

DOWN-THRUST CLAMPS

CLAMPED TO EXACTLY THE RIGHT SPOT

The down-thrust clamp is a universal mechanical clamping element for the fast and convenient changing and clamping of workpieces using clamping elements that can be swivelled by hand. Fast tool changes are important to cost-efficient production. The various down-thrust clamps from Erwin Halder KG offer simple and compact handling and, thanks to their height adjusting cylinders, are able to reach high clamping heights.

A special version has been created for point-accurate repeat clamping: a special positioning ring allows workpieces to always be securely clamped to the same point.



Down-Thrust Clamps • swivelling, size 25

EH 23310.



PRODUCT DESCRIPTION

Universal mechanical clamping element for fast and comfortable changing and clamping of workpieces by means of manually swivelling clamping claw.

The clamps have the following advantages:

- Rapid manual clamping by means of clamping screw, adjustable clamping lever or adjustable eccentric quick clamp.
 - Easy and quick changing of the workpiece by swinging away the clamping claw to the left or right. The positioning ring 23310.0345 allows infinitely variable adjustment (only with variants art no. 23310.0027 - .0029).
 - The use of positioning ring 23310.0345 allows a repeatable precise clamping. Here h_1 min. increases by at least 6 mm (stroke minus 6 mm).
 - Compact design, thus little space taken-up for clamping.
 - Easy adjustment even to large clamping heights due to the height adjusting cylinders.
- As the force applied by the operator is not known for the versions with levers, the clamping force is given in the tables as a guide value. The average value was determined by tests.

Material

Clamp

- Case-hardened steel, case-hardened, blackened and ground

Tension lever

- Zinc die-cast, plastic coated, orange similar to RAL 2004, matt structure
- Zinc die-cast, plastic coated, black, similar to RAL 9005

Assembly

Down-thrust clamps can be attached in two ways:

1. in a T-slot, using a nut for T-slots DIN 508 (EH 23010.)

2. with the set screw directly in the mounting plate of, for example, a fixture
The cylinder must make contact over the whole surface.

MORE INFORMATION

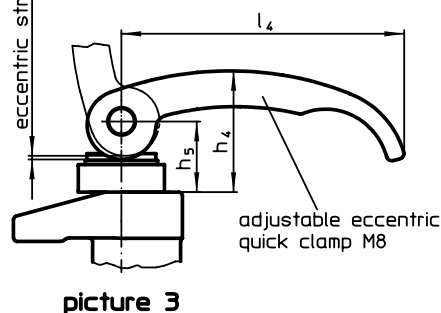
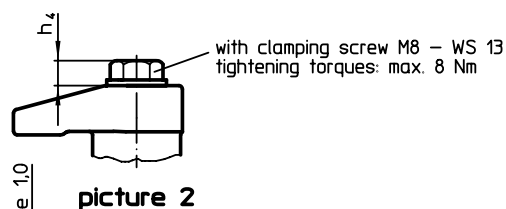
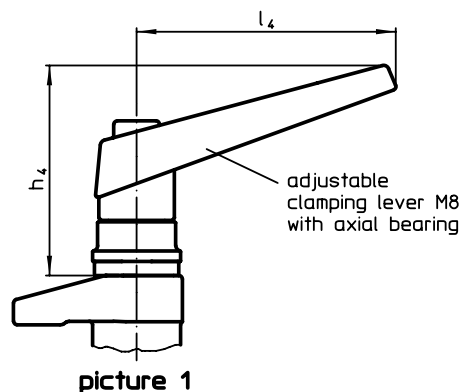
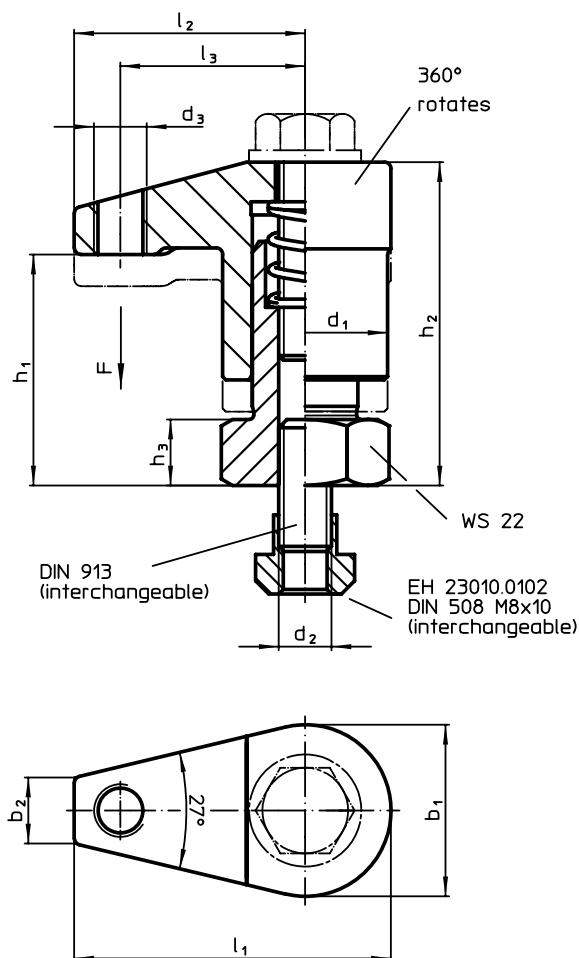
References

The clamping height can be increased with EH 23310. height adjusting cylinders and EH 1007. washers, and equally lowered by using clamping elements e.g. EH 22730.

Further products

- Positioning Rings, for down-thrust clamp → p. 526
Height Adjusting Cylinders → p. 527
Spacers → p. 763

DRAWING

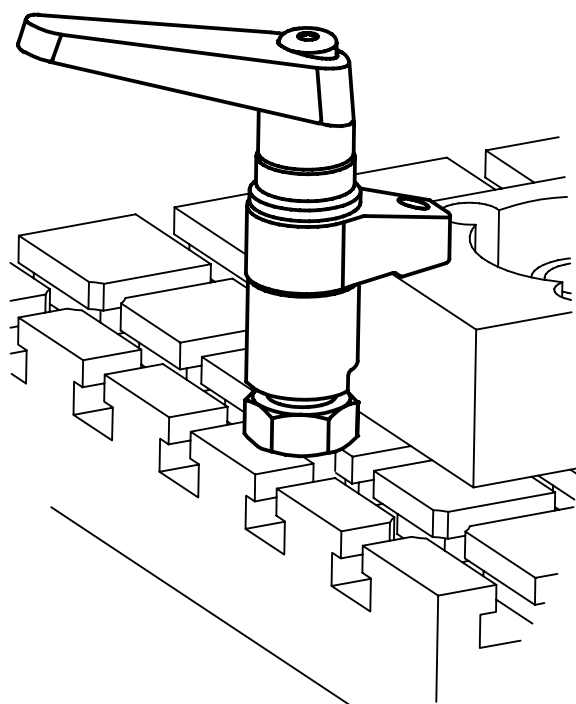


ORDER INFORMATION

Dimensions														Stroke	Clamp- ing force	Tight- ening torque max.		Art. No.
d ₁	b ₁	b ₂	d ₂	d ₃	h ₁	h ₂	h ₃	h ₄	h ₅	l ₁	l ₂	l ₃	l ₄					
[mm]														[mm]	[kN]	[Nm]	[g]	
with adjustable clamping lever with axial bearing – picture 1																		
25	26	10	M8	M8	30 – 35	44 – 49	10	60.0	–	48	35	28	74	5	3 ¹⁾	–	377	23310.0024
					35 – 45	54 – 64	10	60.0	–	48	35	28	74	10	3 ¹⁾	–	259	23310.0028
with clamping screw – picture 2																		
25	26	10	M8	M8	30 – 35	44 – 49	10	6.9	–	48	35	28	–	5	5	8	212	23310.0025
					35 – 45	54 – 64	10	6.9	–	48	35	28	–	10	5	8	419	23310.0027
with eccentric quick clamp, adjustable – picture 3																		
25	26	10	M8	M8	30 – 35	44 – 49	10	35.0	20.5	48	35	28	82	5	2 ¹⁾	–	203	23310.0026
					35 – 45	54 – 64	10	35.0	20.5	48	35	28	82	10	2 ¹⁾	–	261	23310.0029

¹⁾ Average value established in trials.

APPLICATION EXAMPLE



Down-Thrust Clamps • swivelling, size 32

EH 23310.



PRODUCT DESCRIPTION

Universal mechanical clamping element for fast and comfortable changing and clamping of workpieces by means of manually swivelling clamping claw.

The clamps have the following advantages:

- Rapid manual clamping by means of clamping screw, adjustable clamping lever or adjustable eccentric quick clamp.
- Easy and quick changing of the workpiece by swinging away the clamping claw to the left or right. The positioning ring 23310.0348 allows infinitely variable adjustment.
- The use of positioning ring 23310.0348 allows a repeatable precise clamping. Here h_1 min. increases by at least 6 mm (stroke minus 6 mm).
- Compact design, thus little space taken-up for clamping.
- Easy adjustment even to large clamping heights due to the height adjusting cylinders.

As the force applied by the operator is not known for the versions with levers, the clamping force is given in the tables as a guide value. The average value was determined by tests.

Material

Clamp

- Case-hardened steel, case-hardened, blackened and ground

Tension lever

- Zinc die-cast, plastic coated, orange similar to RAL 2004, matt structure
- Zinc die-cast, plastic coated, black, similar to RAL 9005

Assembly

Down-thrust clamps can be attached in two ways:

1. in a T-slot, using a nut for T-slots DIN 508 (EH 23010.)

2. with the set screw directly in the mounting plate of, for example, a fixture

The cylinder must make contact over the whole surface.

MORE INFORMATION

References

The clamping height can be increased with height adjusting cylinders EH 23310. and reduced with the clamping inserts, e.g. EH 22730.

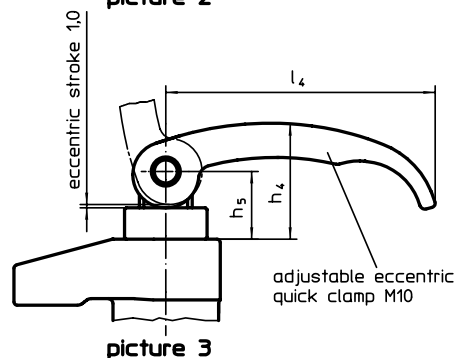
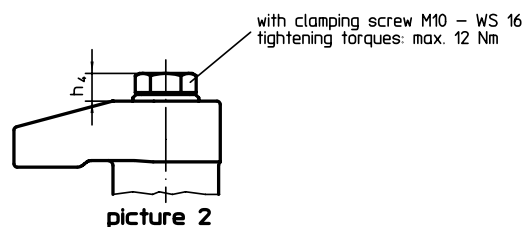
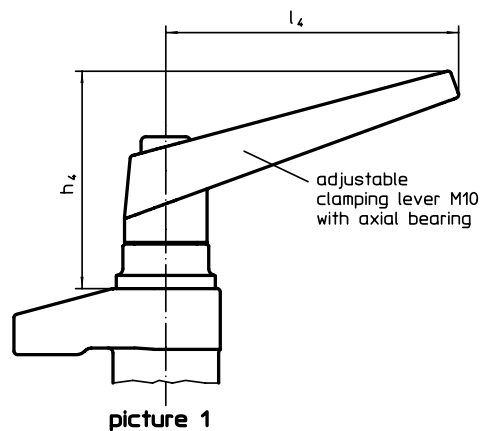
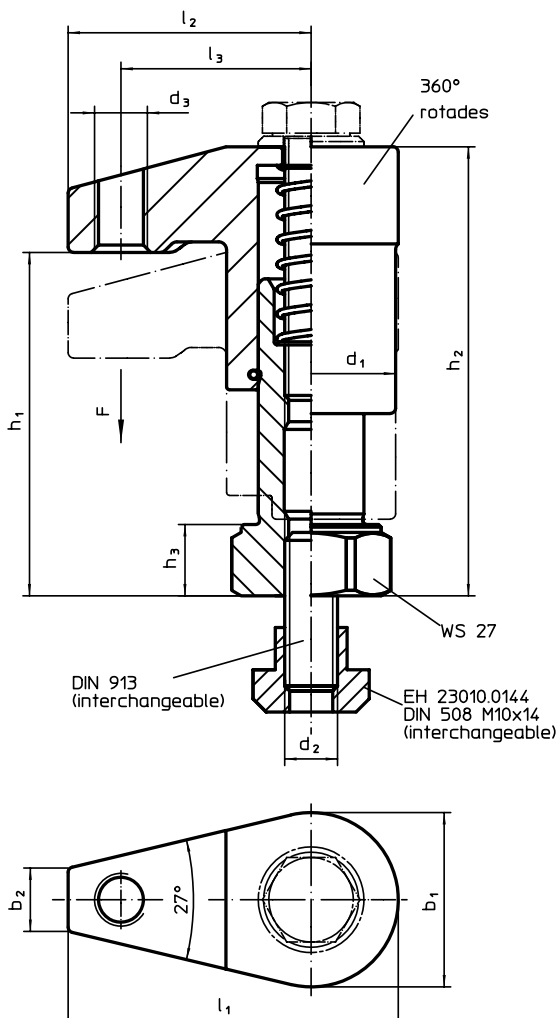
Further products

Positioning Rings, for down-thrust

clamp. → p. 526

Height Adjusting Cylinders → p. 527

DRAWING

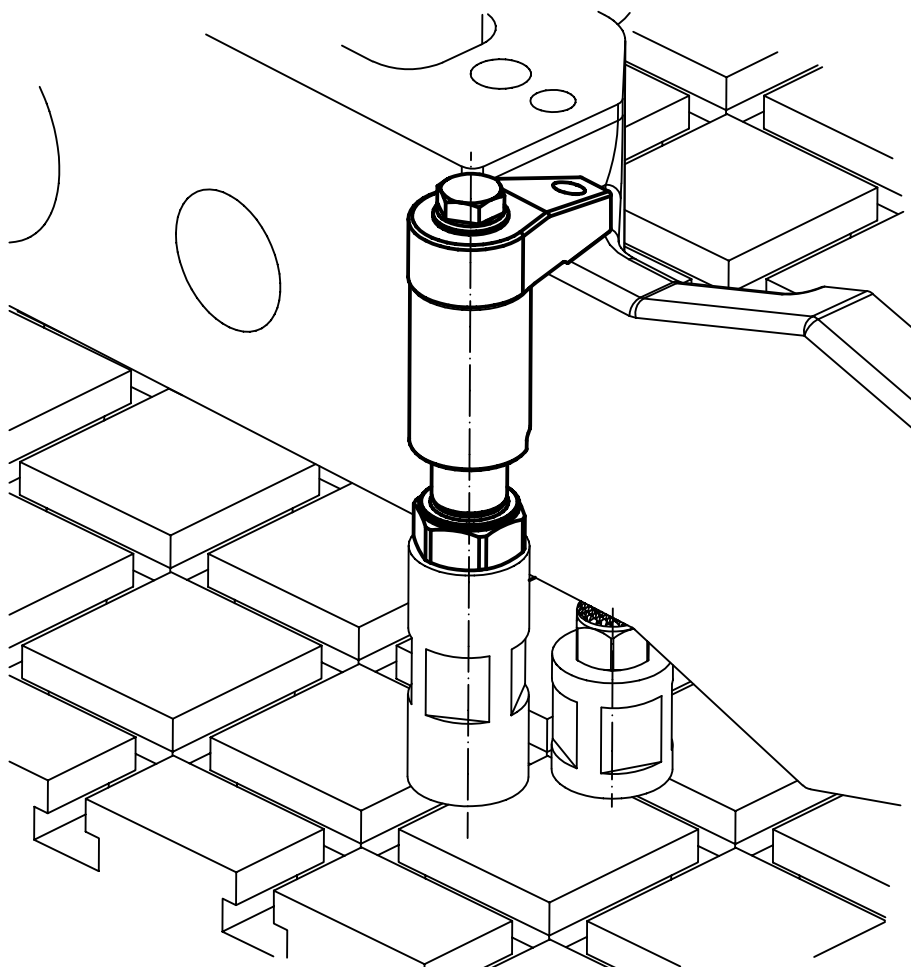


ORDER INFORMATION

Dimensions														Stroke	Clamp- ing force	Tight- ening torque max.		Art. No.
d ₁	b ₁	b ₂	d ₂	d ₃	h ₁	h ₂	h ₃	h ₄	h ₅	l ₁	l ₂	l ₃	l ₄					
[mm]														[mm]	[kN]	[Nm]	[g]	
with adjustable clamping lever with axial bearing – picture 1																		
32	33	12	M10	M10	45 – 65	65 – 85	13	66.0	–	62.5	46	36	89	20	4.5 ¹⁾	–	729	23310.0040
					63 – 88	83 – 108	13	66.0	–	62.5	46	36	89	20	4.5 ¹⁾	–	838	23310.0043
with clamping screw – picture 2																		
32	33	12	M10	M10	45 – 65	65 – 85	13	8.4	–	62.5	46	36	–	20	7.5	12	512	23310.0041
					63 – 88	83 – 108	13	8.4	–	62.5	46	36	–	20	7.5	12	620	23310.0044
with eccentric quick clamp, adjustable – picture 3																		
32	33	12	M10	M10	45 – 65	65 – 85	13	35.0	20.5	62.5	46	36	82	20	3.0 ¹⁾	–	559	23310.0042
					63 – 88	83 – 108	13	35.0	20.5	62.5	46	36	82	20	3.0 ¹⁾	–	666	23310.0045

¹⁾ Average value established in trials.

APPLICATION EXAMPLE



Down-Thrust Clamps • swivelling, size 40

EH 23310.



PRODUCT DESCRIPTION

Universal mechanical clamping element for fast and comfortable changing and clamping of workpieces by means of manually swivelling clamping claw.

The clamps have the following advantages:

- Rapid manual clamping by means of clamping screw, adjustable clamping lever, or double eccentric lever.
 - Easy and rapid changing of workpieces by swinging away the clamping claw to the left or right. The positioning ring 23310.0350 allows infinitely variable adjustment.
 - Continuously variable setting by means of positioning ring 23310.0350.
 - The use of positioning ring 23310.0350 allows a repeatable precise clamping. Here h_1 min. increases by at least 7 mm (stroke minus 7 mm).
 - Compact design, thus only a small amount of space is required for clamping.
 - Easy adjustment even to large clamping heights due to the height adjusting cylinders.
- As the force applied by the operator is not known for the versions with levers, the clamping force is given in the tables as a guide value. The average value was determined by tests.

Material

Clamp

- Case-hardened steel, case-hardened, blackened and ground

Tension lever

- Zinc die-cast, plastic coated, orange similar to RAL 2004, matt structure
- Alloyed case-hardened steel, case-hardened, blackened

Assembly

Down-thrust clamps can be attached in two ways:

1. in a T-slot, using a nut for T-slots DIN 508 (EH 23010.)
2. with the set screw directly in the mounting plate of, for example, a fixture

The cylinder must make contact over the whole surface.

Exceeding of the clamping height is inhibited by the height limitation.

MORE INFORMATION

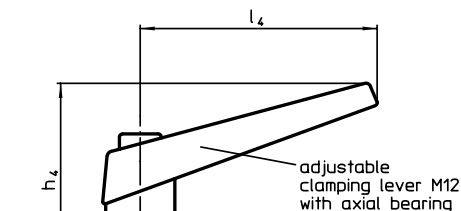
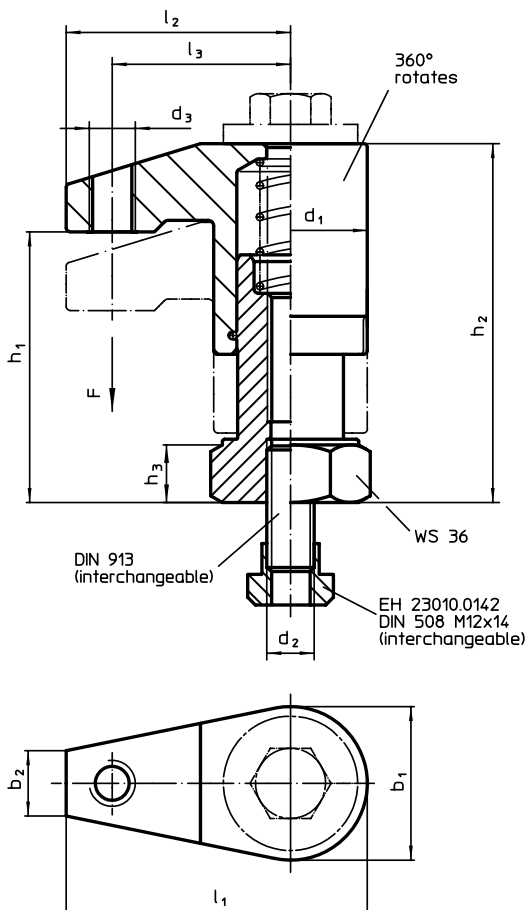
References

The clamping height can be increased by using height adjusting cylinders EH 23310. and disks EH 1107. and EH 1108. It can be reduced by employing clamping inserts, e.g. EH 22730.

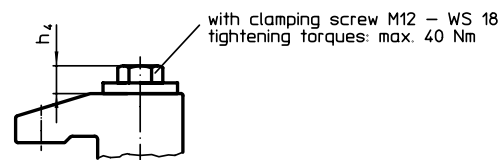
Further products

Positioning Rings, for down-thrust clamp	→ p. 526
Height Adjusting Cylinders	→ p. 527
Spacers	→ p. 763
Wrenches	→ p. 786

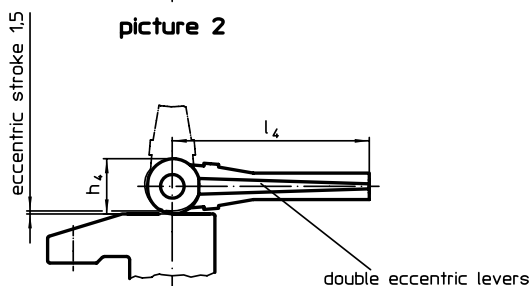
DRAWING



picture 1



picture 2



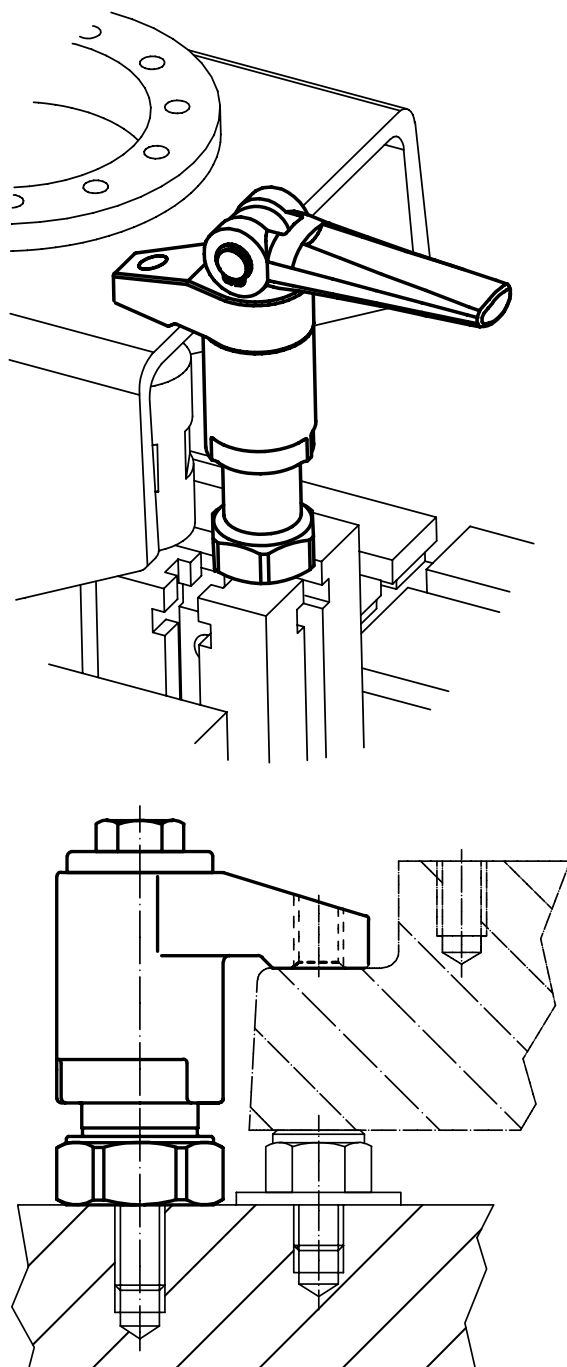
picture 3

ORDER INFORMATION

Dimensions													Stroke	Clamp- ing force	Tightening torque max.		Art. No.
d ₁	b ₁	b ₂	d ₂	d ₃	h ₁	h ₂	h ₃	h ₄	l ₁	l ₂	l ₃	l ₄					
[mm]													[mm]	[kN]	[Nm]	[g]	
with adjustable clamping lever with axial bearing – picture 1																	
40	40	17	M12	M12	50 – 70	73 – 93	15	82	75	55	43	108	20	6 ¹⁾	–	1194	23310.0050
					68 – 98	91 – 121	15	82	75	55	43	108	30	6 ¹⁾	–	1359	23310.0053
					95 – 135	118 – 158	22	82	75	55	43	108	40	6 ¹⁾	–	1639	23310.0056
with clamping screw – picture 2																	
40	40	17	M12	M12	50 – 70	73 – 93	15	13	75	55	43	–	20	10	40	853	23310.0051
					68 – 98	91 – 121	15	13	75	55	43	–	30	10	40	964	23310.0054
					95 – 135	118 – 158	22	13	75	55	43	–	40	10	40	1266	23310.0057
with double eccentric levers – picture 3																	
40	40	17	M12	M12	50 – 70	73 – 93	15	28	75	55	43	100	20	4 ¹⁾	–	1213	23310.0052
					68 – 98	91 – 121	15	28	75	55	43	100	30	4 ¹⁾	–	1370	23310.0055
					95 – 135	118 – 158	22	28	75	55	43	100	40	4 ¹⁾	–	1616	23310.0058

¹⁾ Average value established in trials.

APPLICATION EXAMPLE



Down-Thrust Clamps • swivelling, low construction, size 44

EH 23310.



PRODUCT DESCRIPTION

Universal mechanical clamping element for fast and comfortable changing and clamping of workpieces by means of manually swivelling clamping claw.

The clamps have the following advantages:

- Rapid manual clamping by means of clamping screw or double eccentric lever.
- Easy and rapid changing of workpieces by swinging away the clamping claw to the left or right.
- Low design, thus little space taken-up for clamping.
- Easy adjustment even to large clamping heights due to the height adjusting cylinders.

As the force applied by the operator is not known for the versions with levers, the clamping force is given in the tables as a guide value. The average value was determined by tests.

Material

- Case-hardened steel, case-hardened, blackened and ground

Assembly

Down-thrust clamps can be attached in two ways:

1. in a T-slot, using a nut for T-slots DIN 508 (EH 23010.)
2. with the set screw directly in the mounting plate of, for example, a fixture

The cylinder must make contact over the whole surface.

MORE INFORMATION

References

The clamping height can be increased using height adjusting cylinders EH 23310. and with spacers EH 1107. and EH 1108.

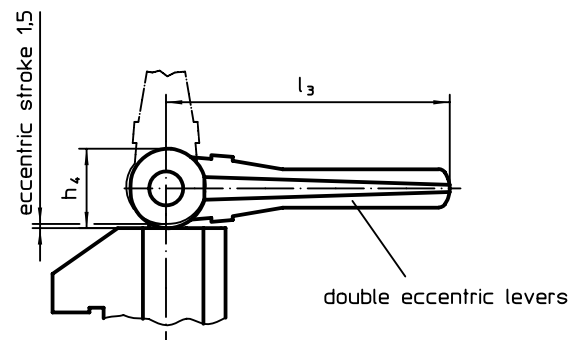
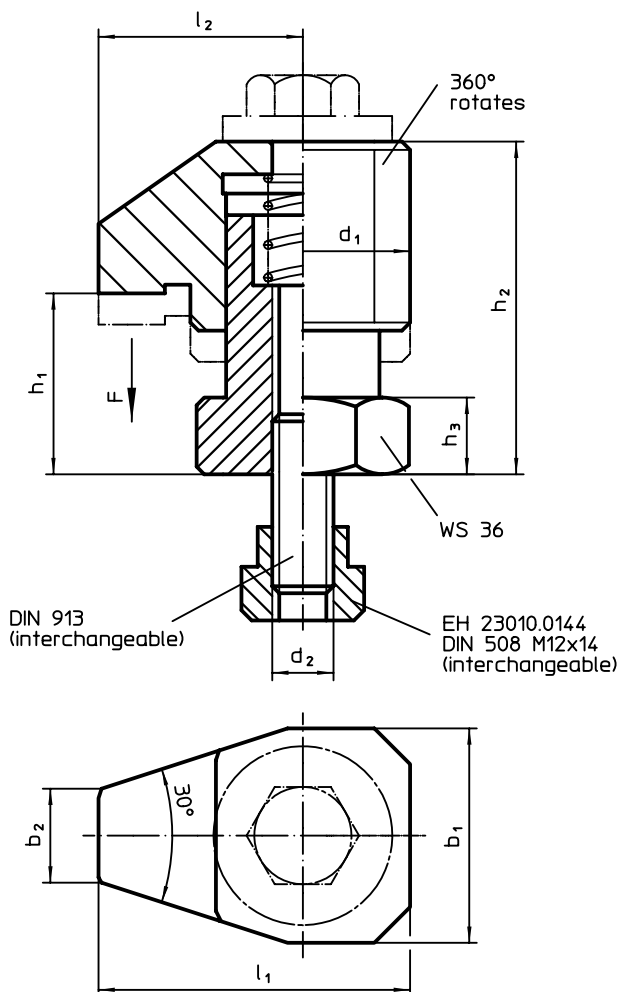
Further products

Height Adjusting Cylinders → p. 527

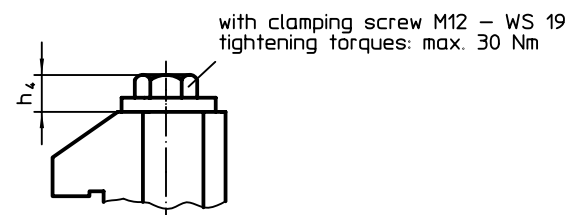
Spacers → p. 763

Wrenches → p. 786

DRAWING



picture 1



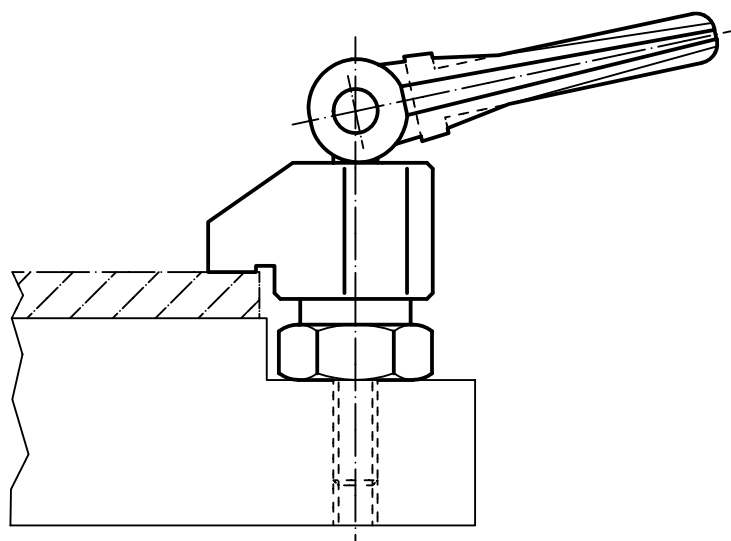
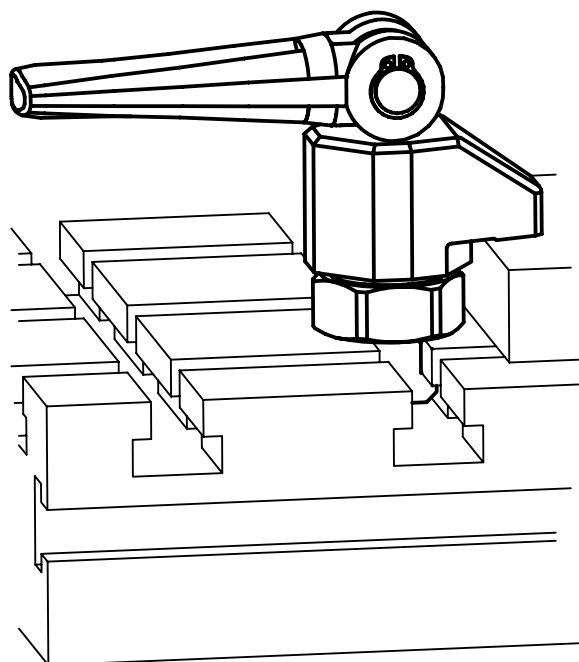
picture 2

ORDER INFORMATION

Dimensions											Stroke	Clamp- ing force	Tightening torque max.		Art. No.
d ₁	b ₁	b ₂	d ₂	h ₁	h ₂	h ₃	h ₄	l ₁	l ₂	l ₃					
[mm]											[mm]	[kN]	[Nm]	[g]	
with double eccentric levers – picture 1															
44	42	18	M12	25 – 30	54 – 59	15	28	61	40	100	5	4 ¹⁾	–	1022	23310.0034
with clamping screw – picture 2															
44	42	18	M12	25 – 30	54 – 59	15	13	61	40	–	5	10	30	708	23310.0035

¹⁾ Average value established in trials.

APPLICATION EXAMPLE



Down-Thrust Clamps • swivelling, size 60

EH 23310.



PRODUCT DESCRIPTION

Universal mechanical clamping element for fast and comfortable changing and clamping of workpieces by means of manually swivelling clamping claw.

The clamps have the following advantages:

- Rapid manual clamping by means of clamping screw.
- Easy and rapid changing of workpieces by swinging away the clamping claw to the left or right. The positioning ring 23310.0360 allows infinitely variable adjustment.
- The use of positioning ring 23310.0360 allows a repeatable precise clamping. Here h_1 min. increases by at least 10 mm (stroke minus 10 mm).
- Compact design, thus little space taken-up for clamping.
- Easy adjustment even to large clamping heights due to the height adjusting cylinders.

Material

Clamp

- Case-hardened steel, case-hardened, blackened and ground

Assembly

Down-thrust clamps can be attached in two ways:

1. in a T-slot, using a nut for T-slots DIN 508 (EH 23010.)
2. with the set screw directly in the mounting plate of, for example, a fixture

The cylinder must make contact over the whole surface.

MORE INFORMATION

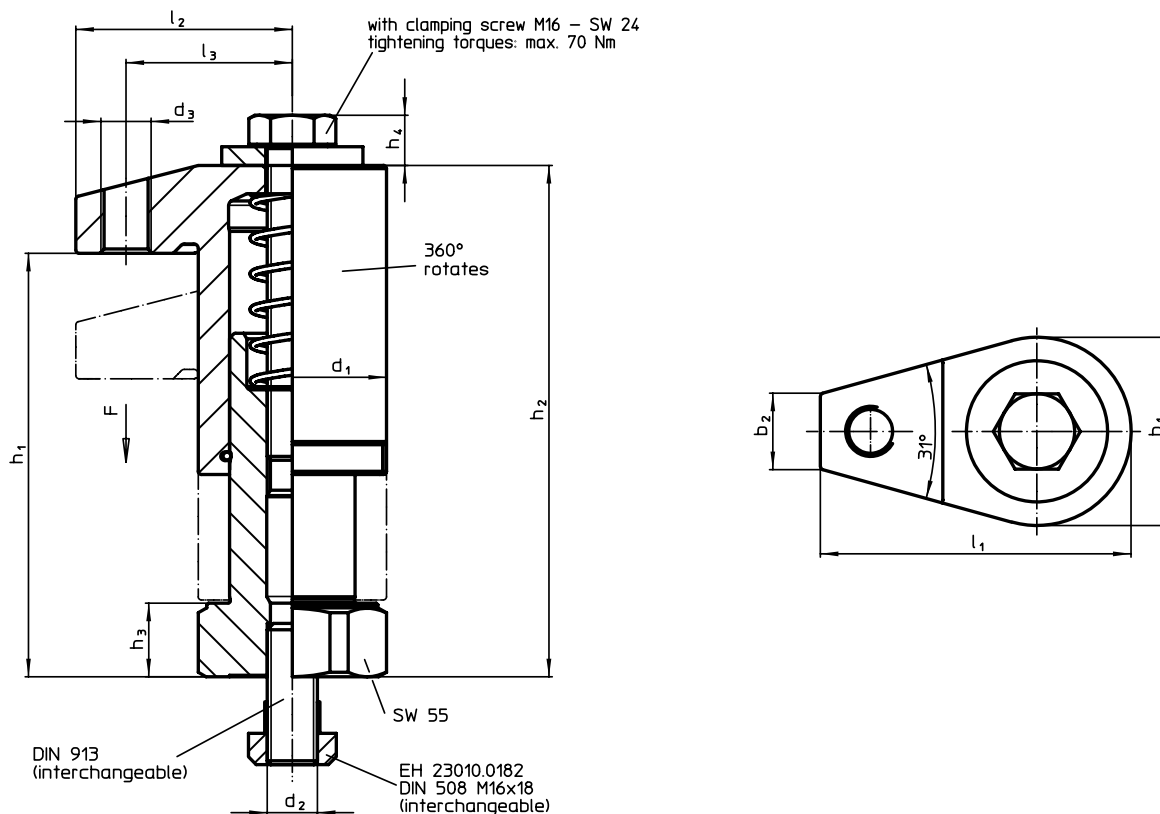
References

The clamping height can be increased with height adjusting cylinders EH 23310. and with spacers EH 1617. and reduced with clamping inserts.

Further products

Positioning Rings, for down-thrust clamp. → p. 526
Wrenches → p. 786
Spacers → p. 819

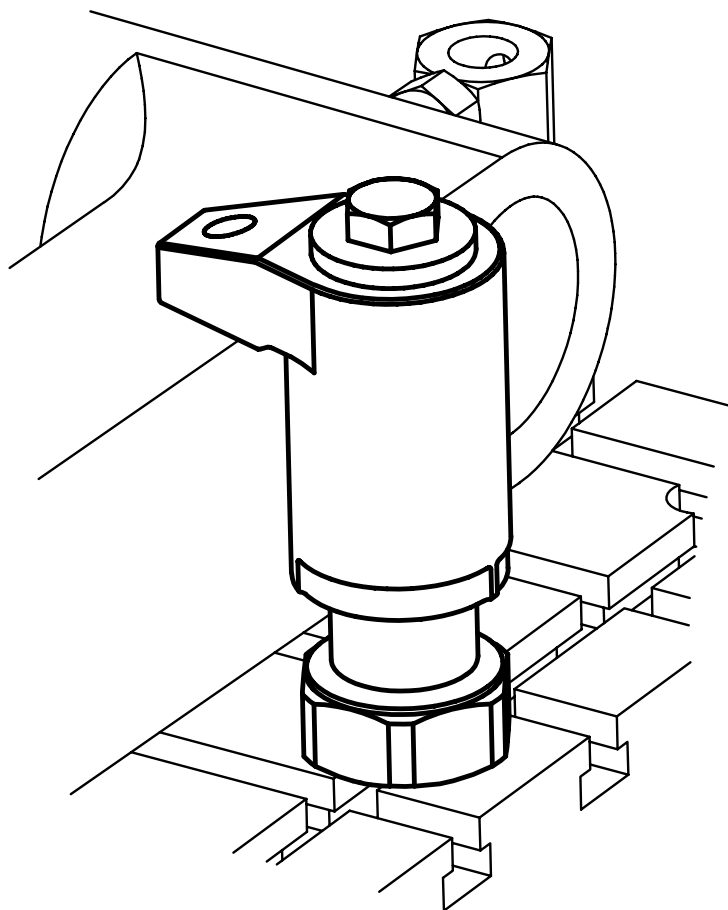
DRAWING



ORDER INFORMATION

Dimensions										Stroke	Clamp- ing force	Tight- ening torque max.		Art. No.
d_1	b_1	b_2	d_3	h_1	h_2	h_3	l_1	l_2	l_3					
[mm]										[mm]	[kN]	[Nm]	[g]	
with clamping screw														
60	60	24	M16	68 – 98	96 – 123	17	99	69	53	30	15	70	2307	23310.0065
				95 – 135	126 – 163	24	99	69	53	40	15	70	3020	23310.0067

APPLICATION EXAMPLE



Down-Thrust Clamps • swivelling, size 82.5

EH 23310.



PRODUCT DESCRIPTION

The down-thrust clamp is a universal mechanical clamp that allows fast and easy exchange and clamping of workpieces - as the clamping claw can be easily manually swivelled to clear the workpiece.

The down-thrust clamps have the following advantages:

- Compact design
 - Clamping force of up to max. 30 kN via a clamping screw WS 36
 - Clamping claw swivels 360°
 - Clamping stroke 30 mm
 - Clamping height max. 250 mm
 - Integrated clamping height stop for safe use
 - Easy and quick workpiece change by swivelling the clamping claw to the left or right.
- The positioning ring 23310.0351 allows infinitely variable adjustment and permits precise repeat clamping.

Material

- Case-hardened steel, case-hardened, blackened and ground

Assembly

Fixture via 4 cap screws M 24 with a hole spacing 100 x 100 mm

MORE INFORMATION

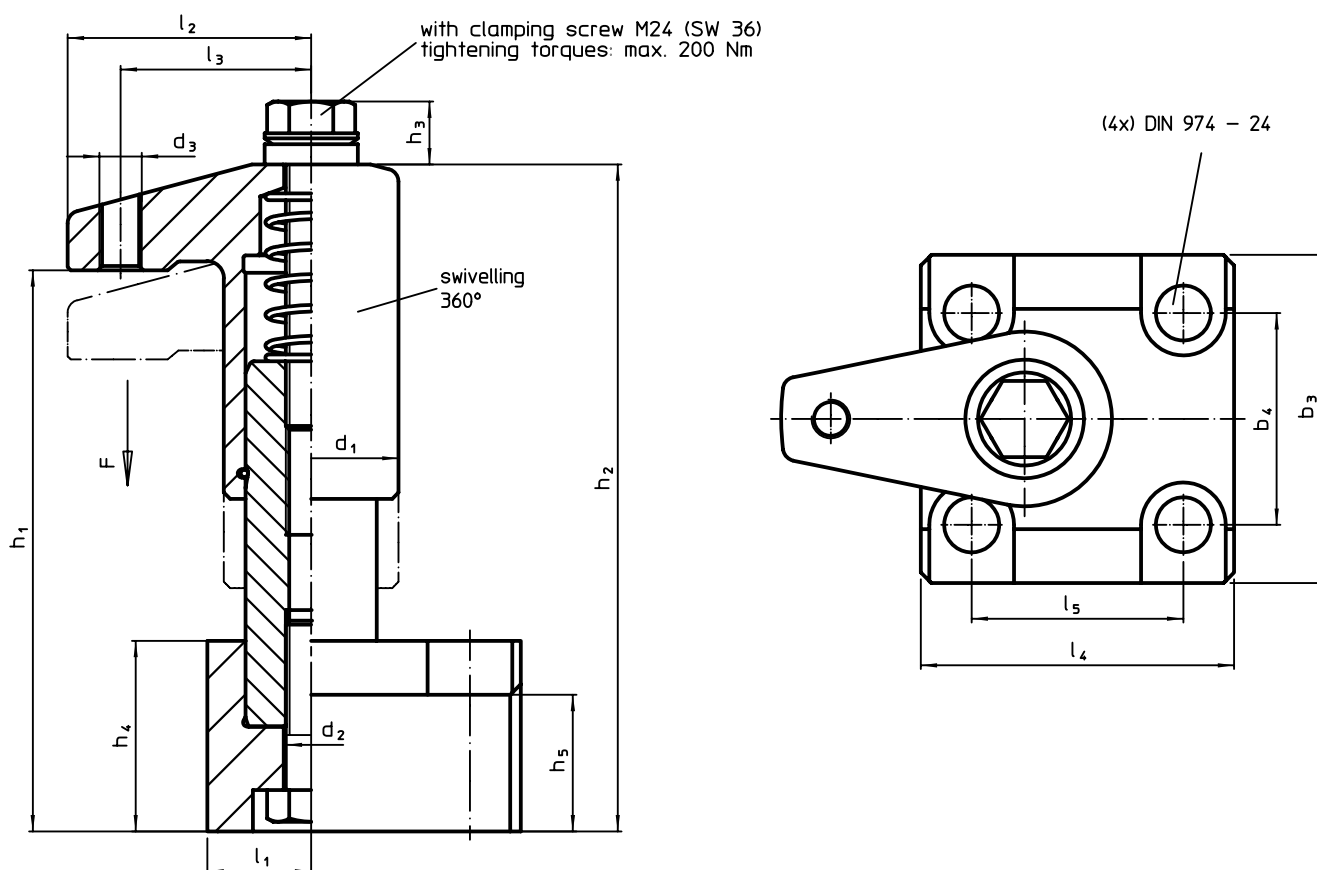
References

The clamping height can be reduced by using clamping inserts, e.g. EH 22730.

Further products

Positioning Rings, for down-thrust clamp. → p. 526
Wrenches → p. 786

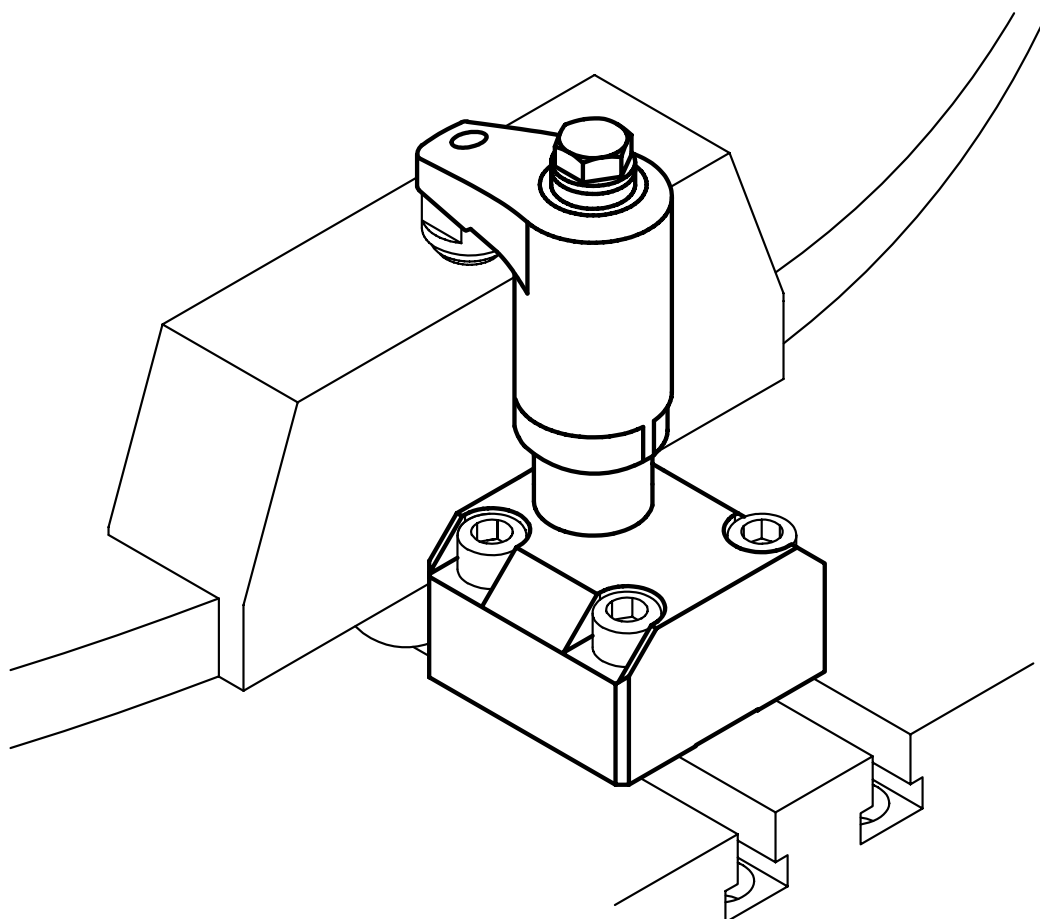
DRAWING



ORDER INFORMATION

Dimensions															Stroke	Clamp- ing force	Tightening torque max.		Art. No.	
d ₁	b ₃	b ₄	d ₂	d ₃	d ₄	h ₁	h ₂	h ₃	h ₄	h ₅	l ₁	l ₂	l ₃	l ₄	l ₅	[mm]	[kN]	[Nm]	[kg]	
[mm]															[mm]	[kN]	[Nm]	[kg]		
82.5	155	100	M24	M20	49	220 – 250	270 – 320	30	90	65	49	115	91.5	148	100	30	30	200	21	23310.0070

APPLICATION EXAMPLE



Down-Thrust Clamps • moveable, size 40

EH 23310.



PRODUCT DESCRIPTION

The moveable down-thrust clamps are used, amongst other things, when swivel movements are not possible because of the workpiece.

The clamps have the following advantages:

- Easier and quicker workpiece change by moving the clamping claws forwards or backwards.
 - The clamping range in horizontal direction is between l_1 min. and l_1 max.
 - To change the workpiece, the clamping claw can be pushed back from l_1 max. by dimension l_2 .
 - Rapid manual clamping by means of the clamping screw, the adjustable clamping lever, or the double eccentric tension lever.
 - As with all down-thrust clamps, the clamping claw of this version can also be swivelled away to the left or right. The use of positioning ring 23310.0350 allows the clamping position to be fixed. Here h_1 min. increases by at least 7 mm (stroke minus 7 mm).
 - Compact design, therefore less space requirement when clamping.
 - Easily adjustable even to large clamping heights, using the height adjusting cylinders.
- As the force applied by the operator is not known for the versions with levers, the clamping force is given in the tables as a guide value. The average value was determined by tests.

Material

Clamp

- Case-hardened steel, case-hardened, blackened and ground

Tension lever

- Zinc die-cast, plastic coated, orange similar to RAL 2004, matt structure
- Alloyed case-hardened steel, case-hardened, blackened

Assembly

Down-thrust clamps can be attached in two ways:

1. in a T-slot, using a nut for T-slots DIN 508 (EH 23010.)
 2. with the set screw directly in the mounting plate of, for example, a fixture
- The cylinder must make contact over the whole surface.

Operation

1. Push clamping claw backwards.

2. Insert workpiece.

3. Push clamping claw forwards.

4. Adjust clamping position of clamping claw using the knurled screw.

5. Secure / lock the clamping position using the knurled nut.

MORE INFORMATION

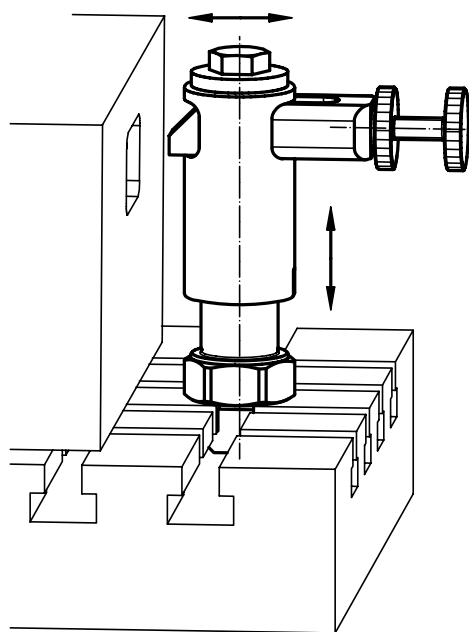
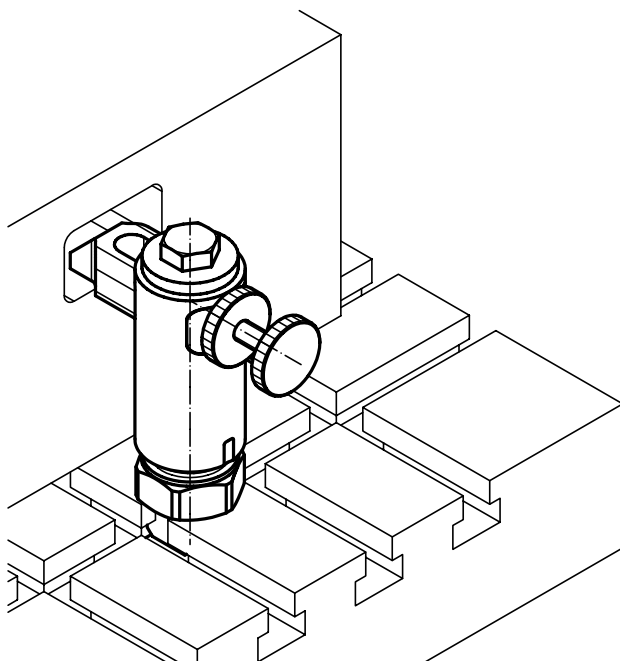
References

The clamping height can be increased by using height adjusting cylinders EH 23310. and disks EH 1107. and EH 1108. It can be reduced by employing clamping inserts, e.g. EH 22730.

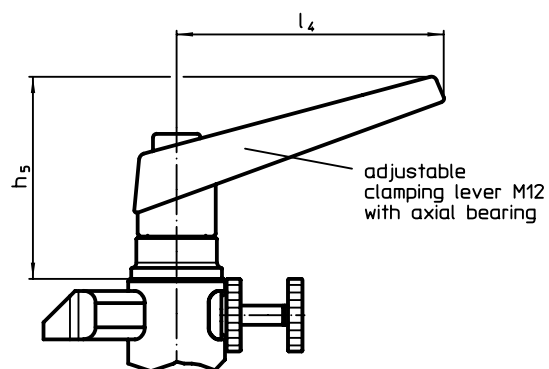
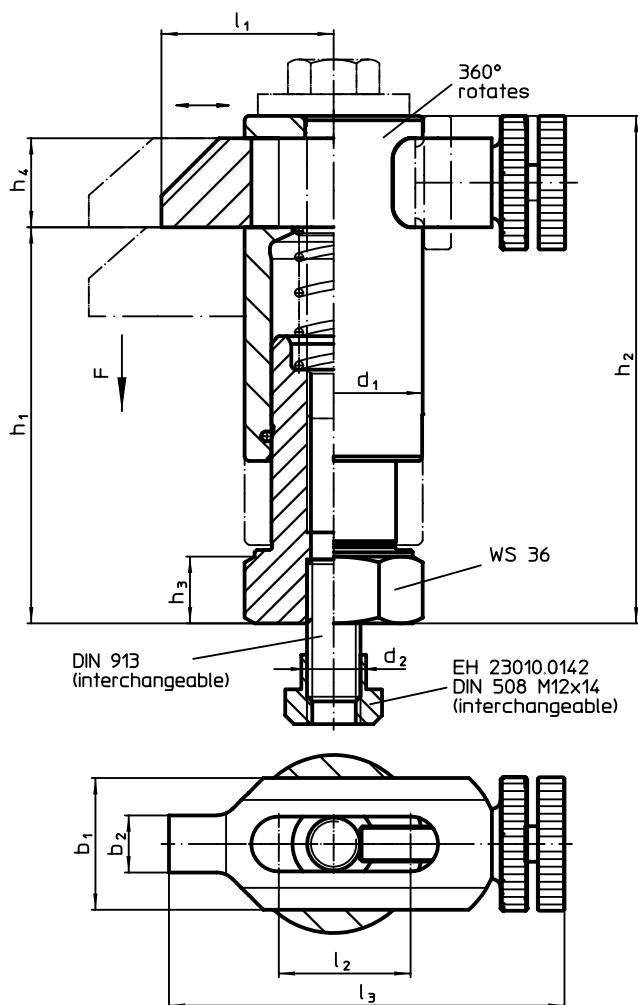
Further products

Positioning Rings, for down-thrust clamp	→ p. 526
Height Adjusting Cylinders	→ p. 527
Spacers	→ p. 763
Wrenches	→ p. 786

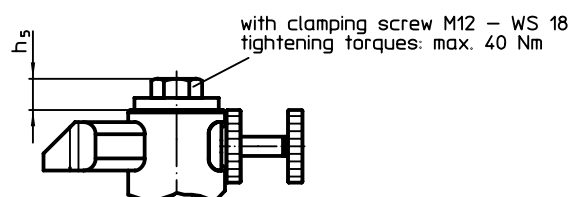
APPLICATION EXAMPLE



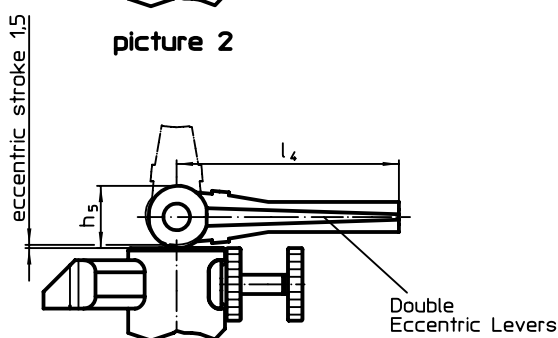
DRAWING



picture 1



picture 2



picture 3

ORDER INFORMATION

Dimensions													Stroke [mm]	Clamp- ing force [kN]	Tightening torque max. [Nm]	 [g]	Art. No.
d ₁	b ₁	b ₂	d ₂	h ₁	h ₂	h ₃	h ₄	h ₅	l ₁	l ₂	l ₃	l ₄					
[mm]																	
with adjustable clamping lever with axial bearing – picture 1																	
40	30	13	M12	70 – 90	95 – 115	15	20	82	38 – 55	30	90 – 107	108	20	6 ¹⁾	–	1400	23310.0083
				88 – 118	113 – 143	15	20	82	38 – 55	30	90 – 107	108	30	6 ¹⁾	–	1560	23310.0086
with clamping screw – picture 2																	
40	30	13	M12	70 – 90	95 – 115	15	20	13	38 – 55	30	90 – 107	–	20	10	40	1075	23310.0084
				88 – 118	113 – 143	15	20	13	38 – 55	30	90 – 107	–	30	10	40	1239	23310.0087
with double eccentric levers – picture 3																	
40	30	13	M12	70 – 90	95 – 115	15	20	28	38 – 55	30	90 – 107	100	20	4 ¹⁾	–	1396	23310.0085
				88 – 118	113 – 143	15	20	28	38 – 55	30	90 – 107	100	30	4 ¹⁾	–	1562	23310.0088

¹⁾ Average value established in trials.

Positioning Rings • for down-thrust clamp

EH 23310.



PRODUCT DESCRIPTION

After aligning, the clamp positioning ring is fitted on the spindle with the effect, that repeated clamping is always exactly on the same point. The positioning ring is adjustable 360° on the down-thrust clamp. After mounting, the clamping claw can swing 110° to the left or right (only for the swiveling versions).

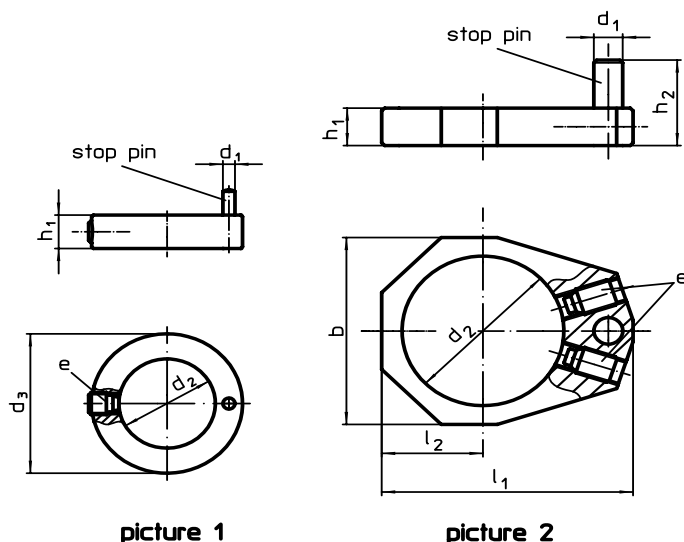
Material

- Steel, blackened

Assembly

Before mounting the positioning ring, pull-off the clamping claw of down-thrust clamp.

DRAWING



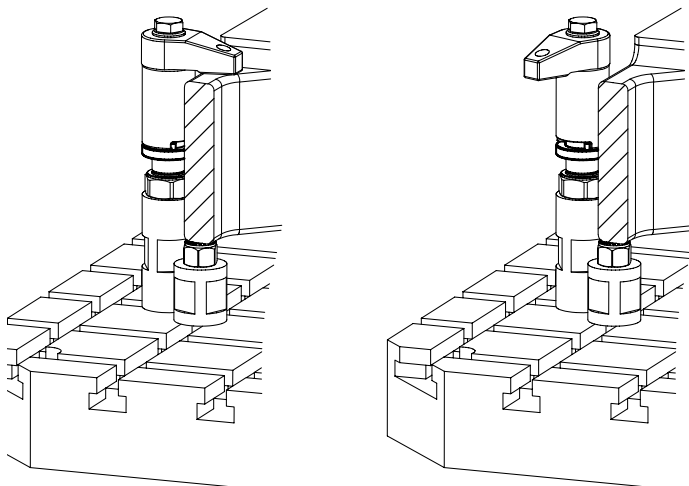
picture 1

picture 2

ORDER INFORMATION

Dimensions										For down-thrust clamp		Art. No.
h_1	h_2	d_1	d_2	d_3	l_1	l_2	b	e			[g]	
[mm]												
for down-thrust clamps size 25 – picture 1												
6	10	2	16	25	–	–	–	22760.0040	23310.0027 - 23310.0029		14	23310.0345
for down-thrust clamps size 32 – picture 1												
6	10	3	20	32	–	–	–	22760.0042	23310.0040 - 23310.0045		23	23310.0348
for down-thrust clamps, size 40 – picture 2												
7	16	5	28	–	43.5	17.5	35	22760.0052	23310.0050-0058/23310.0083-0088		32	23310.0350
for down-thrust clamps size 60 – picture 2												
10	20	8	40	–	66.5	27.5	56	22760.0064	23310.0065, 23310.0067		151	23310.0360
for down-thrust clamps, size 82,5 – picture 2												
15	40	10	62	–	93.0	39.0	78	22760.0104	23310.0070		355	23310.0351

APPLICATION EXAMPLE



Height Adjusting Cylinders

EH 23310.



PRODUCT DESCRIPTION

The height adjusting cylinders can be used to extend the clamping height of down-thrust clamps EH 23310. They are also used in combination with seating pins (EH 22680.), pins (EH 22690.) and self-aligning pads (EH 22730. - EH 22741.).

Material

- Steel, case-hardened, blackened, ground

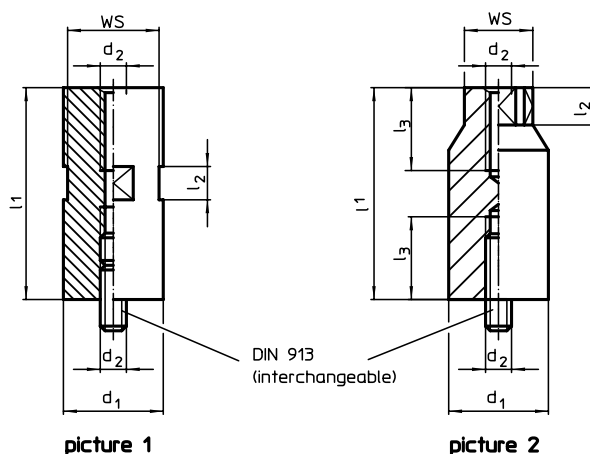
MORE INFORMATION

Further products

- Seating Pins, ribbed or pointed → p. 309
- Seating Pins, pin shape → p. 310
- Pins → p. 311
- Seating Pins, adjustable → p. 314

- Self-Aligning Pads → p. 338
- Self-Aligning Pads, with hard metal ball, ribbed → p. 339
- Self-Aligning Pads, self-resetting → p. 340
- Self-Aligning Pads, with hard metal ball, ribbed and self-resetting → p. 342
- Self-Aligning Pads, adjustable → p. 343
- Self-Aligning Pads, adjustable, self-resetting → p. 344

DRAWING



ORDER INFORMATION

d ₁ -0.1	l ₁	Dimensions			WS		Art. No.
		d ₂	l ₂	l ₃			
		[mm]			[mm]	[g]	
picture 1							
25	20 ±0.01	M 8	10	–	22	75	23310.0125
	40 ±0.01	M 8	20	–	22	150	23310.0126
	80 ±0.01	M 8	20	–	22	306	23310.0127
32	35 ±0.01	M10	20	–	27	202	23310.0130
	70 ±0.01	M10	20	–	27	411	23310.0132
	140 ±0.01	M10	20	–	27	848	23310.0134
40	35 ±0.01	M12	20	–	36	336	23310.0140
	70 ±0.01	M12	20	–	36	673	23310.0141
	140 ±0.01	M12	20	–	36	1366	23310.0142
	35 ±0.01	M16	20	–	36	331	23310.0145
	70 ±0.01	M16	20	–	36	663	23310.0146
	140 ±0.01	M16	20	–	36	1330	23310.0147
60	35 ±0.01	M12	20	–	55	765	23310.0160
	70 ±0.01	M12	20	–	55	1533	23310.0161
	140 ±0.01	M12	20	–	55	3096	23310.0162
	35 ±0.01	M16	20	–	55	763	23310.0165
	70 ±0.01	M16	20	–	55	1522	23310.0166
	140 ±0.01	M16	20	–	55	3056	23310.0167
	50 ±0.01	M20	20	–	55	1087	23310.0170
	100 ±0.01	M20	20	–	55	2130	23310.0171
70	200 ±0.01	M20	20	–	55	4335	23310.0172
	50 ±0.01	M24	25	–	65	1361	23310.0241
	100 ±0.01	M24	25	–	65	2721	23310.0242
picture 2							
90	200 ±0.02	M24	35	50	65	8860	23310.0243
	300 ±0.02	M24	35	50	65	13820	23310.0244