

Ball Lock Connectors • self-locking, with holding rings

EH 22340.



PRODUCT DESCRIPTION

With the ball connector, parts and tools can be secured or connected quickly and easily.

Material

Pin

- Stainless steel 1.4305

Bushing

- Stainless steel 1.4305

Rings

- Stainless steel

Spring

- Stainless Steel

Operation

The balls are unlocked by pressing the button.

MORE INFORMATION

Notes

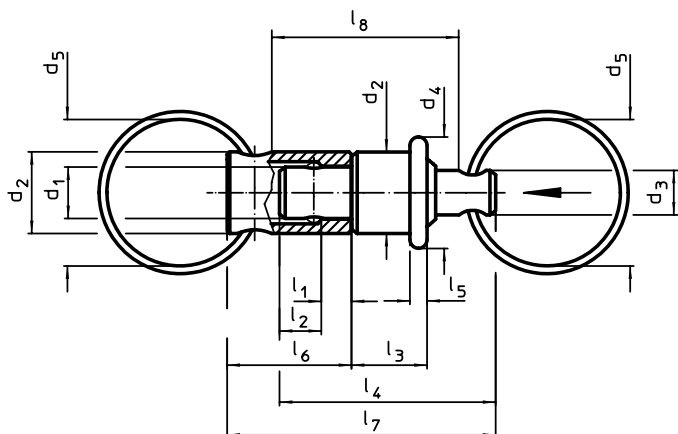
Pin and bushing separately on request.

Further products

Ball Lock Connectors, self-locking, with holder. → p. 191

Ball Lock Connectors, self-locking, with holder, compact construction. → p. 193

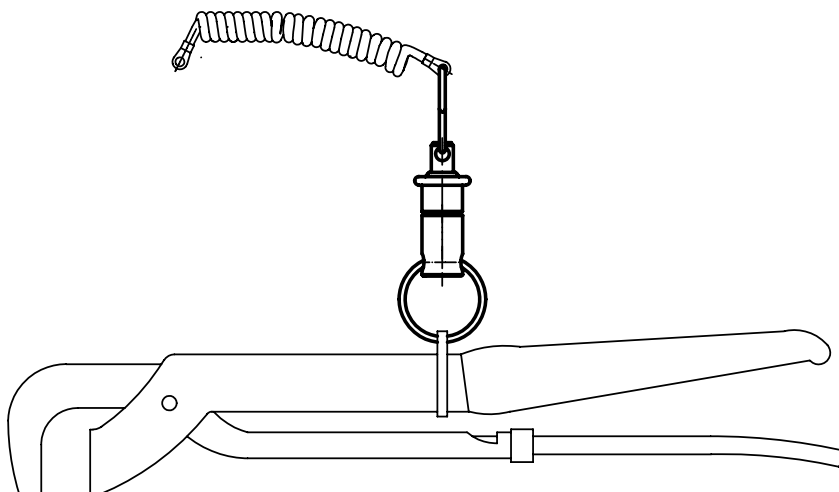
DRAWING



ORDER INFORMATION

Dimensions													Load capacity max.	max.		Art. No.
d_1	d_2	d_3	d_4	d_5	l_1	l_2	l_3	l_4	l_5	l_6	l_7	l_8	[N]	[°C]	[g]	
-0.03 -0.06				~	+0.6	± 1		~			~	~	30	250	14	22340.0905
6	9.5	6.2	13	20	3.2	4.8	8.8	25.2	2.4	14.5	31.5	26.2				

APPLICATION EXAMPLE



Ball Lock Connectors • self-locking, with holder

EH 22330.

2



PRODUCT DESCRIPTION

Parts can be connected fast and easily with the ball lock connector in combination with the locating bushings.

The locating bushings are made from stainless steel. There are three versions available - mounting in wood (picture 2 and picture 4), one version that can be mounted in plastic (picture 3) and with holding (picture 5 and picture 6). In the bushings (picture 2, picture 3 and picture 5) the ball lock connector is lockable (4x90°). In the bushings (picture 4 and picture 6) the ball lock connector is rotatable.

As a robust tool, the item is made from stainless steel. The ball lock connector is maintenance-free, soundless and secured against loss.

Material

Pin part

- Stainless steel 1.4305

Holder

- Stainless steel

Bushing

- Stainless steel 1.4305

Ball

- Stainless steel

Spring

- Stainless steel

Assembly

Mounting into wood (picture 2 and picture 4)

1. Insert location hole and pilot hole for safety bolt according to specifications
 2. Optionally recommended is the use of adhesive for securing
 3. Press in bushing
 4. Secure bushing with a screw
- Note: The bore diameter (D_2) for the pilot hole of the safety bolt depends on the screw used.

Mounting into plastic (picture 3)

1. Insert location hole according to instructions
 2. Optionally recommended is the use of adhesive for securing
 3. Screw in bushing
- Note: The bore diameter to be chosen for the location hole depends on the hardness of the plastic.

Operation

The balls are unlocked by pressing the button.

Characteristic

Marking groove if dimension = 1,5 mm for l_1 (bushings - pictures 2, 3 and 4) or l_2 (ball lock connector - picture 1).

MORE INFORMATION

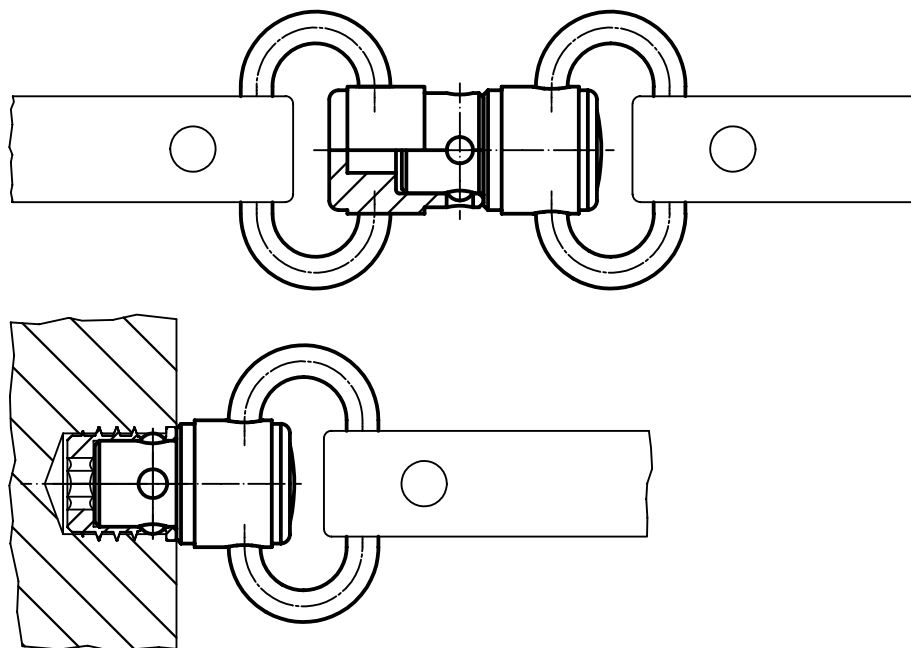
Notes

Special types on request.

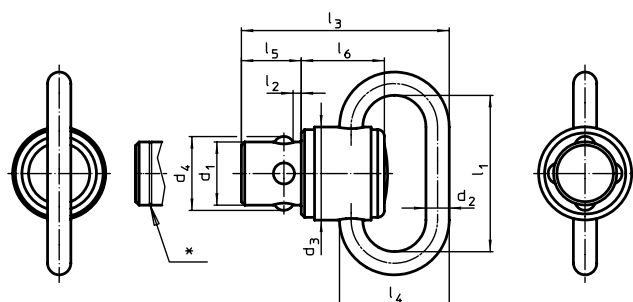
Further products

Ball Lock Connectors, self-locking, with holding rings → p. 190
 Ball Lock Connectors, self-locking, with holder, compact construction. → p. 193

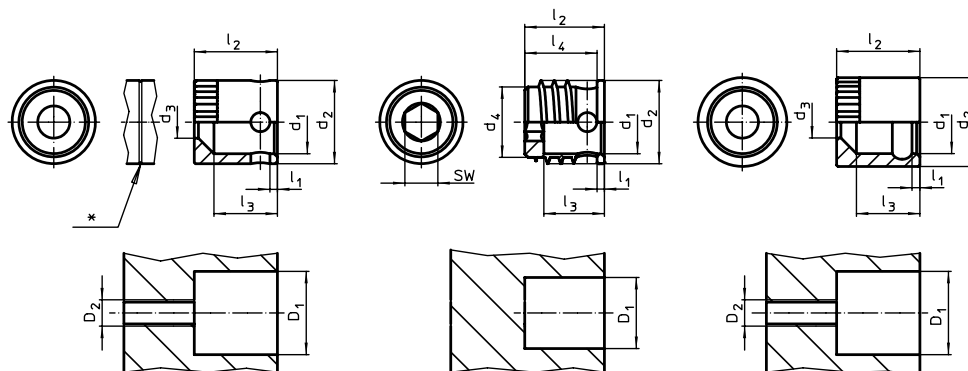
APPLICATION EXAMPLE



DRAWING



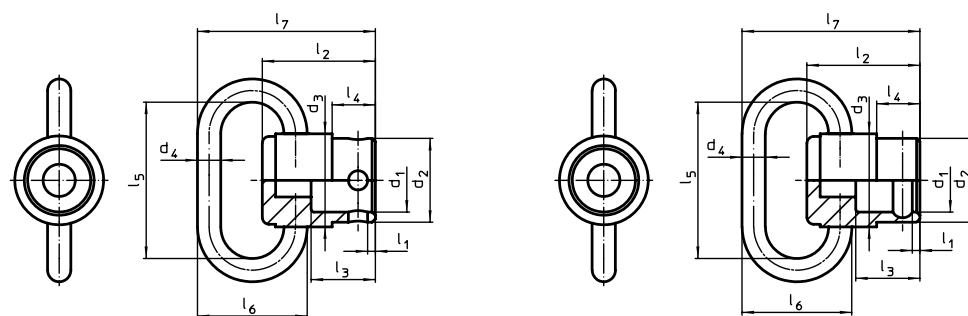
picture 1



picture 2

picture 3

picture 4



picture 5

picture 6

* Marking if dimension = 1,5 mm for l_1 (pictures 2,3 and 4) or l_2 (picture 1).

ORDER INFORMATION

Nominal diameter d ₁	Dimensions											WS	Load capac- ity max.	Location hole D ₁				Art. No.
	l ₁	l ₂	d ₂	d ₃	d ₄	l ₃	l ₄	l ₅	l ₆	l ₇	min.				max.			
[mm]	[mm]											[mm]	[kN]	[mm]	[°C]		[g]	
ball lock connectors – picture 1																		
9.5	23.0	1.00	3.50	14.0	11.1	31.30	16.5	9	12.5	–	–	1.2	–	-50	150	22.0	22330.0110	
		1.50	3.50	14.0	11.1	31.30	16.5	9	12.5	–	–	1.2	–	-50	150	21.0	22330.0111	
	40.0	1.00	4.50	14.0	11.1	36.60	23.0	9	12.5	–	–	2.0	–	-50	150	30.0	22330.0120	
		1.50	4.50	14.0	11.1	36.60	23.0	9	12.5	–	–	2.0	–	-50	150	28.0	22330.0121	
bushing, mounting in wood, lockable – picture 2																		
9.6	1.0	12.65	12.65	4.9	–	9.65	–	–	–	–	–	–	12.7	-50	150	5.8	22330.0305	
	1.5	12.65	12.65	4.9	–	9.65	–	–	–	–	–	–	12.7	-50	150	5.5	22330.0306	
bushing, mounting in plastic, lockable – picture 3																		
9.6	1.0	12.10	12.65	–	10.7	9.20	11.0	–	–	–	5	–	11.1 ¹⁾	-50	150	3.3	22330.0310	
	1.5	12.10	12.65	–	10.7	9.20	11.0	–	–	–	5	–	11.1 ¹⁾	-50	150	3.0	22330.0311	
bushing, mounting in wood, rotatable – picture 4																		
9.6	1.0	12.65	13.50	4.9	–	9.65	–	–	–	–	–	–	13.5	-50	150	7.3	22330.0315	
	1.5	12.65	13.50	4.9	–	9.65	–	–	–	–	–	–	13.5	-50	150	8.5	22330.0316	
flexible mount, lockable – picture 5																		
9.6	1.0	17.00	12.60	14.0	3.5	9.60	6.5	23	16.5	26.8	–	1.2	–	-50	150	16.0	22330.1215	
flexible mount, rotatable – picture 6																		
9.6	1.0	17.00	12.60	14.0	3.5	9.60	6.5	23	16.5	26.8	–	1.2	–	-50	150	15.0	22330.1315	

¹⁾ depending on the hardness of the plastic

Ball Lock Connectors • self-locking, with holder, compact construction

EH 22330.

2



PRODUCT DESCRIPTION

Parts can be connected fast and easily with the ball lock connector in combination with the locating bushings.

The locating bushings are made from stainless steel. There are three versions available - mounting in wood (picture 2 and picture 4), one version that can be mounted in plastic (picture 3) and with holding (picture 5 and picture 6). In the bushings (picture 2, picture 3 and picture 5) the ball lock connector is lockable (4x90°). In the bushings (picture 4 and picture 6) the ball lock connector is rotatable.

As a robust tool, the item is made from stainless steel. The ball lock connector is maintenance-free, soundless and secured against loss.

Material

Pin part

- Stainless steel 1.4542

Holder

- Stainless steel

Bushing

- Stainless steel 1.4305

Ball

- Stainless steel

Spring

- Stainless steel

Assembly

Mounting into wood (picture 2 and picture 4)

1. Insert location hole and pilot hole for safety bolt according to specifications
2. Optionally recommended is the use of adhesive for securing
3. Press in bushing
4. Secure bushing with a screw

Note: The bore diameter (D_2) for the pilot hole of the safety bolt depends on the screw used.

Mounting into plastic (picture 3)

1. Insert location hole according to instructions
2. Optionally recommended is the use of adhesive for securing
3. Screw in bushing

Note: The bore diameter to be chosen for the location hole depends on the hardness of the plastic.

Operation

The balls are unlocked by pressing the button.

MORE INFORMATION

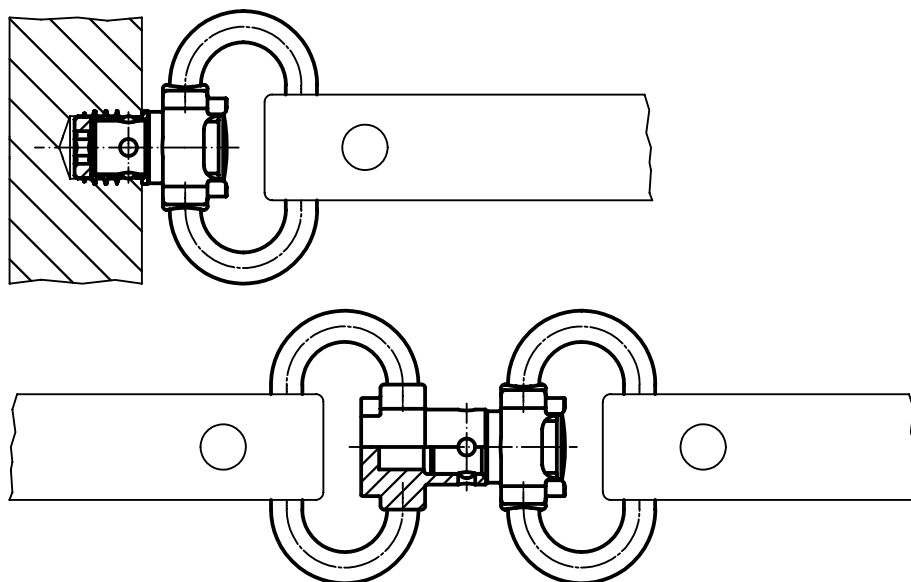
Notes

Special types on request.

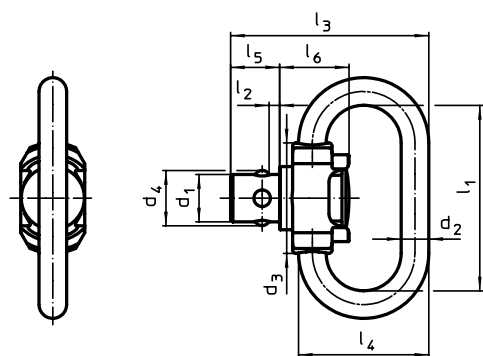
Further products

Ball Lock Connectors, self-locking, with holding rings → p. 190
 Ball Lock Connectors, self-locking, with holder. → p. 191

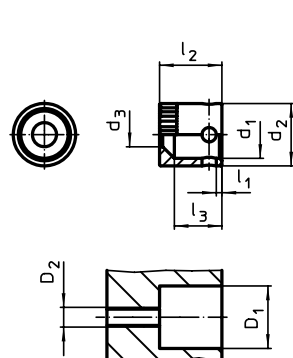
APPLICATION EXAMPLE



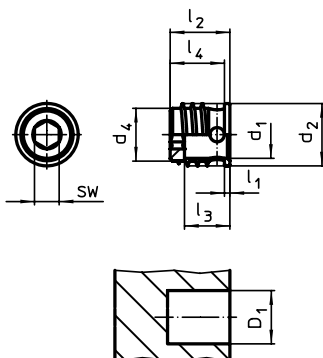
DRAWING



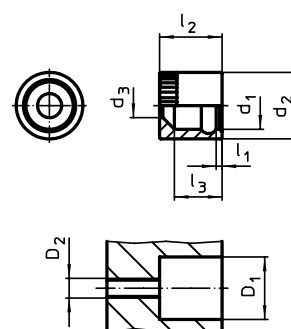
picture 1



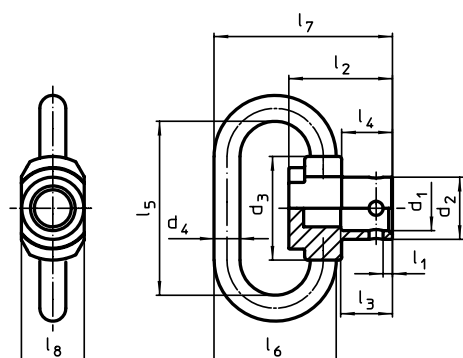
picture 2



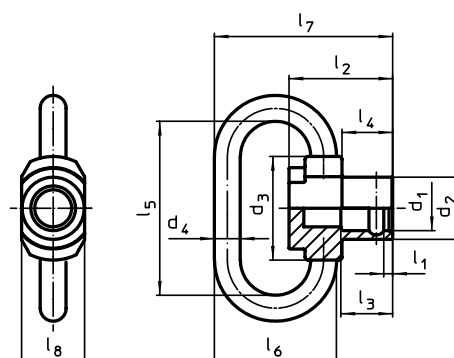
picture 3



picture 4



picture 5



picture 6

ORDER INFORMATION

Nominal diameter d ₁	Dimensions												WS	Load capac- ity max.	Location hole D ₁				Art. No.
	l ₁	l ₂	d ₂	d ₃	d ₄	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	min.				max.			
																	[mm]		
ball lock connectors – picture 1																			
6.0	23	1	3.50	14.0	6.9	25.1	16.5	6.2	8.8	8.1	–	–	1.5	–	-50	150	9.8	22330.0402	
bushing, mounting in wood, lockable – picture 2																			
6.1	1	9	8.15	3.1	–	7.0	–	–	–	–	–	–	–	8.3	-50	150	1.6	22330.0405	
bushing, mounting in plastic, lockable – picture 3																			
6.1	1	9	10.00	–	8.2	6.5	8.2	–	–	–	–	4	–	8.3 ¹⁾	-50	150	3.6	22330.0407	
bushing, mounting in wood, rotatable – picture 4																			
6.1	1	9	9.15	3.1	–	7.0	–	–	–	–	–	–	–	9.1	-50	150	2.4	22330.0409	
flexible mount, lockable – picture 5																			
6.1	1	14	8.40	14.0	3.5	7.0	6.8	23.0	16.5	24.1	8.5	–	1.5	–	-50	150	13.0	22330.1405	
flexible mount, rotatable – picture 6																			
6.1	1	14	8.40	14.0	3.5	7.0	6.8	23.0	16.5	24.1	8.5	–	1.5	–	-50	150	10.0	22330.1409	

¹⁾ depending on the hardness of the plastic

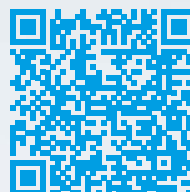
SELF-LOCKING LIFTING PINS

READY TO SUPPORT ANY LOAD

LIFTING CAPACITY OF UP TO 1,000 KG

Aside from delivering an exceptional lifting capacity, our lifting pins require next to no effort as they are in no need of a thread. Better still, they ensure maximum safety during use.

The assortment was also extended by a variant with manual handle. This allows easy, safe and reliable manual lifting and transport of unhandy components.



[www.halder.com/
LiftingDevices](http://www.halder.com/LiftingDevices)



Lifting Pins • self-locking

EH 22350.



PRODUCT DESCRIPTION

Heavy-duty lifting element for quick and easy use, with moveable shackle and locking stud to provide protection against unintentional unlocking. Special lifting devices, e.g. threads for ring bolts, are no longer required on the workpiece. All versions are corrosion-resistant.

Material

Pin part

- Heat-treated steel, tempered, manganese phosphated

Press button

- Aluminium, red anodised

Shackle

- Heat-treated steel, tempered, manganese phosphated

Spring

- Stainless Steel

Assembly

Simple H11 boreholes are sufficient.

Mounting:

- Press in the button and hold it down
- Insert the lifting pin
- Release the button (The button must be back in its original position)

Dismantling:

- Press in the button and hold it down.
- Remove the lifting pin.
- Release the button.

Operation

Each lifting pin contains an instruction manual with an EC Declaration of Conformity.

MORE INFORMATION

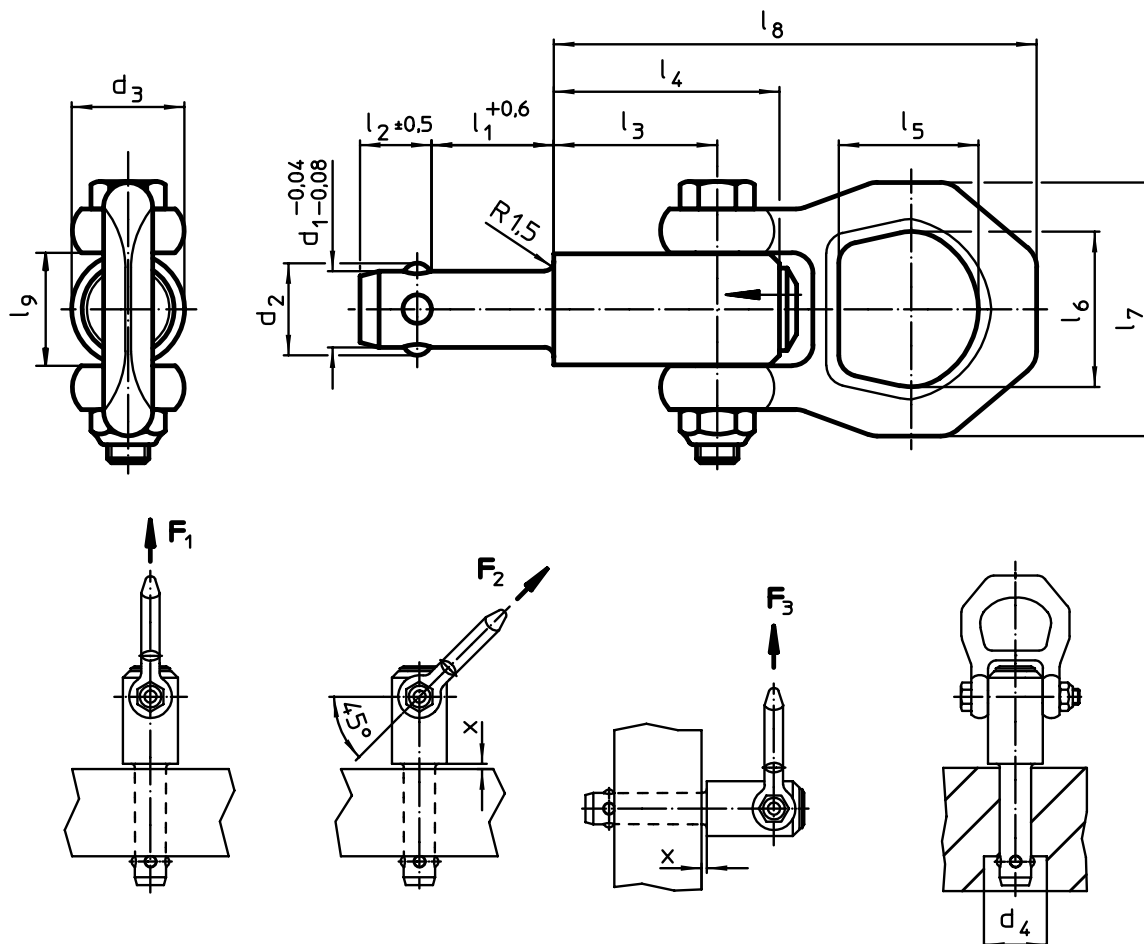
Accessories

As accessories, we offer matching locating bushings for $d_1 = 8, 10, 12, 16$ and 20

Further products

Lifting Pins, self-locking, stainless steel	→ p. 198
Locating Bushings, for lifting pins	→ p. 200
Locating Bushings, plain, for lifting pins	→ p. 201
Locating Bushings with Seal, plain, for lifting pins	→ p. 203
Threaded Lifting Pins, self-locking	→ p. 207
Threaded Lifting Pins, self-locking, for centre holes according to DIN 332	→ p. 209
Threaded Lifting Pins, self-locking, with rotatable shackle	→ p. 211
Threaded Lifting Pins, self-locking - INCH	→ p. 213
Threaded Lifting Pins, self-locking, with rotatable shackle - INCH	→ p. 215

DRAWING

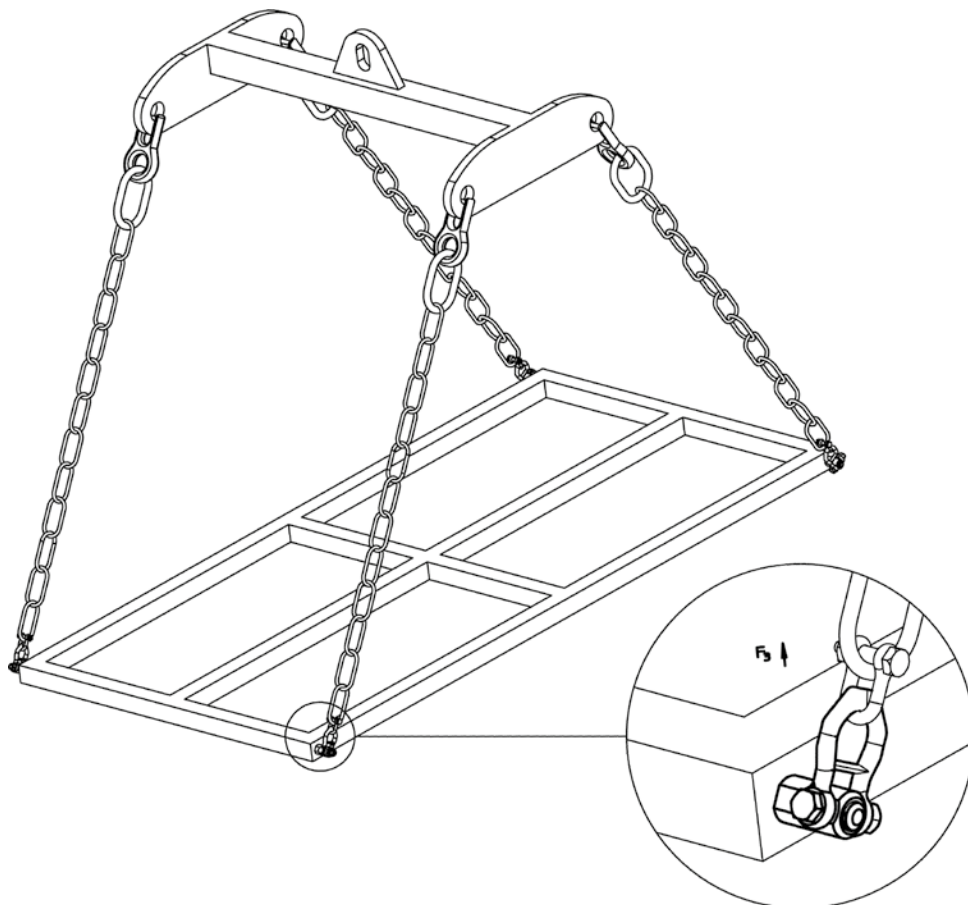


ORDER INFORMATION

d ₁ -0.04 -0.08	l ₁ +0.6	Dimensions											Load capacity ¹⁾			x		Location hole H11	 max.		Art. No.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		d ₂	d ₃	d ₄ min.	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	l ₉	F ₁	F ₂	F ₃	1) min.	max.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]					[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]

¹⁾ for a 5-fold safety against breakage

APPLICATION EXAMPLE



Lifting Pins • self-locking, stainless steel

EH 22350.



PRODUCT DESCRIPTION

Heavy-duty lifting element for quick and easy use, with moveable shackle and locking stud to provide protection against unintentional unlocking. Special lifting devices, e.g. threads for ring bolts, are no longer required on the workpiece.

Corrosion and weathering resistant, thus also suitable for outdoor application. Very solid, precipitation-hardened pin with an extreme load capacity.

Material

Pin part

- Stainless steel 1.4542, precipitation-hardened

Press button

- Aluminium, red anodised

Shackle

- Stainless steel 1.4571

Spring

- Stainless Steel

Assembly

Simple H11 boreholes are sufficient.

Mounting:

- Press in the button and hold it down
- Insert the lifting pin
- Release the button (The button must be back in its original position)

Dismantling:

- Press in the button and hold it down.
- Remove the lifting pin.
- Release the button.

Operation

Each lifting pin contains an instruction manual with an EC Declaration of Conformity.

MORE INFORMATION

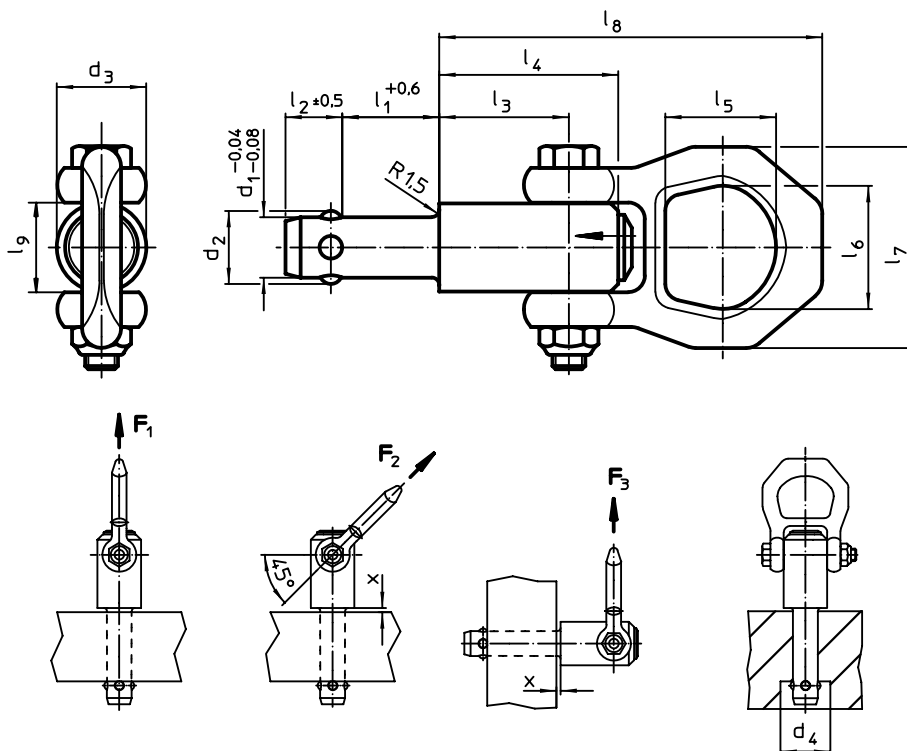
Accessories

As accessories, we offer matching locating bushings for $d_1 = 8, 10, 12, 16$ and 20

Further products

- Lifting Pins, self-locking. → p. 196
- Locating Bushings, for lifting pins → p. 200
- Locating Bushings, plain, for lifting pins → p. 201
- Locating Bushings with Seal, plain, for lifting pins. → p. 203
- Threaded Lifting Pins, self-locking. → p. 207
- Threaded Lifting Pins, self-locking, for centre holes according to DIN 332 → p. 209
- Threaded Lifting Pins, self-locking, with rotatable shackle. → p. 211
- Threaded Lifting Pins, self-locking - INCH → p. 213
- Threaded Lifting Pins, self-locking, with rotatable shackle - INCH → p. 215

DRAWING

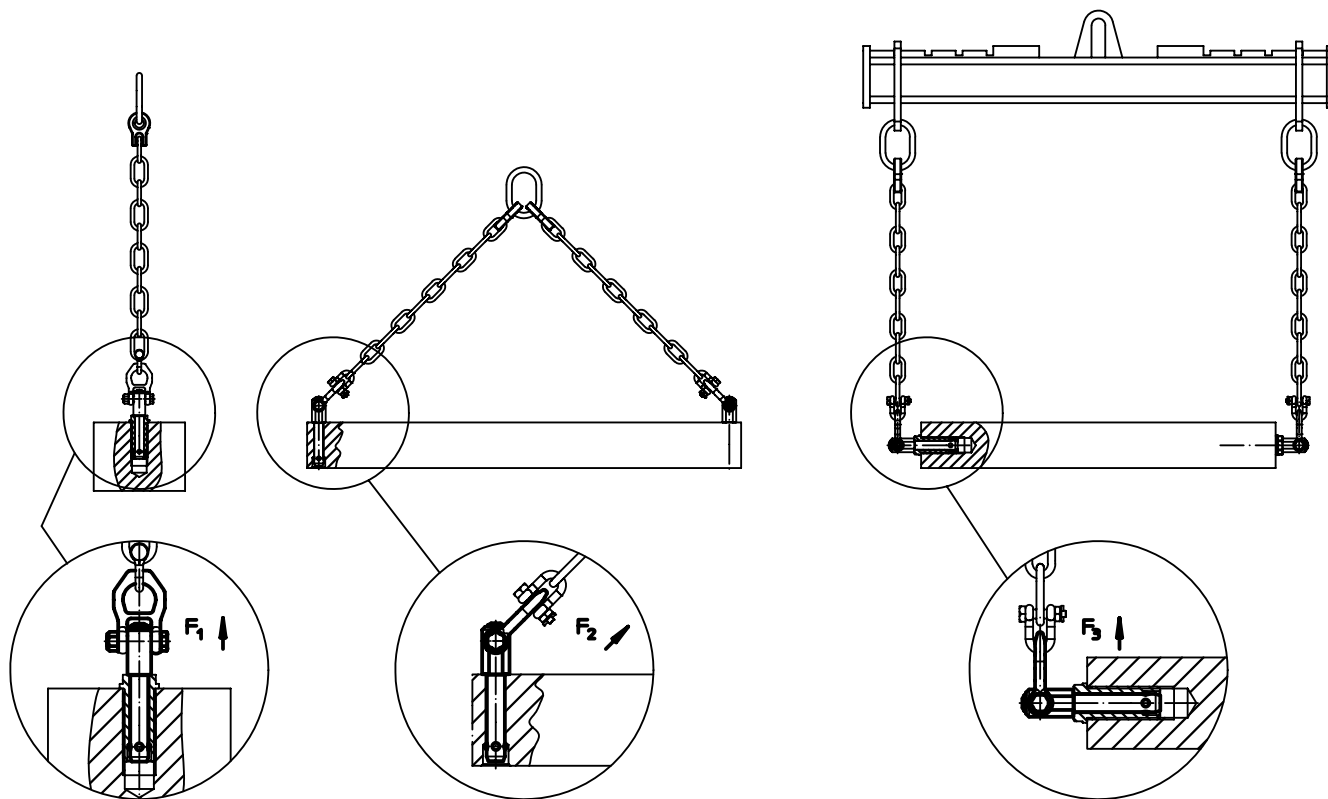


ORDER INFORMATION

d ₁ -0.04 -0.08	l ₁ +0.6	Dimensions											Load capacity ¹⁾			x		Location hole H11	 max.		Art. No.
		d ₂	d ₃	d ₄ min.	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	l ₉	F ₁	F ₂	F ₃	¹⁾ min.	max.				
		[mm]											[kN]			[mm]					
8.0	10	9.35	21.5	9.85	8.75	25.7	36.0	27.0	30	49	87.5	21.5	1.5	1.2	0.5	1.5	5	8.0	250	270	22350.0701
	15	9.35	21.5	9.85	8.75	25.7	36.0	27.0	30	49	87.5	21.5	1.5	1.2	0.5	1.5	10	8.0	250	273	22350.0702
	25	9.35	21.5	9.85	8.75	25.7	36.0	27.0	30	49	87.5	21.5	1.5	1.2	0.5	1.5	15	8.0	250	275	22350.0704
	35	9.35	21.5	9.85	8.75	25.7	36.0	27.0	30	49	87.5	21.5	1.5	1.2	0.5	1.5	15	8.0	250	280	22350.0706
8.3	10	9.65	21.5	10.05	8.75	25.7	36.0	27.0	30	49	87.5	21.5	1.5	1.2	0.5	1.5	5	8.3	250	228	22350.0711
	15	9.65	21.5	10.05	8.75	25.7	36.0	27.0	30	49	87.5	21.5	1.5	1.2	0.5	1.5	10	8.3	250	229	22350.0712
	25	9.65	21.5	10.05	8.75	25.7	36.0	27.0	30	49	87.5	21.5	1.5	1.2	0.5	1.5	15	8.3	250	233	22350.0714
	35	9.65	21.5	10.05	8.75	25.7	36.0	27.0	30	49	87.5	21.5	1.5	1.2	0.5	1.5	15	8.3	250	238	22350.0716
10.0	15	11.70	21.5	12.20	10.20	25.7	36.0	27.0	30	49	87.5	21.5	2.7	2.4	2.1	1.5	10	10.0	250	277	22350.0721
	25	11.70	21.5	12.20	10.20	25.7	36.0	27.0	30	49	87.5	21.5	2.7	2.4	2.1	1.5	10	10.0	250	281	22350.0723
	35	11.70	21.5	12.20	10.20	25.7	36.0	27.0	30	49	87.5	21.5	2.7	2.4	2.1	1.5	10	10.0	250	292	22350.0725
	50	11.70	21.5	12.20	10.20	25.7	36.0	27.0	30	49	87.5	21.5	2.7	2.4	2.1	1.5	10	10.0	250	298	22350.0727
12.0	15	14.20	21.5	14.70	11.00	25.7	36.0	27.0	30	49	87.5	21.5	3.5	3.2	2.8	1.5	10	12.0	250	285	22350.0731
	25	14.20	21.5	14.70	11.00	25.7	36.0	27.0	30	49	87.5	21.5	3.5	3.2	2.8	1.5	15	12.0	250	292	22350.0733
	35	14.20	21.5	14.70	11.00	25.7	36.0	27.0	30	49	87.5	21.5	3.5	3.2	2.8	1.5	15	12.0	250	304	22350.0735
	50	14.20	21.5	14.70	11.00	25.7	36.0	27.0	30	49	87.5	21.5	3.5	3.2	2.8	1.5	15	12.0	250	316	22350.0737
13.8	25	16.20	21.5	16.70	13.00	25.7	36.0	27.0	30	49	87.5	21.5	3.8	3.5	2.8	1.5	15	13.8	250	260	22350.0751
	50	16.20	21.5	16.70	13.00	25.7	36.0	27.0	30	49	87.5	21.5	3.8	3.5	2.8	1.5	35	13.8	250	290	22350.0753
	75	16.20	21.5	16.70	13.00	25.7	36.0	27.0	30	49	87.5	21.5	3.8	3.5	2.8	1.5	35	13.8	250	323	22350.0755
16.0	25	18.60	25.0	19.20	15.10	31.0	44.5	27.0	30	49	92.8	21.5	4.8	4.5	4.1	1.5	15	16.0	250	395	22350.0741
	50	18.60	25.0	19.20	15.10	31.0	44.5	27.0	30	49	92.8	21.5	4.8	4.5	4.1	1.5	35	16.0	250	430	22350.0743
	75	18.60	25.0	19.20	15.10	31.0	44.5	27.0	30	49	92.8	21.5	4.8	4.5	4.1	1.5	40	16.0	250	465	22350.0745
20.0	50	24.50	30.0	25.00	19.70	36.5	52.0	32.6	36	56	114.0	26.0	10.0	8.5	6.5	1.5	25	20.0	250	729	22350.0773
	75	24.50	30.0	25.00	19.70	36.5	52.0	32.6	36	56	114.0	26.0	10.0	8.5	6.5	1.5	30	20.0	250	693	22350.0775

¹⁾ for a 5-fold safety against breakage

APPLICATION EXAMPLE



Locating Bushings • for lifting pins

EH 22350.



PRODUCT DESCRIPTION

Locating bushings are used for quick and safe locating of lifting pins EH 22350 / EH 22351. Corrosion and abrasion resistant.

Material

- Stainless steel 1.4542, precipitation-hardened

Easily incorporated into different materials

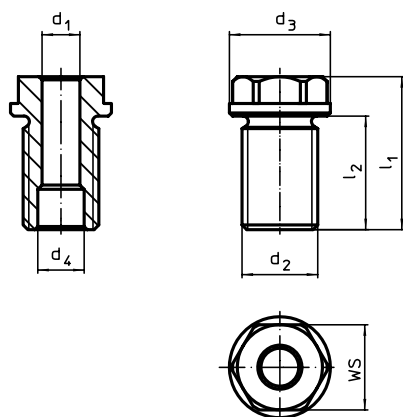
Can be mounted in blind holes.

For thin-walled parts, lock nuts are used for assembly.

Assembly

Safe tolerances and consistent function.

DRAWING

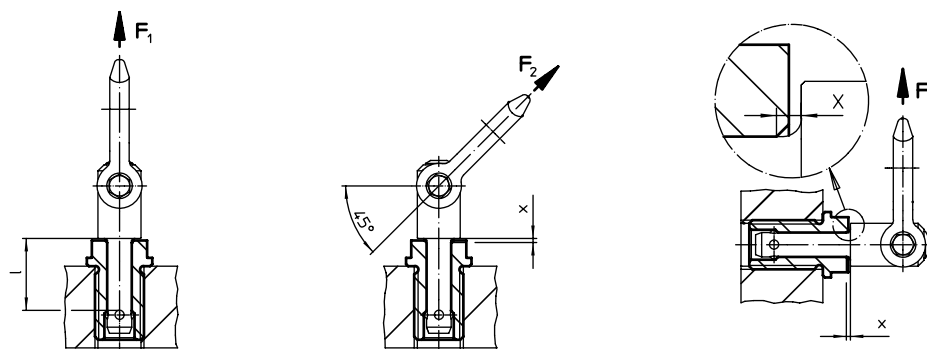


ORDER INFORMATION

d ₁ H11	Dimensions	For nominal length	Dimensions				WS	Tightening torque max.	x ¹⁾	Load capacity ¹⁾			For lifting pin		Art. No.
	d ₂		d ₃ -0.2	d ₄ +0.3	l ₁	l ₂				F ₁	F ₂	F ₃			
	[mm]		[mm]	[mm]	[mm]	[Nm]				[mm]	[kN]	[g]			
8	M16 x 1,5	10	24	9.8	27.5	20	19	90	1.5	1.5	1.2	0.5	22350.0601 / .0701	34	22350.0900
		15	24	9.8	27.5	20	19	90	1.5	1.5	1.2	0.5	22350.0602 / .0702	34	22350.0902
	M16	25	24	9.8	37.5	25	19	75	1.5	1.5	1.2	0.5	22350.0604 / .0704	47	22350.0904
		35	24	9.8	47.5	35	19	75	1.5	1.5	1.2	0.5	22350.0606 / .0706	57	22350.0906
10	M20 x 1,5	15	28	12.2	35.5	24	24	145	1.5	2.7	2.4	2.1	22350.0621 / .0721	71	22350.0910
		25	28	12.2	35.5	24	24	145	1.5	2.7	2.4	2.1	22350.0623 / .0723	74	22350.0912
	M20	35	28	12.2	46.0	29	24	130	1.5	2.7	2.4	2.1	22350.0625 / .0725	94	22350.0914
		50	28	12.2	65.0	49	24	130	1.5	2.7	2.4	2.1	22350.0627 / .0727	117	22350.0916
12	M24 x 1,5	15	32	14.7	35.5	24	27	220	1.5	3.5	3.2	2.8	22350.0631 / .0731	95	22350.0920
		25	32	14.7	36.5	24	27	220	1.5	3.5	3.2	2.8	22350.0633 / .0733	103	22350.0922
	M24	35	32	14.7	48.5	36	27	200	1.5	3.5	3.2	2.8	22350.0635 / .0735	120	22350.0924
		50	32	14.7	72.5	60	27	200	1.5	3.5	3.2	2.8	22350.0637 / .0737	164	22350.0926
16	M30 x 2	25	39	19.2	44.0	29	30	440	1.5	4.8	4.5	4.1	22350.0641 / .0741	164	22350.0930
		50	39	19.2	66.0	44	30	400	1.5	4.8	4.5	4.1	22350.0643 / .0743	238	22350.0934
	M30	75	39	19.2	96.0	74	30	400	1.5	4.8	4.5	4.1	22350.0645 / .0745	325	22350.0936
20	M36 x 2	50	43	26.0	70.0	55	36	440	1.5	10.0	8.5	6.5	22350.0673 / .0773	353	22350.0954
		75	43	26.0	95.0	80	36	440	1.5	10.0	8.5	6.5	22350.0675 / .0775	470	22350.0956

¹⁾ for a 5-fold safety against breakage

APPLICATION EXAMPLE



Locating Bushings, plain • for lifting pins

EH 22350.



PRODUCT DESCRIPTION

Locating bushings are used for quick and safe locating of lifting pins EH 22350 / EH 22351. This design is suitable for applications which require installation flush to the surface. A face wrench is required for installation. As an accessory, we offer a standard adjustable face wrench, offset, and a face and socket wrench. In combination with a socket-wrench/screwdriver, the face and socket wrench is especially suitable for use if space is restricted. Corrosion and abrasion resistant.

Material

- Stainless steel 1.4542, precipitation-hardened

Assembly

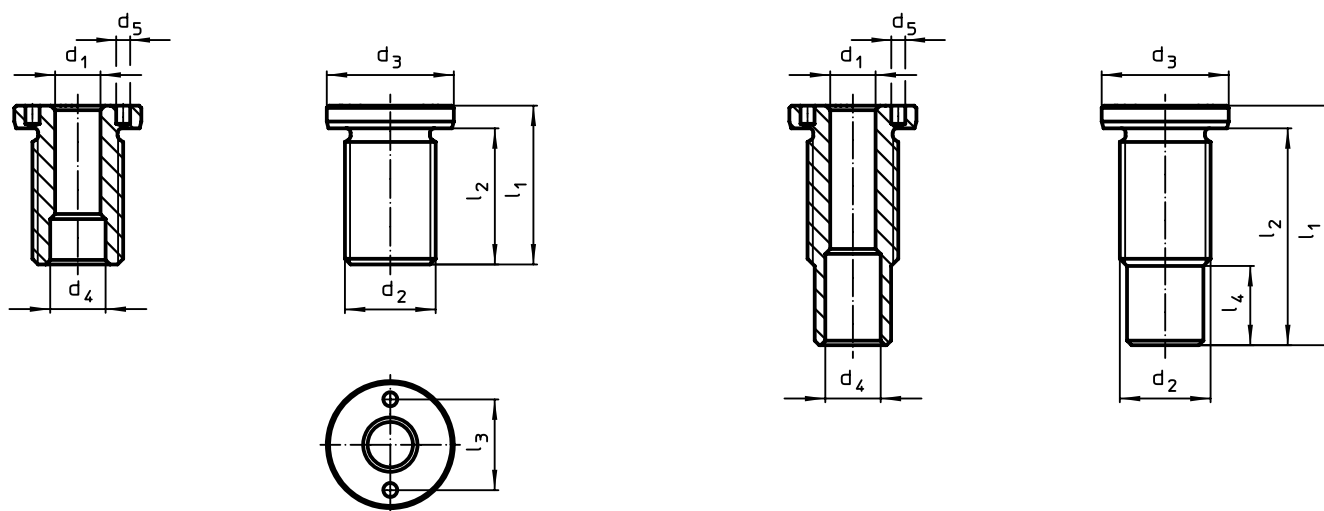
Safe tolerances and consistent function.

Easily incorporated into different materials
Bush can be easily installed via optional assembly tool.

Can be mounted in blind holes.

For thin-walled parts, lock nuts are used for assembly.

DRAWING



size M16/M16x1,5/M20
M20x1,5/M24x1,5/M30x2

size M24/M30/M36x2

ORDER INFORMATION

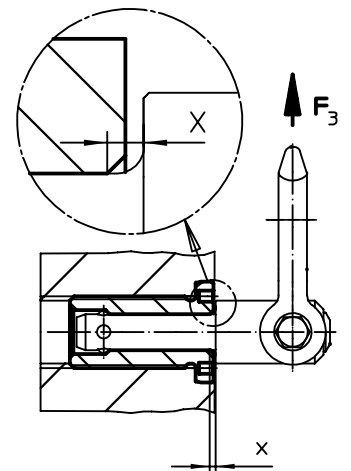
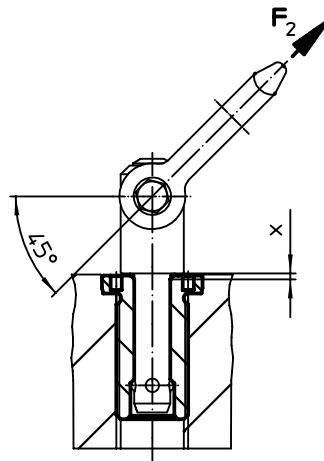
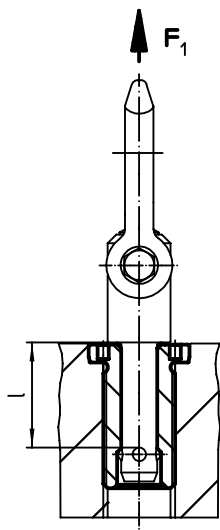
d ₁ H11	Dimensions	For nominal length	Dimensions								Tight- ening torque max.	x ¹⁾	Load capacity ¹⁾			For lifting pin		Art. No.
	d ₂		d ₃ -0.2	d ₄ +0.3	d ₅ +0.1	l ₁	l ₂	l ₃	l ₄	F ₁			F ₂	F ₃				
	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kN]			[kN]	[kN]	[g]			
8	M16 x 1,5	10	24	9.8	3.1	25	20	16	–	75	1.5	1.5	1.2	0.5	22350.0601 / .0701	31	22350.1900	
		15	24	9.8	3.1	25	20	16	–	75	1.5	1.5	1.2	0.5	22350.0602 / .0702	32	22350.1902	
	M16	25	24	9.8	3.1	35	30	16	–	75	1.5	1.5	1.2	0.5	22350.0604 / .0704	41	22350.1904	
		35	24	9.8	3.1	45	40	16	–	75	1.5	1.5	1.2	0.5	22350.0606 / .0706	49	22350.1906	
10	M20 x 1,5	15	28	12.2	5.1	30	24	20	–	100	1.5	2.7	2.4	2.1	22350.0621 / .0721	55	22350.1910	
		25	28	12.2	5.1	35	29	20	–	100	1.5	2.7	2.4	2.1	22350.0623 / .0723	64	22350.1912	
	M20	35	28	12.2	5.1	45	39	20	–	100	1.5	2.7	2.4	2.1	22350.0625 / .0725	70	22350.1914	
		50	28	12.2	5.1	60	54	20	–	100	1.5	2.7	2.4	2.1	22350.0627 / .0727	93	22350.1916	
12	M24 x 1,5	15	32	14.7	5.1	32	26	22	–	150	1.5	3.5	3.2	2.8	22350.0631 / .0731	80	22350.1920	
		25	32	14.7	5.1	40	34	22	–	150	1.5	3.5	3.2	2.8	22350.0633 / .0733	94	22350.1922	
	M24	35	32	14.7	5.1	50	44	22	3.8	150	1.5	3.5	3.2	2.8	22350.0635 / .0735	116	22350.1924	
		50	32	14.7	5.1	65	59	22	18.8	150	1.5	3.5	3.2	2.8	22350.0637 / .0737	130	22350.1926	
16	M30 x 2	25	39	19.2	5.1	45	39	30	–	200	1.5	4.8	4.5	4.1	22350.0641 / .0741	163	22350.1930	
	M30	50	39	19.2	5.1	65	59	30	6.0	200	1.5	4.8	4.5	4.1	22350.0643 / .0743	201	22350.1934	
		75	39	19.2	5.1	90	84	30	31.0	200	1.5	4.8	4.5	4.1	22350.0645 / .0745	248	22350.1936	
20	M36 x 2	50	43	26.0	5.1	70	63	30	3.5	200	1.5	10.0	8.5	6.5	22350.0673 / .0773	341	22350.1954	
		75	43	26.0	5.1	95	88	30	28.5	200	1.5	10.0	8.5	6.5	22350.0675 / .0775	413	22350.1956	

¹⁾ for a 5-fold safety against breakage

ACCESSORIES

	Suitable for size d_1 [mm]	Pin spacing ± 0.1 [mm]	Pin diameter -0.1 [mm]	Square drive [in]	 [g]	Art. No.
adjustable face wrench, offset						
	8	–	3		121	22350.1990
	10/12/16/20/25	–	5		309	22350.1991
face and socket wrench						
	8	16	3	1/2	116	22350.1995
	10	20	5	1/2	136	22350.1996
	12	22	5	1/2	185	22350.1997
	16/20	30	5	1/2	243	22350.1998

APPLICATION EXAMPLE



Locating Bushings with Seal, plain • for lifting pins

EH 22350.



PRODUCT DESCRIPTION

The seal prevents the penetration of liquid and dirt. The bushing is therefore especially suitable for use in the open air.

Locating bushings are used for quick and safe locating of lifting pins EH 22350 / EH 22351. This design is suitable for applications which require installation flush to the surface.

A face wrench is required for installation. As an accessory, we offer a standard adjustable face wrench, offset, and a face and socket wrench. In combination with a socket-wrench/screwdriver, the face and socket wrench is especially suitable for use if space is restricted. Corrosion and abrasion resistant.

Material

Bushings

- Stainless steel 1.4542, precipitation-hardened

O-ring

- NBR

Spring

- Stainless steel

Assembly

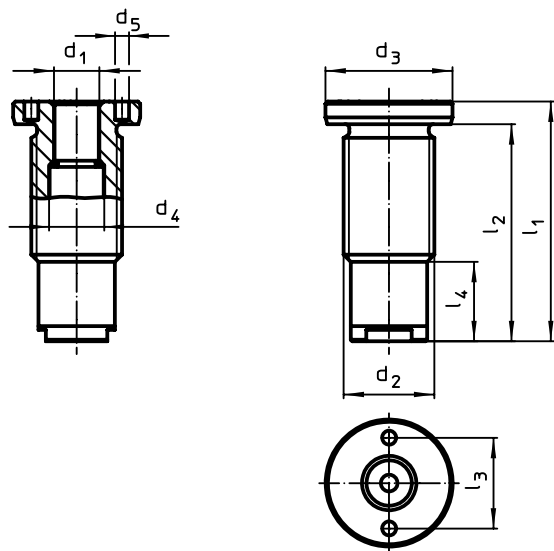
Safe tolerances and consistent function.

Easily incorporated into different materials. Bush can be easily installed via optional assembly tool.

Can be mounted in blind holes.

For thin-walled parts, lock nuts are used for assembly.

DRAWING



ORDER INFORMATION

d ₁ H11	Dimensions	For nominal length	Dimensions								Tight- ening torque max.	x ¹⁾	Load capacity ¹⁾				For lifting pin		Art. No.
	d ₂		d ₃ -0.2	d ₄ +0.3	d ₅ +0.1	l ₁	l ₂	l ₃	l ₄	F ₁			F ₂	F ₃					
	[mm]		[mm]										[Nm]	[mm]	[kN]				
8	M16 x 1,5	10	24	9.9	3.1	37.5	32.5	16	12.5	75	1.5	1.5	1.2	0.5	22350.0601 / .0701	47	22350.1960		
10	M20 x 1,5	15	28	12.3	5.1	51.0	45.0	20	21.0	100	1.5	2.7	2.4	2.1	22350.0621 / .0721	92	22350.1961		
12	M24 x 1,5	15	32	14.4	5.1	53.0	47.0	22	21.0	150	1.5	3.5	3.2	2.8	22350.0631 / .0731	125	22350.1962		
16	M30 x 2	25	39	19.3	5.1	78.0	72.0	30	33.0	200	1.5	4.8	4.5	4.1	22350.0641 / .0741	253	22350.1963		

¹⁾ for a 5-fold safety against breakage