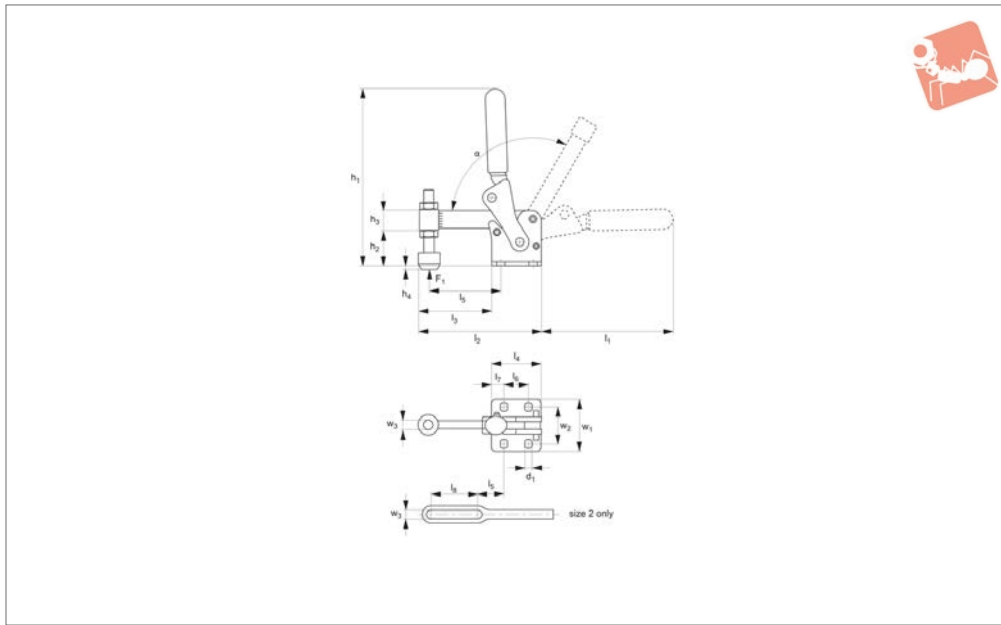




Heavy Duty Vertical Toggle Clamp

horizontal base

Heavy Duty Toggle Clamps



46080

HEAVY DUTY TOGGLE CLAMPS

Material

Body: steel, black oxide coated.
 Lever: cast steel, black oxide coated.
 Bushes: reamed, case hardened.
 Pins: hardened, ground and permanently lubricated.
 Handle: ergonomic soft feel, oil-resistant, with large grip area.
 Supplied complete with zinc plated and

tempered clamping screw (with rubber pad).

Technical Notes

Heavy vertical toggle clamps are especially suitable for production equipment and fixtures.
 Temperature range -10°C to +80°C.

Tips

Clamp nuts on lever arm to vary friction in movement.
 Supplement these base modular toggle clamps with your own clamping arms, handles etc. to meet the requirements of your specific application.

Order No.	Size	F ₁ kN	Clamping screw	h ₁	h ₂	h ₃	h ₄ min.	h ₄ max.	l ₁	l ₂	l ₃	Weight g
46080.W0202	2	2.5	M 6x50	127	25	15	-13.5	6	94	85	57	320
46080.W0204	4	5.0	M12x80	216	44	24	-19.0	14	160	146	100	1250
46080.W0206	6	6.0	M12x110	263	65	30	-22.0	35	185	181	121	2130
46080.W0208	8	12.0	M12x110	303	71	36	-10.0	41	203	226	151	4050

Order No.	l ₄	l ₅	l ₆	l ₇	l ₈	w ₁	w ₂	w ₃	d ₁	α
46080.W0202	37	21	20	8.5	30	47	32	6.1	7.1	120°
46080.W0204	60	75	30	15.0	-	65	45	12.2	8.5	120°
46080.W0206	75	95	45	15.0	-	78	52	12.2	10.5	120°
46080.W0208	95	120	55	20.0	-	108	75	12.2	12.5	120°

Heavy Duty Toggle Clamps

Heavy Duty Vertical Toggle Clamp horizontal base



HEAVY DUTY TOGGLE CLAMPS

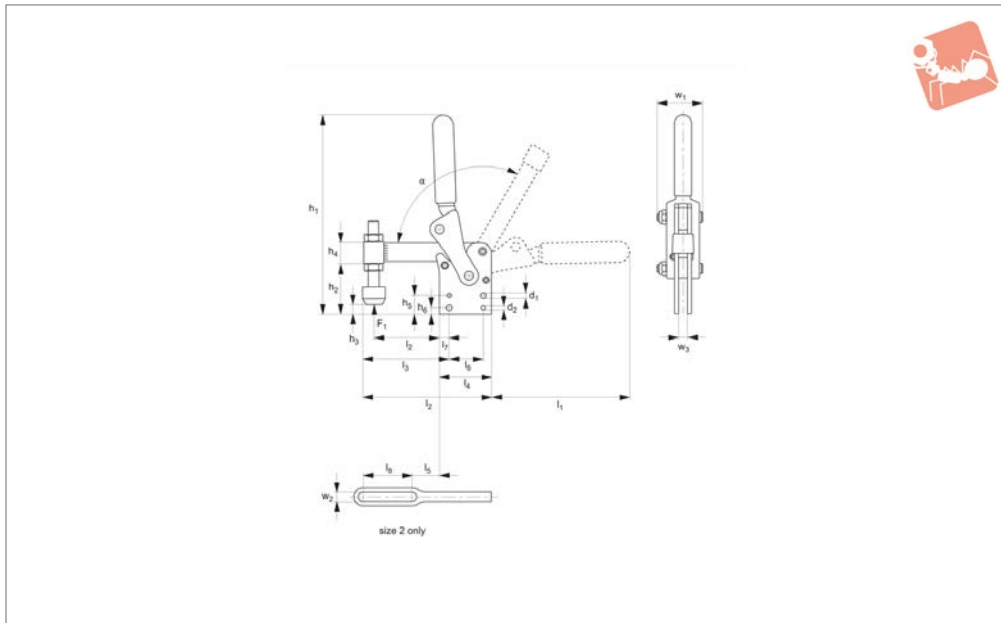




Heavy Duty Vertical Toggle Clamp

with vertical base and mounting holes

Heavy Duty Toggle Clamps



46090

HEAVY DUTY TOGGLE CLAMPS

Material

Body and lever: steel, blued.
 Bushes: reamed, case hardened.
 Pins: hardened, ground and permanently lubricated.
 Handle: ergonomic soft feel, oil-resistant, with large grip area.

Supplied complete with clamping screw (with rubber pad).

Technical Notes

Heavy vertical toggle clamps are especially suitable for production equipment and fixtures.

Temperature range -10°C to +80°C.

Tips

Clamp nuts on lever arm to vary friction in movement.

Order No.	Size	F ₁ kN	Clamping screw	h ₁	h ₂	h ₃ min.	h ₃ max.	h ₄	h ₅	h ₆	Weight g
46090.W0202	2	2.5	M 6x50	144	42.0	3.5	22.8	15	-	-	320
46090.W0204	4	10.0	M12x80	233	62.0	-1.0	35.0	24	25	10	1320
46090.W0206	6	12.0	M12x110	289	87.5	0.0	58.0	30	35	15	2120
46090.W0208	8	20.0	M12x110	338	106.0	25.0	76.0	36	40	20	4060

Order No.	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	w ₁	w ₂	w ₃	d ₁	d ₂	α
46090.W0202	94	85	48	37	12	-	-	30	31	6.2	6	-	-	190°
46090.W0204	161	146	101	60	75	30	15	-	52	12.2	10	8.5	5.7	120°
46090.W0206	189	181	121	75	95	45	15	-	60	12.2	12	10.5	7.7	120°
46090.W0208	219	226	151	95	120	55	20	-	76	12.2	16	12.5	9.7	120°

Heavy Duty Toggle Clamps

Heavy Duty Vertical Toggle Clamp

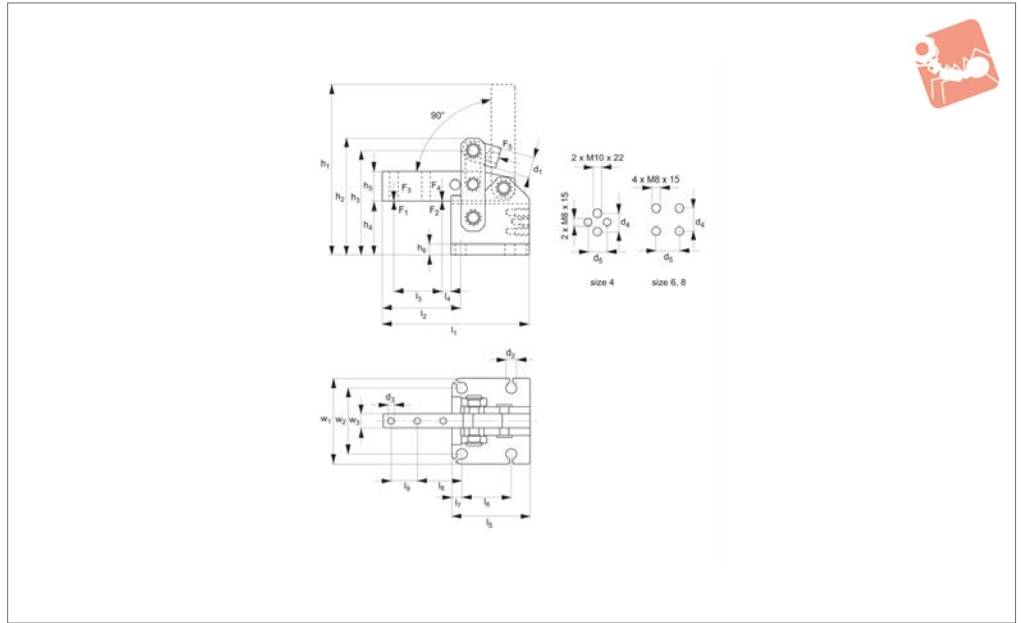
with vertical base and mounting holes



HEAVY DUTY TOGGLE CLAMPS



46100



Material

Body: tempered steel, burnished.
Axle Bolts: tempered and ground, locked with circlips.

Bushes: case hardened and greased.

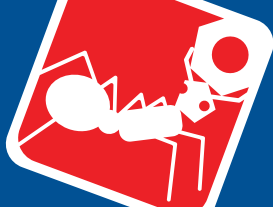
Technical Notes

The clamping forces F_3 and F_4 can be

achieved by using a cylinder with piston force F_5 . This clamp can be equipped with a normal hydraulic or pneumatic cylinder. The rod joint is exchangeable.

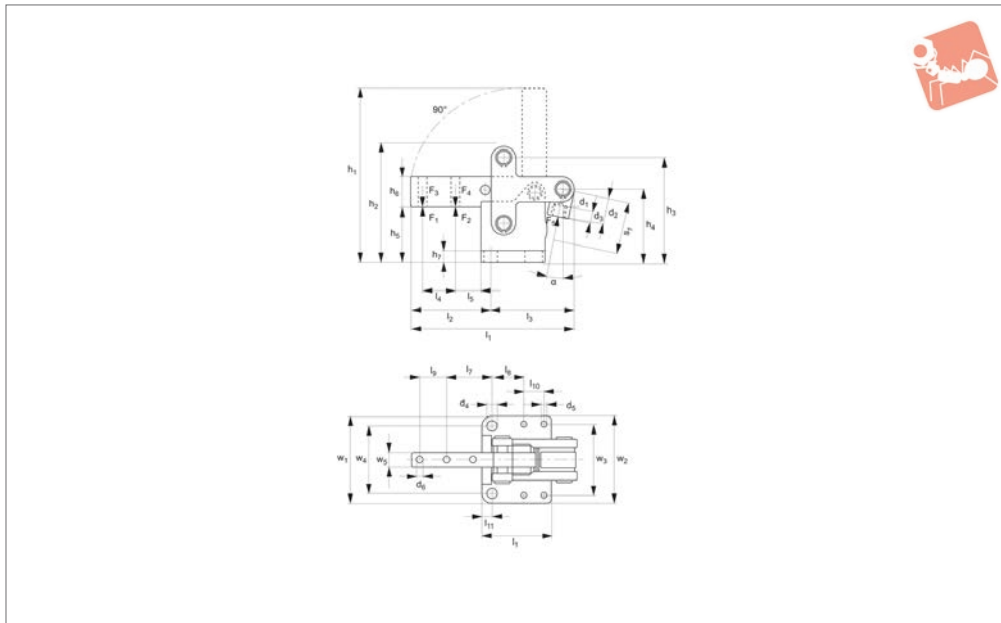
Order No.	Size	F_1 kN	F_2 kN	F_3 kN	F_4 kN	F_5 kN	h_1	h_2	h_3	h_4	h_5	h_6	l_1	l_2	l_3	Weight g
46100.W0000	0	0.6	1.0	0.2	0.4	0.1	75.5	53.5	47.5	25.5	10	6	50	33.5	14	110
46100.W0001	1	0.8	1.2	0.6	0.8	0.2	96.0	68.0	61.5	37.0	12	8	61	41.0	17	230
46100.W0004	4	6.0	9.0	1.5	2.2	0.8	197.0	122.0	109.0	57.0	30	12	154	82.0	54	2535
46100.W0006	6	12.0	18.0	2.5	3.5	1.0	215.0	147.0	129.0	61.0	40	12	169	90.0	60	4215
46100.W0008	8	20.0	30.0	4.0	6.0	1.8	306.0	196.0	176.0	86.0	60	12	235	127.5	95	10670

Order No.	l_4	l_5	l_6	l_7	l_8	l_9	w_1	w_2	w_3	d_1	d_2	d_3	d_4	d_5	Piston dia.	Piston stroke
46100.W0000	8.5	22.0	11	5.5	-	-	35	27	5	M 6	4.5	-	-	-	16	40
46100.W0001	9.0	28.0	14	8.0	-	-	50	35	6	M 8	7.0	-	-	-	20	40
46100.W0004	10.0	77.0	52	10.0	47.0	27	90	70	15	M12x1,25	11.0	6.2	20	18	40	80
46100.W0006	10.0	85.0	55	11.0	53.0	26	105	83	20	M16x1,50	11.0	8.2	24	24	50	100
46100.W0008	9.5	112.5	80	12.5	69.5	40	136	111	30	M16x1,50	13.0	13.0	40	34	63	120



Heavy Duty Toggle Clamps for vertical cylinder connection

Heavy Duty Toggle Clamps



46200

HEAVY DUTY TOGGLE CLAMPS

Material

Body: tempered steel, burnished.
Axle Bolts: tempered and ground, locked with circlips.

Bushes: case hardened and greased.

Technical Notes

The clamping forces F_3 and F_4 can be

achieved by using a cylinder with piston force F_5 . This clamp can be equipped with a normal hydraulic or pneumatic cylinder. The rod joint is exchangeable.

Order No.	Size	F_1 kN	F_2 kN	F_3 kN	F_4 kN	F_5 kN	h_1	h_2	h_3	h_4	h_5	h_6	h_7	l_1	l_{10}	l_{11}	l_2	l_3	Weight g
46200.W0004	4	6	9	1.5	2.2	0.75	206	130	117	82	65	30	12	172	18	10	82	76	2400
46200.W0006	6	12	18	2.5	3.5	1.00	226	155	137	92	69	40	15	200	24	12	91	88	4300
46200.W0008	8	20	30	4.0	6.0	1.80	318	204	184	124	94	60	20	265	40	15	125	120	11000

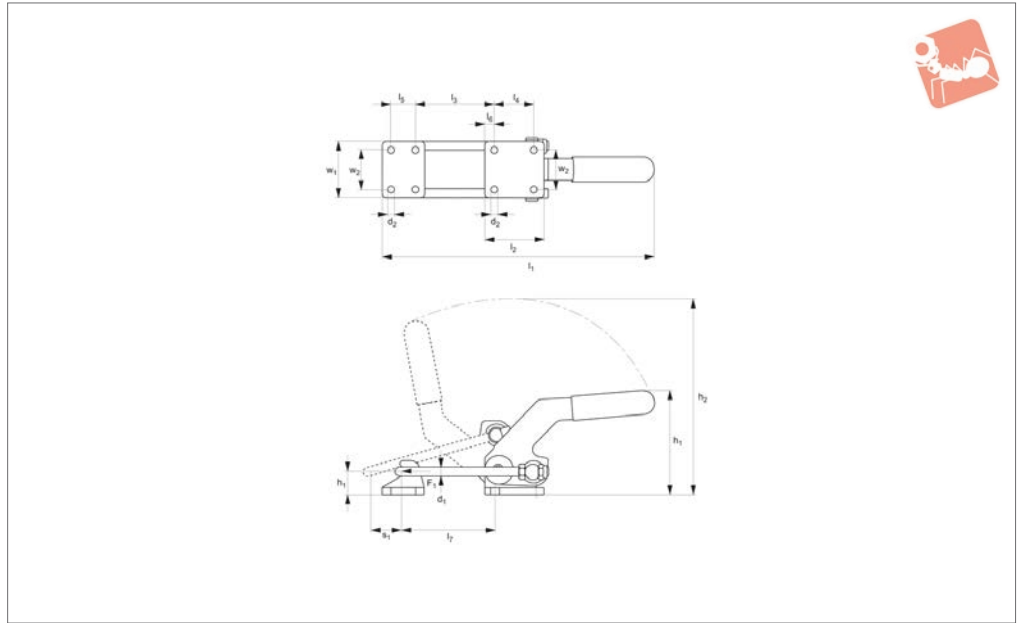
Order No.	l_4	l_5	l_6	l_7	l_8	l_9	Stroke s_1	w_1	w_2	w_3	w_4	w_5	d_1	d_2	d_3	d_4	d_5	d_6	α
46200.W0004	54	20.0	67.0	47	33.0	27	74	90	90	75.5	70	15	M12x1,25	29.5	14	11	6.5	6.2	9,0°
46200.W0006	60	22.0	73.5	54	29.5	26	87	107	100	87.5	83	20	M16x1,50	37.0	18	13	6.5	8.2	7,5°
46200.W0008	95	24.5	109.0	67	44.0	40	120	145	123	120.5	115	30	M16x1,50	32.0	17	13	6.5	13.2	6,5°

Heavy Duty Toggle Clamps

Heavy Duty Hook Toggle Clamp for high retaining force



46030



HEAVY DUTY TOGGLE CLAMPS

Material

Foot, lever, arm and catch: cast steel, black oxide coated.
Strap, pins and nuts: steel, heat treated and zinc plated.
Pins: hardened, ground and permanently lubricated.

Handle: ergonomic soft feel, oil-resistant, with large grip area.

Supplied complete with counter catch.

Technical Notes

Four mounting holes in both foot and

catch.

Circlips are used to retain pins in bearing bushes, and to centre the clamping pin. Temperature range -10°C to +80°C.

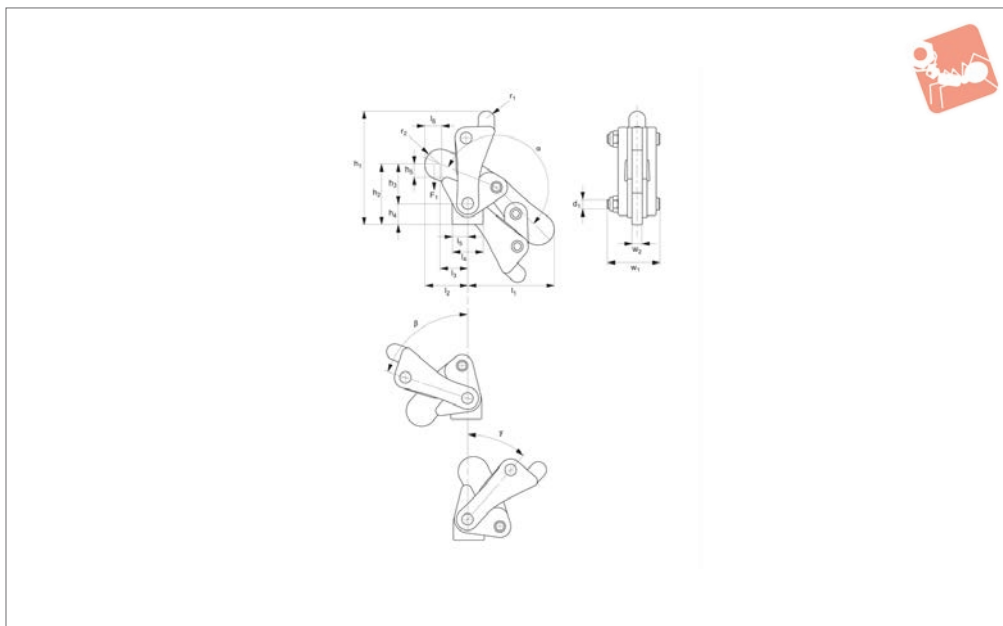
Order No.	Size	F ₁ kN	Adj. distance	Stroke s ₁	h ₁	h ₂	l ₁	l ₂	Weight g
46030.W0204	4	15	66	44	228	122	245-311	183	2830
46030.W0205	5	27	65	47	285	146	313-378	238	4020
Order No.	l ₃	l ₄	l ₅	l ₆	l ₇	w ₁	w ₂	d ₁	d ₂
46030.W0204	42-107	24-90	68	45	28	64	45	10	8.5
46030.W0205	49-114	28-93	86	57	35	82	57	12	10.5



Modular Toggle Clamp

swivelling foot - welding version

Heavy Duty Toggle Clamps



46050

HEAVY DUTY TOGGLE CLAMPS

Material

Body: steel, black oxide coated.
 Lever: cast steel, black oxide coated.
 Bushes: reamed and case hardened bearings.
 Pins: hardened, ground and permanently lubricated.

Technical Notes

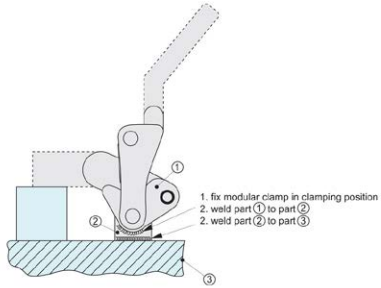
Mechanism can be welded at an angle to its support. Clamp nuts on lever arm enable adjustment of friction in clamp movement.
 Temperature range -10°C to +80°C.

Tips

Supplement these base modular toggle clamps with your own clamping arms, handles etc. to meet the requirements of your specific application.

Order No.	Size	F ₁ kN	h ₁	h ₂	h ₃	h ₄	h ₅	l ₁	l ₂	Weight g
46050.W0002	2	2.5	76	38	18	20.0	5	58	32	205
46050.W0004	4	7.0	112	58	38	20.0	12	82	41	855
46050.W0006	6	11.0	145	78	50	28.0	16	105	55	1600
46050.W0008	8	22.5	172	98	65	33.0	19	135	72	3100
46050.W0010	10	34.0	210	117	83	33.5	25	155	77	5560

Order No.	l ₃	l ₄	l ₅	l ₆	r ₁	r ₂	w ₁	w ₂	d ₁	α	β	y
46050.W0002	22	22	11	12	5	10.0	31	6	M 6	200°	70°	40°
46050.W0004	26	30	15	16	8	15.0	52	10	M 8	200°	70°	40°
46050.W0006	36	36	18	20	11	18.0	60	12	M10	200°	70°	40°
46050.W0008	50	50	25	27	14	22.5	76	16	M12	200°	70°	40°
46050.W0010	52	70	35	22	14	25.0	90	20	M16	200°	60°	28°

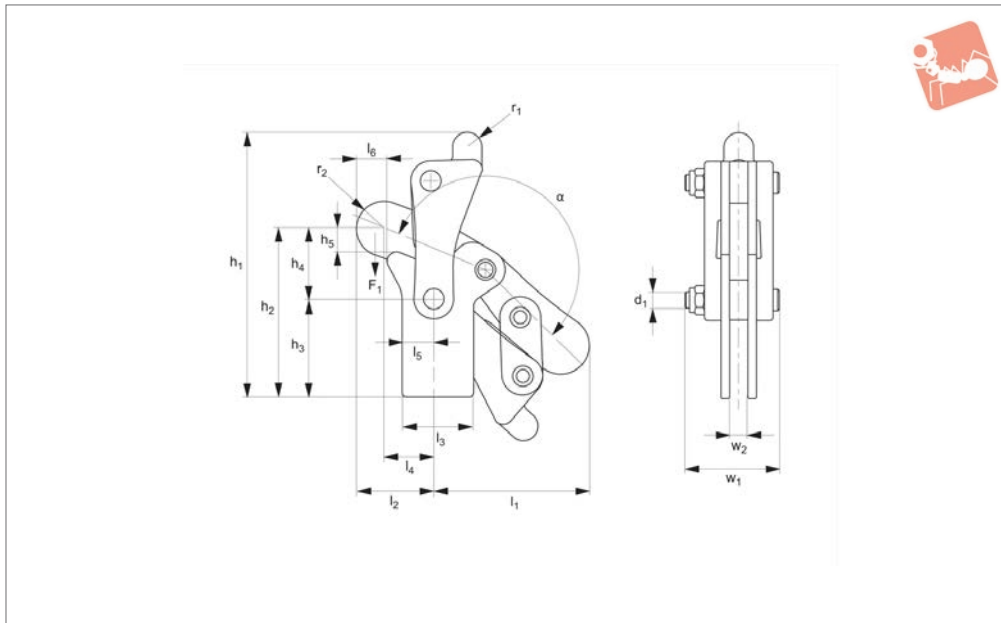




Modular Toggle Clamp

vertical foot - welding version

Heavy Duty Toggle Clamps



46060

HEAVY DUTY TOGGLE CLAMPS

Material

Body: steel, black oxide coated.
 Lever: cast steel, black oxide coated.
 Bushes: reamed and case hardened bearings.
 Pins: hardened, ground and permanently

lubricated.

Technical Notes

Clamp nuts on lever arm enable adjustment of friction in clamp movement.
 Temperature range -10°C to +80°C.

Tips

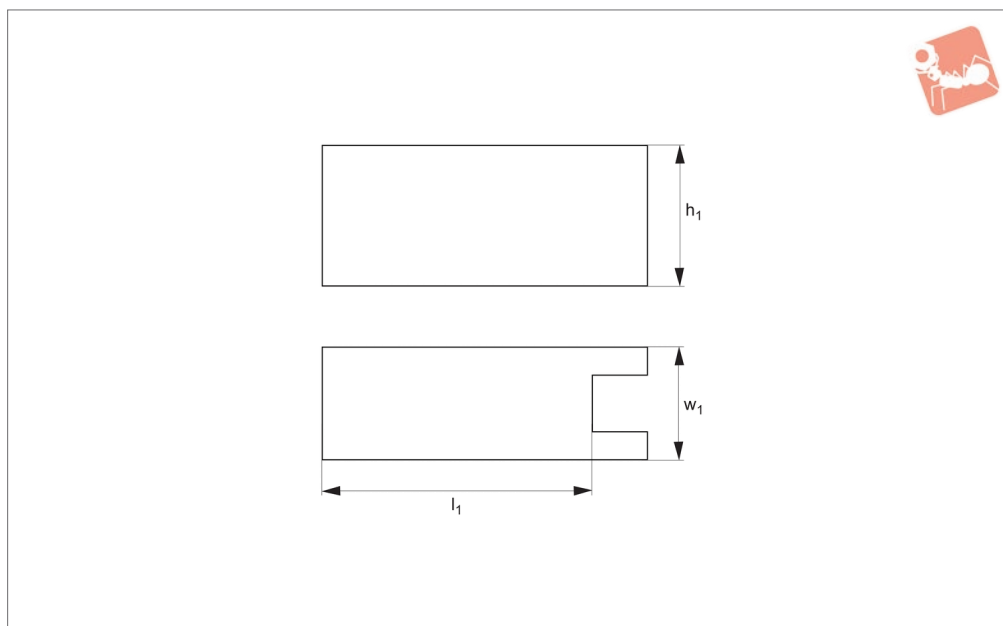
Supplement these base modular toggle clamps with your own clamping arms, handles etc. to meet the requirements of your specific application.

Order No.	Size	F ₁ kN	h ₁	h ₂	h ₃	h ₄	h ₅	l ₁	l ₂	Weight g
46060.W0002	2	2.5	90	52	34	18	5	58	32	245
46060.W0004	4	7.0	142	88	50	38	12	82	41	970
46060.W0006	6	11.0	182	114	64	50	16	106	55	1750
46060.W0008	8	22.5	218	140	76	64	19	135	72	3310
46060.W0010	10	34.0	266	173	90	83	25	155	77	5970

Order No.	l ₃	l ₄	l ₅	l ₆	r ₁	r ₂	w ₁	w ₂	d ₁	α
46060.W0002	30	22	14	12	5	10.0	31	6	M 6	190°
46060.W0004	44	26	19	16	8	15.0	52	10	M 8	190°
46060.W0006	55	36	28	20	11	18.0	60	12	M10	190°
46060.W0008	66	50	37	27	14	22.5	76	16	M12	190°
46060.W0010	80	52	40	22	14	25.0	90	20	M16	190°



46070.1



Material

Steel, black oxide coated.
For welding.

Technical Notes

To suit modular toggle clamps 46050 and 46060.

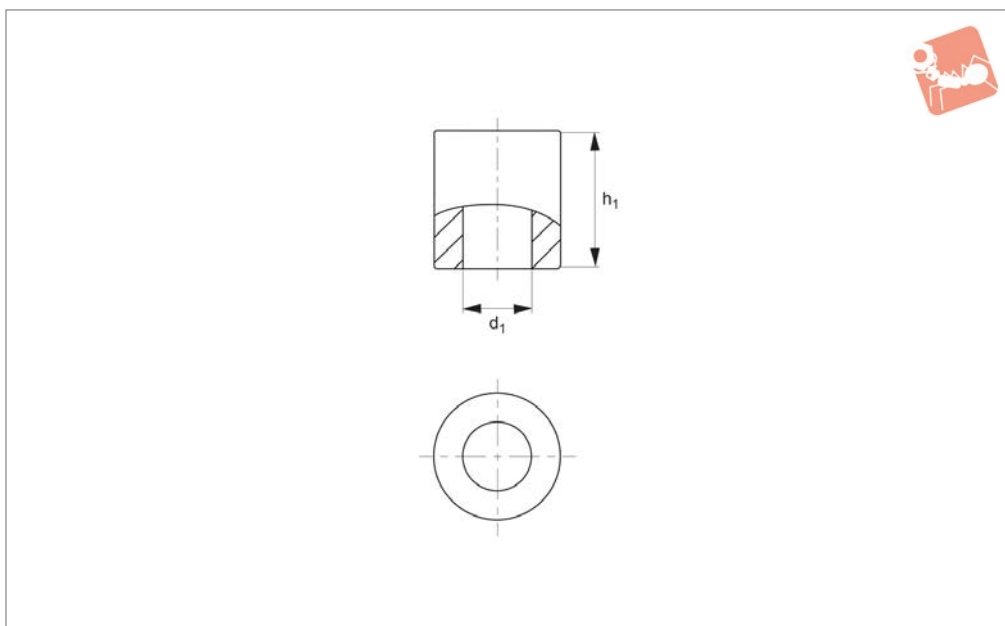
Temperature range -10°C to +80°C.

Order No.	Size	$l_1 \times h_1 \times w_1$	Weight g
46070.W0002	2	40x15x15	81
46070.W0004	4	48x25x20	208
46070.W0006	6	60x30x25	390
46070.W0008	8	75x35x30	676
46070.W0010	10	94x35x35	970



Clamping Screw Holder for modular toggle clamps

Heavy Duty Toggle Clamps



46070.2

HEAVY DUTY TOGGLE CLAMPS

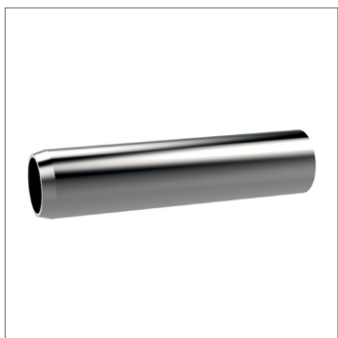
Material

Steel, black oxide coated.
For welding.

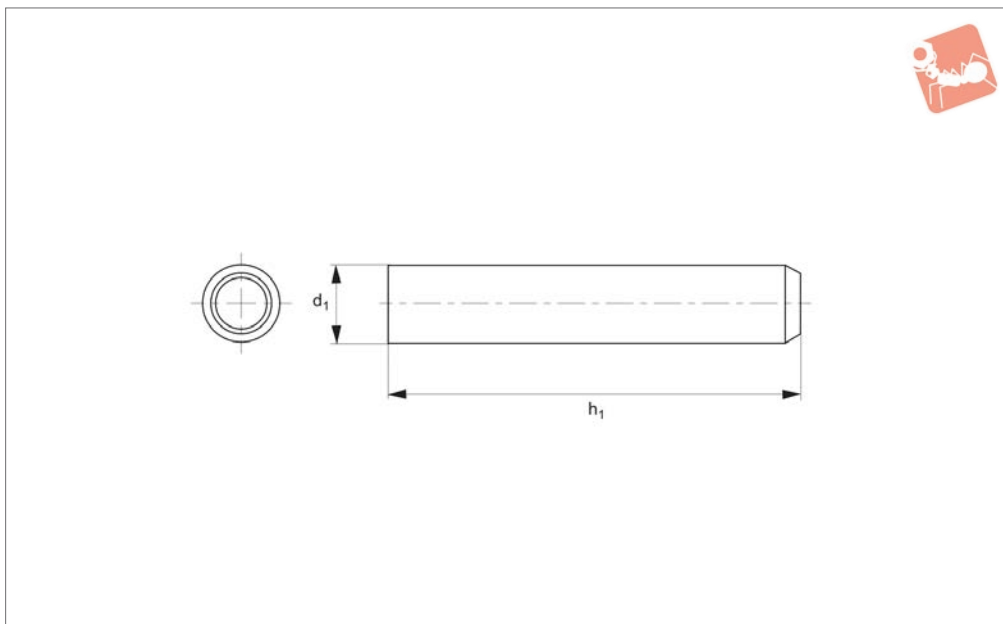
Technical Notes

To suit modular toggle clamps 46050 and
46060.

Order No.	Size	$d_1 \times h_1$	Weight g
46070.W0102	2	6,5x20	26
46070.W0104	4	12,1x24	50
46070.W0106	6	12,1x30	63
46070.W0108	8+10	12,1x36	75



46070.3



Material

Steel, black oxide coated.
For welding.

Technical Notes

To suit modular toggle clamps 46050 and 46060.

Chamfered to protect operator's hands.

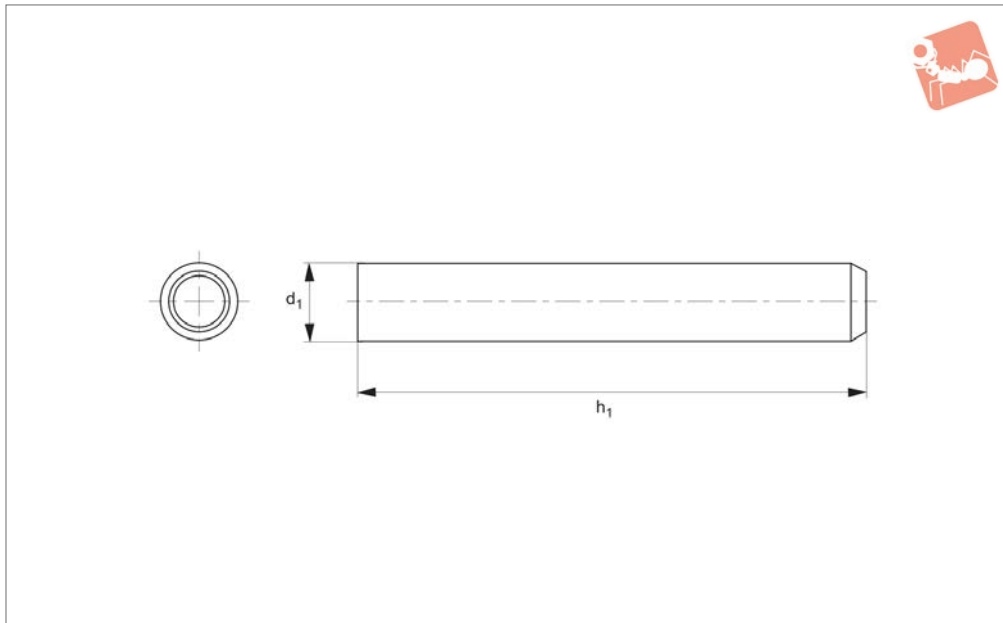
Order No.	Size	$d_1 \times h_1$	Weight g
46070.W0202	2	13x55	37
46070.W0204	4	18x95	104
46070.W0206	6	22x105	148
46070.W0208	8+10	28x115	148



Lever Arm Tube - Long

for modular toggle clamps

Heavy Duty Toggle Clamps



46070.4

HEAVY DUTY TOGGLE CLAMPS

Material

Steel, black oxide coated.
For welding.

Technical Notes

To suit modular toggle clamps 46050 and 46060.

Chamfered to protect operator's hands.

Order No.	Size	$d_1 \times h_1$	Weight g
46070.W0302	2	13x95	60
46070.W0304	4	18x120	132
46070.W0306	6	22x150	211
46070.W0308	8+10	28x180	333

Heavy Duty Toggle Clamps

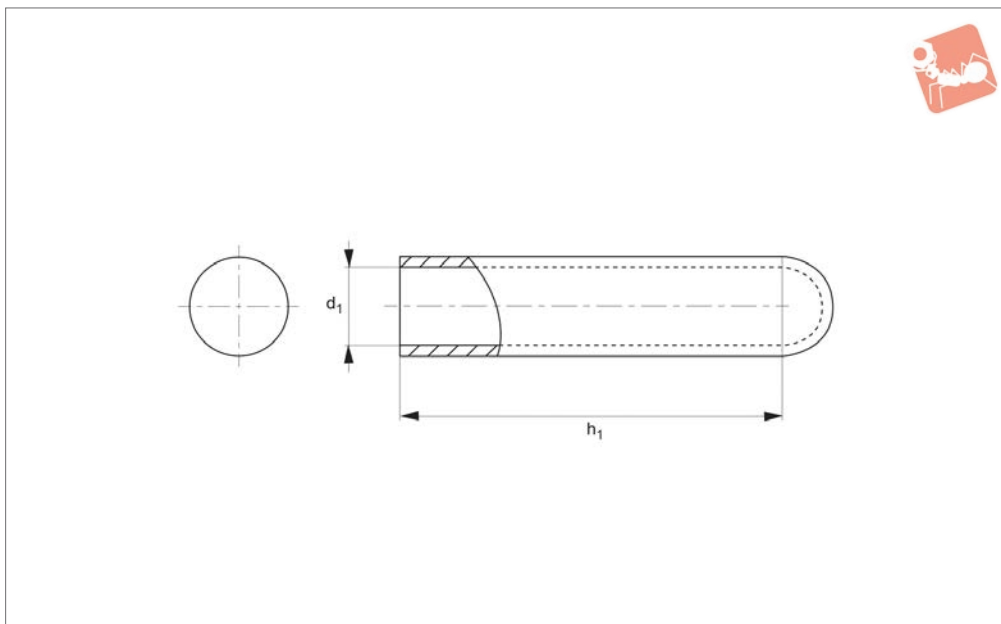
Grips for Levers for modular toggle clamps



HEAVY DUTY TOGGLE CLAMPS



46070.5



Material

Oil-resistant plastic, red.

Technical Notes

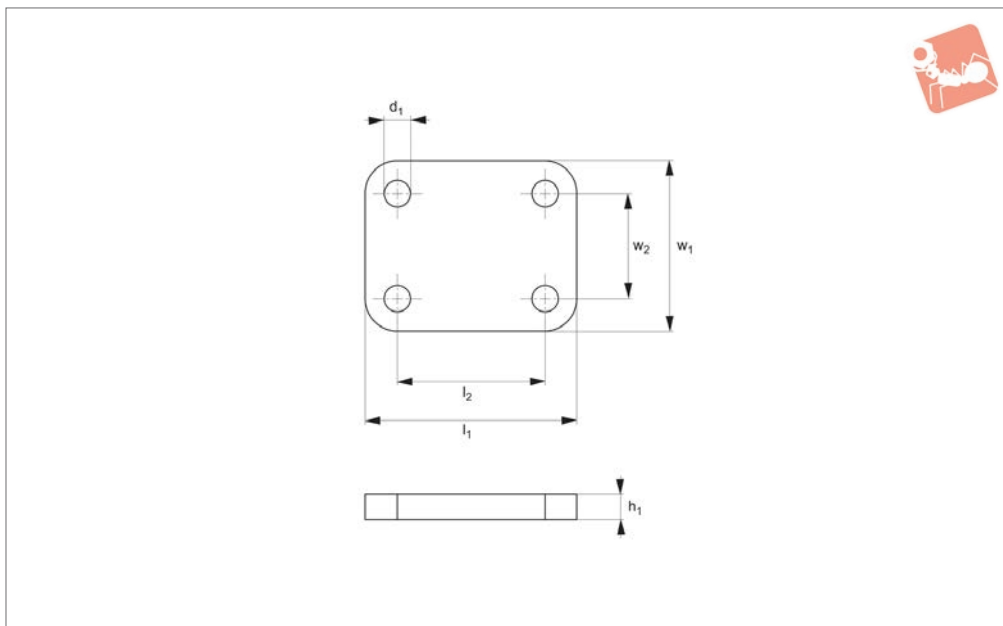
To suit lever arms 46070.W0202- .W0208 and 46070.W0302 - .W0308.

Order No.	Size	$d_1 \times h_1$	Weight g
46070.W0402	2	13x50	7
46070.W0404	4	18x90	21
46070.W0406	6	22x100	28
46070.W0408	8+10	28x110	39



Base Plate for modular toggle clamps

Heavy Duty Toggle Clamps



46070.6

HEAVY DUTY TOGGLE CLAMPS

Material

Steel, black oxide coated.
For welding.

Order No.	Size	h_1	l_1	l_2	w_1	w_2	d_1	Weight g
46070.W0502	2+4	8	50	35	40	25	6.5	86
46070.W0506	6	8	50	30	60	40	8.5	211
46070.W0508	8	8	65	45	70	50	8.5	333
46070.W0510	10	10	70	50	80	60	10.5	406

Heavy Duty Toggle Clamps

Heavy Duty Push-Pull Toggle Clamps

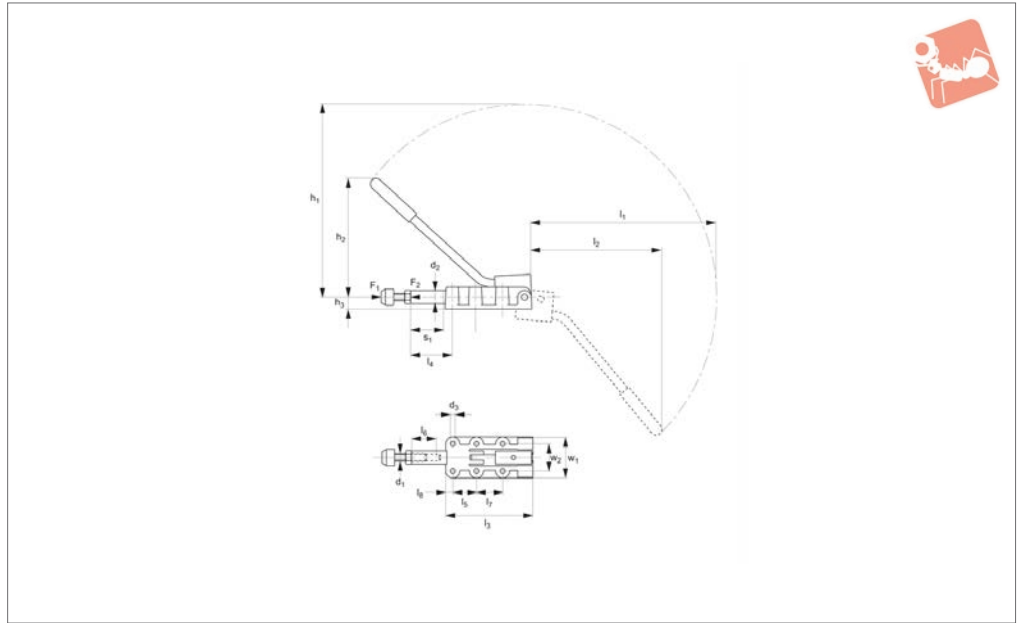
reversible lever



HEAVY DUTY TOGGLE CLAMPS



42100



Material

Body: cast iron, malleable, burnished.
 Lever and rod: tempered steel, burnished.
 Lever: steel, zinc plated.
 Handle: ergonomic soft feel, oil-resistant,

with large grip area.

Supplied complete with zinc plated clamping screw.

Technical Notes

For push-pull clamping.
 Very strong construction with long push-rod guidance.
 Temperature range -10°C to +80°C.

Order No.	Size	F ₁ kN	F ₂ kN	Clamping screw d ₁	Stroke s ₁	d ₂	d ₃	h ₁	h ₂	h ₃	Weight g
42100.W0004	4	7	7	M 8x35	32	14	5.5	190.0	115.0	12	650
42100.W0005	5	12	12	M10x50	50	20	8.5	290.5	178.5	18	1600
42100.W0007	7	25	25	M12x50	75	25	10.5	392.0	246.0	22	4280
42100.W0008	8	45	45	M16x80	106	30	10.5	523.0	323.0	28	7720

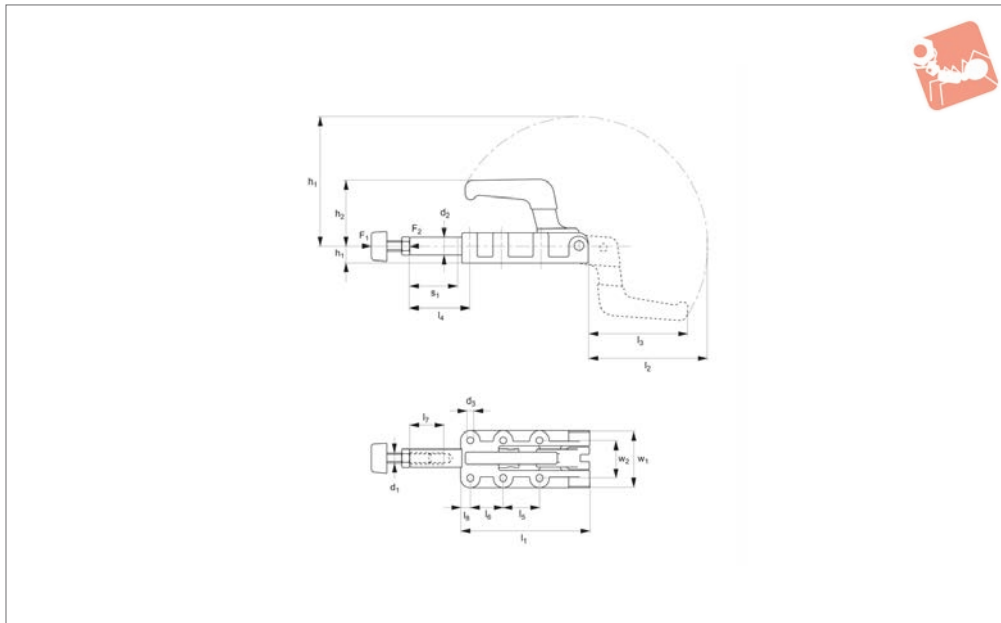
Order No.	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	w ₁	w ₂
42100.W0004	182	128	90	63	36.5	30	-	25.0	47	33.3
42100.W0005	279	197	137	63	35.0	50	41	8.0	58	41.0
42100.W0007	374	267	198	114	45.0	50	45	12.0	84	54.0
42100.W0008	501	365	254	149	70.0	60	70	14.5	86	57.0



Heavy Duty Push-Pull Toggle Clamp

solid hand lever

Heavy Duty Toggle Clamps



42150

HEAVY DUTY TOGGLE CLAMPS

Material

Body: cast iron, malleable, burnished.
 Lever and rod: tempered steel, burnished.
 Handle: ergonomic soft feel, oil-resistant, with large grip area.

Supplied complete with zinc plated and tempered clamping screw.

Technical Notes

Heavy duty version with long guide rod.
 Temperature range -10°C to +80°C.

Order No.	Size	F ₁ kN	F ₂ kN	Clamping screw d ₁	Stroke s ₁	d ₂	d ₃	h ₁	h ₂	h ₃	Weight g
42150.W0004	4	7	7	M 8x35	32	14	5.5	96	42.5	12	590
42150.W0005	5	12	12	M10x50	50	20	8.5	136	70.0	18	1650
42150.W0007	7	25	25	M12x50	75	25	10.5	196	93.5	22	4150
42150.W0008	8	45	45	M16x80	106	30	10.5	247	111.5	28	7420

Order No.	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	w ₁	w ₂
42150.W0004	90	88.0	69.0	63	-	36.5	30	25.0	47	33.3
42150.W0005	137	126.0	105.0	63	41	35.0	50	8.0	58	41.0
42150.W0007	198	183.5	151.5	114	45	45.0	50	12.0	84	54.0
42150.W0008	254	232.0	196.0	149	70	70.0	60	14.5	86	57.0