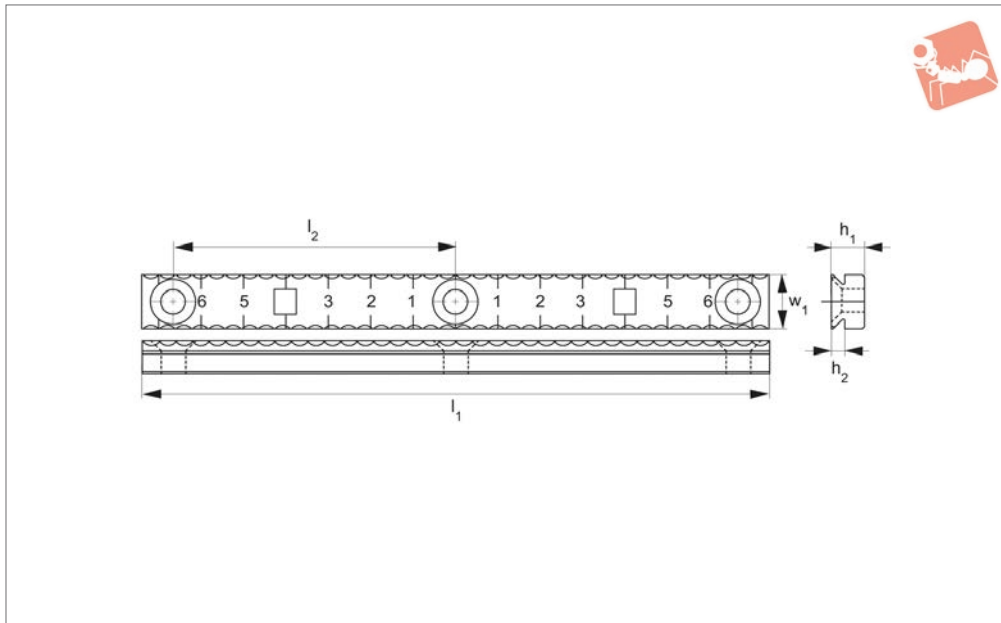




# Talongrip Serrated Grip long

## Low Profile Side Clamping



### 12030

LOW PROFILE SIDE CLAMPING

#### Material

Steel (S7), heat-treated, black oxide.

#### Technical Notes

Installation instructions:

1. Set grip in Talongrip jaw, install with screws provided. For fixture, machine slot 0,025mm-0,075mm larger than dimension  $w_1$ , drill and tap.
2. Torque screws to 6,1 Nm. for standard

cap screw and 3,3 Nm. for low head cap screw.

3. Tighten vice until penetration is felt. As a general rule, an additional 1/4-3/4 turn of vice handle is needed to secure the workpiece dependent on material type and vice model. Recommended penetration is 0,15mm-0,40mm.

#### Tips

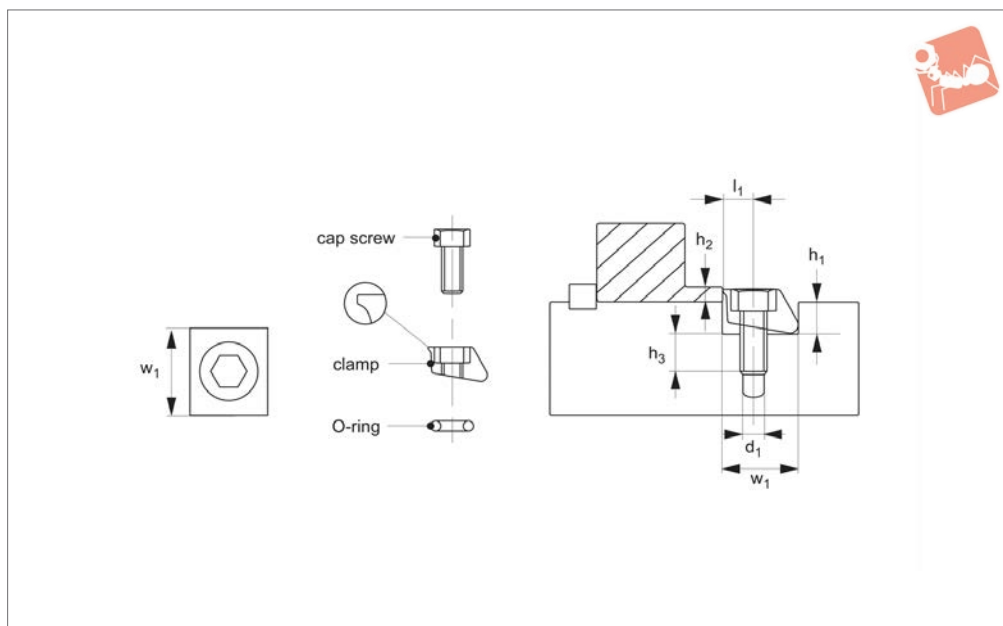
M 5x12 screws provided, as well as 10-32x1/2". Either can be used in M 5 threaded holes as long as they do not exceed 25mm in length.

The 10-32 screws sit better in the gripper rail and are less likely to bind during removal.

Order No.	Qty/pack	$h_1$	$l_1$	$l_2$	$w_1$	Fits Wixroyd jaw set	Gripping height $h_2$	Weight g
12030.W0052	2	9.3	50.0	38.1	19.1	12035 & 12464	1,3-4,1	113
12030.W0054	2	7.8	98.8	41.3	12.7	12035	1,3-3,2	181
12030.W0056	2	7.8	148.1	66.7	12.7	12035	1,3-3,2	259



## 12031.1



### Material

Tool: steel (Hrc 43-45) or brass.  
Screw: steel and oil resistant nitrile rubber.  
O-ring: plastic.

### Technical Notes

Provides positive down force and a very low grip height. High vertical and horizontal clamping forces. The O-ring lifts the clamp when unclamping.  
Hardness: approx. Hrc 45.  
Temperature range -30°C to +80°C.  
Clamps sold by pack quantity.

### Tips

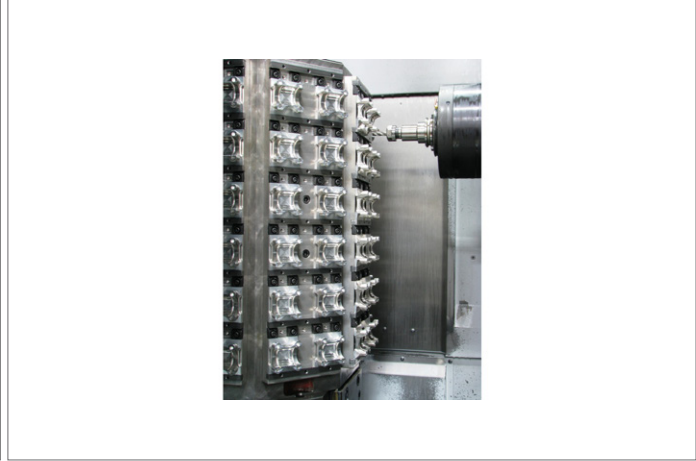
The tool steel blunt edge is less likely to mark workpieces, whilst the knife edge version bites into the material for more aggressive machining requirements. Often used with 12034 Talongrip or 12036 Versagrip. Location rails are ideal for use with pitbull clamps.

### Important Notes

1. Machine a slot for the Pitbull clamp in the fixture according to dimensions „w<sub>1</sub>“ and „h<sub>1</sub>“.

2. Drill and tap a fixing hole to match screw size- refer to dimension „l<sub>1</sub>“ for distance of hole from the component.
  3. Assemble clamp as shown in the diagram above.
  4. Position the clamp, and loosely screw to fixture.
  5. Load the component and tighten screw cap.
- Dimension „h<sub>2</sub>“ is the minimum recommended clamping height.

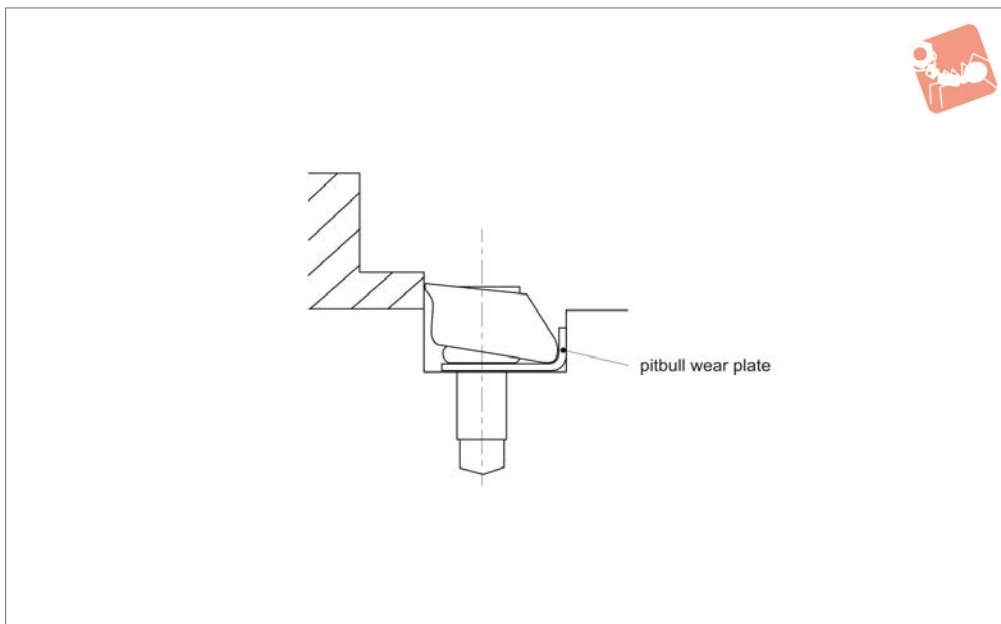
Order No.	Material	Type	Qty/pack	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	Stroke s <sub>1</sub>	w <sub>1</sub>	Torque to Nm max.	Holding force kN	Weight g
12031.W0015	Brass	Blunt Edge	8	M 2,5	3.6	1.9	5.6	3.8	0.2	9.5	0.6	0.9	45
12031.W0040	Brass	Blunt Edge	8	M 4	4.8	2.6	8.6	5.1	0.4	12.7	2.8	1.8	64
12031.W0065	Brass	Blunt Edge	6	M 6	7.1	3.8	11.2	7.6	0.6	19.0	5.6	4.2	163
12031.W0005	Tool Steel	Knife Edge	8	M 2,5	3.6	1.9	6.6	3.8	0.2	9.5	1.8	2.8	32
12031.W0010	Tool Steel	Blunt Edge	8	M 2,5	3.6	1.9	6.6	3.8	0.2	9.5	1.8	2.8	45
12031.W0020	Tool Steel	Knife Edge	8	M 4	4.8	2.6	9.9	5.1	0.4	12.7	5.6	6.6	64
12031.W0030	Tool Steel	Blunt Edge	8	M 4	4.8	2.6	9.9	5.1	0.4	12.7	5.6	6.6	64
12031.W0050	Tool Steel	Knife Edge	6	M 6	7.1	3.8	14.5	7.6	0.6	19.0	22.5	16.0	136
12031.W0060	Tool Steel	Blunt Edge	6	M 6	7.1	3.8	14.5	7.6	0.6	19.0	22.5	16.0	132
12031.W0070	Tool Steel	Knife Edge	4	M10	11.4	6.4	18.0	10.2	1.3	25.4	40.6	26.0	256
12031.W0075	Tool Steel	Blunt Edge	4	M10	11.4	6.4	18.0	10.2	1.3	25.4	40.6	26.0	277
12031.W0080	Tool Steel	Knife Edge	2	M12	16.3	9.5	19.6	15.2	1.9	38.1	145.0	50.0	408
12031.W0085	Tool Steel	Blunt Edge	2	M12	16.3	9.5	19.6	15.2	1.9	38.1	145.0	50.0	408



LOW PROFILE SIDE CLAMPING



## 12031.2



### Technical Notes

Provides a hard barrier between pitbull clamp and fixture, preventing distortion of back wall when using aluminium or mild

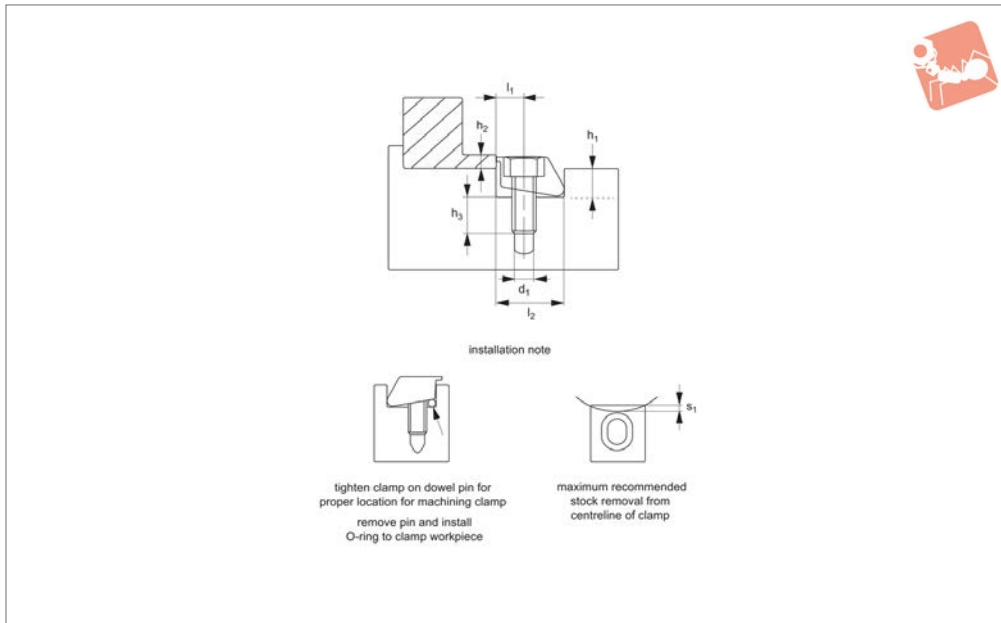
steel fixtures.

### Tips

To keep fixtures light, maintain full clamp

travel and holding forces at max. pressure. Refurbish old fixtures or add to existing aluminium fixtures to maximise machining capabilities.

Order No.	Screw	Part number	Qty/pack
12031.W0615	M 2,5	12031.W0005, 12031.W0010, 12031.W0015	8
12031.W0640	M 4	12031.W0020, 12031.W0030, 12031.W0040	8
12031.W0665	M 6	12031.W0050, 12031.W0060, 12031.W0065	6
12031.W0670	M10	12031.W0070, 12031.W0075, 12032.W0570	4
12031.W0680	M12	12031.W0080, 12031.W0085, 12032.W0580	2



### 12032

LOW PROFILE SIDE CLAMPING

#### Material

Tool: steel, heat treated to HRC 43, machinable.

Screw: steel and oil resistant nitrile rubber.

O-ring: plastic.

#### Technical Notes

A machinable version of the standard pitbull clamps.

Provides positive down force and a very low grip height.

High vertical and horizontal clamping forces.

Hardness: approx. 45HRC

#### Tips

There is additional material of the clamp

face to allow machining of a radius. Often used with part no. 12034 Talongrip or part no. 12036 Versagrip.

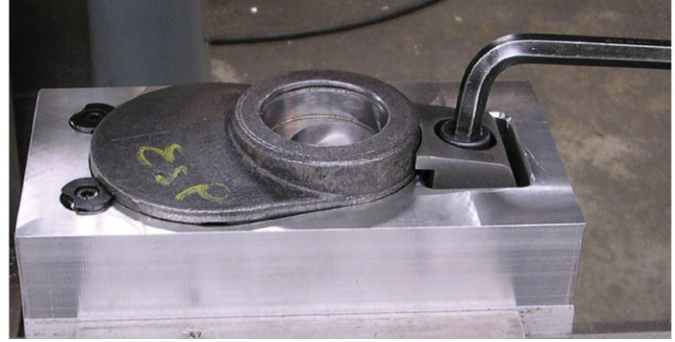
#### Important Notes

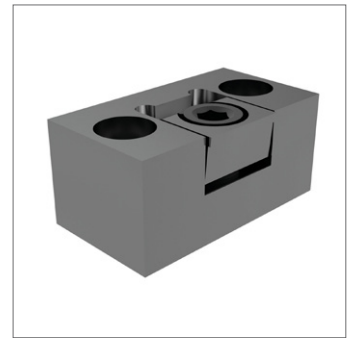
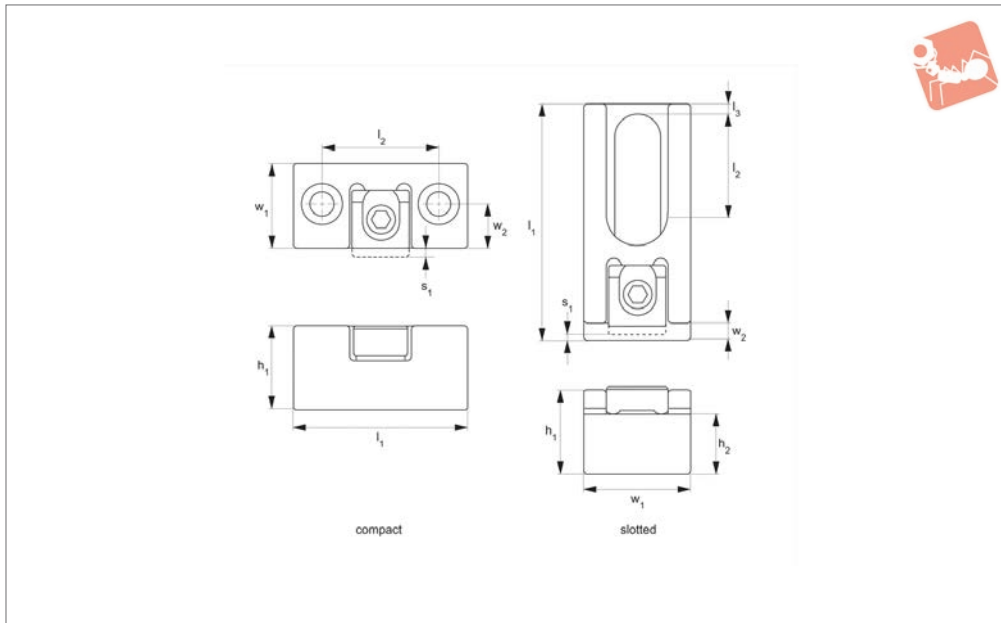
Installation:

1. Machine face of clamp to suit profile of component, taking note of dimension „s<sub>1</sub>“ as the max. recommended stock removal. A dowel pin is included in each pack to locate the clamp whilst machining the face. After machining of face, remove pin and install O-ring to clamp workpiece.
2. Machine a slot for the pitbull clamp in the fixture, according to dimensions „l<sub>2</sub>“ and „h<sub>2</sub>“.
3. Drill and tap a fixing hole to match

4. Assemble clamp as shown in the diagram above.
  5. Position the clamp, and loosely screw to fix.
  6. Load the component and tighten the cap screw.
- Dimension „h<sub>2</sub>“ is the minimum recommended clamping height.

Order No.	Qty/pack	d <sub>1</sub>	Stroke max.	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	s <sub>1</sub>	Dowel pin dia.	Torque to Nm max.	Holding force kN	Weight g
12032.W0570	4	M10	1.27	11.43	6.4	18.0	10.16	25.4	1.5	3.18	40	26	263
12032.W0580	2	M12	1.90	16.26	9.5	19.6	15.24	38.1	4.5	6.35	145	50	463





### 12033.1

LOW PROFILE SIDE CLAMPING

#### Material

Body: steel hardened and ground with pitbull clamps insert (part no. 12031).

#### Technical Notes

Designed to be used in fixtures, on cubes etc.

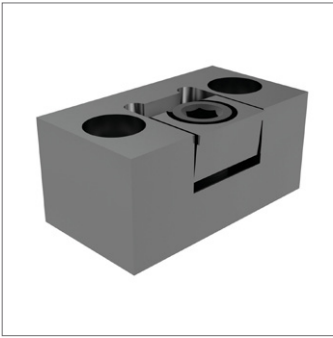
The slotted version has a clamp step to support the workpiece off the machine table for through milling or drilling.

The height of the clamp can be adjusted by varying the depth of the milled slot used to locate the clamp.

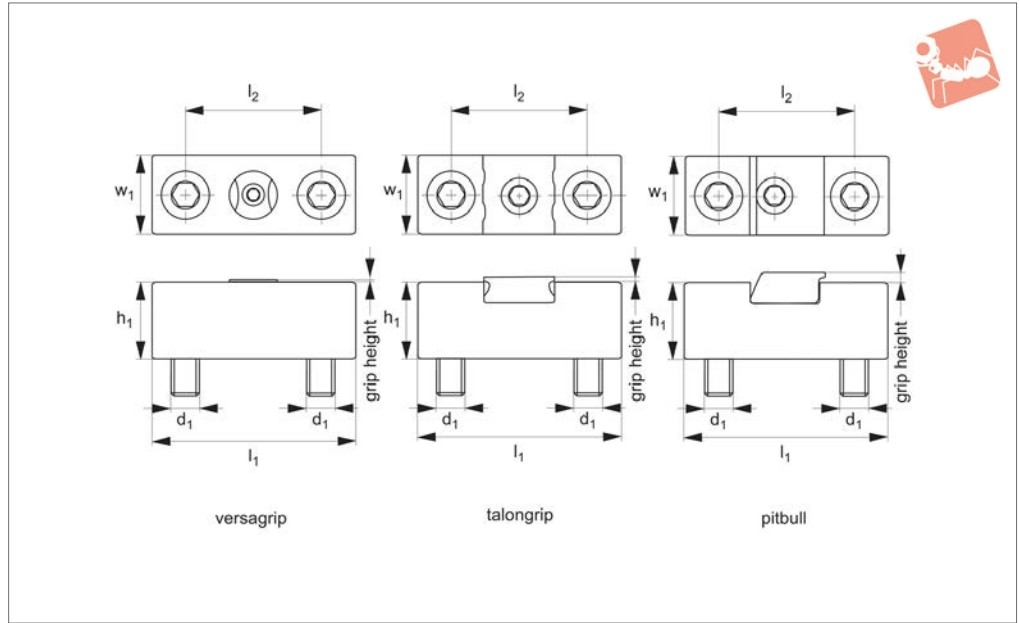
#### Tips

The compact version is ideal for clamping workpieces in series using the back surface of clamp to locate the next workpiece. Back of clamp is ground square to the bottom for precise part location.

Order No.	Body type	Clamp type	$h_1$	$h_2$ +0.000   -0.013	$l_1$	$l_2$	$l_3$	Stroke $s_1$	$w_1$	$w_2$	Torque to Nm max.	Clamping force kN max.	Mounting screw	Replacement clamps 12031	Weight g
<b>12033.W0020</b>	Compact	Knife	25,1		57,1	38,1		0,6	31,2	15,7	22,5	16	M 8	.W0050	
<b>12033.W0025</b>	Compact	Blunt	25,1		57,1	38,1		0,6	31,2	15,7	22,5	16	M 8	.W0060	
<b>12033.W0030</b>	Compact	Knife	31,5		68,6	47,0		1,3	37,6	18,8	40,6	26	M10	.W0070	
<b>12033.W0035</b>	Compact	Blunt	31,5		68,6	47,0		1,3	37,6	18,8	40,6	26	M10	.W0075	
<b>12033.W0040</b>	Slotted	Knife	25,1	18,5	103,6	43,2	12,7	0,6	31,7	9,1	22,5	16	M12	.W0050	12,7
<b>12033.W0045</b>	Slotted	Blunt	25,1	18,5	103,6	43,2	12,7	0,6	31,7	9,1	22,5	16	M12	.W0060	12,7
<b>12033.W0050</b>	Slotted	Knife	40,9	35,0	107,0	37,6	10,9	1,3	38,1	9,1	40,6	26	M16	.W0075	10,9
<b>12033.W0055</b>	Slotted	Blunt	40,9	35,0	107,0	37,6	10,9	1,3	38,1	9,1	40,6	26	M16	.W0075	10,9



## 12033.2



### Material

Hardened and ground steel bodies with pitbull clamps insert (part no. 12031).

### Technical Notes

Designed to be used in fixtures, on cubes etc.

The slotted version has a clamp step to

support the workpiece off the machine table for through milling or drilling. The height of the clamp can be adjusted by varying the depth of the milled slot used to locate the clamp.

### Tips

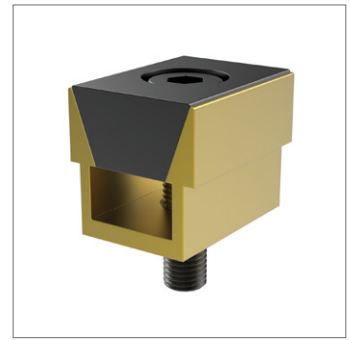
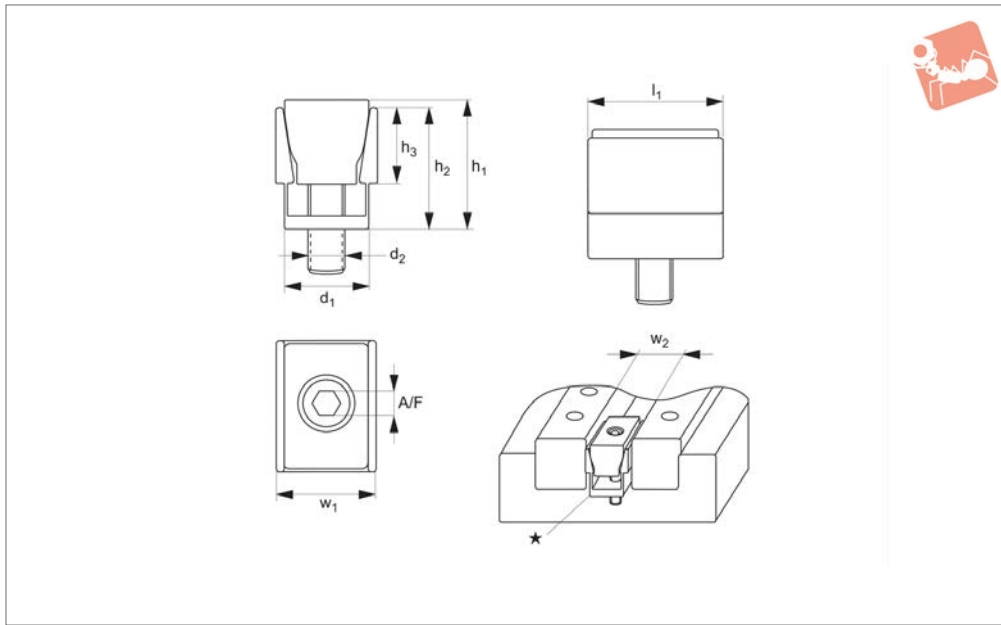
The compact version is ideal for clamping

workpieces in series, using the back surface of the clamp to locate the next workpiece.

Back of clamp is ground square to the bottom for precise part location.

Order No.	Clamp type	d <sub>1</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	w <sub>1</sub>	Grip height	Replacement clamps
12033.W0150	Versagrip	M12	35	76.2	50	25.4	1,5 to 3,0	12036.W0175
12033.W0155	Talongrip	M12	35	76.2	50	25.4	1,5 to 3,0	12034.W0050
12033.W0160	Pitbull - Knife	M12	35	76.2	50	25.4	6.4	12031.W0060
12033.W0165	Pitbull - Blunt	M12	35	76.2	50	25.4	6.4	12031.W0070
12033.W0170	Pitbull - Mach.	M12	35	76.2	50	25.4	6.4	12032.W0570





## 12130

LOW PROFILE SIDE CLAMPING

### Material

Channel: aluminium, anodised (7075-T6).  
Wedge and screw: steel, hardened and blackened.

### Technical Notes

Holds two parts with an equal clamping action. Very effective for multiple workpiece clamping. Can easily be used with hydraulic pull cylinders. Can be used to

clamp round bar, as long as centre line of clamp is above the centre line of the workpiece.

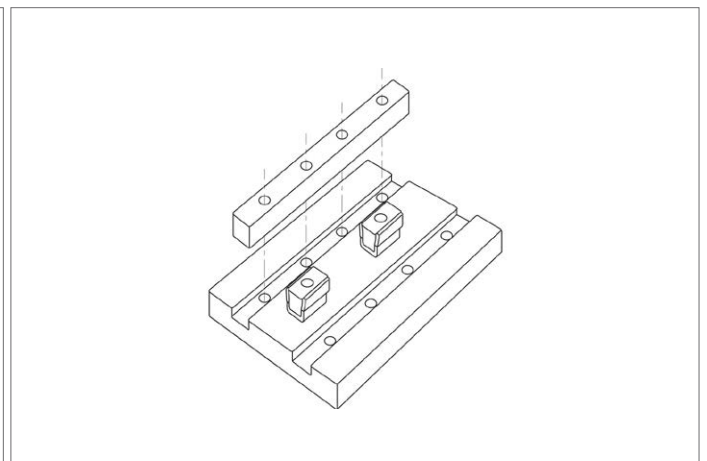
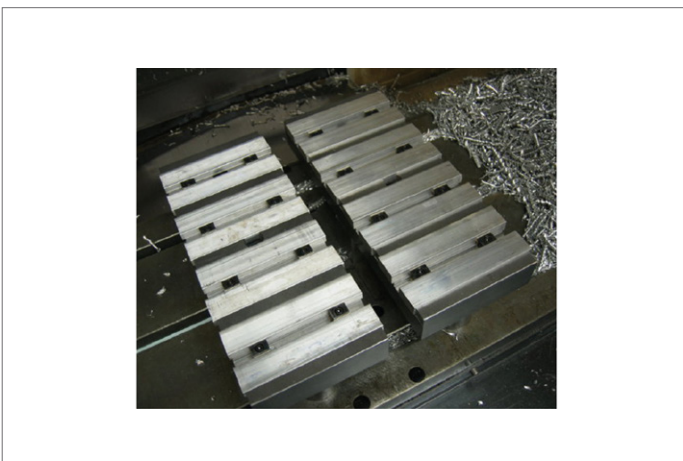
### Tips

Clockwise rotation is recommended. The workpiece should be on the right of the clamp. For replacement cam screws see parts 12112.

### Important Notes

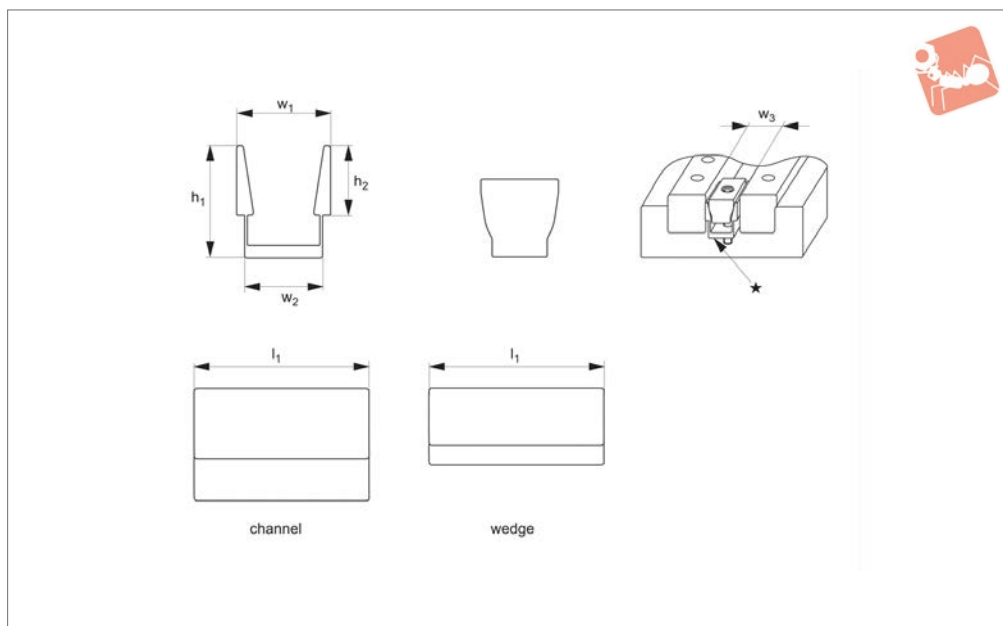
Dimension  $w_2$  is the distance needed between workpieces for clamp clearance. Drill and tap mounting hole on the centre of this dimension.  
\*\* a milled slot wider than  $d_1$  will ensure the clamp remains in line with the workpiece. Clamp sides should not come into contact with slot walls during expansion.

Order No.	$d_1$	$d_2$	$h_1$	$h_2$	$h_3$	$l_1$	$w_1$	$w_2$	Spread max.	A/F	Torque to Nm max.	Qty/pack	Holding force kN	Weight g
12130.W0001	5.3	M 2	6.9	6.40	3.6	8.1	6.1	6.4	6.7	1.5	0.7	6	0.88	45
12130.W0002	7.9	M2,5	9.7	9.50	4.7	11.9	9.1	9.5	10.0	2.0	1.5	6	1.35	68
12130.W0004	10.4	M 4	14.5	12.70	5.6	15.9	12.3	12.7	13.2	3.0	3.4	8	2.23	100
12130.W0006	16.1	M 6	19.0	19.05	9.5	23.8	18.6	19.0	20.3	5.0	13.5	6	6.68	222
12130.W0008	20.8	M 8	25.9	25.40	12.7	31.7	24.8	25.4	26.9	6.0	25.0	4	11.13	340
12130.W0012	30.8	M12	38.6	38.10	19.0	47.6	37.3	38.1	39.9	10.0	38.4	2	15.58	612
12130.W0016	41.2	M16	51.5	50.80	25.4	63.5	49.7	50.8	53.0	14.0	74.6	2	26.70	1404





## 12131



### Material

Channel: aluminium (7075-T6).  
Wedge: steel.

### Technical Notes

Standard length of 508mm supplied, to allow machining to your own requirements.

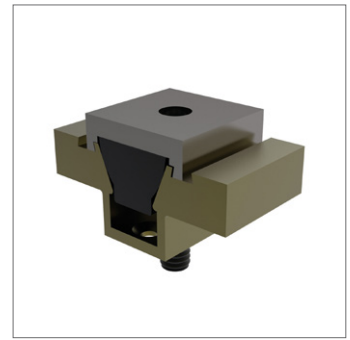
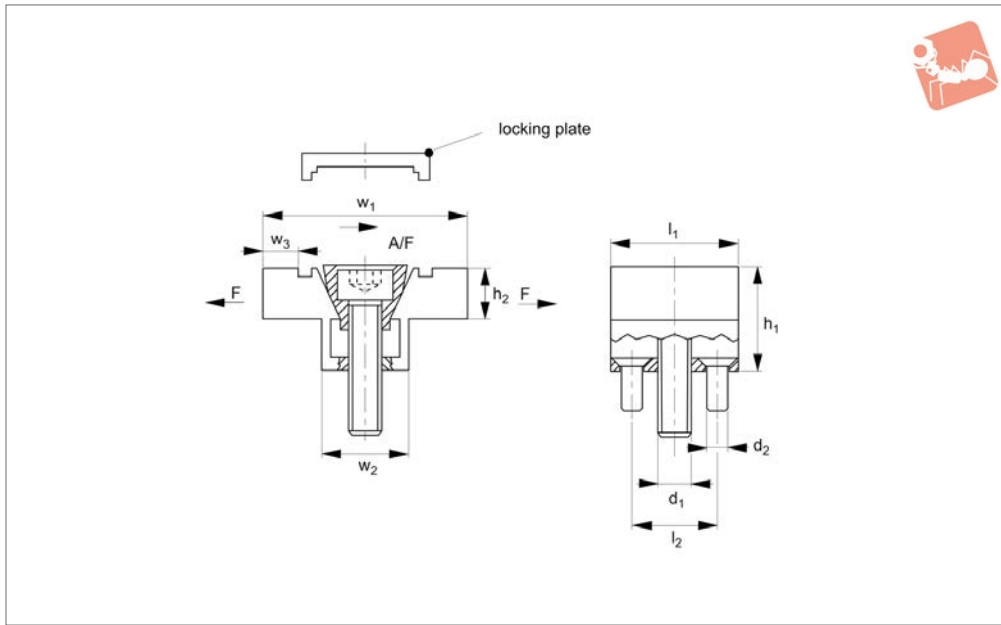
No drilled holes.

### Important Notes

Dimension „w<sub>3</sub>“ is distance needed between workpieces for clamp clearance.  
Drill and tap mounting hole on centre of this dimension.  
„\*“ a milled slot wider than w<sub>2</sub> will ensure

clamp remains in line with workpiece.  
Clamp sides should not come into contact with slot wall during expansion.  
Channel and wedge supplied separately.  
If both parts are required please order them separately.

Order No.	Part	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	Spread max.
12131.W0001	Channel	6.4	3.6	508	6.1	5.3	6.4	6.7
12131.W0002	Channel	9.5	4.7	508	9.1	7.9	9.5	10.0
12131.W0004	Channel	12.7	5.6	508	12.3	10.4	12.7	13.2
12131.W0006	Channel	19.1	9.5	508	18.6	16.1	19.0	20.3
12131.W0008	Channel	25.4	12.7	508	24.8	20.8	25.4	26.9
12131.W0012	Channel	38.1	19.0	508	37.3	30.8	38.1	39.9
12131.W0016	Channel	50.8	25.4	508	49.7	41.2	50.8	53.0
12131.W0201	Wedge	-	-	508	6.1	-	-	-
12131.W0202	Wedge	-	-	508	9.1	-	-	-
12131.W0204	Wedge	-	-	508	12.3	-	-	-
12131.W0206	Wedge	-	-	508	18.6	-	-	-
12131.W0208	Wedge	-	-	508	24.8	-	-	-
12131.W0212	Wedge	-	-	508	37.3	-	-	-
12131.W0216	Wedge	-	-	508	49.7	-	-	-



### 12140

LOW PROFILE SIDE CLAMPING

#### Material

Channel: aluminium, anodised (7075-T6).  
Wedge and screw: steel, hardened, blackened.

#### Technical Notes

Extra material on the clamp jaws can be machined away to suit the shape of your workpiece.  
The specially designed steel wedge spreads

the clamp force uniformly across both sides of the clamp.

#### Tips

The locking plate should be used to machine the jaws, and removed after this process to enable workpiece clamping. When the clamp is used to machine flat faced parts, use the locking plates to machine the faces parallel.

Full clamping cannot be achieved if locking plate has not been removed.

#### Important Notes

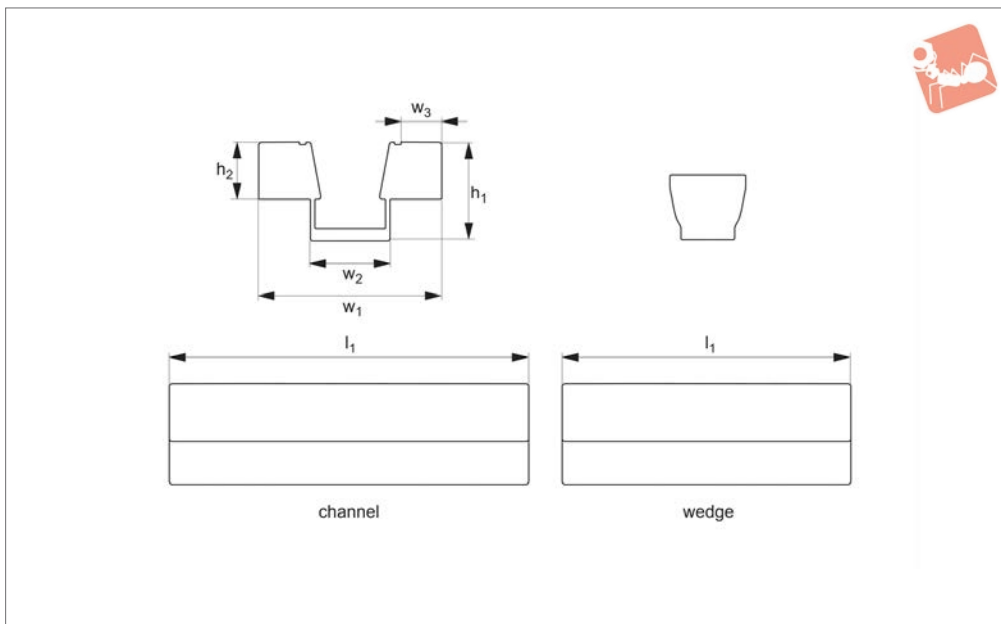
$w_1$  is the distance needed between workpieces for clamp clearance. Drill and tap mounting holes on the centre of this dimension.  
 $w_3$  is the amount of machinable stock on the jaws.

Order No.	$d_1$	$d_2$	$h_1$	$h_2$	$l_1$	$l_2$	$w_1$	$w_2$	$w_3$	Torque to Nm max.	Holding force F kN	Weight g
12140.W0050	M 4	M 2	12.7	6.3	15.7	10.2	28.6	10.7	4.6	3.4	2.2	18
12140.W0075	M 6	M 4	19.1	9.4	23.9	15.9	38.1	16.1	6.6	13.5	6.6	25
12140.W0100	M 8	M 4	25.4	12.7	31.8	20.6	50.8	20.8	9.9	25.0	11.1	13
12140.W0150	M12	M 5	38.1	19.1	47.5	30.5	76.2	30.9	15.7	38.4	15.5	93
12140.W0200	M16	M 6	50.8	25.4	63.5	41.3	101.6	41.3	20.3	74.6	26.7	1000





## 12145



### Material

Channel: aluminium, anodised (7075-T6).  
Wedge: steel.

### Technical Notes

The specially designed steel wedge spreads the clamp force uniformly across both sides of the clamp.  
Channel supplied with 4 mounting screws.

Wedge supplied with 3 drive bolts.

### Tips

Standard length of 190mm supplied to allow machining to your own requirements.

### Important Notes

$w_1$  is the distance needed between work-

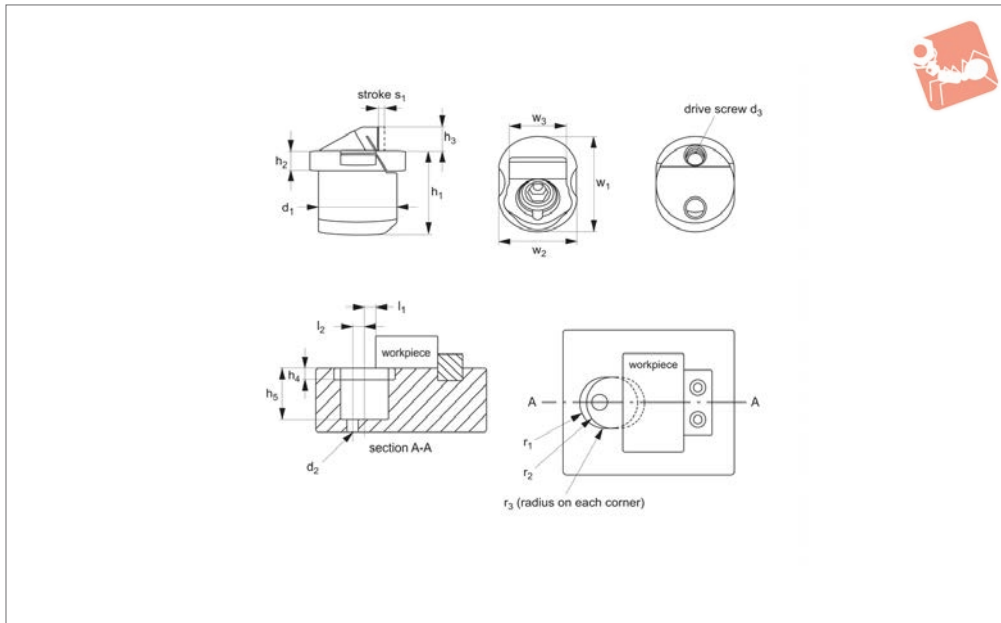
pieces for clamp clearance. Drill and tap mounting holes on the centre of this dimension.

$w_3$  is the amount of machinable stock on the jaws.

Channel and wedge supplied separately. If both parts are required please order them separately.

Order No.	Part	$h_1$	$h_2$	$l_1$	$w_1$	$w_2$	$w_3$	Screw	Torque to Nm max.	Holding force kN	Weight g
12145.W0550	Channel	12.7	6.3	190	28.6	10.67	4.6	M 2	3.4	2.2	91
12145.W0575	Channel	19.1	9.4	190	38.1	16.05	6.6	M 4	14.6	6.6	172
12145.W0600	Channel	25.4	12.7	190	50.8	20.83	9.9	M 4	14.1	8.9	299
12145.W0650	Channel	38.1	19.1	190	76.2	30.86	15.7	M 5	38.4	15.5	376
12145.W0850	Wedge	-	-	190	28.6	-	-	M 4	-	-	114
12145.W0875	Wedge	-	-	190	38.1	-	-	M 6	-	-	231
12145.W0900	Wedge	-	-	190	50.8	-	-	M 8	-	-	403
12145.W0950	Wedge	-	-	190	76.2	-	-	M12	-	-	874





## 12010

LOW PROFILE SIDE CLAMPING

### Material

Stainless steel (17-4 PH, AISI 630).  
Smooth faced jaws (34 HRC), serrated jaws (44 HRC).

### Technical Notes

Very low profile, compact design, strong clamping. With smooth or serrated faces. The clamp jaw slides on an angle for positive downhold force - the down force is approx. 25% of the holding force.

The support surface of the clamp is wire-cut to ensure accurate positioning.

### Tips

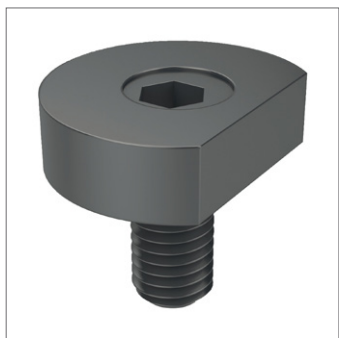
The support surface of the clamp can be installed flush with the fixture plate or raised to allow through drilling. Often used in conjunction with our Talongrips, part no. 12034.

### Important Notes

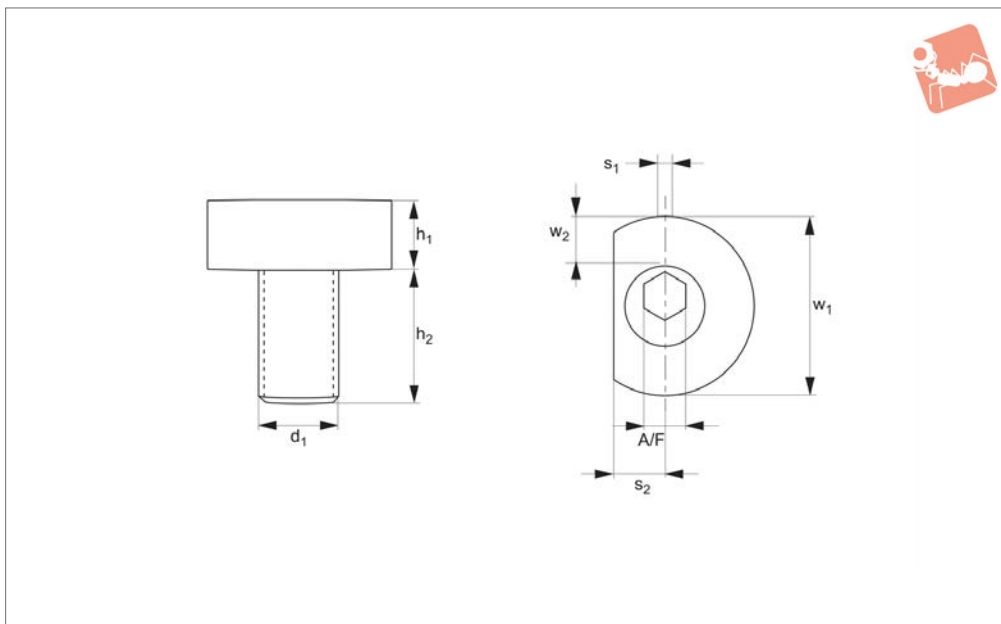
1. Bore installation hole  $d_1$ , with a centre-line at distance  $l_1$  (tol. M8) from edge of workpiece.
2. Drill and tap „ $d_2$ “ to mount the clamp in the pocket.
3. Machine counterbore „ $h_4$ “ if recessing the clamp into the fixture.
4. Provide a back stop to locate the part.

Order No.	Jaw type	$d_1$	$d_2$	Drive screw $d_3$	$h_1$	$h_2$	$h_3$ min.	$h_3$ opt.	$h_3$ max.	$h_4$	$h_5$ +0.1 -0.1	$l_1$ +0.1 -0.1	$l_2$	$r_1$ +0.1 -0.0	Weight g
12010.W0014	Smooth	20	M 5	M 6x12	19.0	4.5	3.3	5.0	6.8	4.5	20	4.9	5.0	25	54
12010.W0018	Serrated	20	M 5	M 6x12	19.0	4.5	3.3	5.0	6.8	4.5	20	4.9	5.0	25	54
12010.W0020	Smooth	25	M 6	M 8x16	24.0	5.0	4.5	6.5	8.3	5.0	25	5.6	6.0	30	100
12010.W0022	Serrated	25	M 6	M 8x16	24.0	5.0	4.5	6.5	8.3	5.0	25	5.6	6.0	30	100
12010.W0024	Smooth	30	M 8	M10x18	29.0	7.0	4.5	7.5	10.8	7.0	30	7.1	7.5	38	159
12010.W0028	Serrated	30	M 8	M10x18	29.0	7.0	4.5	7.5	10.8	7.0	30	7.1	7.5	38	159

Order No.	$r_2$ +0.1 -0.0	$R_3$	Stroke $s_1$	$w_1$	$w_2$	$w_3$	Torque to Nm max.	Key size A/F	Holding force kN
12010.W0014	20	6.0	2.0	24.9	19.9	13.5	10	5	8.8
12010.W0018	20	6.0	2.0	24.9	19.9	13.5	10	5	8.8
12010.W0020	25	6.5	2.2	29.9	24.9	15.0	24	6	11.5
12010.W0022	25	6.5	2.2	29.9	24.9	15.0	24	6	11.5
12010.W0024	30	8.0	3.8	37.9	29.9	20.0	42	8	14.2
12010.W0028	30	8.0	3.8	37.9	29.9	20.0	42	8	14.2



## 12020



### Material

Steel, mild.

### Technical Notes

Used to machine and hold irregular or round parts.

Dimension „w<sub>2</sub>“ is the amount of machinable stock. Dimension „s<sub>2</sub>“ is the distance to drill and tap hole from edge of workpiece to use flat face.

### Tips

Suitable for holding flat, round or irregular shaped workpieces, the mild steel washer

can easily be machined to match the profile of a component.

Supplied with cam screws, and one machining screw to hold clamp during machining of clamp face to fit profile of the component.

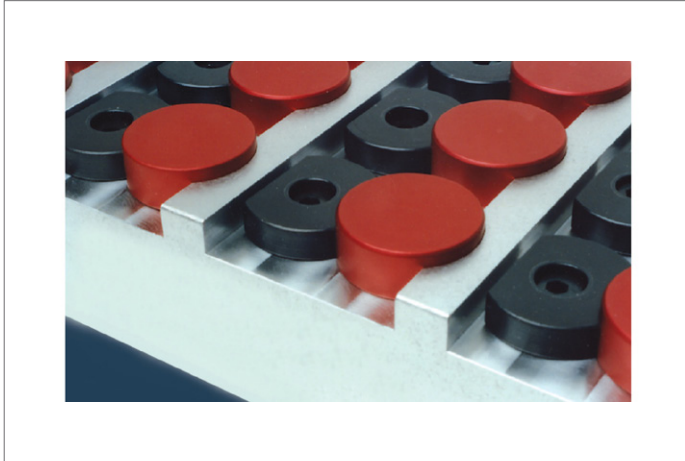
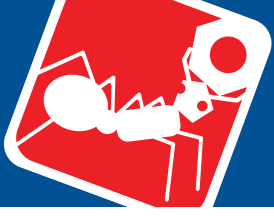
### Important Notes

1. Drill and tap hole in required location, refer to dimension „s<sub>2</sub>“ if using the clamp flat face.
2. Clear drill 1,5mm deep.
3. Using the special machining screw

supplied (identifiable by NOT having a cam action), insert and tighten the steel washer.

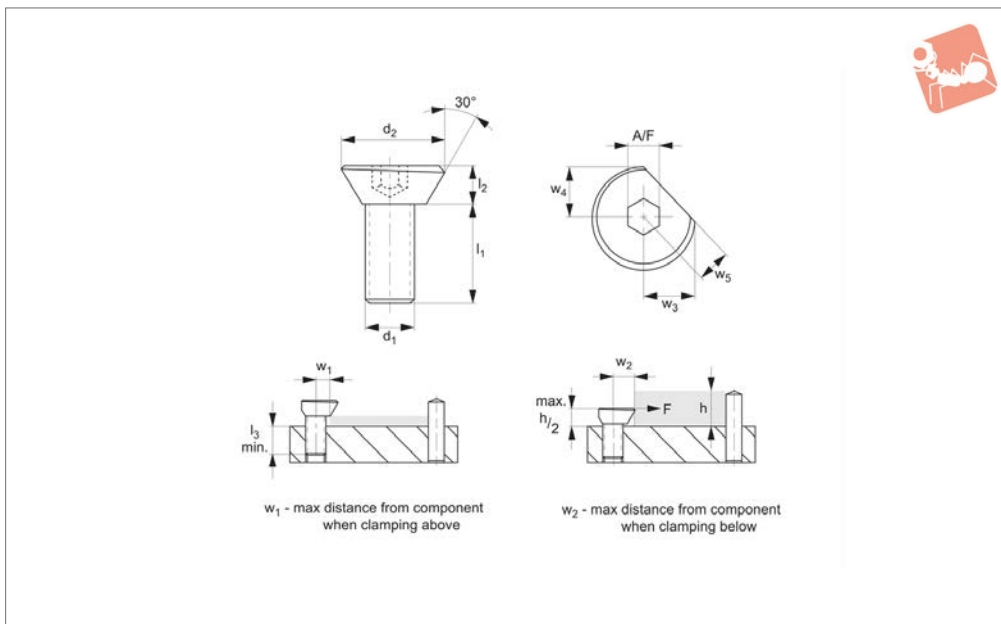
4. Machine the washer to conform with profile of the workpiece.
5. Exchange the machining screw for a cam screw, load the component and clamp with cam screw.
6. CAUTION: Never assume clamp is tight, always check the tightened clamp prior to machining.

Order No.	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	Clamping force kN max.	Stroke s <sub>1</sub>	Stroke s <sub>2</sub>	w <sub>1</sub>	w <sub>2</sub>	A/F	Torque to Nm max.	Qty/pack	Weight g
12020.W0006	M 6	6.4	11.9	3.4	1.0	7.8	24.9	6.4	4	8.5	4	100
12020.W0010	M10	8.9	18.0	8.9	1.5	10.2	31.2	7.0	7	28.0	4	236
12020.W0012	M12	11.4	22.9	17.8	2.0	12.7	37.6	7.6	8	88.0	4	435
12020.W0016	M16	14.0	28.6	26.7	2.5	15.0	43.9	8.9	12	135.0	4	748





## 12111



### Material

Steel, hardened and blue zinc coated.

### Technical Notes

Single piece clamping screw. Unique eccentric side profile of the clamp ensures

both downhold and side clamping action.

„ $w_1$ “ = max. distance from component when clamping above component surface.

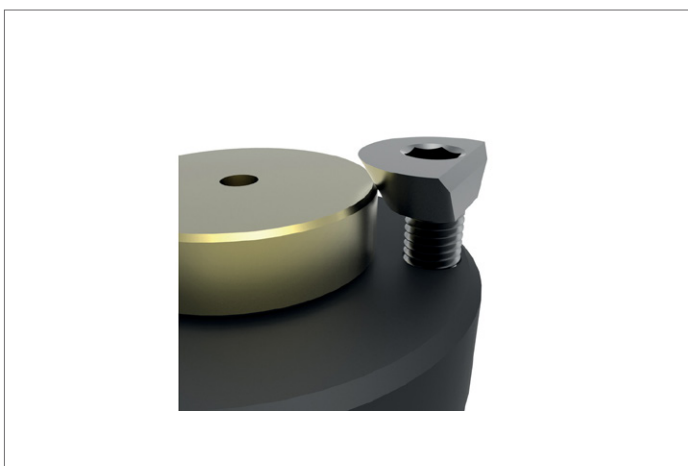
„ $w_2$ “ = max. distance from component when clamping below component surface.

„ $h$ “ - workpiece height.

„ $l_3$ “ - min. suggested thread engagement.

**Clamping stroke achieved via 120° turn of clamping screw.**

Order No.	$d_1$	$d_2$	$l_1$	$l_2$	$l_3$ min.	$w_1$	$w_2$ $\pm 0.2$	$w_3$	$w_4$	$w_5$	A/F	Torque to Nm max.	Holding force F kN	Weight g
12111.W0003	M 3	6.7	6	2	3	3.0	3.2	3.5	2.9	2.2	2.0	1.0	0.05	0.57
12111.W0004	M 4	8.7	8	3	4	3.5	4.2	4.6	4.0	3.0	2.5	1.5	0.09	1.43
12111.W0005	M 5	10.9	10	4	5	4.2	5.2	5.7	5.0	3.5	3.0	2.0	0.10	2.84
12111.W0006	M 6	13.5	12	5	6	5.4	6.4	7.1	6.1	4.5	4.0	4.5	0.30	4.95
12111.W0008	M 8	16.9	16	6	8	6.6	8.0	8.9	7.7	5.5	5.0	20.0	2.70	9.10
12111.W0010	M10	20.9	20	7	10	8.3	9.8	11.1	9.4	6.5	6.0	30.0	4.00	17.0
12111.W0012	M12	26.1	24	9	12	10.1	12.0	13.5	11.6	8.0	8.0	44.0	5.40	31.0

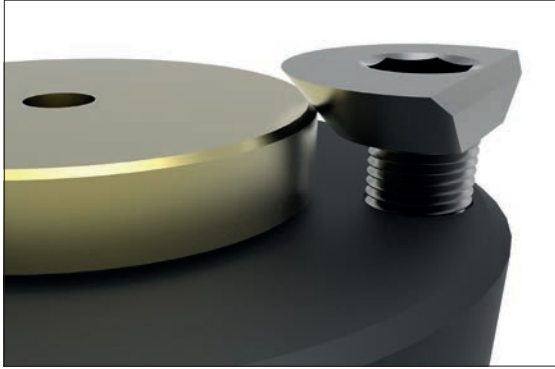






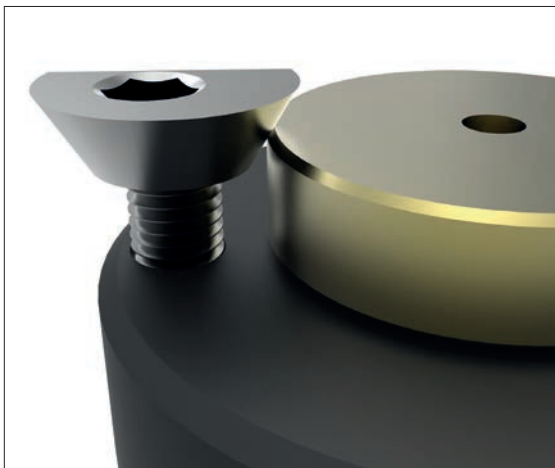
A unique one-piece eccentric pull down clamping screw with compact design is an ideal solution for providing both pull down and side clamping forces in applications where space is limited. Our eccentric Pull Down Clamping Screw, uniquely combines a tapered cone and an offset eccentric thread to provide clamping above or below a component's surface.

## Unique Solution



- Durable, stable, compact design.
- Unaffected by swarf ingress.
- Easily actuated.
- Effective pull down and side thrust clamping.
- High clamping force.
- Small installation footprint, ideal for multi-component clamping.
- Low height clamping solution.

## Advantages



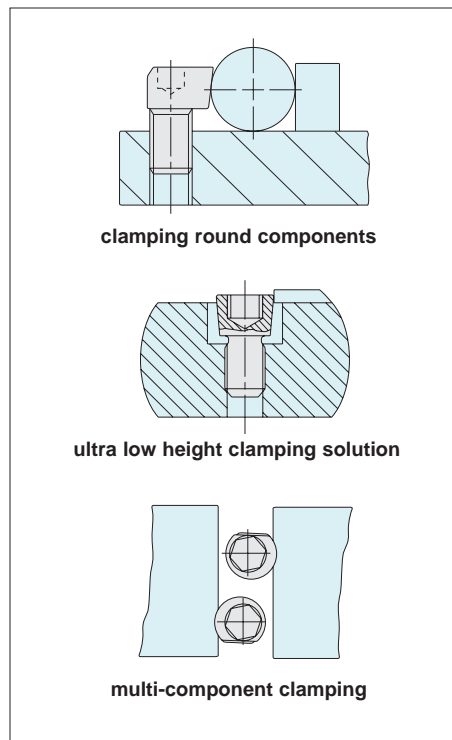
Clamping above component.



Clamping below component surface.

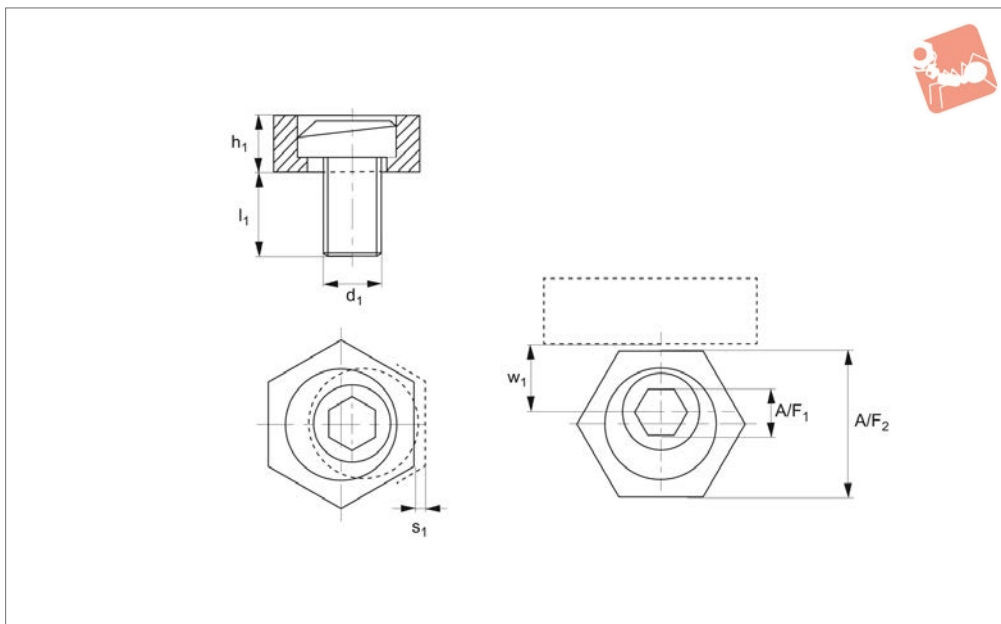
1. Drill and tap hole for required clamp size.
2. Install screw into the hole, and lower to the desired height of the component.
3. Ensure the flat side of the clamp is facing the workpiece - to allow for easy installation of component.
4. Once the clamping screw is installed, insert workpiece/ component.
5. Make a 120° turn of the screw to clamp the component.
6. A simple 120° reverse turn of the screw unclamps the component.

## Installation





## 12112



### Material

Hexagonal clamp: brass.  
Screw: steel, hardened, strength class 10,9.

### Technical Notes

Cam action provides fast, strong clamping.  
Small size allows more parts per load.

Workpiece stop is on the right hand side of the clamp.

### Tips

Clockwise rotation is recommended. The workpiece stop should be to the right of the clamp. Replacement cam screws are suitable for all clamp parts 12112, 12120,

12020 and 12150. For stainless steel version, see 12113.

### Important Notes

$w_1$  - is the location to drill and tap from the edge of workpiece.

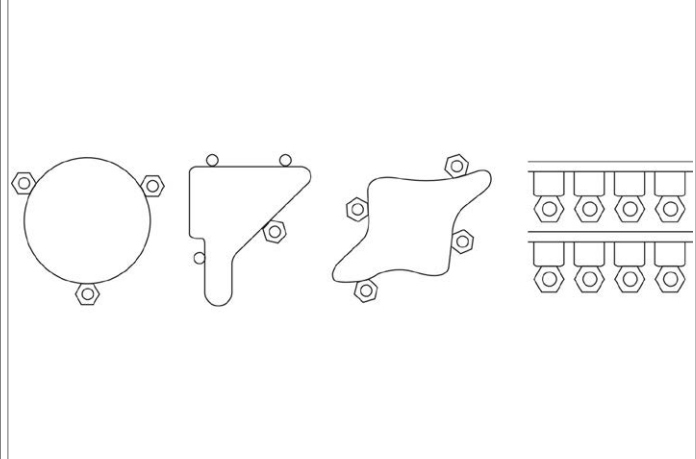
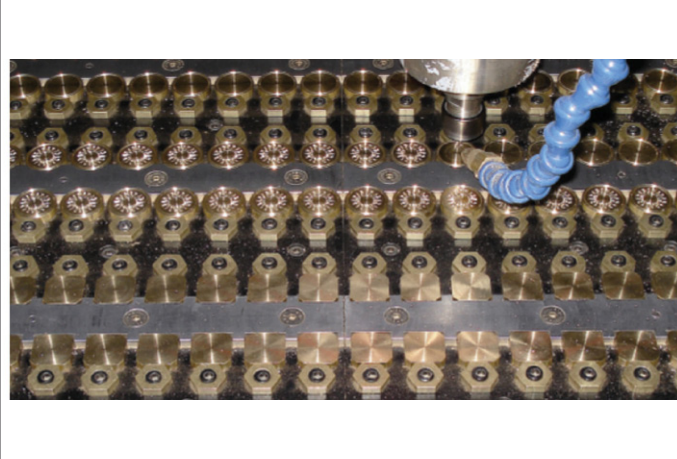
Order No.	Type	$d_1$	$h_1$	$l_1$	Clamping force kN	Stroke $s_1$	$w_1$	$A/F_1$	$A/F_2$	Torque to Nm max.	Qty/pack	Weight g
12112.W0004	Brass Clamp	M 4x0,7	2.80	9.6	0.9	0.76	3.8	3	7.93	2.5	10	3.0
12112.W0006	Brass Clamp	M 6x1	4.75	11.2	3.5	1.01	7.8	4	15.86	10.0	10	11.0
12112.W0008	Brass Clamp	M 8x1,25	4.55	15.0	3.5	1.01	10.2	5	20.60	18.0	12	18.0
12112.W0010	Brass Clamp	M10x1,5	6.35	19.0	8.8	1.27	10.2	7	20.60	26.0	10	27.0
12112.W0012	Brass Clamp	M12x1,75	9.52	22.8	17.7	2.03	12.7	8	25.38	75.0	8	53.0
12112.W0016	Brass Clamp	M16x2	12.70	28.5	26.6	2.54	15.0	12	30.13	120.0	4	103.0
12112.W0504	Replacement Screw	M 4x0,7	-	-	-	-	-	-	-	-	-	-
12112.W0506	Replacement Screw	M 6x1	-	-	-	-	-	-	-	-	-	-
12112.W0508	Replacement Screw	M 8x1,25	-	-	-	-	-	-	-	-	-	-
12112.W0510	Replacement Screw	M10x1,5	-	-	-	-	-	-	-	-	-	-
12112.W0512	Replacement Screw	M12x1.75	-	-	-	-	-	-	-	-	-	-
12112.W0516	Replacement Screw	M16x2	-	-	-	-	-	-	-	-	-	-



# Eccentric Fixture Clamps

low profile

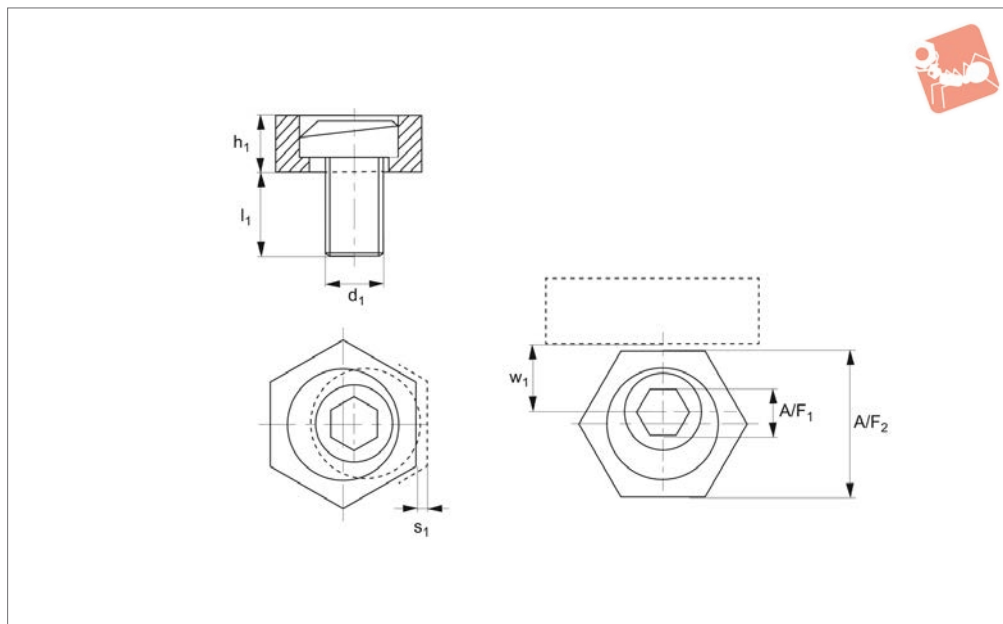
# Low Profile Side Clamping



LOW PROFILE SIDE CLAMPING



## 12113



### Material

Hexagonal clamp: stainless steel.  
Eccentric clamp screw and washer: stainless steel.

### Technical Notes

Clockwise rotation is recommended. Work-

piece stop is on the right hand side of the clamp. For non-stainless steel versions of 12112.

### Tips

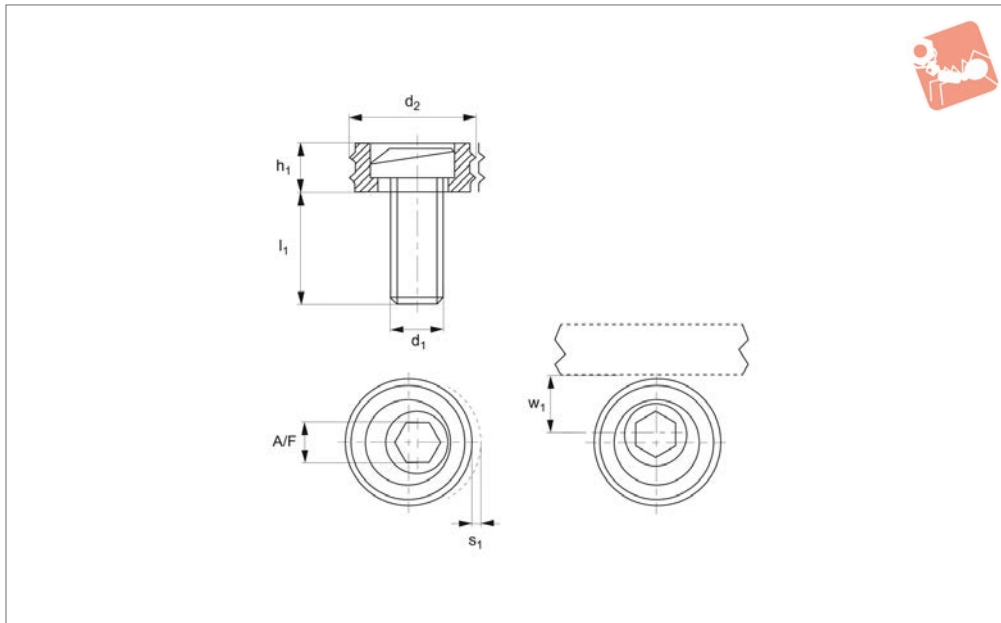
Compact size and fast, strong clamping allows maximum number of parts to be

clamped.

### Important Notes

$w_1$  - is the location to drill and tap from the edge of workpiece.

Order No.	Type	$d_1$	$h_1$	$l_1$	Stroke $s_1$	$w_1$	$A/F_1$	$A/F_2$	Clamp force kN	Torque to Nm max.	Qty/pack	Weight g
<b>12113.W0525</b>	Stainless Screw	M 4 x 0,7	-	-	-	-	-	-	-	-	4	-
<b>12113.W0205</b>	Stainless Clamp	M 4x0,7	2.80	9.6	0.76	3.80	3	7.93	0.9	2.0	4	3.0
<b>12113.W0206</b>	Stainless Clamp	M 6x1	4.75	11.2	1.01	7.80	4	15.86	3.5	8.5	4	11.0
<b>12113.W0208</b>	Stainless Clamp	M 8x1,25	6.35	15.0	1.01	10.20	5	20.60	3.5	11.3	4	18.0
<b>12113.W0526</b>	Stainless Screw	M 6x1	-	-	-	-	-	-	-	-	4	-
<b>12113.W0528</b>	Stainless Screw	M 8x1,25	-	-	-	-	-	-	-	-	4	-



**12120**

LOW PROFILE SIDE CLAMPING

**Material**

Ribbed face steel, hardened and plated.  
Screw steel hardened, strength class 10,9.

**Technical Notes**

For clamping workpieces with uneven

surfaces, this clamp provides serrations to help the clamp grip the workpiece.

**Tips**

Clockwise rotation is recommended. The workpiece should be to the right of the

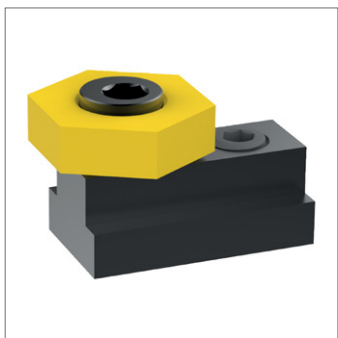
clamp. For replacement cam screws see parts 12112.

**Important Notes**

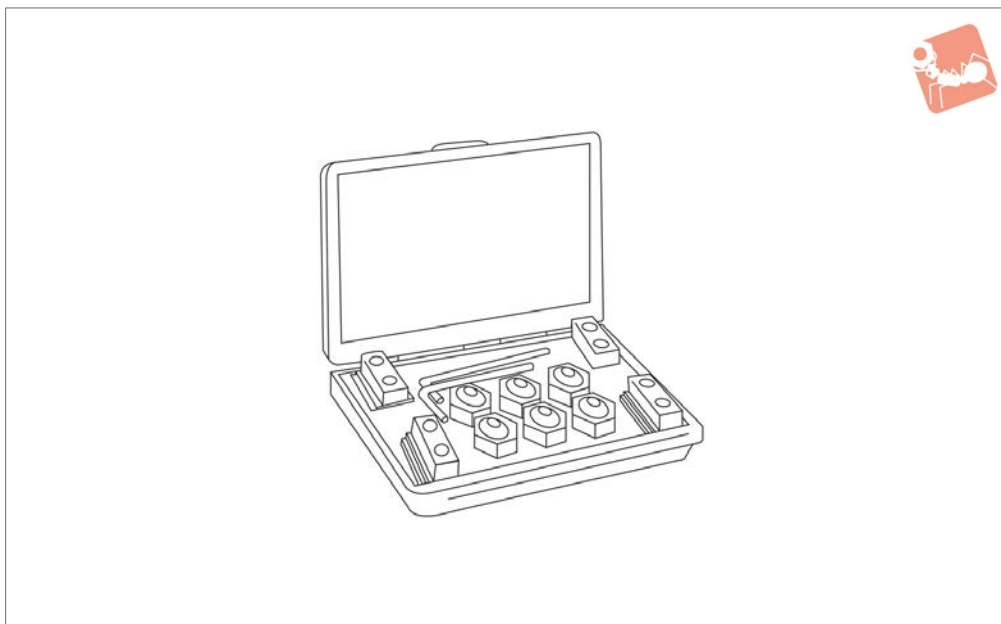
$w_1$  is distance to drill and tap from edge of workpiece.

Order No.	$d_1$	$d_2$	$h_1$	$l_1$	Clamping force kN	Stroke $s_1$	$w_1$	A/F	Torque to Nm max.	Qty/pack	Weight g
12120.W0020	M10x1,5	20.60	6.35	19.0	8.8	1.22	10.2	7	28	8	40
12120.W0025	M12x1,75	25.40	9.52	22.8	17.7	2.03	12.7	8	88	8	45
12120.W0030	M16x2	30.15	12.70	28.5	26.6	2.54	15.0	12	135	4	90





**12170**



**Material**

Clamping kits comprising no.12150 clamps.

Please see no. 12150 for dimensions.

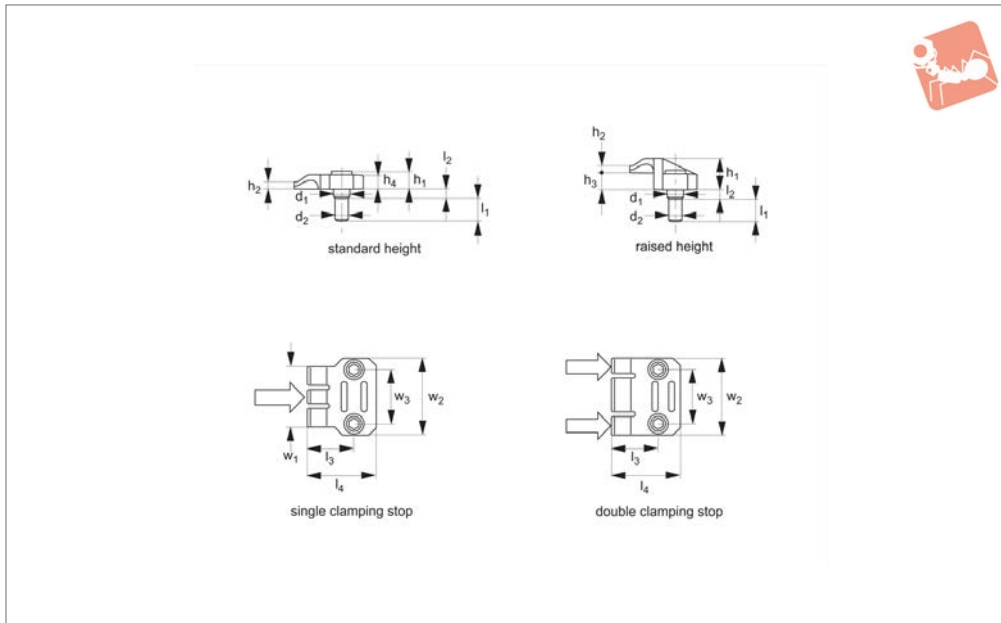
Order No.	Slot size	Contents
<a href="#">12170.W0008</a>	8	6 Clamps (12150.W0008), 4 T-nuts, 2 Hex keys
<a href="#">12170.W0010</a>	10	6 Clamps (12150.W0010), 4 T-nuts, 2 Hex keys
<a href="#">12170.W0012</a>	12	6 Clamps (12150.W0012), 4 T-nuts, 2 Hex keys
<a href="#">12170.W0014</a>	14	6 Clamps (12150.W0014), 4 T-nuts, 2 Hex keys
<a href="#">12170.W0016</a>	16	6 Clamps (12150.W0016), 4 T-nuts, 2 Hex keys
<a href="#">12170.W0018</a>	18	6 Clamps (12150.W0018), 4 T-nuts, 2 Hex keys
<a href="#">12170.W0020</a>	20	6 Clamps (12150.W0020), 4 T-nuts, 2 Hex keys
<a href="#">12170.W0022</a>	22	6 Clamps (12150.W0022), 4 T-nuts, 2 Hex keys



# Fixed Mini Finger Clamp Stops

single or double point

## Low Profile Side Clamping



**10900**

LOW PROFILE SIDE CLAMPING

### Material

Spring steel.

### Technical Notes

Fixed in place with special screws allowing

the precise location and re-positioning of parts.

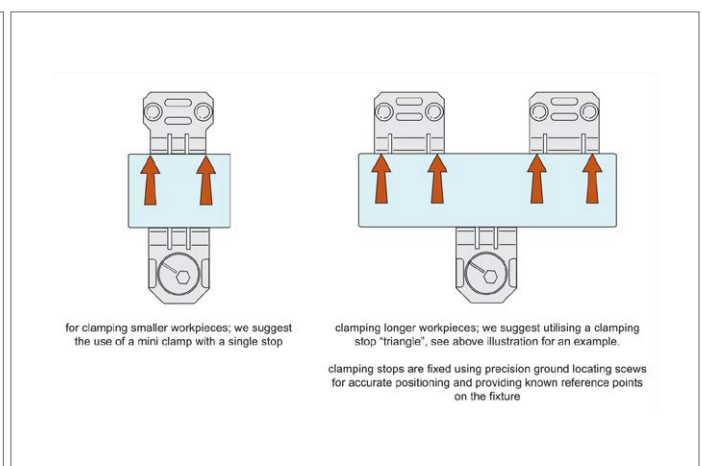
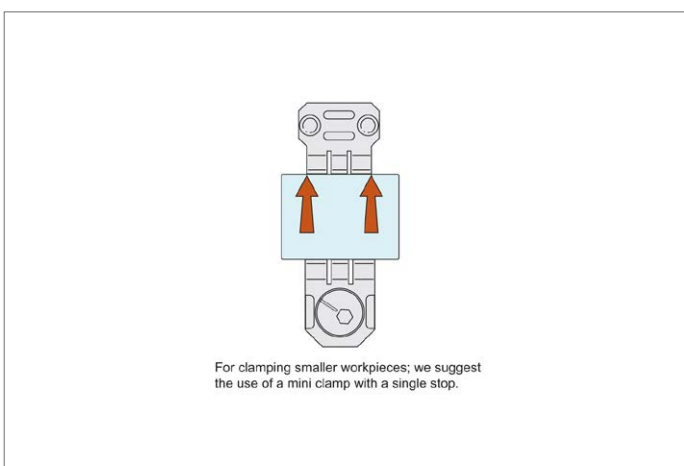
### Tips

Single or double version stops.

Use double clamping stop version on long, slender or flexible parts.

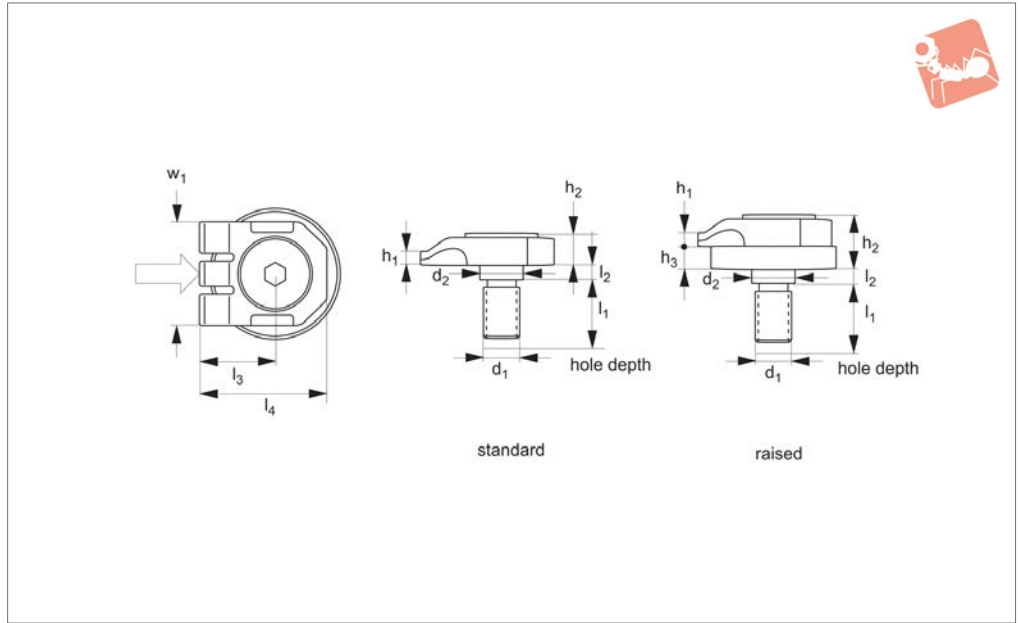
Use if possible with our mini finger clamp, part no. 10940.

Order No.	Type	Clamp height	$h_1$	$h_2$	$h_3$	$h_4$	$l_1$	$l_2$	$l_3$	$l_4$	$w_1$	$w_2$	$w_3$ $\pm 0.01$	$d_1$	$d_2$ tol. H7
<b>10900.W0105</b>	Single - standard	2.5	6.5	2.5	-	5	12	3.5	15	22	20	25	18	M 4	4.2
<b>10900.W0110</b>	Double - standard	2.5	6.5	2.5	-	5	12	3.5	15	22	-	25	18	M 4	4.2
<b>10900.W0115</b>	Single - raised	7.5	10	2.5	5	-	12	3.5	15	22	20	25	18	M 4	4.2
<b>10900.W0120</b>	Double - raised	7.5	10	2.5	5	-	12	3.5	15	22	-	25	18	M 4	4.2





## 10920



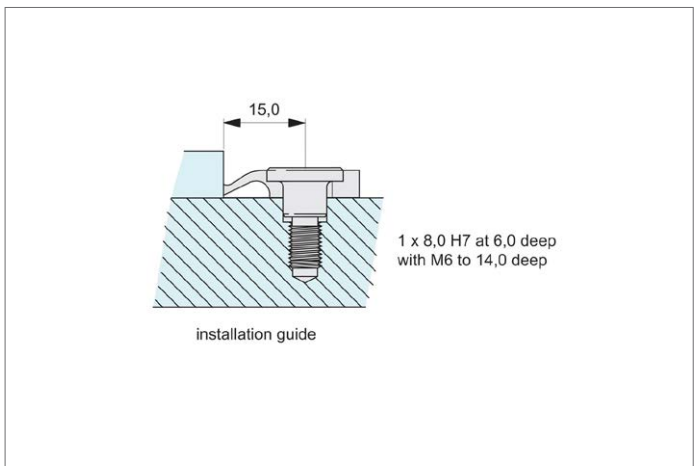
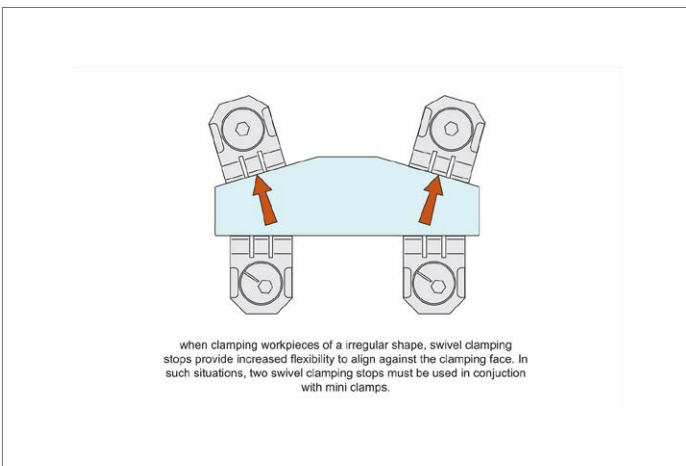
**Material**  
Spring steel.

allowing the precise location and re-positioning of parts.

**Technical Notes**  
Fixed in place with special locking screws

**Tips**  
Use with our mini clamp, part no. 10940.

Order No.	Type	Grip height	$h_1$	$h_2$	$h_3$	$l_1$	$l_2$	$l_3$	$l_4$	$w_1$	$d_1$	$d_2$ tol. H7
10920.W0125	Standard	2.5	2.5	5	-	14	6	15	25	20	M 6	8
10920.W0130	Raised	7.5	2.5	10	5	14	6	15	25	20	M 6	8



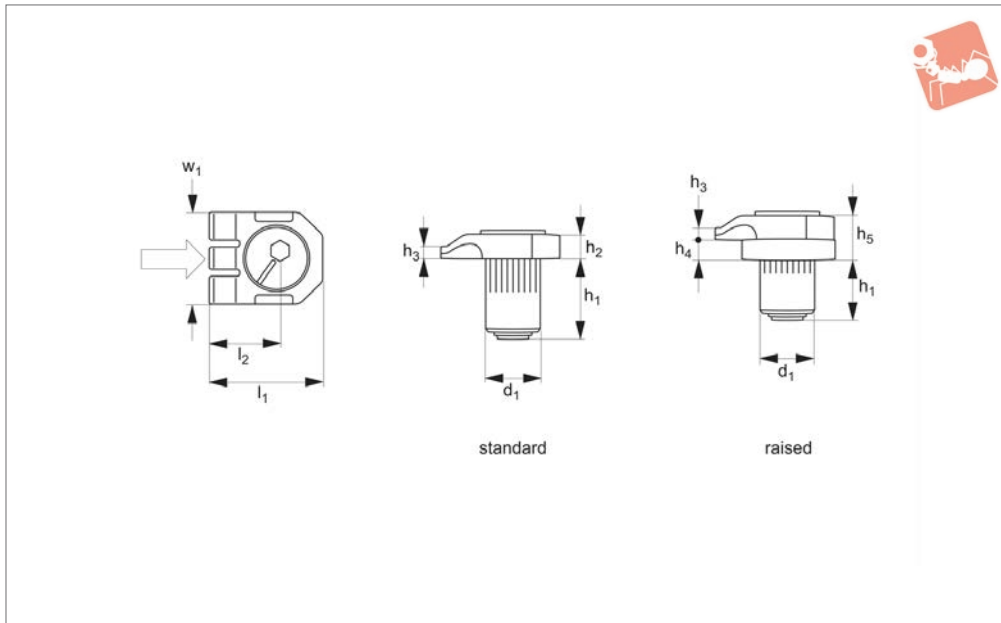




# Mini Finger Clamps

up to 4000 N

## Low Profile Side Clamping



**10940**

LOW PROFILE SIDE CLAMPING

### Material

Spring steel.

### Technical Notes

Simple, very heavy-duty, low profile clamping. A quarter turn of the clamping screw generates up to 4000 N clamping force.

They have a swivel facility to allow clamping in any direction.

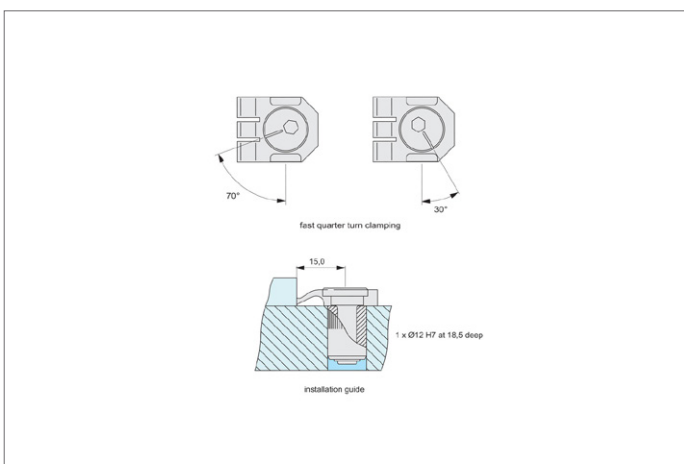
### Tips

The clamps have unique „fingers“ that push the workpiece down before clamping - even on castings with a negative draft.

### Important Notes

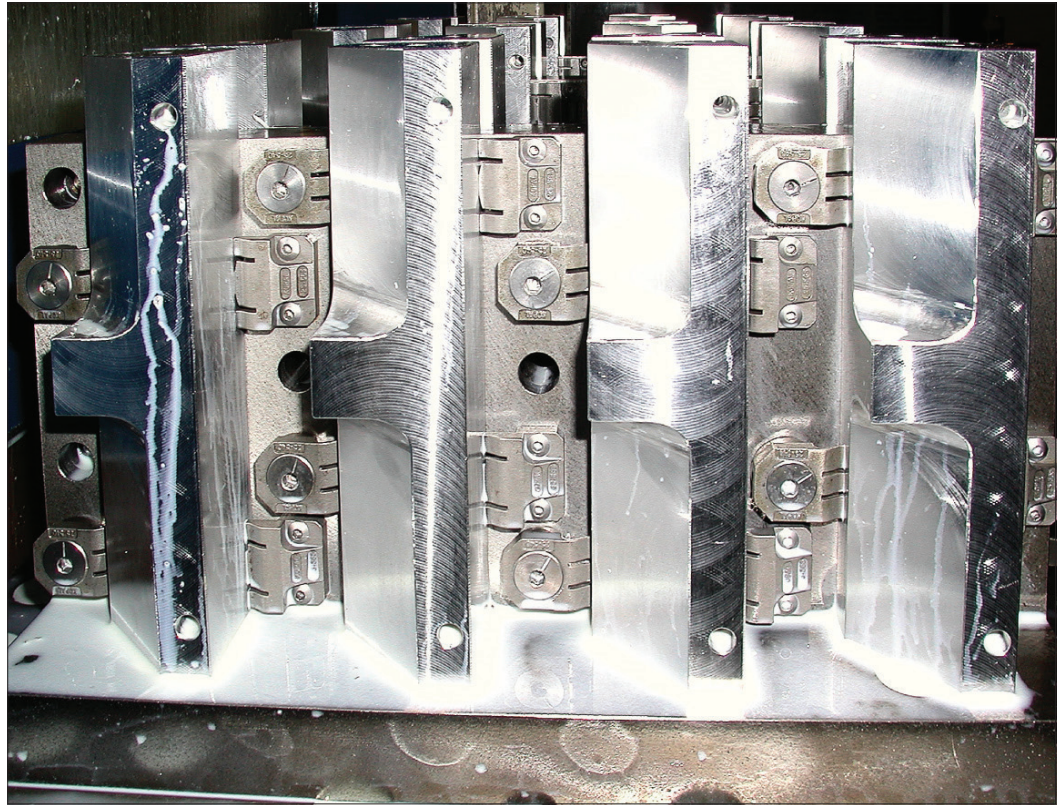
These clamps achieve a positive downforce on both faces of the workpiece when used in conjunction with fixed stop, part nos. 10900 or 10920.

Order No.	Type	Clamp height	Clamp stroke	$h_1$	$h_2$	$h_3$	$h_4$	$h_5$	$l_1$	$l_2$	$w_1$	$d_1$	Torque to Nm max.	Clamping force kN max.
<b>10940.W0210</b>	Standard	2.5	1.2	18	5	2.5	-	-	25	15	20	12	9	4
<b>10940.W0215</b>	Raised	7.5	1.2	18	-	2.5	5	10	25	15	20	12	9	4





## Application



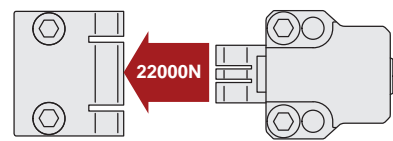
LOW PROFILE SIDE CLAMPING

## Unique Horizontal Clamping Set-Ups

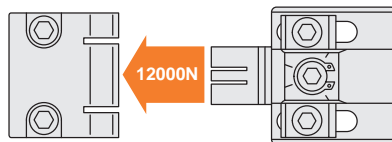
**Part No. 10900, 10920, 10940**  
T-slot table and special machining set-ups



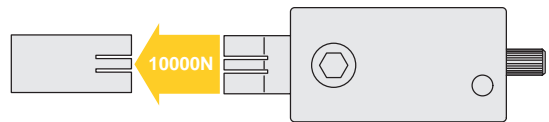
**Part No. 11040, 11041, 11042, 11043**  
Supports and special machining set-ups



**Part No. 11070, 11071**  
Supports and special machining set-ups



**Part No. 11080, 11081, 11083**  
T-slot table, supports and special machining set-ups



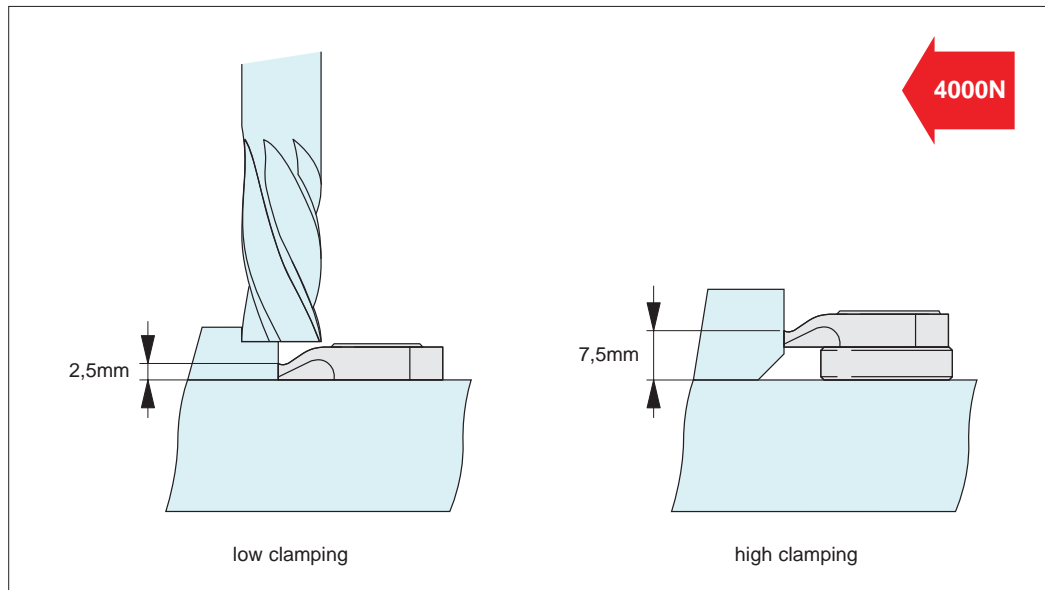


# Mini Finger Clamps

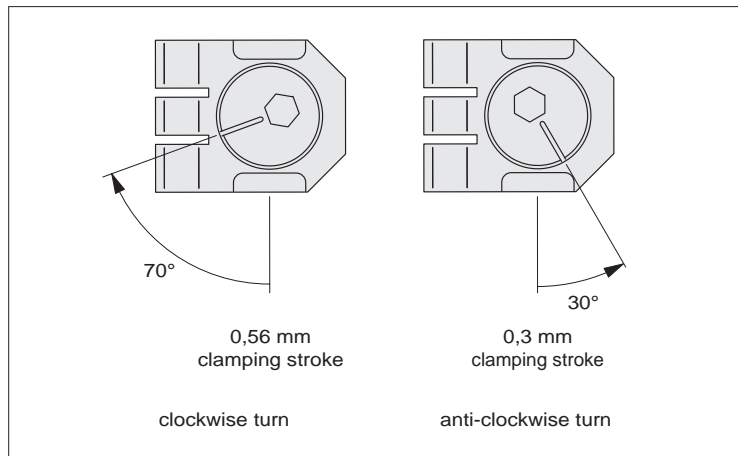
one of the most powerful clamps for its size

10900 - 10940  
Clamping & Height Setting

Mini finger clamps operate using our unique “three finger” clamping action – providing unmatched levels of pull down force and side clamping, for maximum component stability during machining.

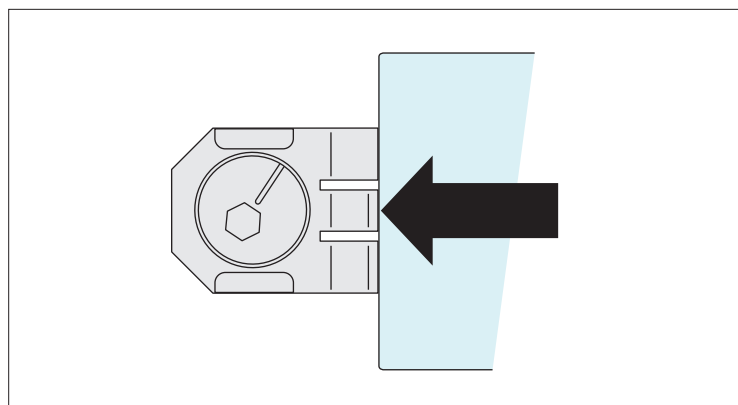


With a height of less than 6mm and a length of just 20mm mini finger clamps are ideal for multi-component clamping, while maximising access of the tooling. The clamp body is made from spring steel and the eccentric and screw from heat-treated steel. For quick, precise and high clamping forces up to 4000 Newtons.



The finger clamps pivot around an eccentric axis, with clamping via either a right (30°) or left (70°) actuation of the eccentric screw.

## Actuation



Mini finger clamps can position as well as clamp the workpiece – putting pressure against the stops and pulling the workpiece onto the reference surface in one motion.

Often just a single mini clamp can achieve workpiece positioning and clamping against its stops.

## Clamping

LOW PROFILE SIDE CLAMPING



## Unique Action - "three finger" Clamping

Pull down AND clamp with the highest of clamping forces – from 0,4 tons to 2,2 tons!

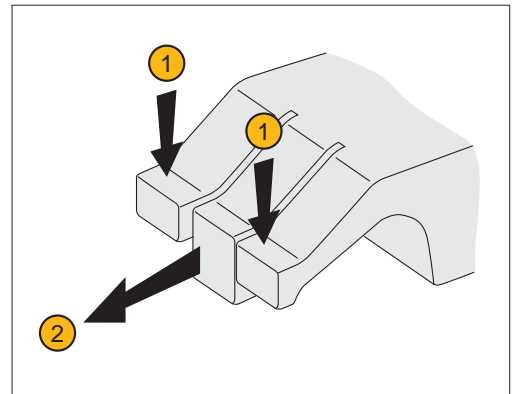
Used in our clamping series:

- 10900, 10940, 10880,
- 10920, 11040, 11041,
- 11042, 11043, 11070,
- 11071, 11080, 11081,
- 11082, 11083

Our horizontal clamps have a unique "three finger" arrangement ensuring components are both pulled down and clamped in the same motion. The face of the clamp is made of three parts or "fingers":

- Two outer flexible fingers (1); for pulling down the component to the work table.
- One solid central finger (2), to provide direct clamping action.

Available in two styles – smooth and serrated face. They can also cater for workpieces with an adverse angle on the clamping face – for example flame cut steel blanks.

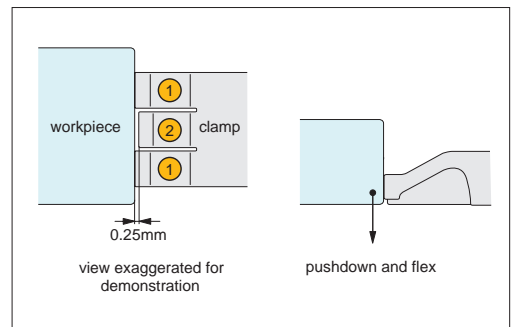


## Clamping Action

### Contact

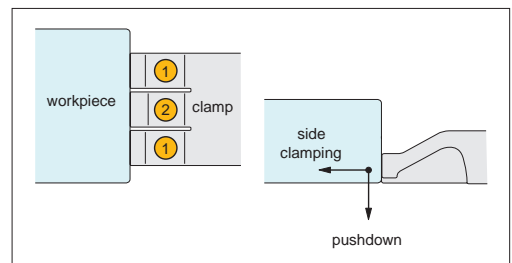
The clamps outer flexible fingers (1) are approx. 0,25mm longer than the solid central finger/clamping stop (2), this slight difference in length means it is the flexible fingers which first come into contact with the workpiece.

As initial contact is made with the work-piece the flexible fingers (1) apply downward pressure forcing the workpiece down against the work table, the flexible fingers are compressed until they are the same length as the solid central finger/clamping stop (2).



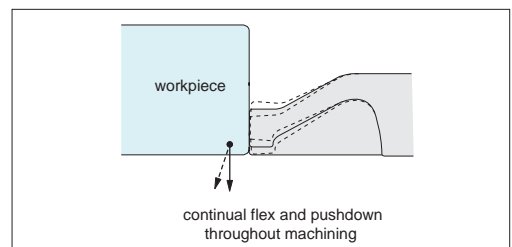
### Clamping

As the solid central finger/clamping stop (2) comes into contact with the work-piece it applies high side clamping pressure to achieve clamping forces up to 2,2 tons (dependent upon clamping model selected).



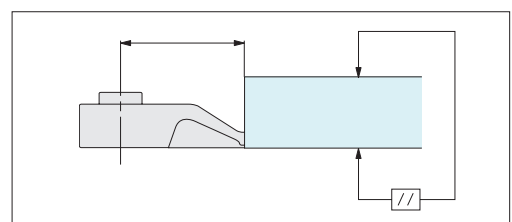
### Machining

During machining the uniquely designed flexible fingers (1) continue to flex and twist applying downward pressure to keep the workpiece flat to the work table throughout.



## Precision Positioning

The unique clamping action achieves precision positioning of workpieces – ensuring the workpiece remains parallel to the reference surface.





# Horizontal Clamping

up to 2.2 tons



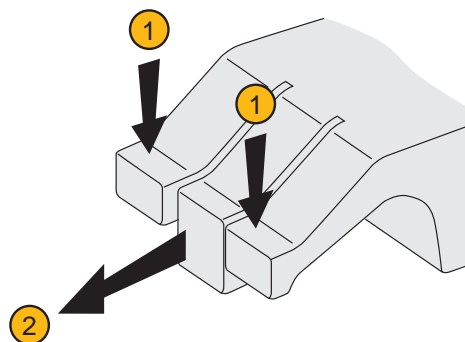
# Clamping & Height Setting

## Unique Action - "three finger" Clamping

Our horizontal clamps have a unique "three finger" arrangement ensuring components are both pulled down and clamped in the same motion. The face of the clamp is made of three parts or "fingers":

- Two outer flexible fingers ①; for pulling down the component to the work table.
- One solid central finger ②, to provide direct clamping action.

Available in two styles – smooth and serrated face. They can also cater for workpieces with an adverse angle on the clamping face – for example flame cut steel blanks.



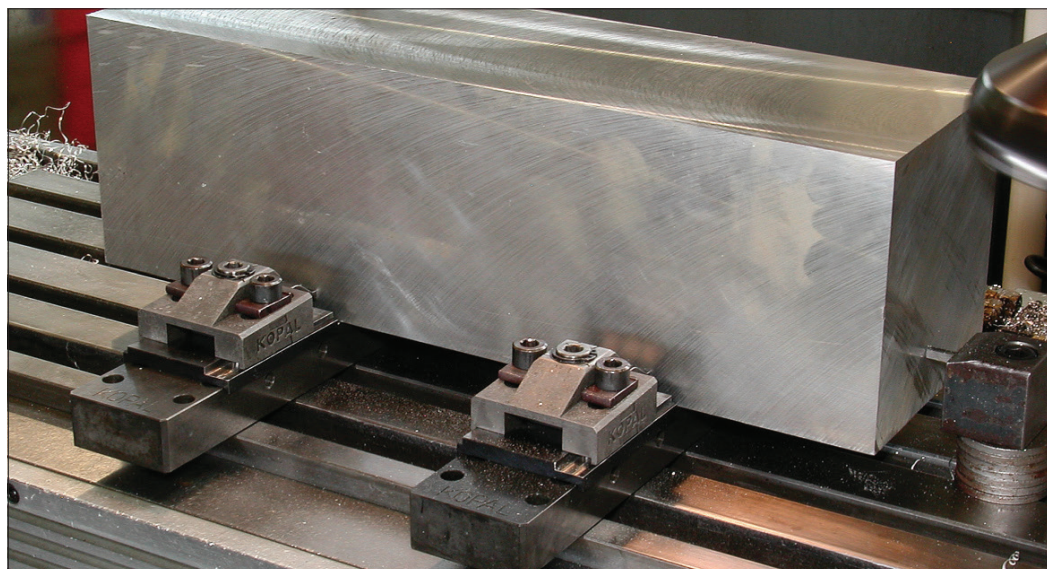
11040/41/42/43

22000N

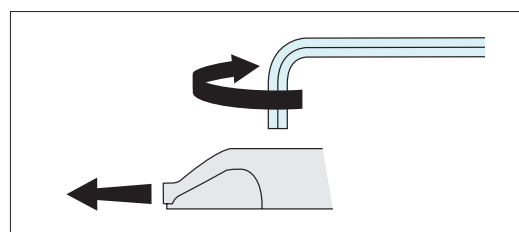
11070/71

12000N

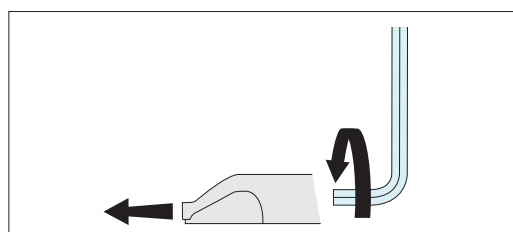
LOW PROFILE SIDE CLAMPING



## Options

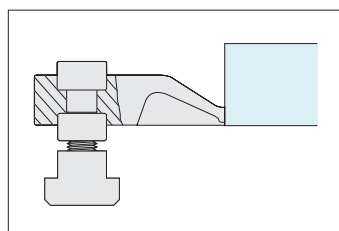


Quick 1/4 turn eccentric clamping – on models offering 4000 and 12000 Newtons clamping force.

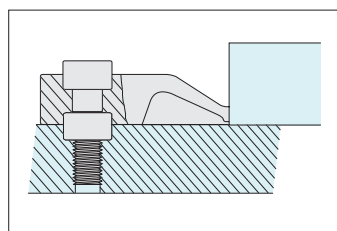


Rear screw clamping – on models offering 6500, 10000 and 22000 Newtons clamping force.

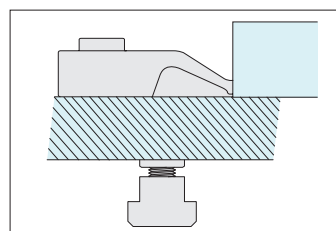
## Actuation



T-Slotted tables



Dedicated fixturing

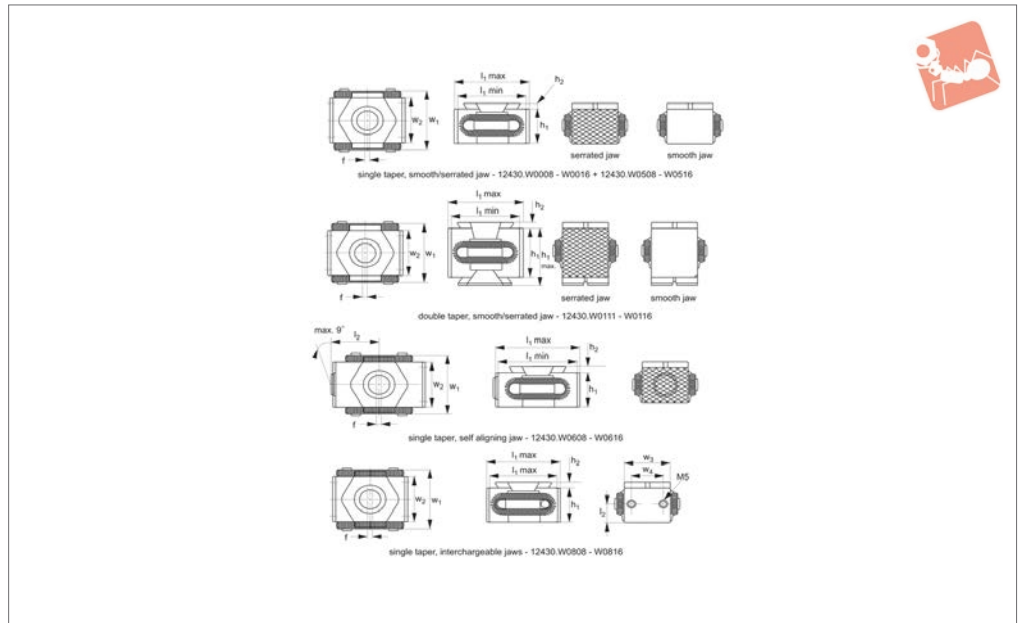


Modular fixturing

## Mounting



## 12430



### Material

Body: tool steel, hardened, bright.  
Clamping segments: tool steel, hardened, ground and blackened.  
Spring: steel, screw grade 12,9.

### Technical Notes

Ideal for horizontal or vertical clamping of multiple parts. Tighten the socket head cap screw to move clamping segments outwards to press the workpiece(s) against a fixed stop. Can be mounted in a threaded

hole or T-slot.

„f\*“ is the float around the clamping screw centre.

### Tips

**Double taper clamps provide higher clamping force.**

Taper clamps with interchangeable jaws are ideal where short runs of different parts are required. Economies can be achieved through changing only the jaw, rather than the whole clamp.

### Important Notes

Jaw Hardness-12430.W0008 to .W0116: 48-52 HRC.

12430.W0608 and .W0616: X=30-34, Y=48-52 HRC.

12430.W0508 to .W0516 and 12430.W808 to .W0816: 30-34 HRC.

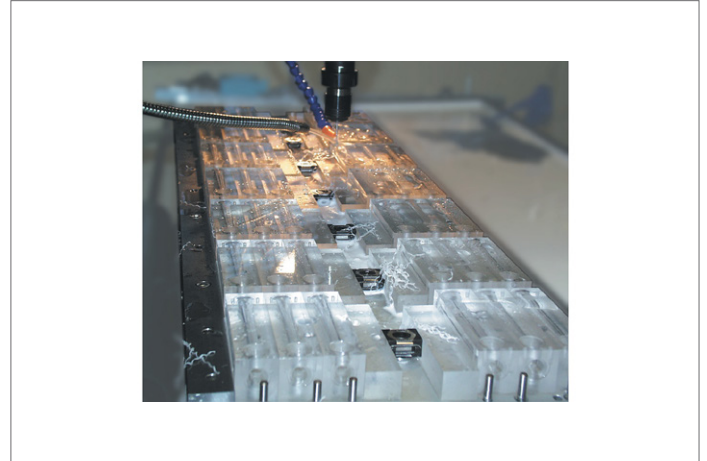
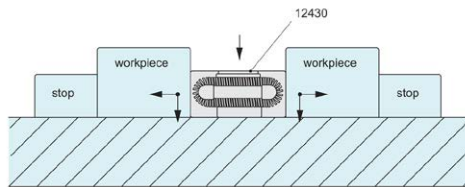
**Taper surfaces ground, for increased precision.**

Order No.	Taper	Jaw type	$l_1$ min.	$l_1$ max.	$l_2$	$d_1$	$h_1$	$h_1$ max.	$h_2$	$w_1$	$w_2$	$w_3$	$w_4$	f max.	Clamping force kN max.	Torque to Nm max.	Weight g
12430.W0008	Single	Smooth	27	31		M 8	15		2,5	29	21			1	20	44	55
12430.W0009	Single	Serrated	27	31		M 8	15		2,5	29	21			1	20	44	55
12430.W0011	Single	Smooth	42	49		M12	22		4,0	41	30			2	30	85	180
12430.W0012	Single	Serrated	42	49		M12	22		4,0	41	30			2	30	85	180
12430.W0015	Single	Smooth	57	64		M16	29		5,0	56	42			3	50	210	465
12430.W0016	Single	Serrated	57	65		M16	29		5,0	56	42			3	50	210	465
12430.W0111	Double	Smooth	41	48		M12	30	36	5,0	41	30			2	50	85	275
12430.W0112	Double	Serrated	42	49		M12	30	36	5,0	41	30			2	50	85	275
12430.W0115	Double	Smooth	58	66		M16	42	50	5,0	56	52			3	80	210	730
12430.W0116	Double	Serrated	58	66		M16	42	50	5,0	56	52			3	80	210	730
12430.W0508	Single	Machinable	33	37		M 8	15		2,5	29	21			1	20	44	70
12430.W0512	Single	Machinable	52	59		M12	22		4,0	41	30			2	30	85	235
12430.W0516	Single	Machinable	67	75		M16	29		5,0	56	42			3	60	210	550
12430.W0608	Single	Self-Aligning	33	37	19,5	M 8	15		2,5	29	21		21,5	1	20	44	64
12430.W0616	Single	Self-Aligning	52	59	31,0	M12	22		4,0	41	30		34,5	2	30	85	212
12430.W0808	Single	Interchange	33	37	7,5	M 8	15		2,5	29	21	21	12	1	20	44	60
12430.W0812	Single	Interchange	46	53	11	M12	22		4,0	41	30	28	18	2	30	85	200
12430.W0816	Single	Interchange	61	69	14,5	M16	29		5,0	56	42	40	26	3	60	210	480



# Taper Clamps with downhold action

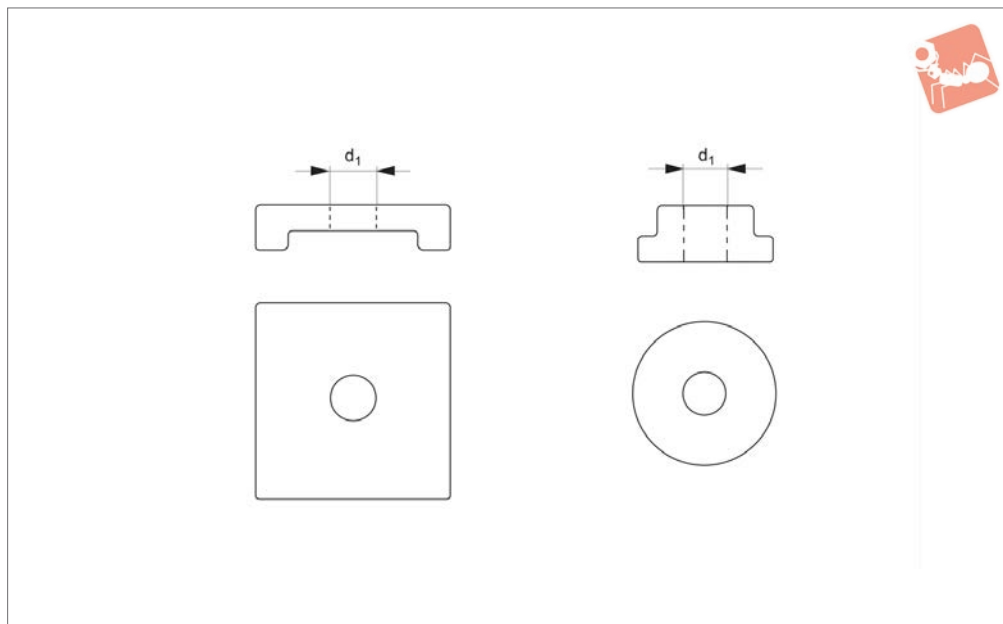
# Low Profile Side Clamping



LOW PROFILE SIDE CLAMPING



**12432**



**Material**

Fixing plate and bush: tool steel, hardened.

**Technical Notes**

With the adapter set a single taper clamp

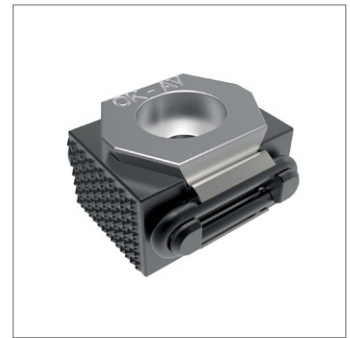
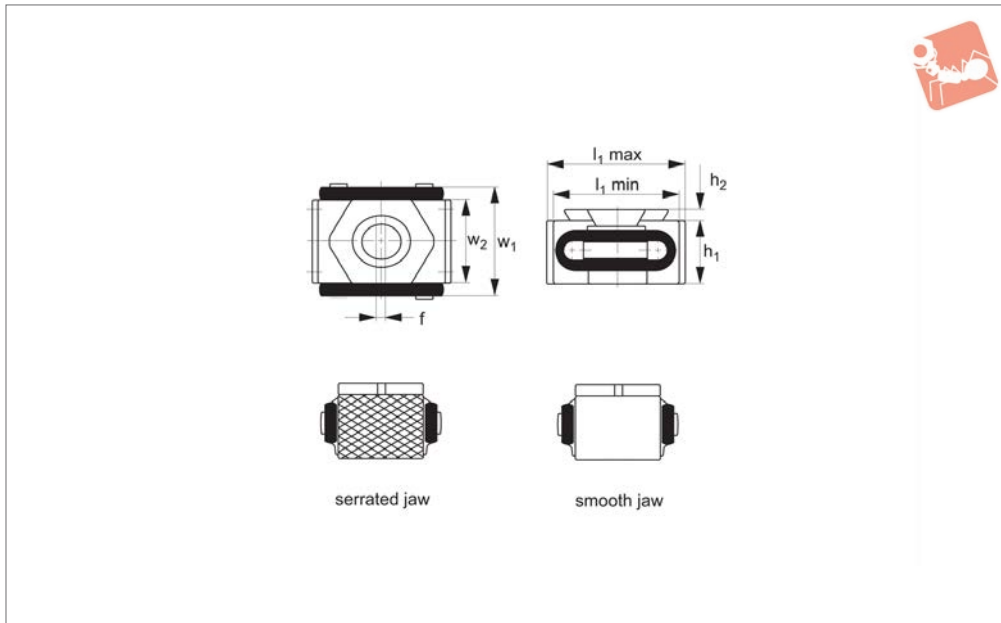
can be adapted to act as a double taper clamp, i.e. to pull down components as well as clamp sideways. Simply invert your existing single taper models, fit the adapter set and clamp as normal.

**Important Notes**

For use with „single taper“ clamps 12430, 12440 and 12450 only - not for use with „double taper“ clamps. Clamping screw not supplied.

Order No.	Description	To suit taper clamp of thread $d_1$
12432.W0008	Single Taper Adapter Set	M 8
12432.W0012	Single Taper Adapter Set	M12
12432.W0016	Single Taper Adapter Set	M16





### 12440

LOW PROFILE SIDE CLAMPING

#### Material

Body: tool steel, hardened, bright.  
Clamping segments: tool steel, hardened to 48-52 HRC, ground and blackened.  
Spring: rubber o-ring (12440.W0005) or steel (12440.W0008 and .W0009).

#### Technical Notes

Ideal for horizontal or vertical clamping of

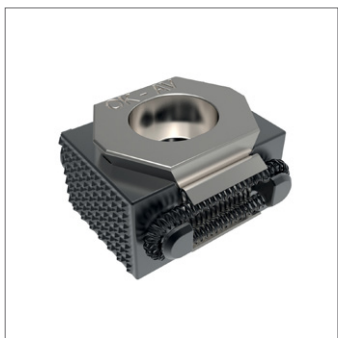
multiple parts. Tighten the socket head cap screw to move clamping segments outwards to press the workpiece(s) against a fixed stop. Can be mounted in a threaded hole or T-slot.  
„f\*“ is the float around the clamping screw centre. Only bottom of jaw is ground.

#### Tips

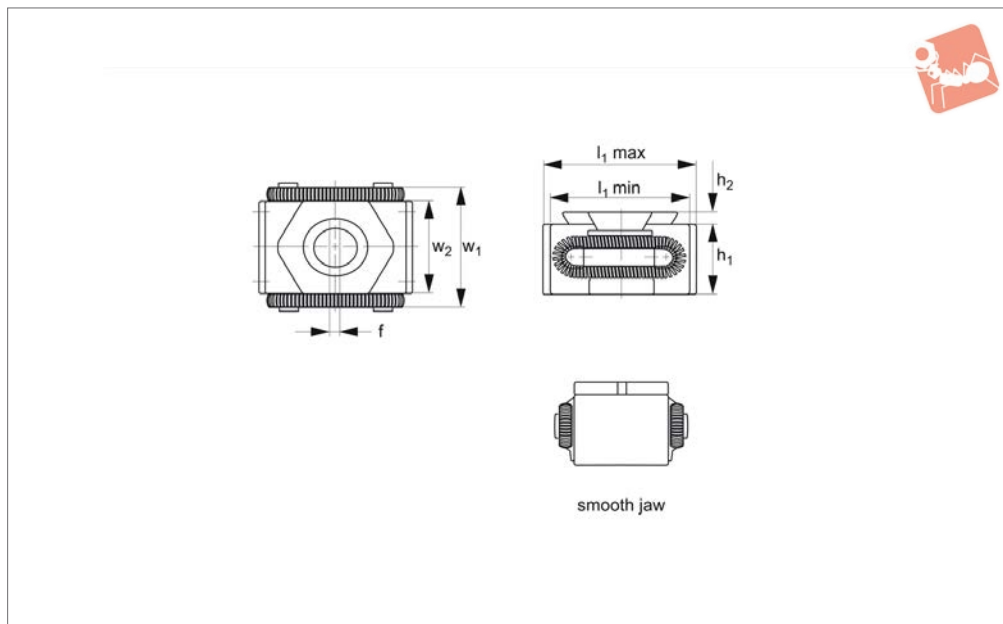
OK-VISE is a registered trademark of OK-VISE OY.

**For suitable T-nuts see no. 24000**

Order No.	Taper	Jaw type	$l_1$ min.	$l_1$ max.	$d_1$	$h_1$	$h_2$	$w_1$	$w_2$	$f$ max.	Clamping force kN max.	Torque to Nm max.	Weight g
<b>12440.W0005</b>	Single	Smooth	20	25	M 5	11	4.2	22	15	0.5	10	10	22
<b>12440.W0008</b>	Single	Serrated	28	32	M 8	15	4.0	29	21	1.0	15	25	55
<b>12440.W0009</b>	Single	Smooth	28	32	M 8	15	3.5	29	21	1.0	15	25	55



## 12450



### Material

Body: stainless steel.

Clamping segment and spring: stainless steel.

### Technical Notes

Ideal for wire EDM applications to clamp

multiple parts. Tighten the socket head cap screw to move clamping segments outwards to press the workpiece(s) against a fixed stop. Can be mounted in a threaded hole or T-slot.

„f\*“ is the float around the clamping screw

centre. Only the bottom of jaw is ground.

### Tips

OK-VISE is a registered trademark of OK-VISE OY.

Order No.	Taper	Jaw type	$l_1$ min.	$l_1$ max.	$d_1$	$h_1$	$h_2$	$w_1$	$w_2$	f max.	Clamping force kN max.	Torque to Nm max.	Weight g
12450.W0008	Single	Smooth	27	31	M 8	15	2.5	29	21	1.0	25	44	55



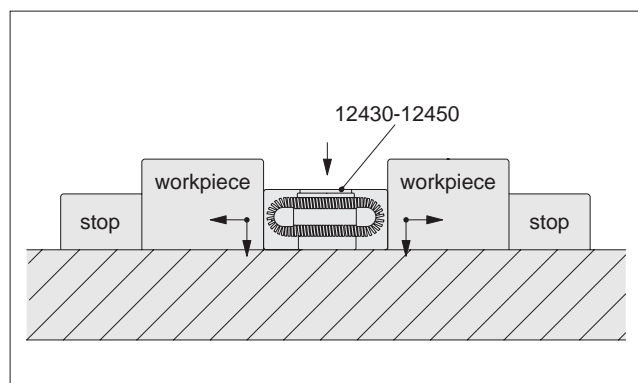
# Single Taper Clamps

small but powerful

12430 - 12450  
Clamping & Height Setting

Our low-profile taper clamps can be used on stand alone machines just as successfully as on large, flexible manufacturing systems. Working on the principle that, when tightened, they expand to simultaneously pull down and clamp the workpiece against stops, preventing any movement or play, they can produce clamping forces of up to 150 kN. With faces hardened to 48-52 HRC they are ideal for a range of clamping applications.

## Operating Principle



When tightening the clamping screw, the clamp's tapers expand simultaneously, pushing components against the fixture stops as well as exerting a pull-down force, pulling components to the fixture base (double taper models only).

With excellent clamping forces of up to 150 kN, these clamps generate high enough forces for workpieces to be safely clamped.



## Models Available



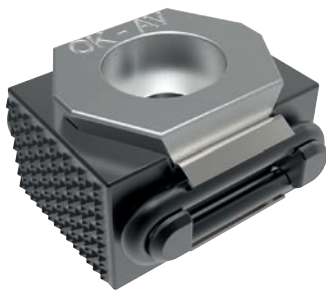
### Single Taper

Providing horizontal clamping forces, holding workpieces solidly in place.



### Single Taper Adapter Set

Single taper clamps can be adapted to perform as a double taper model. Simply invert your existing single taper models, fit our adapter set and clamp as normal.



### Economy Model

When ultra precision and the highest clamping forces are not necessary, our economy models offer a cost-effective choice. Ground only on the bottom jaw of the clamp for a cost saving.



### Stainless Steel

Designed with the demands of wire EDM clamping applications in mind.



### Double Taper

Horizontal clamping and pull-down action, ensuring full contact of workpiece with fixture base.

LOW PROFILE SIDE CLAMPING

ov-W12.111-A-T-eccentric-pull-down-clamping-screw-rnh - Updated -24-10-2022

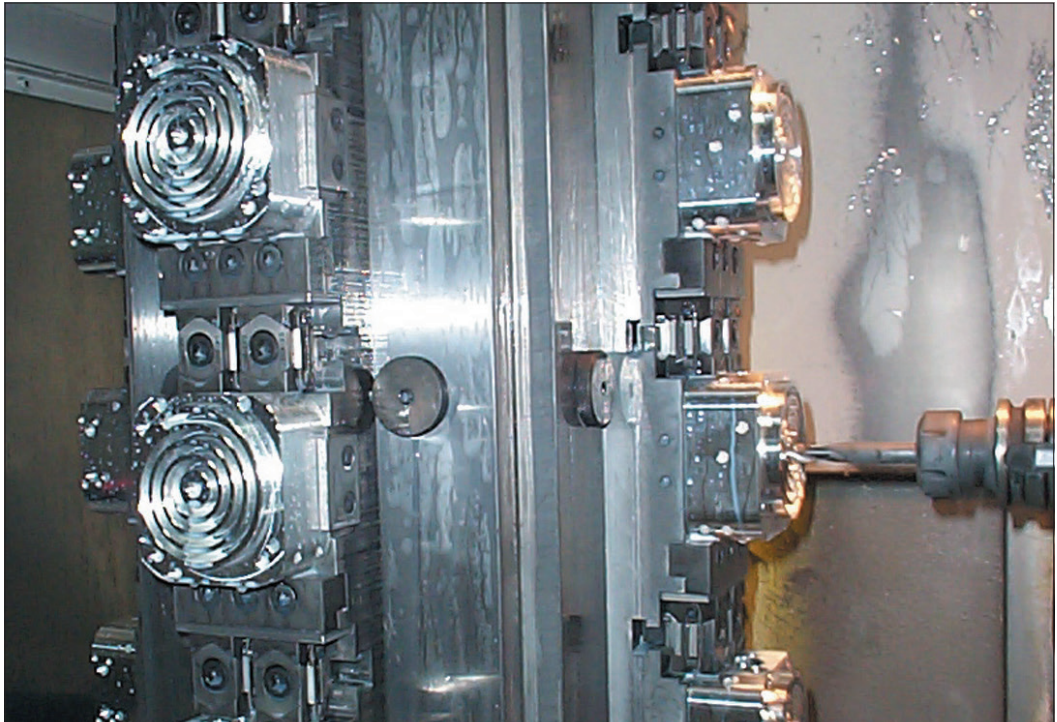


## Features

- Compact with small clamping footprint for multi-component clamping.
- Powerful clamping, up to 150 kN.
- Low profile with no obstruction of tooling path.
- Maximum clamping stability.
- Pulls down and clamps.

## Benefits

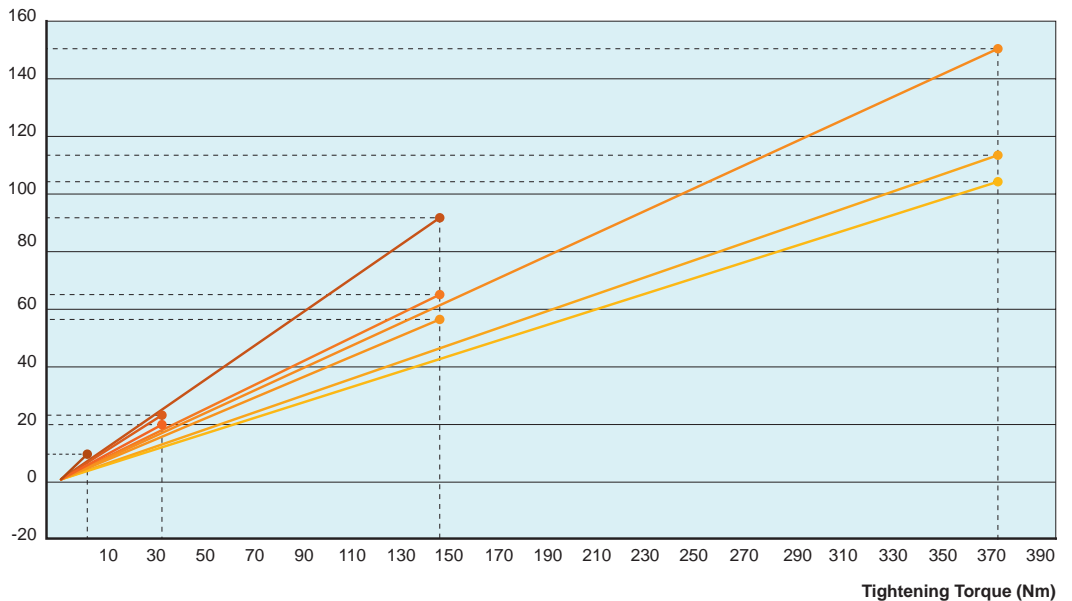
- Quick set-up and clamping.
- Maximise workpieces per fixture.
- Enables three-dimensional machining of components in a single operation, improving accuracy and quality.



## Horizontal Forces of Wixroyd Low Profile Clamps 12430 to 12450

Product no./graph key	Force up to (kN)
12440.W0005	10
12430.W0009	25
12430.W0508	20
12430.W0608	25
12440.W0008	25
12430.W0008	25
12440.W0009	25
12450.W0008	25
12430.W0808	25
12430.W0012	65
12430.W0512	55
12430.W0616	65
12430.W0011	65
12430.W0812	65
12430.W0112	90
12430.W0111	90
12430.W0016	110
12430.W0516	105
12430.W0015	110
12430.W0816	110
12430.W0116	150
12430.W0115	150

Clamping Force (kN)



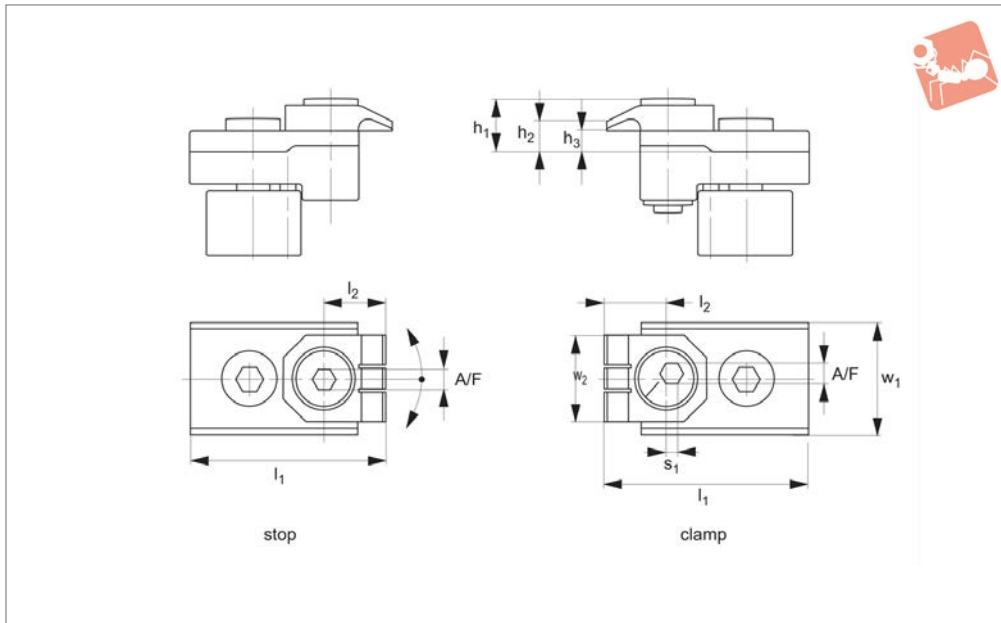
ov-W12111-A-T-eccentric-pull-down-clamping-screw-1nh - Updated - 24-10-2022



# T-Slot Finger Clamp Set

low profile

## Low Profile Side Clamping



**10960**

LOW PROFILE SIDE CLAMPING

### Material

Clamp: spring steel.  
Block: steel.

### Technical Notes

The clamping point is 5mm above the machine table. Risers can be used to allow

for through machining and drilling.

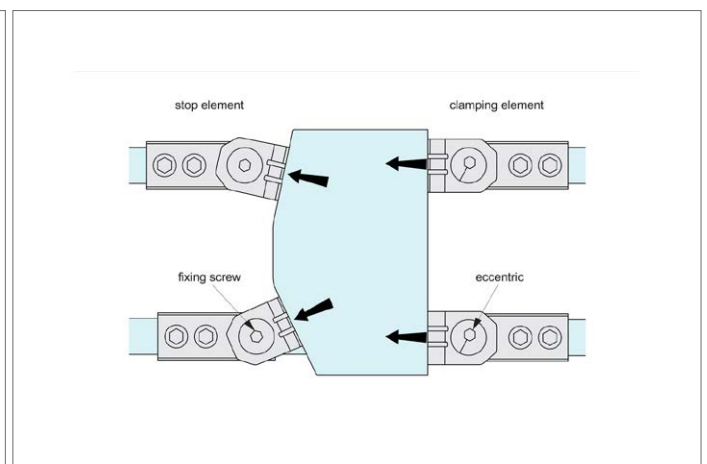
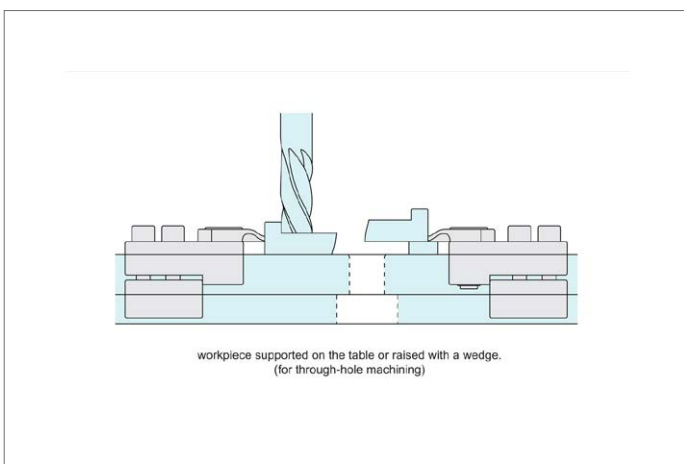
**Supplied as a set: one-piece clamp, one-piece stop.**

### Tips

These low-profile clamps and stops have a holding force of 4000 N. The fingers push

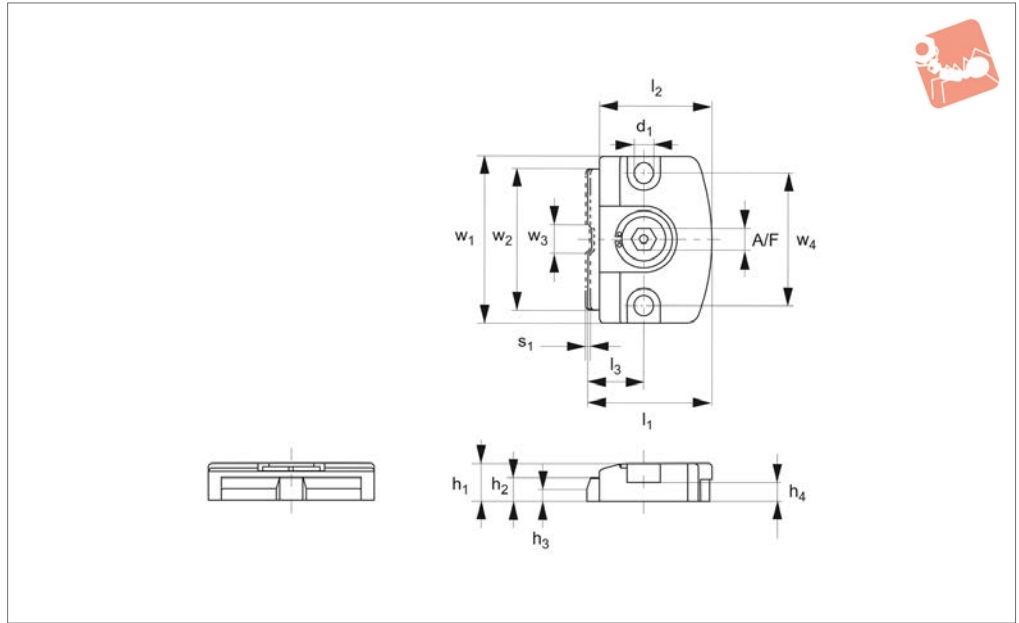
the workpiece down before clamping. The small height of the clamps eliminate any risk of collision between clamp and tooling- ideal for machining small and low profile components.

Order No.	Type	Clamping stroke $s_1$	For T-slot	Clamping height min.	$l_1$	$l_2$	$h_1$	$h_2$	$h_3$	$w_1$	$w_2$	Torque to Nm max.	A/F	Clamping force kN max.	Weight g
<b>10960.W0260</b>	Clamp + Stop	1,2	10	5	46	15	10,5	7,5	5	18	20	9	4	4	140
<b>10960.W0262</b>	Clamp + Stop	1,2	12	5	48	15	10,5	7,5	5	18	20	9	4	4	150
<b>10960.W0264</b>	Clamp + Stop	1,2	14	5	52	15	10,5	7,5	5	22	20	9	4	4	162
<b>10960.W0266</b>	Clamp + Stop	1,2	16	5	48	15	10,5	7,5	5	25	20	9	4	4	178
<b>10960.W0268</b>	Clamp + Stop	1,2	18	5	48	15	10,5	7,5	5	25	20	9	4	4	190





## 10980.1



### Material

Body: steel (C45), black oxide finish.  
 Jaw/cam: steel (42CrMo), tempered, black oxide finish.

### Technical Notes

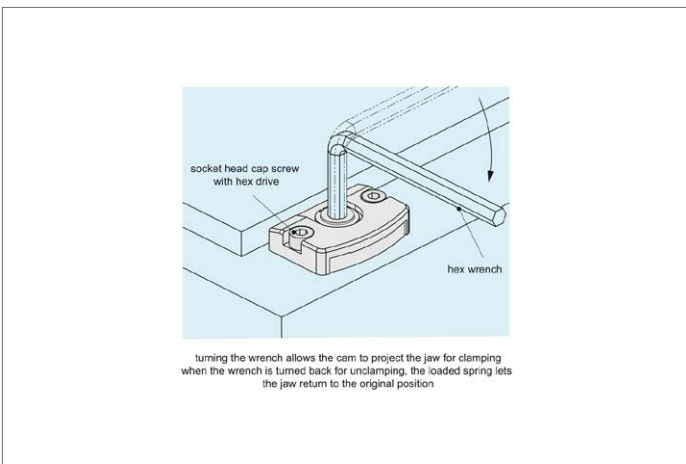
Designed to prevent part lift.

Turning the wrench allows the cam to move the jaw forward for clamping. When the wrench is turned back for unclamping, the loaded spring allows the jaw to return to the original position.

### Tips

Ensure that mounting surfaces are finished to 6.3a or better, without any scratches or dents.

Order No.	Clamping stroke $s_1$	$d_1$	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$h_3$	$h_4$	$w_1$	$w_2$	$w_3$	$w_4$	Torque to Nm max.	A/F	Clamping force kN max.	Weight g
10980.W0038	1	5.2	33.5	30.5	15	10	6	3	5	45	38	8	36	10	6	4	85
10980.W0060	2	8.2	50.0	46.0	22	15	9	5	7	70	60	12	55	27	10	6	290

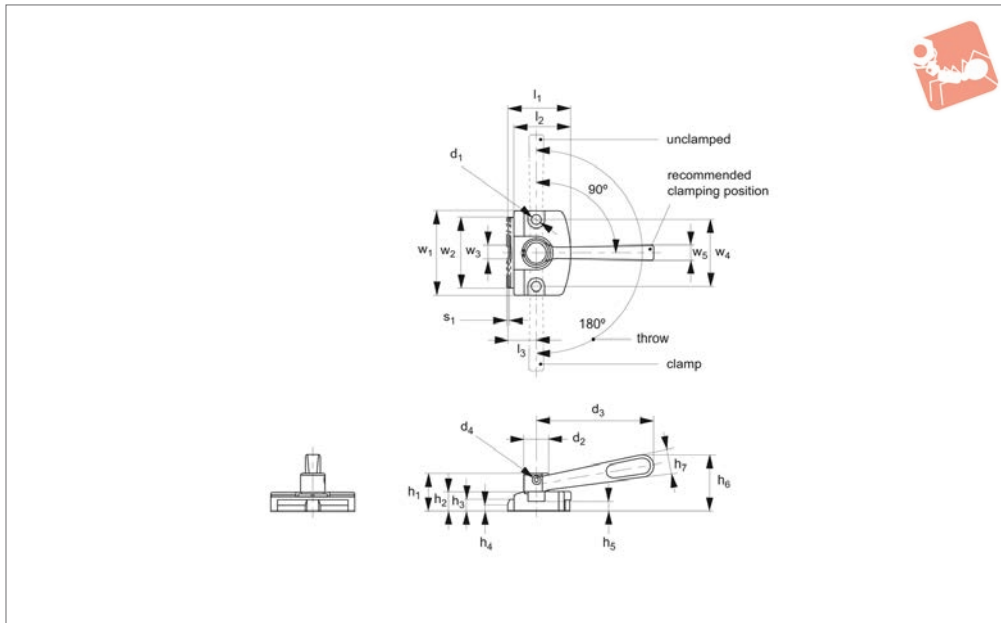




# Low Profile Cam Edge Clamps

lever actuation

# Low Profile Side Clamping



**10980.2**

LOW PROFILE SIDE CLAMPING

### Material

Body: steel (C45), black oxide finish.  
 Jaw/cam: steel (42CrMo), tempered, black oxide finish.  
 Handle: steel (C45), tempered, black oxide finish.

Turning the wrench allows the cam to move the jaw forward for clamping. When the wrench is turned back for unclamping, the loaded spring allows the jaw to return to the original position.

### Tips

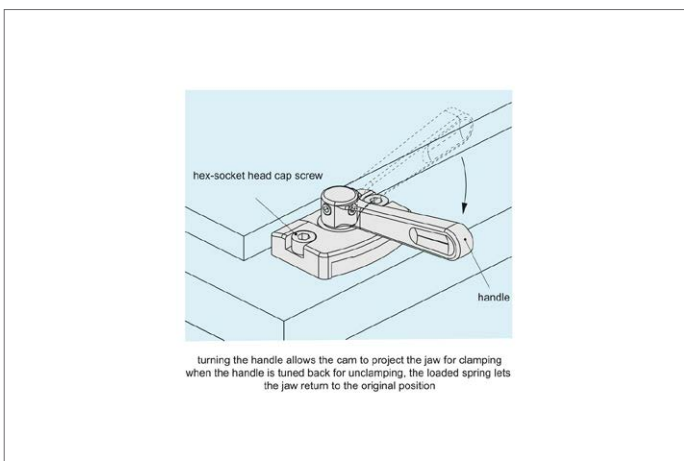
Ensure that mounting surfaces are finished to 6.3a or better, without any scratches or

### Technical Notes

Designed to prevent part lift.

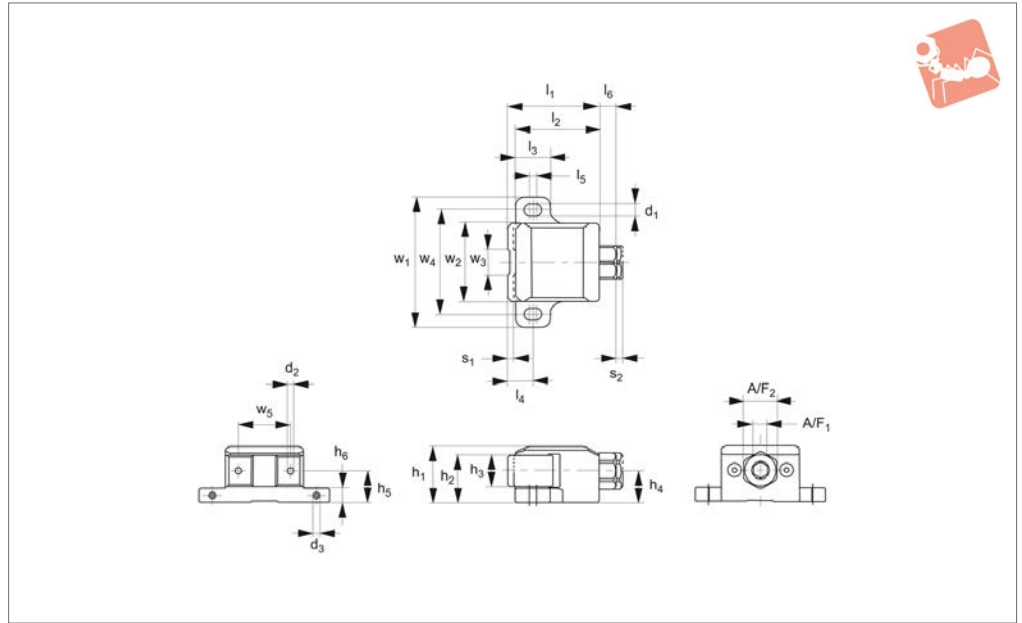
Order No.	Clamping stroke $s_1$	$d_1$	$d_2$	$d_3$	$d_4$	$l_1$	$l_2$	$l_3$	Weight g
10980.W0138	1	5.2	13	63	M 4x0,7-4L	33.5	30.5	15	130
10980.W0160	2	8.2	19	100	M 5x0,8-5L	50.0	46.0	22	440

Order No.	$h_1$	$h_2$	$h_3$	$h_4$	$h_5$	$h_6$	$h_7$	$w_1$	$w_2$	$w_3$	$w_4$	$w_5$	Torque to Nm max.	Clamping force kN max.
10980.W0138	20	10	6	3	5	30	12	45	38	8	36	8	17	4
10980.W0160	30	15	9	5	7	46	18	70	60	12	55	12	28	6





## 10982.1



### Material

Body: steel (C45), black oxide finish.  
 Jaw: steel (42CrMo), tempered. Black oxide finish. Precision ground.  
 Shaft: steel (42CrMo), black oxide finish.

long clamping stroke and firm clamping.  
 The precision-ground jaw is perfect for clamping the workpiece on its finished surface.  
 The jaw provides downward force to prevent part lift.

### Tips

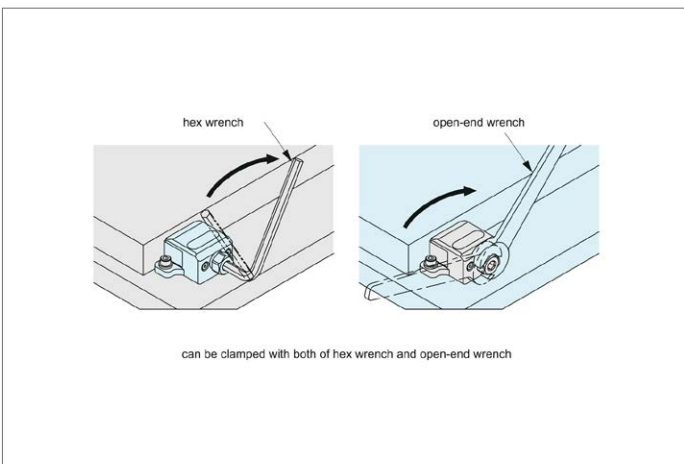
Can be clamped with both hex wrench and spanner.

### Technical Notes

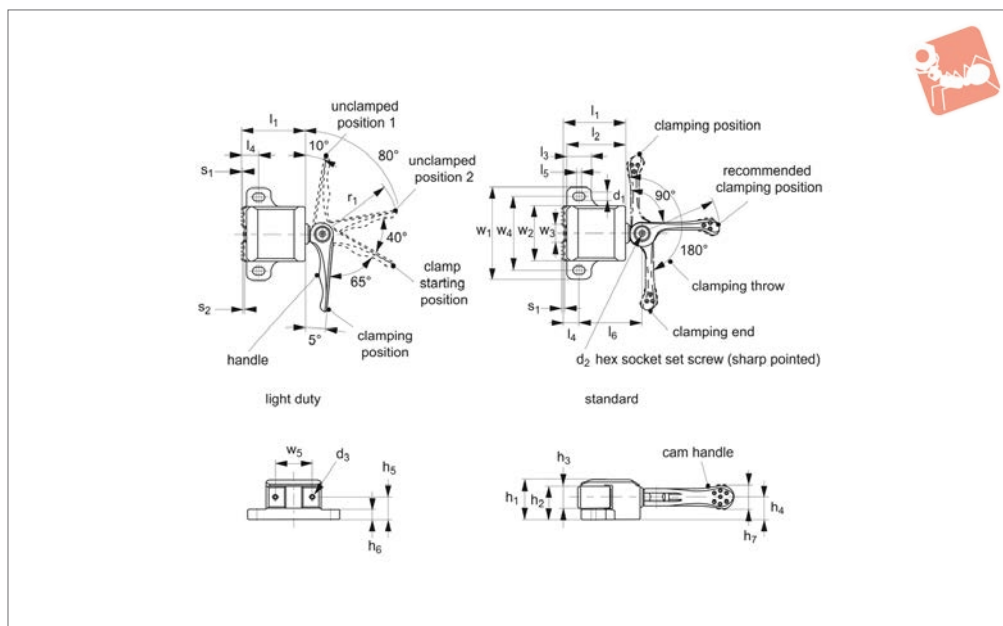
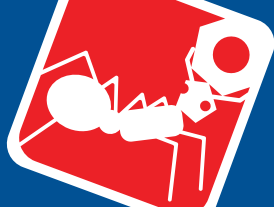
A screw type clamping mechanism allows a

Order No.	Clamping stroke $s_1$	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$h_1$	$h_2$	$h_3$	Weight g
10982.W0045	3	6.6	M 4x0,7 Depth 6	M 4x0,7-6L	52	48	20	14	3	10	32	27	18	560
10982.W0060	4	8.6	M 5x0,8 Depth 8	M 5x0,8-8L	69	63	26	19	4	13	40	33	22	1240

Order No.	$h_4$	$h_5$	$h_6$	$w_1$	$w_2$	$w_3$	$w_4$	$w_5$	$s_2$	Torque to Nm max.	$A/F_1$	$A/F_2$	Clamping force kN max.
10982.W0045	18	18	8	75	45	15	60	30	3	25	8	19	9
10982.W0060	22	22	10	100	60	20	80	40	4	50	10	24	14







## 10982.2

LOW PROFILE SIDE CLAMPING

### Material

Body: steel (C45), black oxide finish.  
 Jaw/handle shaft: steel (C45), tempered.  
 Black oxide finish, precision-ground.  
 Handle: steel (42CrMo), tempered. Electroless nickel plated (light-duty type), black

oxide finish (standard type).

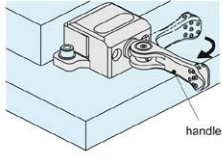
### Technical Notes

The cam handle allows fast clamping in a single operation. Spring-loaded light duty version distributes constant clamping

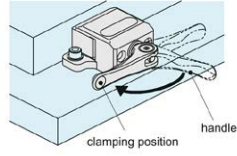
force. Standard version allows the adjustment of clamping force depending on operating loads. Precision-ground jaw is perfect for clamping the workpiece on its finished surface. The jaw provides downward force to prevent part lift.

Order No.	Type	Clamping stroke $s_1$	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$h_1$	$h_2$	Weight g
10982.W0145	Light Duty	0.3	-	-	-	-	-	-	-	-	-	-	-	600
10982.W0160	Light Duty	0.4	-	-	-	-	-	-	-	-	-	-	-	1320
10982.W0245	Standard	1.6	6.6	M 4x0,7 6 Depth	M 4x0,7- 5L	51	48	20	13	3	51.5	32	27	620
10982.W0260	Standard	2.2	8.6	M 4x0,7 8 Depth	M 5x0,8- 6L	67	63	25	17	4	67.0	40	33	1360

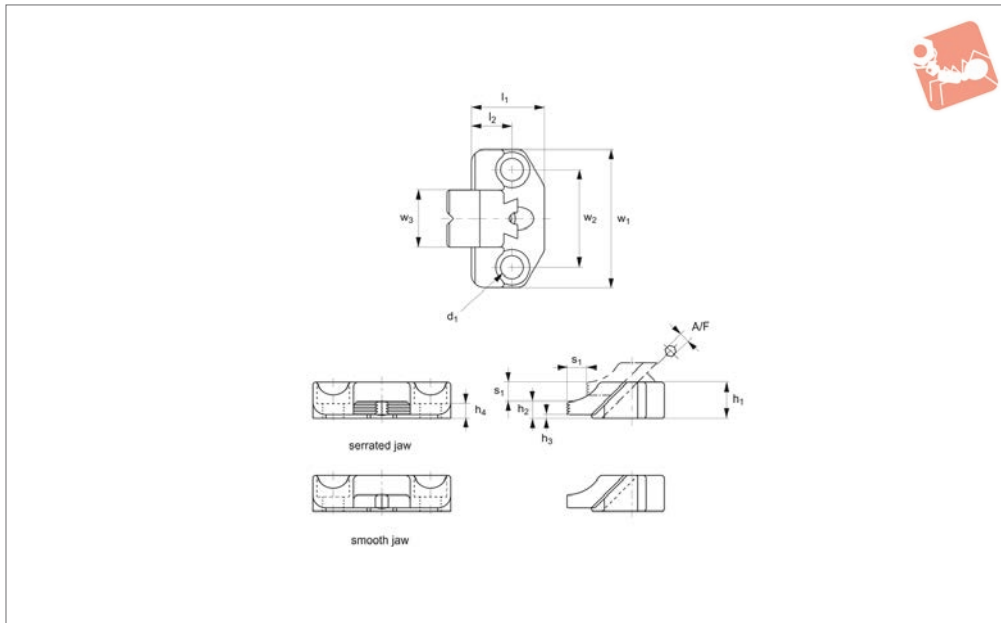
Order No.	$h_3$	$h_4$	$h_5$	$h_6$	$h_7$	$w_1$	$w_2$	$w_3$	$w_4$	$w_5$	$r_1$	Advance stroke $s_2$	Clamping force kN max.	Operating load N max.
10982.W0145	-	-	-	-	14	-	-	-	-	-	-	0.8	0.6	40
10982.W0160	-	-	-	-	18	-	-	-	-	-	-	0.8	1.2	50
10982.W0245	18	18	18	8	19	75	45	15	60	30	63	-	2.0	150
10982.W0260	22	22	22	10	24	100	60	20	80	40	80	-	3.0	200



**standard**  
turning the cam handle allows the jaw to advance to the workpiece for clamping



**light duty**  
turning the handle to the clamping position clamps the workpiece with constant clamping force



## 10988

LOW PROFILE SIDE CLAMPING

### Material

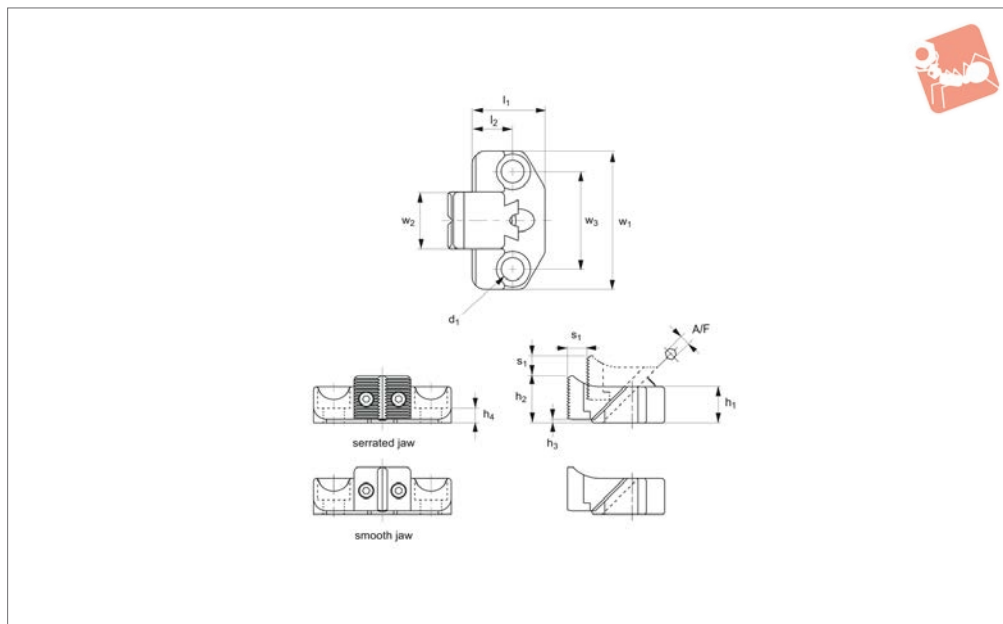
Body: steel (42CrMo), tempered. Black oxide finish.

Jaw: steel (42CrMo), induction hardened (clamping face). Black oxide finish. Precision ground (smooth jaw).

Order No.	Type	d <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	Torque to Nm max.	Stroke s <sub>1</sub>	A/F	Clamping force kN max.	Weight g
<b>10988.W0025</b>	Serrated	M 8	39.5	25	16	7.5	1.5	7	65	45	25	8	7	4	4	160
<b>10988.W0035</b>	Serrated	M12	60.0	40	22	10.0	2.0	9	85	60	35	26	12	6	9	450
<b>10988.W0040</b>	Serrated	M16	77.0	50	30	14.0	2.0	13	100	70	40	60	14	8	17	900
<b>10988.W0125</b>	Smooth	M 8	39.5	25	16	7.5	1.5	7	65	45	25	8	7	4	4	160
<b>10988.W0135</b>	Smooth	M12	60.0	40	22	10.0	2.0	9	85	60	35	26	12	6	9	450
<b>10988.W0140</b>	Smooth	M16	77.0	50	30	14.0	2.0	13	100	70	40	60	14	8	17	900



## 10990

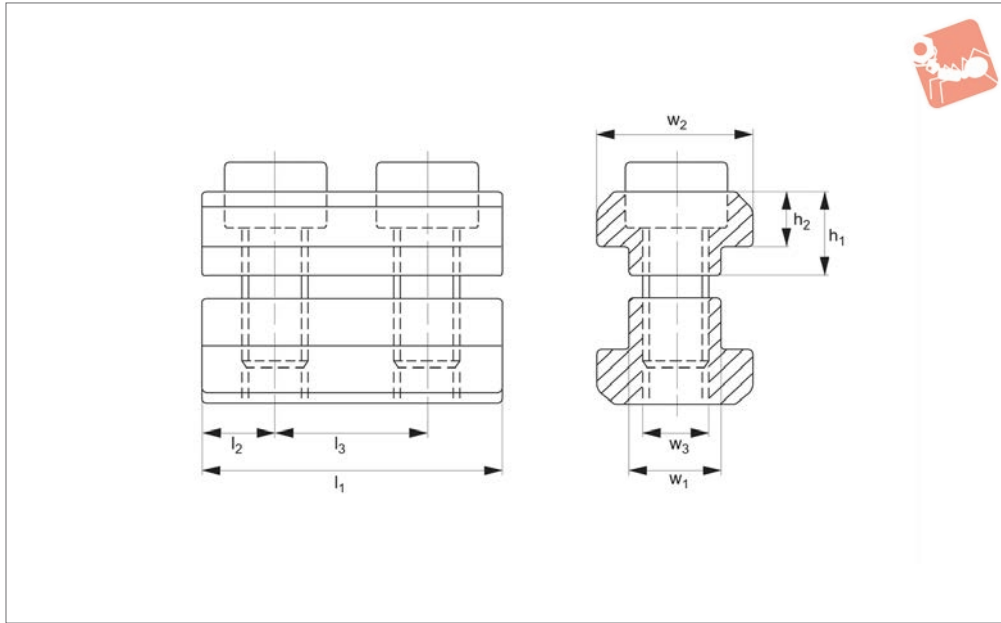


### Material

Body: steel (42CrMo), tempered. Black oxide finish.

Jaw: steel (42CrMo), tempered, black oxide finish. Precision ground (smooth jaw).

Order No.	Type	d <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	s <sub>1</sub>	Torque to Nm max.	A/F	Clamping force kN max.	Weight g
<b>10990.W0025</b>	Serrated	M 8	39.5	25	16	19.5	1.5	7	65	25	45	7	8	4	4	180
<b>10990.W0035</b>	Serrated	M12	60.0	40	22	29.0	2.0	9	85	35	60	12	26	6	9	500
<b>10990.W0040</b>	Serrated	M16	77.0	50	30	38.0	2.0	13	100	40	70	14	60	8	17	1010
<b>10990.W0125</b>	Smooth	M 8	39.5	25	16	19.5	1.5	7	65	25	45	7	8	4	4	180
<b>10990.W0135</b>	Smooth	M12	60.0	40	22	29.0	2.0	9	85	35	60	12	26	6	9	510
<b>10990.W0140</b>	Smooth	M16	77.0	50	30	38.0	2.0	13	100	40	70	14	60	8	17	1020



## 12000

LOW PROFILE SIDE CLAMPING

### Material

Tempered steel, burnished.

transverse direction. Their low overall height allows use in applications with flat workpieces.

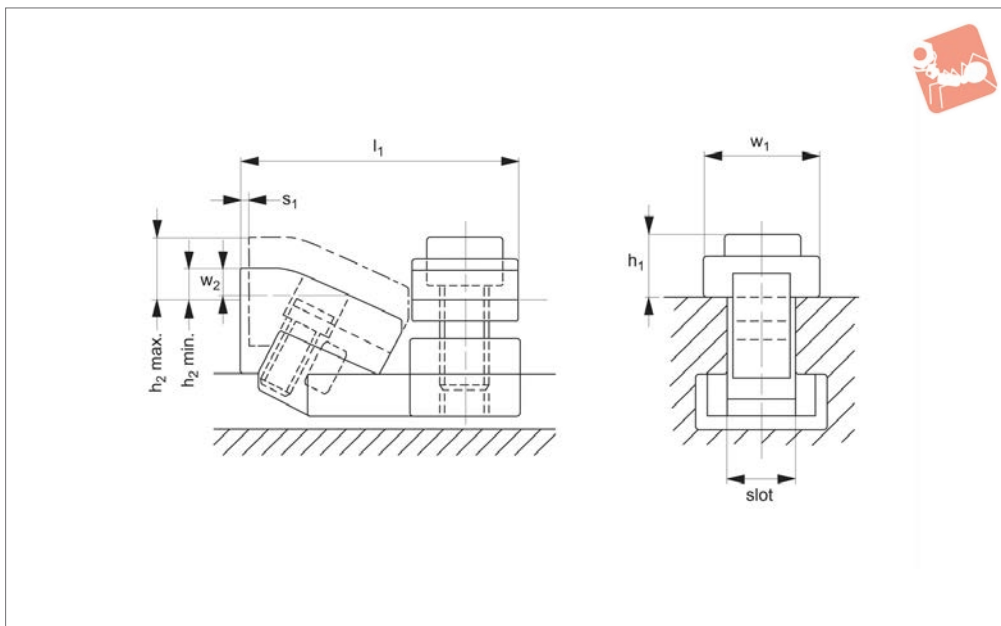
### Technical Notes

The stops can be used in a longitudinal or

Order No.	Slot size	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$w_1$	$w_2$	$w_3$	Weight g
12000.W0012	12	36	9.0	18	12	7	11.7	18	M 8	100
12000.W0014	14	44	11.0	22	12	8	13.7	22	M 8	140
12000.W0016	16	50	12.5	25	15	9	15.7	25	M12	240
12000.W0018	18	56	14.0	28	16	10	17.7	28	M12	340
12000.W0020	20	64	16.0	32	19	12	19.7	32	M16	520
12000.W0022	22	70	17.5	35	21	14	21.7	35	M16	720
12000.W0024	24	80	20.0	40	23	16	23.7	40	M20	880
12000.W0028	28	88	22.0	44	24	18	27.7	44	M20	1460



## 12100



### Material

Steel, heat-treated, blackened.

The clamps produce a downwards and forwards clamping force.

up to dimension „w<sub>2</sub>“, via grinding.  
**Sold in pairs.**

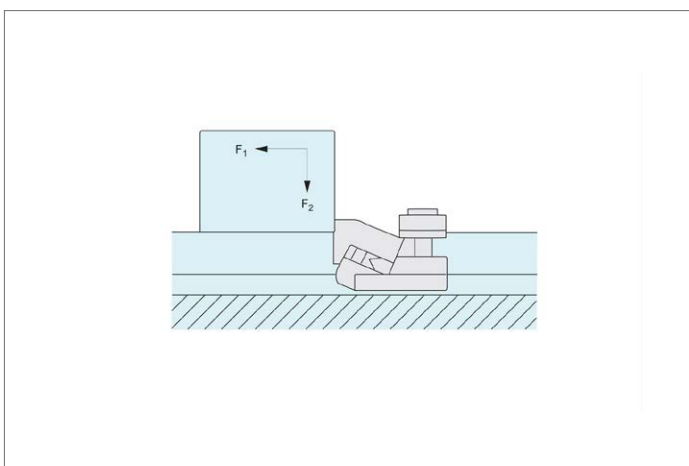
### Technical Notes

Ideal for clamping low profile plates.

### Tips

The clamp height can be further reduced by

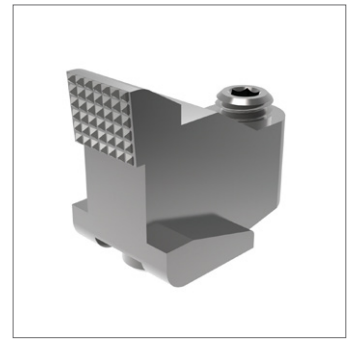
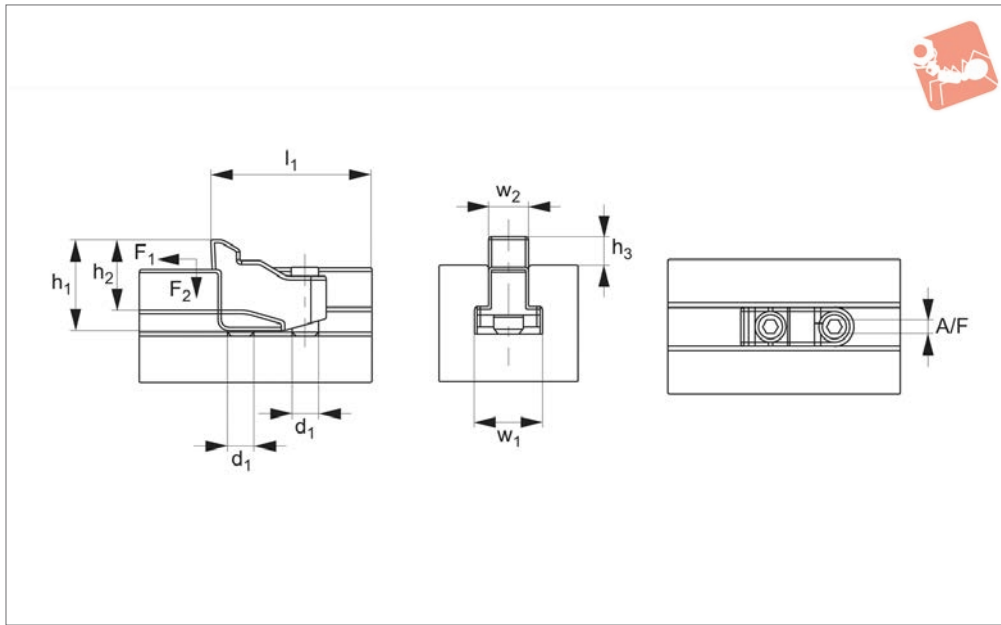
Order No.	Slot size	F <sub>1</sub> kN	F <sub>2</sub> kN	l <sub>1</sub> max.	h <sub>1</sub>	h <sub>2</sub> min.	h <sub>2</sub> max.	w <sub>1</sub>	w <sub>2</sub>	Stroke s <sub>1</sub>	Weight g
12100.W0012	12	5.0	0.6	52	11	2.5	13.5	18	5	1.8	300
12100.W0014	14	5.5	0.7	55	11	1.5	13.5	22	5	1.8	380
12100.W0016	16	8.0	0.9	68	15	2.5	17.0	25	6	2.5	700
12100.W0018	18	9.0	1.0	71	15	1.5	16.0	28	6	2.5	830
12100.W0022	22	16.0	1.9	89	20	4.5	21.5	35	9	3.0	1740





# T-Slot Clamp with mounting

# Low Profile Side Clamping



## 12105

LOW PROFILE SIDE CLAMPING

### Material

Clamp: steel (AISI 4140), HRc 33-39, blackened.

Plate: stainless steel (AISI 304, 1.4301).

### Technical Notes

Extremely small and low height cam clamp offering up to 14 kN. clamping force. Ideal for multi-component fixtures.

Clamp is actuated with use of a hexagon key.

To avoid any deformation to workpiece

during clamping, select our clamping plate type.

Also available with an easy to actuate clamping handle model - see parts 12108.W2012 through .W2116.

Spare clamping plates can be ordered separately, see part no. 12108.W5010 through .W5016.

Dimension  $w_5$  is the recommended distance between mounting hole and workpiece.

Note:  $w_5 + 1$  is required distance when

using clamping plates.

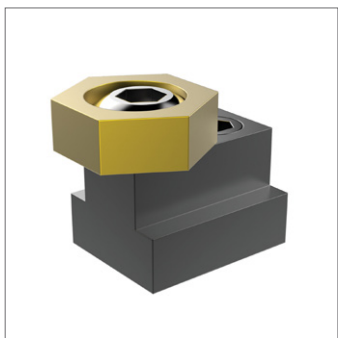
### Tips

To install, drill and tap required hole to dimensions  $d_2$  and space hole to dimension  $w_5$  away from workpiece surface (or  $w_5 + 1$  if using clamping plate).

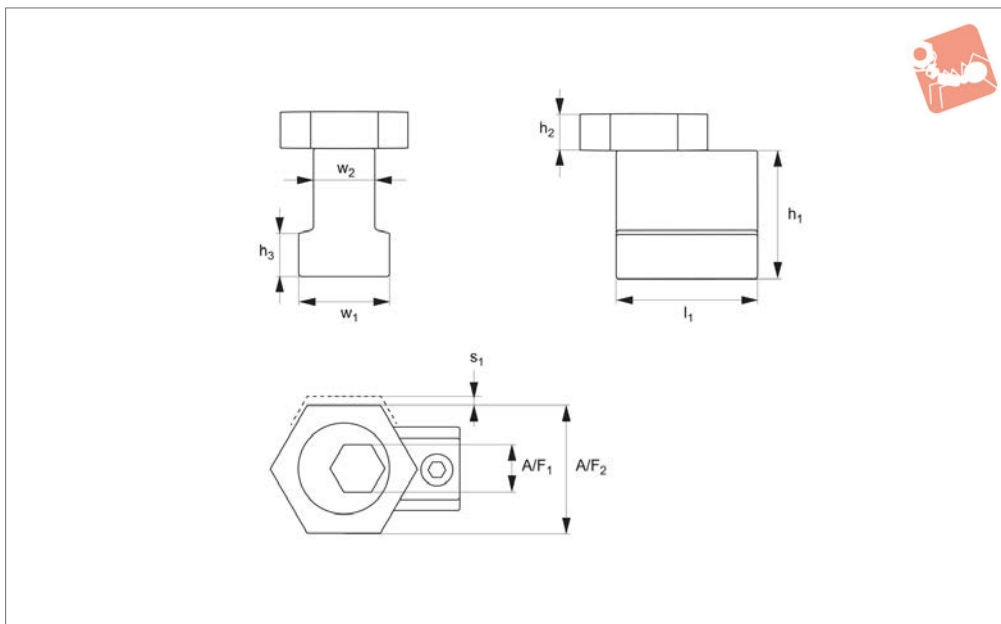
Fully tighten spiral clamp, then slacken off by one turn. Mount workpiece and then re-tighten clockwise to clamp workpiece.

Place a stop to the right of the workpiece to prevent movement.

Order No.	Slot size	$d_1$	$F_1$ kN	$F_2$ kN	$l_1$	$h_1$	$h_2$	$h_3$	$w_1$	$w_2$	A/F	Weight g
<b>12105.W0012</b>	12	M10	7	3.5	40	31	24	10	22	13.6	5	91
<b>12105.W0016</b>	16	M12	10	5.0	49	39	30	12	28	17.4	6	188
<b>12105.W0020</b>	18	M16	16	8.0	63	50	37	15	35	21.5	8	363



## 12150



### Material

Clamp: brass.  
Body: steel heat treated.

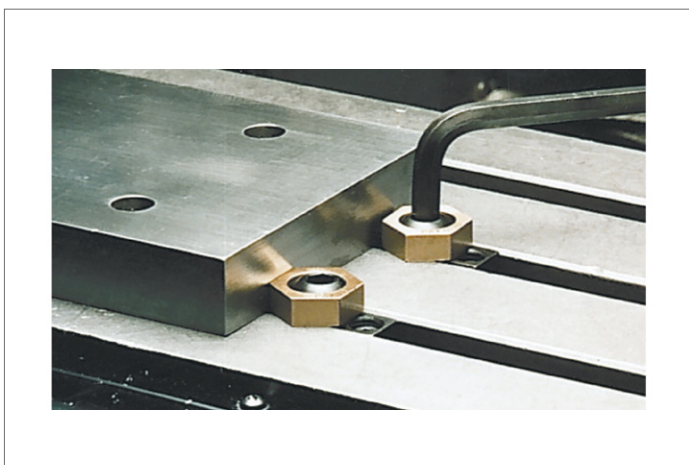
### Tips

For replacement clamping screws see 12112.  
Hex. key not included.  
**Sold in packs of 2.**

### Technical Notes

For use in T-slots of machine tables.

Order No.	For T-slot	Cam screw	$l_1$	$h_1$	$h_2$	$h_3$	$w_1$	$w_2$	Torque to Nm max.	Stroke $s_1$	$A/F_1$	$A/F_2$	Holding force kN
12150.W0008	8	M 6x1,00	23.2	9.5	4.8	4.6	12.7	8	8.5	1.01	5	15.9	3.5
12150.W0010	10	M 6x1,00	23.2	14.2	4.8	4.3	14.2	10	8.5	1.01	5	15.9	3.5
12150.W0012	12	M 8x1,25	27.9	15.9	4.8	6.4	15.9	12	11.3	1.01	5	20.6	3.3
12150.W0014	14	M10x1,50	30.5	22.2	6.4	8.5	22.4	14	28.0	1.52	7	20.6	8.9
12150.W0016	16	M12x1,75	30.9	22.2	9.5	9.2	25.4	16	61.0	2.03	8	25.4	13.3
12150.W0018	18	M12x1,75	34.7	28.6	9.5	10.5	28.6	18	61.0	2.03	8	25.4	13.3
12150.W0020	20	M16x2,00	39.2	31.8	12.7	12.6	31.8	20	135.0	2.54	12	30.2	26.7
12150.W0022	22	M16x2,00	44.3	41.3	12.7	12.5	34.9	22	135.0	2.54	12	30.2	26.7

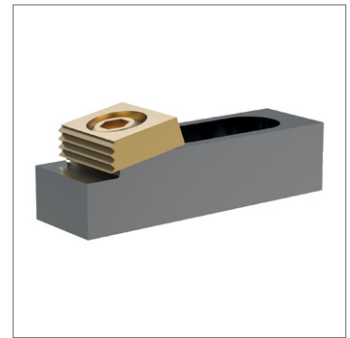
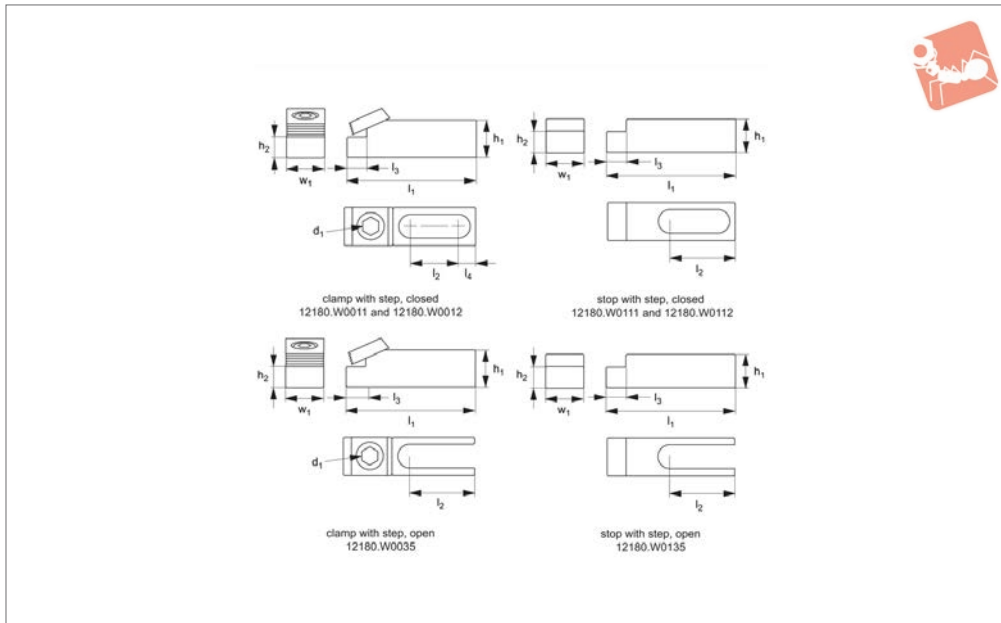






# Multi-Fixture Clamps and Stops with locating step

## Low Profile Side Clamping



### 12180.1

LOW PROFILE SIDE CLAMPING

#### Material

Body: steel, hardened.  
Clamp: brass.

threaded holes and in T-slots. Can be mounted vertically or horizontally.  
Typically used as a clamp and stop pair - please order separately.

#### Technical Notes

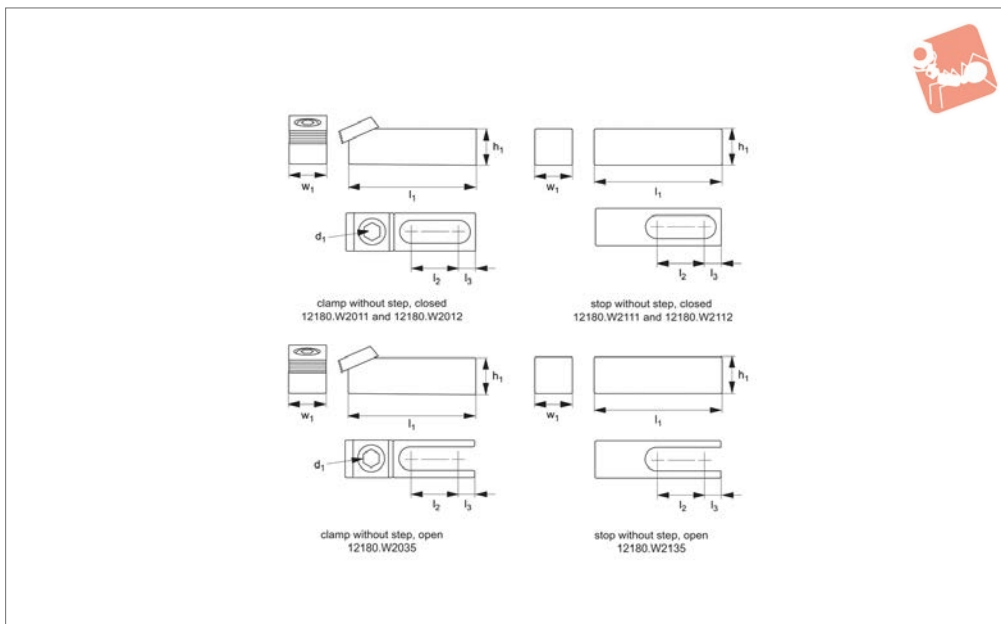
Enables flexible setups. For use in both

Order No.	Type	Slot type	Mounting screw	d <sub>1</sub> cam screw	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	h <sub>1</sub>	h <sub>2</sub> +0.0 -0.013	w <sub>1</sub>	Torque to Nm max.	Stroke	For use with	Holding force kN
<b>12180.W0011</b>	Clamp - With Step Closed	Closed	M 8	M 8	63,5	21,1	8,0	13,5	15,8	11,68	19,1	28	1,6	12180.W0111	8,9
<b>12180.W0012</b>	Clamp - With Step Closed	Closed	M12	M12	95,3	42,7	9,4	12,7	15,8	12,19	28,5	88	2,0	12180.W0112	17,8
<b>12180.W0035</b>	Clamp - With Step Open	Open	M16	M16	107,0	46,2	9,4		41,2	35,0	38,1	135	2,5	12180.W0135	26,7
<b>12180.W0111</b>	Stop - With Step Closed	Closed	M 8		63,5	28,2	8,0	13,5	19,1	11,68	19,1			12180.W0011	
<b>12180.W0112</b>	Stop - With Step Closed	Closed	M12		95,3	42,7	9,4	12,7	22,1	12,19	28,5			12180.W0012	
<b>12180.W0135</b>	Stop - With Step Open	Open	M16		107,0	46,2	9,4		50,8	35,0	38,1			12180.W0035	





## 12180.2



### Material

Body: steel, hardened.  
Clamp: brass.

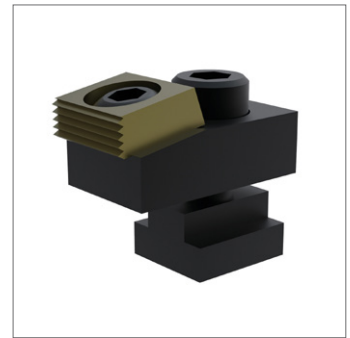
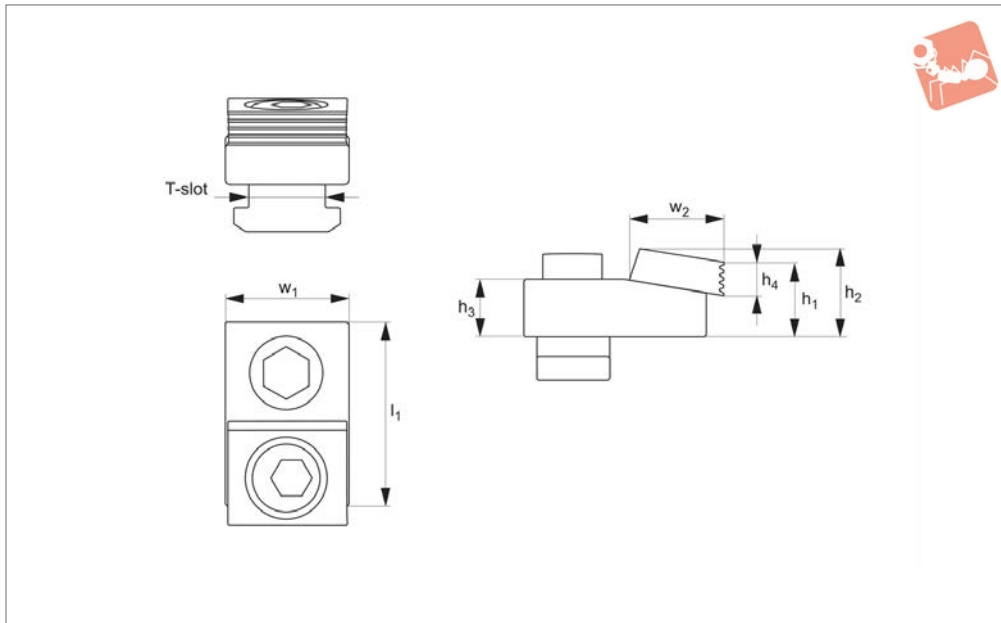
threaded holes and in T-slots. Can be mounted vertically or horizontally.  
Typically used as a clamp and stop pair - please order separately.

### Technical Notes

Enables flexible setups. For use in both

Order No.	Type	Slot type	Mounting screw	Cam screw $d_1$	$l_1$	$l_2$	$l_3$	$h_1$	$w_1$	Torque to Stroke Nm max.	For use with	Holding force kN	
<b>12180.W2011</b>	Clamp - w/o Step	Closed	M 8	M 8	54,9	21,1	13,5	15,8	19,1	28	1,6	12180.W2111	8,9
<b>12180.W2012</b>	Clamp - w/o Step	Closed	M12	M12	58,6	42,7	12,7	15,8	28,5	88	2,0	12180.W2112	17,8
<b>12180.W2035</b>	Clamp - w/o Step	Open	M16	M16	96,5	46,2		41,2	38,1	135	2,5	12180.W2135	26,7
<b>12180.W2111</b>	Stop - w/o Step	Closed	M 8		55,9	28,2	13,5	19,1	19,1			12180.W2011	
<b>12180.W2112</b>	Stop - w/o Step	Closed	M12		83,5	42,7	12,7	22,1	28,5			12180.W2012	
<b>12180.W2135</b>	Stop - w/o Step	Open	M16		83,8	46,2		50,8	38,1			12180.W2035	





### 12191

LOW PROFILE SIDE CLAMPING

#### Material

Steel hardened face.

#### Technical Notes

Designed to be used in the T-slots of machine tables.

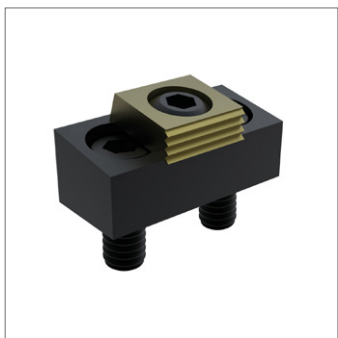
The clamp has both a smooth face (for machined workpieces) and a serrated face (for rougher work). Provides a positive downhold action whilst maintaining a low profile.

#### Tips

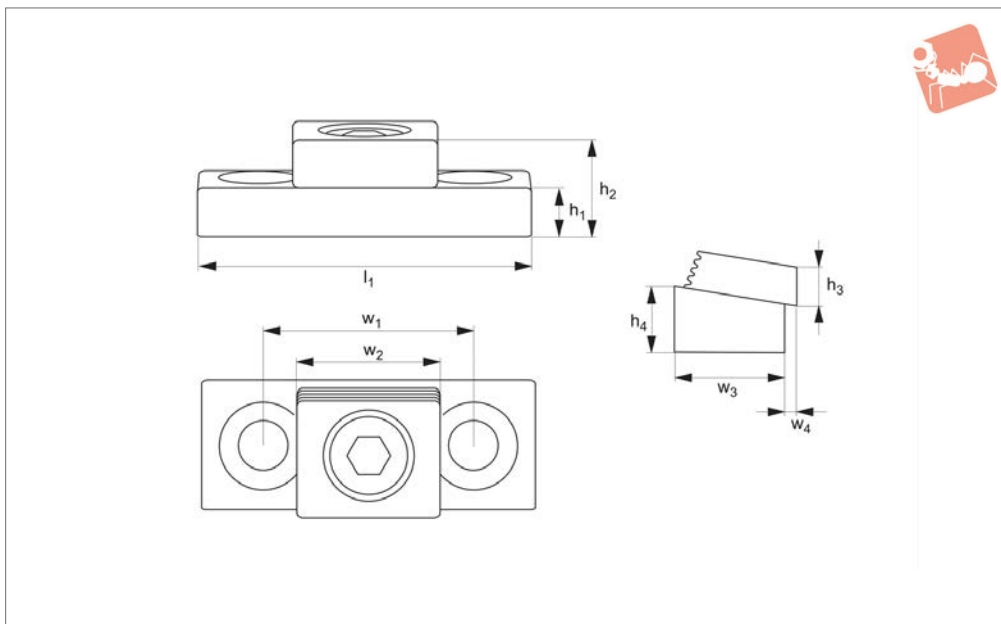
Torque screw for T-slot nut to 150 Nm.  
\*Not supplied with T-nut or mounting screw.

Order No.	T-slot size	$l_1$	$h_1$	$h_2$	$h_3$	$h_4$	$w_1$	$w_2$	Torque to Nm max.	Stroke $s_1$	Holding force kN
12191.W0000	*	50	25.4	22.2	15.7	9.6	28.5	25.4	88	1.6	17.8
12191.W0014	14	50	25.4	22.2	15.7	9.6	28.5	25.4	88	1.6	17.8
12191.W0016	16	50	25.4	22.2	15.7	9.6	28.5	25.4	88	1.6	17.8
12191.W0018	18	50	25.4	22.2	15.7	9.6	28.5	25.4	88	1.6	17.8





## 12193



### Material

Clamping face: steel, hardened.  
Body: mild steel, blackened.

### Technical Notes

The clamp has both a smooth face (for machined workpieces) and a serrated face (for rougher work).

Provides a positive downhold action whilst maintaining a low profile.

### Tips

The height of the clamp can be varied by milling the slot deeper into the fixture.

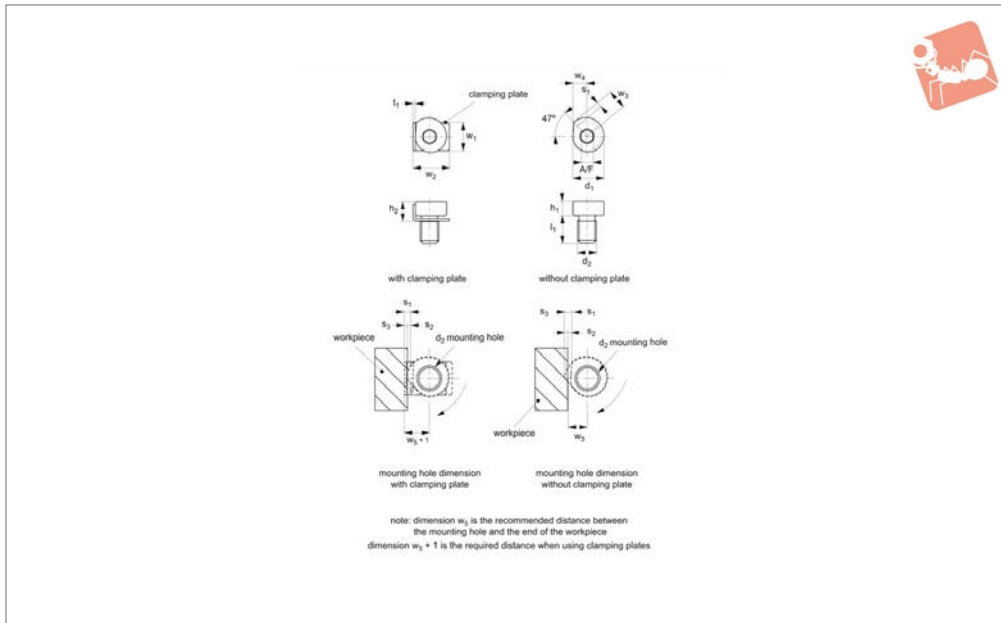
### Important Notes

$w_3$  - the distance between the front of the clamp base and the workpiece. Drill and tap the centreline of „ $w_1$ “ for mounting holes.

For replacement cam screws see part 12112.

Order No.	Clamp screw	Mounting screw	$l_1$	$h_1$	$h_2$	$h_3$	$h_4$	$w_1$	$w_2$	$w_3$	$w_4$	Torque to Nm max.	Stroke	Holding force kN
12193.W0110	M 8	M 8	43.2	12.7	21.5	6.4	15.75	25.4	19.0	19.0	2.3	28	1.6	8.9
12193.W0112	M10	M10	54.0	11.4	24.4	9.7	15.75	33.5	25.4	25.4	2.8	88	2.0	17.8
12193.W0116	M12	M12	75.0	25.2	43.2	12.7	31.75	50.8	38.1	38.1	3.3	135	2.5	26.7





### 12108.1

LOW PROFILE SIDE CLAMPING

#### Material

Clamp: steel AISI 4140, HRC 33-39, blackened.

Plate: stainless steel (AISI 304, 1.4301).

#### Technical Notes

Extremely small and low height cam clamp offering upto 14 kN. clamping force. Ideal for multi-component fixtures.

Clamp is actuated with use of a hexagon key.

To avoid any deformation to work piece during clamping, select our clamping plate type.

Also available with an easy to actuate clamping handle model - see parts 12108.W2012 through .W2116.

Spare clamping plates can be ordered separately, see part no. 12108.W5010 through .W5016.

#### Tips

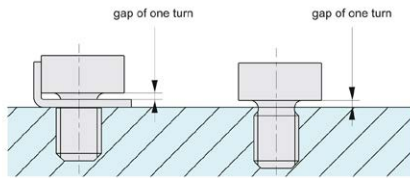
To install, drill and tap required hole to dimension  $d_2$  and space hole to dimension  $w_5$  away from workpiece surface (or  $w_5 + 1$  if using clamping plate).

Fully tighten spiral clamp, then slacken off by one turn. Mount workpiece and then re-tighten clockwise to clamp workpiece.

Place a stop to the right of the workpiece to prevent movement.

Order No.	Type	$d_1$	$d_2$	$h_1$	$h_2$	$l_1$	$w_1$	$w_2$	Weight g
12108.W0010	W/o Clamping Plate	10	M 6x1,00	5	-	9	-	-	6
12108.W0012	W/o Clamping Plate	12	M 8x1,25	6	-	12	-	-	11
12108.W0014	W/o Clamping Plate	14	M10x1,50	7	-	15	-	-	19
12108.W0016	W/o Clamping Plate	16	M12x1,75	8	-	18	-	-	30
12108.W0110	With Clamping Plate	10	M 6x1,00	5	6	9	10	13.0	7
12108.W0112	With Clamping Plate	12	M 8x1,25	6	7	12	12	15.5	13
12108.W0114	With Clamping Plate	14	M10x1,50	7	8	15	14	18.0	21
12108.W0116	With Clamping Plate	16	M12x1,75	8	9	18	16	20.0	33

Order No.	$w_3$	$w_4$	$w_5$	Stroke $s_1$	Stroke $s_2$	Stroke $s_3$	$t_1$	A/F	Torque to Nm max.	Clamping force kN max.
12108.W0010	6.8	5	5.9	1.8	0.9	0.9	-	4	7.4	2.2
12108.W0012	8.2	6	7.1	2.2	1.1	1.1	-	5	18.0	4.7
12108.W0014	9.5	7	8.3	2.5	1.3	1.2	-	6	35.0	7.9
12108.W0016	10.9	8	9.5	2.9	1.5	1.4	-	8	60.0	14.0
12108.W0110	6.8	5	5.9	1.8	0.9	0.9	1	4	7.4	2.2
12108.W0112	8.2	6	7.1	2.2	1.1	1.1	1	5	18.0	4.7
12108.W0114	9.5	7	8.3	2.5	1.3	1.2	1	6	35.0	7.9
12108.W0116	10.9	8	9.5	2.9	1.5	1.4	1	8	60.0	14.0



tighten spiral cam clamp fully and loosen it about one turn  
then mount to workpiece



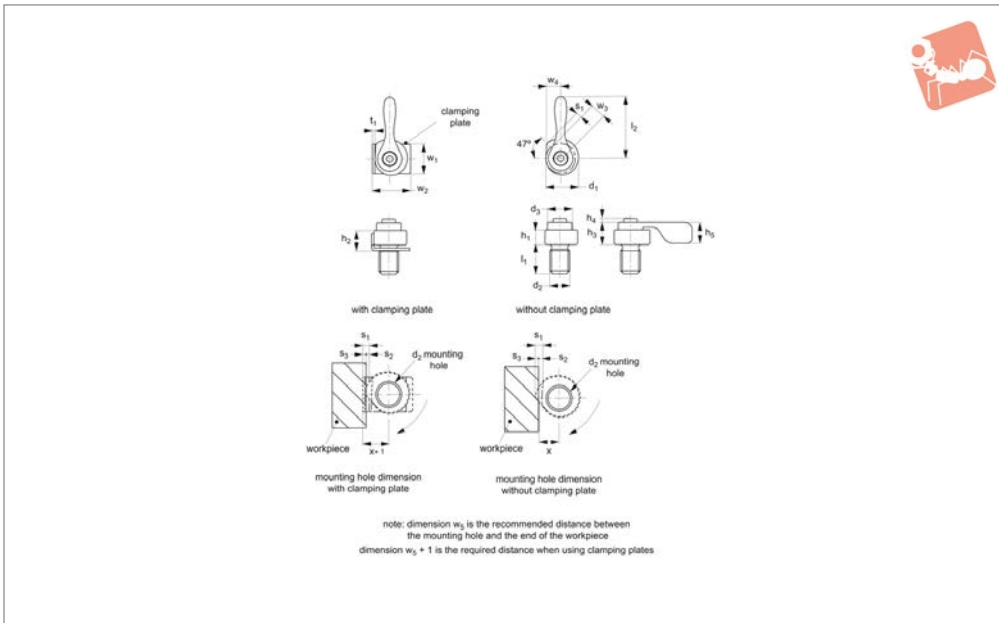
# Spiral Cam Clamps actuating handle

## Low Profile Side Clamping



**12108.2**

LOW PROFILE SIDE CLAMPING



### Material

Clamp: steel (AISI 4140), HRc 33-39, blackened.

Plate: stainless steel (AISI 304, 1.4301).

### Technical Notes

Extremely small and low height cam clamp offering upto 14 kN. clamping force. Ideal for multi-component fixtures.

Clamp is actuated via small handle/lever.

To avoid any deformation to workpiece

during clamping, select our with clamping plate type.

Also available in model actuated with use of hexagon key - see parts 12108.W0010 through .W0116.

Spare clamping plates can be ordered separately, see part no. 12108.W5010 through .W5016.

### Tips

To install, drill and tap required hole to

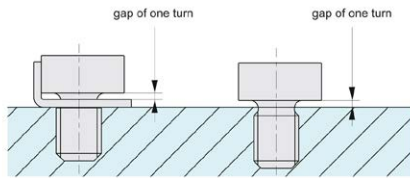
dimension  $d_2$  and space hole to dimension  $w_5$  away from workpiece surface (or  $w_5 + 1$  if using clamping plate).

Fully tighten spiral clamp, then slacken off by one turn. Mount workpiece and then re-tighten clockwise to clamp workpiece.

Place a stop to the right of the workpiece to prevent movement.

Order No.	Type	$d_1$	$d_2$	$d_3$	$h_1$	$h_2$	$h_3$	$h_4$	$h_5$	$l_1$	Weight g
12108.W2012	W/o Clamping Plate	12	M 8x1,25	10	6	-	9	1.5	8.5	12	17
12108.W2014	W/o Clamping Plate	14	M10x1,50	12	7	-	11	1.8	10.0	15	30
12108.W2016	W/o Clamping Plate	16	M12x1,75	14	8	-	13	2.2	12.0	18	51
12108.W2112	With Clamping Plate	12	M 8x1,25	10	6	7	9	1.5	8.5	12	19
12108.W2114	With Clamping Plate	14	M10x1,50	12	7	8	11	1.8	10.0	15	32
12108.W2116	With Clamping Plate	16	M12x1,75	14	8	9	13	2.2	12.0	18	54

Order No.	$l_2$	$w_1$	$w_2$	$w_3$	$w_4$	$w_5$	Stroke $s_1$	Stroke $s_2$	Stroke $s_3$	$t_1$	Torque to Nm max.	Clamping force kN max.
12108.W2012	25	-	-	8.2	6	7.1	2.2	1.1	1.1	-	18	4.7
12108.W2014	30	-	-	9.5	7	8.3	2.5	1.3	1.2	-	35	7.9
12108.W2016	40	-	-	10.9	8	9.5	2.9	1.5	1.4	-	60	14.0
12108.W2112	25	12	15.5	8.2	6	7.1	2.2	1.1	1.1	1	18	4.7
12108.W2114	30	14	18.0	9.5	7	8.3	2.5	1.3	1.2	1	35	7.9
12108.W2116	40	16	20.0	10.9	8	9.5	2.9	1.5	1.4	1	60	14.0



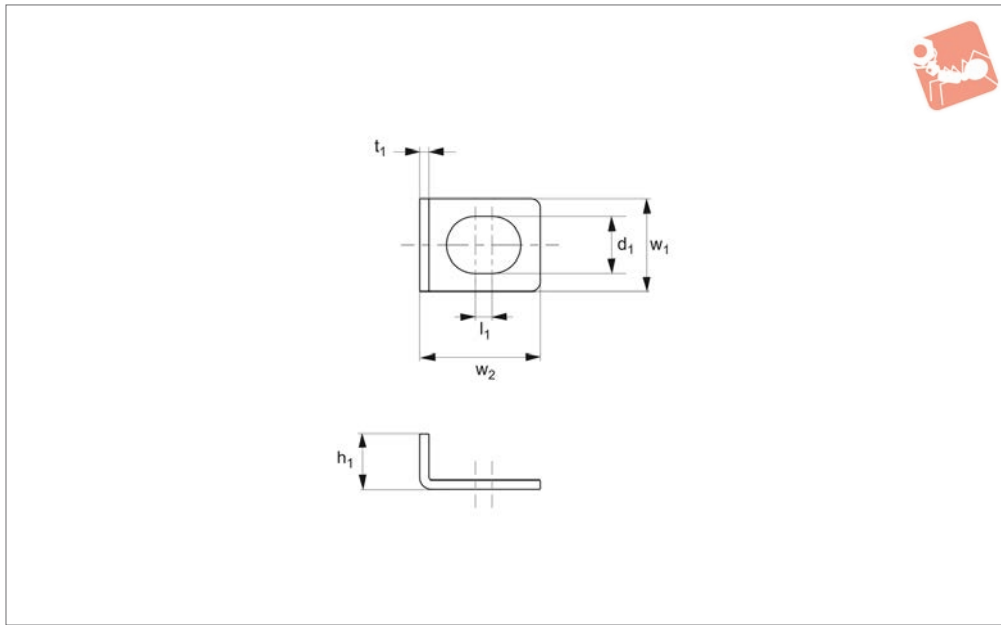
tighten spiral cam clamp fully and loosen it about one turn  
then mount to workpiece





# Clamping Plate for spiral cam clamps 12108

## Low Profile Side Clamping



**12108.3**

LOW PROFILE SIDE CLAMPING

### Material

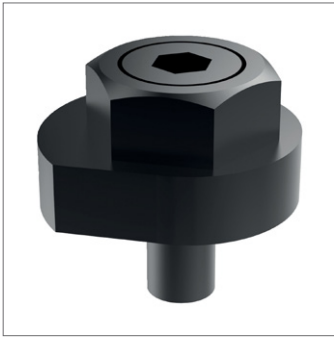
Stainless steel (AISI 304, 1.4301).

no. 12108. Use plates to avoid any deformation to workpiece during clamping.

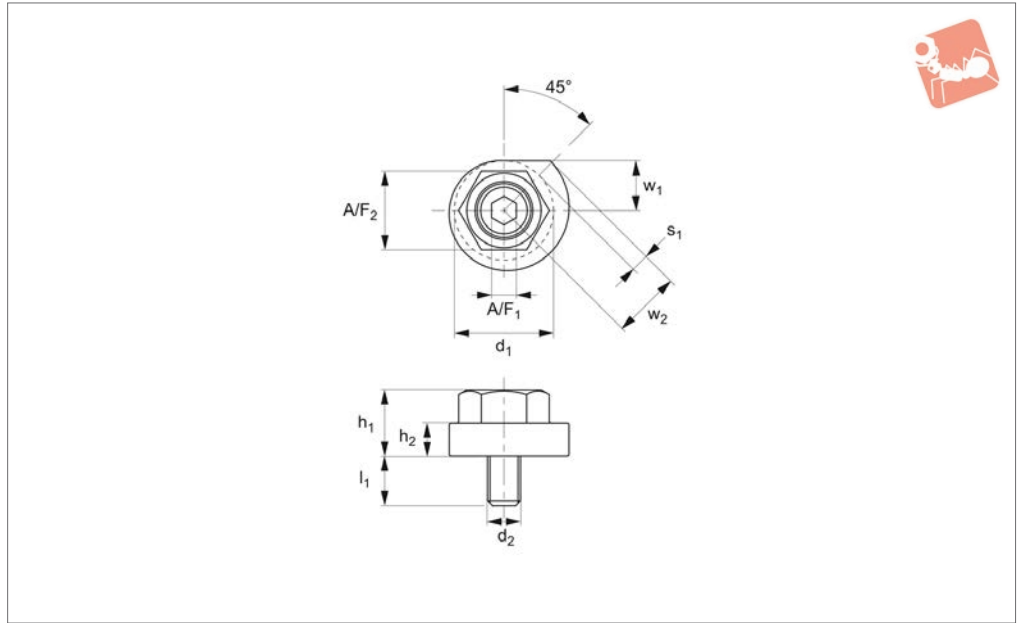
### Technical Notes

Clamping plates for spiral cam clamp, part

Order No.	d <sub>1</sub>	For spiral clamp size d <sub>2</sub>	h <sub>1</sub>	l <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	t <sub>1</sub>	Weight g
<b>12108.W5010</b>	6.2	10	6	1.8	10	13.0	1	17
<b>12108.W5012</b>	8.2	12	7	2.2	12	15.5	1	17
<b>12108.W5014</b>	10.2	14	8	2.6	14	18.0	1	30
<b>12108.W5016</b>	12.2	16	9	2.9	16	20.0	1	51



## 12109



### Material

Steel (AISI 4140), HRc 33-39, blackened.

### Technical Notes

Simple and robust cam clamp. Easy to

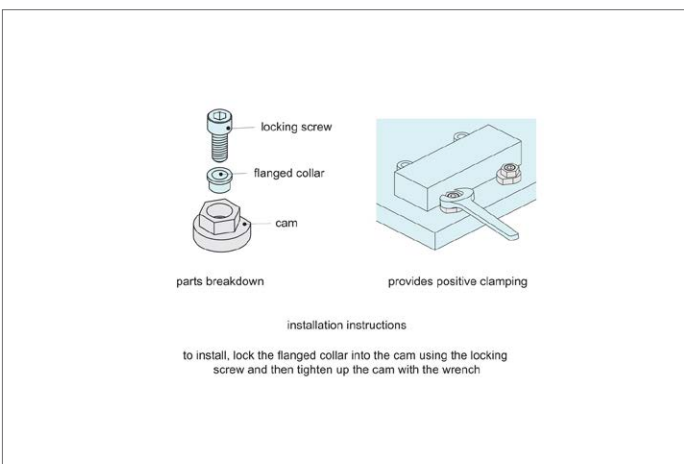
install. Actuated with spanner.

### Tips

To install: insert flanged collar and locking screw into cam body. Tighten locking screw

to fix cam in position. Load component, then use spanner to turn and actuate cam to clamp up to workpiece surface.

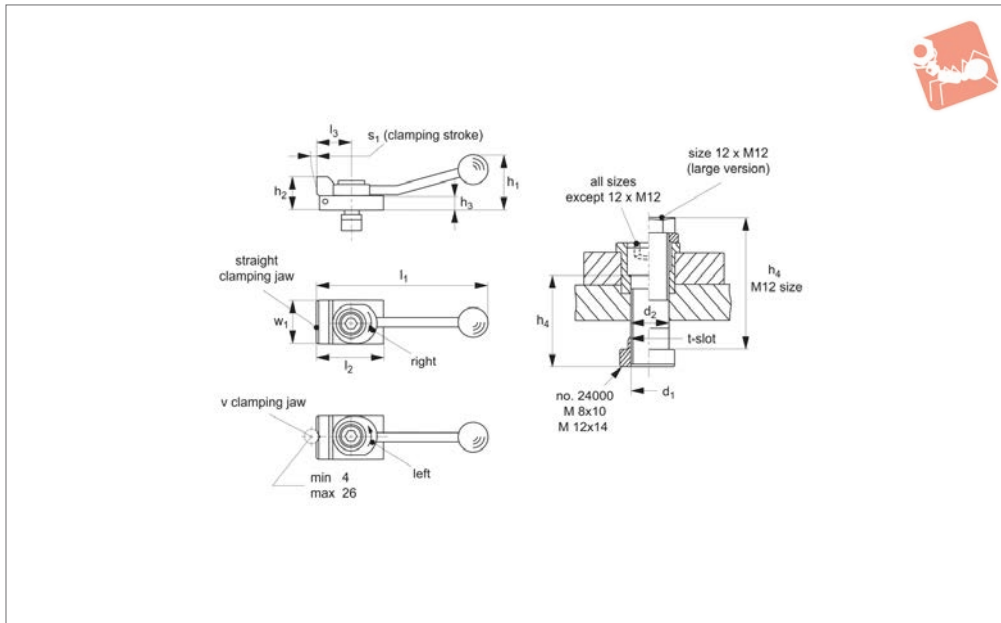
Order No.	$d_1$	$d_2$	$h_1$	$h_2$	$l_1$	$w_1$	$w_2$	Stroke $s_1$	$A/F_1$	$A/F_2$	Torque to Nm max.	Clamping force kN max.	Weight g
12109.W0024	24	M 8x1,25	16	8	12	12	16.4	4.4	6	19	50	5.2	55
12109.W0030	30	M10x1,50	20	10	15	15	20.5	5.5	8	24	75	8.0	110
12109.W0034	34	M12x1,75	24	12	18	17	23.2	6.2	10	27	90	9.3	185





# Downhold Clamps with cranked clamping lever

## Low Profile Side Clamping



**12400**

LOW PROFILE SIDE CLAMPING

### Material

Steel, case-hardened, blackened.

### Technical Notes

For quick clamping from the side. The clamps give forwards and downwards clamping forces.

### Tips

Can bridge T-slots when used with holding plate no. 12410. The clamps low profile enables full-face machining. Often used in conjunction with cylindrical stops and bedding supports.

Supplied with standard T-nut. Clamps can be used in other T-slot sizes by selecting T-nuts no. 24000 as required, e.g. M 8x12, M 8x14, M12x16, M12x18.

Order No.	For T-slot	Type	$h_1$	$h_2$	$h_3$	$h_4$	$l_1$	$l_2$	$l_3$	$d_1$	$d_2$	Stroke $s_1$	$w_1$	Clamping force horizontal kN max.	Weight g
12400.W0101	10	Straight Jaw, Clamps Right	20	30	8	40	132	50	32	M 8	8,4	3	32	3,5	262
12400.W0321	12	Straight Jaw, Clamps Right	38	60	16	62	190	72	40	M12	12,5	4	48	7,0	870
12400.W0341	14	Straight Jaw, Clamps Right	38	40	16	62	190	72	40	M12	12,5	4	48	7,0	845
12400.W0105	10	Straight Jaw, Clamps Left	20	30	8	40	132	50	32	M 8	8,4	3	32	3,5	262
12400.W0325	12	Straight Jaw, Clamps Left	38	60	16	62	190	72	40	M12	12,5	4	48	7,0	868
12400.W0345	14	Straight Jaw, Clamps Left	38	40	16	62	190	72	40	M12	12,5	4	48	7,0	847
12400.W0102	10	V-Jaw, Clamps Right	20	30	8	40	132	50	32	M 8	8,4	3	32	3,5	263
12400.W0322	12	V-Jaw, Clamps Right	38	60	16	62	190	72	40	M12	12,5	4	48	7,0	893
12400.W0342	14	V-Jaw, Clamps Right	38	40	16	62	190	72	40	M12	12,5	4	48	7,0	838
12400.W0106	10	V-Jaw, Clamps Left	20	30	8	40	132	50	32	M 8	8,4	3	32	3,5	264
12400.W0326	12	V-Jaw, Clamps Left	38	60	16	62	190	72	40	M12	12,5	4	48	7,0	900
12400.W0346	14	V-Jaw, Clamps Left	38	40	16	62	190	72	40	M12	12,5	4	48	7,0	841

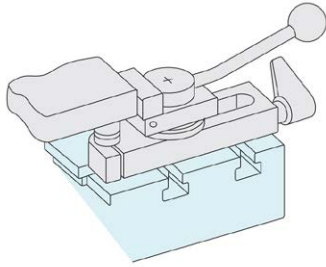
# Low Profile Side Clamping



# Downhold Clamps with cranked clamping lever



LOW PROFILE SIDE CLAMPING

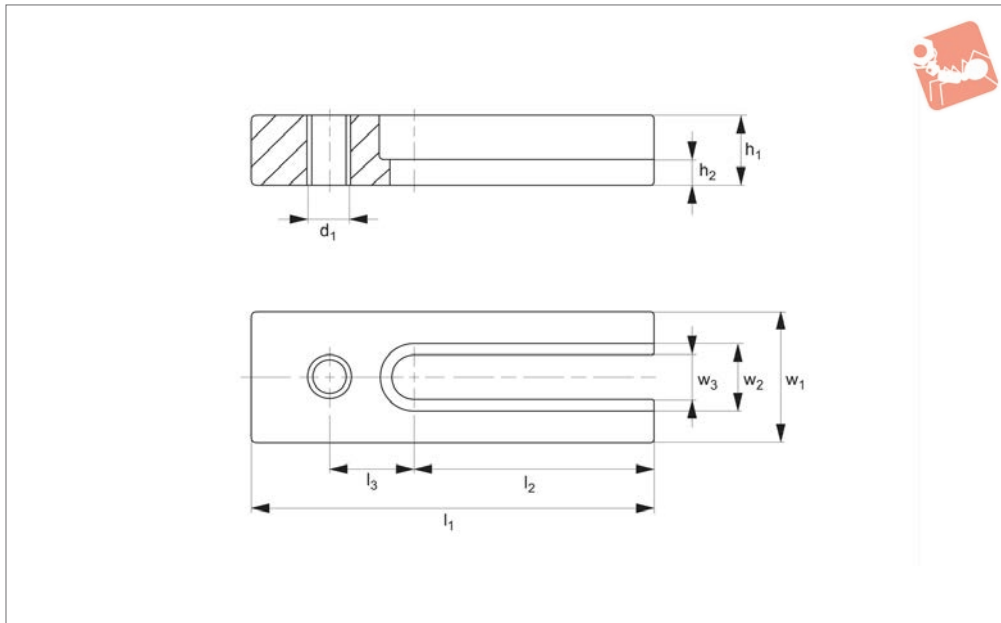




# Holding Plates

for downhold clamps nos. 12400 & 12420

## Low Profile Side Clamping



**12410**

LOW PROFILE SIDE CLAMPING

### Material

Steel, heat treated, blackened.

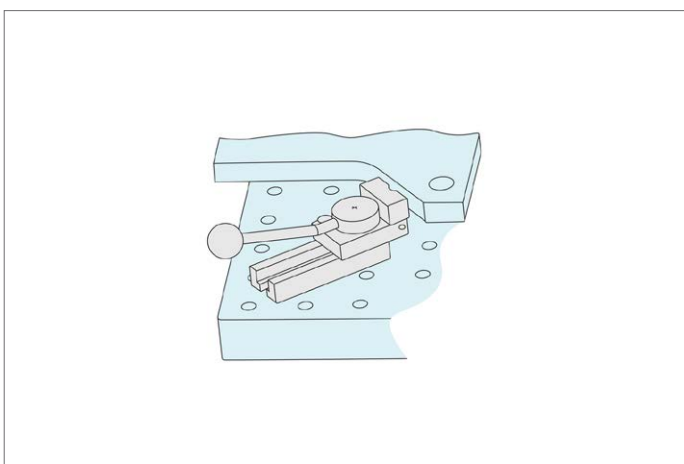
### Tips

Allows downhold clamps to be placed in any desired position, across T-slots etc.

### Technical Notes

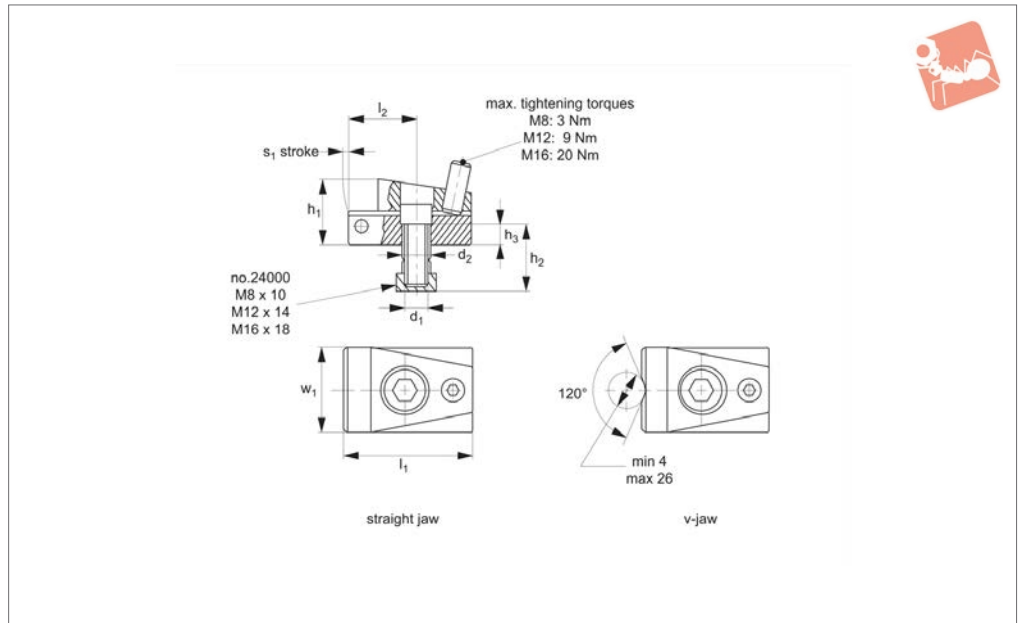
For use with clamps nos. 12400 and 12420.

Order No.	$h_1$ -0.4	$h_2$	$l_1$	$l_2$	$l_3$	$d_1$	$w_1$	$w_2$	$w_3$	Weight g
12410.W0730	15	6.5	100	63	20	M 8	30	15	9	246
12410.W0740	20	7.5	120	72	25	M12	40	20	13	515
12410.W0760	30	13.0	140	80	30	M16	60	26	17	1456
12410.W0770	40	18.0	200	110	50	M20	80	32	21	3900
12410.W0780	50	24.0	220	130	55	M24	90	38	25	5850





## 12420



### Material

Steel, ground, case-hardened and blackened.

### Technical Notes

Actuate by self-aligning screw on top, rear of the clamp. Extremely high clamping

forces, as the clamp pivots forwards and downwards to securely hold the workpiece. **T-nuts no. 24000 allow the clamps to be used in a variety of T slot sizes.**

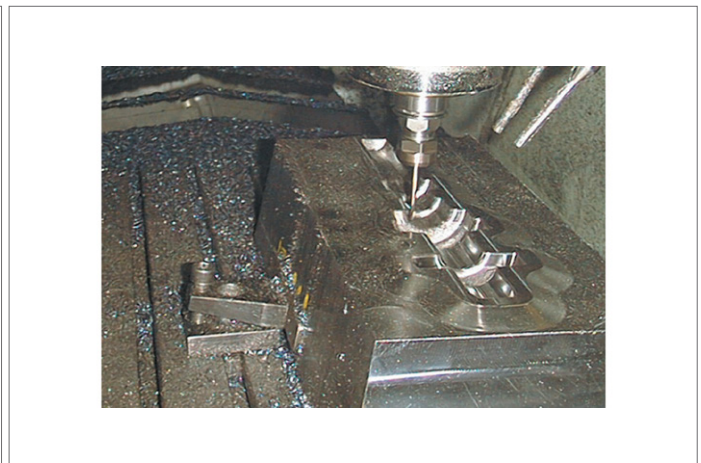
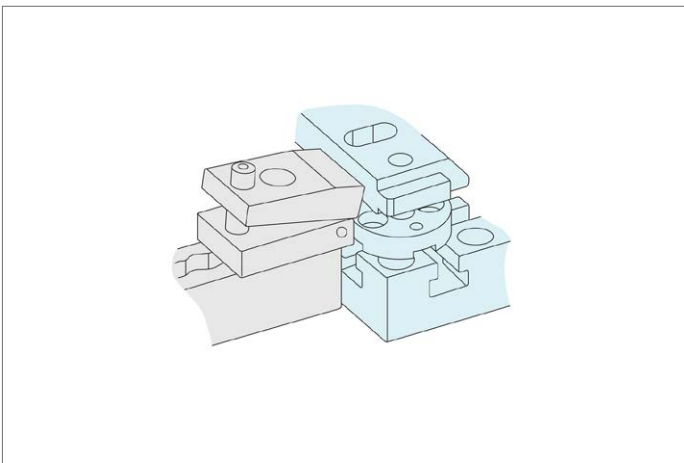
### Tips

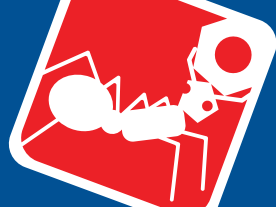
**Do not over torque clamping screw as**

**this can result in the stripping of the thread. For recommended torques - please see table.**

May be used with holding plate no. 12410.

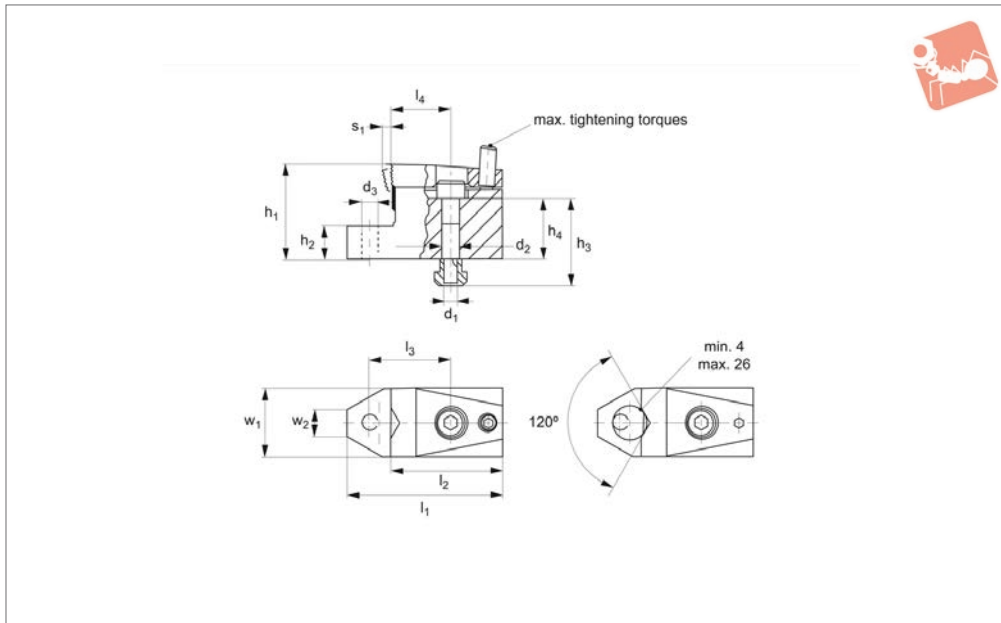
Order No.	For T-slot	Type	$h_1$	$h_2$	$h_3$	$l_1$	$l_2$	$d_1$	$d_2$	Stroke $s_1$	$w_1$	Clamping force horizontal kN max.	Torque to Nm max.	Weight g
<b>12420.W0501</b>	10	Straight Jaw	24	20	8	52	28,0	M 8	8,4	3	32	7,0	3	276
<b>12420.W0521</b>	14	Straight Jaw	37	30	11	72	40,0	M12	12,5	4	48	15,0	9	831
<b>12420.W0541</b>	18	Straight Jaw	47	35	13	86	41,0	M16	16,5	7	68	21,5	20	1749
<b>12420.W0502</b>	10	V-Jaw	24	20	8	52	28,0	M 8	8,4	3	32	7,0	3	266
<b>12420.W0522</b>	14	V-Jaw	37	30	11	72	40,0	M12	12,5	4	48	15,0	9	833
<b>12420.W0542</b>	18	V-Jaw	47	35	13	86	41,0	M16	16,5	7	68	21,5	20	1730





# Downhold Clamps with support ledge

# Low Profile Side Clamping



## 12422

LOW PROFILE SIDE CLAMPING

### Material

Steel, case-hardened, blackened, ground.

### Technical Notes

By tightening the ball-ended thrust screw the workpiece is simultaneously pressed towards the stops and fixture plate. This

pivoting action enables high horizontal clamping forces. The integrated support has a thread suitable for rest buttons.

### Tips

**Do not over torque clamping screw as this can result in the stripping of the**

**thread. For recommended torques - please see table.**

May be used with holding plate no. 12410.

Order No.	For T-slot	Jaw type	$h_1$	$h_2$ $\pm 0.01$	$h_3$ $\approx$	$h_4$ $\approx$	$l_1$	$l_2$	Weight g
12422.W0051	10	Straight Jaw	44	15	40	28	52	28	556
12422.W0061	14	Straight Jaw	53	15	45	27	72	40	1342
12422.W0071	18	Straight Jaw	72	20	60	38	86	41	3149
12422.W0052	10	V- Jaw	44	15	40	28	52	28	553
12422.W0062	14	V- Jaw	53	15	45	27	72	40	1324
12422.W0072	18	V- Jaw	72	20	60	38	86	41	3100

Order No.	$l_3$	$l_4$	$d_1$	$d_2$	$d_3$	Stroke $s_1$	$w_1$	$w_2$	Clamping force horizontal kN max.	Tightening torque Nm max.
12422.W0051	72.5	38	M 8	8.4	M 8	3	32	12.1	7.0	3
12422.W0061	100.0	55	M12	13.0	M12	4	48	16.0	15.0	9
12422.W0071	126.0	63	M16	17.0	M16	7	68	18.8	21.5	20
12422.W0052	72.5	38	M 8	8.4	M 8	3	32	12.1	7.0	3
12422.W0062	100.0	55	M12	13.0	M12	4	48	16.0	15.0	9
12422.W0072	126.0	63	M16	17.0	M16	7	68	18.8	21.5	20

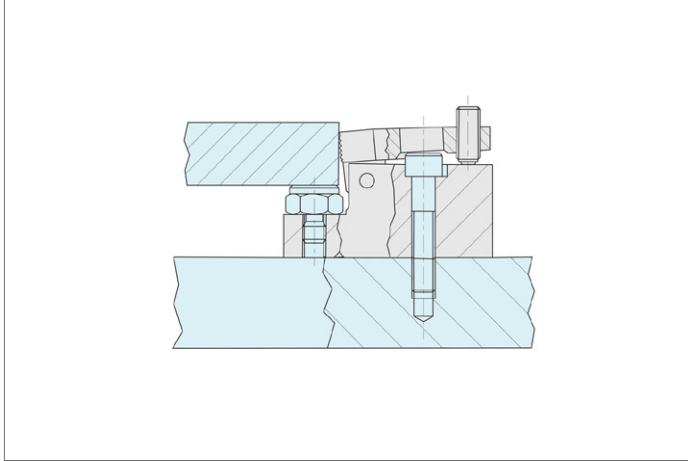
# Low Profile Side Clamping



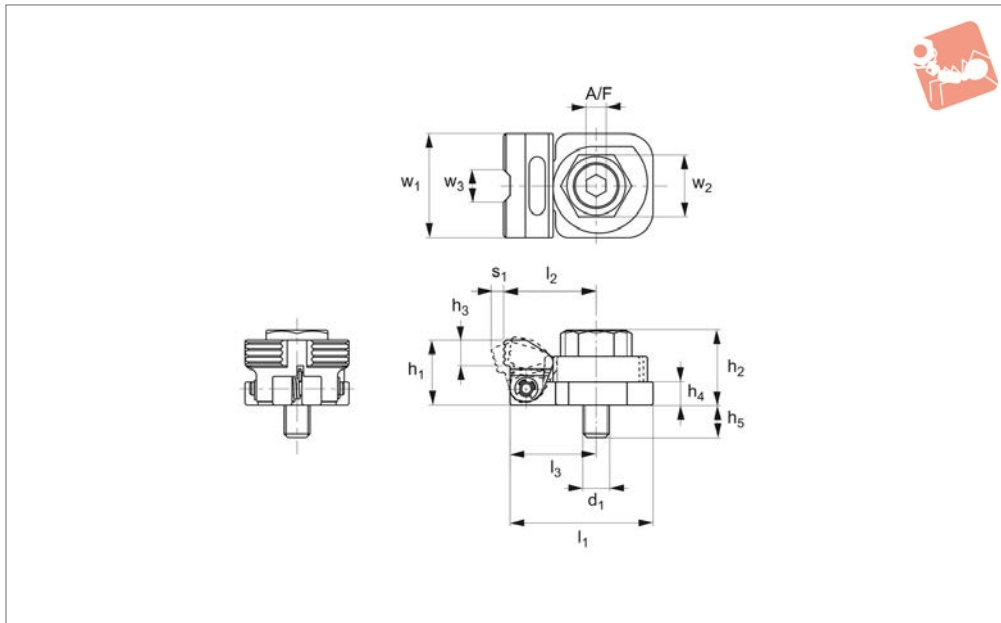
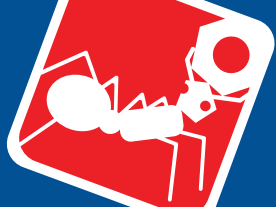
# Downhold Clamps with support ledge



LOW PROFILE SIDE CLAMPING







## 12426

LOW PROFILE SIDE CLAMPING

### Material

Body/jaw: steel (42CrMo), tempered and black oxide finish.

Cam: steel (C45), tempered and black

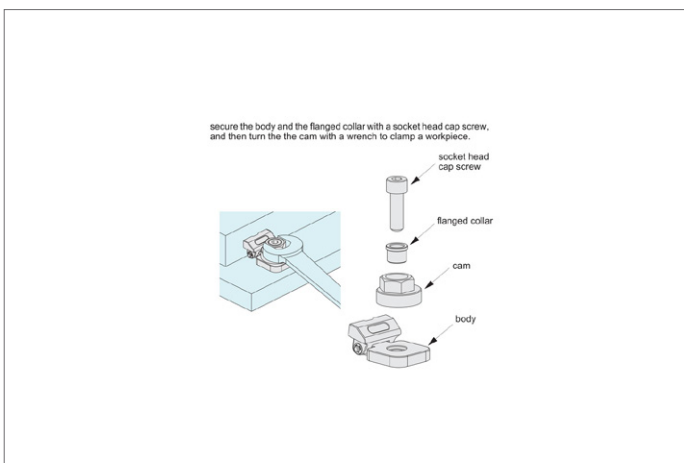
oxide finish.

### Technical Notes

Secure the body and the flanged collar

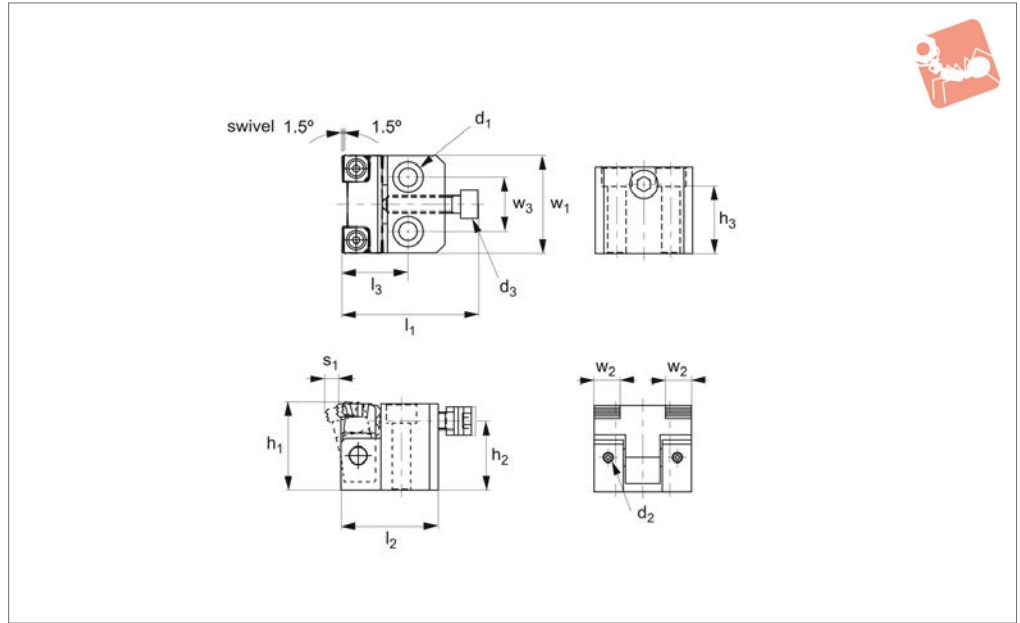
with a socket head cap screw. Turn the cam with a wrench to clamp a workpiece.

Order No.	$h_1$	$h_2$	$h_3$	$h_4$	$h_5$	$l_1$	$l_2$	$l_3$	$d_1$	Stroke $s_1$	$w_1$	$w_2$	$w_3$	A/F	Clamping force kN max.	Torque to Nm max.	Weight g
<b>12426.W0032</b>	20	23	8	7	15	44	28,5	26,5	M 8x30	4,0	32	19	10	6	3,5	45	160
<b>12426.W0040</b>	25	29	10	9	16	54	35,0	33,0	M10x35	5,0	40	24	12	8	5,5	55	310
<b>12426.W0046</b>	30	35	12	11	17	62	39,5	37,5	M12x40	5,5	46	27	14	10	7,0	70	490





## 12428



### Material

Body: steel (C45), black oxide finish.  
 Arm: steel (C45), tempered and black oxide finish.  
 Jaw: steel (SKH51), tempered and black oxide finish.

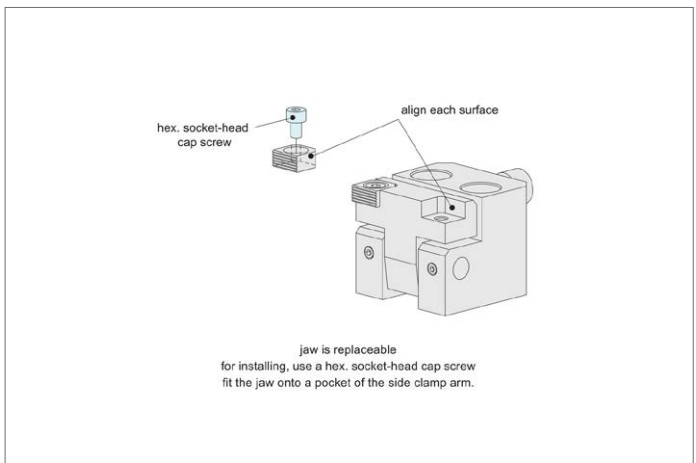
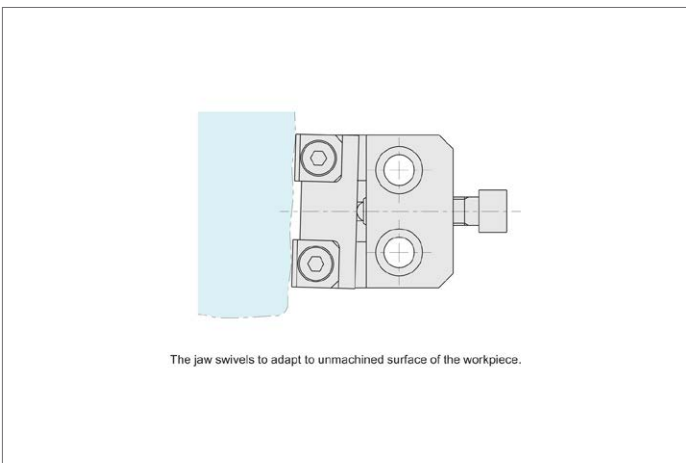
### Technical Notes

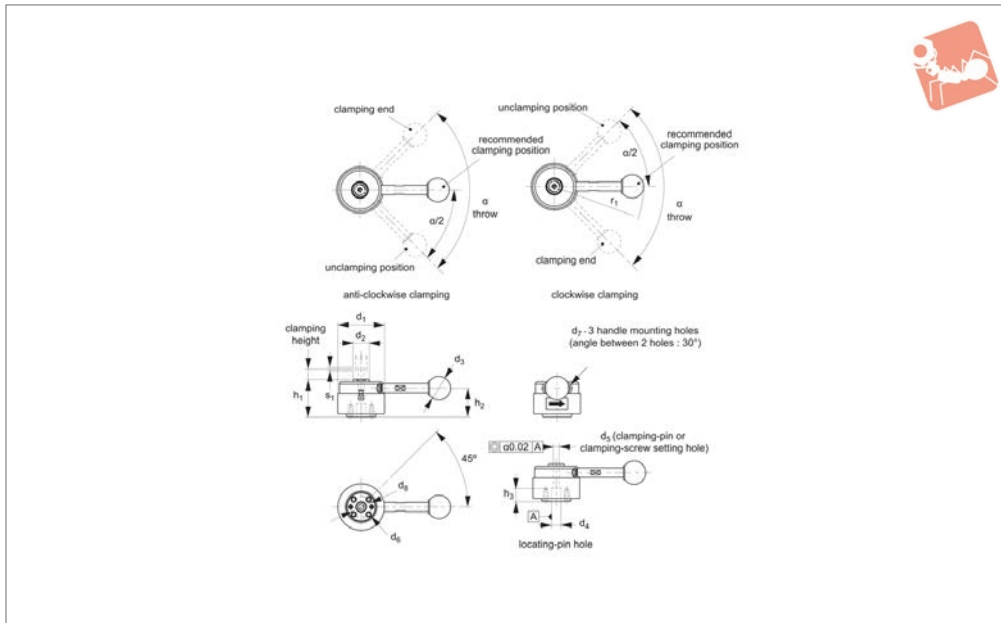
The jaw swivels to align to an unmachined surface of the workpiece. The jaw is replaceable.  
 For mounting, use a cap screw to suit  $d_1$

### Tips

For replacement jaws, see part nos. 35520.W0303, 35520.W0306 and 35520.W0310.

Order No.	$h_1$	$h_2$	$h_3$	$l_1$	$l_2$	$l_3$	$d_1$	$d_2$	$d_3$	Stroke $s_1$	$w_1$	$w_2$	$w_3$	Clamping force kN max.	Torque to Nm max.	Weight g
12428.W0012	40	32	31	62.5	45	30	M 8	M 4x4	M 8x35	5.3	45	12	25	15	25	0.6
12428.W0016	50	40	39	74.0	55	40	M10	M 4x4	M10x40	7.1	55	16	30	27	50	1.0
12428.W0020	60	48	47	91.0	65	45	M12	M 5x5	M12x50	8.0	65	20	35	38	90	1.7





## 12620.1

LOW PROFILE SIDE CLAMPING

### Material

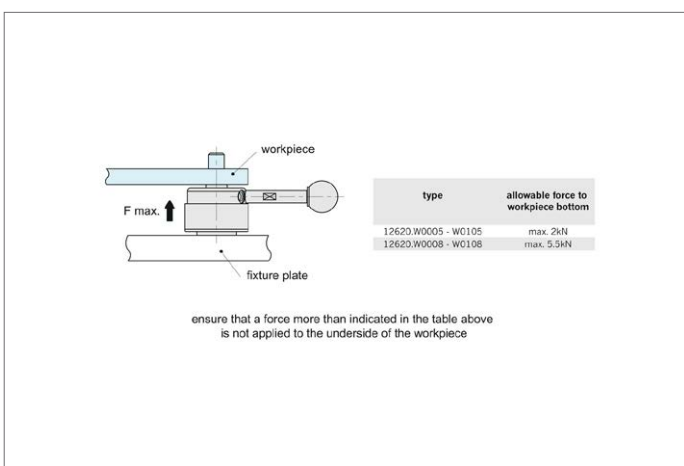
Body: steel (42CrMo), quenched and tempered, black oxide finish.

Handle shank: steel (C43), black oxide finish.

Ball knob: ABS resin, black.

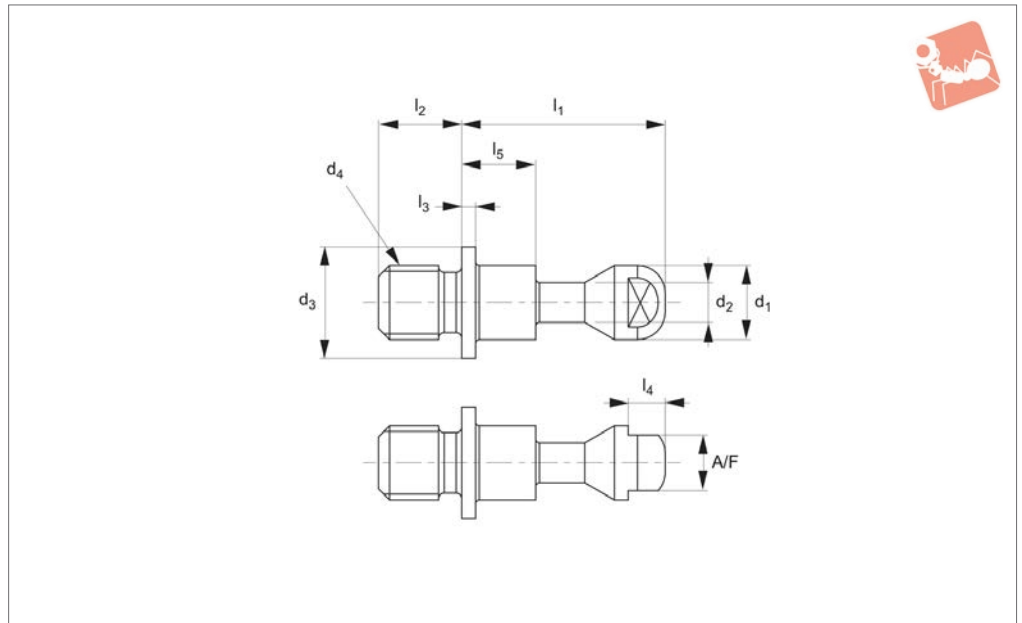
Order No.	Type	s <sub>1</sub>	h <sub>1</sub> ±0.01	h <sub>2</sub>	h <sub>3</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub> tol. G6	d <sub>5</sub> tol. H7	Weight g
12620.W0005	Clockwise	1.5	32	24.5	10	40	13.5	20	8	5	245
12620.W0105	Anti Clockwise	1.5	32	24.5	10	40	13.5	20	8	5	245
12620.W0008	Clockwise	2.0	40	30.7	13	50	18	25	12	8	470
12620.W0108	Anti Clockwise	2.0	40	30.7	13	50	18	25	12	8	470

Order No.	d <sub>6</sub>	d <sub>7</sub>	d <sub>8</sub>	r <sub>1</sub>	α	Recommended workpiece thickness tolerance	Clamping mechanism	Handle load N max.	Clamping force kN max.
12620.W0005	M4x8	M5x0.8	18	76.5	90°	±0,3	Spiral Cam, 4°	150	0.9
12620.W0105	M4x8	M5x0.8	18	76.5	90°	±0,3	Spiral Cam, 4°	150	0.9
12620.W0008	M6x9	M6x1	25	111.5	110°	±0,5	Spiral Cam, 4°	200	2.5
12620.W0108	M6x9	M6x1	25	111.5	110°	±0,5	Spiral Cam, 4°	200	2.5





## 12620.2



### Material

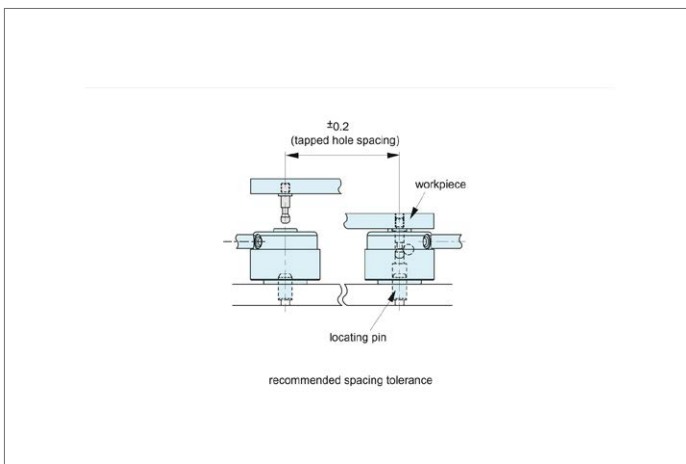
Steel (35CrMo), tempered and black oxide finish.

### Technical Notes

Used with Pull clamp 12620.W0005- . W0108.

Recommended spacing tolerance between clamping screws  $\pm 0,2$ .

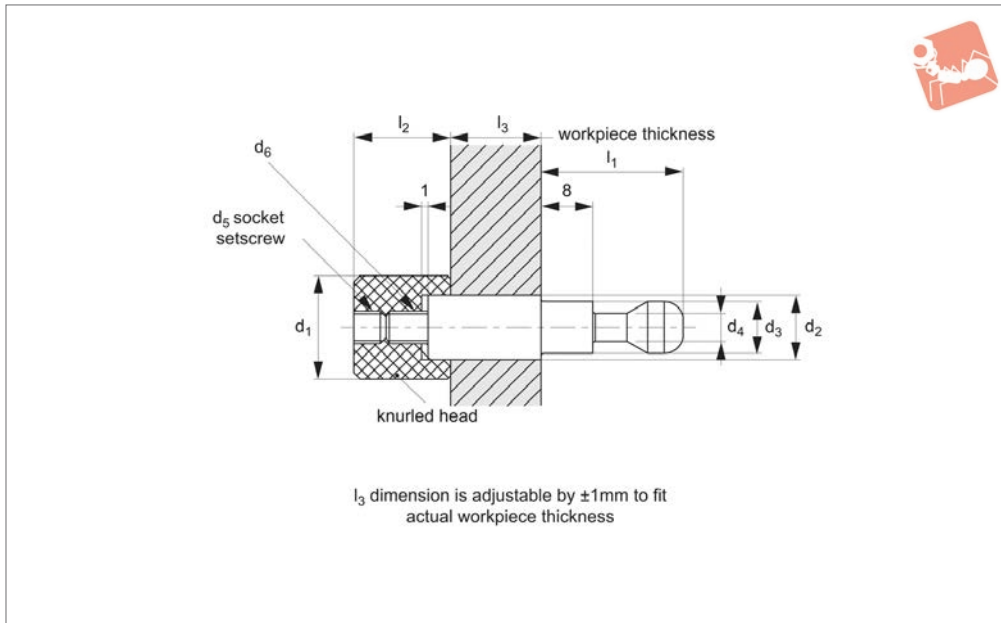
Order No.	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	A/F	Weight g
12620.W0351	5	3.0	8	M 5x0,8	17	6	1.2	2.5	4	3
12620.W0352	5	3.0	8	M 6x1	17	7	1.2	2.5	4	4
12620.W0381	8	4.3	12	M 8x1,25	22	9	1.5	4.0	6	10
12620.W0382	8	4.3	12	M10x1,5	22	11	1.5	4.0	6	13





# Clamping Pins for pull clamps

## Low Profile Side Clamping



### 12620.3

LOW PROFILE SIDE CLAMPING

#### Material

Shank: steel (35CrMo), induction hardened (taper seat), precision ground.  
Head: steel (C45), tempered and black oxide finish.

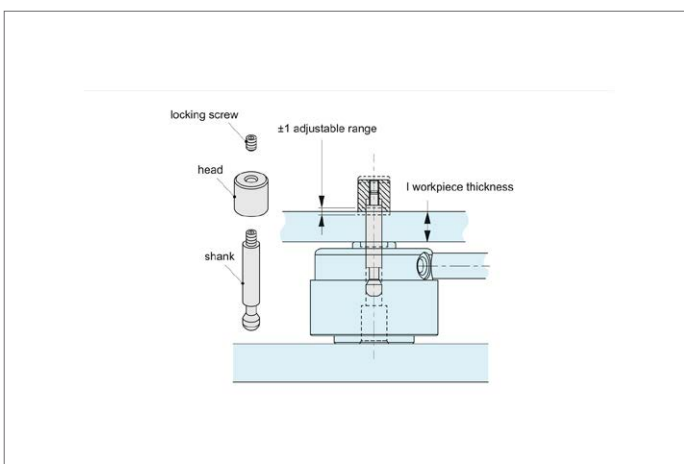
#### Technical Notes

The length  $l_3$  should be decided depending on the workpiece thickness, adjustable by  $\pm 1$ mm.

#### Tips

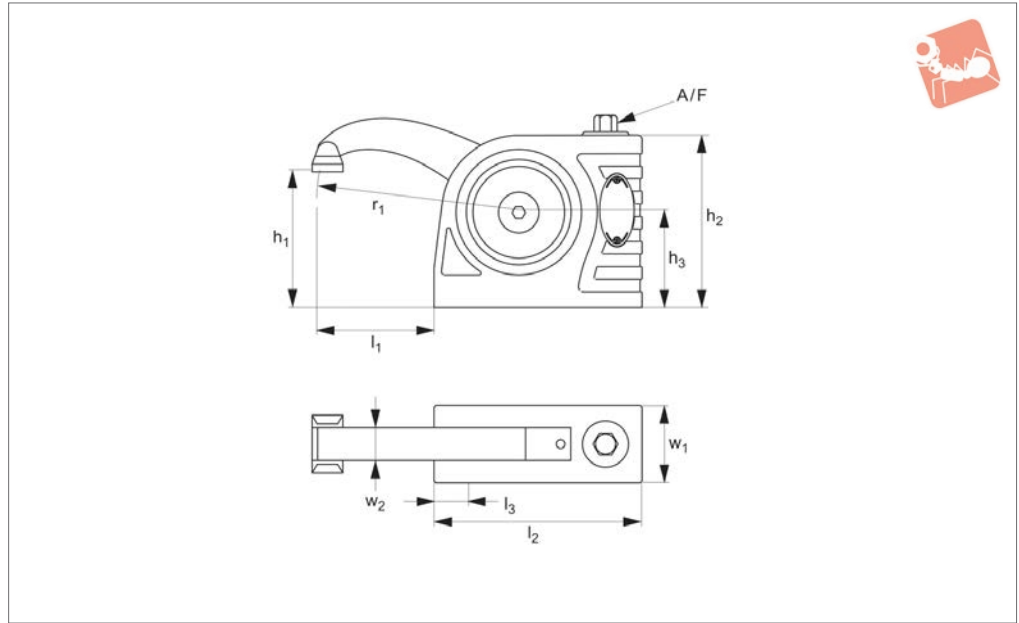
In the order table replace XX with  $l_3$  length required to suit workpiece (in mm).

Order No.	$d_1$	$d_2$ tol. f7	$d_3$ tol. f7	$d_4$	$d_5$	$d_6$	$l_1$	$l_2$	$l_3$	Weight g
12620.W0551-XX	10	5	5	3	M 3x4	M 3x0,5	17	10	$3 < l_3 < 50$	8~16
12620.W0552-XX	10	6	5	3	M 3x4	M 3x0,5	17	10	$3 < l_3 < 50$	8~19
12620.W0581-XX	16	8	8	4.3	M 5x5	M 5x0,8	22	15	$4 < l_3 < 80$	30~60
12620.W0582-XX	16	10	8	4.3	M 5x5	M 5x0,8	22	15	$4 < l_3 < 80$	31~77





## 10650



### Material

Aluminium body, steel arm and screw.  
Aluminium clamping pad.

### Technical Notes

Can be used with our stackable riser elements to increase the clamping height

if required (see part 10651).

Supplied with clamping key (10651. W1140). Clamping screws for mounting to machine bed etc. supplied separately, see part no. 10654.

### Tips

Can be used on T-slot tables or tapped holes.

### Important Notes

Available as a box set, see part 10653.

Order No.	Arm type	Clamp reach $l_1$	Clamping force kN max.	Clamping height $h_1$	$h_2$	$h_3$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$	A/F	Torque to Nm max.
10650.W0020	Short	33	16	0 to 80	89	49	108	12.5	r 77	40	16	11	80
10650.W0030	Long	61	12	-8 to 102	89	49	108	12.5	r105	40	16	11	80
10650.W0035	Extra Long	132	8	-43 to 155	89	49	108	12.5	r176	40	16	11	80

installation notes

1. slide the T-nut and the screw into the slot 2. position and tighten the clamp on the table using the clamping key provided 3. clamp the workpiece using the same key 4. proceed with machining

mounted on modular table with a special screw: M10 - M12 - M14 or M16

mounted T-slot table with special M10 screw

why use the monobloc?

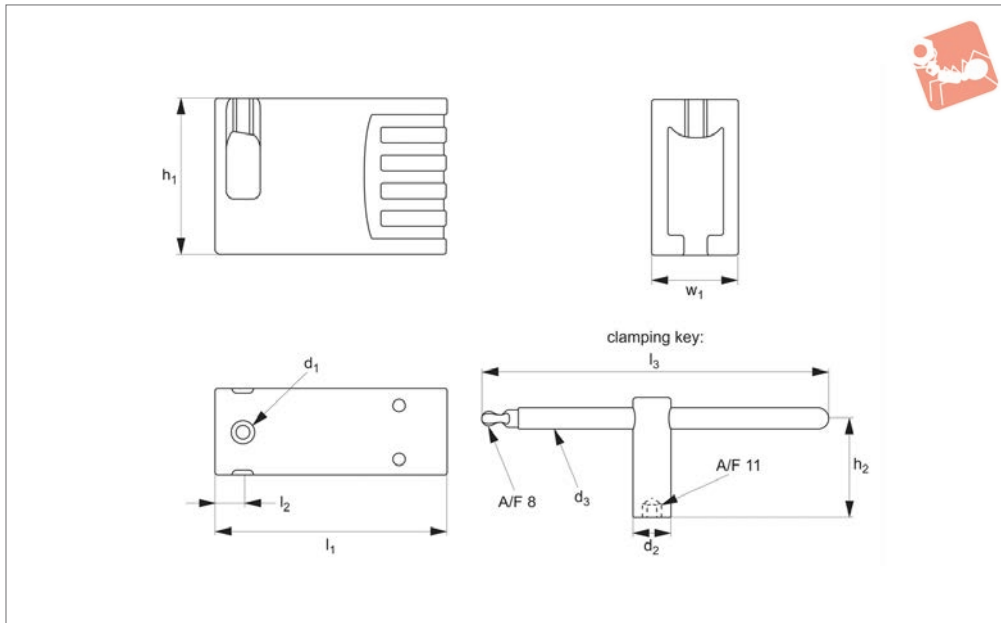
- works with tables with tapped holes and tables with T-slots
- when the arm is released, the monobloc remains fixed in the position in the slot





# Monobloc Spacer Elements for clamps 10650

# Adjustable Vertical Clamps



## 10651

ADJUSTABLE VERTICAL CLAMPS

### Material

Spacer elements: aluminium. Supplied with clamping screw.

Clamping key: red plastic coated or nickel

plated.

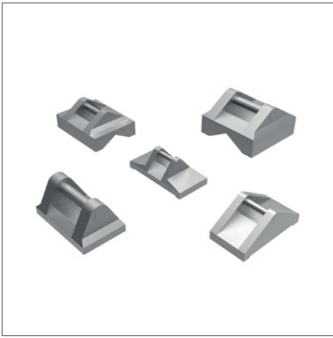
### Technical Notes

Can be used to increase the clamping

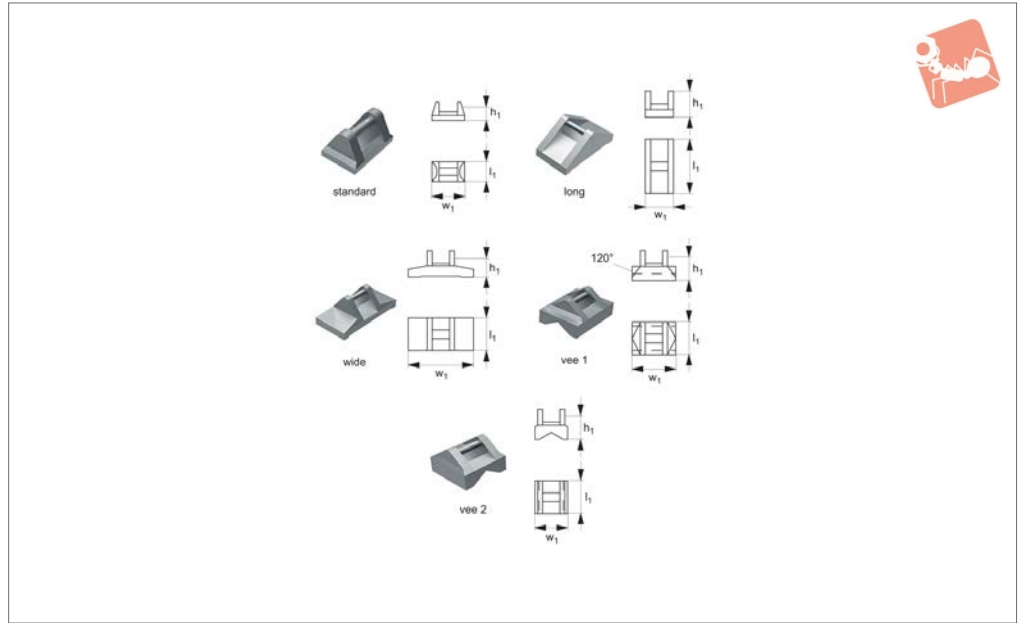
height of most of our vertical clamping systems (10650, 10660).

Order No.	Type	$h_1$	$h_2$	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$	$l_3$	$w_1$
10651.W0050	Spacer element	74	-	M10	-	-	108	12.5	-	40
10651.W0160	Key - coated	-	58	-	24	14	-	-	200	-
10651.W0325	Key - plated	-	88	-	20	10	-	-	200	-





## 10652



**Material**  
Aluminium.

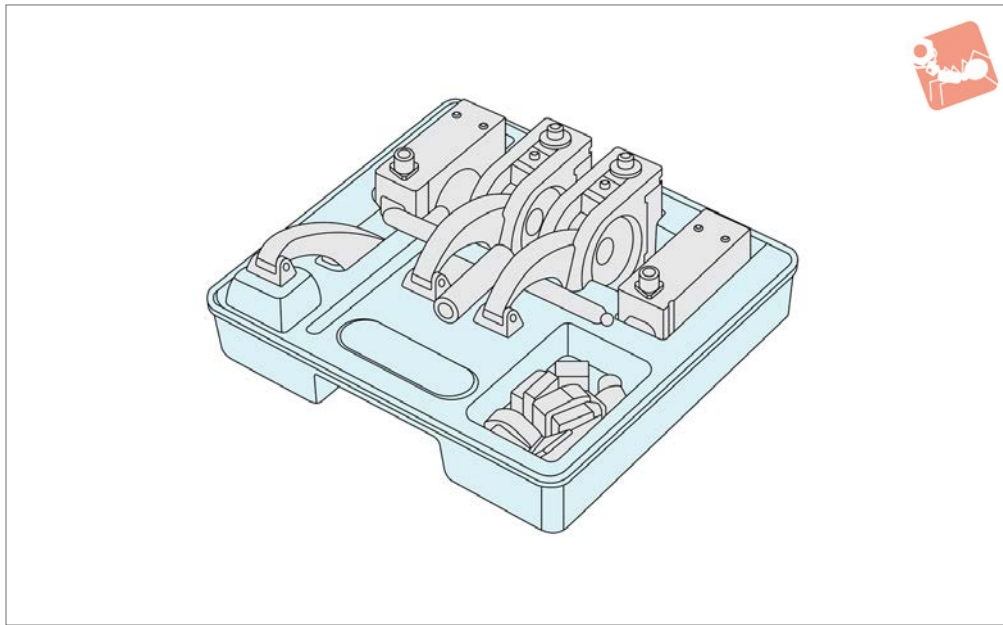
shapes. For use with clamps 10650, 10655, 10660.

**Technical Notes**

Clamping pads to suit differing workpiece

Order No.	Pad type	$h_1$	$l_1$	$w_1$
10652.W0565	Standard	11	18	30
10652.W0802	Long	17	50	26
10652.W0803	Wide	18	30	60
10652.W0804	Vee 1	14	30	40
10652.W0805	Vee 2	14	30	30
10652.W1150	Set of 4 (Long, Wide, Vee 1, Vee 2)	-	-	-





## 10653

ADJUSTABLE VERTICAL CLAMPS

### Technical Notes

Comprises of two monobloc clamps (short 10650.W0020 and long 10650.W0030), two spacer elements (2 x 10651.W0050), one clamping key (10651.W0160 or 10651.

W0325), one extra long arm (available with clamp in 10650.W0035), 4xM10 screws (10654.W0080 and 10654.W0085) and 6xM10 T-nuts (with spring) for 14, 16 and 18mm slots.

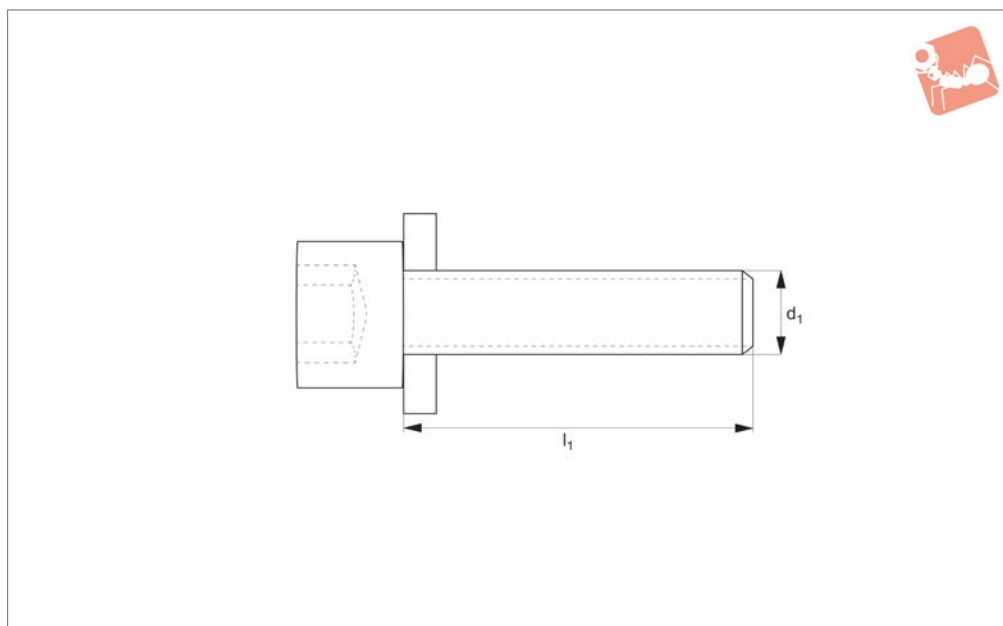
### Tips

Clamp heights shown with the use of the riser blocks.

Order No.	Description	Clamp reach	Clamping force kN max.	Clamping height min.   max.
10653.W0100	Long Arm Set	61	12	-8 to 176
10653.W0110	Short Arm Set	33	16	0 to 154



**10654**



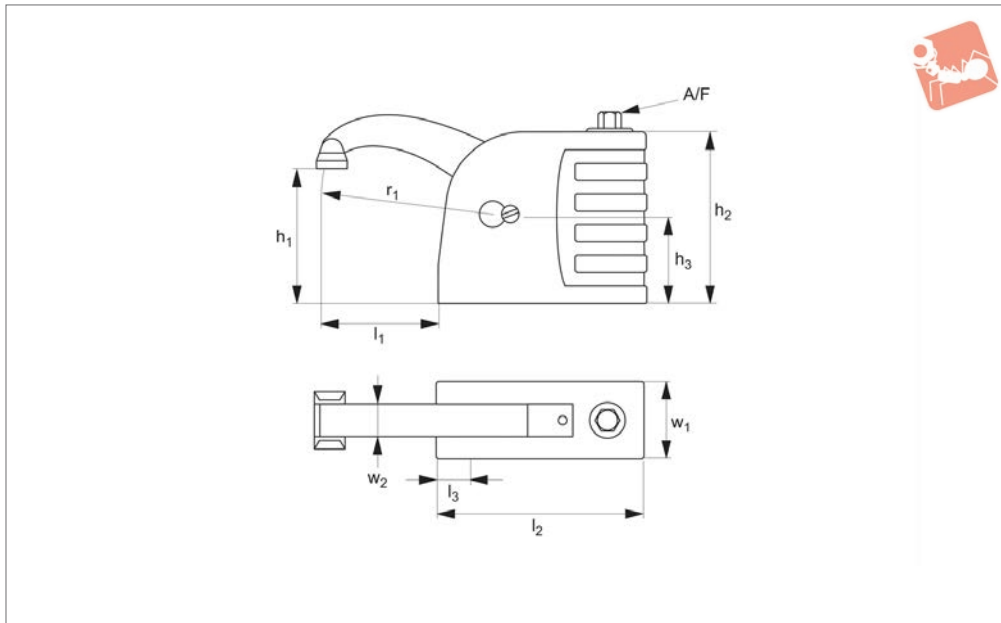
**Material**

Steel.

**Technical Notes**

Please order T-nuts separately, see part no. 24000.

Order No.	Type	For thread	For T-slot	$d_1 \times l_1$
10654.W0080	For T-slots	-	12 & 14	M10x35
10654.W0085	For T-slots	-	16 & 18	M10x40
10654.W0090	For T-slots	-	20 & 22	M10x45
10654.W0065	For threads	M12	-	M12x40
10654.W0070	For threads	M14	-	M14x45
10654.W0075	For threads	M16	-	M16x45



## 10655

ADJUSTABLE VERTICAL CLAMPS

### Material

Aluminium body, steel arm and screw.  
Aluminium thrust product.

ping force. Supplied with key and clamping screw (M8 x 30mm) for mounting to machine bed.

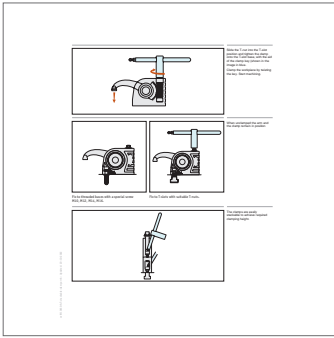
### Technical Notes

Small clamping footprint with high clam-

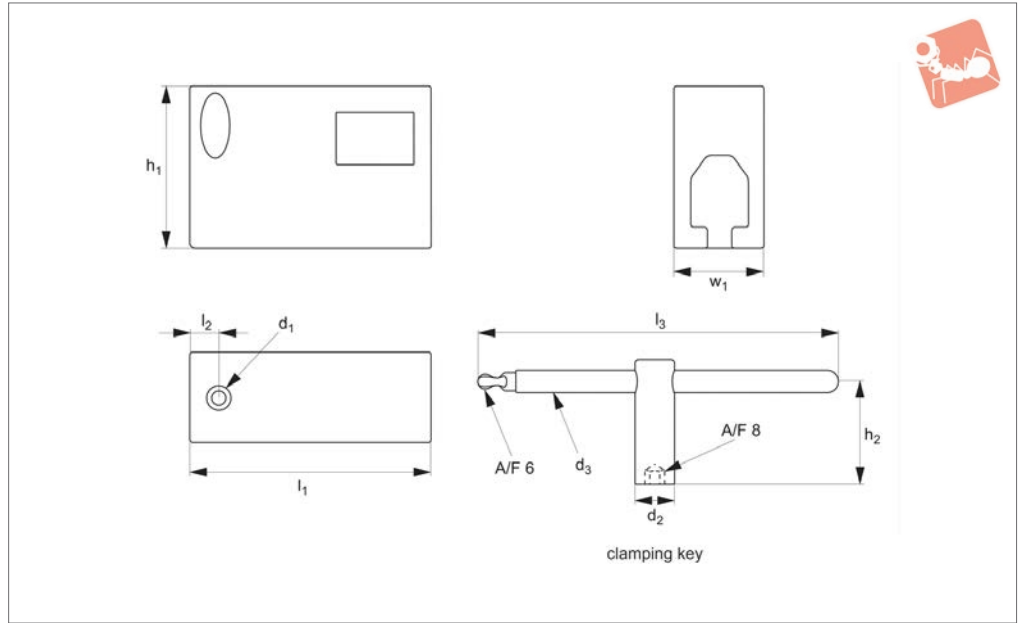
For spacer elements see part no. 10656.

Order No.	Arm type	Clamp reach $l_1$	Clamping force kN max.	Clamping height $h_1$ min.   max.	$h_2$	$h_3$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$	A/F	Torque to Nm max.
<b>10655.W0020</b>	Short	54	6.5	-15 to 58	62.5	31	73	11	r 76	32	16	8	30
<b>10655.W0025</b>	Long	100	4.2	-40 to 90	62.5	31	73	11	r122	32	16	8	30





## 10656



### Material

Aluminium body, supplied with clamping screw.

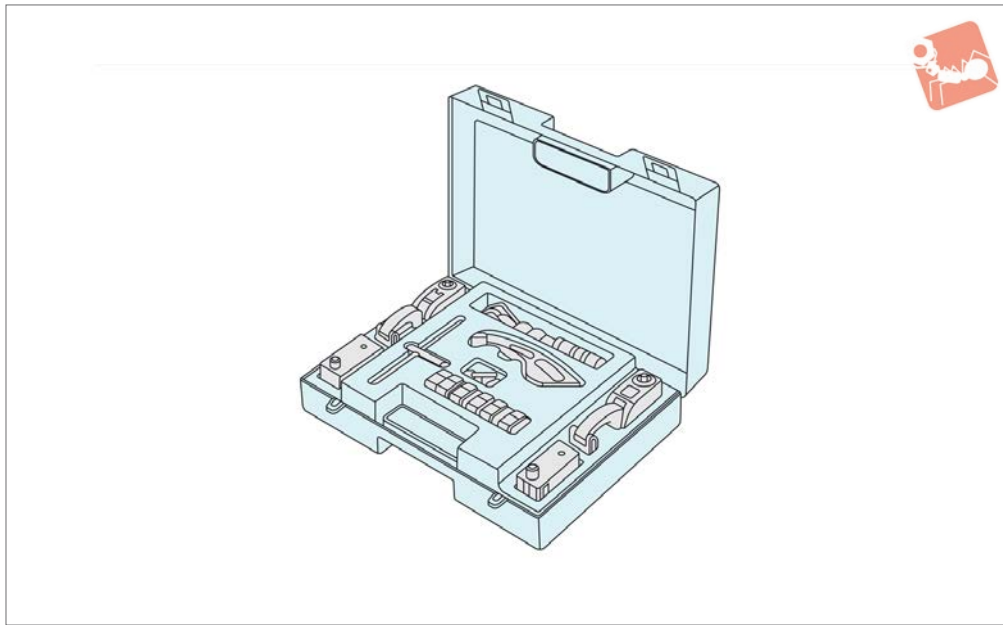
Clamping body key: nickel plated steel.

### Technical Notes

Can be used to increase the clamping

height of our vertical clamping systems 10655.

Order No.	Type	$h_1$	$h_2$	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$	$l_3$	$w_1$
10656.W0030	Spacer	60	-	M8	-	-	73	11	-	32
10656.W0180	Key	-	38	-	16	7	-	-	140	-



## 10657

ADJUSTABLE VERTICAL CLAMPS

### Technical Notes

Comprises of two piccolo clamping elements (short 10655.W0020 and long

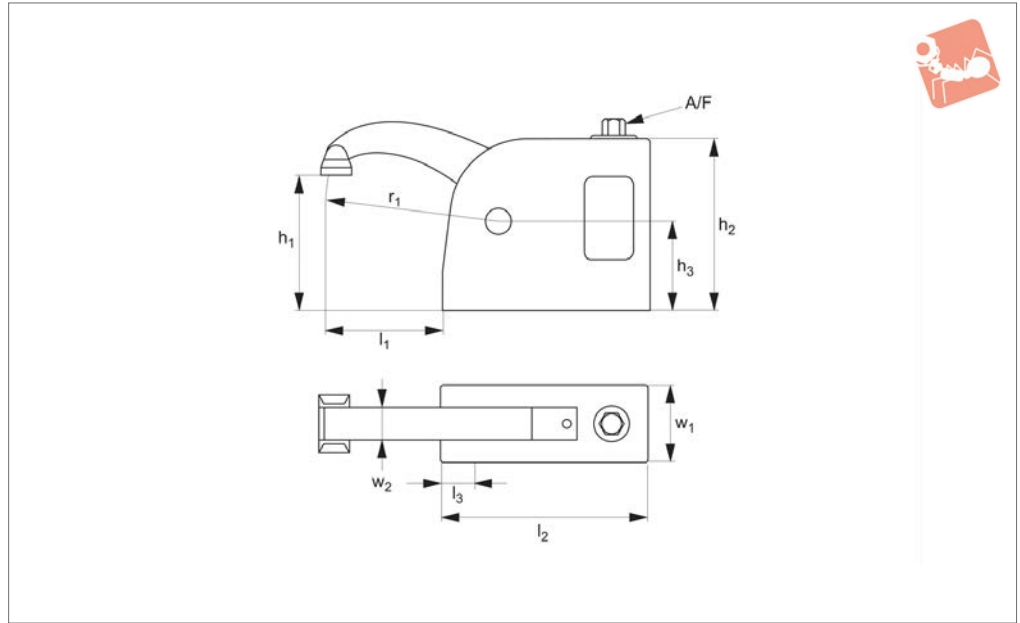
10655.W0025), two spacer elements (2 x 10656.W0030), one clamping key (10656.W0180), one extra long arm, four M10

screws and six M10 T-nuts (with spring) for 14, 16 and 18mm slots.

Order No.	Description	Clamp reach	Clamping force kN max.	Clamping height min.   max.
10657.W0100	Piccolo Clamp Set	54	6.5	0 to 118



## 10658



### Material

Aluminium body, steel arm and screw.  
Aluminium clamp thrust product.

### Technical Notes

The only clamp specially designed for

electro-discharge (EDM) machines. The body has a large opening to ensure free flow of fluid.

These clamps are easily disassembled without tools, cleaned, greased and re-

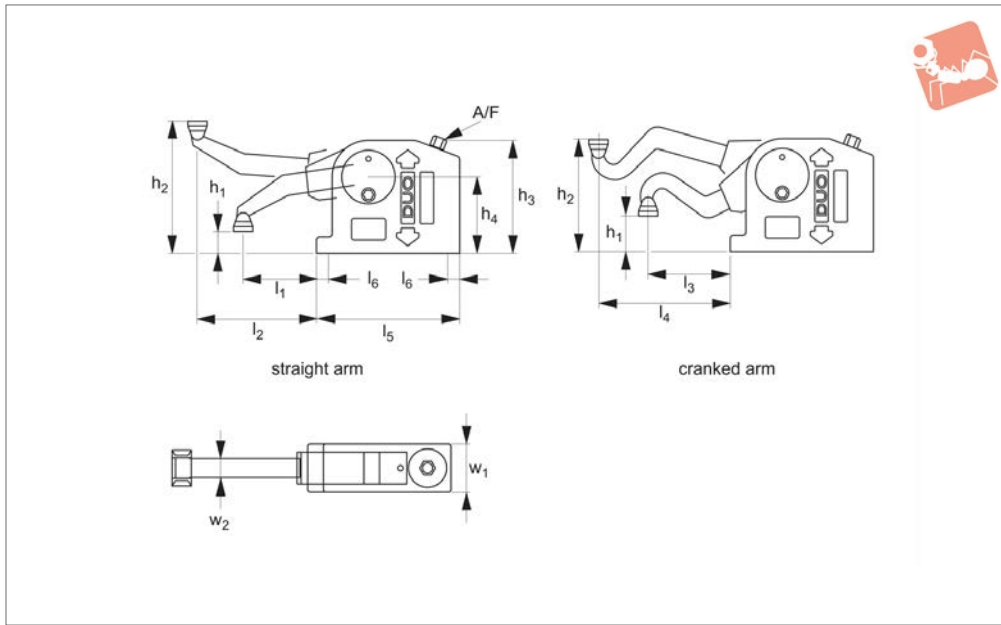
assembled.

### Important Notes

Supplied with clamping key and clamping screw (M8 x 30mm) for mounting to machine bed.

Order No.	Arm type	Clamp reach $l_1$	Clamping force kN max.	Clamping height $h_1$ min.   max.	$h_2$	$h_3$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$	A/F	Torque to Nm max.
10658.W0022	Short	54	6	-15 to 58	62.5	31	73	11	r 76	32	16	8	80
10658.W0023	Long	100	4	-40 to 90	62.5	31	73	11	r122	32	16	8	30





## 10660

ADJUSTABLE VERTICAL CLAMPS

### Material

Aluminium body, steel arm and screw.  
Aluminium clamp thrust product.

### Technical Notes

Fully adjustable clamping range that can be used with our standard stackable riser

elements (see part no. 10651).

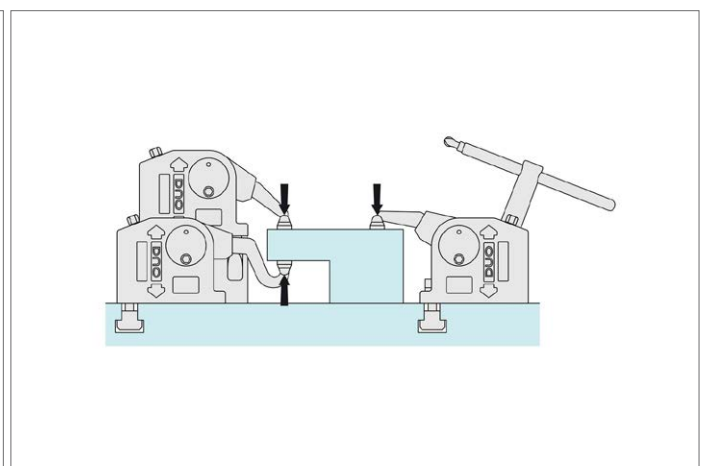
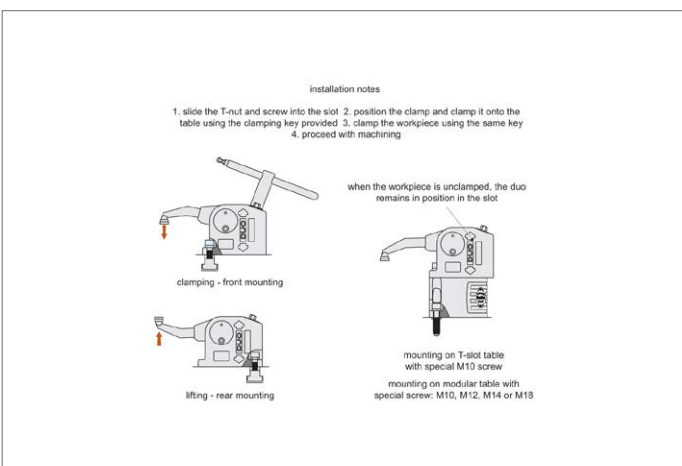
Has both clamping and lifting capability, aided by two different interchangeable arms.

Supplied with operating key.

### Tips

**Two different clamping arm shapes provided: straight and cranked.** See table below for clamping and lifting heights of each arm.

Order No.	Clamp reach $l_1$ - $l_2$	Clamp reach $l_3$ - $l_4$	Clamping force kN max.	Clamping height $h_1$ min.   max.	Lifting height $h_2$ min.   max.	$h_1$ min.   max.	$h_2$ min.   max.	$h_3$	$h_3$ min.   max.	$h_4$	$h_4$ min.   max.	$l_5$	$l_6$	$w_1$	$w_2$	Clamping arm
10660.W0020	46-88	48-91	11	0-129	4-142	0-80	52-142	95	38-125	65	4-94	120	10	40	14	Straight



# Adjustable Vertical Clamps

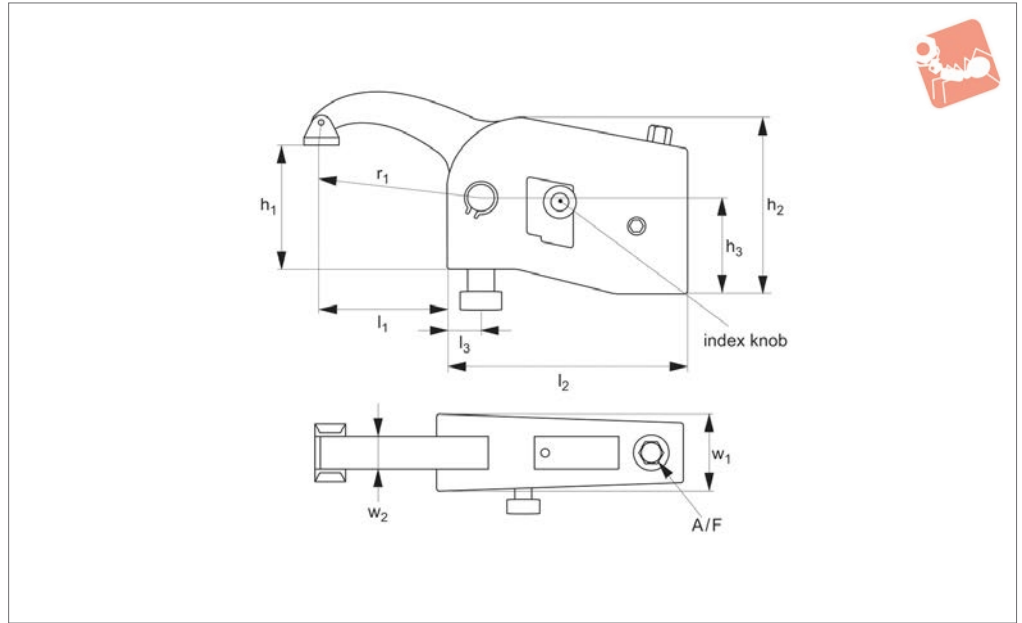
# Big Block Clamps



ADJUSTABLE VERTICAL CLAMPS



## 10661



### Material

Aluminium body, steel arm and screw.  
Aluminium thrust product.

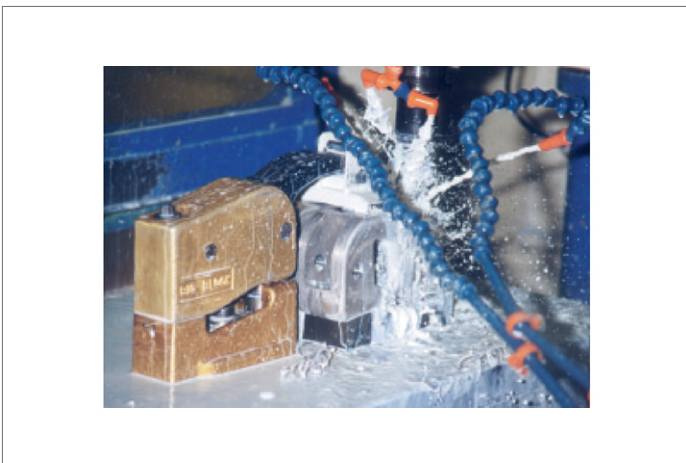
### Technical Notes

Quick and easy clamping of different clam-

ping heights. The index pin knob allows rapid adjustment to five set positions. Can be used with stackable riser elements to achieve required clamping heights. See part 10662.

Supplied with clamping key.

Order No.	Description	Clamp reach $l_1$	Clamping force kN max.	Clamping height $h_1$ min.   max.	$h_2$	$h_3$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$	A/F	Torque to Nm max.
10661.W0020	Short	50	40	12 to 80	105	60	162	25	r 75	60	30	11	70
10661.W0030	Standard	95	28	-12 to 100	105	60	162	25	r120	60	30	11	70
10661.W0035	Long	145	20	-18 to 135	105	60	162	25	r170	60	30	11	70
10661.W0038	Extra Long	245	14	-50 to 155	105	60	162	25	r270	60	30	11	70



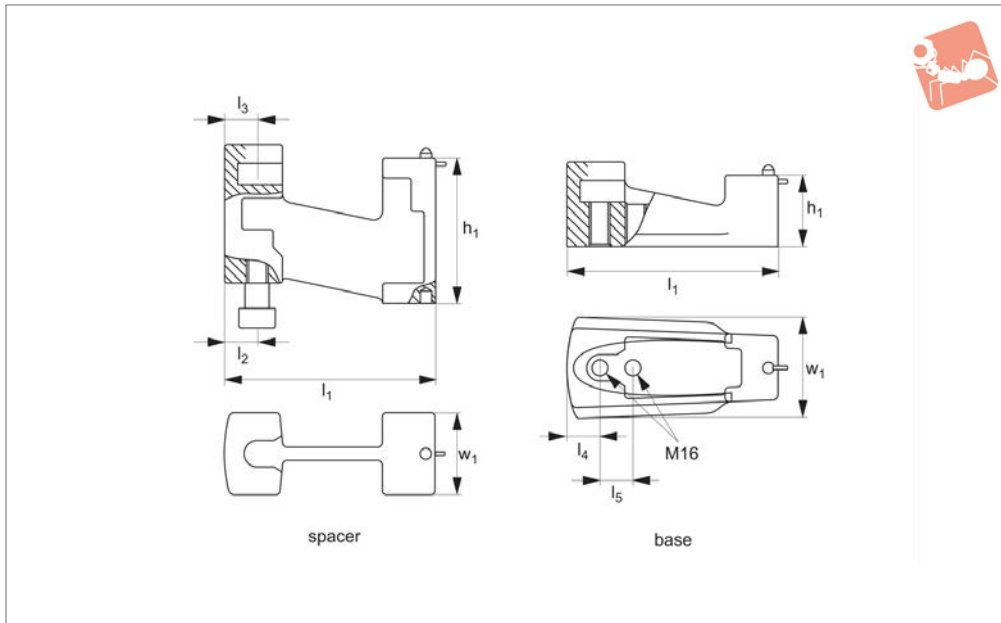




# Big Block Spacer Elements

for big block clamps no. 10661

# Adjustable Vertical Clamps



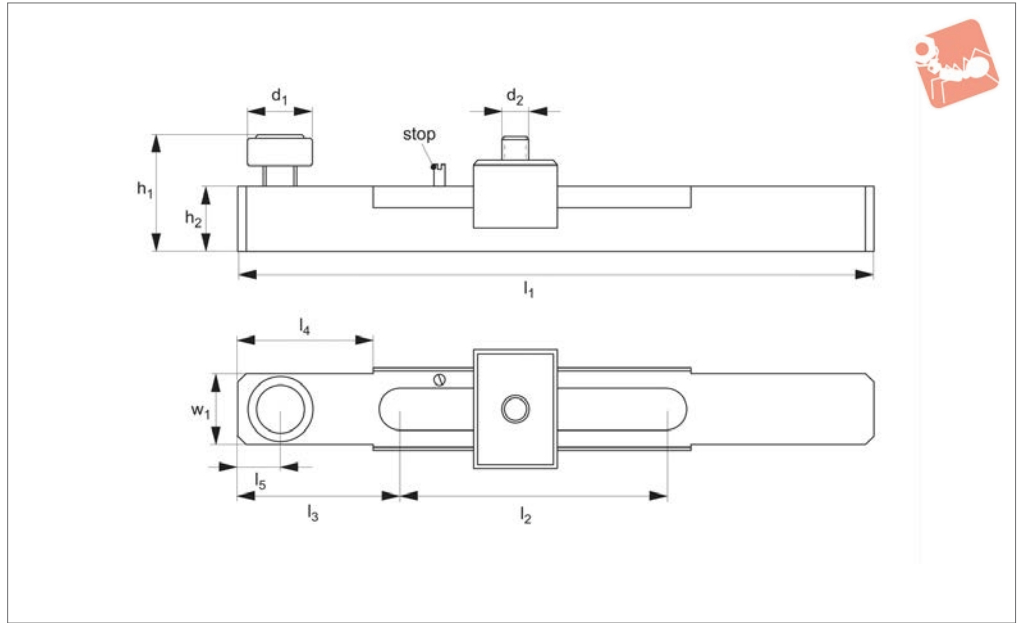
**10662**

ADJUSTABLE VERTICAL CLAMPS

**Material**  
Aluminium.

**Technical Notes**  
Base and spacer elements. For use with big block clamping system (part no. 10661).

Order No.	Type	$h_1$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$w_1$
<b>10662.W0040</b>	Base	55	162	-	-	25	25	75
<b>10662.W0045</b>	Spacer	55	162	25	25	-	-	75
<b>10662.W0050</b>	Spacer	110	162	25	25	-	-	75
<b>10662.W0055</b>	Spacer	330	162	25	25	-	-	75



ADJUSTABLE VERTICAL CLAMPS

## 10663

**Material**

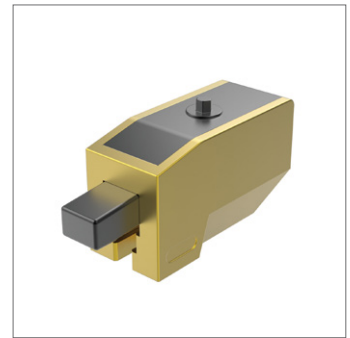
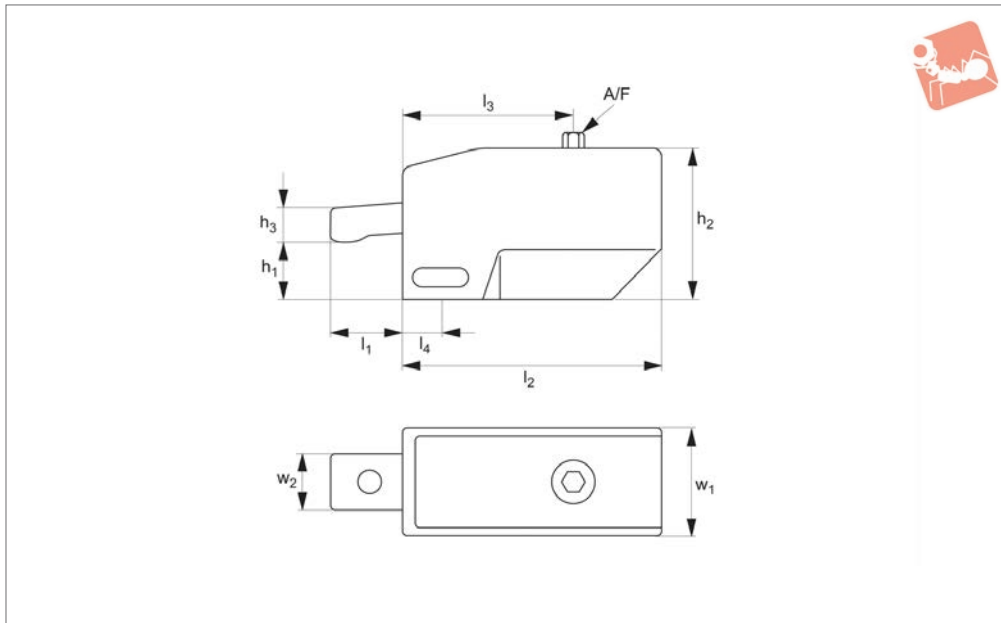
Steel.

with big block clamping system (part no. 10661).

**Technical Notes**

Easy 152mm retraction of clamps. For use

Order No.	Type	$h_1$	$h_2$	$d_1$	$d_2$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	Travel max.	$w_1$
10663.W0180	Base	61 - 85	28	28	M16	382	160	95	80	25	152	48



**10670**

ADJUSTABLE VERTICAL CLAMPS

**Material**

Body: aluminium.  
Clamping piece: steel.

downward simply with a turn of the hex key.  
Very compact, powerful and quick acting.

using on a spacer element or using our standard spacers (see part no. 10671).  
Supplied with clamping key and clamping screw (M10 x 35mm).

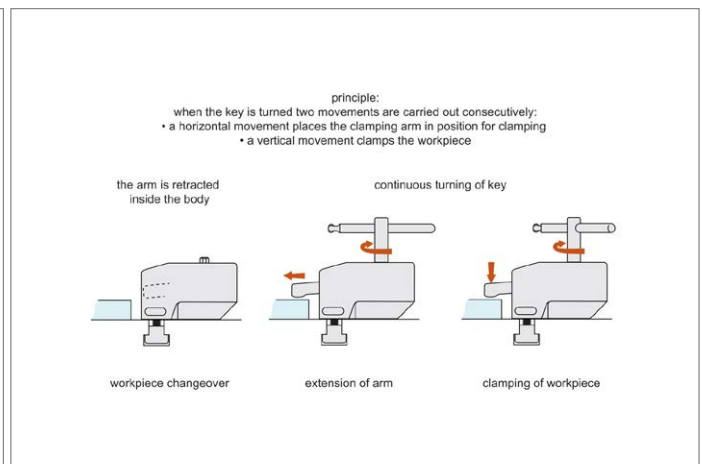
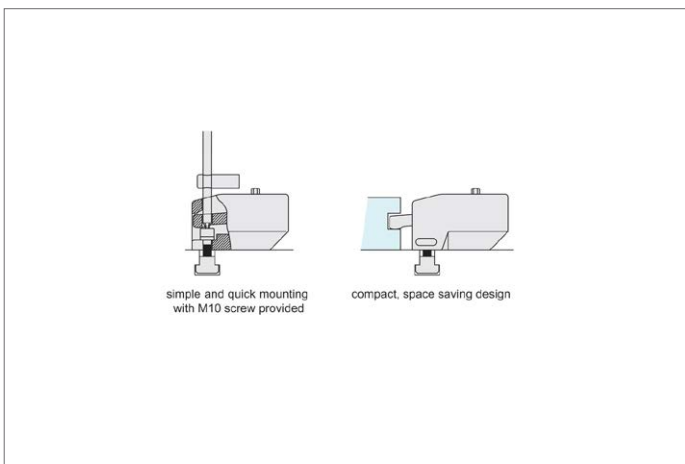
**Technical Notes**

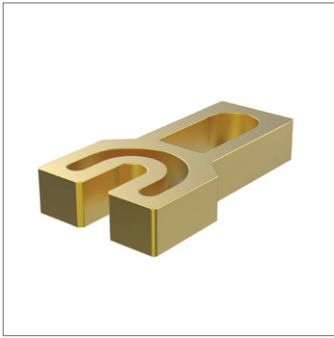
Unique double action, moves forward and

**Tips**

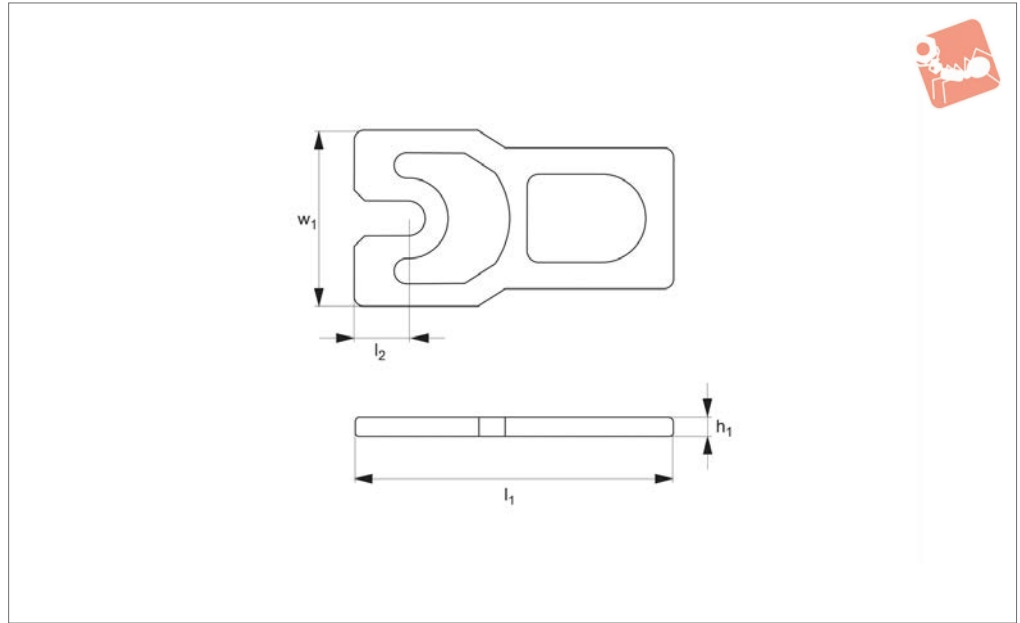
Clamping height can be easily adjusted by

Order No.	Clamping force kN max.	Clamping height $h_1$ min.   max.	Clamping reach $l_1$	$h_2$	$h_3$	$l_2$	$l_3$	$l_4$	$w_1$	$w_2$	A/F	Torque to Nm max.
10670.W0020	11	22 to 26	30	67	16.5	115	65	18	50	25	8	20





**10671**



**Material**

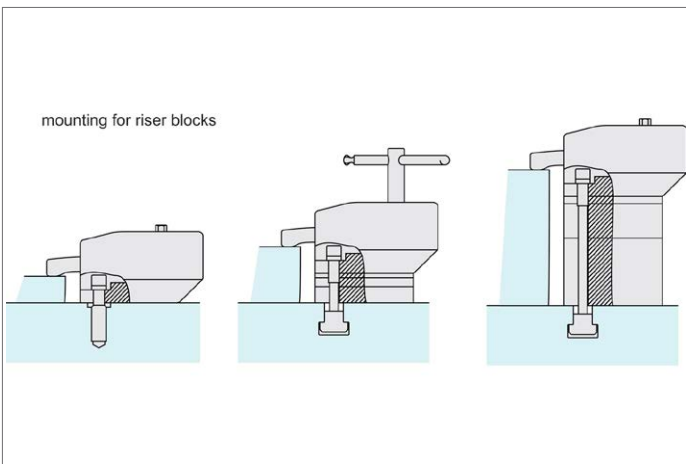
Aluminium.

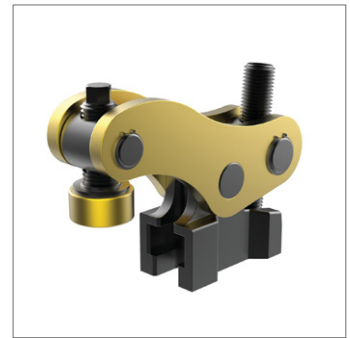
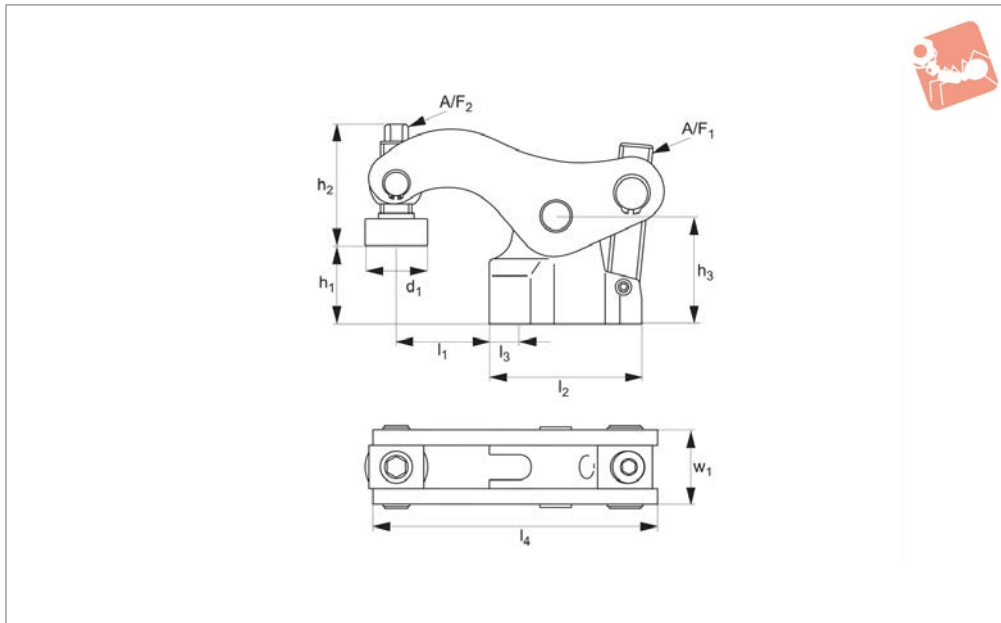
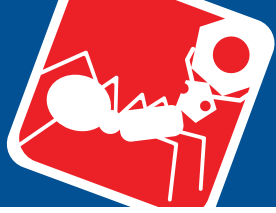
**Technical Notes**

Supplied as set of six different spacer

thicknesses. Suitable mounting screws also supplied. For use with clamp 10670. Can reach a maximum clamping height of 126mm.

Order No.	Type	$h_1$	$l_1$	$l_2$	$w_1$
10671.W0080	Set of 6	2, 4, 8, 16, 32 and 64	92	18	50





## 10675

ADJUSTABLE VERTICAL CLAMPS

### Material

Steel body and clamping arm, with special clamping screw.

Supplied with clamping key, extension key and clamping screw (M14 x 40mm). Please order suitable T-nuts separately, see part no. 24000.

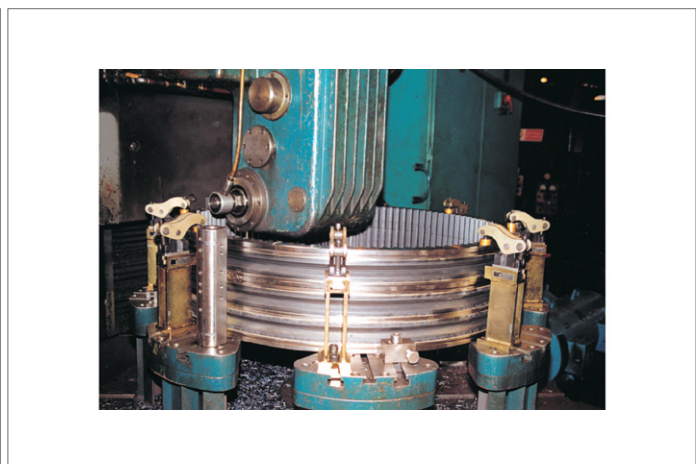
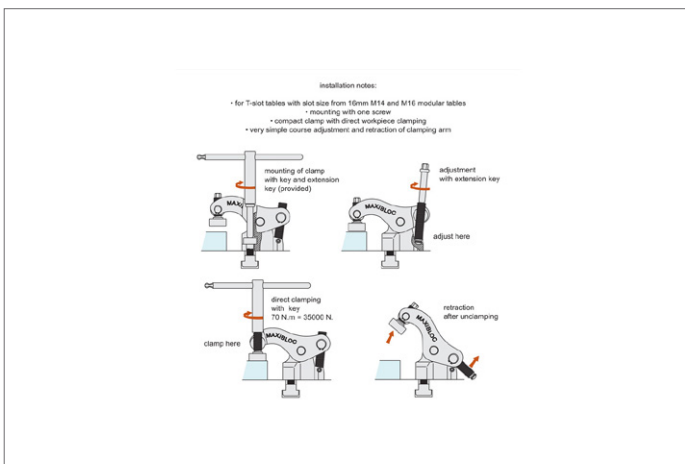
### Tips

Clamping height can be raised using our stackable elements (part no. 10676).

### Technical Notes

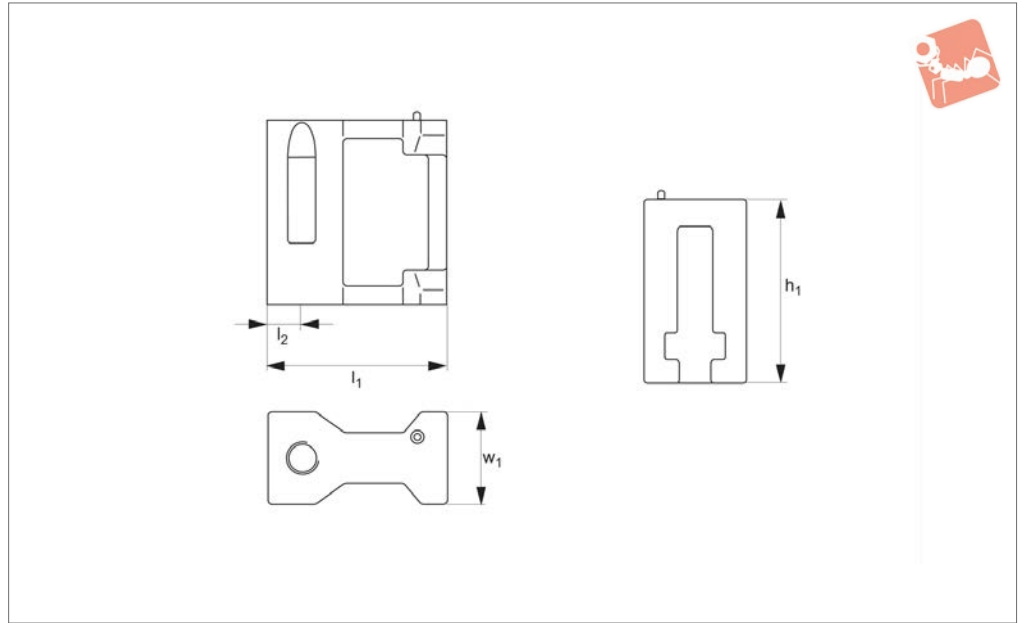
For very heavy machining. Arm retracts.

Order No.	Clamping force kN max.	Clamping height $h_1$ min.   max.	Clamping reach $l_1$	$h_2$	$h_3$	$d_1$	$l_2$	$l_3$	$l_4$	$w_1$	$A/F_1$	$A/F_2$	Torque to Nm max.
10675.W0310	35	0 to 86	49	62.5	55	32	78	15	152	40	8	11	70





**10676**



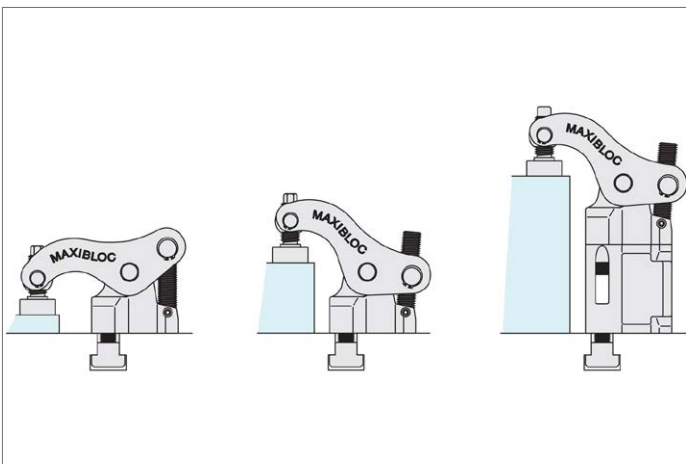
**Material**  
Steel.

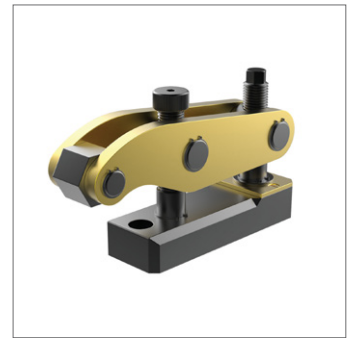
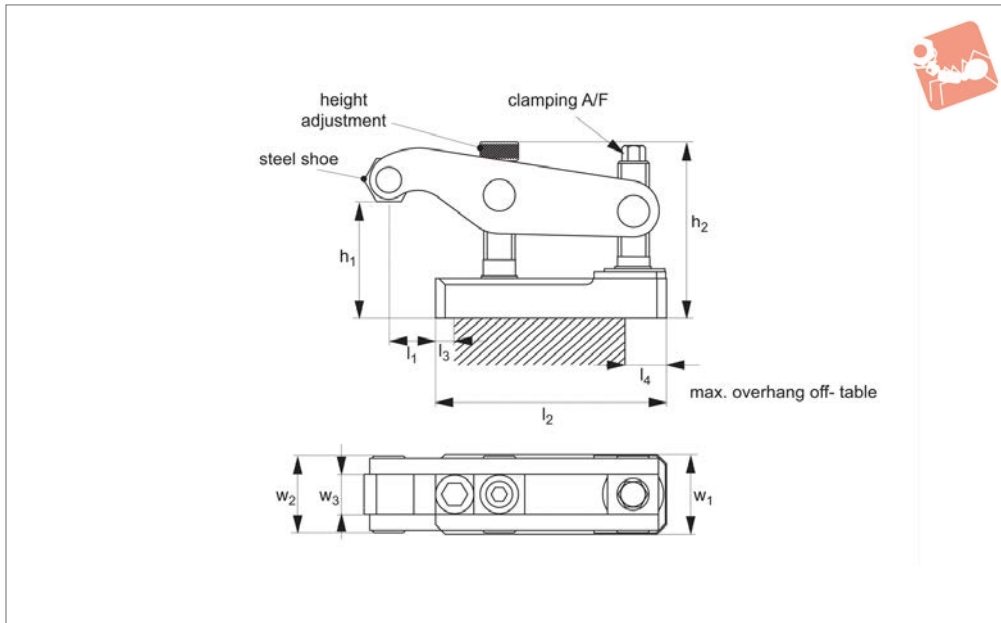
**Technical Notes**

Quick and easy clamping of different clam-

ping heights. For use with Maxi Bloc clamping system part no. 10675. Supplied with M14 mounting screw.

Order No.	Type	$h_1$	$l_1$	$l_2$	$w_1$
10676.W0320	Spacer	80	78	15	40





## 10678

ADJUSTABLE VERTICAL CLAMPS

### Material

Steel, hardened, supplied with clamping key and high tensile strength (12.9) clamping screw.

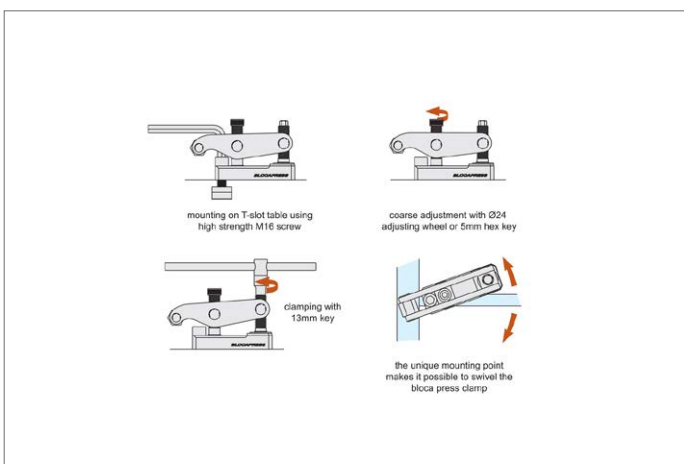
ping screw.

Five ton clamping force.

### Technical Notes

Suitable for heavy duty presses.

Order No.	Clamping force kN max.	Clamping height $h_1$ min.   max.	Clamping reach $l_1$	$h_2$	$l_2$	$l_3$	$l_4$ max.	$w_1$	$w_2$	$w_3$	A/F	Torque to Nm max.
10678.W0340	50	14 to 92	30	111	145	12	25	50	45	25	13	90





## A Wide Range of Clamps to Match any Requirement

CLAMPING FORCE  
**UPTO  
50000  
NEWTONS**

**10650** All machining operations



**16000  
NEWTONS**

**10655** Light machining



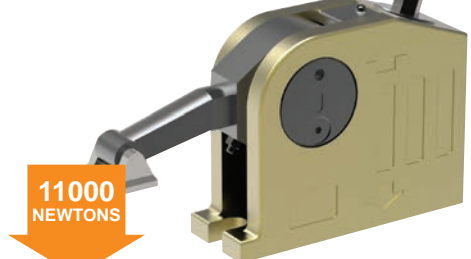
**6500  
NEWTONS**

**10658** Electrical discharge machining



**6500  
NEWTONS**

**10660** Clamping and lifting



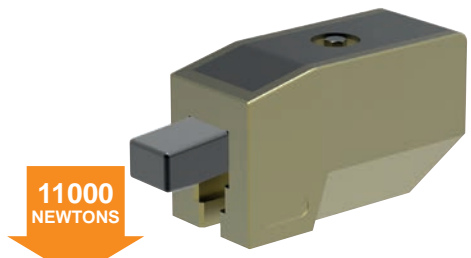
**11000  
NEWTONS**

**10661** Heavy machining



**40000  
NEWTONS**

**10670** Repetitive machining



**11000  
NEWTONS**

**10675** Heavy machining



**35000  
NEWTONS**

**10678** Press Tool Clamping



**50000  
NEWTONS**

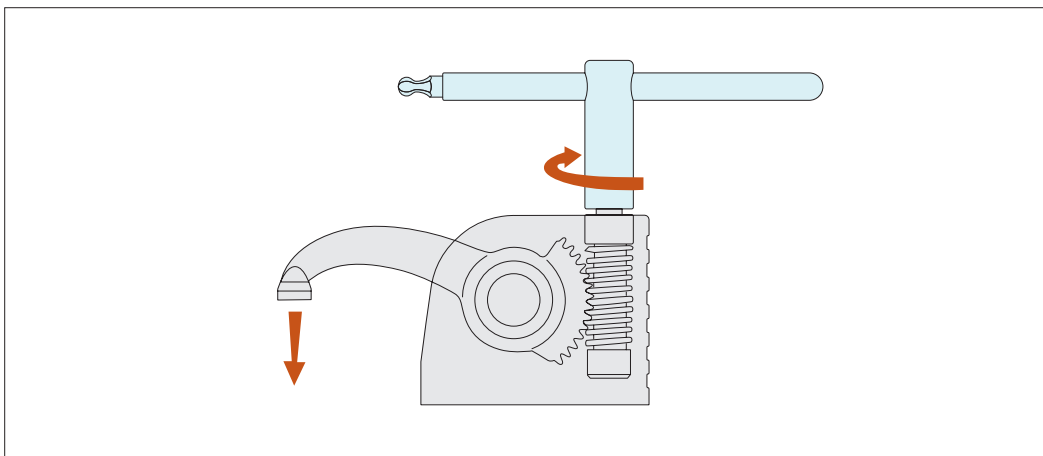




# Monobloc Clamps

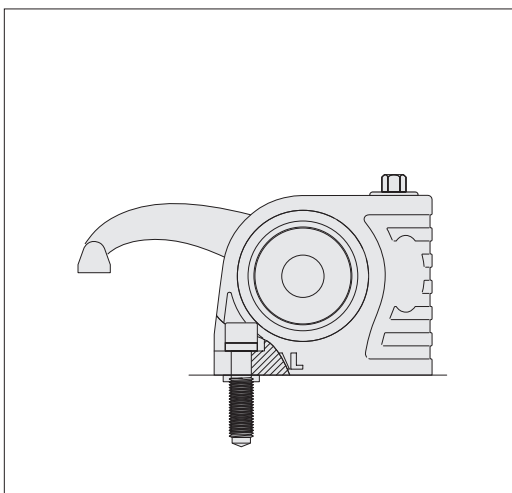
stackable vertical clamping

## Clamping & Height Setting

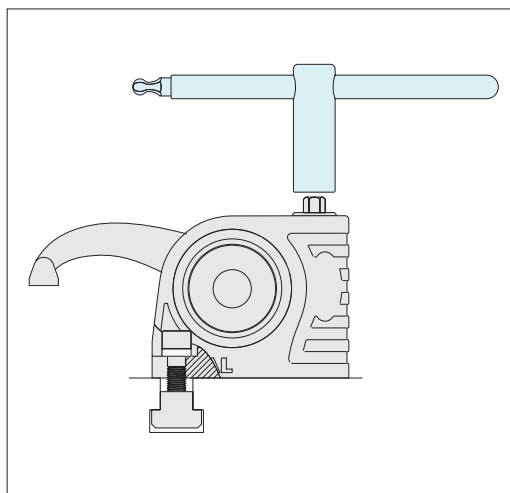


Slide the T-nut into the T-slot position and tighten the clamp onto the T-slot base, with the aid of the clamp key (shown in the image in blue).

Clamp the workpiece by twisting the key. Start machining.

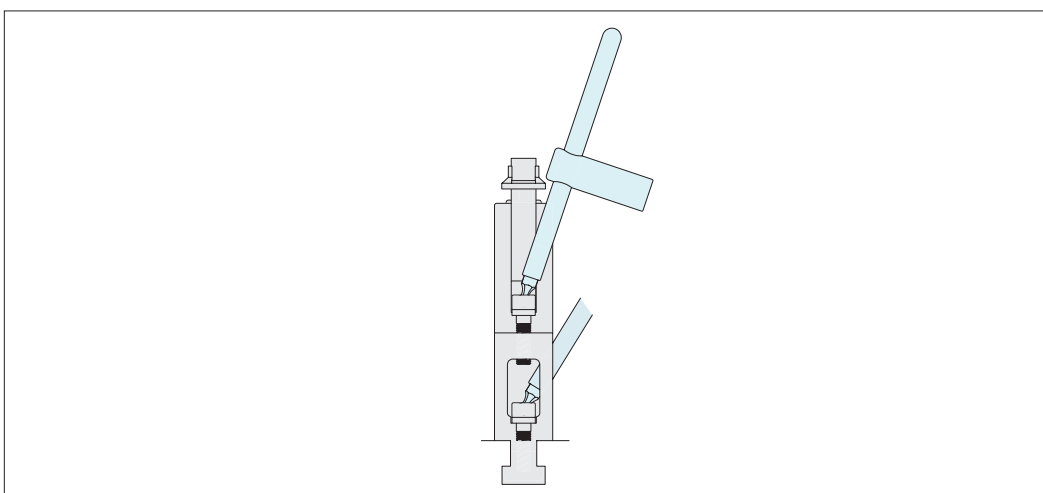


Fix to threaded bases with a special screw M10, M12, M14, M16.



Fix to T-slots with suitable T-nuts.

When unclamped the arm and the clamp remain in position

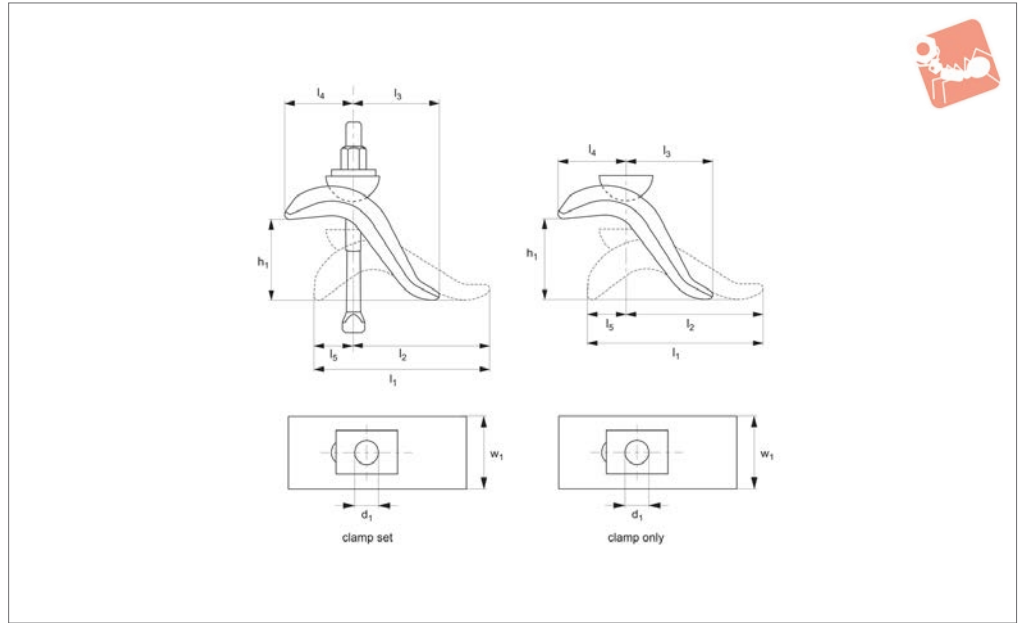


The clamps are easily stackable to achieve required clamping height.

ADJUSTABLE VERTICAL CLAMPS



## 10600



### Material

Steel, forged, tempered and burnished.

### Technical Notes

Type one: clamp and T-bolt set.

Type two: clamp only.

$h_1$  - depends on the depth of the slot position and the position of the fixture nut.

### Tips

Often used for clamping press tools.

Easy height adjustable clamp. No fitting

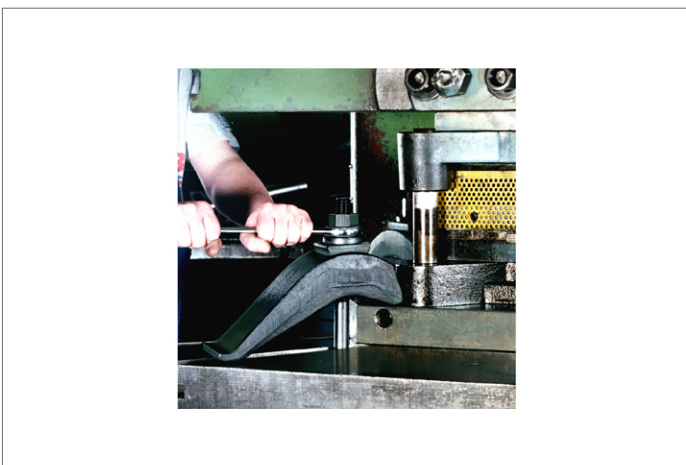
support required.

Used with:

21000 T-slot bolts, 24400 collar nuts,

25000 plain washer.

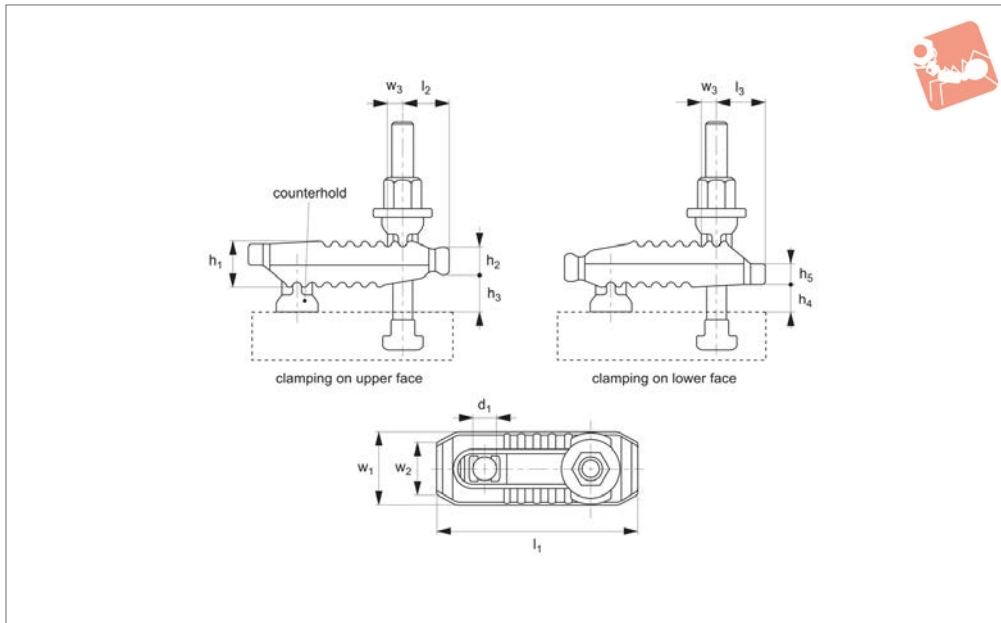
Order No.	Type	T-bolt	For T-bolt	For T-slot	$d_1 \times l_1$	$h_1$	$l_2$	$l_3$	$l_4$	$l_5$	$w_1$	Weight g
<a href="#">10600.W0012</a>	Clamp set	M12x12x125	M12 - M16	12	17x140	0-50	110	60	55	30	50	1070
<a href="#">10600.W0014</a>	Clamp set	M12x14x125	M12 - M16	14	17x140	0-50	110	60	55	30	50	1080
<a href="#">10600.W0016</a>	Clamp set	M16x16x160	M12 - M16	16	17x140	0-75	110	60	55	30	50	1270
<a href="#">10600.W0018</a>	Clamp set	M16x18x160	M12 - M16	18	17x140	0-75	110	60	55	30	50	1280
<a href="#">10600.W0020</a>	Clamp set	M20x20x200	M18 - M20	20	21x175	0-85	135	80	70	40	60	2300
<a href="#">10600.W0022</a>	Clamp set	M20x22x200	M18 - M20	22	21x175	0-85	135	80	70	40	60	2370
<a href="#">10600.W0117</a>	Clamp only	-	M12 - M16	-	17x140	0-75	110	60	55	30	50	900
<a href="#">10600.W0121</a>	Clamp only	-	M18 - M20	-	21x175	0-85	135	80	70	40	60	1600





# Crocodile Adjustable Clamp with support heel

## Adjustable Vertical Clamps



**10603**

ADJUSTABLE VERTICAL CLAMPS

### Material

Clamp: steel, tempered and galvanised.  
T-bolt: steel, forged (strength class 8.8).  
See part 21000 for details.  
Washer: steel, hardened. See part 25000  
for details.  
Nut: steel, heat-treated to strength class  
10. See part 24300 for details.

### Technical Notes

Ideal for clamping components of varying

heights - requires no additional support or  
packing pieces.  
Continuously adjustable clamp over range  
of heights (see dimension  $h_1$  in table),  
with high clamping force.  
Support heel and stud counterhold are  
non-detachable, making for a single piece  
clamp which is quick and easy to use.  
Supplied complete with T-bolt, washer and  
T-nut (see data table).

Ideal for use on press tools and injection  
mould tools. Height can be increased by  
using Support Extensions 10604.

### Tips

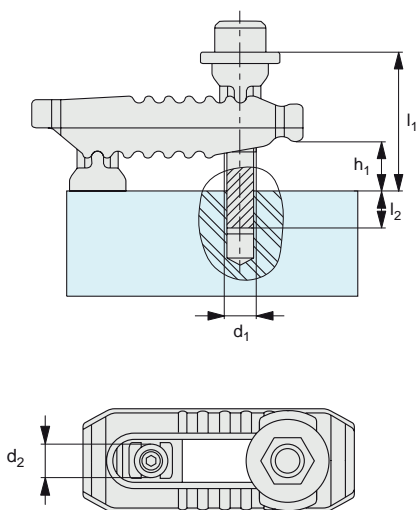
\*Clamping forces based on using stud and  
nut of strength class 8.8 or better, optimal  
positioning of the clamp and good condi-  
tion of the thread.

Order No.	T-bolt	For T-slot	$h_1$	$h_2$	$h_3$ min. max.	$h_4$	$h_5$	$l_2$	$l_3$	$w_1 \times l_1$	$w_2$	$w_3$	$d_1$	Clamping force kN max.	Weight g
<b>10603.W0011</b>	M10x10x100	10	27	17	0-40	18	12	25	30	44x115	30	11	13	25	613
<b>10603.W0012</b>	M12x12x125	12	27	17	0-55	18	12	25	30	44x115	30	11	13	30	686
<b>10603.W0013</b>	M12x12x160	12	36	21	0-70	20	17	35	36	55x150	41	12	17	35	1591
<b>10603.W0014</b>	M12x14x125	14	27	17	0-55	18	12	25	30	44x115	30	11	13	30	705
<b>10603.W0015</b>	M12x14x160	14	36	21	0-70	20	17	35	36	55x150	41	12	17	35	1610
<b>10603.W0016</b>	M16x16x160	16	36	21	0-70	20	17	35	36	55x150	41	12	17	40	1798
<b>10603.W0017</b>	M16x16x200	16	42	27	0-80	30	20	44	44	62x187	30	14	21	55	2715
<b>10603.W0018</b>	M16x18x160	18	36	21	0-70	20	17	35	36	55x150	41	12	17	40	1818
<b>10603.W0020</b>	M16x18x200	18	42	27	0-80	30	20	44	44	62x187	30	14	21	55	3018
<b>10603.W0021</b>	M20x20x200	20	42	27	0-80	30	20	44	44	62x187	30	14	21	60	3018
<b>10603.W0022</b>	M20x22x200	22	42	27	0-80	30	20	44	44	62x187	30	14	21	60	3060
<b>10603.W0023</b>	M20x20x250	20	51	34	0-100	31	24	60	47	70x235	30	17	25	70	4368
<b>10603.W0024</b>	M24x24x250	24	51	34	0-100	31	24	60	47	70x235	30	17	25	75	4895
<b>10603.W0025</b>	M20x22x250	22	51	34	0-100	31	24	60	47	70x235	30	17	25	70	4410
<b>10603.W0028</b>	M24x28x250	28	51	34	0-100	31	24	60	47	70x235	30	17	25	75	4966



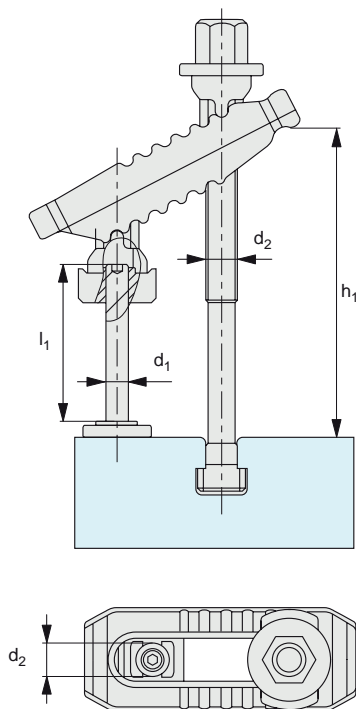
**Installation Recommendations**

Installation dimensions for clamp 10603 (without support extension 10604) when using clamping stud 21100.



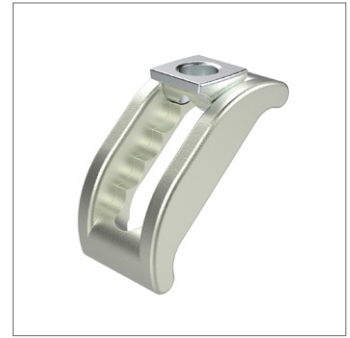
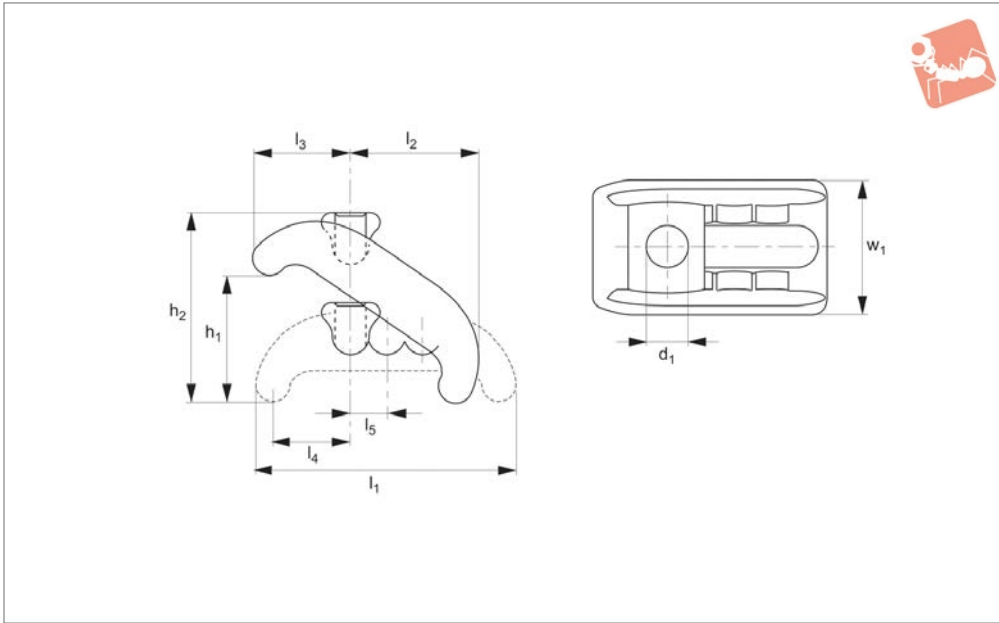
$d_2$	Stud 21100 size $d_1 \times l_1$	Thread depth $l_2$	Achievable clamping range height $h_1$
13	M10x80	15-31	4-25
	M10x90	15-31	17-40
	M10x100	15-31	4-25
	M12x80	18-33	0-20
	M12x90	18-33	10-34
17	M12x100	18-33	22-50
	M12x90	18-33	0-22
	M12x110	18-33	24-50
	M12x120	18-33	38-66
	M16x100	24-43	0-26
21	M16x110	24-44	12-40
	M16x120	24-44	26-55
	M16x120	24-44	2-29
	M16x130	24-44	15-43
	M16x150	24-44	43-72
25	M20x140	30-52	18-48
	M20x150	30-52	31-63
	M20x160	30-52	45-78
	M20x160	30-52	23-54
	M20x180	30-52	51-83
25	M20x195	34-52	72-100
	M24x160	36-48	0-15
	M24x180	36-60	10-42
	M24x195	36-60	37-71

Installation dimensions for clamp 10603 (with support extension 10604) when using T-slot bolt 21000.



$d_2$	10604 support extension $d_1 \times l_1$	T-Slot 21000 $d_2 \times T\text{-slot} \times l_1$	Achievable clamping range height $h_1$
13	M10x39	M10x10x100	18-31
	M10x39	M12x12x160	18-95
	M10x39	M12x14x160	18-95
	M12x49	M12x12x200	26-123
	M12x49	M12x14x200	26-123
17	M12x49	M16x16x200	26-123
	M12x49	M16x18x200	26-123
	M12x94	M12x12x200	26-120
	M12x94	M12x14x200	26-120
	M12x94	M16x16x250	26-166
21	M12x94	M16x18x250	26-166
	M16x55	M16x16x250	33-141
	M16x55	M16x18x250	33-141
	M16x55	M20x20x250	33-141
	M16x55	M20x22x250	33-141
25	M16x90	M16x16x250	33-150
	M16x90	M16x18x250	33-150
	M16x90	M20x20x315	33-173
	M16x90	M20x22x315	33-173
	M20x69	M20x20x315	41-177
25	M20x69	M20x22x315	41-177
	M20x69	M24x24x315	41-177
	M20x69	M24x28x315	41-177
	M20x109	M20x20x315	41-197
	M20x109	M20x22x315	41-193
	M20x109	M24x24x315	41-180
	M20x109	M24x28x315	41-180

ADJUSTABLE VERTICAL CLAMPS



## 10620

ADJUSTABLE VERTICAL CLAMPS

### Material

Steel, tempered and galvanised.

body has a long slot for easy positioning.

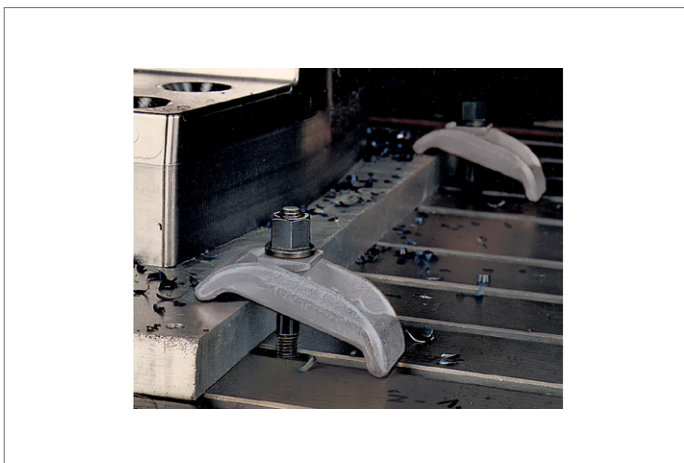
### Technical Notes

Ideal for press tool clamping. The clamp

### Tips

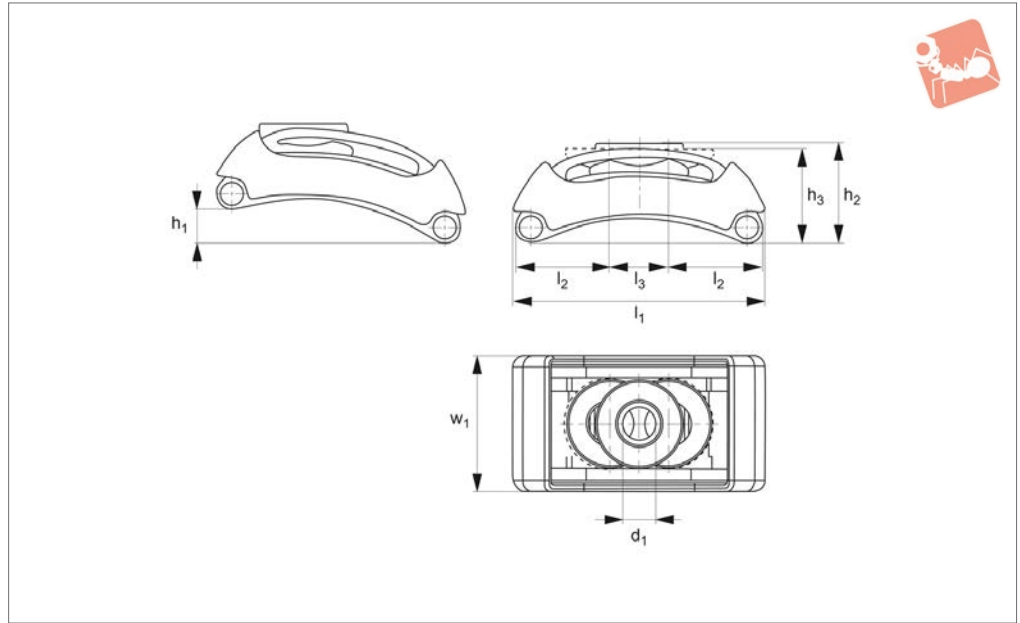
Supplied without T-bolt or nut - for these parts see nos. 21000 and 24400.

Order No.	Clamping height $h_1$ min.   max.	For T-slot	For bolt	$h_2$ min.   max.	$l_2$	$l_3$	$l_4$	$l_5$	$w_1 \times l_1$	$d_1$	Weight g
10620.W0012	0-35	12 & 14	M12	30-55	48	28	23	14	38x88	13	260
10620.W0016	0-55	16 & 18	M16	42-84	74	38	29	18	56x130	18	809
10620.W0020	0-65	20 & 22	M20	50-100	80	46	32	20	66x140	22	1253
10620.W0026	0-75	24 & 28	M24	54-111	100	52	39	24	76x174	26	1718
10620.W0032	0-80	36	M30	62-125	110	61	44	28	90x200	32	2785





## 10630.1



### Material

Steel, tempered and burnished.

### Technical Notes

Weight-saving thanks to its lightweight design. Variable and fast adjustment at a distance from the workpiece. No additional

clamping supports are needed to reach the required clamping height. The U-piece is undetachable from the clamp.

### Tips

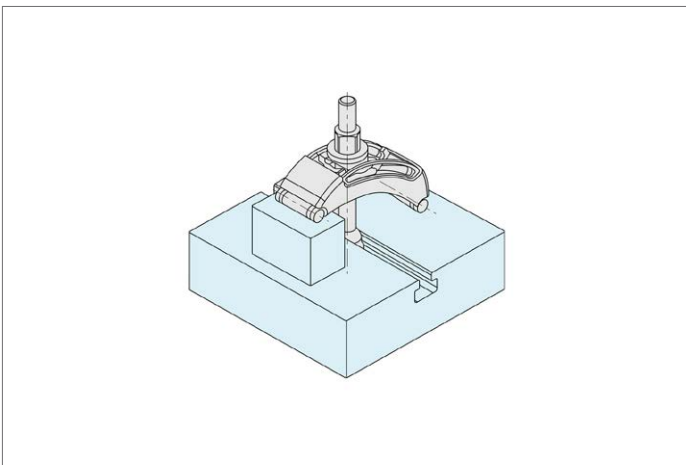
For clamping, clamping bolts no. 21000 and studs no. 21100 and cheese head

screws (ISO 4762) can be used.

A washer no. 25000 must always be used between the hexagonal nut and U-piece.

$h_1$  is dependent on depth of slot to DIN 650 and position of fixture nut.

Order No.	Size	For clamping screw	$h_1$ min.   max.	$h_2$	$h_3$	$l_1$	$l_2$	$l_3$	$w_1$	$d_1$	Weight g
10630.W0010	10	M10	0-15	32.0	30.5	80	30	19	44	11	257
10630.W0014	14	M12-M14	0-33	49.5	47.0	125	37	51	57	14	708
10630.W0018	18	M16-M18	0-45	62.0	58.5	160	49	63	67	18	1235
10630.W0022	22	M20-M22	0-65	75.0	71.5	200	58	63	72	22	1880
10630.W0026	26	M22-M24	0-85	94.0	89.5	250	74	0	82	16	2799

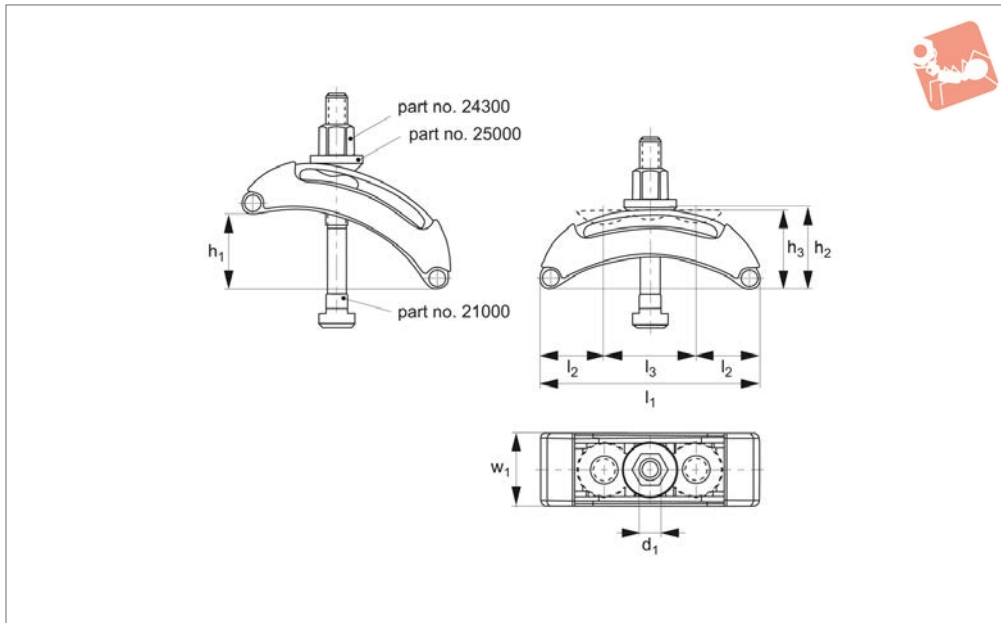




# Clamp - Plastic Cover

complete with T-bolt set

# Adjustable Vertical Clamps



## 10630.2

ADJUSTABLE VERTICAL CLAMPS

### Material

Steel, tempered and burnished.

### Technical Notes

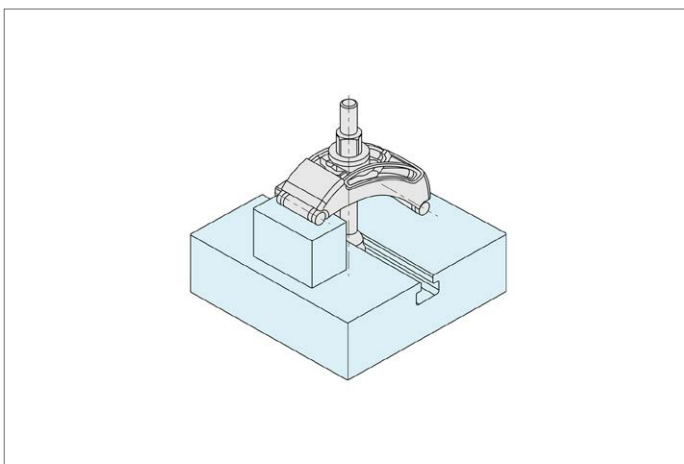
Complete with T-bolt set. Weight-saving thanks to its lightweight design. Variable

and fast adjustment at a distance from the workpiece. No additional clamping supports are needed to reach the required clamping height. The U-piece is undetachable from the clamp.

### Tips

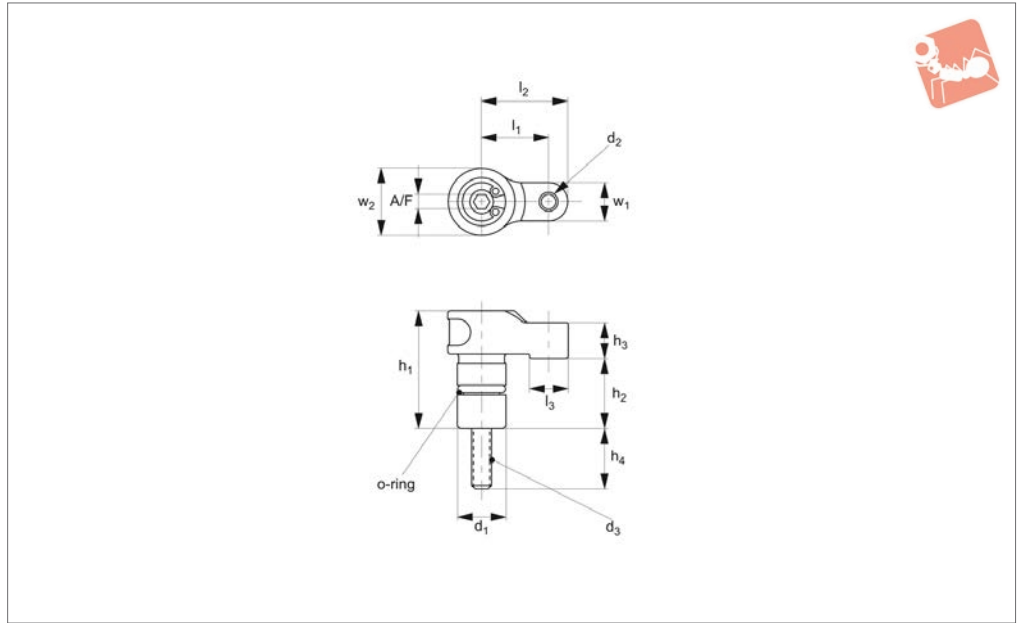
A washer (DIN 6340) must always be used between the hexagonal nut and U-piece.  $h_1$  is dependent on depth of slot to DIN 650 and position of fixture nut.

Order No.	Size	With clamping bolt	$h_1$ min.   max.	$h_2$	$h_3$	$l_1$	$l_2$	$l_3$	$w_1$	$d_1$	Weight g
10630.W0110	10	M10x10x80	0-15	32.0	30.5	80	30	19	44	11	349
10630.W0112	12	M12x12x100	0-33	49.5	47.0	125	37	51	57	14	886
10630.W0114	14	M12x14x125	0-33	49.5	47.0	125	37	51	57	14	905
10630.W0116	16	M16x16x160	0-45	62.0	58.5	160	49	63	67	18	1648
10630.W0118	18	M16x18x160	0-45	62.0	58.5	160	49	63	67	18	1668





## 12550.1



### Material

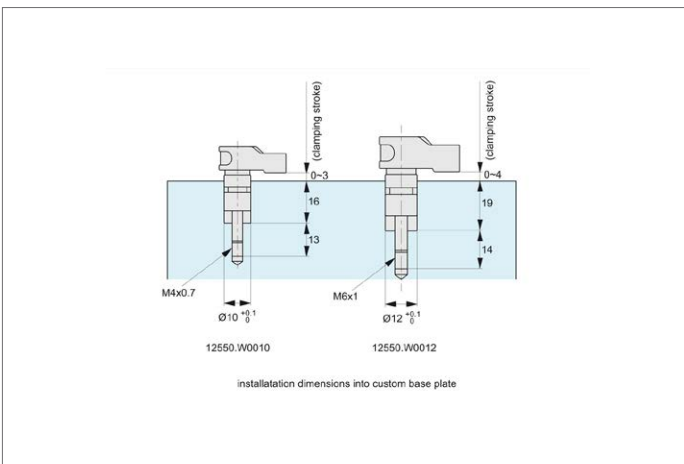
Steel (42CrMo), tempered, black oxide finish.

### Technical Notes

Very useful for limited space vertical clamping, can be recessed into bores to mini-

mise height. Clamping stroke (see diagram below) for M 4= 0-3mm, for M 6= 0-4mm.

Order No.	$h_1$	$l_1$	$d_1$ -0.02   -0.10	$d_2$	$h_2$	$h_3$	$h_4$	$d_3$	$l_2$	$l_3$	$w_1$	$w_2$	Torque to Nm max.	A/F	Clamping force kN max.	Weight g
<b>12550.W0010</b>	24,5	14	10	M 4x0,7	14,5	7,5	12,5	M 4x30	18	8	8	14	2,7	3	2,0	25
<b>12550.W0012</b>	30,5	17	12	M 5x0,8	17,5	9,5	13,5	M 6x35	22	10	10	16	7,0	5	3,5	45

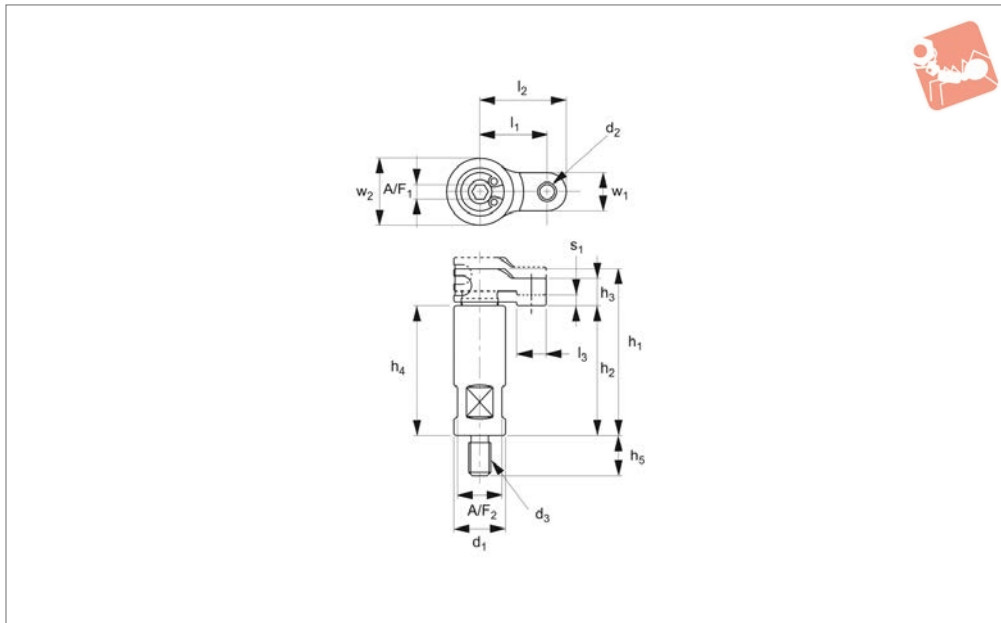






# Hook Clamp with holder

# Adjustable Vertical Clamps



**12550.2**

ADJUSTABLE VERTICAL CLAMPS

### Material

Clamp body: steel (42CrMo), tempered, black oxide finish.

Holder: steel (C45), tempered, black oxide

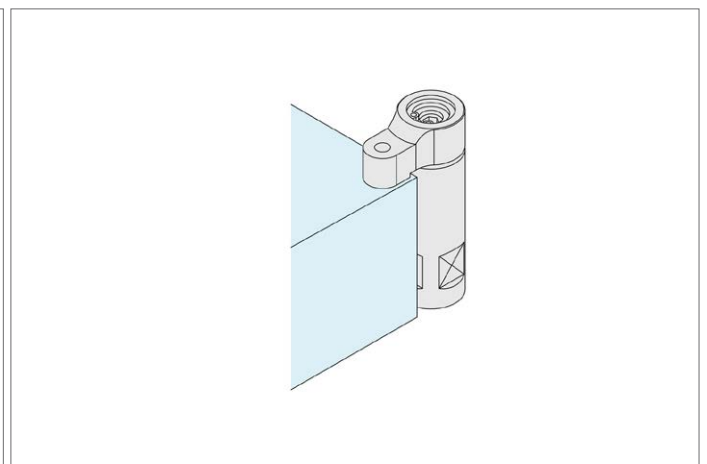
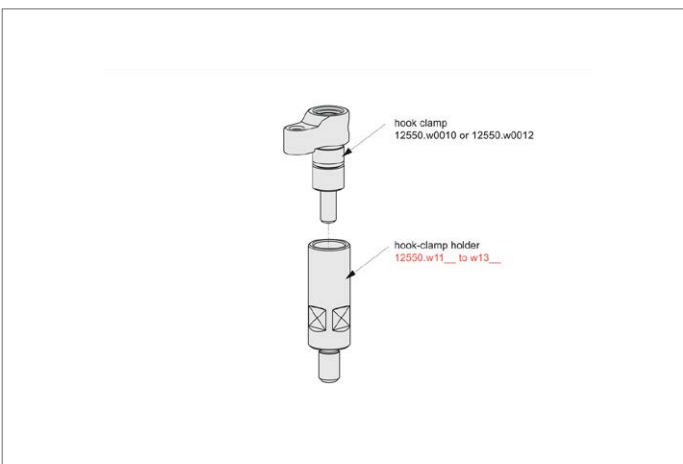
finish.

### Technical Notes

The hook clamp is designed to move up and

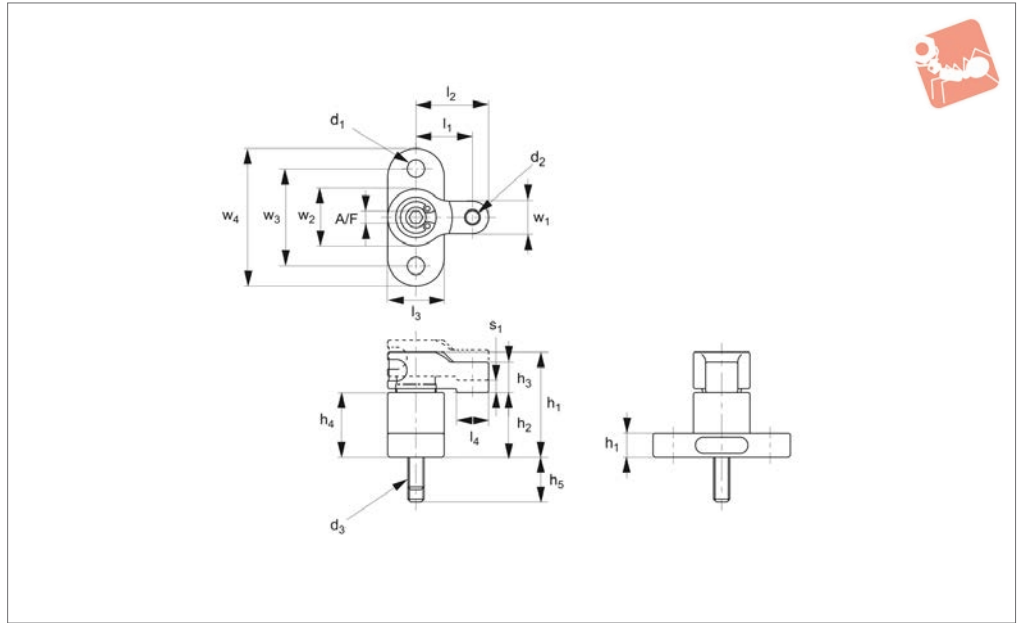
down in conjunction with the tightening screw.

Order No.	$h_1$	Stroke $s_1$	$l_1$	$d_1$	$d_2$	$h_2$	$h_3$	$h_4$	$h_5$	$d_3$	$w_1$	$w_2$	$A/F_1$	$A/F_2$	Clamping force kN	Torque Nm max.	Weight g
<b>12550.W0110</b>	45	3	14	14	M 4x0,7	35	7,5	35	11	M 6x1	8	14	3	12	2,0	2,7	55
<b>12550.W0112</b>	53	4	17	16	M 5x0,8	40	9,5	40	14	M 8x1,25	10	16	5	13	3,5	7,0	90





## 12550.3



### Material

Steel (42CrMo), quenched and tempered, black oxide finish.  
Holder: steel (C45), quenched and

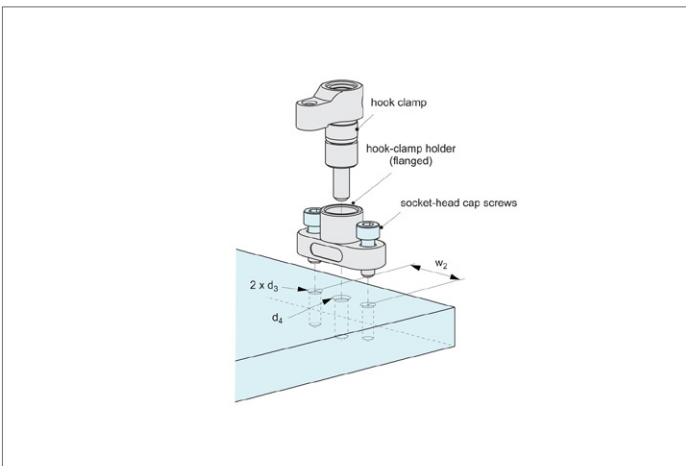
tempered, black oxide finish.

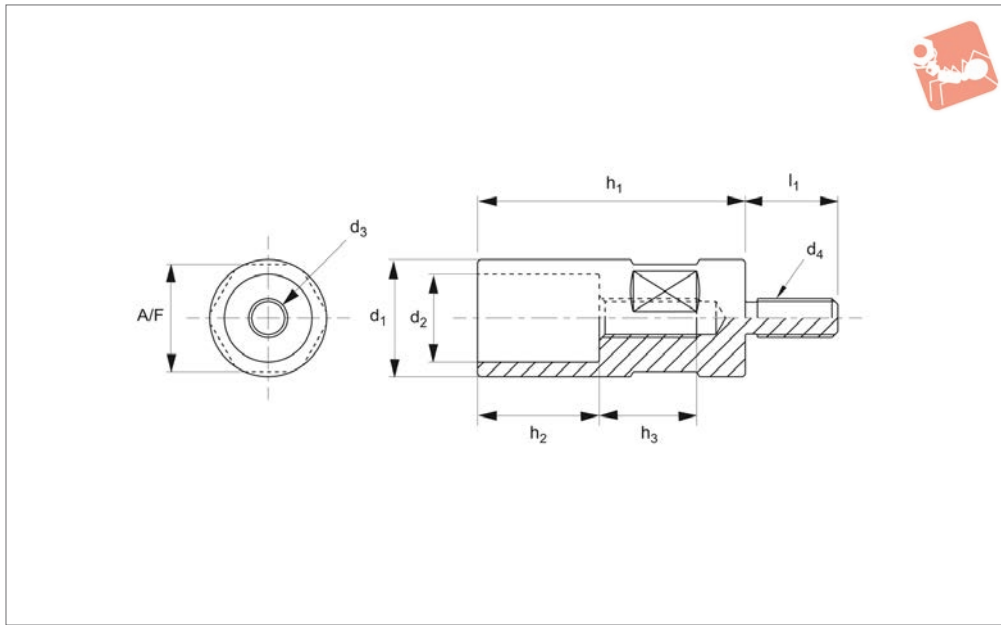
### Technical Notes

Ideal for low height clamping.

The hook clamp is designed to move up and down in conjunction with the tightening screw.

Order No.	$h_1$	Stroke $s_1$	$l_1$	$d_1$	$d_2$	$h_2$	$h_3$	$h_4$	$h_5$	$d_3$	$l_2$	$l_3$	$w_1$	$w_2$	$w_3$	$w_4$	Torque to Nm max.	A/F	Clamping force kN	Weight g
12550.W0210	6	3	14	4,3	M 4x0,7	16	7,5	16	11	M 4x30	18	14	8	14	24	34	2,7	3	2,0	45
12550.W0212	8	4	17	5,3	M 5x0,8	19	9,5	19	12	M 5x35	22	16	10	16	28	40	7,0	5	3,5	75





**12550.4**

ADJUSTABLE VERTICAL CLAMPS

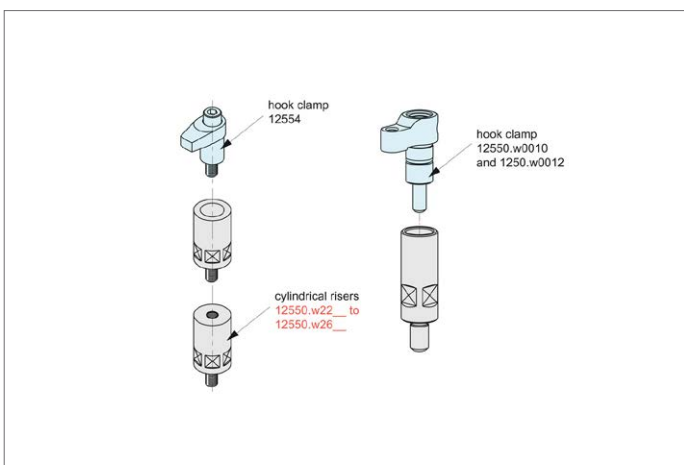
### Material

Steel (C45), black oxide finish.

### Tips

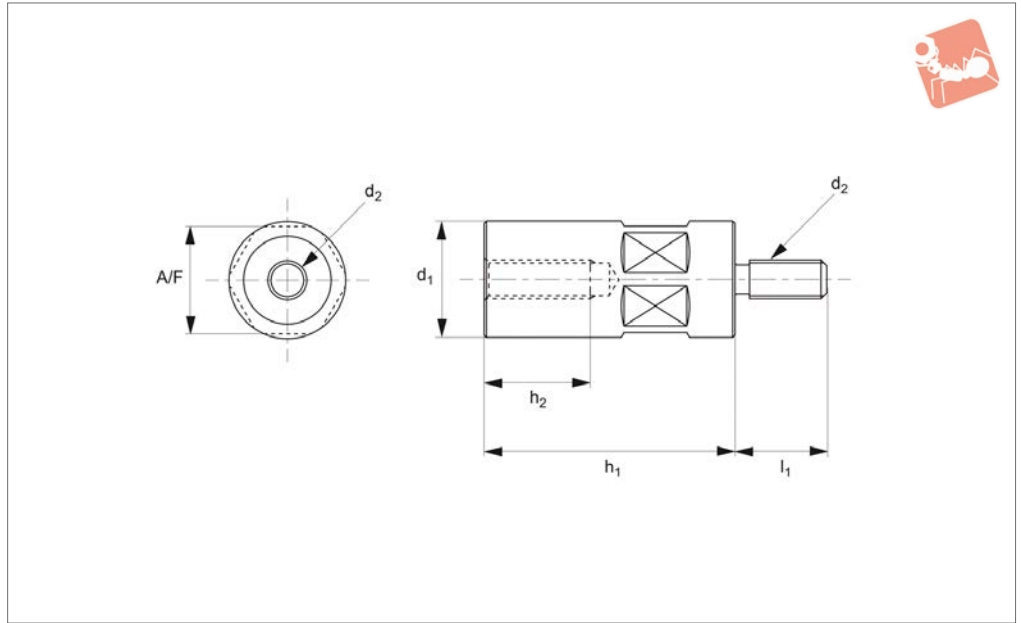
For use with hook clamps part no's 12550. W0010- .W0012 and 12554.

Order No.	Hook clamp size dia.	$h_1$	$l_1$	$d_1$	$d_2$ tol. f7	$h_2$	$h_3$	$d_3$	$d_4$	Torque to Nm max.	A/F	Weight g
<b>12550.W1101</b>	10	35	11	14	10 <sup>+0,1,0</sup>	16	13	M 4x0,7	M 6x1	2.7	12	30
<b>12550.W1121</b>	12	40	14	16	12 <sup>+0,1,0</sup>	19	14	M 6x1	M 8x1,25	7.0	13	45
<b>12550.W1181</b>	18	55	19	24	18	25	20	M 8x1,25	M 8x1,25	30	22	140
<b>12550.W1201</b>	20	63	30	32	20	30	21	M10x1,5	M12x1,75	38	30	400
<b>12550.W1202</b>	20	80	30	32	20	30	23	M10x1,5	M12x1,75	38	30	500
<b>12550.W1251</b>	25	80	30	40	25	40	25	M12x1,75	M12x1,75	50	36	600
<b>12550.W1252</b>	25	100	30	40	25	40	25	M12x1,75	M12x1,75	50	36	800
<b>12550.W1321</b>	32	80	30	50	32	40	25	M16x2	M16x2	80	46	930
<b>12550.W1322</b>	32	100	30	50	32	40	25	M16x2	M16x2	80	46	1230





## 12550.5



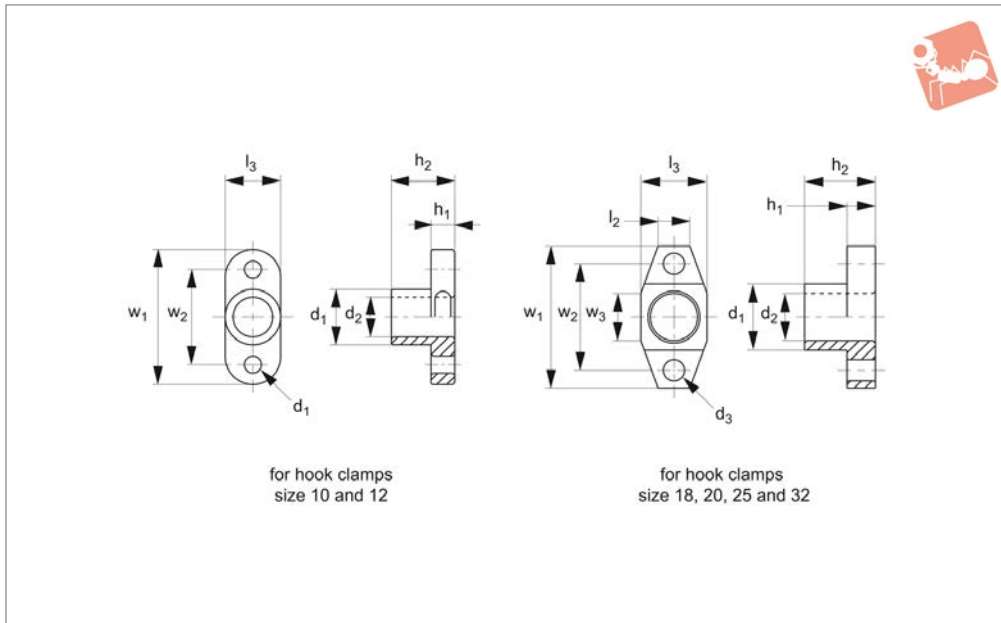
### Material

Steel, heat treated and black oxide finish.

### Technical Notes

For use with hook clamps 12550.

Order No.	$h_1$	$l_1$	$d_1$	$d_2$	$h_2$	A/F	Weight g
12550.W2241	32	19	24	M 8x1,25	20	22	105
12550.W2242	40	19	24	M 8x1,25	20	22	135
12550.W2243	50	19	24	M 8x1,25	20	22	170
12550.W2244	65	19	24	M 8x1,25	20	22	220
12550.W2401	50	30	40	M12x1,75	35	36	480
12550.W2402	65	30	40	M12x1,75	35	36	640
12550.W2403	80	30	40	M12x1,75	35	36	740
12550.W2404	100	30	40	M12x1,75	35	36	940
12550.W2405	125	30	40	M12x1,75	35	36	1230
12550.W2406	160	30	40	M12x1,75	35	36	1570
12550.W2407	200	30	40	M12x1,75	35	36	1970
12550.W2501	50	30	50	M16x2	35	46	770
12550.W2502	65	30	50	M16x2	35	46	1000
12550.W2503	80	30	50	M16x2	35	46	1160
12550.W2504	100	30	50	M16x2	35	46	1470
12550.W2505	125	30	50	M16x2	35	46	1920
12550.W2601	160	30	60	M16x2	35	55	3490
12550.W2602	200	30	60	M16x2	35	55	4370



## 12550.6

ADJUSTABLE VERTICAL CLAMPS

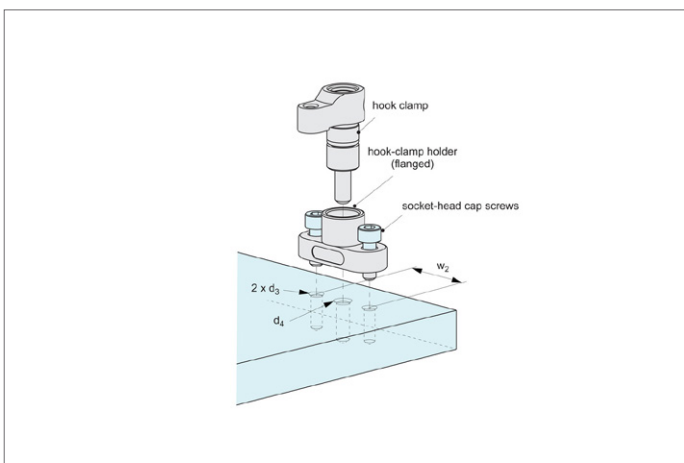
### Material

Steel (C45), black oxide finish, tempered - 12550.W3100 and 12550.W3120).

### Technical Notes

For use with hook clamps part no's 12550. W0010- .W0012 and 12554.

Order No.	Hook clamp size dia.	$h_1$	$l_1$	$d_1$	$d_2$ tol. f7	$h_2$	$d_3$	$l_2$	$w_1$	$w_2$	$w_3$	Weight g
12550.W3100	10	6	-	14	$10^{+0,1}$	16	4,3 (M 4)	14	34	24	-	20
12550.W3120	12	8	-	16	$12^{+0,1}$	19	5,3 (M 5)	16	40	28	-	30
12550.W3180	18	10	11.3	24	18	25	6,6 (M 6)	24	50	38	15	85
12550.W3200	20	12	13.4	28	20	30	9,0 (M 8)	28	60	45	20	150
12550.W3250	25	14	15.0	35	25	40	11,0 (M10)	35	75	55	20	290
12550.W3320	32	16	20.2	42	32	40	13,0 (M12)	41	85	65	25	400

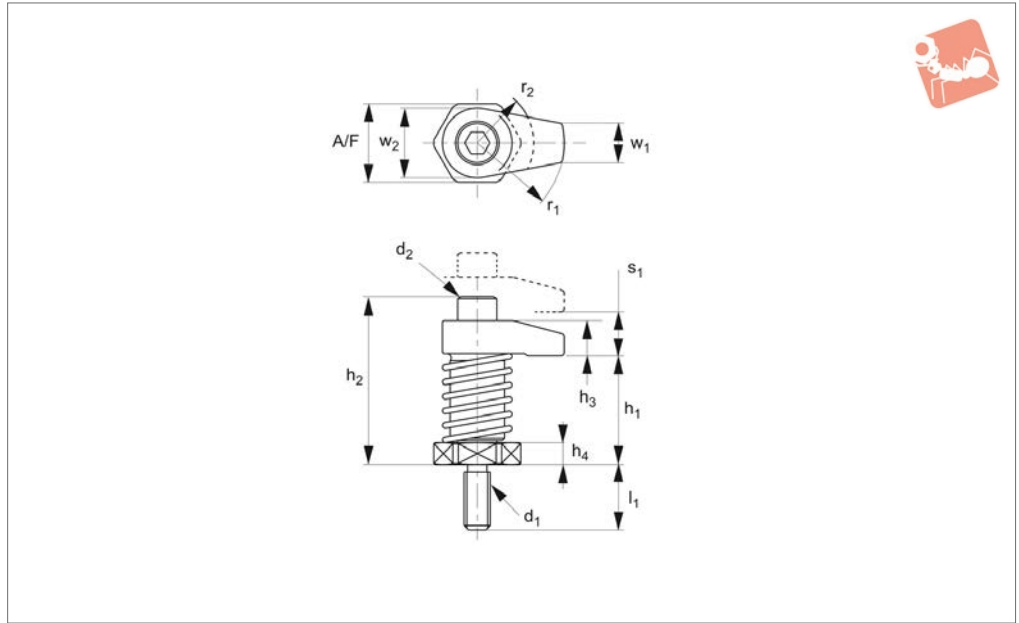


# Adjustable Vertical Clamps

# Hook Clamps spring loaded



## 12552



ADJUSTABLE VERTICAL CLAMPS

### Material

Steel (35CrMo), heat treated, black oxide finish, precision ground.

ping height.

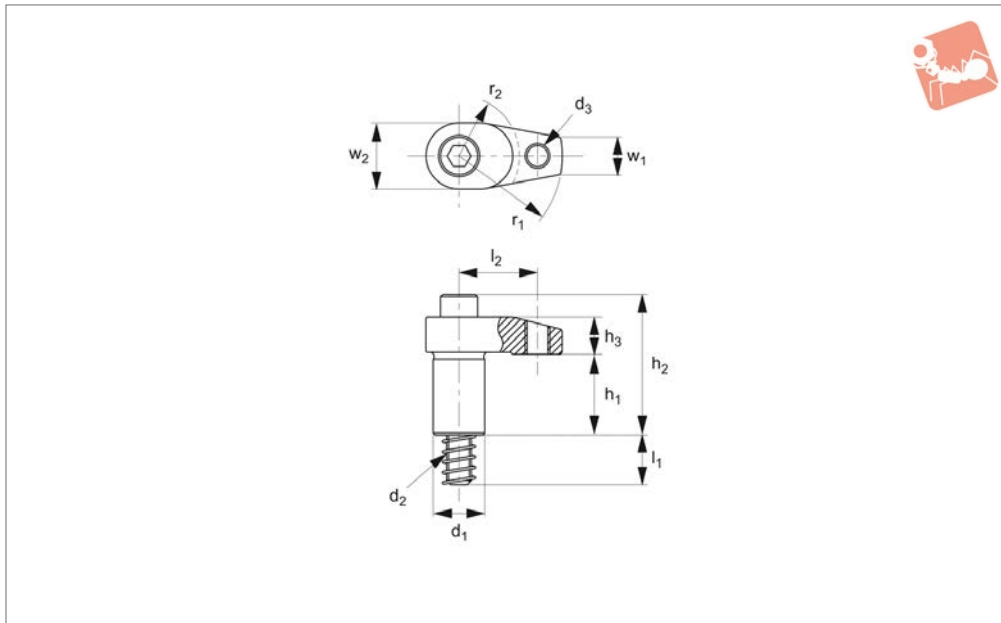
### Tips

Please apply grease to sliding surface.

### Technical Notes

Cylindrical risers can be used to raise clam-

Order No.	$h_1$	Stroke $s_1$	$l_1$	$d_1$	$d_2$	$h_2$	$h_3$	$h_4$	$w_1$	$w_2$	$r_1$	$r_2$	Torque to Nm max.	A/F	Clamping force kN	Weight g
12552.W0221	35	10	19	M 8x1,25	M 8x30	49	12	6	10	22	20	15	20	22	7.9	125
12552.W0222	35	10	19	M 8x1,25	M 8x30	49	12	6	10	22	25	15	20	22	7.3	130
12552.W0223	35	10	19	M 8x1,25	M 8x30	49	12	6	10	22	30	15	20	22	6.7	135
12552.W0224	45	10	19	M 8x1,25	M 8x30	59	12	16	10	22	20	15	20	22	7.9	160
12552.W0225	45	10	19	M 8x1,25	M 8x30	59	12	16	10	22	25	15	20	22	7.3	165
12552.W0226	45	10	19	M 8x1,25	M 8x30	59	12	16	10	22	30	15	20	22	6.7	170
12552.W0321	50	15	30	M12x1,7 5	M12x4 5	77	16	10	18	32	40	26	45	36	13.5	450
12552.W0322	50	15	30	M12x1,7 5	M12x4 5	79	16	10	18	32	50	26	45	36	12.6	480
12552.W0323	50	15	30	M12x1,7 5	M12x4 5	79	16	10	18	32	60	26	45	36	11.7	520
12552.W0324	65	15	30	M12x1,7 5	M12x4 5	92	16	25	18	32	40	26	45	36	13.5	600
12552.W0325	65	15	30	M12x1,7 5	M12x4 5	94	18	25	18	32	50	26	45	36	12.6	630
12552.W0326	65	15	30	M12x1,7 5	M12x4 5	94	18	25	18	32	60	26	45	36	11.7	670
12552.W0361	50	15	30	M16x2	M16x5 5	86	21	10	22	36	40	26	60	36	13.4	630
12552.W0362	50	15	30	M16x2	M16x5 5	86	21	10	22	36	50	26	60	36	12.4	680
12552.W0363	50	15	30	M16x2	M16x5 5	86	21	10	22	36	60	26	60	36	12.0	740
12552.W0364	65	15	30	M16x2	M16x5 5	101	21	25	22	36	40	26	60	36	13.4	780
12552.W0365	65	15	30	M16x2	M16x5 5	101	21	25	22	36	50	26	60	36	12.4	830
12552.W0366	65	15	30	M16x2	M16x5 5	101	21	25	22	36	60	26	60	36	12.0	890



## 12554

ADJUSTABLE VERTICAL CLAMPS

### Material

Steel (C45), tempered and black oxide finish, precision ground.

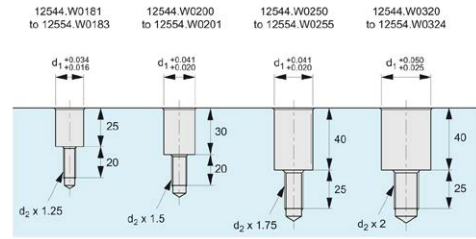
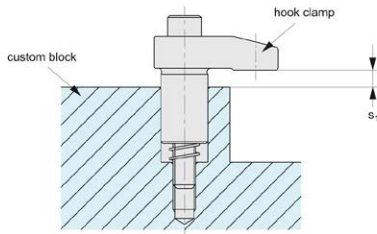
prevent galling when using in dry condition.

Can be used with clamping holders 12550.4. and cylindrical risers 12550.5.

### Tips

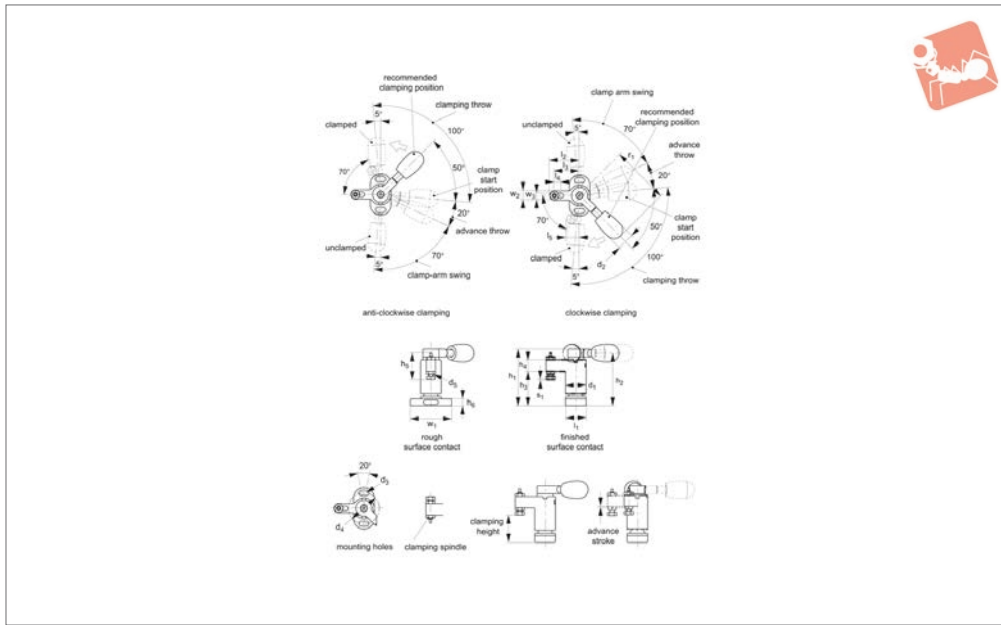
Please apply grease on sliding surface to

Order No.	$h_1$	Stroke $s_1$	$l_1$	$d_1$ tol. h7	$d_2$	$h_2$	$h_3$	$d_3$	$l_2$	$w_1$	$w_2$	$r_1$	$r_2$	Torque to Clamping force Nm max. kN	Weight g	
12554.W0181	23	10	21	18	M 8x50	37	12			10	22	20	15	38	15	90
12554.W0182	23	10	21	18	M 8x50	37	12			10	22	25	15	33	12	100
12554.W0183	23	10	21	18	M 8x50	37	12			10	22	30	20	30	10	105
12554.W0200	30	12	21	20	M10x65	54	15			12	25	30	20	38	13	165
12554.W0201	30	12	21	20	M10x65	54	15			12	25	40	25	32	10	180
12554.W0250	39	15	26	25	M12x80	66	16			18	32	40	25	60	18	305
12554.W0251	39	15	24	25	M12x80	68	18			18	32	50	25	50	14	360
12554.W0252	39	15	24	25	M12x80	68	18			18	32	60	25	46	12	380
12554.W0253	39	15	26	25	M12x80	66	16	M12x1,75	31	18	32	40	25	60	18	295
12554.W0254	39	15	24	25	M12x80	68	18	M12x1,75	38	18	32	50	25	50	14	350
12554.W0255	39	15	24	25	M12x80	68	18	M12x1,75	46	18	32	60	25	46	12	370
12554.W0320	39	15	26	32	M16x85	75	21			22	36	40	25	170	38	530
12554.W0321	39	15	26	32	M16x85	75	21			22	36	50	25	150	31	580
12554.W0322	39	15	26	32	M16x85	75	21			22	36	60	25	130	26	625
12554.W0323	39	15	26	32	M16x85	75	21	M12x1,75	38	22	36	50	25	150	31	565
12554.W0324	39	15	26	32	M16x85	75	21	M12x1,75	46	22	36	60	25	130	26	610



Hook clamps can be mounted directly into custom blocks with receiving holes as specified above.  
 machining instruction for custom blocks





## 12562.1

ADJUSTABLE VERTICAL CLAMPS

### Material

Body, handle, clamping spindle: steel (C45), tempered and black oxide finish.  
 Arm, cam shaft: steel (42CrMo4), tempered

and black oxide finish.

Knob: phenolic plastic, black.

### Tips

Rough surface contact. Can be supplied with nickel-plated finish on request. Clamping height can be adjusted. Values in

Order No.	Clamping direction	Clamping height finished surface min.	Clamping height finished surface max.	Clamping height rough surface min.	Clamping height rough surface max.	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	h <sub>6</sub>	l <sub>1</sub>	l <sub>2</sub>	Weight g
12562.W0030	Clockwise	22,8 (22,3~23)	24,8 (24,3~25)	22,4 (21,9~22)	24,4 (23,9~24)	49	45.8	30	10	22.8	6	18	26	112
12562.W0040	Clockwise	31,3 (30,6~32,0)	31,3 (30,6~32,0)	32,2 (31,5~32,9)	34,2 (33,5~34,9)	66	61.3	40	14	28.5	8	23	35	250
12562.W0050	Clockwise	32,5 (31,7~33,2)	39,0 (38,2~39,7)	33,5 (32,7~34,2)	40,0 (39,2~40,7)	82	76.5	50	18	45.5	12	30	45	570
12562.W0060	Clockwise	36,5 (35,5~37,4)	46,0 (45,0~46,9)	39,0 (38,0~39,9)	48,5 (47,5~49,4)	100	93.0	60	22	57.0	15	40	55	1200
12562.W0031	Anti-Clockwise	22,8 (22,3~23,3)	24,8 (24,3~25,3)	22,4 (21,9~22,9)	24,4 (23,9~24,9)	49	45.8	30	10	22.8	6	18	26	112
12562.W0041	Anti-Clockwise	31,3 (30,6~32,0)	33,3 (32,6~34,0)	32,2 (31,5~32,9)	34,2 (33,5~34,9)	66	61.3	40	14	28.5	8	23	35	250
12562.W0051	Anti-Clockwise	32,5 (31,7~33,2)	39,0 (38,2~39,7)	33,5 (32,7~34,2)	40,0 (39,2~40,7)	82	76.5	50	18	45.5	12	30	45	570
12562.W0061	Anti-Clockwise	36,5 (35,5~37,4)	46,0 (45,0~46,9)	39,0 (38,0~39,9)	48,5 (47,5~49,4)	100	93.0	60	22	57.0	15	40	55	1200

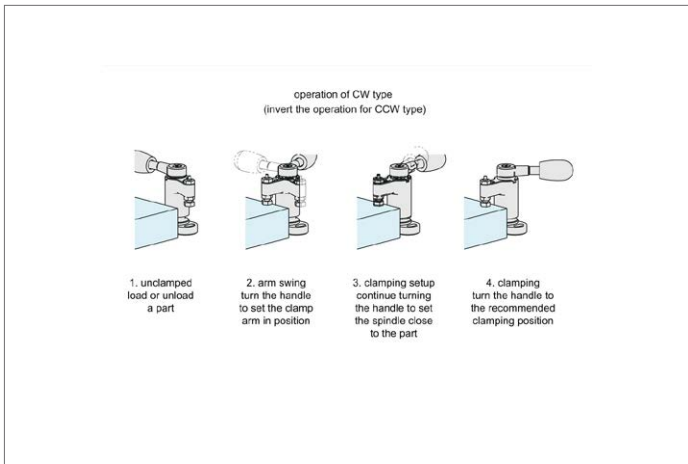
# Adjustable Vertical Clamps

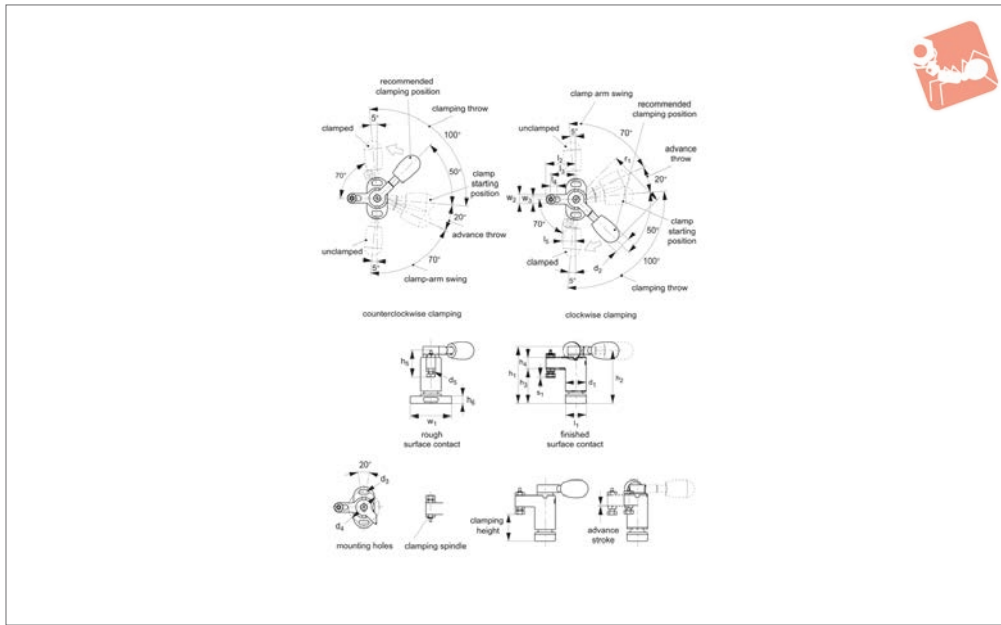
# Swing Clamps



ADJUSTABLE VERTICAL CLAMPS

Order No.	$l_3$	$l_4$	$l_5$	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$r_1$	$w_1$	$w_2$	$w_3$	Clamping force kN	Clamping mechanism	Clamping stroke $s_1$	Advance stroke $s_2$	Operating load N max.
<b>12562.W0030</b>	22	6	11.5	18	15	4.3	27	M 4x0,70	50	36	8	4.3	1.1	Spiral Cam, 5°	1.0	0.8	100
<b>12562.W0040</b>	30	8	15.3	23	20	5.3	34	M 5x0,80	63	45	10	5.3	1.8	Spiral Cam, 5°	1.4	1.1	150
<b>12562.W0050</b>	37	8	20.7	30	26	8.4	48	M 8x1,25	80	65	16	8.4	2.2	Spiral Cam, 4°	1.5	1.4	200
<b>12562.W0060</b>	45	8	25.4	40	33	10.5	64	M10x1,50	100	85	20	10.4	3.5	Spiral Cam, 4°	1.9	1.7	300
<b>12562.W0031</b>	22	6	11.5	18	15	4.3	27	M 4x0,70	50	36	8	4.3	1.1	Spiral Cam, 5°	1.0	0.8	100
<b>12562.W0041</b>	30	8	15.3	23	20	5.3	34	M 5x0,80	63	45	10	5.3	1.8	Spiral Cam, 5°	1.4	1.1	150
<b>12562.W0051</b>	37	8	20.7	30	26	8.4	48	M 8x1,25	80	65	16	8.4	2.2	Spiral Cam, 4°	1.5	1.4	200
<b>12562.W0061</b>	45	8	25.4	40	33	10.5	64	M10x1,50	100	85	20	10.4	3.5	Spiral Cam, 4°	1.9	1.7	300





## 12562.2

ADJUSTABLE VERTICAL CLAMPS

### Material

Body, handle, clamping spindle: steel (C45), quenched and tempered, electroless nickel plated.  
 Arm, cam shaft: steel (42CrMo4), quenched

and tempered, electroless nickel plated.  
 Knob: phenolic plastic, black.

parenthesised values denote clamping height range.

### Tips

Clamping height can be adjusted. The

Order No.	Clamping direction	Clamping height finished surface min.	Clamping height finished surface max.	Clamping height rough surface min.	Clamping height rough surface max.	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	h <sub>6</sub>	l <sub>1</sub>	l <sub>2</sub>	Weight g
12562.W0330	Clockwise	22,8 (22,3~23,3)	24,8 (24,3~25,3)	22,4 (21,9~22,9)	24,4 (23,9~24,9)	49	45.8	30	10	22.8	6	18	26	112
12562.W0340	Clockwise	31,3 (30,6~32,0)	33,3 (32,6~34,0)	32,2 (31,5~32,9)	34,2 (33,5~34,9)	66	61.3	40	14	28.5	8	23	35	250
12562.W0350	Clockwise	32,5 (31,7~33,2)	39,0 (38,2~39,7)	33,5 (32,7~34,2)	40,0 (39,2~40,7)	82	76.5	50	18	45.5	12	30	45	570
12562.W0360	Clockwise	36,5 (35,5~37,4)	46,0 (45,0~46,9)	39,0 (38,0~39,9)	48,5 (47,5~49,4)	100	93.0	60	22	57.0	15	40	55	1200
12562.W0331	Counter Clockwise	22,8 (22,3~23,3)	24,8 (24,3~25,3)	22,4 (21,9~22,9)	24,4 (23,9~24,9)	49	45.8	30	10	22.8	6	18	26	112
12562.W0341	Counter Clockwise	31,3 (30,6~32,0)	33,3 (32,6~34,0)	32,2 (31,5~32,9)	34,2 (33,5~34,9)	66	61.3	40	14	28.5	8	23	35	250
12562.W0351	Counter Clockwise	32,5 (31,7~33,2)	39,0 (38,2~39,7)	33,5 (32,7~34,2)	40,0 (39,2~40,7)	82	76.5	50	18	45.5	12	30	45	570

# Adjustable Vertical Clamps

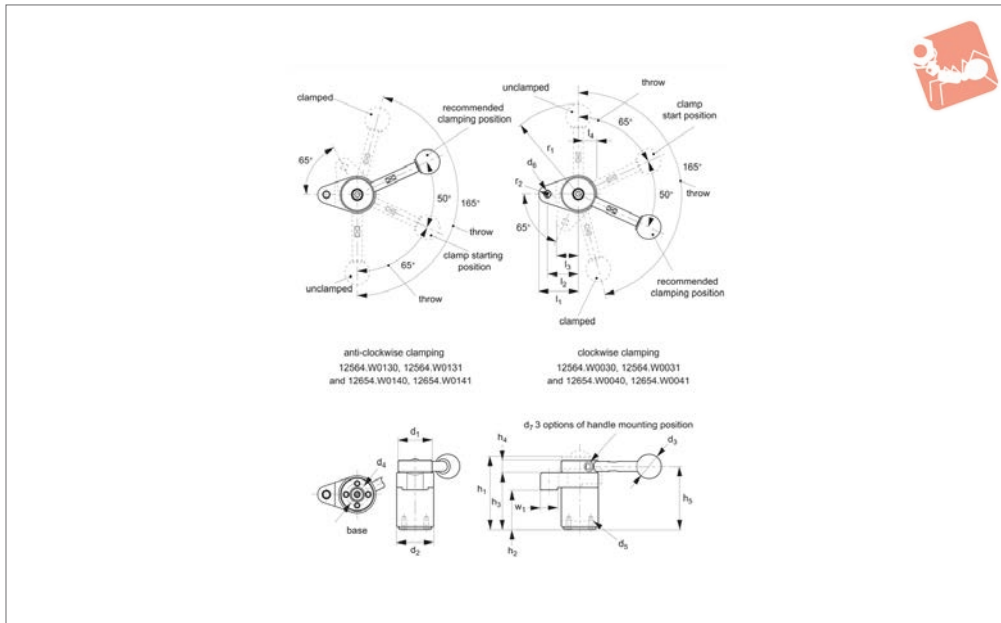
# Swing Clamps



ADJUSTABLE VERTICAL CLAMPS

Order No.	Clamping direction	Clamping height finished surface min.	Clamping height finished surface max.	Clamping height rough surface min.	Clamping height rough surface max.	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	h <sub>6</sub>	l <sub>1</sub>	l <sub>2</sub>	Weight g
<b>12562.W0361</b>	Counter Clockwise	36,5 (35,5~37,4)	46,0 (45,0~46,9)	39,0 (38,0~39,9)	48,5 (47,5~49,4)	100	93.0	60	22	57.0	15	40	55	1200

Order No.	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	Clamping force kN max.	Clamping mechanism	Clamping stroke s <sub>1</sub>	Advance stroke s <sub>2</sub>	Operating load N max.
<b>12562.W0330</b>	22	6	11.5	18	15	4.3	27	M 4x0,70	50	36	8	4.3	1.1	Spiral Cam, Cam Angle 5°	1.0	0.8	100
<b>12562.W0340</b>	30	8	15.3	23	20	5.3	34	M 5x0,80	63	45	10	5.3	1.8	Spiral Cam, Cam Angle 5°	1.4	1.1	150
<b>12562.W0350</b>	37	8	20.7	30	26	8.4	48	M 8x1,25	80	65	16	8.4	2.2	Spiral Cam, Cam Angle 5°	1.5	1.4	200
<b>12562.W0360</b>	45	8	25.4	40	33	10.5	64	M1 0x1,50	100	85	20	10.4	3.5	Spiral Cam, Cam Angle 4°	1.9	1.7	300
<b>12562.W0331</b>	22	6	11.5	18	15	4.3	27	M 4x0,70	50	36	8	4.3	1.1	Spiral Cam, Cam Angle 5°	1.0	0.8	100
<b>12562.W0341</b>	30	8	15.3	23	20	5.3	34	M 5x0,80	63	45	10	5.3	1.8	Spiral Cam, Cam Angle 5°	1.4	1.1	150
<b>12562.W0351</b>	37	8	20.7	30	26	8.4	48	M 8x1,25	80	65	16	8.4	2.2	Spiral Cam, Cam Angle 4°	1.5	1.4	200
<b>12562.W0361</b>	45	8	25.4	40	33	10.5	64	M1 0x1,50	100	85	20	10.4	3.5	Spiral Cam, Cam Angle 4°	1.9	1.7	300



## 12564.1

ADJUSTABLE VERTICAL CLAMPS

### Material

Body, shaft: steel (42CrMo), tempered and black oxide finish.  
 Clamp arm, adaptor head: steel (C45), tempered and black oxide finish.  
 Handle: steel (C45), black oxide finish.  
 Ball knob: ABS resin, black.

### Technical Notes

When installing a pad on the clamp arm, lock the clamp arm using a wrench to prevent the clamp from receiving any torque.  
 Clamping height can be adjusted. The values in brackets shows clamping height range.

range.

### Tips

For parts 12564.W0031, 12564.W0131, 12564.W0041 and 12564.W0141 the handle must be ordered separately.

Order No.	Clamping direction	Type	$h_1$	$h_2$	$h_3$	$h_4$	$h_5$	$l_1$	$l_2$	$l_3$	Weight g
12564.W0030	Clockwise	With handle	57.5	32 (31,4~32,6)	46	10	51.0	32	25	17.5	320
12564.W0040	Clockwise	With handle	78.1	45 (44,1~45,9)	63	13	69.5	40	32	21.5	710
12564.W0031	Clockwise	Without handle	57.5	32 (31,4~32,6)	46	10	51.0	32	25	17.5	295
12564.W0041	Clockwise	Without handle	78.1	45 (44,1~45,9)	63	13	69.5	40	32	21.5	660
12564.W0130	Anti Clockwise	With handle	57.5	32 (31,4~32,6)	46	10	51.0	32	25	17.5	320
12564.W0140	Anti Clockwise	With handle	78.1	45 (44,1~45,9)	63	13	69.5	40	32	21.5	710
12564.W0131	Anti Clockwise	Without handle	57.5	32 (31,4~32,6)	46	10	51.0	32	25	17.5	295
12564.W0141	Anti Clockwise	Without handle	78.1	45 (44,1~45,9)	63	13	69.5	40	32	21.5	660

Order No.	$l_4$	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$d_6$	$d_7$	$r_1$	$r_2$	$w_1$	Clamping force kN max.	Clamping mechanism	Handle load N max.
12564.W0030	15	30	30	20	18	M 4x0,7 Depth 8M	6x1,0M	5x0,8	73	7	14	0.8	Spiral Cam, 4°	150
12564.W0040	20	40	38	25	25	M 6x1,0 Depth 12	M 8x1,2M	6x1,5	107	8	16	1.2	Spiral Cam, 4°	200
12564.W0031	15	30	30	20	18	M 4x0,7 Depth 8M	6x1,0M	5x0,8	73	7	14	0.8	Spiral Cam, 4°	150
12564.W0041	20	40	38	25	25	M 6x1,0 Depth 12	M 8x1,2M	6x1,5	107	8	16	1.2	Spiral Cam, 4°	200
12564.W0130	15	30	30	20	18	M 4x0,7 Depth 8M	6x1,0M	5x0,8	73	7	14	0.8	Spiral Cam, 4°	150
12564.W0140	20	40	38	25	25	M 6x1,0 Depth 12	M 8x1,2M	6x1,5	107	8	16	1.2	Spiral Cam, 4°	200

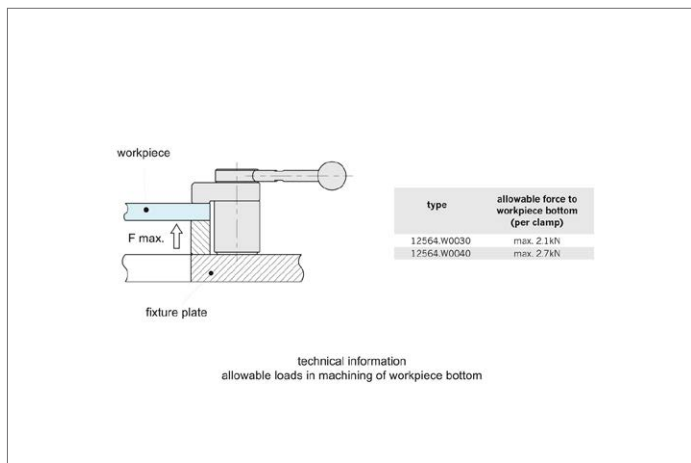
# Adjustable Vertical Clamps

# Swing Clamps



Order No.	$l_4$	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$d_6$	$d_7$	$r_1$	$r_2$	$w_1$	Clamping force kN max.	Clamping mechanism	Handle load N max.	
<b>12564.W0131</b>	15	30	30	20	18	M 4x0,7	Depth 8M	6x1,0M	5x0,8	73	7	14	0.8	Spiral Cam, 4°	150
<b>12564.W0141</b>	20	40	38	25	25	M 4x1,0	Depth 8M	8x1,2M	6x1,0	107	8	16	1.2	Spiral Cam, 4°	200

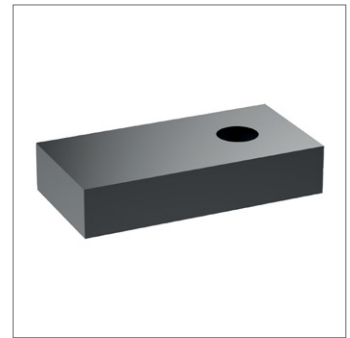
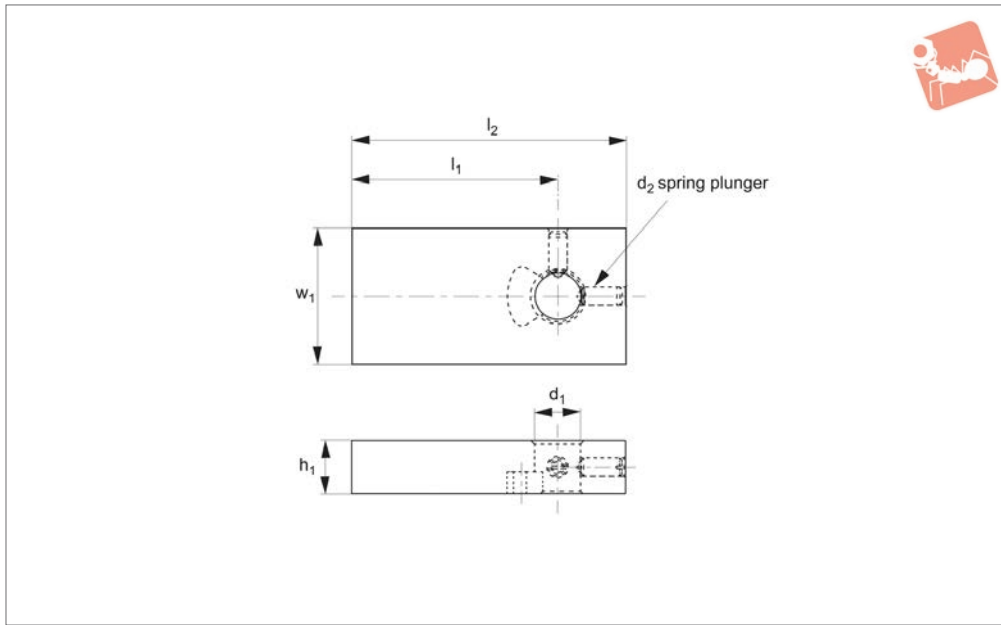
ADJUSTABLE VERTICAL CLAMPS





# Machineable Clamp Arms for use with 12564.W0030 - .W0141

# Adjustable Vertical Clamps



## 12564.2

ADJUSTABLE VERTICAL CLAMPS

### Material

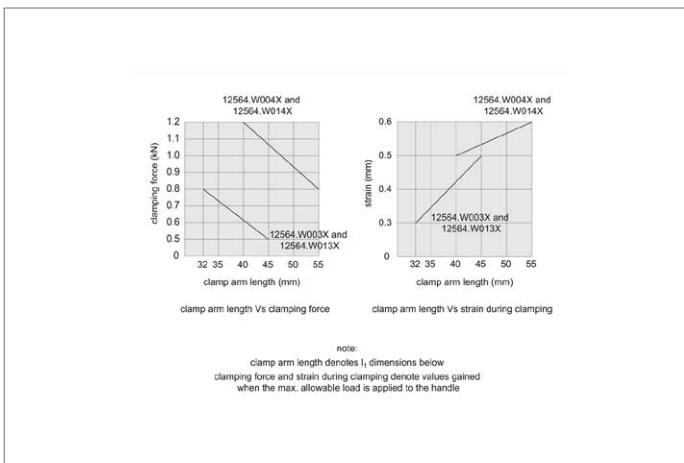
Steel (C45), black oxide finish.

### Technical Notes

Clamp arm length denotes  $l_1$  dimensions.

Clamping force and strain during clamping denote values gained when the maximum allowable load is applied to the handle.

Order No.	$h_1$	$l_1$	$l_2$	$d_1$	$d_2$	$w_1$	To suit clamp 12564	Weight of clamping prd. g max.	Weight g
<b>12564.W0430</b>	12	45	60	10	M 4	30	.W003x and .W013x	100	150
<b>12564.W0440</b>	16	55	75	16	M 5	40	.W004x and .W014x	100	330

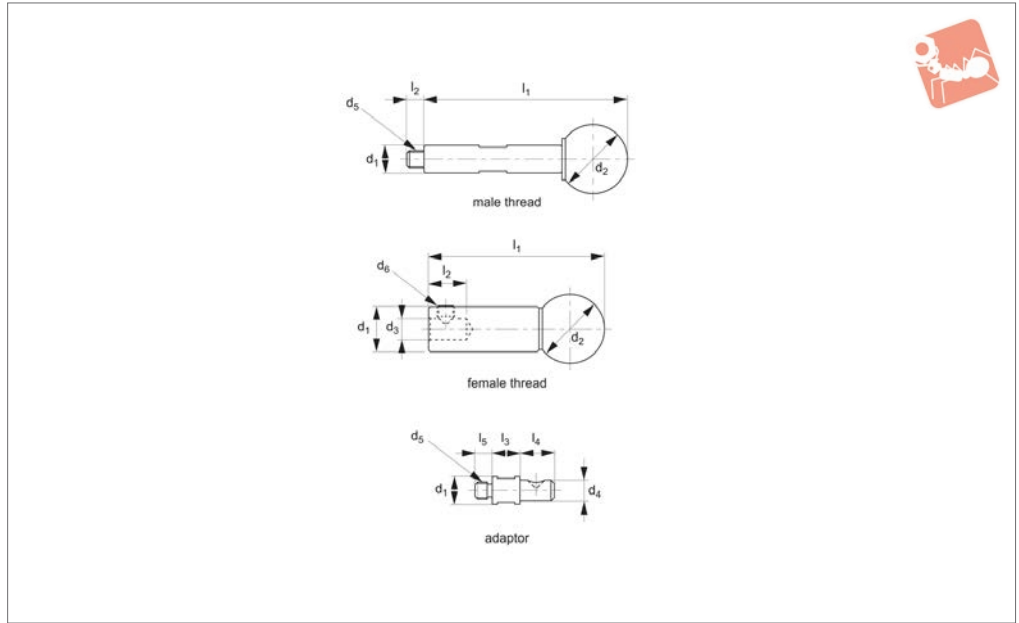


# Adjustable Vertical Clamps

## Standard Handles for use with swing and pull clamps



**12564.3**



ADJUSTABLE VERTICAL CLAMPS

### Material

Handle: steel (C45), black oxide finish.  
Ball knob: ABS resin, black.

Shaft: steel (C45), tempered and black oxide finish.

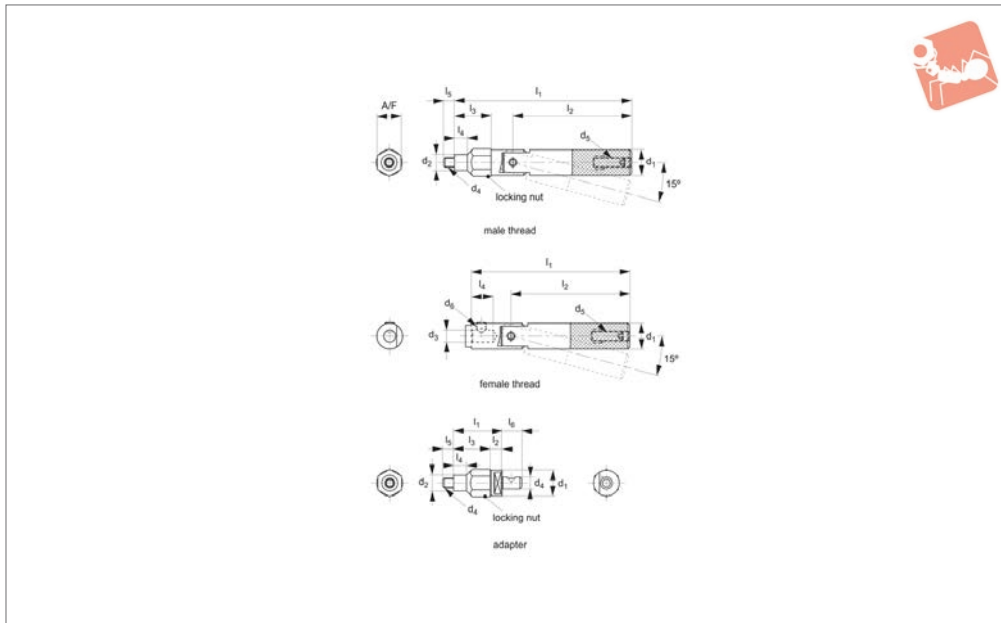
Order No.	Type	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$d_6$	Weight g
<b>12564.W0630</b>	Male Thread	59	5	-	-	-	8	20	-	-	M 5x0,8	-	25
<b>12564.W0640</b>	Male Thread	89	6	-	-	-	10	25	-	-	M 6x1	-	50
<b>12564.W0631</b>	Female Thread	51	11	-	-	-	13	20	6	-	-	M 5x5	45
<b>12564.W0641</b>	Female Thread	79	13	-	-	-	15	25	8	-	-	M 6x6	90
<b>12564.W0632</b>	Adaptor	-	-	8	10	5	8	-	-	6	M 5x0,8	-	7
<b>12564.W0642</b>	Adaptor	-	-	10	12	6	10	-	-	8	M 6x1	-	14





# Adjustable Torque Handles for use with swing and pull clamps

# Adjustable Vertical Clamps



**12564.4**

ADJUSTABLE VERTICAL CLAMPS

### Material

Stem, handle: steel (C45), tempered and black oxide finish.  
Locking nut: steel (C45), black oxide

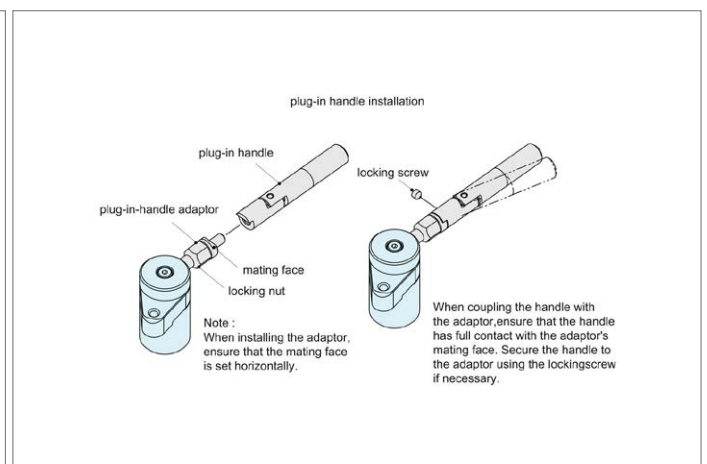
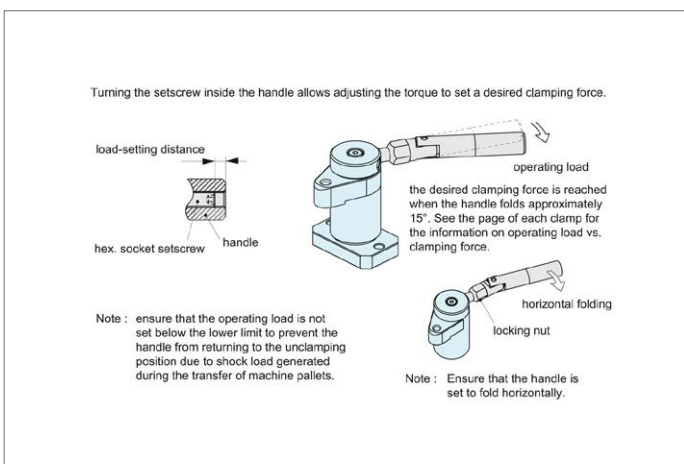
finish.

### Technical Notes

Turning the set screw inside the handle

allows the torque to be set to a desired clamping force.

Order No.	Type	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$d_6$	A/F	Load setting range N	Weight g
<b>12564.W0730</b>	Male Thread	89,5	60	18,5	6,5	5,5		13	8		M 5x0,8	M 5x16		12	30 - 120	90
<b>12564.W0740</b>	Male Thread	119,0	84	23,0	8,0	6,5		15	10		M 6x1	M 6x20		14	30 - 160	140
<b>12564.W0731</b>	Female Thread	80,0	60		11,0			13		6		M 5x5			30 - 120	70
<b>12564.W0741</b>	Female Thread	107,0	84		13,0			15		8		M 6x20	M 6x6		30 - 160	130
<b>12564.W0732</b>	Adaptors	24,5	6	18,5	6,5	5,5	10	13	8		M 5x0,8				30 - 120	20
<b>12564.W0742</b>	Adaptors	30,0	7	23,0	8,0	6,5	12	15	10		M 6x1				30 - 160	40

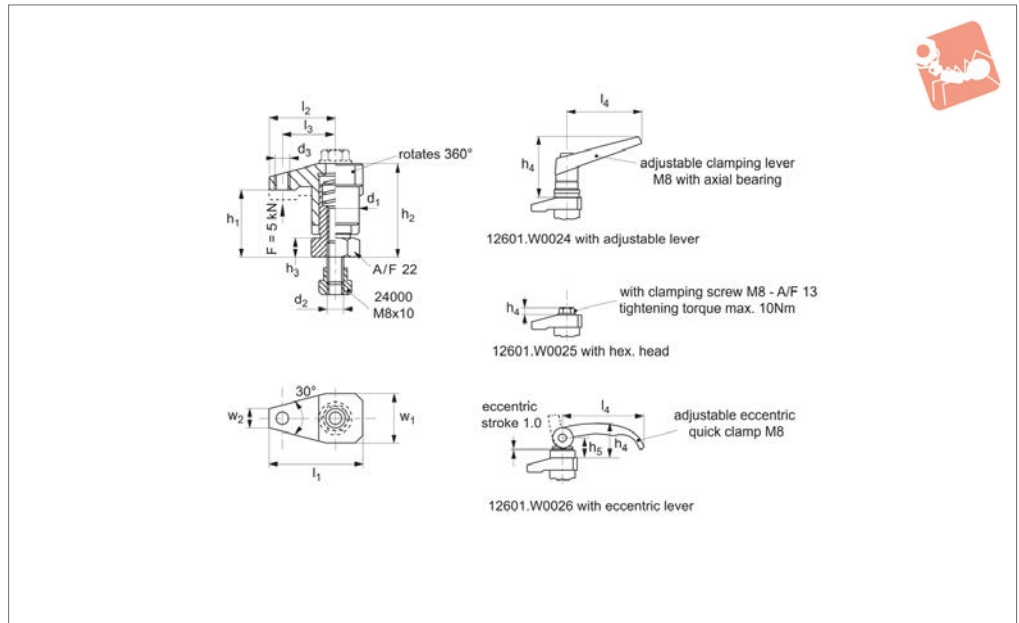




ADJUSTABLE VERTICAL CLAMPS



## 12601



### Material

Steel case-hardened, blackened and ground.

### Technical Notes

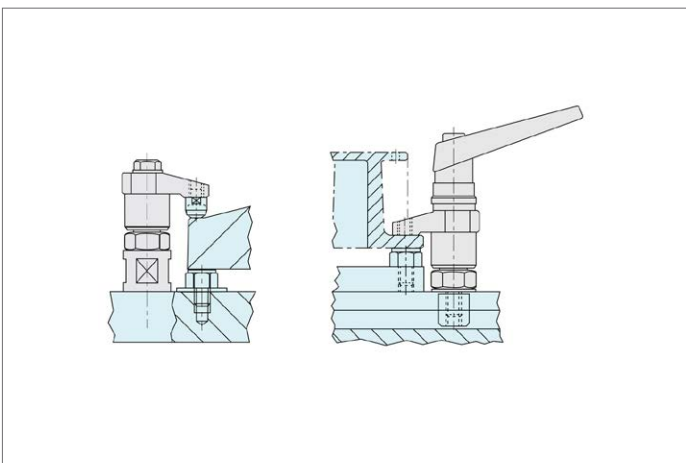
Ideally suited for clamping small

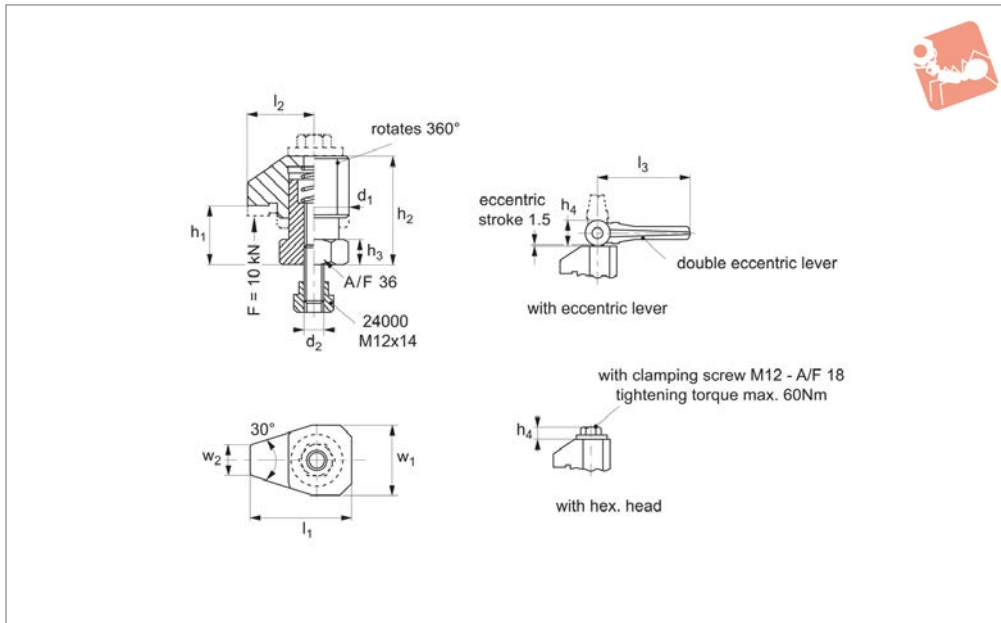
components. The 10mm wide nose allows a very small clamping footprint. For suitable self-aligning pads (if required) see no. 34100.

### Tips

T-nuts can be supplied in any M8 sizes, see no. 24000.

Order No.	Type	Clamping height $h_1$ min.	Clamping height $h_1$ max.	Stroke	$d_1$	$d_2$	$w_1$	$w_2$	$h_2$ min.	$h_2$ max.	$h_3$	$h_4$	$h_5$	$l_1$	$l_2$	$l_3$	$l_4$	Weight g
12601.W0024	with adj. clamping lever	30	35	5	25	M8	26	10	44	49	10	60,0		49,5	35	28	74	363
12601.W0025	with hex. head	30	35	5	25	M8	26	10	44	49	10	6,9		49,5	35	28		215
12601.W0026	with ecc. clamping lever	30	35	5	25	M8	26	10	44	49	10	35,0	20,5	49,5	35	28	82	340





## 12602

ADJUSTABLE VERTICAL CLAMPS

### Material

Steel case-hardened, blackened and ground.

### Technical Notes

For heavy-duty clamping applications

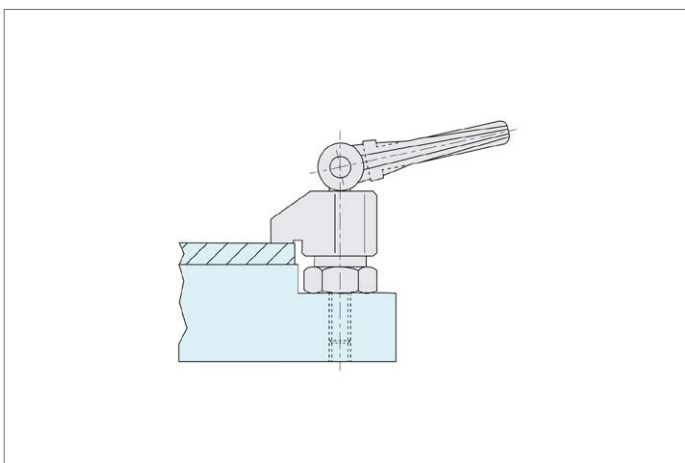
where space and height are limiting factors.

### Tips

Often used for clamping of injection mould tools and the like.

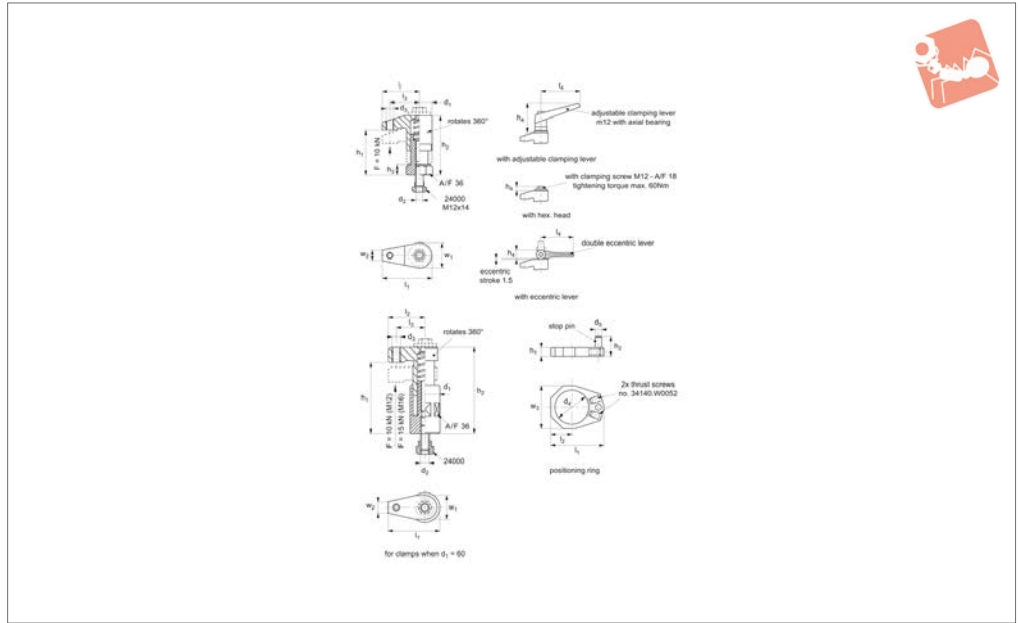
**T-nuts removable. For other T-nut sizes please refer to no. 24000.**

Order No.	Type	Clamping height $h_1$ min.	Clamping height $h_1$ max.	Stroke	$d_1$	$d_2$	$w_1$	$w_2$	$h_2$ min.	$h_2$ max.	$h_3$	$h_4$	$l_1$	$l_2$	$l_3$	Weight g
<b>12602.W0034</b>	With Eccentric Clamp Lever	25	30	5	44	M12	42	18	54	59	15	28	61	40	100	1022
<b>12602.W0035</b>	With Hex. Head Bolt	25	30	5	44	M12	42	18	54	59	15	13	61	40		708





## 12603



### Material

Steel case-hardened, blackened and ground.

### Technical Notes

Clamping height increased with the addition of height adjusting cylinders no. 12605.W0125-.W0167 and reduced with self-aligning pads nos.34100 or 34120.

**Maximum clamping height** ( $h_1$  max.) must

not be exceeded.

Use of positioning ring 12603.W0350 increases height  $h_2$  by 7mm and reduces stroke by 7mm.

\* Part no. 12603.W0063 has a M16 threaded stud.

### Tips

Offers rapid manual clamping with easy removal of workpieces through rotation of

clamp arm away from component.

Positioning ring no. 12603.W0063, and its integral stop, provides repeated accuracy of the clamping position.

**SAFETY: base of the clamping cylinder must make full surface contact.**

**T-nuts removable. For other T-nut sizes please refer to no.24000.**

Order No.	Type	Stroke	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$w_1$	$w_2$	$w_3$	$h_1$ min.	$h_1$ max.	Weight g
12603.W0050	With Adj. Clamping Lever	20	40	M12	M12	-	-	40	17	-	50	70	1194
12603.W0053	With Adj. Clamping Lever	30	40	M12	M12	-	-	40	17	-	68	98	1359
12603.W0056	With Adj. Clamping Lever	40	40	M12	M12	-	-	40	17	-	95	135	1639
12603.W0051	With Hex. Head	20	40	M12	M12	-	-	40	17	-	50	70	876
12603.W0054	With Hex. Head	30	40	M12	M12	-	-	40	17	-	68	98	964
12603.W0057	With Hex. Head	40	40	M12	M12	-	-	40	17	-	95	135	1300
12603.W0061	With Hex. Head	35	60	M12	M12	-	-	44	17	-	100	135	2695
12603.W0063	With Hex. Head *	35	60	M16	M16	-	-	53	24	-	100	135	2939
12603.W0052	With Ecc. Clamping Lever	20	40	M12	M12	-	-	40	17	-	50	50	1213
12603.W0055	With Ecc. Clamping Lever	30	40	M12	M12	-	-	40	17	-	68	70	1370
12603.W0058	With Ecc. Clamping Lever	40	40	M12	M12	-	-	40	17	-	95	98	1585
12603.W0060	With Ecc. Clamping Lever	35	60	M12	M12	-	-	40	17	-	100	135	3015
12603.W0350	Positioning Ring	-	-	-	-	28	5	-	-	35	7	-	32

Order No.	$h_2$ min.	$h_2$ max.	$h_3$	$h_4$	$l_1$	$l_2$	$l_3$	$l_4$	A/F
12603.W0050	73	93	15	82	75	55	43	108	36
12603.W0053	91	121	15	82	75	55	43	108	36
12603.W0056	118	158	22	82	75	55	43	108	36
12603.W0051	73	93	15	13	75	55	43	108	36
12603.W0054	91	121	15	13	75	55	43	108	36
12603.W0057	118	158	22	13	75	55	43	108	36
12603.W0061	123	158	98	13	95	65	53	-	36
12603.W0063	123	158	98	16	99	69	53	-	36
12603.W0052	50	50	15	73-93	75	55	43	108	36
12603.W0055	73	93	15	28	75	55	43	108	36
12603.W0058	91	121	22	28	75	55	43	108	36

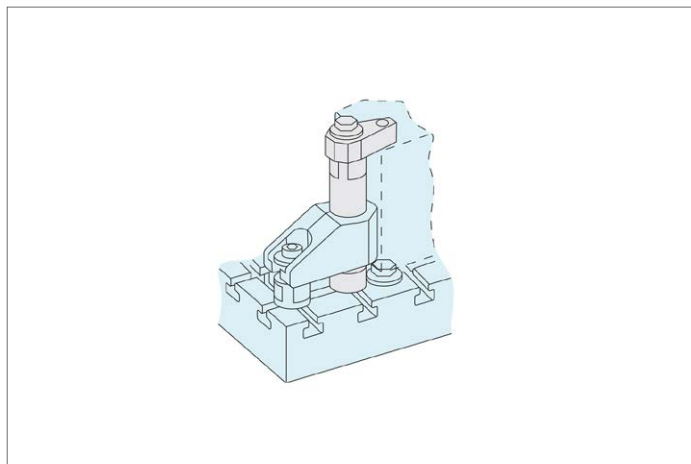


# Down Thrust Clamps swivelling



# Adjustable Vertical Clamps

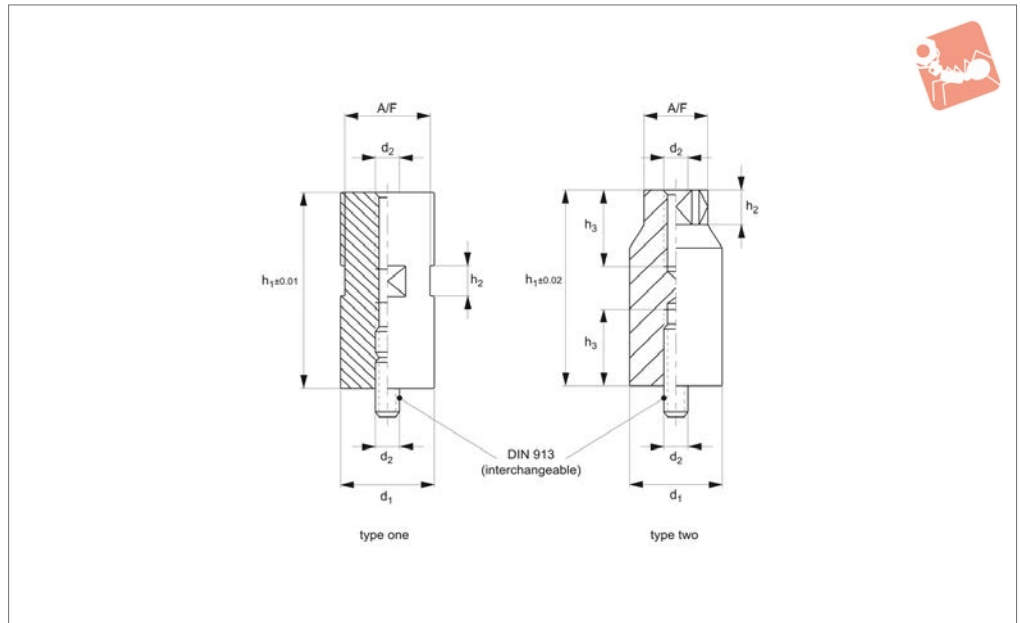
Order No.	$h_2$ min.	$h_2$ max.	$h_3$	$h_4$	$l_1$	$l_2$	$l_3$	$l_4$	A/F
12603.W0060	123	158	98	28	95	65	53	100	36
12603.W0350	16	-	-	-	43.5	17.5	-	-	-



ADJUSTABLE VERTICAL CLAMPS



## 12605



### Material

Steel case-hardened, blackened and ground.

### Technical Notes

Increase clamping height for down-thrust clamps, alternatively can be used as

general height setting and supporting elements.

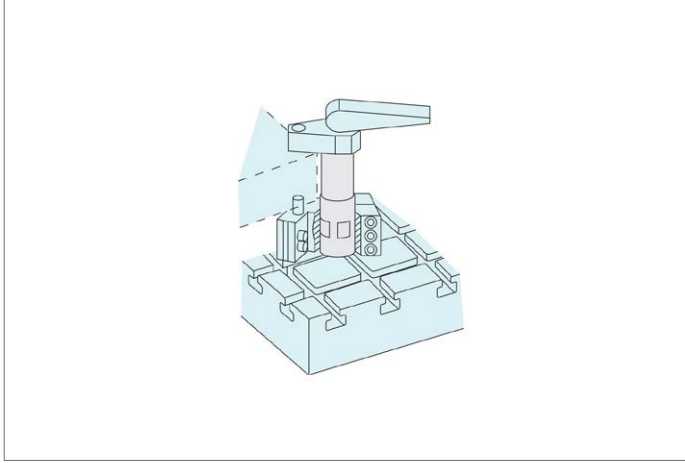
Order No.	Type	d <sub>1</sub> tol. h9	d <sub>2</sub>	h <sub>1</sub> ±0.01	h <sub>2</sub>	h <sub>3</sub>	A/F	Weight g
12605.W0125	One	25	M 8	20	10	-	22	71
12605.W0126	One	25	M 8	40	20	-	22	139
12605.W0127	One	25	M 8	80	20	-	22	292
12605.W0140	One	40	M12	35	20	-	36	319
12605.W0141	One	40	M12	70	20	-	36	644
12605.W0142	One	40	M12	140	20	-	36	1325
12605.W0145	One	40	M16	35	20	-	36	318
12605.W0146	One	40	M16	70	20	-	36	634
12605.W0147	One	40	M16	140	20	-	36	1307
12605.W0160	One	60	M12	35	20	-	55	755
12605.W0161	One	60	M12	70	20	-	55	1460
12605.W0162	One	60	M12	140	20	-	55	3034
12605.W0165	One	60	M16	35	20	-	55	438
12605.W0166	One	60	M16	70	20	-	55	1493
12605.W0167	One	60	M16	140	20	-	55	3016
12605.W0241	One	70	M24	50	25	-	65	1310
12605.W0242	One	70	M24	100	25	-	65	2682
12605.W0243	Two	90	M24	200	35	50	65	8655
12605.W0244	Two	90	M24	300	35	50	65	13617



# Height Adjusting Cylinders

for down thrust clamps 12603

# Adjustable Vertical Clamps



ADJUSTABLE VERTICAL CLAMPS

# Adjustable Vertical Clamps

# Down Thrust Clamps

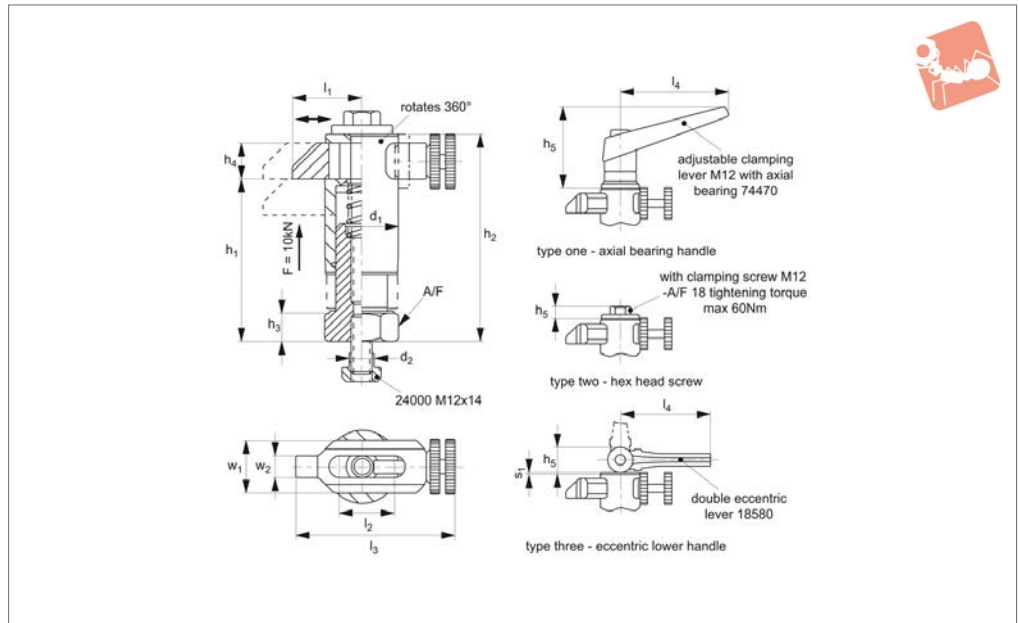
retractable



ADJUSTABLE VERTICAL CLAMPS



## 12608



### Material

Steel case-hardened, blackened and ground

### Technical Notes

Use when swivelling of clamp is not possible, horizontal retraction available, see  $l_1$  min -  $l_1$  max.  
Use of positioning ring 12603.W0350

increases height  $h_1$  by 7mm and reduces stroke by 7mm.

### Operation:

Push clamp jaw back. Insert workpiece to fixture. Push clamp jaw forwards, adjust position with knurled clamp screw, lock off. Apply clamping pressure.

### Tips

Offers quick manual clamping by use of clamping screw/lever. Compact design and height adjustable.

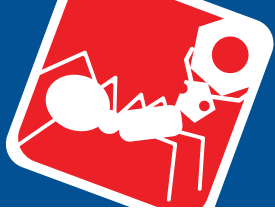
### Used with:

24000 T-nuts  
12603.W0350 positioning ring.

Order No.	Type	Stroke $s_1$	$d_1$	$d_2$	$w_1$	$w_2$	$h_1$ min.	$h_1$ max.	$h_2$ min.	$h_2$ max.	Weight g
12608.W0083	One	20	40	M12	30	13	70	90	95	115	1400
12608.W0086	One	30	40	M12	30	13	88	118	113	143	1560
12608.W0084	Two	20	40	M12	30	13	70	90	95	115	1070
12608.W0087	Two	30	40	M12	30	13	88	118	113	143	1240
12608.W0085	Three	20	40	M12	30	13	70	90	95	115	1400
12608.W0088	Three	30	40	M12	30	13	88	118	113	143	1560

Order No.	$h_3$	$h_4$	$h_5$	$l_1$ min.	$l_1$ max.	$l_2$	$l_3$ min.	$l_3$ max.	$l_4$	A/F
12608.W0083	15	20	82	38	55	30	90	107	108	36
12608.W0086	15	20	82	38	55	30	90	107	108	36
12608.W0084	15	20	13	38	55	30	90	107	-	36
12608.W0087	15	20	13	38	55	30	90	107	-	36
12608.W0085	15	20	28	38	55	30	90	107	100	36
12608.W0088	15	20	28	38	55	30	90	107	100	36



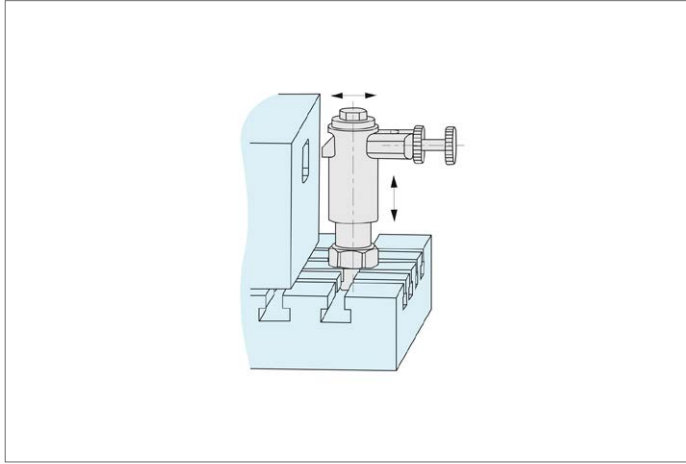


# Down Thrust Clamps

retractable



# Adjustable Vertical Clamps



ADJUSTABLE VERTICAL CLAMPS

# Adjustable Vertical Clamps

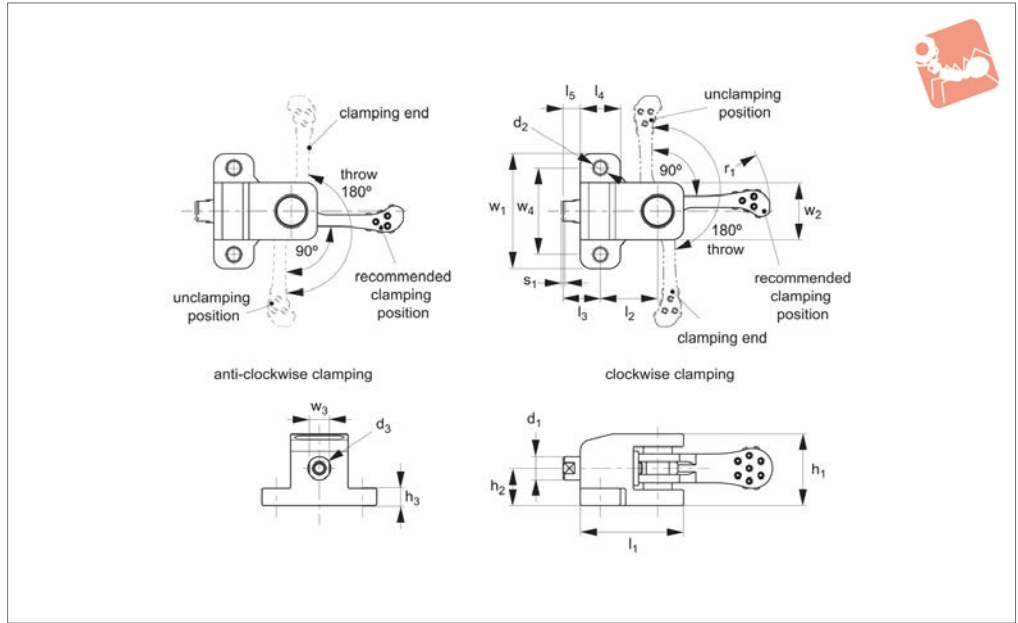
# Cam Action Push Clamps



ADJUSTABLE VERTICAL CLAMPS



## 12618



### Material

Steel (35CrMo), heat treated, black oxide finish, precision ground.  
 Body: steel (C45), black oxide finish.

Piston/pin: steel (C45), tempered and black oxide finish.

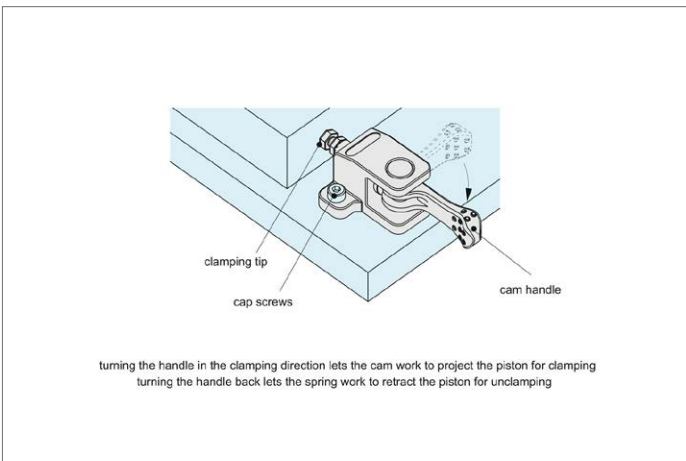
Cam handle: steel (42CrMo), tempered and black oxide finish.

### Technical Notes

The tapped hole in the piston allows a pad to be fitted to the clamp.

Order No.	Clamping direction	Clamping stroke $s_1$	$d_1$	$d_2$	$d_3$	$w_1$	$w_2$	$w_3$	$w_4$	$h_1$	Weight g
<b>12618.W0008</b>	Clockwise	1.2	8	4.5	M 4x0,7 Depth 8	40	20	7	30	25	130
<b>12618.W0012</b>	Clockwise	1.6	12	6.6	M 6x1 Depth 12	55	26	10	40	33	350
<b>12618.W0108</b>	Anti Clockwise	1.2	8	4.5	M 4x0,7 Depth 8	40	20	7	30	25	130
<b>12618.W0112</b>	Anti Clockwise	1.6	12	6.6	M 6x1 Depth 12	55	26	10	40	33	350

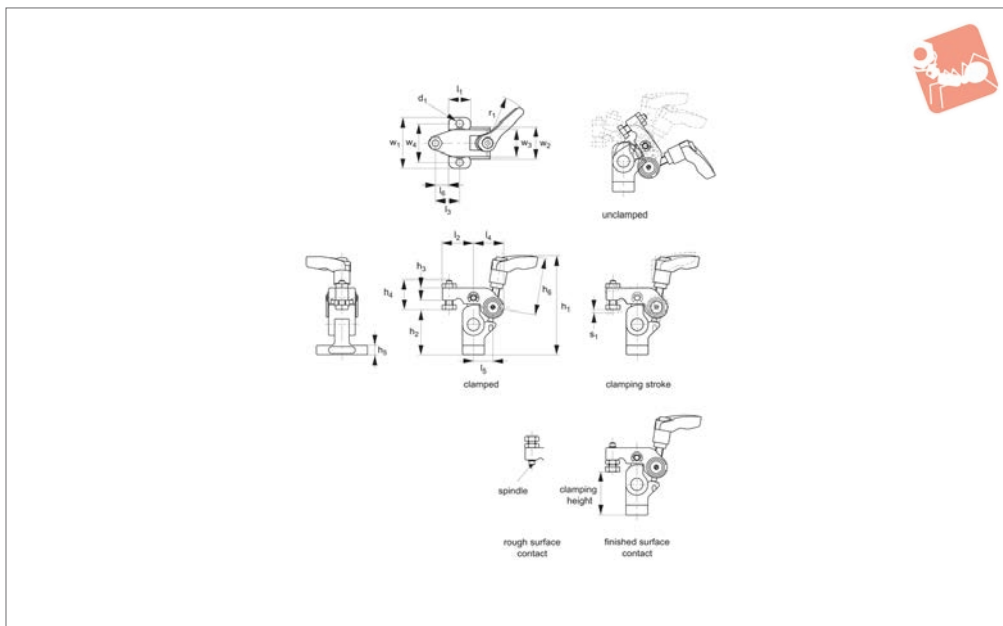
Order No.	$h_2$	$h_3$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$r_1$	Handle load N max.	Clamping force kN max.	Clamping mechanism
<b>12618.W0008</b>	13	6	36	20	13	14	6	40	80	0.9	Spiral Cam, 4°
<b>12618.W0012</b>	18	10	50	28	19	20	9	63	150	2.4	Spiral Cam, 4°
<b>12618.W0108</b>	13	6	36	20	13	14	6	40	80	0.9	Spiral Cam, 4°
<b>12618.W0112</b>	18	10	50	28	19	20	9	63	150	2.4	Spiral Cam, 4°





# Retractable Clamps with adjustable handle

# Adjustable Vertical Clamps



## 12610.1

ADJUSTABLE VERTICAL CLAMPS

### Material

Body/spindle: steel (C45), tempered and black oxide finish.

Arm/joint: steel (35CrMo), tempered and

black oxide finish.

### Tips

Clamping height can be adjusted. The

values in brackets shows clamping height range. Screw clamping mechanism allows for longer clamping stroke and greater clamping force.

Order No.	$h_1$	$h_2$	$h_3$	$h_4$	$h_5$	$h_6$	$l_1$	$l_2$	$l_3$	$l_4$	Weight g
12610.W0006	81	45	10	24.0	8	47	18	25.5	20	25	242
12610.W0008	100	55	12	30.5	10	63	22	32.0	25	31	490

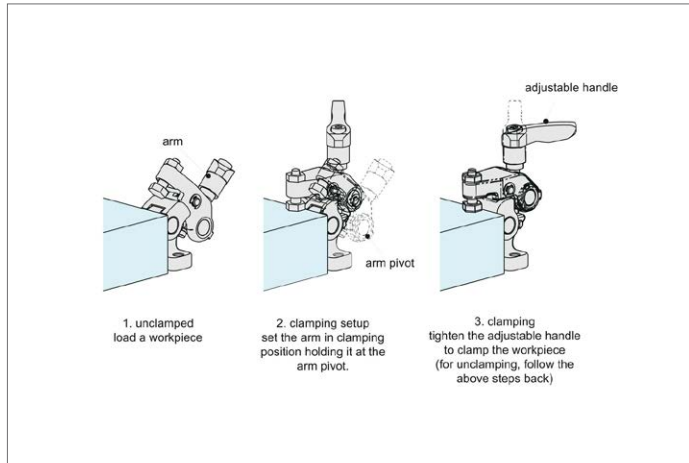
Order No.	$l_5$	$l_6$	$r_1$	$w_1$	$w_2$	$w_3$	$w_4$	$w_5$	$d_1$	Handle load N max.	Clamping height finished surface min.	Clamping height finished surface max.	Clamping height rough surface min.	Clamping height rough surface max.	Clamping stroke $s_1$	Clamping force kN max.	Clamping force mechanical max.
12610.W0006	16	11	40	42	26	22	32	M 6x1	5.5	170	32 (32,0~29,5)	40 (40,0~37,5)	35 (35,0~32,5)	43 (43,0~40,5)	2.5	2.4	Screw
12610.W0008	20	14	65	52	32	28	40	M 8x1, 25	6.5	210	37 (37,0~33,5)	48 (48,0~44,5)	42 (42~38,5)	53 (53,0~49,5)	3.5	4.2	Screw

# Adjustable Vertical Clamps

## Retractable Clamps with adjustable handle



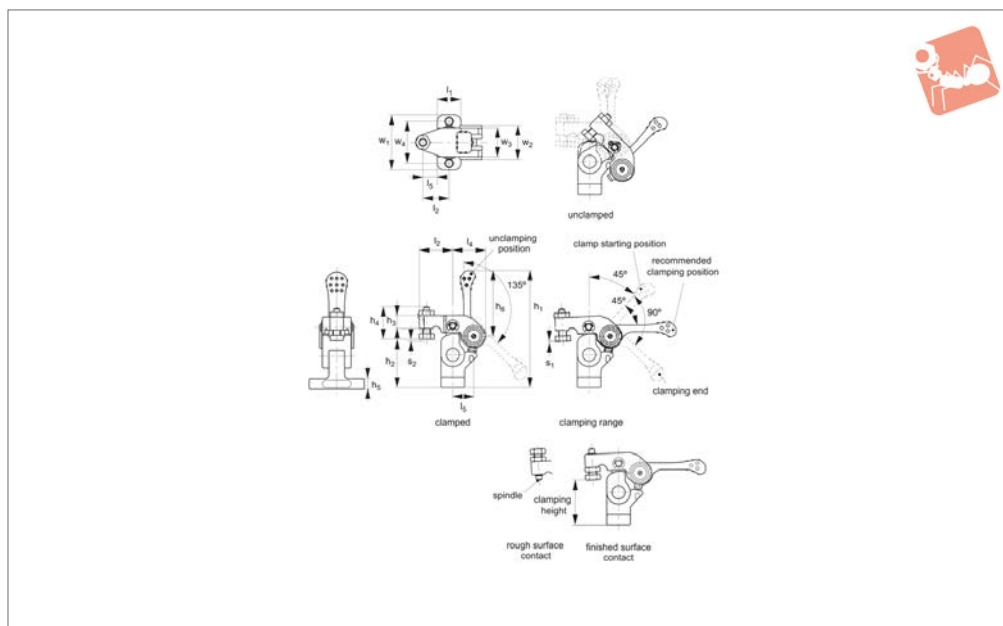
ADJUSTABLE VERTICAL CLAMPS





# Retractable Clamps with eccentric handle

# Adjustable Vertical Clamps



**12610.2**

ADJUSTABLE VERTICAL CLAMPS

### Material

Body/spindle: steel (C45), tempered and black oxide finish.

Arm/joint: steel (35CrMo), tempered and

black oxide finish.

### Tips

Clamping height can be adjusted. The

values in brackets shows clamping height range.

Order No.	$h_1$	$h_2$	$h_3$	$h_4$	$h_5$	$h_6$	$l_1$	$l_2$	$l_3$	$l_4$	Weight g
<b>12610.W0106</b>	89	45	10	24.0	8	50	18	25.5	20	25	244
<b>12610.W0108</b>	109	55	12	30.5	10	63	22	32.0	25	31	468

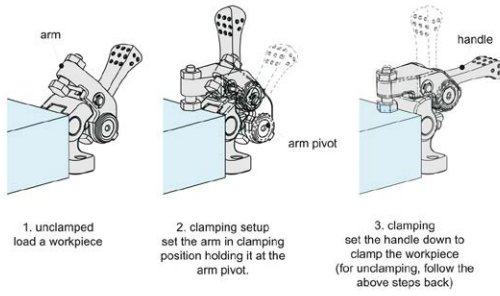
Order No.	$l_5$	$l_6$	$w_1$	$w_2$	$w_3$	$w_4$	$w_5$	$d_1$	Handle load N max.	Clamping height finished surface min.	Clamping height finished surface max.	Clamping height rough surface min.	Clamping height rough surface max.	Clamping stroke $s_1$	Clamping force kN max.	Clamping mechanism	Overall stroke $s_2$
<b>12610.W0106</b>	16	11	42	26	22	32	M 6x1	5.5	100	32 (31,5~32,5)	40 (39,5~40,5)	35 (34,5~35,5)	43 (42,5~43,5)	1.0	0.7	Spiral Cam, 4°	1.5
<b>12610.W0108</b>	20	14	52	32	28	40	M 8x1, 25	6.5	150	37 (36,4~37,6)	48 (47,4~48,6)	42 (41,4~42,6)	53 (52,4~53,6)	1.2	1.1	Spiral Cam, 4°	1.8

# Adjustable Vertical Clamps

## Retractable Clamps with eccentric handle



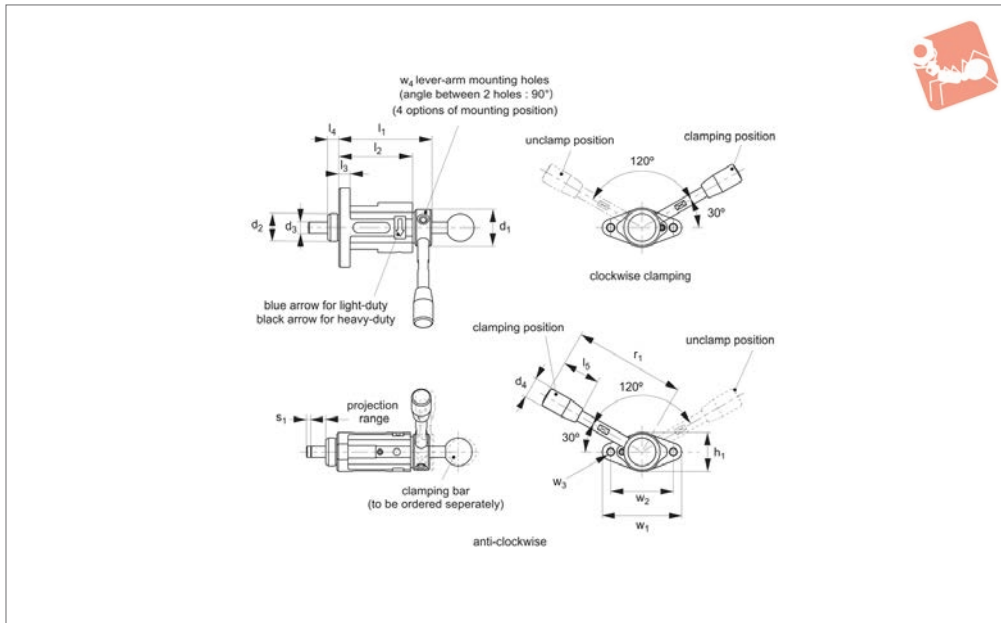
ADJUSTABLE VERTICAL CLAMPS





# Vertical Acting Thrust Clamps

# Adjustable Vertical Clamps



**12615**

ADJUSTABLE VERTICAL CLAMPS

## Material

Body/lever arm: steel (C45), black oxide finish.

Cam: steel (C45), carburized-hardened, black oxide finish.

Handle: phenolic plastic, black matt. Clamping handle is not included.

## Technical Notes

Can be used in both vertical and horizontal

clamping applications.

Spring-loaded clamp that provides constant clamping force.

Long clamping-bar projection range allows clamping of a recessed part.

When using your own clamping bar, ensure that the diameter is finished to a H9 or better tolerance.

## Tips

When a reaction force (F) becomes greater than clamping force, the clamping bar slides back, unclamping the part.

Order No.	Type	Clamping direction	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight g
12615.W0008	Light Duty	Clockwise	26	20	8	14	28	68.5	53	8	330
12615.W0012	Light Duty	Clockwise	36	30	12	21	40	90.7	72	12	930
12615.W0208	Light Duty	Clockwise	26	20	8	14	28	68.5	53	8	330
12615.W0212	Light Duty	Clockwise	36	30	12	21	40	90.7	72	12	950
12615.W0108	Heavy Duty	Anti Clockwise	26	20	8	14	28	68.5	53	8	330
12615.W0112	Heavy Duty	Anti Clockwise	36	30	12	21	40	90.7	72	12	930
12615.W0308	Heavy Duty	Anti Clockwise	26	20	8	14	28	68.5	53	8	330
12615.W0312	Heavy Duty	Anti Clockwise	36	30	12	21	40	90.7	72	12	950

Order No.	l <sub>4</sub>	l <sub>5</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Clamping stroke s <sub>1</sub>	Handle load N max.	Clamping force kN max.	Clamping releasing force kN
12615.W0008	8	28	80	57	45	M 6x1 (Pre-drill 5,2)	M 5x0,8	1.5	40	0.2	F>0,2
12615.W0012	12	50	132	85	65	M10x1,5 (Pre-drill 8,5)	M 6x1	2.3	100	0.7	F<0,7
12615.W0208	8	28	80	57	45	M 6x1 (Pre-drill 5,2)	M 5x0,8	1.5	80	0.5	F>0,5
12615.W0212	12	50	132	85	65	M10x1,5 (Pre-drill 8,5)	M 6x1	2.3	150	1.4	F>1,4
12615.W0108	8	28	80	57	45	M 6x1 (Pre-drill 5,2)	M 5x0,8	1.5	40	0.2	F>0,2
12615.W0112	12	50	132	85	65	M10x1,5 (Pre-drill 8,5)	M 6x1	2.3	100	0.5	F<0,7
12615.W0308	8	28	80	57	45	M 6x1 (Pre-drill 5,2)	M 5x0,8	1.5	80	0.5	F>0,5

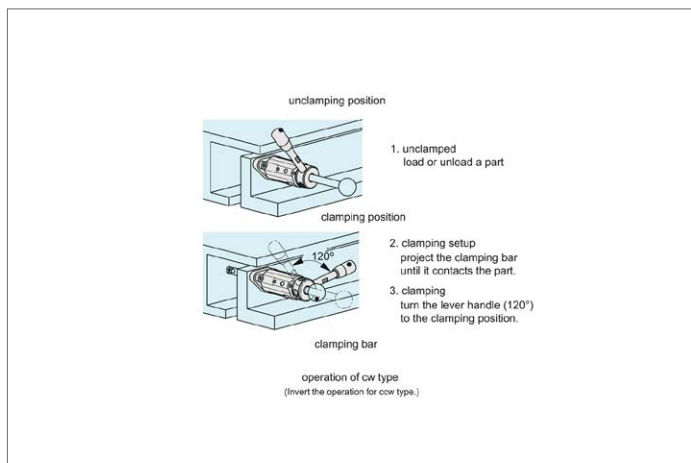
# Adjustable Vertical Clamps

## Vertical Acting Thrust Clamps

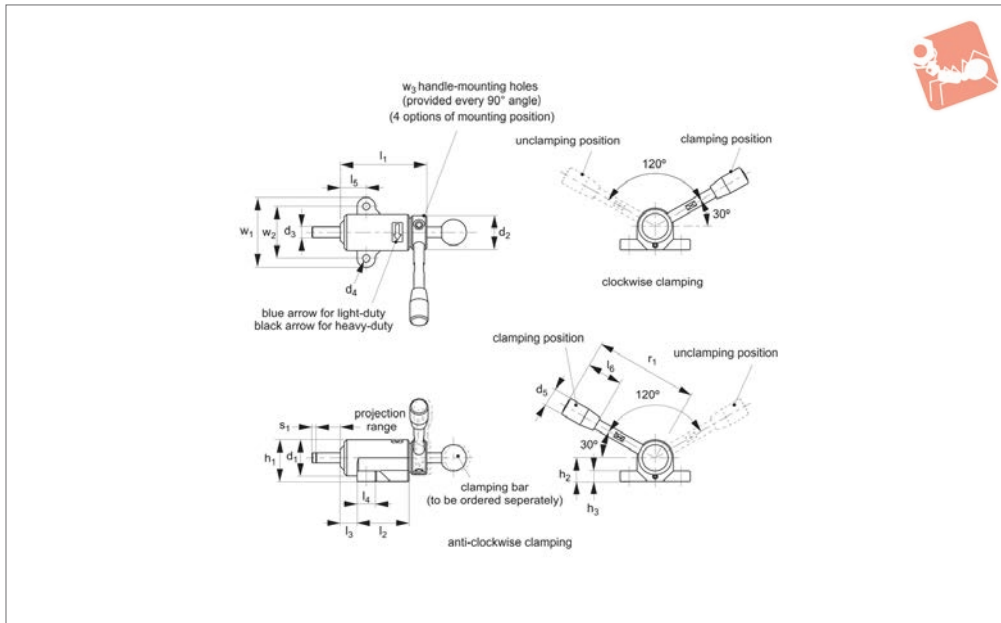


Order No.	$l_4$	$l_5$	$r_1$	$w_1$	$w_2$	$w_3$	$w_4$	Clamping stroke $s_1$	Handle load N max.	Clamping force kN max.	Clamping releasing force kN
<b>12615.W0312</b>	12	50	132	85	65	M10x1,5 (Pre-drill 8,5)	M 6x1	2.3	150	1.4	F>1,4

ADJUSTABLE VERTICAL CLAMPS







## 12616.1

ADJUSTABLE VERTICAL CLAMPS

### Material

Body/lever arm: steel (C45), black oxide finish.

Cam: steel (C45), carburized-hardened, black oxide finish.

Handle: phenolic plastic, black matt.

### Technical Notes

Can be used in both vertical and horizontal

clamping applications.

Spring-loaded clamp that provides constant clamping force.

Long clamping-bar projection range allows clamping of a recessed part.

When using your own clamping bar, ensure that the diameter is finished to a H9 or better tolerance.

### Tips

When the applied u-clamp force (F) becomes greater than clamping force, the clamping bar slides back, unclamping the part.

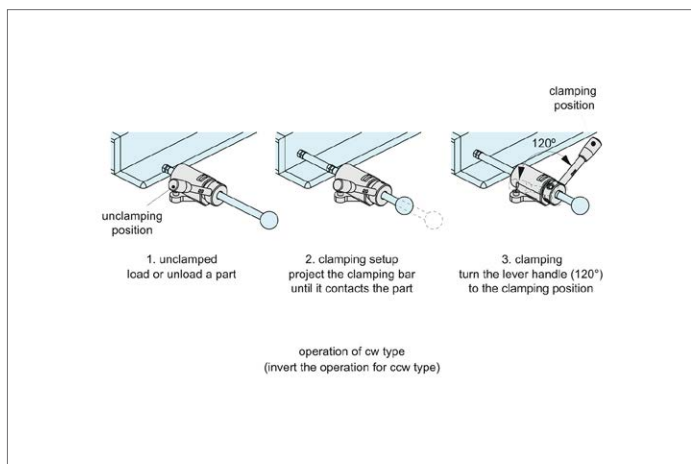
Order No.	Type	Clamping direction	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	Weight g
12616.W0008	Light Duty	Clockwise	28	26	8	5.5	14	32	18	8	330
12616.W0012	Light Duty	Clockwise	40	36	12	9.0	21	45	25	12	910
12616.W0208	Heavy Duty	Clockwise	28	26	8	5.5	14	32	18	8	330
12616.W0212	Heavy Duty	Clockwise	40	36	12	9.0	21	45	25	12	910
12616.W0108	Light Duty	Anti Clockwise	28	26	8	5.5	14	32	18	8	330
12616.W0112	Light Duty	Anti Clockwise	40	36	12	9.0	21	45	25	12	910
12616.W0308	Heavy Duty	Anti Clockwise	28	26	8	5.5	14	32	18	8	330
12616.W0312	Heavy Duty	Anti Clockwise	40	36	12	9.0	21	45	25	12	910

Order No.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	l <sub>6</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	Clamping stroke s <sub>1</sub>	Handle load N max.	Clamping force kN max.	Clamping releasing force kN
12616.W0008	68.5	40	13	14	20	28	80	54	40	M 5x0,8	1.5	40	0.2	F>0,2
12616.W0012	93.7	55	20	20	30	50	132	80	60	M 6x1	2.3	100	0.7	F>0,7
12616.W0208	68.5	40	13	14	20	28	80	54	40	M 5x0,8	1.5	80	0.5	F>0,5
12616.W0212	93.7	55	20	20	30	50	132	80	60	M 6x1	2.3	150	1.4	F>1,4
12616.W0108	68.5	40	13	14	20	28	80	54	40	M 5x0,8	1.5	40	0.2	F>0,2
12616.W0112	93.7	55	20	20	30	50	132	80	60	M 6x1	2.3	100	0.7	F>0,7



Order No.	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$r_1$	$w_1$	$w_2$	$w_3$	Clamping stroke $s_1$	Handle load N max.	Clamping force kN max.	Clamping releasing force kN
<b>12616.W0308</b>	68.5	40	13	14	20	28	80	54	40	M 5x0,8	1.5	80	0.5	F>0,5
<b>12616.W0312</b>	93.7	55	20	20	30	50	132	80	60	M 6x1	2.3	150	1.4	F>1,4

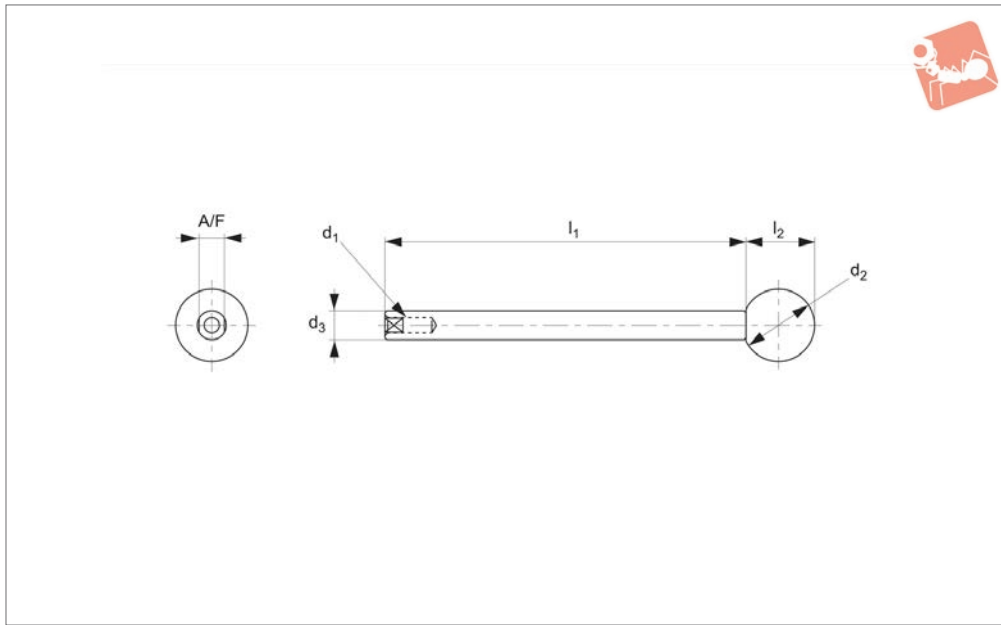
ADJUSTABLE VERTICAL CLAMPS





# Handles For Thrust Clamps for 12615 & 12616

## Adjustable Vertical Clamps



**12616.2**

ADJUSTABLE VERTICAL CLAMPS

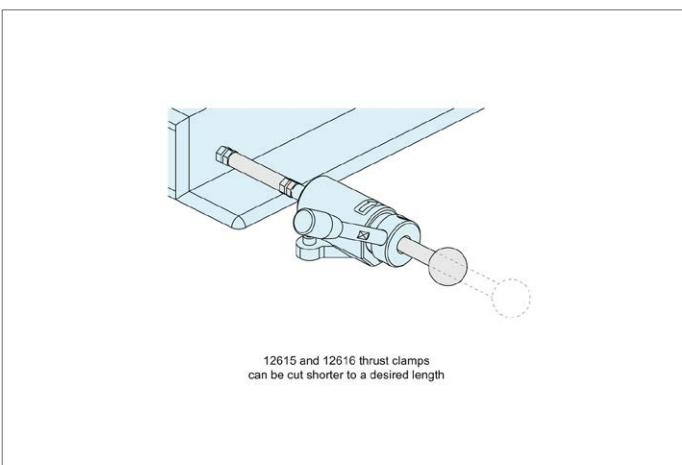
### Material

Arm: steel (C45), chrome plated.  
Ball knob: ABS resin black.

### Tips

Can be used with part no's 12615 and 12616.W0008- .W0312.

Order No.	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	A/F	Weight g
<b>12616.W0810</b>	M 4x8	20	8	100	19	7	50
<b>12616.W0812</b>	M 4x8	20	8	125	19	7	60
<b>12616.W0815</b>	M 4x8	20	8	150	19	7	70
<b>12616.W1212</b>	M 6x12	25	12	125	24	10	130
<b>12616.W1215</b>	M 6x12	25	12	150	24	10	150
<b>12616.W1220</b>	M 6x12	25	12	200	24	10	190



# Adjustable Vertical Clamps

# Floating Clamps M12

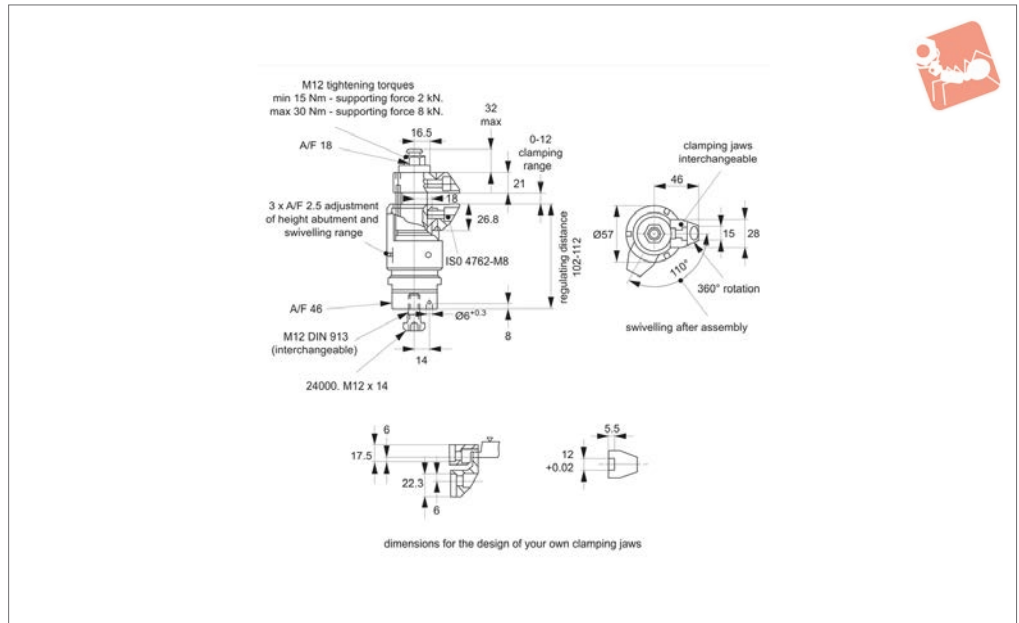
combined clamping and locking



ADJUSTABLE VERTICAL CLAMPS



## 12660.1



### Material

Body: steel case-hardened, nitrided, blackened and ground.

Clamping jaws: steel case-hardened, nitrided, blackened.

Housing: aluminium, red anodised.

### Technical Notes

Used to clamp and support additional clamping points on components, whilst minimising distortion in the clamping of components. It also serves to reduce vibration during machining.

### Tips

Alternative clamping jaws available, see

part 12660.W0050 to W0058 and 12660.W0148 to W0156.

The benefits of the floating clamp are:

- Avoids vibration during the processing
- Clamps ribs and flanges to reinforce clamped components
- Distortion-free clamping of first op. parts.

### Assembly

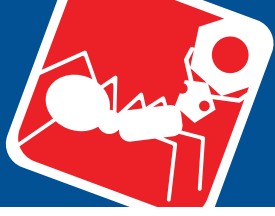
1. Mount the floating clamp (M 12 connection thread) onto the device with a wrench (A/F 46).
2. Adjust the height limit stop and the rotating area with the red sleeve and clamp with a set screw (3 x A/F 2,5). When setting

the height limit, consider tolerance of workpiece.

### Operation

1. Push the floating clamp downwards.
2. Pivot the clamping jaws in as far as possible. The floating clamp contacts the bottom of the workpiece with a slight spring load.
3. Tighten the floating clamp with a hexagonal nut (A/F 18) having a min. torque of 15 Nm and a maximum torque of 30 Nm. In the clamping process, the workpiece is clamped and simultaneously supported.
4. Releasing is done in reverse order.

Order No.	Description	Clamping & support force kN max.	Clamping stroke	Weight g
12660.W0012	Clamping & Support	8	0-12	2076

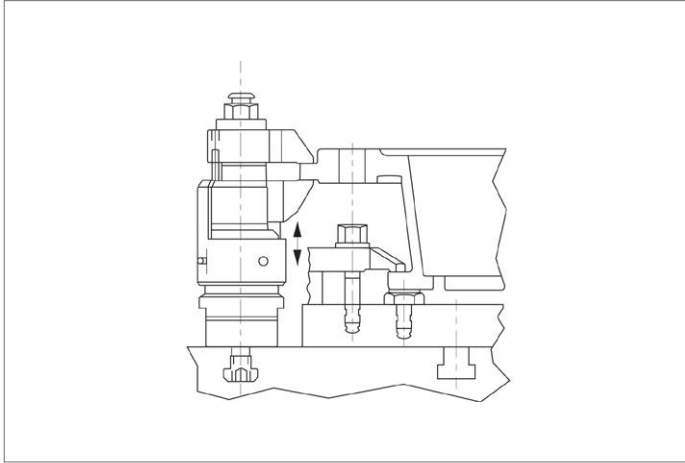


# Floating Clamps M12

combined clamping and locking



# Adjustable Vertical Clamps



ADJUSTABLE VERTICAL CLAMPS

# Adjustable Vertical Clamps

# Compact Floating Clamps M12

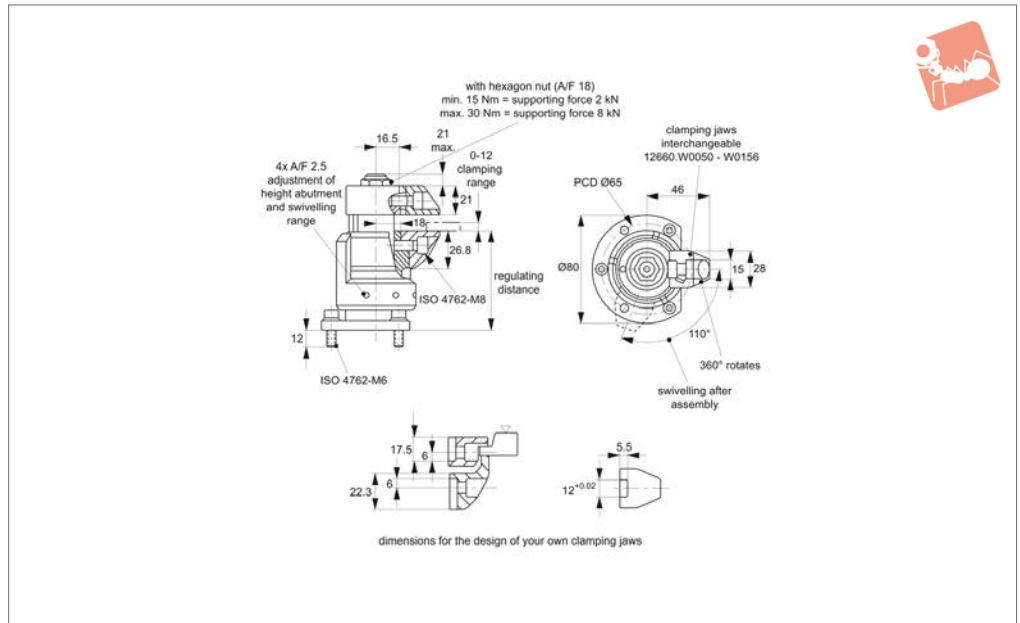
combined clamping and locking



ADJUSTABLE VERTICAL CLAMPS



## 12660.2



### Material

Body: steel case-hardened, nitrided, manganese phosphate treated and ground.  
Clamping jaws: steel case-hardened, nitrided, manganese phosphate treated.  
Housing: aluminium, red anodised.

### Technical Notes

Used to clamp and support additional clamping points on components, whilst minimising distortion in the clamping of components. It also serves to reduce vibration during machining.

### Tips

Alternative clamping jaws available, see part 12660.W0050 to W0058 and 12660.W0148 to W0156.

### Floating clamp benefits:

Floating Clamp 12660.1 is used to clamp and support over-determined points on a component, offering the following benefits:

1. No deformation in the clamping of unstable components.
2. Eliminates vibration during machining.
3. Clamps on the smallest area to improve clamping stability.

### Installation of floating clamp on fixture:

1. Fix clamp on to machine bed with A/F 46 spanner. Clamp has 12mm connection thread, select suitable T-nut for your machine bed.

2. Adjust the clamp's height limit stop and rotating area with the red setting sleeve, set sleeve position through tightening the 3 grub screws (A/F 2,5mm). When setting the height limit, make generous allowance for variation in workpiece tolerance.

### Clamping process:

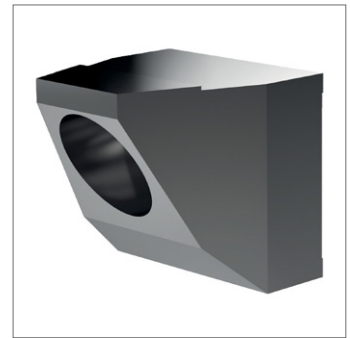
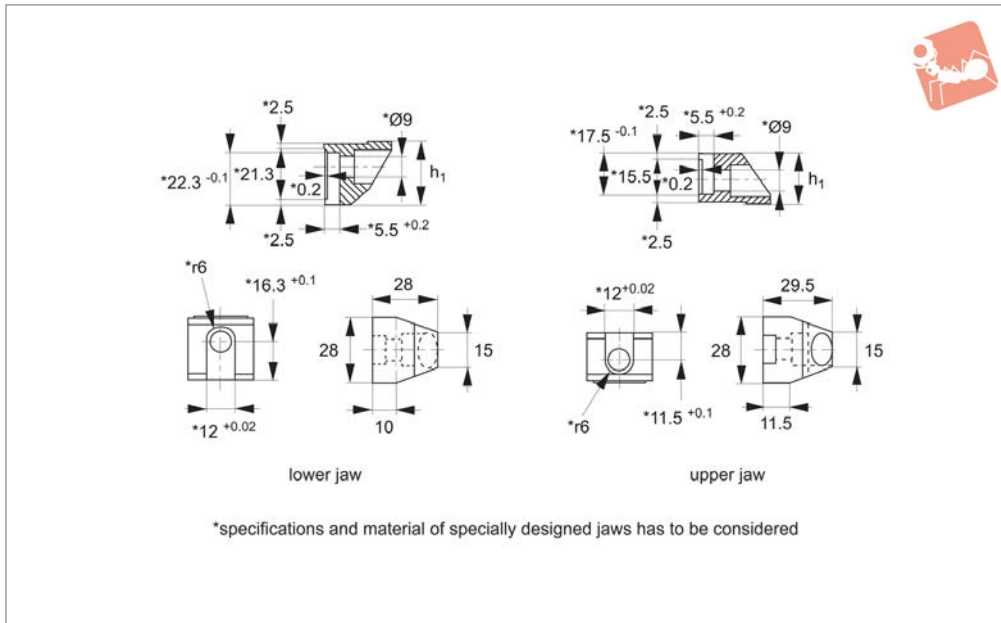
1. Push floating clamp downwards,
2. Pivot clamping jaws into component as far as possible. Clamp will contact bottom of component with a light spring pressure.
3. Tighten floating clamp with A/F 18mm hex nut – torque to min. 15Nm, 30Nm max. In the clamping process workpiece is clamped and simultaneously supported.
4. To release, reverse steps 3 to 1.

Order No.	Description	Clamping & support force kN max.	Clamping stroke	Weight g
12660.W0008	Clamping & Support	8	0-12	1450



# Support Jaws for floating clamps M12

# Adjustable Vertical Clamps



## 12660.3

ADJUSTABLE VERTICAL CLAMPS

### Material

Steel, case-hardened, nitrided.

### Technical Notes

The clamping jaws can be used for floating clamps 12660.W0008, 12662.W0010,

12660.W0012 and 12662.W0014

### Tips

When using custom-made jaws it is important to insert the tightening screw (M 8 grade 12,9, 43Nm) 10mm deep into the

clamp housing on the upper clamping jaw and 9mm deep into the clamp housing on the lower clamping jaw.

Order No.	Type	Clamping range	$h_1$	Weight
12660.W0050	Lower Jaw	-	-0.1	g
12660.W0052	Upper Jaw	0 - 12	26.8	83
			21	69

# Adjustable Vertical Clamps

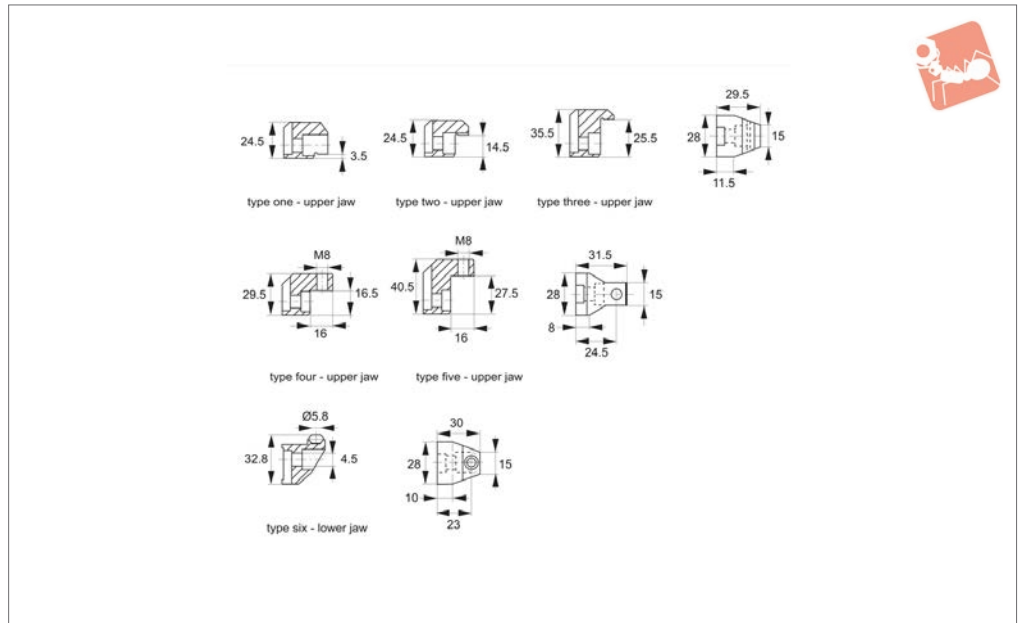
## Clamping Jaws for floating clamp M12



ADJUSTABLE VERTICAL CLAMPS



### 12660.4



#### Material

Ball: steel ball-bearing  
Clamping jaws: steel case-hardened, nitrided.

#### Technical Notes

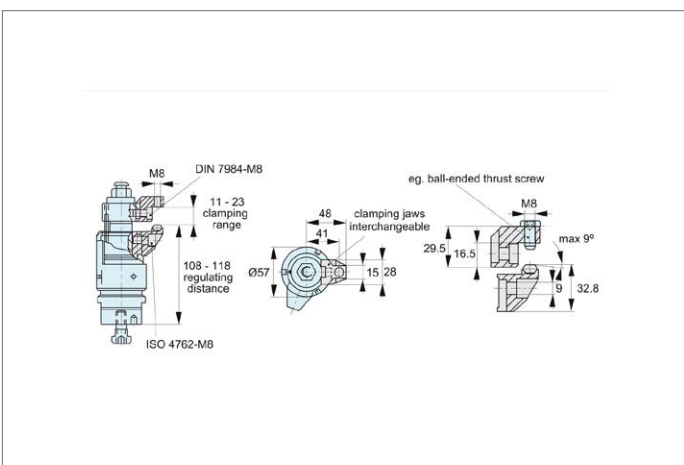
A selection of the alternative upper and

lower jaws for floating clams. The tightening torque of the floating clamp must be adapted dependent on condition. Note the surface pressure due to the reduced contact surface of the clamping jaws.

#### Important Notes

The clamping jaws can be used for floating clamps 12660.W0008, 12662.W0010, 12660.W0012 and 12662.W0014.

Order No.	Type	Clamping range of clamp in combination with standard lower jaw 12260.W0050	Clamping range in combination with lower jaw 12260.W0148 max.	Weight g
12660.W0054	Upper Jaw (Type One)	4-16		91
12660.W0056	Upper Jaw (Type Two)	15-27		88
12660.W0058	Upper Jaw (Type Three)	26-38		130
12660.W0154	Upper Jaw (Type Four)	29	23	83
12660.W0156	Upper Jaw (Type Five)	40	34	112
12660.W0148	Lower Jaw (Type Six)			98

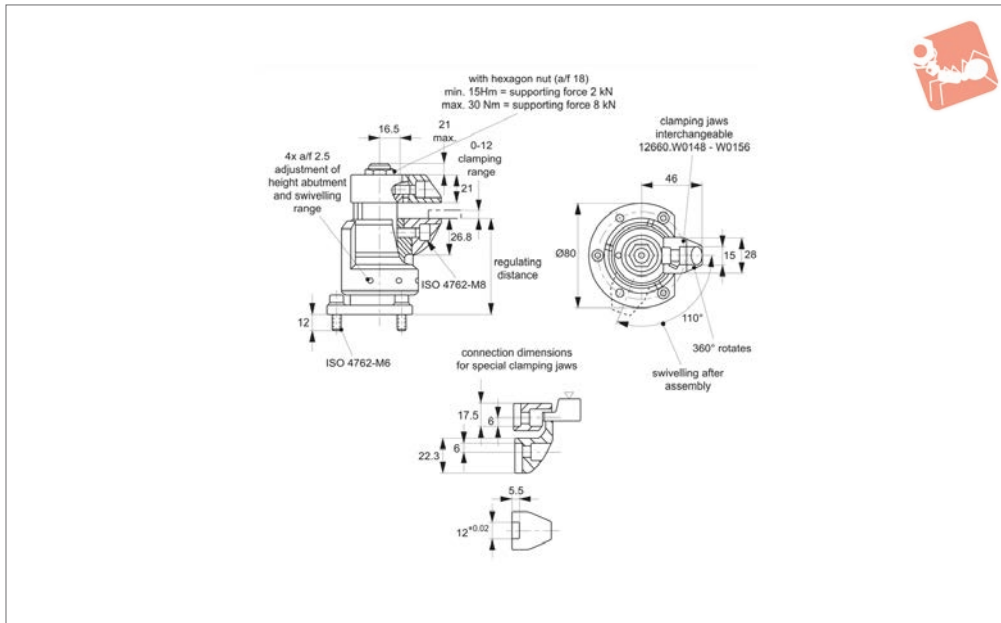






# Floating Clamps - Compact combined clamping and locking

# Adjustable Vertical Clamps



**12661**

ADJUSTABLE VERTICAL CLAMPS

### Material

Body: case hardened steel, nitrided, manganese phosphate treated and ground.  
Clamping jaws: case hardened steel, nitrided, manganese phosphate treated.  
Housing: aluminium, red anodised.

### Technical Notes

Used to clamp and support additional

clamping points on components, whilst minimising distortion in the clamping of components. It also serves to reduce vibration during machining.

### Tips

The benefits of the floating clamp are:  
- avoids vibration during the processing  
- clamps ribs, beads and shackles to rein-

force clamped components  
- distortion-free clamping of raw parts.  
Compact version with reduced height.  
Used with:  
24000 T-Nuts  
12660 Clamp Jaws - upper & lower

Order No.	Description	Clamping & support force kN max.	Clamping stroke	Weight g
12661.W0008	Clamping & Support	8	0-12	1450

# Adjustable Vertical Clamps

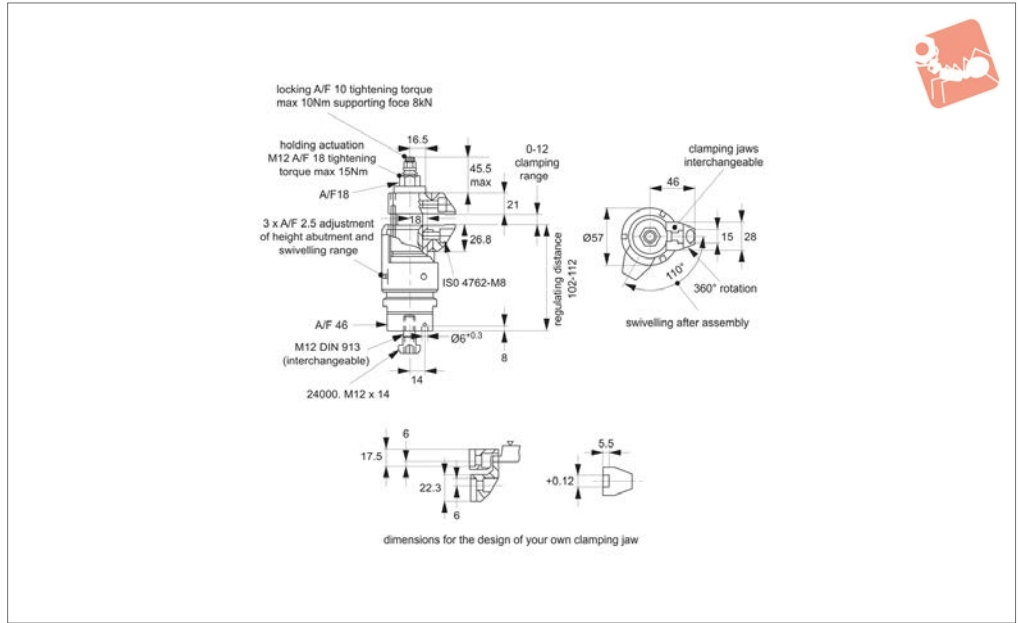
## Floating Clamps M12 separate clamping and locking



ADJUSTABLE VERTICAL CLAMPS



# 12662.1



### Material

Body: case hardened steel, nitrided and ground.

Clamping jaws: case hardened steel, nitrided.

Housing: aluminium, blue anodised.

### Technical Notes

Used to clamp and support additional clamping points on extremely pliable work pieces, whilst minimising deformation of component. It also serves to reduce vibration during machining.

### Tips

Alternative clamping jaws available, see part 12660.W0050 to W0058 and 12660.W0148 to W0156.

### Floating clamp benefits:

Floating clamp 12662.1 is used to clamp and support over determined points on a component, offering the following benefits:

1. No deformation in the clamping of unstable components.
2. Eliminates vibration during machining.
3. Clamps on the smallest area to improve clamping stability.

### Installation of floating clamp on fixture:

1. Fix clamp on to machine bed with A/F 46 spanner. Clamp has 12mm thread, select suitable T-nut for your machine bed.
2. Adjust the clamp's height limit stop and rotating area with the blue setting sleeve, set sleeve position through tightening the 3 grub screws (A/F 2,5mm). When setting the height limit, make generous allowance

for variation in workpiece tolerance.

### Clamping process:

1. Push floating clamp downwards.
2. Pivot clamping jaws into component as far as possible. Clamp will contact bottom of component with only light spring pressure.
3. Tighten floating clamp with A/F 18mm hex nut - torque to min. 15Nm, 30Nm max. The jaws are clamping the workpiece, the clamp is still floating.
4. Tighten hexagon collar with A/F 10mm hex to max. 10Nm torque.
5. Clamping process is complete.
6. To release, reverse steps 5 to 1.

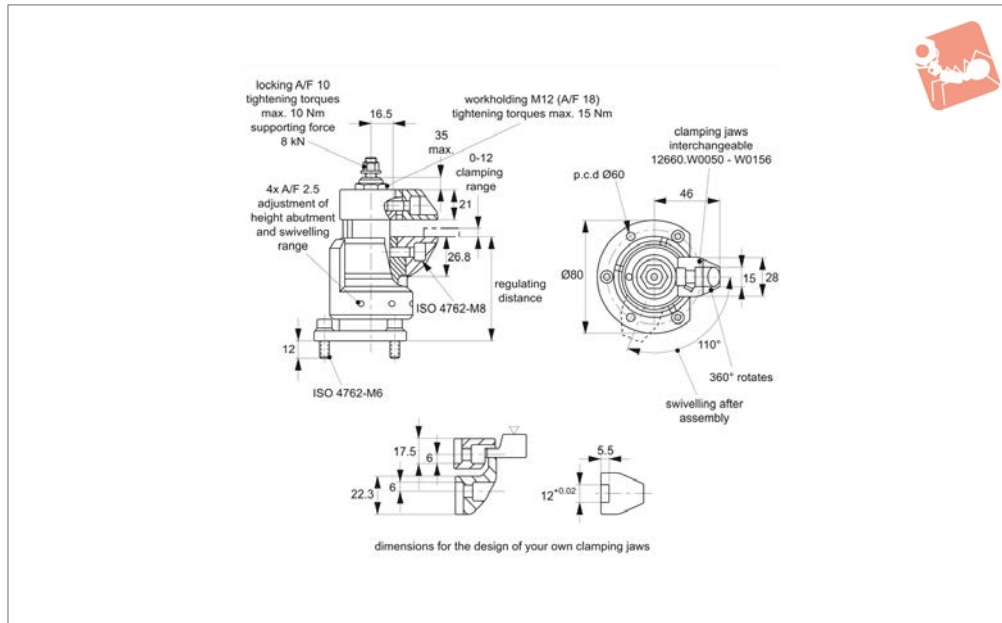
Order No.	Type	Weight g
12662.W0014	Steel	1890



# Compact Floating Clamps

separate clamping and locking

# Adjustable Vertical Clamps



**12662.2**

ADJUSTABLE VERTICAL CLAMPS

### Material

Body: steel case-hardened, nitrided, manganese phosphate treated and ground.  
Clamping jaws: steel case-hardened, nitrided, manganese phosphate treated.  
Housing: aluminium, blue anodised.

### Technical Notes

Used to clamp and support additional clamping points on extremely pliable work pieces, whilst minimising deformation of component. It also serves to reduce vibration during machining.

### Tips

Alternative clamping jaws available, see part 12660.W0050 to W0058 and 12660.W0148 to W0156.

Order No.	Description	Clamping & support force kN max.	Clamping stroke $s_1$	Weight g
12662.W0010	Clamping & Locking	8	0-12	1650

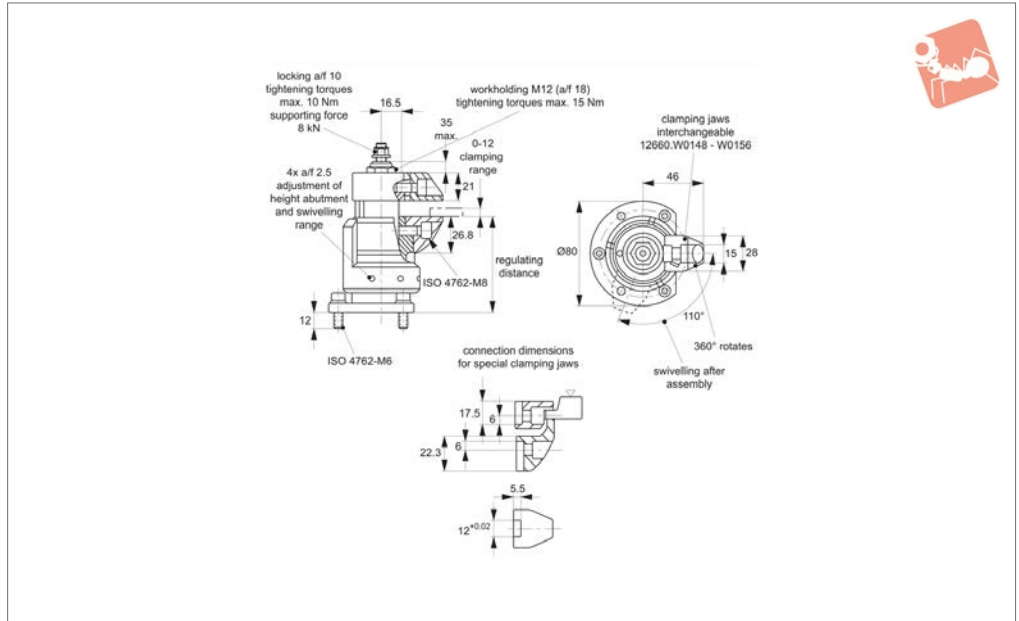
# Adjustable Vertical Clamps

## Floating Clamps - Compact

separate clamping and locking



**12663**



ADJUSTABLE VERTICAL CLAMPS

### Material

Body: case hardened steel, nitrided, manganese phosphate treated and ground.  
Clamping jaws: case hardened steel, nitrided, manganese phosphate treated.  
Housing: aluminium, blue anodised.

### Technical Notes

Used to clamp and support additional

clamping points on extremely pliable work pieces, whilst minimising deformation of component. It also serves to reduce vibration during machining.

### Tips

The benefits of the floating clamp are:  
- avoids vibration during the processing  
- clamps ribs, beads and shackles to rein-

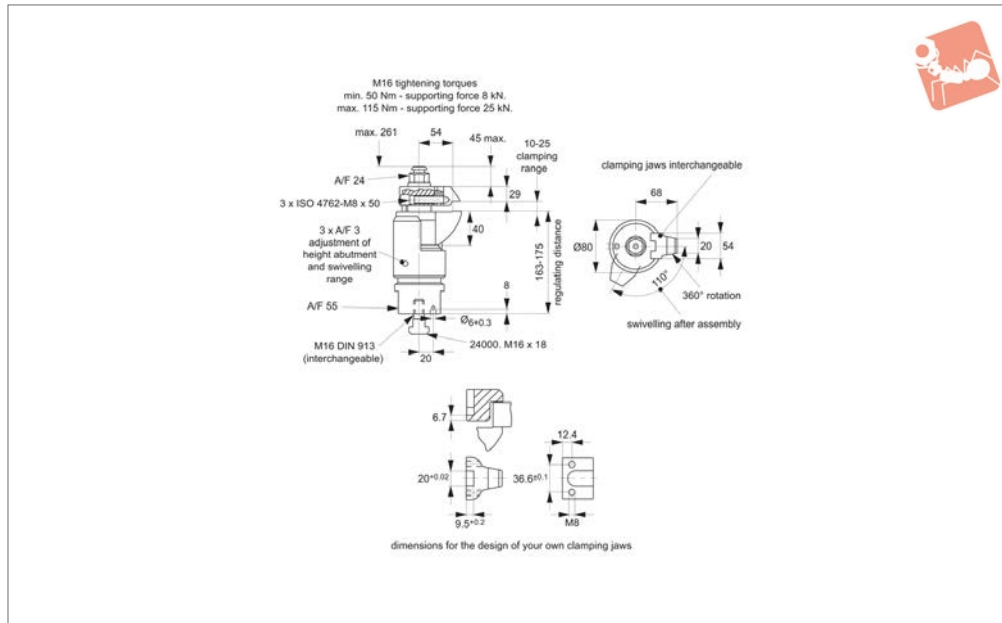
force clamped components  
- distortion-free clamping of raw parts.  
Used with:  
24000 T-Nuts  
12660 Clamp Jaws - upper & lower

Order No.	Description	Clamping & support force kN max.	Clamping stroke	Weight g
12663.W0010	Clamping and locking	8	0-12	1650



# Floating Clamps M16 combined clamping and locking

# Adjustable Vertical Clamps



## 12664.1

ADJUSTABLE VERTICAL CLAMPS

### Material

Body: steel case-hardened, nitrided and ground.

Clamping jaws: steel case-hardened, nitrided, manganese phosphate treated.

Housing: aluminium, red anodised.

### Technical Notes

Used to clamp and support additional clamping points on extremely pliable work pieces, whilst minimising deformation of component. It also serves to reduce vibration during machining.

### Tips

Alternative clamping jaws available, see part 12664.W0060 to W0066.

### Floating clamp benefits:

Floating clamp 12664.1 is used to clamp and support over-determined points on a component, offering the following benefits:

1. No deformation in the clamping of unstable components.
2. Eliminates vibration during machining.
3. Clamps on the smallest area to improve clamping stability.

### Installation of floating clamp on fixture:

1. Fix clamp onto machine bed with A/F 46 spanner. Clamp has 16mm connection thread, select suitable T-nut for your machine bed.
2. Adjust the clamp's height limit stop and rotating area with the red setting sleeve, set sleeve position through tightening the

3 grub screws (A/F 2,5mm). When setting the height limit, make generous allowance for variation in workpiece tolerance.

### Clamping process:

1. Push floating clamp downwards.
2. Pivot clamping jaws in to component as far as possible. Clamp will contact bottom of component with only low spring pressure.
3. Tighten floating clamp with A/F 24mm hex nut - torque 50Nm, 115Nm max. **In the clamping process the workpiece is clamped and simultaneously supported.**
4. To release, reverse steps 3 to 1.

Order No.	Type	Weight
12664.W0016	Steel	g 6250

# Adjustable Vertical Clamps

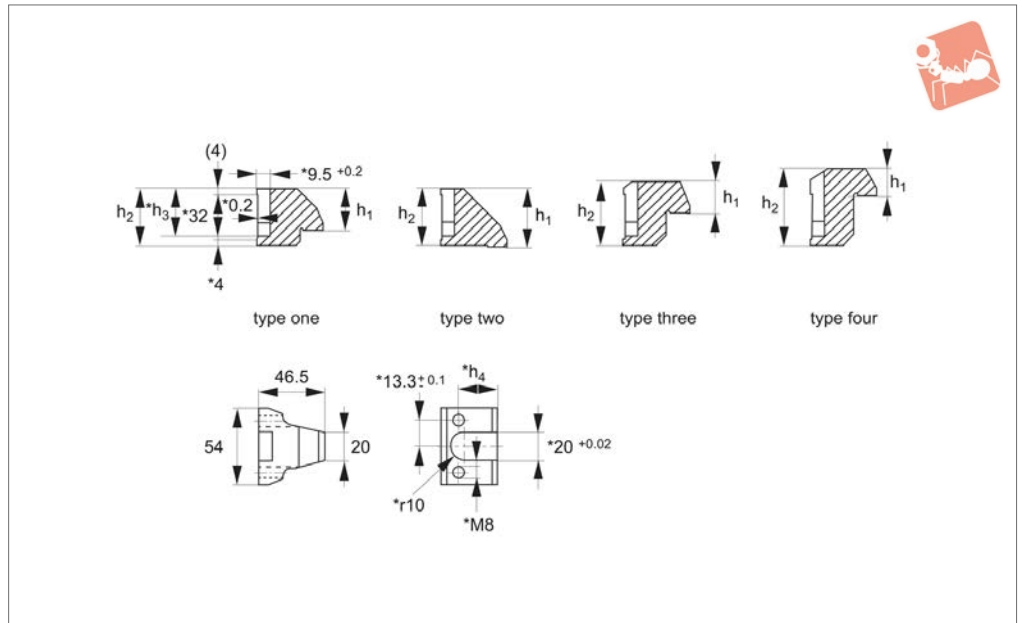
## Clamping Jaws M16 for floating clamp



ADJUSTABLE VERTICAL CLAMPS



### 12664.2



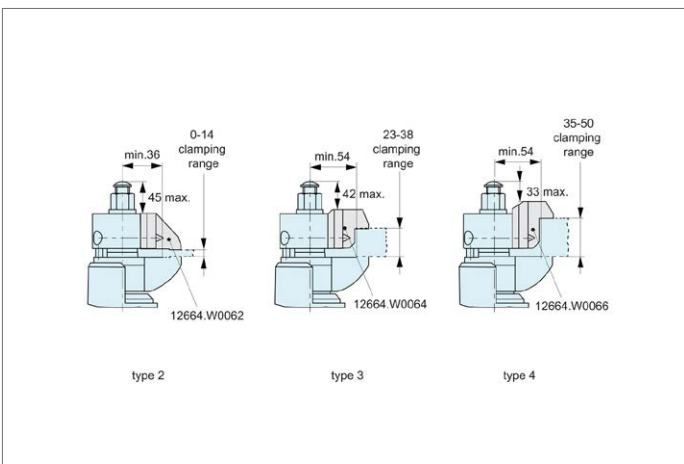
#### Material

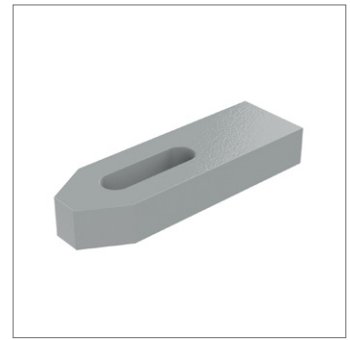
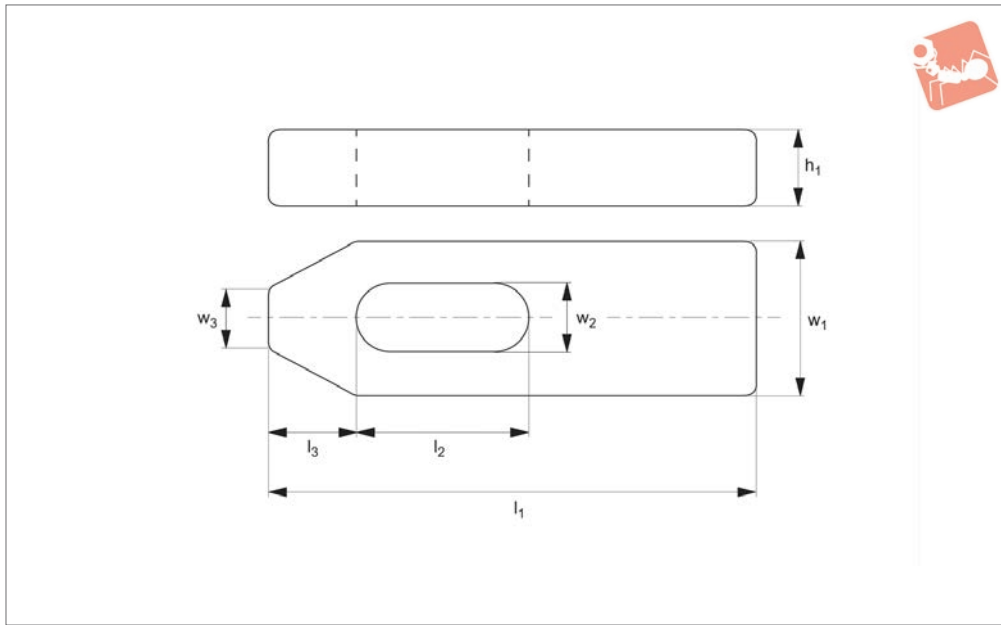
Steel case-hardened, nitrided, manganese phosphate treated.

#### Technical Notes

For use with 12664.1 clamps. A selection of alternative clamping jaws.

Order No.	Type	Clamping range	$h_1$	$h_2$	$h_3$	$h_4$	Weight g
12664.W0060	1	10-25	29.0	40	33.3	27.6	402
12664.W0062	2	0-14	41.0	40	33.3	27.6	380
12664.W0064	3	23-28	21.6	45	38.3	32.6	435
12664.W0066	4	35-50	18.6	54	47.3	41.6	490





## 10000

STANDARD MANUAL CLAMPING

### Material

Steel, heat-treated and enamelled.

( )= Not to DIN standard.

collar nuts, 25000 plain washer.

### Technical Notes

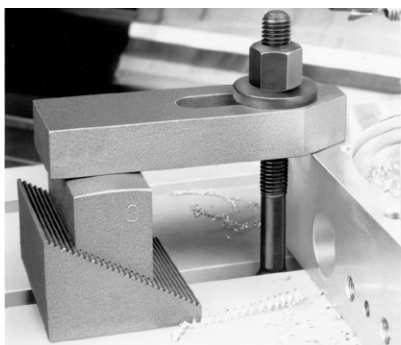
To DIN 6314.

### Tips

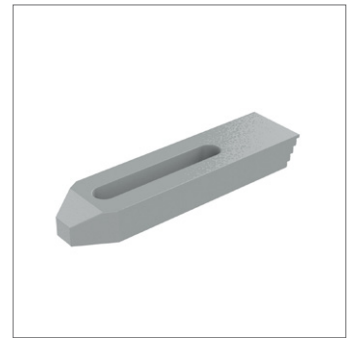
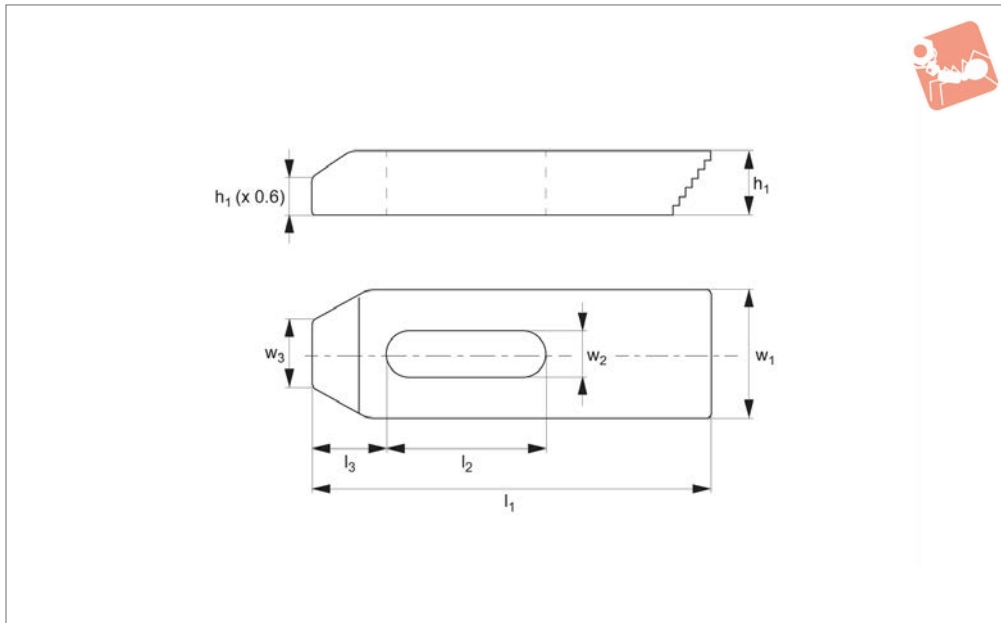
Used with:

21000 T-slot bolts, 24000 T-nuts, 24400

Order No.	For bolt	For bolt inch	$l_1$	$l_2$	$l_3$	$w_1$	$w_2$	$w_3$	$h_1$	Weight g
10000.W0007	M 6	1/4"	50	20	10	20	6.6	8	10	63
10000.W0009	M 8	5/16"	60	22	13	25	9.0	10	12	113
10000.W0011	M10	3/8"	80	30	15	30	11.0	12	15	226
10000.W0014	M12, M14	1/2"	100	40	21	40	14.0	14	20	490
10000.W0015	M12, M14	1/2"	125	50	21	40	14.0	14	20	621
10000.W0018	M16, M18	5/8"	125	45	26	50	18.0	18	25	960
10000.W0019	M16, M18	5/8"	160	65	26	50	18.0	18	25	1240
10000.W0022	M20, M22	3/4"	160	60	30	60	22.0	22	30	1787
10000.W0023	M20, M22	3/4"	200	80	30	60	22.0	22	30	2237
10000.W0026	M24	1"	200	80	35	70	26.0	26	30	2580
10000.W0027	M24	1"	250	105	35	70	26.0	26	35	3800
10000.W0034	M30	1-1/4"	250	100	45	80	33.0	34	40	4934
10000.W0035	M30	1-1/4"	315	130	45	80	33.0	34	50	7788
10000.W0043	M36, M42	1-1/2"	400	150	100	100	(43.0)	43	60	15000







## 10020

STANDARD MANUAL CLAMPING

### Material

Steel, heat-treated and enamelled.

14000).

collar nuts, 25000 plain washer.

### Technical Notes

To be used with step blocks etc (part no.

### Tips

Used with:

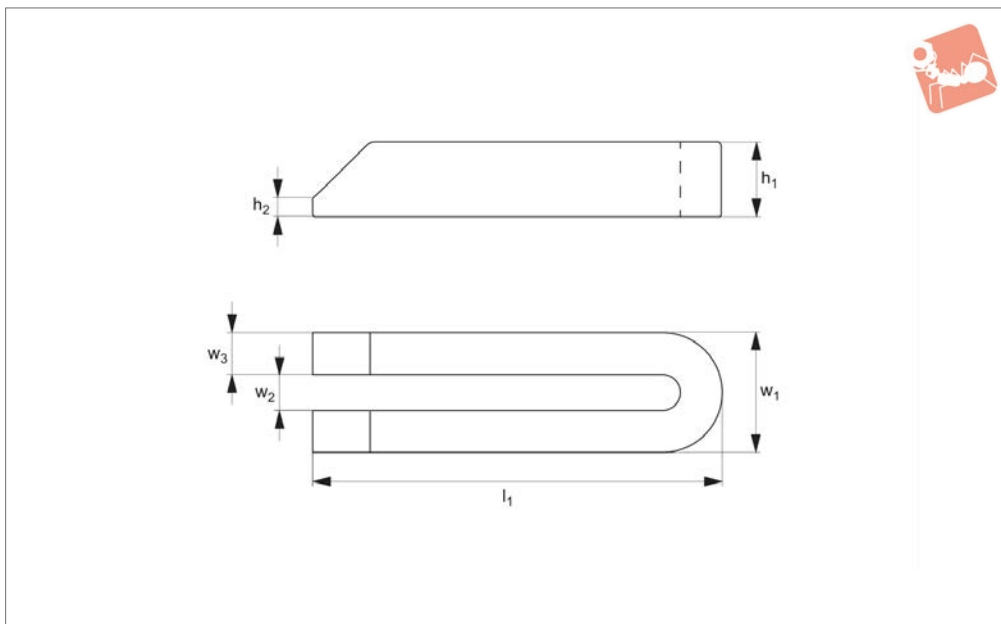
21000 T-slot bolts, 24000 T-nuts, 24400

Order No.	For bolt	For bolt inch	$l_1$	$l_2$	$l_3$	$w_1$	$w_2$	$w_3$	$h_1$	Weight g
10020.W0007	M 6	1/4"	50	20	10	20	6.6	8	10	55
10020.W0008	M 6	1/4"	80	45	10	20	6.6	8	10	90
10020.W0009	M 8	5/16"	60	22	13	25	9.0	10	12	100
10020.W0010	M 8	5/16"	100	60	13	25	9.0	10	12	180
10020.W0011	M10	3/8"	80	30	15	30	11.0	12	15	200
10020.W0012	M10	3/8"	125	70	15	30	11.0	12	15	350
10020.W0014	M12, M14	1/2"	100	40	21	40	14.0	14	20	450
10020.W0015	M12, M14	1/2"	160	90	21	40	14.0	14	20	770
10020.W0018	M16, M18	5/8"	125	45	26	50	18.0	18	25	900
10020.W0019	M16, M18	5/8"	200	110	26	50	18.0	18	25	1500
10020.W0022	M20, M22	3/4"	160	60	30	60	22.0	22	30	1700
10020.W0026	M24	1"	200	80	35	70	26.0	26	30	2500





10100



**Material**

Steel, heat-treated and enamelled.

( ) = Not to DIN standard.

24000 T-nuts, 24400 collar nuts,  
25000 plain washer.

**Technical Notes**

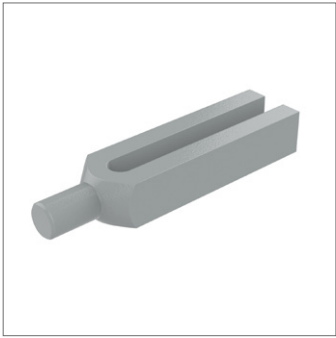
To DIN 6315B.

**Tips**

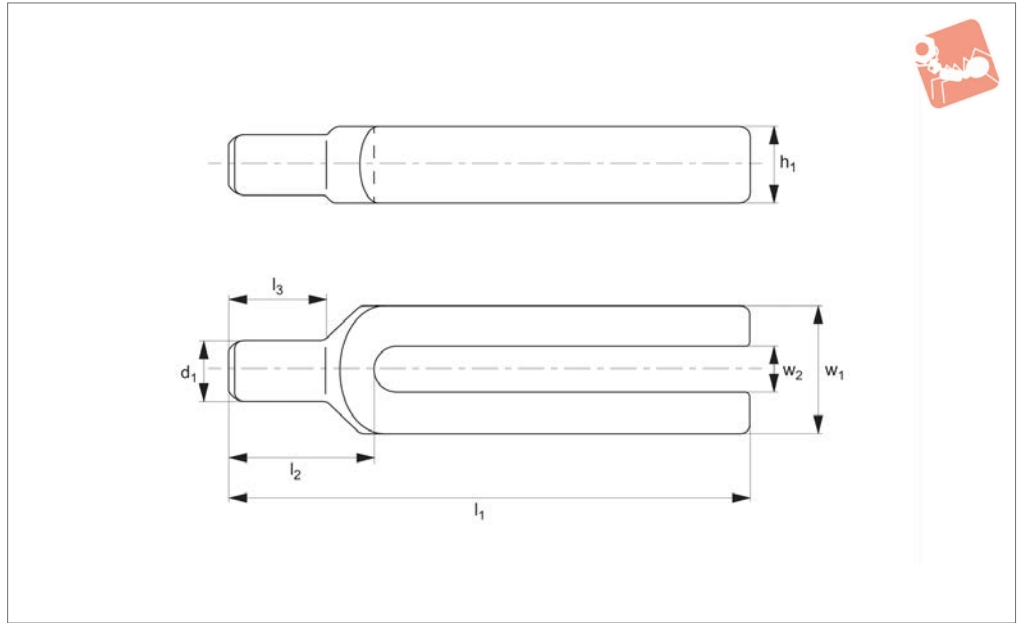
Used with:  
26000 clamp support, 21000 T-slot bolts,

Order No.	For bolt	For bolt inch	$l_1$	$w_1$	$w_2$	$w_3$	$h_1$	$h_2$	Weight g
10100.W0007	M 6	1/4"	60	19	6.6	6	12	3	60
10100.W0009	M 8	5/16"	80	25	9.0	8	15	4	140
10100.W0011	M10	3/8"	100	31	11.0	10	20	5	300
10100.W0014	M12, M14	1/2"	125	38	14.0	12	25	6	570
10100.W0015	M12, M14	1/2"	160	38	14.0	12	25	6	730
10100.W0016	M12, M14	1/2"	200	38	14.0	12	25	6	910
10100.W0018	M16, M18	5/8"	160	48	18.0	15	30	8	1080
10100.W0019	M16, M18	5/8"	200	48	18.0	15	30	8	1360
10100.W0020	M16, M18	5/8"	250	48	18.0	15	40	10	2250
10100.W0022	M20, M22	3/4"	200	52	22.0	15	40	10	1800
10100.W0023	M20, M22	3/4"	250	62	22.0	20	40	10	3000
10100.W0024	M20, M22	3/4"	315	62	22.0	20	40	10	3850
10100.W0025	M20, M22	3/4"	500	62	(22.0)	20	50	10	7500
10100.W0026	M24	1"	200	66	26.0	20	40	10	2400
10100.W0027	M24	1"	250	66	26.0	20	40	10	3000
10100.W0028	M24	1"	315	66	26.0	20	40	10	3850
10100.W0029	M24	1"	400	66	(26.0)	20	50	10	5962
10100.W0030	M24	1"	500	66	(26.0)	20	50	10	7600
10100.W0031	M24	1"	600	66	(26.0)	20	50	10	9042
10100.W0032	M24	1"	800	66	(26.0)	20	50	10	12122
10100.W0034	M30	1-1/4"	250	74	33.0	20	50	12	3700
10100.W0035	M30	1-1/4"	315	74	33.0	20	50	12	4750
10100.W0036	M30	1-1/4"	400	74	33.0	20	50	12	6100
10100.W0037	M30	1-1/4"	600	74	(33.0)	20	50	12	9200
10100.W0038	M30	1-1/4"	1000	94	(33.0)	30	60	12	28000
10100.W0040	M36	1-1/2"	400	100	(40.0)	30	60	12	11000
10100.W0041	M36	1-1/2"	600	100	(40.0)	30	60	12	16500
10100.W0042	M36, M42	1-5/8"	600	123	(43.0)	40	80	12	29600





10120



**Material**

Steel, heat-treated and enamelled.

**Technical Notes**

To DIN 6315C.

**Tips**

Used with:  
21000 T-slot bolts, 24000 T-nuts, 24400 collar nuts, 25000 plain washer.

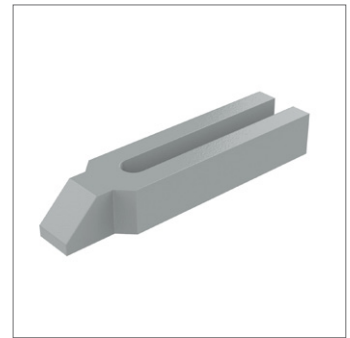
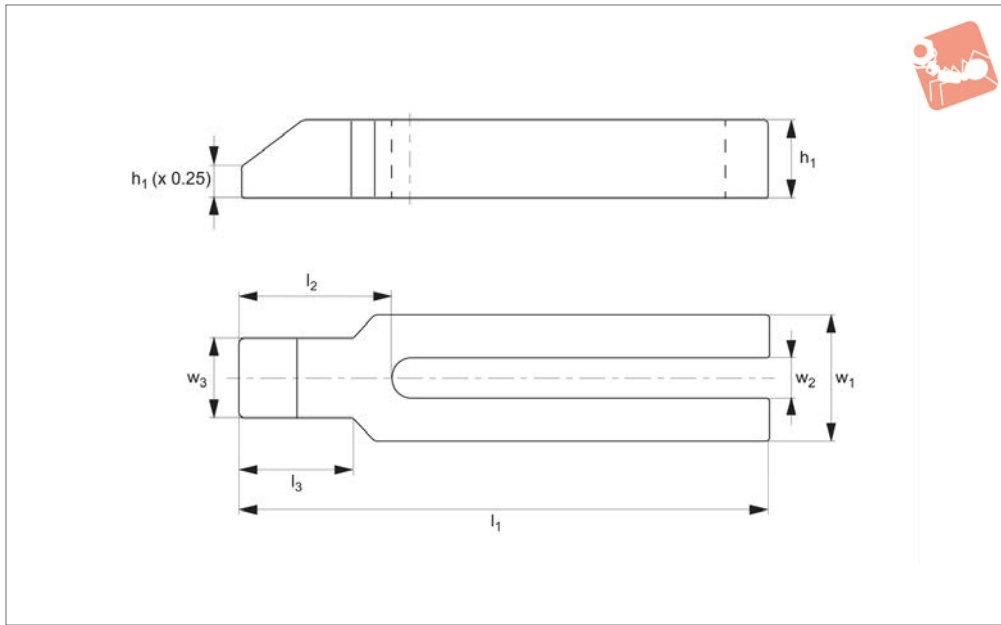
Order No.	For bolt	For bolt inch	$l_1$	$l_2$	$l_3$	$w_1$	$w_2$	$h_1$	$d_1$	Weight g
10120.W0009	M 8	5/16"	100	30	18	30	9	15	12	220
10120.W0011	M10	3/8"	125	36	24	30	11	20	16	350
10120.W0014	M12, M14	1/2"	160	45	30	40	14	25	20	750
10120.W0015	M12, M14	1/2"	200	45	30	40	14	25	20	950
10120.W0018	M16, M18	5/8"	200	55	36	50	18	30	24	1400
10120.W0019	M16, M18	5/8"	250	55	36	50	18	30	24	1750
10120.W0022	M20, M22	3/4"	250	65	45	60	22	40	30	2700
10120.W0023	M20, M22	3/4"	315	65	45	60	22	40	30	3400
10120.W0026	M24	1"	250	80	56	70	26	40	38	3200
10120.W0027	M24	1"	315	80	56	70	26	40	38	4100
10120.W0034	M30	1-1/4"	315	85	56	80	33	50	45	5700
10120.W0035	M30	1-1/4"	400	85	56	80	33	50	45	7000





# Forked Clamps with shoe

# Standard Manual Clam-



**10140**

STANDARD MANUAL CLAMPING

### Material

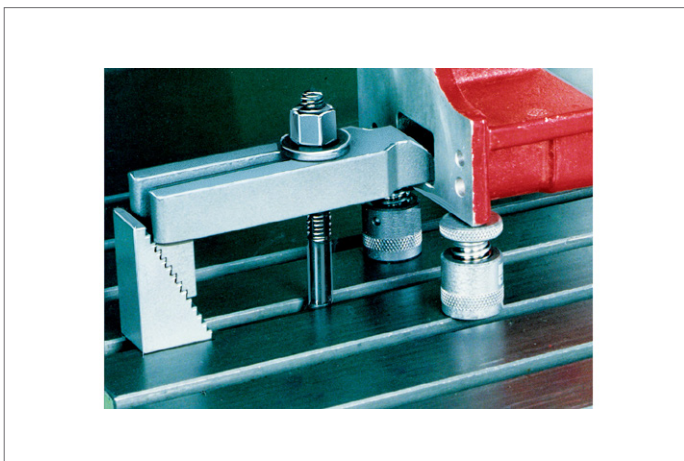
Steel, heat-treated and enamelled.

21000 T-slot bolts, 24000 T-nuts, 24400 collar nuts, 25000 plain washer.

### Tips

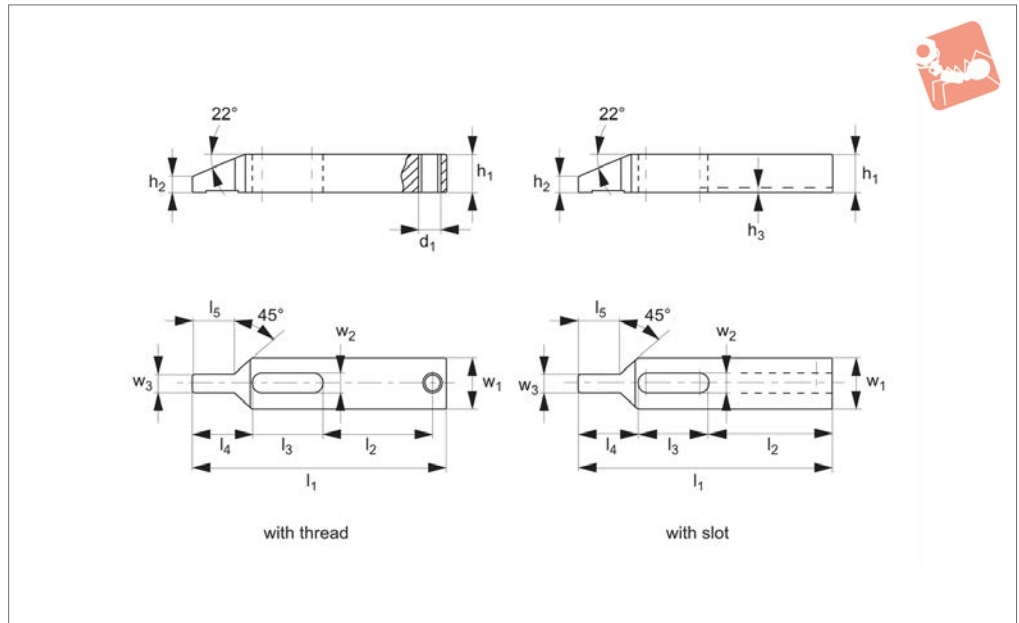
Used with:

Order No.	For bolt	For bolt inch	$l_1$	$l_2$	$l_3$	$w_1$	$w_2$	$w_3$	$h_1$	Weight g
10140.W0009	M 8	5/16"	100	32	18	30	9	16	15	240
10140.W0011	M10	3/8"	125	38	24	30	11	20	20	380
10140.W0014	M12, M14	1/2"	160	47	30	40	14	24	25	800
10140.W0015	M12, M14	1/2"	200	47	30	40	14	24	25	950
10140.W0018	M16, M18	5/8"	200	57	36	50	18	28	30	1500
10140.W0019	M16, M18	5/8"	250	57	36	50	18	28	30	1850
10140.W0022	M20, M22	3/4"	250	68	45	60	22	35	40	2900
10140.W0023	M20, M22	3/4"	315	68	45	60	22	35	40	3600
10140.W0026	M24	1"	250	83	56	70	26	43	40	3400
10140.W0027	M24	1"	315	83	56	70	26	43	40	4300
10140.W0034	M30	1-1/4"	315	88	56	80	33	50	50	6000
10140.W0035	M30	1-1/4"	400	88	56	80	33	50	50	7300





10160



**Material**

Steel, heat-treated and blackened.

**Technical Notes**

The small nose permits clamping even on

difficult to reach areas.

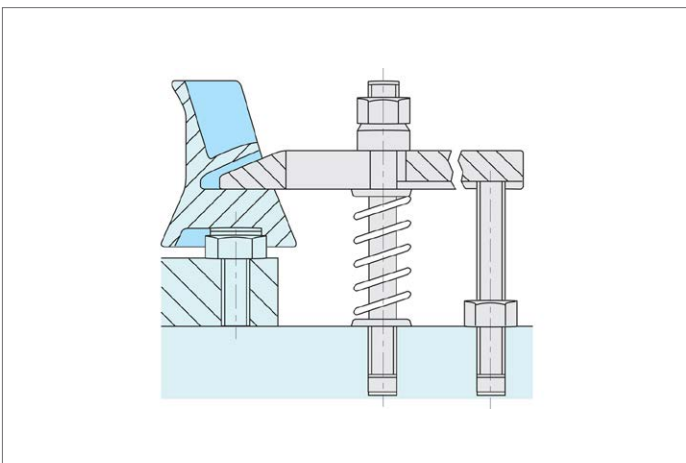
**Tips**

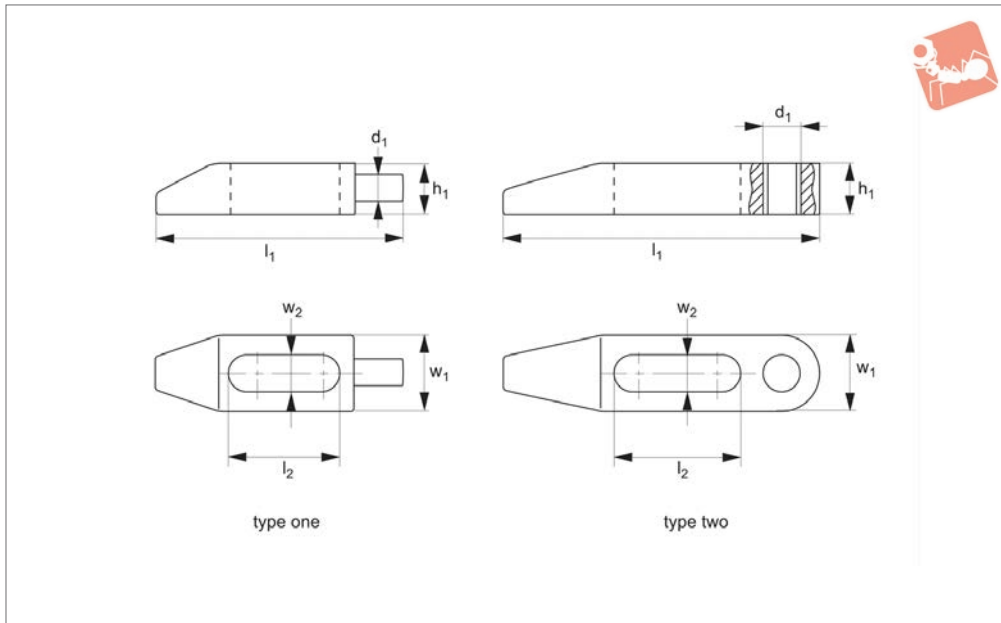
- „With thread“ for vertical adjustment.
- „With slot“ for horizontal adjustment.

Used with:

21000 T-slot bolts, 24000 T-nuts, 24400 collar nuts, 25000 plain washer.

Order No.	Type	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$w_1$	$w_2$	$w_3$	$h_1$	$h_2$	$h_3$	$d_1$	Weight g
10160.W0107	With thread	80	34	23	17	13	15	6.6	7.5	8	2.5	-	M 6	54
10160.W0109	With thread	100	42	29	22	17	20	9.0	9.5	12	4.0	-	M 8	133
10160.W0111	With thread	125	52	36	28	21	25	11.0	11.5	15	5.0	-	M10	261
10160.W0113	With thread	150	63	43	34	25	30	13.0	13.5	20	7.0	-	M12	504
10160.W0117	With thread	175	70	52	40	29	35	17.0	15.5	25	9.0	-	M16	828
10160.W0207	With slot	80	34	23	17	13	15	6.6	7.5	8	2.5	2.5	-	50
10160.W0209	With slot	100	42	29	22	17	20	9.0	9.5	12	4.0	3.0	-	127
10160.W0211	With slot	125	52	36	28	21	25	11.0	11.5	15	5.0	3.5	-	251
10160.W0213	With slot	150	63	43	34	25	30	13.0	13.5	20	7.0	4.0	-	488
10160.W0217	With slot	175	70	52	40	29	35	17.0	15.5	25	9.0	4.5	-	812
10160.W0222	With slot	225	-	62	52	33	50	22.0	19.5	35	15.5	5.5	-	2200
10160.W0226	With slot	250	-	71	60	36	60	26.0	21.5	40	17.5	5.5	-	3340





## 10164

STANDARD MANUAL CLAMPING

### Material

Stainless steel (AISI 630,17-4 PH), heat-treated.

both normal and restricted areas with minimum tooling interference.

collar nuts, 25000 plain washer.

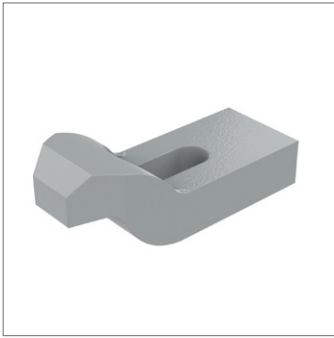
### Technical Notes

This is a low profile slotted clamp for use in

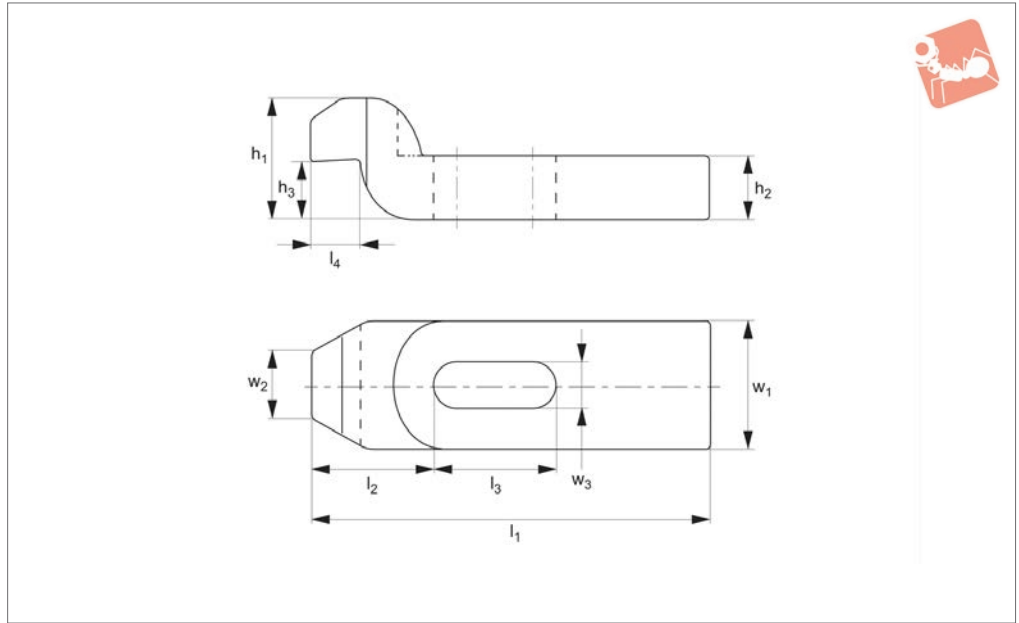
### Tips

Used with:  
21000 T-slot bolts, 24000 T-nuts, 24400

Order No.	Type	Holding force kN	$l_1$	$l_2$	$w_1$	$w_2$	$h_1$	$d_1$	Weight g
10164.W0092	One	14.2	92	22.0	22.6	10.4	11	9,5 Ø	150
10164.W0127	Two	26.7	127	34.5	25.4	13.4	19	M12	340
10164.W0152	Two	38.2	152	38.1	30.5	16.5	22	M16	600
10164.W0178	Two	69.8	178	38.1	35.6	19.8	27	M20	1130



10200



**Material**

Steel, heat-treated and enamelled.

( ) = not to DIN standard.

collar nuts, 25000 plain washer.

**Technical Notes**

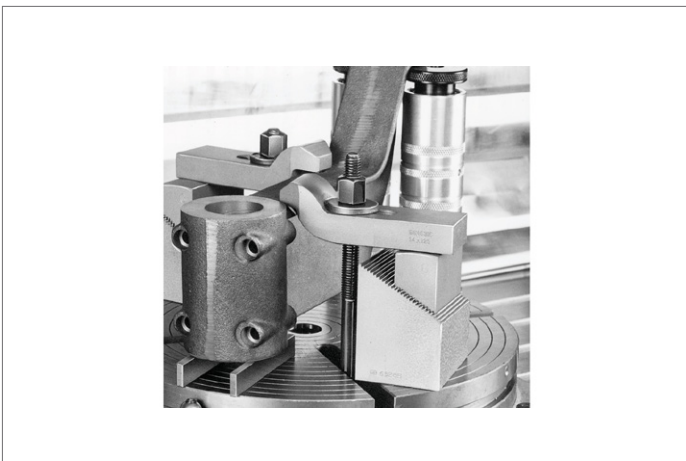
To DIN 6316.

**Tips**

Used with:

21000 T-slot bolts, 24000 T-nuts, 24400

Order No.	For bolt	For bolt inch	$l_1$	$l_2$	$l_3$	$l_4$	$w_1$	$w_2$	$w_3$	$h_1$	$h_2$	$h_3$	Weight g
10200.W0007	M 6	1/4"	60	22.0	20	8	20	10	6.6	20	10	9	81
10200.W0009	M 8	5/16"	80	27.5	25	9	25	12	9.0	24	12	11	166
10200.W0011	M10	3/8"	100	36.0	32	12	30	15	11.0	30	15	14	299
10200.W0014	M12, M14	1/2"	125	44.0	40	16	40	20	14.0	40	20	18	678
10200.W0018	M16, M18	5/8"	125	51.5	40	20	50	25	(18.0)	50	25	23	1049
10200.W0019	M16, M18	5/8"	160	51.5	50	20	50	25	18.0	50	25	23	1366
10200.W0022	M20, M22	3/4"	160	59.0	55	24	60	30	(22.0)	60	30	27	1911
10200.W0023	M20, M22	3/4"	200	59.0	70	24	60	30	22.0	60	30	27	2417
10200.W0026	M24	1"	200	76.5	60	25	70	35	(26.0)	70	35	32	3315
10200.W0027	M24	1"	250	76.5	80	25	70	35	26.0	70	35	32	4132
10200.W0034	M30	1-1/4"	250	96.0	80	40	80	40	(33.0)	80	40	45	5225
10200.W0035	M30	1-1/4"	315	96.0	100	40	80	40	33.0	100	50	45	8459
10200.W0043	M36, M42	1-1/2"- 1-5/8"	400	105.0	120	50	100	50	(43.0)	120	60	55	17078

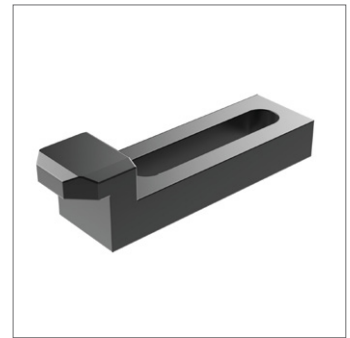
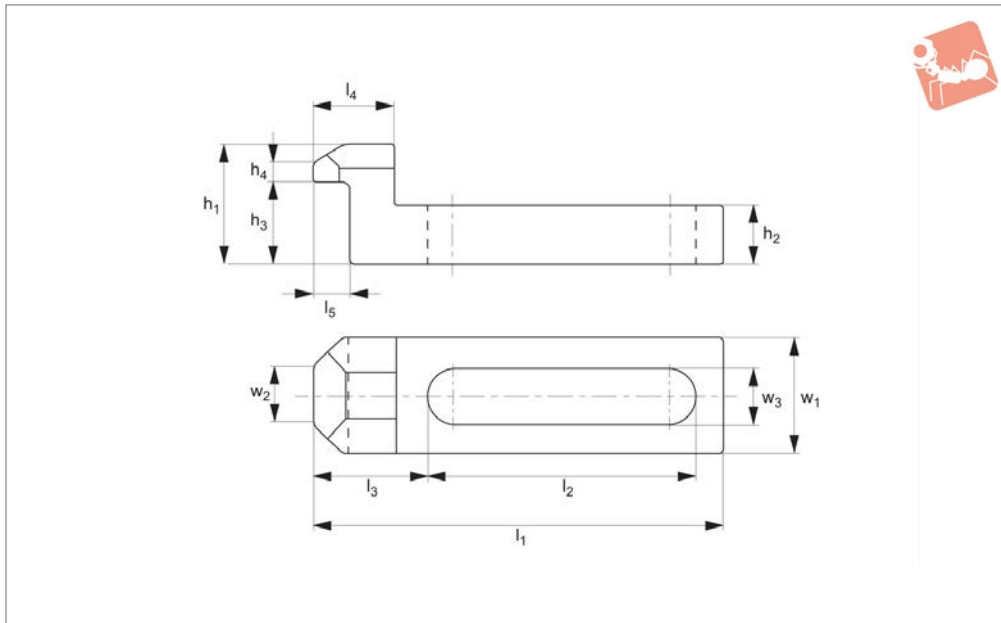






# Stepped Clamps long slot

## Standard Manual Clam-



**10210**

STANDARD MANUAL CLAMPING

### Material

Steel, heat-treated and blackened.

21000 T-slot bolts, 24000 T-nuts, 24400 collar nuts, 25000 plain washer.

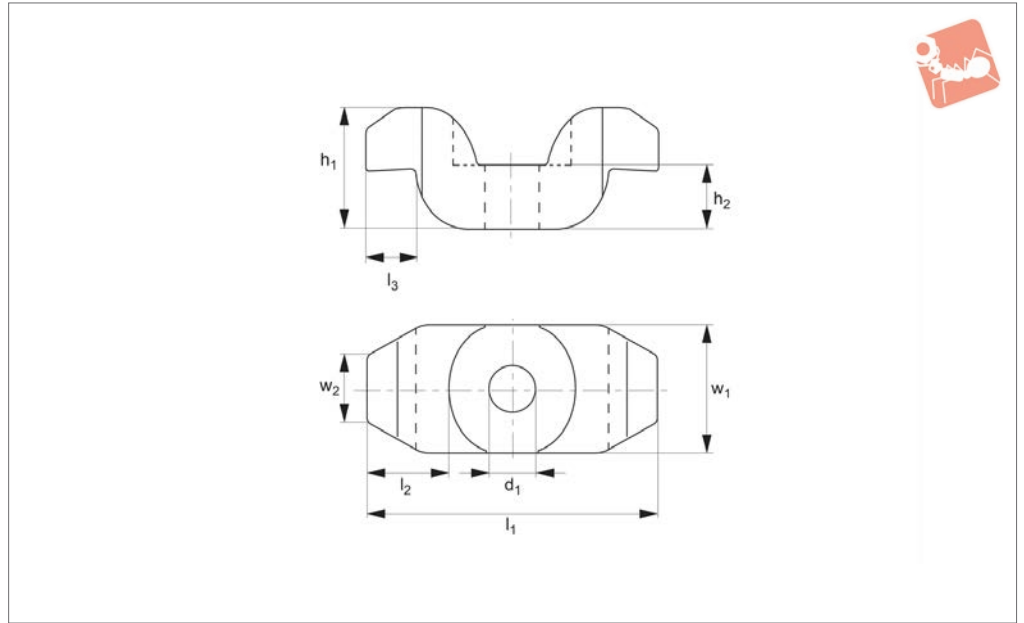
### Tips

Used with:

Order No.	For bolt	For bolt inch	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$w_1$	$w_2$	$w_3$	$h_1$	$h_2$	$h_3$	$h_4$	Weight g
<b>10210.W0107</b>	M 6	1/4"	55	36	15.5	11	5	15	8	6.6	16	8	11	2	39
<b>10210.W0109</b>	M 8	5/16"	70	46	19.5	15	8	20	10	9.0	20	10	14	3	80
<b>10210.W0111</b>	M10	3/8"	90	58	26.5	19	10	25	12	11.0	25	13	18	4	170
<b>10210.W0113</b>	M12	1/2"	115	75	32.5	24	12	30	15	13.0	32	16	23	5	328



10220



**Material**

Steel, heat-treated and enamelled.

21000 T-slot bolts, 24000 T-nuts, 24400 collar nuts, 25000 plain washer, 25700 dished washer.

**Tips**

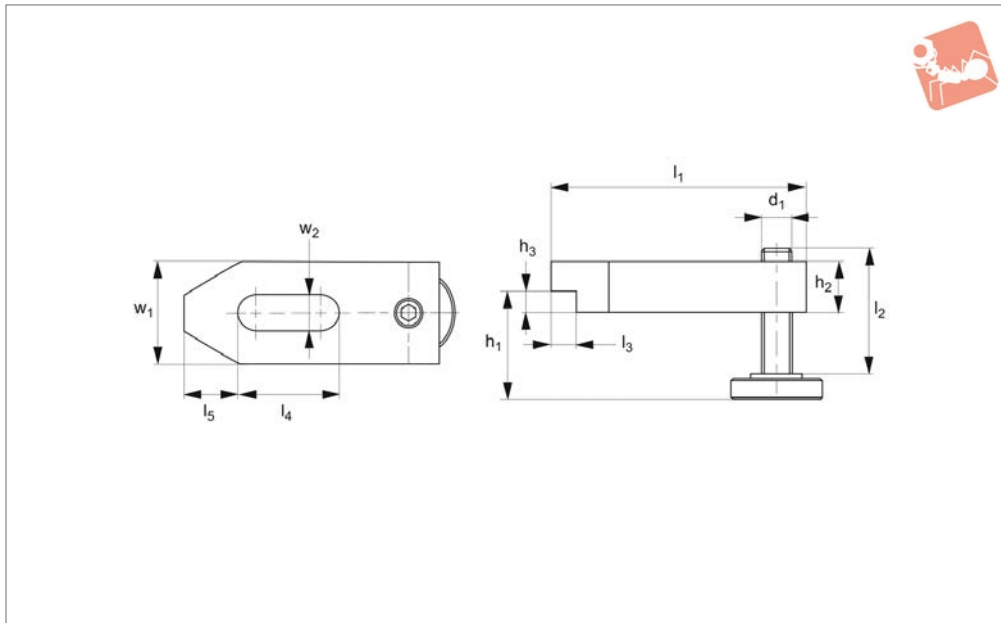
Used with:

Order No.	For bolt	$l_1$	$l_2$	$l_3$	$w_1$	$w_2$	$h_1$	$h_2$	$d_1$	Weight g
10220.W0018	M12-M18	100	26	16	40	20	40	20	18	620
10220.W0025	M20-M24	140	38	24	60	30	60	30	25	2040



# Stepped Clamp with adjusting support screw

Standard  
Manual Clam-



**10230**

STANDARD MANUAL CLAMPING

### Material

Steel, heat-treated and enamelled.

### Technical Notes

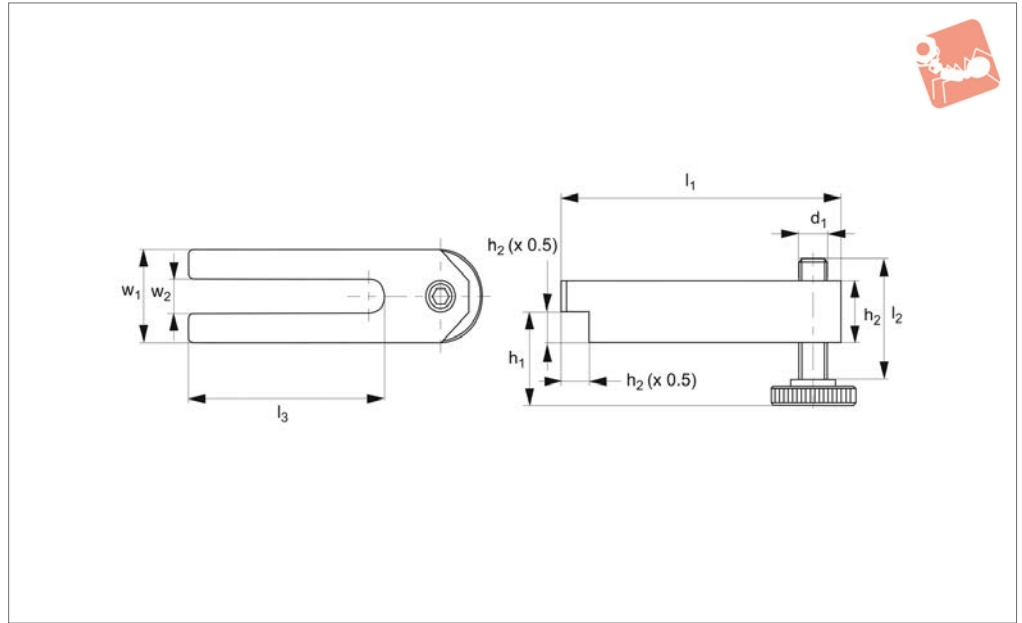
To clamp thin parts, turn the clamp over.

Order No.	For clamping screw	$d_1 \times l_2$	$l_4$	$l_5$	$w_1$	$w_2 \times l_1$	$h_1$	$h_2$	$h_3 \times l_3$	Weight g
<b>10230.W0014</b>	M12, M14	M12x49	40	21	40	14x100	10-55	20	8,0x10,0	580
<b>10230.W0018</b>	M16, M18	M16x55	45	26	50	18x125	13-62	25	10,0x12,5	1140
<b>10230.W0022</b>	M20, M22	M20x69	60	30	60	22x160	16-77	30	12,0x15,0	2100



10240

STANDARD MANUAL CLAMPING



**Material**

Steel, heat-treated and enamelled.

**Technical Notes**

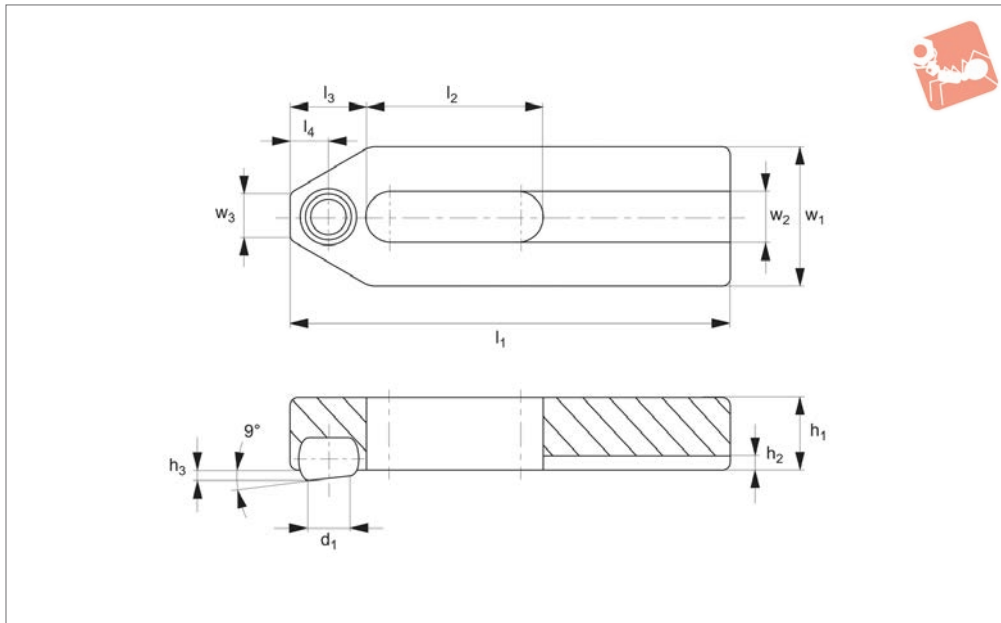
To clamp thin parts, turn the clamp over.

Order No.	For clamping screw	$d_1 \times l_2$	$l_3$	$w_1$	$w_2 \times l_1$	$h_1$	$h_2$	Weight g
10240.W0010	M10	M10x39	70	30	11x100	8-47	20	330
10240.W0014	M12, M14	M12x49	90	40	14x125	10-59	25	700
10240.W0018	M16, M18	M16x55	110	50	18x160	13-67	30	1300
10240.W0022	M20, M22	M20x69	135	60	22x200	16-85	40	2600



# Plain Clamps with self-aligning support

# Standard Manual Clam-



**10300**

STANDARD MANUAL CLAMPING

### Material

Body: steel, heat-treated and blackened.  
Ball: ball-bearing steel, hardened and bright.

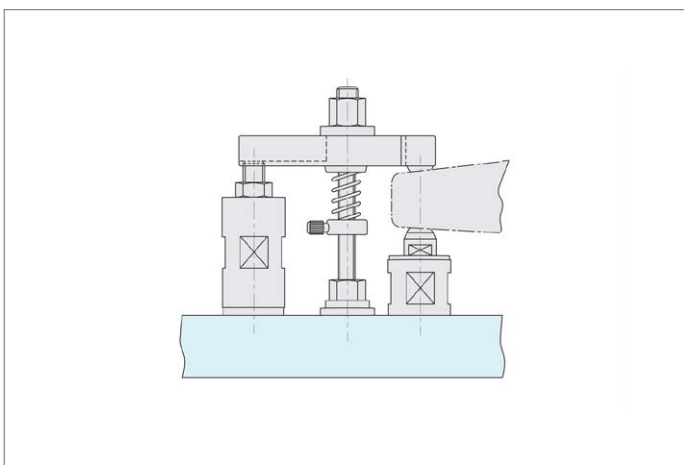
### Tips

Provides alignment of the clamp with the workpiece, useful where there is some component variation. For suitable supporting screw see part no. 18400.

### Technical Notes

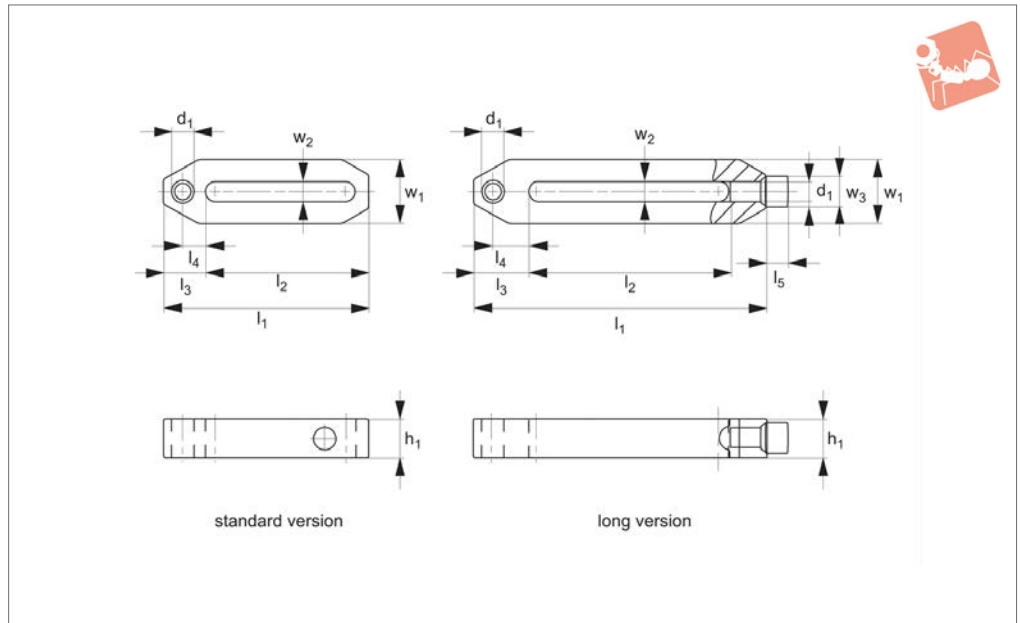
Ball secured against turning.

Order No.	For bolt	For bolt inch	$l_1$	$l_2$	$l_3$	$l_4$	$w_1$	$w_2$	$w_3$	$h_1$	$h_2$	$h_3$	Ball dia.	$d_1$	Weight g
10300.W0007	M 6	1/2"	50	20	10	5.0	20	6.6	8	10	2.5	1.6	8.5	5.8	61
10300.W0009	M 8	5/16"	60	22	13	6.5	25	9.0	10	12	3.0	2.0	10.0	7.2	109
10300.W0011	M10	3/8"	80	30	15	7.5	30	11.0	12	15	3.5	2.7	12.0	8.6	219
10300.W0014	M12	1/2"	125	50	21	10.5	40	13.0	14	20	4.0	3.5	16.0	10.5	615





10700



**Material**

Steel, hardened and blackened.

positioning screw and is particularly useful where long reach is required.

used with these clamps.

**Technical Notes**

The long version has an adjustable rear

**Tips**

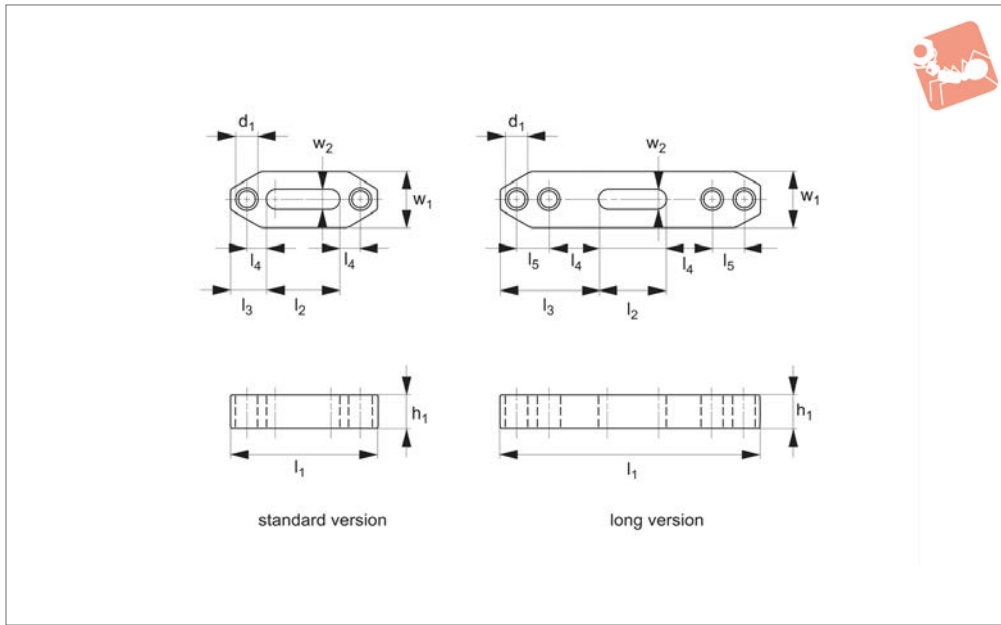
Self-aligning pads (part no. 34100) can be

Order No.	Type	Size	$h_1 \times w_1$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$w_2$	$w_3$	$d_1$	Weight g
10700.W0012	Standard	12	20x35,0	110	82	21.5	11.5	-	12.5	-	M12	340
10700.W0016	Standard	16	30x40,0	142	107	28.0	15.0	-	17.0	-	M16	770
10700.W0020	Standard	20	40x50,0	200	150	38.0	21.0	-	21.0	-	M20	1800
10700.W0112	Long	12	20x35,0	156	106	30.0	20.0	12	12.5	18	M12	600
10700.W0116	Long	16	30x45,5	196	136	35.0	22.0	16	17.0	24	M16	1400
10700.W0120	Long	20	40x60,0	298	221	47.0	30.0	20	21.0	30	M20	3900



# Double Ended Straight Clamp

# Standard Manual Clamp-



**10740**

STANDARD MANUAL CLAMPING

**Material**

Steel, hardened and blackened.

same time.

**Technical Notes**

Ideal for clamping two similar parts at the

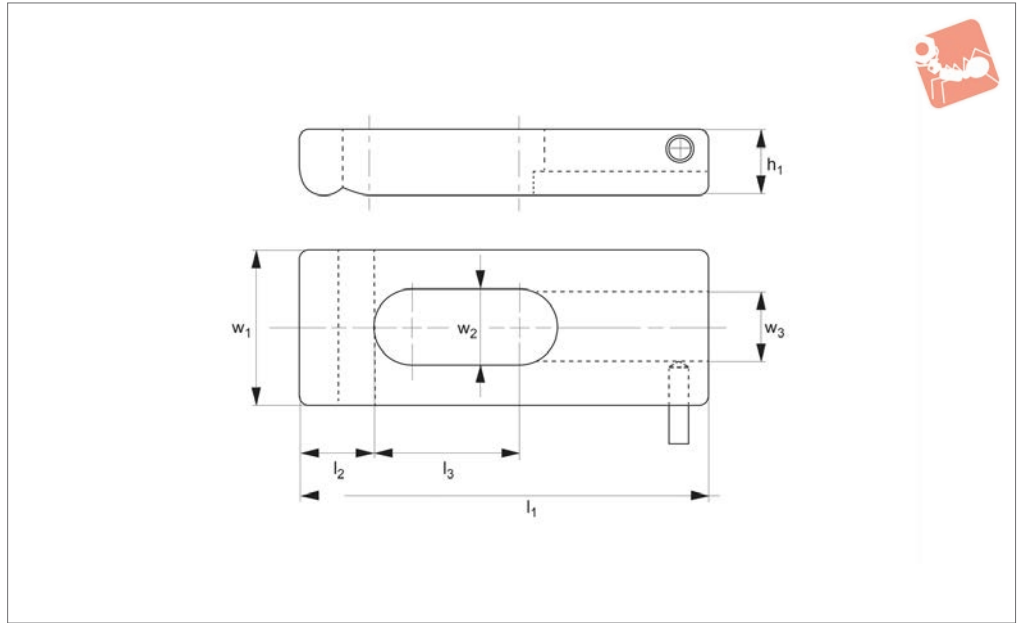
**Tips**

Self-aligning pads (part no. 34100) can be used with these clamps.

Order No.	Type	Size	$h_1 \times w_1$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$w_2$	$d_1$	Weight g
10740.W0012	Standard	12	15x30	80	33	23.5	13.5	-	12.5	M12	200
10740.W0016	Standard	16	25x40	100	42	29.0	16.0	-	17.0	M16	525
10740.W0112	Long	12	20x30	160	33	63.5	33.5	20	12.5	M12	610
10740.W0116	Long	16	30x40	200	42	79.0	41.0	25	17.0	M16	1480



**18200**



STANDARD MANUAL CLAMPING

**Material**

Steel, heat-treated.

**Technical Notes**

To be used with supporting screw no. 18400.

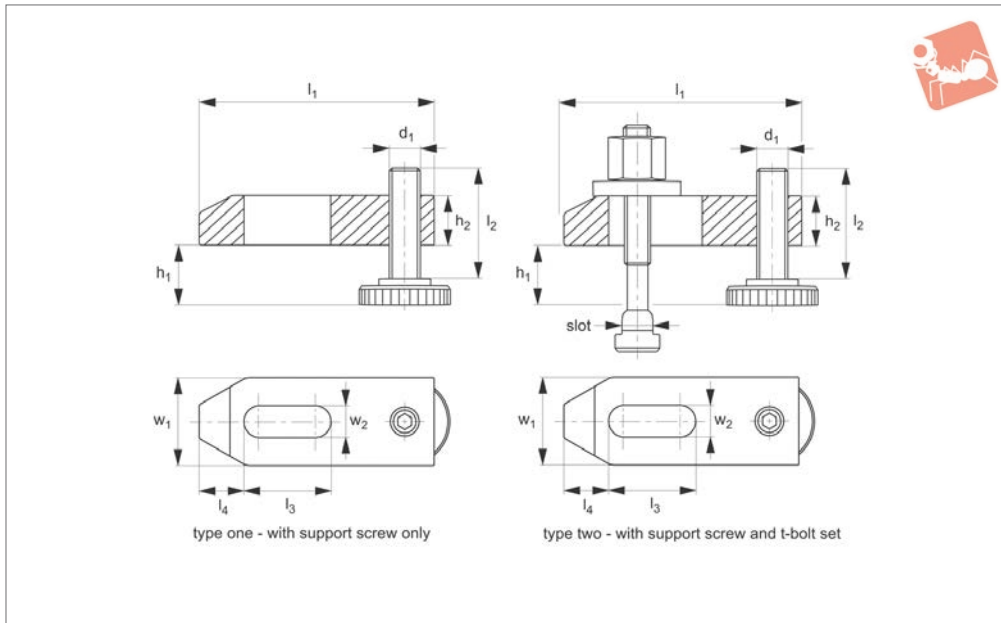
Order No.	$l_1$	$l_2$	$l_3$	$w_1$	$w_2$	$w_3$	$h_1$	Weight g
18200.W0001	100	13.5	37	30	15	12.5	20	350
18200.W0002	125	24.5	50	40	19	12.5	20	590





# Adjustable Plain Clamps with height adjusting screw

Standard  
Manual Clam-



10400

STANDARD MANUAL CLAMPING

## Material

Heat-treated steel, enamelled.

## Technical Notes

**Type One** - clamp and support screw only.

**Type Two** - clamp, support screw and t-bolt set.

h\* - dependent on depth of slot and posi-

tion of fixture nut.

## Tips

Often used for clamping press tools.

Used with:

10680 Ratchet clamp lever.

21000 T-Slot bolt.

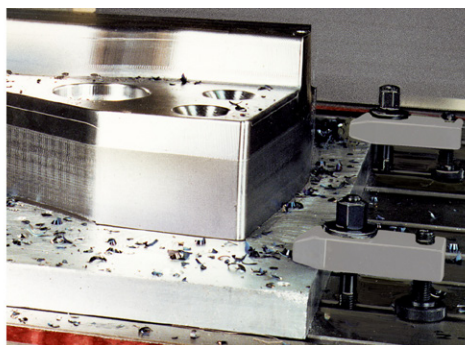
24400 Collar Nut.

25000 Plain washer.

Replacement Parts:

Replacement support screw see part no. 10410.

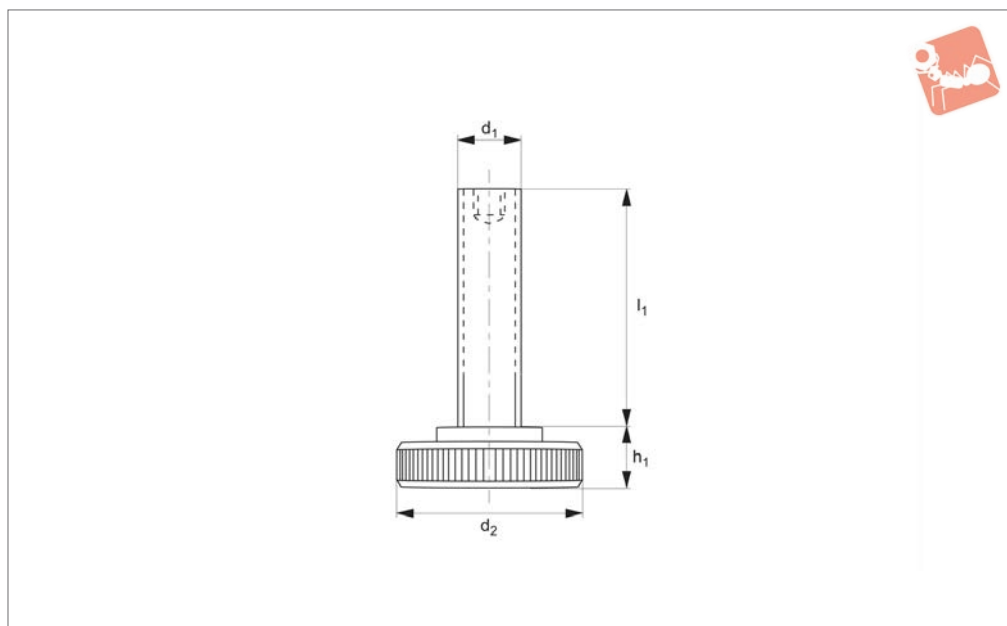
Order No.	Type	For bolt	Supplied T-bolt	T-slot size	d <sub>1</sub> x l <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	w <sub>1</sub>	w <sub>2</sub> x l <sub>1</sub>	Weight g
10400.W0010	One	M10	-	-	M10x39	8-37	15	30	15	30	11x80	200
10400.W0012	One	M12, M14	-	-	M12x49	10-47	20	40	21	40	14x100	560
10400.W0014	One	M12, M14	-	-	M12x94	10-92	20	40	21	40	14x100	635
10400.W0016	One	M16, M18	-	-	M16x55	13-52	25	45	26	50	18x125	1110
10400.W0018	One	M16, M18	-	-	M16x90	13-87	25	45	26	50	18x125	1230
10400.W0020	One	M20, M22	-	-	M20x69	16-65	30	60	30	60	22x160	2050
10400.W0022	One	M20, M22	-	-	M20x109	16-105	30	60	30	60	22x160	2230
10400.W0024	One	M24	-	-	M24x87	20-83	30	80	35	70	26x200	3200
10400.W0026	One	M24	-	-	M24x137	20-133	30	80	35	70	26x200	3470
10400.W0028	One	M24	-	-	M24x87	20-80	35	105	35	70	26x250	4340
10400.W0030	One	M24	-	-	M24x137	20-130	35	105	35	70	26x250	4520
10400.W0032	One	M30	-	-	M30x180	24-150	50	130	45	80	33x315	11215
10400.W0034	One	M36, M42	-	-	M30x180	24-150	80	170	80	100	43x400	24350
10400.W0110	Two	M10	M10x10x80	10	M10x39	08-32	15	30	15	30	11x80	340
10400.W0112	Two	M12, M14	M12x12x100	12	M12x49	10-40	20	40	21	40	14x100	700
10400.W0114	Two	M12, M14	M12x14x100	14	M12x49	10-38	20	40	21	40	14x100	720
10400.W0115	Two	M12, M14	M12x14x160	14	M12x94	23-92	20	40	21	40	14x100	845
10400.W0116	Two	M16, M18	M16x16x125	16	M16x55	13-48	25	45	26	50	18x125	1400
10400.W0117	Two	M16, M18	M16x16x160	16	M16x90	15-83	25	45	26	50	18x125	1610
10400.W0118	Two	M16, M18	M16x18x125	18	M16x55	13-46	25	45	26	50	18x125	1400
10400.W0119	Two	M16, M18	M16x18x160	18	M16x90	13-81	25	45	26	50	18x125	1630
10400.W0120	Two	M20, M22	M20x20x160	20	M20x69	16-65	30	60	30	60	22x160	2600
10400.W0121	Two	M20, M22	M20x20x200	20	M20x109	21-105	30	60	30	60	22x160	2930
10400.W0122	Two	M20, M22	M20x22x160	22	M20x69	16-65	30	60	30	60	22x160	2770
10400.W0123	Two	M20, M22	M20x22x200	22	M20x109	19-105	30	60	30	60	22x160	2980
10400.W0124	Two	M24	M24x28x200	28	M24x87	20-80	35	105	35	70	26x250	5486
10400.W0125	Two	M24	M24x28x250	28	M24x137	30-130	35	105	35	70	26x250	5716
10400.W0126	Two	M30	M30x36x315	36	M30x180	24-150	50	130	45	80	33x315	11995
10400.W0127	Two	M36, M42	M36x42x400	42	M30x180	24-150	80	170	80	100	43x100	25683
10400.W0113	Two	M12, M14	M12x12x160	12	M12x49	24-92	20	40	21	40	14x100	830





## Support Screw for adjustable clamps

## Standard Manual Clam-



# 10410

STANDARD MANUAL CLAMPING

### Material

Steel, hardened, strength class 8.8.

### Technical Notes

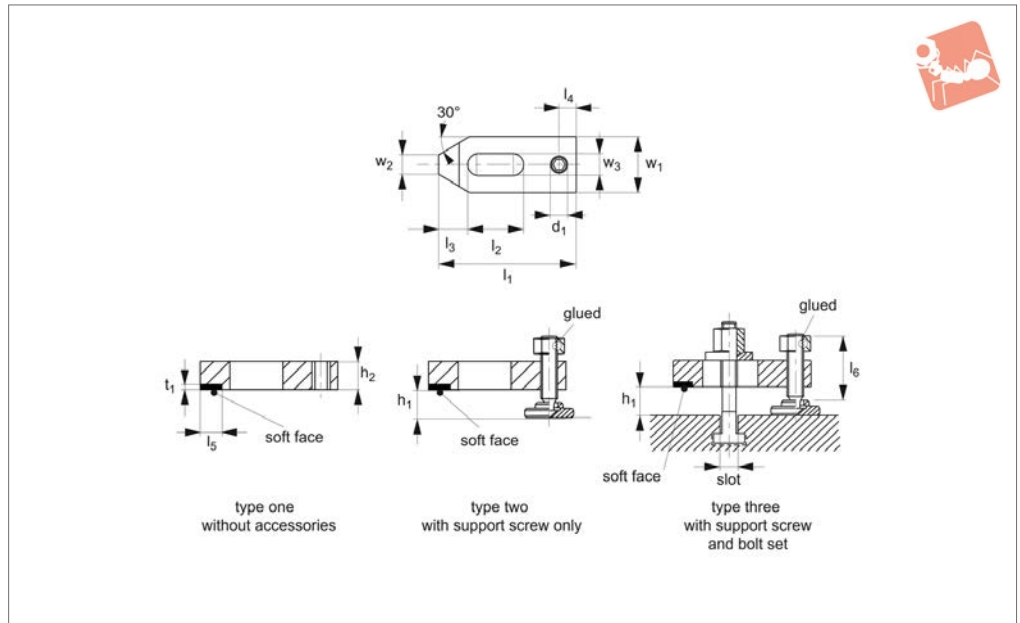
Suitable for all lockable clamps.

Order No.	$d_1 \times l_1$	$d_2$	$h_1$	Weight g
10410.W0010	M10x39	30	8	52
10410.W0012	M12x49	36	10	96
10410.W0013	M12x94	36	10	145
10410.W0016	M16x55	42	13	180
10410.W0017	M16x90	42	13	230
10410.W0020	M20x69	50	16	320
10410.W0021	M20x109	50	16	400
10410.W0024	M24x87	60	20	590
10410.W0025	M24x137	60	20	820
10410.W0030	M30x180	80	24	1704



## 10420

STANDARD MANUAL CLAMPING



### Material

Clamps: steel, heat-treated, blackened.  
Protective face: brass, brazed.

### Technical Notes

Type one: clamp only.

Type two: clamp and support screw only.

Type three: clamp, support screw and T-bolt set.

$h_1$  - dependent on depth of slot and position of fixture nut.

The protective brass plate, brazed on to the clamp, acts to protect the workpiece from damage under clamping.

### Tips

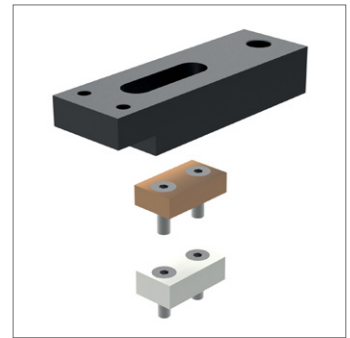
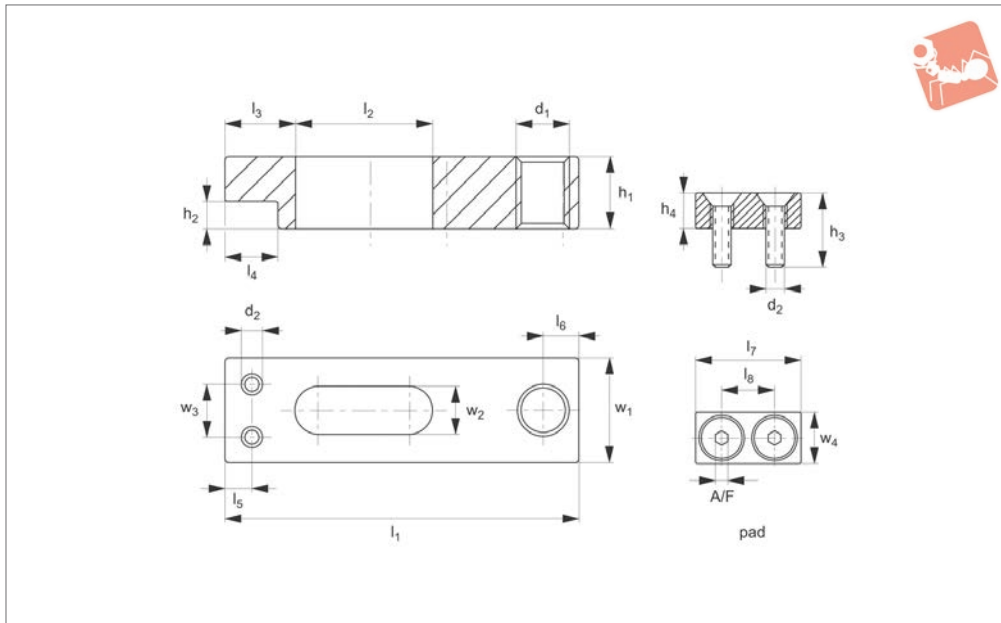
Often used for clamping press tools.

Used with:

10680 ratchet clamp level, 21000 T-slot bolt, 24400 collar nut, 25000 plain washer.

Replacement support screw see part nos. 34500 and 34520.

Order No.	Type	For bolt	Supplied T-bolt	T-slot size	$d_1 \times l_6$	$h_1$	$h_2$	$l_2$	$l_3$	$l_4$	$l_5$	$t_1$	$w_1$	$w_2 \times l_1$	$w_3$	Weight g
10420.W0010	One	M 8					12	22	13	8	10	2	25	9x60	10	104
10420.W0020	One	M10					15	30	15	10	12	2	30	11x80	12	211
10420.W0030	One	M12, M14					20	40	21	12	15	3	40	14x100	14	461
10420.W0040	One	M16, M18					25	45	26	16	20	3	50	18x125	18	917
10420.W0011	Two	M 8			M 8x40	8-23	12	22	13	8	10	2	25	9x60	10	150
10420.W0012	Two	M 8			M 8x60	8-43	12	22	13	8	10	2	25	9x60	10	160
10420.W0021	Two	M10			M10x60	10-38	15	30	15	10	12	2	30	11x80	12	295
10420.W0022	Two	M10			M10x80	10-58	15	30	15	10	12	2	30	11x80	12	310
10420.W0031	Two	M12, M14			M12x60	10-31	20	40	21	12	15	2	40	14x100	14	590
10420.W0032	Two	M12, M14			M12x100	10-71	20	40	21	12	15	3	40	14x100	14	620
10420.W0041	Two	M16, M18			M16x80	12-42	25	45	26	16	20	3	50	18x125	18	1150
10420.W0042	Two	M16, M18			M16x125	12-87	25	45	26	16	20	3	50	18x125	18	1220
10420.W0015	Three	M 8	M 8x8x50	7,6	M 8x40	8-16	12	22	13	8	10	3	25	9x60	10	200
10420.W0016	Three	M 8	M 8x8x80	7,6	M 8x60	8-43	12	22	13	8	10	2	25	9x60	10	220
10420.W0025	Three	M10	M10x10x65	9,6	M10x60	10-22	15	30	15	10	12	2	30	11x80	12	385
10420.W0026	Three	M10	M10x10x100	9,6	M10x80	10-58	15	30	15	10	12	2	30	11x80	12	420
10420.W0035	Three	M12, M14	M12x12x80	11,6	M12x60	10-28	20	40	21	12	15	2	40	14x100	14	740
10420.W0036	Three	M12, M14	M12x12x125	11,6	M12x100	10-71	20	40	21	12	15	3	40	14x100	14	805
10420.W0037	Three	M12, M14	M12x14x80	13,6	M12x60	10-26	20	40	21	12	15	3	40	14x100	14	755
10420.W0038	Three	M12, M14	M12x14x125	13,6	M12x100	10-71	20	40	21	12	15	3	40	14x100	14	820
10420.W0045	Three	M16, M18	M16x16x100	15,6	M16x80	12-31	25	45	26	16	20	3	50	18x125	18	1470
10420.W0046	Three	M16, M18	M16x16x160	15,6	M16x125	12-87	25	45	26	16	20	3	50	18x125	18	1630
10420.W0047	Three	M16, M18	M16x18x100	17,6	M16x80	12-32	25	45	26	16	20	3	50	18x125	18	1490
10420.W0048	Three	M16, M18	M16x18x160	17,6	M16x125	12-87	25	45	26	16	20	3	50	18x125	18	1650



## 10425

STANDARD MANUAL CLAMPING

### Material

Clamp: steel, heat-treated and blackened.  
Pads: brass or plastic.

### Technical Notes

Clamp provided without clamping pads.

Mounting screws included with clamping pads.

Temperature should not exceed 250°C when using brass pad, or 0-50°C when using plastic pad.

### Tips

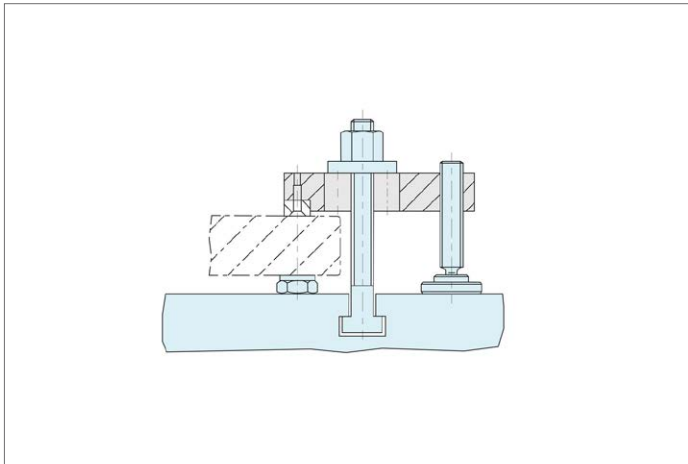
Particularly suitable for clamping sensitive components; soft pads protect the work-piece.

Order No.	Type	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	Weight g
10425.W0050	Clamp only	M 6	M 2	8	3	-	-	25
10425.W0051	Clamp only	M 6	M 2,5	10	4	-	-	45
10425.W0052	Clamp only	M 8	M 3	12	4	-	-	85
10425.W0053	Clamp only	M10	M 4	16	6	-	-	180
10425.W0054	Clamp only	M12	M 5	20	8	-	-	363
10425.W0055	Clamp only	M16	M 8	30	12	-	-	1445
10425.W0060	Brass pad	-	M 2	-	-	8	4	2.5
10425.W0061	Brass pad	-	M 2,5	-	-	10	6	7
10425.W0062	Brass pad	-	M 3	-	-	12	6	11
10425.W0063	Brass pad	-	M 4	-	-	16	9	25
10425.W0064	Brass pad	-	M 5	-	-	20	12	53
10425.W0065	Brass pad	-	M 8	-	-	30	16	193
10425.W0070	Plastic pad	-	M 2	-	-	8	4	0.7
10425.W0071	Plastic pad	-	M 2,5	-	-	10	6	1.6
10425.W0072	Plastic pad	-	M 3	-	-	12	6	2.7
10425.W0073	Plastic pad	-	M 4	-	-	16	9	6
10425.W0074	Plastic pad	-	M 5	-	-	20	12	13
10425.W0075	Plastic pad	-	M 8	-	-	30	16	48

Order No.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	l <sub>6</sub>	l <sub>7</sub>	l <sub>8</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub> +0.5	w <sub>4</sub>	A/F
10425.W0050	40	15.5	8	6	4	3.0	-	-	12	6	5.5	-	-
10425.W0051	50	22.0	10	8	5	4.0	-	-	16	9	7.0	-	-
10425.W0052	63	29.0	12	10	6	5.0	-	-	20	11	9.0	-	-
10425.W0053	80	36.0	15	13	8	6.5	-	-	25	14	11.0	-	-
10425.W0054	100	44.0	18	16	10	8.0	-	-	32	16	14.0	-	-
10425.W0055	160	63.0	30	28	16	14.0	-	-	50	30	18.0	-	-
10425.W0060	-	-	-	-	-	-	12	6	-	-	5.5	6	1.3
10425.W0061	-	-	-	-	-	-	16	9	-	-	7.0	8	1.5
10425.W0062	-	-	-	-	-	-	20	11	-	-	9.0	10	2.0
10425.W0063	-	-	-	-	-	-	25	14	-	-	11.0	13	2.5
10425.W0064	-	-	-	-	-	-	32	16	-	-	14.0	16	3.0



Order No.	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$l_7$	$l_8$	$w_1$	$w_2$	$w_3$ +0.5	$w_4$	A/F
10425.W0065	-	-	-	-	-	-	50	30	-	-	18.0	28	5.0
10425.W0070	-	-	-	-	-	-	12	6	-	-	5.5	6	1.3
10425.W0071	-	-	-	-	-	-	16	9	-	-	7.0	8	1.5
10425.W0072	-	-	-	-	-	-	20	11	-	-	9.0	10	2.0
10425.W0073	-	-	-	-	-	-	25	14	-	-	11.0	13	2.5
10425.W0074	-	-	-	-	-	-	32	16	-	-	14.0	16	3.0
10425.W0075	-	-	-	-	-	-	50	30	-	-	18.0	28	5.0

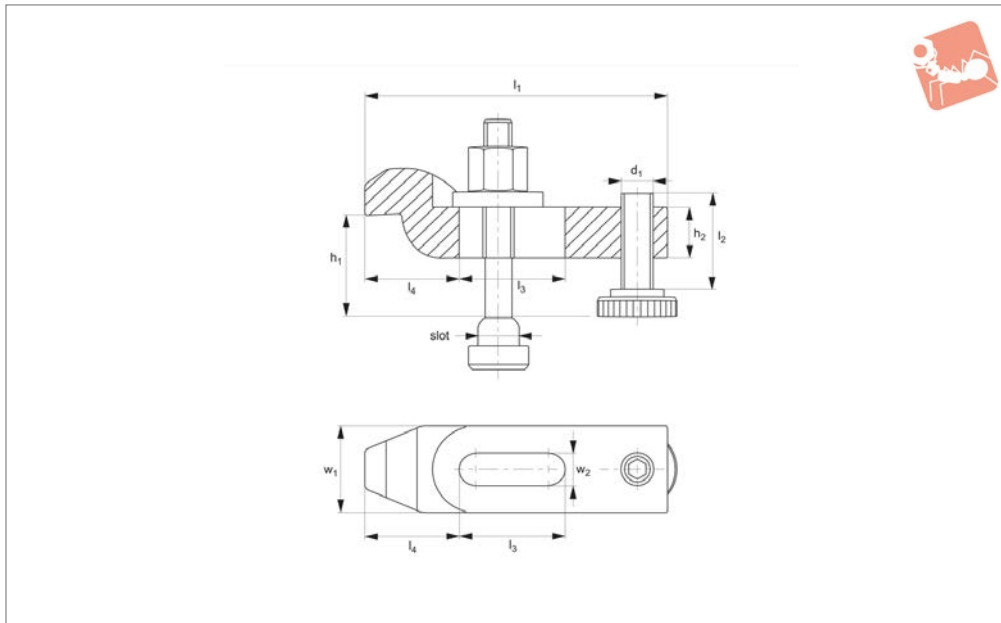




# Adjustable Goose Neck Clamps with height adjusting screw



Standard  
Manual Clam-



10500

STANDARD MANUAL CLAMPING

### Material

Steel, heat-treated and enamelled.

### Technical Notes

Type one: clamp, support screw and T-bolt set.

Type two: clamp and support screw only.

Dimension  $h_1$  is dependent on depth of slot and position of fixture nut.

### Tips

Often used for clamping press tools.

Used with:

10680 ratchet clamp lever, 21000 T-slot bolt, 24400 collar nut, 25000 plain washer.

Replacement parts:

Replacement support screw see part no. 10410.

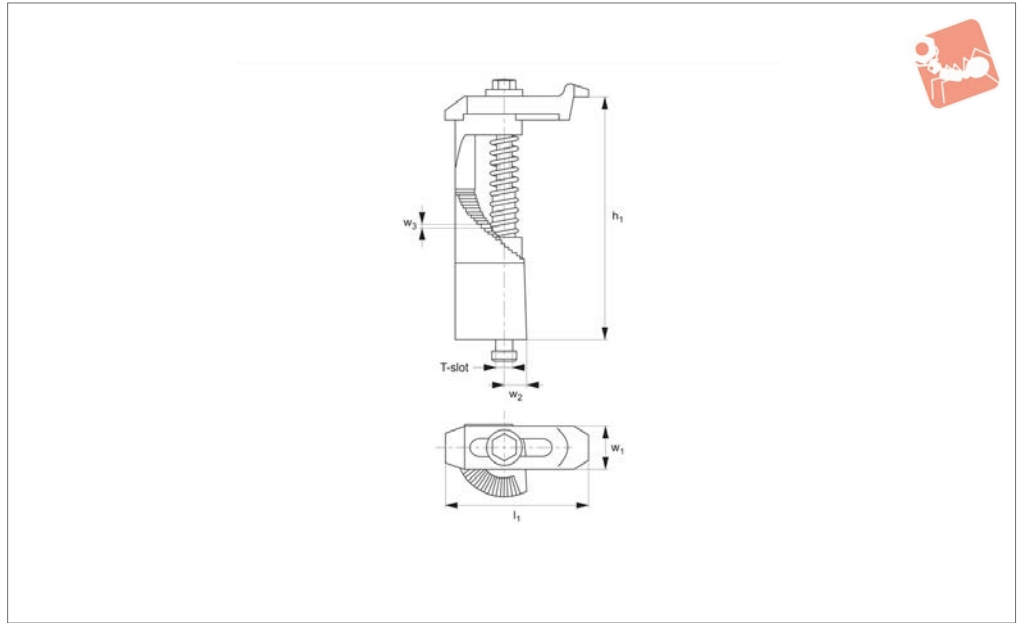
### Important Notes

Particularly suited to clamping low work-pieces. The clamping height can be adjusted by means of the support screw.

Order No.	Type	For bolt	For T-slot	T-bolt	$d_1 \times l_2$	$h_1$	$h_2$	$l_3$	$l_4$	$w_1$	$w_2 \times l_1$	Weight g
10500.W0010	With bolt	M10	10	M10x10x80	M10x39	22-46	15	32	36.0	30	11x100	440
10500.W0012	With bolt	M12	12	M12x12x100	M12x49	28-58	20	40	44.0	40	14x125	906
10500.W0014	With bolt	M12	14	M12x14x100	M12x49	28-56	20	40	44.0	40	14x125	926
10500.W0016	With bolt	M16	16	M16x16x125	M16x55	36-71	25	50	51.5	50	18x160	1859
10500.W0018	With bolt	M16	18	M16x18x125	M16x55	36-69	25	50	51.5	50	18x160	1875
10500.W0020	With bolt	M20	20	M20x20x160	M20x69	43-92	30	70	59.0	60	22x200	3322
10500.W0022	With bolt	M22	22	M20x22x160	M20x69	43-92	30	70	59.0	60	22x200	3352
10500.W0110	W/o bolt	M10	-	-	M10x39	22-51	15	32	36.0	30	11x100	344
10500.W0112	W/o bolt	M12	-	-	M12x49	28-65	20	40	44.0	40	14x125	761
10500.W0116	W/o bolt	M16	-	-	M16x55	36-75	25	50	51.5	50	18x160	1516
10500.W0120	W/o bolt	M20	-	-	M20x69	43-92	30	70	59.0	60	22x200	2669
10500.W0124	W/o bolt	M24	-	-	M24x87	52-115	35	60	76.5	70	26x200	3810



# 10550



**Material**

Steel forged, thread quality 8.8.

**Technical Notes**

Clamping unit for quick action. The compact construction ensures a small foot-

print on the machine table. Allows clamping over a wide height range with minimum fuss.

\* Clamping forces stated for minimum  $h_1$

dimension.

**Tips**

Used with:  
24000 T-nuts.

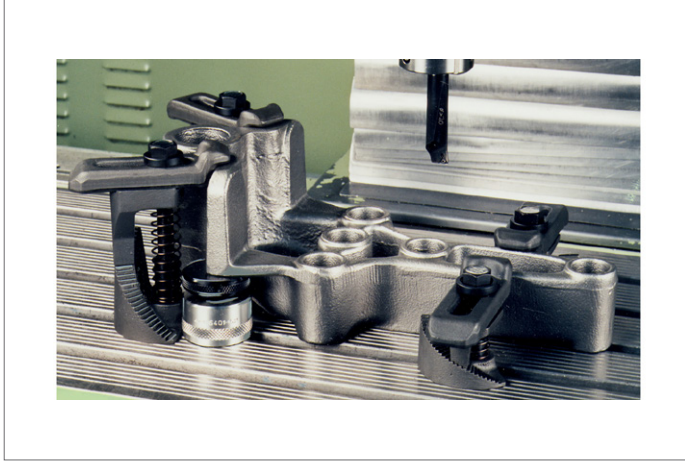
Order No.	Size	T-slot size	$h_1$	$l_1$	Tightening torque Nm	$w_1$	$w_2$	$w_3$	Clamping force kN max.	Weight g
10550.W0120	12-0	12	0-45	140	50	34	14	0.8	11.5	700
10550.W0121	12-1	12	15-45	112	50	34	14	0.8	11.4	600
10550.W0122	12-2	12	30-75	112	50	34	15	1.3	11.4	800
10550.W0123	12-3	12	60-135	112	50	34	16	2.5	11.4	1200
10550.W0124	12-4	12	120-195	112	50	34	18	2.5	11.4	1700
10550.W0125	12-5	12	180-255	112	50	34	19	2.5	11.4	2200
10550.W0126	14-0	14	0-45	140	80	34	14	0.8	15.5	700
10550.W0127	14-1	14	15-45	112	80	34	14	0.8	15.3	600
10550.W0128	14-2	14	30-75	112	80	34	15	1.3	15.3	800
10550.W0129	14-3	14	60-135	112	80	34	16	2.5	15.3	1200
10550.W0130	14-4	14	120-195	112	80	34	18	2.5	15.3	1700
10550.W0131	14-5	14	180-255	112	100	34	19	2.5	15.3	2200
10550.W0132	16-0	16	0-70	160	100	50	20	1.3	15.3	1900
10550.W0133	16-1	16	25-70	125	100	50	20	1.3	16.3	1700
10550.W0134	16-2	16	50-120	125	100	50	21	2.5	16.3	2500
10550.W0135	16-3	16	100-220	125	100	50	21	3.8	16.3	3540
10550.W0136	16-4	16	200-320	125	100	50	24	3.8	16.3	4900
10550.W0137	18-0	18	0-70	160	130	50	20	1.3	17.8	1870
10550.W0138	18-1	18	25-70	125	130	50	20	1.3	19.0	1670
10550.W0139	18-2	18	50-120	125	130	50	21	2.5	19.0	2500
10550.W0140	18-3	18	100-220	125	130	50	21	3.8	19.0	3580
10550.W0141	18-4	18	200-320	125	130	50	24	3.8	19.0	4720





# Adjustable Step Pillar Clamps with goose neck

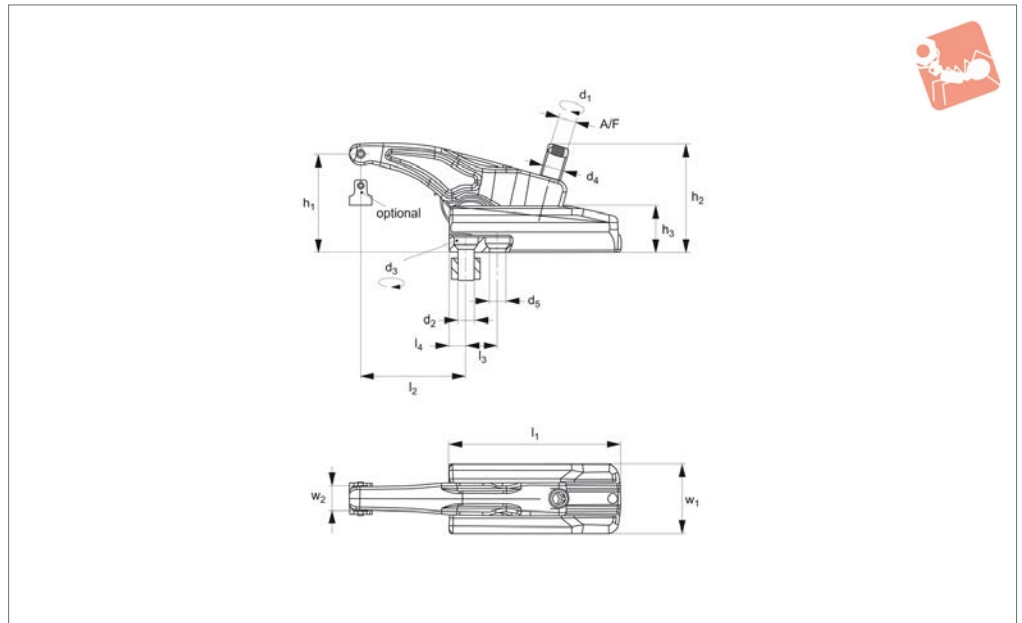
Standard  
Manual Clam-



STANDARD MANUAL CLAMPING



## 10588.1



### Material

Steel, tempered, alloyed and galvanised (black).

### Technical Notes

Complete with mounting kit.  
Powerful, adjustable height clamp for

milling, press tools and injection mould applications. Clamping force 22 kN to 49 kN depending on size. Low height readily adjustable. Smooth or ribbed clamping pad available. For use in threaded holes (M10, M12, M16, M20) and 12-28mm T-slot

bases.

### Tips

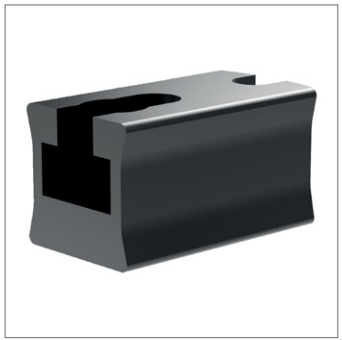
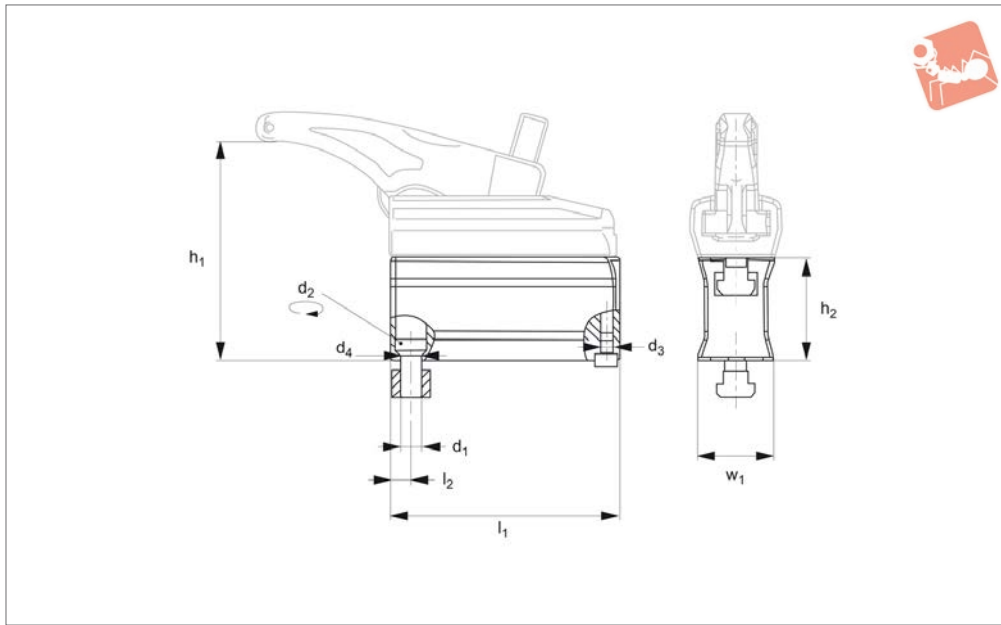
Torque the screws to the correct specified torque. Clamping force depends on thread lubrication and thread condition.

Order No.	Size	For slot	d <sub>2</sub>	d <sub>4</sub>	d <sub>5</sub>	h <sub>1</sub> min.   max.	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	Torque to d <sub>1</sub> Nm max.	Torque to d <sub>3</sub> Nm max.	w <sub>1</sub>	w <sub>2</sub>	A/F	Load capacity for static load kN max.	Weight g
10588.W0022	22	12	M10	M12	13	5-38	58	30	65	15-50		11	50	35	45	13	6	22	700
10588.W0023	22	14	M12	M12	13	5-38	58	30	65	15-50		11	50	40	45	13	6	22	700
10588.W0030	30	14	M12	M16	13	6-68	85	36	135	13-110	25	13	100	70	54	18	8	30	2013
10588.W0031	30	18	M16	M16	17	6-68	85	36	135	16-114	28	16	100	150	54	18	8	30	2045
10588.W0032	32	14	M12	M16	13	6-50	78	36	95	12-82	20	12	120	70	54	18	8	32	1462
10558.W0040	40	18	M16	M20	17	6-50	92	42	110	15-95	26	15	150	150	60	20	10	40	2262
10558.W0043	43	18	M16	M20	17	5-80	105	42	155	16-134	32	16	220	150	60	20	10	43	3158
10558.W0049	49	22	M20	M24	21	7-88	125	52	175	19-165	36	19	220	200	75	25	12	49	5928



# Spacer Element

for power clamp 10588.W0022 - W0049



**10588.2**

STANDARD MANUAL CLAMPING

**Material**

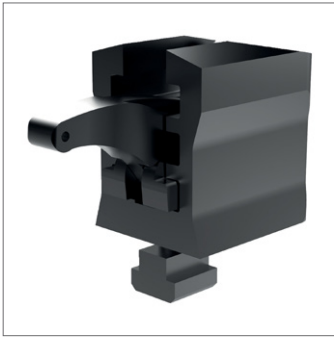
Steel, tempered and galvanised (black).

Further space elements could be added to achieve required clamping height.

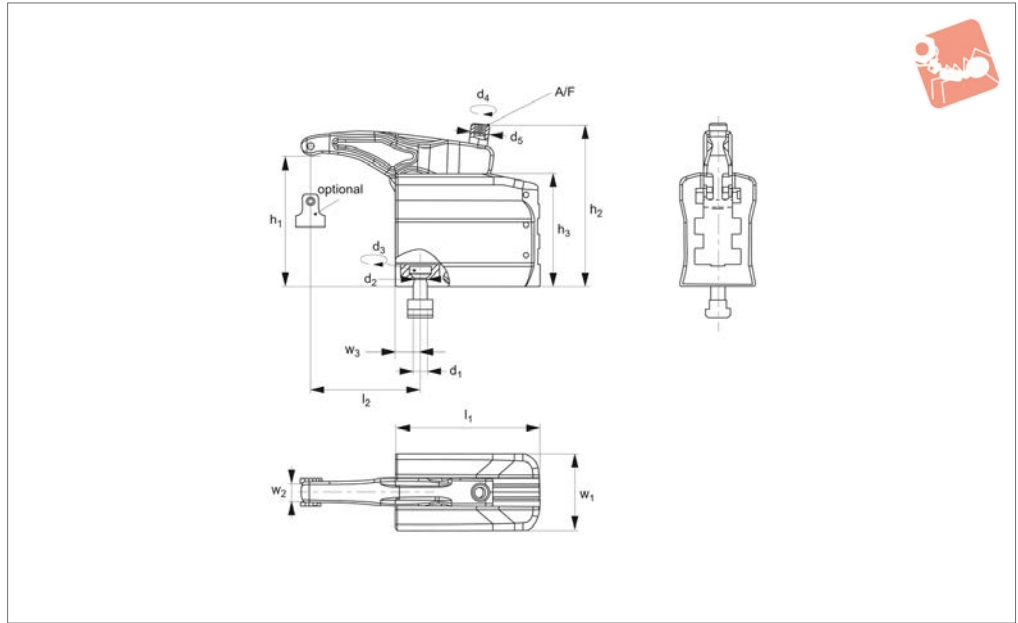
**Technical Notes**

Spacer element only and bolts.

Order No.	Size	For T-slot	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	h <sub>1</sub> min.   max.	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	w <sub>1</sub>	Weight g
<b>10588.W0122</b>	22	12	M10	35	M 6	14	40-73	35	65	12	36.0	480
<b>10588.W0123</b>	22	14	M12	40	M 6	13	40-73	35	65	12	36.0	480
<b>10588.W0130</b>	30	14	M12	70	M 8	13	66-128	60	135	12	44.5	2300
<b>10588.W0132</b>	32	14	M12	70	M 8	13	66-110	60	95	12	44.5	1570
<b>10588.W0140</b>	40	18	M16	150	M 8	17	76-120	70	110	16	47.5	2290
<b>10558.W0143</b>	43	18	M16	150	M 8	17	75-150	70	155	16	47.5	3344
<b>10558.W0149</b>	49	22	M20	200	M10	21	87-168	80	175	19	58.0	5286



## 10588.3



### Material

Steel, tempered, alloyed and galvanised (black).

### Technical Notes

Complete with three-step support element, clamping unit and mounting kit.

### Tips

Three step clamping:

1. Position clamp on table and tighten to correct torque.
2. Adjust the clamping arm.
3. Tighten the clamping screw to clamp

part (tighten to correct torque).

### Important Notes

**Not suitable for use on injection moulding, die casting machines or presses.**

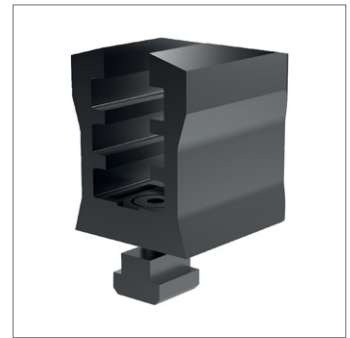
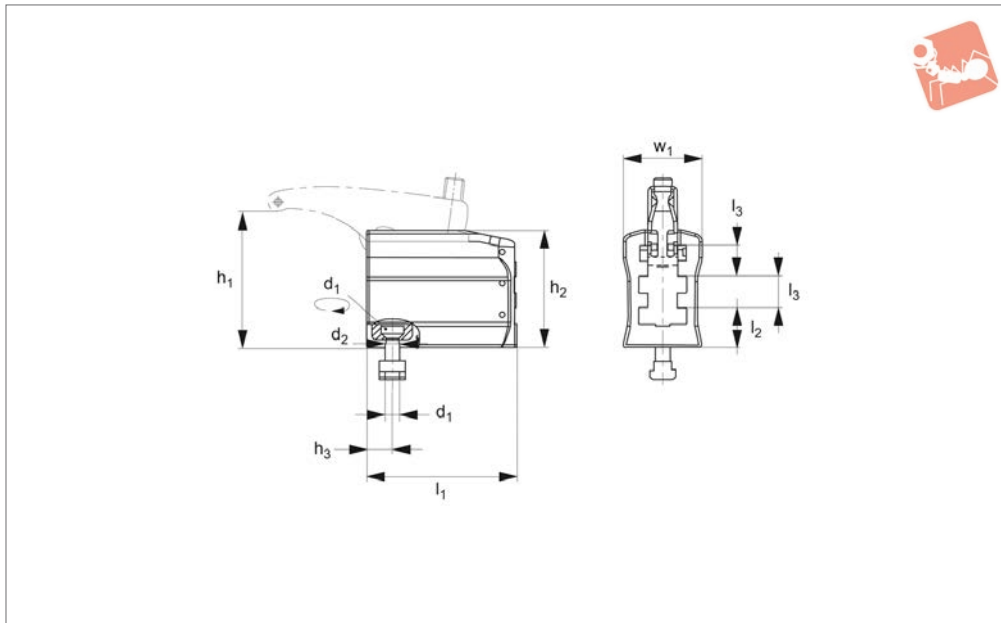
Order No.	Size	For T-slot	d <sub>1</sub>	d <sub>3</sub>	d <sub>5</sub>	h <sub>1</sub> min.   max.	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	Torque to d <sub>2</sub> Nm max.	Torque to d <sub>4</sub> Nm max.	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	A/F	Load capacity for static load kN max.	Weight g
<b>10588.W0222</b>	22	14	M12	40	M12	9-74	98	67	65	30-58	13,5	55	52	13	14,5	6	22	1120
<b>10588.W0230</b>	30	14	M12	70	M16	13-129	146	101	130	37-106	13,5	100	68	18	22,5	8	30	4600
<b>10588.W0243</b>	43	18	M16	150	M20	16-147	175	116	150	48-114	17,5	200	75	20	25,0	10	43	6844
<b>10558.W0249</b>	49	22	M20	200	M24	16-169	207	140	170	68-172	22,0	220	85	25	29,0	12	49	10870



# Spacer Element

for power clamp 10588.W0222 - W0249

# Standard Manual Clam-



**10588.4**

STANDARD MANUAL CLAMPING

**Material**

Steel, tempered and galvanised (black).

ting kit. Unsuitable for injection moulding, die casting machines and presses.

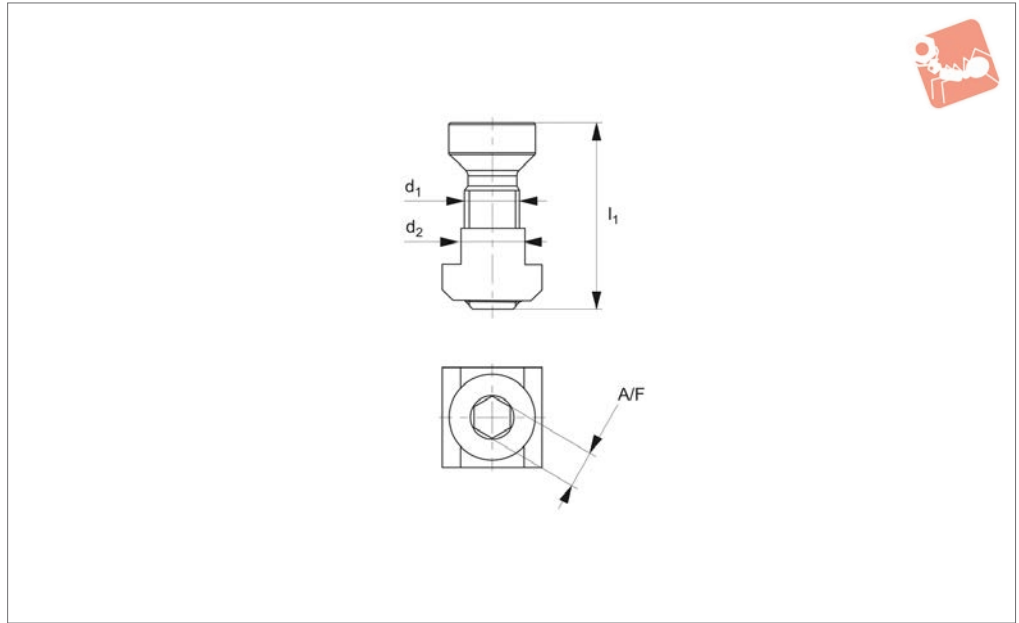
**Technical Notes**

Complete with pressure plate and moun-

Order No.	Size	For T-slot	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Torque to Nm max.	w <sub>1</sub>	Weight g
10588.W0322	22	14	M12	13.5	9-74	65	14.5	65	25	16	40	52	795
10588.W0330	30	14	M12	13.5	13-129	101	22.5	130	34	27	70	68	3440
10588.W0343	43	18	M16	17.5	16-147	116	25.0	150	43	29	150	75	5010
10558.W0349	49	22	M20	22.0	16-169	138	29.0	170	52	34	200	85	7710



## 10588.5



STANDARD MANUAL CLAMPING

### Material

Steel, heat-treated.

### Technical Notes

Fastening screw strength class 12.9 and T-slot nut DIN 508.

Order No.	Size	d <sub>1</sub>	d <sub>2</sub>	l <sub>1</sub>	A/F	Weight g
10588.W2212	22	M10	12	29.0	6	61
10588.W2214	22	M12	14	31.5	6	61
10588.W2215	22	M12	14	35.5	6	40
10588.W3014	30/32	M12	14	34.0	8	70
10588.W3016	30/32	M12	16	38.0	8	98
10588.W3018	30/32	M12	18	38.0	8	125
10588.W3019	30	M12	14	41.0	8	78
10588.W3118	30	M16	18	41.0	8	143
10588.W3120	30	M16	20	45.0	8	208
10588.W3122	30	M16	22	49.0	8	270
10588.W3124	30	M16	24	49.0	8	348
10588.W4018	40/43	M16	18	43.0	10	145
10588.W4020	40/43	M16	20	47.0	10	195
10588.W4022	40/43	M16	22	51.0	10	264
10588.W4024	40/43	M16	24	51.0	10	350
10588.W4319	43	M16	18	52.0	10	160
10558.W4922	49	M20	22	52.0	12	300
10558.W4923	49	M20	22	66.0	12	330
10558.W4924	49	M20	24	55.0	12	390
10558.W4928	49	M20	28	62.0	12	505

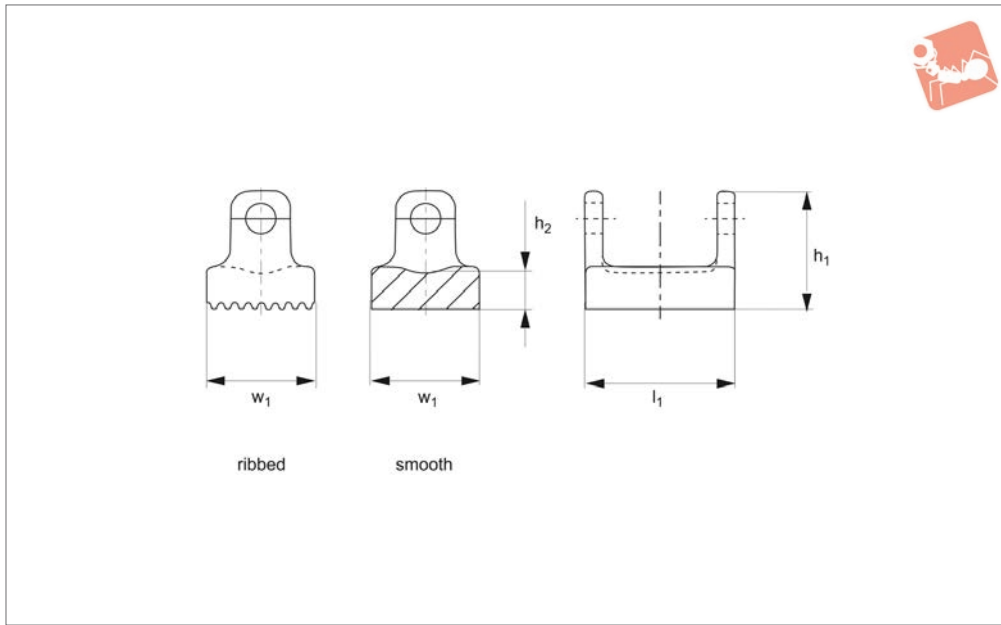


# Pressure Pad

for power clamp 10588.W0022 - W0049



## Standard Manual Clam-



**10588.6**

STANDARD MANUAL CLAMPING

### Material

Stainless steel.

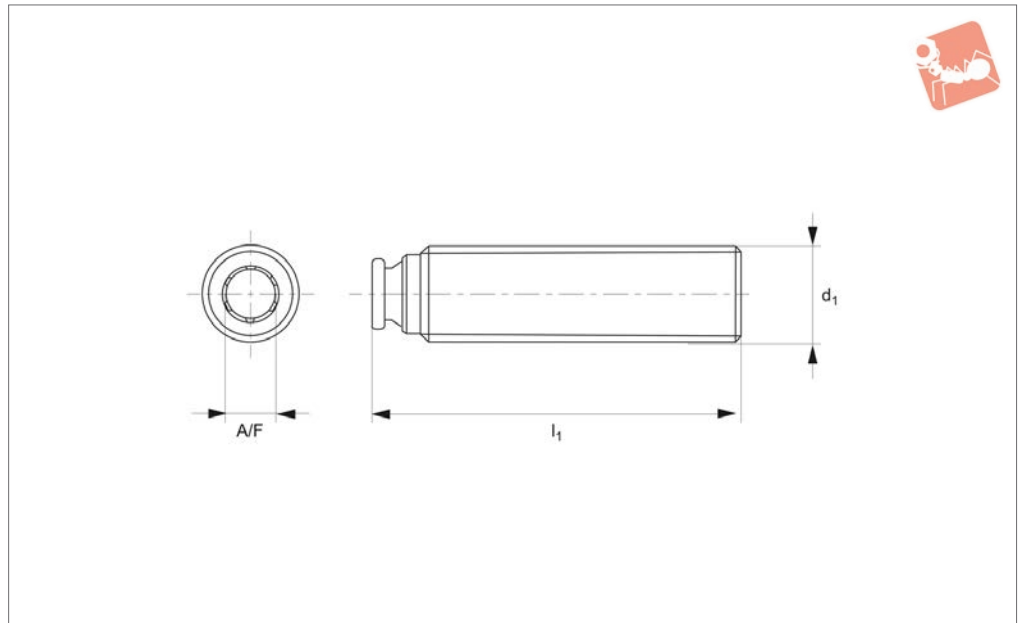
### Technical Notes

Complete with pin.

Order No.	Size	Form	$h_1$	$h_2$	$l_1$	$w_1$	Weight g
10588.W0701	22	Smooth	14.0	4.5	19	12	11
10588.W0702	30/32	Smooth	19.5	6.0	25	18	28
10588.W0703	40/43	Smooth	24.0	6.5	30	20	47
10588.W0704	49	Smooth	28.0	7.0	36	25	75
10588.W0711	22	Ribbed	14.0	4.5	19	12	10
10558.W0712	30/32	Ribbed	19.5	6.0	25	18	27
10588.W0713	40/43	Ribbed	24.0	6.5	30	20	48
10558.W0714	49	Ribbed	28.0	7.0	36	25	78



**10588.7**

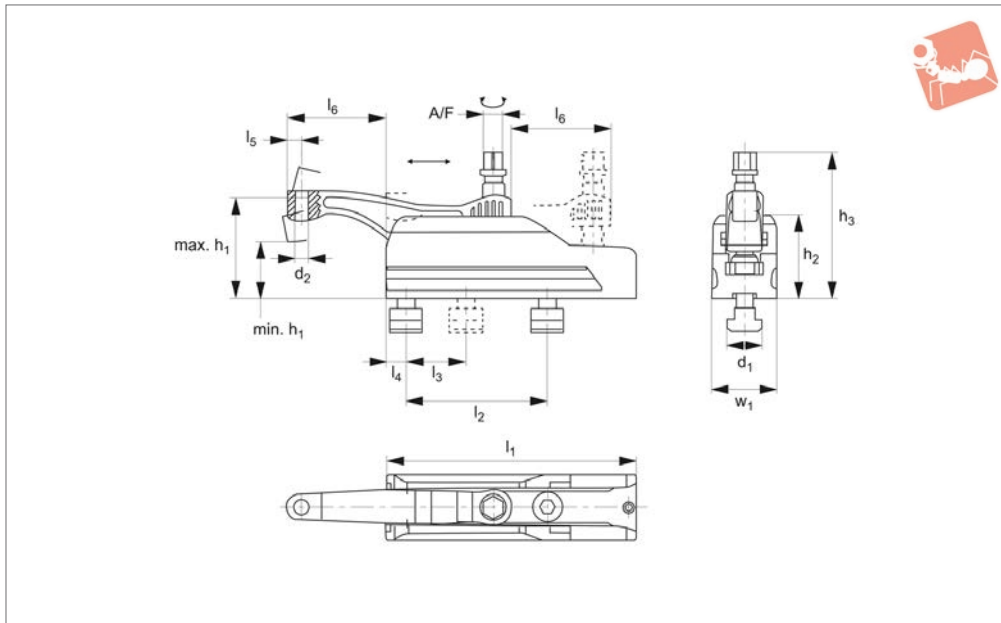


**Material**

Steel, tempered and burnished.

Order No.	Size	d <sub>1</sub>	l <sub>1</sub>	A/F	Weight g
10588.W0823	22	M12	43	6	30
10588.W0830	30	M16	62	8	80
10588.W0832	32	M16	55	8	70
10588.W0840	40	M20	65	10	128
10588.W0843	43	M20	78	10	165
10558.W0849	49	M24	93	12	275





## 10592.1

STANDARD MANUAL CLAMPING

### Material

Body: steel, heat-treated and black coated.  
Lever: steel, heat-treated and silver coated.

### Technical Notes

Assembly and set-up:

1. Take out stop pin ISO 4762-M 6 x 10.
2. Move back and take out clamping lever.

3. Tightening by two screws with internal hexagon (included).

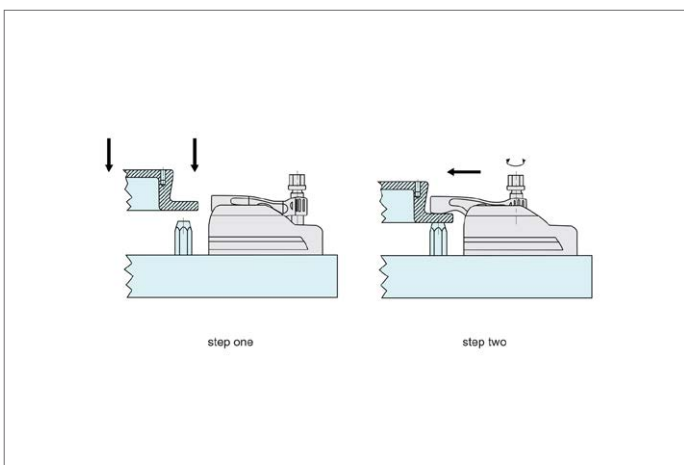
4. Place clamping lever in sliding rail.
5. Tighten clamping screw to torque required.

### Tips

The clamps are corrosion resistant, provide easy clamping of varied heights with

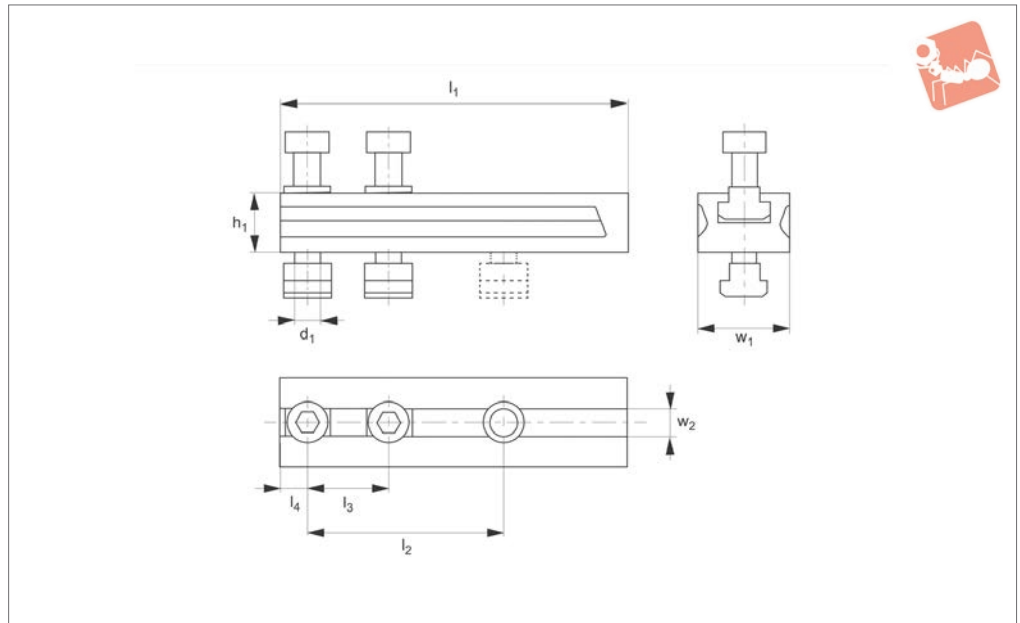
strong clamping forces. The self-locking clamping lever allows the clamp to be used in horizontal or vertical orientations. Slide back the clamping lever to allow access to parts. Corrosion resistant coating is applied to the spacer elements (see order no's 10592.W0112 and 10592.W0116).

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub> min.	h <sub>1</sub> max.	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub> +1	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	l <sub>6</sub> max.	Tightening torque Nm max.	w <sub>1</sub>	A/F	Clamping force kN max.	Weight g
10592.W0012	M12	M 8	40	60	59	95	134	70	50	13	10,0	43	45	45	16	15	1813
10592.W0016	M16	M12	47	85	70	126	213	120	50	17	12,5	85	75	55	18	25	4274





## 10592.2



### Material

Steel, heat-treated, black coated.

### Technical Notes

The height adapter for compact clamps

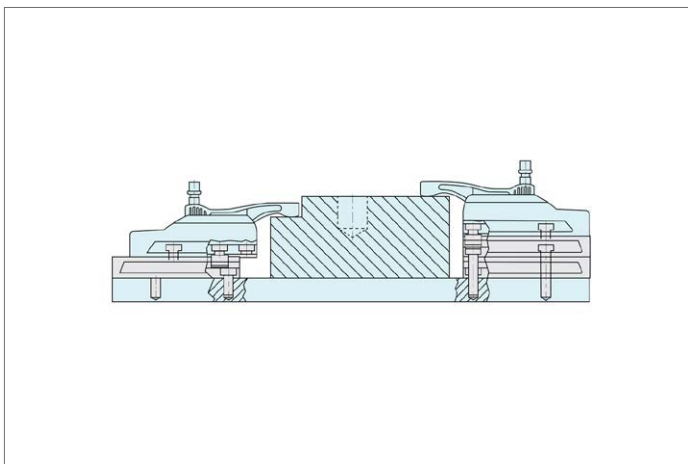
allows a clamping height increase.

### Tips

When using multiple height adapters, the screws ISO 10642 or DIN 7984 have to be

replaced by screws extended by the dimension  $h_1$ .

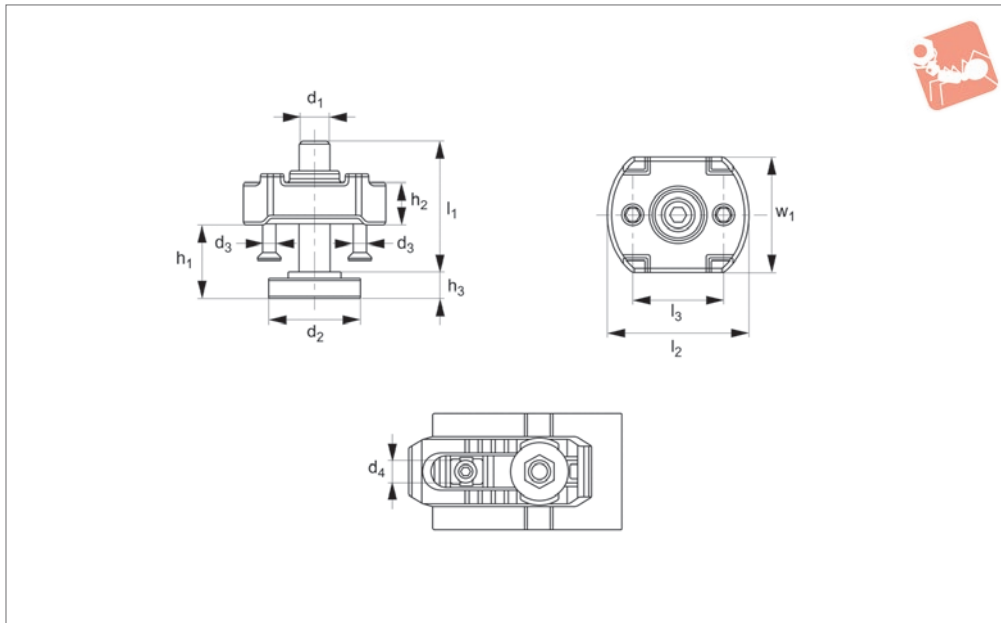
Order No.	$d_1$	$h_1$	$l_1$	$l_2$ +1	$l_3$	$l_4$	$w_1$	$w_2$ tol. H12	Weight g
10592.W0112	M12	20	134	70	50	13	45	14	874
10592.W0116	M16	35	213	120	50	17	55	18	2534





# Support Extension for crocodile clamp 10603

## Standard Manual Clam-



### 10604

STANDARD MANUAL CLAMPING

#### Material

Body and support screw: steel, zinc plated and hardened. Strength class 8.8.

counterhold of the crocodile clamp to increase the clamping height.

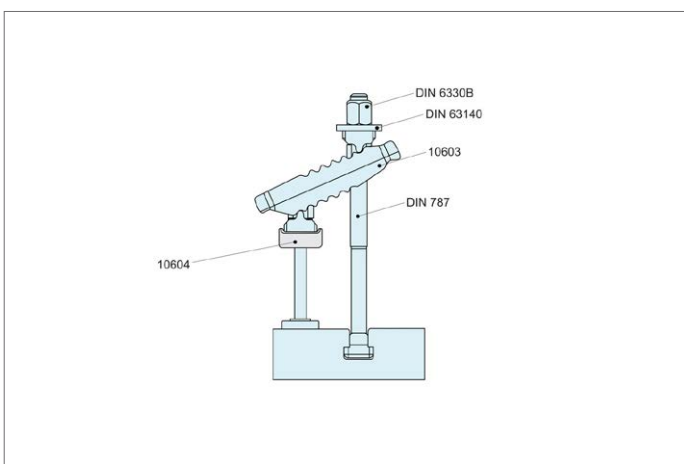
#### Technical Notes

The support extension is screwed to the

#### Tips

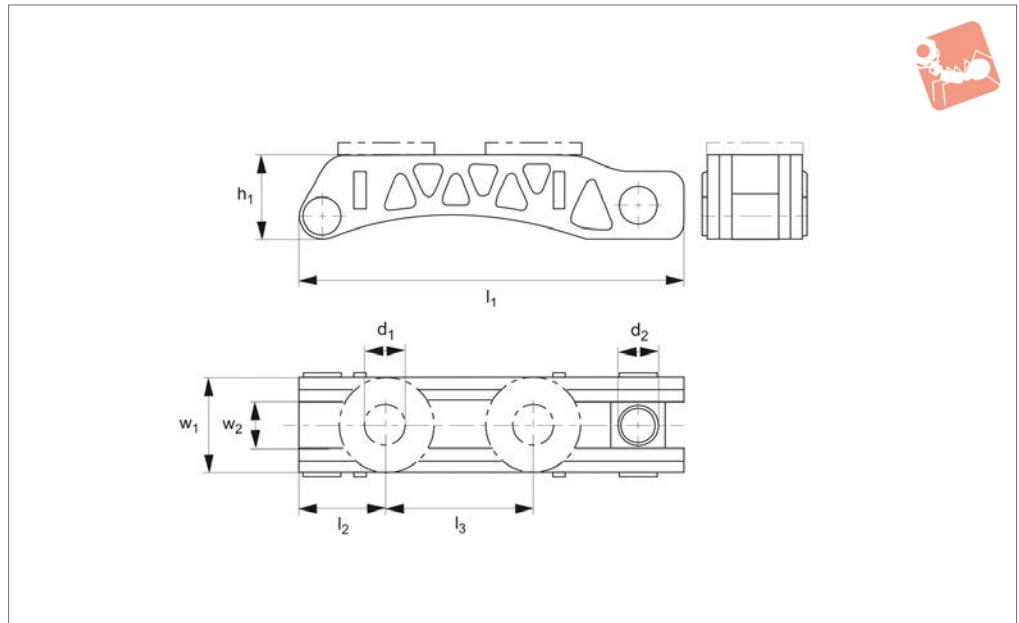
Allows continuous adjustment of clamping heights.

Order No.	$d_1 \times l_1$	$d_2$	$d_3$	$d_4$	$h_1$ min.   max.	$h_2$	$h_3$	$l_2$	$l_3$	$w_1$	Weight g
10604.W0010	M10x39	30	M 5	13	8-30	10	8	44	30	30	197
10604.W0016	M12x49	36	M 5	17	10-37	16	10	54	35	42	433
10604.W0018	M12x94	36	M 5	17	10-80	16	10	54	35	42	473
10604.W0020	M16x55	42	M 5	21	13-41	20	13	60	40	50	608
10604.W0022	M16x90	42	M 5	21	13-73	20	13	60	40	50	640
10604.W0025	M20x69	50	M 6	25	16-52	25	16	70	50	50	1136
10604.W0027	M20x109	50	M 6	25	16-91	25	16	70	50	50	1396





10610.1



**Material**

Steel, tempered and burnished.

**Technical Notes**

The weight saving device allows a 50%

reduction in weight with no effect on clamping force that can be applied. Useful for rotating applications.

**Tips**

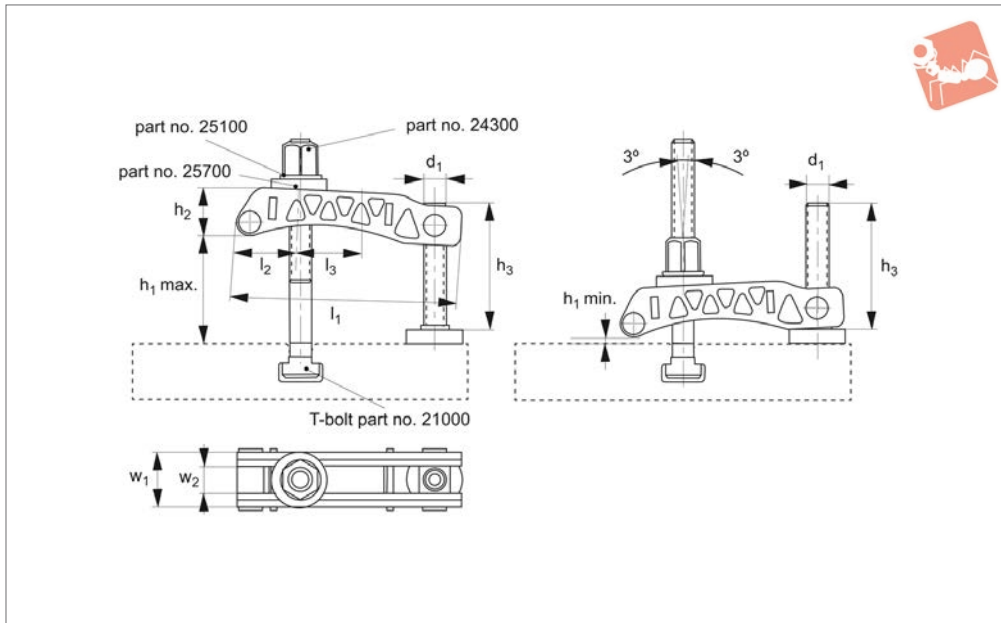
For clamping, T-bolts no. 21000 (DIN 787), studs no. 21100 (DIN 6379) and cheese head screws (ISO 4762) can be used.

Order No.	Size	For clamping screw	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	Weight g
10610.W0022	22	M20, M22	22	M20	44	200	45	77	49	25	1289
10610.W0026	26	M24	26	M24	44	250	46	116	54	30	1630
10610.W0033	33	M30	33	M30	71	315	59	152	72	40	4522
10610.W0043	43	M36, M42	43	M30	80	400	74	209	102	54	9709



# Scalloped Clamp with adjustable support screw

Standard  
Manual Clam-



**10610.2**

STANDARD MANUAL CLAMPING

### Material

Steel, tempered and burnished.

### Technical Notes

The weight saving device allows a 50% reduction in weight with no effect on clam-

ping force that can be applied. Useful for rotating applications.

### Tips

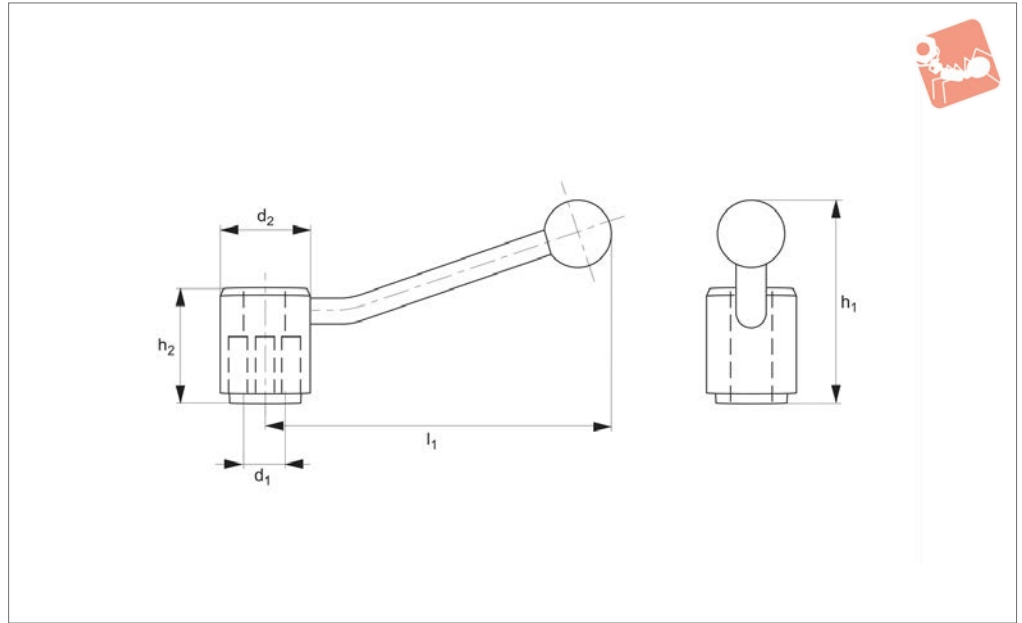
For clamping, clamping screws (DIN 21000), stud bolts (DIN 21100) and cheese

head screws (ISO 4762) can be used.  $h_1$  is dependent on the depth of the slot and position of the fixture nut.

Order No.	Size	For T-slot	With T-bolt	$d_1 \times h_2$	$h_1$ min.   max.	$h_3$	$l_1$	$l_2$	$l_3$	$w_1$	$w_2$	Weight g
<b>10610.W0122</b>	22	20	M20x20x160	M20x69	8-58	44	200	45	77	49	25	2434
<b>10610.W0123</b>	22	20	M20x20x200	M20x109	8-98	44	200	45	77	49	25	2531
<b>10610.W0126</b>	26	24	M24x28x200	M24x87	10-81	44	250	46	116	54	30	3779
<b>10610.W0127</b>	26	24	M24x28x250	M24x137	10-130	44	250	59	116	54	30	3884
<b>10610.W0133</b>	33	36	M30x36x315	M30x180	7-214	71	315	59	152	72	40	9044
<b>10610.W0143</b>	43	48	M36x42x400	M30x180	7-153	80	400	74	209	102	54	17560



10680



**Material**

Steel, burnished.

clamps, but particularly useful for part nos. 10400, 10500 and 10620.

without the need for spanners.

**Technical Notes**

For use as quick acting lever for most

**Tips**

The ratchet action allows quick clamping

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	Weight g
10680.W0012	M12	33	83	48	135	360
10680.W0016	M16	40	105	64	158	620

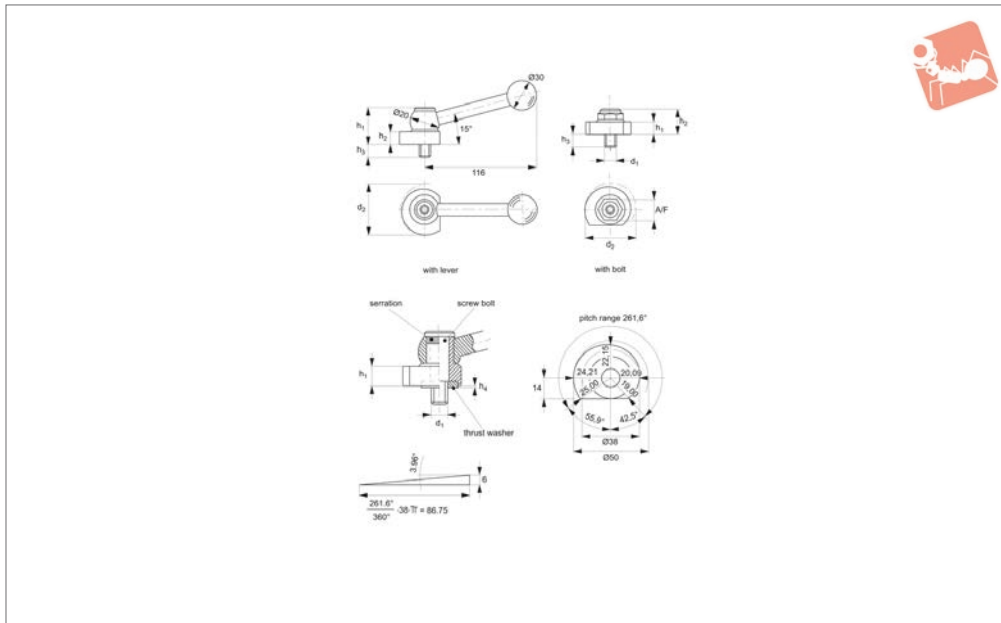


# Eccentric Clamps - Side Action

steel or stainless steel



## Standard Manual Clam-



# 12500

STANDARD MANUAL CLAMPING

### Material

#### Steel Type:

Body: steel, blackened. Spiral eccentric and washer case hardened.

Screw: bolt nitrated.

Ball knob: DIN 319 black plastic, (PF31).

#### Stainless Steel Type:

Body: stainless steel 1.4305 (AISI 303), nickel plated.

Screw: stainless steel 1.4021, heat-

treated, nickel plated.

Ball knob: DIN 319 black plastic, (PF31).

### Technical Notes

The screw bolt and washer can be pre-set together so that the clamp can be easily rotated to any position - by means of the serrations. By removing the washer the clamp can also be used as an infinitely adjustable stop.

### Tips

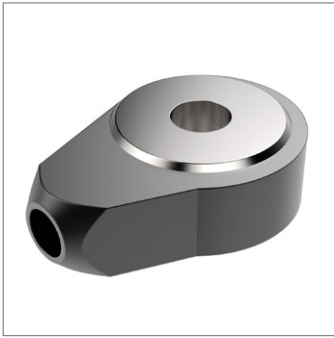
**No. 12500 eccentric clamp, clamps from the SIDE.**

**Left hand acting version available on request.**

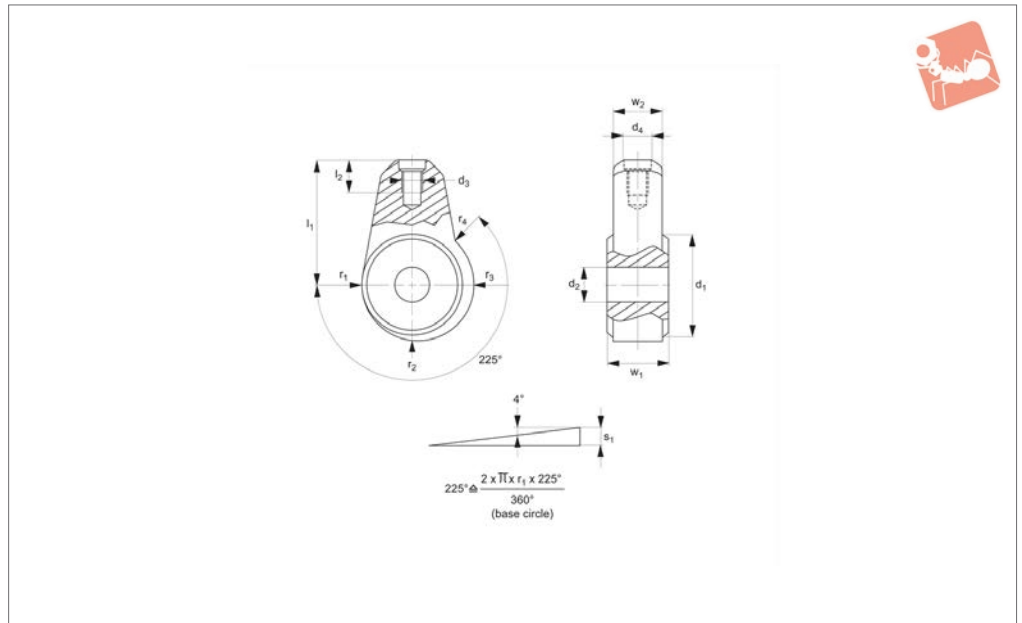
**No. 12520 clamping catch, clamps from ABOVE or BELOW.**

Left hand acting version can be supplied on request.

Order No.	Material	d <sub>1</sub>	h <sub>1</sub>	d <sub>2</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	Type	A/F	Clamping surface	Weight g
<b>12500.W0050</b>	Steel	M10	34.5	50	12	11	0.2	With Lever	-	Side	317
<b>12500.W0150</b>	Steel	M10	24.0	50	12	11	0.2	With Bolt	19	Side	159
<b>12500.W0051</b>	Stainless Steel	M10	34.5	50	12	11	0.2	With Lever	-	Side	317
<b>12500.W0151</b>	Stainless Steel	M10	25.0	50	12	11	0.2	With Bolt	19	Side	159



12505



**Material**

Body: sintered steel, case hardened.

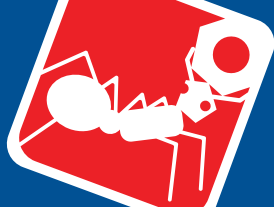
clamping force and are self-locking in any position. Use in conjunction with gear lever handle part 74600.

**Technical Notes**

These eccentric clamps provide constant

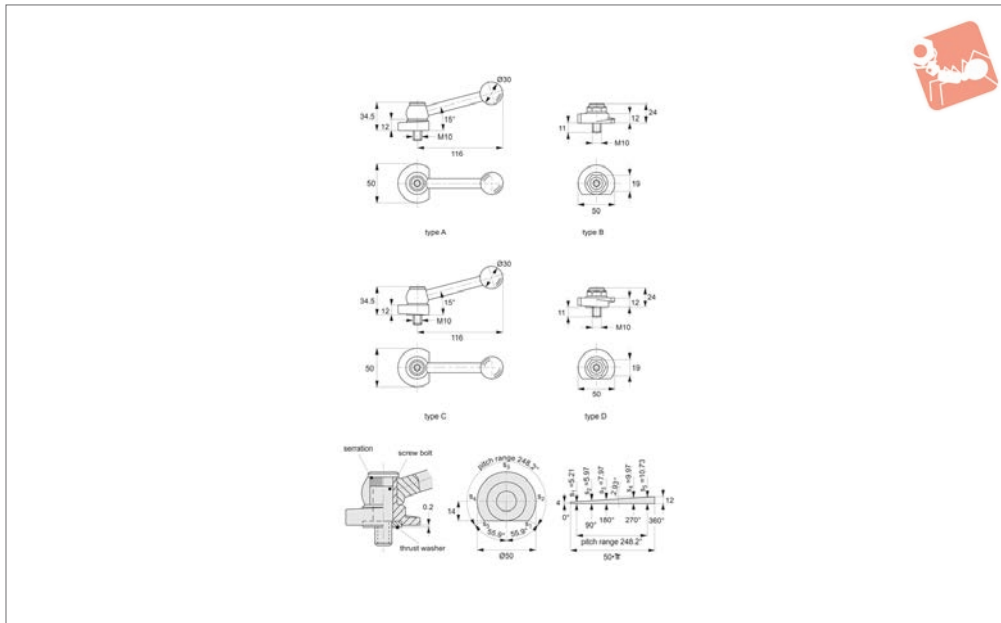
Order No.	$w_1$ -0.05 -0.15	$w_2$	$l_1$	$d_1$	$d_2$ tol. h9	$d_3$	$d_4$	Corres. handle dia. 74600	$l_2$	$r_1$	$r_2$	$R_3$	$r_4$	Stroke $s_1$	Weight g
12505.W0210	13	11	28	24	8	M 6		8	9	12.0	13.3	14.6	15.3	3.3	50
12505.W0220	15	13	32	30	10	M 8		10	12	15.0	16.7	18.3	19.1	4.1	100
12505.W0230	17	15	36	35	12	M10		12	15	17.5	19.4	21.3	22.3	4.8	150





# Eccentric Clamps

top/bottom surface - steel or stainless steel



**12520**

STANDARD MANUAL CLAMPING

**Material**

**Steel Type:**

Body: steel, blackened. Spiral eccentric and washer case hardened.

Screw: bolt nitrated.

Gear lever handle: steel, ground, blackened.

Ball knob: DIN 319 black plastic, (PF31).

**Stainless Steel Type:**

Body: stainless steel 1.4305 (AISI 303),

nickel plated.

Screw: stainless steel 1.4021, heat-treated, nickel plated.

Gear lever handle: stainless steel, 1.4305, dull blasted.

Ball knob: DIN 319 black plastic, (PF31).

**Technical Notes**

Through manually adjusting the setting of the clamping lever, the lever can be placed

in the most convenient position for clamping.

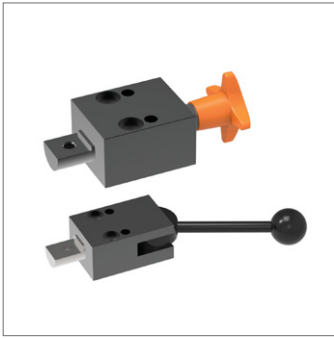
**Tips**

**Type A & B - force generated from TOP of catch.**

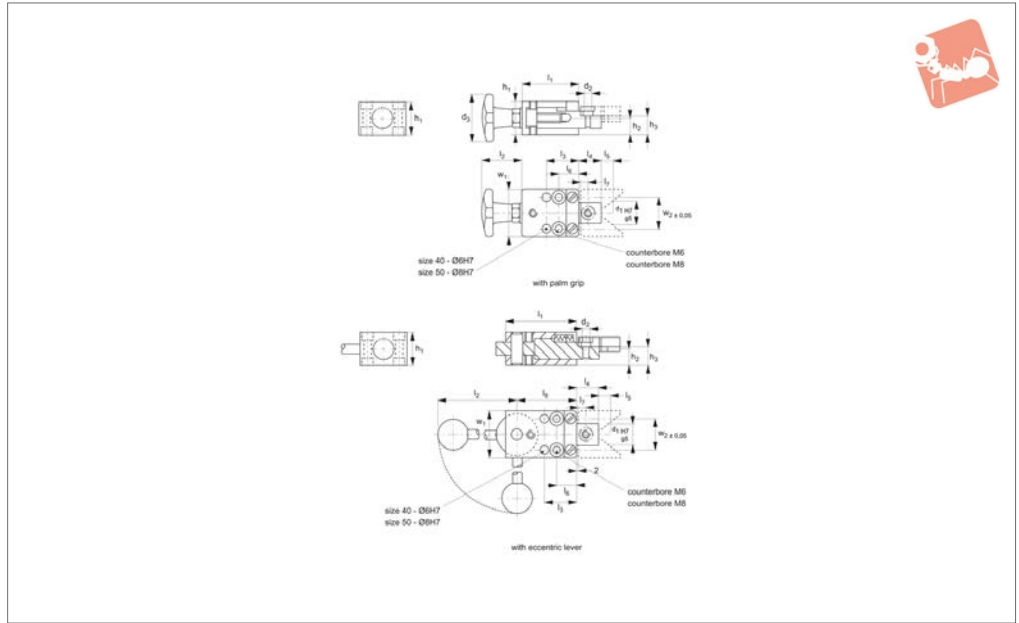
**Type C & D - force generated from BOTTOM of catch.**

Left hand acting version can be supplied on request.

Order No.	Material	Type	Clamping surface	Description	Weight g
12520.W0250	Steel	Type A	Top	Pitch Opposite to Bearing Surface	304
12520.W0350	Steel	Type B	Top	Pitch Opposite to Bearing Surface	154
12520.W0450	Steel	Type C	Bottom	Pitch on Bearing Surface	312
12520.W0550	Steel	Type D	Bottom	Pitch on Bearing Surface	154
12520.W0251	Stainless Steel	Type A	Top	Pitch Opposite to Bearing Surface	310
12520.W0351	Stainless Steel	Type B	Top	Pitch Opposite to Bearing Surface	154
12520.W0451	Stainless Steel	Type C	Bottom	Pitch on Bearing Surface	317
12520.W0551	Stainless Steel	Type D	Bottom	Pitch on Bearing Surface	153



## 17440



### Material

Body: steel, case-hardened, ground and blackened.

Star grip: no. 70020 (orange).

Lever: no. 73000 (black).

### Technical Notes

Suitable for simultaneous positioning and

clamping of workpieces.

The locating element is a precision element which can be assembled from either side.

### Tips

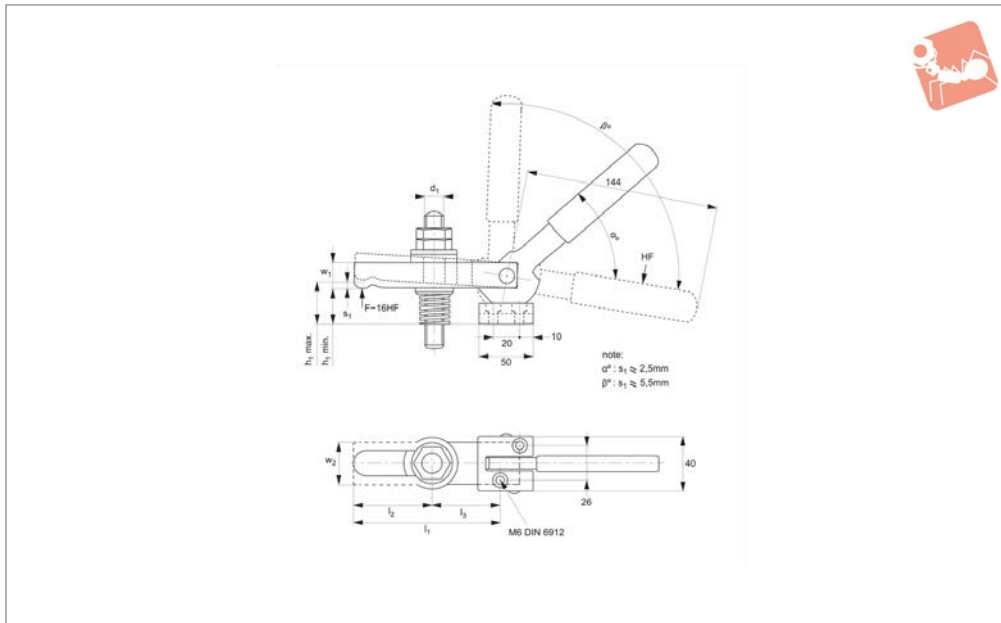
The clamping and fixing part (made by the user to suit the workpiece) is screwed onto the unit.

Order No.	w <sub>1</sub>	w <sub>2</sub> ±0.05	l <sub>1</sub>	d <sub>1</sub> tol. H7/g5	h <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	l <sub>6</sub>	l <sub>7</sub>	l <sub>8</sub>	Type	Weight g
<b>17440.W0040</b>	40	27	50	18	29,8	M 6	40	14,9	16,9	33	28	19	9	17	8		With palm grip	505
<b>17440.W0050</b>	50	33	60	22	34,8	M 8	50	17,4	19,4	42	34	24	10	21	10		With palm grip	862
<b>17440.W0440</b>	40	27	60	18	29,8	M 6		14,9	16,9	96	28	19	3	17	8	50	Eccentric lever	566
<b>17440.W0450</b>	50	33	75	22	34,8	M 8		17,4	19,4	145	34	24	4	21	10	63	Eccentric lever	1071



# Cam Clamps with clamp and bolt

# Standard Manual Clam-



**18000**

STANDARD MANUAL CLAMPING

**Material**

Steel, heat-treated, burnished.

Actuation by hand requires force (HF) of 150N approximately.

tely 16x hand force (HF) applied.

**Tips**

Especially useful on component fixtures.

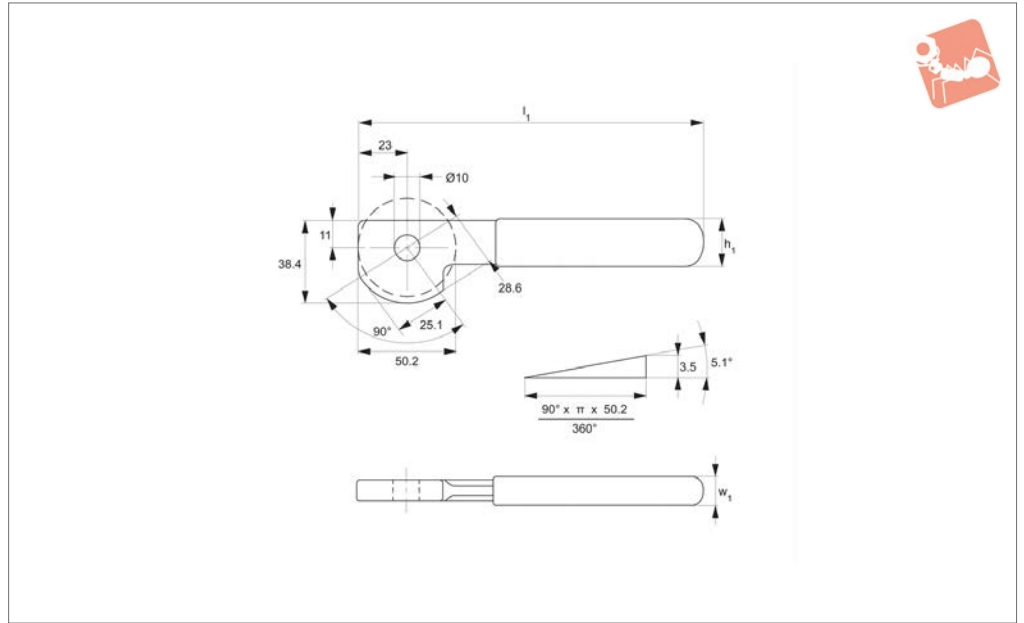
**Important Notes**

Clamping force (F) exerted is approxima-

Order No.	w <sub>1</sub>	w <sub>2</sub>	l <sub>1</sub>	d <sub>1</sub>	h <sub>1</sub> min.	h <sub>1</sub> max.	l <sub>2</sub>	l <sub>3</sub>	Weight g
18000.W0001	30	20	100	M12	26	35	21-43	37	1000
18000.W0002	40	20	125	M16	26	35	34-66	45	1400



**18020**



**Material**

Steel, heat-treated.  
Handle: plastic, coated.

**Technical Notes**

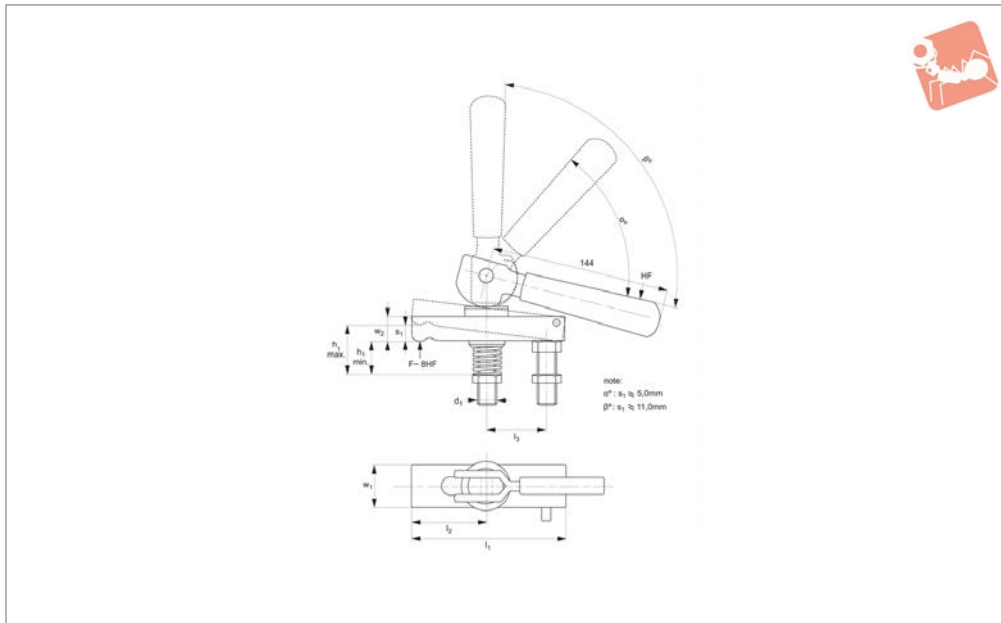
Cam lever for end clamping.

Order No.	$w_1$	$l_1$	$h_1$	Weight g
18020.W0001	14	167	24	300



# Cam Clamps - Centre Acting with clamp and bolt

Standard  
Manual Clam-



18040

STANDARD MANUAL CLAMPING

### Material

Body: steel, heat-treated.  
Handle: plastic, coated.

### Tips

Actuation by hand requires force of approxi-

mately 150N (HF).

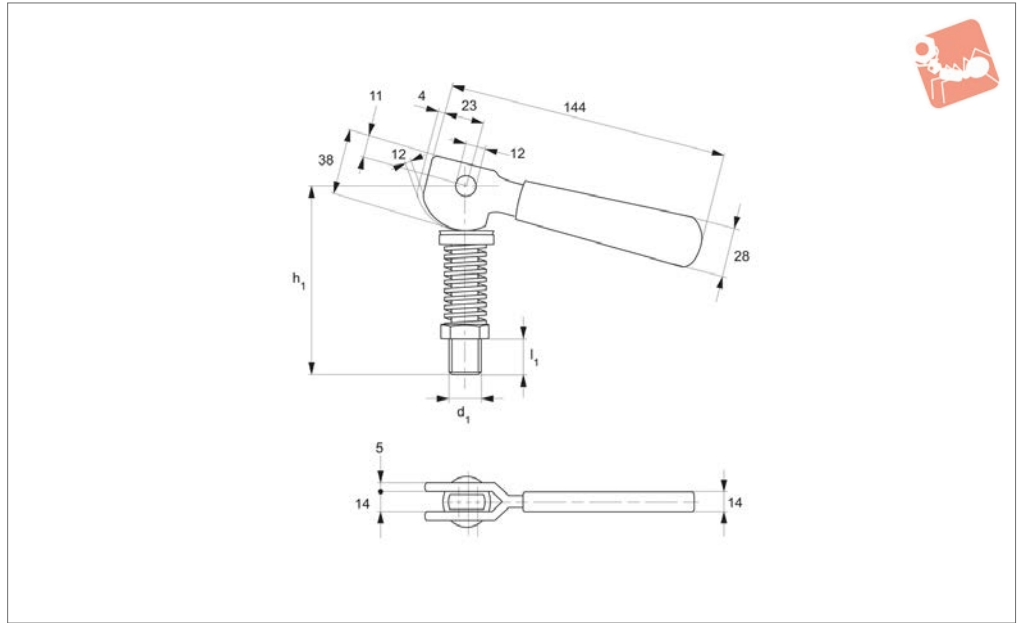
### Important Notes

Clamping force (F) achieved is approximately 8x hand force (HF) applied.

Order No.	w <sub>1</sub>	w <sub>2</sub>	l <sub>1</sub>	d <sub>1</sub>	h <sub>1</sub> min.	h <sub>1</sub> max.	l <sub>2</sub>	l <sub>3</sub>	Weight g
18040.W0001	30	20	100	M12	30	45	21 - 43	32	1000
18040.W0002	40	20	125	M16	35	50	34 - 66	40	1450



**18080**



STANDARD MANUAL CLAMPING

**Material**

Lever: steel, heat-treated.  
Handle: plastic, coated.

**Technical Notes**

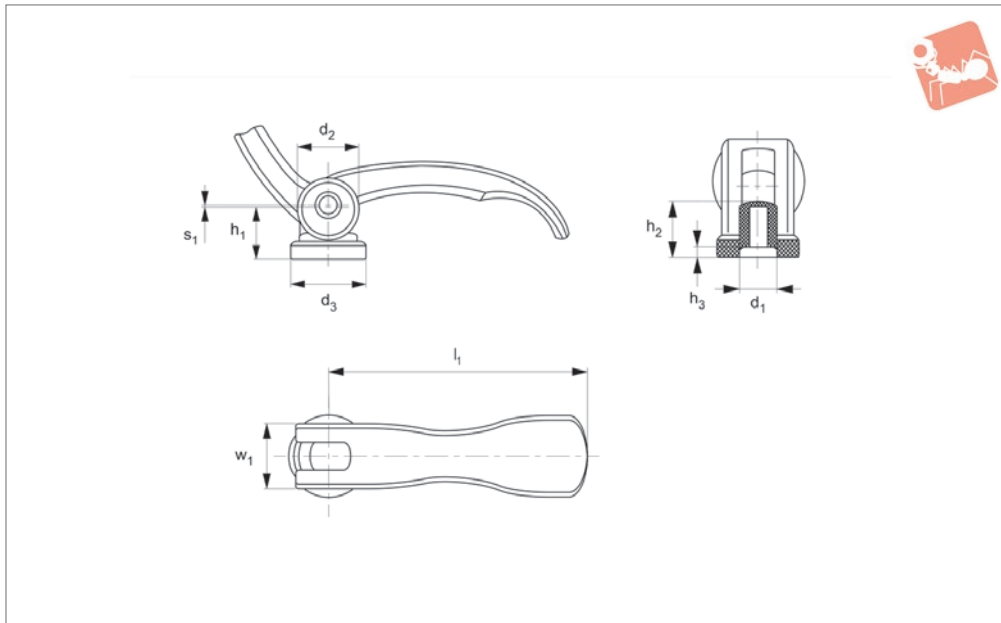
Cam lever for centre clamping.

Order No.	$l_1$	$d_1$	$h_1$	Type	Weight g
18080.W0001	25	M12	110	With Bolt	500
18080.W0002	30	M16	120	With Bolt	610
18080.W0100	-	-	-	Without Bolt	310



# Cam Levers - Female fixed

## Standard Manual Clam-



### 18580.1

STANDARD MANUAL CLAMPING

#### Material

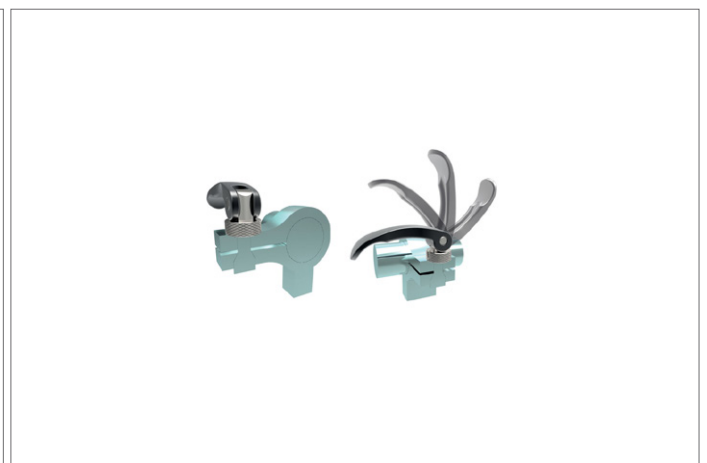
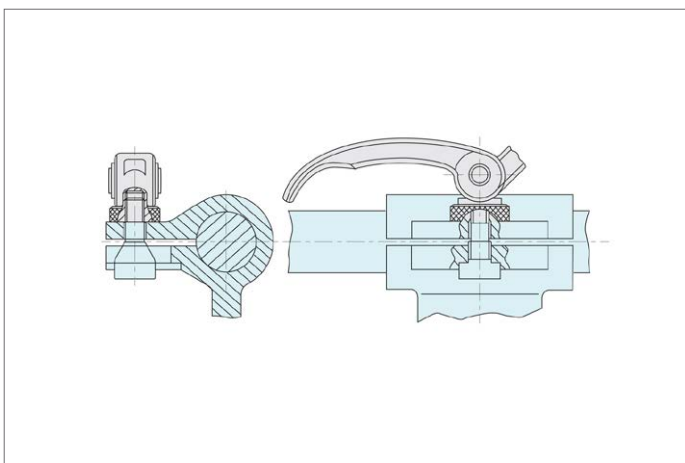
Handle: zinc die-cast, black plastic coated.  
Threaded part, inner parts, adjusting nut:  
steel, galvanised or stainless 1.4305.

Bearing washer: glass reinforced, thermo-  
plastic.

#### Technical Notes

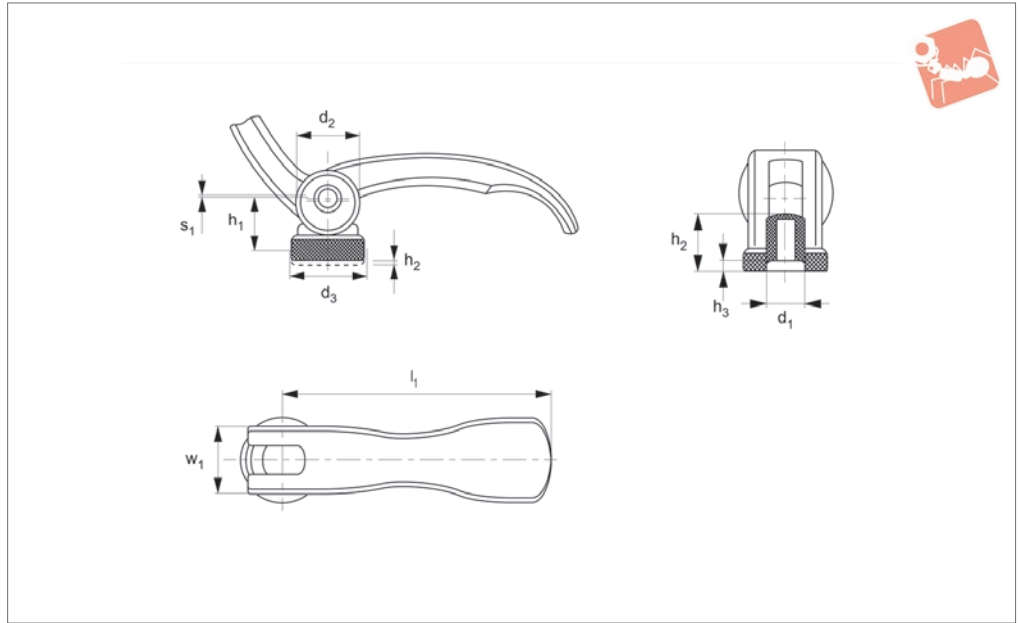
Enables quick and easy clamping of work-  
pieces.  
Withstands temperatures of up to 80°C.

Order No.	Material	w <sub>1</sub>	l <sub>1</sub>	d <sub>1</sub>	h <sub>1</sub> max.	d <sub>2</sub>	d <sub>3</sub>	h <sub>2</sub>	h <sub>3</sub>	Clamping stroke s <sub>1</sub>	Weight g
18580.W0003	Steel	16	63	M 5	16.4	16	18.5	13	3.0	0.75	60
18580.W0001	Steel	16	63	M 6	16.4	16	18.5	13	3.0	0.75	58
18580.W0002	Steel	20	82	M 8	19.5	20	22.5	15	3.7	1.00	116
18580.W0203	Stainless	16	63	M 5	16.4	16	18.5	13	3.0	0.75	60
18580.W0201	Stainless	16	63	M 6	16.4	16	18.5	13	3.0	0.75	58
18580.W0202	Stainless	20	82	M 8	19.5	20	22.5	15	3.7	1.00	116





18580.2



**Material**

Handle: zinc die-cast, black plastic coated.  
Threaded part, inner parts, adjusting nut: stainless steel (AISI 303, 1.4305).  
Bearing washer: reinforced glass, thermo-

plastic.

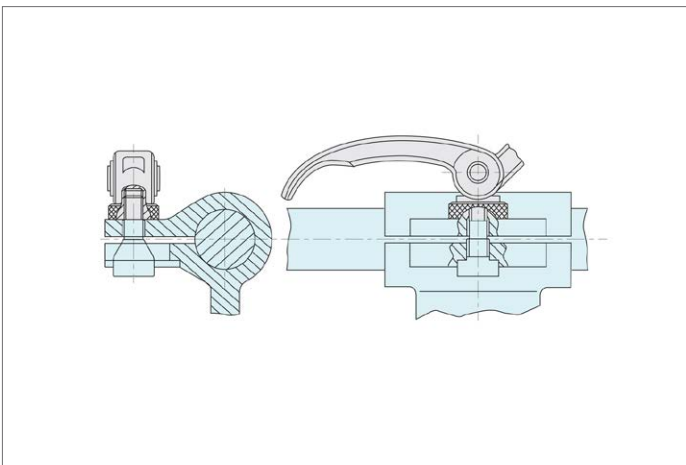
**Technical Notes**

Enables quick and easy clamping of work-pieces.

Adjustable type enables repositioning of lever to avoid obstruction of the work-piece.

Withstands temperatures of up to 80° C.

Order No.	Material	w <sub>1</sub>	l <sub>1</sub>	d <sub>1</sub>	h <sub>1</sub> max.	d <sub>2</sub>	d <sub>3</sub>	Range of adj. h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub> min.	Clamping stroke s <sub>1</sub>	Weight g
18580.W0302	Stainless	20	82	M 8	19.5	20	25	2.5	15	3.7	1.00	130
18580.W0303	Stainless	16	63	M 5	16.4	16	19	1.5	13	3.0	0.75	65
18580.W0301	Stainless	16	63	M 6	16.4	16	19	1.5	13	3.0	0.75	64
18580.W0102	Steel	20	82	M 8	19.5	20	25	2.5	15	3.7	1.00	130
18580.W0103	Steel	16	63	M 5	16.4	16	19	1.5	13	3.0	0.75	65
18580.W0101	Steel	16	63	M 6	16.4	16	19	1.5	13	3.0	0.75	64

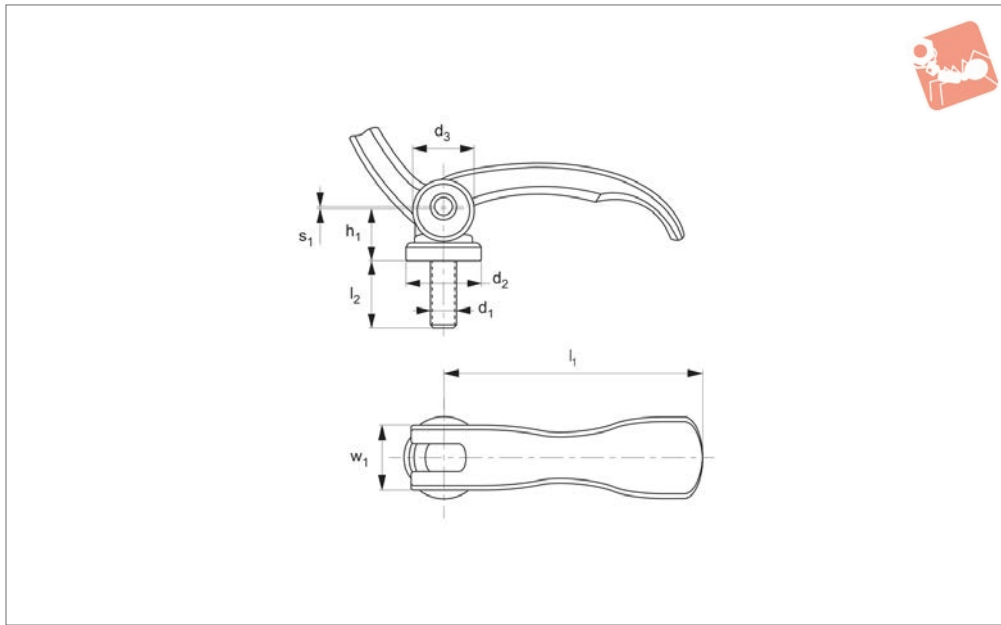






# Eccentric Levers - Male fixed

# Standard Manual Clam-



**18582.1**

STANDARD MANUAL CLAMPING

### Material

Handle: zinc die-cast, black plastic coated.  
Grub screw, inner parts, adjusting nut: steel, galvanised, or stainless steel 1.4305.

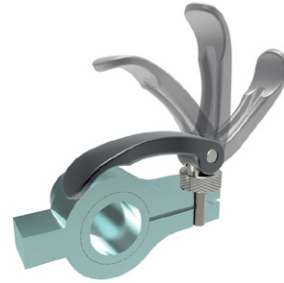
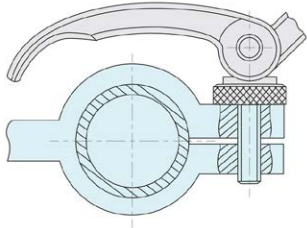
Bearing washer: Thermoplastic (POM), glass-reinforced.

pieces. Withstands temperatures of up to 80° C.

### Technical Notes

Enables quick and easy clamping of work-

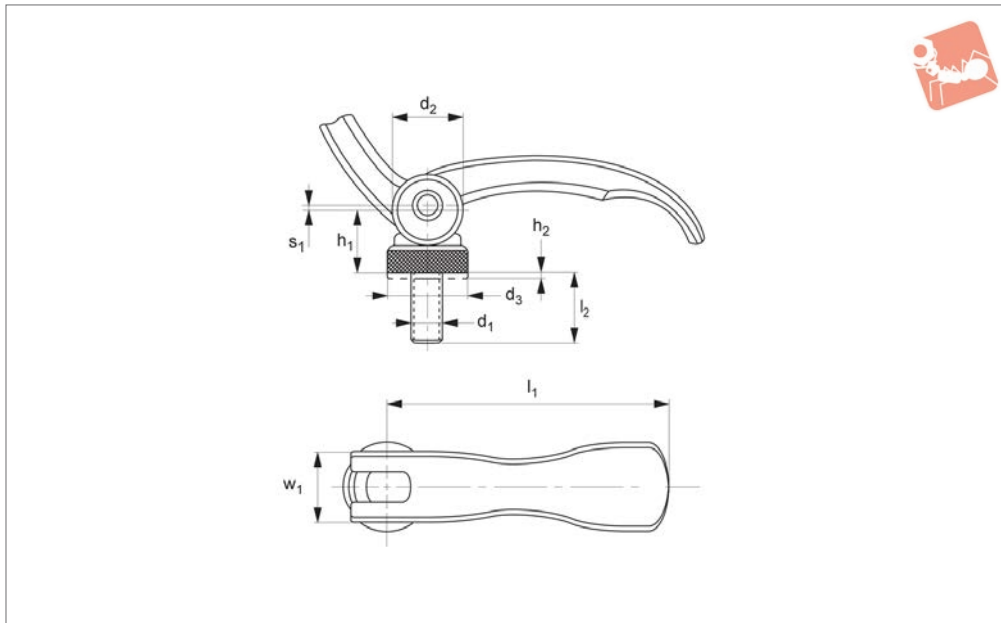
Order No.	Material	w <sub>1</sub>	l <sub>1</sub>	d <sub>1</sub>	h <sub>1</sub> max.	d <sub>2</sub>	d <sub>3</sub>	l <sub>2</sub> max.	Clamping stroke s <sub>1</sub>	Weight g
18582.W0009	Steel	16	63	M 6	16.4	16	18.5	16	0.75	63
18582.W0012	Steel	16	63	M 6	16.4	16	18.5	30	0.75	66
18582.W0014	Steel	16	63	M 6	16.4	16	18.5	40	0.75	68
18582.W0016	Steel	16	63	M 6	16.4	16	18.5	50	0.75	68
18582.W0019	Steel	20	82	M 8	19.5	20	22.5	20	1.00	129
18582.W0020	Steel	20	82	M 8	19.5	20	22.5	25	1.00	130
18582.W0022	Steel	20	82	M 8	19.5	20	22.5	35	1.00	133
18582.W0023	Steel	20	82	M 8	19.5	20	22.5	40	1.00	135
18582.W0030	Steel	16	63	M 5	16.4	16	18.5	16	0.75	62
18582.W0031	Steel	16	63	M 5	16.4	16	18.5	20	0.75	63
18582.W0032	Steel	16	63	M 5	16.4	16	18.5	25	0.75	64
18582.W0033	Steel	16	63	M 5	16.4	16	18.5	30	0.75	65
18582.W0034	Steel	16	63	M 5	16.4	16	18.5	35	0.75	65
18582.W0035	Steel	16	63	M 5	16.4	16	18.5	40	0.75	66
18582.W0036	Steel	16	63	M 5	16.4	16	18.5	50	0.75	67
18582.W0209	Stainless	16	63	M 6	16.4	16	18.5	16	0.75	63
18582.W0212	Stainless	16	63	M 6	16.4	16	18.5	30	0.75	66
18582.W0214	Stainless	16	63	M 6	16.4	16	18.5	40	0.75	68
18582.W0216	Stainless	16	63	M 6	16.4	16	18.5	50	0.75	68
18582.W0219	Stainless	20	82	M 8	19.5	20	22.5	20	1.00	129
18582.W0220	Stainless	20	82	M 8	19.5	20	22.5	25	1.00	130
18582.W0222	Stainless	20	82	M 8	19.5	20	22.5	35	1.00	133
18582.W0223	Stainless	20	82	M 8	19.5	20	22.5	40	1.00	135
18582.W0230	Stainless	16	63	M 5	16.4	16	18.5	16	0.75	62
18582.W0231	Stainless	16	63	M 5	16.4	16	18.5	20	0.75	63
18582.W0232	Stainless	16	63	M 5	16.4	16	18.5	25	0.75	64
18582.W0233	Stainless	16	63	M 5	16.4	16	18.5	30	0.75	65
18582.W0234	Stainless	16	63	M 5	16.4	16	18.5	35	0.75	65
18582.W0235	Stainless	16	63	M 5	16.4	16	18.5	40	0.75	66
18582.W0236	Stainless	16	63	M 5	16.4	16	18.5	50	0.75	67





# Eccentric Levers - Male adjustable

# Standard Manual Clam-



**18582.2**

STANDARD MANUAL CLAMPING

### Material

Handle: zinc die-cast, black plastic coated.  
Grub screw, inner parts, adjusting nut: steel, zinc plated or stainless steel (AISI 303, 1.4305).

Bearing washer: Thermoplastic (POM), glass-reinforced.

### Technical Notes

Enables quick and easy clamping of work-

pieces. Adjustable type enables re-positioning of lever to avoid obstruction of the workpiece.

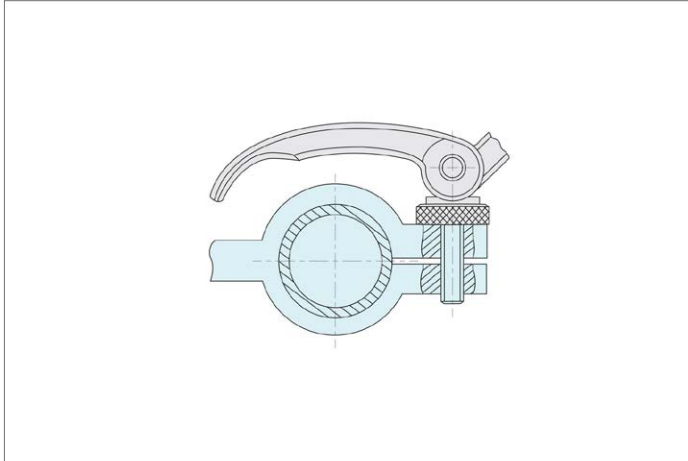
Withstands temperatures of up to 80° C.

Order No.	Material	w <sub>1</sub>	l <sub>1</sub>	d <sub>1</sub>	h <sub>1</sub> max.	d <sub>2</sub>	d <sub>3</sub>	h <sub>2</sub> range of adj.	l <sub>2</sub> max.	Type	Clamping stroke s <sub>1</sub>	Weight g
18582.W0130	Steel	16	63	M 5	16.4	16	19	1.5	16	Adjustable	0.75	68
18582.W0131	Steel	16	63	M 5	16.4	16	19	1.5	20	Adjustable	0.75	69
18582.W0132	Steel	16	63	M 5	16.4	16	19	1.5	25	Adjustable	0.75	70
18582.W0133	Steel	16	63	M 5	16.4	16	19	1.5	30	Adjustable	0.75	71
18582.W0134	Steel	16	63	M 5	16.4	16	19	1.5	35	Adjustable	0.75	71
18582.W0135	Steel	16	63	M 5	16.4	16	19	1.5	40	Adjustable	0.75	72
18582.W0136	Steel	16	63	M 5	16.4	16	19	1.5	50	Adjustable	0.75	73
18582.W0109	Steel	16	63	M 6	16.4	16	19	1.5	16	Adjustable	0.75	69
18582.W0110	Steel	16	63	M 6	16.4	16	19	1.5	20	Adjustable	0.75	69
18582.W0111	Steel	16	63	M 6	16.4	16	19	1.5	25	Adjustable	0.75	71
18582.W0112	Steel	16	63	M 6	16.4	16	19	1.5	30	Adjustable	0.75	72
18582.W0113	Steel	16	63	M 6	16.4	16	19	1.5	35	Adjustable	0.75	73
18582.W0114	Steel	16	63	M 6	16.4	16	19	1.5	40	Adjustable	0.75	74
18582.W0116	Steel	16	63	M 6	16.4	16	19	1.5	50	Adjustable	0.75	76
18582.W0120	Steel	20	82	M 8	19.5	20	25	2.5	25	Adjustable	1.00	142
18582.W0121	Steel	20	82	M 8	19.5	20	25	2.5	30	Adjustable	1.00	144
18582.W0122	Steel	20	82	M 8	19.5	20	25	2.5	35	Adjustable	1.00	146
18582.W0125	Steel	20	82	M 8	19.5	20	25	2.5	50	Adjustable	1.00	152
18582.W0127	Steel	20	82	M 8	19.5	20	25	2.5	60	Adjustable	1.00	156
18582.W0330	Stainless	16	63	M 5	16.4	16	19	1.5	16	Adjustable	0.75	68
18582.W0331	Stainless	16	63	M 5	16.4	16	19	1.5	20	Adjustable	0.75	69
18582.W0332	Stainless	16	63	M 5	16.4	16	19	1.5	25	Adjustable	0.75	70
18582.W0333	Stainless	16	63	M 5	16.4	16	19	1.5	30	Adjustable	0.75	71
18582.W0334	Stainless	16	63	M 5	16.4	16	19	1.5	35	Adjustable	0.75	71
18582.W0335	Stainless	16	63	M 5	16.4	16	19	1.5	40	Adjustable	0.75	72
18582.W0336	Stainless	16	63	M 5	16.4	16	19	1.5	50	Adjustable	0.75	73
18582.W0309	Stainless	16	63	M 6	16.4	16	19	1.5	16	Adjustable	0.75	69
18582.W0310	Stainless	16	63	M 6	16.4	16	19	1.5	20	Adjustable	0.75	69
18582.W0311	Stainless	16	63	M 6	16.4	16	19	1.5	25	Adjustable	0.75	71
18582.W0312	Stainless	16	63	M 6	16.4	16	19	1.5	30	Adjustable	0.75	72
18582.W0313	Stainless	16	63	M 6	16.4	16	19	1.5	35	Adjustable	0.75	73
18582.W0314	Stainless	16	63	M 6	16.4	16	19	1.5	40	Adjustable	0.75	74
18582.W0316	Stainless	16	63	M 6	16.4	16	19	1.5	50	Adjustable	0.75	76



Order No.	Material	w <sub>1</sub>	l <sub>1</sub>	d <sub>1</sub>	h <sub>1</sub> max.	d <sub>2</sub>	d <sub>3</sub>	h <sub>2</sub> range of adj.	l <sub>2</sub> max.	Type	Clamping stroke s <sub>1</sub>	Weight g
<b>18582.W0320</b>	Stainless	20	82	M 8	19.5	20	25	2.5	25	Adjustable	1.00	142
<b>18582.W0321</b>	Stainless	20	82	M 8	19.5	20	25	2.5	30	Adjustable	1.00	144
<b>18582.W0322</b>	Stainless	20	82	M 8	19.5	20	25	2.5	35	Adjustable	1.00	146
<b>18582.W0325</b>	Stainless	20	82	M 8	19.5	20	25	2.5	50	Adjustable	1.00	152
<b>18582.W0327</b>	Stainless	20	82	M 8	19.5	20	25	2.5	60	Adjustable	1.00	156

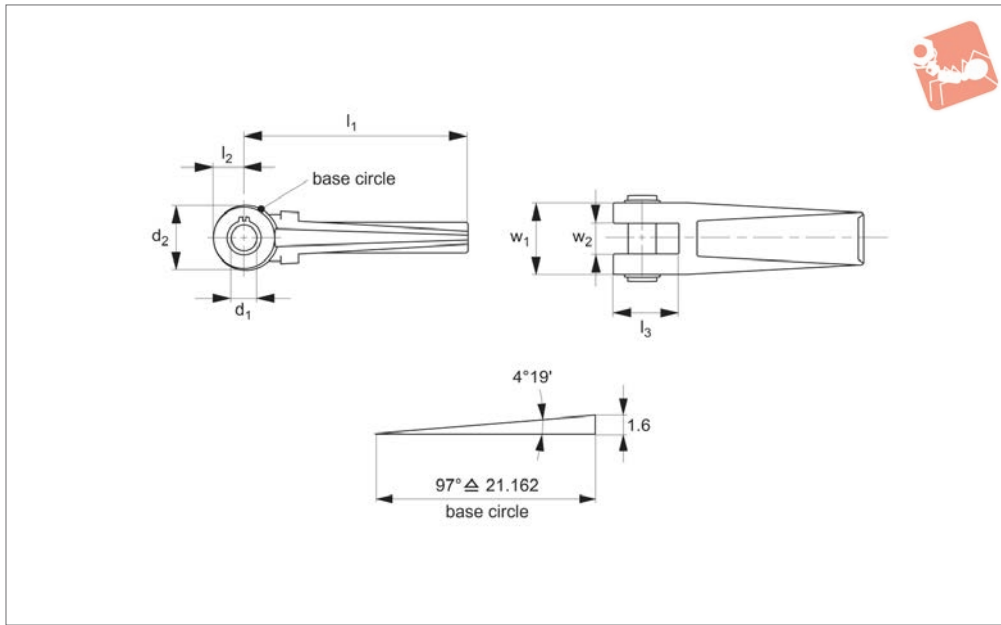
STANDARD MANUAL CLAMPING





# Eccentric Levers - Double Surface with fulcrum pin 18640

Standard  
Manual Clam-



**18600**

STANDARD MANUAL CLAMPING

### Material

Lever: steel, alloyed, case-hardened and blackened.  
Fulcrum pin: steel, case-hardened and

ground. Complete with circlips.

### Technical Notes

Eccentric clamping cams on both sides.

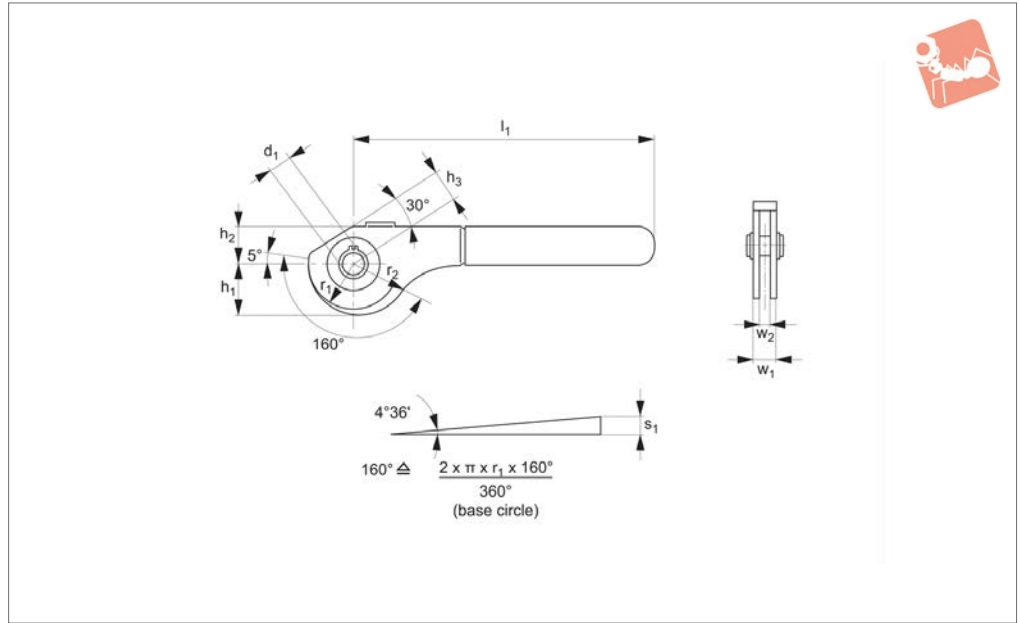
### Tips

Can be used with swing bolts.

Order No.	w <sub>1</sub>	w <sub>2</sub>	l <sub>1</sub>	d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight g
18600.W0012	32	14.1	100	12	28	12.5	28.5	334



## 18620



### Material

Eccentric: steel (ST52-3, 1.0570), zinc phosphated or stainless steel, (AISI 304, 1.4301).

Circlip: stainless steel (AISI 301, 1.4310).

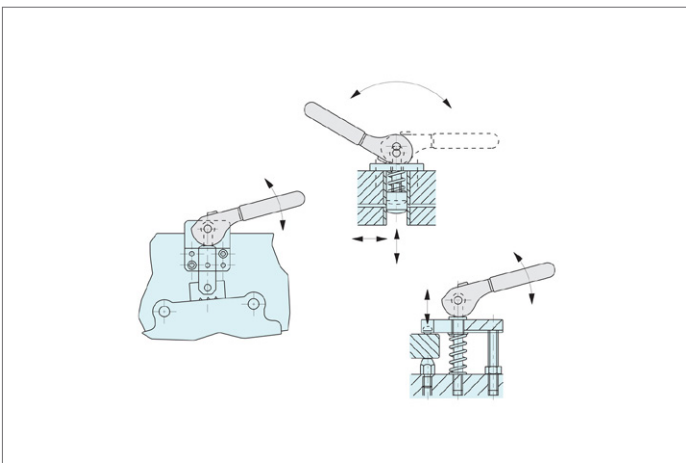
Fulcrum pin: stainless steel (AISI 420, 1.4021), heat-treated.

Grip: red PVC, max. temperature 60°C.

### Technical Notes

Supplied with fulcrum pin no. 18640.

Order No.	w <sub>1</sub>	w <sub>2</sub>	l <sub>1</sub>	d <sub>1</sub> tol. f8	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	r <sub>1</sub>	r <sub>2</sub>	Eccentric stroke s <sub>1</sub>	Total stroke r <sub>2</sub> - h <sub>3</sub>	Type	Weight g
<b>18620.W0408</b>	13	9	114	8	19.54	14	12	17.2	21.07	3.87	9.07	Steel	93
<b>18620.W0410</b>	17	12	138	10	24.54	17	15	21.6	26.45	4.85	11.45	Steel	178
<b>18620.W0412</b>	20	14	157	12	31.81	21	18	28.0	34.29	6.29	16.29	Steel	290
<b>18620.W0508</b>	13	9	114	8	19.54	14	12	17.2	21.07	3.87	9.07	Stainless Steel	94
<b>18620.W0510</b>	17	12	138	10	24.54	17	15	21.6	26.45	4.85	11.45	Stainless Steel	175
<b>18620.W0512</b>	20	14	157	12	31.81	21	18	28.0	34.29	6.29	16.29	Stainless Steel	288

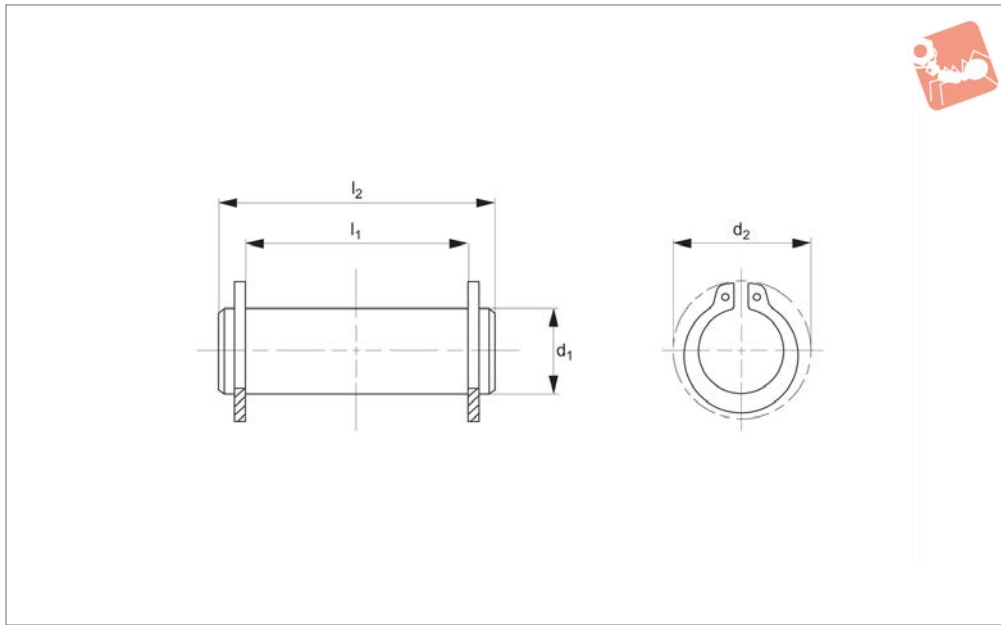




# Fulcrum Pins - Stainless Steel

for eccentric levers 18620

# Standard Manual Clam-



**18640**

STANDARD MANUAL CLAMPING

### Material

Pin: stainless steel (AISI 420, 1.4021), heat treated.

Circlip: stainless steel (AISI 301, 1.4310) -

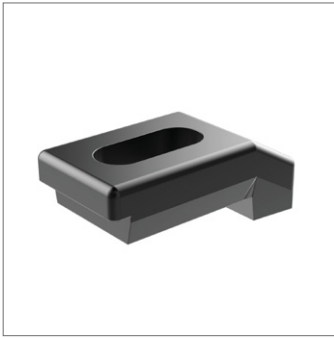
supplied.

### Technical Notes

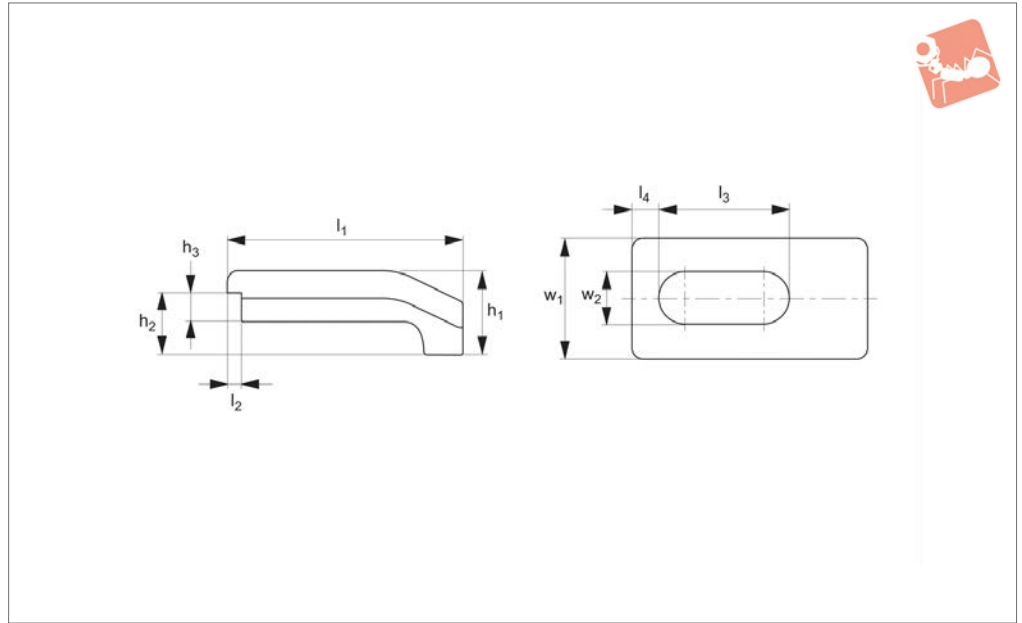
Suitable for eccentric levers no.18620 and

similar applications.

Order No.	$l_1$ -0.5	$d_1$ tol. f8	$d_2$	$l_2$	Weight g
18640.W0082	14	8	14.7	18	7.7
18640.W0085	21	8	14.7	27	10.0
18640.W0102	18	10	17.0	24	14.0
18640.W0105	29	10	17.0	35	21.0
18640.W0122	21	12	19.0	27	23.0
18640.W0125	31	12	19.0	37	34.0



10290



**Material**

Steel, heat-treated and blackened.

**Technical Notes**

Supplied in pairs.

**Tips**

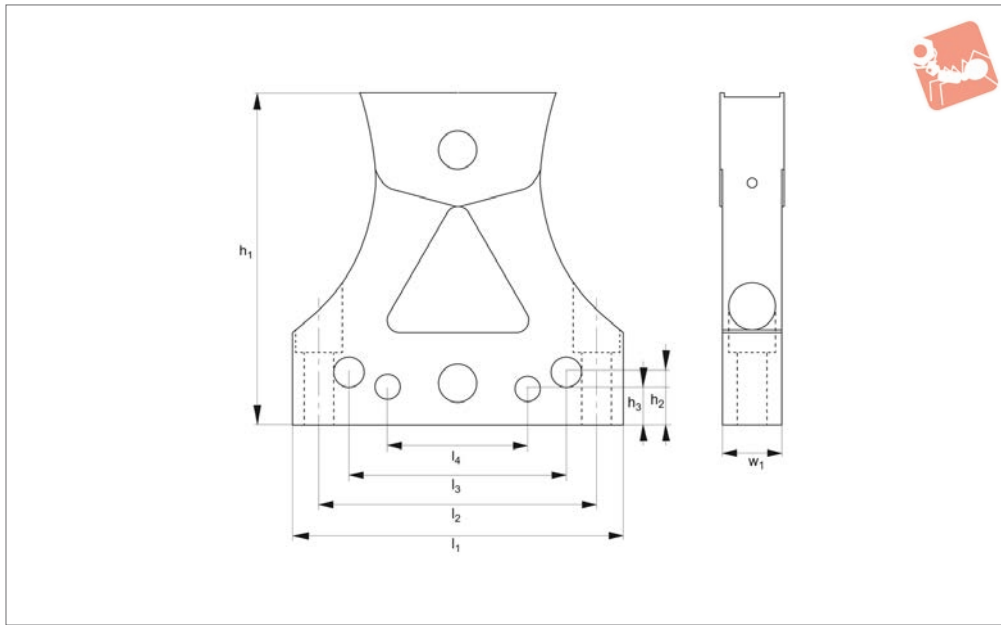
Used with:  
21000 T-slot bolt, 21120 T-stud, 24400 collar nut, 25000 plain washer.

Order No.	For bolt	For vice jaw width	$h_1$	$h_2$	$h_3 \times l_2$	$l_1$	$l_3$	$l_4$	$w_1$	$w_2$	Weight g
10290.W0015	M12- M16	100	22.5	15	10x6,5	78	40	10.5	40	16.5	660
10290.W0020	M12- M16	125/160	27.5	20	10x6,5	78	40	10.5	40	16.5	705





# Vice Tower Set for 5 side machining on vices



**12464**

STANDARD MANUAL CLAMPING

### Technical Notes

Vice towers mount directly to your 4" or 6" vice to elevate your workpiece into the 5-axis envelope and allow machining on 5 sides of the workpiece. Incorporating talon, versagrip and pitbull clamps the system is exceptionally versatile in securing round or square stock material. As well as being suited for mounting to

your vice, the vice towers can also be mounted to your T-slot table.

### Tips

Low profile clamping reduces material costs and eliminates the need for time-consuming workpiece preparation.

### Important Notes

Full set contents:

- 2 x vice towers
- 4 x talon grips 12034.W0075
- 4 x versagrips 12036.W0175
- 1 x talon stop 12035.W0220
- 2 x pitbull clamp 12031.W0060
- 2 x each support bolts M12x65/100/200
- 4 x mounting bolts M12x55
- 4 x T-nuts M12x16

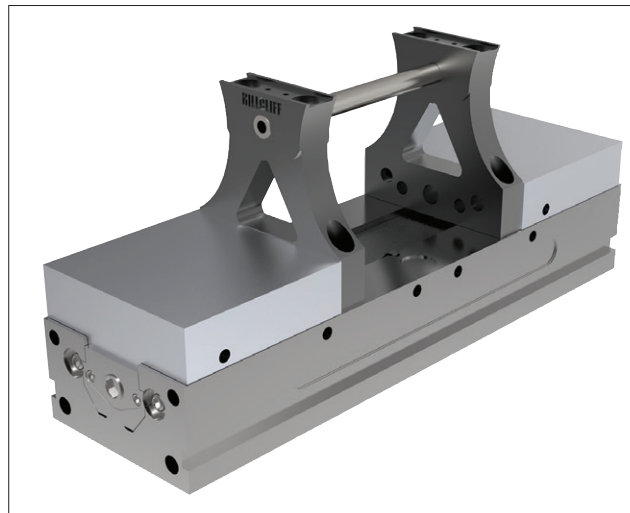
Order No.	Type	Suitable vice size	Mounting bolts	$h_1$	$h_2$	$h_3$	$l_1$	$l_2$	$l_3$	$l_4$	$w_1$
<b>12464.W0066</b>	Set	4" or 6"	M12x55	150	23.9	17.5	150	126.0	98.6	63.5	26.9





### Vice Application

- Mount jaws to either 4 or 6 inch vice with logo facing outwards, keeping the mounting bolts loose.
- Determine which grippers will be used, install and hand-tighten the grippers. If VersaGrips are being used to grip round stock, place in outboard bores. Do not tighten screws at this point. Tighten vice lightly onto workpiece allowing jaws to centre themselves, adjust VersaGrips, and tighten gripper screws and mounting bolts for both jaws.
- Loosen vice jaw for load/unload clearance of workpiece. Install support/pivot bolt.
- Setup is complete. Tighten support bolt allowing grippers to penetrate 0.25-1.52mm on material < 40 HRC.
- For additional holding force, loosen vice handle which will eliminate any jaw lift that may have occurred and depending on amount of torque can increase pressure to over 4000 kg.



### T-slot and Grid Table Application

- Using vertical counterbores on outboard edges of jaws, install mounting bolts into t-nuts or grid plate and adjust accordingly. Do not tighten at this time.
- Select appropriate support bolts and install in upper horizontal counterbore and thread into opposite tower.
- Place workpiece between jaws and lightly tighten upper support bolt until all grippers contact workpiece. Tighten vertical mounting bolts.
- Loosen upper support bolt one full turn or until adequate workpiece clearance is obtained.
- Upper support bolt is now the “drive bolt” for securing and releasing workpiece.
- Any size T-nuts can be utilised. We provide 16mm T-nuts.



# Clamping Sets with low height clamps 12200

# Standard Manual Clam-



**19100**

STANDARD MANUAL CLAMPING

### Material

Clamp sets are designed for use on T-slot machines, and contain all the necessary

parts to quickly clamp tools, fixtures or workpieces. All parts are interchangeable and are made of heat treated steel to DIN

standard (class 8 or class 10). The clamping set comes in a wooden box which has a removable lid.

Order No.	Thread & Slot size	Box l x w x h	Step blocks 14000	T-Bolts 21000	Step clamps 10020	Studs 21100	Weight kg
19100.W0010	M10 x 10	355x270x47	.W0001 x 4pcs .W0002 x 4pcs .W0003 x 2pcs	40mm .W0101 x 2pcs 63mm .W0102 x 4pcs 100mm .W0103 x 4pcs	.W0010 x 4pcs	80mm .W0102 x 4pcs	9.2
19100.W0012	M12 x 12	460x330x50	.W0002 x 4pcs .W0003 x 4pcs	50mm .W0121 x 2pcs 80mm .W0123 x 4pcs 125mm .W0124 x 4pcs	.W0014 x 4pcs	100mm .W0124 x 4pcs	14.3
19100.W0014	M12 x 14	460x330x50	.W0002 x 4pcs .W0003 x 4pcs	50mm .W0141 x 2pcs 80mm .W0143 x 4pcs 125mm .W0144 x 4pcs	.W0014 x 4pcs	100mm .W0124 x 4pcs	14.6
19100.W0015	M14 x 16	510x415x50	.W0002 x 4pcs .W0003 x 4pcs	63mm .W0161 x 2pcs 100mm .W0162 x 4pcs 160mm .W0163 x 4pcs	.W0018 x 4pcs	125mm .W0147 x 4pcs	18.5
19100.W0016	M16 x 16	510x415x50	.W0002 x 4pcs .W0003 x 4pcs	63mm .W0165 x 2pcs 100mm .W0167 x 4pcs 160mm .W0168 x 4pcs	.W0018 x 4pcs	125mm .W0164 x 4pcs	21.5
19100.W0018	M16 x 18	510x415x50	.W0002 x 4pcs .W0003 x 4pcs	63mm .W0181 x 2pcs 100mm .W0183 x 4pcs 160mm .W0184 x 4pcs	.W0018 x 4pcs	125mm .W0164 x 4pcs	21500

Order No.	Fixture nuts 24300	Extension nuts 24600	Dished washers 25700	Low height clamp 12200	T-Slot scrapper 26300	Spanner	Thread paste
19100.W0010	.W0110 x 6pcs	.W0110 x 4pcs	.W0110 x 6pcs	.W0012 x 4pcs	-	16 x 1pc	1pc



Order No.	Fixture nuts 24300	Extension nuts 24600	Dished washers 25700	Low height clamp 12200	T-Slot scrapper 26300	Spanner	Thread paste
<b>19100.W0012</b>	.W0112 x 6pcs	.W0112 x 4pcs	.W0112 x 6pcs	.W0012 x 4pcs	-	18 x 1pc	1pc
<b>19100.W0014</b>	.W0112 x 6pcs	.W0112 x 4pcs	.W0112 x 6pcs	.W0014 x 4pcs	.W0120 x 1pc	18 x 1pc	1pc
<b>19100.W0015</b>	.W0114 x 6pcs	.W0114 x 4pcs	.W0114 x 6pcs	.W0016 x 1pc	.W0120 x 1pc	22 x 1pc	1pc
<b>19100.W0016</b>	.W0116 x 6pcs	.W0116 x 4pcs	.W0116 x 6pcs	.W0016 x 1pc	.W0120 x 1pc	24 x 1pc	1pc
<b>19100.W0018</b>	.W0116 x 6pcs	.W0116 x 4pcs	.W0116 x 6pcs	.W0018 x 1pc	.W0120 x 1pc	24 x 1pc	1pc



# Clamping Sets with stop clamps 10020

## Standard Manual Clam-



### 19200

STANDARD MANUAL CLAMPING

#### Technical Notes

High quality clamping set for machines. Comprising step clamps no. 10200 and

step blocks no. 14000. High quality T-bolts and studs (class 8 or class 10). With spring clamp supports.

Order No.	Thread & Slot size	Box l x w x h	Step blocks 14000	T-Bolts 21000	Step clamps 10020	Studs 21100	Weight kg
19200.W0010	M10 x 10	355x225x47	.W0001 x 4pcs .W0002 x 4pcs .W0003 x 2pcs	63mm .W0102 x 4pcs 100mm .W0103 x 4pcs	.W0011 x 4pcs	80mm .W0083 x 4pcs	6.5
19200.W0012	M12 x 12	359x333x52	.W0002 x 4pcs .W0003 x 4pcs	80mm .W0123 x 4pcs 125mm .W0124 x 4pcs	.W0014 x 4pcs	100mm .W0124 x 4pcs	11.0
19200.W0014	M12 x 14	359x333x52	.W0002 x 4pcs .W0003 x 4pcs	80mm .W0123 x 4pcs 125mm .W0124 x 4pcs	.W0014 x 4pcs	100mm .W0124 x 4pcs	11.1
19200.W0016	M16 x 16	390x415x55	.W0002 x 4pcs .W0003 x 4pcs	100mm .W0167 x 4pcs 160mm .W0168 x 4pcs	.W0018 x 4pcs	125mm .W0164 x 4pcs	16.5
19200.W0018	M16 x 18	390x415x55	.W0002 x 4pcs .W0003 x 4pcs	100mm .W0183 x 4pcs 160mm .W0184 x 4pcs	.W0018 x 4pcs	125mm .W0164 x 4pcs	16.5
19200.W0020	M20 x 20	480x528x60	.W0002 x 4pcs .W0003 x 4pcs	125mm .W0203 x 4pcs 200mm .W0205 x 4pcs	.W0022 x 4pcs	125mm .W0202 x 4pcs	24.5
19200.W0022	M20 x 22	480x528x60	.W0002 x 4pcs .W0003 x 4pcs	125mm .W0223 x 4pcs 200mm .W0225 x 4pcs	.W0022 x 4pcs	125mm .W0202 x 4pcs	24.5
19200.W0024	M20 x 24	480x528x60	.W0002 x 4pcs .W0003 x 4pcs	-	.W0022 x 4pcs	125mm .W0202 x 8pcs 200mm .W0204 x 4pcs	24.8



Order No.	T-nuts 24000	Fixture nuts 24300	Extension nuts 24600	Dished washers 25700	T-Slot scrapper 26300	Clamp Support 26000	Spanner	Thread paste
19200.W0010	-	.W0110 x 6pcs	.W0110 x 4pcs	.W0110 x 6pcs	-	.W0101 x 4pcs	16 x 1pc	1pc
19200.W0012	-	.W0112 x 4pcs	.W0112 x 4pcs	.W0112 x 6pcs	-	.W0102 x 4pcs	18 x 1pc	1pc
19200.W0014	-	.W0112 x 4pcs	.W0112 x 4pcs	.W0112 x 6pcs	.W0120 x 1pc	.W0102 x 4pcs	18 x 1pc	1pc
19200.W0016	-	.W0116 x 4pcs	.W0116 x 4pcs	.W0116 x 6pcs	.W0120 x 1pc	.W0103 x 4pcs	24 x 1pc	1pc
19200.W0018	-	.W0116 x 4pcs	.W0116 x 4pcs	.W0116 x 6pcs	.W0120 x 1pc	.W0103 x 4pcs	24 x 1pc	1pc
19200.W0020	-	.W0120 x 6pcs	.W0120 x 4pcs	.W0120 x 6pcs	.W0120 x 1pc	.W0104 x 4pcs	30 x 1pc	1pc
19200.W0022	-	.W0120 x 6pcs	.W0120 x 4pcs	.W0120 x 6pcs	.W0132 x 1pc	.W0104 x 4pcs	30 x 1pc	1pc
19200.W0024	.W0242 x 8pcs	.W0120 x 6pcs	.W0120 x 4pcs	.W0120 x 6pcs	.W0132 x 1pc	.W0104 x 4pcs	30 x 1pc	1pc



## 19240

STANDARD MANUAL CLAMPING

### Material

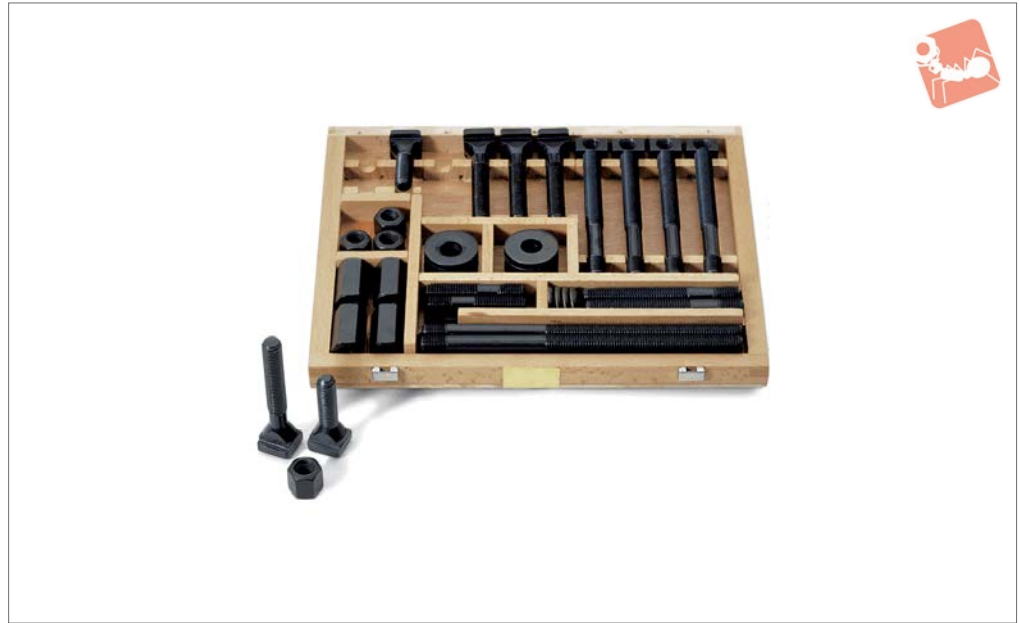
All parts are produced from tempered steel according to DIN or factory standards,

screw parts to strength class 8 or 10. Ideal for tool making, manufacturing and training facilities.

Order No.	Thread & Slot size	Step blocks <b>14000</b>	T-Bolts <b>21000</b>	Step clamps <b>10020</b>	Weight kg
<b>19240.W0014</b>	M12 x 14	.W0002 x 4pcs .W0003 x 4pcs	50mm .W0141 x 2pcs 80mm .W0143 x 4pcs 125mm .W0144 x 4pcs	.W0014 x 2pcs .W0015 x 2pcs	10.0
<b>19240.W0016</b>	M14 x 16	.W0002 x 4pcs .W0003 x 4pcs	63mm .W0161 x 2pcs 100mm .W0162 x 4pcs 160mm .W0163 x 4pcs	.W0014 x 2pcs .W0015 x 2pcs	11.1
<b>19240.W0018</b>	M16 x 18	.W0002 x 4pcs .W0003 x 4pcs	63mm .W0181 x 2pcs 80mm .W0182 x 4pcs 160mm .W0184 x 4pcs	.W0018 x 2pcs .W0019 x 2pcs	15.2
Order No.	Studs <b>21100</b>	Fixture nuts <b>24300</b>	Extension nuts <b>24600</b>	Dished washers <b>25700</b>	
<b>19240.W0014</b>	100mm .W0124 x 2pcs	.W0112 x 6pcs	.W0112 x 2pcs	.W0112 x 6pcs	
<b>19240.W0016</b>	100mm .W0142 x 2pcs 160mm .W0143 x 2pcs	.W0114 x 6pcs	.W0114 x 2pcs	.W0114 x 6pcs	
<b>19240.W0018</b>	125mm .W0164 x 4pcs 200mm .W0166 x 2pcs	.W0116 x 6pcs	.W0116 x 4pcs	.W0116 x 6pcs	



**29000**



### Technical Notes

Set no 29000.W0020 contains extra studs no. 21100 (2 x 80 mm, 4 x 125 mm) in

place of T-bolts no. 21000.

Order No.	Thread & Slot size	Box l x w x h	T-Bolts <b>21000</b>	Studs <b>21100</b>	Weight g
<b>29000.W0010</b>	M10x10	254x188x32	40mm .W0101 x 2pcs 63mm .W0102 x 4pcs 100mm.W0103 x 4pcs	50mm .W0101 x 4pcs 80mm .W0102 x 4pcs 200mm .W0106 x 4pcs	2000
<b>29000.W0012</b>	M12x12	276x234x36	50mm .W0101 x 4pcs 80mm .W0102 x 4pcs 200mm .W0106 x 4pcs	63mm .W0122 x 4pcs 100mm .W0124 x 4pcs 200mm .W0127 x 4pcs	3200
<b>29000.W0014</b>	M12x14	278x234x36	50mm .W0141 x 2pcs 80mm .W0143 x 4pcs	63mm .W0122 x 4pcs 100mm .W0124 x 4pcs 125mm .W0125 x 4pcs 200mm .W0127 x 4pcs	3500
<b>29000.W0016</b>	M14x16	317x239x44	63mm .W0161 x 2pcs 100mm .W0162 x 4pcs	63mm .W0141 x 4pcs 100mm .W0142 x 4pcs 160mm .W0143 x 4pcs 250mm .W0145 x 4pcs	5400
<b>29000.W0017</b>	M16x16	339x294x48	63mm .W0165 x 2pcs 100mm .W0167 x 4pcs 160mm .W0168 x 4pcs	80mm .W0162 x 4pcs 125mm .W0164 x 4pcs 250mm .W0167 x 4pcs	7400
<b>29000.W0018</b>	M16x18	339x294x48	63mm .W0181 x 2pcs 100mm .W0183 x 4pcs	80mm .W0162 x 4pcs 125mm .W0164 x 4pcs 160mm .W0165 x 4pcs 250mm .W0167 x 4pcs	7400
<b>29000.W0020</b>	M18x20	358x342x56	-	80mm .W0181 x 6pcs 125mm .W0182 x 8pcs 200mm .W0184 x 4pcs 315mm .W0186 x 4pcs	11000
<b>29000.W0022</b>	M20x22	358x342x56	80mm .W0201 x 2pcs 125mm .W0203 x 4pcs	80mm .W0201 x 4pcs 125mm .W0202 x 4pcs 200mm .W0204 x 4pcs 315mm .W0206 x 4pcs	13500
<b>29000.W0028</b>	M24x28	444x409x72	100mm .W0281 x 2pcs 160mm .W0283 x 4pcs	100mm .W0241 x 4pcs 160mm .W0243 x 4pcs 250mm .W0245 x 4pcs 400mm .W0247 x 4pcs	23600





# T-Bolt Set in wooden box



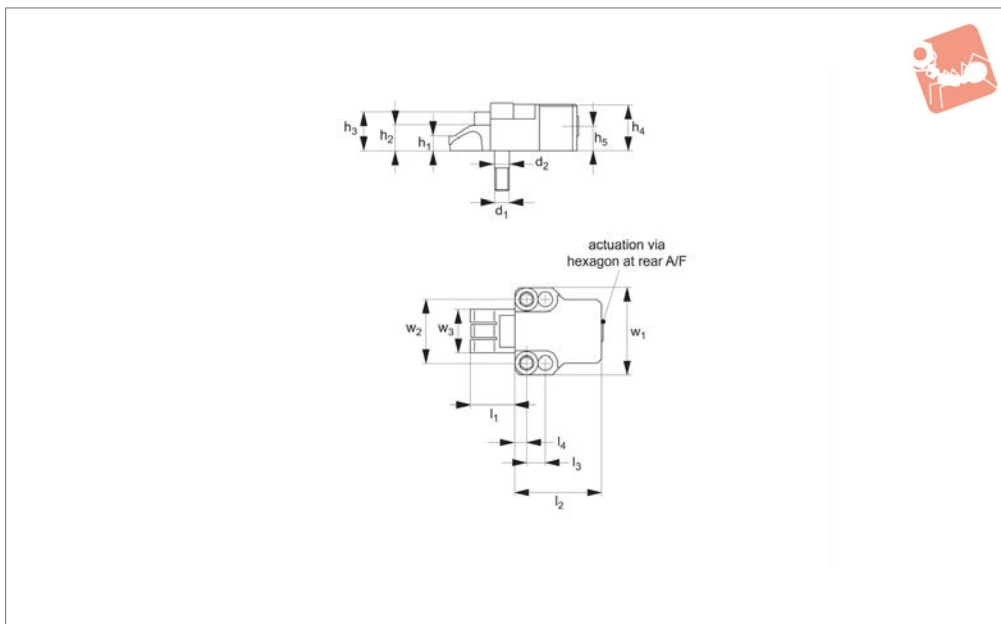
# Standard Manual Clam-

Order No.	T-nuts 24000	Fixture nuts 24330	Extension nuts 24600	Dished washers 25700	Spherical washer 25100	Plain washer 25000
29000.W0010	-	.W0110 x 4pcs	.W0110 x 4pcs	.W0110 x 4pcs	.W0110 x 4pcs	.W0110 x 4pcs
29000.W0012	-	.W0112 x 4pcs	.W0112 x 4pcs	.W0112 x 4pcs	.W0112 x 4pcs	.W0112 x 4pcs
29000.W0014	.W0143 x 4pcs	.W0112 x 4pcs	.W0112 x 4pcs	.W0112 x 4pcs	.W0112 x 4pcs	.W0112 x 4pcs
29000.W0016	.W0164 x 4pcs	.W0114 x 4pcs	.W0114 x 4pcs	.W0114 x 4pcs	.W0114 x 4pcs	.W0114 x 4pcs
29000.W0017	-	.W0116 x 4pcs	.W0116 x 4pcs	.W0116 x 4pcs	.W0116 x 4pcs	.W0116 x 4pcs
29000.W0018	.W0185 x 4pcs	.W0116 x 4pcs	.W0116 x 4pcs	.W0116 x 4pcs	.W0116 x 4pcs	.W0116 x 4pcs
29000.W0020	.W0202 x 10pcs	.W0118 x 4pcs	.W0118 x 4pcs	-	-	.W0118 x 10pcs
29000.W0022	.W0223 x 4pcs	.W0120 x 4pcs	.W0120 x 4pcs	.W0120 x 4pcs	.W0120 x 4pcs	.W0120 x 4pcs
29000.W0028	.W0284 x 4pcs	.W0124 x 4pcs	.W0124 x 4pcs	.W0124 x 4pcs	.W0124 x 4pcs	.W0124 x 4pcs

STANDARD MANUAL CLAMPING



### 11040



#### Material

Hardened steel, with spring steel clamping element.

#### Technical Notes

A low height, very powerful compact clamp. These clamps have a unique sideways and

downwards clamping action.

#### Tips

Provided with specially ground location bolts  $\varnothing 10,2 - M10$ , allowing for precise positioning. For mounting there are 2 tapped holes at  $44,00 \pm 0,005\text{mm}$  centres,  $M10$  with depth of 28mm, counterbore

10,2 (H6) with depth of 14mm.

#### Important Notes

When used in conjunction with fixed stop, part nos. 11041 or 11043, these clamps achieve a positive downforce on both faces of the workpiece - a unique feature.

Order No.	Clamping height $h_1$		Clamping stroke $l_1$		$d_1$	$d_2$ tol. h6	$h_2$	$h_3$	$h_4$	$h_5$	$l_2$
11040.W0025	10		18-34		M10	10.2	18	27	33	17	60
Order No.	$l_3$	$l_4$	$l_5$	$w_1$	$w_2$	$w_3$	A/F	Clamping torque Nm	Clamping force kN		
11040.W0025	13	8	18	60	44	30	8	50	22		



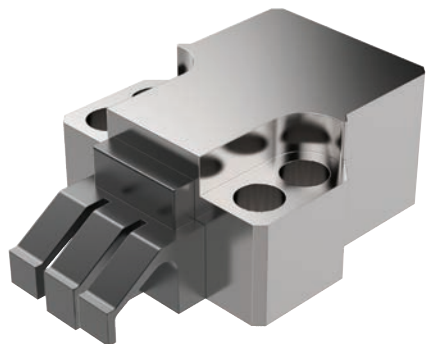
# Horizontal Clamping

up to 2.2 tons



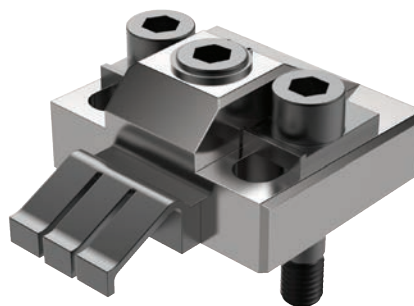
# Clamping & Height Setting

## Clamping Torque



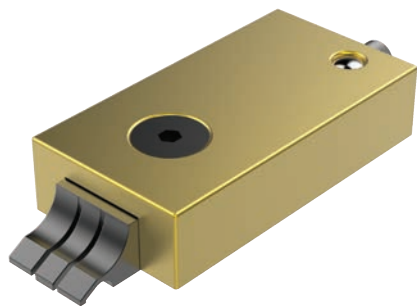
11040/CL2040

Clamping Torque N/m	Clamping Force N
50	23000
40	18000
30	12500
25	11500
20	9500



11070/CL2070

Clamping Torque N/m	Clamping Force N
60	16500
50	15000
40	12000
30	10000
25	8000
20	7000



11081/CL2081

Clamping Torque N/m	Clamping Force N
5	6600
4.5	5500
4	4900



10940/CL0030

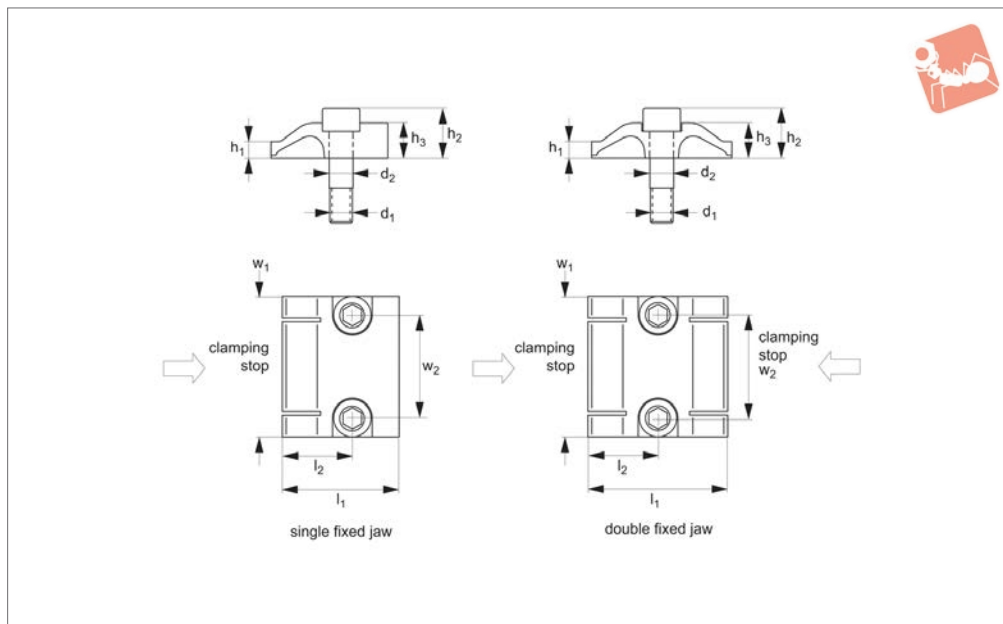
Clamping Torque N/m	Clamping Force N
8.5	4000
8	3800
7	3400
6	3000
5	2500
4	2000

HEAVY-DUTY SIDE CLAMPING

ov-W11040-A-T-W10940-A-T-horizontal-clamping-rnh - Updated - 13-10-2022



### 11041



#### Material

Spring steel.

#### Technical Notes

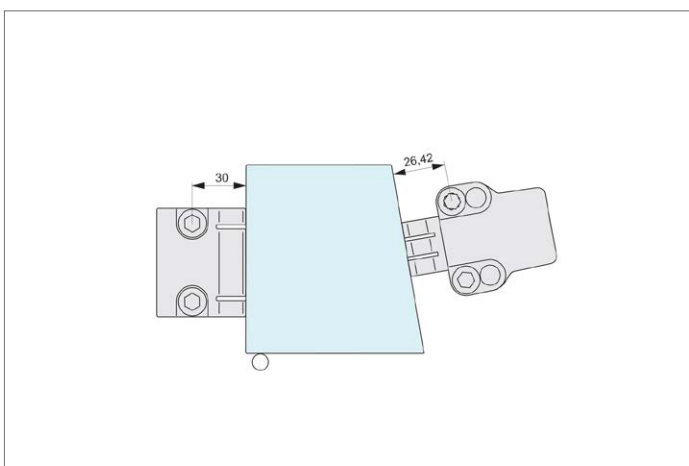
These stops have a unique sideways and downwards action.

#### Tips

Provided with specially ground location bolts  $\text{Ø}10,2 - \text{M}10$ , allowing for precise positioning. Precision of the screws also allows dimension  $l_2$  to be used as a useful

clamping datum. For mounting there are 2 tapped holes at  $44,00 \pm 0,005\text{mm}$  centres,  $\text{M}10$ , with depth of 28mm, counterbore  $10,2 (\text{H}6)$ , with depth of 14mm.

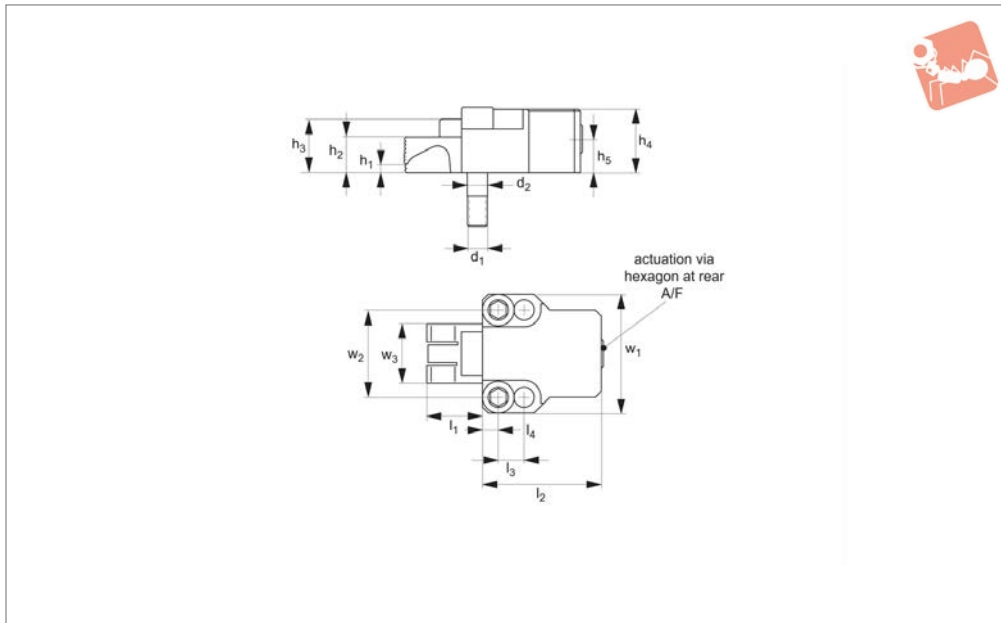
Order No.	Type	Clamping height $h_1$	$d_1$	$d_2$ tol. h6	$h_2$	$h_3$	$l_1$	$l_2$	$w_1$	$w_2$
11041.W0080	Single	7	M10	10.2	22	15	50	30	60	44
11041.W0082	Double	7	M10	10.2	22	15	60	30	60	44





## 2.2 Ton Clamp - Serrated Face movable jaw

## Heavy-Duty Side Clamping



# 11042

HEAVY-DUTY SIDE CLAMPING

### Material

Hardened steel, with spring steel clamping element.

### Technical Notes

A low height, very powerful compact clamp.

These clamps exert a sideways and down-

wards clamping action.

### Tips

Provided with specially ground location bolts  $\varnothing 10,2 - M10$ , allowing for precise positioning.

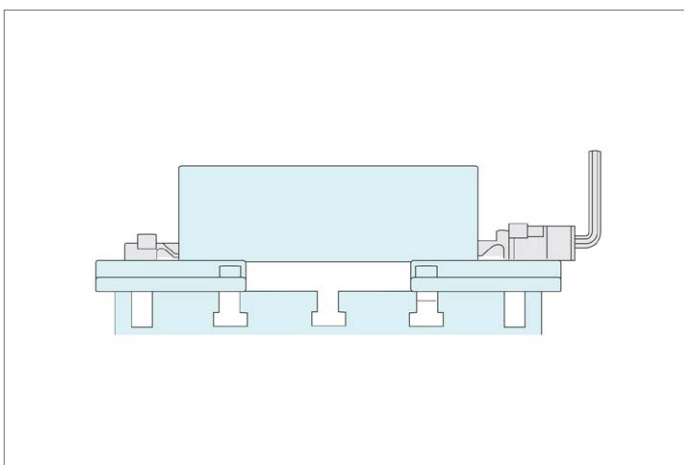
For mounting there are 2 tapped holes at  $44,00 \pm 0,005\text{mm}$  centres, M10 with depth

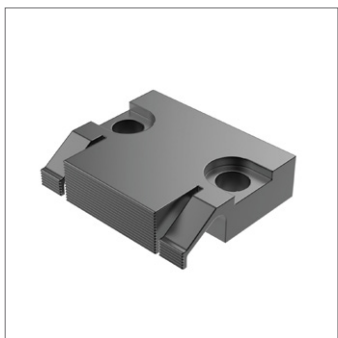
of 28mm, counterbore 10,2 (H6) with depth of 14mm.

### Important Notes

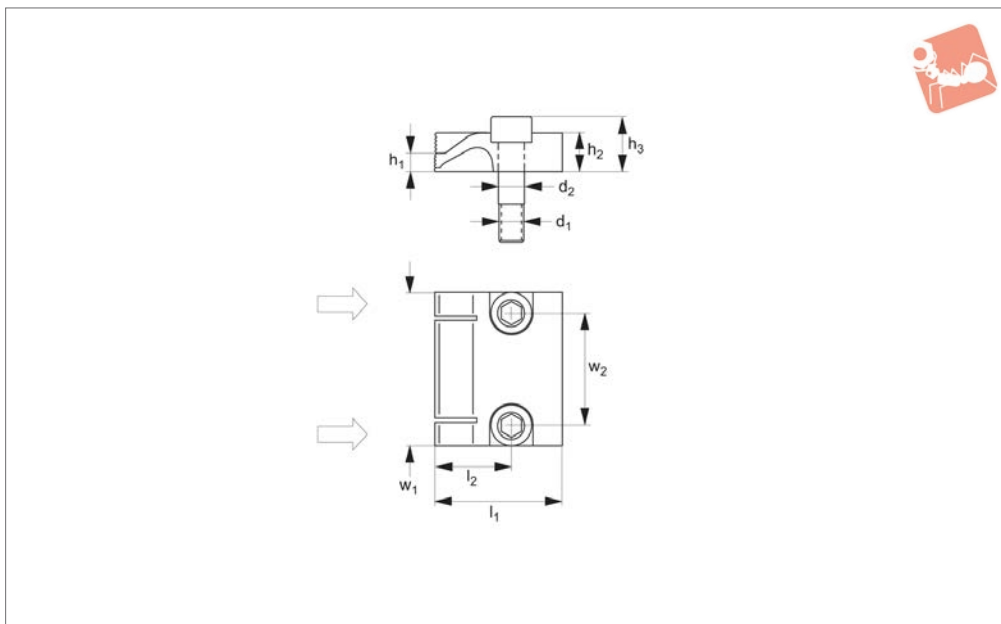
When used in conjunction with fixed stop (part nos. 11041 or 11043) these clamps achieve a positive downforce on both faces of the workpiece - a unique feature.

Order No.	Clamp height $h_2$	Clamp stroke $l_1$	$d_1$	$d_2$ tol. h6	$h_1$	$h_3$	$h_4$	$h_5$	$l_2$	$l_3$	$l_4$	$w_1$	$w_2$	$w_3$	A/F	Torque to Nm max.	Clamping force kN max.
11042.W0027	18	18-34	M10	10,2	10	27	33	17	60	13	8	60	44	30	8	50	22





### 11043



**Material**  
Spring steel.

**Technical Notes**  
These stops have a unique sideways and

downwards action.

**Tips**  
Provided with specially ground location bolts  $\varnothing 10,2 - M10$ , allowing for precise

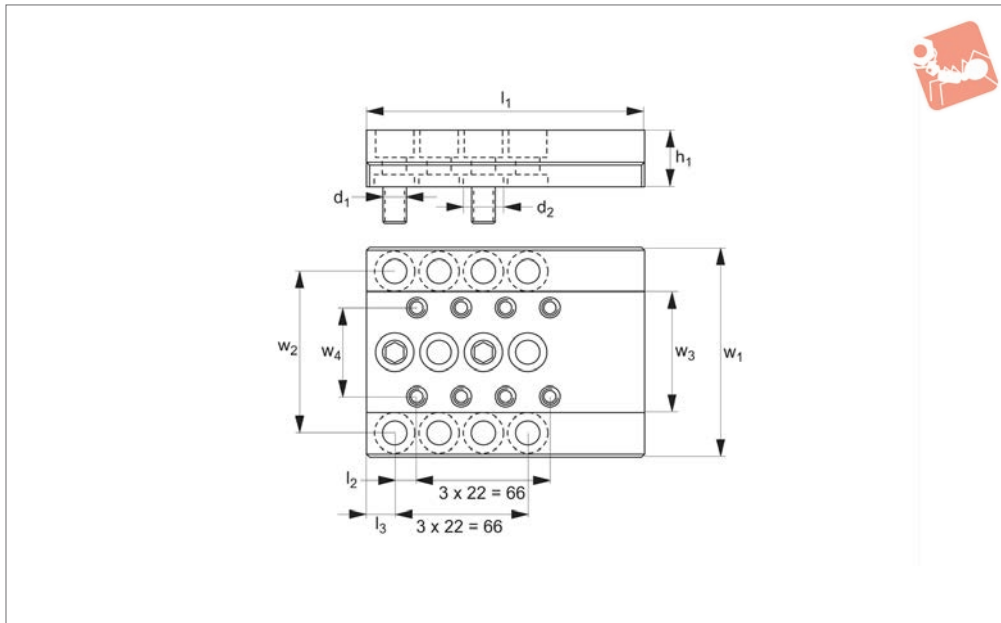
positioning. For mounting - 2 tapped holes at  $44,00 \pm 0,005\text{mm}$  centres, M10 with depth of 28mm, counterbore 10,2 (H6) with depth of 14mm.

Order No.	Type	Clamping height $h_1$	$d_1$	$d_2$ tol. h6	$h_2$	$h_3$	$l_1$	$l_2$	$w_1$	$w_2$
11043.W0081	Serrated Face	7	M10	10.2	15	22	50	30	60	44



# Base Plates Finger - Short for 2.2 ton clamps

## Heavy-Duty Side Clamping



# 11045

HEAVY-DUTY SIDE CLAMPING

### Material

Steel, hardened, with ground faces.

### Technical Notes

For T-slot tables and fixture plates.

### Tips

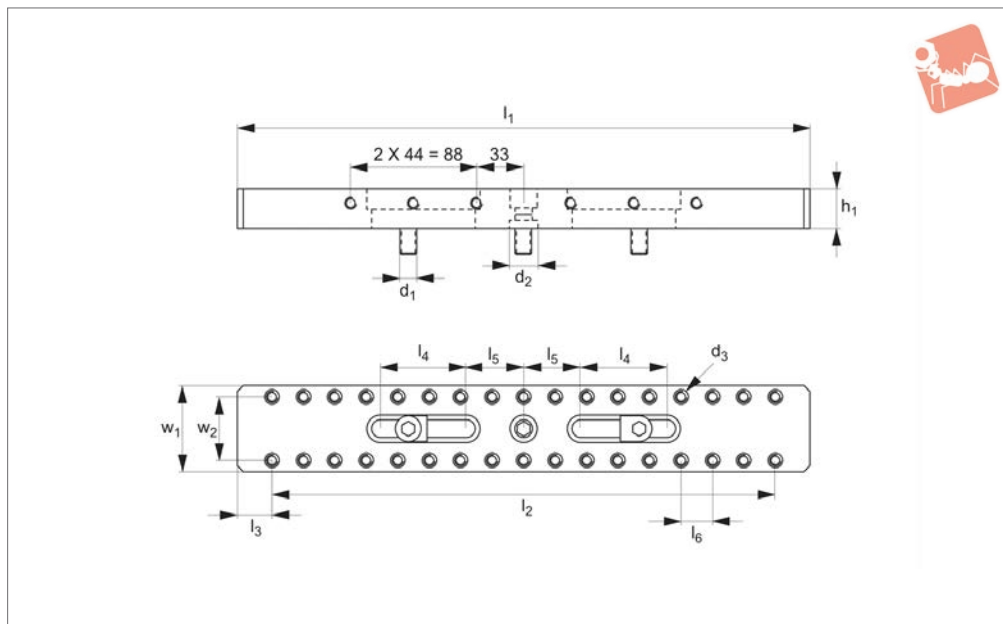
Provided with 3 x M12 fixing screws and centring locator.

For use with parts 11040-11043.

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>
11045.W0016	M12	20	28	138	11	14	104	80	60	44



## 11046



### Material

Steel, hardened, with ground faces.

### Technical Notes

For T-slot tables and fixture plates.

### Tips

Provided with 3 x M12 fixing screws and centring locator.

For use with parts 11040-11043.

Order No.	$d_1$	$d_2$	$d_3$	$h_1$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$w_1$	$w_2$
11046.W0015	M12	20	Ø10,2 - M10	28	400	352	60	40	24	22	60	44

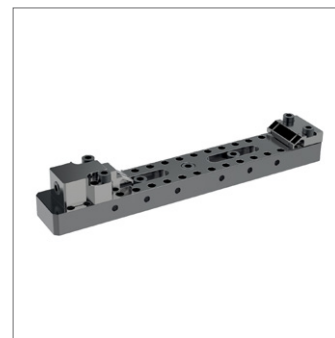
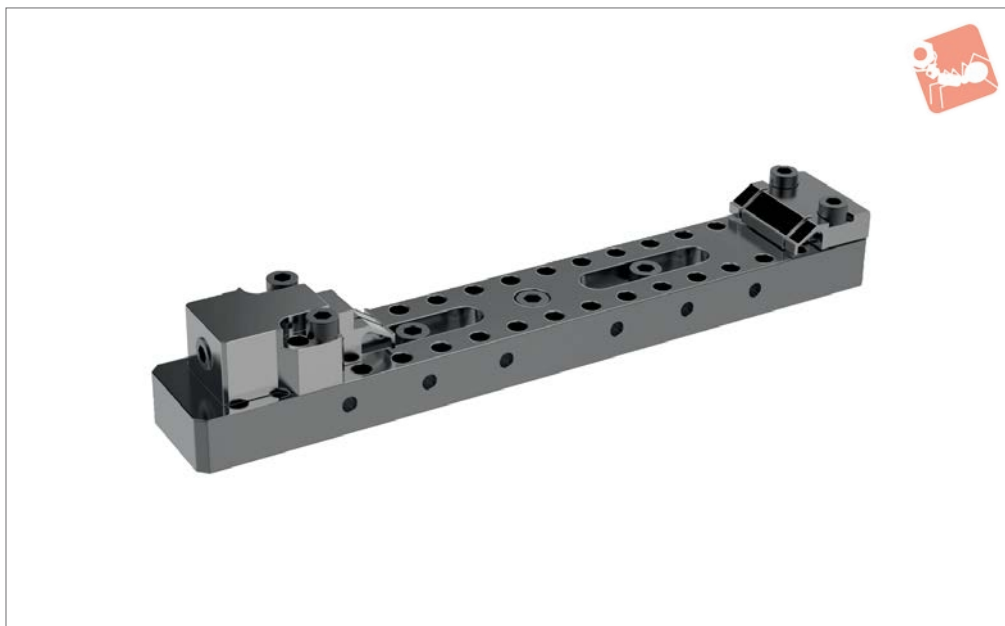




# 2.2 Ton Finger Clamps

vice sets

# Heavy-Duty Side Clamping



## 11050

HEAVY-DUTY SIDE CLAMPING

### Material

Clamp rail: steel, hardened and ground faces.

Clamps: hardened steel, with spring steel clamping element.

Stops: spring steel.

### Technical Notes

A low height, very powerful compact clamp system.

These clamps have a unique sideways and downwards clamping action.

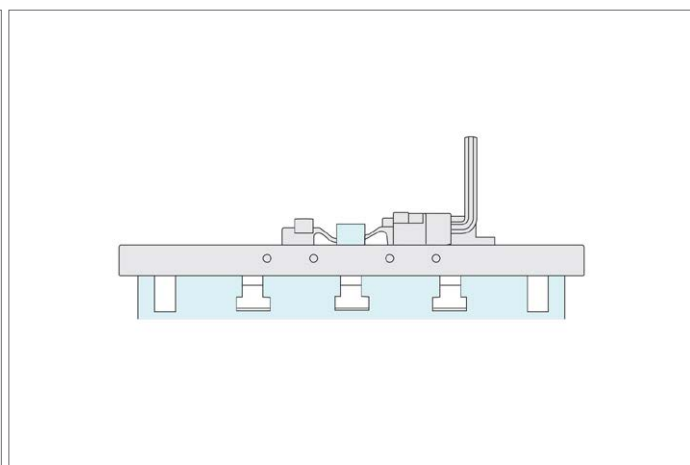
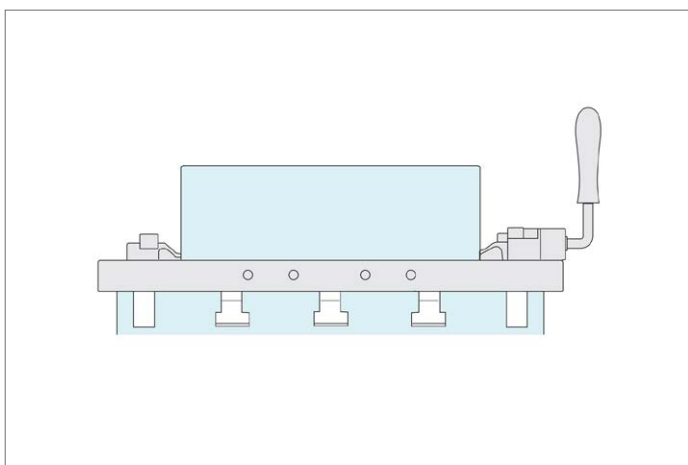
Maximum workpiece capacity 280mm.

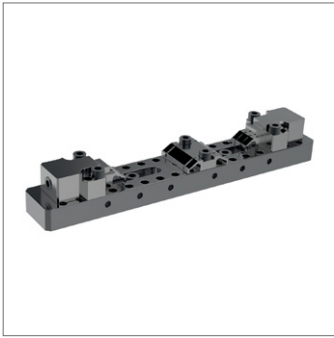
### Tips

Provided with specially ground location bolts  $\varnothing 10,2 - M10$ .

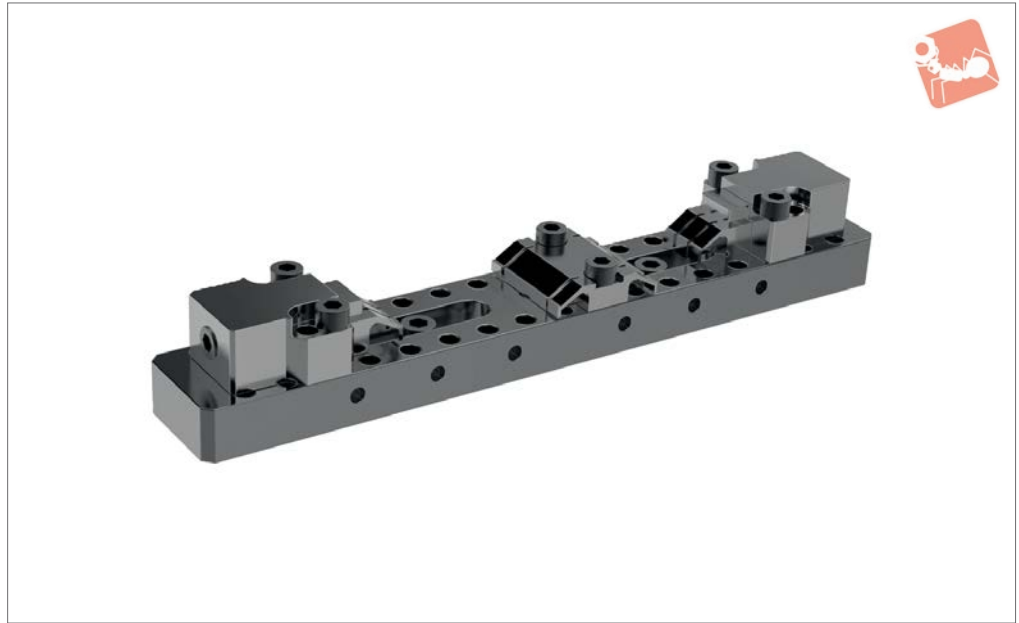
Also available with serrated jaws.

Order No.	Type	Base	Clamp	Stop
11050.W0004	Standard Vice Set	1 pc 11046.W0015	1 pc 11040.W0025	1 pc 11041.W0080





### 11051



#### Material

Clamp rail: steel, hardened, with ground faces.  
Clamps: hardened steel, with spring steel clamping element.  
Stops: spring steel.

#### Technical Notes

A low height, very powerful compact

#### clamp.

These clamps have a unique sideways and downwards clamping action.  
Maximum workpiece capacity 107mm when used as a double vice, or 280mm when used as a single vice.

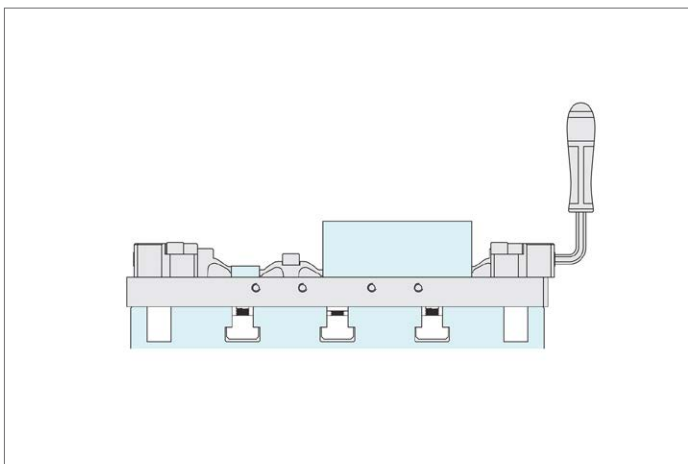
#### Tips

Provided with specially ground location

bolts  $\varnothing 10,2 - M10$ .

Also available with serrated jaws.

Order No.	Type	Base	Clamp	Stop
11051.W0002	Double Vice Set	1 pc 11046.W0015	2 pcs 11040.W0025	1 pc 11041.W0082





## 2.2 Ton Finger Clamps modular vice set

## Heavy-Duty Side Clamping



**11052**

HEAVY-DUTY SIDE CLAMPING

### Material

Clamp rail: steel, hardened, with ground faces.

Clamps: hardened steel, with spring steel clamping element.

Stops: spring steel.

### Technical Notes

A low height, very powerful compact clamp.

These clamps have a unique sideways and downwards clamping action.

### Tips

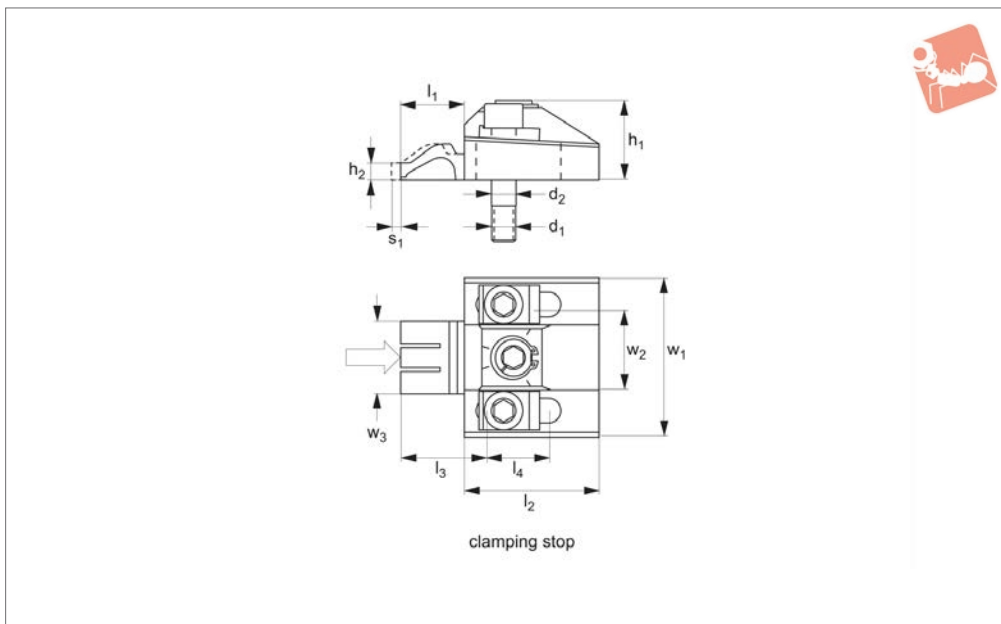
Provided with specially ground location bolts  $\varnothing 10,2 - M10$ .

Also available with serrated jaws.

Order No.	Type	Base	Clamp	Stop
11052.W0006	Modular Vice Set	2 pcs 11045.W0016	1 pc 11040.W0025	1 pc 11041.W0080



### 11070



#### Material

Hardened steel, with spring steel clamping element.

#### Technical Notes

A low height, very powerful compact

#### clamp.

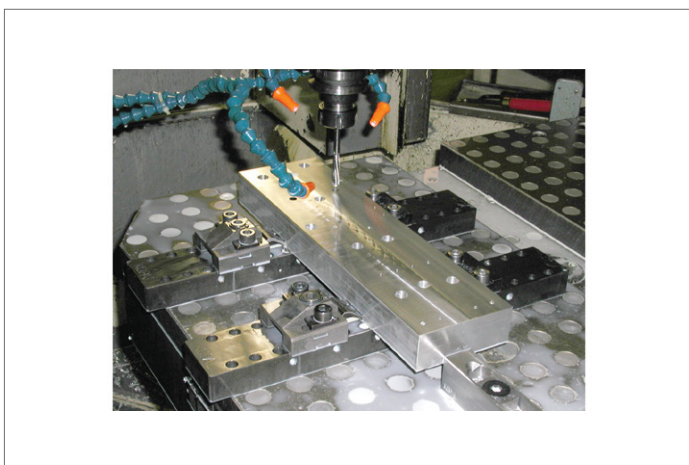
These clamps have a unique sideways and downwards clamping action.

#### Tips

Provided with specially ground location

bolts  $\varnothing 10,2$  - M10, screws, washers and clamping key. For mounting there are 2 tapped holes at  $44,00 \pm 0,005$ mm centres, M10 with depth of 28mm, counterbore 10,2 (H6) with depth of 14mm.

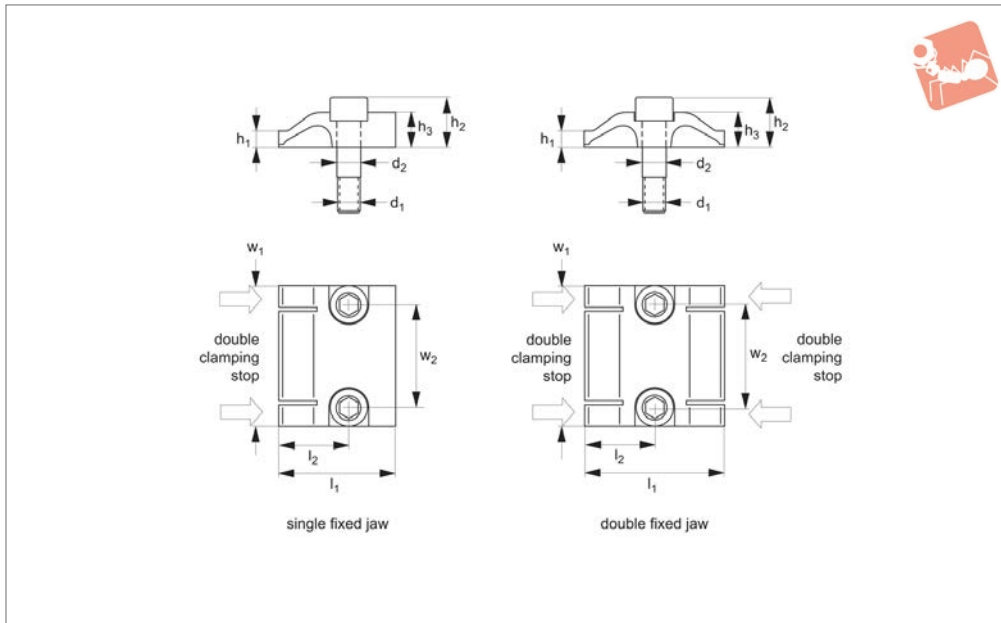
Order No.	Clamping adjustment $l_3$	Clamping height $h_2$	Clamping stroke $s_1$	$d_1$	$d_2$ tol. h6	$h_1$	$l_1$	$l_2$	$l_4$	$w_1$	$w_2$	$w_3$	Torque to Nm max.	Clamping force kN max.
11070.W0020	25	7	1,6	M10	10,2	33	26,5	56	36,5	66	44	30	70	12





# 1.2 Ton Fixed Stops for finger clamps

## Heavy-Duty Side Clamping



**11071**

HEAVY-DUTY SIDE CLAMPING

### Material

Spring steel.

### Technical Notes

These stops have a unique sideways and

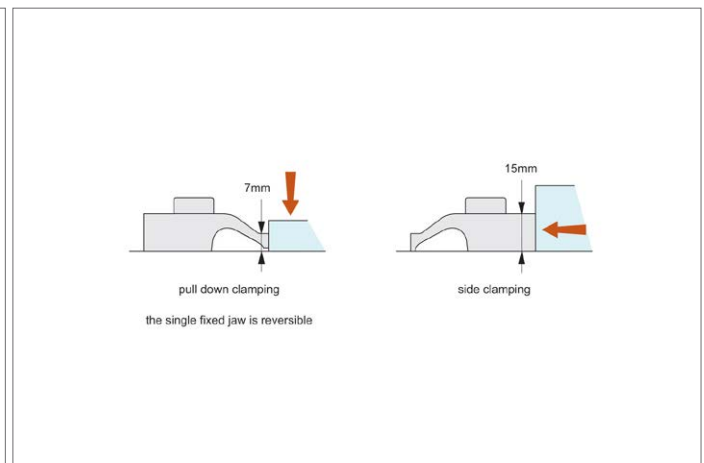
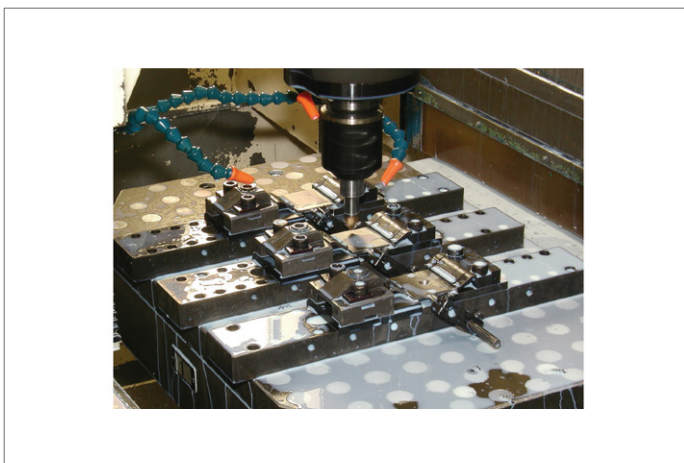
downwards action.

### Tips

Provided with specially ground location bolts  $\varnothing 10,2 - M10$ . For mounting there are

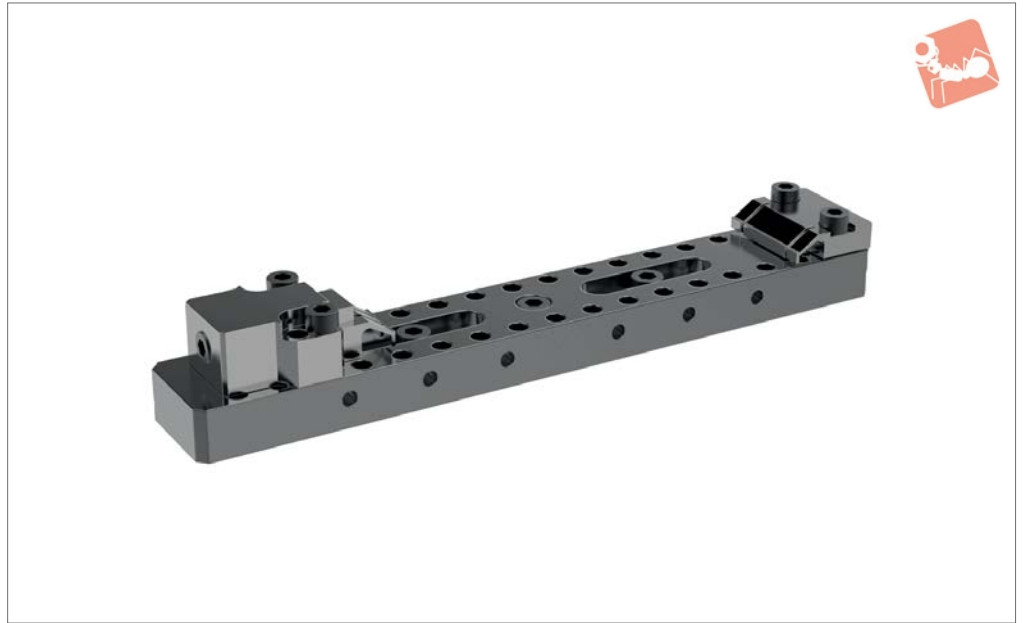
2 tapped holes at  $44,00 \pm 0,005\text{mm}$  centres, M10 with depth of 28mm, counterbore 10,2 (H6) with depth of 14mm.

Order No.	Type	Clamping height $h_1$	$d_1$	$d_2$	$h_2$	$h_3$	$l_1$	$l_2$	$w_1$	$w_2$
11071.W0080	Single	7	M10	10.2	22	15	50	30	60	44
11071.W0082	Double	7	M10	10.2	22	15	60	30	60	44





**11075**



**Material**

Steel, hardened, with ground faces.

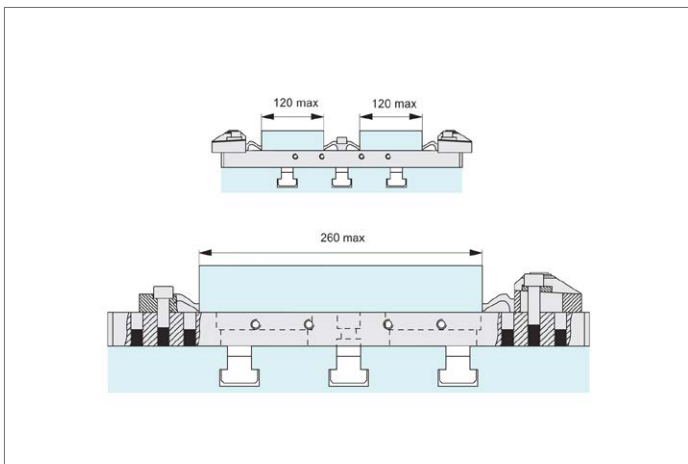
**Technical Notes**

For T-slot tables and fixture plates.

**Tips**

Provided with 2 x M12 fixing screws and centring locator.

Order No.	Rail	Stop	Type	Clamp
11075.W0010	1 pc 11046.W00015	1 pc 11071.W0080	Vice Set	1 pc 11070.W0020





# 1.2 Ton Finger Clamps modular vice set

## Heavy-Duty Side Clamping



### 11076

HEAVY-DUTY SIDE CLAMPING

#### Material

Steel, hardened, with ground faces.

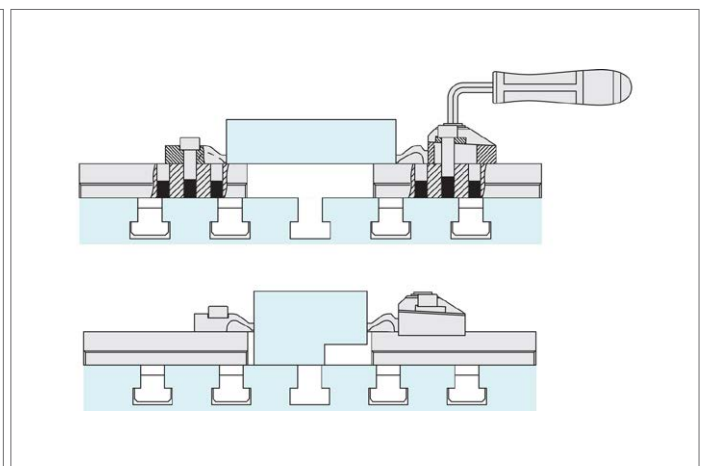
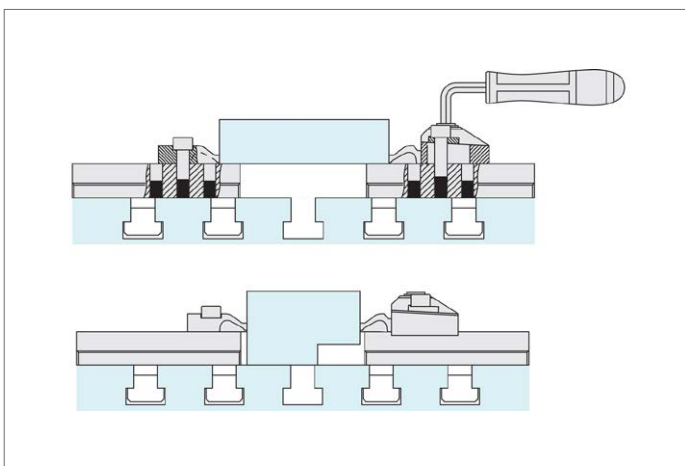
#### Technical Notes

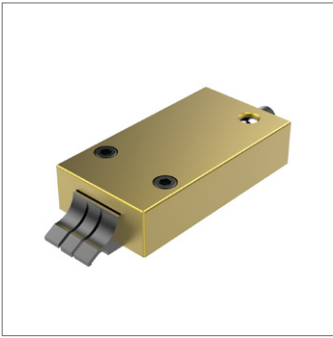
For T-slot tables and fixture plates.

#### Tips

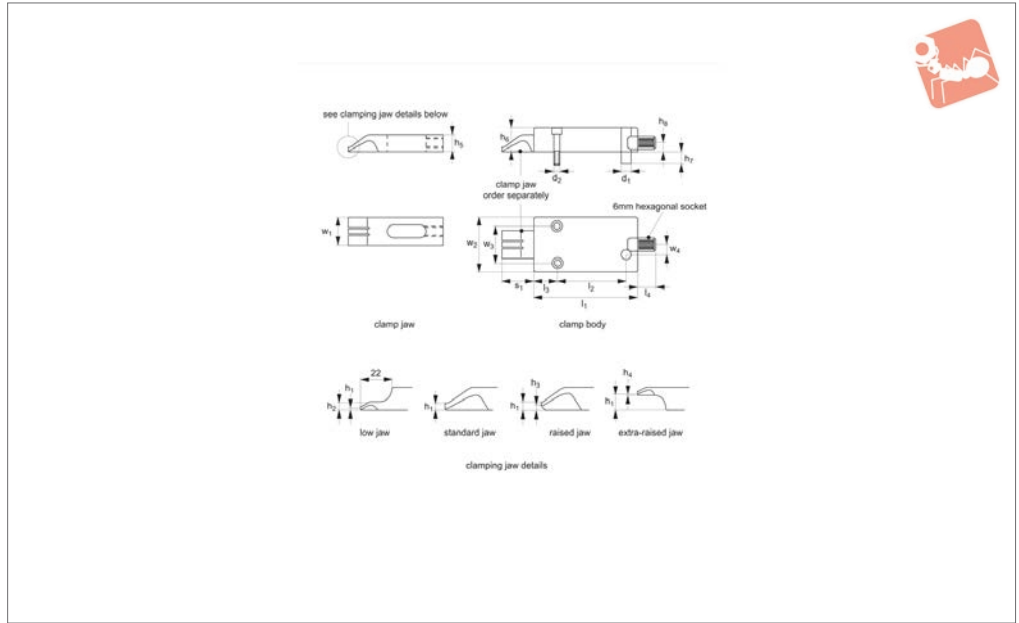
Provided with 3 x M12 fixing screws and centring locator.

Order No.	Rail	Stop	Type	Clamp
11076.W0014	2 pc 11045.W0016	1 pc 11071.W0080	Modular Vice Set	1 pc 11070.W0020





## 11080



### Material

Aluminium body, with spring steel clamping element.

### Technical Notes

A low height, very powerful compact

clamp.

These clamps have a unique sideways and downwards clamping action.

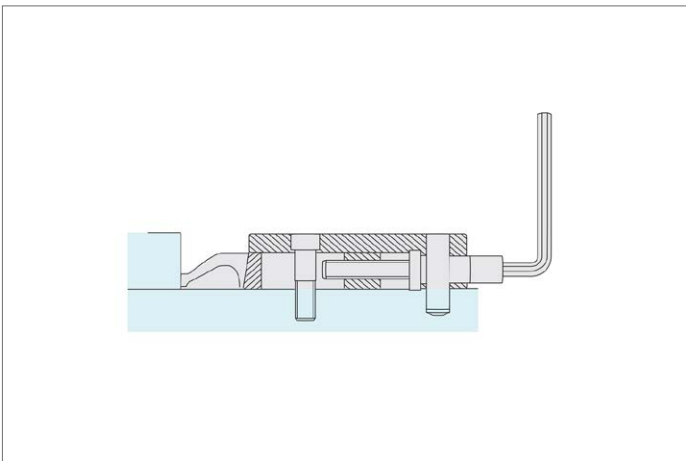
### Tips

Clamp jaws and clamp body sold separately.

To order please select clamp body 11080.W0090 then most suitable clamp jaw for your application - (part nos. 11080.W0610 to 11080.W0625).

Order No.	Type	Jaw height $h_1$	Clamp stroke	$s_1$	$w_1$	$d_1$	$d_2$
11080.W0090	Clamp Body	-	20	18 to 38	-	M 6	10
11080.W0610	Standard Jaw	4.7	-	-	28	-	-
11080.W0615	Low Jaw	2.5	-	-	28	-	-
11080.W0620	Raised Jaw	8.0	-	-	28	-	-
11080.W0625	Extra-raised Jaw	13.5	-	-	28	-	-

Order No.	$h_2$	$h_3$	$l_1$	$l_2$	$h_4$	$l_3$	$h_5$	$l_4$	$h_6$	$h_7$	$h_8$	$w_2$	$w_3$	$w_4$
11080.W0090	-	-	104	69.5	-	23	-	18	24	9	12	55	37	10
11080.W0610	-	-	-	-	-	-	17	-	-	-	-	-	-	-
11080.W0615	6.0	-	-	-	-	-	17	-	-	-	-	-	-	-
11080.W0620	-	4.0	-	-	-	-	17	-	-	-	-	-	-	-
11080.W0625	-	-	-	-	2.5	-	17	-	-	-	-	-	-	-

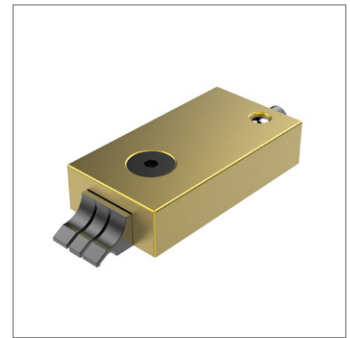
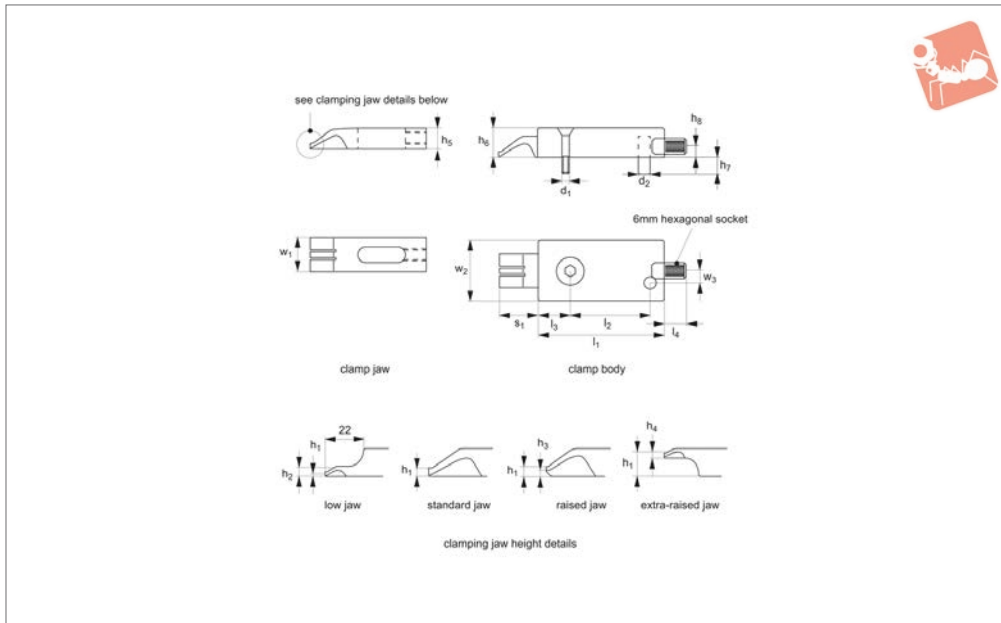






# 1.0 Ton Finger Clamps for T-slots

## Heavy-Duty Side Clamping



# 11081

HEAVY-DUTY SIDE CLAMPING

### Material

Jaw: spring steel.  
Body: aluminium.

### Technical Notes

These clamps have a unique sideways and

downwards action.

Please see part no. 11082 for fixed stops.

### Tips

Provided location bolts - M10, M12.

Clamp and body supplied separately. To

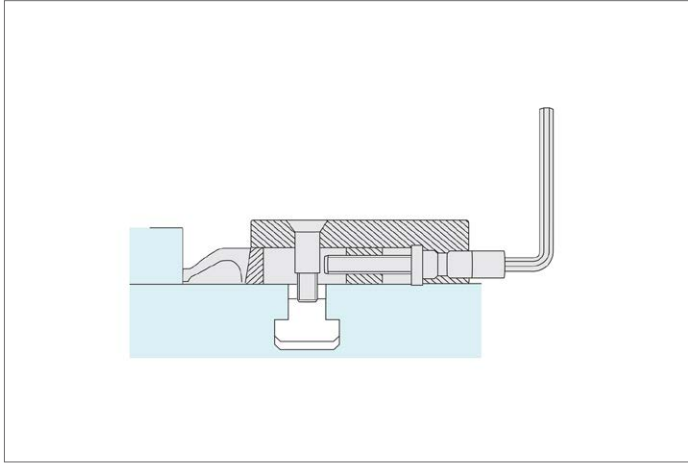
order please select clamp body (part nos. 11081.W0065 or .W0068) then the clamping jaw most suitable for your application (11081.W0610 to .W0625).

Order No.	Type	Clamp stroke	$s_1$	$w_1$	$d_1$	$d_2$	$h_1$	$h_2$	$h_3$	$l_1$	$l_2$
11081.W0065	Clamp Body M10	20	18 to 38	-	M10	10	-	-	-	104	69.5
11081.W0068	Clamp Body M12	20	18 to 38	-	M12	10	-	-	-	104	69.5
11081.W0610	Standard Jaw	-	-	28	-	-	2.5	-	-	-	-
11081.W0615	Low Jaw	-	-	28	-	-	4.7	6.0	-	-	-
11081.W0620	Raised Jaw	-	-	28	-	-	8.0	-	4.0	-	-
11081.W0625	Extra-raised Jaw	-	-	28	-	-	13.5	-	-	-	-

Order No.	$h_4$	$l_3$	$h_5$	$l_4$	$h_6$	$h_7$	$h_8$	$w_2$	$w_3$	Clamping torque Nm	Clamping force kN
11081.W0065	-	23	-	1.8	24	9	12	55	10	12	10
11081.W0068	-	23	-	1.8	24	9	12	55	10	12	10
11081.W0610	-	-	17	-	-	-	-	-	-	-	-
11081.W0615	-	-	17	-	-	-	-	-	-	-	-
11081.W0620	-	-	17	-	-	-	-	-	-	-	-
11081.W0625	2.5	-	17	-	-	-	-	-	-	-	-



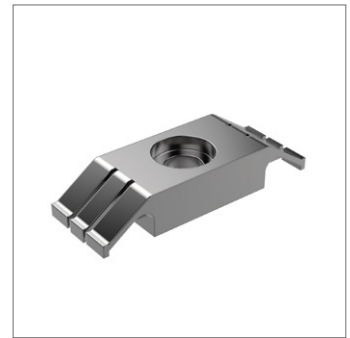
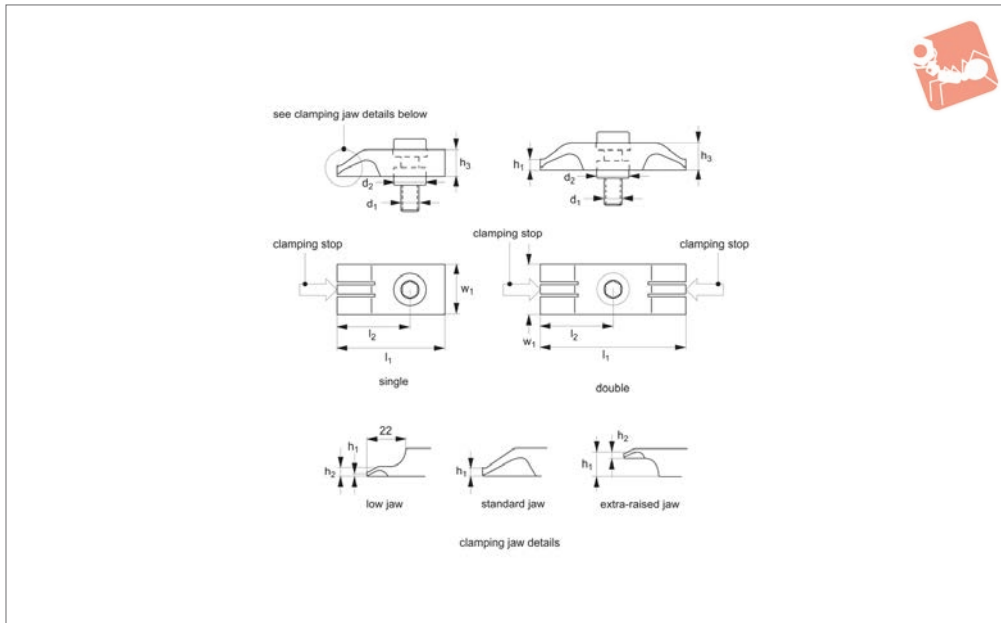
HEAVY-DUTY SIDE CLAMPING





# 1.0 Ton Fixed Stops for 1 ton finger clamps

## Heavy-Duty Side Clamping



# 11082

HEAVY-DUTY SIDE CLAMPING

### Material

Hardened steel, with spring steel clamping element.

### Technical Notes

A low height, very powerful compact clamp stop.

### Tips

Supplied with clamping screw and Ø18 centering bush. When used longitudinally along a T-slot it is advisable to use anti-slip T-nuts or additional stops to resist the force exerted by the clamping element.

For use with part nos. 11080 and 11081.

Fitting instruction:

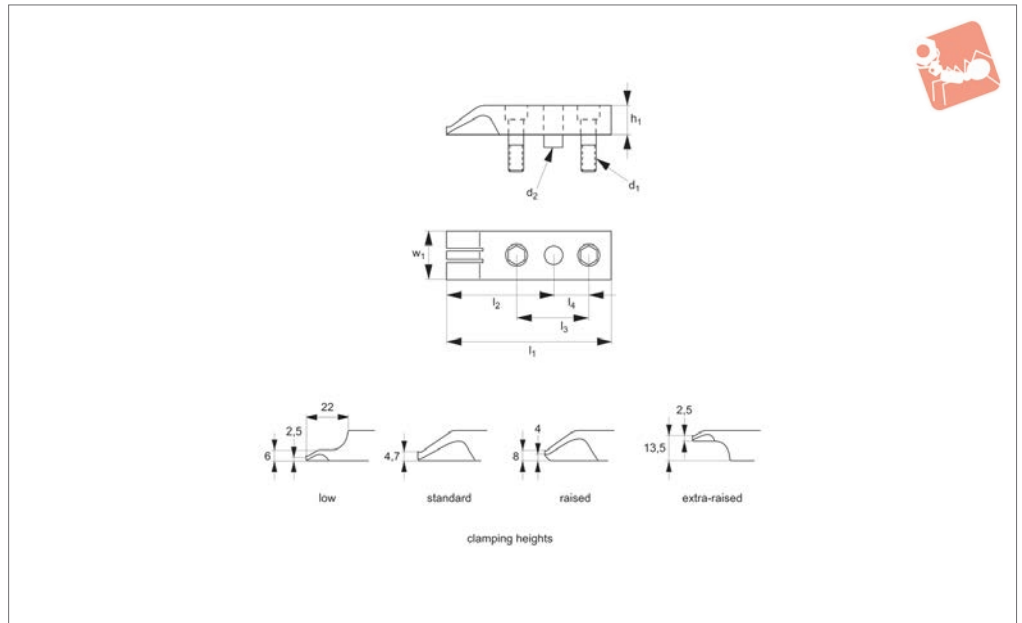
Tap M10/M12 counterbore 18,00 (H7) with depth 5mm.

Order No.	Type	Jaw height $h_1$	Jaw type	$w_1$	$d_1$	$d_2$	$h_2$	$h_3$	$l_1$	$l_2$
11082.W0140	Single	4.7	Standard	28	M10	18	-	15	60	40
11082.W0141	Single	4.7	Standard	28	M12	18	-	15	60	40
11082.W0142	Single	13.5	Extra-raised	28	M10	18	2.5	15	60	40
11082.W0143	Single	2.5	Low	28	M10	18	6	15	60	40
11082.W0144	Single	2.5	Low	28	M12	18	6	15	60	40
11082.W0145	Double	6.0	Standard	28	M10	18	-	15	80	40
11082.W0147	Double	6.0	Standard	28	M12	18	-	15	80	40





### 11083



#### Material

Spring steel.

#### Technical Notes

These stops have a unique sideways and

downward action.

For use on support bars, part no. 11086.

Supplied with M6 screws and dowel pin.

Order No.	Type	$w_1$	$d_1$	$d_2$	$h_1$	$l_1$	$l_2$	$l_3$	$l_4$
11083.W0120	Low Jaw	28	M 6	8	17	95	57.7	40	20
11083.W0125	Standard Jaw	28	M 6	8	17	95	57.7	40	20
11083.W0130	Raised Jaw	28	M 6	8	17	95	57.7	40	20
11083.W0135	Extra-raised Jaw	28	M 6	8	17	95	57.7	40	20



# 1.0 Ton Finger Clamp Sets

## Heavy-Duty Side Clamping



### 11085

HEAVY-DUTY SIDE CLAMPING

#### Material

Support bar: steel, hardened, with ground faces.

Clamping jaws: spring steel.

Body: aluminium.

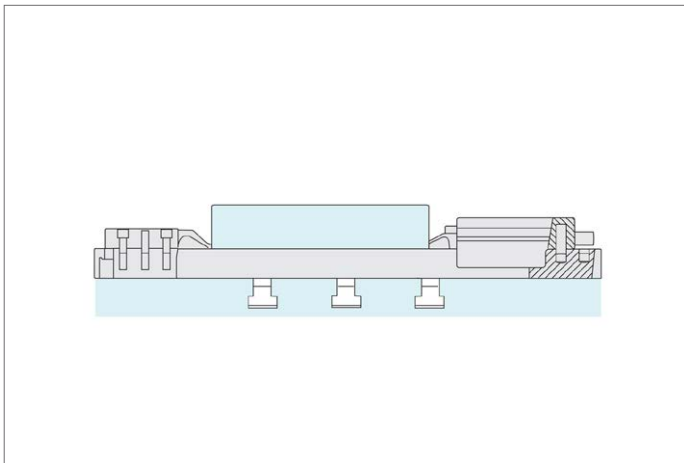
#### Tips

Maximum workpiece capacity 232mm when

used as a single vice.

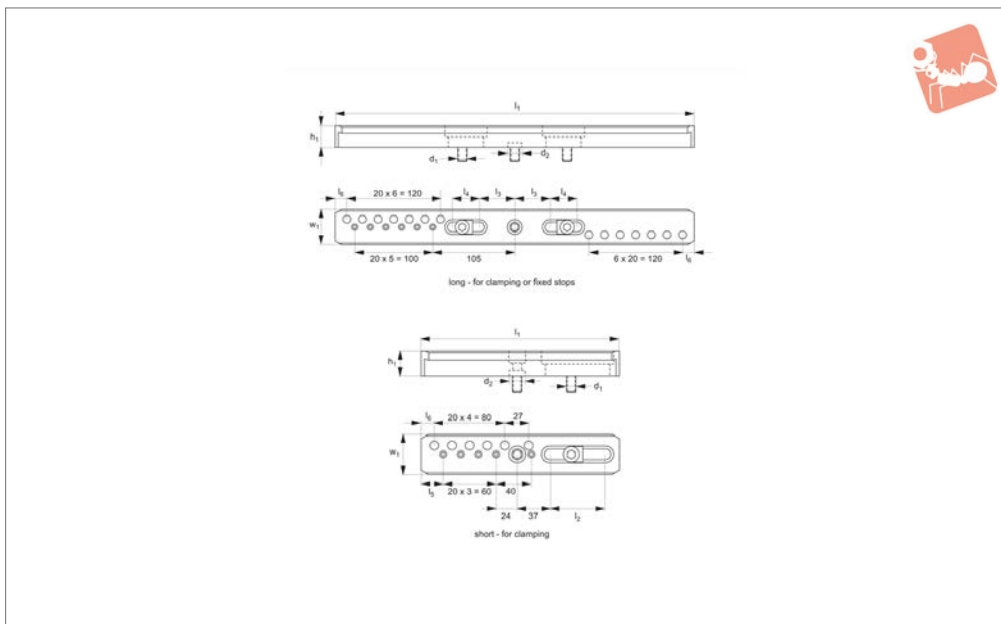
Supplied with M12 mounting screws.

Order No.	Type	Rail	Clamp body	Clamp jaw	Fixed clamp
11085.W0455	Set	1 pc 11086.W0040	1 pc 11080.W0090	1 pc 11080.W0610	1 pc 11083.W0125





## 11086



### Material

Steel, hardened, with ground faces.

for locator  $d_2$  tap M12 counterbore 18,00 H7 + 5mm deep.

### Technical Notes

Fitting instructions:

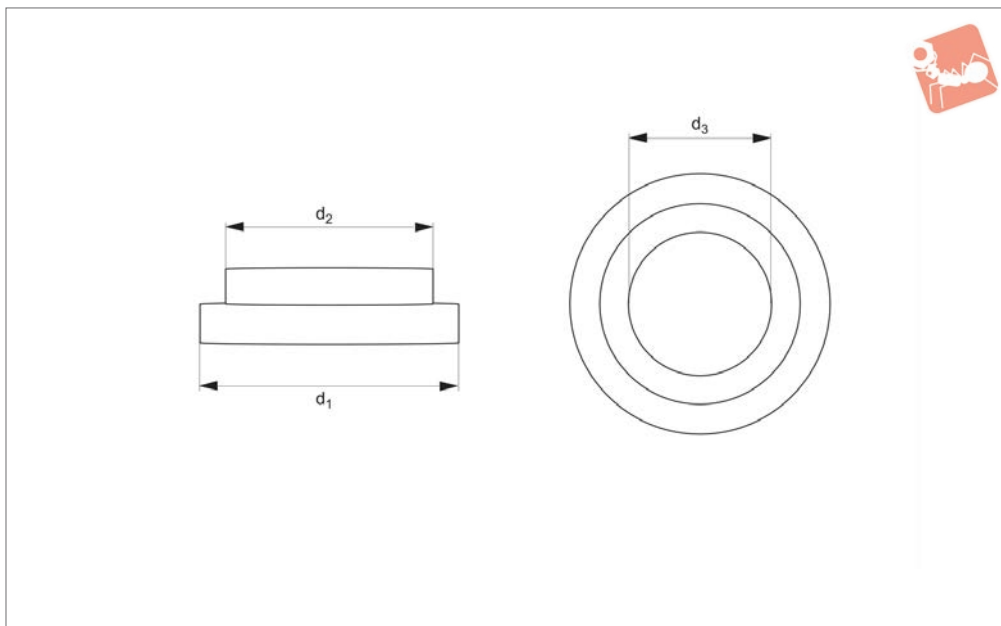
For use with finger clamps 11080-11083.

Order No.	Type	$w_1$	$d_1$	$d_2$	$h_1$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$
<a href="#">11086.W0040</a>	Long	45.5	M12	18	28	460	-	45	35	-	15
<a href="#">11086.W0045</a>	Short	45.5	M12	18	28	225	63	-	-	25	15



# Centering Bushes for clamp 11086

## Heavy-Duty Side Clamping



**11095**

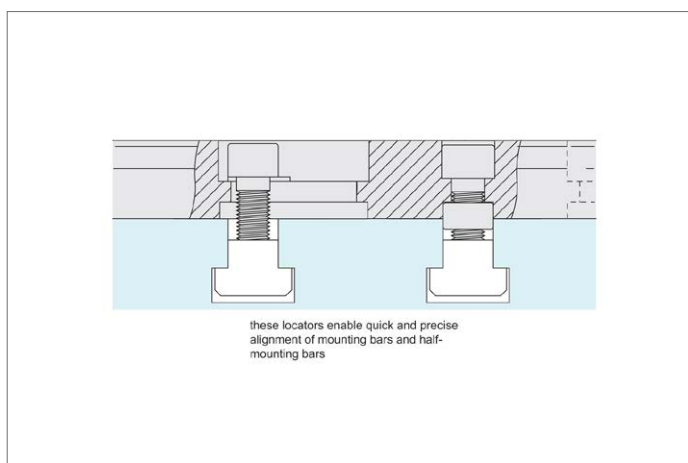
HEAVY-DUTY SIDE CLAMPING

### Tips

Centering bushes for use with finger clamps mounting bars 11086. Their use

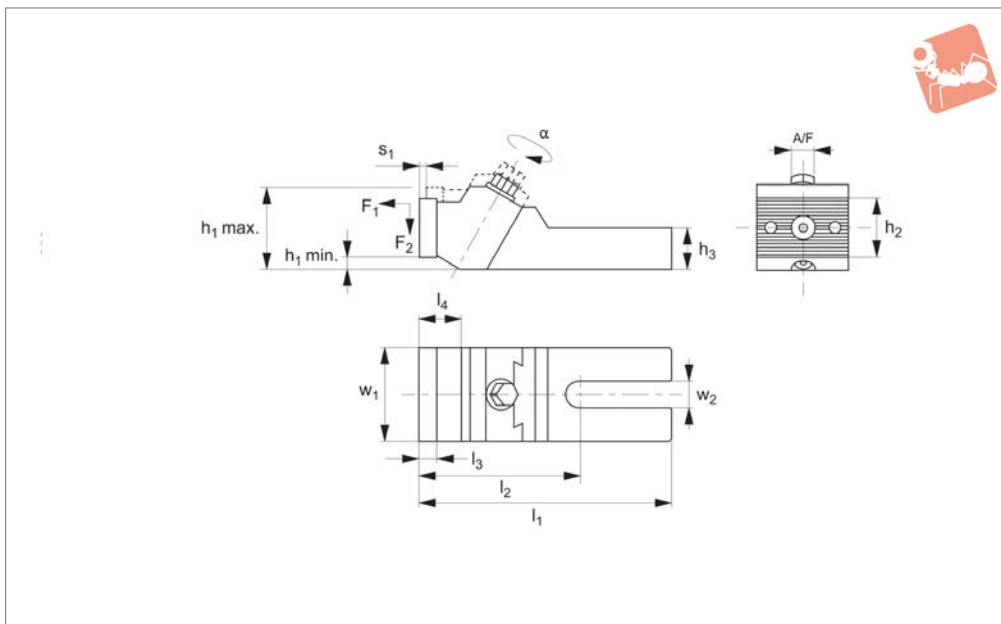
enables immediate alignment of the clamp to the T-slot and hence prevents any movement of components.

Order No.	Slot size	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>
11095.W0220	12	18	12	10.2
11095.W0225	14	18	14	10.2
11095.W0230	16	18	16	12.2
11095.W0215	18	18	18	12.2
11095.W0235	20	18	20	12.2
11095.W0240	22	18	22	12.2





## 12318



### Material

Body: steel, tempered.  
Clamping jaws: steel, case hardened.

### Technical Notes

Reversible clamping jaws with smooth side for machined workpieces and serrated side for rough clamping surfaces.

### Tips

The large clamping surface makes these solid clamping jaws suitable for laterally clamping workpieces. We recommend using two clamping studs for fastening the solid clamping jaw on the machine table. Screws for T-slots No. 21000 - two screws per

clamping jaw - should be ordered separately as a fastening bolt depending on the width of the machine T-slot.

### Important Notes

\*Clamping forces  $F_1$  and  $F_2$  depend on the T-slot size.

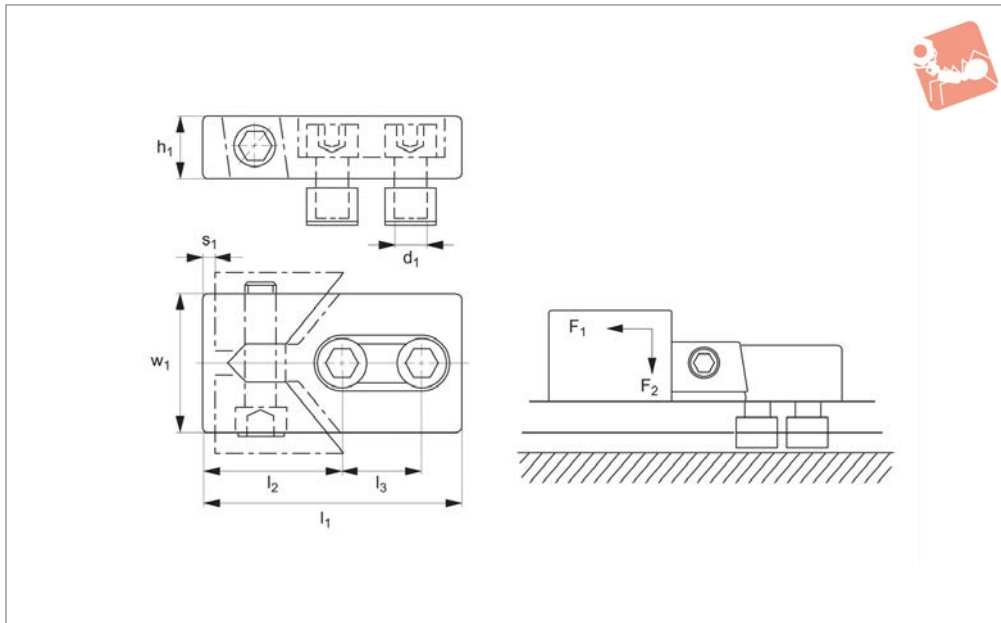
Order No.	For T-slot	$w_1$	$w_2$	$h_1$ min.	$h_1$ max.	$h_2$	$h_3$	$l_1$ max.	$l_2$	$l_3$	$l_4$	Stroke $s_1$	A/F	Weight g
12318.W0012	12-14	40	13	3	33.5	25.4	20	128	82	8	19	3.0	13	840
12318.W0014	12-18	65	19	20	60.0	40	30	177	113	12	29	6.0	16	3020
12318.W0024	20-30	75	26	33	73.0	40	36	224	135	12	29	7.5	18	4880
12318.W0036	32-42	90	38	51	91.5	40	46	256	152	12	34	10.0	21	7715





# Clamping Jaws - Low Height downhold action

# Heavy-Duty Side Clamping



**12200**

HEAVY-DUTY SIDE CLAMPING

### Material

Steel, heat treated, blackened.

Acutated on one side via hex. key (provided).

wards into the workpiece.  
**Sold in pairs.**

### Technical Notes

Ideal for clamping low-profile plates.

### Tips

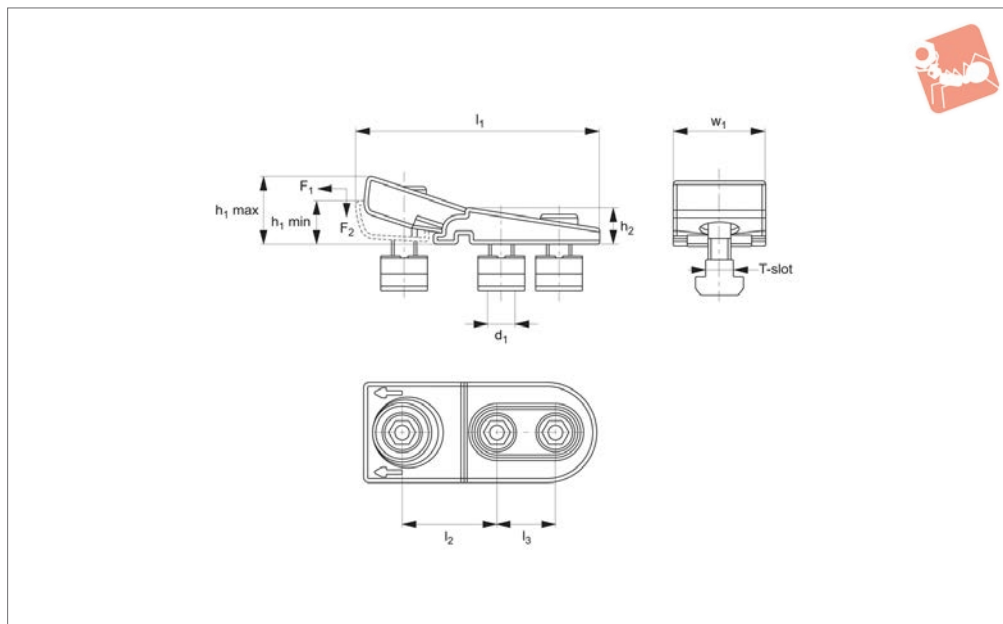
Clamping action is forwards and down-

Order No.	T-slot size	w <sub>1</sub>	d <sub>1</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Stroke s <sub>1</sub>	F <sub>1</sub> kN	F <sub>2</sub> kN	Weight/pair g
<b>12200.W0012</b>	12	40	M10	20	80	39	26	3	16	0.6	1150
<b>12200.W0014</b>	14	40	M12	20	80	39	26	3	22	0.9	1250
<b>12200.W0016</b>	16	40	M12	20	80	39	26	3	22	0.9	1330
<b>12200.W0017</b>	16	50	M14	25	100	46	34	4	32	1.2	2340
<b>12200.W0018</b>	18	50	M16	25	100	46	34	4	36	1.4	2540
<b>12200.W0020</b>	20	50	M16	25	100	46	34	4	36	1.4	2660
<b>12200.W0022</b>	22	78	M20	30	140	65	50	5	36	1.4	5980
<b>12200.W0024</b>	24	78	M20	30	140	65	50	5	36	1.4	6330
<b>12200.W0028</b>	28	78	M24	30	140	65	50	5	40	1.6	7060
<b>12200.W0030</b>	30	78	M24	30	140	65	50	5	40	1.6	7580





## 12205



### Material

Steel, tempered and burnished.

Suitable for horizontal and vertical applications.

### Technical Notes

Low height clamping of thin workpieces.

### Tips

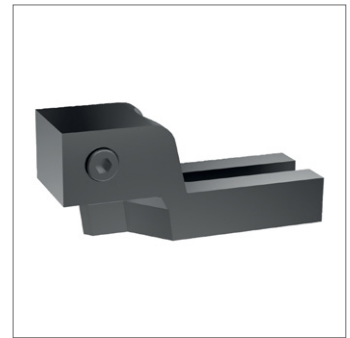
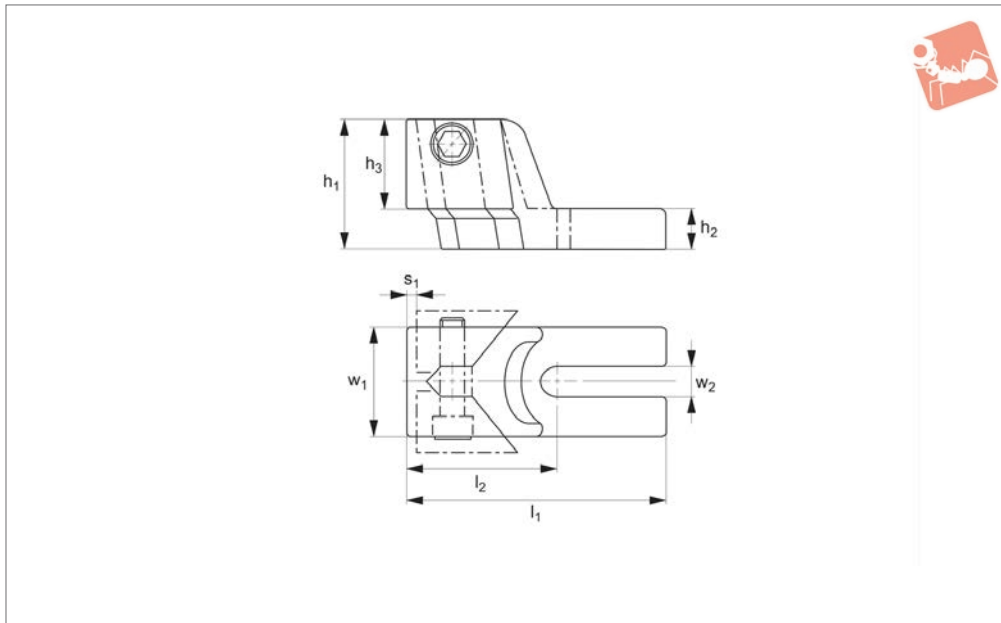
For clamping of low profile workpieces.

Order No.	T-slot size	w <sub>1</sub>	d <sub>1</sub>	h <sub>1</sub> min.	h <sub>1</sub> max.	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	F <sub>1</sub> kN	F <sub>2</sub> kN	Weight g
12205.W0014	14	15	M12	16	25	16	110	45-48	26	15	7.5	579
12205.W0016	16	15	M12	16	25	16	110	45-48	26	15	7.5	600
12205.W0018	18	20	M16	19	30	19	130	50-54	33	20	10.0	1011
12205.W0020	20	20	M16	19	30	19	130	50-54	33	20	10.0	1055
12205.W0022	22	30	M20	22	36	22	152	58-63	41	30	15.0	1670
12205.W0024	24	30	M20	22	36	22	152	58-63	41	30	15.0	1705
12205.W0028	28	30	M20	22	36	22	152	58-63	41	30	15.0	1807



# Clamping Jaws - Standard downhold action

# Heavy-Duty Side Clamping



**12300**

HEAVY-DUTY SIDE CLAMPING

### Material

Body: cast iron.  
Jaws: steel, hardened.

### Technical Notes

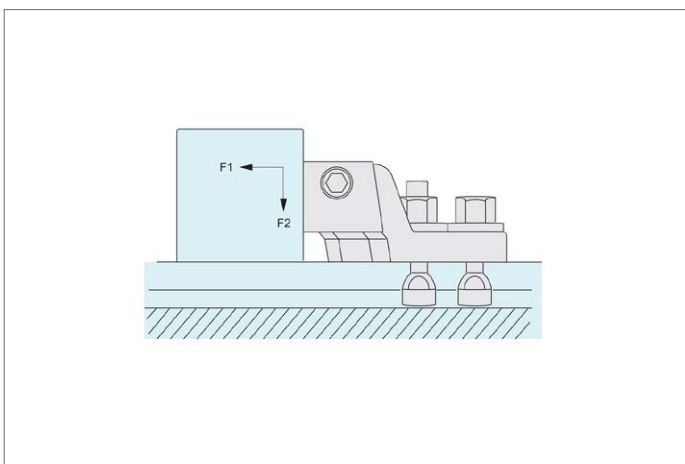
For mounting of each clamp to machine

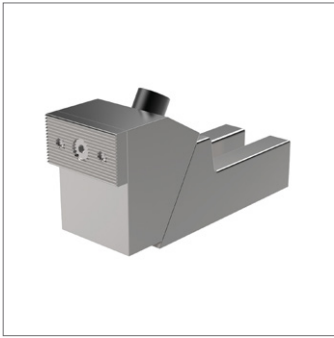
table, two clamping bolts no. 21000,  
washers no. 25000 and fixture nuts no.  
24300 should be ordered separately.  
Hex. key provided.

### Tips

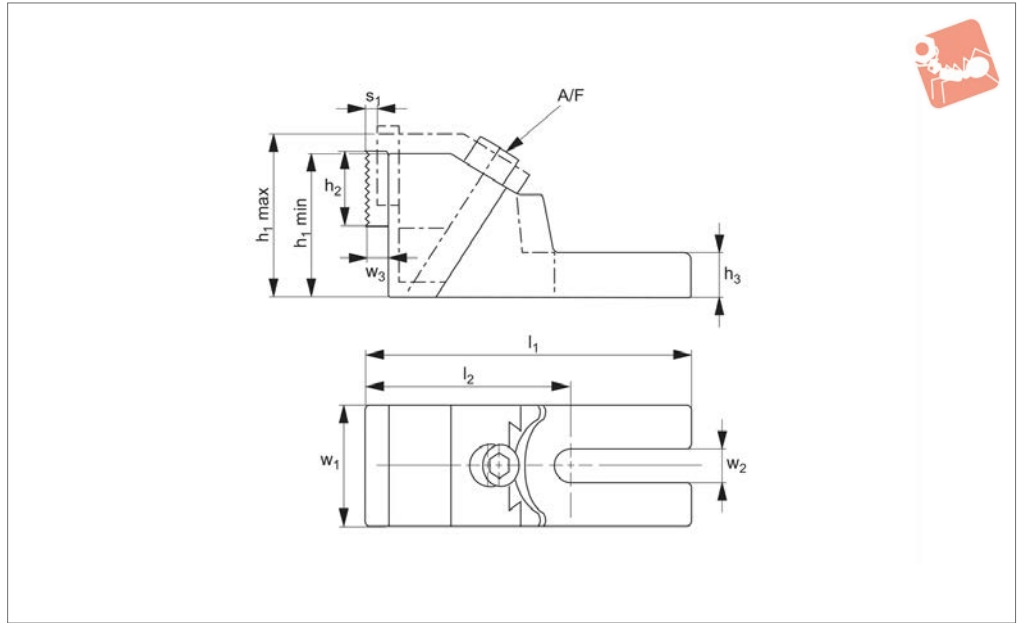
Can be actuated from left hand side only.  
**Sold in pairs.**  
For table of clamping forces, see below.

Order No.	For T-slot	w <sub>1</sub>	w <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	Stroke s <sub>1</sub>	Weight g
<b>12300.W0016</b>	10-14	40	13	50	20	30	115	60	3	1590
<b>12300.W0018</b>	16-20	50	19	60	25	35	150	72	4	2940
<b>12300.W0030</b>	22-36	80	31	75	30	45	205	102	5	7900





## 12320



### Material

Body: cast iron.  
Jaws: steel, hardened.

### Technical Notes

Jaw plates are reversible (ribbed/smooth).

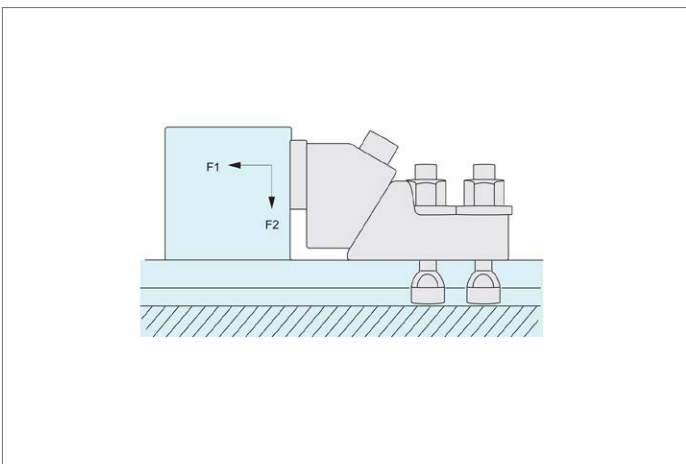
Clamping action is forwards and downwards into the workpiece.

### Tips

Extremely powerful clamps for use where high clamping forces are required. Due to

the high clamping forces we recommend the use of 2 clamping bolts (no. 21000), for each clamp.

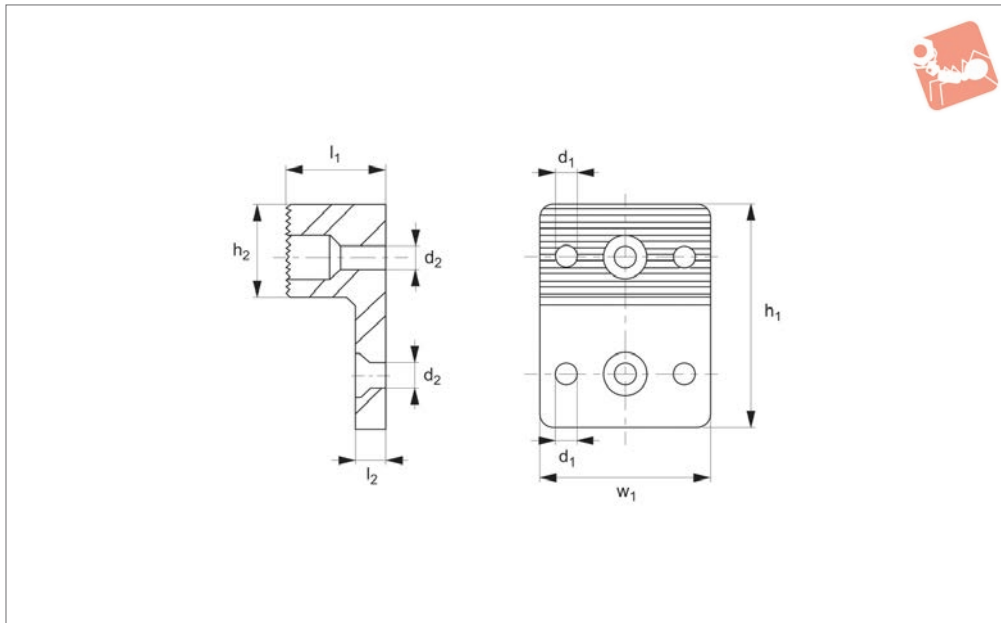
Order No.	For T-slot	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	h <sub>1</sub> min.	h <sub>1</sub> max.	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	Stroke s <sub>1</sub>	A/F	Weight g
12320.W0014	12-18	65	19	12	85	99	40	38	179	112.5	8	14	1590
12320.W0024	20-30	75	26	12	100	118	40	45	230	138.5	11	14	2940
12320.W0036	32-42	90	38	12	120	145	40	56	265	158.0	15	17	7900





# Clamping Jaw for clamps 12320

# Heavy-Duty Side Clamping



**12330**

HEAVY-DUTY SIDE CLAMPING

### Material

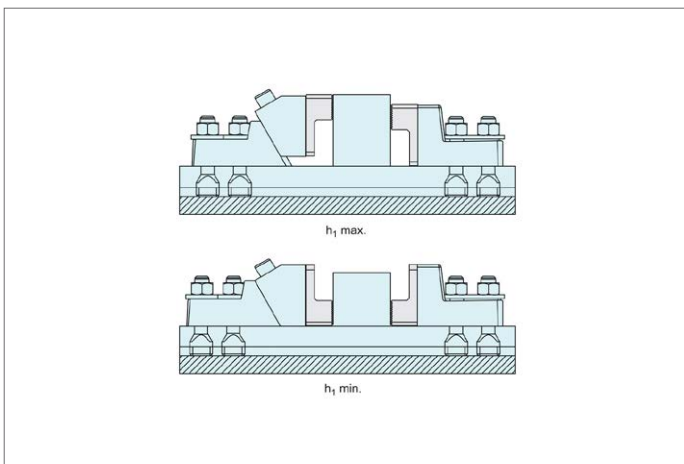
Steel, case hardened, with M8 bolts.

machining of rough parts. Can be mounted on the clamping jaw or the stop.

### Tips

Clamping jaw with serrated surface for

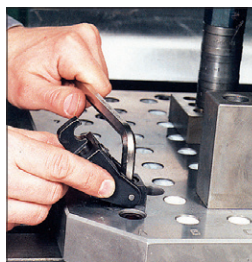
Order No.	For clamp $w_1$	$d_1$	$d_2$	$h_1$	$h_2$	$l_1$	$l_2$	Weight g
12330.W0019	65	8.1	9	85	35	38	12	889
12330.W0026	75	8.1	9	100	45	38	12	1306
12330.W0038	90	8.1	9	120	50	38	12	1829





Our comprehensive range of clamping elements includes a compact and powerful workpiece clamping element, the chain clamping set no. 12700. This set was specifically designed for clamping large workpieces with round or arched surfaces. Due to an increase in the bearing surface of the chain, the clamping force is distributed across the workpiece thereby reducing deformation.

## Setting Up



1. Attach the hook unit and the take-up unit as close to the workpiece as possible.



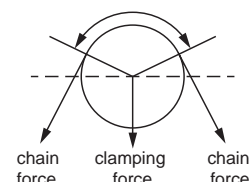
2. Turn the knurled nut on the take-up unit until the pull rod is fully extended. Select the number of chain segments required for the workpiece and attach to the pull rod.



3. Fine adjustment of the chain lengths is made by tightening the knurled nut until the chain slightly touches the workpiece.



4. To clamp the workpiece connect the free end of the chain onto the hook unit. Using a hex key tighten the eccentric shaft, and ensure the lever is rotated to its fully locked position (180°). The workpiece is now clamped.



## Important Factors in Selection of Chain Clamp

### Chain Length and Stretch

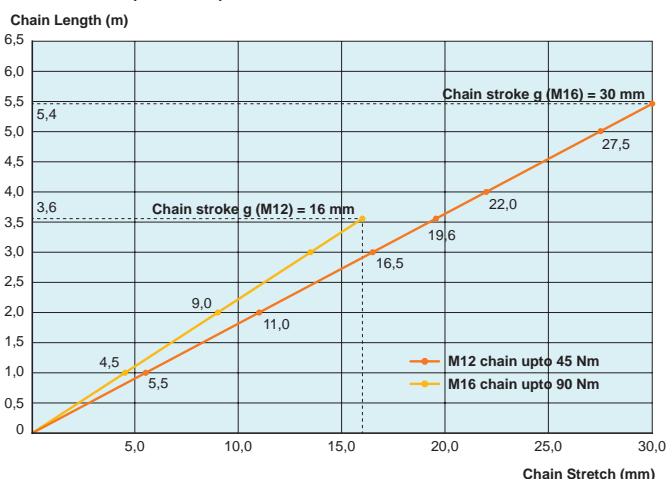
Torque value of 50 Nm is used for M12 set.

Torque value of 90 Nm is used for M16 set.

The clamping force achievable through the Wixroyd chain clamp set is dependent upon three factors:

- Workpiece diameter (see graph).
- Chain length and stretch (see graph).
- Contact angle of chain and workpiece (see table below right).

Chain Stretch at Specified Torques



### Table of Clamping Force to Contact Angle $\alpha$



Clamping with the chain clamp set.

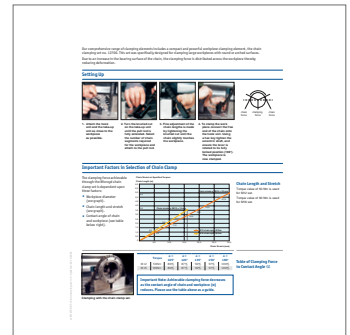
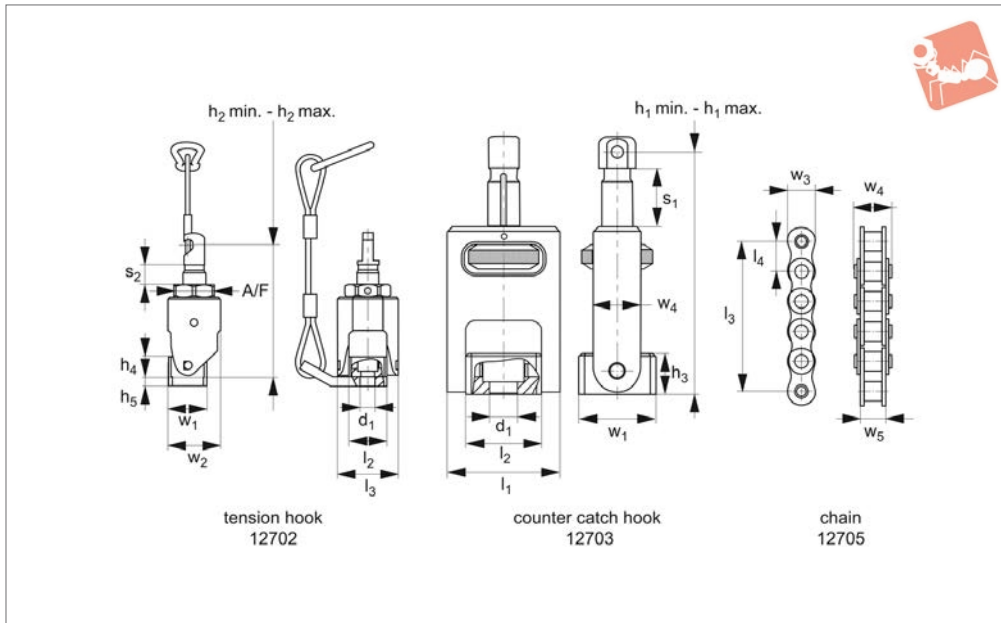
Torque	$\alpha = 105^\circ$	$\alpha = 120^\circ$	$\alpha = 135^\circ$	$\alpha = 150^\circ$	$\alpha = 180^\circ$
M12   50Nm	80%	87%	92%	97%	100%
M16   90Nm	80%	87%	92%	97%	100%

**Important Note:** Achievable clamping force decreases as the contact angle of chain and workpiece ( $\alpha$ ) reduces. Please use the table above as a guide.



# Chain Clamping Set with lanyard

# Chain Clamping



## 12700

CHAIN CLAMPING

### Material

Alloy steel.

Set contents:

- 1 x tension hook,
- 1 x take-up hook,
- 1 x clamp chain protection set,
- .W0112 (2 x 492mm, 1 x 238mm, 1 x 15,9mm),
- .W0116 (1x991mm, 1x229mm, 1x483, 1x25mm),
- 4 x split chain links,
- 6 x plastic protectors (to protect the work-piece),

1 x chain clamp protection lanyard.

Note: M20 and M24 clamp sets only have 3 chain lengths.

### Technical Notes

For clamping valves, flanges, pump cases etc - can be used on fixture sub-plates or machine tables. The clamping force is generated by the eccentric shaft, and the force is determined by the take-up which is adjusted using the knurled screw. Please order T-nuts no. 24000 separately if

required.

### Tips

The even distribution of the clamping force reduces workpiece deformation. The work-pieces are protected from marking of the chain by plastic protectors which are locked into the chain segments. Chains enable a large range of adjustment. See table opposite for details for achievable clamping forces.

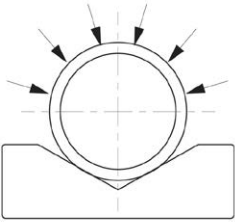
Order No.	Size	For T-slot	Combined chain length max.	d <sub>1</sub>	h <sub>1</sub> min.	h <sub>1</sub> max.	h <sub>2</sub> min.	h <sub>2</sub> max.	h <sub>3</sub>	h <sub>4</sub>	Weight g
12700.W0112	12	14, 16 of 18	1302	M12	83	108.0	100	118	18	18	853
12700.W0116	16	18, 20, 22 or 24	1829	M16	110	146.0	122	153	25	25	1902
12700.W0120	20	22 to 28	4940	M20	162	205.5	195	250	41	41	6037
12700.W0124	24	28 to 36	4940	M24	166	209.0	199	260	41	41	6040

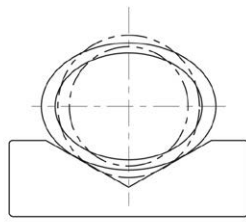
Order No.	h <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Permissible torque					Clamping force		
					Nm max.	w <sub>1</sub>	w <sub>2</sub>	w <sub>4</sub>	A/F	Stroke s <sub>1</sub>	Clamp stroke s <sub>2</sub>	kN max.
12700.W0112	8	50	34	54	45	34	47	21	36	25.0	18	15
12700.W0116	10	64	44	70	90	37	62	29	46	36.0	31	40
12700.W0120	10	91	64	98	190	58	86	48	65	43.5	55	75
12700.W0124	10	91	64	98	300	58	86	48	65	43.0	61	120



chain clamping:  
even distribution of clamping force-  
little workpiece deformation.



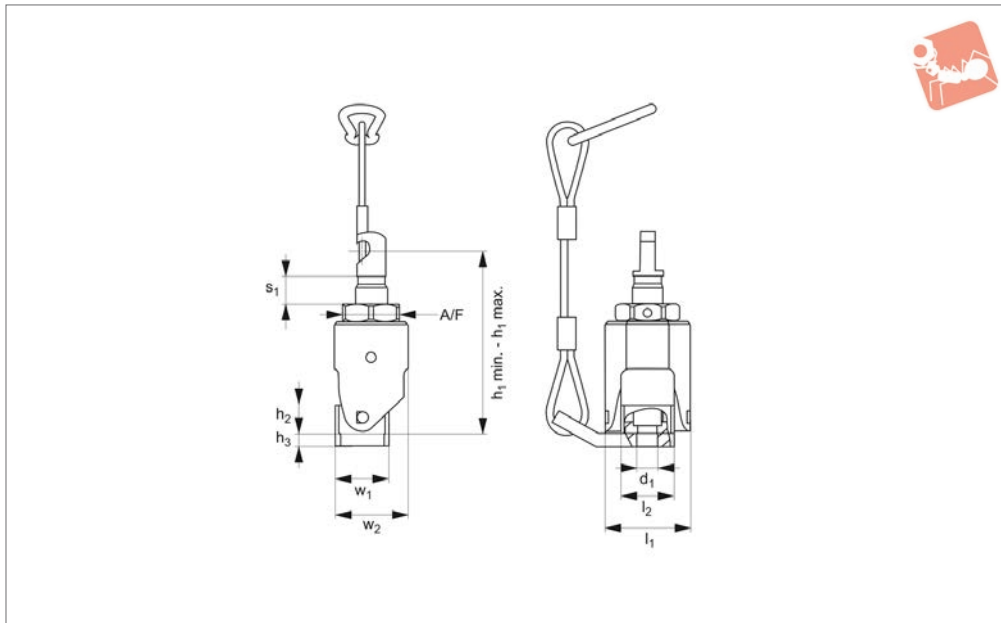
existing methods:  
workpiece deformation caused by  
pressure at a single clamping point.







# Tension Hook for chain clamping set 12700



**12702**

CHAIN CLAMPING

### Material

Hardened and tempered alloy steel.

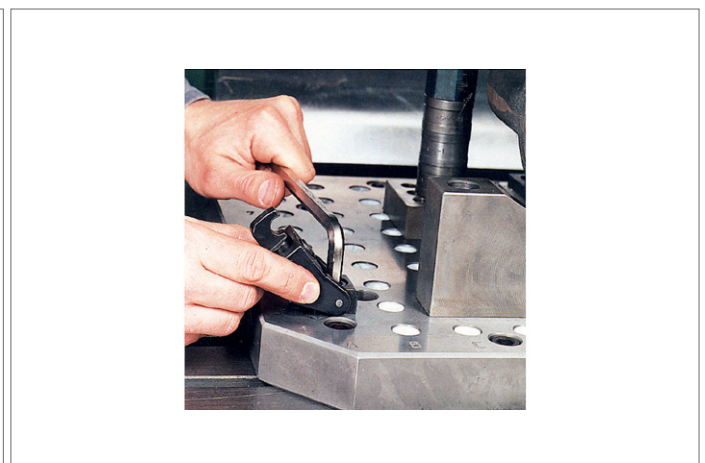
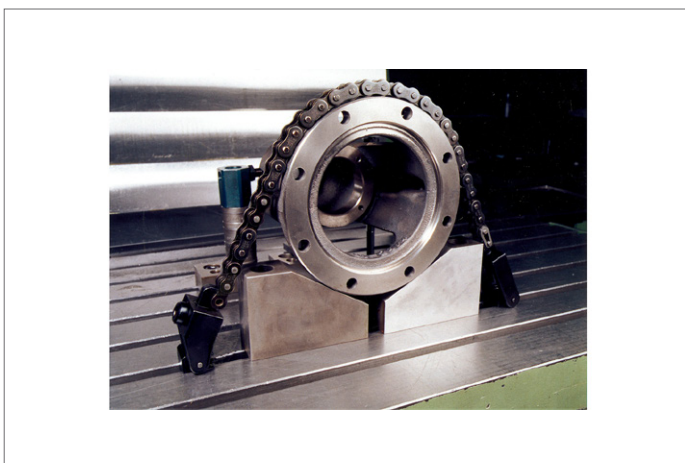
### Technical Notes

For use with chain clamp set 12700.

Tension hook provides final clamping and tightening of component when chain clamp 12700 is used. Counter catch hook is for the iniatial pre-tightening of chain

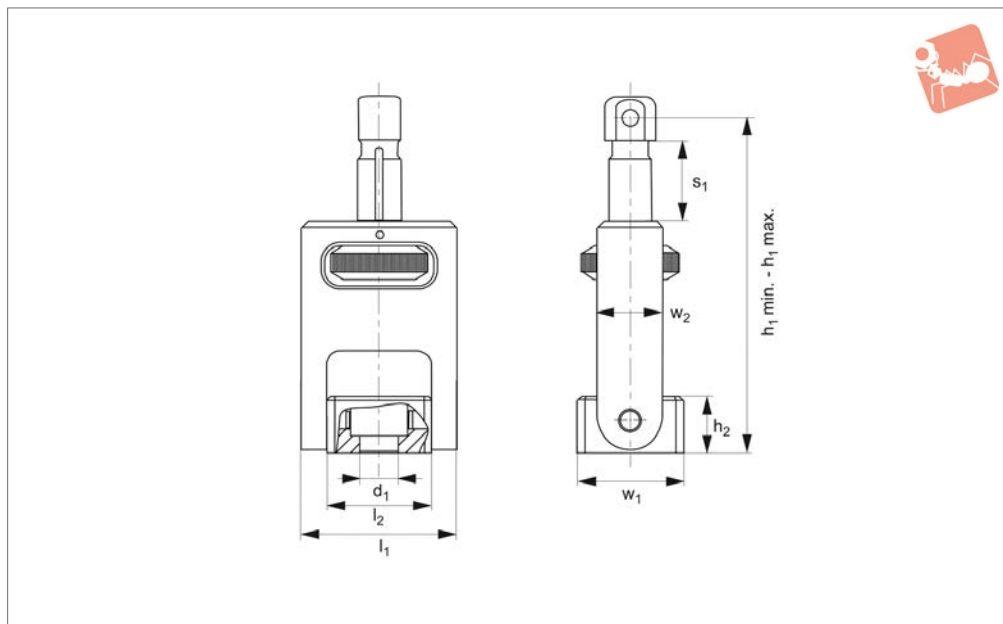
prior to final clamping. Comes complete with safety lanyard.

Order No.	Size	For T-slot	d <sub>1</sub>	h <sub>1</sub> min.	h <sub>1</sub> max.	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	Torque to Nm max.	w <sub>1</sub>	w <sub>2</sub>	A/F	Clamp stroke s <sub>1</sub>	Clamping force kN max.	Weight g
<b>12702.W0012</b>	12	14, 16 of 18	M12	100	118	18	8	54	34	45	34	47	36	18	15	853
<b>12702.W0016</b>	16	18, 20, 22 or 24	M16	122	153	25	10	70	44	90	37	62	46	31	40	1902
<b>12702.W0020</b>	20	22 to 28	M20	195	250	41	10	98	64	190	58	86	65	55	75	6037
<b>12702.W0024</b>	24	28 to 36	M24	199	260	41	10	98	64	300	58	86	65	61	120	6040





**12703**

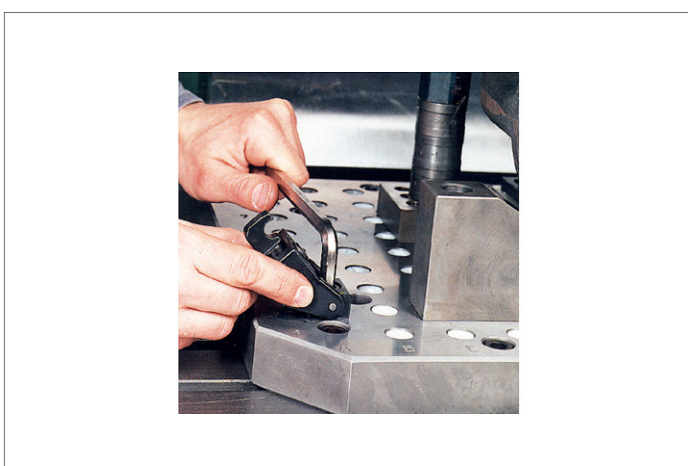


**Material**  
Alloy steel.

Counter catch hook is for the pre-tightening of chain prior to final clamping.

**Technical Notes**  
For use with chain clamp set 12700.

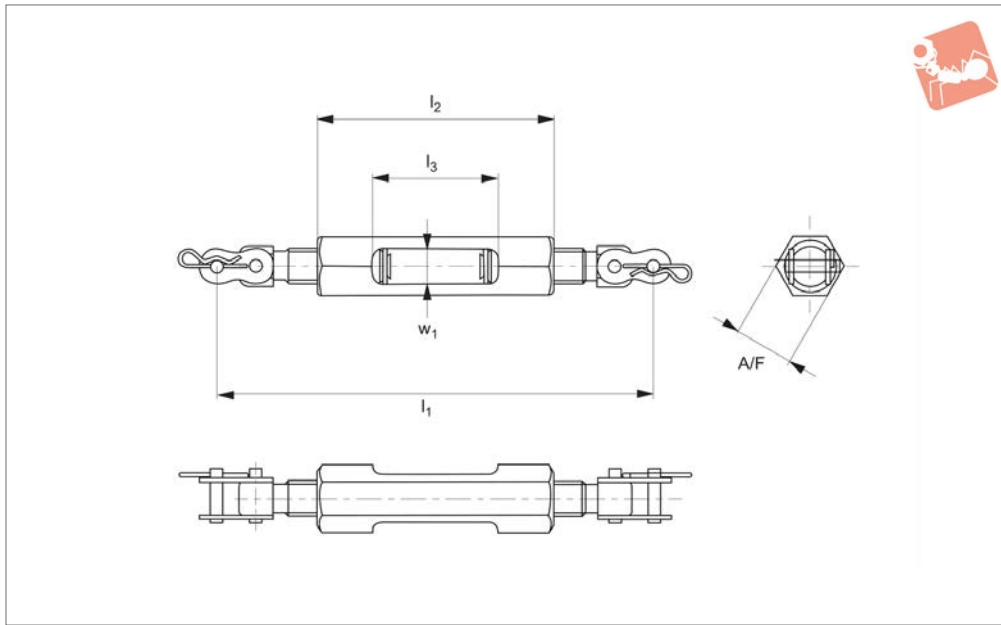
Order No.	Size	For T-slot	d <sub>1</sub>	h <sub>1</sub> min.	h <sub>1</sub> max.	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	w <sub>1</sub>	w <sub>2</sub>	Stroke s <sub>1</sub>	Clamping force kN max.	Weight g
<b>12703.W0012</b>	12	14, 16 or 18	M12	83	108.0	18	50	34	34	21	25.0	15	553
<b>12703.W0016</b>	16	18, 20, 22 or 24	M16	110	146.0	25	64	44	37	29	36.0	40	1235
<b>12703.W0020</b>	20	22 to 28	M20	162	205.5	41	91	64	58	48	43.5	75	4088
<b>12703.W0024</b>	24	28 to 36	M24	166	209.0	41	91	64	58	48	43.0	120	4145





# Turnbuckle for chain clamping set 12700

## Chain Clamping



**12704**

CHAIN CLAMPING

### Material

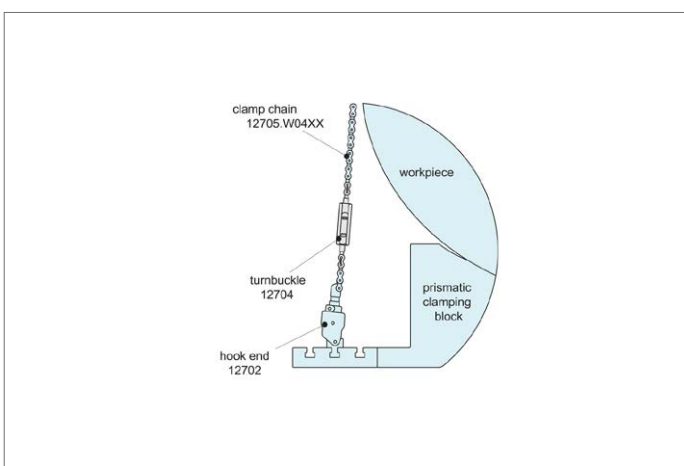
Alloy steel.

### Technical Notes

For use with chain clamp set 12700. The

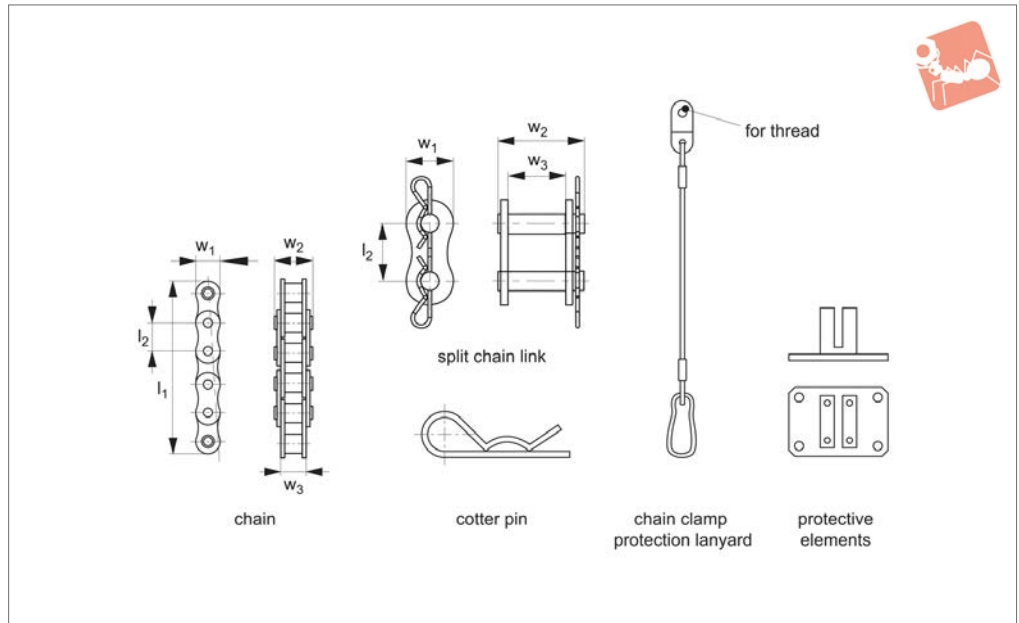
turnbuckle is clamped between the chains using two locking links. The chain is pre-tensioned by turning, and the play (caused by lengthening of the chain) is removed.

Order No.	Size	$l_1$	$l_2$	$l_3$	$w_1$	A/F	Clamping force kN max.	Weight g
12704.W0012	12	111-147	97	52	14	24	15	240
12704.W0016	16	151-203	126	66	20	30	40	720
12704.W0020	20	206-270	180	100	31	50	75	2222
12704.W0024	24	214-284	180	105	31	50	120	3517





## 12705



### Technical Notes

**Lanyard:** for use with chain clamp, when properly assembled prevents chain from snapping uncontrolled if chain breaks.

**Protective element:** can be placed between chain and workpiece to protect

surfaces.

**Chain Links:** for use to connect chain of different lengths to expand chain capacity and hence accommodate larger workpieces.

**Chain:** DIN8187, as well as being extended with the use of connecting links, can also

be shortened to suit requirements. Chain is pre-tensioned to minimise elongation.

### Important Notes

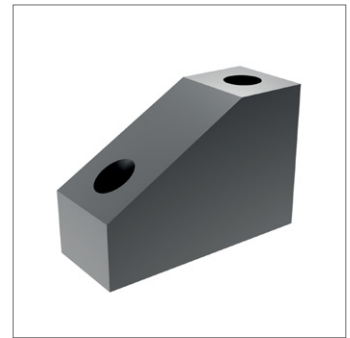
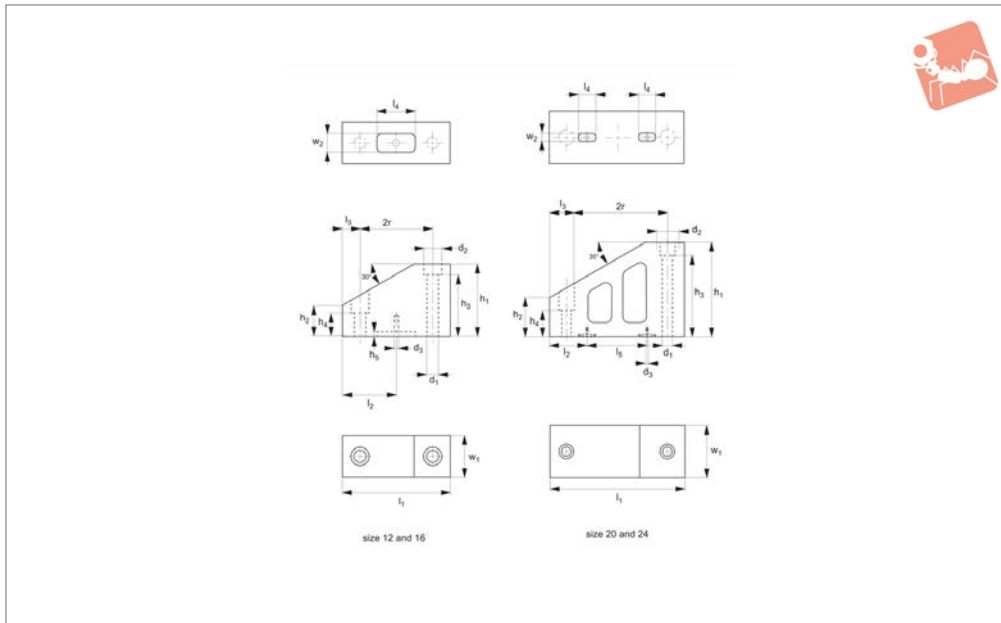
If the lanyard system is damaged the entire lanyard set must be replaced.

Order No.	Size	Type	Length nom.	$l_1$	$l_2$	$w_1$	$w_2$	$w_3$	Clamping force to be secured kN max.	Qty/pack	Weight g
12705.W0012	12	Lanyard	-	-	-	-	-	-	15	-	280
12705.W0016	16	Lanyard	-	-	-	-	-	-	40	-	350
12705.W0020	20	Lanyard	-	-	-	-	-	-	75	-	1313
12705.W0024	24	Lanyard	-	-	-	-	-	-	120	-	1313
12705.W0112	12	Workpiece Protector	-	-	-	-	-	-	-	6	3
12705.W0116	16	Workpiece Protector	-	-	-	-	-	-	-	6	5
12705.W0120	20	Workpiece Protector	-	-	-	-	-	-	-	6	10
12705.W0124	24	Workpiece Protector	-	-	-	-	-	-	-	6	16
12705.W0212	12	Chain Link	-	-	15.87	14	22	13	15	-	15
12705.W0216	16	Chain Link	-	-	25.40	21	39	25	40	-	67
12705.W0220	20	Chain Link	-	-	31.75	26	44	29	75	-	113
12705.W0224	24	Chain Link	-	-	38.10	33	59	38	120	-	274
12705.W0312	12	Cotter Pin	-	-	-	-	-	-	-	10	0.5
12705.W0316	16	Cotter Pin	-	-	-	-	-	-	-	10	1.0
12705.W0320	20	Cotter Pin	-	-	-	-	-	-	-	10	2.2
12705.W0324	24	Cotter Pin	-	-	-	-	-	-	-	10	6.5
12705.W0412	12	Chain	125	111	15.87	15	20	13	15	-	114
12705.W0413	12	Chain	250	238	15.87	15	20	13	15	-	228
12705.W0414	12	Chain	500	492	15.87	15	20	13	15	-	455
12705.W0415	12	Chain	1000	1000	15.87	15	20	13	15	-	910
12705.W0416	16	Chain	125	127	25.40	21	23	25	40	-	335
12705.W0417	16	Chain	250	229	25.40	21	23	25	40	-	670
12705.W0418	16	Chain	500	483	25.40	21	23	25	40	-	1340
12705.W0419	16	Chain	1000	991	25.40	21	23	25	40	-	2680
12705.W0420	20	Chain	1000	984	31.75	26	44	29	75	-	3720
12705.W0421	20	Chain	1500	1492	31.75	26	44	29	75	-	5580
12705.W0422	20	Chain	2000	2000	31.75	26	44	29	75	-	7440
12705.W0424	24	Chain	1000	1028	38.10	33	54	38	120	-	7050
12705.W0425	24	Chain	1500	1485	38.10	33	54	38	120	-	10575
12705.W0426	24	Chain	2000	2019	38.10	33	54	38	120	-	14100



# Angle Block - 120° for chain clamping

## Chain Clamping



**12706**

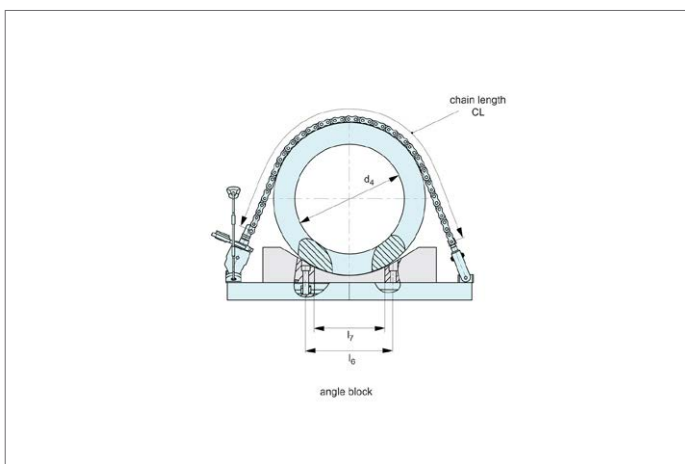
CHAIN CLAMPING

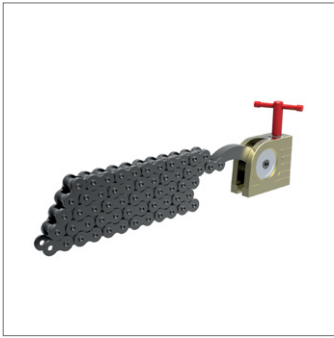
### Technical Notes

Ideal for use when clamping components with chain clamp set 12700. 2 off prisms

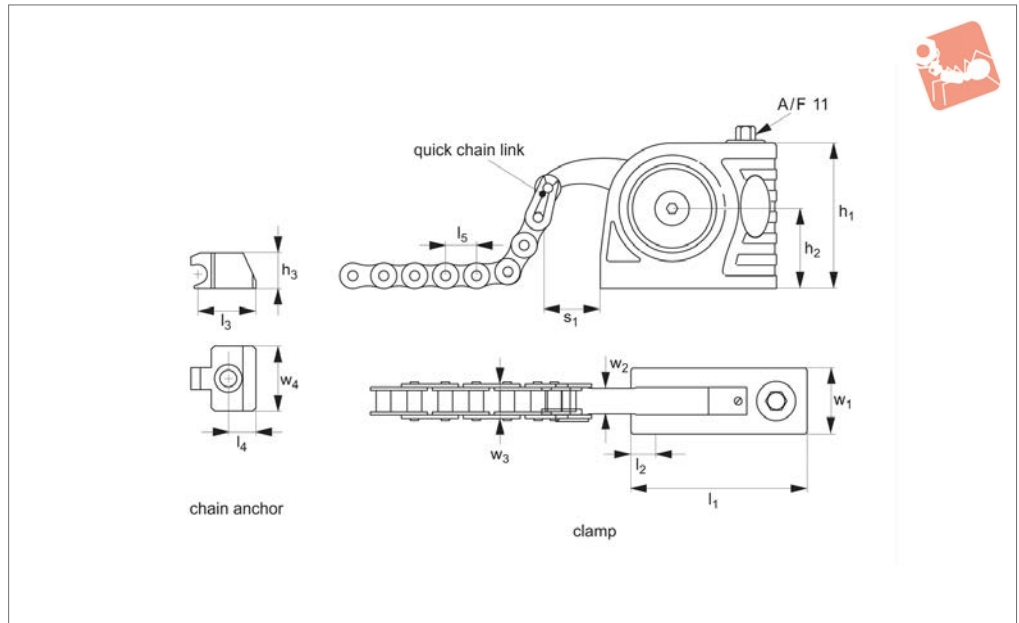
provide ideal support for components with large circumferences. **Sold individually.**

Order No.	Size	2r	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	w <sub>1</sub>	w <sub>2</sub>	Weight g
<b>12706.W0012</b>	12	80	13.5	20	M 6	80	35	67	27	5.5	118	59	19	42	-	47	20	3230
<b>12706.W0016</b>	16	100	17.5	26	M 6	100	44	33	33	5.5	148	74	24	44	-	47	20	3960
<b>12706.W0020</b>	20	270	22.0	33	M 6	250	102	161	91	5.5	360	100	45	44	160	78	20	32455
<b>12706.W0024</b>	24	270	22.0	40	M 6	250	102	161	91	5.5	360	100	45	44	160	78	20	31760





## 12750



### Material

Clamp: as part no. 10650.  
Chain: steel, 19,05mm pitch - 1 metre.  
Chain anchor: steel.  
Quick chain link: steel.

diameter workpieces.

Extra lengths of chain can be ordered and linked together.  
Clamp or unclamp with a simple turn of the red key. The chain can then easily be removed clear from the workpiece.

### Tips

Chains with rubber protective pads can also be provided on request (min. radius 200mm).

### Technical Notes

Provides strong and even clamping of large

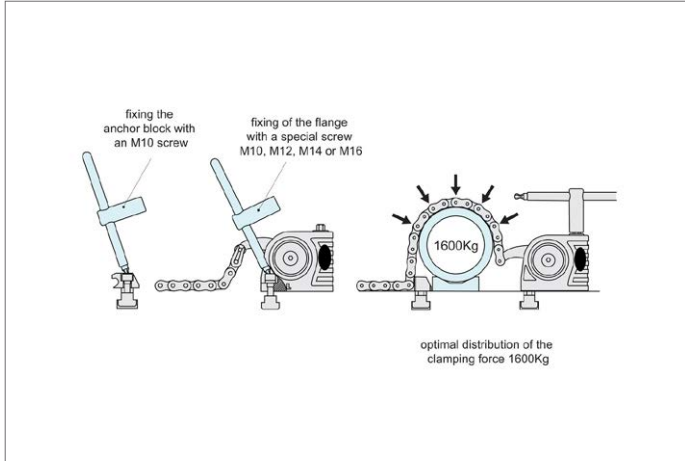
Order No.	Description	$h_1$	$h_2$	$h_3$	$l_1$	$l_2$
12750.W0040	Set: Clamp, 1m Chain, Chain Anchor	89	49	-	108	12.5
12750.W0900	Chain - 1m	-	-	-	-	-
12750.W0905	Quick Chain Link	-	-	-	-	-
12750.W0910	Chain Anchor	-	-	22	-	-

Order No.	$l_3$	$l_4$	$l_5$	$w_1$	$w_2$	$w_3$	$w_4$	A/F	Clamp reach $s_1$	Clamping force kN max.
12750.W0040	-	-	-	40	16	-	-	11	33	16
12750.W0900	-	-	19.05	-	-	19.5	-	-	-	-
12750.W0905	-	-	19.05	-	-	-	-	-	-	-
12750.W0910	26	17	-	-	-	-	40	-	-	-



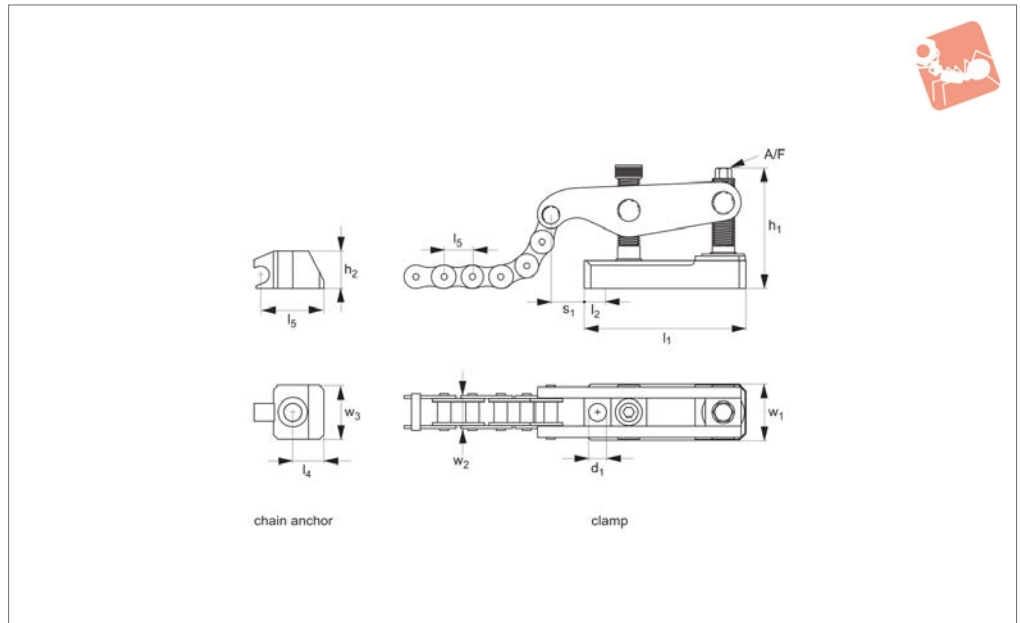
# Chain Clamp Sets - 16kN for large diameter clamping

## Chain Clamping





## 12752



### Material

Clamp - as part no. 10678.  
Chain - steel, 25,4 pitch. 3m long.  
Chain anchor - steel.

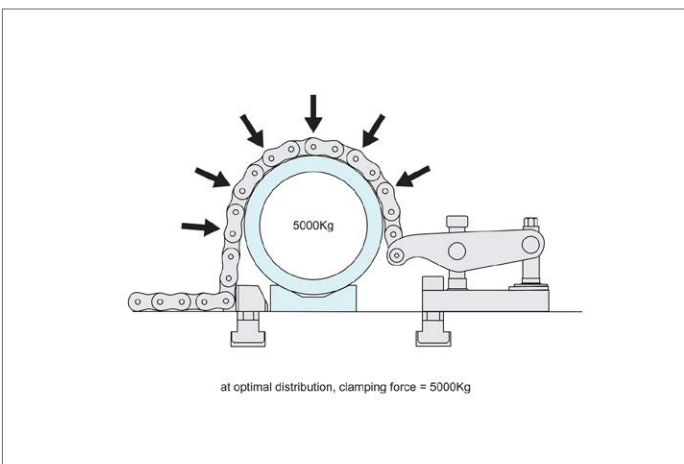
### Technical Notes

Heavy clamping forces of up to 50kN.

Provides strong and even clamping of large diameter workpieces.  
Clamp or unclamp with a simple turn of hexagon socket. Chain can be easily removed clear from the workpiece.  
Please use socket head cap screw of

strength class 12,9 for mounting. Please order T-nuts to suit your application separately, if required see part 24000.

Order No.	Description							d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>
12752.W0001	Set: Clamp, Chain (3m), Chain Anchor							17	111	35	108	12
Order No.	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	A/F	Clamp reach s <sub>1</sub>	Clamping force kN max.			
12752.W0001	57	28	25.4	50	25.4	50	13	30	50			

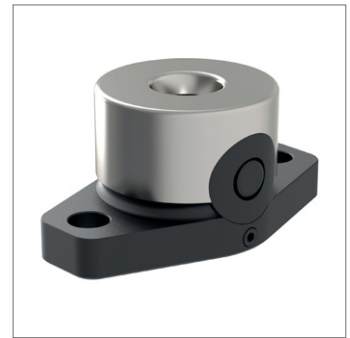
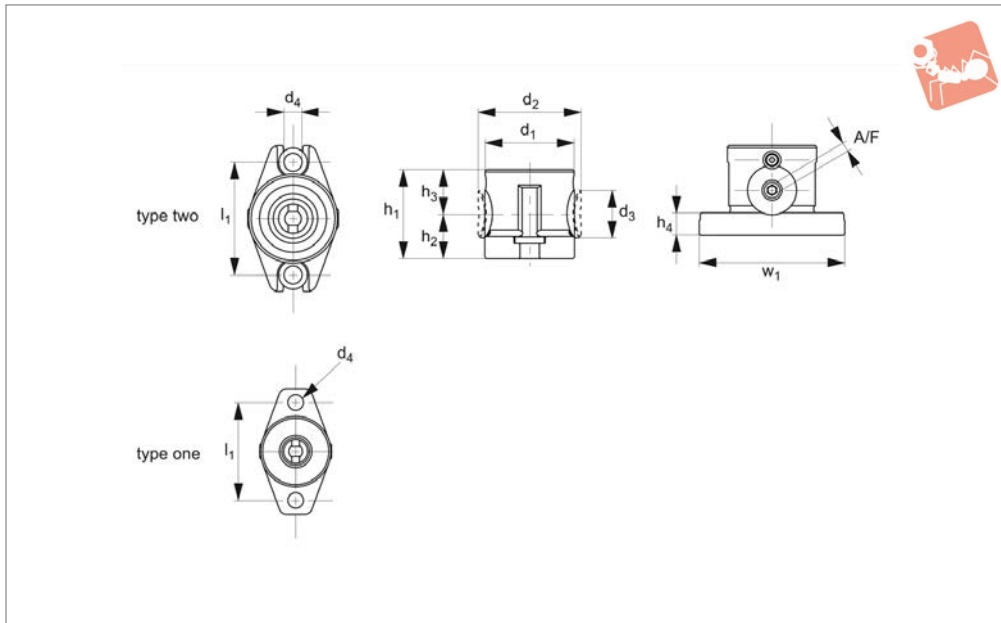






# Clamping Module - Single flanged

## Bore Clamping



### 12043

BORE CLAMPING

#### Material

Steel (AISI 4140), induction hardened, black oxide finish.

#### Technical Notes

For suitable clamping screws see part no.s

12046 through 12050.

For permissible cutting forces and corresponding workpiece weights when using the clamping module system, see technical pages.

Order No.	$h_1$ $\pm 0.01$	$h_2$	$h_3$	$l_1$	$w_1$	Type	Size	$d_1$	$d_2$	$d_3$	$d_4$	$h_4$	A/F	Clamping force kN max.	Screw torque Nm max.	Weight g
<b>12043.W0008</b>	25	12.5	12.5	42	54	One	8	30	34.5	15	6.6	7	3	5	4	100
<b>12043.W0011</b>	40	20.0	20.0	50	65	Two	11	40	46.0	22	9.0	10	4	8	8	300
<b>12043.W0016</b>	63	33.0	30.0	75	95	Two	16	60	69.0	32	13.0	15	6	15	50	1400
<b>12043.W0021</b>	80	40.0	40.0	100	130	Two	21	80	91.0	44	17.0	20	8	25	50	3300



Simple Workholding Provides

<p><b>Single Step Machining</b></p> <p>No tool interference</p>	<p><b>Lower Fixture Cost</b></p> <p>Single fixture</p>	<p><b>Better Machining Accuracy</b></p> <p>Single setup</p>	<p><b>Shorter Machining Time</b></p> <p>Simple toolpaths</p>
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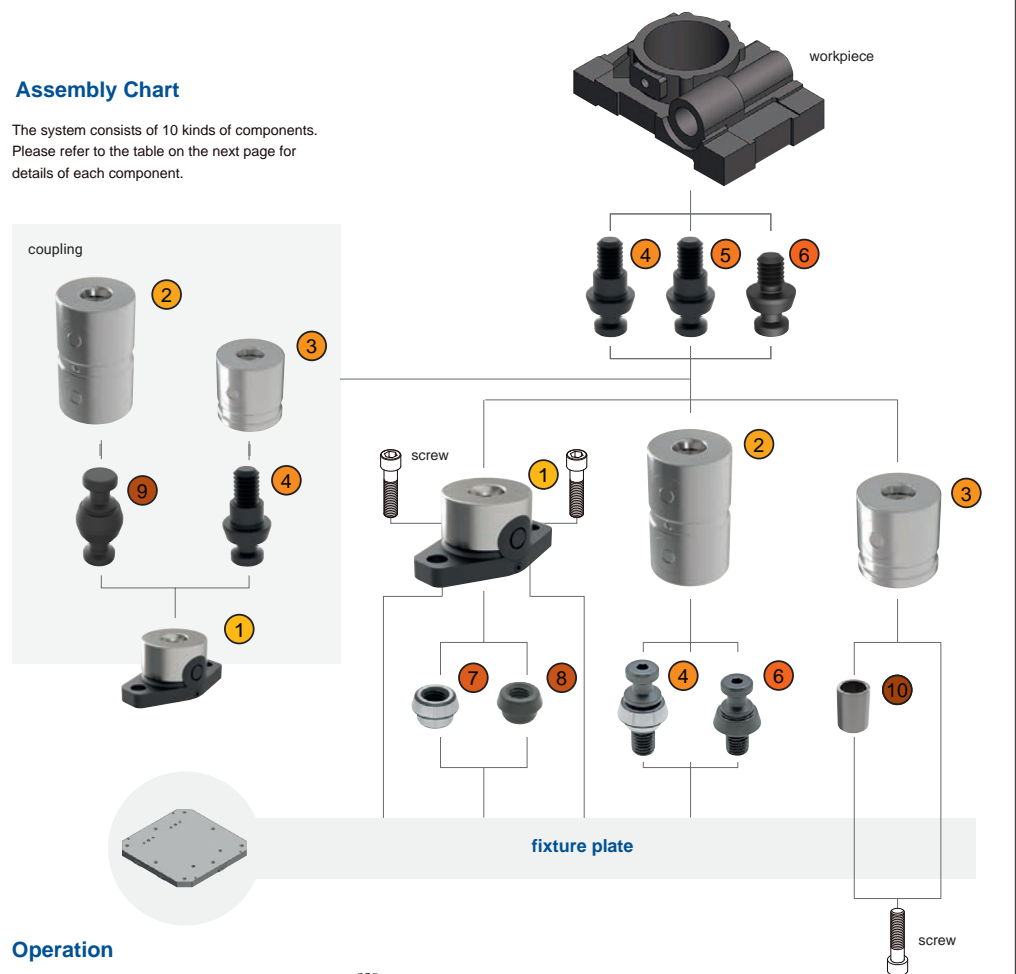
How to Use Modular Clamping System

Wixroyd Products

- ① 12043
- ② 12044
- ③ 12045
- ④ 12046.W0xxx
- ⑤ 12046.W4xxx
- ⑥ 12047
- ⑦ 12048.W02xx
- ⑧ 12048.W01xx
- ⑨ 12047
- ⑩ 12048.W00xx

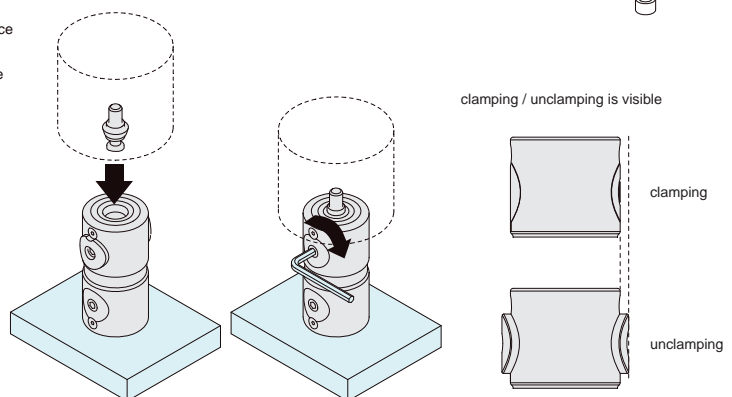
Assembly Chart

The system consists of 10 kinds of components. Please refer to the table on the next page for details of each component.



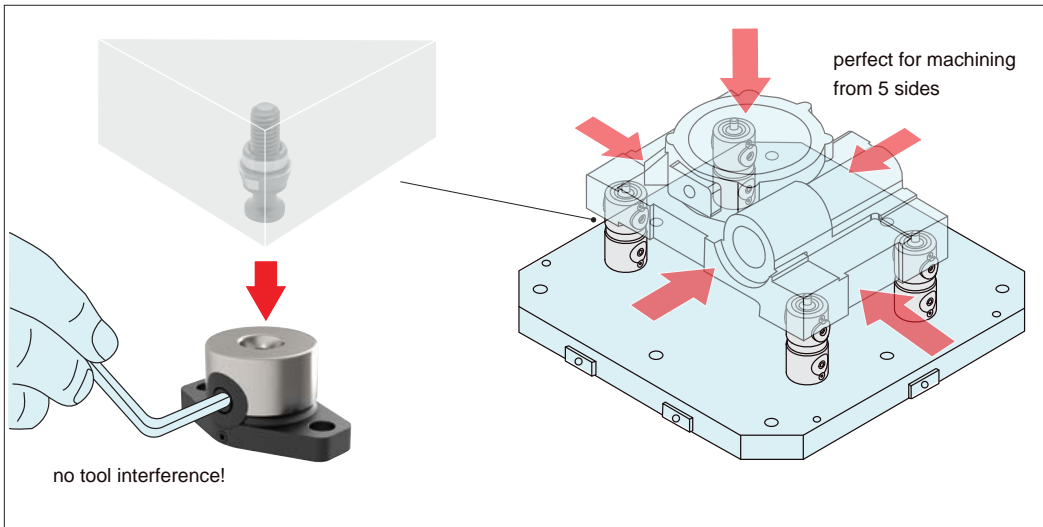
Operation

Install clamping screw on the workpiece and mount it on clamping module.  
Tighten the locking screws on the side of the clamping module.



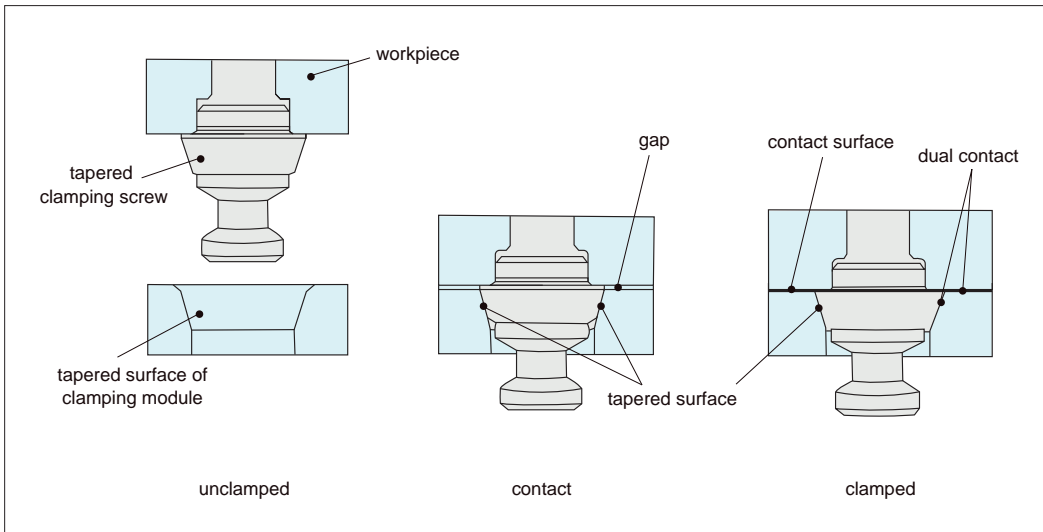


### Application Example



### Locating Mechanism

Dual surface contact at the tapered surfaces and contact surfaces provides 5 μm locating repeatability.



BORE CLAMPING

ov-W12043-A-T-W12049.5-A-T-modular-pull-clamping-system-b-rmh - Updated - 21-10-2022

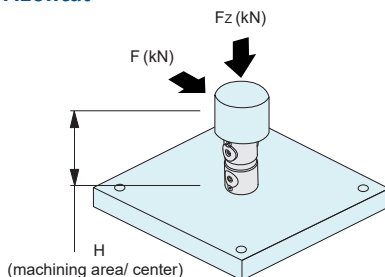
## Permissible Cutting Force & Workpiece Weight for Clamping Module System 12043 to 12049

### 1 Module

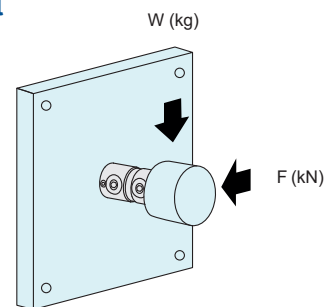
Note: Prepare a locator when the workpiece gets big rotating force.

Ensure the cutting force and the workpiece weight are within the allowable level.

#### Horizontal

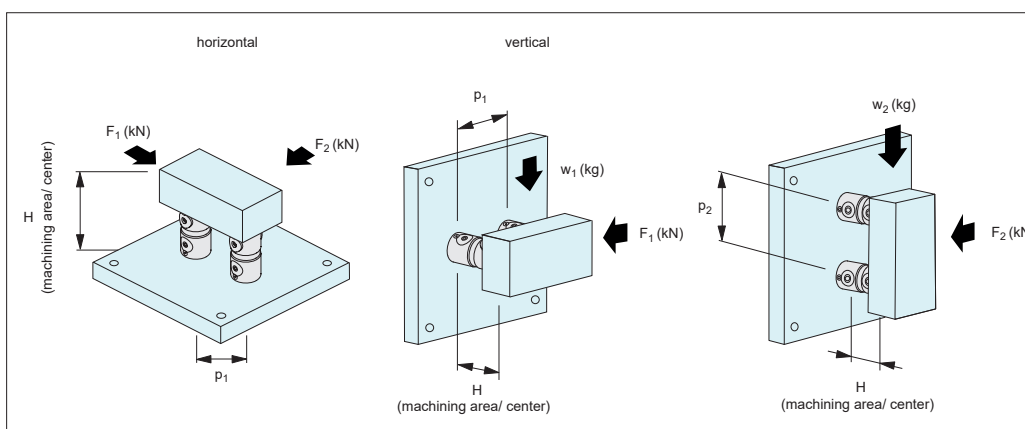


#### Vertical

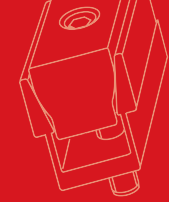


Part Number	Allowable Cutting Force		Allowable Workpiece Weight w(kg)
	F(kN)	Fz(kN)	
12043.W0008	50/H		50 x 100/H
12044.W0008	25/H	1.5	25 x 100/H
12045.W0008	25/H		25 x 100/H
12043.W0011	120/H		120 x 100/H
12044.W0011	70/H	2.5	70 x 100/H
12045.W0011	70/H		70 x 100/H
12043.W0016	250/H		250 x 100/H
12044.W0016	150/H	7.5	150 x 100/H
12045.W0016	150/H		150 x 100/H
12043.W0021	500/H		500 x 100/H
12044.W0021	300/H	15	300 x 100/H
12045.W0021	300/H		300 x 100/H

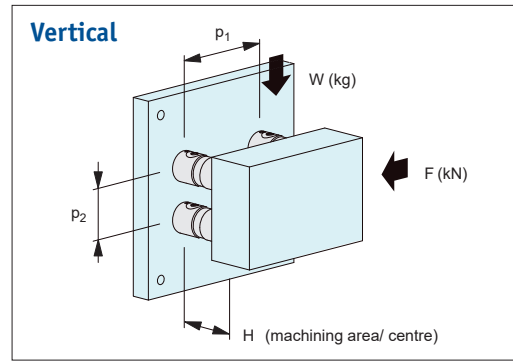
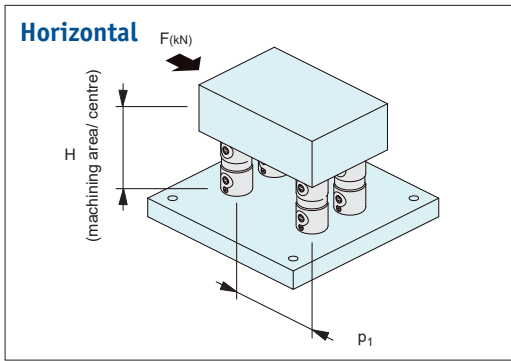
### 2 Modules



Part Number	Allowable Cutting Force			Allowable Workpiece Weight		
	F1(kN)	F2(kN)	Max(kN)	w1(kg)	w2(kg)	Max(kg)
12043.W0008	$(0.10p_1 + 180)H$	100/H		100x100/H	$(0.10p_2 + 180) \times 100/H$	
12044.W0008	$(0.05p_1 + 90)H$	50/H	1.8	50x100/H	$(0.05p_2 + 90) \times 100/H$	180
12045.W0008	$(0.05p_1 + 90)H$	50/H		50x100/H	$(0.05p_2 + 90) \times 100/H$	
12043.W0011	$(0.24p_1 + 432)H$	240/H		240x100/H	$(0.24p_2 + 432) \times 100/H$	
12044.W0011	$(0.14p_1 + 252)H$	140/H	3.2	140x100/H	$(0.14p_2 + 252) \times 100/H$	320
12045.W0011	$(0.14p_1 + 252)H$	140/H		140x100/H	$(0.14p_2 + 252) \times 100/H$	
12043.W0016	$(0.50p_1 + 900)H$	500/H		500x100/H	$(0.50p_2 + 900) \times 100/H$	
12044.W0016	$(0.30p_1 + 540)H$	300/H	6	300x100/H	$(0.30p_2 + 540) \times 100/H$	600
12045.W0016	$(0.30p_1 + 540)H$	300/H		300x100/H	$(0.30p_2 + 540) \times 100/H$	
12043.W0021	$(1.00p_1 + 1800)H$	1000/H		1000x100/H	$(1.00p_2 + 1800) \times 100/H$	
12044.W0021	$(0.60p_1 + 1080)H$	600/H	10	600x100/H	$(0.60p_2 + 1080) \times 100/H$	1000
12045.W0021	$(0.60p_1 + 1080)H$	600/H		600x100/H	$(0.60p_2 + 1080) \times 100/H$	



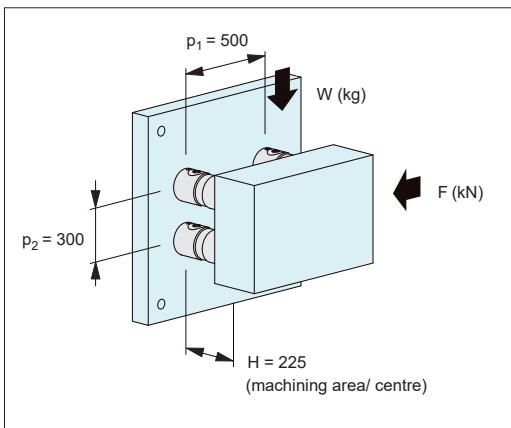
## Permissible Cutting Force & Workpiece Weight for Clamping Module System 12043 to 12049



4 Modules

BORE CLAMPING

Part Number	Allowable Cutting Force		Allowable Workpiece Weight	
	F(kN)	Max(kN)	w(kg)	Max (kg)
12043.W0008	$2X (0.10p_1 + 180)/H$	3.6	$2X (0.10p_2 + 180) X100/H$	360
12044.W0008	$2X (0.05p_1 + 90)/H$		$2X (0.05p_2 + 90) X100/H$	
12045.W0008	$2X (0.05p_1 + 90)/H$	6.4	$2X (0.05p_2 + 90) X100/H$	640
12043.W0011	$2X (0.24p_1 + 432)/H$		$2X (0.24p_2 + 432) X100/H$	
12044.W0011	$2X (0.14p_1 + 252)/H$	12	$2X (0.14p_2 + 252) X100/H$	1200
12045.W0011	$2X (0.14p_1 + 252)/H$		$2X (0.14p_2 + 252) X100/H$	
12043.W0016	$2X (0.50p_1 + 900)/H$	20	$2X (0.50p_2 + 900) X100/H$	2000
12044.W0016	$2X (0.30p_1 + 540)/H$		$2X (0.30p_2 + 540) X100/H$	
12045.W0016	$2X (0.30p_1 + 540)/H$	20	$2X (0.30p_2 + 540) X100/H$	2000
12043.W0021	$2X (1.00p_1 + 1800)/H$		$2X (1.00p_2 + 1800) X100/H$	
12044.W0021	$2X (0.60p_1 + 1080)/H$	20	$2X (0.60p_2 + 1080) X100/H$	2000
12045.W0021	$2X (0.60p_1 + 1080)/H$		$2X (0.60p_2 + 1080) X100/H$	



### Calculation Example

- Vertical mounting
- 4 pcs of 12044.W0016 (height 125mm)
- Pitch:  
 $p_1 = 500\text{mm}$   
 $p_2 = 300\text{mm}$
- Workpiece centre:  $H = 225\text{mm}$
- F direction cutting force: 3kN
- Workpiece weight: 375kg

<Allowable Cutting Force F>  
 $F = 2x(0.3X p_1 + 540)/H$   
 $= 2x(0.3X 500 + 540)/225$   
 $= 6.13\text{kN}$

\*) Cutting force 3kN is within allowable value (6.13kN).

<Allowable Workpiece Weight W>  
 $W = 2x(0.3X p_2 + 540)X100/H$   
 $= 2x(0.3X 300 + 540)X100/225$   
 $= 560\text{kg}$

\*) Workpiece weight 375kg is within allowable value (560kg).

weight-W12043-A-T-W12049.5-b-rnh - Updated - 21-10-2022

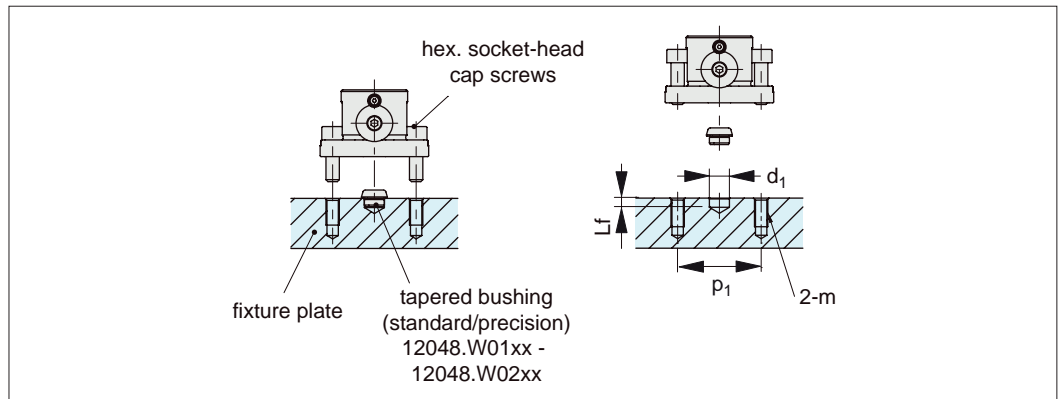


## Installation Instructions Modular Clamping System

### Mounting-Hole Dimension

Use 12048.W02xx tapered bushing (precision) for precise locating.

Use 12048.W01xx tapered bushing (standard) for rough locating.

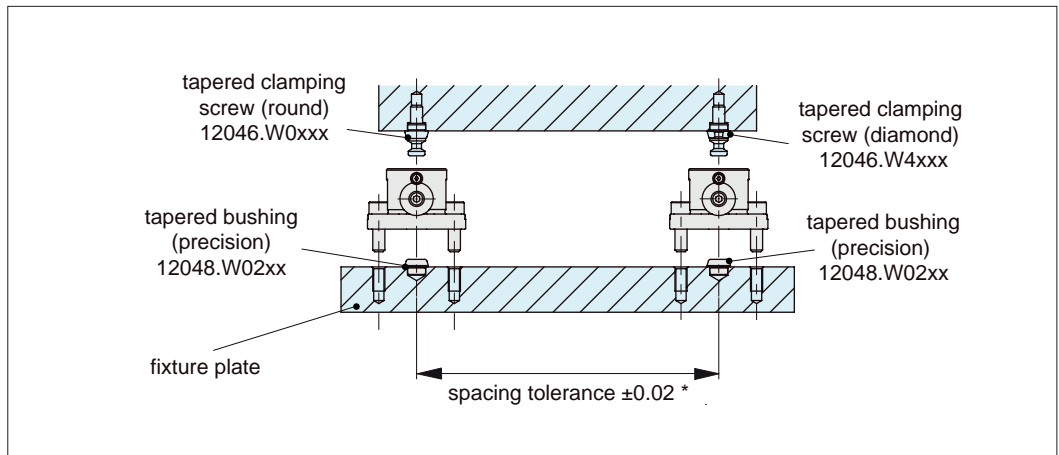


Part Number	$d_1$ (H7)	$L_f$	M	$P_1$
12043.W0008	8	5.5	M 6X1	42
12043.W0011	12	5.5	M 8X1.25	50
12043.W0016	18	6.5	M 12X1.75	75
12043.W0021	22	8	M 16X2	100

### Spacing Tolerance

Spacing tolerance for 12048.W02xx tapered bushings (precision) should be  $\pm 0.02$ .

Spacing tolerance for 12048.W01xx tapered bushings (standard) should be  $\pm 0.01$ .

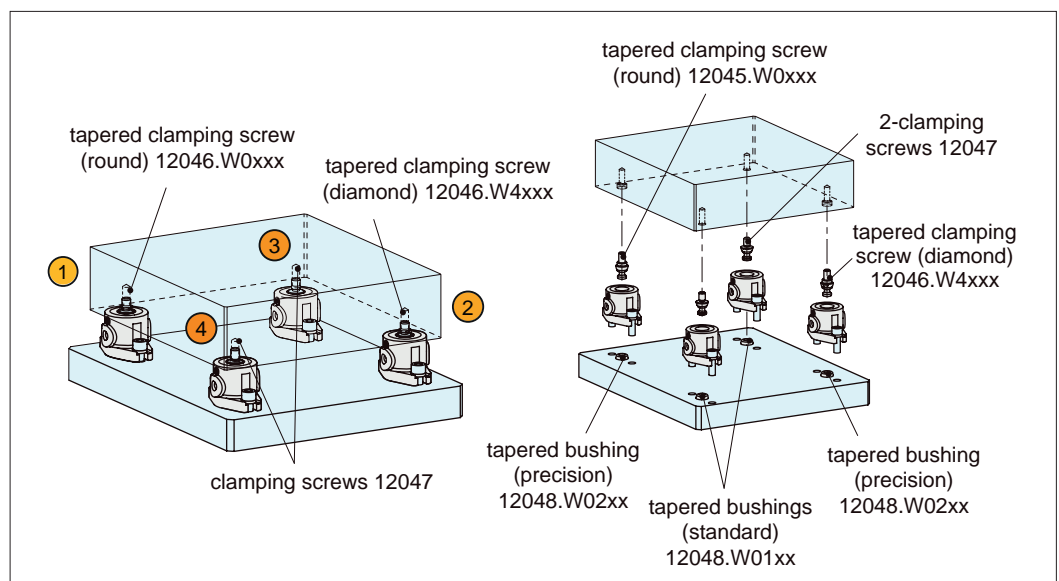


### Tightening Order

Note: For 12043.W0008, use 2 pieces of round tapered clamping screw. Tighten these 2 screws in the same order to maintain the locating repeatability.

Tighten the locking screws in order of

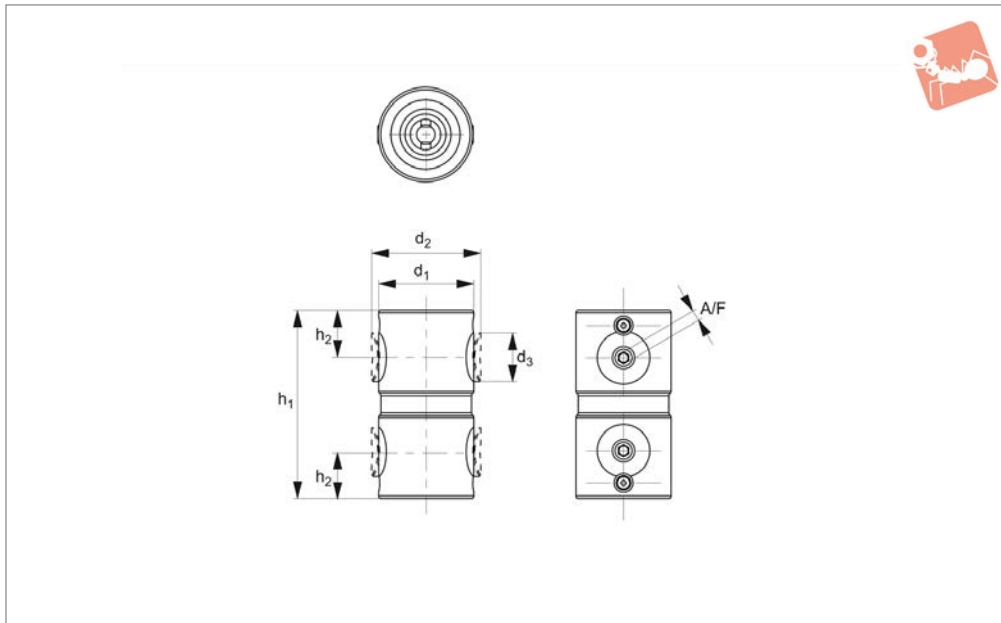
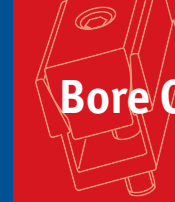
- ① Round tapered clamping screw
- ② Diamond tapered clamping screw
- ③ Clamping screw
- ④ Clamping screw





# Clamping Module - Double unflanged

## Bore Clamping



**12044**

BORE CLAMPING

### Material

Steel (AISI 4140), induction hardened, black oxide finish.

### Technical Notes

For suitable clamping screws see part no.s

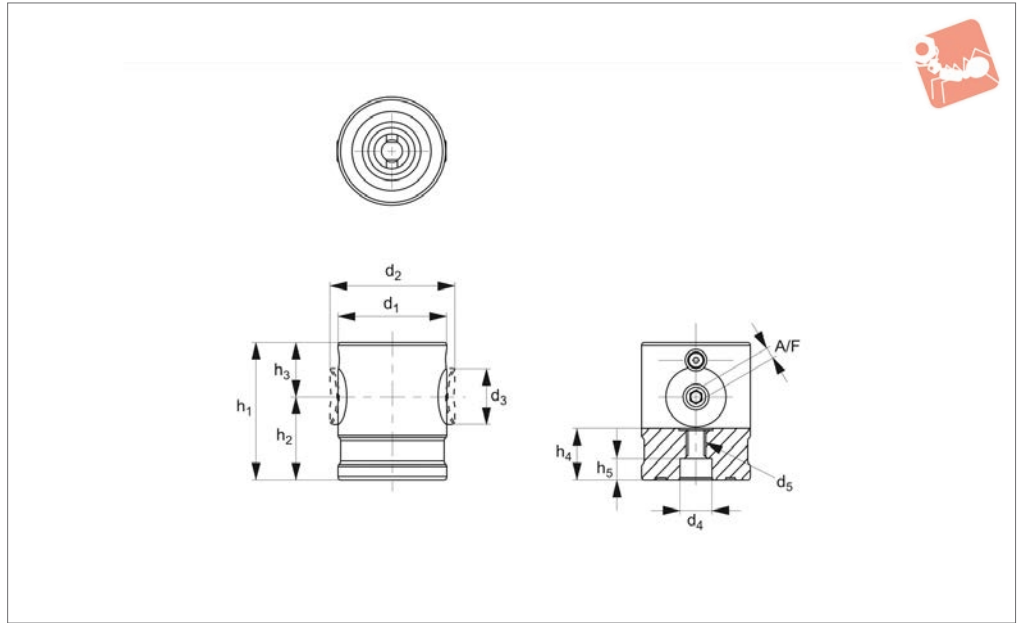
12046 through 12050.

For permissible cutting forces and corresponding workpiece weights when using the clamping module system, see technical pages.

Order No.	$h_1$ $\pm 0.01$	$h_2$	Size	$d_1$	$d_2$	$d_3$	A/F	Clamping force kN max.	Screw torque Nm max.	Weight g
<b>12044.W0008</b>	50	12.5	8	30	34.5	15	3	5	4	200
<b>12044.W0011</b>	80	20.0	11	40	46.0	22	4	8	8	700
<b>12044.W0016</b>	125	30.0	16	60	69.0	32	6	15	22	2600
<b>12044.W0021</b>	160	40.0	21	80	91.0	44	8	25	50	5800



## 12045



BORE CLAMPING

### Material

Steel (AISI 4140), induction hardened, black oxide finish.

### Technical Notes

For suitable clamping screws see part no.s

12046 through 12050.

For permissible cutting forces and corresponding workpiece weights when using the clamping module system, see technical pages.

Order No.	$h_1$ $\pm 0.01$	$h_2$	$h_3$	Size	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$h_4$	$h_5$	A/F	Clamping force kN max.	Screw torque Nm max.	Weight g
<b>12045.W0008</b>	32	19.5	12.5	8	30	34.5	15	8	M 6x1,00	11.5	5.0	3	5	4	200
<b>12045.W0011</b>	50	30.0	20.0	11	40	46.0	22	12	M 8x1,25	18.0	7.5	4	8	8	500
<b>12045.W0016</b>	80	50.0	30.0	16	60	69.0	32	18	M12x1,75	25.0	10.5	6	15	22	1600
<b>12045.W0021</b>	100	60.0	40.0	21	80	91.0	44	22	M16x2,00	31.0	12.5	8	25	50	3800

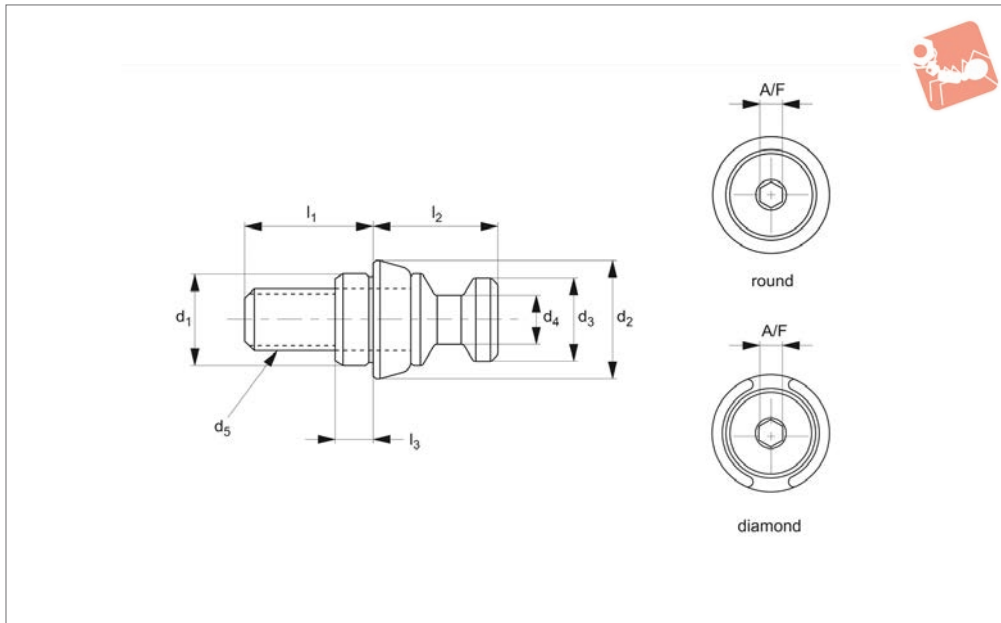




# Tapered Clamping Screws

round and diamond

## Bore Clamping



**12046**

BORE CLAMPING

### Material

Bushing: steel (C45E), black oxide finish, precision ground.

Screw: steel (SCM435), tempered, black oxide finish.

### Technical Notes

For suitable clamping modules, see parts

12043, 12044 and 12045.

Round type can be used for mounting 12044 double clamping module to fixture plate.

Used together, round and diamond type tapered clamping screws can provide x and y location of workpiece with up to 5 micron

repeatability.

Order No.	$l_1$	Suitable clamping module size	Type	Size	$d_1$ tol. g6	$d_2$	$d_3$	$d_4$	$d_5$	$l_2$	$l_3$	A/F	Weight g
12046.W0061	13	8	Round	8	8	11,5	8	4,8	M 6x1,00	10,0	5,0	3	6
12046.W0062	17	11	Round	11	10	15,5	11	6,5	M 6x1,00	16,5	5,0	3	17
12046.W0081	17	11	Round	11	12	15,5	11	6,5	M 8x1,25	16,5	5,0	3	20
12046.W0082	17	16	Round	16	12	24,5	16	9,5	M 8x1,25	25,0	5,0	5	52
12046.W0121	24	16	Round	16	18	24,5	16	9,5	M12x1,75	25,0	6,0	5	70
12046.W0122	24	21	Round	21	18	31,5	21	13,0	M12x1,75	33,0	6,0	6	125
12046.W0161	30	21	Round	21	22	31,5	21	13,0	M16x2,01	33,0	7,5	6	150
12046.W4062	17	11	Diamond	11	10	15,5	11	6,5	M 6x1,01	16,5	5,0	3	17
12046.W4081	17	11	Diamond	11	12	15,5	11	6,5	M 8x1,26	16,5	5,0	3	20
12046.W4082	17	16	Diamond	16	12	24,5	16	9,5	M 8x1,26	25,0	5,0	5	52
12046.W4121	24	16	Diamond	16	18	24,5	16	9,5	M12x1,75	25,0	6,0	5	70
12046.W4122	24	21	Diamond	21	18	31,5	21	13,0	M12x1,75	33,0	6,0	6	125
12046.W4161	30	21	Diamond	21	22	31,5	21	13,0	M16x2,01	33,0	7,5	6	150



## Installation Instructions Tapered Clamping Screws

### How To Use

Note: For 12043.W0008, 12044.W0008 or 12045.W0011, use 2 pieces of round type.

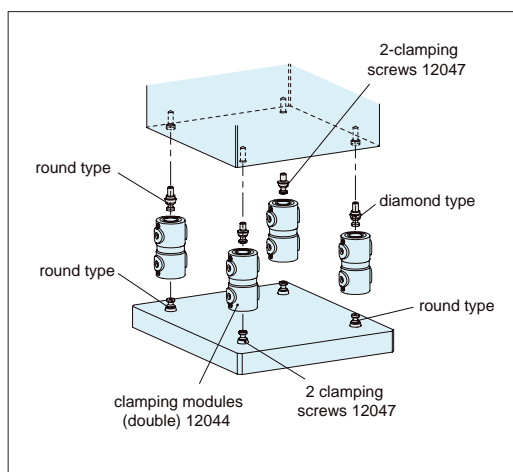
### Round Type

- Can be used for locating 12044 clamping module (double).
- Can be used for locating a workpiece with diamond type.

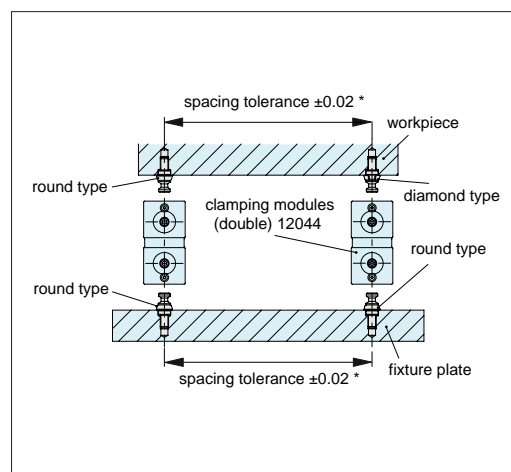
### Diamond Type

- Can be used for locating a workpiece with round type.
- Fix the tapered bushing of diamond type after deciding the direction.

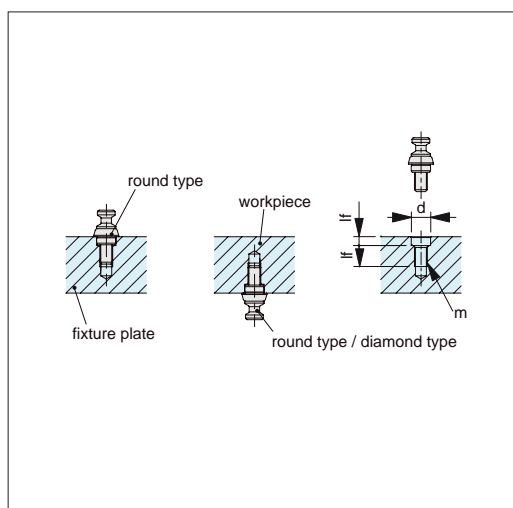
### Application Example



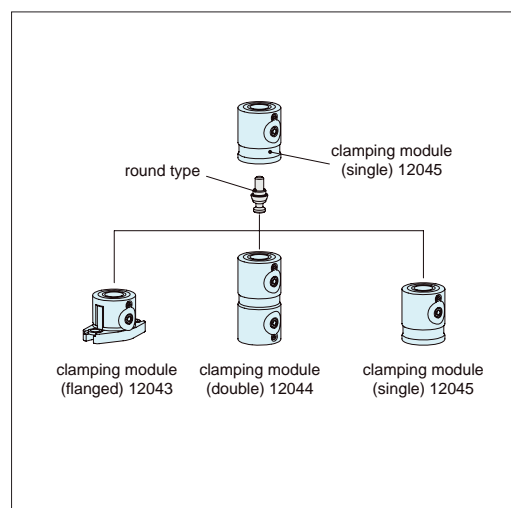
### Spacing Tolerance



### Mounting-Hole Dimension



### Coupling of Clamping Module (Single)



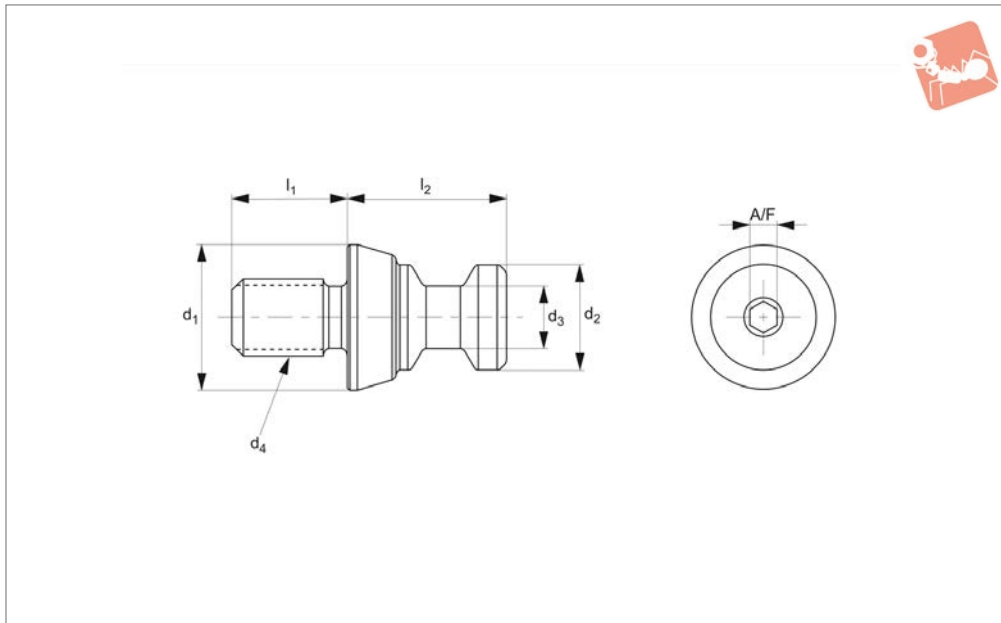
Part Number	d (H7)	Lf	Lf <sub>1</sub>	M
12046.WX061	8	9	5.5	M 6X1
12046.WX062	10	13	5.5	M 6X1
12046.WX081	12	13	5.5	M 8X1.25
12046.WX082	12	13	5.5	M 8X1.25
12046.WX121	18	19	6.5	M12X1.75
12046.WX122	18	19	6.5	M12X1.75
12046.WX161	22	23	8	M16X2

Round type can be used as a coupling for clamping module (single). Locating repeatability is 5 μm).



# Tapered Clamping Screws floating

## Bore Clamping



**12047.1**

BORE CLAMPING

### Material

Bushing: steel (C45E), black oxide finish, precision ground.

### Technical Notes

Can be used to couple double clamping modules (see part no.12044) together for

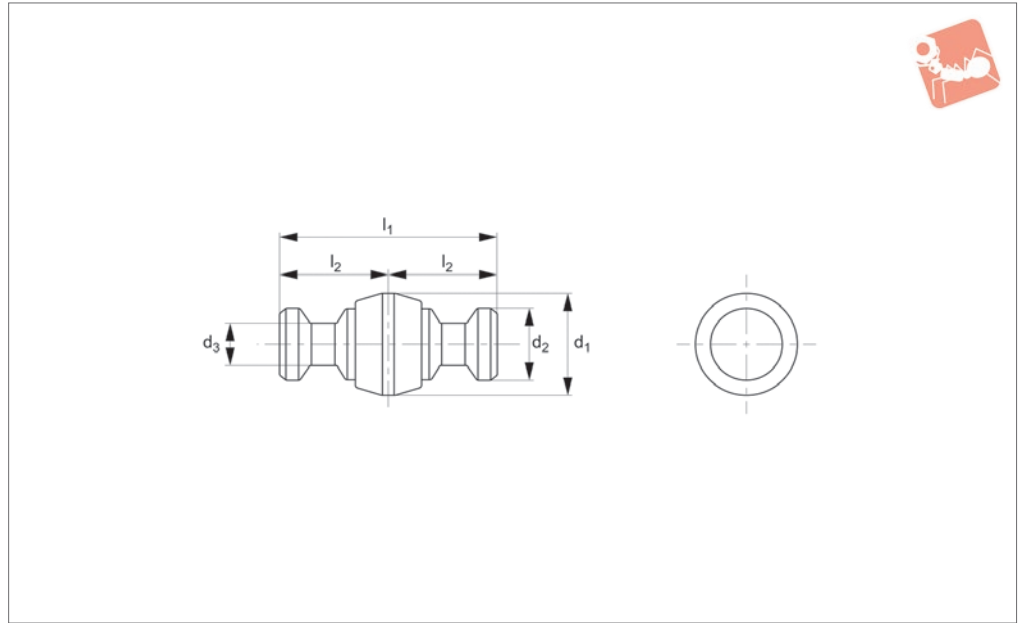
greater height.

Locating repeatability  $\pm 0,2\text{mm}$ .

Order No.	$l_1$	Suitable clamping module size	Type	Size	$d_1$	$d_2$	$d_3$	$d_4$	$l_2$	A/F	Weight g
12047.W0061	8	8	Floating	8	11	8	4,8	M 6x1,00	10,0	3	5
12047.W0062	9	11	Floating	11	15	11	6,5	M 6x1,00	16,5	3	13
12047.W0081	12	11	Floating	11	15	11	6,5	M 8x1,25	16,5	3	16
12047.W0082	12	16	Floating	16	24	16	9,5	M 8x1,25	25,0	5	46
12047.W0121	18	16	Floating	16	24	16	9,5	M12x1,75	25,0	5	57
12047.W0122	18	21	Floating	21	31	21	13,0	M12x1,75	33,0	6	108
12047.W0161	22	21	Floating	21	31	21	13,0	M16x2,01	33,0	6	125



## 12047.2



### Material

Bushing: steel (C45E), black oxide finish, precision ground.

### Technical Notes

Can be used to couple double clamping modules (see part no.12044) together for

greater height.

Locating repeatability  $\pm 0,2\text{mm}$ .

Order No.	$l_1$	Suitable clamping module 12044	Type	Size	$d_1$	$d_2$	$d_3$	$l_2$	Weight g
12047.W0011	33	11	Floating	11	15.5	11	6.5	16.5	24
12047.W0016	50	16	Floating	16	24.5	16	9.5	25.0	85
12047.W0021	66	21	Floating	21	31.5	21	13.0	33.0	190

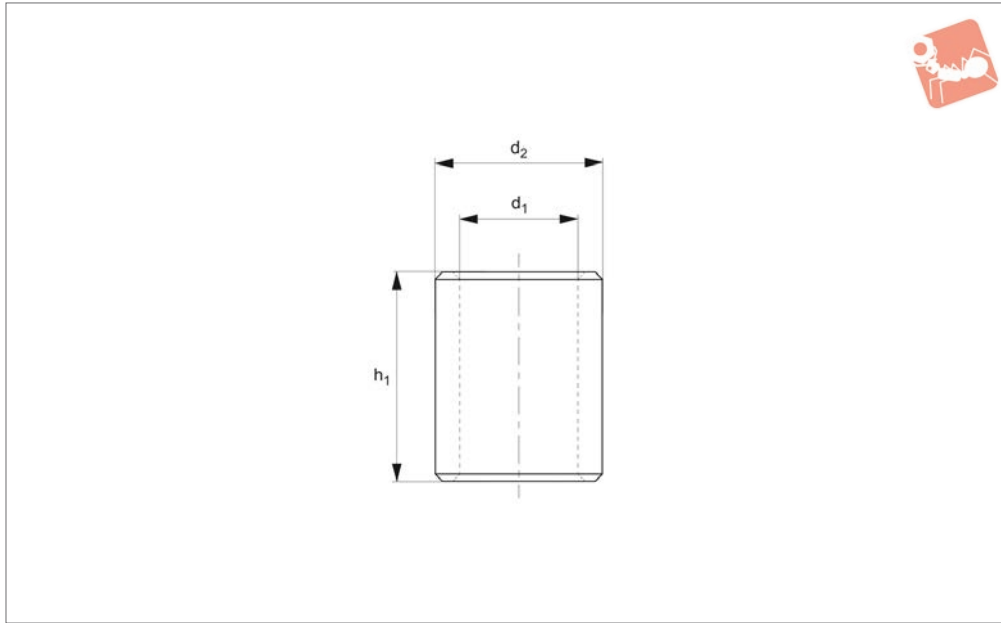


# Locating Bush

for single clamping module 12045



## Bore Clamping



**12048.1**

BORE CLAMPING

### Material

Steel (SK95), tempered, black oxide finish, precision ground.

single clamping module (see part no. 12045) location on the fixture plate. Can achieve clamping module locating repeatability of up to 0,04mm.

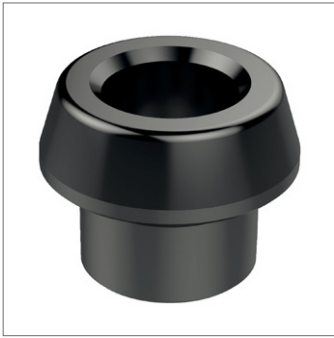
### Technical Notes

Can be used to increase the accuracy of

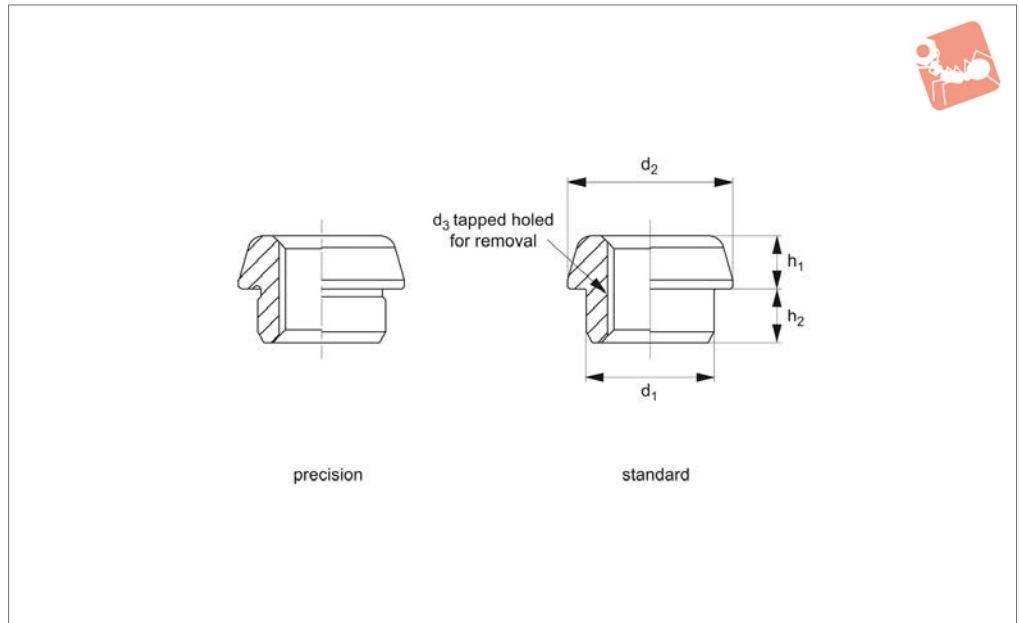
Order No.	$h_1$	Suitable clamping module 12045	Size	$d_1$	$d_2$ tol. h6	Weight g
12048.W0008	11	8	8	6.0	8	2
12048.W0011	15	11	11	8.5	12	7
12048.W0016	22	16	16	12.5	18	22
12048.W0021	28	21	21	16.5	22	35



BORE CLAMPING



## 12048.2



### Material

Steel (C45E), tempered, black oxide finish, precision ground (precision type only)

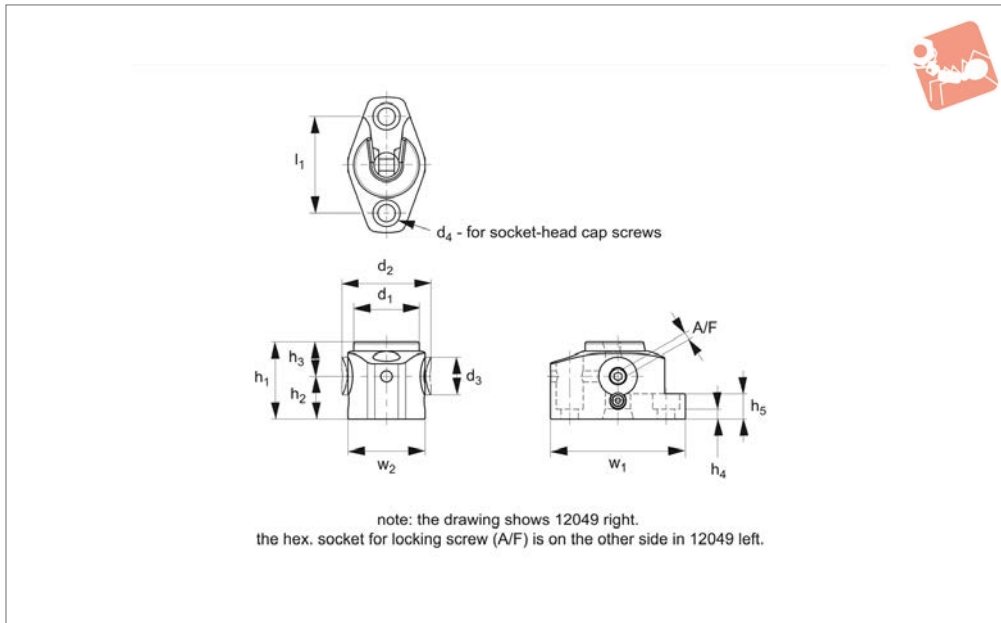
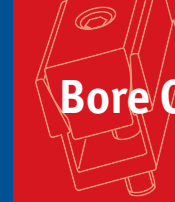
### Technical Notes

Can be used to increase the accuracy of

flanged single clamping module (see part no. 12043) location on the fixture plate. Can achieve clamping module locating repeatability of up to 5 microns (precision type), or 0,1mm (standard type).

Only the precision type is precision ground for increased locating accuracy.

Order No.	$h_1$	$h_2$	Suitable clamping module 12043	Type	Size	$d_2$	$d_3$	Precision $d_1$ tol. g6	Standard $d_1$ -0.02 -0.05	Weight g
<a href="#">12048.W0108</a>	4	5.0	8	Standard	8	11.5	M 6x1,00	-	8	4
<a href="#">12048.W0111</a>	5	5.0	11	Standard	11	15.5	M 8x1,25	-	12	8
<a href="#">12048.W0116</a>	8	6.0	16	Standard	16	24.5	M12x1,75	-	18	27
<a href="#">12048.W0121</a>	10	7.5	21	Standard	21	31.5	M16x2,00	-	22	51
<a href="#">12048.W0208</a>	4	5.0	8	Precision	8	11.5	M 6x1,00	8	-	4
<a href="#">12048.W0211</a>	5	5.0	11	Precision	11	15.5	M 8x1,25	12	-	8
<a href="#">12048.W0216</a>	8	6.0	16	Precision	16	24.5	M12x1,75	18	-	27
<a href="#">12048.W0221</a>	10	7.5	21	Precision	21	31.5	M16x2,00	22	-	51



## 12049.1

BORE CLAMPING

### Material

Steel (AISI 4140), induction hardened, black oxide finish, precision ground.

### Technical Notes

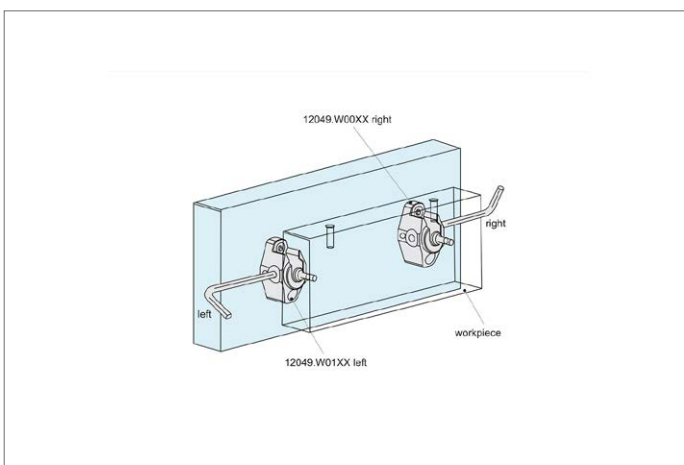
For suitable clamping screws see part no.s

12049.W0212 - .W0224.

For permissible cutting forces and corresponding workpiece weights when using the clamping module system, see technical pages.

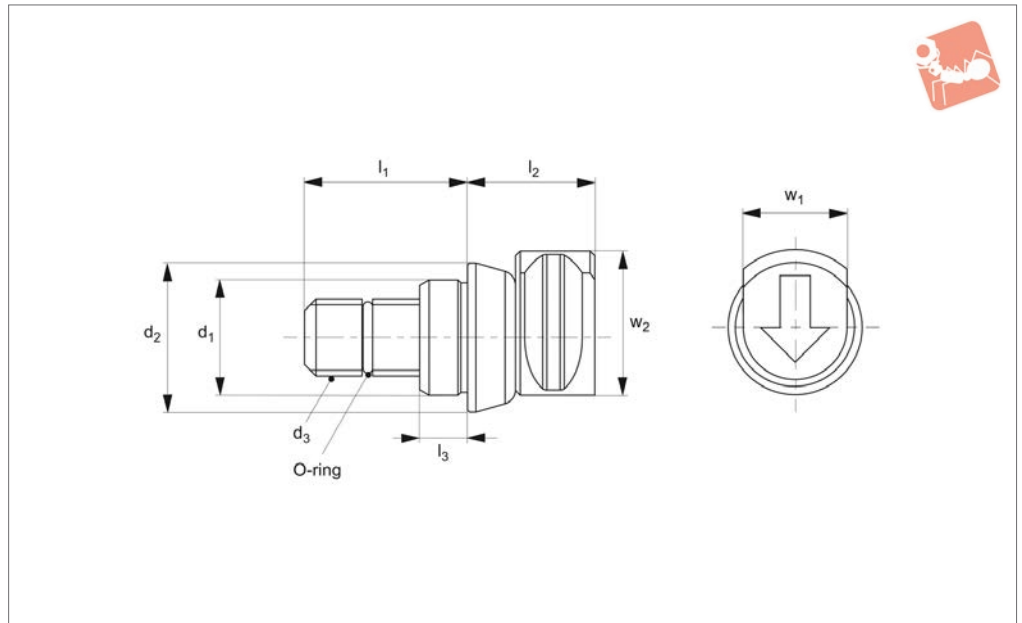
Diagram shown is for right hand version, left hand version only varies by location of locking screw A/F which is on the left hand side of module rather than right.

Order No.	$h_1$ $\pm 0.01$	$h_2$	$h_3$	$l_1$	$w_1$	Type	Size	$d_1$	$d_2$	$d_3$	$d_4$	$h_4$	$h_5$	$w_2$	A/F	Clamping force kN max.	Screw torque Nm max.	Weight g
<b>12049.W0012</b>	40	22	18	50	70	Right	12	34	46	20	M 8	5	13	40	4	8	8	400
<b>12049.W0019</b>	63	35	28	75	100	Right	19	52	69	30	M12	8	20	60	6	15	22	1400
<b>12049.W0024</b>	80	44	36	100	140	Right	24	70	93	40	M16	10	26	80	8	25	50	3200
<b>12049.W0112</b>	40	22	18	50	70	Left	12	34	46	20	M 8	5	13	40	4	8	8	400
<b>12049.W0119</b>	63	35	28	75	100	Left	16	52	69	30	M12	8	20	60	6	15	22	1400
<b>12049.W0124</b>	80	44	36	100	140	Left	24	70	93	40	M16	10	26	80	8	25	50	3200





## 12049.2



### Material

Bushing: steel (C45E), black oxide finish, precision ground.  
Screw: steel (SCM 435), tempered, black

oxide finish.

O-ring: nitrile rubber.

### Technical Notes

For suitable clamping modules see part no.12049.W0012 - .W0124.

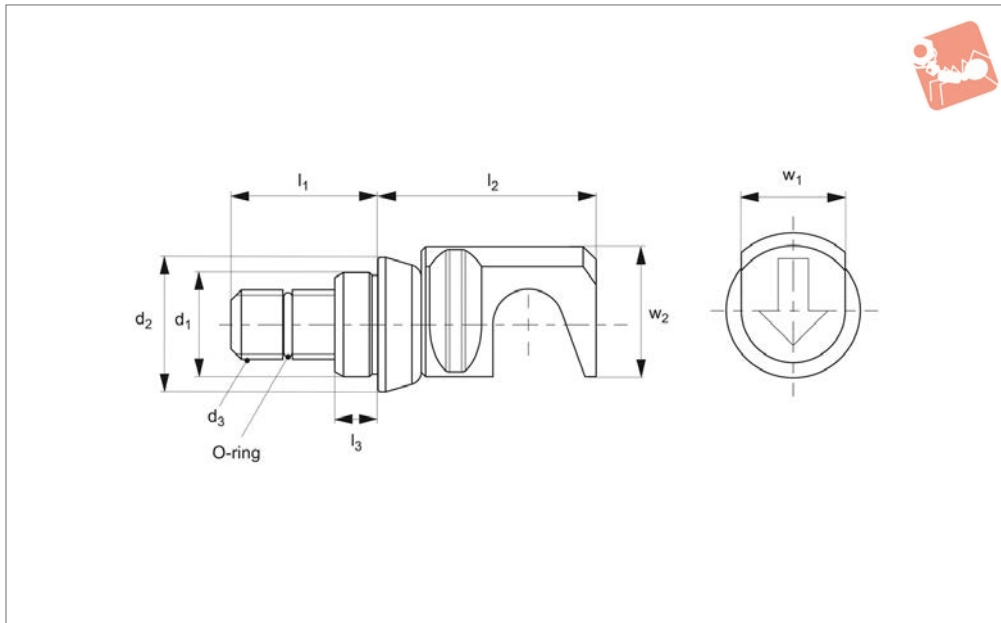
Order No.	$l_1$	$w_1$	Suitable clamping module size	Type	Size	$d_1$ tol. g6	$d_2$	O-ring size	$d_3$	$l_2$	$l_3$	$w_2$	Weight g
<b>12049.W0212</b>	17	12	12	Precision	12	12	15,5	SS050 (CS1 I/D 5,0)	M 8x1,25	13,0	5,0	15,0	22
<b>12049.W0219</b>	24	19	19	Precision	19	18	24,5	S8 (CS1,5 I/D 7,5)	M12x1,75	21,5	6,0	23,5	81
<b>12049.W0224</b>	30	24	24	Precision	24	22	31,5	S12 (CS 1,5 I/D 11,5)	M16x2,00	27,0	7,5	30,0	170





# Tapered Clamping Screws - Hook precision

## Bore Clamping



**12049.3**

BORE CLAMPING

### Material

Bushing: steel (C45E), black oxide finish, precision ground.  
Screw: steel (SCM 435), tempered, black

oxide finish.

O-ring: nitrile rubber.

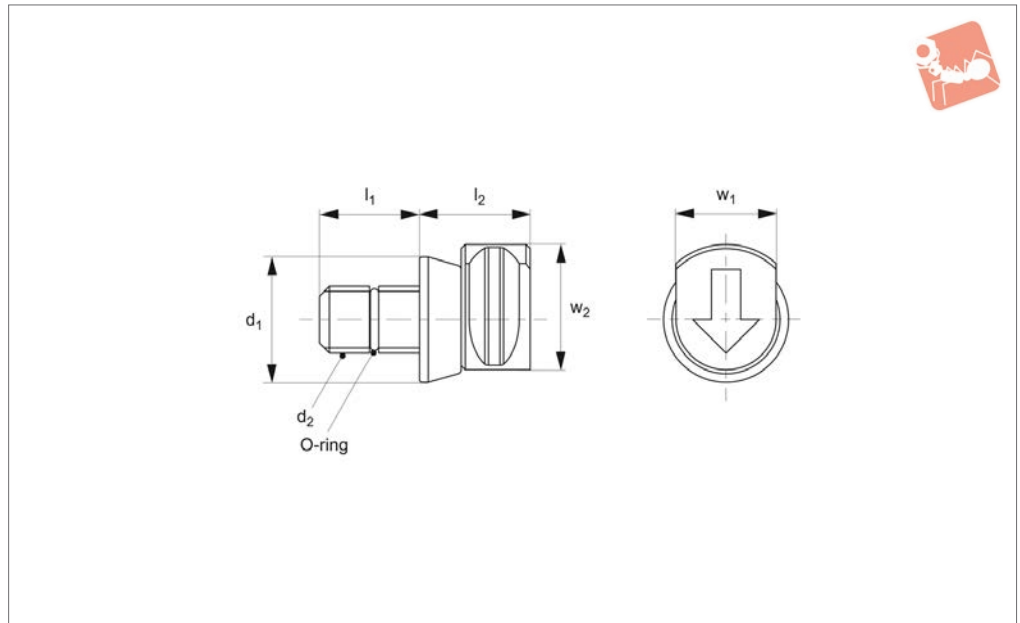
### Technical Notes

For suitable clamping modules see part no. 12049.1.

Order No.	$l_1$	$w_1$	Suitable clamping module size	Type	Size	$d_1$ tol. g6	$d_2$	O-ring size	$d_3$	$l_2$	$l_3$	$w_2$	Weight g
<b>12049.W0312</b>	17	12	12	Precision	12	12	15,5	SS050 (CS1 I/D 5,0)	M 8x1,25	25	5,0	15,0	30
<b>12049.W0319</b>	24	19	19	Precision	19	18	24,5	S8 (CS1,5 I/D 7,5)	M12x1,75	40	6,0	23,5	115
<b>12049.W0324</b>	30	24	24	Precision	24	22	31,5	S12 (CS 1,5 I/D 11,5)	M16x2,00	51	7,5	30,0	235



## 12049.4



### Material

Bushing: steel (C45E), black oxide finish, precision ground.  
Screw: steel (SCM 435), tempered, black

oxide finish.

O-ring: nitrile rubber.

### Technical Notes

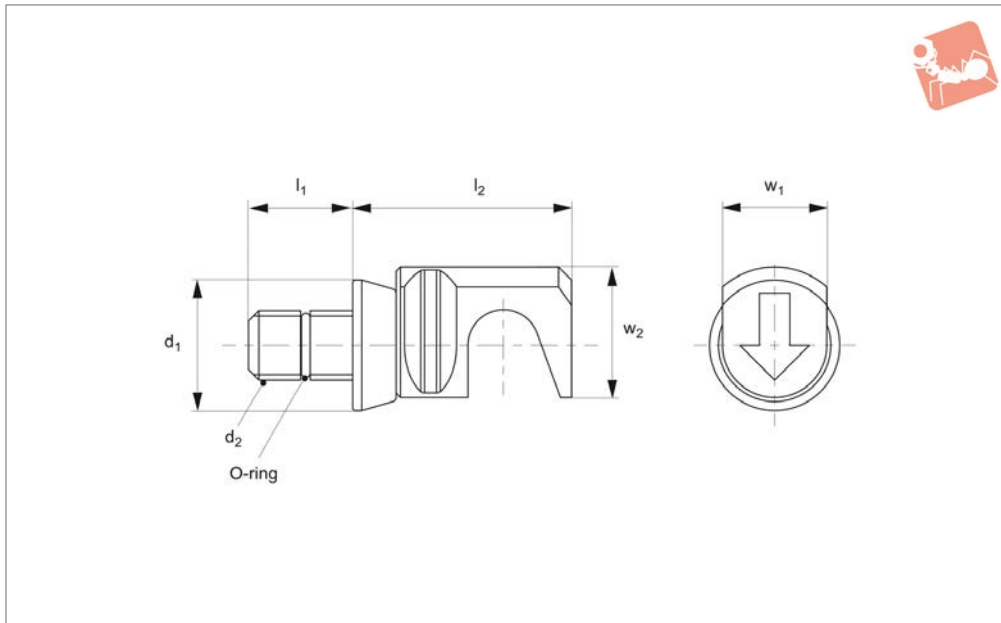
For suitable clamping modules see part no. 12049.1.

Order No.	$l_1$	$w_1$	Suitable clamping module size	Type	Size	$d_1$	$d_2$	O-ring size	$l_2$	$w_2$	Weight g
12049.W0412	12	12	12	Standard	12	15	M 8x1,25	SS050 (CS1 I/D 5,0)	13,0	15,0	18
12049.W0419	18	19	19	Standard	19	24	M12x1,75	S8 (CS1,5 I/D 7,5)	21,5	23,5	69
12049.W0424	22	24	24	Standard	24	31	M16x2,00	S12 (CS 1,5 I/D 11,5)	27,0	30,0	147



# Clamping Screws - Hook standard

## Bore Clamping



**12049.5**

BORE CLAMPING

### Material

Bushing: C45E. Black oxide finish, precision ground.  
Screw: steel (SCM 435), tempered, black

oxide finish.

O-ring: nitrile rubber.

### Technical Notes

For suitable clamping modules see part no. 12049.1.

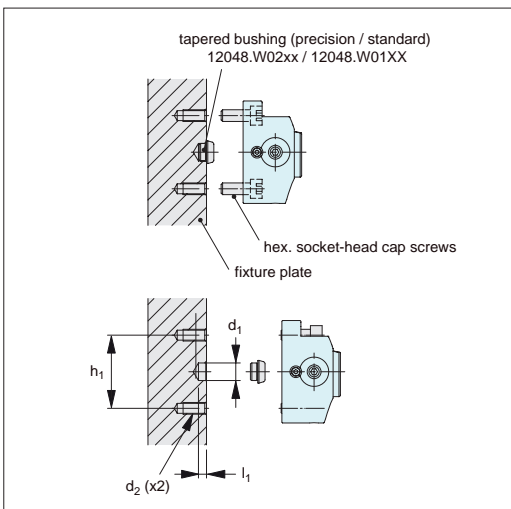
Order No.	$l_1$	$w_1$	Suitable clamping module size	Type	Size	$d_1$	$d_2$	O-ring size	$l_2$	$l_3$	$w_2$	Weight g
<b>12049.W0512</b>	12	12	12	Standard	12	15	M 8x1,25	SS050 (CS1 I/D 5,0)	25	5,0	15,0	26
<b>12049.W0519</b>	18	19	19	Standard	19	24	M12x1,75	S8 (CS1,5 I/D 7,5)	40	6,0	23,5	103
<b>12049.W0524</b>	22	24	24	Standard	24	31	M16x2,00	S12 (CS 1,5 I/D 11,5)	51	7,5	30,0	213



## How To Use

- Use 12048.W02xx tapered bushing (precision) for precise locating.
- Use 12048.W01xx tapered bushing (standard) for rough locating.

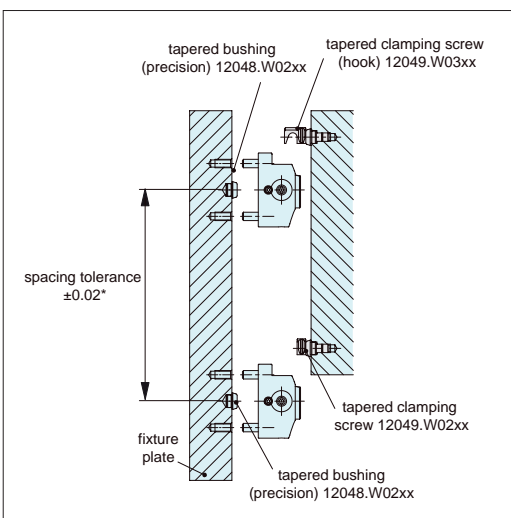
## Mounting Hole Dimension



Part Number	d <sub>1</sub> (H7)	l <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>
12049.W0012	12	5.5	M 8X1,25	50
12049.W0112	12	5.5	M 8X1,25	50
12049.W0019	18	6.5	M12X1,75	75
12049.W0119	18	6.5	M12X1,75	75
12049.W0024	22	8	M16X2	100
12049.W0124	22	8	M16X2	100

\* The tolerance of dimension 'd<sub>1</sub>' for tapered bushings (standard) should be  $0^{-0,1}$

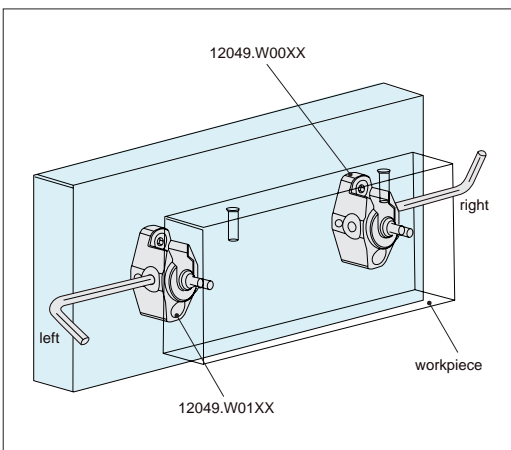
## Spacing Tolerance



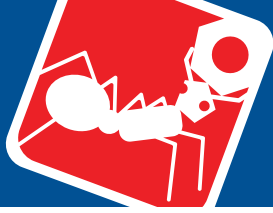
Spacing tolerance should be  $\pm 0,02$  for tapered bushings (precision).

\*Spacing tolerance should be  $\pm 0,1$  for tapered bushings (standard).

## Layout



Use 12049.W00xx for tightening from right side, 12049.W01xx for left side.



# Clamping Modules for Vertically Mounted Fixtures



12049

Clamping & Height Setting

## Clamping Modules for Vertically Mounted Fixtures

Firstly tighten the hook type clamping screw.

The first one becomes reference.

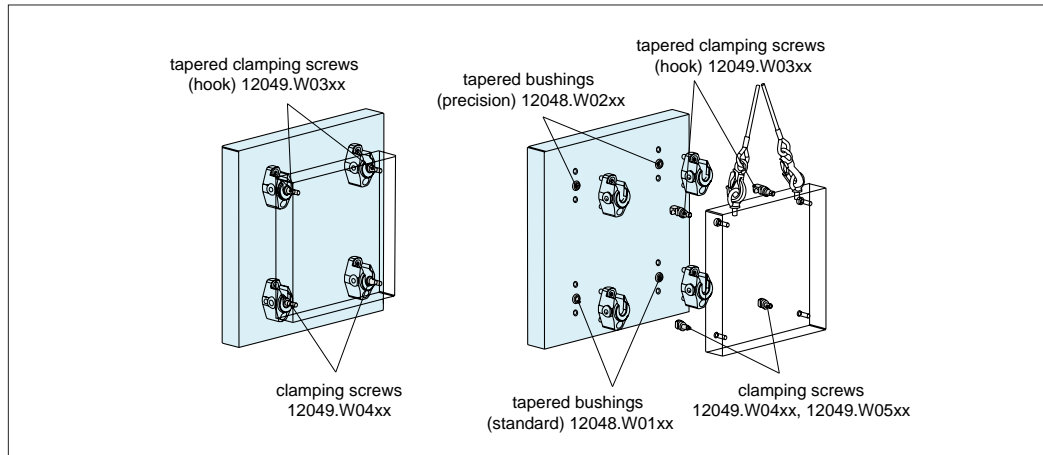
The products should be positioned as shown below.

12049.W03xx, 12049.W01xx and 12049.W02xx tapered clamping screws and 12048.W02xx tapered bushings (precision) should be used together, and 12049.W04xx and 12049.W05xx clamping screws and 12048.W01xx tapered bushings (standard) should also be used together.

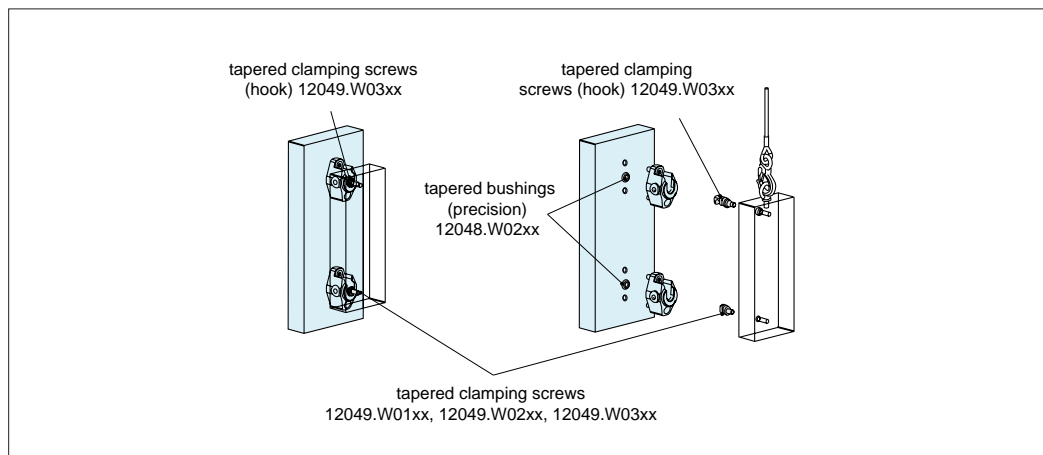
### Application Example

Note: Do not remove the hoists until the unit fully clamped.

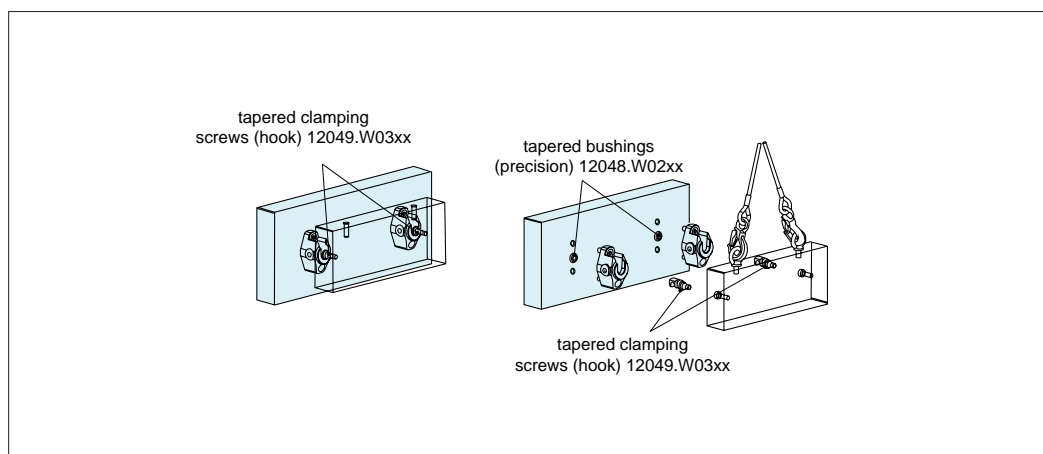
### Example 1



### Example 2



### Example 3



BORE CLAMPING

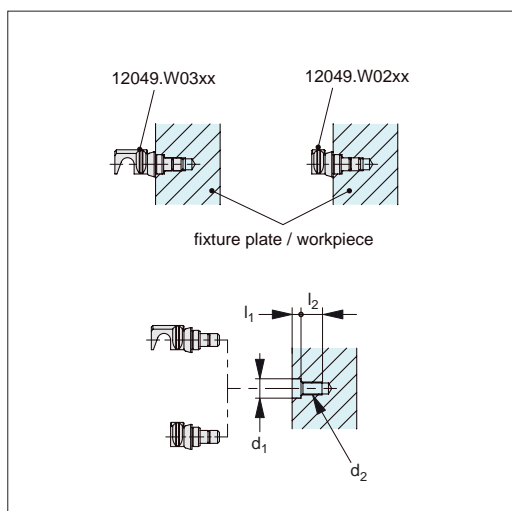
ov-W12049.1-A-T-W12049.5-A-T-clamping-modules-vertically-mounted-fixtures-rmh - Updated - 21-10-2022



## Clamping Modules for Angle Mounted Fixtures

- Each clamping screw has commercially available O-ring to prevent rotation and keep the direction of arrow marking.
- O-ring should be replaced by the customer when it is worn.
- Tapered clamping screws can be used for locating fixture plate or workpiece.
- Clamping screws can be used for just clamping.

### Mounting Hole Dimension

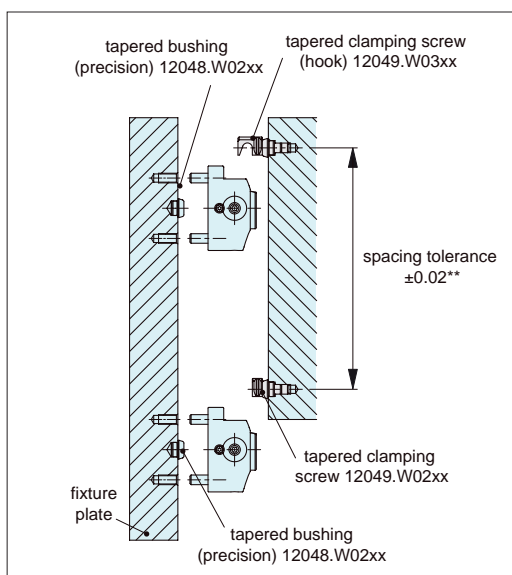


Part Number	d <sub>1</sub> *	l <sub>1</sub>	l <sub>2</sub>	d <sub>2</sub>
12049.W0212	12	13	5.5	M 8X1,25
12049.W0312	12	13	5.5	M 8X1,25
12049.W0219	18	19	6.5	M12X1,75
12049.W0319	18	19	6.5	M12X1,75
12049.W0224	22	23	8	M16X2,00
12049.W0324	22	23	8	M16X2,00

\* The hole tolerance should always be  $\begin{matrix} -0,010 \\ -0,025 \end{matrix}$  when tapered clamping screws are always mounted on the fixture plate. Fixture plate and tapered bushing fit tightly and keep repeatability without chip incursion.

The hole tolerance should be H7 when mounting on workpiece. Tapered bushing can be easily mounted/ removed.

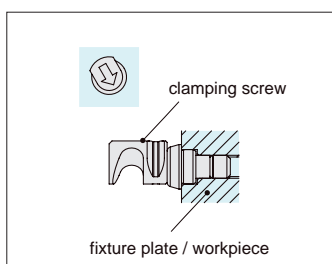
### Spacing Tolerance



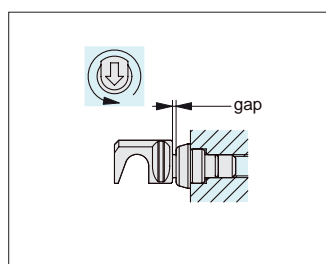
Spacing tolerance should be  $\pm 0,02$  for tapered clamping screws.

\*\*Spacing tolerance should be  $\pm 0,2$  for clamping screws.

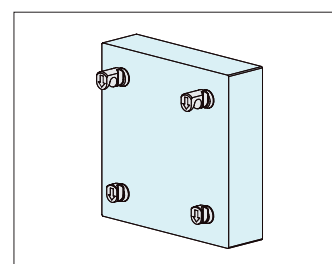
### Installation



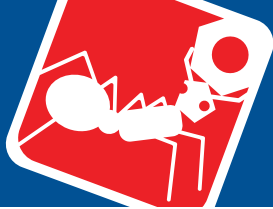
1. Fully tighten the clamping screw on fixture plate or workpiece.



2. Turn the screw counter clockwise within one turn until the arrow marking points downward. (There is a gap between clamping screw and tapered bushing)

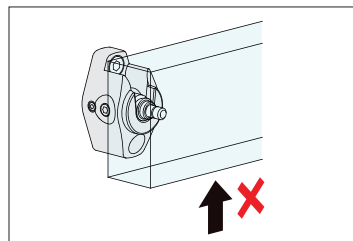
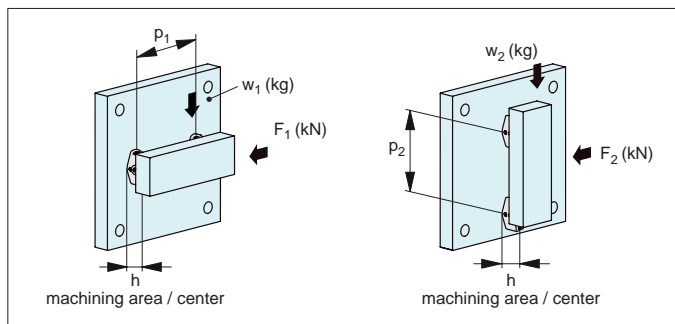


3. Install the clamping screws into the clamping modules.



## Permissible Cutting Force & Workpiece Weight of Clamping Modules (Hook)

Ensure the cutting force and workpiece weight are within the allowable level.



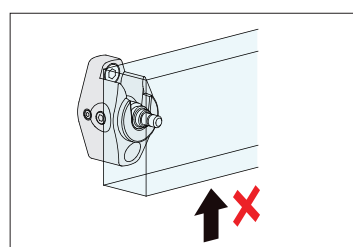
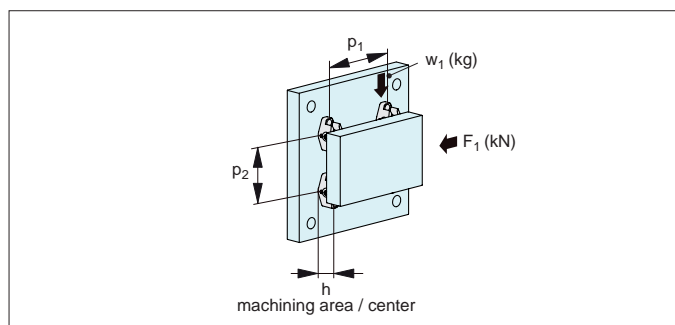
Note: Heavy cutting force in the open direction may cause workpiece move.

### 2 Modules

#### Permissible Cutting Force

#### Permissible Workpiece Weight

Part Number	F <sub>1</sub> (kN)	F <sub>2</sub> (kN)	Max (kN)	w <sub>1</sub> (kg)	w <sub>2</sub> (kg)	Max (kg)
12049.W0012 / W0112	$(0,24p_1 + 432)/h$	240/h	3,2	240 x100/h	$(0,24p_2 + 432) \times 100/h$	320
12049.W0019 / W0119	$(0,50p_1 + 900)/h$	500/h	6	500 x100/h	$(0,50p_2 + 900) \times 100/h$	600
12049.W0024 / W0124	$(1,00p_1 + 1800)/h$	1000/h	10	1000x100/h	$1,00p_2 + 1880) \times 100/h$	1000



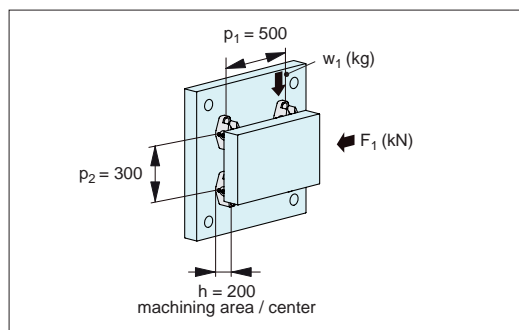
Note: Heavy cutting force in the open direction may cause workpiece move.

### 4 Modules

#### Permissible Cutting Force

#### Permissible Workpiece Weight

Part Number	F <sub>1</sub> (kN)	Max (kN)	w <sub>1</sub> (kg)	Max (kg)
12049.W0012 / W0112	$2x(0,24p_1 + 432)/h$	6.4	$2x(0,24p_2 + 432) \times 100/h$	640
12049.W0019 / W0119	$2x(0,50p_1 + 900)/h$	12	$2x(0,50p_2 + 900) \times 100/h$	1200
12049.W0024 / W0124	$2x(1,00p_1 + 1800)/h$	20	$2x(1,00p_2 + 1880) \times 100/h$	2000



- 4 pieces of 12049.W0019 (height 63mm)
- Pitch: p<sub>1</sub> = 500mm p<sub>2</sub> = 300mm
- Workpiece center: h = 200mm
- F<sub>1</sub> direction cutting force: 5kN
- Workpiece weight: 600kg

#### <Allowable Cutting Force F<sub>1</sub>>

$$F_1 = 2x(0.5X p_1 + 900)/H$$

$$= 2x(0.5X 500 + 900)/200$$

$$= 11.5kN$$

\*) Cutting force 5kN is within allowable value (11.5kN).

#### <Allowable Workpiece Weight W<sub>1</sub>>

$$W_1 = 2x(0.5X p_2 + 900)X100/H$$

$$= 2x(0.5X 300 + 900)X100/200$$

$$= 1050kg$$

\*) Workpiece weight 600kg is within allowable value (1050kg).

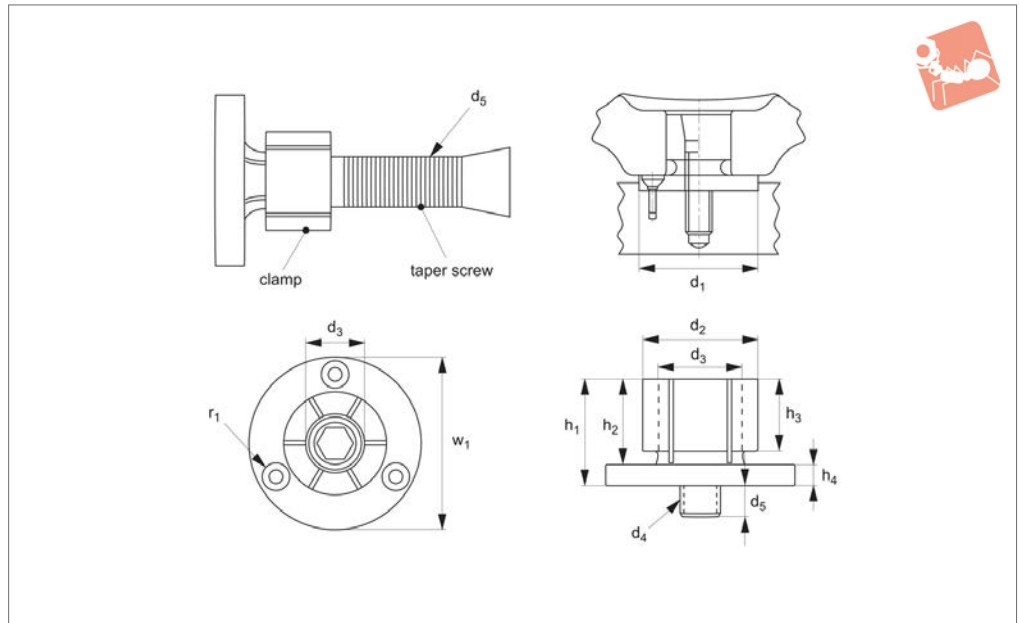
### Calculation Example



BORE CLAMPING



## 12051



### Material

Body: mild steel.  
Tapered screw: steel, heat-treated (coated to prevent seizing).  
12051.W0250: aluminium (7075-T6) .

### Technical Notes

For holding parts on an inside diameter, for high density machining on vertical or horizontal mills.  
Diameter can range from 4,1mm to a maximum of 250mm!  
This product can also be used as an expanding mandrel on a lathe.  
Tighten with hex key or hydraulic pull cylinders.  
The flange diameter of the base is held to a close tolerance for precision location in a machined pocket.

### Tips

$d_3$  is the minimum diameter the „ $d_2$ “ dimension can be machined or turned down to.  
Mounting screws included.

### Important Notes

#### Installation for clamps 12051.W0010 to .W0051.

- Expand clamp 0,1mm over the relaxed diameter and machine to fit workpiece bore (on lathe or mill).  
If using the clamp on a lathe then use the nut provided to tighten the taper screw. This nut is only used to machine the clamp.
- Machine a pocket in the fixture for the close tolerance „ $d_1$ “ dimension, and drill and tap mounting holes „ $d_4$ “.
- Drill and tap a hole „ $d_5$ “ in the centre of

the pocket for the tapered screw.

- A recessed dowel pin can be installed into the flange for extra rigidity if required.
- Range of expansion 0,13 - 0,64mm depending on clamp size.

#### Installation for clamps 12051.W0077 to .W0250.

- Insert machining locking ring (provided), tighten taper screw and machine clamp to required bore size.
- Release taper screw and remove locking ring prior to any machining of workpieces.  
Note: 12051.W0175 and W0250 have four mounting holes on PCD as dimension „ $d_4$ “.

Order No.	$h_1$	$h_2$	$h_3$	$d_1$ +0.000 -0.050	Weight g
12051.W0010	10.7	7.6	6.1	20.0	23
12051.W0012	21.8	16.0	15.0	29.7	59
12051.W0014	24.9	19.0	15.0	31.5	109
12051.W0020	24.9	19.0	15.0	37.5	204
12051.W0027	28.6	22.2	17.5	50.0	213
12051.W0035	31.8	25.4	20.6	56.0	317
12051.W0042	39.6	31.8	27.0	69.5	593
12051.W0051	39.6	31.8	27.0	75.5	775
12051.W0077	45.5	37.6	32.3	107.5	1826
12051.W0103	45.5	37.6	32.3	132.9	2954
12051.W0175	45.5	37.6	32.3	132.9	6795
12051.W0250	45.5	37.6	32.3	152.4	5436

Order No.	$d_3$ min.	$d_4$	$d_5$	Stock $d_2$	$h_4$	$r_1$ on PCD	Torque to Nm max.	Holding force kN	Expansion from relaxed dia. max.
12051.W0010	4.1	M 2	4.1	7.4	3.0	M 2 at 13,7	0.7	1.1	0.1





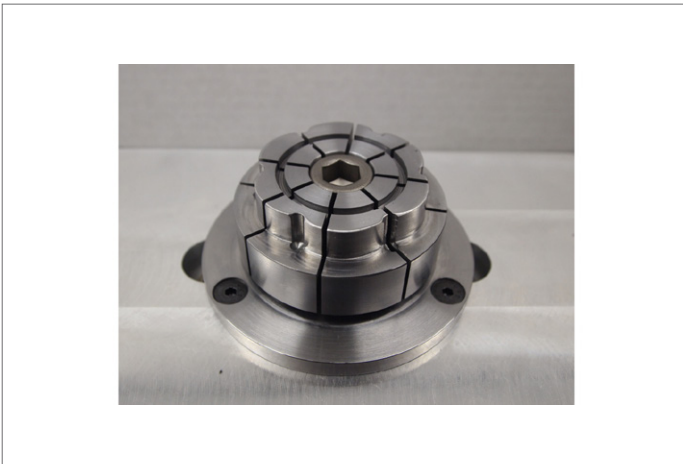
# ID Xpansion Clamps - Machinable

for clamping internal bores



## Bore Clamping

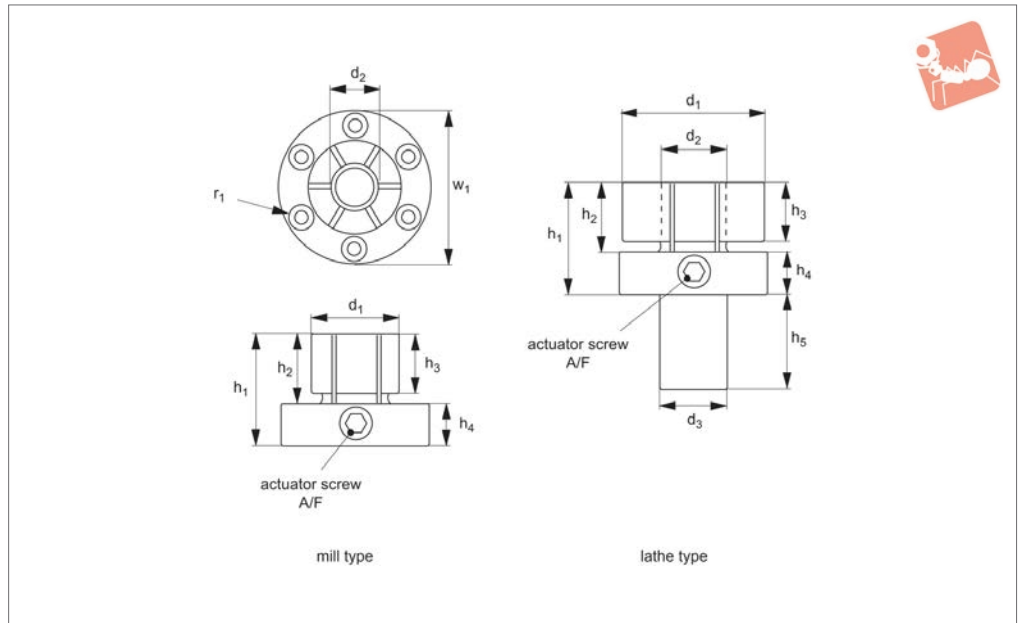
Order No.	d <sub>3</sub> min.	d <sub>4</sub>	d <sub>5</sub>	Stock d <sub>2</sub>	h <sub>4</sub>	r <sub>1</sub> on PCD	Torque to Nm max.	Holding force kN	Expansion from relaxed dia. max.
<b>12051.W0012</b>	7.1	M 4	7.2	12.4	5.9	M 3 at 21,0	5.0	4.2	0.3
<b>12051.W0014</b>	12.2	M 6	11.2	14.2	5.9	M 3 at 23,1	17.0	8.4	0.3
<b>12051.W0020</b>	13.5	M 8	13.2	20.0	5.9	M 3 at 29,0	34.0	11.1	0.4
<b>12051.W0027</b>	18.0	M10	16.3	27.0	6.4	M 4 at 39,4	60.0	20.0	0.4
<b>12051.W0035</b>	23.0	M12	20.3	35.3	6.4	M 4 at 45,5	150.0	26.2	0.4
<b>12051.W0042</b>	29.3	M16	21.4	42.0	7.9	M 5 at 55,9	280.0	44.5	0.4
<b>12051.W0051</b>	29.3	M16	21.4	51.5	7.9	M 5 at 63,9	280.0	44.5	0.4
<b>12051.W0077</b>	29.3	M16	19.3	77.7	7.9	M 6 at 92,6	280.0	44.5	0.4
<b>12051.W0103</b>	29.3	M16	19.3	103.0	7.9	M 6 at 118,1	280.0	44.5	0.4
<b>12051.W0175</b>	29.3	M16	19.3	175.0	7.9	M 6 at 118,1	280.0	44.5	0.5
<b>12051.W0250</b>	29.3	M16	19.3	250.2	7.9	M 6 at 133,4	170.0	26.0	1.0



BORE CLAMPING



## 12052



### Material

Mild steel body, with heat-treated tapered screw (coated to prevent seizing).

### Technical Notes

For clamping blind holes from 17,8mm to 53mm.

Actuated from the side. The cam shaft and the plunger expand the clamp.

### Tips

Actuated by turning a socket head cam shaft on the side which moves a tapered plunger to expand the clamp.

Two versions: one for milling (type: mill) and one for turning (type: lathe).

„d<sub>2</sub>“ is the minimum diameter the „d<sub>1</sub>“ dimension can be machined or turned down to.

Mounting screws included.

### Important Notes

Installation Instructions:

ID Xpansion Clamps are designed for clamping on the inside diameter of a component. To install correctly, please follow the following guidelines:

1. Expand the clamp approximately 0,1mm over its relaxed diameter and machine diameter d<sub>1</sub> to suit bore of the workpiece, either on lathe or mill.

2. If machining the clamp on a lathe use the nut provided, on the back of the clamp, to tighten the tapered screw. This nut is used only to machine the clamp.

3. Machine a pocket in the fixture to the close tolerance of dimension w<sub>1</sub>, and depth h<sub>4</sub>.

4. Drill and tap mounting holes as per dimension r<sub>1</sub>.

5. In the centre of the pocket, drill and tap a hole to dimension d<sub>3</sub> for the tapered screw.

6. For additional rigidity, a recessed dowel pin may be installed into the flange, if required.

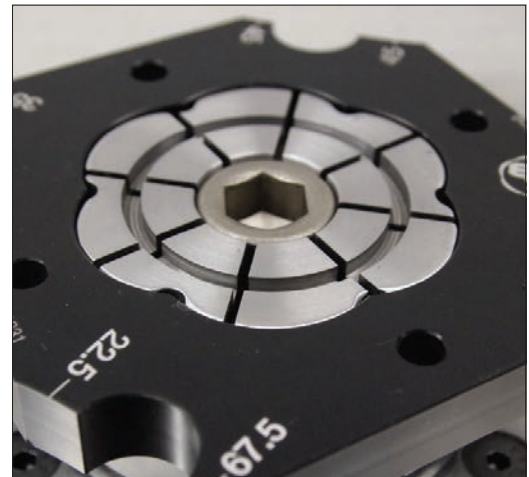
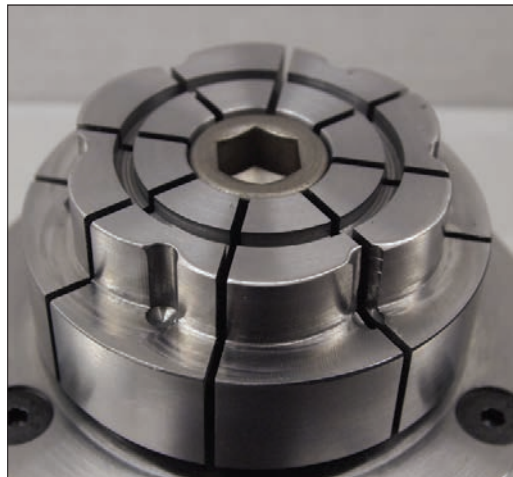
Order No.	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	w <sub>1</sub> +0.000 -0.05	Type	d <sub>1</sub>	d <sub>2</sub> min.	d <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	r <sub>1</sub> on PCD	A/F	Torque to Nm max.	Holding force kN	Weight g
<b>12052.W0828</b>	41.3	22.2	17.5	50.0	Mill	28.7	17.8	-	19.0	-	Ø39,4 (M 4)	M 6	66	20	340.2
<b>12052.W0853</b>	44.4	25.4	21.3	-	Lathe	53.3	17.8	25	19.0	44.4	-	M 6	66	20	





**ID Xpansion Clamp, Machinable**

The ID Xpansion Clamp is the ideal way to hold multiple parts on an inside diameter for machining on your VMC or HMC.



ID Xpansion Clamps can be used to hold components with complex internal shapes, not just plain bores.

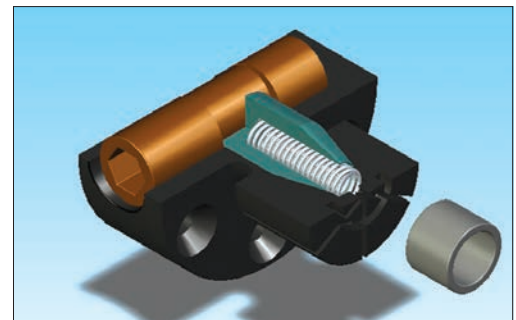
These machinable clamps are produced in 10 sizes and can hold internal diameters from 21,8 to 45,5mm.

- Low profile and ideal for secondary operations on lathe parts.
- Easily machined to size on lathe or mill.
- Excellent for palletised setups.
- Allow more parts per workcube or fixture plates.
- Body made of mild steel for machinability.
- Tighten with hex key, hydraulic pull cylinders or speed block.

BORE CLAMPING

**Side-Loc Xpansion Clamp**  
machinable

Wixroyd introduces a new style clamp to its range of ID-Xpansion clamps, the Side-Loc Xpansion Clamp. Actuated by turning a socket head cam shaft on the side, it is ideal for clamping on blind internal diameters. The locking ring provides an accurate preset diameter and rigidity for machining. Like our original ID Xpansion clamps, the Side-Loc Xpansion Clamp has the dead length feature which is critical for close tolerance dimensions.

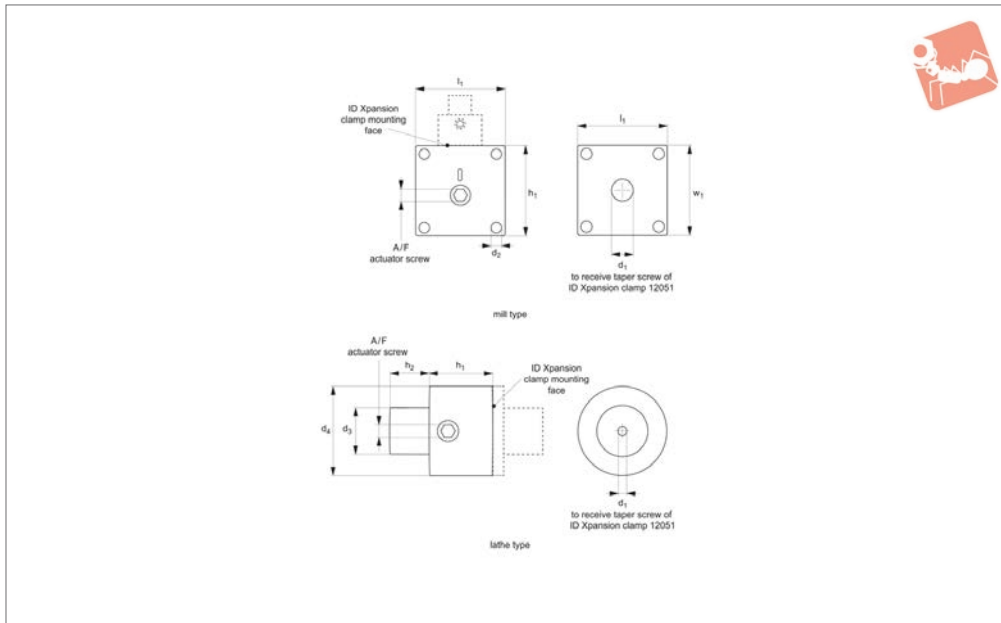
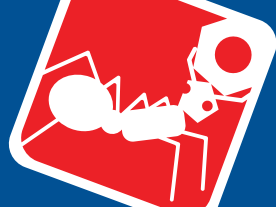


Clamp activated from the side with a standard hex key.

Designed in two styles, one for milling operations and one for lathe applications; the mill Side-Loc Xpansion Clamp can be machined from 28.4 to 18mm and the lathe version from 53 to 18mm.



Side-Loc Xpansion Clamp, when the component obstructs the clamps tapered screw.



### 12054

BORE CLAMPING

#### Material

Steel.

#### Technical Notes

Versatile manual actuators when combined with our ID Xpansion clamps 12051. Enables clamping of smaller internal diameters and blind holes. Mount corresponding ID Xpansion clamp. Mill type actuator is adaptable and can be used on both vertical and horizontal planes. Once installed the clamp can be actuated with use of an actuator screw (6mm A/F).

#### Tips

Order ID Xpansion clamp 12051 separately.

#### Important Notes

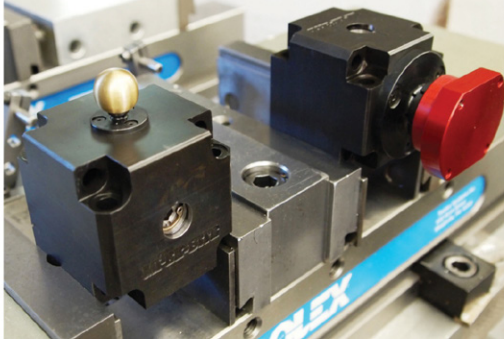
Manual actuators for mills and lathes. Introducing another new and innovative workholding system. Specifically designed to clamp on blind internal diameters smaller than our Side-Loc clamps would allow. We took the design a step further, by increasing the functionality to clamp smaller inside diameters. For the mill version the option of holding the workpiece in a

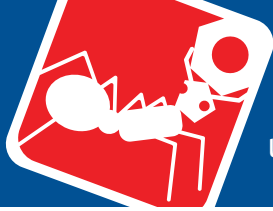
vertical or horizontal plane. By simply mounting our standard ID Xpansion clamps on these manual actuators, or using another style clamp that has a „straight draw“, you can now perform operations that previously required extensive hydraulic/pneumatic cylinders. Mill mounted manual actuators for ID Xpansion clamps are suitable for holding workpieces of very small blind internal diameters.

Order No.	$h_1$	$h_2$	$l_1$	$w_1$	Suitable for ID Xpansion clamp	Type	$d_1$	$d_2$ for	$d_3$	$d_4$	A/F
12054.W0002	57.2	-	57.2	57.2	.W0010	Mill	M 2	M 6	-	-	6
12054.W0004	57.2	-	57.2	57.2	.W0012	Mill	M 4	M 6	-	-	6
12054.W0006	57.2	-	57.2	57.2	.W0014	Mill	M 6	M 6	-	-	6
12054.W0008	57.2	-	57.2	57.2	.W0020	Mill	M 8	M 6	-	-	6
12054.W0010	57.2	-	57.2	57.2	.W0027	Mill	M10	M 6	-	-	6
12054.W0012	57.2	-	57.2	57.2	.W0035	Mill	M12	M 6	-	-	6
12054.W0102	38	25.4	-	-	.W0010	Lathe	M 2	-	25.0	56.9	6
12054.W0104	38	25.4	-	-	.W0012	Lathe	M 4	-	25.0	56.9	6
12054.W0106	38	25.4	-	-	.W0014	Lathe	M 6	-	25.0	56.9	6
12054.W0108	38	25.4	-	-	.W0020	Lathe	M 8	-	25.0	56.9	6
12054.W0110	38	25.4	-	-	.W0027	Lathe	M10	-	25.0	56.9	6
12054.W0112	38	25.4	-	-	.W0035	Lathe	M12	-	25.0	56.9	6
12054.W0550	-	-	-	-	-	Spare - Actuator Screw	-	-	-	-	-



BORE CLAMPING

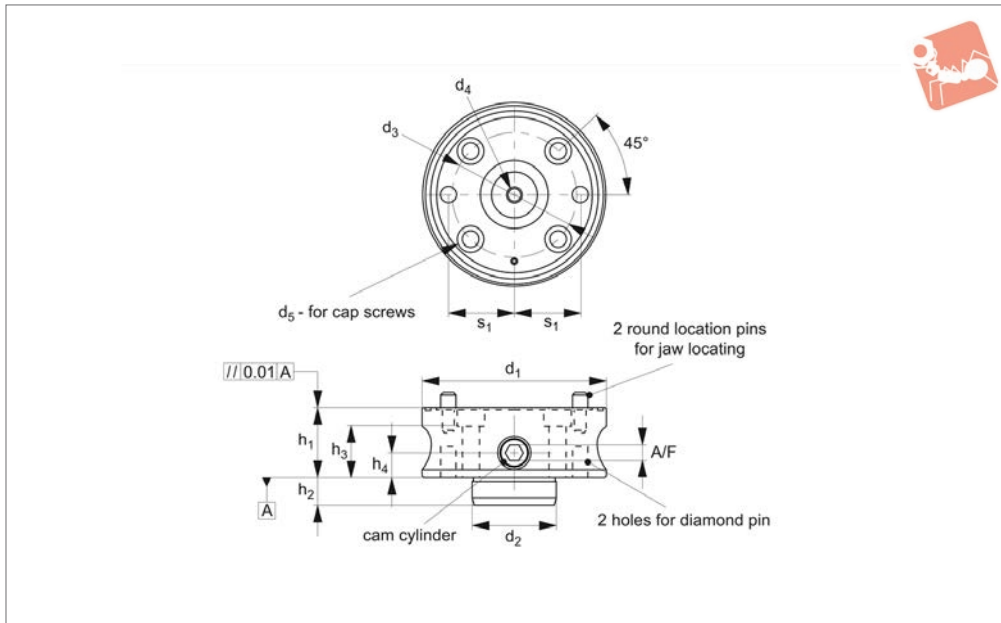
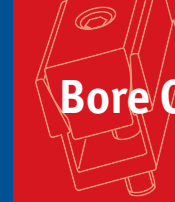




# Flexible Form Clamping Base

use with flexible form holding jaws 12056 or 12057

## Bore Clamping



**12055.1**

BORE CLAMPING

### Material

Body: steel.

### Technical Notes

For use with jaws part no.s 12056 and 12057 for clamping on the external of a component (jaw no. 12056) or for clam-

ping on internal bore of a component (jaw no. 12057). Order jaws separately.

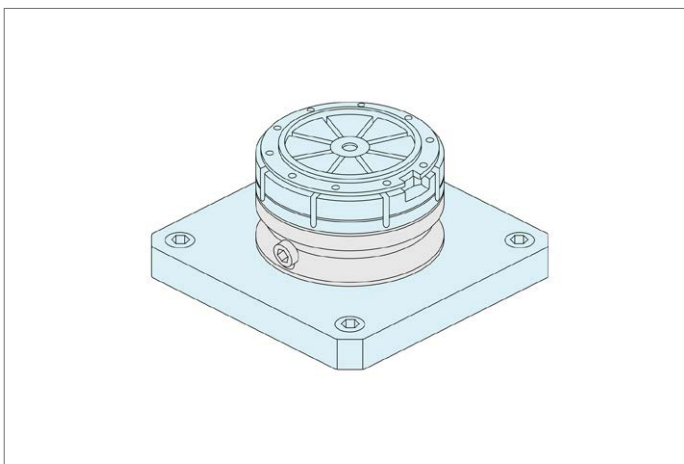
Supplied with one diamond locating pin to suit.

Can achieve part location repeatability of  $\pm 0,03$  and jaw repeatability of  $\pm 0,02$ . Max.

clamping stroke of 0,3mm diameter.

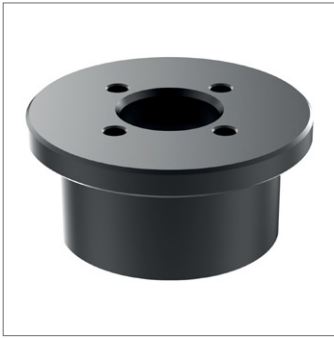
To prevent damage or deformation, do not tighten the cam cylinder without a holding jaw installed.

Order No.	$h_1$ $\pm 0.01$	$h_2$	$h_3$	Type	Size	$d_1$	$d_2$ tol. G6	$d_3$	$d_4$	$d_5$	$h_4$	Stroke $s_1$ $\pm 0.02$	A/F	Torque to Nm max.	External form no. 12056 clamping force kN	Internal form no. 12057 clamping force kN	Weight g
<b>12055.W0065</b>	35	27	12	Base	65	65	28	42	M 8x1,25	M 6	12	22	8	15	4,5	4,5	800
<b>12055.W0090</b>	40	30	14	Base	90	90	42	60	M10x1,5	M 8	14	30	8	25	7,0	7,0	1700
<b>12055.W0120</b>	45	33	16	Base	120	120	55	80	M10x1,5	M10	18	43	10	40	10,0	10,0	3500
<b>12055.W0160</b>	50	36	18	Base	160	160	63	110	M12x1,75	M12	24	60	10	40	12,0	10,0	7100

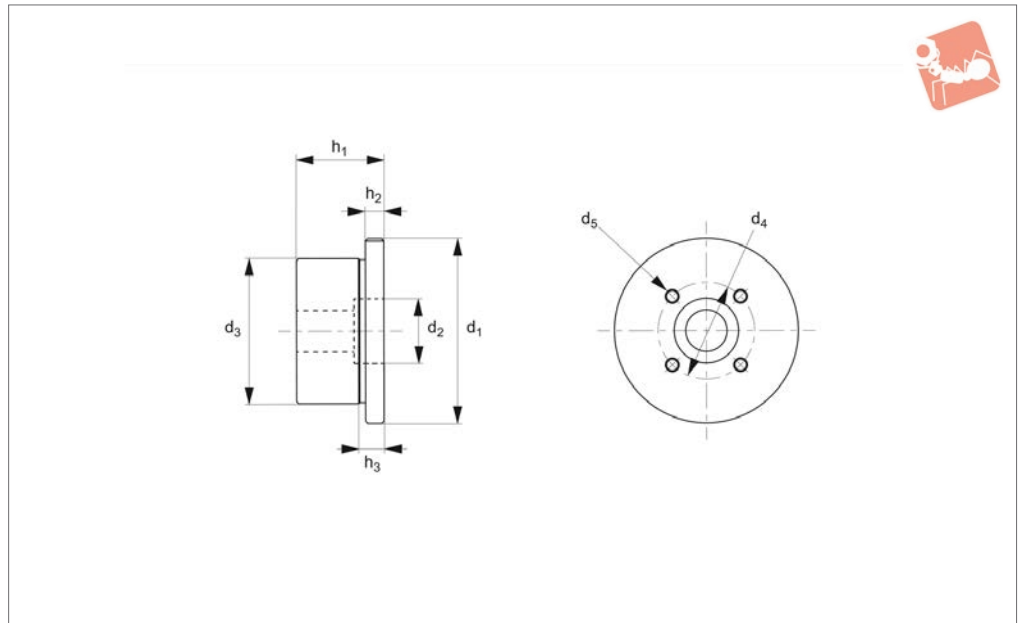




BORE CLAMPING



## 12055.2



### Material

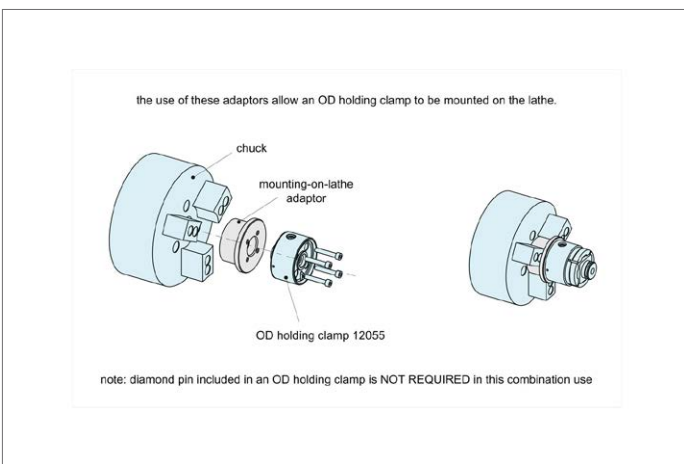
Steel, hardened and blackened.

form holding clamp (part no. 12055) to a lathe.

### Technical Notes

Adaptor to enable mounting of flexible

Order No.	$h_1$	$h_2$	$h_3$	Suitable for clamping base 12055	Size	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	Weight g
<b>12055.W1065</b>	38	8	13	4.5	65	80	28	63	42	M 6x1,00	910
<b>12055.W1090</b>	43	8	15	7.0	90	100	42	80	60	M 8x1,25	1600







# Form Holding Clamp installation

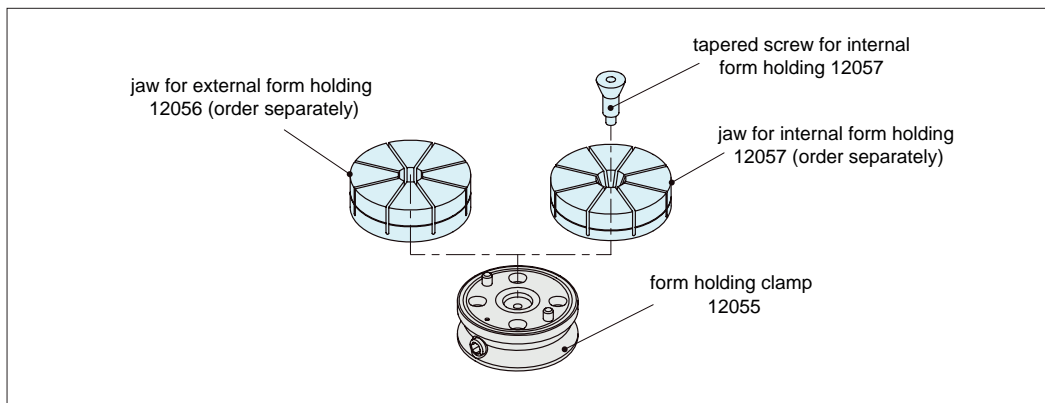


## 12055

### Clamping & Height Setting

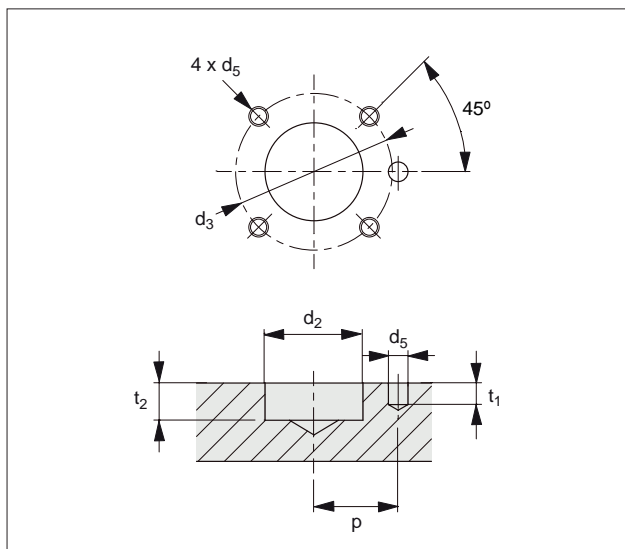
BORE CLAMPING

### Feature



Two optional jaws allow clamping a workpiece both on its external form and internal form.

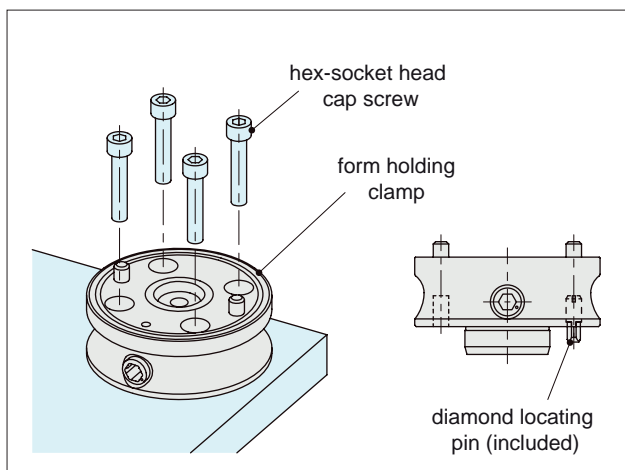
### How to Use



Part Number	d <sub>2</sub> (H7)	t <sub>1</sub>	d <sub>5</sub> (G7)	t <sub>2</sub>
12055.W0065	28	13	6	6
12055.W0090	42	15	8	8
12055.W0120	55	19	10	11
12055.W0160	63	25	12	13

Part Number	P (±0,02)	d <sub>5</sub>	d <sub>3</sub>
12055.W0065	22	M 6X1	42
12055.W0090	30	M 8X1,25	60
12055.W0120	43	M10X1,5	80
12055.W0160	60	M12X1,75	110

### Installation Instruction



Insert an included diamond locating pin into the body for locating and secure the body to the fixture plate with 4 socket-head cap screws.

Note: use either of the holes for the diamond locating pin for your application.

#### Dimension of Diamond Locating Pin

Part Number	diameter
12055.W0065	Ø 6h6
12055.W0090	Ø 8h6
12055.W0120	Ø 10h6
12055.W0160	Ø 12h6

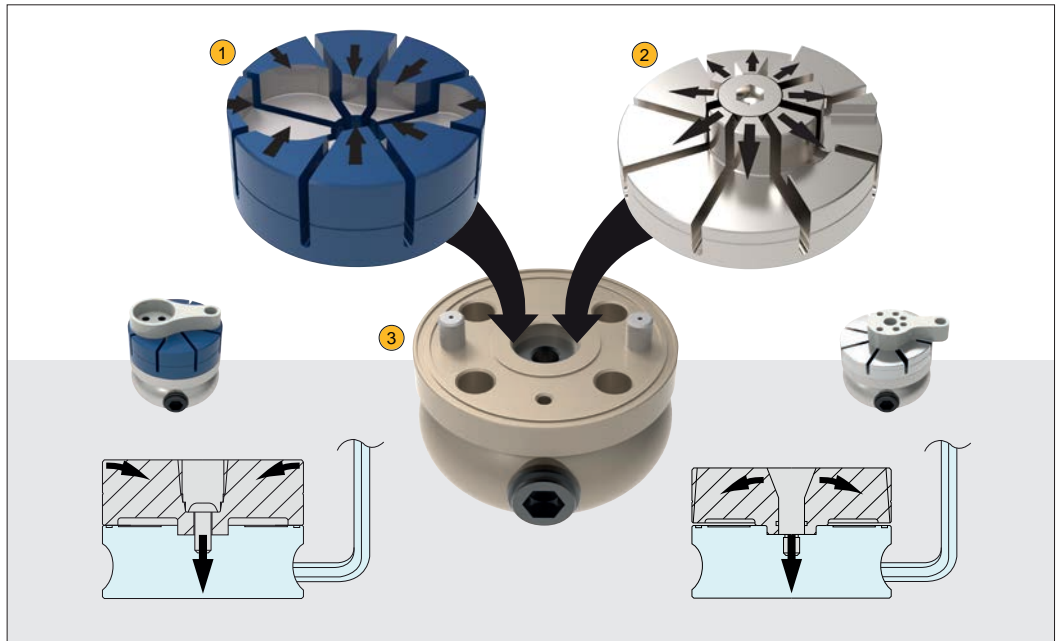
ov-W12055.1-A-T-W12055.2-A-T-installation-mh - Updated -24-10-2022



Versatile holding of complex shaped workpieces on either the external or internal form - quick, secure, versatile.

Single clamping base designed to accept either external form or internal form clamping jaws, fully flexible holding of custom forces.

- ① External Form Jaw - 12056
- ② Internal Form Jaw - 12057
- ③ Flexible Form Clamping Base - 12055

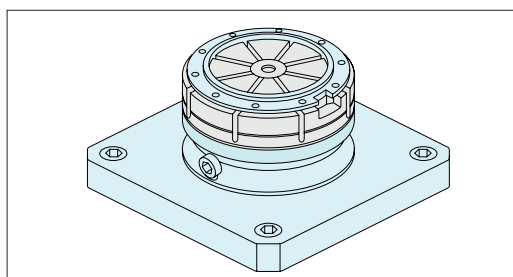
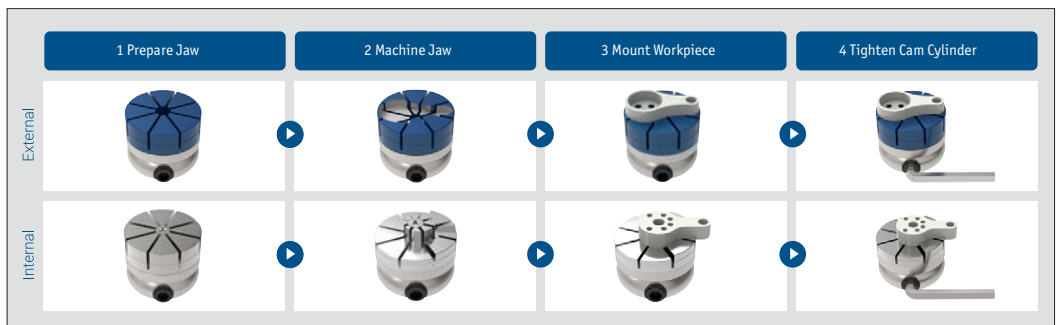


## External

Parts 12055, 12056

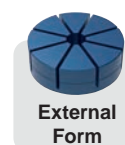
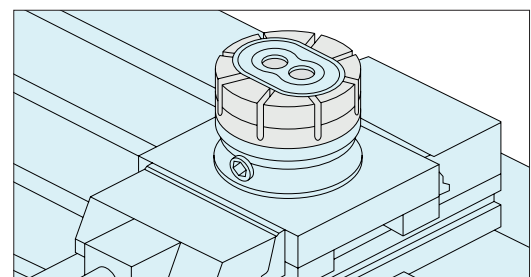
## Internal

Parts 12055, 12057



Internal Form

**Clamping Low Profile Workpiece**  
Parts 12055 and 10257. 8 jaw clamping sections distribute clamping force to workpiece for deformation prevention.



External Form

**Fixture for Temporal Job**  
Parts 12055 and 10256. Can be mounted on the existing vise by attaching the clamp on plate.

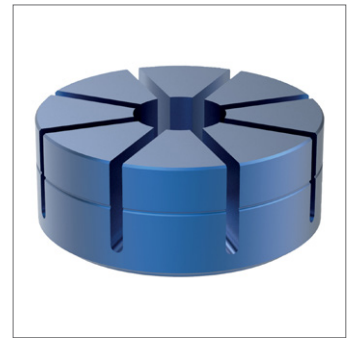
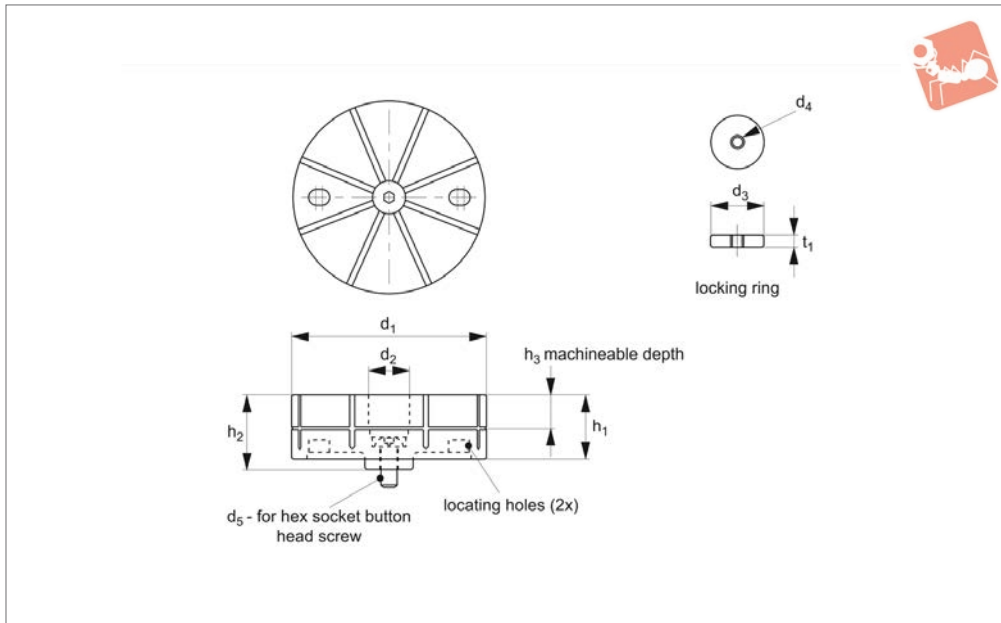
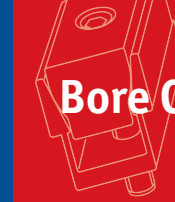
Note to control the tightening torque using adequate tools in reference to the data provided by the performance curve.



# External Form Holding Jaws

for flexible form holding clamp no. 12055

## Bore Clamping



**12056**

BORE CLAMPING

### Material

Jaws: aluminium (A7075), silver anodised.  
Locating ring: steel (C45E), tempered, nickel plated.

Ideal for die-cast and extruded parts.

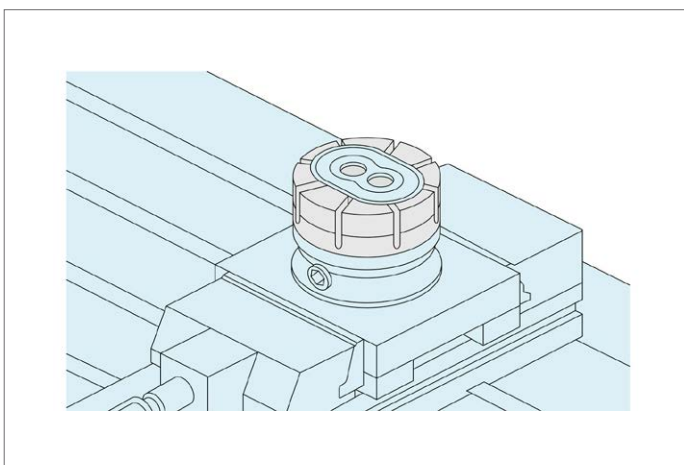
Used with flexible form clamping base no. 12055.

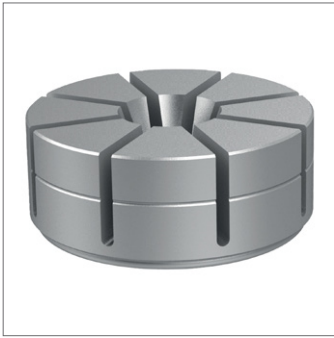
Supplied with O-ring, locking ring and socket button head screw to assist during machining of form.

### Technical Notes

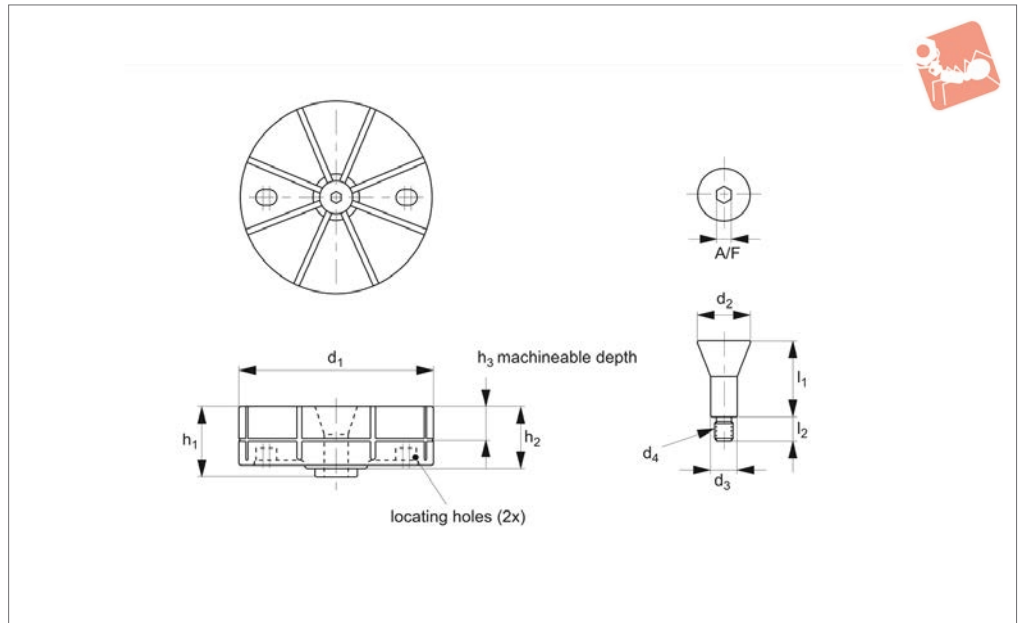
Offers 0,15mm clamping stroke on jaw.

Order No.	$h_1$	$h_2$	$h_3$	Suitable for clamping base 12055	Type	Size	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$t_1$	Weight g
<b>12056.W0065</b>	26	25	10	.W0065	Jaw	65	65	21	20	M 5x0,80	M 8x20	4	200
<b>12056.W0090</b>	40	35	15	.W0090	Jaw	90	90	25	24	M 6x1,00	M 10x25	5	500
<b>12056.W0120</b>	46	40	20	.W0120	Jaw	120	120	25	24	M 6x1,00	M 10x25	5	1100
<b>12056.W0160</b>	52	45	25	.W0190	Jaw	160	160	29	28	M 8x1,25	M 12x25	6	2200





## 12057



BORE CLAMPING

### Material

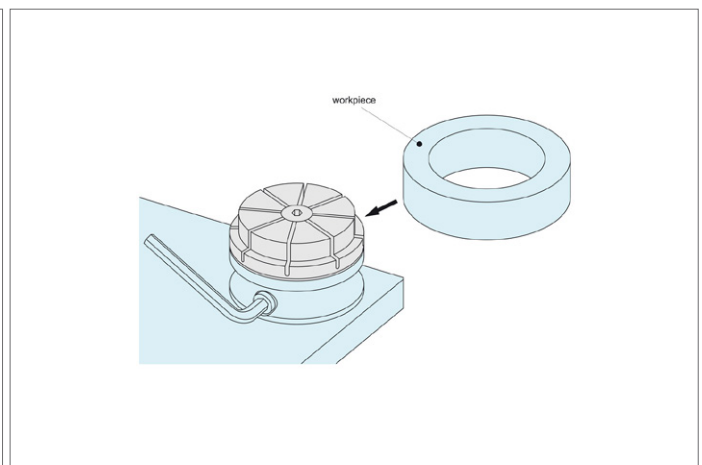
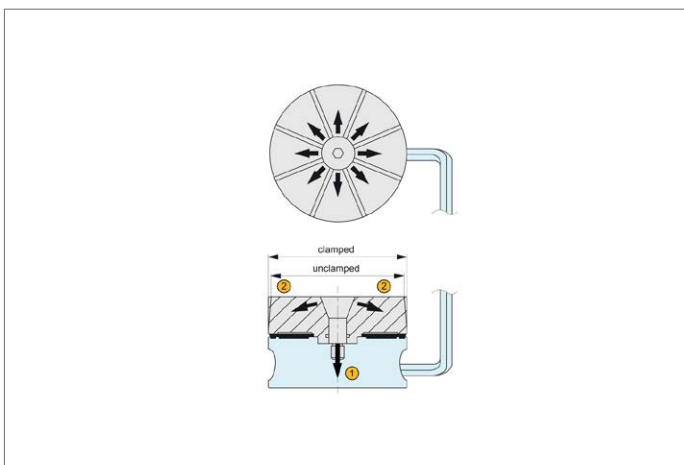
Jaws: aluminium (A7075), silver anodised.  
Tapered screw: steel (C45E), tempered, nickel plated.

Tapered screw expands jaw outwards to hold irregular shaped workpieces securely.  
Offers 0,15mm clamping stroke on jaw.  
Ideal for die-cast and extruded parts.  
Used with flexible form clamping base no. 12055.

### Technical Notes

Order jaw and tapered screw separately.

Order No.	$h_1$	$h_2$	$h_3$	$l_1$	Suitable for clamping base 12055	Type	Size	$d_1$	$d_2$	$d_3$	$d_4$	$l_2$	A/F	Suitable for internal jaw 12057	Weight g
12057.W0065	28,5	25	10		.W0065	Jaw	65	65							200
12057.W0090	34,5	30	15		.W0095	Jaw	90	90							400
12057.W0120	40,5	35	20		.W0120	Jaw	120	120							900
12057.W0160	46,5	40	25		.W0160	Jaw	160	160							1900
12057.W2065				29		Screw	65		22,5	13,2	M 8x1,25	10	6	.W1065	50
12057.W2090				35		Screw	90		27,0	16,0	M10x1,5	11	8	W.1090	80
12057.W2120				41		Screw	120		29,0	13,0	M10x1,5	16	8	W.1120	100
12057.W2160				47		Screw	160		33,0	18,0	M12x1,75	14	10	W.1160	150





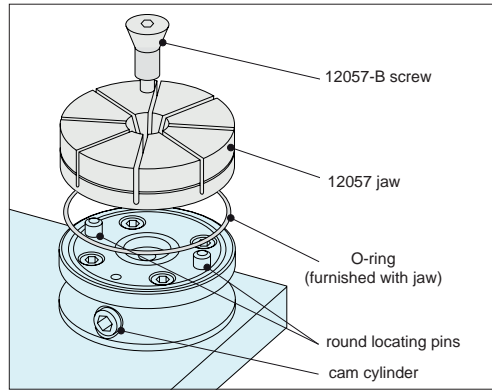
# Installation and Machining of Jaw Profile



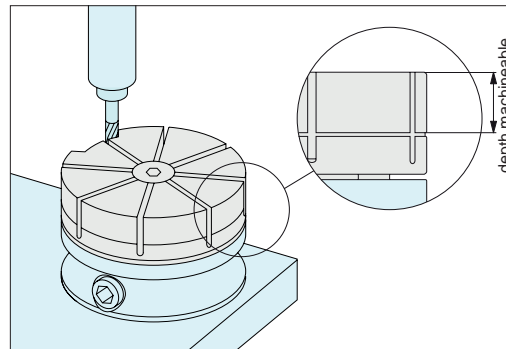
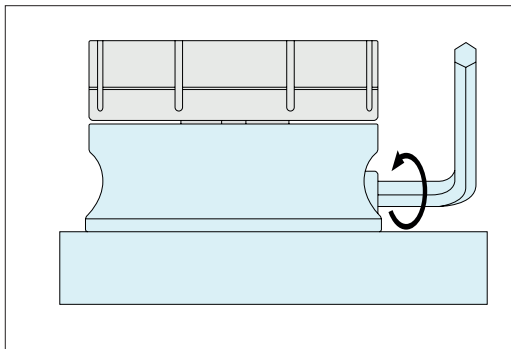
12057

Clamping & Height Setting

- Insert O-ring to the groove on top surface of the Flexible Form Holding Clamp 12055.
- Mount jaw 12057 to clamping base, align with locating pins and fix with tapered screw.



## Prepare Jaw for Mounting

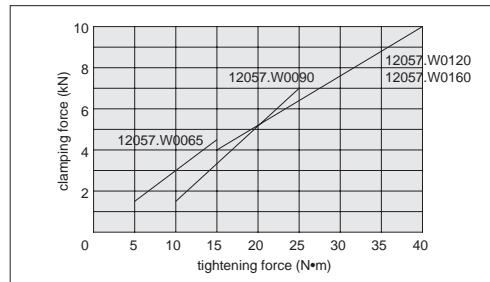
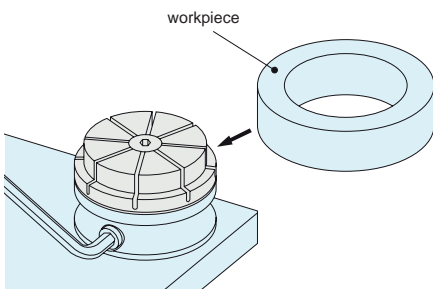


## Machine Jaw

2.1 Loosen the clamping bases cam cylinder fully. Measure dimension of the jaw for machining. Tighten the cam cylinder until each jaw section expands a further 0.15mm beyond desired clamping dimensions.

2.2 Machine the jaw to the contours of workpiece. (Do not machine the jaws beyond the machinable depth – see data tables of jaws 12056 and 12057 for dimension.)

After machining of jaw, loosen cam cylinder of clamp base and load workpiece. Tighten the cam cylinder again to clamp.

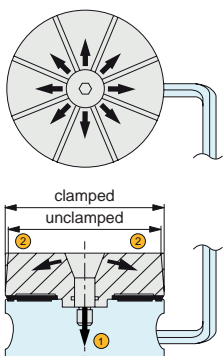


## Load Workpiece

Note: Do not tighten the cam cylinder without the workpiece set to prevent damage and deformation. Tightening with the torque beyond allowable screw torque will lower the durability of the jaw.

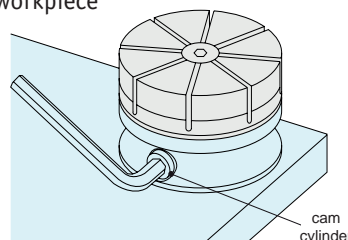
Take note of recommended tightening forces.

## Function



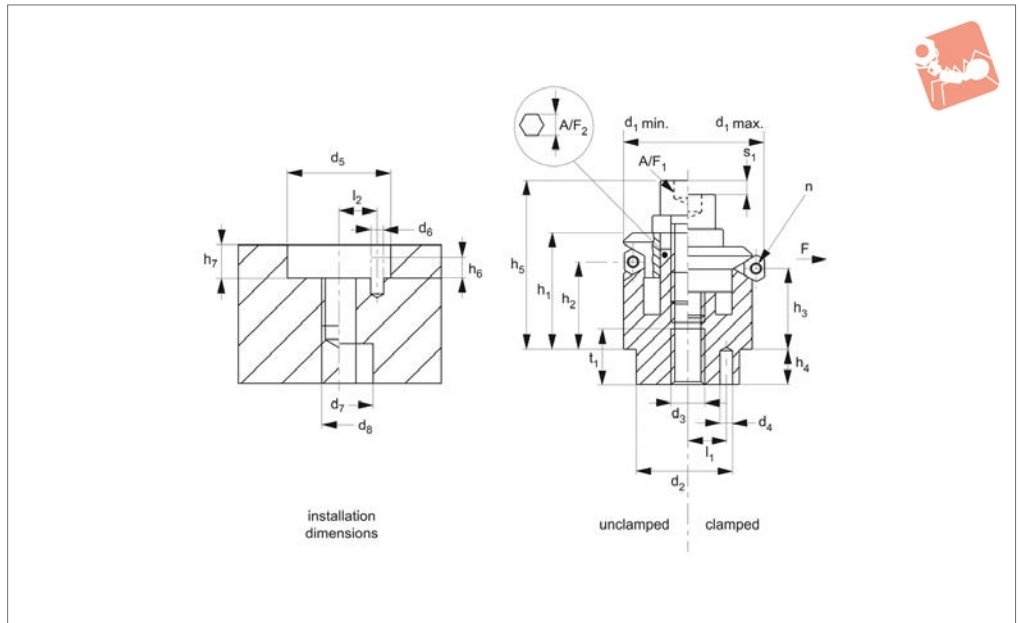
- Tapered screw fixes jaw to clamping base and expands the jaws in eight directions for 'pre-holding' of irregularly-shaped workpieces.
- Final 0.15mm clamping stroke of the jaw is activated via the cam cylinder to provide final clamping of workpiece on its internal contours.

- When the cam cylinder is tightened, the tapered screw is pulled down.
- At the same time the 8 jaw sections expand to clamp the internal form of workpiece.





## 12061



BORE CLAMPING

### Material

Body: tool steel (1.2842), blackened.  
 Top cone: steel, case hardened, blackened and ground.  
 Ball: stainless steel (1.4112), hardened and burnished.  
 Tension spring: stainless steel, 1.4310 (AISI 301)

### Technical Notes

Suitable for concentric positioning and chucking inside holes with surfaces prone to damage.  
 Locking pin for precise ball positioning.  
 For deep installation applications, „d<sub>2</sub> max.“ must be maintained for clearance.  
 Repeatability and rotational accuracy,

±0,025.

### Tips

Suitable for perforated walls prone to damage, machining centres, welding devices, transfer units, assembly units etc.

Order No.	$h_1$ -1	$h_2$	$h_3$	$l_1$ ±0.1	$d_1$ min.	$d_1$ max.	$d_2$ tol. F7	$d_3$	$d_4$ +0.3	$d_6$	$d_7$	Weight g
12061.W0214	14.3	9.8	8.6	4.5	14.5	18.5	12	M 4	2.0	2.0	4	19
12061.W0218	16.6	11.5	10.4	5.5	18.5	22.5	15	M 5	2.5	2.5	5	38
12061.W0222	19.7	14.1	13.0	7.0	22.5	26.5	20	M 6	3.0	3.0	6	62
12061.W0226	19.7	14.1	13.0	7.0	26.5	30.5	20	M 6	3.0	3.0	6	87
12061.W0230	23.2	14.0	11.7	9.0	30.5	38.5	25	M 6	4.0	4.0	6	133
12061.W0238	27.2	18.0	15.5	11.0	38.5	46.5	30	M 8	4.0	4.0	8	238
12061.W0246	27.2	18.0	15.7	11.0	46.5	54.5	30	M 8	4.0	4.0	8	327
12061.W0254	40.7	23.7	19.1	15.0	54.5	70.5	45	M10	5.0	5.0	10	658
12061.W0270	46.0	28.3	23.6	17.0	70.5	86.5	60	M12	5.0	5.0	12	1286
12061.W0286	51.1	30.3	25.6	25.0	86.5	102.5	60	M16	5.0	5.0	16	1778

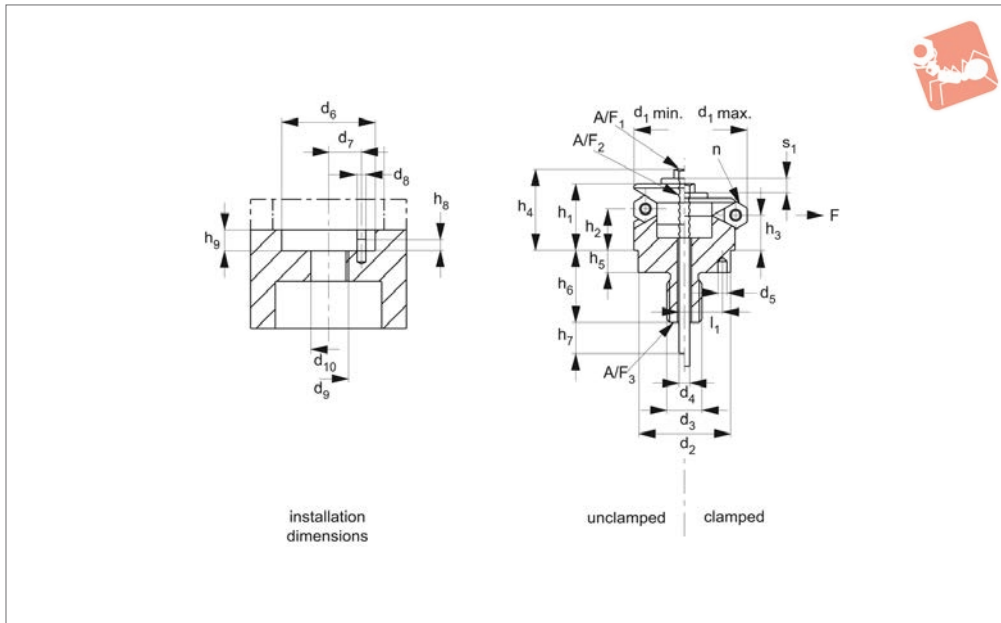
Order No.	$d_8$	Location hole $d_5$ tol. H7	$h_4$	$h_5$ -2	$h_6$	$h_7$	$l_2$	Stroke $s_1$	$t_1$	A/F <sub>1</sub>	A/F <sub>2</sub>	Clamping force kN max.	No. of segments n
12061.W0214	M 4	12	5.5	19.3	2.0	5.5	4.5	2.3	6	3	5	3.5	3
12061.W0218	M 5	15	7.5	22.8	2.5	7.5	5.5	2.3	7	4	5	4.5	3
12061.W0222	M 6	20	6.0	28.7	3.0	6.0	7.0	2.3	8	5	6	5.0	3
12061.W0226	M 6	20	6.0	28.9	3.0	6.0	7.0	2.3	8	5	6	5.0	3
12061.W0230	M 6	25	7.0	32.2	4.0	7.0	9.0	4.6	8	5	6	5.0	3
12061.W0238	M 8	30	7.5	39.2	4.0	7.5	11.0	4.6	10	6	8	6.5	6
12061.W0246	M 8	30	7.5	39.2	4.0	7.5	11.0	4.6	10	6	8	6.5	6
12061.W0254	M10	45	9.0	54.7	5.0	9.0	15.0	9.2	12	8	10	8.0	6
12061.W0270	M12	60	10.0	63.0	5.0	10.0	17.0	9.2	15	10	12	10.0	6
12061.W0286	M16	60	10.0	72.1	5.0	10.0	25.0	9.2	15	14	17	10.0	6



# Internal Centering Clamps

rear actuated - for delicate components

## Bore Clamping



12062

BORE CLAMPING

### Material

Body: tool steel 1.2842, blackened.  
 Top cone: steel 1.4112, case hardened, blackened and ground.  
 Ball: steel, hardened and ground.  
 Spring: steel (AISI 301, 1.4310).

### Technical Notes

Suitable for concentric positioning and

chucking inside holes with surfaces prone to damage.  
 Locking pin for precise ball positioning.  
 Pull down version can be actuated from rear either manually, or via pneumatic hydraulic cylinder attached to thread „d<sub>5</sub>“ at rear of clamp.  
 For deep installation applications, „d<sub>2</sub>

max“ must be maintained for clearance. Repeatability and rotational accuracy, ±0,025.

### Tips

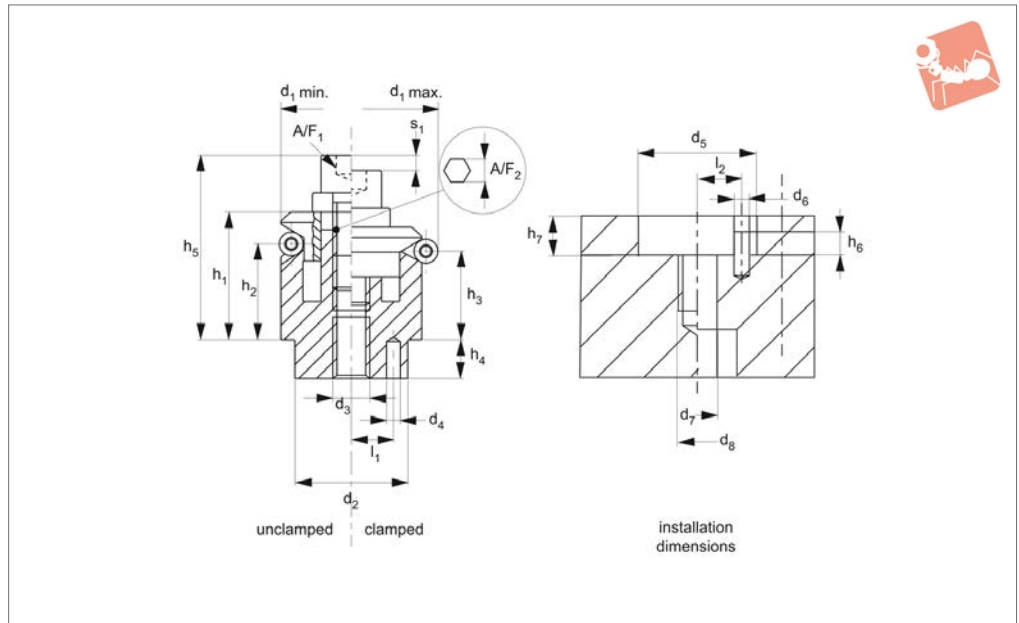
Suitable for perforated walls prone to damage, machining centres, welding devices, transfer units, assembly units etc.

Order No.	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub> ±0.1	d <sub>1</sub> min.	d <sub>1</sub> max.	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub> +0.3	d <sub>6</sub> tol. H7	d <sub>7</sub> ±0.1	d <sub>8</sub>	Weight g
12062.W0214	14.2	9.8	8.6	4.5	14.5	18.5	12	M 6	M 3	2.0	12	4.5	2.0	21
12062.W0218	16.6	11.5	10.4	5.5	18.5	22.5	15	M 8	M 4	2.5	15	5.5	2.5	46
12062.W0222	19.7	14.1	13.0	7.0	22.5	26.5	20	M10	M 5	3.0	20	7.0	3.0	78
12062.W0226	19.9	14.2	13.0	7.0	26.5	30.5	20	M10	M 5	3.0	20	7.0	3.0	96
12062.W0230	23.2	14.0	11.7	9.0	30.5	38.5	25	M12	M 6	4.0	25	9.0	4.0	143
12062.W0238	27.2	18.0	15.5	11.0	38.5	46.5	30	M12	M 6	4.0	30	11.0	4.0	250
12062.W0246	27.2	18.0	15.7	11.0	46.5	54.5	30	M12	M 6	4.0	30	11.0	4.0	340
12062.W0254	40.7	23.7	19.1	15.0	54.5	70.5	45	M14x1,5	M 8	5.0	45	15.0	5.0	680
12062.W0270	46.0	28.1	23.5	17.0	70.5	86.5	60	M16x1,5	M 8	5.0	60	17.0	5.0	1300
12062.W0286	51.1	30.1	25.5	25.0	86.5	102.5	60	M16x1,5	M10	5.0	60	25.0	5.0	2060

Order No.	d <sub>9</sub>	d <sub>10</sub> +0.5	h <sub>4</sub> -2	h <sub>5</sub>	h <sub>6</sub> +1	h <sub>7</sub> ≈	h <sub>8</sub> +1	h <sub>9</sub> +0.5	n <sub>1</sub>	Stroke s <sub>1</sub>	A/F <sub>1</sub>	A/F <sub>2</sub>	A/F <sub>3</sub>	Clamping force kN max.	Torque to Nm max.
12062.W0214	M 6	6	17.0	5.5	14.1	12	2.5	5.5	3	2.3	6	3	10	3.5	2
12062.W0218	M 8	8	20.5	7.5	18.2	14	3.5	7.5	3	2.3	7	5	13	4.0	5
12062.W0222	M10	10	24.4	6.0	17.4	15	3.5	6.0	3	2.3	8	6	16	4.5	10
12062.W0226	M10	10	24.6	6.0	17.4	15	3.5	6.0	3	2.3	8	6	16	4.5	10
12062.W0230	M12	12	28.8	7.0	21.9	20	3.5	7.0	3	4.6	10	6	18	4.5	17
12062.W0238	M12	12	33.1	7.5	22.5	20	4.5	7.5	6	4.6	10	8	18	6.5	17
12062.W0246	M12	12	33.1	7.5	22.5	20	6.5	7.5	6	4.6	10	8	18	6.5	17
12062.W0254	M14x1,5	14	50.0	9.0	24.9	32	6.5	9.0	6	9.2	13	10	21	8.0	43
12062.W0270	M16x1,5	16	55.3	10.0	29.4	20	6.5	10.0	6	9.2	13	12	24	10.0	43
12062.W0286	M16x1,5	16	61.5	10.0	29.4	25	6.5	10.0	6	9.2	16	12	24	12.5	79



## 12071



### Material

Body: tool steel, blackened.  
 Top cone: case hardened stainless steel 1.4112, blackened and ground.  
 Ball: stainless steel, 1.4034. hardened and ground.  
 Spring: stainless steel, 1.4310 (AISI 301).

### Technical Notes

For deep installation applications, „ $d_2$

max.“ must be maintained for clearance. A locking pin can be used for precise ball positioning.  
 Suitable for concentric positioning and chucking inside holes, repeatability and rotary accuracy  $\pm 0,025$ .

### Tips

Precise self-centering, providing clamping and positioning of components.

### Important Notes

If machining delicate components, see parts 12061.

Order No.	$h_1$ -1	$h_2$	$h_3$	$l_1$ $\pm 0.1$	$d_1$ min.	$d_1$ max.	$d_2$ tol. f7	$d_3$	$d_4$ +0.3	$d_5$ tol. H7	$d_6$	Weight g
12071.W0211	8.6	3.9	3.2	3.5	11.7	14.2	10	M 4	1.5	10	1.5	9.0
12071.W0214	14.2	9.8	8.6	4.5	14.5	18.5	12	M 4	2.0	12	2.0	20.0
12071.W0218	16.5	11.6	10.4	5.5	18.5	22.5	15	M 5	2.5	15	2.5	39.0
12071.W0222	19.6	14.1	12.9	7.0	22.5	26.5	20	M 6	3.0	20	3.0	60.0
12071.W0226	19.8	14.1	13.0	7.0	26.5	30.5	20	M 6	3.0	20	3.0	86.0
12071.W0230	23.2	14.1	11.8	9.0	30.5	38.5	25	M 6	4.0	25	4.0	125.0
12071.W0238	27.2	18.0	15.7	11.0	38.5	46.5	30	M 8	4.0	30	4.0	233.0
12071.W0246	27.1	18.0	15.7	11.0	46.5	54.5	30	M 8	4.0	30	4.0	323.0
12071.W0254	40.6	23.7	19.1	15.0	54.5	70.5	45	M10	5.0	45	5.0	653.0
12071.W0270	46.1	28.3	23.7	17.0	70.5	86.5	60	M12	5.0	60	5.0	1271.0
12071.W0286	51.2	30.3	25.6	25.0	86.5	102.5	60	M16	5.0	60	5.0	1783.0

Order No.	$d_7$	$d_8$	$h_4$	$h_5$ -2	$h_6$	$h_7$ +0.5	$l_2$ $\pm 0.1$	Stroke $s_1$	$t_1$	$A/F_1$	$A/F_2$	Clamping force kN max.	Torque to Nm max.
12071.W0211	4	M 4	3.5	14.7	2.0	3.5	3.5	1.3	4	3	-	0.5	5
12071.W0214	4	M 4	5.5	19.2	2.5	5.5	4.5	2.3	6	3	5	3.5	5
12071.W0218	5	M 5	7.5	22.7	3.5	7.5	5.5	2.3	7	4	5	4.5	10
12071.W0222	6	M 6	6.0	28.6	3.5	6.0	7.0	2.3	8	5	6	5.0	17
12071.W0226	6	M 6	6.0	28.8	3.5	6.0	7.0	2.3	8	5	6	5.0	17
12071.W0230	6	M 6	7.0	32.2	3.5	7.0	9.0	4.6	8	5	6	5.0	17
12071.W0238	8	M 8	7.5	39.2	4.5	7.5	11.0	4.6	10	6	8	6.5	43
12071.W0246	8	M 8	7.5	39.2	6.5	7.5	11.0	4.6	10	6	8	6.5	43
12071.W0254	10	M10	9.0	54.6	6.5	9.0	15.0	9.2	12	8	10	8.0	79
12071.W0270	12	M12	10.0	63.1	6.5	10.0	17.0	9.2	15	10	12	10.0	141
12071.W0286	16	M16	10.0	72.2	6.5	10.0	25.0	9.2	15	14	17	10.0	354

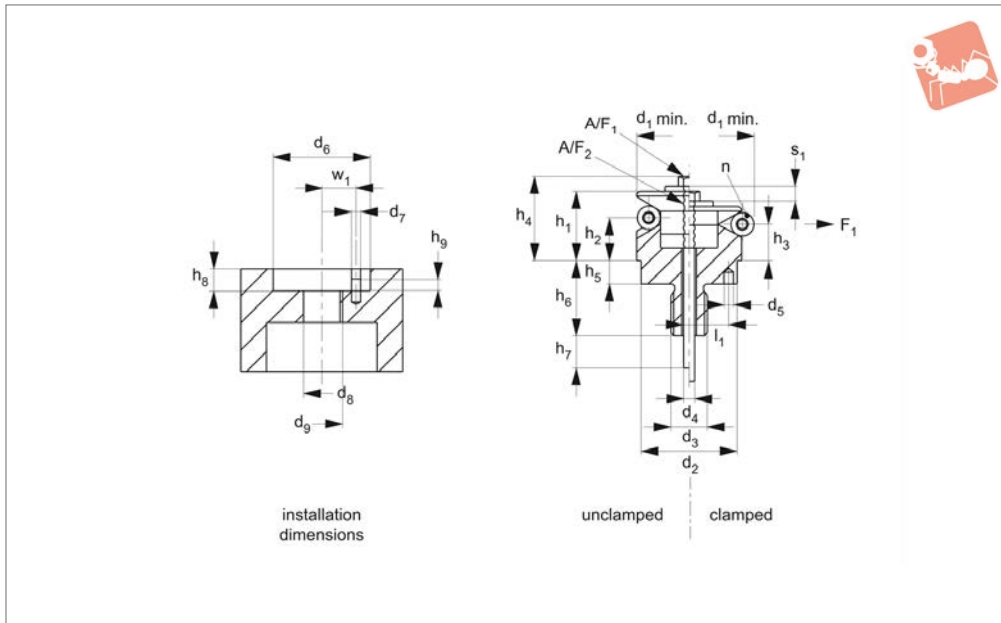




# Internal Centering Clamps

rear actuated, for casts and forgings

## Bore Clamping



12072

BORE CLAMPING

### Material

Body: tool steel, blackened.  
 Top cone: case hardened stainless steel 1.4112, blackened and ground.  
 Ball: stainless steel, 1.4034. hardened and ground.  
 Spring: stainless steel, 1.4310 (AISI 301).

### Technical Notes

Suitable for concentric positioning and chucking inside holes, provided that small

ball impressions can be accepted.  
 Pull down version can be actuated from rear either manually, or via pneumatic of hydraulic cylinder attached to thread „d<sub>4</sub>“ at rear of clamp.  
 For deep installation applications, „d<sub>2</sub> max.“ must be maintained for clearance.  
 A locking pin can be used for precise ball positioning.  
 Repeatability and rotational accuracy,

±0,025.

### Tips

Suitable for; machining centres, welding devices, transfer units, assembly units etc.

### Important Notes

If machining delicate components, see parts 12062.

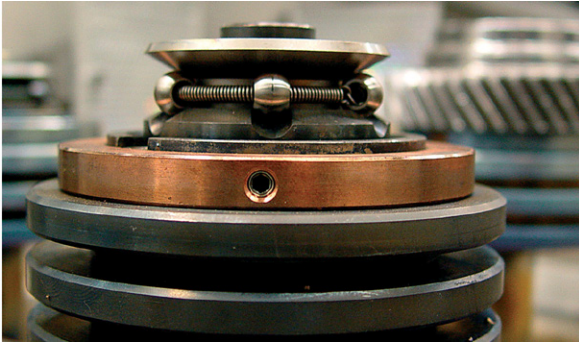
Order No.	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub> ±0.1	w <sub>1</sub> ±0.1	d <sub>1</sub> min.	d <sub>1</sub> max.	d <sub>2</sub> tol. f7	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub> +0.3	d <sub>6</sub> tol. H7	d <sub>7</sub>	d <sub>8</sub>	Weight g
12072.W0211	9.9	3.9	3.2	3.5	3.5	11.7	14.2	10	M 5	M 3	1.5	10	1.5	5	12
12072.W0214	14.2	9.8	8.6	4.5	4.5	14.5	18.5	12	M 6	M 3	2.0	12	2.0	6	21
12072.W0218	16.5	11.6	10.4	5.5	5.5	18.5	22.5	15	M 8	M 4	2.5	15	2.5	8	45
12072.W0222	19.6	14.1	12.9	7.0	7.0	22.5	26.5	20	M10	M 5	3.0	20	3.0	10	77
12072.W0226	19.8	14.1	13.0	7.0	7.0	26.5	30.5	20	M10	M 5	3.0	20	3.0	10	96
12072.W0230	23.2	14.1	11.8	9.0	9.0	30.5	38.5	25	M12	M 6	4.0	25	4.0	12	140
12072.W0238	27.1	18.0	15.5	11.0	11.0	38.5	46.5	30	M12	M 6	4.0	30	4.0	12	246
12072.W0246	27.2	18.0	15.7	11.0	11.0	46.5	54.5	30	M12	M 6	4.0	30	4.0	12	327
12072.W0254	40.6	23.7	19.1	15.0	15.0	54.5	70.5	45	M14x1,5	M 8	5.0	45	5.0	14	650
12072.W0270	46.1	28.3	23.7	17.0	17.0	70.5	86.5	60	M16x1,5	M 8	5.0	60	5.0	16	1272
12072.W0286	51.2	30.3	25.7	25.0	25.0	86.5	102.5	60	M16x1,5	M10	5.0	60	5.0	16	2042

Order No.	d <sub>9</sub>	h <sub>4</sub> -2	h <sub>5</sub>	h <sub>6</sub> +1	h <sub>7</sub> ≈	h <sub>8</sub> +0,5	h <sub>9</sub>	Stroke s <sub>1</sub>	A/F <sub>1</sub>	A/F <sub>2</sub>	A/F <sub>3</sub>	Torque to Nm max.	Clamping force F <sub>1</sub> kN	Ball dia.	Number of balls n
12072.W0211	M 5	12.7	3.5	11.0	10	3.5	2.0	1.3	5.5	4	8	2	0.5	2.5	3
12072.W0214	M 6	17.0	5.5	14.1	12	5.5	2.5	2.3	5.5	3	10	2	3.5	4.0	3
12072.W0218	M 8	20.4	7.5	18.2	14	7.5	3.5	2.3	7.0	5	13	5	4.0	4.0	3
12072.W0222	M10	24.3	6.0	17.4	15	6.0	3.5	2.3	8.0	6	16	10	4.5	4.0	3
12072.W0226	M10	24.5	6.0	17.4	15	6.0	3.5	2.3	8.0	6	16	10	4.5	4.0	3
12072.W0230	M12	28.8	7.0	21.9	20	7.0	3.5	4.6	10.0	6	18	17	4.5	8.0	3
12072.W0238	M12	33.0	7.5	22.5	20	7.5	4.5	4.6	10.0	8	18	17	6.5	8.0	6
12072.W0246	M12	33.1	7.5	22.5	20	7.5	6.5	4.6	10.0	8	18	17	6.5	8.0	6
12072.W0254	M14x1,4	49.9	9.0	24.5	32	9.0	6.5	9.2	13.0	10	21	43	8.0	16.0	6



Order No.	$d_9$	$h_4$ -2	$h_5$	$h_6$ +1	$h_7$ $\approx$	$h_8$ +0.5	$h_9$	Stroke $s_1$	$A/F_1$	$A/F_2$	$A/F_3$	Torque to Nm max.	Clamping force $F_1$ kN	Ball dia.	Number of balls $n$
<b>12072.W0270</b>	M16x1,5	55.4	10.0	29.4	20	10.0	6.5	9.2	13.0	12	24	43	10.0	16.0	6
<b>12072.W0286</b>	M16x1,5	61.6	10.0	29.4	25	10.0	6.5	9.2	16.0	12	24	79	15.5	16.0	6

BORE CLAMPING





# Self Centering Internal Clamps

**12061, 62 -  
12071, 72**  
Clamping & Height Setting

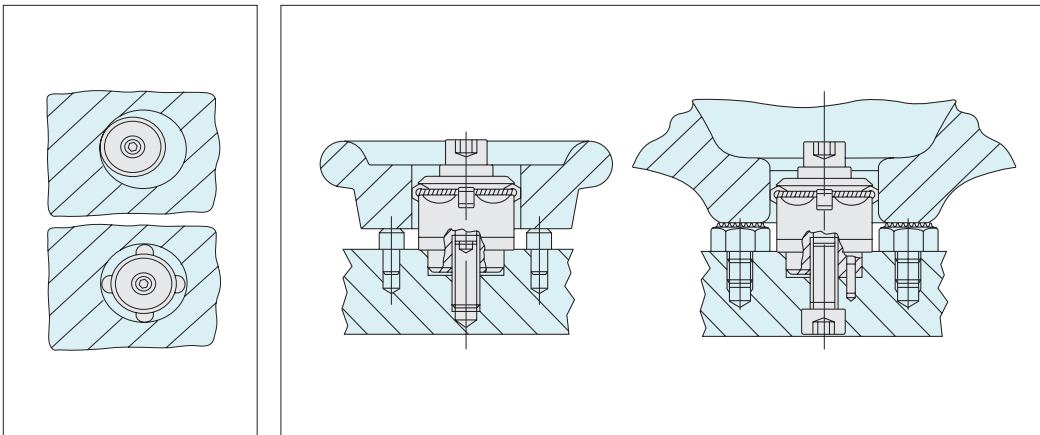
The internal centering clamp provides autocentric chucking inside both round and square holes, at the simple turn of a hexagon screw. Precise self-centering is achieved through the expansion of the ring of balls which, during clamping, are pressed outward across a precision cone. As the outer diameter of the clamp changes the balls transmit force between its body and the bore. The clamps are used in machining and welding fixtures, product assemblies and transfer units.



- Easy to use.
- Precise self-centering and downhold clamping minimising tolerance errors.
- 3 or 6 points of clamping for maximum stability.
- Clamping on uneven surfaces, such as casts and forgings.
- Low height clamping element.
- Bore sizes 11 to 102mm.
- Repeatable positioning accuracy  $\pm 0,025$  and rotational accuracy  $\pm 0,025$ .
- Easily actuated by the turn of a screw.
- Clamping of workpieces with perforated walls without distortion.
- Actuation from above or below.

## Advantages

## Centering



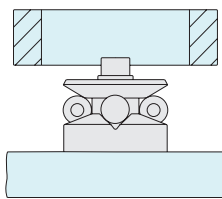
### Manual from above

### Manual, hydraulic or pneumatic from below

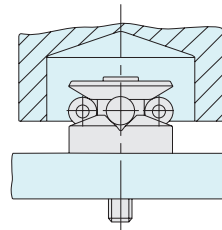
### Actuation Models



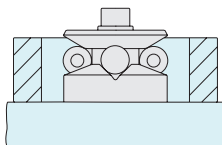
**12061** - for delicate workpieces (non-marking).



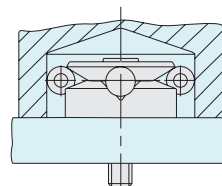
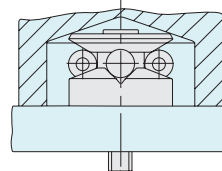
**12062** - for delicate workpieces (non-marking).

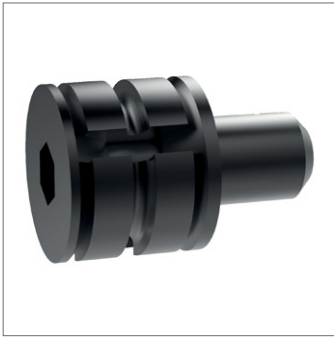


**12071** - for cast and more robust workpieces.

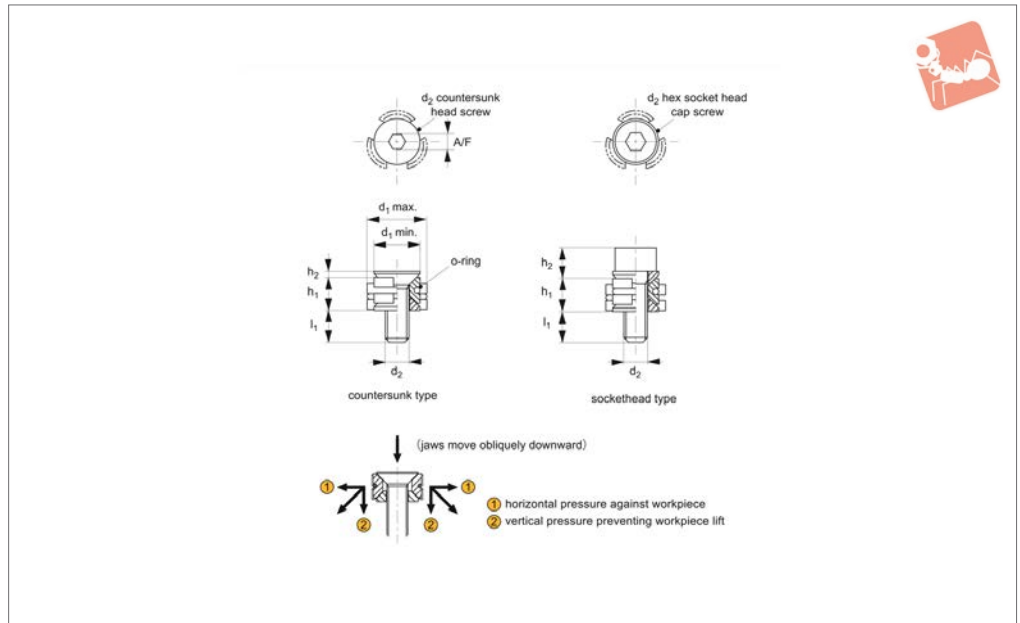


**12072** - for cast and more robust workpieces.





## 12074



### Material

Steel (AISI 4140), 33-39 HRC, blackened.

### Technical Notes

Compact clamps to hold workpiece on an inside diameter. Wedge construction

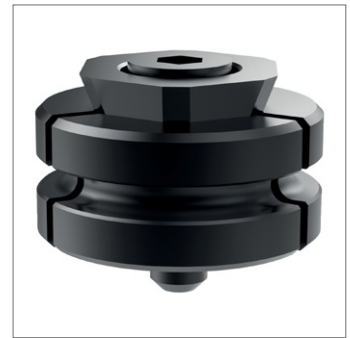
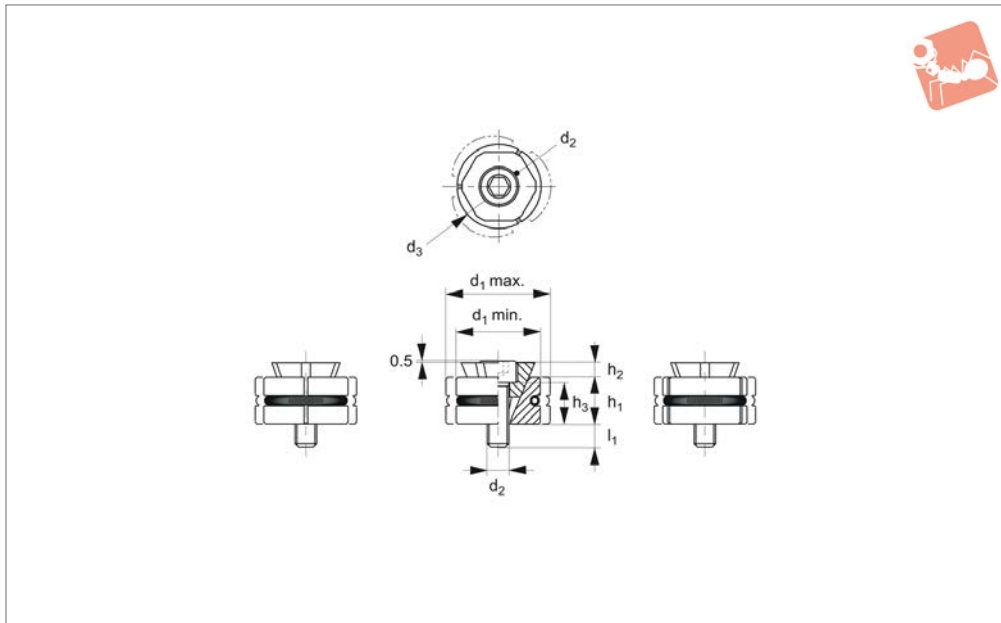
provides powerful clamping force. Generates both horizontal and vertical clamping force.

### Tips

Clamps are suited to holding on cast or

roughed holes. Contact point nature of clamp may result in marking of workpiece. Not recommended for use in accurately finished holes.

Order No.	$h_2$	$l_1$ at $d_1$ max.	Type	$d_1$ min.	$d_1$ max.	$d_2$	$h_1$ at $d_1$ min.	$h_1$ at $d_1$ max.	A/F	Clamping force kN max.	Torque to Nm max.	Weight g
12074.W0008	0.9	7.3	Countersunk	8	10.3	M 4x0,70	4.6	5.5	3	2.1	0.9	3
12074.W0010	1.1	9.1	Countersunk	10	12.3	M 5x0,80	5.6	6.4	3	4.3	1.5	5
12074.W0012	1.3	11.2	Countersunk	12	16.3	M 6x1,00	7.0	8.6	4	7.3	2.1	9
12074.W0016	1.6	16.2	Countersunk	16	22.0	M 8x1,25	9.4	11.5	5	18.0	4.0	22
12074.W0108	5.1	7.1	Socket Head	8	10.3	M 4x0,70	4.6	5.5	3	2.7	1.5	4
12074.W0110	6.2	9.0	Socket Head	10	12.3	M 5x0,80	5.6	6.4	4	5.4	2.5	7
12074.W0112	7.9	10.6	Socket Head	12	16.3	M 6x1,00	7.0	8.6	5	9.1	5.0	11
12074.W0116	10.4	15.4	Socket Head	16	22.0	M 8x1,25	9.4	11.5	6	25.0	9.0	28



## 12075

BORE CLAMPING

### Material

Steel (AISI 4140, 42CrMo4), 47-53 HRC, blackened.

### Technical Notes

Clamps hold workpieces on an inside

diameter. Wedge construction provides powerful clamping force. Generates both horizontal and vertical clamping force.

### Tips

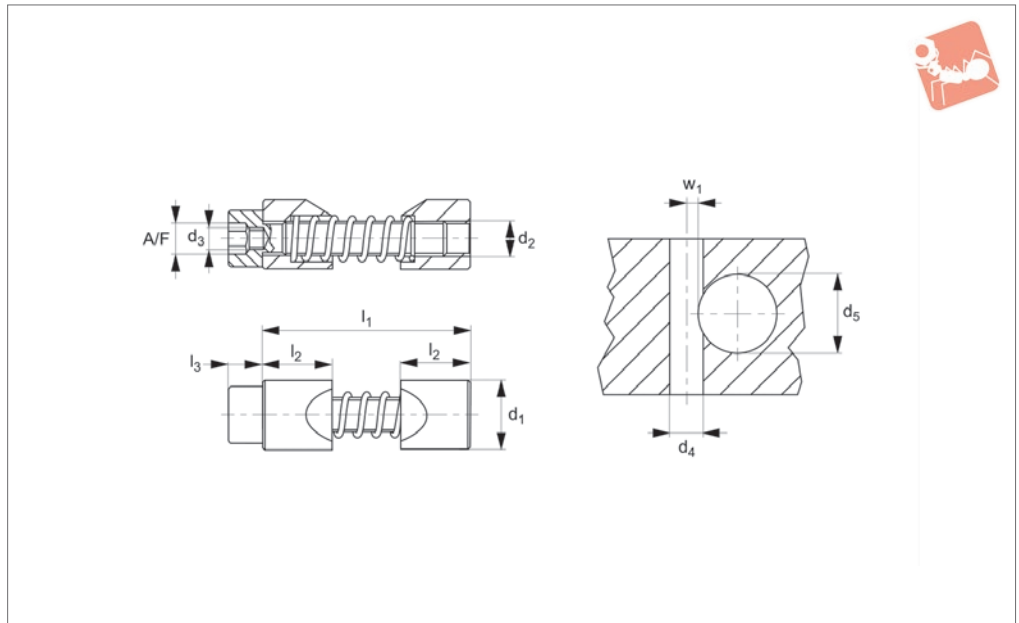
Clamps are suited to holding on cast or

roughed holes. Contact point nature of clamp, may result in marking of workpiece. Not recommended for use in accurately finished holes.

Order No.	$h_1$	$h_3$ min.	$h_3$ max.	$l_1$ at $d_1$ max.	$d_1$ min.	$d_1$ max.	$d_1$	$d_2$	$d_3$	$h_2$ at $d_1$ min.	Clamping force kN max.	Torque to Nm max.	Weight g
12075.W0008	9	8.0	2.6	9.4	19.5	24	24	M 4 x 12	9.5	2.5	3.2	2	19
12075.W0012	13	11.5	5.0	13.0	23.5	29	29	M 6 x 18	11.5	4.0	10.5	5	43
12075.W0016	17	15.0	6.0	19.0	28.5	36	36	M 8 x 25	14.0	5.5	25.0	9	89



## 32940.1



### Material

Body: steel, heat-treated, blackened.  
Clamping screw: steel, zincplated.  
Spring: stainless.

RoHS compliant  
REACH: contains no SVHC materials

### Technical Notes

Installation:

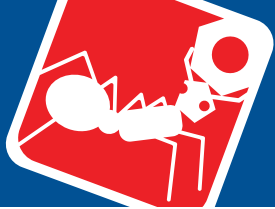
- 1) machine bores
- 2) insert shaft clamp
- 3) expand jaws to appropriate dimension of the part to be clamped
- 4) position the shaft
- 5) clamp it using the working tool

The thread  $d_3$  serves to hold the assembly tool (optional).

### Tips

For clamping shafts, axles, columns, bolts, bars, pipes etc. (with diameters 6-125mm), quickly and easily.

Order No.	$d_1$ tol. h11	$d_2$	$d_3$	$l_1$ max.	$l_2$	$l_3$	Hub bore tol. H7	$d_4$	Location hole shaft $d_5$	$w_1$ +0.2	A/F	Tightening torque Nm max.	Fitting tool 32940	Weight g
<b>32940.W0006</b>	8	M 4	M 2,5	27	8	4	8		6-10	2,8	3	2,9	.W0806	8
<b>32940.W0010</b>	10	M 5	M 3	33	10	5	10		10-15	3,3	4	6,0	.W0810	12
<b>32940.W0015</b>	12	M 6	M 4	39	12	6	12		15-20	3,5	5	10,0	.W0815	21
<b>32940.W0020</b>	16	M 8	M 5	46	16	8	16		20-30	4,0	6	25,0	.W0820	52
<b>32940.W0030</b>	20	M10	M 6	53	20	10	20		30-40	4,8	8	46,0	.W0830	98
<b>32940.W0040</b>	25	M12	M 8	70	25	12	25		40-60	5,6	10	82,0	.W0840	183
<b>32940.W0060</b>	30	M16	M10	81	30	16	30		60-125	7,9	14	206,0	.W0860	344



# Steel Shaft Clamps

for cylindrical parts

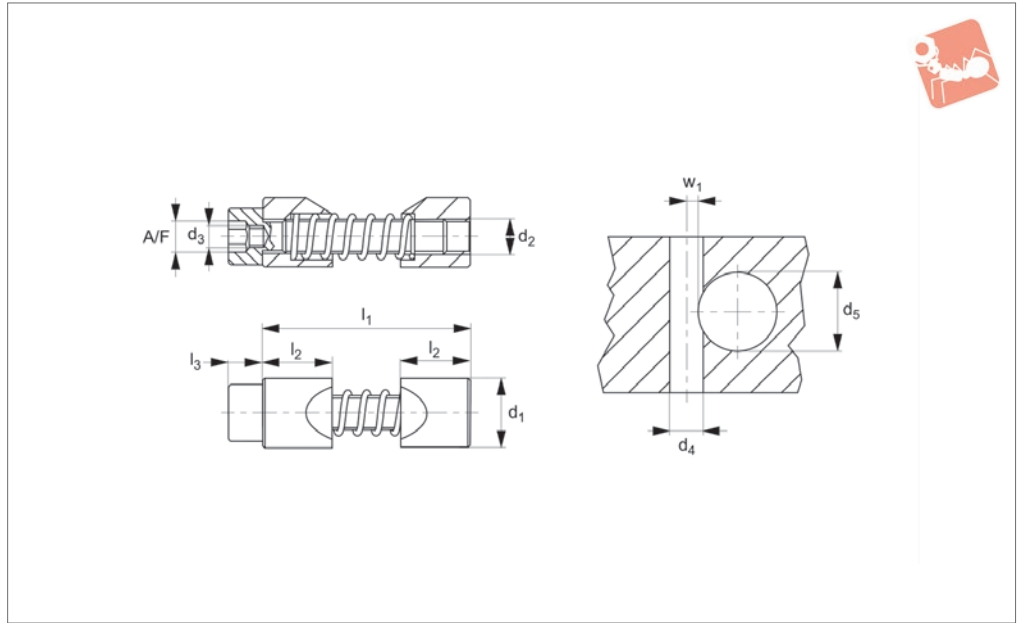
## Shaft Clamping



SHAFT CLAMPING



## 32940.2



### Material

Body: stainless 1.4305.  
Clamping screw: stainless.  
Spring: stainless.

RoHS compliant  
REACH

### Technical Notes

Installation:

- 1) machine bores
- 2) insert shaft clamp
- 3) expand jaws to appropriate dimension of the part to be clamped
- 4) position the shaft
- 5) clamp it using the working tool

The thread  $d_3$  serves to hold the assembly tool (optional).

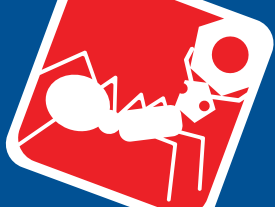
### Tips

For clamping shafts, axles, columns, bolts, bars, pipes etc. (with diameters 6-125mm), quickly and easily.

Order No.	$d_1$ tol. h11	$d_2$	$d_3$	$l_1$ max.	$l_2$	Weight g
32940.W0106	8	M 4	M 2,5	27	8	7
32940.W0110	10	M 5	M 3	33	10	13
32940.W0115	12	M 6	M 4	39	12	22
32940.W0120	16	M 8	M 5	46	16	52
32940.W0130	20	M10	M 6	53	20	104
32940.W0140	25	M12	M 8	70	25	189
32940.W0160	30	M16	M10	81	30	346

Order No.	$l_3$	Hub bore $d_4$ tol. H7	Location hole shaft $d_5$	$w_1$ +0.2	A/F	Tightening torque Nm max.	Fitting tool 32940
32940.W0106	4	8	6-10	2.8	3	2.9	.W0806
32940.W0110	5	10	10-15	3.3	4	6	.W0810
32940.W0115	6	12	15-20	3.5	5	10	.W0815
32940.W0120	8	16	20-30	4.0	6	25	.W0820
32940.W0130	10	20	30-40	4.8	8	46	.W0830
32940.W0140	12	25	40-60	5.6	10	82	.W0840
32940.W0160	16	30	60-125	7.9	14	206	.W0860





# Stainless Shaft Clamps

for cylindrical parts

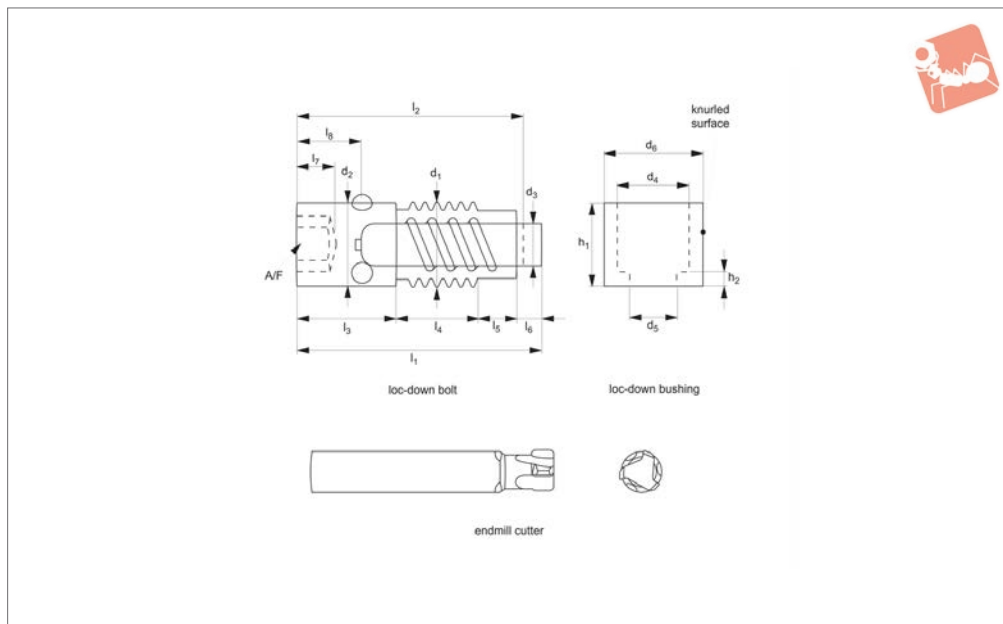
## Shaft Clamping



SHAFT CLAMPING



## 12098



### Material

Bolt: stainless steel, heat treated  
 Bushings: alloy steel (4140), Rc 58-60, black oxide finish  
 Endmill cutter: stainless steel, heat treated  
 Install tool: stainless steel, heat treated

### Technical Notes

\*\*Please note: max. clamping force is typically 0,33kN. force for every 1 Nm. of torque, and is dependent upon workpiece material.

### Max torque:

With bushing 20 Nm.  
 Alu/brass (without bush) 20 Nm.  
 Mild steel/ stainless steel 27Nm.  
 Metals HRc 45 20Nm.  
 See technical pages.

### Tips

Ideal low cost quick component and fixture change. Use in conjunction with location pins 36340 and drill bushes 30800 for fast and accurate positioning. Provides repea-

### tability to 0,01mm.

Time saving solution, removing the need for traditional bolts whilst reducing tooling interference from traditional clamping methods. Ideal for high speed machining of components.

### Important Notes

See installation guidance sheet for correct installation procedure.

Order No.	Type	Size	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	h <sub>1</sub>	Weight g
12098.W0010	Loc-down bolt	M10	M10x1,5	9.9	5.0	-	-	-	-	16
12098.W0012	Loc-down bolt	M12	M12x1,75	12.6	7.9	-	-	-	-	27
12098.W0016	Loc-down bolt	M16	M16x2	15.9	9.8	-	-	-	-	58
12098.W0110	Loc-down bushing	M10	-	-	-	13.2	10.2	18.0	10.0	10
12098.W0112	Loc-down bushing	M12	-	-	-	16.3	13.0	22.0	9.7	14
12098.W0116	Loc-down bushing	M16	-	-	-	20.7	16.1	26.9	14.1	30
12098.W0510	Endmill cutter	M10	-	-	-	-	-	-	-	-
12098.W0512	Endmill cutter	for M12, M16	-	-	-	-	-	-	-	-
12098.W0535	Bushing install tool	for M10 to M16	-	-	-	-	-	-	-	159

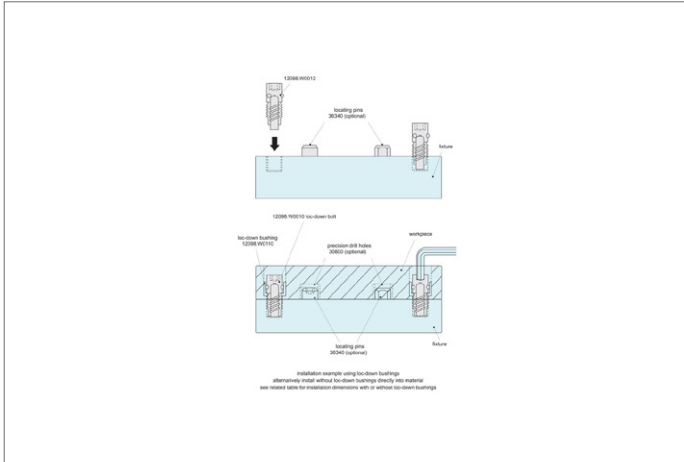
Order No.	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	l <sub>6</sub>	l <sub>7</sub>	l <sub>8</sub>	A/F
12098.W0010	-	42.8	40.2	14.1	18.7	5.3	4.6	6.3	10.5	5
12098.W0012	-	43.8	38.5	15.8	16.0	6.3	5.7	6.8	12.3	6
12098.W0016	-	56.4	50.0	21.3	22.7	6.0	6.3	8.5	15.9	8
12098.W0110	2.9	-	-	-	-	-	-	-	-	-
12098.W0112	1.6	-	-	-	-	-	-	-	-	-
12098.W0116	3.6	-	-	-	-	-	-	-	-	-
12098.W0510	-	-	-	-	-	-	-	-	-	-
12098.W0512	-	-	-	-	-	-	-	-	-	-
12098.W0535	-	-	-	-	-	-	-	-	-	-



# Expanding Loc-Down Bolts for quick component clamping



## Pull Back Inserts



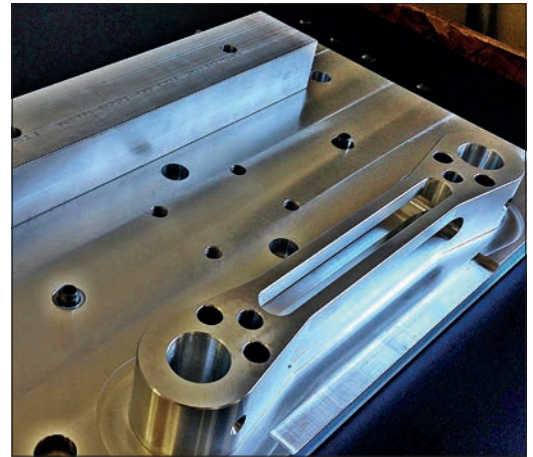
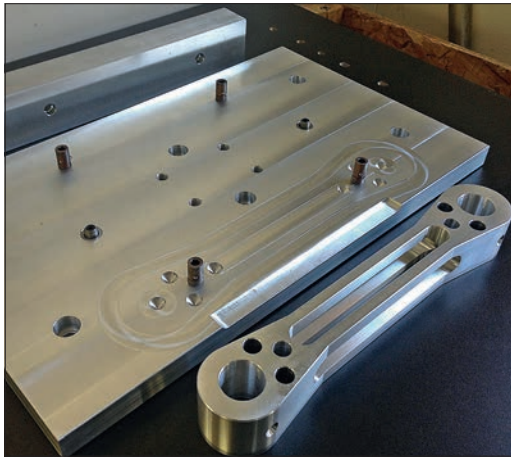
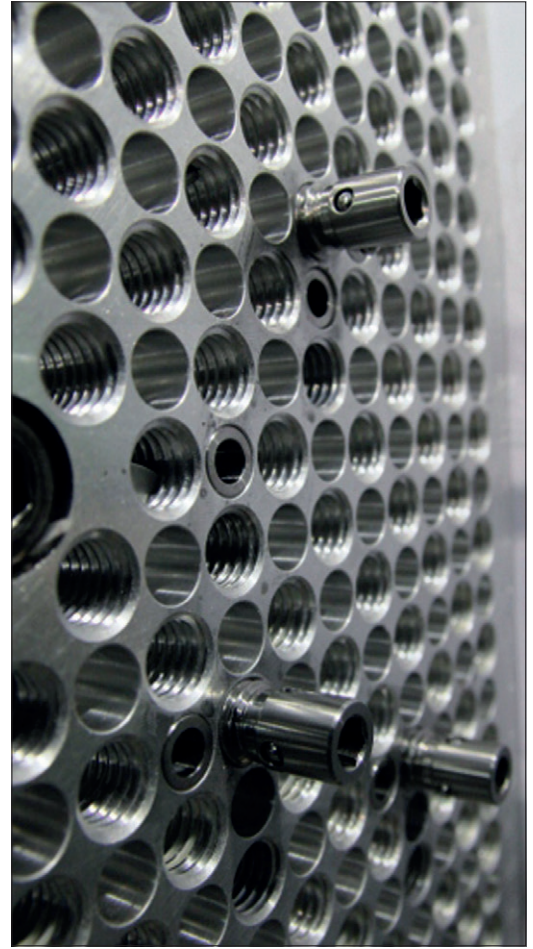
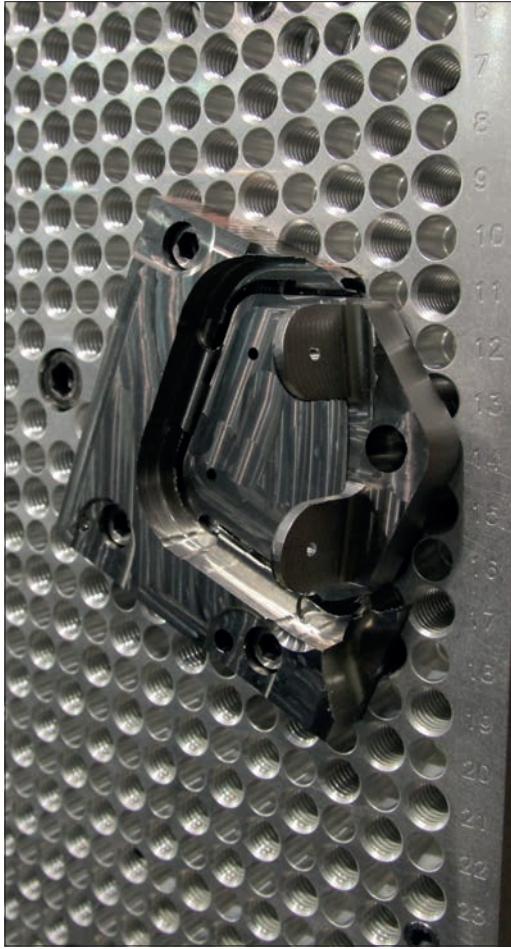
PULL BACK INSERTS

12098

Clamping & Height Setting



# Expanding Loc-Down Bolt applications



PULL BACK INSERTS

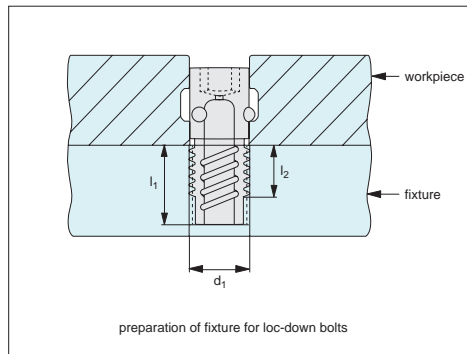


## Installation Guidance

1. Drill and tap blind hole to thread  $d_1$  depth of  $l_1$ .
2. Thread must be to a minimum depth  $l_2$  and a blind hole.
3. Blind hole must be flat to ensure proper actuation of bolt.

### Preparation of Fixture

Loc-down Bolt	Size	$d_1$	$l_1$	$l_2$ min.
12098.W0010	M10	M10 x 1,5	22	18
12098.W0012	M12	M10 x 1,75	22	18
12098.W0016	M16	M10 x 2	27	22

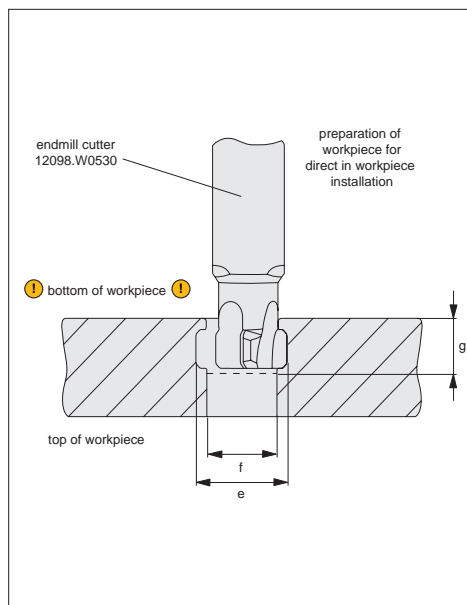


## Preparation of Fixture

1. Drill through hole, dimension 'f'.
2. Using endmill cutter, (please order separately), touch off on bottom of workpiece and drop tool to dimension 'g'. Now cut a groove to diameter 'e'. Please refer to table of endmill cutter starting feeds and speeds for different materials.
3. Countersink 0.8mm x 90°. See "direct workpiece without bushing preparation" chart below.

### Preparation of Workpiece Option 1

Loc-down Bolt	Size	$h_3$	$w_1$	$d_7$
12098.W0010	M10	12,5 - 12,7	9,9	11,43
12098.W0012	M12	15,9 - 16,0	13,0	11,73
12098.W0016	M16	20,6 - 20,9	16,5	15,09



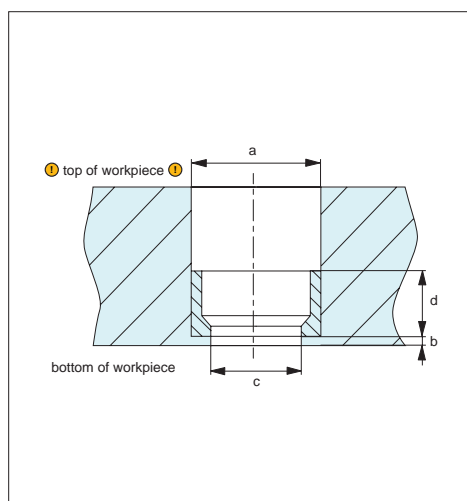
## Preparation of Workpiece Option 1

without bushing direct into workpiece.

### Endmill Cutter Starting Feeds and Speeds

Material	Feed	Speed
Aluminium	25 IPM	3,000 rpm/1 radial pass
Hard metals	1 IPM	1,200 rpm/3 equal radial passes

1. Drill through workpiece to dimension 'c'. Deep countersink hole of diameter "a", leaving material on bottom of thickness 'b' (i.e. mounting) surface of workpiece.
2. Install loc-down bushing (please order separately), ensuring bottom of bushing is flush with base of counter sink hole.
3. On deep holes, consider counter bore for dimension "a" for easier bushing installation.
4. This is a press fit installation, metal is displaced. The OD of the bushing is knurled, to aid in retention, and minimize bushing and part distortion. Using bushing installation tool 12098.W0535 (order separately) provides properly seated bushing installation, without damage to the bushing.



## Preparation of Workpiece Option 2

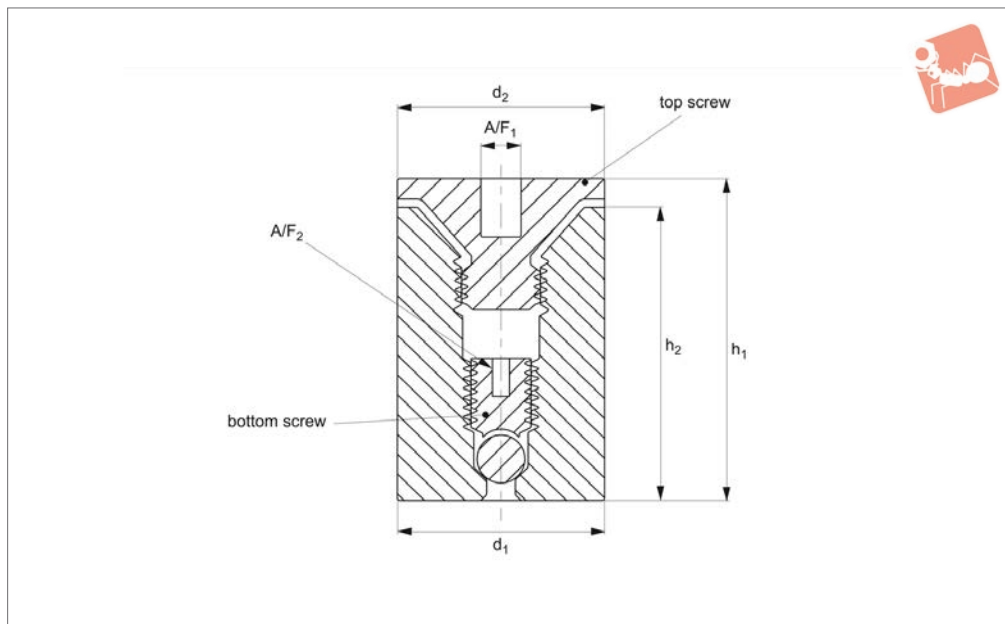
with loc-down bushing (especially for soft materials).

### Preparation of Workpiece Option 2

Loc-down Bolt	Size	Loc-down Bushing	Endmill Cutter	$d_7$	$h_5$	$d_9$	$h_4$
12098.W0010	M10	12098.W0110	12098.W0510	18,00/18,02	2,0	10,3/10,5	10,0
12098.W0012	M12	12098.W0112	12098.W0512	22,00/22,03	2,0	13,0/13,5	9,7
12098.W0016	M16	12098.W0112	12098.W0516	27,00/27,03	2,5	16,3/16,6	14,0



## 12099



### Material

Steel (SNCM20), heat-treated, quenched and tempered.

0,013.

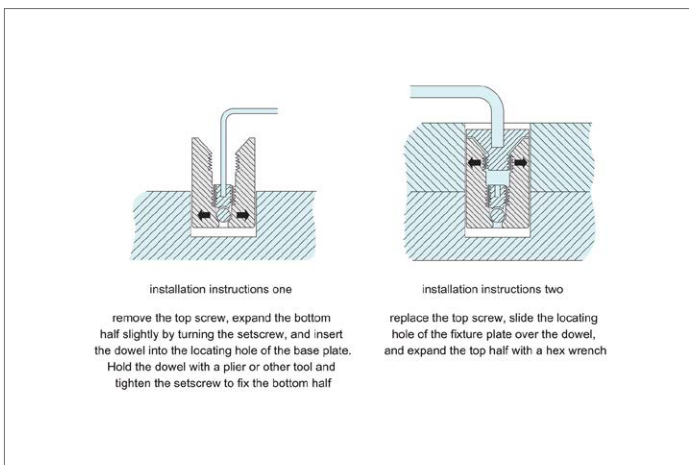
### Tips

These dowels are designed just for locating and are unsuitable for applications where high shear stress is generated.

### Technical Notes

Self-centering and repeatable to within +/-

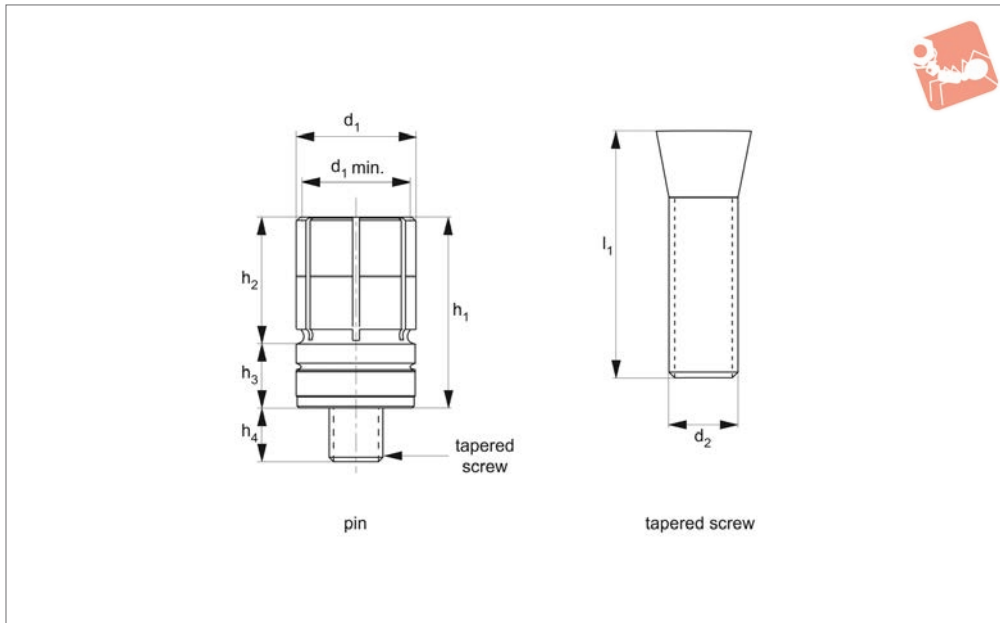
Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	A/F <sub>1</sub>	A/F <sub>2</sub>	Screw torque bottom screw	Screw torque top screw	Recommended hole dia. +0.025	Weight g
							Nm max.	Nm max.		
12099.W0010	10	9.9	20	17.6	4	3	2.2	2.2	10	11
12099.W0012	12	11.9	25	22.6	5	4	2.2	2.2	12	18
12099.W0014	14	13.9	28	24.9	5	4	3.5	4.5	14	28
12099.W0016	16	15.9	32	29.7	6	5	3.5	5.7	16	41
12099.W0020	20	19.9	38	35.4	8	6	4.5	5.7	20	76





## 12058

PULL BACK INSERTS



### Material

Stainless steel (17-4PH) or steel (12L14). Pin and screw supplied together. Replacement pins can be ordered separately, see parts 12058.W5030-W5060. Supplied as one pin and one tapered screw.

### Technical Notes

XYZ Xpansion pins provide a cost-effective workholding solution for tombstones, grid and fixture plates, enabling full tool access to the work surface with no external clamping interference.

Unique design provides accurate location and repeatability with high holding forces to secure parts on an internal diameter.

Press-fit XYZ Xpansion pins are for installation into a precision bored hole, with a centred threaded hole to receive tapered screw.

Easy to use installation/removal tool available, please order separately.

### Tips

Designed for applications requiring quick set-up on secondary operation, water jetting or even non-machining applications where discrete location and clamping of parts is required.

### Important Notes

Clamping of component achieved via tight-

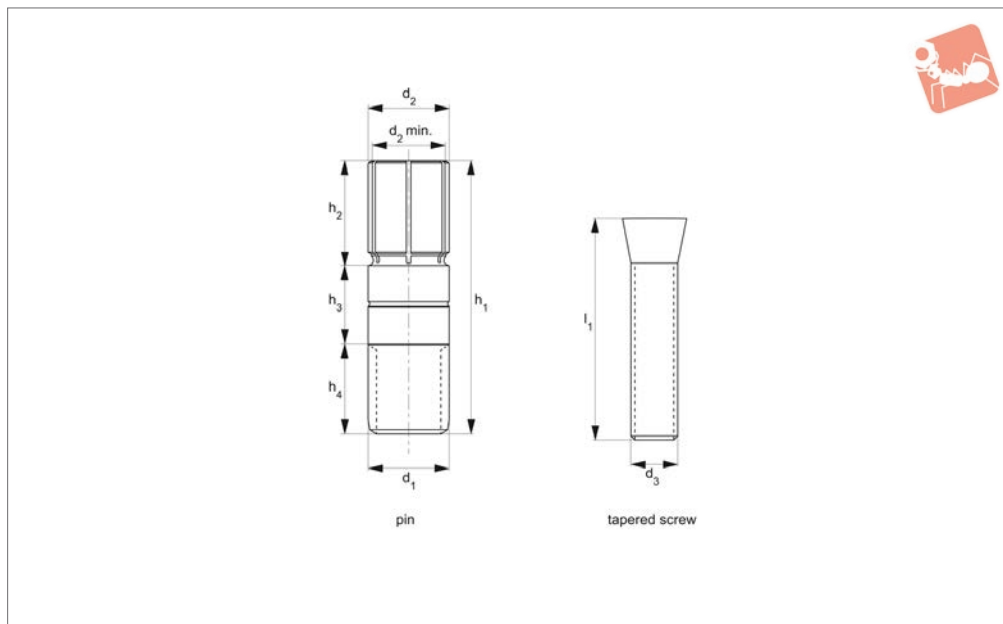
tening of tapered screw to expand the XYZ pin collet; expansion of 0,7mm is possible. The top of the pin has been slightly tapered to maximise line contact in the mounting bore and to provide adequate clearance during workpiece loading and unloading. If recessing pin into a fixture at a depth below the collet slits, be sure to provide sufficient clearance to allow for expansion of clamp (approx. 0,7mm).

**d<sub>1</sub> min.** is the minimum diameter to which the pin can be machined down. The tapered screws listed on the data table are for replacement purposes.

Order No.	Type	Material	For pin dia.	$l_1$	$d_1$ +0.00 -0.025	$d_1$ min.	$d_2$	$h_1$	$h_2$	$h_3$	$h_4$	Weight g
12058.W0030	Pin	17-4PH	-	16	6	5.5	-	13	7.0	5.8	7.3	2.7
12058.W0040	Pin	17-4PH	-	22	10	7.5	-	19	12.7	6.4	8.4	9.5
12058.W0050	Pin	17-4PH	-	22	12	10.5	-	19	12.7	6.4	11.1	17
12058.W0060	Pin	17-4PH	-	22	16	12.0	-	19	12.7	6.4	13.0	27
12058.W0130	Pin	12L14	-	16	6	5.5	-	13	7.0	5.8	7.3	2.7
12058.W0140	Pin	12L14	-	22	10	7.5	-	19	12.7	6.4	8.4	9.5
12058.W0150	Pin	12L14	-	22	12	10.5	-	19	12.7	6.4	11.1	17.2
12058.W0160	Pin	12L14	-	22	16	12.0	-	19	12.7	6.4	13.0	27.2
12058.W5030	Tapered Screw	-	-	-	-	-	M 3x0,5	-	-	-	-	-
12058.W5040	Tapered Screw	-	-	-	-	-	M 4x0,7	-	-	-	-	4.5
12058.W5050	Tapered Screw	-	-	-	-	-	M 6x1,0	-	-	-	-	-
12058.W5060	Tapered Screw	-	-	-	-	-	M 8x1,25	-	-	-	-	13.6
12058.W6030	Inst. Tool	-	6	-	-	-	-	-	-	-	-	-
12058.W6040	Inst. Tool	-	10	-	-	-	-	-	-	-	-	-
12058.W6050	Inst. Tool	-	12	-	-	-	-	-	-	-	-	-
12058.W6060	Inst. Tool	-	16	-	-	-	-	-	-	-	-	63.5



## 12059



### Material

Stainless steel (17-4PH, AISI 630) or steel (12L14). Pin and screw supplied together. Replacement pins can be ordered separately, see parts 12059.W5010-12059.W5020. Supplied as one pin and one tapered screw.

### Technical Notes

XYZ Xpansion pins provide a cost-effective workholding solution for tombstones, grid and fixture plates, enabling full tool access to the work surface with no external clamping interference. Unique design provides accurate location and repeatability with high holding forces to secure parts on an internal diameter. Threaded XYZ Xpansion pins are installed

via a drilled and reamed hole for precise location, or set in a hardened drill bush for additional fixture strength and wear resistance.  $d_2$  tolerance  $+0.00/-0.025$ .

### Tips

Designed for applications requiring quick set-up on secondary operation, water jetting or even non machining applications where discrete location and clamping of parts is required.

### Important Notes

Clamping of component achieved via tightening of tapered screw to expand the XYZ pin collet; expansion of 0,7mm is possible. The top of the pin has been slightly tapered to maximise line contact in the mouting

bore and to provide adequate clearance during loading and unloading of workpieces.

If installation pin in a precision bore, drill and ream the hole over the nominal diameter  $d_2$  by minimum  $+0,003$  to  $+0,013$  mm.

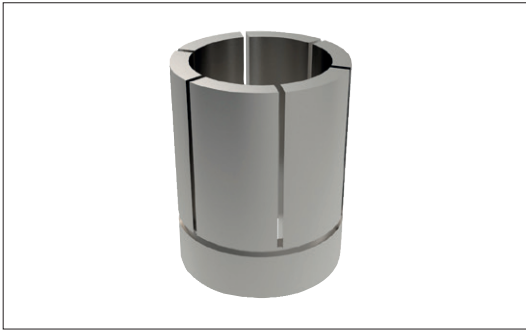
If recessing pin into a fixture at a depth below the collet slits, be sure to provide sufficient clearance to allow for expansion of clamp (approx. 0,7mm).

$d_2$  min.\* is the minimum diameter to which the pin can be machined down.

The tapered screws listed on the data table are for replacement purposes.

Order No.	Type	$l_1$	$d_1$	$d_2$ $+0.00 -0.025$	$d_2$ min.*	$d_3$	$h_1$	$h_2$	$h_3$	$h_4$	Weight g
12059.W0050	Pin	-	M12x1,75	12	10.5	-	40	15	12	13	34
12059.W0060	Pin	-	M16x2,00	16	12.0	-	45	16	16	13	59
12059.W5010	Tapered Screw	30	-	-	-	M 6x1,00	-	-	-	-	9.1
12059.W5020	Tapered Screw	30	-	-	-	M 8x1,25	-	-	-	-	14





Expansion pins are the ideal solution for securing parts on the inside diameter on tombstones, grid and fixture plates.

The unique design achieves accurate location, repeatability and high holding forces for securing parts and provide discrete workholding and full accessibility to the work surface with no external clamping interference.

Location accuracy is achieved through the close tolerance between the Xpansion pin's locating diameter and busing internal diameter. The top of the pins have a slight taper to maximise line contact in the bore, and to provide clearance during loading and unloading.

Pins expand up to 0.7mm, with the pin's diameter machinable to your specific application.

Ideal for quick set-up on secondary operation, water jetting operations, or even applications outside of a machining centre.

Available in long threaded version, or shorter press fit model. Serrated and smooth finish in both M12 and M16 threads.



Design simple fixture plate with Xpansion pins located to suit your component, the same hole spacing will be used in the workpiece/raw stock for mounting bolt holes.



Install the Xpansion pin into the fixture plate.

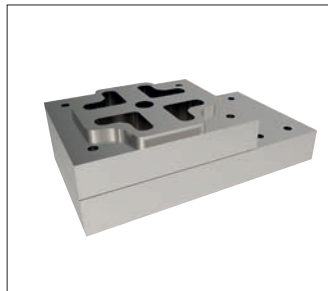


Install the Xpansion pin's tapered drive screw into fixture plate.

### Easy to Install



Load workpiece raw stock onto Xpansion pins and tighten tapered drive screws to clamp.

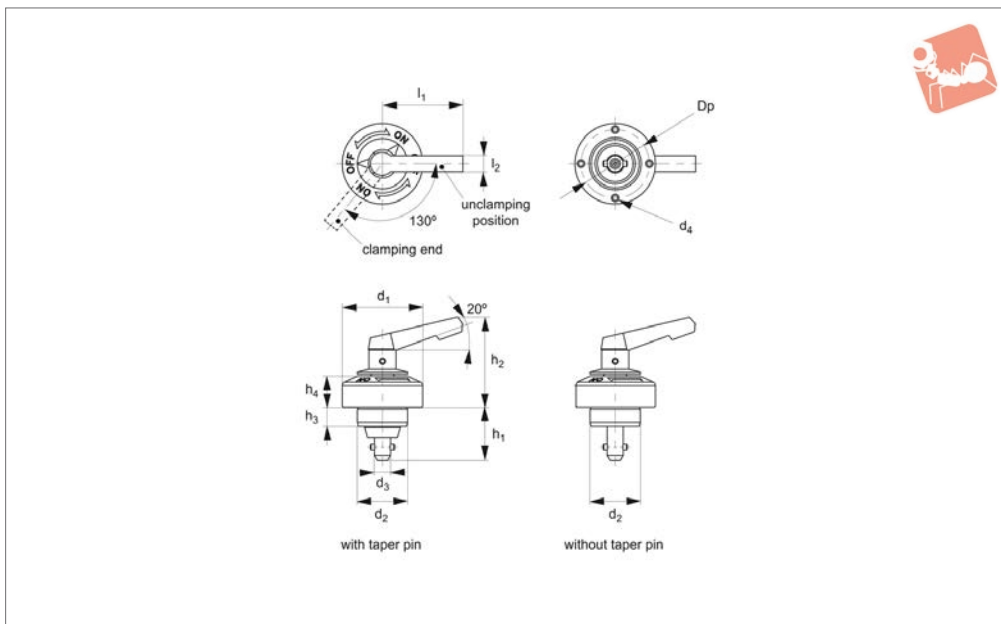


Run first operation – note the clear tooling path possible with no noticeable external clamping interference.

- Flip the part and locate on the same Xpansion pins for operation two.
- Xpansion pins provide a quick, accurate and low cost fixture solution.



## 12085.1



### Material

Body/shank: steel (SCM440), black oxide finish.

Tapered pin: steel (SCM440), nitrocarburised.

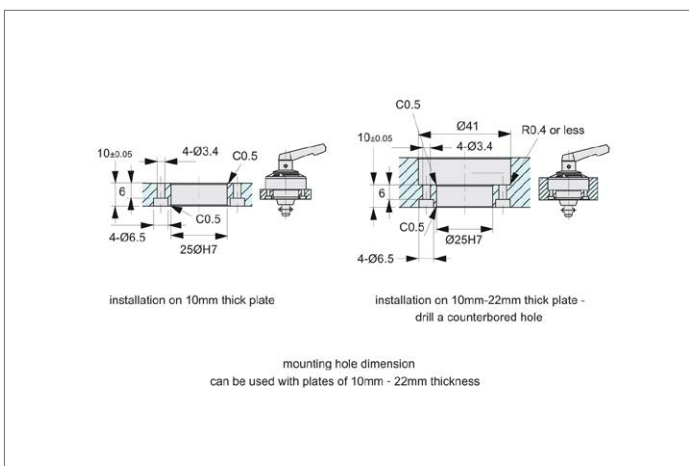
Handle: die-cast zinc (ZDC1), silver-grey painted.

Pin: stainless steel (AISI 303, 1.4305).

### Technical Notes

The lifting force is the power of the inner spring of the body to push up the moveable tapered pin.

Order No.	Tapered pin	Size	Clamping force N	$l_1$	$l_2$	Dp	$d_1$	$d_2$ tol. G6	$d_3$	$d_4$	$h_1$	$h_2$	$h_3$	$h_4$	Lifting force N	Weight g
12085.W0008	With	8	600	40	8	34	40	25	8	M 3x0,5	26	45	9,5	15,5	100	220
12085.W0108	Without	8	700	40	8	34	40	25	8	M 3x0,5	26	45	9,5	15,5		215



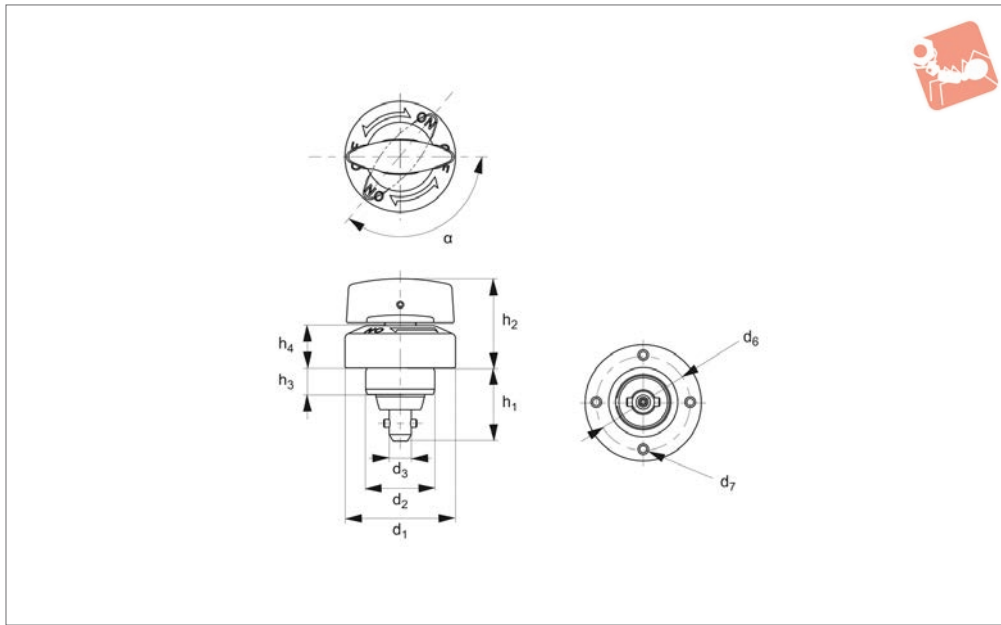


# One-Touch Flex Locator Clampers

knob



## Pull Back Inserts



**12085.2**

PULL BACK INSERTS

### Material

Body/shank: steel (AISI 4140, 42CrMo4), black oxide finish.

Tapered pin: steel (AISI 4140, 42CrMo4), nitrocarburised.

Knob: stainless steel (AISI 304, 1.4308).

Pin: stainless steel (AISI 303, 1.4305).

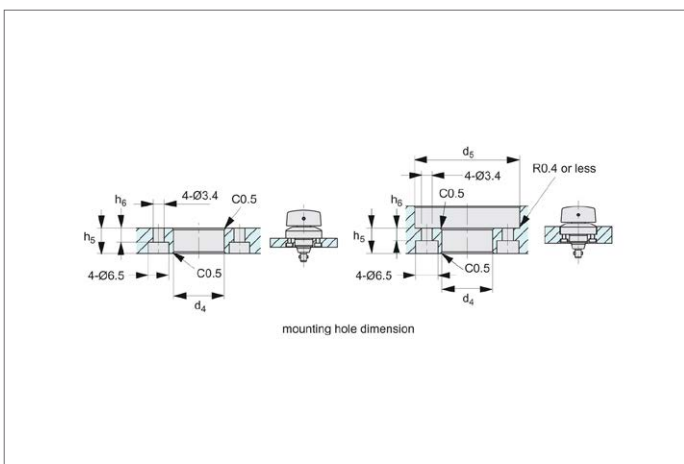
### Technical Notes

The lifting force is the power of the inner spring of the body to push up the moveable tapered pin.

### Tips

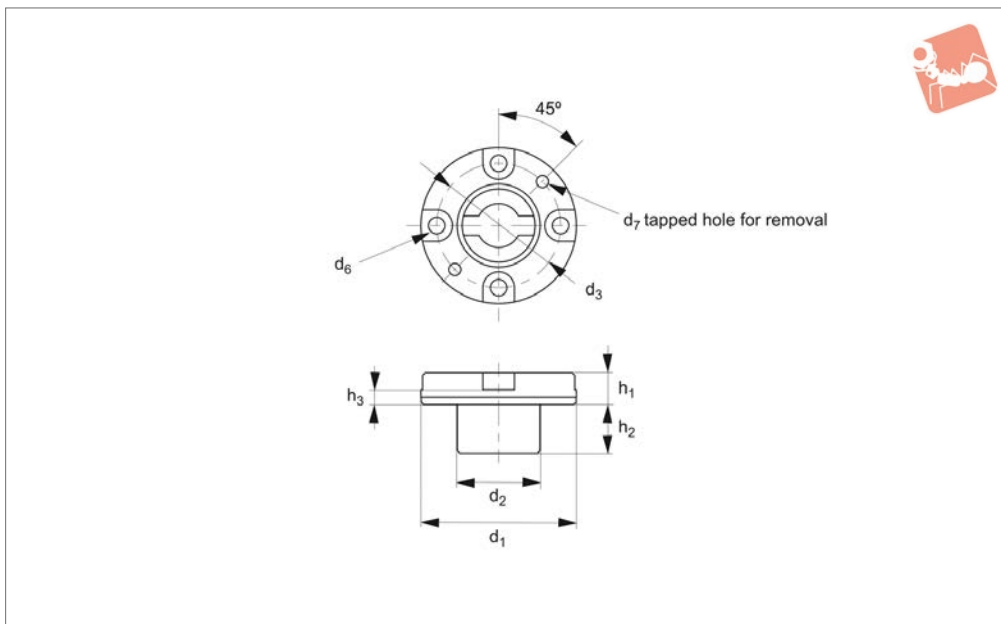
Flex locator bushing: for .W0206, see part no. 12085.W0506. For .W0208, see part no. 12085.W0508.

Order No.	Size	Clamping force N	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	d <sub>7</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	h <sub>6</sub>	Lifting force N	α	Weight g
<b>12085.W0206</b>	6	350	32	16	5.5	16	33	25.5	M 3x0,5	22	27	7.5	12.0	8	4	30	120°	96
<b>12085.W0208</b>	8	600	40	25	8.0	25	41	34.0	-	26	32	9.5	15.5	10	6	100	130°	211





## 12085.3



### Material

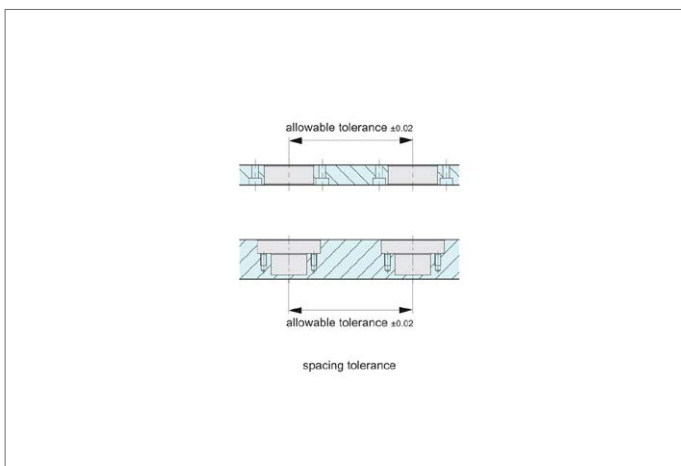
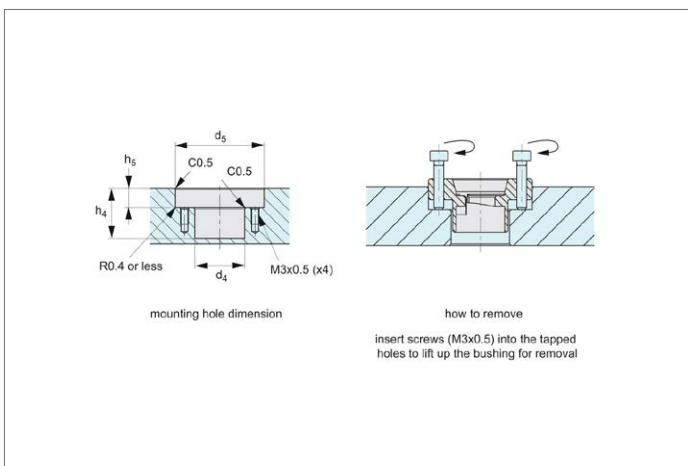
Stainless steel (AISI 304, 1.4301).

no. 12108. Use plates to avoid any deformation to workpiece during clamping.

### Technical Notes

Clamping plates for spiral cam clamp, part

Order No.	Size	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	d <sub>7</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	Weight g
12085.W0506	6	28	12.5	21.5	13.5	28	3.4	M 3x0,5	5.5	8	2	15	6	20
12085.W0508	8	32	17	25.5	18.0	32	3.4	M 3x0,5	6.5	10	3	18	7	32





# One Touch Flex Locator Clampers

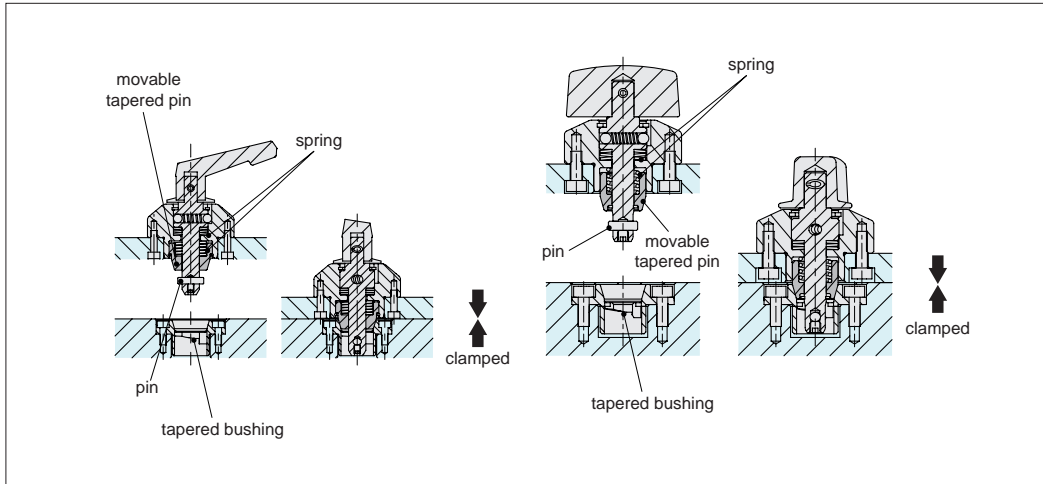
how to use



## 12085

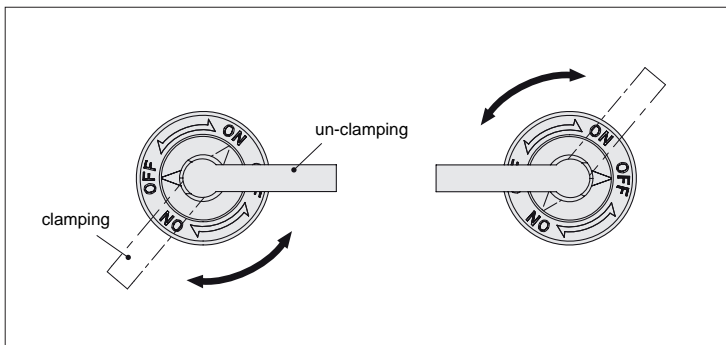
### Clamping & Height Setting

#### Feature



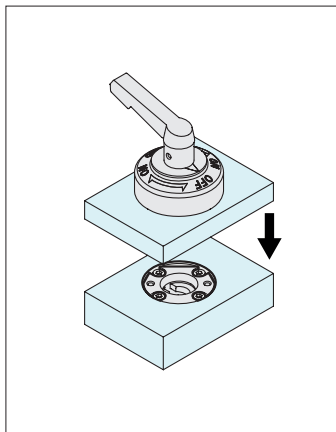
- The plates are located by fitting the tapered pin and the tapered bushing.
- The pin contacts the cam surface inside the bushing, and it compresses the inner spring, then the plates are clamped.

Note: 12085.W0108 does not have locating function.



Two clamping and unclamping positions of handle can be chosen for 12085.W0008/W0108

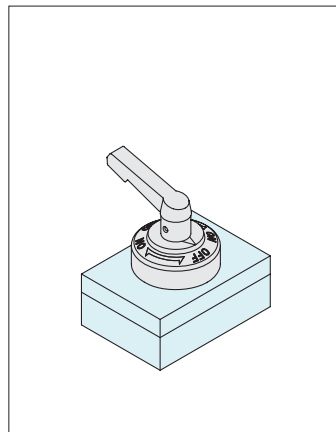
#### How to Operate



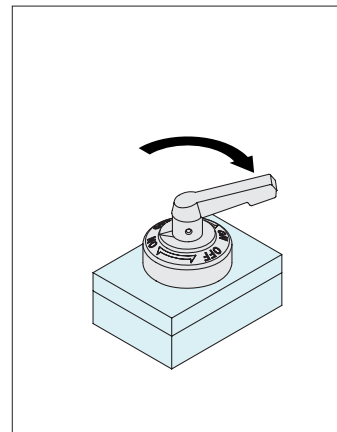
1. Ensure the handle is positioned at 'OFF' mark.

\*Follow back these steps for unclamping

\*Same operation for knob style.



2. Insert the clamper to the bushing.



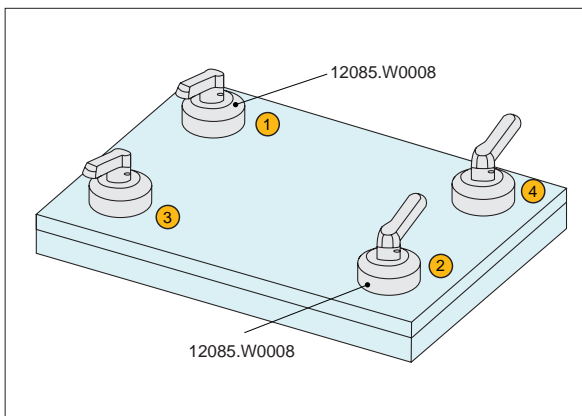
3. Turn the handle to 'ON' mark for clamping.

PULL BACK INSERTS

ov-W12085.1-A-T-W12085.3-A-T-how-to-use-one-touch-flex-locators-a-rnh - Updated -24-10-2022



### Tightening Order



Ensure the handle is positioned at 'OFF' mark and lift down the fixture plate.

Turn the handle and clamp in order of **1 - 2 - 3 - 4**

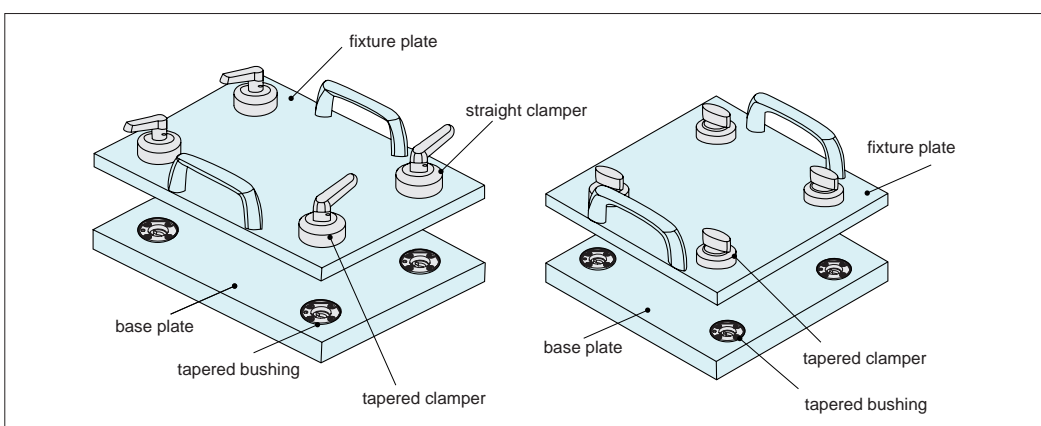
\*For unclamping, ensure the handle is positioned at 'OFF' mark and disassemble the fixture plate.

**If the handles are not tightened in the correct order, the locating repeatability may exceed 10 µm.**

### How to Use

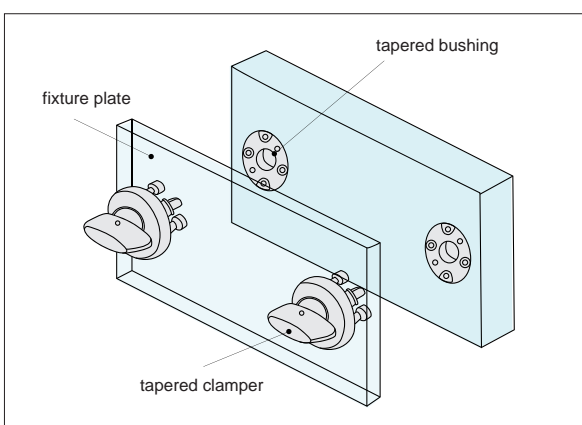
#### Horizontal Assembly of Fixture Plate

Note: Ensure not to lift the fixture plate up and down with gripping the handle of the clammers.



#### Vertical Assembly of Fixture Plate

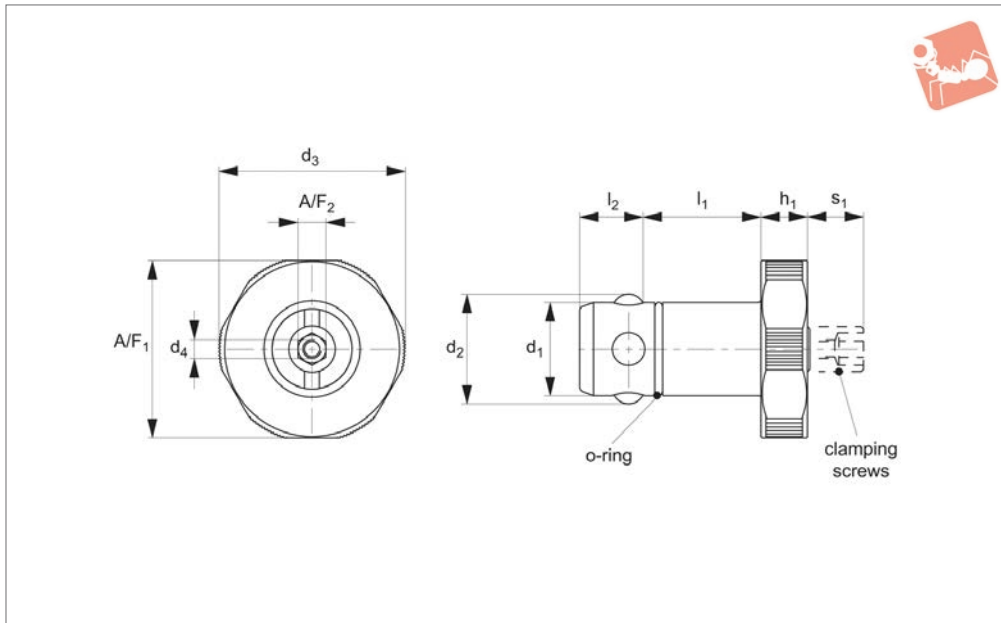
Note: Locating repeatability is 10 µm.



Clamp and Bush Combination		Max. Loading Capacity (N)
<b>12085.W0206</b>	Ø6	120
<b>12085.W0008</b>	Ø8	400
<b>12085.W0108</b>	Ø8	400
<b>12085.W0208</b>	Ø8	400

Note: The maximum load is the entire sum of the load of fixture plates, fixtures and workpieces.

The maximum loading capacity shown is the value when two sets of tapered clammer and tapered bushing are used.



### 12090

PULL BACK INSERTS

#### Material

Steel version: heat treated steel, tempered and blackened.

Stainless steel version: precipitation hardened stainless steel (17-4PH, AISI 630).

#### Technical Notes

By tightening the clamping screw, the

positioning clamping pin is centered and clamped via the four balls, into the locating bush.

The clamping screw can be operated manually via a removable handle or hex. key.

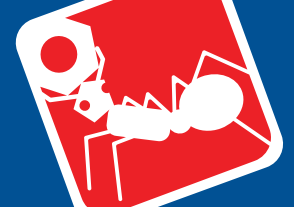
#### Tips

For removable handle see part no. 12091.

#### Important Notes

The positioning clamping pin allows fast clamping, fastening, adjusting, changing and securing of workpieces, plates, fixture systems etc.

Order No.	Material	$l_1$ +0.6	$l_2$ $\pm 1$	$d_1$ -0.02   - 0.05	$d_2$	$d_3$	$d_4$	For clamping plate thickness $\pm 0.05$	$h_1$	Holding force kN	Stroke $s_1$ max.	A/F <sub>1</sub>	A/F <sub>2</sub>	Weight g
12090.W0016	Steel	25	13,6	16	18,7	32	M 4	20	10	5	9	30	6	105
12090.W0018	Steel	30	13,6	16	18,7	32	M 4	25	10	5	9	30	6	115
12090.W0020	Steel	25	13,6	20	23,6	40	M 4	20	10	6	9	38	6	170
12090.W0022	Steel	30	13,6	20	23,6	40	M 4	25	10	6	9	38	6	185
12090.W0025	Steel	25	18,6	25	29,0	45	M 4	20	10	8	9	43	10	255
12090.W0027	Steel	30	18,6	25	29,0	45	M 4	25	10	8	9	43	10	275
12090.W0030	Steel	25	18,6	30	34,6	55	M 4	20	10	10	9	53	10	375
12090.W0032	Steel	30	18,6	30	34,6	55	M 4	25	10	10	9	53	10	400
12090.W0116	Stainless Steel	25	13,6	16	18,7	32	M 4	20	10	5	9	30	6	105
12090.W0118	Stainless Steel	30	13,6	16	18,7	32	M 4	25	10	5	9	30	6	115
12090.W0120	Stainless Steel	25	13,6	20	23,6	40	M 4	20	10	6	9	38	6	170
12090.W0122	Stainless Steel	30	13,6	20	23,6	40	M 4	25	10	6	9	38	6	185
12090.W0125	Stainless Steel	25	18,6	25	29,0	45	M 4	20	10	8	9	43	10	255
12090.W0127	Stainless Steel	30	18,6	25	29,0	45	M 4	25	10	8	9	43	10	275
12090.W0130	Stainless Steel	25	18,6	30	34,6	55	M 4	20	10	10	9	53	10	375
12090.W0132	Stainless Steel	30	18,6	30	34,6	55	M 4	25	10	10	9	53	10	400

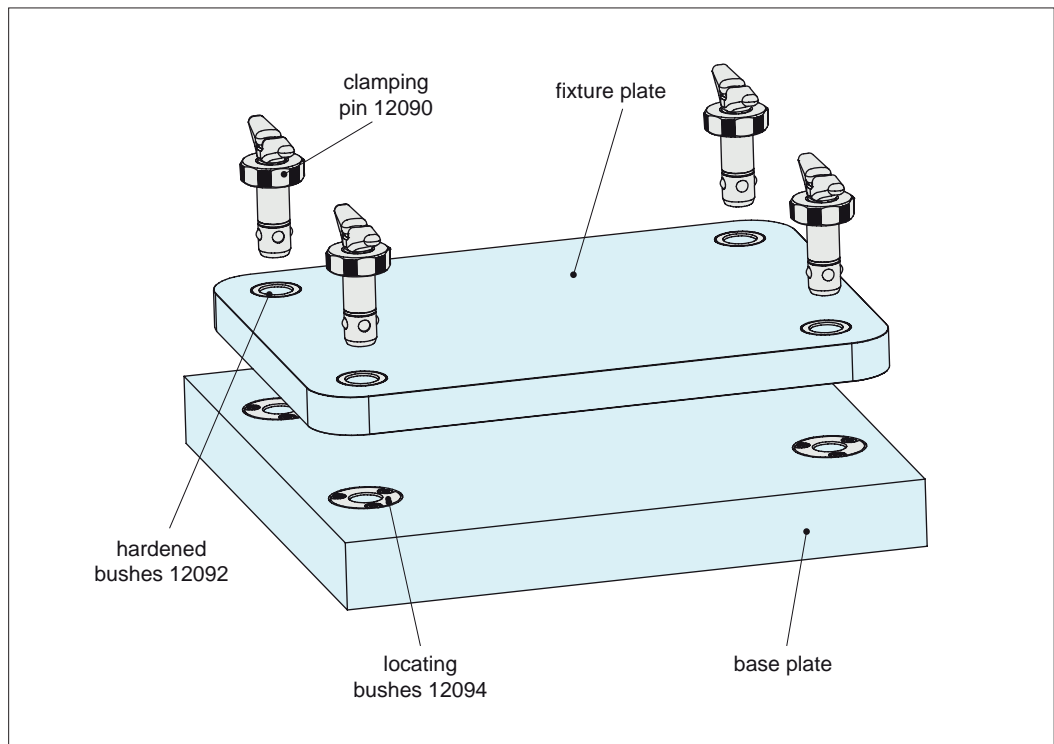
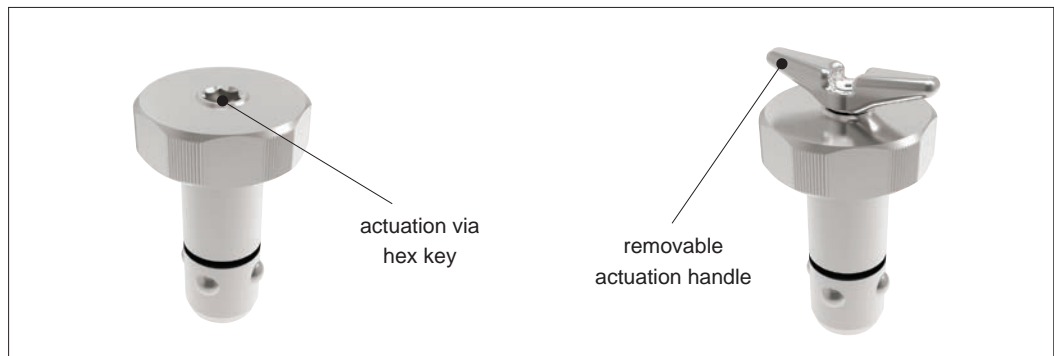


By tightening the clamping screws, the positioning clamping pin is centered and clamped with four balls in the locating bush. The clamping screw can be operated manually via a removable handle or via a hex. key.

## Advantages

### Overview

- Advantages of initial spring tension:
  - Abrasion resistant.
  - Clamping ball and location hole are protected from overload.
  - No seizing of the pin through overloading.
  - Reduces vibration during machining.
  - Eliminates unintentional unlocking of the system (e.g. due to system vibration).
- High repeatability of  $\pm 0.03\text{mm}$ .
- Simple installing /uninstalling using a spanner faces and knurling.
- Low construction height.
- Operation via hex. key or optional handle.



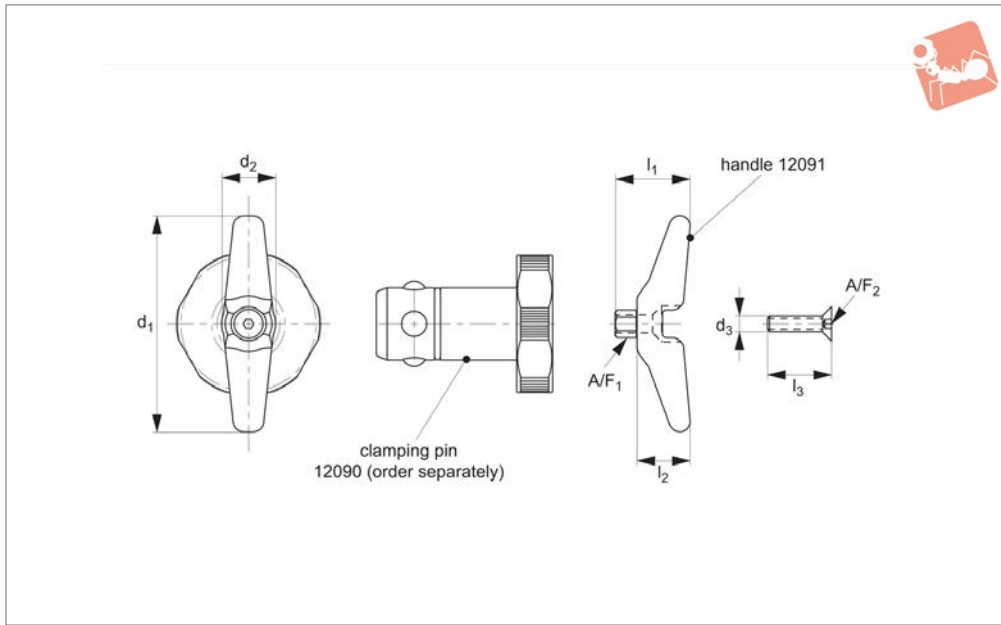




# Manual Handles for positioning clamping pins 12090



## Pull Back Inserts



**12091**

PULL BACK INSERTS

**Material**

Stainless steel.

**Technical Notes**

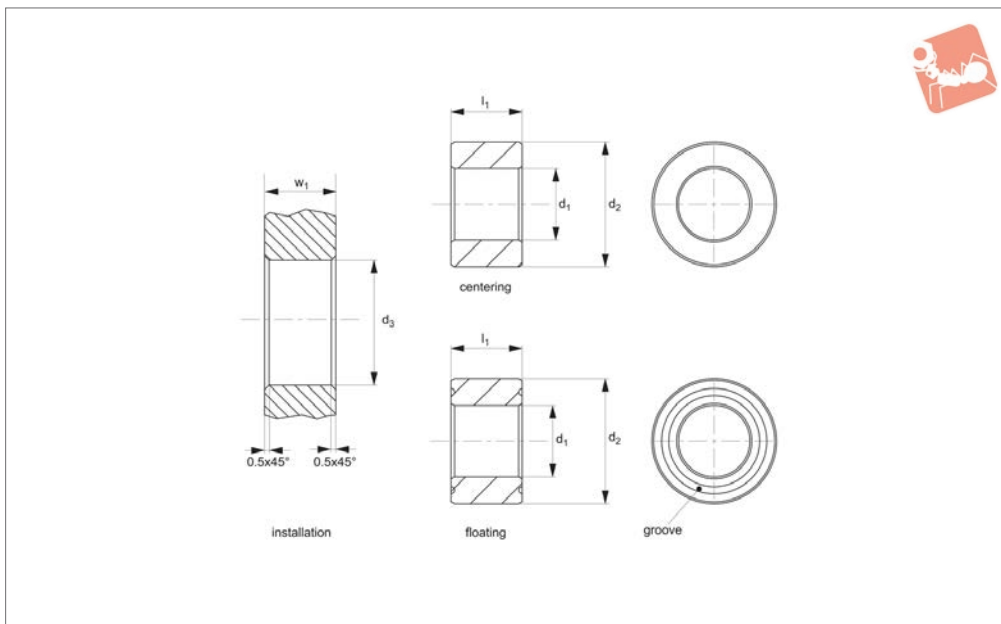
The handle enables easy and fast operation

of the positioning clamping pin. The handle is tightened to the positioning clamping pin with the M4 screw included in the delivery.

Order No.	For pin dia.	$l_1$	$l_2$	$l_3$	$d_1$	$d_2$	$d_3$	A/F <sub>1</sub>	A/F <sub>2</sub>	Weight g
<b>12091.W0900</b>	16/20	20	15	16	60	15	M 4	6	3	45
<b>12091.W0902</b>	25/30	25	20	20	80	15	M 4	10	3	80



## 12092



### Material

Steel version: steel, heat treated, tempered and blackened.

Stainless steel version: hardened stainless

steel (AISI 440B, 1.4112).

### Technical Notes

Mount two centering and two floating

bushes into the mounting plate to achieve optimal repeatability. The floating bush has a groove which serves as a differentiation mark.

Order No.	Type	Material	$l_1$ -0.25 -0.5	$d_1$ tol. F6	$d_1$ +0.2	$d_2$ tol. n6	$w_1$ $\pm 0.05$	$d_3$ tol. H7	Weight g
12092.W0702	Centering	Steel	20	16	-	25	20	25	45
12092.W0704	Centering	Steel	25	16	-	25	20	25	55
12092.W0706	Centering	Steel	20	20	-	35	20	25	100
12092.W0708	Centering	Steel	25	20	-	35	20	25	125
12092.W0710	Centering	Steel	20	25	-	35	20	25	75
12092.W0712	Centering	Steel	25	25	-	35	20	25	95
12092.W0714	Centering	Steel	20	30	-	45	20	25	140
12092.W0716	Centering	Steel	25	30	-	45	20	25	175
12092.W0732	Floating	Steel	20	-	16.8	25	20	25	42
12092.W0734	Floating	Steel	25	-	16.8	25	20	25	52
12092.W0736	Floating	Steel	20	-	20.8	35	20	25	95
12092.W0738	Floating	Steel	25	-	20.8	35	20	25	120
12092.W0740	Floating	Steel	20	-	25.8	35	20	25	70
12092.W0742	Floating	Steel	25	-	25.8	35	20	25	85
12092.W0744	Floating	Steel	20	-	30.8	45	20	25	135
12092.W0746	Floating	Steel	25	-	30.8	45	20	25	165
12092.W0802	Centering	Stainless Steel	20	16	-	25	20	25	45
12092.W0804	Centering	Stainless Steel	25	16	-	25	20	25	55
12092.W0806	Centering	Stainless Steel	20	20	-	35	20	25	100
12092.W0808	Centering	Stainless Steel	25	20	-	35	20	25	125
12092.W0810	Centering	Stainless Steel	20	25	-	35	20	25	75
12092.W0812	Centering	Stainless Steel	25	25	-	35	20	25	95
12092.W0814	Centering	Stainless Steel	20	30	-	45	20	25	140
12092.W0816	Centering	Stainless Steel	25	30	-	45	20	25	175
12092.W0832	Floating	Stainless Steel	20	-	16.8	25	20	25	42
12092.W0834	Floating	Stainless Steel	25	-	16.8	25	20	25	52
12092.W0836	Floating	Stainless Steel	20	-	20.8	35	20	25	95
12092.W0838	Floating	Stainless Steel	25	-	20.8	35	20	25	120
12092.W0840	Floating	Stainless Steel	20	-	25.8	35	20	25	70
12092.W0842	Floating	Stainless Steel	25	-	25.8	35	20	25	85
12092.W0844	Floating	Stainless Steel	20	-	30.8	45	20	25	135
12092.W0846	Floating	Stainless Steel	25	-	30.8	45	20	25	165

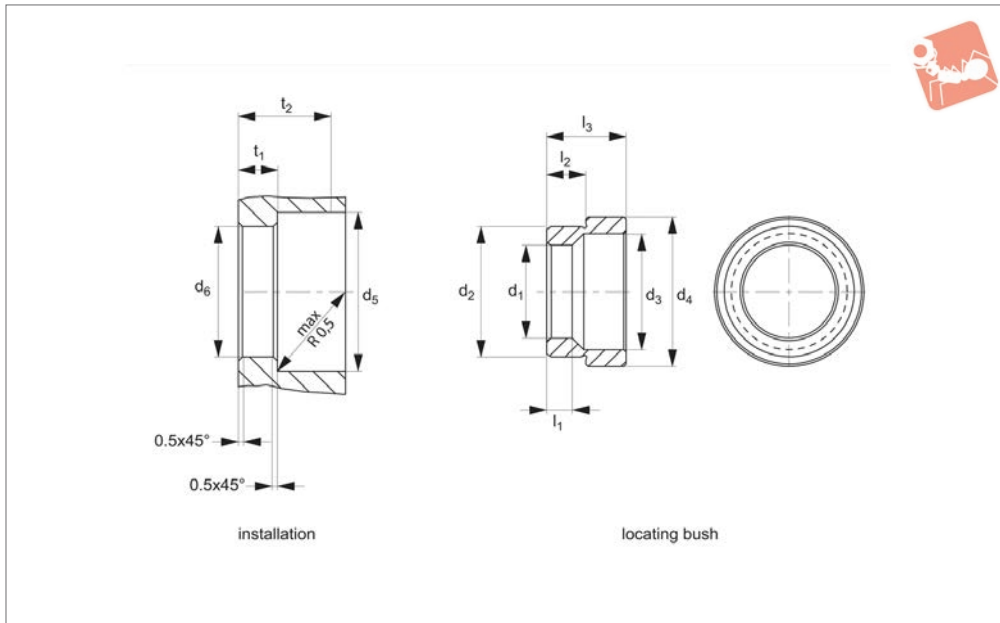


# Locating Bushings

for positioning clamping pins 12090 - press fit



# Pull Back Inserts



**12093**

PULL BACK INSERTS

### Material

Steel version: steel, heat treated, tempered and blackened.  
 Stainless steel version: hardened stainless

steel (AISI 440B, 1.4112).

### Technical Notes

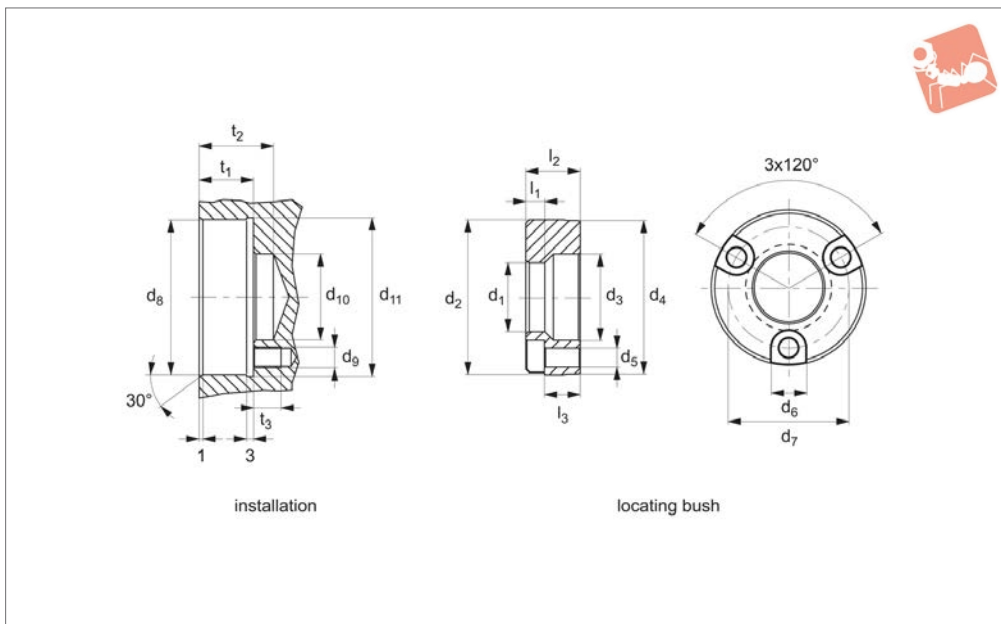
The press fit locating bush for positioning

clamping pins are inserted in the machine table or the base plate with light pressure.

Order No.	Material	$l_1$	$l_2$	$l_3$	$d_1$ tol. F6	$d_2$ $\pm 0.01$	$d_3$	$d_4$	$d_5$ $+1$	$d_6$ tol. H7	$t_1$ $\pm 0.025$	$t_2$ min.	Weight g
<b>12093.W0762</b>	Steel	5.3	6.9	12.1	16	22	20	28.6	31	22	7.3	22	25
<b>12093.W0764</b>	Steel	5.3	8.4	17.1	20	28	25	32.2	34	28	8.8	22	40
<b>12093.W0766</b>	Steel	5.3	10.2	21.0	25	35	31	40.2	42	35	10.6	28	80
<b>12093.W0768</b>	Steel	5.3	10.6	21.8	30	42	37	48.2	50	42	11.0	28	115
<b>12093.W0862</b>	Stainless Steel	5.3	6.9	12.1	16	22	20	28.6	31	22	7.3	22	25
<b>12093.W0864</b>	Stainless Steel	5.3	8.4	17.1	20	28	25	32.2	34	28	8.8	22	40
<b>12093.W0866</b>	Stainless Steel	5.3	10.2	21.0	25	35	31	40.2	42	35	11.0	28	80
<b>12093.W0868</b>	Stainless Steel	5.3	10.6	21.8	30	42	37	48.2	50	42	11.0	28	115



## 12094



### Material

Steel version: steel, heat treated, tempered and blackened.

Stainless steel version: precipitation-hardened stainless steel (17-4 PH, AISI

630, 1.4542).

### Technical Notes

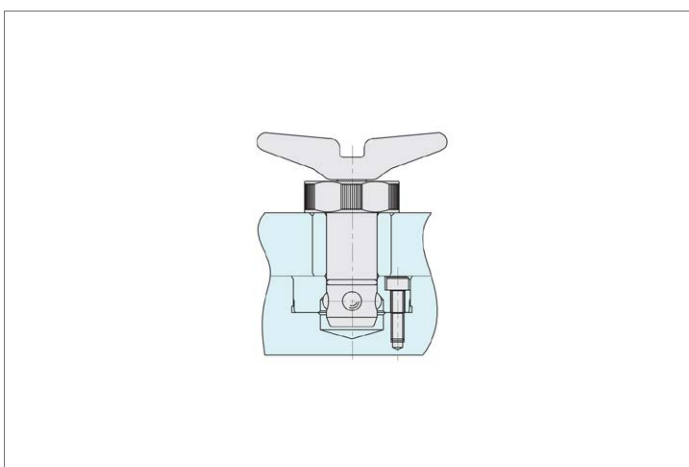
The screw fit locating bushings for positioning clamping pins are inserted in the

machine table or in the base plate and are screwed on.

### Important Notes

Supplied with mounting screws.

Order No.	Material	$l_1$	$l_2$	$l_3$ ≈	$d_1$ tol. F6 +0.01	$d_2$	$d_3$	$d_4$	$d_5$	$d_6$	$d_7$	$d_8$ tol. H7	$d_9$	$d_{10}$ +1	$d_{11}$	$t_1$ ±0.02	$t_2$	$t_3$	Weight g
12094.W0782	Steel	5,3	11,6	7,0	16	37	20	36,5	4,5	8	29	37	M 4	20	38,5	11,9	22	12	70
12094.W0784	Steel	5,3	15,8	10,0	20	45	25	44,5	5,5	10	35	45	M 5	25	46,5	16,2	22	12	130
12094.W0786	Steel	5,3	19,9	13,5	25	55	31	54,5	6,6	11	42	55	M 6	31	56,5	20,3	28	14	245
12094.W0788	Steel	5,3	21,8	15,0	30	60	37	59,5	6,6	11	48	60	M 6	37	61,5	22,2	28	14	195
12094.W0882	Stainless Steel	5,3	11,6	7,0	16	37	20	36,5	4,5	8	29	37	M 4	20	38,5	11,9	22	12	70
12094.W0884	Stainless Steel	5,3	15,8	10,0	20	45	25	44,5	5,5	10	35	45	M 5	25	46,5	16,2	22	12	130
12094.W0886	Stainless Steel	5,3	19,9	13,5	25	55	31	54,5	6,6	11	42	55	M 6	31	56,5	20,3	28	14	245
12094.W0888	Stainless Steel	5,3	21,8	15,0	30	60	37	59,5	6,6	11	48	60	M 6	37	61,5	22,2	28	14	195

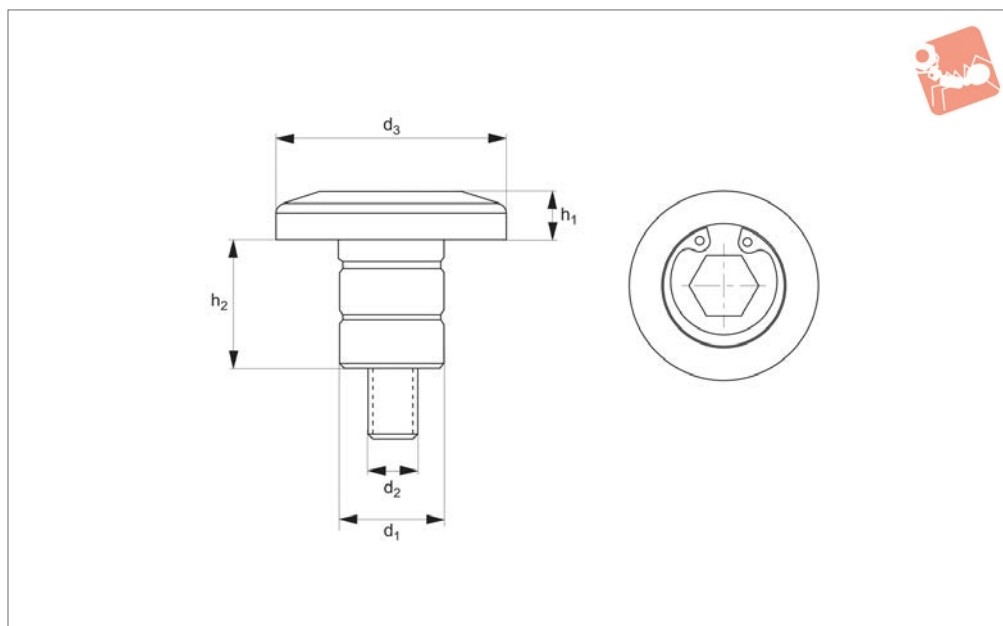




# Locator Unit - Standard



## Pull Back Inserts



**12095.1**

PULL BACK INSERTS

### Material

Heat-treated steel, alloy with black oxide finish. High tensile strength (180 000+ PSI or 1241 MPa) and hardness (46 HRC).

### Technical Notes

Easy locating - installs and locks in

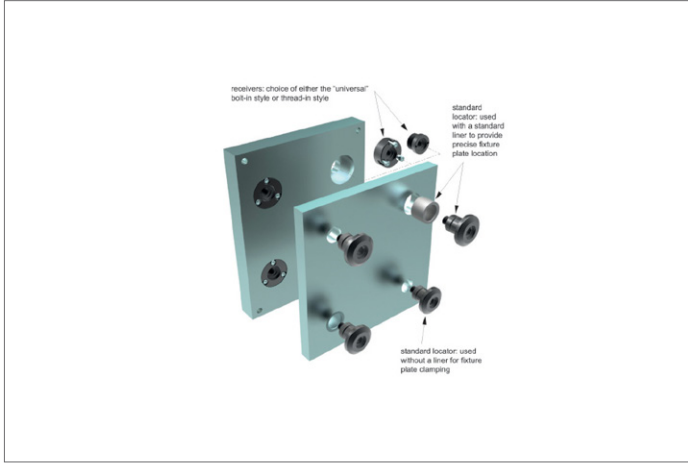
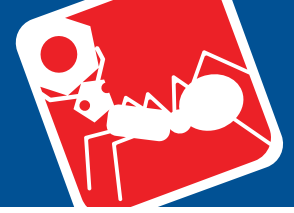
seconds, offers  $\pm 0.0004$ " repeatability.

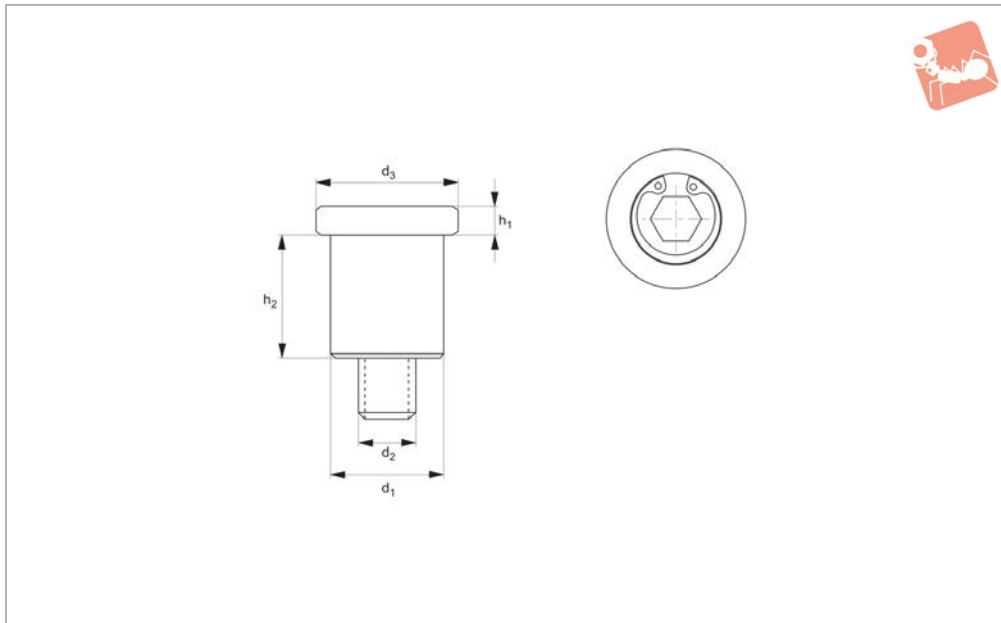
### Tips

The exclusive self-extracting mechanism eliminates the need for prying, pounding or using jack screws to separate fixture and base plates. It enables the locator unit to

be easily removed from counterbored installations.

Order No.	Fixture plate thickness inch $\pm 0.005$	d <sub>1</sub> mm	d <sub>2</sub> UNF-2B	d <sub>3</sub> inch	h <sub>1</sub> inch	h <sub>2</sub> inch	Hold down force lb max.	Tightening torque ft-lb max.
12095.W0131	0.50	13	1/4"-20	1.00	0.25	0.78	2964	13
12095.W0132	0.75	13	1/4"-20	1.00	0.25	1.03	2964	13
12095.W0161	0.50	16	5/16"-18	1.38	0.31	0.78	5385	26
12095.W0162	0.75	16	5/16"-18	1.38	0.31	1.03	5385	26
12095.W0163	1.00	16	5/16"-18	1.38	0.31	1.28	5385	26
12095.W0201	0.75	20	3/8"-16	1.63	0.38	1.07	8107	46
12095.W0202	1.00	20	3/8"-16	1.63	0.38	1.32	8107	46
12095.W0203	1.50	20	3/8"-16	1.63	0.38	1.82	8107	46
12095.W0204	2.00	20	3/8"-16	1.63	0.38	2.32	8107	46
12095.W0251	0.75	25	1/2"-13	1.80	0.41	1.07	14709	113
12095.W0252	1.00	25	1/2"-13	1.80	0.41	1.32	14709	113
12095.W0254	1.50	25	1/2"-13	1.80	0.41	1.82	14709	113
12095.W0255	2.00	25	1/2"-13	1.80	0.41	2.32	14709	113
12095.W0301	0.75	30	1/2"-13	2.13	0.50	1.15	22623	213
12095.W0302	1.00	30	5/8"-11	2.13	0.50	1.40	22623	213
12095.W0303	1.50	30	5/8"-11	2.13	0.50	1.90	22623	213
12095.W0304	2.00	30	5/8"-11	2.13	0.50	2.40	22623	213
12095.W0351	0.75	35	3/4"-10	2.25	0.50	1.15	31572	375
12095.W0352	1.00	35	3/4"-10	2.25	0.50	1.40	31572	375
12095.W0353	1.50	35	3/4"-10	2.25	0.50	1.90	31572	375
12095.W0534	2.00	35	3/4"-10	2.25	0.50	2.40	31572	375
12095.W0501	0.75	50	1-8	3.00	0.69	1.27	46958	781
12095.W0502	1.00	50	1-8	3.00	0.69	1.52	46958	781
12095.W0503	1.50	50	1-8	3.00	0.69	2.02	46958	781
12095.W0504	2.00	50	1-8	3.00	0.69	2.52	46958	781





### 12095.2

PULL BACK INSERTS

#### Material

Steel, heat-treated alloy, black oxide finish.  
 Tensile strength 180,000+ PSI or 1241 MPa.  
 Hardness 46 HRc.

#### Technical Notes

Easy locating - installs and locks in

seconds.  
 Offers  $\pm 0.0004$ " repeatability.

#### Tips

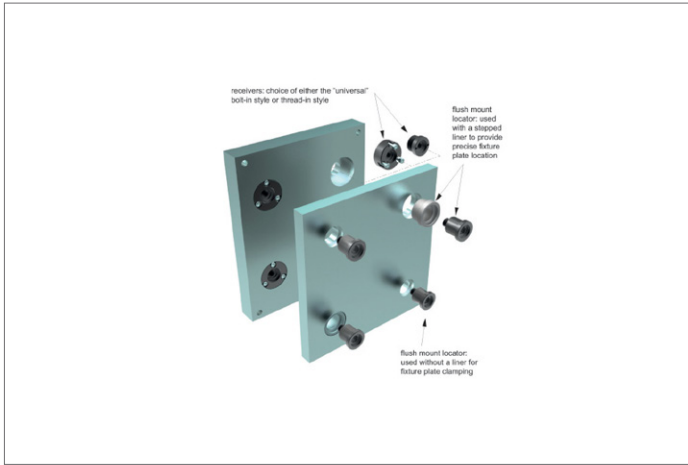
The exclusive self-extracting mechanism eliminates the need for prying, pounding or using jack screws to separate fixture and base plates. It enables the locator unit to be easily removed from counterbored

installations.

Order No.	Fixture plate thickness $\pm 0.005$
12095.W2131	0.50
12095.W2132	0.75
12095.W2161	0.50
12095.W2162	0.75
12095.W2163	1.00
12095.W2201	0.75
12095.W2202	1.00
12095.W2203	1.50
12095.W2204	2.00
12095.W2251	0.75
12095.W2252	1.00
12095.W2254	1.50
12095.W2255	2.00
12095.W2301	0.75
12095.W2302	1.00
12095.W2303	1.50
12095.W2304	2.00
12095.W2352	1.00
12095.W2353	1.50
12095.W2354	2.00
12095.W2503	1.50
12095.W2504	2.00



PULL BACK INSERTS







### Quick and Easy to Use with Every Load

The Wixroyd Precision Locating & Mounting System consists of locators, receivers and bushings for a wide range of tooling, fixturing, workholding, production, welding and assembly applications. They offer the ability to make fast, accurate set-up changes which enables significant improvements in machining productivity, throughput rates, quality and reduced operating costs.

Wixroyd has solved the typical problems associated with precision attachment and removal of fixture plates, tooling and accessories. The Wixroyd system eliminates the need to pry, pound and use jack screws to separate the fixture plate from the sub-plate or machine table. The Wixroyd system uses a threaded fastening device to mechanically extract the precision locator from its receiver, allowing easy separation of fixture plates, tooling and accessories. Unlike competitive ball locking products, the Wixroyd system does not require expensive "repair kits" since there are no rubber o-rings to break nor ball bearings to fall out or fracture.

- Place fixture plate over sub-plate or machine table containing the Wixroyd receivers.
- Insert two Wixroyd precision locators through holes lined with hardened bushings and into the receivers.
- Insert two remaining locators into unlined holes and tighten to draw each locator to the desired torque.
- Total time require to unload existing fixture plates and load a new fixture plate is typically under 2 minutes.

- Self- extracting – unique design enables easy and quick "self-extract" from tooling, fixturing etc. There is no binding or other issues to delay removal time or compromise accuracy of the locking system.
- Precise locating – repeatability of +/- 0.0004"
- High clamping strength – over 45,000 lbs
- Easy Installation – easily installed in a wide range of applications using standard tooling and machining practices.
- Compact – requires minimal space in tooling and fixture applications. Both standard and compact/flush mounting options.
- Can be retro-fitted with existing competitive ball lock type systems.

### System Overview

### Usage

### System Features

### Product Range



**12095.W0131 to .W0504 -**  
Locator unit - standard



**12095.W2131 to .W2504 -**  
Locator unit - compact



**12097.W0131 to .W0501 -**  
Face mount receivers  
- standard



**12097.W2131 to .W2501 -**  
Face mount compact  
receivers - compact

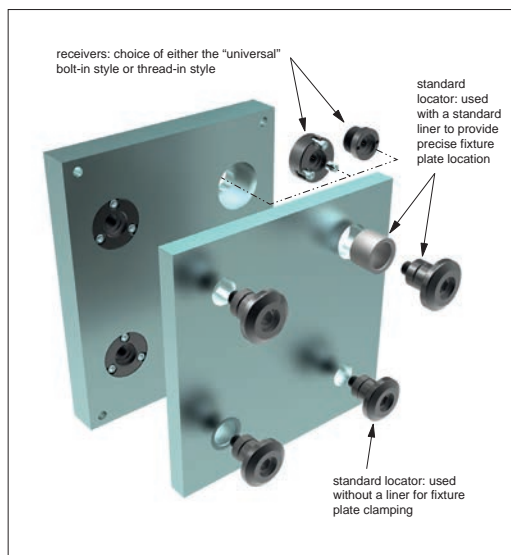


## Precision Locating and Mounting System

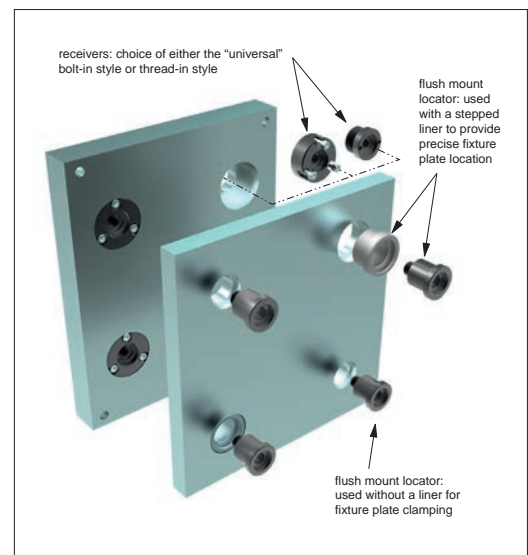
### FAQs

- Q. What is the Wixroyd Precision Locating & Mounting System?**  
 A. It is a means of locating and locking two flat surfaces together. These surfaces are most commonly a fixture plate and sub-plates, however, they are also used in many other applications because of their holding strength and accuracy.
- Q. How does it locate the fixture plate?**  
 A. The Wixroyd system locates with receivers in the base plate, liner bushings in the sub-plate and locator/fasteners locking the two surfaces together.
- Q. How many locators are needed to locate and fasten the fixture plate?**  
 A. Two locators with liner bushings are required to accurately position and two locators without liner bushings to fasten only.
- Q. How does it fasten?**  
 A. Locators use standard threads to hold the two surfaces together. By tightening the locators into the receivers very high holding forces can be achieved.
- Q. Can the Wixroyd system be mounted so the work pieces mounting surface is free from any interference?**  
 A. Yes, our compact of flush locators allow the head to lie flush with the fixture plate surface.
- Q. Can the system be used in high temperature applications?**  
 A. Yes, because all parts are made from heat treated alloy steel, temperatures up to +500F are not a problem. The user should account for thermal expansion of the fixture plates and bases that could affect tolerances.
- Q. Can Fixture plates be mounted in both the horizontal and vertical positions with the Wixroyd system?**  
 A. Yes, in vertical mounting applications Wixroyd offer optional docking hardware to “hang” the fixture plate from the tooling column before fastening the surfaces together.
- Q. Can a current ball locking type system be retrofit to work with the Wixroyd system?**  
 A. Yes, the universal bolt-in receiver will fit directly into the pocket that holds ball locking type receivers. Also, the Wixroyd system locators will fit the existing holes and liners of a fixture plate set up for ball locking systems.

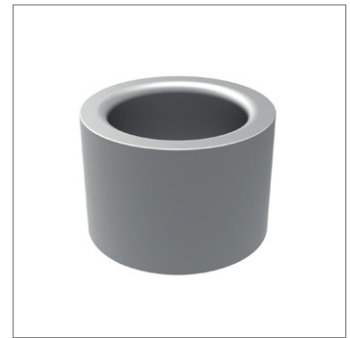
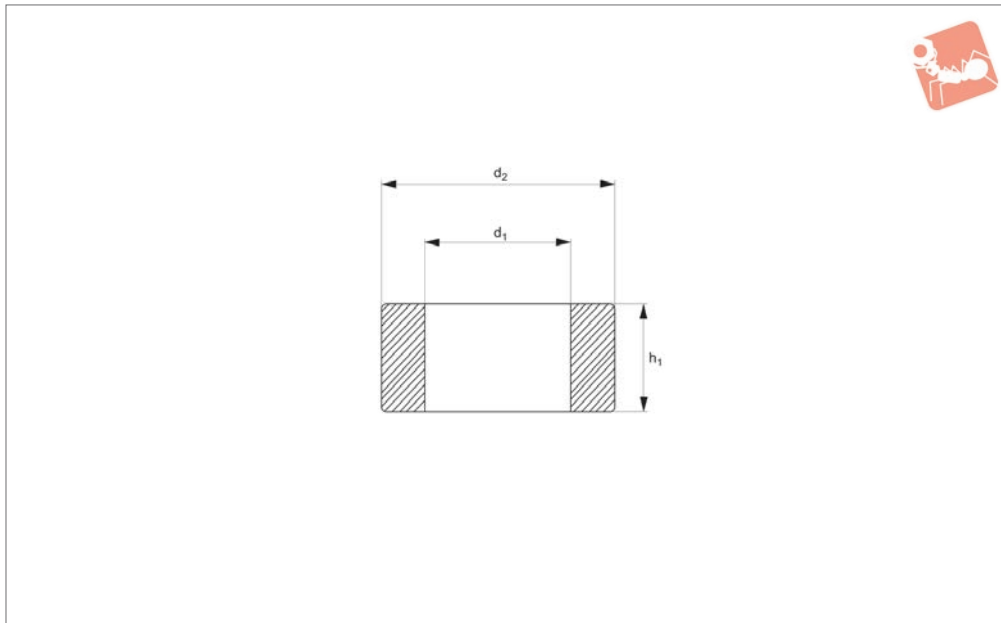
### Applications



Standard locators



Flush mount locators



## 12096.1

PULL BACK INSERTS

### Material

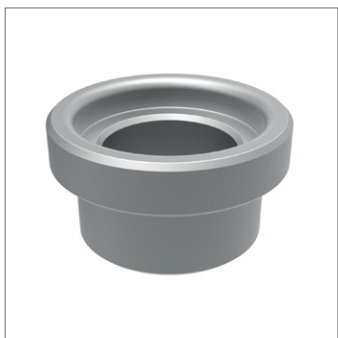
Alloy steel, hardness 62+ HRC.

the integrated locator unit system (part no. 12095), achieving precise and accurate machining results.

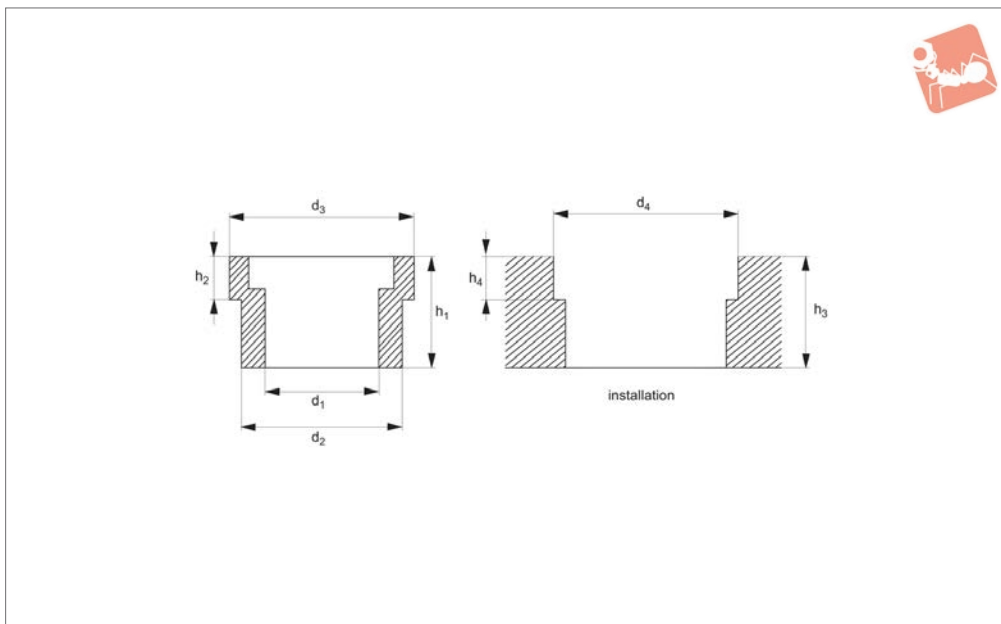
### Technical Notes

Liner bushings are a critical component of

Order No.	Fixture plate thickness inch ±0.005	d <sub>1</sub> mm	d <sub>2</sub> inch +0.0000 -0.0004	h <sub>1</sub> inch
12096.W0131	0.50	13	0.7518	0.45
12096.W0132	0.75	13	0.7518	0.70
12096.W0161	0.50	16	1.0018	0.45
12096.W0162	0.75	16	1.0018	0.70
12096.W0164	1.00	16	1.0018	0.95
12096.W0201	0.75	20	1.1270	0.70
12096.W0202	1.00	20	1.1270	0.95
12096.W0203	1.50	20	1.1270	1.45
12096.W0204	2.00	20	1.1270	1.95
12096.W0251	0.75	25	1.3772	0.70
12096.W0252	1.00	25	1.3772	0.95
12096.W0253	1.50	25	1.3772	1.45
12096.W0254	2.00	25	1.3772	1.95
12096.W0301	0.75	30	1.7523	0.70
12096.W0302	1.00	30	1.7523	0.95
12096.W0303	1.50	30	1.7523	1.45
12096.W0305	2.00	30	1.7523	1.95
12096.W0351	0.75	35	1.7523	0.70
12096.W0352	1.00	35	1.7523	0.95
12096.W0353	1.50	35	1.7523	1.45
12096.W0354	2.00	35	1.7523	1.95
12096.W0501	0.75	50	2.5025	0.70
12096.W0502	1.00	50	2.5025	0.95
12096.W0503	1.50	50	2.5025	1.45
12096.W0504	2.00	50	2.5025	1.95



## 12096.2



### Material

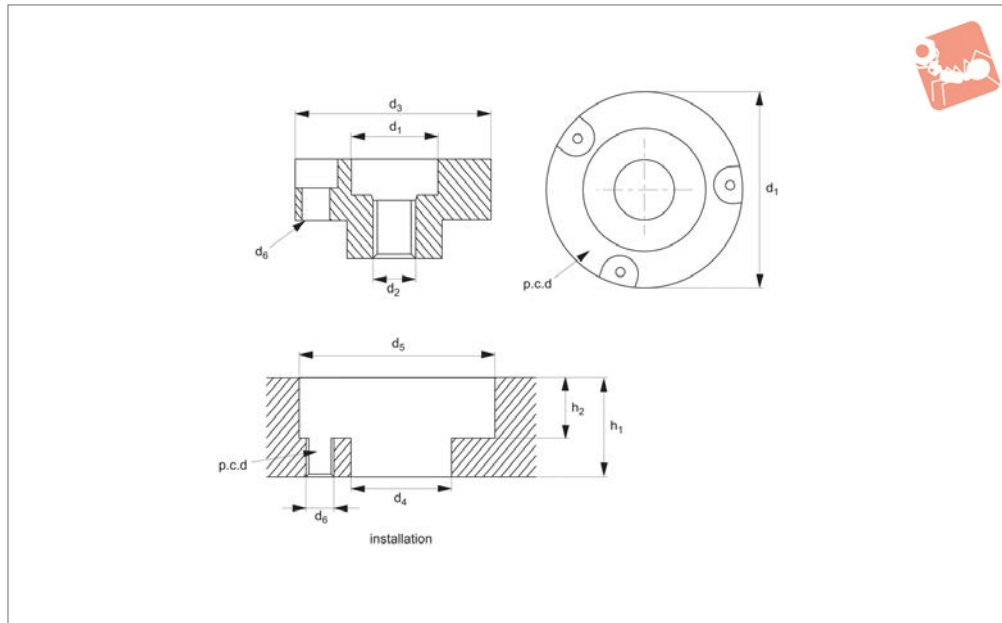
Alloy steel, hardness 62+ HRC.

the integrated locator unit system (part no. 12095), achieving precise and accurate machining results.

### Technical Notes

Liner bushings are a critical component of

Order No.	$d_1$ mm	$d_2$ inch +0.0000 -0.0004	$d_3$ inch	$d_4$ plate c'bore dia. inch ±0.005	Fixture plate thickness $h_3$ inch ±0.005	$h_1$ inch	$h_2$ inch	$h_4$ plate c'bore depth inch +0.010 -0.005
12096.W2131	13	0.7518	0.92	0.94	0.50	0.45	0.22	0.23
12096.W2132	13	0.7518	0.92	0.94	0.75	0.70	0.22	0.23
12096.W2161	16	1.0018	1.23	1.25	0.50	0.45	0.31	0.33
12096.W2162	16	1.0018	1.23	1.25	0.75	0.70	0.31	0.33
12096.W2163	16	1.0018	1.23	1.25	1.00	0.95	0.31	0.33
12096.W2201	20	1.1270	1.36	1.38	0.75	0.70	0.38	0.39
12096.W2202	20	1.1270	1.36	1.38	1.00	0.95	0.38	0.39
12096.W2203	20	1.1270	1.36	1.38	1.50	1.45	0.38	0.39
12096.W2204	20	1.1270	1.36	1.38	2.00	1.95	0.38	0.39
12096.W2251	25	1.3772	1.61	1.63	0.75	0.70	0.38	0.39
12096.W2252	25	1.3772	1.61	1.63	1.00	0.95	0.38	0.39
12096.W2253	25	1.3772	1.61	1.63	1.50	1.45	0.38	0.39
12096.W2254	25	1.3772	1.61	1.63	2.00	1.95	0.38	0.39
12096.W2301	30	1.7523	1.98	2.00	0.75	0.70	0.38	0.39
12096.W2302	30	1.7523	1.98	2.00	1.00	0.95	0.38	0.39
12096.W2303	30	1.7523	1.98	2.00	1.50	1.45	0.38	0.39
12096.W2304	30	1.7523	1.98	2.00	2.00	1.95	0.38	0.39
12096.W2352	35	1.7523	1.98	2.00	1.00	0.95	0.45	0.47
12096.W2353	35	1.7523	1.98	2.00	1.50	1.45	0.45	0.47
12096.W2354	35	1.7523	1.98	2.00	2.00	1.95	0.45	0.47
12096.W2503	50	2.5025	3.00	3.02	1.50	1.45	0.70	0.72
12096.W2504	50	2.5025	3.00	3.02	2.00	1.95	0.70	0.72



## 12097.1

PULL BACK INSERTS

### Material

Heat-treated steel alloy with black oxide finish. High tensile strength (180 000 PSI or 1241 MPa) and hardness (50-52 HRC).

### Technical Notes

Precision machined to  $\pm 0.0002$ " tol. Repea-

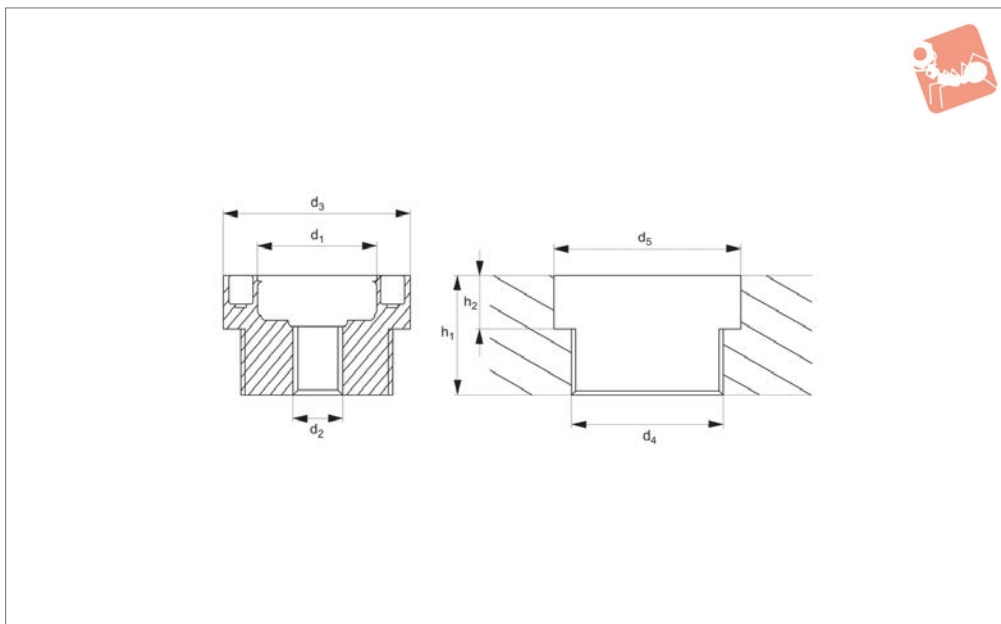
...ability of ,0004" or better.

Standard face mount design. This receiver is interchangeable with competitive face mount designs providing an advanced retrofit option. For customers with existing investments in another system.

Order No.	$d_2$ UNF-2B	$d_3$ inch +0.0000 -0.0004	$d_4$ inch	$d_5$ inch +0.0004 -0.0000	$d_6$ inch	For shank dia $d_1$ mm	$h_1$ inch min.	$h_2$ inch +0.010 -0.005	p.c.d inch
12097.W0131	1/4-20	1.3750	11/16	1.3754	#8-32 x 1/2	13	3/4	0.469	0.984
12097.W0161	5/16-18	1.4370	13/16	1.4374	#8-32 x 1/2	16	3/4	0.469	1.125
12097.W0201	3/8-16	1.6873	13/16	1.6877	#10-32 x 3/4	20	1	0.637	1.362
12097.W0251	1/2-13	2.0623	1	2.0627	1/4-28 x 7/8	25	1-1/4	0.799	1.644
12097.W0301	5/8-11	2.2654	1-3/16	2.2658	1/4-28 x 1	30	1-3/8	0.871	1.875
12097.W0351	3/4-10	2.6873	1-9/16	2.6877	5/16-24 x 1	35	1-1/2	0.904	2.178
12097.W0501	1-8	3.4998	2-5/32	3.5002	3/8-24 x 1-1/4	50	2	1.239	2.916



12097.2



**Material**

Heat-treated steel alloy with black oxide finish. High tensile strength (180 000 PSI or 1241 MPa) and hardness (50-52 HRC).

**Technical Notes**

Precision machined to  $\pm,0002''$  tol. Repeatability of  $,0004''$  or better. Compact face mount design optimises

subplate space, is easier to install, stronger and less expensive than standard face mount receivers.

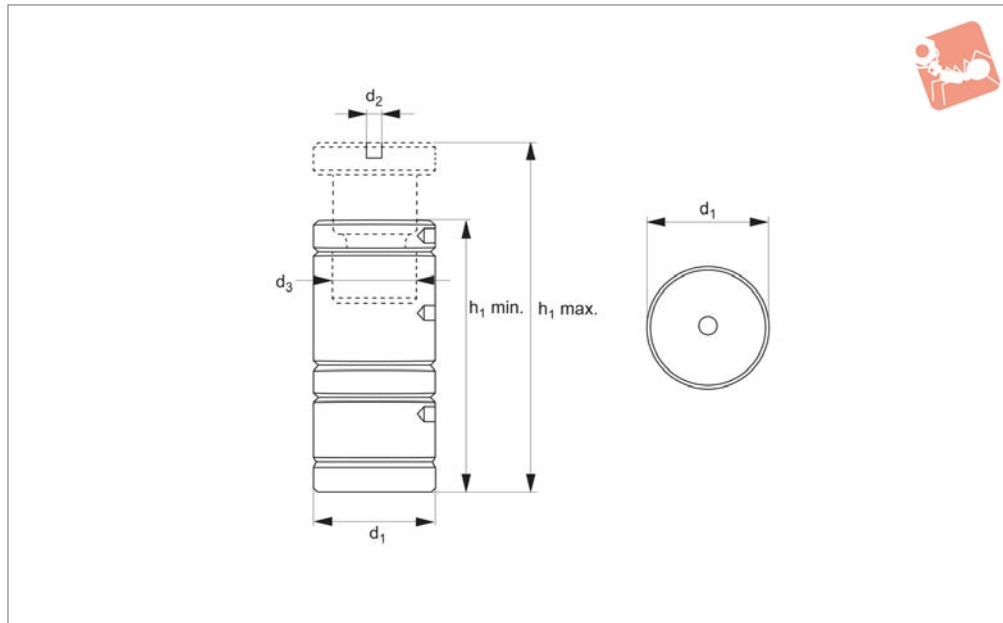
Order No.	d <sub>1</sub> mm +0.010 -0.000	d <sub>2</sub> inch	d <sub>3</sub> inch	d <sub>4</sub> UNF-2B	d <sub>5</sub> inch +0.0004 -0.0000	h <sub>1</sub> inch min.	h <sub>2</sub> inch +0.010 -0.005
12097.W2131	13	1/4-20	0.9500	3/4-16	0.9504	3/4	,300
12097.W2161	16	5/16-18	1.0625	7/8-14	1.0629	3/4	,300
12097.W2201	20	3/8-16	1.2750	1-12	1.2754	1	,390
12097.W2251	25	1/2-13	1.5000	1-1/4-12	1.5004	1	,390
12097.W2301	30	5/8-11	1.8125	1-1/2-12	1.8129	1-1/4	,505
12097.W2351	35	3/4-10	2.1250	1-1/2-12	2.1254	1-5/16	,630
12097.W2501	50	1-8	2.7500	2-12	2.7504	1-3/4	,765



# Screw Jack Set with Spacers

aluminium and steel

## Screw Jacks



**14130**

SCREW JACKS

### Material

Body: aluminium.

Spindle: steel, heat treated with trapezoidal self-locking thread.

### Technical Notes

Thread protected against swarf ingress.

For individual parts and to make up greater heights please see no. 14140.

### Set contents:

- 1 x main screwjack
- 1 x large spacer (25,0mm)
- 1 x small spacer (12,5mm)
- 1 x aluminium base
- 1 x magnetic base

### Tips

Max. static load (kN.) applies up to

maximum height of 350mm. Do not use above these heights.

Main screw jack has a centering hole Ø12mm, for fitting of support and positioning pads nos. 15030 - 15080.

### Important Notes

**Do not adjust screw jack under load.**

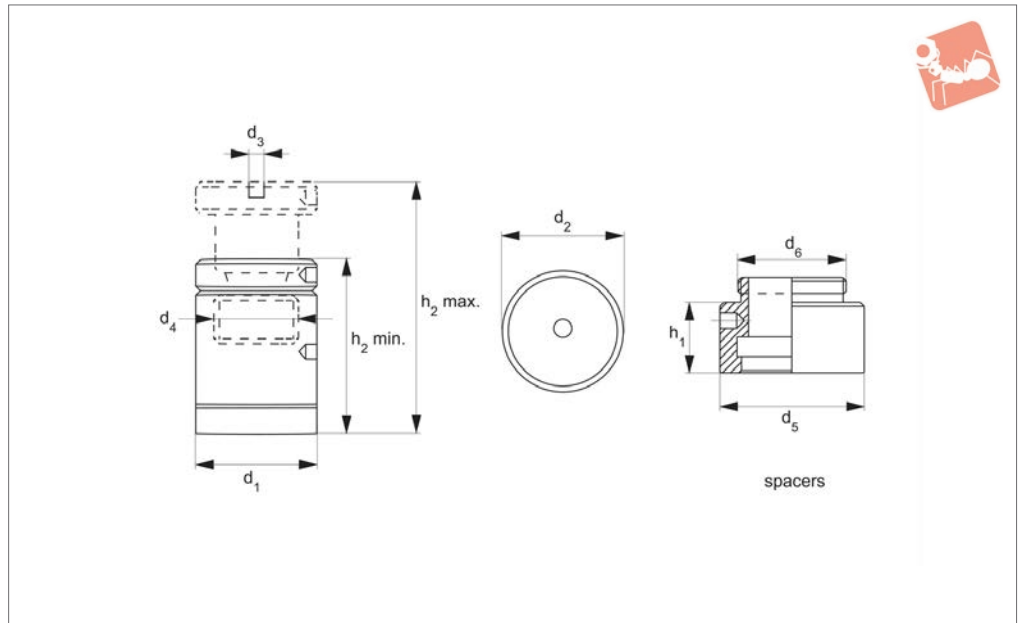
Order No.	$h_1$ min.	$h_1$ max.	$d_1$	$d_2$	$d_3$	Static load kN max.	Weight g
<b>14130.W0001</b>	75	125	50	12	30x4	30	920



SCREW JACKS



## 14140



### Material

Body: aluminium.

Spindle: steel, tempered with trapezoidal self locking thread.

### Tips

Individual parts can be combined to create

screw jacks of varying heights (maximum 350mm).

Max. static load (30kN.) applies for heights up to 350mm, above which there is danger of buckling.

### Important Notes

**Do not adjust screw jack under load.**

Order No.	Type	$h_1$	$h_2$ min.	$h_2$ max.	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$d_6$	Static load kN max.	Weight g
14140.W0010	Screw Jack with Aluminium Foot	-	75	88	50	50	12	30x4	-	-	30	630
14140.W0020	Screw Jack with Magnetic Foot	-	75	88	50	50	12	30x4	-	-	30	720
14140.W0125	Spacer Element	12.5	-	-	-	-	-	-	50	M38x2	30	38
14140.W0250	Spacer Element	25.0	-	-	-	-	-	-	50	M38x2	30	76
14140.W0500	Spacer Element	50.0	-	-	-	-	-	-	50	M38x2	30	165



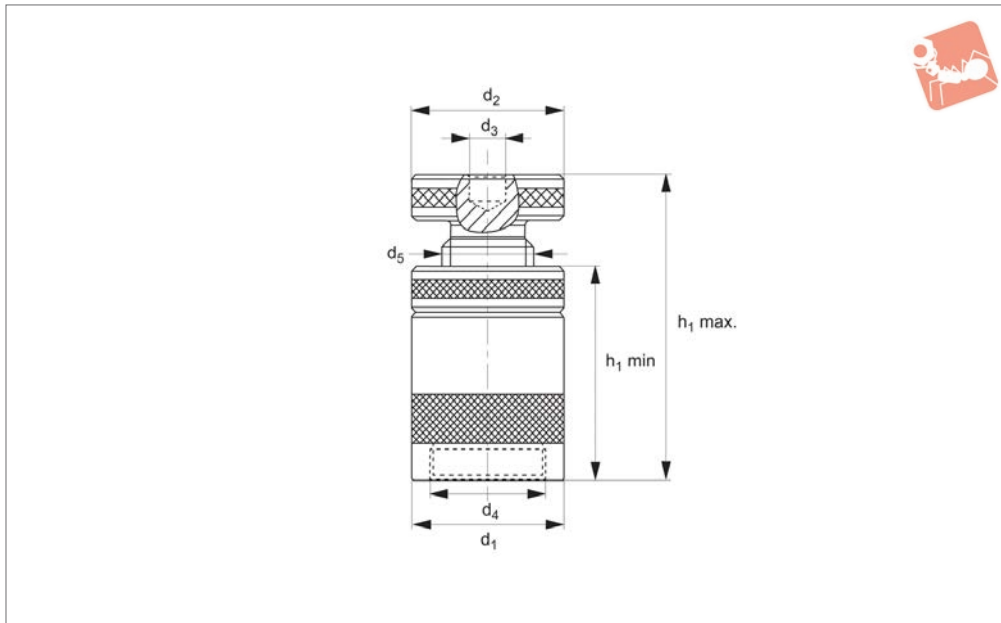


# Screw Jacks

plain Ø12 centering hole



# Screw Jacks



15000

SCREW JACKS

### Material

Body: carbon steel, enamelled.  
Spindle: steel, tempered.  
Trapezoidal thread, self-locking with end stop.

### Technical Notes

Light duty: for clamps with slot widths up to 14mm.

Medium duty: for clamps with slot widths approx. 14-22mm.

Heavy duty: for clamps with slot widths between 20-40mm.

Extra heavy duty: for supporting larger work-pieces.

### Tips

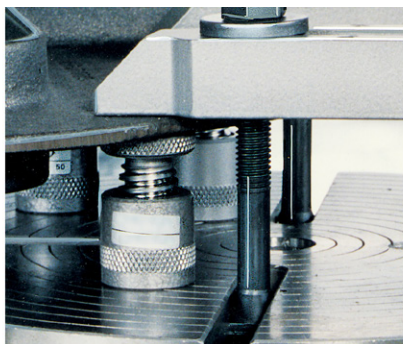
Centering hole Ø12mm in top of screw

jacks (no hole on part no. 15000.W0050).

When using in conjunction with forked clamps no. 10100, we recommend the use of locating pad no. 15060.

See technical pages for the table of locating pad and support pad elements suitability.

Order No.	Type	$h_1$ min.	$h_2$ max.	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	Static load kN max.	Weight g
15000.W0050	Light Duty	38	50	31	31	-	-	20x4	15	190
15000.W0052	Medium Duty	42	52	50	50	12	M38x2	30x4	60	550
15000.W0070	Medium Duty	50	70	50	50	12	M38x2	30x4	60	620
15000.W0100	Medium Duty	70	100	50	50	12	M38x2	30x4	60	900
15000.W0140	Heavy Duty	100	140	68	68	12	-	40x7	100	2760
15000.W0210	Heavy Duty	140	210	80	70	12	-	50x8	170	4600
15000.W0200	Extra Heavy	140	200	100	80	12	-	65x10	350	6900
15000.W0280	Extra Heavy	190	280	140	110	12	-	80x10	600	19000
15000.W0300	Extra Heavy	190	300	100	80	12	-	65x10	350	9000



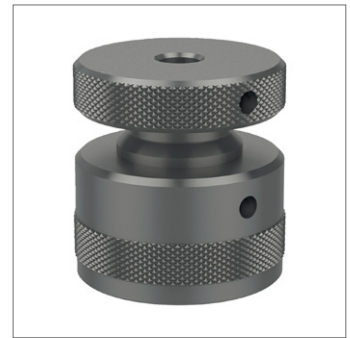
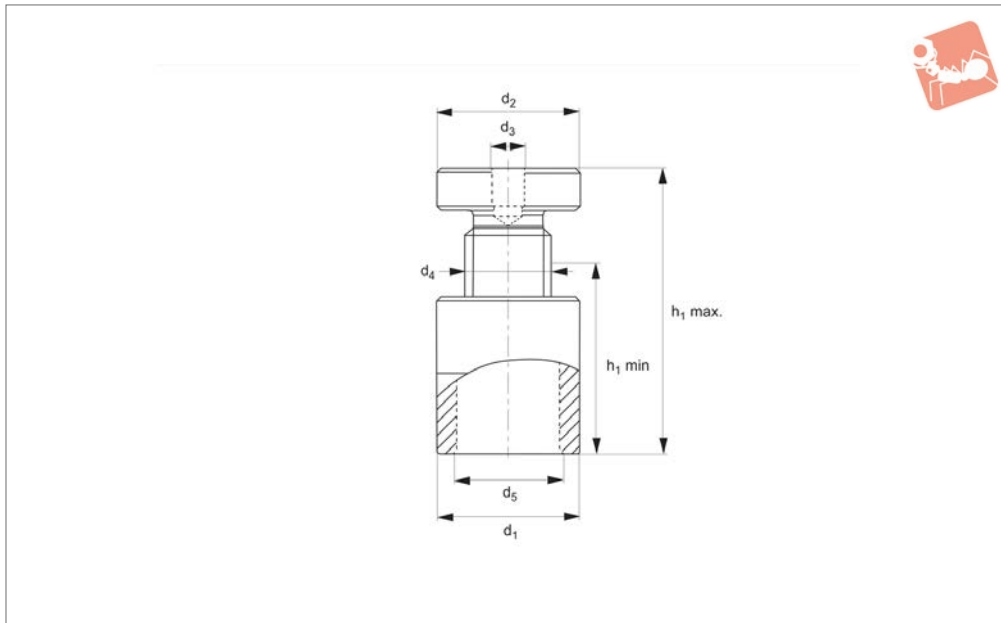


# Screw Jacks

threaded M12 centering hole



# Screw Jacks



**15002**

SCREW JACKS

### Material

Body: carbon steel, enamelled.  
Spindle: trapezoidal thread, self-locking with end stop.

### Technical Notes

The threaded centering hole (M12) on the

top surface of the screw jack enables secure fixing of support accessories 15042 and 15062, whilst the M38x2 base thread allows expansion of the screw jack height.

### Tips

For table of support and locating element

compatibility see technical pages.

### Important Notes

**Do not adjust screw jack when under load.**

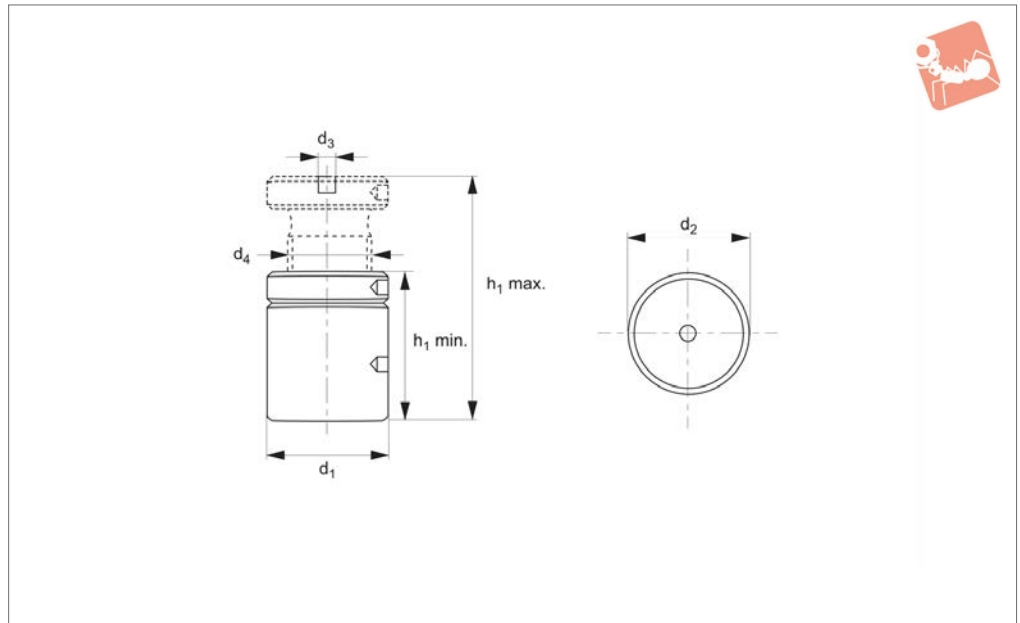
Order No.	Type	Size	$h_1$ min.	$h_1$ max.	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	Static load kN max.	Weight g
<b>15002.W0052</b>	Medium Duty	52	42	52	50	50	M12	30x4	M38x2	100	550
<b>15002.W0070</b>	Medium Duty	70	50	70	50	50	M12	30x4	M38x2	100	620
<b>15002.W0100</b>	Medium Duty	100	70	100	50	50	M12	30x4	M38x2	100	948



SCREW JACKS



## 15100



### Material

Body & base: aluminium 400 N/mm<sup>2</sup> tensile strength.

Spindle: steel, tempered.

Trapezoidal thread, self-locking with end stop.

### Technical Notes

See technical pages for the table of loca-

ting pad and support locating element suitability.

Greater heights can be achieved by combining screw jacks with the centering support pad no. 15060.

### Tips

The swarf is absorbed into the aluminium base thereby protecting the machine table.

Particularly useful for delicate machine tables and high precision machines.

### Important Notes

**Do not adjust screw jacks under load.**

Order No.	Size	$h_1$ min.	$h_1$ max.	$d_1$	$d_2$	$d_3$	$d_4$	Static load kN max.	Weight g
15100.W0052	52	42	52	50	50	12	30x4	30	370
15100.W0070	70	50	70	50	50	12	30x4	30	430
15100.W0100	100	70	100	50	50	12	30x4	30	600

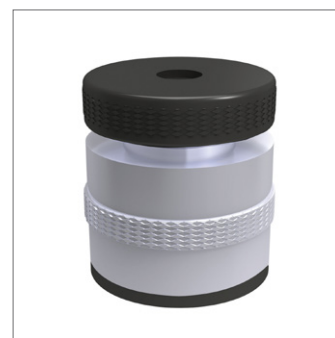
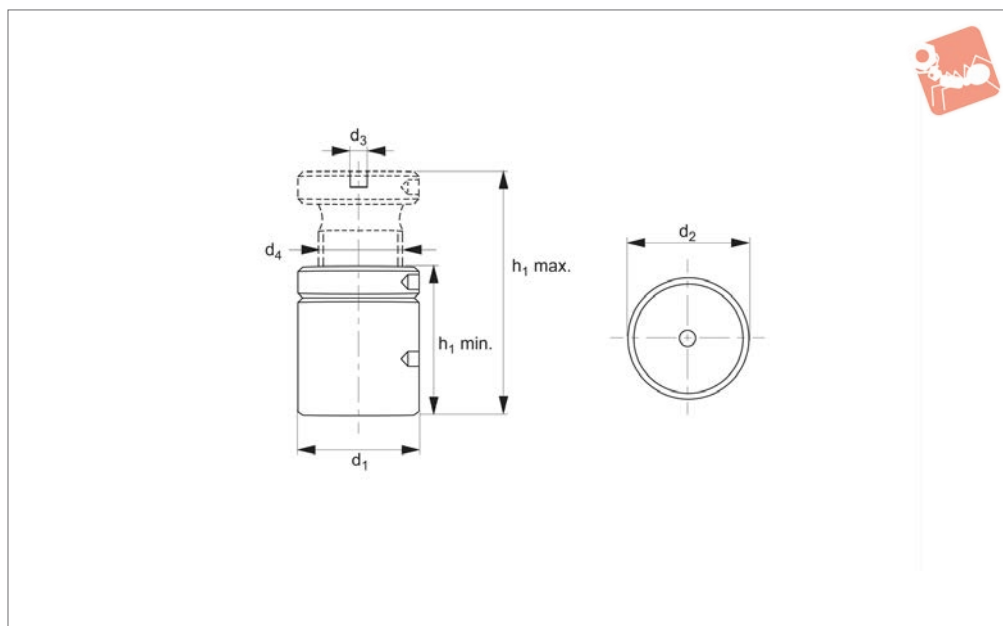


# Screw Jacks

aluminium - magnetic base



# Screw Jacks



**15120**

SCREW JACKS

### Material

Body: aluminium 400N/mm<sup>2</sup> tensile strength.

Base: magnetic.

Spindle: steel, tempered.

Trapezoidal thread, self locking with end stop.

### Technical Notes

See technical pages for the table of locating pad and support locating element suitability.

### Tips

Allows for positioning of screw jacks on

both horizontal and vertical surfaces.

Greater heights can be achieved by combining the screw jacks with the centering pad no. 15060<X\15060#22>.

Magnetic base ensures precise positioning of workpiece on vertical faces.

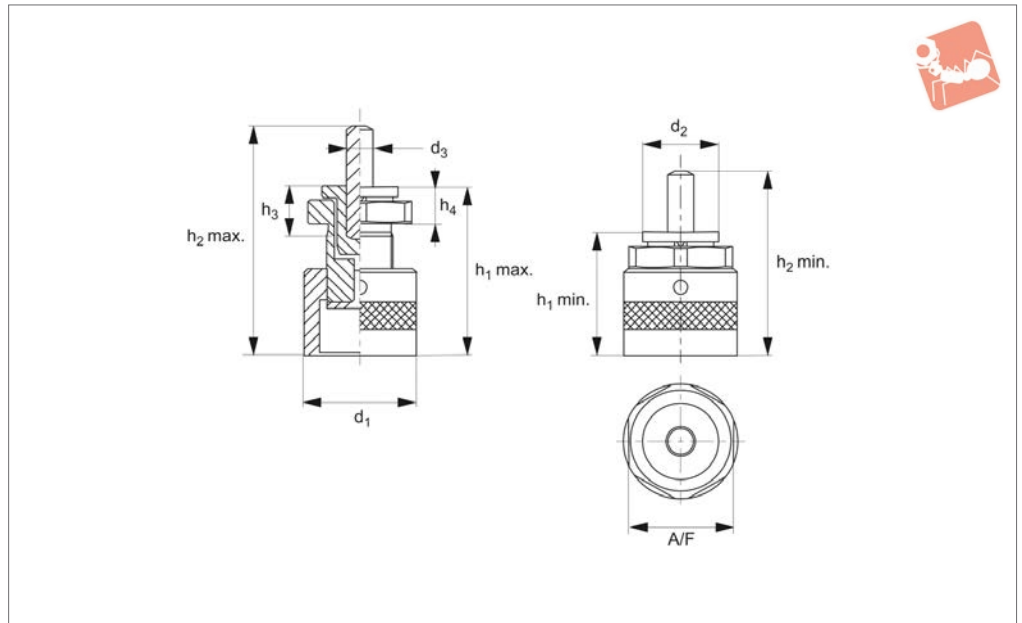
Order No.	Size	$h_1 \text{ min.}$	$h_1 \text{ max.}$	$d_1$	$d_2$	$d_3$	$d_4$	Static load kN max.	Weight g
<b>15120.W0006</b>	62	52	62	50	50	12	30x4	30	380
<b>15120.W0008</b>	80	60	80	50	50	12	30x4	30	550
<b>15120.W0011</b>	110	80	110	50	50	12	30x4	30	710



SCREW JACKS



## 15200



### Material

Body: steel, tempered.  
Spindle: M30x1,5 fine thread with end stop.

### Technical Notes

Comes with 2 locating pins (Ø12x50 and

Ø12x80). Centering hole Ø12 mm. The M30x1,5 fine thread makes precise adjustment possible whilst preventing the workpiece from turning.

See technical pages for the table of locating pad and support locating element

suitability.

### Tips

A bearing insert prevents the workpiece turning whilst the jack is adjusted.

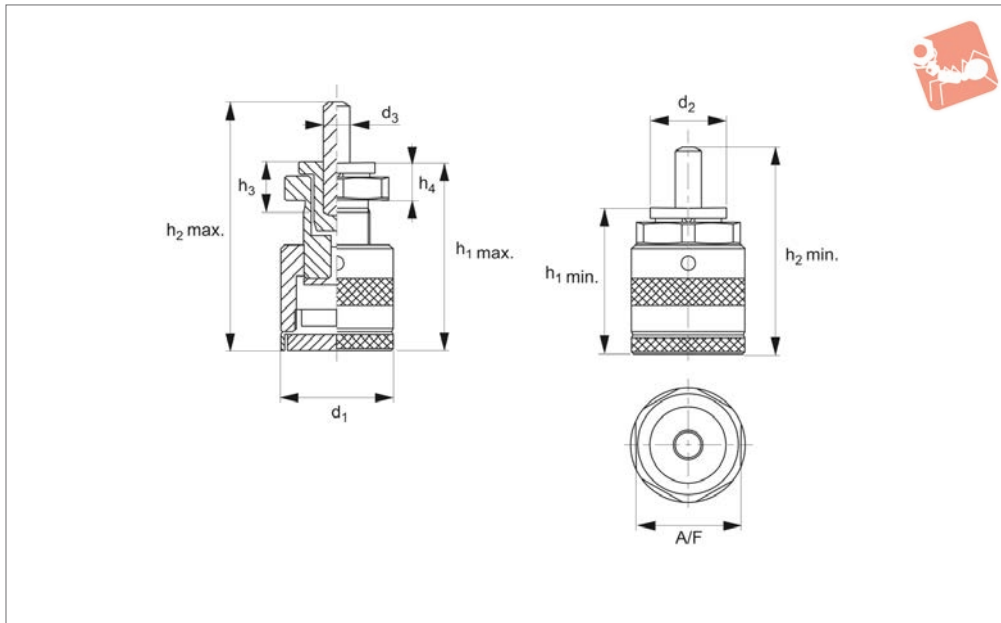
Order No.	$h_1$ min.	$h_1$ max.	$h_3$	$h_4$	$d_1$	$d_2$	$d_3$	A/F	Static load kN max.	With locating pins 12x80 $h_2$ min. - $h_2$ max.	With locating pins 12x50 $h_2$ min. - $h_2$ max.	Weight g
15200.W0007	55	75	22	16,5	50	34	12	46	30	113-133	82-102	680
15200.W0011	75	115	22	16,5	50	34	12	46	30	132-172	102-142	550



# Height Setting Screw Jacks

magnetic base and locating pins

## Screw Jacks



**15220**

SCREW JACKS

### Material

Body: steel, tempered.

Base: magnetic.

Spindle: M30x1,5 fine thread with end stop.

### Technical Notes

With 2 locating pins ( $\varnothing 12 \times 50$  and  $\varnothing 12 \times 80$ ).

Centering hole  $\varnothing 12 \text{mm}$ . The M30x1.5 fine thread makes precise adjustment possible whilst also preventing the workpiece from turning.

See technical pages for the table of locating pad and support locating element compatibility.

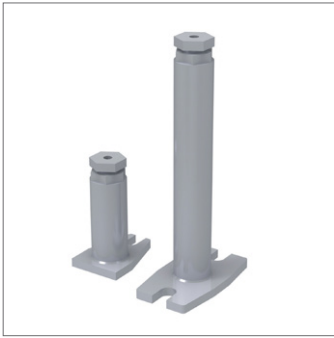
### Tips

A bearing insert prevents the workpiece from turning whilst the jack is adjusted. These screw jacks can be placed on other screw jacks (using a centering pad) to build up heights of up to 1370mm.

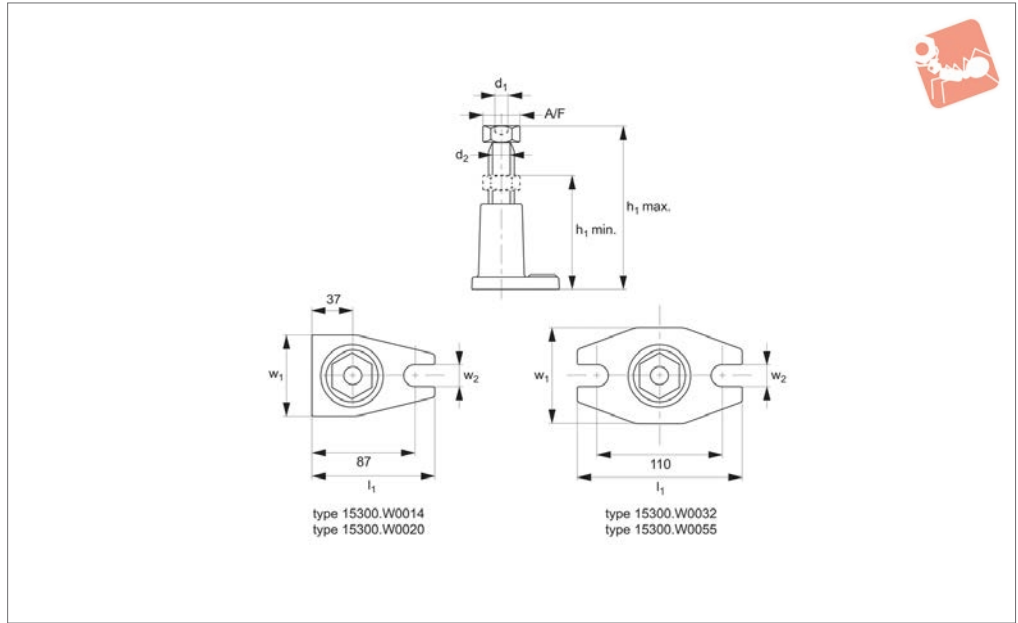
Order No.	$h_1$ min.	$h_1$ max.	$h_3$	$h_4$	$d_1$	$d_2$	$d_3$	A/F	Static load kN max.	With locating pins 12x80 $h_2$ min. - $h_2$ max.	With locating pins 12x50 $h_2$ min. - $h_2$ max.	Weight g
<b>15220.W0007</b>	65	85	22	16,5	50	34	12	46	30	122 - 142	92 - 112	800
<b>15220.W0011</b>	85	125	22	16,5	50	34	12	46	30	142 - 182	112 - 152	1000



SCREW JACKS



## 15300



### Material

Housing: cast iron, enamelled.  
Spindle: carbon steel, trapezoidal thread 30x6.

### Technical Notes

Centering hole  $\varnothing 12\text{mm}$ .

See technical pages for the table of locating pad and support locating element suitability.

### Tips

When using in conjunction with forked clamps, we recommend the use of locating

pads no. 15040 when the slot width of the clamps is  $>26\text{mm}$ .

### Important Notes

**Do not adjust screw jacks under load.**

Order No.	$h_1$ min.	$h_1$ max.	$d_1$	$d_2$	$w_1$	$w_2$	$l_1$	A/F	Static load kN max.	Weight g
15300.W0014	100	140	12	30x6	75	18	110	46	60	1800
15300.W0020	140	200	12	30x6	75	18	110	46	60	2200
15300.W0032	200	320	12	30x6	90	22	160	46	40	3800
15300.W0055	320	550	12	30x6	90	22	160	46	25	4900

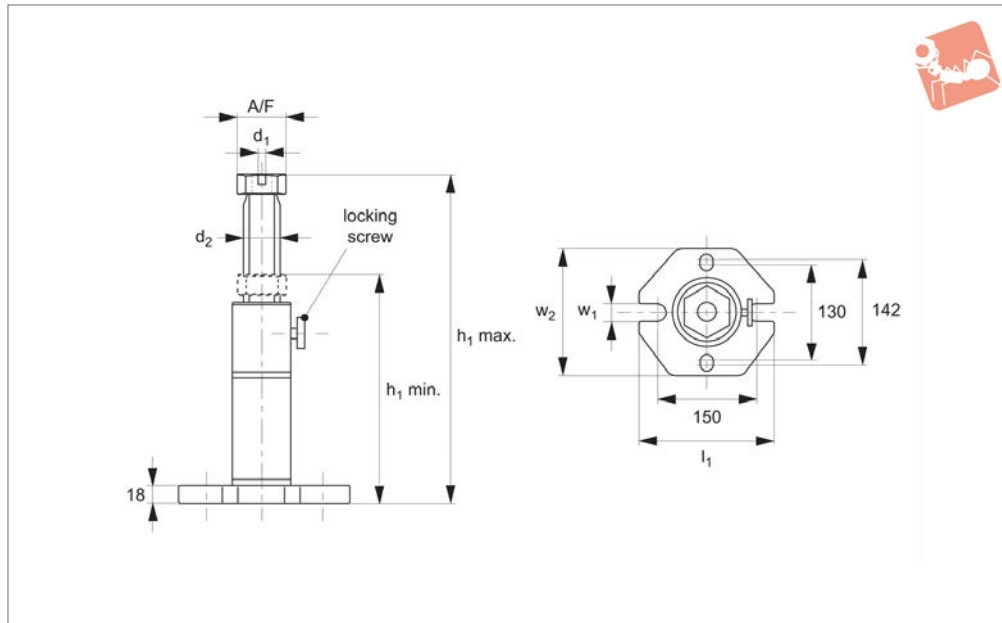






# Heavy Duty Screw Jacks with brass locking screw

## Screw Jacks



**15320**

SCREW JACKS

### Material

Housing: cast steel, enamelled.  
Spindle: carbon steel, trapezoidal thread 40x7.

See technical pages for the table of locating pad and support locating element suitability.

### Technical Notes

With  $\varnothing 12$ mm centering hole.

### Important Notes

**Do not adjust screw jacks under load.**

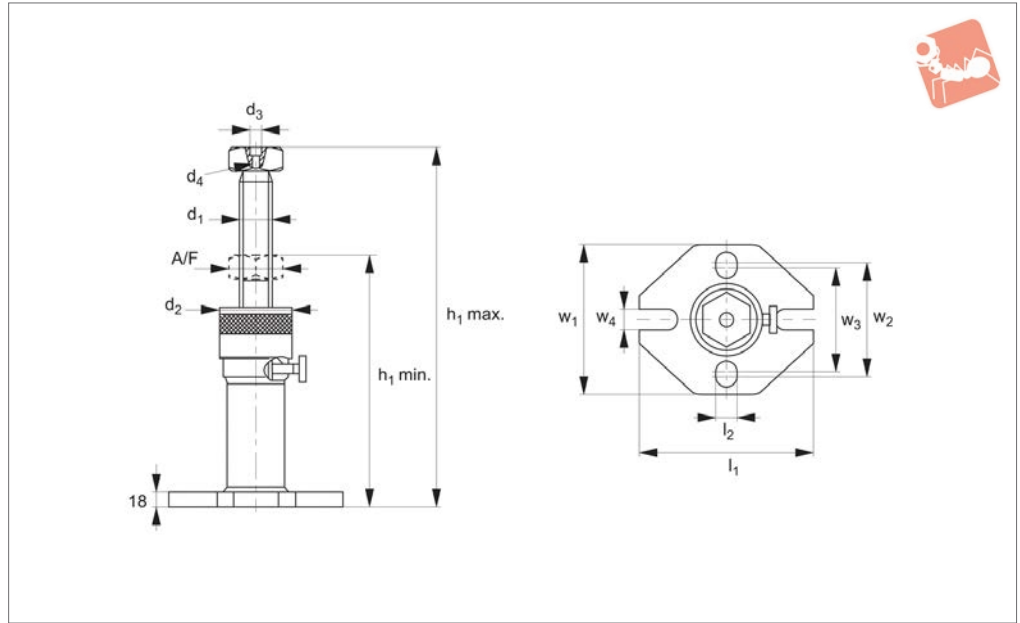
Order No.	$h_1$ min.	$h_1$ max.	$d_1$	$d_2$	$w_1$	$w_2$	$l_1$	A/F	Static load kN max.	Weight g
<b>15320.W0030</b>	200	300	12	40x7	26	190	220	65	80	8000
<b>15320.W0046</b>	290	470	12	40x7	26	190	220	65	60	10000
<b>15320.W0075</b>	430	750	12	40x7	26	190	220	65	50	13000
<b>15320.W0125</b>	710	1250	12	40x7	26	190	220	65	40	18000



SCREW JACKS



## 15360



### Material

Housing: steel, tempered, enamelled.  
Spindle: steel, tempered, trapezoidal thread.

### Technical Notes

This screw jack is designed for quick, stepless adjustment throughout its height

range.

Centering hole  $\varnothing 12\text{mm}$ .  
See technical pages for the table of locating pad and support locating element suitability.

### Tips

To adjust height, grip spindle, loosen

locking screw, twist setting ring and set required height.

### Important Notes

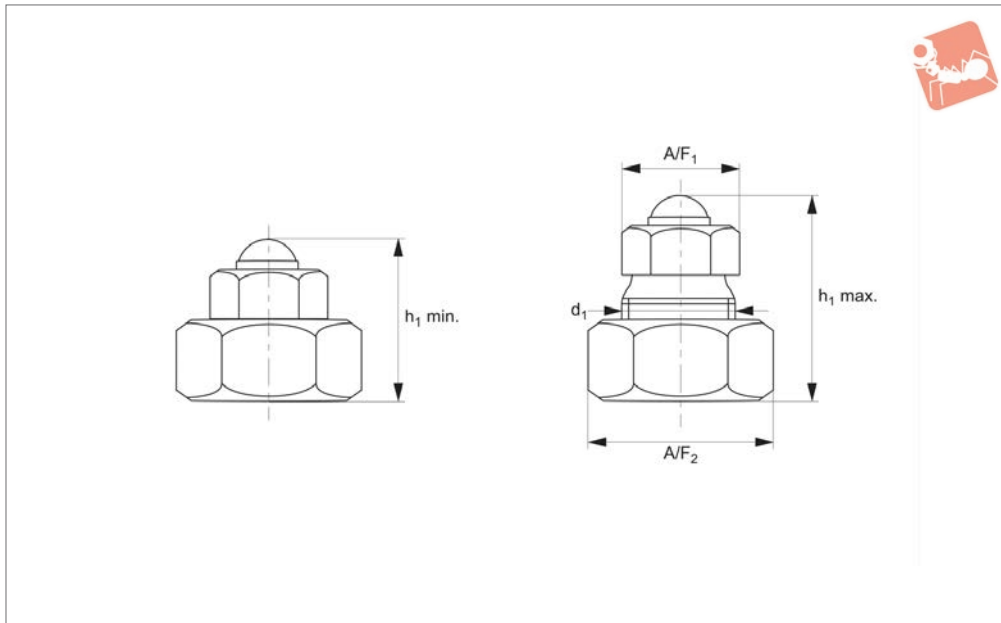
**Do not adjust screw jacks under load.**

Order No.	$h_1$ min.	$h_1$ max.	$d_1$	$d_2$	$d_3$	$d_4$	$w_1$	$w_2$	$l_1$	A/F	Static load kN max.	Weight kg
15360.W0045	320	450	40x7	90	12	M10	26	190	220	65	50	11.5
15360.W0071	450	710	40x7	90	12	M10	26	190	220	65	40	13.7
15360.W0125	710	1250	40x7	90	12	M10	26	190	220	65	30	18.3



# Height Setting Screw Jack with pivoting ball

## Screw Jacks



**15520**

SCREW JACKS

### Material

Body: steel, tempered, burnished.  
Ball: steel, hardened.

screw jack is designed to support and align cast iron or forged components. Alignment can be made to 0,1mm.

reduces the required operating forces. The use of a point-type support reduces the transmission of turning forces generated by the machine spindle.

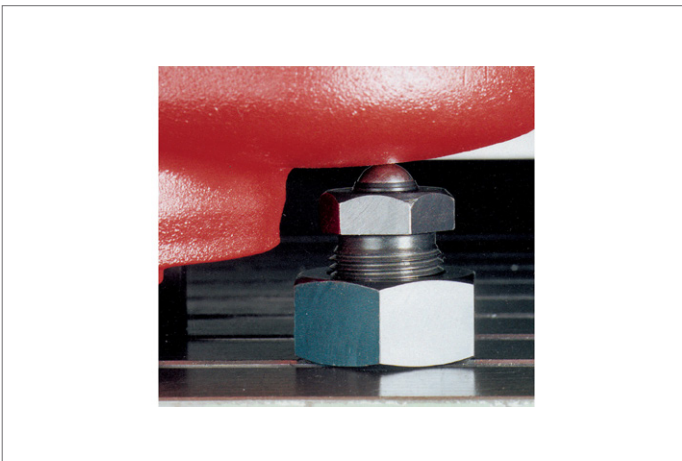
### Technical Notes

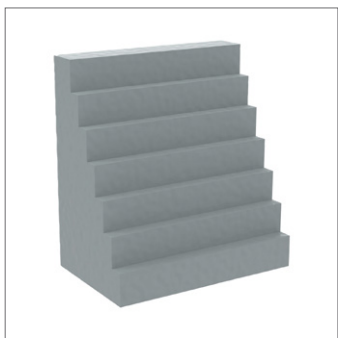
Used as a point support, this heavy-duty

### Tips

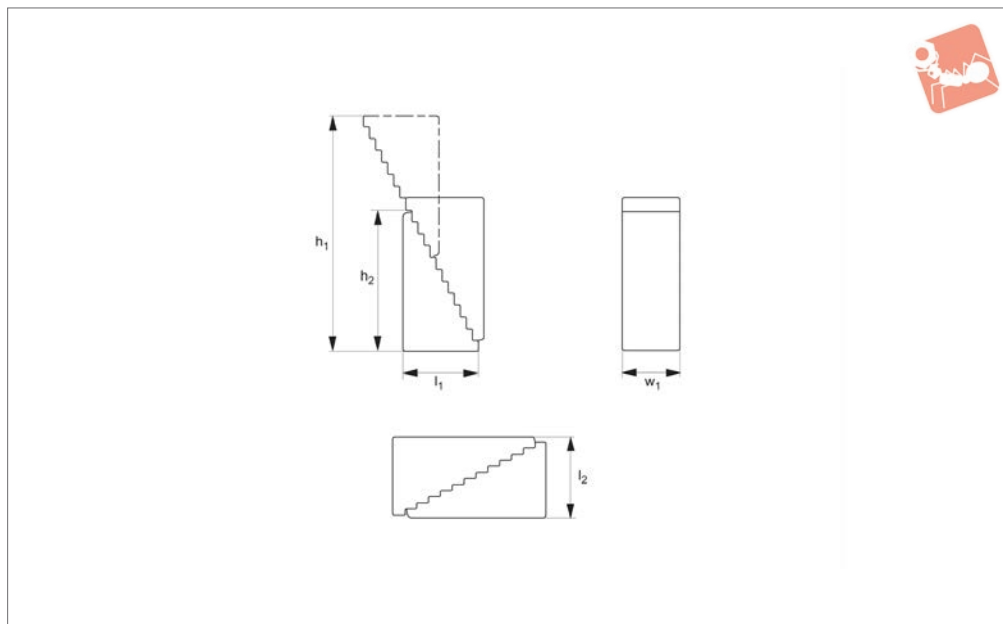
The pivoting ball minizises the friction and

Order No.	Size	$h_1$ min.	$h_1$ max.	$d_1$	$A/F_1$	$A/F_2$	Static load kN max.	Weight g
15520.W0070	70	56	70	39x3	41	60	30	950





14000



**Material**

Heat-treated steel, enamelled.

**Technical Notes**

When used as a pair, these blocks are

compatible with all our clamps. However, when used individually, they can be used with clamp no. 10020.

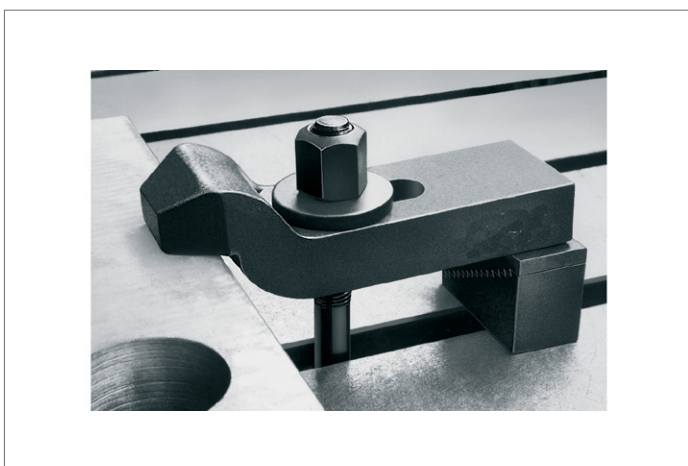
Step increments: vertical 4,65mm,

horizontal 2,30mm.

**Tips**

**Sold individually.** Dimensions  $h_1$  and  $h_2$  are when step blocks used as a pair.

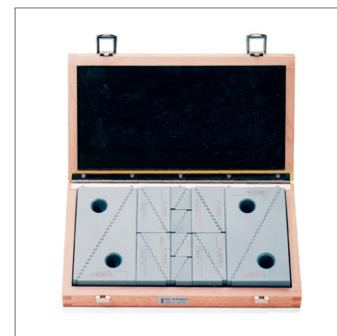
Order No.	Size	$h_1$ max.	$h_2$	$w_1$	$l_1$	$l_2$ min.	Weight g
14000.W0001	1	51	33	30	19.0	23	90
14000.W0002	2	107	66	30	35.5	39	300
14000.W0003	3	208	131	30	68.0	71	1050





# Universal Step Block Set in wooden case

## Screw Jacks



### 14020

SCREW JACKS

#### Material

Steel, tempered and enamelled.

#### Technical Notes

In a sturdy wooden case with lid. Please

refer to product no. 14000 for more information regarding the contents of the set.

#### Tips

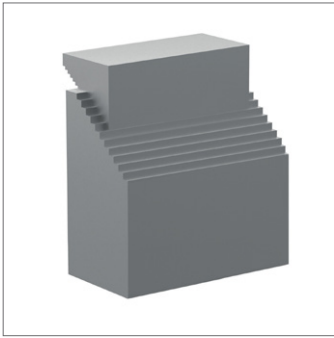
When used as a pair, these blocks are

compatible with all our clamps. However, when used individually, they can be used with clamp no. 10020.

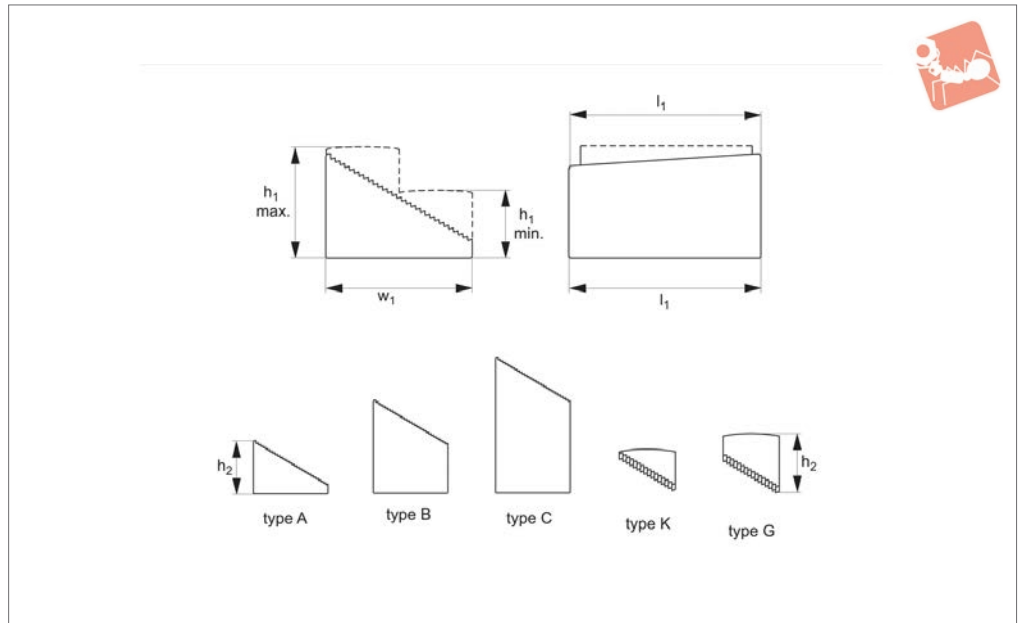
Order No.	Case size	Contents	$h_1$ min.	$h_1$ max.	Weight g
14020.W0100	280x155x40	8 pcs 14000.W0001 8 pcs 14000.W0002 4 pcs 14000.W0003	23	208	8400



SCREW JACKS



## 14040



### Material

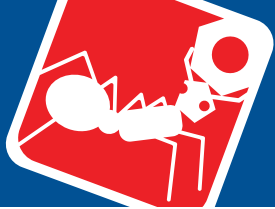
Steel, tempered and enamelled.

The tooth form is a metric profile to DIN 13 sheet 1 with a pitch of 2,5mm. It lies in the normal section of the setting level.

### Technical Notes

DIN 6326.

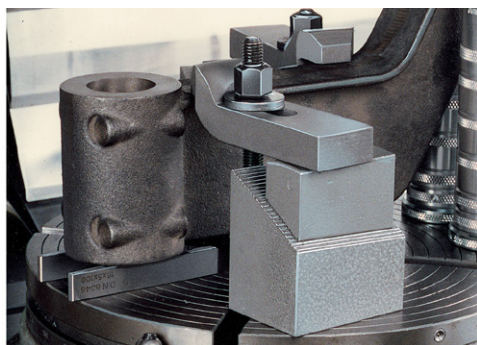
Order No.	Type	Clamping height $h_1$ min.	Clamping height $h_1$ max.	Description	$h_2$	$w_1$	$l_1$	Lower part	Upper part	Single parts	Weight g
14040.W0001	A			Lower part	42	60	80			A	850
14040.W0002	B			Lower part	82	60	80			B	2300
14040.W0003	C			Lower part	122	60	80			C	3800
14040.W0004	K			Upper part	24	30	70			K	200
14040.W0005	G			Upper part	44	30	70			G	500
14040.W0014	A+K	25	45	Combination				A	K		1050
14040.W0015	A+G	45	65	Combination				A	G		1350
14040.W0017	A+K+G	25	65	Combination				A	KG		1550
14040.W0023	B+K	65	85	Combination				B	K		2500
14040.W0025	B+G	85	105	Combination				B	G		2800
14040.W0026	B+K+G	65	105	Combination				B	KG		3000
14040.W0034	C+K	105	125	Combination				C	K		4000
14040.W0035	C+G	125	145	Combination				C	G		4300
14040.W0036	C+K+G	105	145	Combination				C	KG		4500



# Adjustable Step Blocks with spiral gearing



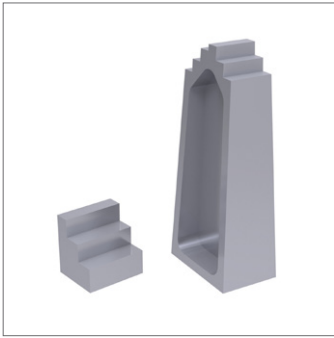
## Screw Jacks



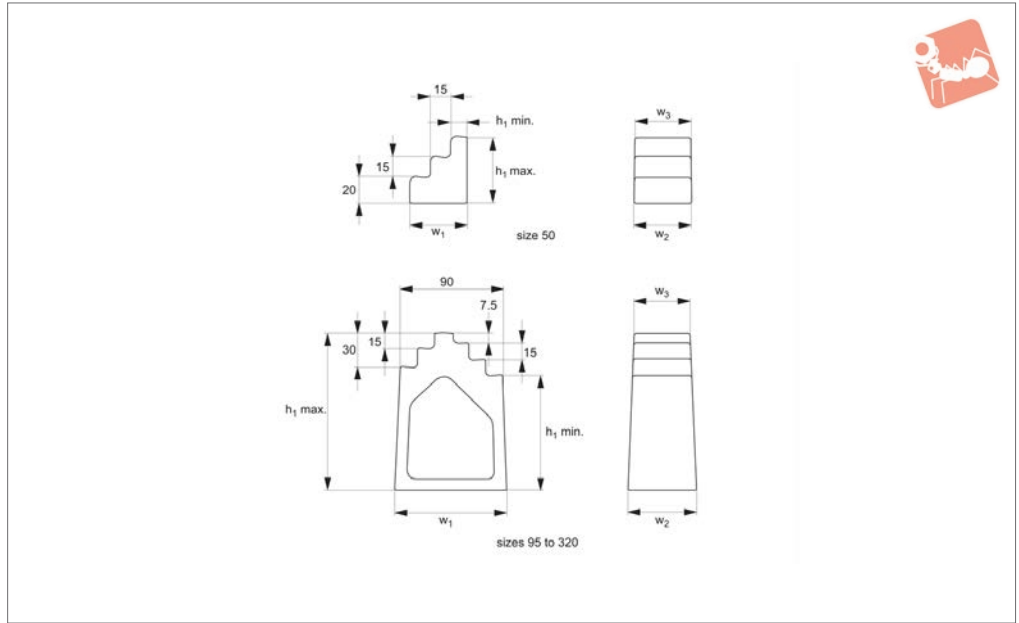
SCREW JACKS



SCREW JACKS



**14100**



**Material**

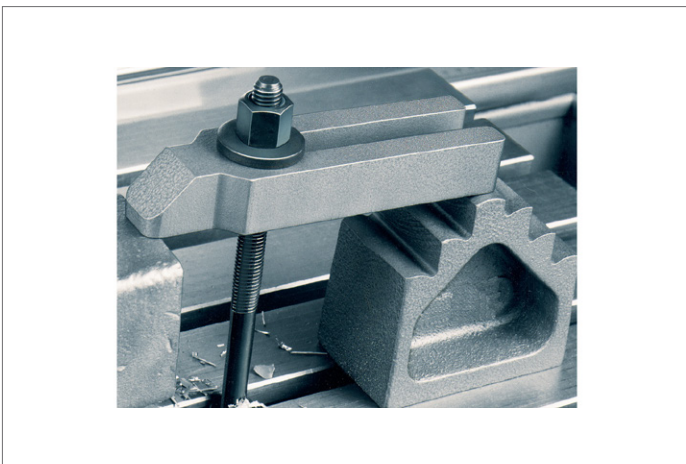
Cast iron, enamelled with support surface and steps milled.

**Technical Notes**

Produced to DIN 6318.  
See item no. 14150<X\14150#22> for

extra wide step blocks. Step increments of 7,5mm each.

Order No.	Size	h <sub>1</sub> min.	h <sub>1</sub> max.	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	Weight g
14100.W0050	50	12.5	50	42.5	50	50	500
14100.W0095	95	57.5	95	95.0	55	50	1600
14100.W0140	140	102.5	140	100.0	60	50	2000
14100.W0185	185	147.5	185	105.0	65	50	2900
14100.W0230	230	192.5	230	110.0	70	50	3600
14100.W0275	275	237.5	275	115.0	75	50	4300
14100.W0320	320	282.5	320	120.0	80	50	5200



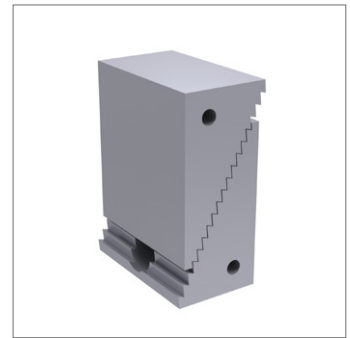
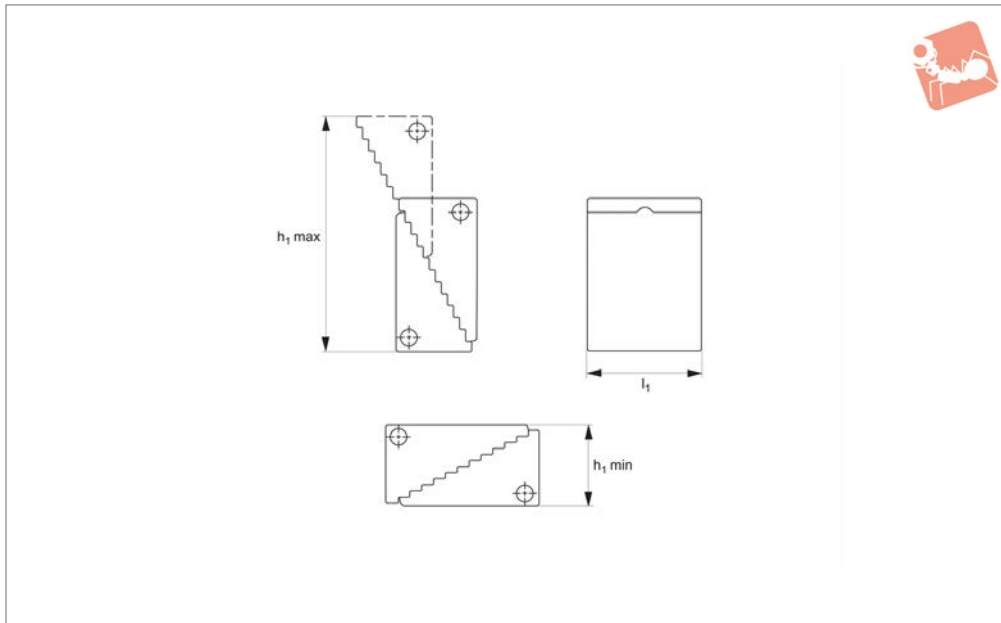




# Step Blocks with coupling spring



# Screw Jacks



**14110**

SCREW JACKS

**Material**

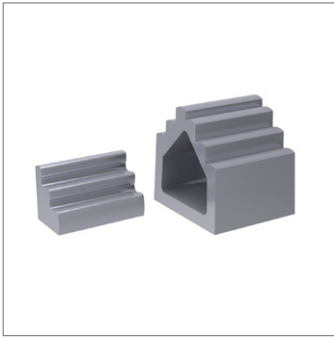
Carbon steel, enamelled.

**Technical Notes**

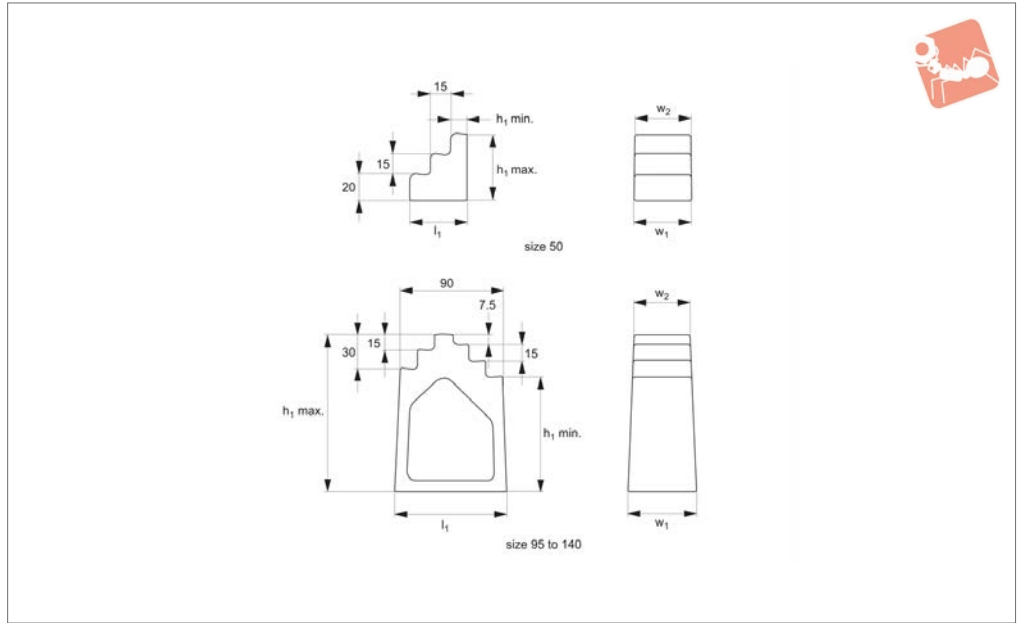
Similar to no. 14000.W0002 but joined

together with a spring for ease of handling. Used vertically or horizontally. Step increments vertical 4,65mm, horizontal 2,30mm.

Order No.	Size	$h_1$ min.	$h_1$ max.	$l_1$	Weight g
14110.W0001	2	37	107	60	1000



**14150**



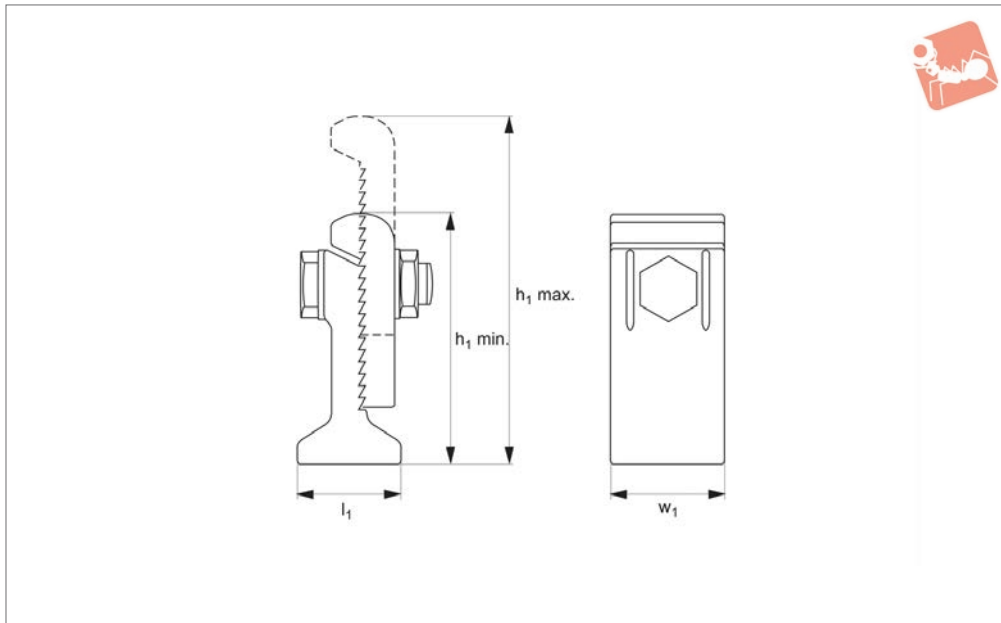
**Material**

Cast iron, enamelled.  
Base and step faces milled.

**Technical Notes**

Step increments of 7,5mm each.

Order No.	Size	h <sub>1</sub> min.	h <sub>1</sub> max.	w <sub>1</sub>	w <sub>2</sub>	l <sub>1</sub>	Weight g
14150.W0050	50	12.5	50	80	80	42.5	800
14150.W0095	95	57.5	95	85	80	95.0	2300
14150.W0140	140	102.5	140	90	80	100.0	3450



## 14200

SCREW JACKS

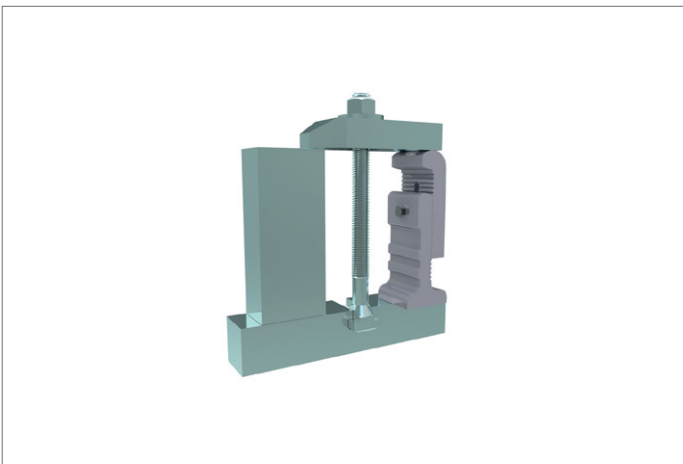
### Material

Steel, malleable casting, enamelled.  
Base and step faces milled.

### Technical Notes

Step increments 5,2mm.

Order No.	Size	$h_1$ min.	$h_1$ max.	$w_1$	$l_1$	Static load kN max.	Weight g
14200.W0015	2	111	147	50	50	40	1225
14200.W0022	3	155	223	60	60	60	2607
14200.W0034	4	220	340	80	80	90	6028





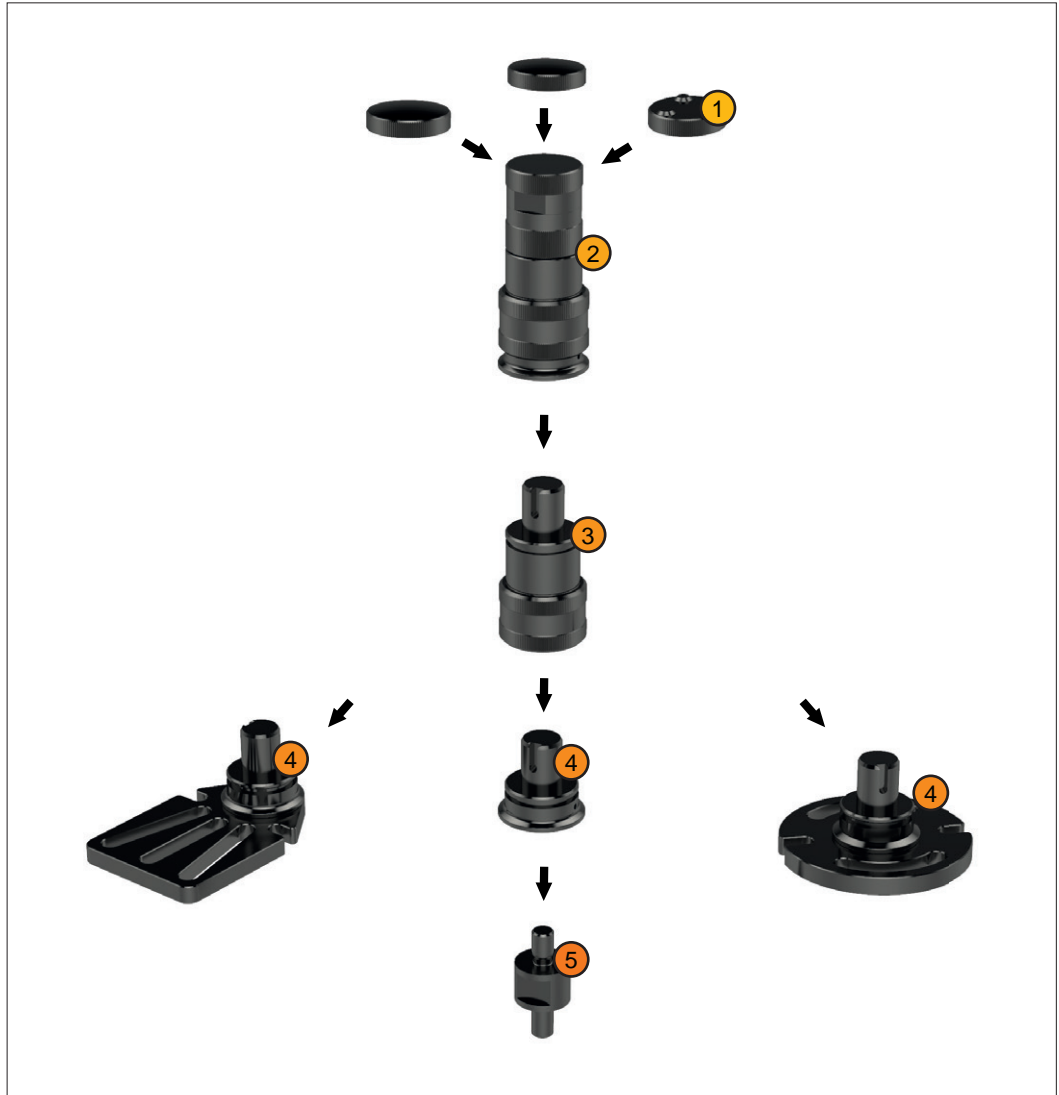
With the modular screw jack your production becomes even more flexible and economical. When combined you can achieve a maximum height of 1620mm.

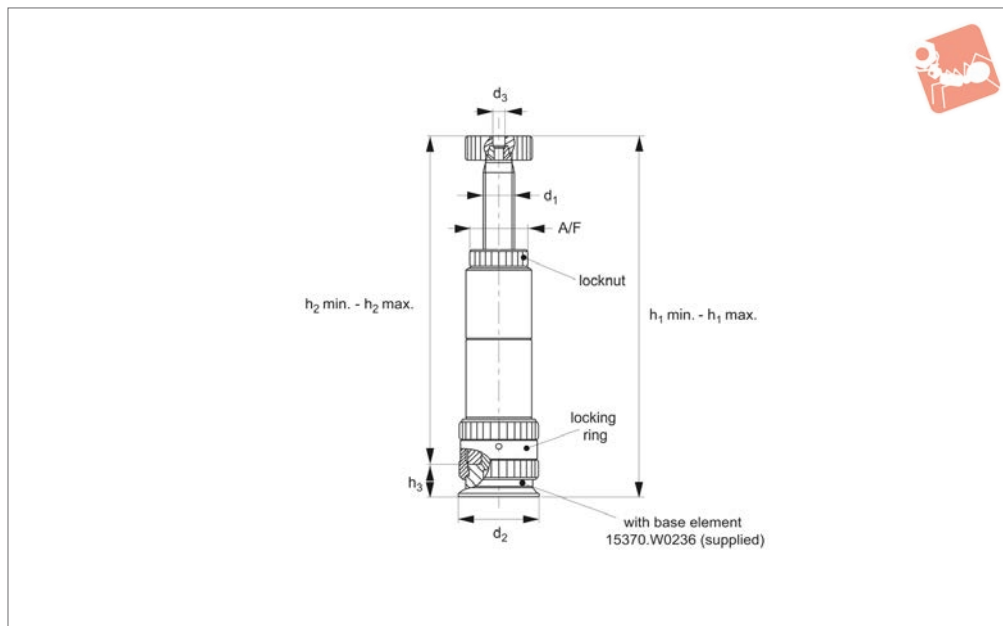
## Benefits

- Maximum height of 1620mm.
- Quick set-up time.

## The Elements

- 1 Bearing pads, 15374.W0075, 15374.W0175, 15374.W0275
- 2 Screw jack, 15370.W0040, 15372.W0023
- 3 Spacer, 15370.W0116, 15370.W0126, 15370.W0135
- 4 Base, 15370.W0236, 15370.W0356, 15370.W0456
- 5 Thread adapter, 15374.W0016, 15374.W0020, 15374.W0024





## 15370.1

SCREW JACKS

### Material

Steel, tempered, burnished.

### Technical Notes

Can be used on T-slots and grid plates by means of adapters which are screwed in the base element. The individual elements are

joined together and connected by means of a threaded ring. The insertion tool makes it possible to use the locknut and base element as well as a thread adapter.

### Tips

Can be used with other elements to achieve

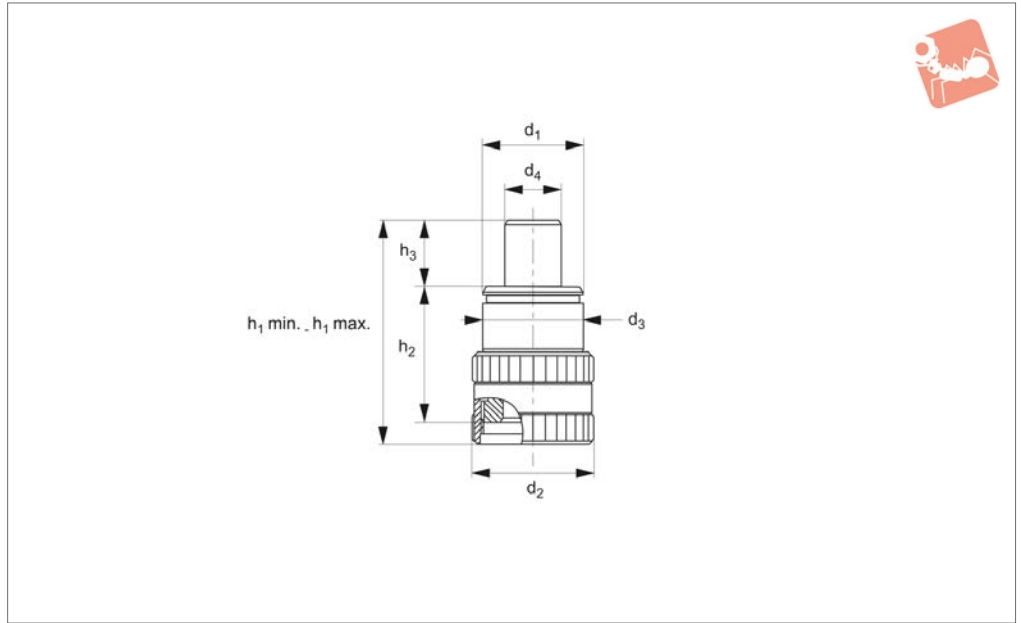
heights of up to 1.6 metres, with a max. load of 60 kN. Observe possible buckling loads.

**Do not adjust screw jacks under load.**

Order No.	$h_1$ min.	$h_1$ max.	$h_2$ min.	$h_2$ max.	$h_3$	$d_1$	$d_2$	$d_3$	A/F	F kN max.	Weight g
15370.W0040	306	406	270	370	36	40x7	90	12	65	60	9436



**15370.2**



**Material**

Steel, tempered, burnished.

can allow stopless height range of up to 1620mm.

load of 60 kN. Observe possible buckling loads.

**Technical Notes**

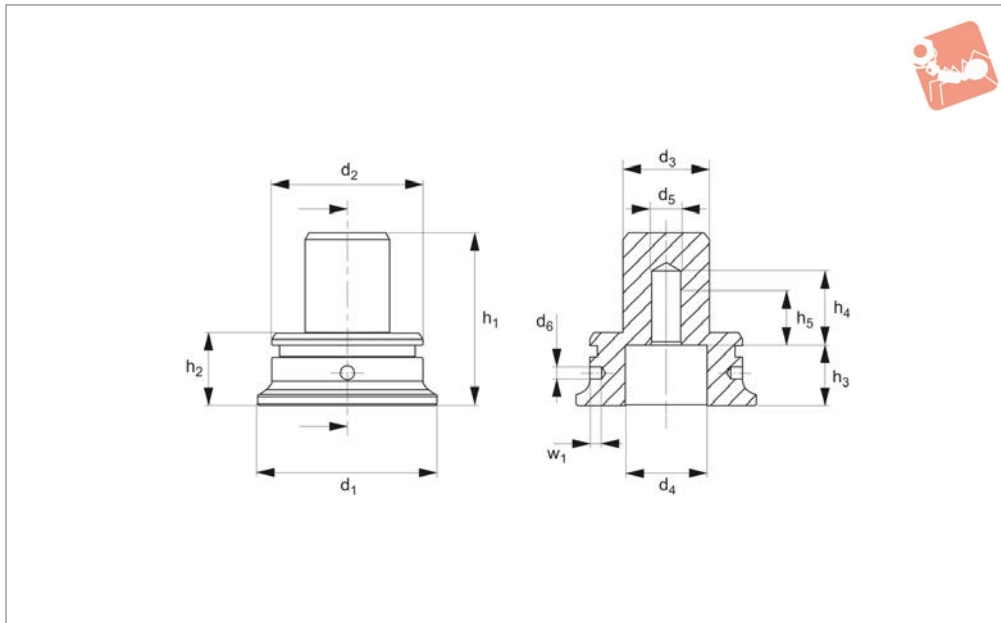
These spacer elements are used with modular screw jacks 15370. Using the item

**Tips**

Can be used with other elements to achieve heights of up to 1.6 metres, with a max.

**Do not adjust screw jacks under load.**

Order No.	$h_1$ min.	$h_1$ max.	$h_2$	$h_3$	$d_1$	$d_2$	$d_3$	$d_4$	Weight g
<b>15370.W0116</b>	150	166.5	100	50	M76x3	89	75	42.5	3132
<b>15370.W0126</b>	250	266.5	200	50	M76x3	89	75	42.5	6228
<b>15370.W0135</b>	350	366.5	300	50	M76x3	89	75	42.5	7493



**15370.3**

SCREW JACKS

**Material**

Steel, tempered, burnished.

**Technical Notes**

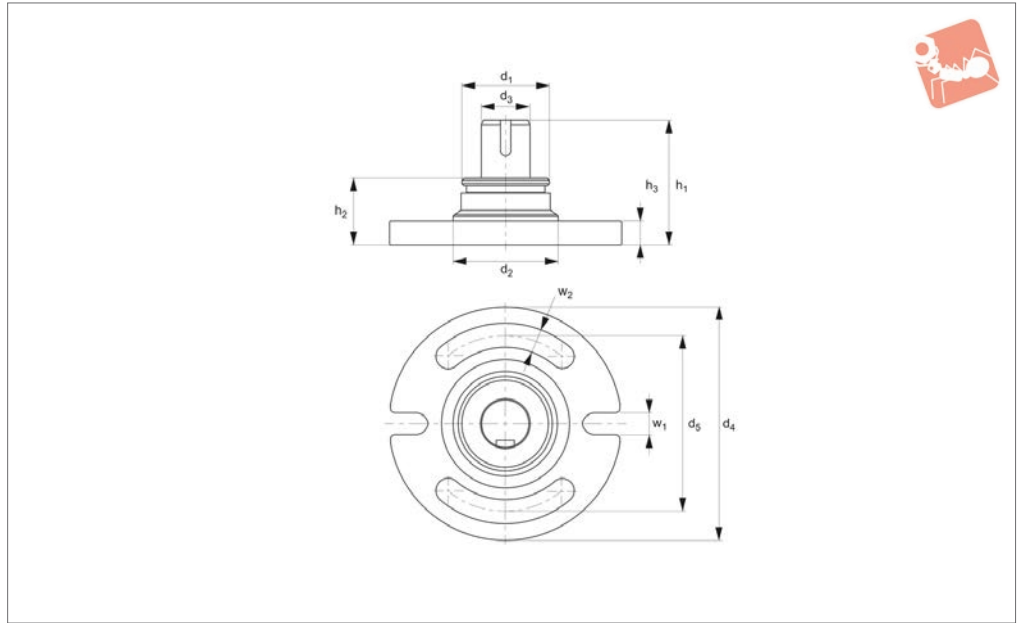
Can be used on T-slots and grid plates by

means of adapters which are screwed in the base element. The individual elements are easily joined together with threaded ring ensuring process reliability.

Order No.	$h_1$	$h_2$	$h_3$	$h_4$	$h_5$	$w_1$	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$d_6$	Weight g
<b>15370.W0236</b>	86	36	30	37	27	6	90	M76x3	42.5	41	M16	6.2	1497



15370.4



SCREW JACKS

**Material**

Steel, tempered, burnished.

**Technical Notes**

Can be used on T-slots and grid plates. The

individual elements are easily joined together.

Enables easy positioning on a machine table.

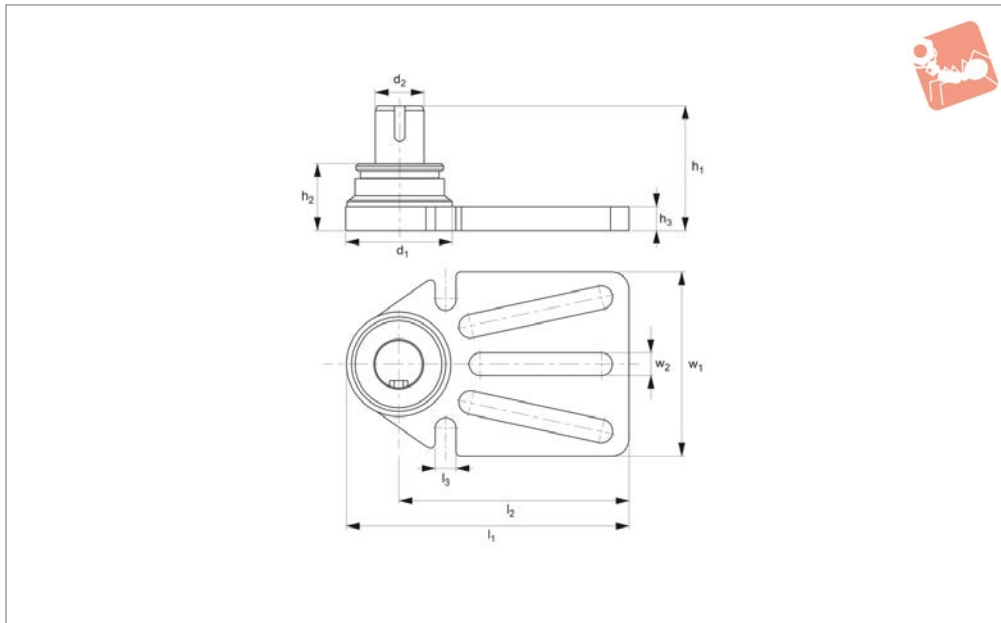
Order No.	$h_1$	$h_2$	$h_3$	$w_1$	$w_2$	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	Weight g
15370.W0356	106	56	20	17	20	M76x3	90	42.5	200	150	5717





# Modular Screw Jack Base adjustable

## Screw Jacks



### 15370.5

SCREW JACKS

#### Material

Steel, tempered, burnished.

Enables easy positioning on a machine table.

#### Technical Notes

Can be used on T-slots and grid plates.

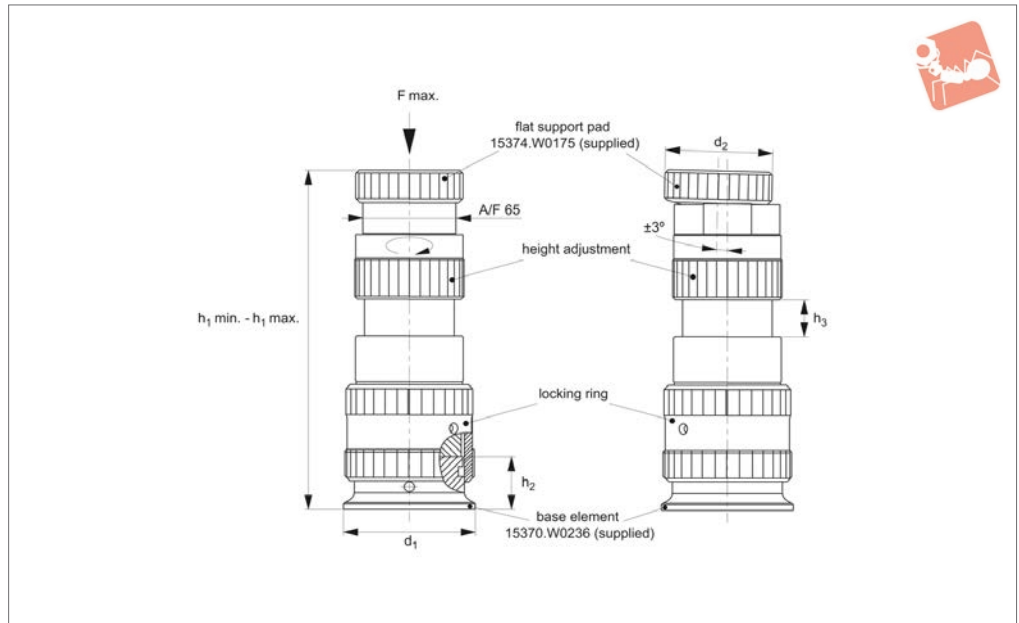
Order No.	$h_1$	$h_2$	$h_3$	$w_1$	$w_2$	$d_1$	$d_2$	$l_1$	$l_2$	$l_3$	Weight g
15370.W0456	106	56	20	158.5	20	90	42.5	240	195	17	5652



SCREW JACKS



**15372**



**Material**

Body and base: steel, tempered, burnished.  
Spindle and bearing: steel, tempered, plasma-nitrided and burnished.

**Technical Notes**

Can be used on T-slots and grid plates by means of adapters which are screwed in the base element with a spacer element. This

support can be finely adjusted to a maximum height of 330mm under load. The bearings can be adjusted with an angle of  $\pm 3^\circ$ . Used as an extra support point to prevent sag and vibration of the workpiece. As it is mounted directly under a clamping point, distortion of the work-piece is prevented.

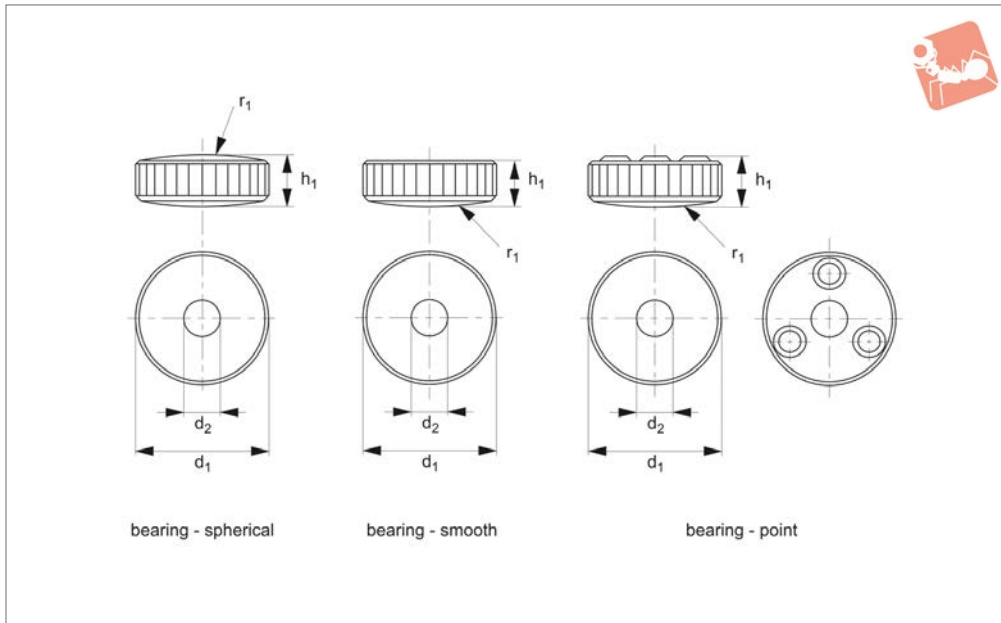
For use in horizontal and vertical clamping.

**Tips**

**Maximum height 330mm when used with additional spacer 15370.W0116.**

Three different bearings are held in place by magnets. Bearings are interchangeable.

Order No.	$h_1$ min.	$h_1$ max.	$h_2$	$d_1$	$d_2$	Stroke $h_3$	F kN max.	Weight g
15372.W0023	210	230	36	90	75	20	35	6671



## 15374.1

SCREW JACKS

### Material

Steel, tempered, plasma-nitrided and burnished.

### Technical Notes

Interchangeable top bearing for the fine

thread modular screw jack 15537.2.

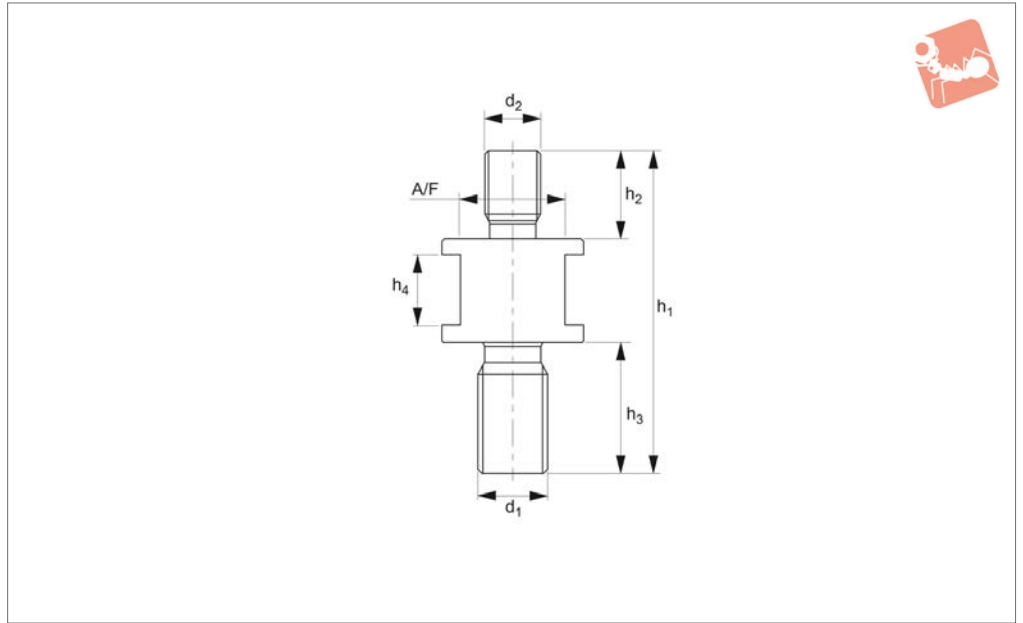
Compensation of large work-piece tolerances.

For use in horizontal and vertical clamping.

Order No.	Bearing type	$h_1$	$d_1$	$d_2$	$r_1$	Weight g
15374.W0075	Spherical	24.7	75	20.5	140	655
15374.W0175	Smooth	24.7	75	20.5	140	739
15374.W0275	Point	24.7	75	20.5	140	651



15374.2



SCREW JACKS

**Material**

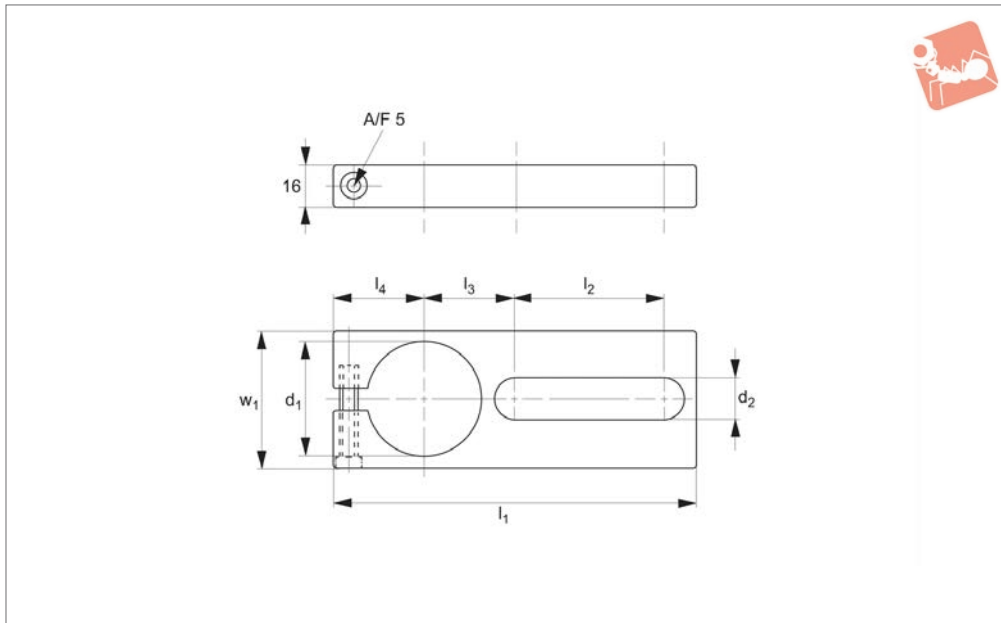
Steel, tempered and burnished.

base element allowing easy fixing to T-slots and grid plates.

**Technical Notes**

The thread adapters are screwed in the

Order No.	$h_1$	$h_2$	$h_3$	$h_4$	$d_1$	$d_2$	A/F	Weight g
15374.W0016	83.5	25	29	20	M16	M16	30	339
15374.W0020	91.5	25	37	20	M20	M16	30	381
15374.W0024	101.5	25	47	20	M24	M16	30	452



## 15010

SCREW JACKS

### Material

Steel, blackened.

movement when a workpiece is changed, and for mounting screw jacks vertically.

tely.

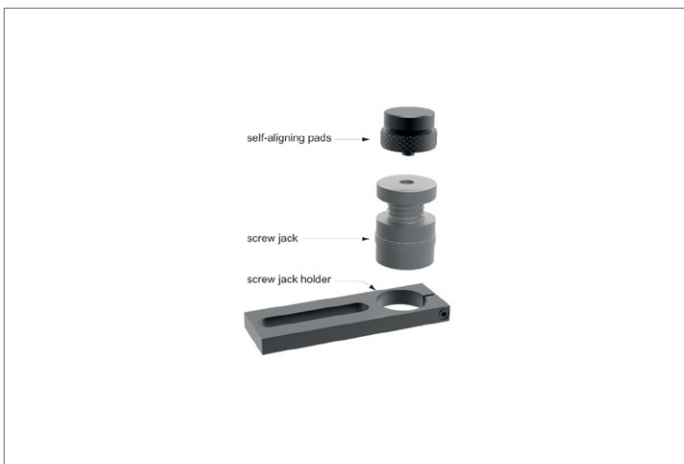
### Technical Notes

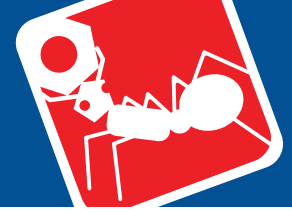
Used to fix screw jacks in place to prevent

### Tips

Please order screw jacks no. 15000 separa-

Order No.	For screw jacks no. 15000	d <sub>1</sub>	d <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	w <sub>1</sub>	Weight g
15010.W0232	Size 50	31	18.5	175	90	35	30	40	518
15010.W0250	Size 52,70,100	50	20.5	190	90	46	38	60	891
15010.W0270	Size 140	69	24.5	210	90	54	48	80	1300





**15030**  
Spherical



**15040**  
Pin Type



**15050**  
Vee Type



**15060**  
Centering Pin



**15070**  
Cylindrical



**15080**  
Self-Aligning



**15090**  
Pivot Ball



**15000**  
Screw Jack



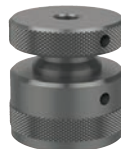
**15042**  
Locating Pad



**15062**  
Centering Pad



**15002**  
Screw Jack



These screw and aligning jacks offer a broad range of applications. Due to their robust construction, the screw jacks function securely and precisely, with infinite adjustment even under heavy loads.

- Safe and reliable clamp supports for heights from 38 to 1250mm.
- Accurate and safe supporting and setting of any workpiece in various levels and heights.
- Aluminium screw jacks for delicate machine tables, surface plates and CMM tables.
- Magnetic screw jacks for horizontal and vertical supporting and setting.

### Table of Suitability for Screw Jack Attachments

Attachments	Suited to screw jacks with centering pin - plain bore	Suitable screw jack
15030	Ø12	15200 14130
15040		15220 14140
15050		15000 15300
15060		15000 15320
15070		15100 15360
15080		15120 15500
15090		

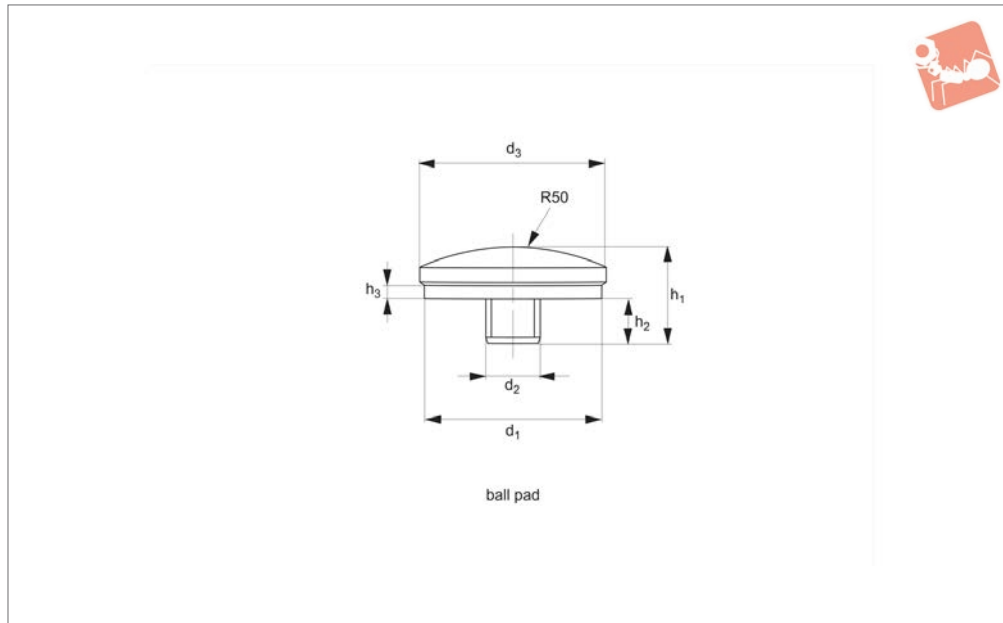
Attachments	Suited to screw jacks with either / or centering pin - threaded	Suitable screw jack
15042	M 12	15002.W0052 / W0070 / W0100
15062	M 10	15320 15360
15062	M 12	15002.W0052 / W0070 / W0100

Attachments	Base thread	Suitable screw jack
15042	M38 x 2	15000.W0052 / W0070 / W0100
15062		15000.W0052 / W0070 / W0100
		15100 14140



# Locating Pad - Spherical for screw jacks

## Screw Jacks



### 15030

SCREW JACKS

#### Material

Steel, hardened, blackened and burnished.

15300.

See technical pages for the table of screw jack suitability.

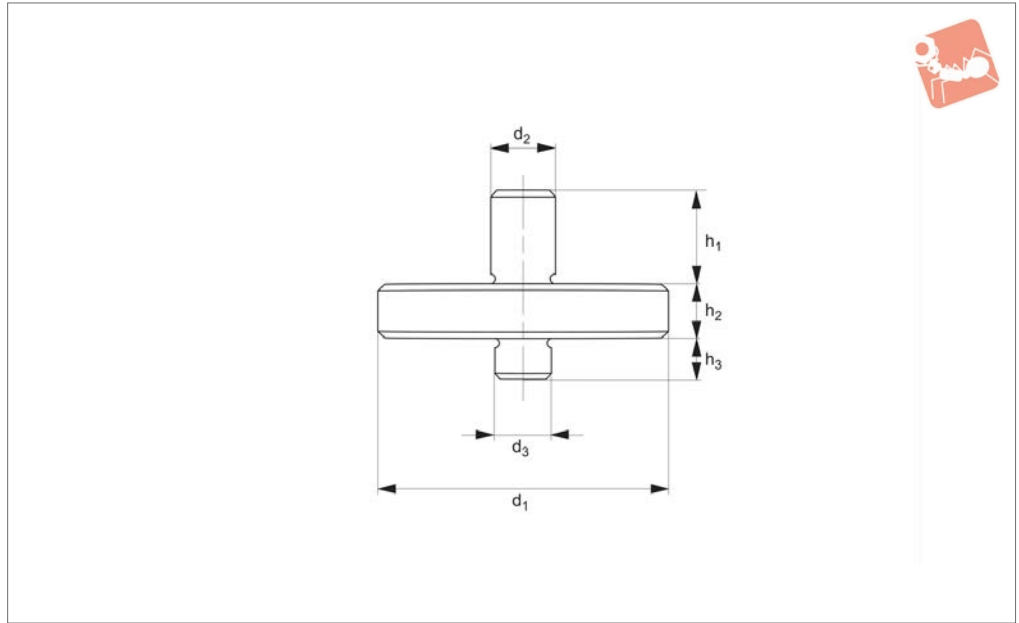
#### Tips

Can be used with screw jacks 15000 and

Order No.	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	Weight g
15030.W0037	35	12	37	18	8	3	90



**15040**



**Material**

Steel, hardened and blackened.

15300.

See technical pages for the table of screw jack suitability.

**Tips**

Can be used with screw jacks 15000 and

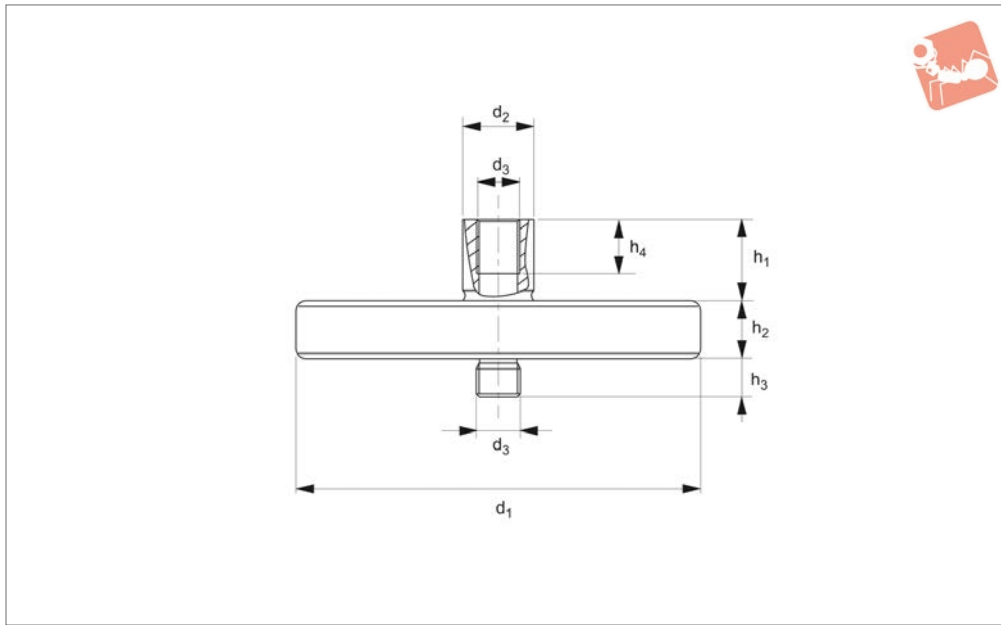
Order No.	$d_1$	$d_2$	$d_3$	$h_1$	$h_2$	$h_3$	Weight g
15040.W0163	63	14	12	15	12	8	310
15040.W0167	78	25	12	19	15	8	650





# Locating Pad - Pin Type M12 for screw jacks

## Screw Jacks



**15042**

SCREW JACKS

### Material

Steel, hardened, enamelled and blackened.

### Technical Notes

Has threaded centering pin (M12) for secu-

ring to compatible screw jacks with corresponding M12 threaded centering holes.

### Tips

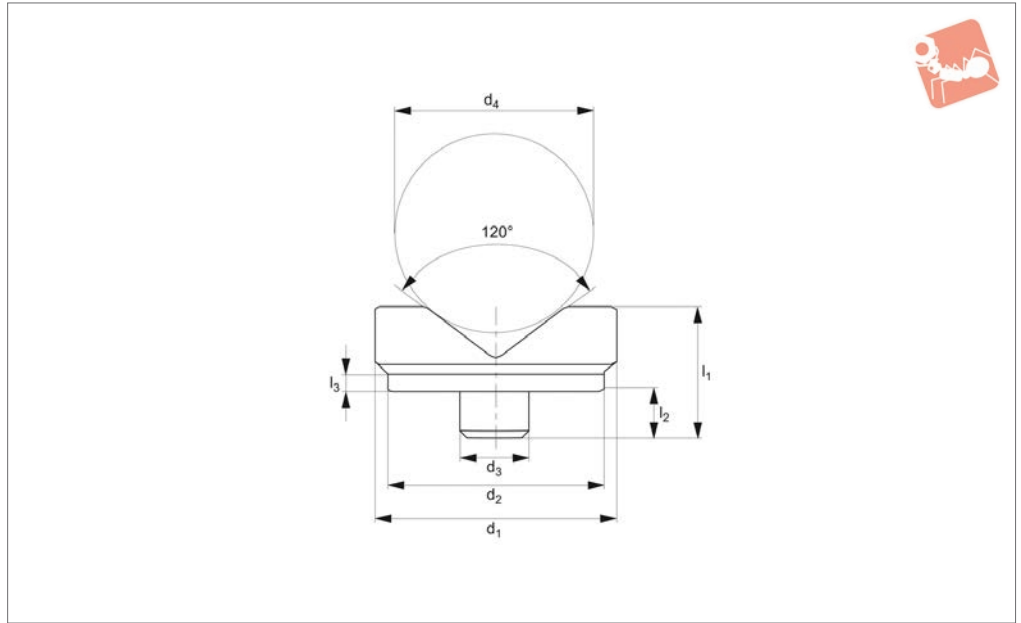
Do not adjust screw jack when under load. See technical pages for the table of screw

jack suitability.

Order No.	$d_1$	$d_2$	$d_3$	$h_1$	$h_2$	$h_3$	$h_4$	Weight g
15042.W0012	72	22	M12	20	12	12	15	601



15050



SCREW JACKS

**Material**

Steel, hardened and blackened.

15300.

See technical pages for the table of screw jack suitability.

**Tips**

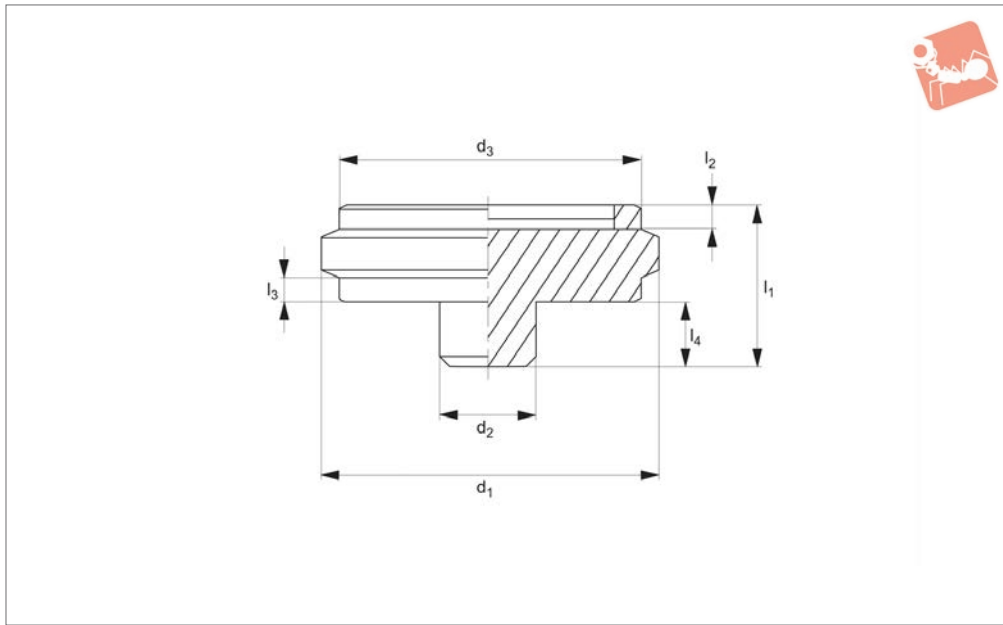
Can be used with screw jacks 15000 and

Order No.	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub> min.	d <sub>4</sub> max.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight g
15050.W0045	45	42	12	10	50	23	8	3	120
15050.W0065	65	62	12	22	100	38	8	3	545



# Centering Pad for screw jacks

# Screw Jacks



## 15060

SCREW JACKS

### Material

Steel, hardened and blackened.

15300.

See technical pages for the table of screw jack suitability.

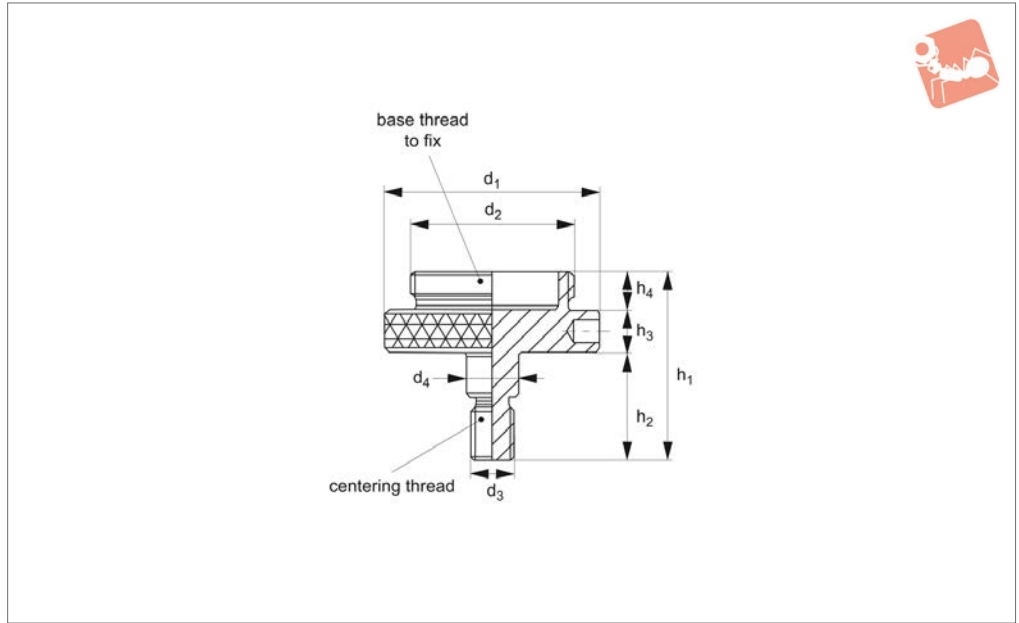
### Tips

Can be used with screw jacks 15000 and

Order No.	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$	$l_3$	$l_4$	Weight g
15060.W0145	45	12	35.8	19	3	8	8	120



## 15062



SCREW JACKS

### Material

Steel, hardened and blackened.

### Technical Notes

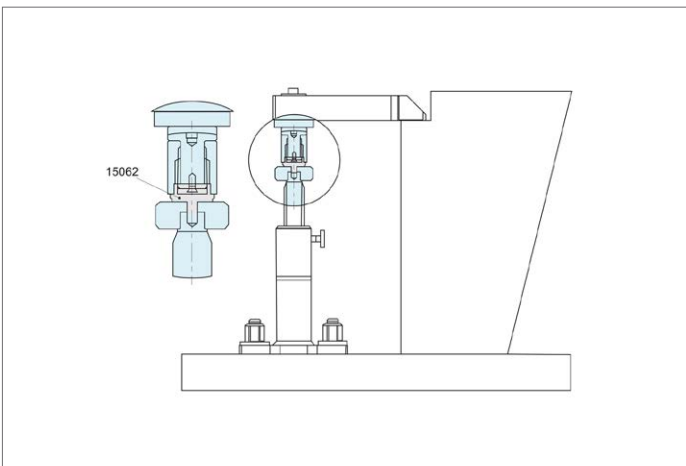
Has threaded centering pin (M12) for securing to compatible screw jacks with corre-

sponding M12 threaded centering holes. Also equipped with M38x2 male thread for fixing screw jacks with corresponding M38x2 thread in their base.

### Tips

Do not adjust screw jacks when under load. See technical pages for the table of screw jack suitability.

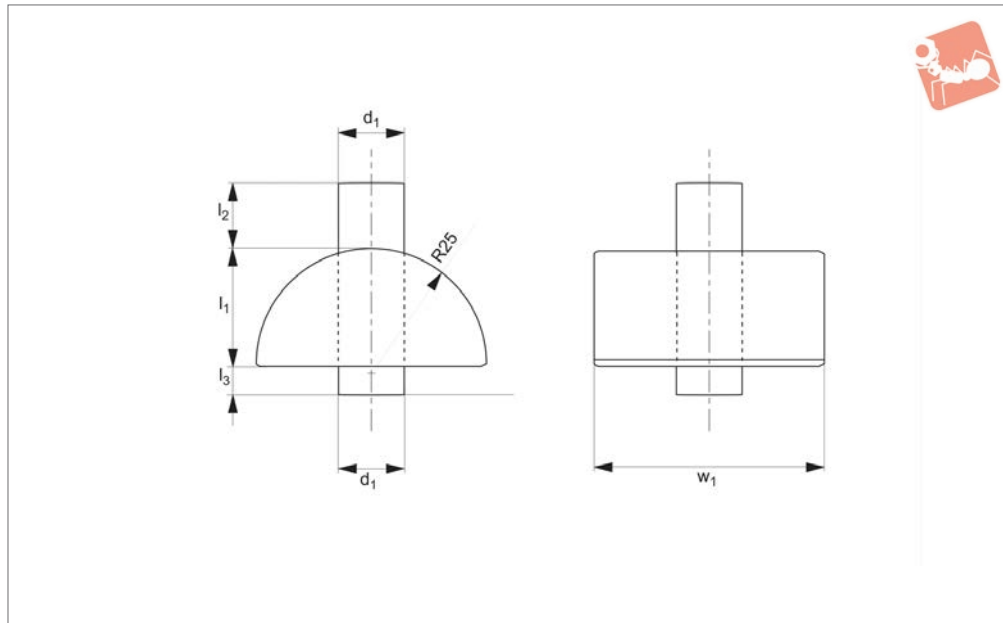
Order No.	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	Weight g
15062.W0010	50	M38x2	M10	11.9	33	25	10	9	200





# Locating Pad - Domed for screw jacks

## Screw Jacks



**15070**

SCREW JACKS

**Material**

Steel, hardened and blackened.

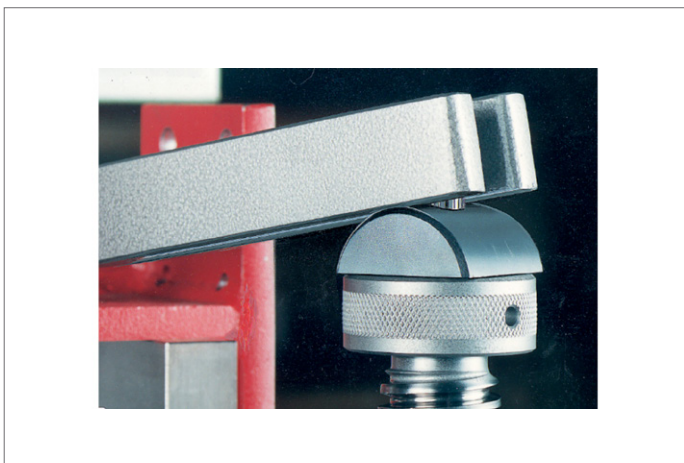
15300.

See technical pages for the table of screw jack suitability.

**Tips**

Can be used with screw jacks 15000 and

Order No.	d <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	Weight g
15070.W0050	12	23	19	8	50	370

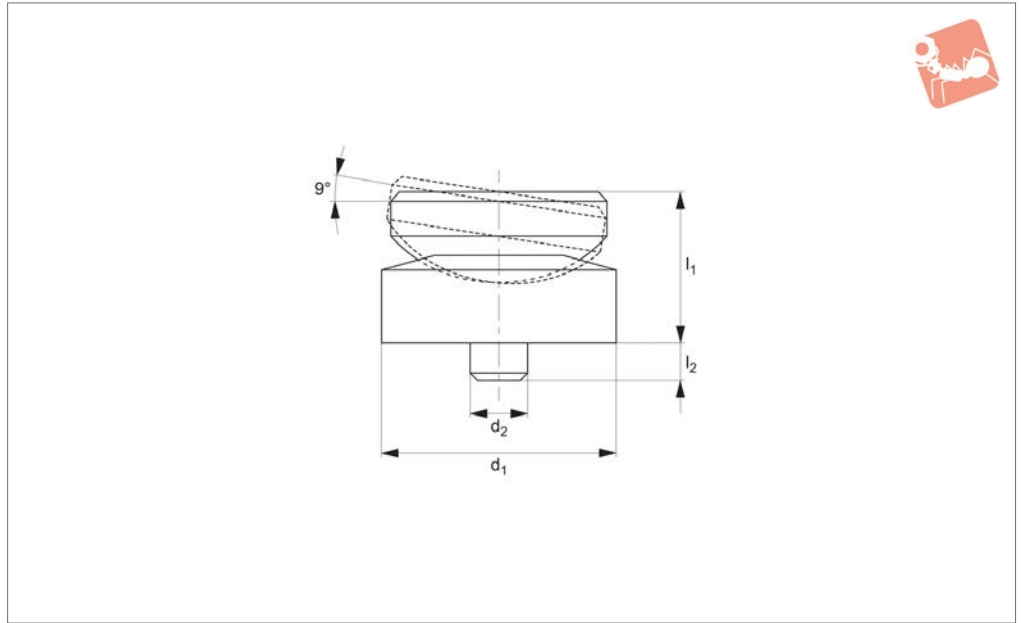




SCREW JACKS



## 15080



### Material

Steel, case-hardened, blackened.

### Technical Notes

These self-aligning pads ensure that the

bearing surfaces between the clamp/work-piece, and the screw jack are correctly aligned.

See technical pages for the table of screw

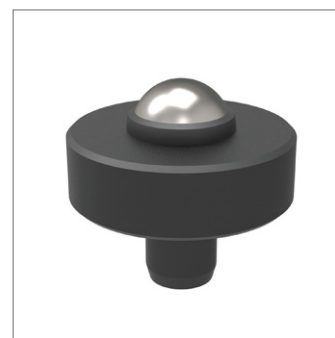
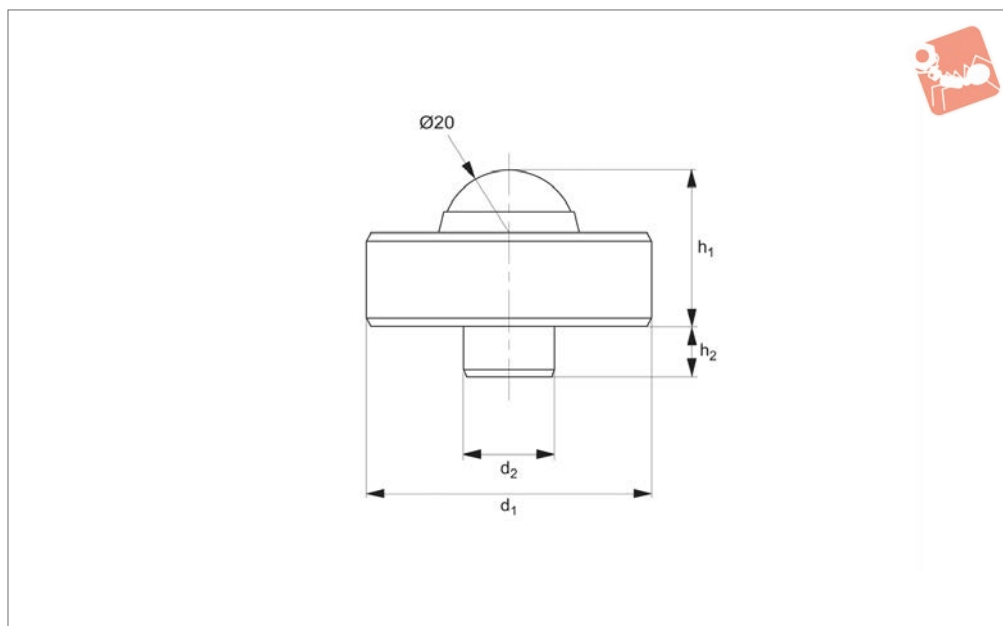
jack suitability.

Order No.	For screw jack	$d_1$	$d_2$	$l_1$	$l_2$	Weight g
15080.W0150	Sizes 52, 70, 100	50	12	32	8	399
15080.W0165	Sizes 140, 210	65	12	35	8	715



# Locating Pad - Pivot Ball for screw jacks

## Screw Jacks



**15090**

SCREW JACKS

### Material

Pad: steel, tempered.  
Ball: steel, hardened.

### Technical Notes

Designed for use with screw jacks and for

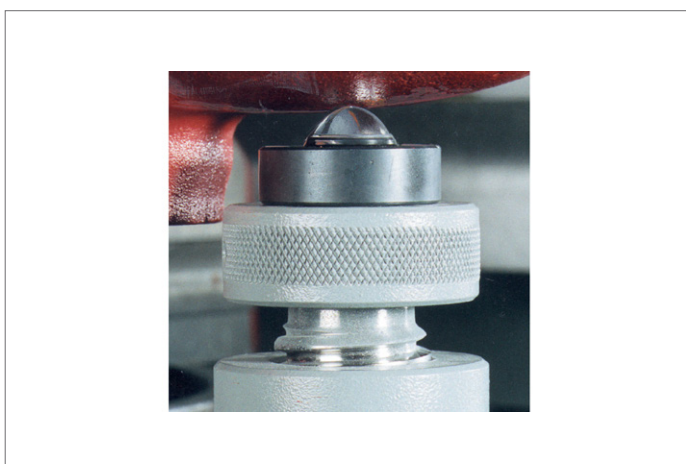
supporting heavy duty cast iron and forged parts.

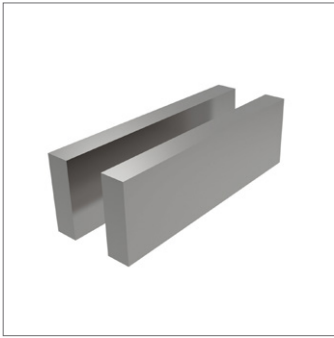
### Tips

The pivot ball minimizes the friction on the support. The use of a point-like support

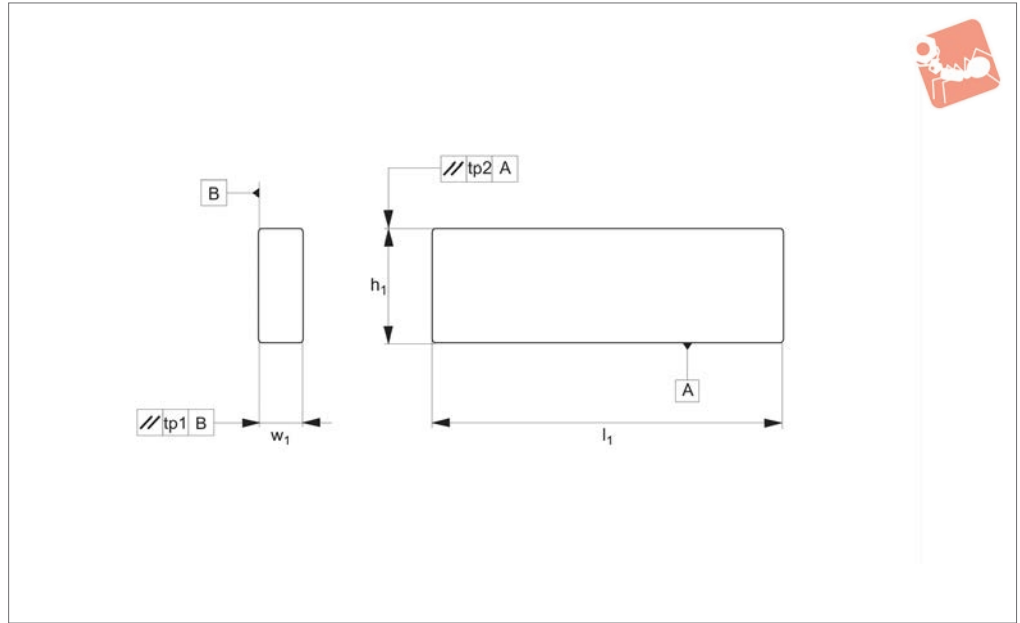
reduces the transmission of the turning force generated by the machine spindle. See technical pages for the table of screw jack suitability.

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	Static load kN max.	Weight g
15090.W0030	45	12	25	8	30	240





## 17100



### Material

Steel, case-hardened and precision ground in pairs.

### Technical Notes

DIN6364 P. Tolerances:  
 $h_1$  (height) pair tolerance  $tp2 =$  to IT5.

$w_1$  (width) pair tolerance  $tp1 =$  to IT5.  
 Other dimensions to ISO 2768m.

Order No.	$h_1$	$l_1$	Pair tolerance $tp1$	$w_1$	Pair tolerance $tp2$	$h_1$	Standard tolerance $h_1$	Standard tolerance $w_1$	$w_1$	Weight/pair g
17100.W0008	8	63	0.004		0.006		$\pm 0,2$	$\pm 0,1$	2.5	20
17100.W0010	10	63	0.005		0.006		$\pm 0,2$	$\pm 0,1$	3.2	30
17100.W0012	12	63	0.005		0.008		$\pm 0,2$	$\pm 0,1$	4.0	45
17100.W0013	12	100	0.005		0.008		$\pm 0,2$	$\pm 0,1$	4.0	75
17100.W0016	16	63	0.005		0.008		$\pm 0,2$	$\pm 0,1$	5.0	80
17100.W0017	16	100	0.005		0.008		$\pm 0,2$	$\pm 0,1$	5.0	125
17100.W0020	20	63	0.006		0.009		$\pm 0,2$	$\pm 0,2$	6.3	125
17100.W0021	20	100	0.006		0.009		$\pm 0,2$	$\pm 0,2$	6.3	200
17100.W0025	25	100	0.006		0.009		$\pm 0,2$	$\pm 0,2$	8.0	315
17100.W0026	25	160	0.006		0.009		$\pm 0,2$	$\pm 0,2$	8.0	500
17100.W0032	32	100	0.006		0.011		$\pm 0,3$	$\pm 0,2$	10.0	500
17100.W0033	32	160	0.006		0.011		$\pm 0,3$	$\pm 0,2$	10.0	800
17100.W0040	40	100	0.008		0.011		$\pm 0,3$	$\pm 0,2$	12.0	750
17100.W0041	40	160	0.008		0.011		$\pm 0,3$	$\pm 0,2$	12.0	1200
17100.W0050	50	160	0.008		0.011		$\pm 0,3$	$\pm 0,2$	16.0	2000
17100.W0063	63	160	0.009		0.013		$\pm 0,3$	$\pm 0,2$	20.0	3170
17100.W0064	63	250	0.009		0.013		$\pm 0,3$	$\pm 0,2$	20.0	4950
17100.W0080	80	250	0.009		0.013		$\pm 0,3$	$\pm 0,2$	25.0	7900
17100.W0100	100	250	0.011		0.015		$\pm 0,3$	$\pm 0,3$	32.0	12680
17100.W0101	100	400	0.011		0.015		$\pm 0,3$	$\pm 0,3$	40.0	25300

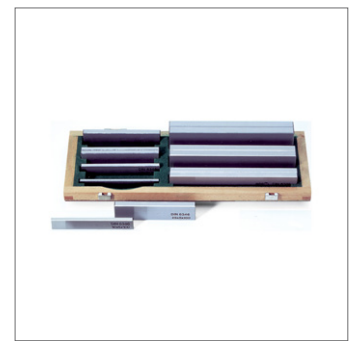
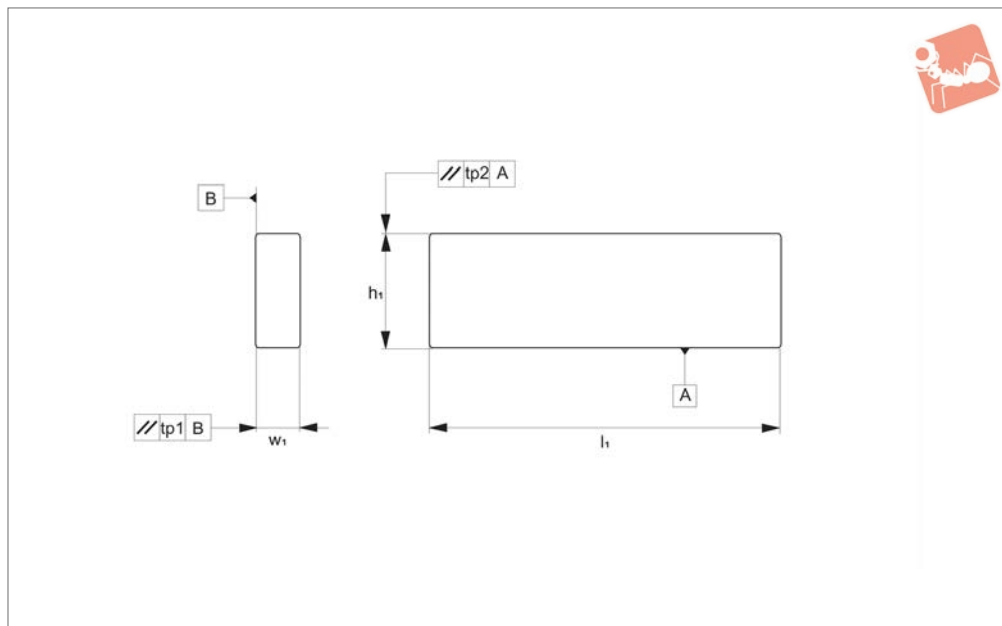




# Set of Parallel Pairs in wooden case



## Supports & Stops



### 17120

SUPPORTS & STOPS

#### Material

Steel, case hardened and precision ground.  
In wooden box with removable lid.

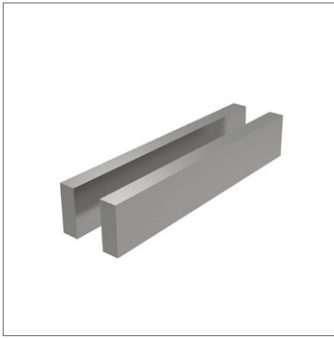
#### Tolerances:

$h_1$  (height) pair tolerance tp2 = to IT5.  
 $w_1$  (width) pair tolerance tp1 = to IT5.  
Other dimensions to ISO 2768m.

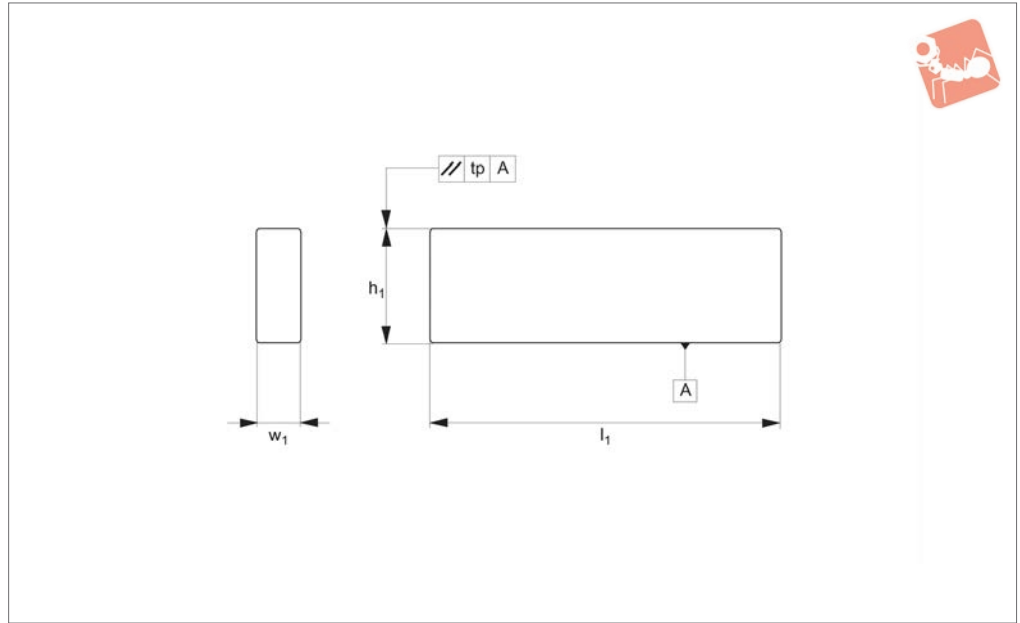
#### Technical Notes

Produced to DIN 6346S.

Order No.	Support height in 1 mm increments	1 pair $l_1 = 250\text{mm}$ $h_1 \times w_1$	1 pair $l_2 = 100\text{mm}$ $h_1 \times w_1$	1 pair $l_2 = 160\text{mm}$ $h_1 \times w_1$	1 pair $l_2 = 63\text{mm}$ $h_1 \times w_1$	Wooden box $l_1 \times h_1 \times w_1$	Weight g
17120.W0025	2,5-25		12x4,0		8x2,5	200x100x36	1300
			16x5,0		10x3,2		
			20x6,3		12x4,0		
			25x8,0		16x5,0		
					20x6,3		
17120.W0040	4,0-40		12x4,0		25x8,0	305x115x50	3800
			16x5,0		32x10,0		
			20x6,3		40x12,0		
			25x8,0				
17120.W0063	8,0-63		25x8,0		50x16,0	305x115x70	7400
			32x10,0		63x20,0		
			40x12,0				
17120.W0100	20,0-100	63x20				280x215x125	27100
		80x25					
		100x32					
17120.W0532	4,0-32		12x4,0			132x145x50	1500
			16x5,0				
			20x6,3				
			25x8,0				
			32x10,0				
17120.W0550	8,0-50				25x8,0	192x158x75	4900
					32x10,0		
					40x12,0		
					50x16,0		



## 17200



### Material

Steel, case-hardened and ground in pairs.

### Technical Notes

Tolerances - high precision level:

$h_1$  (height) pair tolerance  $tp = \pm 0,004\text{mm}$ .

$h_1$  (height) standard (single)  $tp = \pm 0,004\text{mm}$ .

Other dimensions to DIN ISO 2768m.

Tolerances - standard level:

$h_1$  (height) pair tolerance  $tp = \pm 0,01\text{mm}$ .

$h_1$  (height) standard (single)  $tp = \text{ISO 2768m}$ .

Tolerances - precision level:

$h_1$  (height) pair tolerance  $tp = \pm 0,01\text{mm}$ .

$h_1$  (height) standard (single)  $tp = \pm 0,01\text{mm}$ .

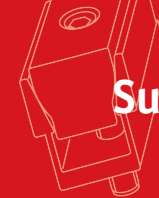
Other dimensions to DIN ISO 2768m.

Order No.	$h_1$ - Pair tolerance $tp$	$h_1$ - Standard tolerance $tp$	$h_1 \times w_1 \times l_1$	Precision level	Weight/pair g
17200.W0014	0.004	$\pm 0,004$	14x10x150	Super High	330
17200.W0016	0.004	$\pm 0,004$	16x10x150	Super High	380
17200.W0018	0.004	$\pm 0,004$	18x10x150	Super High	420
17200.W0020	0.004	$\pm 0,004$	20x10x150	Super High	470
17200.W0022	0.004	$\pm 0,004$	22x10x150	Super High	520
17200.W0024	0.004	$\pm 0,004$	24x10x150	Super High	570
17200.W0026	0.004	$\pm 0,004$	26x10x150	Super High	610
17200.W0028	0.004	$\pm 0,004$	28x10x150	Super High	660
17200.W0030	0.004	$\pm 0,004$	30x10x150	Super High	710
17200.W0032	0.004	$\pm 0,004$	32x10x150	Super High	750
17200.W0035	0.004	$\pm 0,004$	35x10x150	Super High	830
17200.W0040	0.004	$\pm 0,004$	40x10x150	Super High	940
17200.W0045	0.004	$\pm 0,004$	45x10x150	Super High	1060
17200.W0050	0.004	$\pm 0,004$	50x10x150	Super High	1180
17200.W0114	0.01	$\pm 0,01$	14x10x150	Precision	330
17200.W0116	0.01	$\pm 0,01$	16x10x150	Precision	380
17200.W0118	0.01	$\pm 0,01$	18x10x150	Precision	420
17200.W0120	0.01	$\pm 0,01$	20x10x150	Precision	470
17200.W0122	0.01	$\pm 0,01$	22x10x150	Precision	520
17200.W0124	0.01	$\pm 0,01$	24x10x150	Precision	570
17200.W0126	0.01	$\pm 0,01$	26x10x150	Precision	610
17200.W0128	0.01	$\pm 0,01$	28x10x150	Precision	660
17200.W0130	0.01	$\pm 0,01$	30x10x150	Precision	710
17200.W0132	0.01	$\pm 0,01$	32x10x150	Precision	750
17200.W0135	0.01	$\pm 0,01$	35x10x150	Precision	830
17200.W0140	0.01	$\pm 0,01$	40x10x150	Precision	940
17200.W0145	0.01	$\pm 0,01$	45x10x150	Precision	1060
17200.W0150	0.01	$\pm 0,01$	50x10x150	Precision	1180
17200.W0214	0.01	2768-m	14x10x150	Standard	330
17200.W0216	0.01	2768-m	16x10x150	Standard	380



## Parallel Supports - Pairs

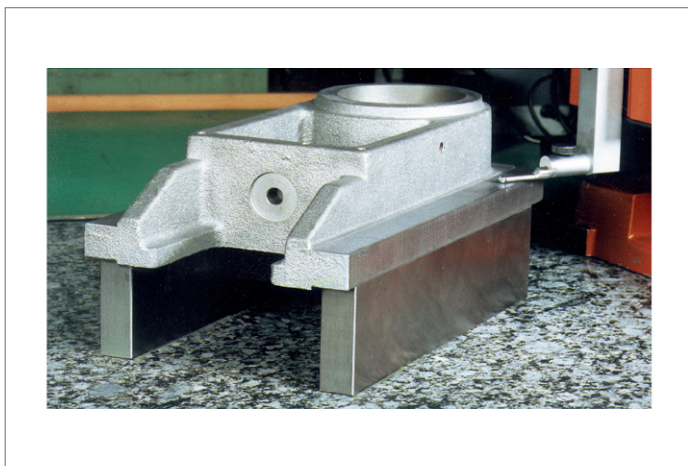
high, standard and precision



## Supports & Stops

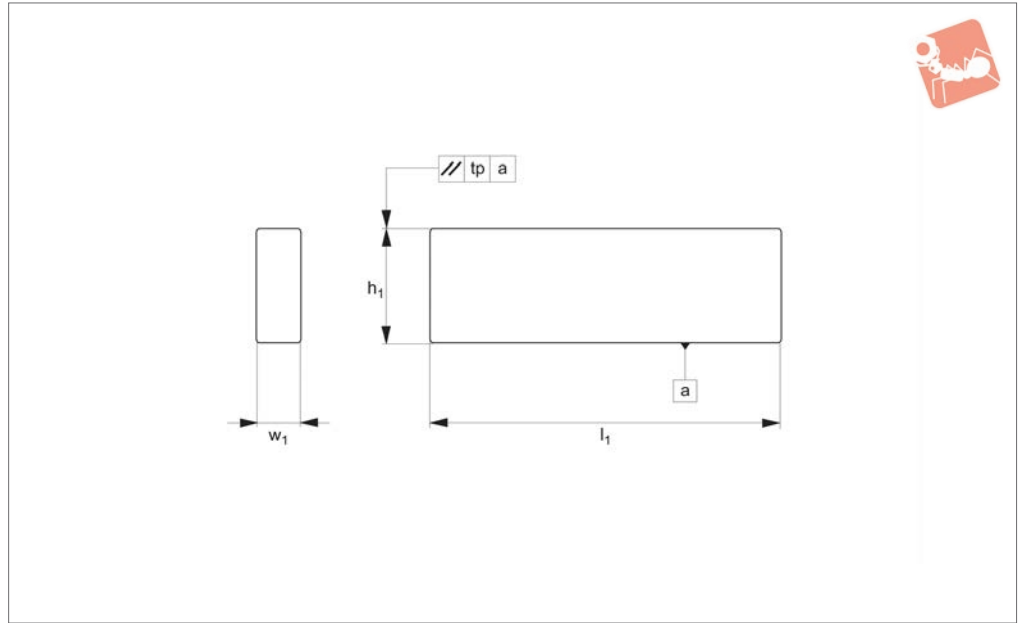
Order No.	$h_1$ - Pair tolerance tp	$h_1$ - Standard tolerance tp	$h_1 \times w_1 \times l_1$	Precision level	Weight/pair g
17200.W0218	0.01	2768-m	18x10x150	Standard	420
17200.W0220	0.01	2768-m	20x10x150	Standard	470
17200.W0222	0.01	2768-m	22x10x150	Standard	520
17200.W0224	0.01	2768-m	24x10x150	Standard	570
17200.W0226	0.01	2768-m	26x10x150	Standard	610
17200.W0228	0.01	2768-m	28x10x150	Standard	660
17200.W0230	0.01	2768-m	30x10x150	Standard	710
17200.W0232	0.01	2768-m	32x10x150	Standard	750
17200.W0235	0.01	2768-m	35x10x150	Standard	830
17200.W0240	0.01	2768-m	40x10x150	Standard	940
17200.W0245	0.01	2768-m	45x10x150	Standard	1060
17200.W0250	0.01	2768-m	50x10x150	Standard	1180

SUPPORTS & STOPS





## 17211



### Material

Steel, case-hardened and finely ground in pairs.

### Technical Notes

Machined in parallel and square. Set incre-

ments are 1mm.

**Super high precision version. For standard precision model, (see part no 17200 for full tolerances).**

Tolerances:

$h_1$  (height) pair tolerance  $tp =$  to IT5.

$h_1$  (height) and  $w_1$  (width) standard (single) tolerance  $\pm 0,01$ mm.

All other dimensions to DIN ISO 2768m.

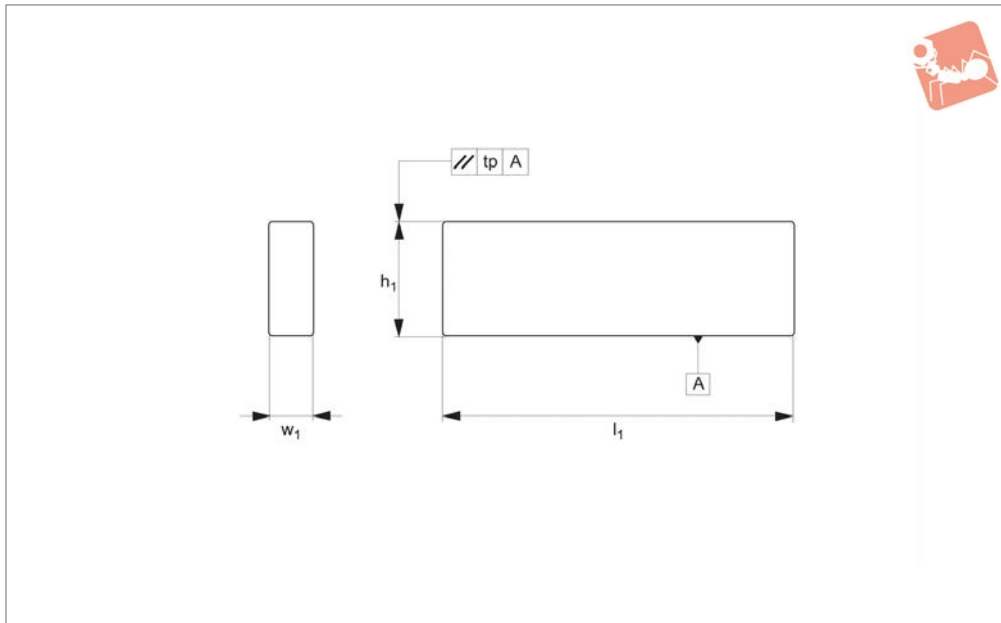
Order No.	Contents (1 pair each) $w_1 \times h_1 \times l_1$	Support height in 1 mm increments	Tolerance $h_1$ and $w_1$ mm	Weight g
17211.W0001	2x5x100 2x10x100	2-24	$\pm 0,01$	2200
	2x15x100 2x20x100			
	3x6x100 3x11x100			
	3x16x100 3x21x100			
	4x7x100 4x12x100			
17211.W0002	8x11x125 8x16x125	8-42	$\pm 0,01$	14000
	8x21x125 8x26x125			
	8x31x125 8x36x125			
	10x13x125 10x18x125			
	10x23x125 10x28x125			
17211.W0003	8x11x150 8x16x150	8-42	$\pm 0,01$	17000
	8x21x150 8x26x150			
	8x31x150 8x36x150			
	10x13x150 10x18x150			
	10x23x150 10x28x150			



# Parallel Support Pairs - Set standard precision - in wooden stand



## Supports & Stops



**17212**

SUPPORTS & STOPS

### Material

Steel, case hardened and finely ground in pairs.

### Technical Notes

Machined in parallel and square. Set incre-

ments are 1mm.

**Standard precision version (see part no. 17200 for full tolerances). For high precision model, see parts 17211.**

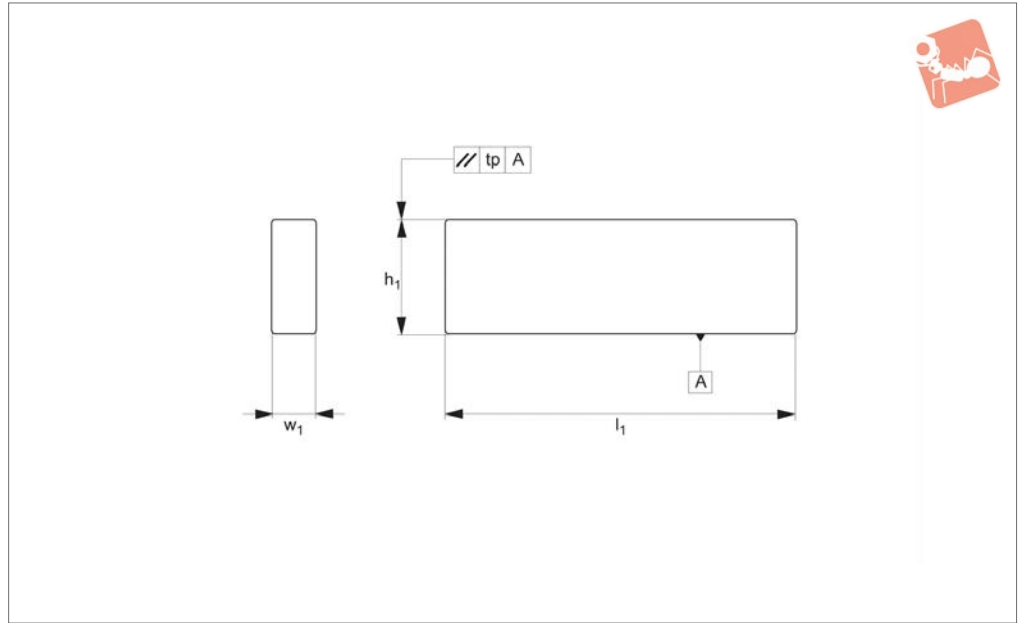
Tolerances:

$h_1$  (height) pair tolerance  $tp =$  to ITS.  
 $h_1$  (height) and  $w_1$  (width) standard (single) tolerance to DIN ISO 2768m.  
 All other dimensions to DIN ISO 2768m.

Order No.	Contents (1 pair each) $w_1 \times h_1 \times l_1$	Support height in 1 mm increments	Weight g
<b>17212.W0201</b>	2x5x100 2x10x100	2-24	2200
	2x15x100 2x20x100		
	3x6x100 3x11x100		
	3x16x100 3x21x100		
	4x7x100 4x12x100		
<b>17212.W0202</b>	8x11x125 8x16x125	8-42	14000
	8x21x125 8x26x125		
	8x31x125 8x36x125		
	10x13x125 10x18x125		
	10x23x125 10x28x125		
<b>17212.W0203</b>	8x11x150 8x16x150	8-42	17000
	8x21x150 8x26x150		
	8x31x150 8x36x150		
	10x13x150 10x18x150		
	10x23x150 10x28x150		



## 17220



### Material

Steel, ground and case-hardened.  
In wooden box with removable lid.

### Technical Notes

Dimensions  $w_1$  and  $l_1$  to ISO 2768 medium.

Tolerances - 17220.W0001 (super high precision).

$h_1$  (height) pair tolerance  $tp = 0,004\text{mm}$ .

$h_1$  (height) standard tolerance  $tp = \pm 0,004\text{mm}$ .

Other dimensions to DIN ISO 2768m.

Tolerances - 17220.W0000 (standard precision).

$h_1$  (height) pair tolerance  $tp = 0,010\text{mm}$ .

$h_1$  (height) standard tolerance  $tp = \pm 0,004\text{mm}$ .

### Tips

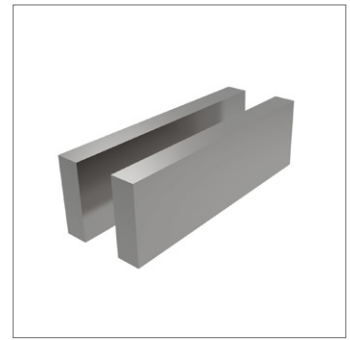
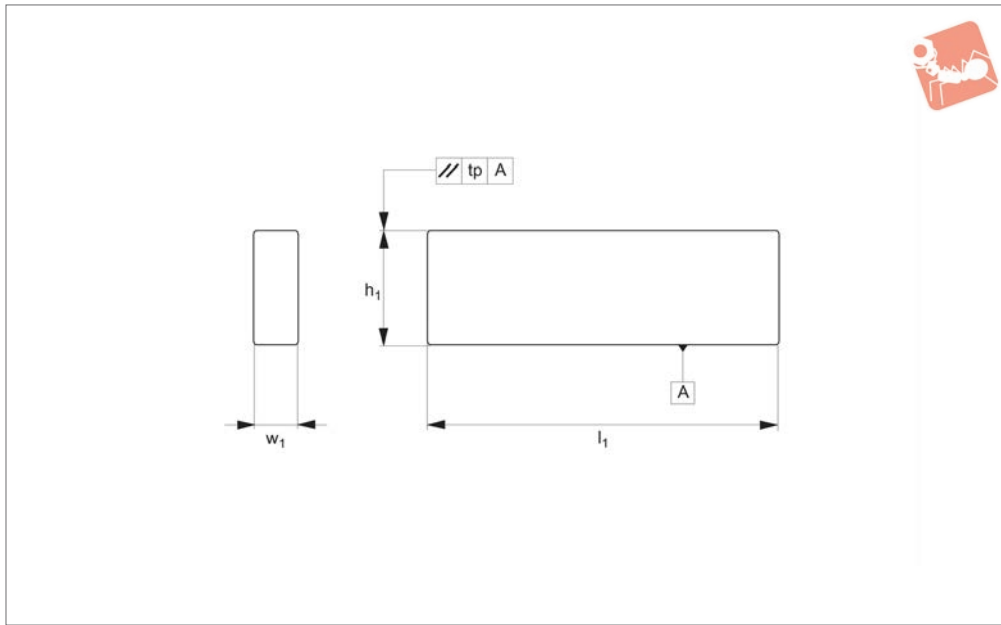
Indispensable for parallel support of components in vices and plates. Their high

degree of accuracy allows the combination of sizes.

Part no. 17220.W0000 is exactly the same as 17220.W0001, but is a lower cost, and lower toleranced set.

**Matched sets can be supplied on request for an extra charge.**

Order No.	Contents (pairs) $h_1 \times w_1 \times l_1$	$h_1$ Standard tolerance	$h_1$ - Pair tolerance $tp$	Weight g
17220.W0001	14x10x150	$\pm 0,004$	$\pm 0,004$	10900
	16x10x150			
	18x10x150			
	20x10x150			
	22x10x150			
17220.W0000	as per 17220.W0001 but with lower tolerances	$\pm 0,2$ (to 30mm) $\pm 0,3$ (>30mm)	$\pm 0,010$	10600



## 17320

SUPPORTS & STOPS

### Material

Steel, case-hardened and finely ground in pairs.

### Technical Notes

The thickness of these parallels matches the slot width on machine tables (tolerance H8).

range H8).

Tolerances:

$h_1$  (height) pair tolerance  $tp = IT5$ .

$h_1$  (height) standard (single) tolerance to DIN ISO 2768m.

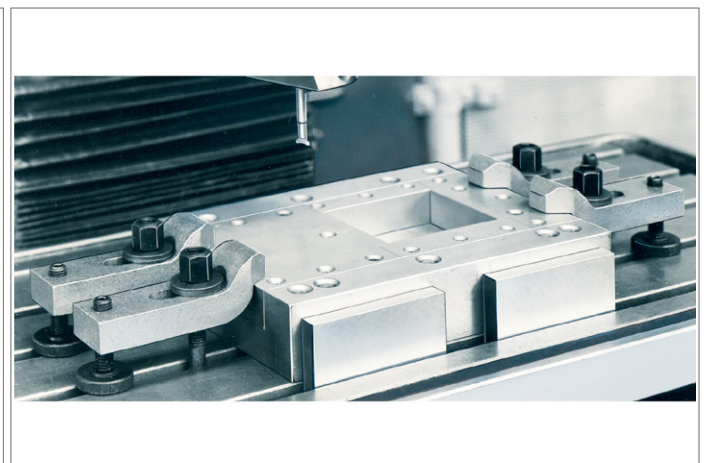
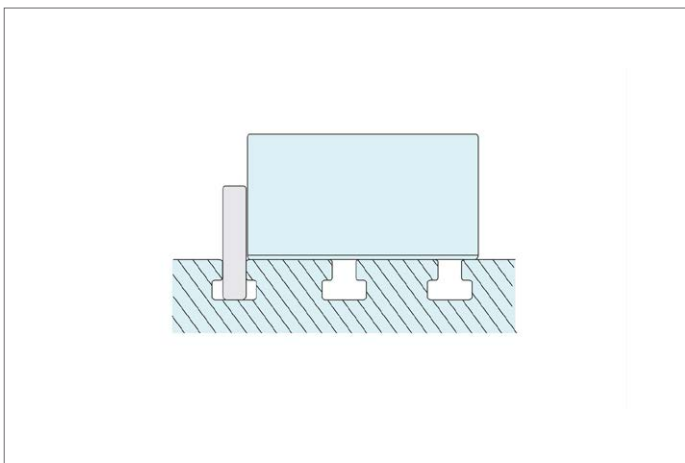
$w_1$  (width) standard (single) tolerance = h7

Other dimensions to DIN ISO 2768m.

### Tips

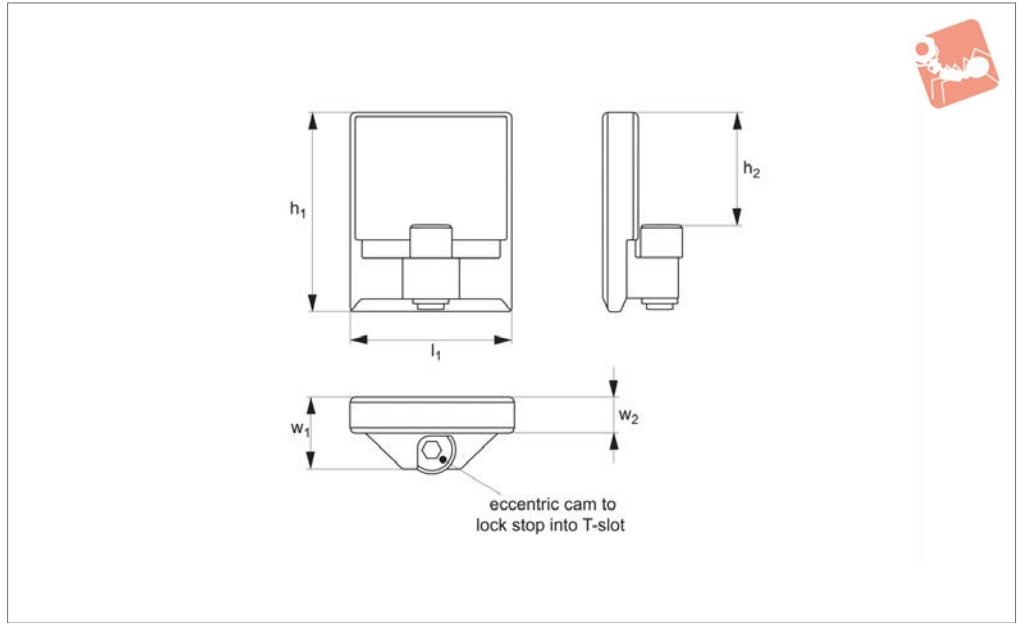
Ideally used for stops on small and medium machines. They allow rapid alignment of the workpiece to the table.

Order No.	$h_1$	$l_1$	Pair tolerance $h_1$ tp	Standard tolerance $h_1$ DIN 7168m	$w_1$	$w_1$ tol. h7	Weight/pair g
17320.W0008	25	100	0.009	$\pm 0,2$	8	-0.015	315
17320.W0010	32	100	0.011	$\pm 0,3$	10	-0.015	500
17320.W0012	40	100	0.011	$\pm 0,3$	12	-0.018	750
17320.W0014	50	100	0.011	$\pm 0,3$	14	-0.018	1100
17320.W0016	50	160	0.011	$\pm 0,3$	16	-0.018	2000
17320.W0018	63	160	0.013	$\pm 0,3$	18	-0.018	2850
17320.W0020	63	160	0.013	$\pm 0,3$	20	-0.021	3170
17320.W0022	80	160	0.013	$\pm 0,3$	22	-0.021	4400
17320.W0024	80	160	0.013	$\pm 0,3$	24	-0.021	4800
17320.W0028	100	160	0.015	$\pm 0,3$	28	-0.021	7000





**17400**



**Material**

Steel, ground and hardened.

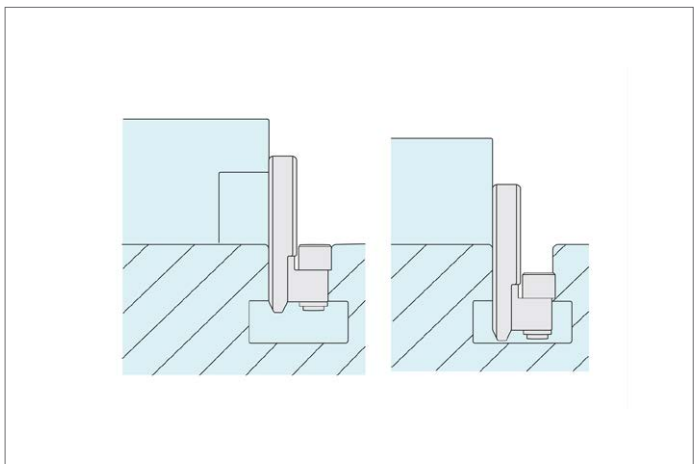
For machine T-slots from 12mm to 22mm.

Position stop in machine slot, actuate the eccentric cam to lock in place.

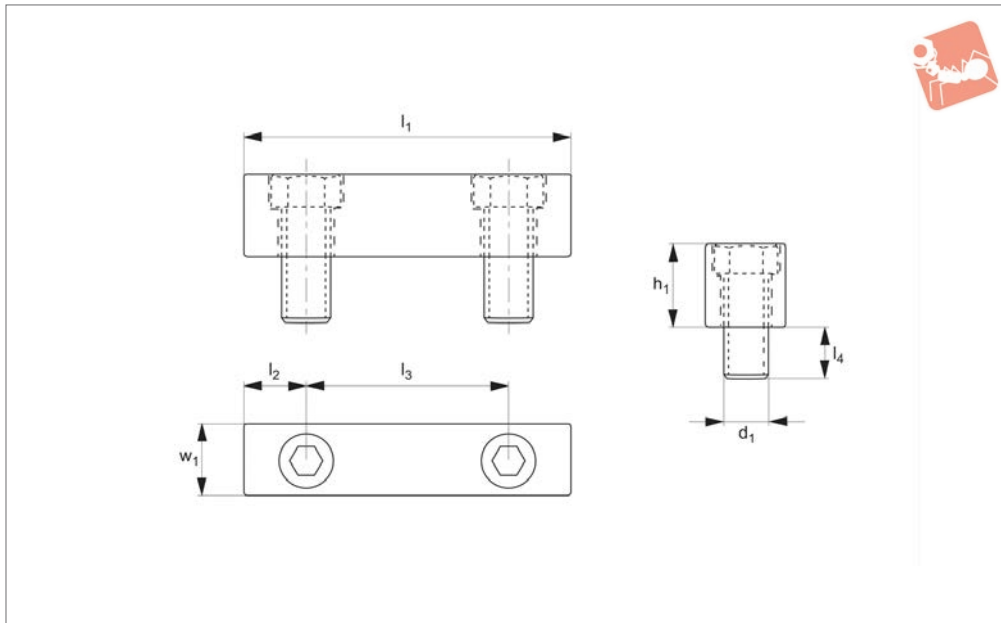
**Technical Notes**

Compact, strong and easily removable.

Order No.	w <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	Slot size w <sub>1</sub>
17400.W0020	6.0	33	17	25	12
17400.W0025	6.0	36	20	30	14
17400.W0030	8.0	40	20	30	16
17400.W0035	9.8	40	21	40	18
17400.W0045	12.0	55	27	50	22







**17403**

SUPPORTS & STOPS

### Material

Low carbon steel, precision ground square. Mounting screws included.

### Technical Notes

The locating rails can be machined and are ideal for using with our machinable

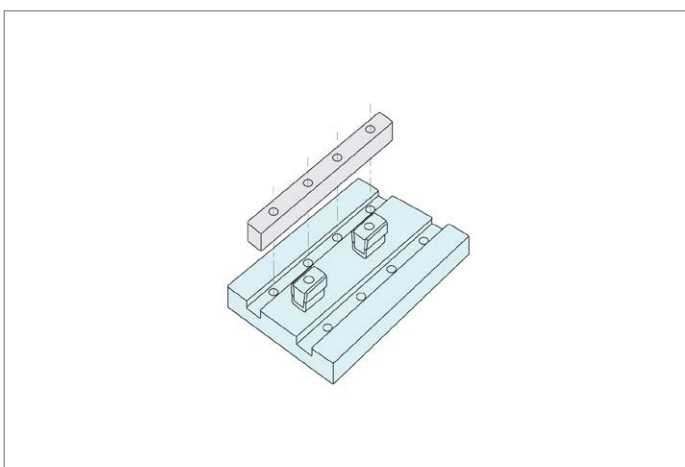
clamps.

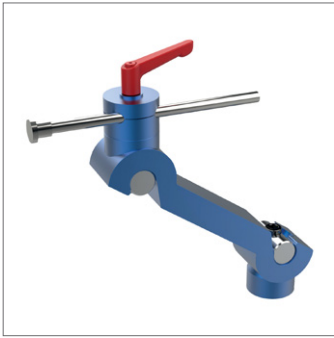
### Important Notes

1. Mill a slot to locate the rail. Depth of slot will determine rail height.
2. Drill and tap the required holes.
3. For better rigidity the rail should be

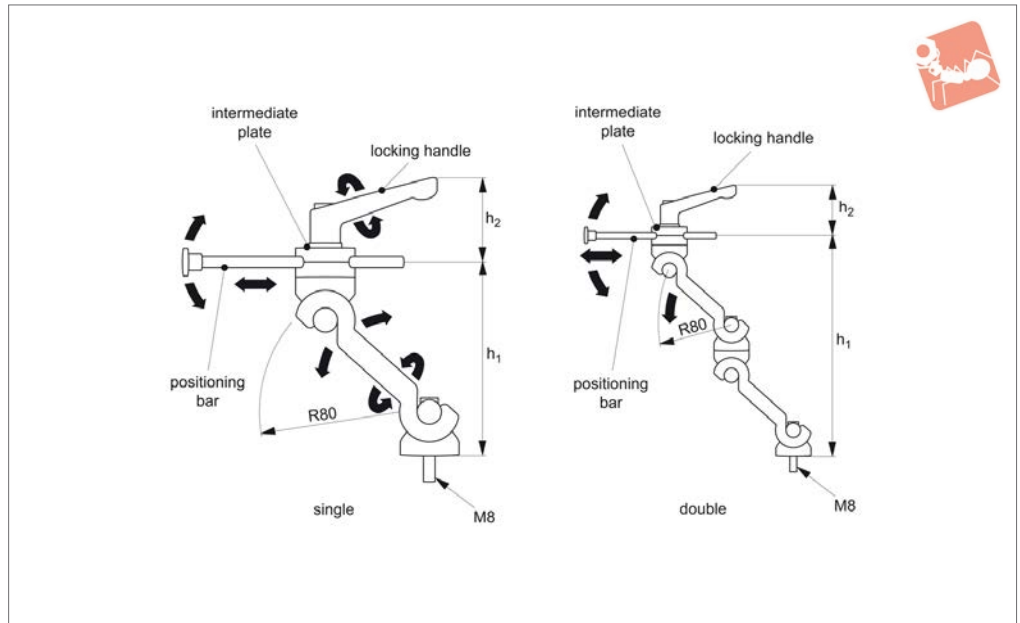
pinned to the fixture plate with dowel pins. 4. If rails are to be machined to hold round pieces, the clamps should be mounted and both rail and clamps machined at the same time.

Order No.	$w_1$ +0.00 -0.01	$d_1$	$h_1$	$l_1$	$l_2$	$l_3$	$l_4$	No. of holes	Weight g
17403.W0200	15	M 6	12	50	15	20	11	2	68.0
17403.W0210	15	M 6	12	100	20	30	11	3	140.6
17403.W0220	15	M 6	12	150	30	30	11	4	208.7
17403.W0240	15	M 6	12	250	25	50	11	5	353.8
17403.W0260	24	M10	18	75	20	35	18	2	258.5
17403.W0280	24	M10	18	150	30	30	18	4	512.6
17403.W0300	24	M10	18	250	25	50	18	5	848.2





**17405**

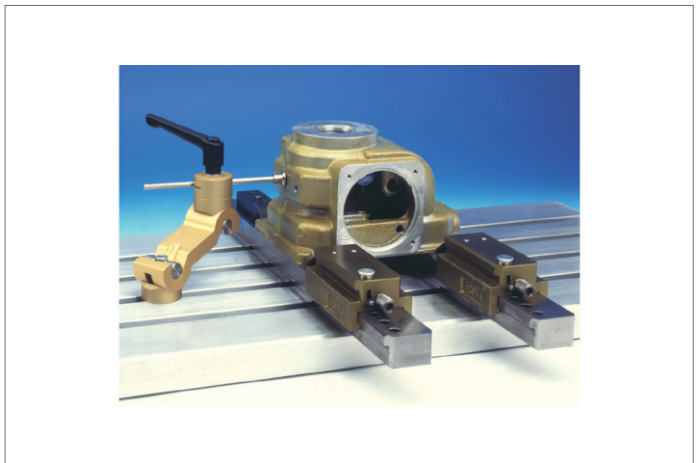
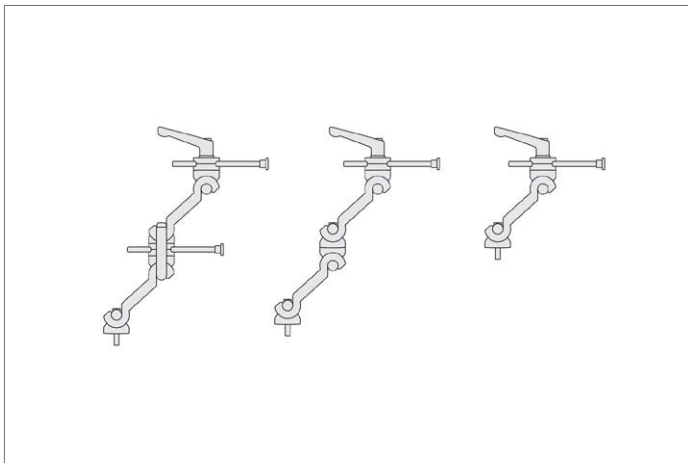


### Technical Notes

Three dimensional, fully adjustable end stops for milling machines, and vices.

Can also be used as a support to minimise work-piece vibration.

Order No.	Bar dia.	Height adj. min.   max.	$h_1$	$h_2$	Type
17405.W0420	6x150	0-150	145	60	Single
17405.W0430	6x150	0-300	300	60	Double
17405.W0710	-	-	-	-	Intermediate Plate
17405.W0720	-	-	-	-	Locking Handle

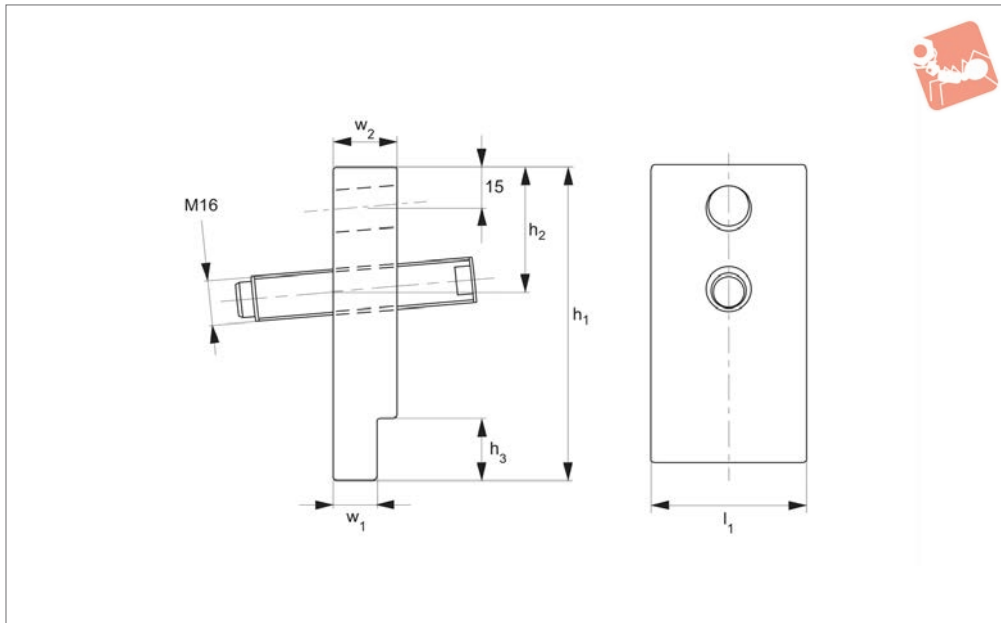




# Heavy Duty Side Stop adjustable



## Supports & Stops



### 17420

SUPPORTS & STOPS

#### Material

Steel, tempered, with two threaded holes M16, and adjustable set screw M16x80.

on slotted tables. The side stop slips into the T-slot and locks when the adjusting bolt comes into contact with the workpiece.

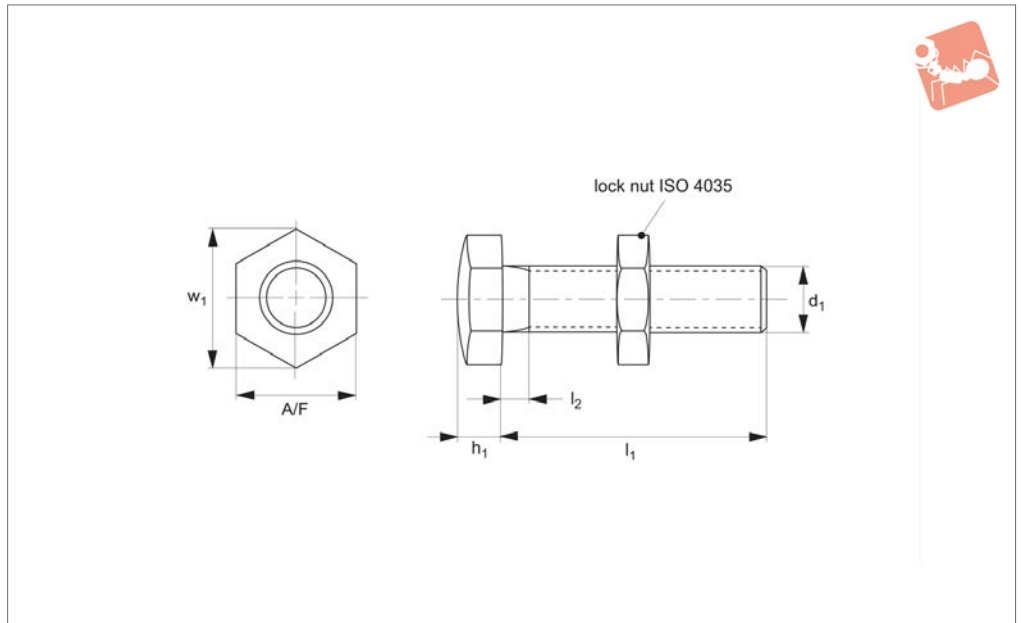
#### Technical Notes

Used to position long or heavy workpieces

Order No.	w <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	Slot w <sub>1</sub>	Weight g
17420.W0018	20	100	40	20	50	18	805
17420.W0020	25	125	40	30	80	20	1880
17420.W0022	25	125	40	30	80	22	1920
17420.W0024	32	150	65	40	100	24	3515
17420.W0028	32	150	65	40	100	28	3645
17420.W0036	40	160	65	50	120	36	4870



## 18300



SUPPORTS & STOPS

### Material

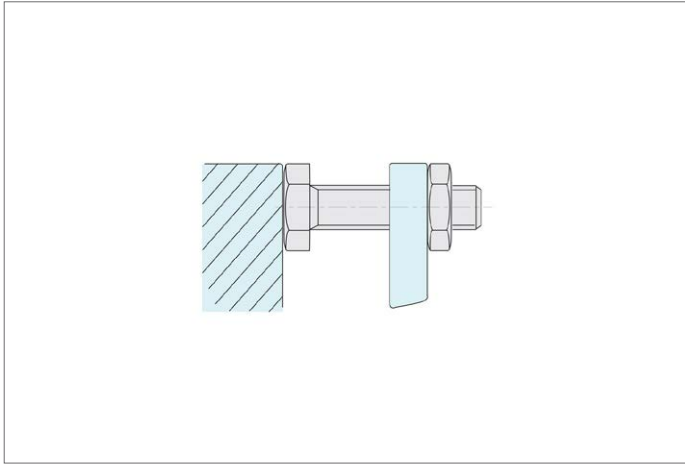
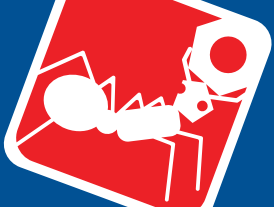
Bolt: steel, blackened and with a hardened head. Tensile strength 500N/mm<sup>2</sup>.

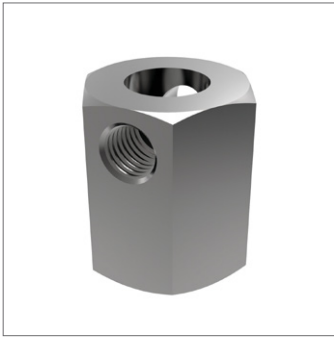
and rounded head which can be used as support or setting bolt as an end stop. These bolts are normally used together with a locknut.

### Technical Notes

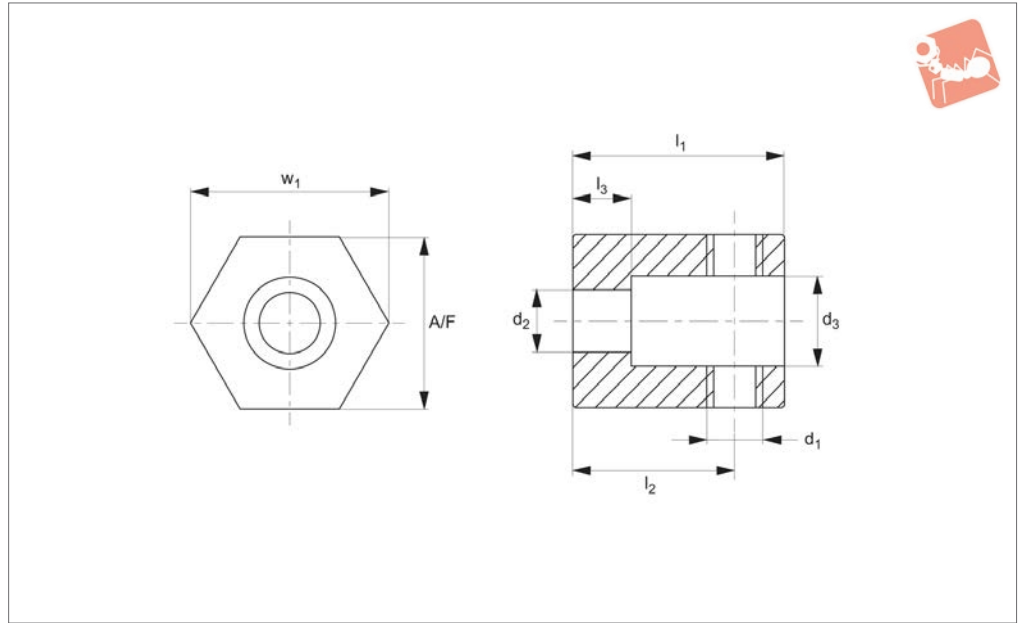
Setting bolts are produced with a hardened

Order No.	d <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	h <sub>1</sub>	w <sub>1</sub>	A/F
18300.W0031	M 3	10	2	2.0	6.4	5.5
18300.W0032	M 3	20	2	2.0	6.4	5.5
18300.W0033	M 3	30	2	2.0	6.4	5.5
18300.W0041	M 4	10	2	2.8	8.1	7.0
18300.W0042	M 4	20	2	2.8	8.1	7.0
18300.W0043	M 4	30	2	2.8	8.1	7.0
18300.W0051	M 5	20	2	3.5	9.2	8.0
18300.W0052	M 5	30	2	3.5	9.2	8.0
18300.W0053	M 5	40	2	3.5	9.2	8.0
18300.W0061	M 6	30	3	4.0	11.5	10.0
18300.W0062	M 6	40	3	4.0	11.5	10.0
18300.W0063	M 6	50	3	4.0	11.5	10.0
18300.W0081	M 8	30	4	5.5	15.0	13.0
18300.W0082	M 8	40	4	5.5	15.0	13.0
18300.W0083	M 8	50	4	5.5	15.0	13.0
18300.W0101	M10	40	5	7.0	19.6	17.0
18300.W0102	M10	50	5	7.0	19.6	17.0
18300.W0103	M10	60	5	7.0	19.6	17.0
18300.W0104	M10	70	5	7.0	19.6	17.0
18300.W0121	M12	40	5	8.0	21.9	19.0
18300.W0122	M12	50	5	8.0	21.9	19.0
18300.W0123	M12	60	5	8.0	21.9	19.0
18300.W0124	M12	70	5	8.0	21.9	19.0
18300.W0161	M16	50	6	10.0	27.7	24.0
18300.W0162	M16	60	6	10.0	27.7	24.0
18300.W0163	M16	70	6	10.0	27.7	24.0
18300.W0164	M16	80	6	10.0	27.7	24.0





**30400**



**Material**

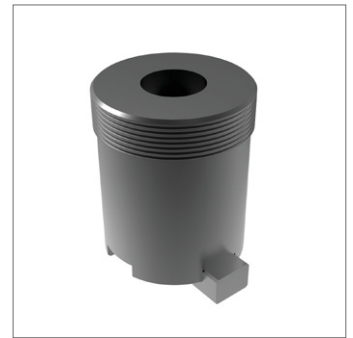
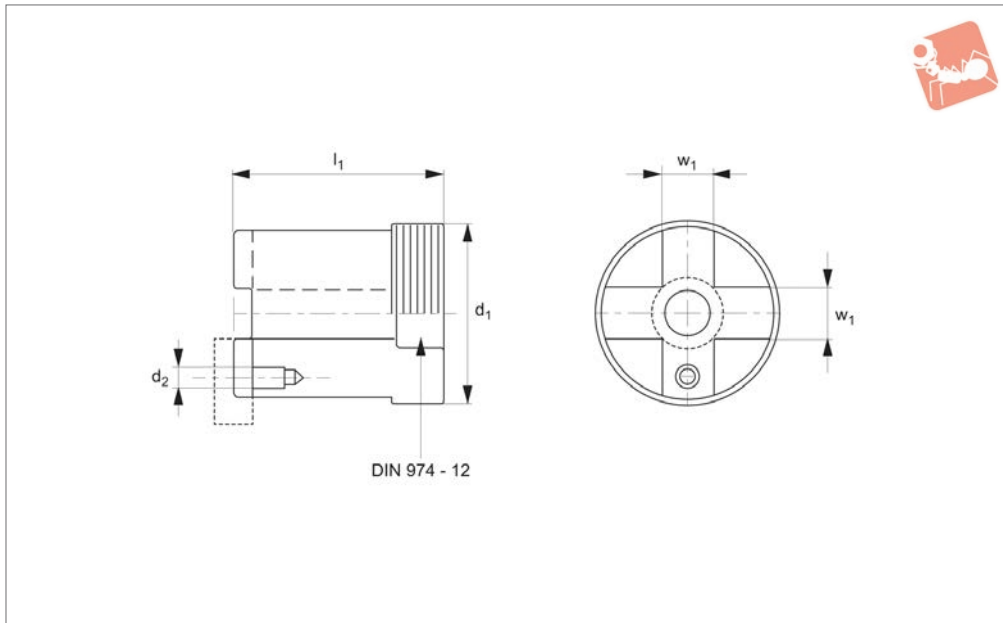
Steel, heat-treated, blackened.

34500 and thrust pads no. 34520 - used as adjustable stops.

**Technical Notes**

Used in conjunction with grub screws no.

Order No.	w <sub>1</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	A/F	Weight g
30400.W0045	25.4	M 8	8.4	14	26	20	8	22	55
30400.W0145	40.0	M12	13.0	19	44	34	12	36	280



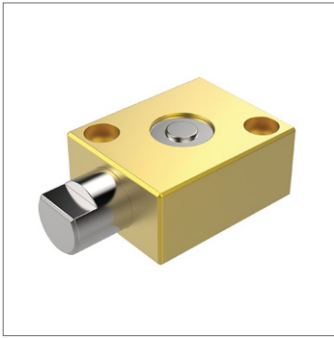
### 30420

SUPPORTS & STOPS

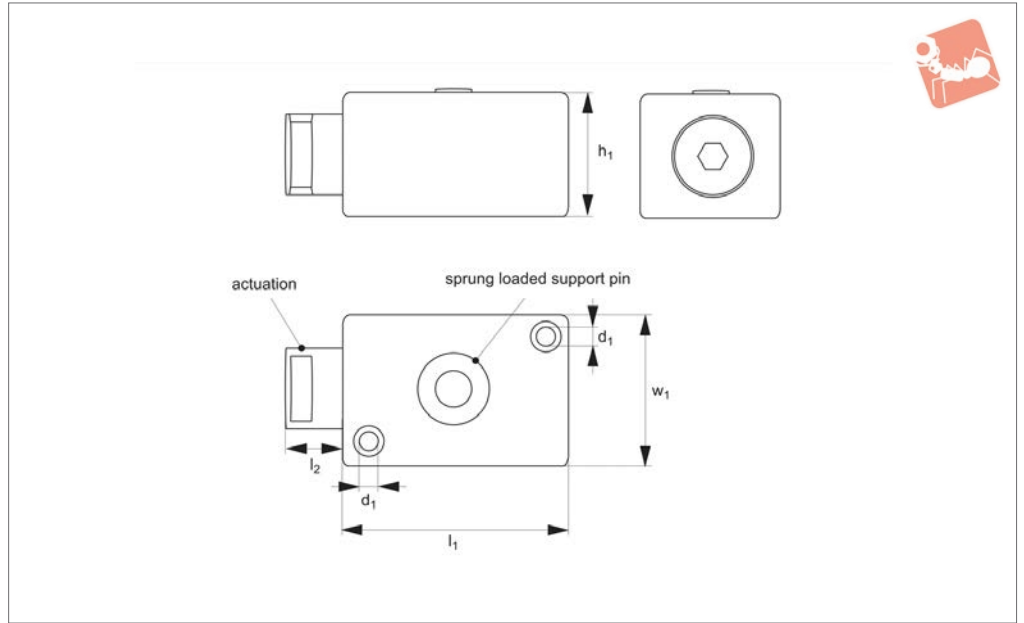
#### Material

Steel, case-hardened and ground.

Order No.	$w_1$ tol. H7	$d_1$ $\pm 0.01$	$d_2$	$l_1$	Weight g
30420.W0050	14	50	M 6	60	750



**11090**

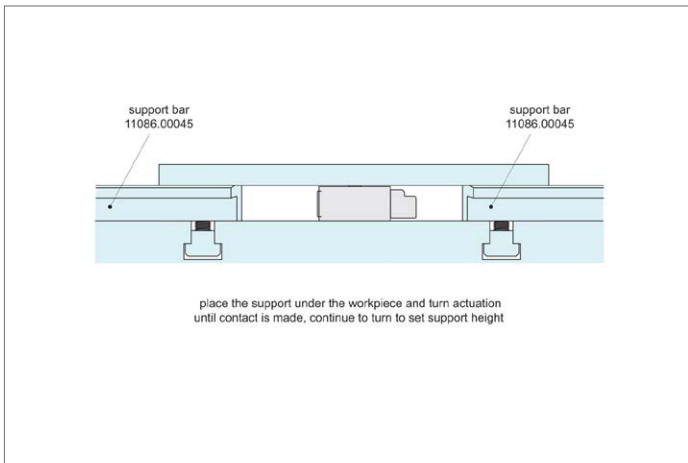


**Tips**  
Eliminates workpiece chatter and vibration during machining.

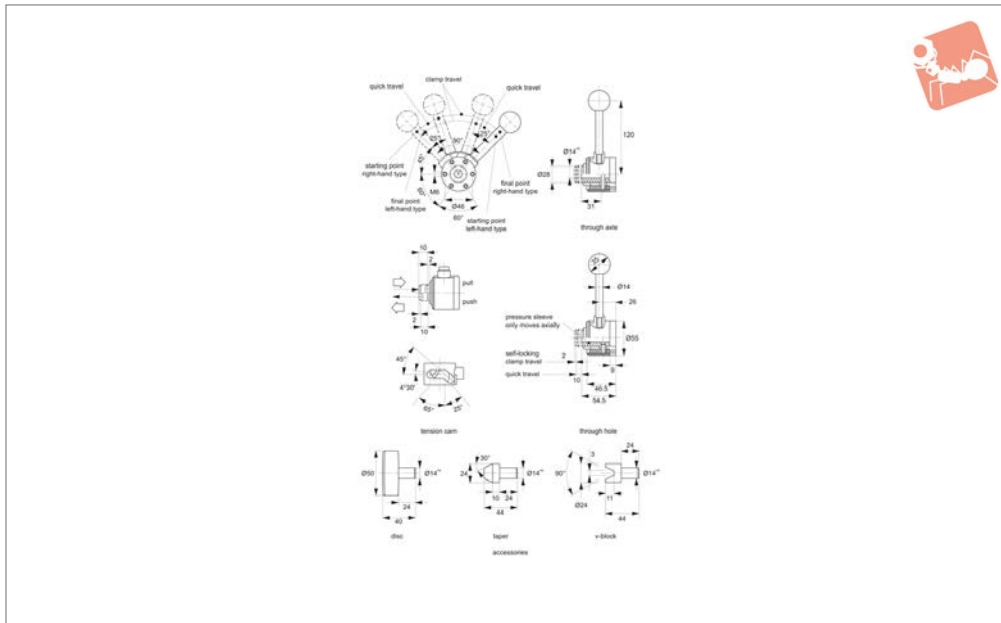
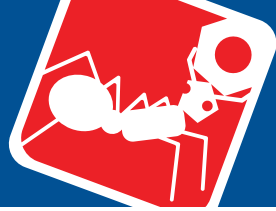
Easy to actuate; locate and fix beneath workpiece, turn actuation handle and sprung loaded support pin will come into

contact with workpiece. Lock handle to set support.

Order No.	Support height	$w_1$	$d_1$	$l_1$	$l_2$
11090.W0060	28	45	6	56	20







# 12540

SUPPORTS & STOPS

### Material

Individual parts: steel, blackened.  
 Ball knob: duroplast (PF 31) DIN 7708, red.  
 Housing: thermoplastic, black.  
 Additional parts: steel, blackened.

### Technical Notes

Travel path/movement of approach 10mm, during which no clamping takes place.  
 Within the quick clamp travel of 2mm, self-

locking occurs in any position. Maximum clamping force allowed 4,9 kN.

### Through Axle Type:

Due to the cam axle running across the diameter of the pressure sleeve, depth of the pressure sleeve is limited to 31mm.

### Through Hole Type:

Depth of the pressure sleeve is not limited and is equal to equal to 45,5mm. Moun-

ting: via six M 6 x 9 threaded holes on its base.

### Tips

A compact clamping element for pull and push clamping which can be actuated by turning the tension cam.

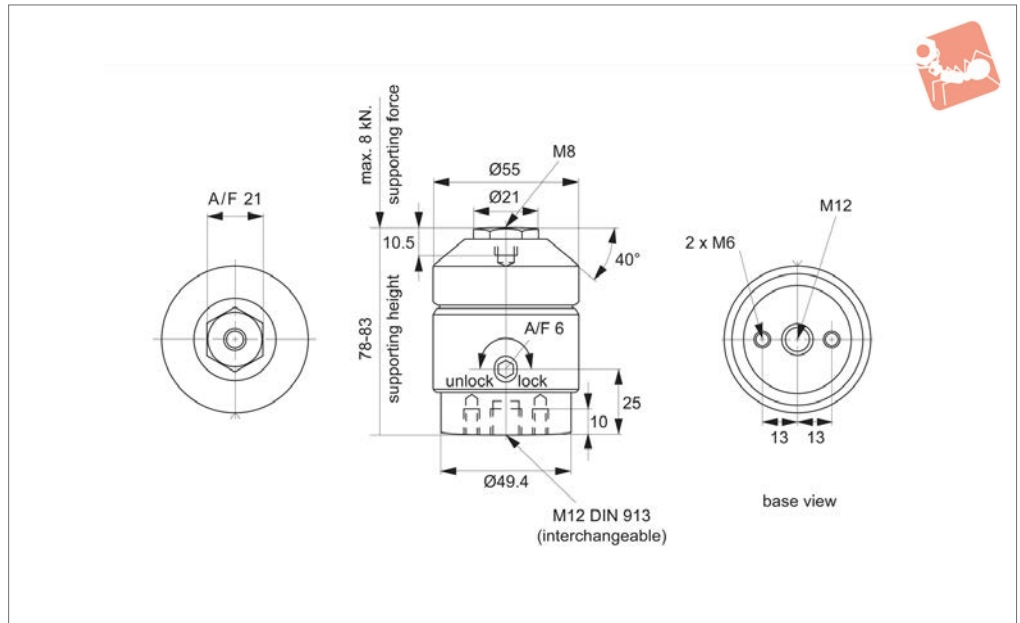
Used with:

12540.W0042 - W0046 Clamping devices.

Order No.	Type	Description	Clamping force kN max.	Weight g
12540.W0002	Through axle	Right push/left pull	4.9	751
12540.W0004	Through axle	Left push/right pull	4.9	749
12540.W0012	Through axle	Right push/left pull	4.9	745
12540.W0014	Through axle	Left push/right pull	4.9	750
12540.W0042	Accessories	Disc	-	270
12540.W0044	Accessories	Taper	-	85
12540.W0046	Accessories	Vee-block	-	82



**12680**



### Material

Body: steel case-hardened, nitrided, blackened and ground.  
Housing: aluminium, red anodised.

### Technical Notes

Used to support over determined clamping points, whilst minimising deformation of component. It also reduces vibration during machining.

By tuning on the lock function (max. 180° at 15Nm), the clamping mechanism locks the support pin without moving. The support element has supported the work-piece and is locked in place.

### Tips

#### Assembly:

Fix the support element (2x M6 thread) onto the device. Ensure the key activation is in required orientation.

Alternatively: Dismantle the M12 x 10 threaded pin and replace it by an M12x 30 threaded pin and assemble the support element with a spanner (A/F 21), e.g for T-slot mounting (no pin M12x 30 and T-nut 24000 M12x 14, grade 10, are parts of the standard supply volume. The support element can be recessed into a hole max. 16mm deep.

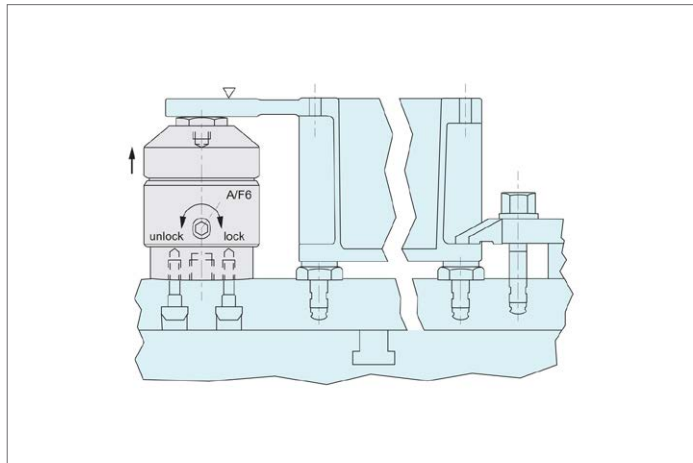
#### Operation:

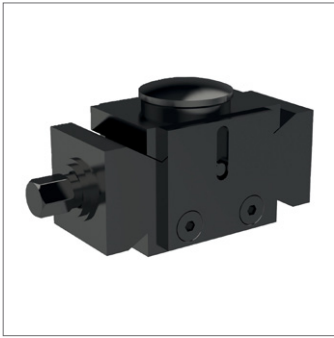
By turning the clamping cam (A/F 6 internal hexagon) on the outer surface of the re protective sleeve, the support pin contacts the workpiece with a slight spring

load.

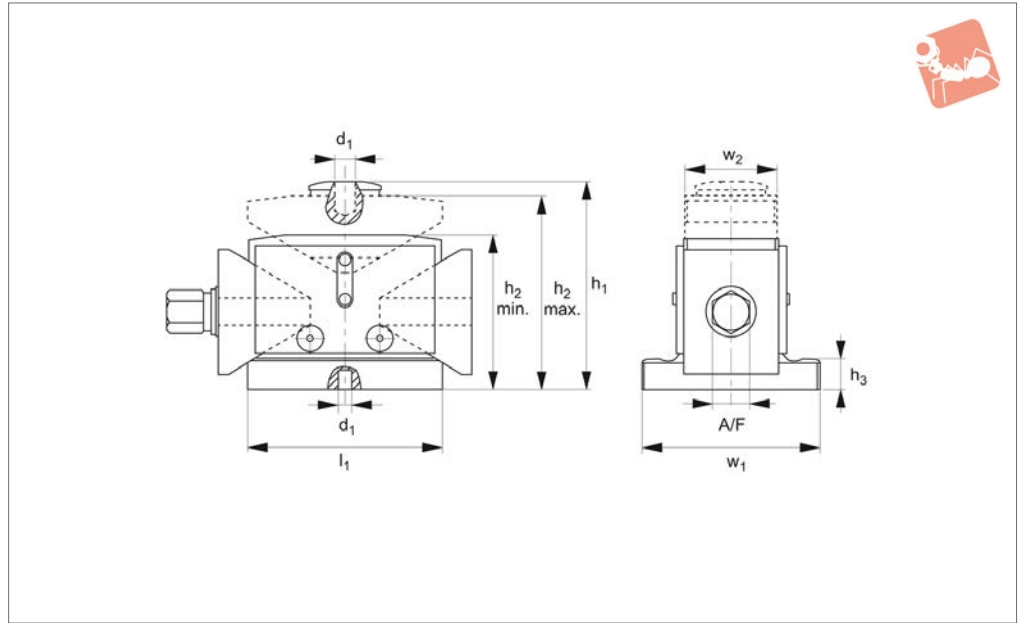
1. By turning on (15Nm) as far as possible (lock), total of 180°, the clamping mechanism locks the support pin without moving. The support element has been placed onto the workpiece and locked.
2. If turned in the opposite directions (unlock), the clamping is released. If turned back as far as possible, i.e. total of 180° the support pin moves to the end position.

Order No.	Description	Stroke	Supporting force kN max.	Weight g
12680.W0400	Support Element	5	8	950





**15500**



**Material**

Spheroidal graphite, cast iron.  
Heat treated and burnished.  
Contact surfaces precision machined.

**Technical Notes**

Centering hole  $\varnothing 12\text{mm}$ .  
With loads up to 33% of the max. static

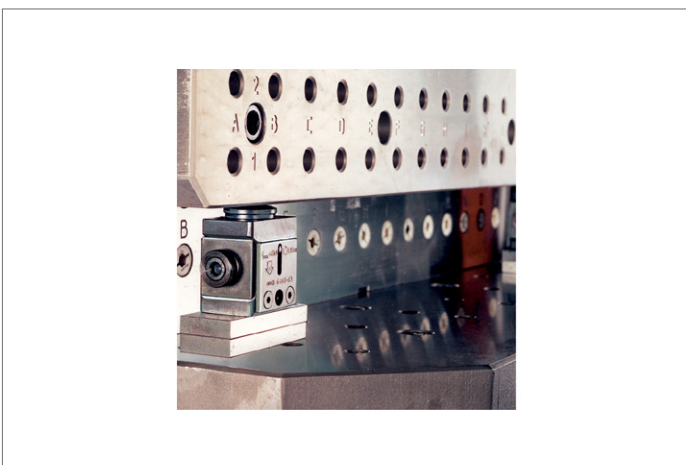
load, adjustment is easily made with a turn of screw. Allows fine adjustment to 0.1mm. See technical pages for the table of locating pad and support pad elements compatibility.

**Tips**

Particularly useful for precise positioning

and machining of large components on heavy duty machines. If necessary, an additional  $\varnothing 12\text{mm}$  locating hole in the base allows the wedge blocks to be located.

Order No.	Size	w <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub> min.	h <sub>2</sub> max.	d <sub>1</sub>	h <sub>3</sub>	l <sub>1</sub>	Static load kN max.	w <sub>2</sub>	A/F	Adj./ 360°	Weight g
15500.W0006	63	63	80	50	68	12	7	63	40	40	13	0.86	1700
15500.W0012	125	115	135	100	125	12	20	125	100	60	24	1.16	8600
15500.W0016	190	145	200	170	190	12	20	175	250	80	36	2.02	23750

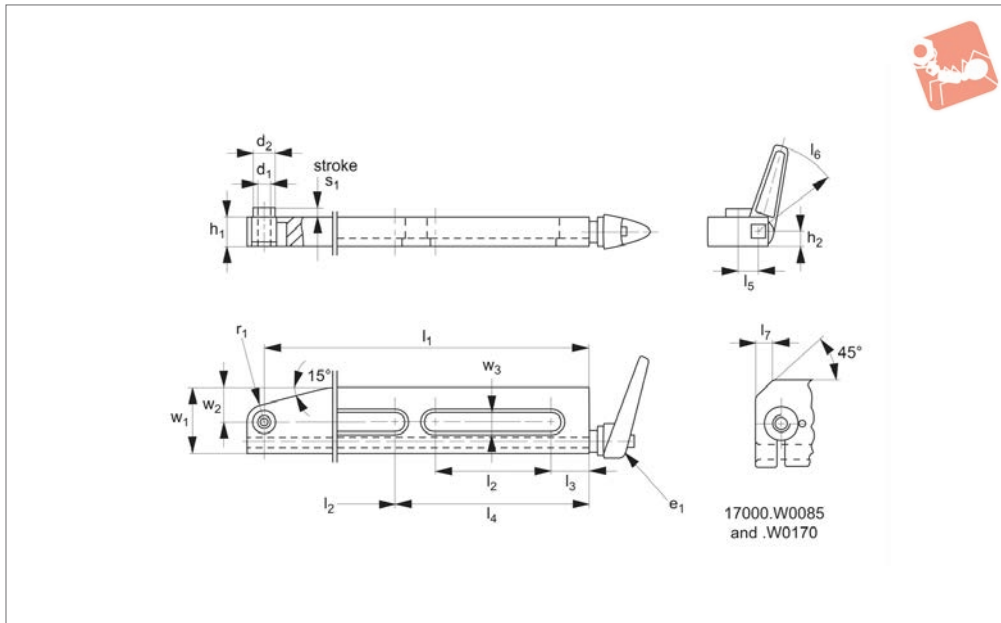




# Workpiece Supports

for support and to prevent workpiece chatter

# Supports & Stops



**17000**

SUPPORTS & STOPS

### Material

Support: steel, case-hardened and ground.  
Grip: die-cast zinc.

### Technical Notes

Used as support beneath workpieces to prevent chatter and vibration.

The supporting pin is applied with spring pressure to the workpiece and can be clamped in any desired position without the need to reach under the workpiece.

### Tips

Additional support to a three-point fixed

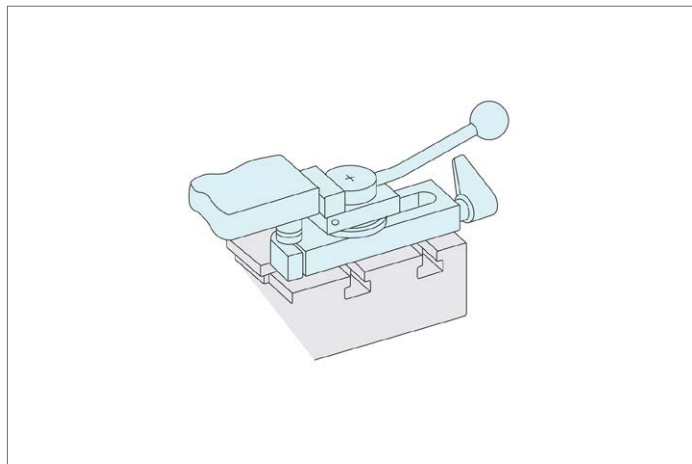
support. Threaded studs or levelling pads can be screwed into the female thread to set the required height.

Sizes .W0085 to W0170 have only one slot. 17000.W0450 is fitted with axial bearing clamping lever 74470.W0210.

Order No.	w <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	Handle e <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	Weight g
17000.W0085	8.5	19.5	11.5	M 8	13	M 6x18	75	35	342
17000.W0150	13.0	24.0	14.0	M10	20	M 8x22	150	90	1159
17000.W0170	17.0	34.0	21.5	M16	26	M12x30	170	100	2534
17000.W0300	13.0	24.0	14.0	M10	20	M 8x22	300	100	2153
17000.W0450	25.0	40.0	25.0	M20	32	M10x25	387	110	7300

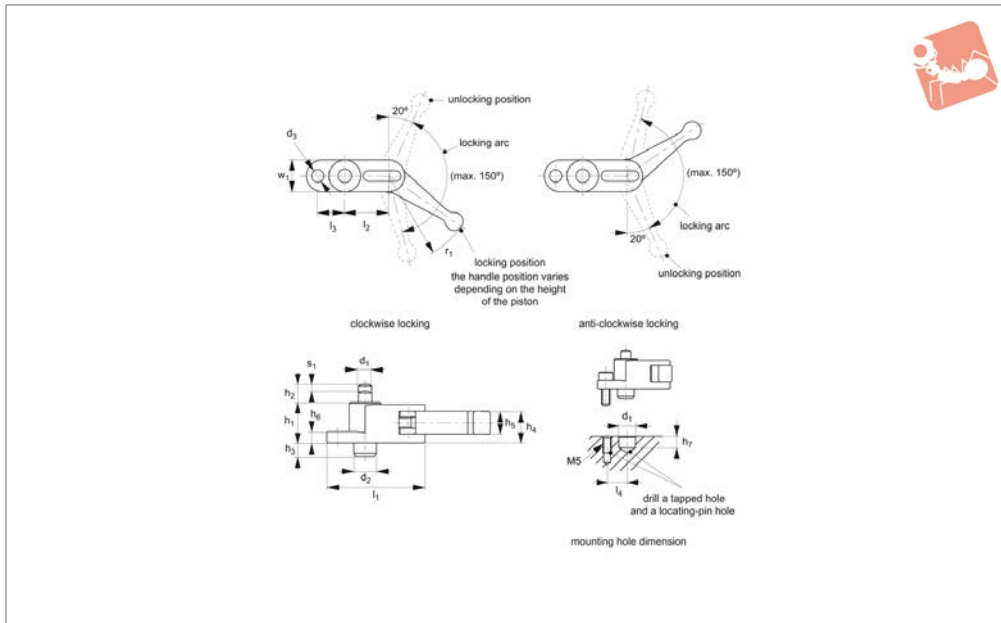
Order No.	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	l <sub>6</sub>	l <sub>7</sub>	r <sub>1</sub>	Load capacity kN max.	Stroke s <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
17000.W0085	13	-	13	62	5	-	0.5	3	30	10
17000.W0150	20	-	17	74	-	15	2.5	6	50	25
17000.W0170	25	-	27	108	11	-	5.0	11	60	20
17000.W0300	30	160	17	74	-	15	2.5	6	50	25
17000.W0450	30	200	30	89	-	24	10.0	11	85	40





# Compact Work Supports with cam handle

## Supports & Stops



# 17002

SUPPORTS & STOPS

### Material

Body and pin: steel (S45C), black oxide finish.

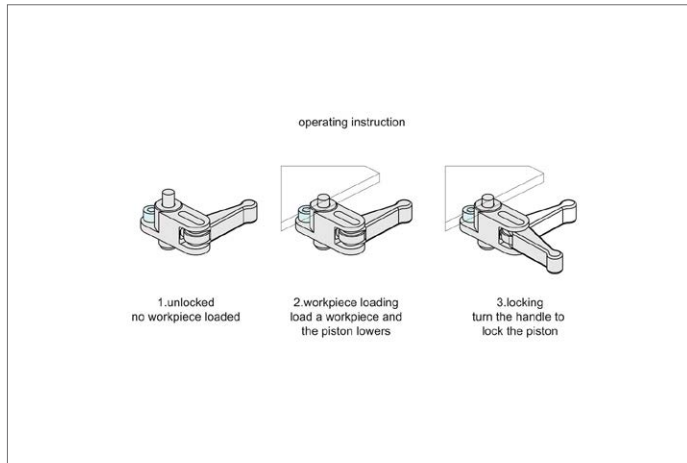
Piston: steel, black oxide finish, HRc 50-55. Cam handle: zinc die-cast, chrome plated.

### Technical Notes

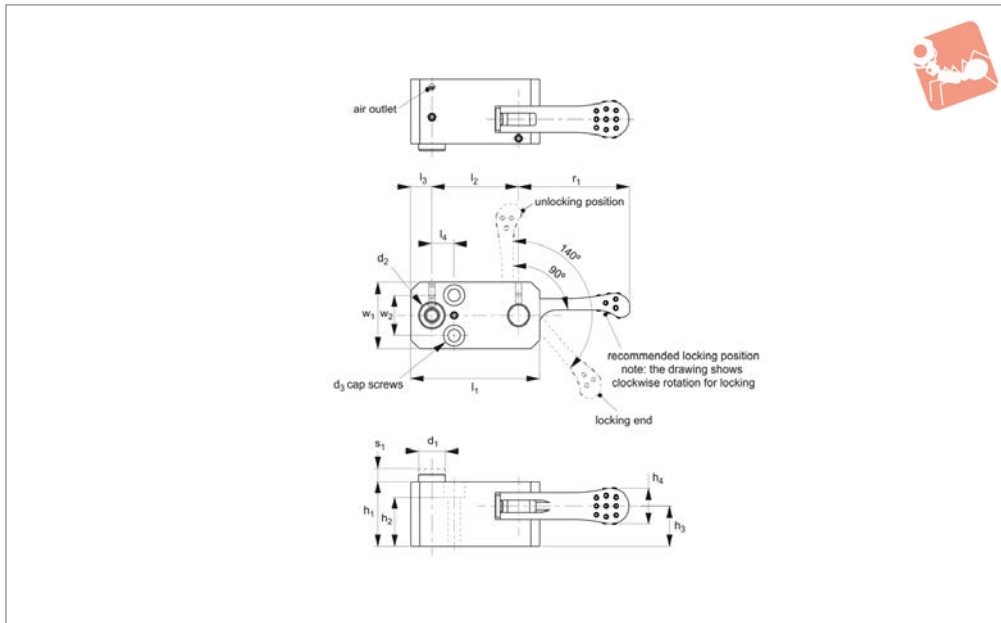
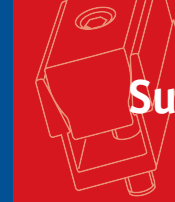
The built in disc spring prevent release.

Order No.	w <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub> +0.3 -0	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	Weight g
17002.W0018	14	18	8	6	10	5.5	10	6.0	14.5	10	76
17002.W0118	14	18	8	6	10	5.5	10	6.0	14.5	10	76
17002.W0025	18	25	10	10	14	5.5	14	9.5	18.5	13	140
17002.W0125	18	25	10	10	14	5.5	14	9.5	18.5	13	140

Order No.	h <sub>6</sub>	h <sub>7</sub>	Handle load N max.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	r <sub>1</sub>	Locking direction	Locking mechanism	Piston spring force N	Stroke s <sub>1</sub>	Support capacity N max.
17002.W0018	5	7.0	80	43.5	19.5	12	12	39	Clockwise	Spiral cam, 4°	1,5-3	3	200
17002.W0118	5	7.0	80	43.5	19.5	12	12	39	Anticlockwise	Spiral cam, 4°	1,5-3	3	200
17002.W0025	5	10.5	100	50.4	22.4	14	14	50	Clockwise	Spiral cam, 4°	1,8-3	4	400
17002.W0125	5	10.5	100	50.4	22.4	14	14	50	Anticlockwise	Spiral cam, 4°	1,8-3	4	400







### 17003

SUPPORTS & STOPS

#### Material

Body: steel (S45C), black oxide finish.  
 Piston: steel (SK95), tempered and black oxide finish.  
 Locking pin: steel (S45C), tempered and black oxide finish.  
 Handle: steel (SCM440), tempered and black oxide finish.

#### Technical Notes

The built in disc spring prevent loosened locking.

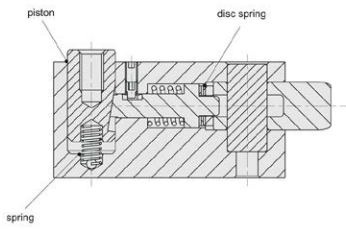
#### Tips

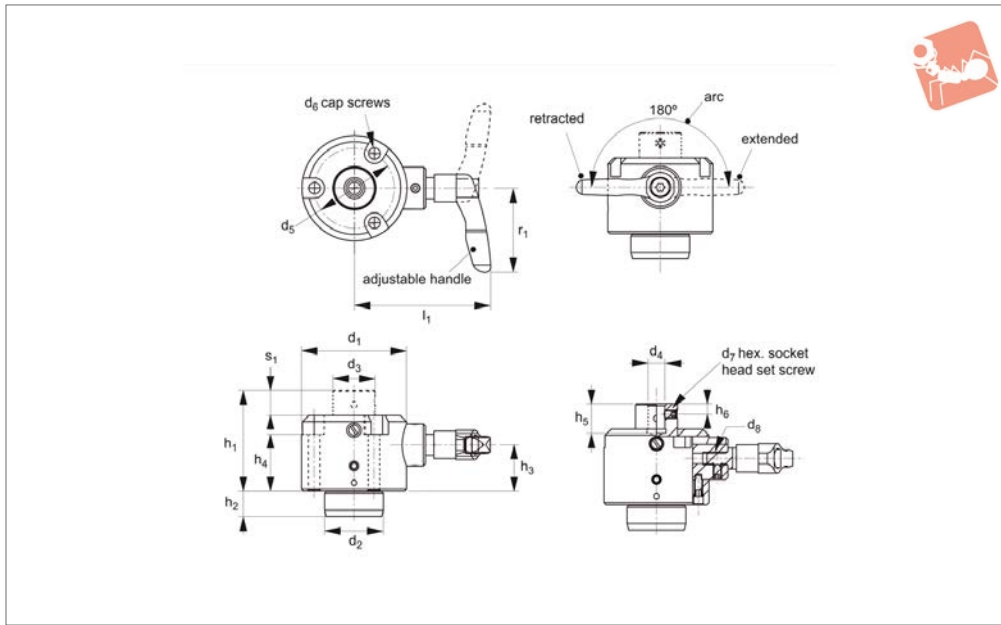
When you attach a support pad to the tapped hole through the shaft, lock the

shaft in place to prevent damage on installation. To change locking direction loosen set screw, remove retaining pin, invert handle and reassemble.

Order No.	Capacity kN max.	w <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	h <sub>3</sub>	h <sub>4</sub>	l <sub>1</sub>	Weight g
17003.W0024	0.5	25	24	19	10	M 5x8	M 4	14	14	52	213
17003.W0029	0.7	30	29	22	12	M 6x10	M 5	18	16	58	335
17003.W0037	0.9	38	37	25	16	M 8x15	M 6	23	19	75	738
17003.W0042	1.2	45	42	30	19	M10x15	M 8	26	24	85	1110

Order No.	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	r <sub>1</sub>	Locking mechanism	Piston spring force N	Stroke s <sub>1</sub>	w <sub>2</sub>	Allowable handle load N
17003.W0024	36	8	8	40	Spiral cam, 4°	0-6	5	15	80
17003.W0029	39	9.5	10	50	Spiral cam, 4°	0-6	6	18	100
17003.W0037	51	12	12	63	Spiral cam, 4°	0-7	8	24	150
17003.W0042	56	14.5	15	80	Spiral cam, 4°	0-11	10	28	200





### 17004.1

SUPPORTS & STOPS

#### Material

Body and piston: steel (S45C), tempered and black oxide finish.  
Crank shaft: steel (S45C), black oxide finish.

#### Technical Notes

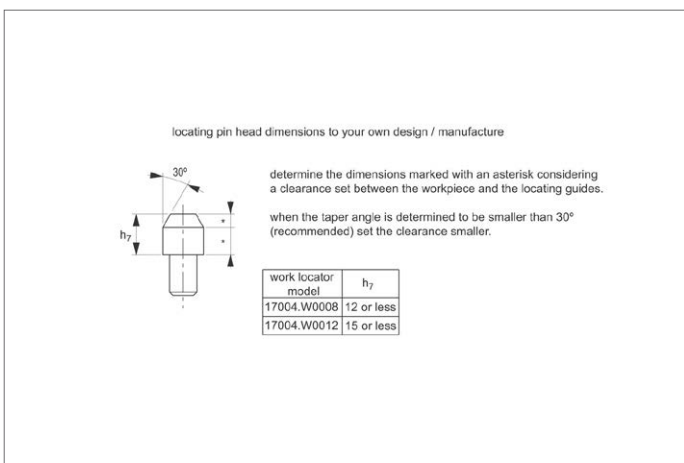
Can support heavy workpieces made from

steel or cast iron. No tools needed. The handle position is freely adjustable. The handle can be easily changed to act in a clockwise or anti clockwise direction. Different locating pins can be mounted depending on workpiece's locating holes. The piston stays locked when it is fully

extended or retracted until the handle is operated again.

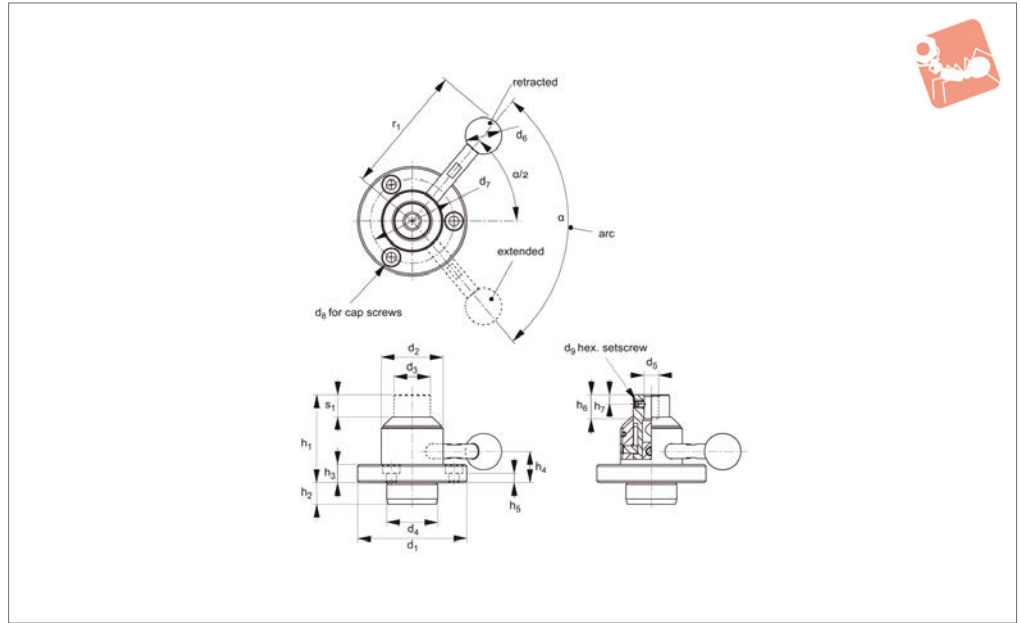
Order No.	$h_1$	$h_2$	$d_1$	$d_2$ tol. g6	$d_3$	$d_4$ tol. G7	$d_5$	$d_6$	$d_7$	$d_8$	Weight g
17004.W0008	48	12	50	28	20	8	38	M 5	M 4x5	M 6x12	590
17004.W0012	61	14	65	42	30	12	52	M 6	M 5x8	M 8x7	1310

Order No.	$h_3$	$h_4$	$h_5$	$h_6$	$l_1$	$r_1$	Stroke $s_1$	Allowable handle load N	Workpiece weight kg max.
17004.W0008	22	27	14	5	65.0	40	12	170	250
17004.W0012	26	31	16	6	87.5	65	15	210	300





## 17004.2



### Material

Body: steel (S45C), tempered and black oxide finish.

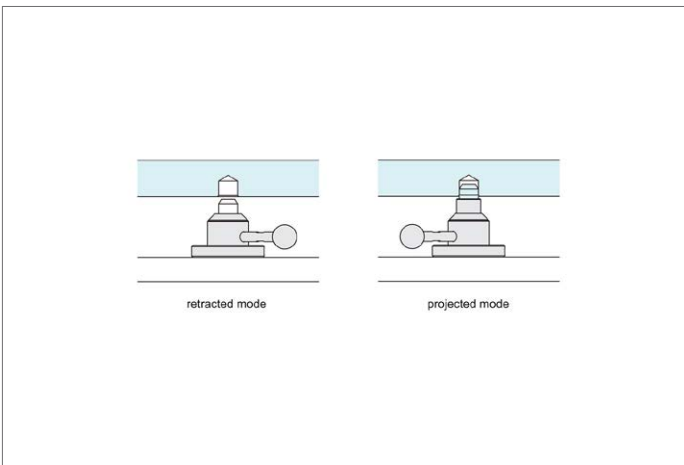
Piston: steel (SCM440), tempered and black oxide finish.

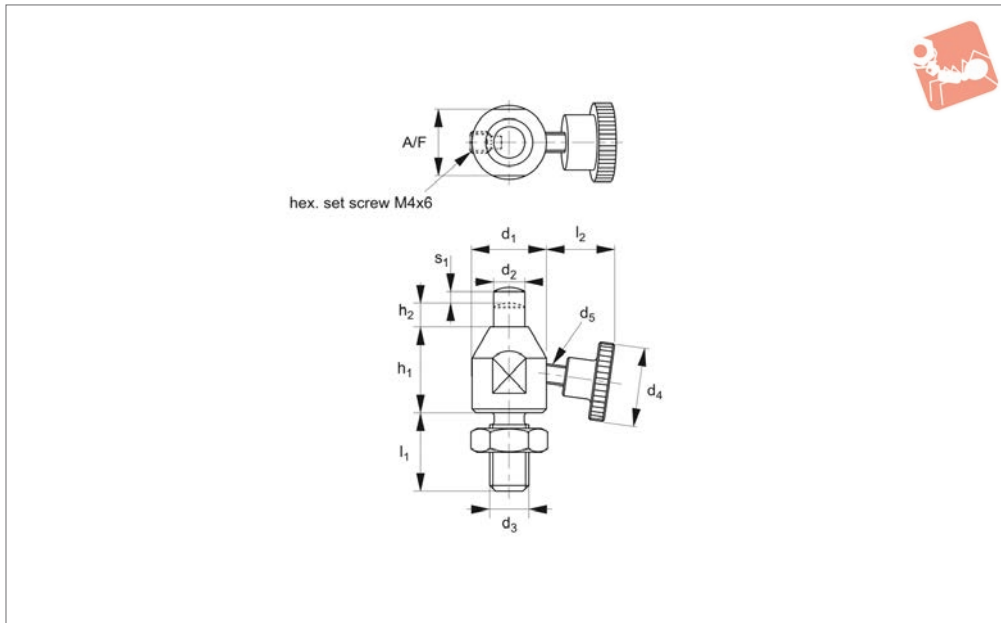
Handle: steel (S45C), black oxide finish.

Ball knob: ABS resin, black.

Order No.	$h_1$	$h_2$	$d_1$	$d_2$	$d_3$	$d_4$ tol. G6	$d_5$ tol. G7	$d_6$	$d_7$	$d_8$	Weight g
17004.W0108	48	12	60	34	20	28	8	20	46	M 5	420
17004.W0112	61	14	80	48	30	42	12	25	63	M 6	1040

Order No.	$d_9$	$h_3$	$h_4$	$h_5$	$h_6$	$h_7$	$r_1$	Stroke $s_1$	Allowable handle load N	Workpiece weight kg max.	$\alpha$
17004.W0108	M 4x5	10	17	5	13	5	71	12	150	250	100°
17004.W0112	M 6x8	13	23	7	15	8	94	15	200	300	90°





**17005.1**

SUPPORTS & STOPS

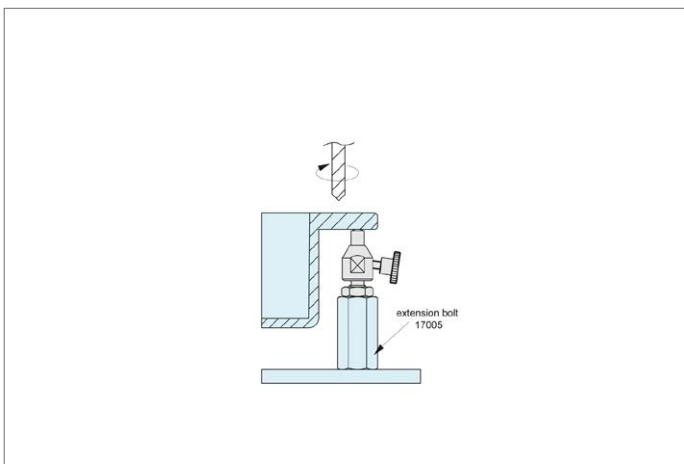
**Material**

oxide finish.

Body: steel (C45), black oxide finish.

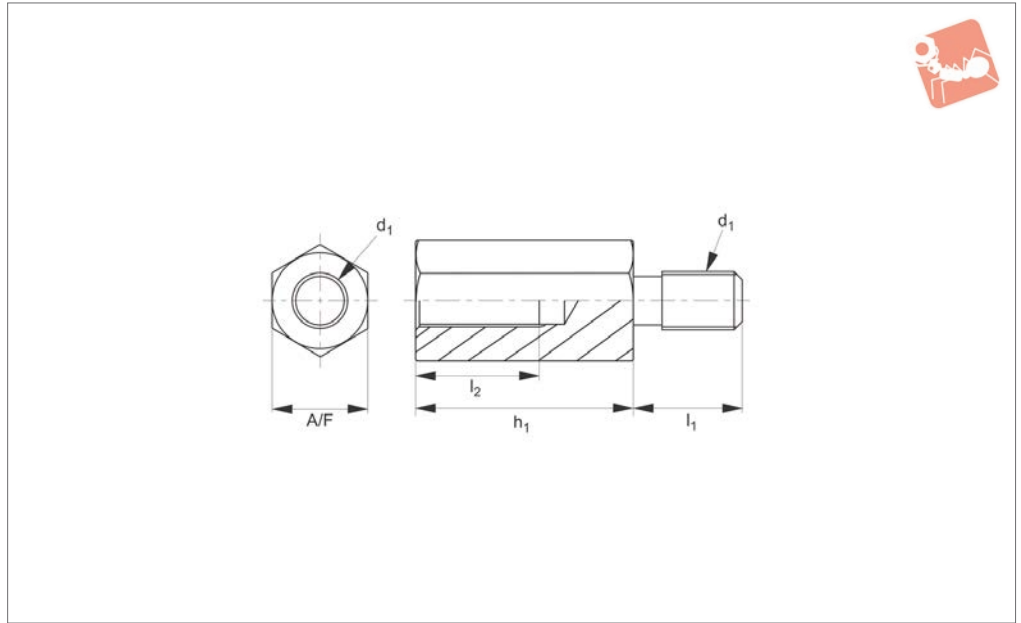
Piston: steel (42CrMo), heat treated, black

Order No.	$h_1$	$h_2$	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$l_1$	$l_2$	Piston spring force N	Stroke $s_1$	Support capacity kN	A/F	Weight g
<b>17005.W0018</b>	18	5	15	6	M 8x1,25	16	M 4x16	16	13,2	1,5~3,0	3	0,2	13	36
<b>17005.W0022</b>	22	6	19	8	M10x1,50	20	M 5x20	20	16,3	1,8~3,0	4	0,3	17	72
<b>17005.W0025</b>	25	6	22	10	M12x1,75	24	M 6x25	24	22,3	1,8~3,0	4	0,4	19	150





**17005.2**

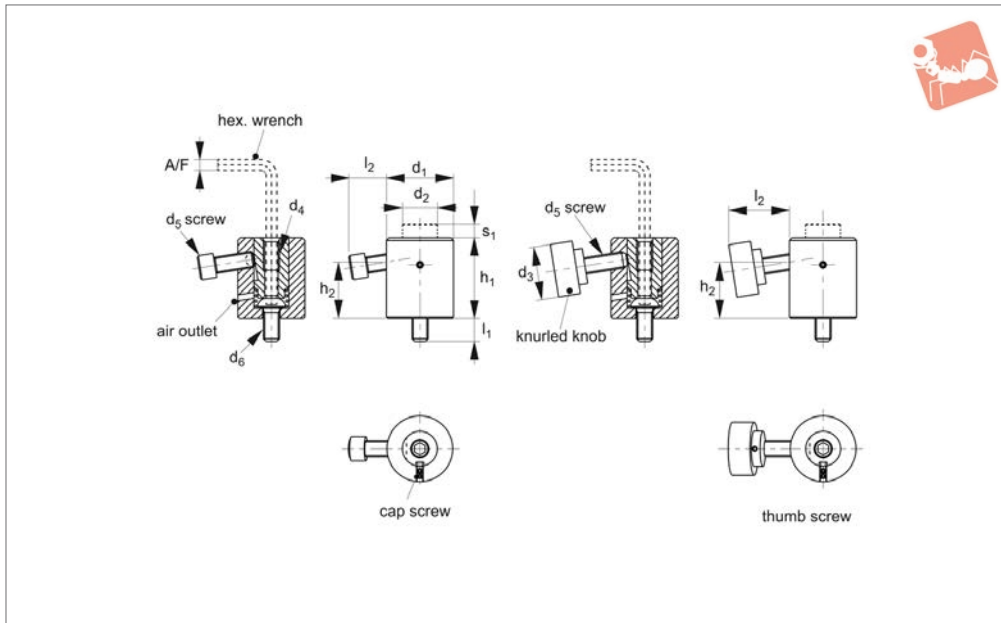


SUPPORTS & STOPS

**Material**

Steel (C45), tempered and black oxide finish.

Order No.	$h_1$	$d_1$	$l_1$	$l_2$	A/F	Weight g
17005.W0825	25	M 8x1,25	13	16	13	25
17005.W0832	32	M 8x1,25	13	16	13	35
17005.W0840	40	M 8x1,25	13	16	13	45
17005.W1032	25	M10x1,50	16	20	17	60
17005.W1050	32	M10x1,50	16	20	17	95
17005.W1075	40	M10x1,50	16	20	17	145
17005.W1232	25	M12x1,75	18	20	22	95
17005.W1250	32	M12x1,75	18	20	22	165
17005.W1275	40	M12x1,75	18	20	22	250



### 17008

SUPPORTS & STOPS

#### Material

Body: steel (C45), black oxide finish.  
Piston: steel (C45), tempered, black oxide finish.

#### Technical Notes

The positive locking mechanism allows the

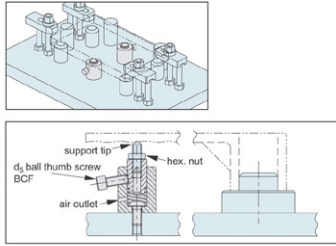
cap screw style to offer high support capacities.

#### Tips

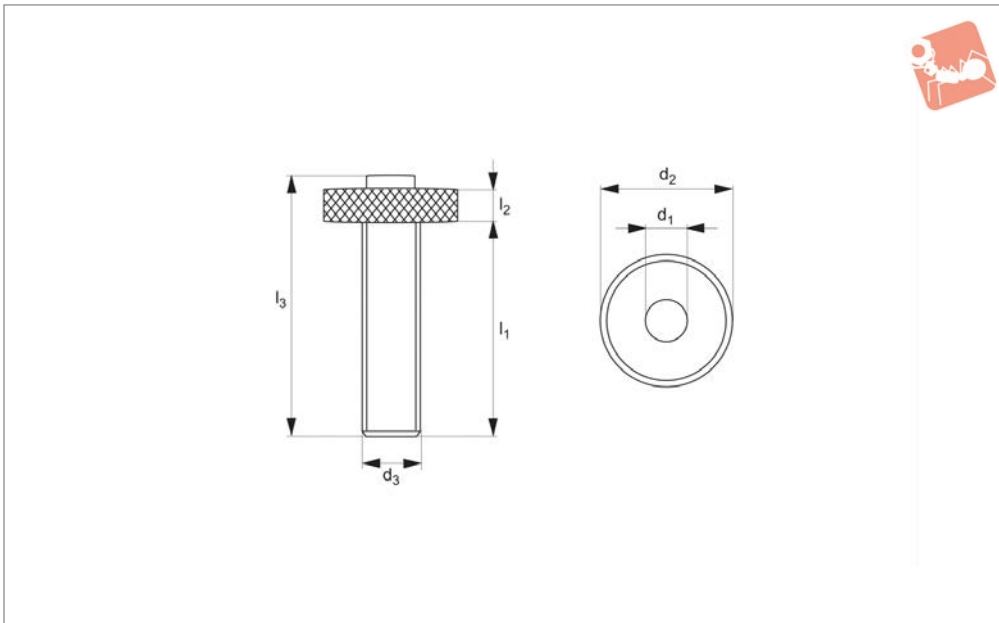
When you attach a support tip to the tapped hole through the shaft, tighten the shaft and secure it to prevent damage.

Order No.	Type	$h_1$	$h_2$	$d_1$	$d_2$	$d_3$	$d_4$	Weight g
17008.W0033	Cap screw	33	22.0	28	14	-	M 6x12	150
17008.W0042	Cap screw	42	28.5	35	19	-	M 8x16	300
17008.W0050	Cap screw	50	34.0	42	22	-	M10x20	540
17008.W0060	Cap screw	60	42.0	50	26	-	M12x24	865
17008.W0070	Cap screw	70	47.0	60	33	-	M16x32	1390
17008.W0233	Thumb screw	33	22.0	28	14	24	M 6x12	185
17008.W0242	Thumb screw	42	28.5	35	19	30	M 8x16	360
17008.W0250	Thumb screw	50	34.0	42	22	36	M10x20	620
17008.W0260	Thumb screw	60	42.0	50	26	40	M12x24	1020

Order No.	$d_5$	$d_6$	$l_1$	$l_2$	Piston spring force N	Stroke $s_1$	Support capacity kN max.	Torque to Nm max.	A/F
17008.W0033	M 6x16	M 6	10	14.1	10~22	6	4.0	7.5	4
17008.W0042	M 8x20	M 8	15	18.8	10~27	10	6.0	14.0	5
17008.W0050	M10x25	M10	14	23.8	14~28	10	7.5	18.0	6
17008.W0060	M12x30	M12	17	28.5	15~30	10	9.0	22.0	8
17008.W0070	M12x30	M16	22	26.5	15~35	10	9.0	25.0	10
17008.W0233	M 6	M 6	10	22.7	10~22	6	0.6	1.0	4
17008.W0242	M 8	M 8	15	27.7	10~27	10	0.7	1.2	5
17008.W0250	M10	M10	14	31.8	14~28	10	0.7	1.5	6
17008.W0260	M12	M12	17	36.8	15~30	10	0.8	2.0	8







## 18420

SUPPORTS & STOPS

### Material

Steel, heat-treated.

Order No.	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight g
18420.W0001	12	28	M12	46	8	58	70
18420.W0002	16	34	M16	57	9	72	150