**Technical description:** See page 3.04



Matching possibilities

**Order example:**Guide bush **ST 7426**

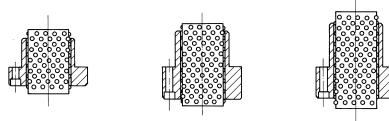
without ball cage

 $d_1 = 30, l_1 = 72 \text{ mm}$ Addition **30 x 072**Order number **ST 7426.30 x 072**Add size to  
order number

Without ball cage

Order number **ST 7426.** x  x **Order example:**Guide bush **ST 7424**

with ball cage

 $d_1 = 40, l_1 = 67, l_2 = 88 \text{ mm}$ Addition **40 x 067 x 088**Add size to  
order number

With ball cage

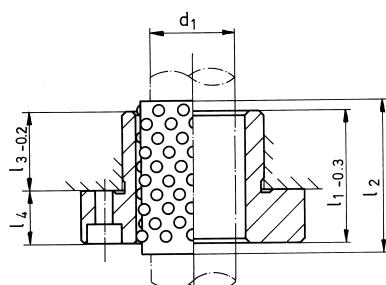
Order number **ST 7424.** x  x 

<b><math>d_{1h3}</math></b>	<b><math>d_2</math></b>	<b><math>d_{3js4}</math></b>	<b><math>d_5</math></b>	<b><math>d_8</math></b>	<b><math>d_9</math></b>	<b>k</b>	<b>t</b>	<b><math>l_1 - 0.3</math></b>	<b><math>l_2 - 0.2</math></b>	<b><math>l_3</math></b>	<b><math>l_4</math></b>	
15	21	28	45	35	4.5	15	3.5	29	43	23	6	<b>15 x 029 x 043</b>
								36	43	30	6	<b>15 x 036 x 043</b>
16	22	28	45	35	4.5	15	3.5	29	43	23	6	<b>16 x 029 x 043</b>
								36	43	30	6	<b>16 x 036 x 043</b>
19	25	32	50	40	4.5	18	4.6	38	43	23	15	<b>19 x 038 x 043</b>
								45	54	30	15	<b>19 x 045 x 054</b>
								51	63	36	15	<b>19 x 051 x 063</b>
20	26	32	50	40	4.5	18	4.6	38	43	23	15	<b>20 x 038 x 043</b>
								45	54	30	15	<b>20 x 045 x 054</b>
								51	63	36	15	<b>20 x 051 x 063</b>
24	30	40	63	50	5.5	23	5.7	38	43	23	15	<b>24 x 038 x 043</b>
								55	63	30	25	<b>24 x 055 x 063</b>
								62	74	37	25	<b>24 x 062 x 074</b>
25	31	40	63	50	5.5	23	5.7	38	43	23	15	<b>25 x 038 x 043</b>
								55	63	30	25	<b>25 x 055 x 063</b>
								62	74	37	25	<b>25 x 062 x 074</b>
30	38	48	72	58	5.5	28	5.7	45	54	30	15	<b>30 x 045 x 054</b>
								62	74	37	25	<b>30 x 062 x 074</b>
								72	83	47	25	<b>30 x 072 x 083</b>
32	40	48	72	58	5.5	28	5.7	45	54	30	15	<b>32 x 045 x 054</b>
								62	74	37	25	<b>32 x 062 x 074</b>
								72	83	47	25	<b>32 x 072 x 083</b>
38	46	58	85	70	6.6	33	6.8	55	58	30	25	<b>38 x 055 x 058</b>
								67	88	37	30	<b>38 x 067 x 088</b>
								77	94	47	30	<b>38 x 077 x 094</b>
40	48	58	85	70	6.6	33	6.8	55	58	30	25	<b>40 x 055 x 058</b>
								67	88	37	30	<b>40 x 067 x 088</b>
								77	94	47	30	<b>40 x 077 x 094</b>
48	56	70	104	86	9	38	9	62	74	37	25	<b>48 x 062 x 074</b>
								89	108	47	42	<b>48 x 089 x 108</b>
								102	128	60	42	<b>48 x 102 x 128</b>
50	58	70	104	86	9	38	9	62	74	37	25	<b>50 x 062 x 074</b>
								89	108	47	42	<b>50 x 089 x 108</b>
								102	128	60	42	<b>50 x 102 x 128</b>
60	70	85	120	100	9	46	9	89	113	47	42	<b>60 x 089 x 113</b>
								102	128	60	42	<b>60 x 102 x 128</b>
63	73	85	120	100	9	46	9	89	113	47	42	<b>63 x 089 x 113</b>
								102	128	60	42	<b>63 x 102 x 128</b>
80	92	105	148	125	11	56	11	125	138	75	50	<b>80 x 125 x 138</b>

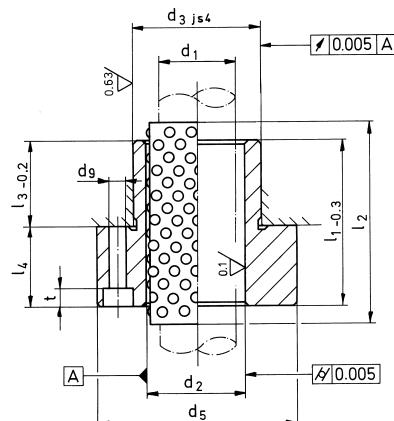
# Guide bushes ST 7425, ST 7426

with flange, plastic ball guide

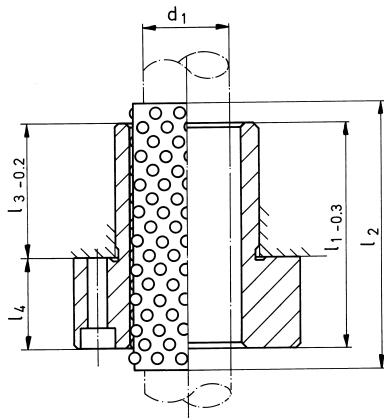
**STEINEL®**



Short version



Medium length version



Long version  
Cage travel =  $\frac{1}{2}$  stroke length



DIN 9831, ISO 9448

**Material:**

Steel guide bushes 1.7131 (16 Mn Cr5), case-hardened, hardness 61–63 HRC, plastic ball cage, steel balls, hardened, quality classification 1, sorting

Guide diameter honed, suitable for ball cage and guide pillar, mounting diameter ISO js4, ground

**Important:**

Order ball guide separately, so that it can be matched in the correct fit.

**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7117, ST 7118, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

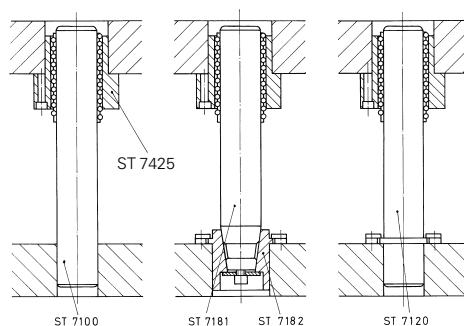
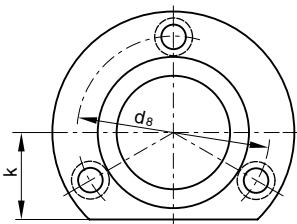
**Installation instructions:**

Fit into mounting bore ISO H6, fixing with 3 socket-head screws

The flange surface that is ground at a right angle to the guide bore is securely pressed onto the base by the screws and ensures absolute chucking of the guide bush.

Guide bush without ball cage ST 7426, ball cage alone ST 7133

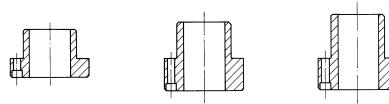
**Technical description:** See page 3.04



Matching possibilities

**Order example:**Guide bush **ST 7426**

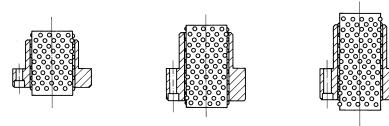
without ball cage

 $d_1 = 30$ ,  $l_1 = 72$  mmAddition **30 x 072**Order number **ST 7426.30 x 072**Add size to  
order number

Without ball cage

Order number **ST 7426.** x  x **Order example:**Guide bush **ST 7425**

with ball cage, plastic

 $d_1 = 40$ ,  $l_1 = 67$ ,  $l_2 = 88$  mmAddition **40 x 067 x 088**Order number **ST 7425.40 x 067 x 088**Add size to  
order number

With ball cage

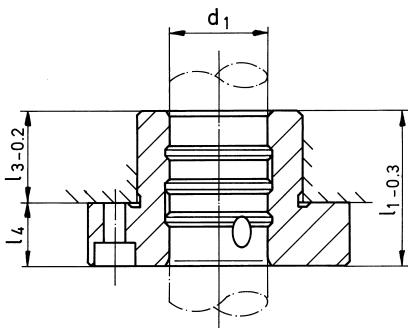
Order number **ST 7425.** x  x 

<b><math>d_{1h3}</math></b>	<b><math>d_2</math></b>	<b><math>d_{3js4}</math></b>	<b><math>d_5</math></b>	<b><math>d_8</math></b>	<b><math>d_9</math></b>	<b>k</b>	<b>t</b>	<b><math>l_{1-0.3}</math></b>	<b><math>l_{2-0.2}</math></b>	<b><math>l_3</math></b>	<b><math>l_4</math></b>	
15	21	28	45	35	4.5	15	3.5	29	43	23	6	<b>15 x 029 x 043</b>
								36	43	30	6	<b>15 x 036 x 043</b>
16	22	28	45	35	4.5	15	3.5	29	43	23	6	<b>16 x 029 x 043</b>
								36	43	30	6	<b>16 x 036 x 043</b>
19	25	32	50	40	4.5	18	4.6	38	43	23	15	<b>19 x 038 x 043</b>
								45	54	30	15	<b>19 x 045 x 054</b>
								51	63	36	15	<b>19 x 051 x 063</b>
20	26	32	50	40	4.5	18	4.6	38	43	23	15	<b>20 x 038 x 043</b>
								45	54	30	15	<b>20 x 045 x 054</b>
								51	63	36	15	<b>20 x 051 x 063</b>
24	30	40	63	50	5.5	23	5.7	38	43	23	15	<b>24 x 038 x 043</b>
								55	63	30	25	<b>24 x 055 x 063</b>
								62	74	37	25	<b>24 x 062 x 074</b>
25	31	40	63	50	5.5	23	5.7	38	43	23	15	<b>25 x 038 x 043</b>
								55	63	30	25	<b>25 x 055 x 063</b>
								62	74	37	25	<b>25 x 062 x 074</b>
30	38	48	72	58	5.5	28	5.7	45	54	30	15	<b>30 x 045 x 054</b>
								62	74	37	25	<b>30 x 062 x 074</b>
								72	83	47	25	<b>30 x 072 x 083</b>
32	40	48	72	58	5.5	28	5.7	45	54	30	15	<b>32 x 045 x 054</b>
								62	74	37	25	<b>32 x 062 x 074</b>
								72	83	47	25	<b>32 x 072 x 083</b>
38	46	58	85	70	6.6	33	6.8	55	58	30	25	<b>38 x 055 x 058</b>
								67	88	37	30	<b>38 x 067 x 088</b>
								77	94	47	30	<b>38 x 077 x 094</b>
40	48	58	85	70	6.6	33	6.8	55	58	30	25	<b>40 x 055 x 058</b>
								67	88	37	30	<b>40 x 067 x 088</b>
								77	94	47	30	<b>40 x 077 x 094</b>
48	56	70	104	86	9	38	9	62	74	37	25	<b>48 x 062 x 074</b>
								89	108	47	42	<b>48 x 089 x 108</b>
								102	128	60	42	<b>48 x 102 x 128</b>
50	58	70	104	86	9	38	9	62	74	37	25	<b>50 x 062 x 074</b>
								89	108	47	42	<b>50 x 089 x 108</b>
								102	128	60	42	<b>50 x 102 x 128</b>

# Guide bushes ST 7429

with flange, sliding guide bronze coating

**STEINEL®**



Short version



DIN 9831, ISO 9448

**Material:**

Steel 1.7131(16 Mn Cr5), case-hardened, hardness 63 + 2 HRC, running surface, bronze coating

Guide diameter ISO H5, honed, mounting diameter ISO js4, ground

**Important:**

Due to the galvanically deposited bronze coating on the hardened steel sleeve, this bush is particularly suitable for high sliding speeds and strong lateral loads.



Medium length version



**Lubrication:**

Lubrication via funnel-type lubricating nipple, connection M 8 x 1 intended for central lubrication

**Suitable guide pillars:**

ST 7100, ST 7106, ST 7107, ST 7108, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

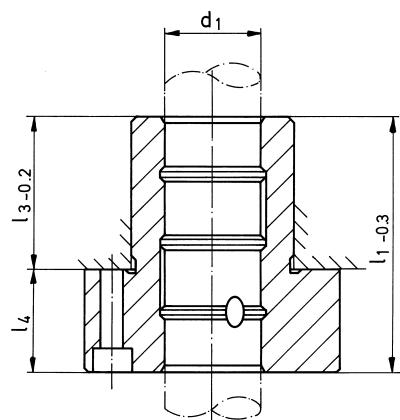
**Installation instructions:**

Fit into mounting bore ISO H6, fixing with 3 socket-head screws

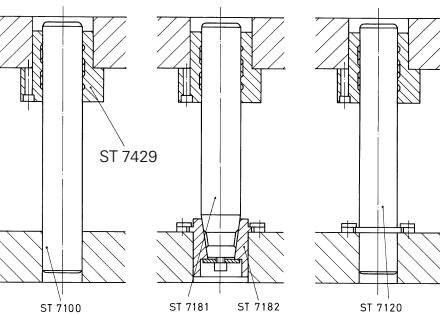
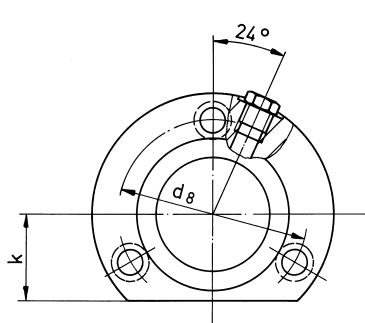
The flange surface that is ground at a right angle to the guide bore is securely pressed onto the base by the screws and ensures absolute chucking of the guide bush.

The borehole for the lubrication is found on the shank (d3) for diameters 15 and 16.

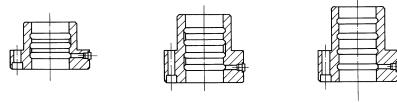
**Technical description:** See page 3.04



Long version



Matching possibilities

**Order example:**Guide bush **ST 7429** $d_1 = 24, l_1 = 38 \text{ mm}$ Addition **24 x 038**Order number **ST 7429.24 x 038**Add size to  
order number

Without ball cage

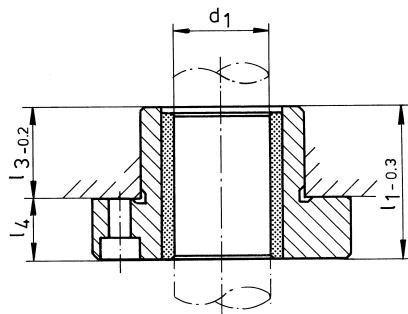
Order number **ST 7429.** 

<b><math>d_1^{\text{H5}}</math></b>	<b><math>d_{3js4}</math></b>	<b><math>d_5</math></b>	<b><math>d_8</math></b>	<b><math>d_9</math></b>	<b><math>k</math></b>	<b><math>t</math></b>	<b><math>l_1 -0.3</math></b>	<b><math>l_3 -0.2</math></b>	<b><math>l_4</math></b>	
15	28	45	35	4.5	15	3.5	29	23	6	<b>15 x 029</b>
							36	30	6	<b>15 x 036</b>
16	28	45	35	4.5	15	3.5	29	23	6	<b>16 x 029</b>
							36	30	6	<b>16 x 036</b>
19	32	50	40	4.5	18	4.6	38	23	15	<b>19 x 038</b>
							45	30	15	<b>19 x 045</b>
							51	36	15	<b>19 x 051</b>
20	32	50	40	4.5	18	4.6	38	23	15	<b>20 x 038</b>
							45	30	15	<b>20 x 045</b>
							51	36	15	<b>20 x 051</b>
24	40	63	50	5.5	23	5.7	38	23	15	<b>24 x 038</b>
							55	30	25	<b>24 x 055</b>
							62	37	25	<b>24 x 062</b>
25	40	63	50	5.5	23	5.7	38	23	15	<b>25 x 038</b>
							55	30	25	<b>25 x 055</b>
							62	37	25	<b>25 x 062</b>
30	48	72	58	5.5	28	5.7	45	30	15	<b>30 x 045</b>
							62	37	25	<b>30 x 062</b>
							72	47	25	<b>30 x 072</b>
32	48	72	58	5.5	28	5.7	45	30	15	<b>32 x 045</b>
							62	37	25	<b>32 x 062</b>
							72	47	25	<b>32 x 072</b>
38	58	85	70	6.6	33	6.8	55	30	25	<b>38 x 055</b>
							67	37	30	<b>38 x 067</b>
							77	47	30	<b>38 x 077</b>
40	58	85	70	6.6	33	6.8	55	30	25	<b>40 x 055</b>
							67	37	30	<b>40 x 067</b>
							77	47	30	<b>40 x 077</b>
48	70	104	86	9	38	9	62	37	25	<b>48 x 062</b>
							89	47	42	<b>48 x 089</b>
							102	60	42	<b>48 x 102</b>
50	70	104	86	9	38	9	62	37	25	<b>50 x 062</b>
							89	47	42	<b>50 x 089</b>
							102	60	42	<b>50 x 102</b>
60	85	120	100	9	46	9	89	47	42	<b>60 x 089</b>
							102	60	42	<b>60 x 102</b>
63	85	120	100	9	46	9	89	47	42	<b>63 x 089</b>
							102	60	42	<b>63 x 102</b>
80	105	148	125	11	56	11	125	75	50	<b>80 x 125</b>

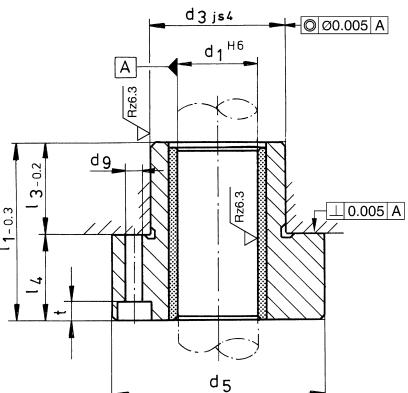
# Guide bushes ST 7481

with flange, sliding guide with solid lubricant

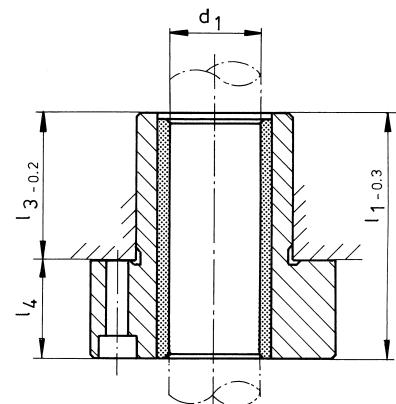
**STEINEL®**



Short version



Medium length version



Long version



**Dimensions according to  
DIN 9831, ISO 9448**

**Material:**

Steel hardened to 63 + 2 HRC with solid lubricant insert

This sliding guide is self-lubricating due to the solid lubricant inserts, and suitable for higher loads.

Guide diameter ISO H6, precision-turned, mounting diameter ISO js4, ground

**Lubrication:**

The solid lubricant lubrication is designated as a lubrication condition in which solid lubricant particles that have a low cutting resistance in their crystal structure are present between two surfaces and assume the lubricating functions.

**Suitable guide pillars:**

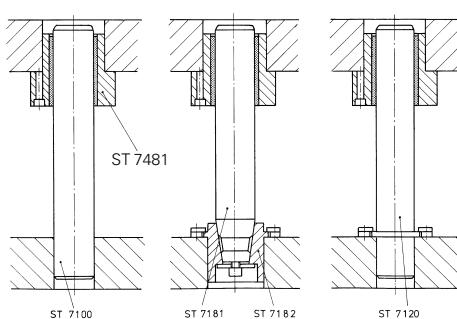
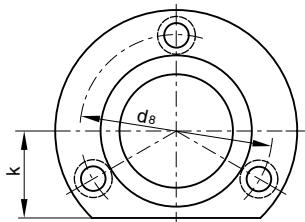
ST 7100, ST 7106, ST 7107, ST 7108, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

**Installation instructions:**

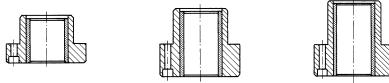
Fit into mounting bore ISO H6, fixing with 3 socket-head screws

The flange surface that is ground at a right angle to the guide bore is securely pressed onto the base by the screws and ensures absolute chucking of the guide bush.

**Technical description:** See page 3.04



Matching possibilities

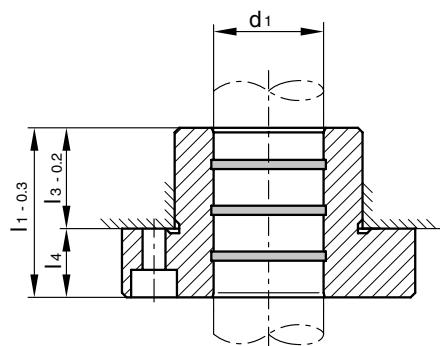
**Order example:**Guide bush **ST 7481** $d_1 = 24, l_1 = 38 \text{ mm}$ Addition **24 x 038**Order number **ST 7481.24 x 038**Add size to  
order numberOrder number **ST 7481.** x 

<b><math>d_1^{\text{H6}}</math></b>	<b><math>d_{3js4}</math></b>	<b><math>d_5</math></b>	<b><math>d_8</math></b>	<b><math>d_9</math></b>	<b><math>k</math></b>	<b><math>t</math></b>	<b><math>l_1 -0.3</math></b>	<b><math>l_3 -0.2</math></b>	<b><math>l_4</math></b>	
15	28	45	35	4.5	15	3.5	29	23	6	<b>15 x 029</b>
							36	30	6	<b>15 x 036</b>
16	28	45	35	4.5	15	3.5	29	23	6	<b>16 x 029</b>
							36	30	6	<b>16 x 036</b>
19	32	50	40	4.5	18	4.6	38	23	15	<b>19 x 038</b>
							45	30	15	<b>19 x 045</b>
							51	36	15	<b>19 x 051</b>
20	32	50	40	4.5	18	4.6	38	23	15	<b>20 x 038</b>
							45	30	15	<b>20 x 045</b>
							51	36	15	<b>20 x 051</b>
24	40	63	50	5.5	23	5.7	38	23	15	<b>24 x 038</b>
							55	30	25	<b>24 x 055</b>
							62	37	25	<b>24 x 062</b>
25	40	63	50	5.5	23	5.7	38	23	15	<b>25 x 038</b>
							55	30	25	<b>25 x 055</b>
							62	37	25	<b>25 x 062</b>
30	48	72	58	5.5	28	5.7	45	30	15	<b>30 x 045</b>
							62	37	25	<b>30 x 062</b>
							72	47	25	<b>30 x 072</b>
32	48	72	58	5.5	28	5.7	45	30	15	<b>32 x 045</b>
							62	37	25	<b>32 x 062</b>
							72	47	25	<b>32 x 072</b>
38	58	85	70	6.6	33	6.8	55	30	25	<b>38 x 055</b>
							67	37	30	<b>38 x 067</b>
							77	47	30	<b>38 x 077</b>
40	58	85	70	6.6	33	6.8	55	30	25	<b>40 x 055</b>
							67	37	30	<b>40 x 067</b>
							77	47	30	<b>40 x 077</b>
48	70	104	86	9	38	9	62	37	25	<b>48 x 062</b>
							89	47	42	<b>48 x 089</b>
							102	60	42	<b>48 x 102</b>
50	70	104	86	9	38	9	62	37	25	<b>50 x 062</b>
							89	47	42	<b>50 x 089</b>
							102	60	42	<b>50 x 102</b>
60	85	120	100	9	46	9	89	47	42	<b>60 x 089</b>
							102	60	42	<b>60 x 102</b>
							102	60	42	<b>63 x 089</b>
63	85	120	100	9	46	9	89	47	42	<b>63 x 102</b>
							102	60	42	<b>63 x 125</b>
							125	75	50	

# Guide bushes ST 7441

with flange, sliding guide with solid lubricant

**STEINEL®**



Short version



Dimensions according to  
DIN 9831, ISO 9448

**Material:**

CuSn8/CuZn25Al5 with solid lubricant rings. This sliding guide is self-lubricating due to the integrated solid lubricant rings, and suitable for higher loads.

Guide diameter ISO H6, precision-turned, mounting diameter ISO j6, precision-turned

**Lubrication:**

The solid lubricant lubrication is designated as a lubrication condition in which solid lubricant particles that have a low cutting resistance in their crystal structure are present between two surfaces and assume the lubricating functions.

**Suitable guide pillars:**

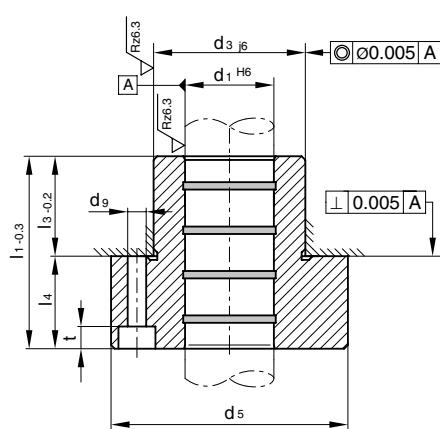
ST 7100, ST 7106, ST 7107, ST 7108, ST 7120, ST 7126, ST 7127, ST 7128, ST 7181/82

**Installation instructions:**

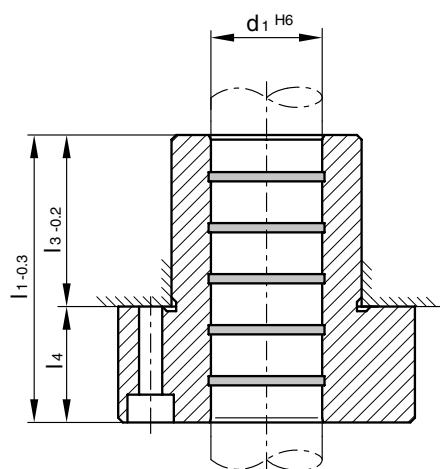
Fit into mounting bore ISO H6, fixing with 3 socket-head screws

The flange surface that is ground at a right angle to the guide bore is securely pressed onto the base by the screws and ensures absolute chucking of the guide bush.

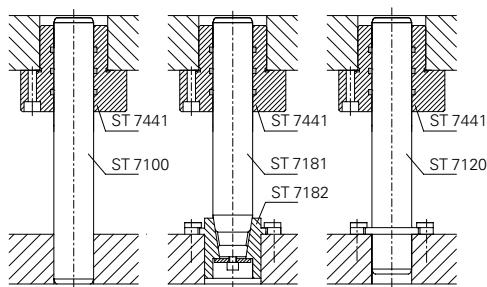
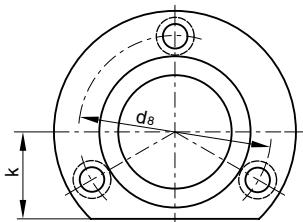
**Technical description:** See page 3.04



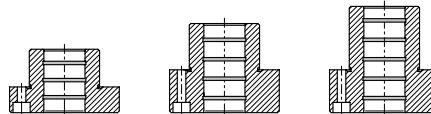
Medium length version



Long version



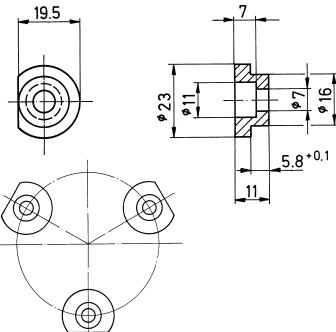
Matching possibilities

**Order example:**Guide bush **ST 7441** $d_1 = 24, l_1 = 38 \text{ mm}$ Addition **24 x 038**Order number **ST 7441.24 x 038**Add size to  
order numberOrder number **ST 7441.** x 

$d_1^{H6}$	$d_{3j6}$	$d_5$	$d_8$	$d_9$	$k$	$t$	$l_1 -0.3$	$l_3 -0.2$	$l_4$	
15	28	45	35	4.5	15	3.5	29	23	6	<b>15 x 029</b>
							36	30	6	<b>15 x 036</b>
16	28	45	35	4.5	15	3.5	29	23	6	<b>16 x 029</b>
							36	30	6	<b>16 x 036</b>
19	32	50	40	4.5	18	4.6	38	23	15	<b>19 x 038</b>
							45	30	15	<b>19 x 045</b>
							51	36	15	<b>19 x 051</b>
20	32	50	40	4.5	18	4.6	38	23	15	<b>20 x 038</b>
							45	30	15	<b>20 x 045</b>
							51	36	15	<b>20 x 051</b>
24	40	63	50	5.5	23	5.7	38	23	15	<b>24 x 038</b>
							55	30	25	<b>24 x 055</b>
							62	37	25	<b>24 x 062</b>
25	40	63	50	5.5	23	5.7	38	23	15	<b>25 x 038</b>
							55	30	25	<b>25 x 055</b>
							62	37	25	<b>25 x 062</b>
30	48	72	58	5.5	28	5.7	45	30	15	<b>30 x 045</b>
							62	37	25	<b>30 x 062</b>
							72	47	25	<b>30 x 072</b>
32	48	72	58	5.5	28	5.7	45	30	15	<b>32 x 045</b>
							62	37	25	<b>32 x 062</b>
							72	47	25	<b>32 x 072</b>
38	58	85	70	6.6	33	6.8	55	30	25	<b>38 x 055</b>
							67	37	30	<b>38 x 067</b>
							77	47	30	<b>38 x 077</b>
40	58	85	70	6.6	33	6.8	55	30	25	<b>40 x 055</b>
							67	37	30	<b>40 x 067</b>
							77	47	30	<b>40 x 077</b>
48	70	104	86	9	38	9	62	37	25	<b>48 x 062</b>
							89	47	42	<b>48 x 089</b>
							102	60	42	<b>48 x 102</b>
50	70	104	86	9	38	9	62	37	25	<b>50 x 062</b>
							89	47	42	<b>50 x 089</b>
							102	60	42	<b>50 x 102</b>
60	85	120	100	9	46	9	89	47	42	<b>60 x 089</b>
							102	60	42	<b>60 x 102</b>
63	85	120	100	9	46	9	89	47	42	<b>63 x 089</b>
							102	60	42	<b>63 x 102</b>
80	105	148	125	11	56	11	125	75	50	<b>80 x 125</b>

# Holding clamps ST 7367, ST 7377, ST 7387

**STEINEL®**



Set-up possibility

## Holding clamps ST 7367

### Material:

1.0715 (9 S Mn 28 K)

**Order example:** Holding clamp ST 7367

Order number **ST 7367**

### Suitable for guide pillars:

ST 7118, ST 7120, ST 7126, ST 7127, ST 7128,  
ST 9825, ST9827

### Pillar holding bushes ST 7182 as well as guide bushes with shoulder:

ST 7412, ST 7413, ST 7414, ST 7415, ST 7416,  
ST 7419, ST 7431, ST 7471



## Holding clamp ST 7377 DIN 9832

### Material:

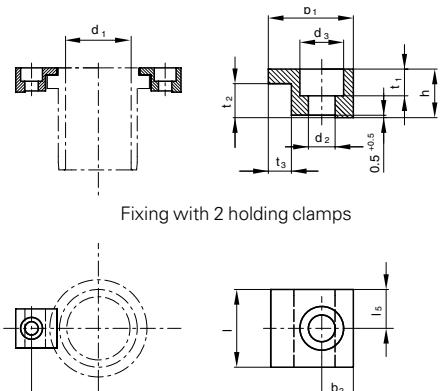
Steel

**Order example:** Holding clamp **ST 7377**

Nominal diameter  $d_1 = 32$  mm

Addition **01**

Order number **ST 7377.01**



### Fixing:

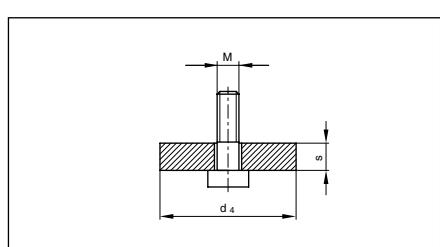
Suitable socket screws DIN 912

Order number **SZ 8510**

Add size to  
order number

Order number **ST 7377.**

$d_1$	$d_2$	$d_3$	$b_1$	$b_2$	$b_3$	$h$	$l$	$l_5$	$t_1$	$t_2$	$t_3$	Screw	
25	7	11	20	7.5	29	10	20	10	7	6.3	5	M6 x 16	<b>01</b>
32					33								<b>01</b>
40					39.5								<b>01</b>
50					44.5								<b>01</b>
63	11.5	17.5	32	11	61.5	16	32	16	11.5	10	10	M10 x 25	<b>02</b>
80					71.5								<b>02</b>
100					84								<b>02</b>
125					101.5								<b>02</b>
160					121.5								<b>02</b>



## Holding disc with screw ST 7387

### Material:

1.0503 (C 45)

**Order example:** Holding disc **ST 7387**

$d_1 = 25$  mm

Addition **25**

Order number **ST 7387.25**

### Suitable for guide pillars:

ST 7106, ST 7107, ST 7120, ST 7126, ST 9827

### Fixing:

Suitable socket screws DIN 6912 (included in  
scope of delivery)

Add size to  
order number

Order number **ST 7387.**

$d_1$	$d_3$	$d_4$	$s$	$h_{min}$	$M$	
15 and 16	23	21	6	13	8	<b>16</b>
19 and 20	27	25	6	13	8	<b>20</b>
24 and 25	34	32	6	13	8	<b>25</b>
30 and 32	42	40	7	14	8	<b>32</b>
38 and 40	52	50	7	16	10	<b>40</b>
48 and 50	62	60	8	17	10	<b>50</b>
60 and 63	72	70	8	19	12	<b>63</b>
	80	98	10	15	12	<b>80</b>

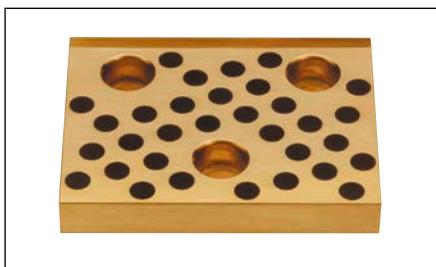
### Suitable for guide pillars:

ST 7106, ST 7107, ST 7120, ST 7126, ST 9827

# Guide plates ST 7571

## with solid lubricant

**STEINEL®**



VDI 3357

**Material:**

Solid bronze with solid lubricant

**Fixing:**

Suitable socket screws DIN 912

Order number **SZ 8510.12 x 025**

**Order example:** Guide plate **ST 7571**

Size  $b_1 \times l_1 = 80 \times 125$

Addition **080 x 125**

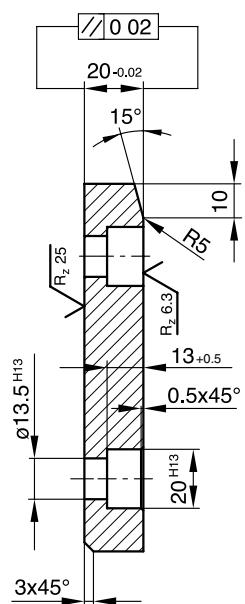
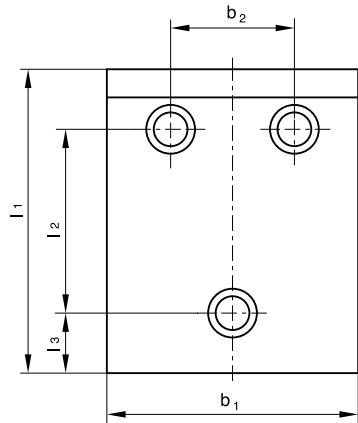
Order number **ST 7571.080.**

**Function:**

Guide plates are preferably used in the area of mixed friction or friction, e.g. at very low sliding speeds and high specific surface pressures.

They are resistant to impacts and shocks, and have very good wear-resistant properties.

This sliding guide is self-lubricating due to the integrated solid lubricant inserts, and therefore maintenance-free.



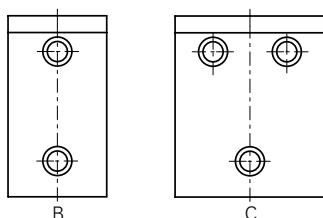
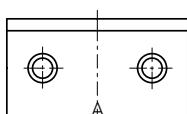
Add size to  
order number  
 x

Order number **ST 7571.**

$b_{1-0.2}$	$l_{1-0.2}$	$b_{2\pm 0.2}$	$l_{2\pm 0.2}$	$l_{3\pm 0.2}$		
50	80*	—	30	25	B	<b>050 x 080</b>
	100	—	50	25	B	<b>050 x 100</b>
	125	—	75	25	B	<b>050 x 125</b>
	160	—	110	25	B	<b>050 x 160</b>
	200	—	150	25	B	<b>050 x 200</b>
80	50*	30	—	25	A	<b>080 x 050</b>
	80	—	30	25	B	<b>080 x 080</b>
	100	—	50	25	B	<b>080 x 100</b>
	125	—	75	25	B	<b>080 x 125</b>
	160	—	110	25	B	<b>080 x 160</b>
	200	—	150	25	B	<b>080 x 200</b>
100	50	50	—	25	A	<b>100 x 050</b>
	80	50	—	40	A	<b>100 x 080</b>
	100	—	50	25	B	<b>100 x 100</b>
	125	—	75	25	B	<b>100 x 125</b>
	160	—	110	25	B	<b>100 x 160</b>
	200	—	150	25	B	<b>100 x 200</b>
125	50	75	—	25	A	<b>125 x 050</b>
	80	75	—	40	A	<b>125 x 080</b>
	100	75	50	25	C	<b>125 x 100</b>
	125	75	75	25	C	<b>125 x 125</b>
	160	75	110	25	C	<b>125 x 160</b>
	200	75	150	25	C	<b>125 x 200</b>
160	50	110	—	25	A	<b>160 x 050</b>
	80	110	—	40	A	<b>160 x 080</b>
	100	110	50	25	C	<b>160 x 100</b>
	125	110	75	25	C	<b>160 x 125</b>
	160	110	110	25	C	<b>160 x 160</b>
	200	110	150	25	C	<b>160 x 200</b>

Special sizes upon request

\* Mounting hole for M8

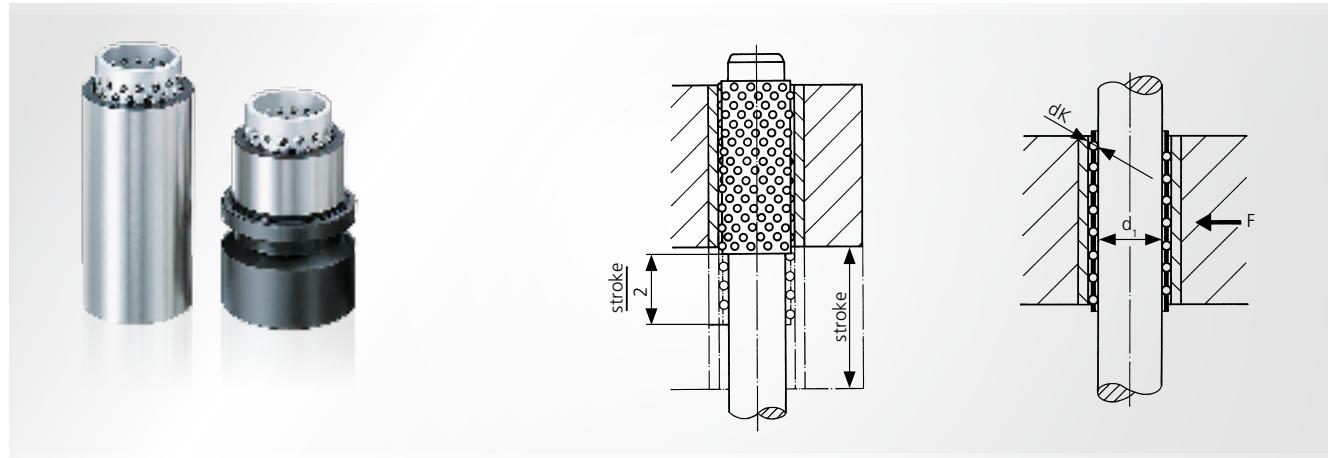


Hole pattern



## High-precision inch guide units Made in Germany





## Special features of STEINEL precision ball guides

- Precision due to the microfinished contact surfaces and uniformly selected precision steel balls.
- Friction-free movement due to the rolling motion of the balls.

Clearance-free guidance due to the optimal preloaded rolling motion of the balls between the guide pillar and guide bush.

- Long lifespan due to the free-wheeling mounting and helical positioning of the balls, so that each ball has its own track.
- High load capacities, precision guidance and high stroke speeds are achieved due to the highest precision of the uniformly selected precision steel balls, honed guide bushes and superfine ground guide pillars. The large number of balls in the cage as well as an even force distribution in the guidance system allow high stroke speeds of 98–131 feet/min (30–40 m/min) and more.
- Interchangeability is ensured due to the uniformly selected precision steel balls.
- Special designs can be manufactured according to your drawings.

## Load capacities – preload

The radial load capacity of the ball guide grows with the increasing preload while simultaneously decreasing the friction-free movement. Extremely high preloading will overstrain the ball guide due to the excessive surface pressure on the balls.

## Ball cage with safety part and screw

Special characteristics: Guide pillars mounted in the upper plate and the possibility for the ball cage to come completely out of the guide bushing.

## Limiting sleeve

Special characteristics: Prevents the ball cage from shifting down.

## Low maintenance

Low maintenance is needed for the practically maintenance-free ball guides. Lubrication with a high-performance grease when mounting is sufficient for continuous operation.

## Component arrangement and function

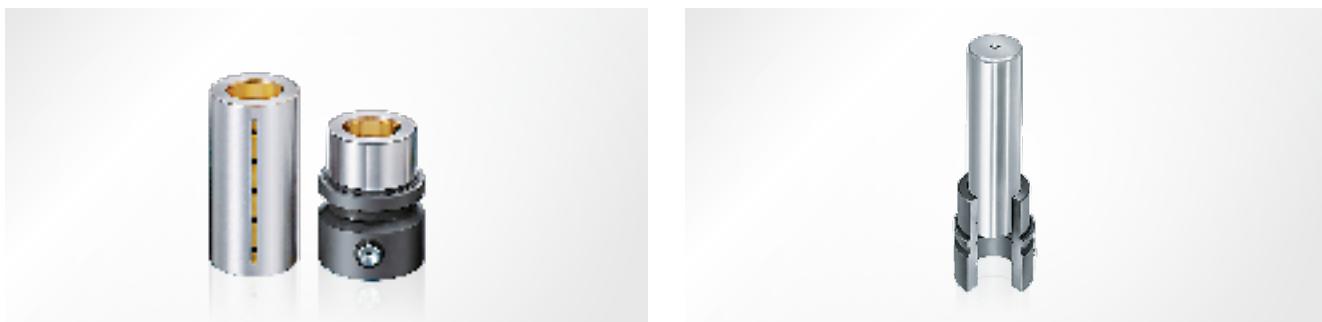
The STEINEL precision ball guide is composed of a guide pillar, guide bushing and ball cage, which are tensionally paired by preloading.

Due to the tensional structure of the balls within the cage, the ball cage only travels at half the speed of the ball guide motion. The travel length of the ball cage is always half of the stroke of the guide bushing or the guide pillar.

# STEINEL precision sliding guides

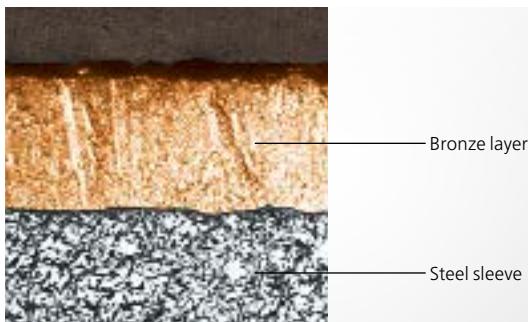
## steel sliding guide with bronze coating

**STEINEL®**



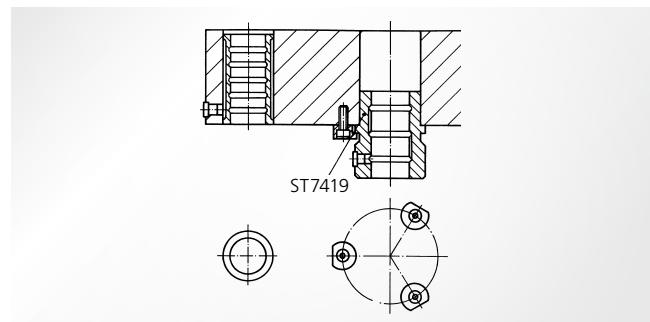
### Fields of application

STEINEL precision sliding guides "steel with bronze coating" are used for longitudinal movement in the manufacture of tools, fixtures, machines, medical devices and cars. They are characterised by their high loading capacity and resistance to wear.



### Component arrangement

The STEINEL precision sliding guide "steel with bronze coating" is composed of a guide pillar and guide bush with honed guide clearance.



### Bronze coating

The hardened steel sleeve absorbs strong lateral forces and prevents the guide bush from deforming when strong edge pressure is present. The galvanised bronze coating is very hard, wear-resistant and honed to highest surface quality. In addition to its excellent dry-running properties it also has very good heat dissipation characteristics that ensure the rapid disbursement of excessive frictional heat.

### Sliding speed

The recommended sliding speed is 49–98 feet/min (15–30 m/min). Under ideal conditions of lubrication, guide clearance, stroke length, radial load and heat dissipation, very high stroke speeds of 600–800 strokes/min can be achieved with the STEINEL precision sliding guide "steel with bronze coating".

### Lubrication

All STEINEL precision sliding guides "steel with bronze coating" are supplied with an internal lubrication system, where the parallel transverse oil grooves are connected with axial channels. As a result, an equal distance to all lubrication points is ensured. At the same time, the internal lubrication system guarantees a shielding effect against dirt. The internal lubrication system must be supplied with high-quality oil or high-quality grease several times a day, depending on sliding speed.

### Guide clearance

The guide bushes are precision-turned and honed. An additional compression of the running surface takes place at the tool start-up, resulting in better sliding characteristics. The clearance is 0.000078"–0.000275" (2–7 µm). If more clearance is required, please indicate it on the order as "smooth-running honed".

# Guide pillar ST7108

**STEINEL®**

precision ground, to press-in, with internal thread



## Material / Version

Steel 1.11221 (Ck 60) induction hardened, hardness 62–64 HRC

Guide diameter ISO h3 superfinish ground and microfinished mounting into mounting-holes ISO R6. Starting at sheet thickness 1.97" (50 mm) N6.

## Application

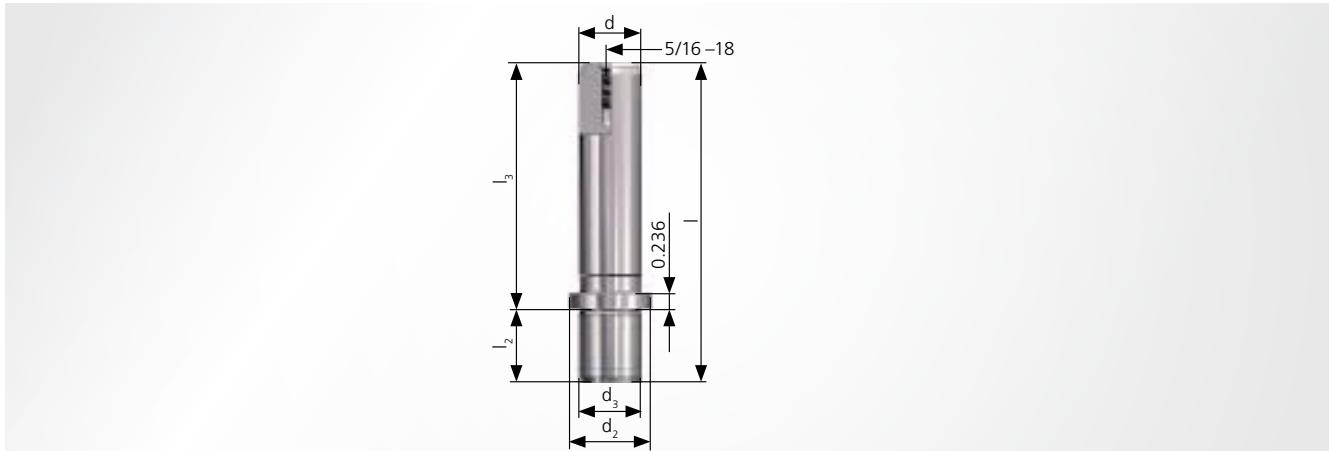
Due to the high precision of the guide pillars ST7108 they are suitable for all STEINEL guide bushes for sliding- and ball guides. Especially in connection with ball cages ST7130.

Ø d	I	Item number
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
	10"	ST7108-1.75X10.000
	11"	ST7108-1.75X11.000
	12"	ST7108-1.75X12.000
	13"	ST7108-1.75X13.000
	14"	ST7108-1.75X14.000
	15"	ST7108-1.75X15.000
	16"	ST7108-1.75X16.000
	17"	ST7108-1.75X17.000
1 1/4"	4"	ST7108-1.25X04.000
	4 1/2"	ST7108-1.25X04.500
	5"	ST7108-1.25X05.000
	5 1/2"	ST7108-1.25X05.500
	6"	ST7108-1.25X06.000
	6 1/2"	ST7108-1.25X06.500
	7"	ST7108-1.25X07.000
	7 1/2"	ST7108-1.25X07.500
	8"	ST7108-1.25X08.000
	8 1/2"	ST7108-1.25X08.500
	9"	ST7108-1.25X09.000
	10"	ST7108-1.25X10.000
	11"	ST7108-1.25X11.000
	12"	ST7108-1.25X12.000
	13"	ST7108-1.25X13.000
	14"	ST7108-1.25X14.000
	15"	ST7108-1.25X15.000
	16"	ST7108-1.25X16.000
	17"	ST7108-1.25X17.000
2"	6"	ST7108-2.00X06.000
	6 1/2"	ST7108-2.00X06.500
	7"	ST7108-2.00X07.000
	7 1/2"	ST7108-2.00X07.500
	8"	ST7108-2.00X08.000
	8 1/2"	ST7108-2.00X08.500
	9"	ST7108-2.00X09.000
	10"	ST7108-2.00X10.000
	11"	ST7108-2.00X11.000
	12"	ST7108-2.00X12.000
	13"	ST7108-2.00X13.000
	14"	ST7108-2.00X14.000
	15"	ST7108-2.00X15.000
	16"	ST7108-2.00X16.000
	17"	ST7108-2.00X17.000

Ø d	I	Item number
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
	10"	ST7108-1.75X10.000
	11"	ST7108-1.75X11.000
	12"	ST7108-1.75X12.000
	13"	ST7108-1.75X13.000
	14"	ST7108-1.75X14.000
	15"	ST7108-1.75X15.000
	16"	ST7108-1.75X16.000
	17"	ST7108-1.75X17.000
1 1/4"	4"	ST7108-1.25X04.000
	4 1/2"	ST7108-1.25X04.500
	5"	ST7108-1.25X05.000
	5 1/2"	ST7108-1.25X05.500
	6"	ST7108-1.25X06.000
	6 1/2"	ST7108-1.25X06.500
	7"	ST7108-1.25X07.000
	7 1/2"	ST7108-1.25X07.500
	8"	ST7108-1.25X08.000
	8 1/2"	ST7108-1.25X08.500
	9"	ST7108-1.25X09.000
	10"	ST7108-1.25X10.000
	11"	ST7108-1.25X11.000
	12"	ST7108-1.25X12.000
	13"	ST7108-1.25X13.000
	14"	ST7108-1.25X14.000
	15"	ST7108-1.25X15.000
	16"	ST7108-1.25X16.000
	17"	ST7108-1.25X17.000
2"	6"	ST7108-2.00X06.000
	6 1/2"	ST7108-2.00X06.500
	7"	ST7108-2.00X07.000
	7 1/2"	ST7108-2.00X07.500
	8"	ST7108-2.00X08.000
	8 1/2"	ST7108-2.00X08.500
	9"	ST7108-2.00X09.000
	10"	ST7108-2.00X10.000
	11"	ST7108-2.00X11.000
	12"	ST7108-2.00X12.000
	13"	ST7108-2.00X13.000
	14"	ST7108-2.00X14.000
	15"	ST7108-2.00X15.000
	16"	ST7108-2.00X16.000
	17"	ST7108-2.00X17.000

# Guide pillar ST7120

## with shoulder



## Material/Versions

Steel 1.11221 induction hardened, hardness 62–64 HRC

Guide pillars with shoulder enable an easy and quick assembly and disassembly of the pillars, if, for example, you want to sharpen cutting tools with a surface grinding machine.

## Application

Guide pillars with shoulder are suitable to all STEINEL guide bushes for sliding- and ball guides. Especially in connection with ball cages ST7130.

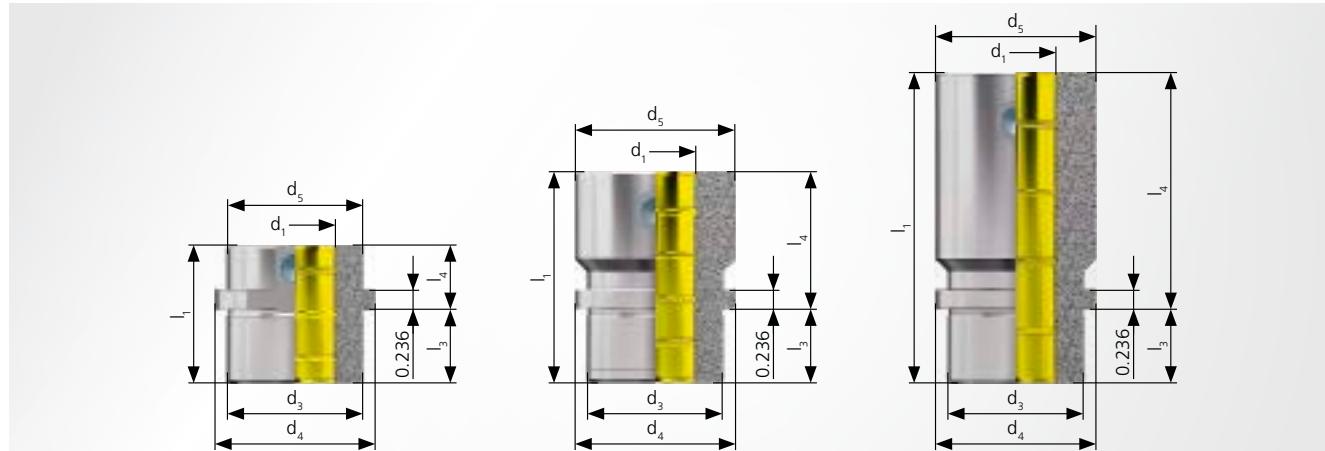
<b>Ø d</b>	<b>l<sub>3</sub></b>	<b>Ø d<sub>3</sub></b>	<b>Ø d<sub>2</sub></b>	<b>l<sub>2</sub></b>	<b>l</b>	<b>Item number</b>
1"	4"	1"	1.312"	1.1880"	5.188"	ST7120- <b>1.00X04.000</b>
	4½"				5.688"	ST7120- <b>1.00X04.500</b>
	5"				6.188"	ST7120- <b>1.00X05.000</b>
	5½"				6.688"	ST7120- <b>1.00X05.500</b>
	6"				7.188"	ST7120- <b>1.00X06.000</b>
	6½"				7.688"	ST7120- <b>1.00X06.500</b>
	7"				8.188"	ST7120- <b>1.00X07.000</b>
	7½"				8.688"	ST7120- <b>1.00X07.500</b>
	8"				9.188"	ST7120- <b>1.00X08.000</b>
	8½"				9.688"	ST7120- <b>1.00X08.500</b>
	9"				10.188"	ST7120- <b>1.00X09.000</b>
	10"				11.188"	ST7120- <b>1.00X10.000</b>
1¼"	4"	1¼"	1.562"	1.5620"	5.562"	ST7120- <b>1.25X04.000</b>
	4½"				6.062"	ST7120- <b>1.25X04.500</b>
	5"				6.562"	ST7120- <b>1.25X05.000</b>
	5½"				7.062"	ST7120- <b>1.25X05.500</b>
	6"				7.562"	ST7120- <b>1.25X06.000</b>
	6½"				8.062"	ST7120- <b>1.25X06.500</b>
	7"				8.562"	ST7120- <b>1.25X07.000</b>
	7½"				9.062"	ST7120- <b>1.25X07.500</b>
	8"				9.562"	ST7120- <b>1.25X08.000</b>
	8½"				10.062"	ST7120- <b>1.25X08.500</b>
	9"				10.562"	ST7120- <b>1.25X09.000</b>
	10"				11.562"	ST7120- <b>1.25X10.000</b>

<b>Ø d</b>	<b>l<sub>3</sub></b>	<b>Ø d<sub>3</sub></b>	<b>Ø d<sub>2</sub></b>	<b>l<sub>2</sub></b>	<b>l</b>	<b>Item number</b>
1 1/2"	5"	1 1/2"	1.875"	1.8750"	6.875"	ST7120- <b>1.50X05.000</b>
	5 1/2"				7.375"	ST7120- <b>1.50X05.500</b>
	6"				7.875"	ST7120- <b>1.50X06.000</b>
	6 1/2"				8.375"	ST7120- <b>1.50X06.500</b>
	7"				8.875"	ST7120- <b>1.50X07.000</b>
	7 1/2"				9.375"	ST7120- <b>1.50X07.500</b>
	8"				9.875"	ST7120- <b>1.50X08.000</b>
	9"				10.875"	ST7120- <b>1.50X09.000</b>
	10"				11.875"	ST7120- <b>1.50X10.000</b>
	11"				12.875"	ST7120- <b>1.50X11.000</b>
	12"				13.875"	ST7120- <b>1.50X12.000</b>
1 3/4"	5"	1 3/4"	2.25"	2.2500"	7.25"	ST7120- <b>1.75X05.000</b>
	5 1/2"				7.75"	ST7120- <b>1.75X05.500</b>
	6"				8.25"	ST7120- <b>1.75X06.000</b>
	6 1/2"				8.75"	ST7120- <b>1.75X06.500</b>
	7"				9.25"	ST7120- <b>1.75X07.000</b>
	7 1/2"				9.75"	ST7120- <b>1.75X07.500</b>
	8"				10.25"	ST7120- <b>1.75X08.000</b>
	9"				11.25"	ST7120- <b>1.75X09.000</b>
	10"				12.25"	ST7120- <b>1.75X10.000</b>
	11"				13.25"	ST7120- <b>1.75X11.000</b>
	12"				14.25"	ST7120- <b>1.75X12.000</b>
2"	5"	2"	2.5"	2.5000"	7.5"	ST7120- <b>2.00X05.000</b>
	5 1/2"				8.0"	ST7120- <b>2.00X05.500</b>
	6"				8.5"	ST7120- <b>2.00X06.000</b>
	6 1/2"				9.0"	ST7120- <b>2.00X06.500</b>
	7"				9.5"	ST7120- <b>2.00X07.000</b>
	7 1/2"				10.0"	ST7120- <b>2.00X07.500</b>
	8"				10.5"	ST7120- <b>2.00X08.000</b>
	9"				11.5"	ST7120- <b>2.00X09.000</b>
	10"				12.5"	ST7120- <b>2.00X10.000</b>
	11"				13.5"	ST7120- <b>2.00X11.000</b>
	12"				14.5"	ST7120- <b>2.00X12.000</b>

# Guide bush ST7419

**STEINEL®**

## with shoulder, steel sliding guide with bronze coating



### Material / Version

Guide bush made of steel 1.7131, case-hardened, hardness 61–63 HRC

Guide diameter ISO H5 honed. Mounting diameter ISO js4, ground.

### Important

Due to the galvanically applied bronze coating onto the hardened steel sleeve, this bush is suitable especially for high sliding speeds and strong lateral forces.

### Lubrication

Lubrication by cup head lubrication nipple, connection M8 x 1 provided for central lubrication.

### Guide bush – short

Ø d	Ø d <sub>1</sub>	I <sub>1</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>	I <sub>3</sub>	I <sub>4</sub>	Item number
1"	1"	1 3/4"	1.7170"	2.0320"	1.7170"	0.9375"	0.8125"	ST7419-1.00X01.750
1 1/4"	1 1/4"	1 15/16"	2.1070"	2.4220"	2.1070"	1.1250"	0.8125"	ST7419-1.25X01.937
1 1/2"	1 1/2"	2"	2.4370"	2.7520"	2.4370"	1.1875"	0.8125"	ST7419-1.50X02.000
1 3/4"	1 3/4"	2 3/8"	2.7470"	3.0620"	2.7470"	1.3750"	1.0000"	ST7419-1.75X02.375
2"	2"	2 5/8"	3.1620"	3.4770"	3.1620"	1.6250"	1.0000"	ST7419-2.00X02.625

### Guide bush – standard

Ø d	Ø d <sub>1</sub>	I <sub>1</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>	I <sub>3</sub>	I <sub>4</sub>	Item number
1"	1"	2 15/16"	1.7170"	2.0320"	2.0320"	0.9375"	1.7500"	ST7419-1.00X02.687
1 1/4"	1 1/4"	3 1/8"	2.1070"	2.4220"	2.4220"	1.1250"	2.0000"	ST7419-1.25X03.125
1 1/2"	1 1/2"	3 3/16"	2.4370"	2.7520"	2.7520"	1.1875"	2.0000"	ST7419-1.50X03.187
1 3/4"	1 3/4"	3 3/8"	2.7470"	3.0620"	3.0620"	1.3750"	2.0000"	ST7419-1.75X03.375
2"	2"	3 5/8"	3.1620"	3.4770"	3.4770"	1.6250"	2.0000"	ST7419-2.00X03.625

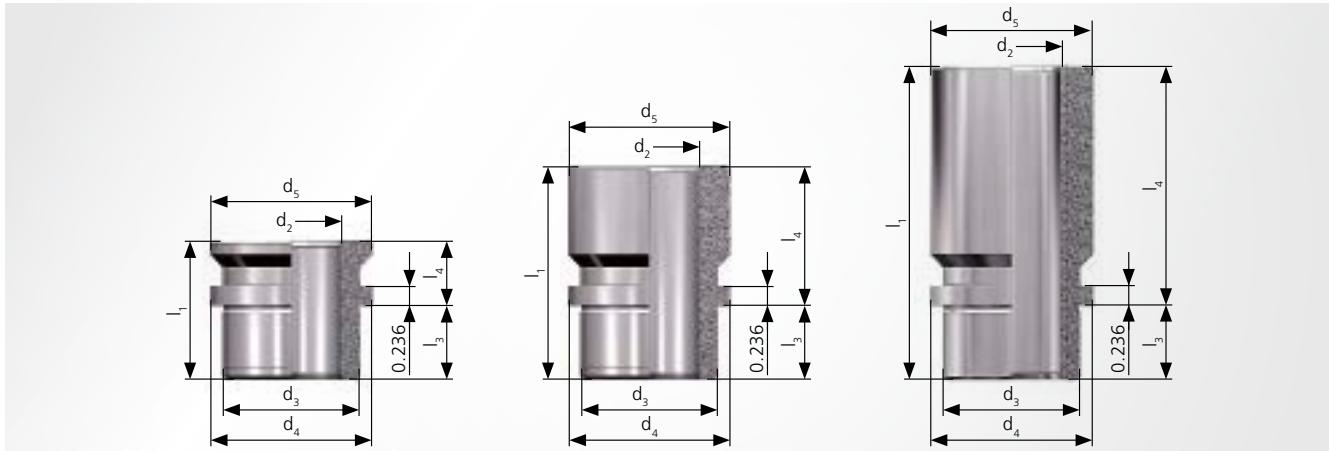
### Guide bush – long

Ø d	Ø d <sub>1</sub>	I <sub>1</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>	I <sub>3</sub>	I <sub>4</sub>	Item number
1"	1"	3 15/16"	1.7170"	2.0320"	2.0320"	0.9375"	3.0000"	ST7419-1.00X03.937
1 1/4"	1 1/4"	4 1/8"	2.1070"	2.4220"	2.4220"	1.1250"	3.0000"	ST7419-1.25X04.125
1 1/2"	1 1/2"	4 3/16"	2.4370"	2.7520"	2.7520"	1.1875"	3.0000"	ST7419-1.50X04.187
1 3/4"	1 3/4"	4 3/8"	2.7470"	3.0620"	3.0620"	1.3750"	3.0000"	ST7419-1.75X04.375
2"	2"	4 5/8"	3.1620"	3.4770"	3.4770"	1.6250"	3.0000"	ST7419-2.00X04.625

# Guide bush ST7416

## with shoulder, ball guide

**STEINEL®**



### Material / Version

Guide bushes made of steel 1.7131, case-hardened, hardness 61–63 HRC

Guide diameter honed, matched to ball cage and guide pillar.  
Mounting diameter ground ISO js4.

### Mounting instructions

Fit in mounting bore hole ISO H6. Fix with 3 holding clamps ST7367 (included in delivery). The shoulder surface, right-angled ground to the guide bore, will be squeezed onto the plate by the holding clamps and guarantees an absolute chucking of the guide bush.

### Important

If possible, order the complete ball guide so that it can be matched with the correct preload.

### Holding clamps

When reordering the holding clamps please order:  
1 set = 3 pieces, order number ST7367

### Guide bush – short

Ø d	Ø d <sub>2</sub>	l <sub>1</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>	l <sub>3</sub>	l <sub>4</sub>	Item number
1"	1.2362"	2 7/16"	1.7170"	2.0320"	1.7170"	0.9375"	1.5000"	ST7416-1.00X02.437
1 1/4"	1.5650"	2 15/16"	2.1070"	2.4220"	2.1070"	1.1250"	1.8125"	ST7416-1.25X02.937
1 1/2"	1.8150"	2 15/16"	2.4370"	2.7520"	2.4370"	1.1875"	1.7500"	ST7416-1.50X02.937
1 3/4"	2.0650"	3 7/16"	2.7470"	3.0620"	2.7470"	1.3750"	2.0625"	ST7416-1.75X03.437
2"	2.3150"	3 7/16"	3.1620"	3.4770"	3.1620"	1.6250"	1.8125"	ST7416-2.00X03.437

### Guide bush – standard

Ø d	Ø d <sub>2</sub>	l <sub>1</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>	l <sub>3</sub>	l <sub>4</sub>	Item number
1"	1.2362"	2 15/16"	1.7170"	2.0320"	2.0320"	0.9375"	2.0000"	ST7416-1.00X02.937
1 1/4"	1.5650"	3 7/16"	2.1070"	2.4220"	2.4220"	1.1250"	2.3125"	ST7416-1.25X03.437
1 1/2"	1.8150"	3 11/16"	2.4370"	2.7520"	2.7520"	1.1875"	2.5000"	ST7416-1.50X06.687
1 3/4"	2.0650"	4 3/16"	2.7470"	3.0620"	3.0620"	1.3750"	2.8125"	ST7416-1.75X04.187
2"	2.3150"	4 11/16"	3.1620"	3.4770"	3.4770"	1.6250"	3.0625"	ST7416-2.00X04.687

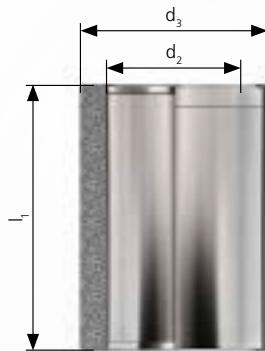
### Guide bush – long

Ø d	Ø d <sub>2</sub>	l <sub>1</sub>	Ø d <sub>3</sub>	Ø d <sub>4</sub>	Ø d <sub>5</sub>	l <sub>3</sub>	l <sub>4</sub>	Item number
1"	1.2362"	3 7/16"	1.7170"	2.0320"	2.0320"	0.9375"	2.5000"	ST7416-1.00X03.437
1 1/4"	1.5650"	3 15/16"	2.1070"	2.4220"	2.4220"	1.1250"	2.8125"	ST7416-1.25X03.937
1 1/2"	1.8150"	4 7/16"	2.4370"	2.7520"	2.7520"	1.1875"	3.2500"	ST7416-1.50X04.437
1 3/4"	2.0650"	4 15/16"	2.7470"	3.0620"	3.0620"	1.3750"	3.5625"	ST7416-1.75X04.937
2"	2.3150"	5 7/16"	3.1620"	3.4770"	3.4770"	1.6250"	3.8125"	ST7416-2.00X05.437

# Guide bush ST7406

## smooth, ball guide

**STEINEL®**



### Material / Version

Guide bushes made of steel 1.3505 hardened, hardness 61–63 HRC

Guide diameter honed, suitable for ball cage and guide pillar.  
Mounting diameter ground.

### Important

If possible, order the complete set, so that it can be matched with the correct preload.

### Mounting instructions

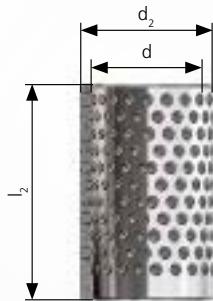
- 1) To glue into the mounting hole ISO G6.  
LOCTITE 603 SZ9742 see on page 13.
- 2) If possible, avoid press fit, because the internal diameter will decrease.

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

# Ball cage ST7130

## aluminium

**STEINEL®**



### Material / Version

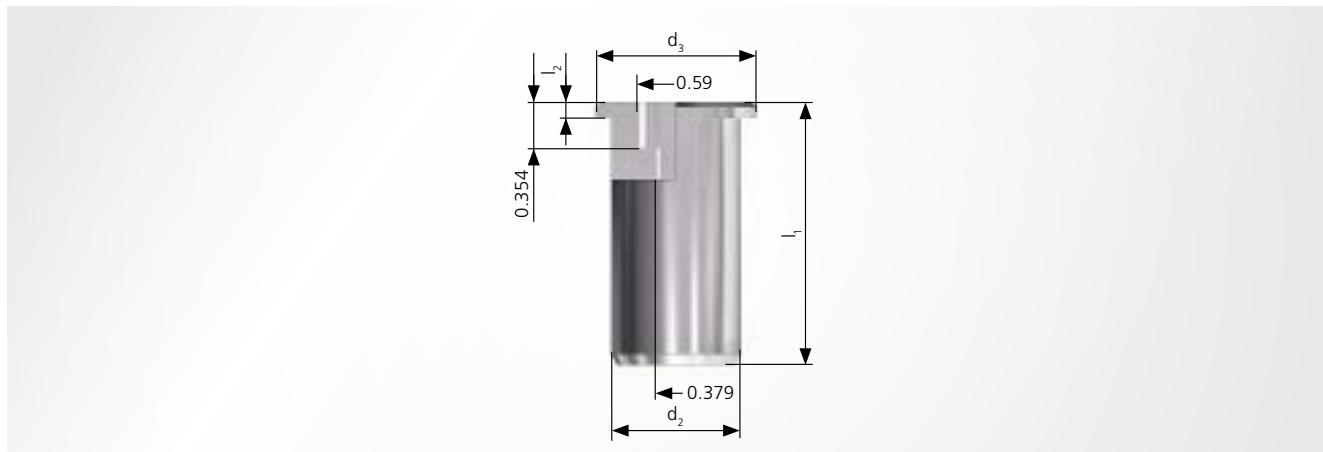
Ball cage made of aluminium, balls of steel, hardened, quality grade 1, sorted

The balls in the mounting bore are free-wheeling mounted. They are helically arranged in the axial direction, so that each ball has its own track.

Ø d	l <sub>2</sub>	Ø Ball <sub>1</sub>	Ø d <sub>2</sub>	Item number
1"	1 1/2"	0.118"	1.2362"	ST7130-1.00X01.500
	1 3/4"			ST7130-1.00X01.750
	2"			ST7130-1.00X02.000
	2 1/4"			ST7130-1.00X02.250
	2 1/2"			ST7130-1.00X02.500
1 1/4"	2"	0.157"	1.5650"	ST7130-1.25X02.000
	2 1/4"			ST7130-1.25X02.250
	2 1/2"			ST7130-1.25X02.500
	2 3/4"			ST7130-1.25X02.750
	3"			ST7130-1.25X03.000
	3 1/4"			ST7130-1.25X03.250
1 1/2"	2 1/2"	0.157"	1.8150"	ST7130-1.50X02.500
	2 3/4"			ST7130-1.50X02.750
	3"			ST7130-1.50X03.000
	3 1/4"			ST7130-1.50X03.250
	3 1/2"			ST7130-1.50X03.500
	3 3/4"			ST7130-1.50X03.750
	4"			ST7130-1.50X04.000
1 3/4"	2 3/4"	0.157"	2.0650"	ST7130-1.75X02.750
	3"			ST7130-1.75X03.000
	3 1/4"			ST7130-1.75X03.250
	3 1/2"			ST7130-1.75X03.500
	3 3/4"			ST7130-1.75X03.750
	4"			ST7130-1.75X04.000
	4 1/4"			ST7130-1.75X04.250
2"	3 1/4"	0.157"	2.3150"	ST7130-2.00X03.250
	3 1/2"			ST7130-2.00X03.500
	3 3/4"			ST7130-2.00X03.750
	4"			ST7130-2.00X04.000
	4 1/4"			ST7130-2.00X04.250
	4 1/2"			ST7130-2.00X04.500
	5 1/2"			ST7130-2.00X05.500

# Cage holder ST7132 steel

**STEINEL®**



## Material / Version

Steel

The cage holder can be used for our ball cages. The length of the cage holder should be half the length of the cage in use (If necessary please shorten).

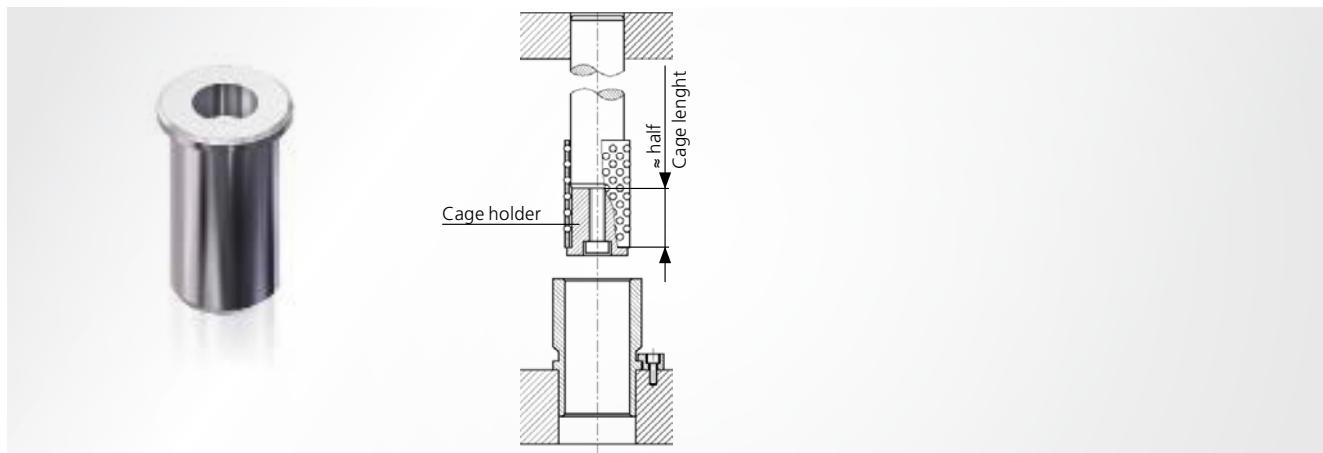
## Application

In all die sets in which the guide pillars are fastened in the upper plate.

Screws SZ8514.2 and SZ8514.3 are included in delivery.

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

## Mounting example





For tension-free, enduring fastening of parts with radial and axial pressure, such as bearings, bushings, axles, pins, rotors, gear wheels, rings, tires and sinter bearings. The extrusion force of press fits increases by approximately 100% and more. Fitting rust and leakage are avoided. Thin liquid, only very difficult to break fastening.

#### Glue gap

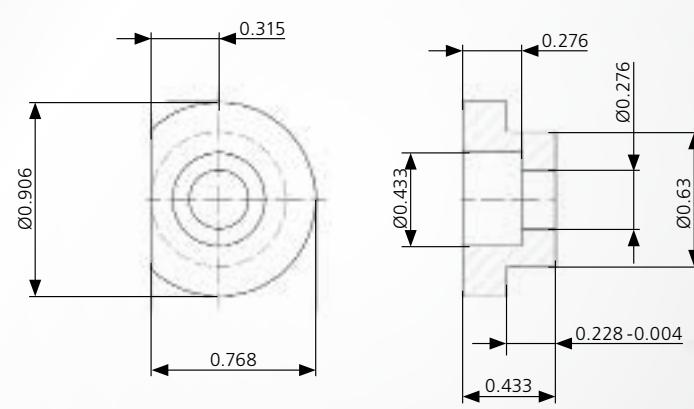
- Max. 0.0059" (0.15 mm)
- Preferably 0.0020" (0.05 mm)

#### Hardening time

- Hard to the touch 10–30 min
- Functional hardness 30–60 min
- Final hardness  $\approx$  6 hrs

Colour green, 50 ml in plastic bottle.

## Clamp ST7367



## Socket-head screw SZ8514



Screw for clamp	Item number
1/4" x 7/16" UNC	SZ8514.1

Screw for cage holder	Ø d	Item number
5/16" x 2 1/4" UNC	1" + 1 1/4"	SZ8514.2
5/16" x 2 3/4" UNC	from 1 1/2"	SZ8514.3

# Bore dimensions and clamp information

**STEINEL®**

## Bore size for STEINEL guide pillar

Ø	<b>ST7108</b>		<b>ST7120</b>
	Plate thickness < 1		Plate thickness > 1
	Press fit	Press fit	Clamp fit
ISO R6	ISO N6	ISO N6	
1"	1"	1"	1"
1.25"	1.25"	1.25"	1.25"
1.5"	1.5"	1.5"	1.5"
1.75"	1.75"	1.75"	1.75"
2"	2"	2"	2"

## Bore size for STEINEL guide bushes

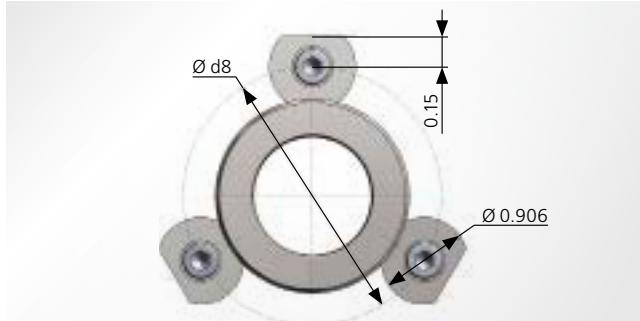
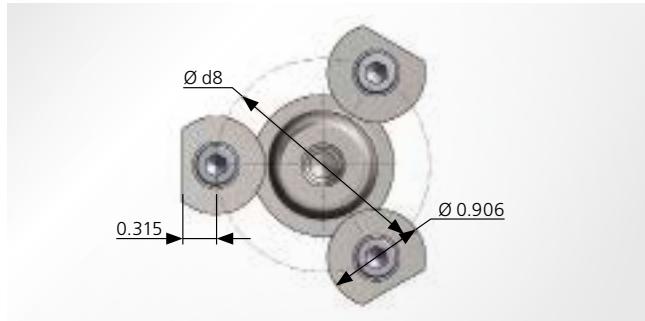
Ø	<b>ST7419</b>	<b>ST7416</b>	<b>ST7406</b>
	Clamp fit	Clamp fit	Cement fit
	ISO H6	ISO H6	ISO G6
1"	1.717"	1.717"	1.717"
1.25"	2.107"	2.107"	2.107"
1.5"	2.437"	2.437"	2.437"
1.75"	2.747"	2.747"	2.747"
2"	3.162"	3.162"	3.162"

## Bore size

<b>Nom Bore Ø</b>	<b>Max. bore</b>	<b>Min. bore</b>
<b>ISO R6</b>		
1"	0.9991"	0.9985"
1.25"	1.2489"	1.2482"
1.5"	1.4989"	1.4982"
1.75"	1.7489"	1.7482"
2"	1.9986"	1.9978"
<b>ISO N6</b>		
1"	0.9996"	0.9991"
1.25"	1.2495"	1.2489"
1.5"	1.4995"	1.4989"
1.75"	1.7495"	1.7489"
2"	1.9994"	1.9987"
3.162"	3.1633"	3.1625"

<b>Nom Bore Ø</b>	<b>Max. bore</b>	<b>Min. bore</b>
<b>ISO H6</b>		
1.717"	1.00005"	1.00000"
2.107"	1.2506"	1.2500"
2.437"	1.5006"	1.5000"
2.747"	1.7506"	1.7500"
3.162"	2.0006"	2.0000"
<b>ISO G6</b>		
1.717"	1.7180"	1.7174"
2.107"	2.1081"	2.1074"
2.437"	2.4381"	2.4374"
2.747"	2.7481"	2.7474"
3.162"	3.1633"	3.1625"

## Pitch circle diameter



<b>Pillar Ø</b>	<b>Pitch Circle Ø (d8)</b>
1"	1.9813"
1.25"	2.2313"
1.5"	2.5443"
1.75"	2.9193"
2"	3.1693"

<b>Bush Ø</b>	<b>Pitch Circle Ø (d8)</b>
1.717"	2.7013"
2.107"	3.0913"
2.437"	3.4213"
2.747"	3.7313"
3.162"	4.1463"