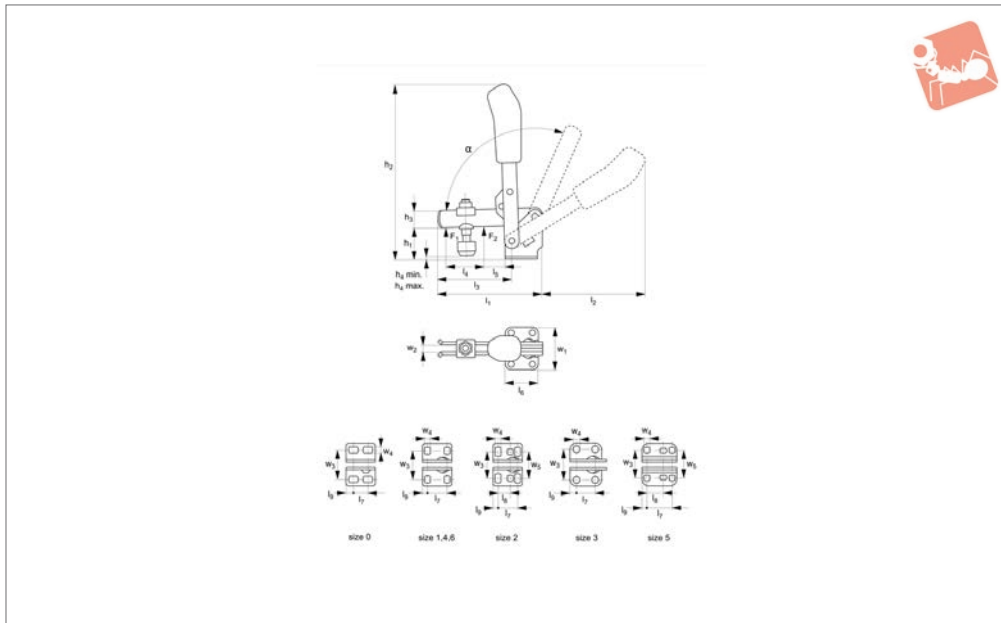




Vertical Acting Toggle Clamps

open arm - horizontal base



40000.1

STEEL TOGGLE CLAMPS

Material

Body: steel, zinc plated.
 Rivets: stainless steel running in hardened bushes (sizes 2-6). Pre-lubricated bearings (grease suitable for food industry use).
 Ergonomic, soft feel, oil-resistant handle with large grip area. Supplied complete

with clamping screw (with rubber pad).

Technical Notes

For fastening to mounting plates, etc.
 Opening angle (symbola/symbol/symbola/symbol*) can be changed by pressing in a stop pin on the clamp body.

Temperature range -10°C to +80°C.

Tips

This product is also available in stainless steel, matt black and ESD.

Order No.	Size	F ₁ kN	F ₂ kN	Clamping screw	h ₁	h ₂	h ₃	h ₄ min.	h ₄ max.	l ₁	l ₂	Weight g
40000.W0000	0	0.5	0.7	M 4x25	18.0	81	8	-1.5	3.5	49	50	60
40000.W0001	1	0.6	1.1	M 5x30	19.0	98	10	-4.0	2.0	61	58	105
40000.W0002	2	0.8	1.2	M 6x35	23.0	140	12	-3.0	4.5	78	89	175
40000.W0003	3	1.2	2.5	M 8x45	33.0	186	18	2.0	11.0	112	112	410
40000.W0004	4	1.7	3.0	M 8x65	42.5	221	20	-6.0	22.5	141	130	630
40000.W0005	5	3.0	5.0	M12x80	55.8	281	25	-3.0	27.5	195	185	1480
40000.W0006	6	3.4	5.5	M12x110	81.0	333	30	-2.5	55.0	231	206	2200

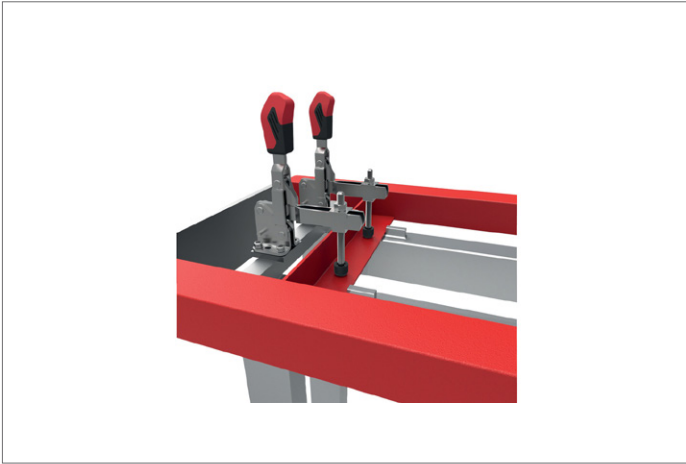
Order No.	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	l ₉	w ₁	w ₂	w ₃	w ₄	w ₅	α	α*
40000.W0000	31.0	14	5.5	22	8,5-13,5	-	5.5	32	4	23.0	4.5	-	95°	-
40000.W0001	39.0	18	6.0	27	16.0	-	5.5	34	5	22,5-26,0	4.5	-	95°	-
40000.W0002	52.0	25	11.0	32	20.0	12.5	6.0	43	6	23,0-31,0	5.5	27	105°	60°
40000.W0003	79.0	37	19.0	35	20.0	-	7.5	46	8	32.5	7.5	-	105°	60°
40000.W0004	101.0	54	16.0	53	32.0	-	13.0	64	10	43,0-46,5	8.6	-	105°	60°
40000.W0005	140.0	73	34.0	65	45.0	26,5-31,5	9.5	70	14	45,0-50,0	8.5	45	115°	60°
40000.W0006	165.5	89	28.0	90	50.5	-	24.5	100	14	67,5-72,5	13.0	-	140°	60°

Steel Toggle Clamps

Vertical Acting Toggle Clamps open arm - horizontal base



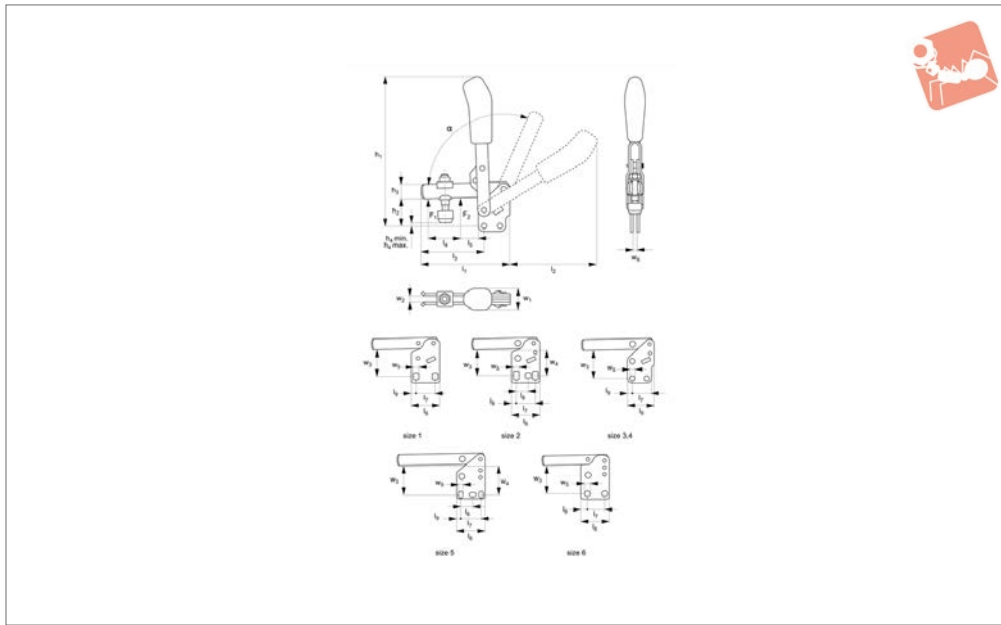
STEEL TOGGLE CLAMPS





Vertical Acting Toggle Clamps

open arm - vertical base



40050.1

STEEL TOGGLE CLAMPS

Material

Body: steel, zinc plated. Stainless steel rivets running in hardened bushes (sizes 2-6). Pre-lubricated bearings (grease suitable for food industry use). Ergonomic, soft feel, oil-resistant handle

with large grip area.
Supplied complete with clamping screw (with rubber pad).

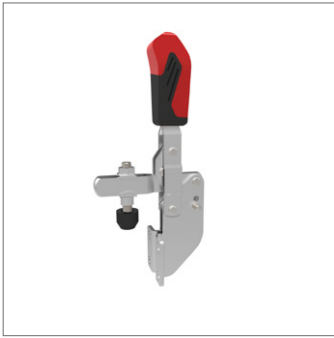
Technical Notes

For fastening to mounting plates, etc.

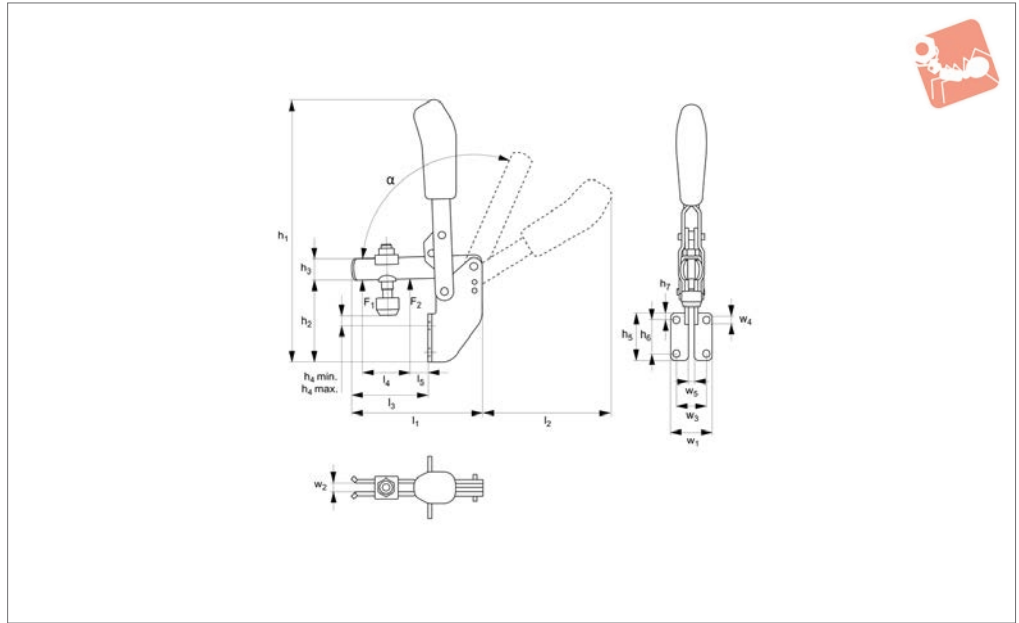
Opening angle (symbola/symbol/symbola/symbol*) can be changed by pressing in a stop pin on the clamp body.
Temperature range -10°C to +80°C.

Order No.	Size	F ₁ kN	F ₂ kN	Clamping screw	h ₁	h ₂	h ₃	h ₄ min.	h ₄ max.	l ₁	l ₂	l ₃	Weight g
40050.W0001	1	0.6	1.1	M 5x30	109.0	29	10	6.0	12.5	61	59	39	105
40050.W0002	2	0.8	1.2	M 6x35	144.5	38	12	11.5	19.5	78	80	52	175
40050.W0003	3	1.2	2.5	M 8x45	200.0	48	18	16.5	25.0	112	114	79	410
40050.W0004	4	1.7	3.0	M 8x65	244.0	65	20	16.5	45.5	141	130	101	630
40050.W0005	5	3.0	5.0	M12x80	301.0	77	25	18.0	49.0	195	183	140	1480
40050.W0006	6	3.4	5.5	M12x110	369.0	117	30	33.0	90.5	231	206	165	2200

Order No.	l ₄	l ₅	l ₆	l ₇	l ₈	l ₉	w ₁	w ₂	w ₃	w ₄	w ₅	w ₆	α	α*
40050.W0001	18	6	27	16.0	-	5.5	19	5	23,5-25,0	4,5	-	5	95°	-
40050.W0002	25	11	32	20.0	12.5	6.0	21	6	28,5-32,0	5,5	30	5	105°	60°
40050.W0003	36	19	40	20.0	-	7.5	27	8	41.0	7,5	-	6	105°	60°
40050.W0004	54	16	53	32.0	-	13.0	35	10	55.5	8,6	-	8	105°	60°
40050.W0005	72	35	65	45.0	26,5-31,5	9.5	45	14	66.0	8,5	64	10	115°	60°
40050.W0006	89	28	90	50.5	-	24.5	45	14	102.0	13,0	-	10	140°	60°



40100.1



Material

Body: steel, zinc plated.
 Rivets: stainless steel running in hardened bushes (sizes 2-3). Pre-lubricated bearings (grease suitable for food industry use).
 Ergonomic, soft feel, oil-resistant handle

with large grip area.
 Supplied complete with clamping screw (with rubber pad).

Technical Notes
 For fastening to mounting plates, etc.

Opening angle (symbol α /symbol α *) can be changed by pressing in a stop pin on the clamp body.
 Lock washer for the thrust bolt at the end of the clamping arm.
 Temperature range -10°C to +80°C.

Order No.	Size	F ₁ kN	F ₂ kN	Clamping screw	h ₁	h ₂	h ₃	h ₄ min.	h ₄ max.	h ₅	h ₆	h ₇	Weight g
40100.W0001	1	0.8	1.1	M 5x30	125.0	45.0	10	2.5	9.0	30	14	10	125
40100.W0002	2	1.0	1.2	M 6x35	176.5	60.0	12	8.0	15.5	32	20	6	220
40100.W0003	3	1.4	2.5	M 8x45	223.0	71.0	18	9.0	17.5	38	24	7	400
40100.W0004	4	2.0	3.0	M 8x65	280.0	101.5	20	11.0	39.5	96	32	54	650

Order No.	l ₁	l ₂	l ₃	l ₄	l ₅	w ₁	w ₂	w ₃	w ₄	w ₅	α	α^*
40100.W0001	61	58	34.5	18	7	30.0	5	20.0	4.5	5	98°	-
40100.W0002	77	90	41.0	25	6	37.0	6	25.5	6.1	5	105°	60°
40100.W0003	110	112	62.0	37	11	42.5	8	28.5	6.5	6	105°	60°
40100.W0004	141	129	83.0	54	11	52.0	10	32.0	8.5	8	105°	60°



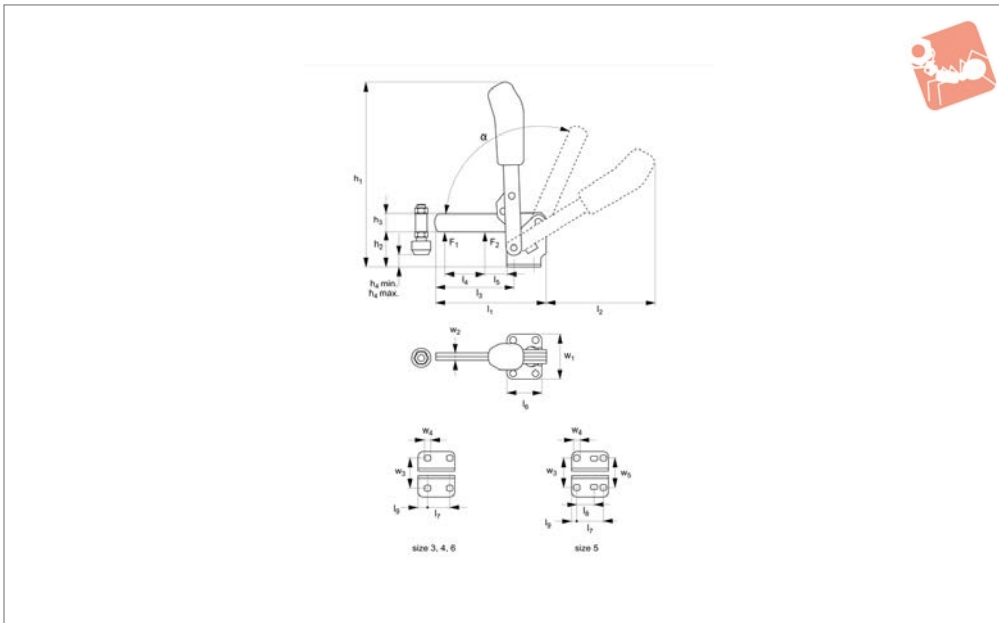
Vertical Acting Toggle Clamps

solid arm - horizontal base



40150

STEEL TOGGLE CLAMPS



Material

Body: steel, zinc plated.
 Rivets: stainless steel running in hardened bushes.
 Pre-lubricated bearings (grease suitable for food industry use).
 Ergonomic, soft feel, oil-resistant handle

with large grip area.
 Supplied complete with weldable clamping screw (with rubber pad).

Technical Notes

For fastening to mounting plates, etc. The arm can be shortened to suit the work-

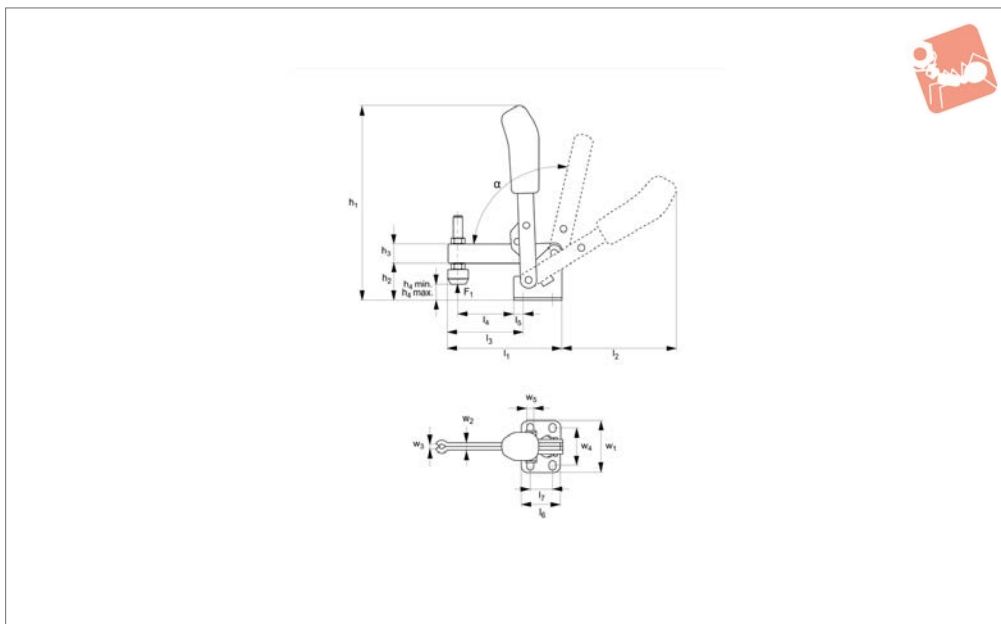
piece, the sleeve is then welded to the arm. Opening angle (symbol α /symbol α^*) can be changed by pressing in a stop pin on the clamp body. Temperature range -10°C to $+80^\circ\text{C}$.

Order No.	Size	F_1 kN	F_2 kN	Clamping screw	h_1	h_2	h_3	h_4 min.	h_4 max.	l_1	l_2	l_3	Weight g
40150.W0003	3	1.4	2.5	M 8x45	186	33.5	18	0	12.0	108.5	116.5	81.0	340
40150.W0004	4	2.0	3.0	M 8x65	221	42.5	20	-8	21.0	141.5	129.5	101.0	585
40150.W0005	5	3.0	5.0	M12x80	281	55.5	25	-6	25.5	196.5	184.0	141.0	1480
40150.W0006	6	3.5	5.5	M12x110	331	81.0	30	-5	51.0	232.0	206.0	166.5	2200

Order No.	l_4	l_5	l_6	l_7	l_8	l_9	w_1	w_2	w_3	w_4	w_5	α	α^*
40150.W0003	43	19.5	35	20.0	-	7.5	46	6	32.5	7.5	-	105°	60°
40150.W0004	61	17.0	53	32.0	-	13.0	64	8	45.0	8.6	-	105°	60°
40150.W0005	88	30.5	65	45.0	26,5-31,5	9.5	70	10	45,0-50,0	8.5	45	115°	60°
40150.W0006	90	20.5	90	50.5	-	24.5	100	10	68,0-72,0	13.0	-	140°	60°



40200



Material

Body: steel, zinc plated.
 Rivets: stainless steel running in hardened bushes.
 Pre-lubricated bearings (grease suitable

for food industry use).
 Ergonomic, soft feel, oil-resistant handle with large grip area.
 Supplied complete with clamping screw (with rubber pad).

Technical Notes

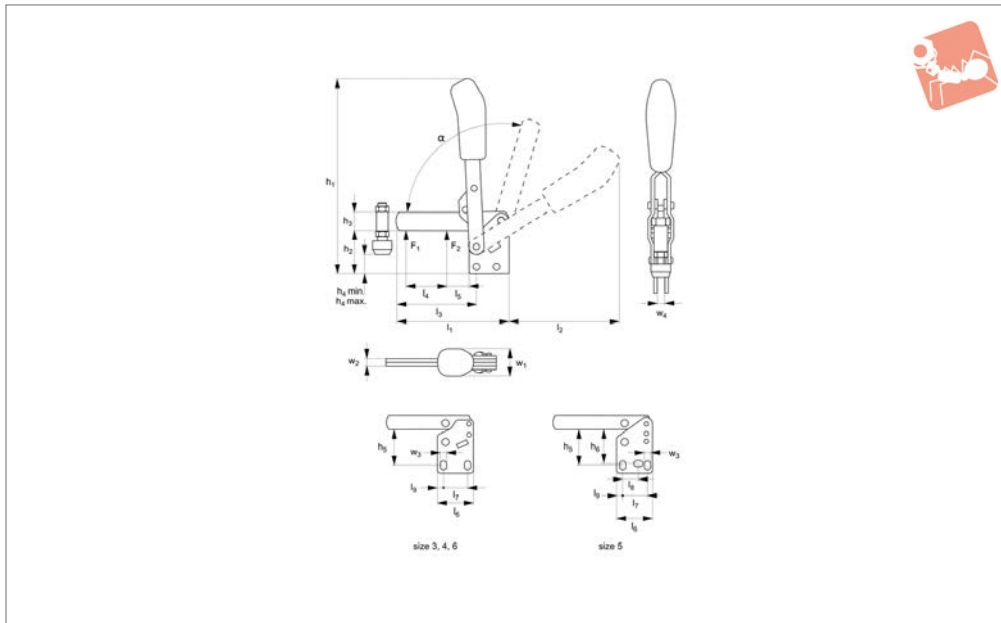
Temperature range -10°C to +80°C.

Order No.	Size	F_1 kN	Clamping screw		h_1	h_2	h_3	h_4 min.	h_4 max.	l_1	l_2	Weight g
40200.W0001	1	1	M 5x30		98	18.5	10	-6	4.5	67	58	100
Order No.	l_3	l_4	l_5	l_6	l_7	w_1	w_2	w_3	w_4	w_5	α	
40200.W0001	45	33	5.5	27	16	34	5	5	22,5-25,5	4.5	95°	



Vertical Acting Toggle Clamps

solid arm - vertical base



40250

STEEL TOGGLE CLAMPS

Material

Body: steel, zinc plated.
 Rivets: stainless steel running in hardened bushes.
 Pre-lubricated bearings (grease suitable for food industry use).
 Ergonomic, soft feel, oil-resistant handle

with large grip area.
 Supplied complete with weldable clamping screw (with rubber pad).

Technical Notes

For mounting to struts and for welding jigs. The arm can be shortened to suit the

workpiece, the sleeve is then welded to the arm.

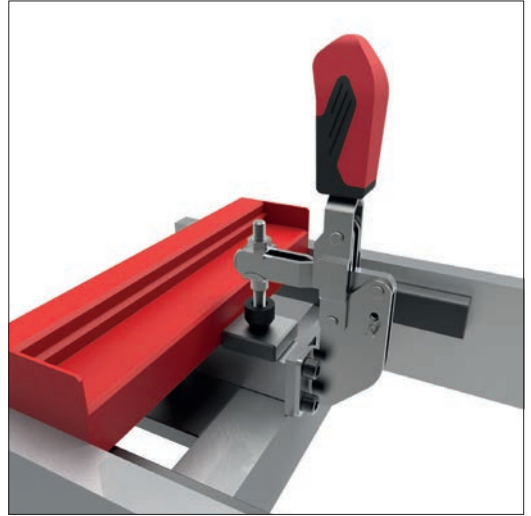
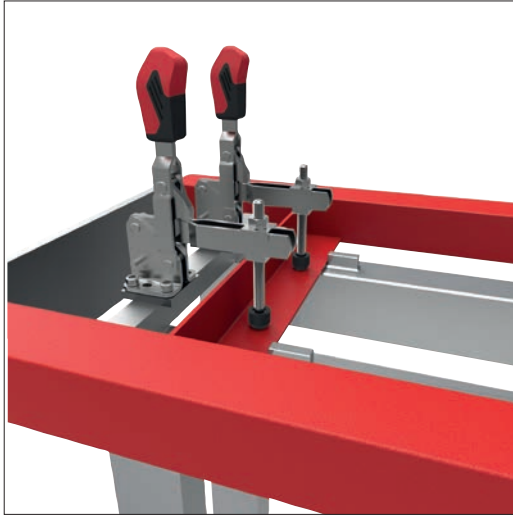
Opening angle (symbol α /symbol α /symbol α /symbol*) can be changed by pressing in a stop pin on the clamp body.
 Temperature range -10°C to +80°C.

Order No.	Size	F ₁ kN	F ₂ kN	Clamping screw	h ₁	h ₂	h ₃	h ₄ min.	h ₄ max.	h ₅	h ₆	l ₁	l ₂	Weight g
40250.W0003	3	1.4	2.5	M 8x45	200	48	18	14.5	26.0	41.0	-	108.5	111.0	400
40250.W0004	4	2.0	3.0	M 8x65	244	65	20	13.0	44.0	55.5	-	141.5	129.5	585
40250.W0005	5	3.0	5.0	M12x80	302	77	25	15.0	47.0	66.0	64	196.5	184.0	1480
40250.W0006	6	3.5	5.5	M12x110	369	117	30	28.5	86.5	102.0	-	232.0	206.0	2200

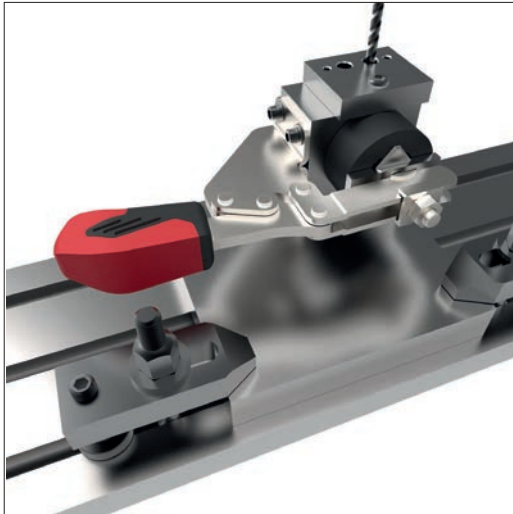
Order No.	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	l ₉	w ₁	w ₂	w ₃	w ₄	α	α^*
40250.W0003	81.0	43	19.5	35	20.0	-	7.5	27	6	7.5	6	105°	60°
40250.W0004	101.0	61	17.0	53	32.0	-	13.0	34	8	8.6	8	105°	60°
40250.W0005	141.0	88	30.5	65	45.0	26,5-31,5	9.5	36	10	8.5	10	115°	60°
40250.W0006	166.5	90	20.5	90	50.5	-	24.5	39	10	13.0	10	140°	60°



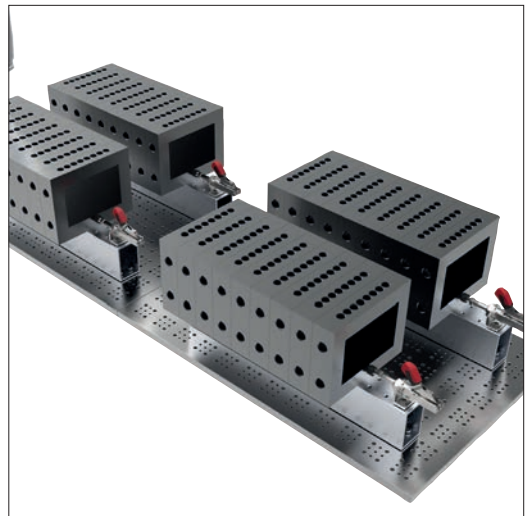
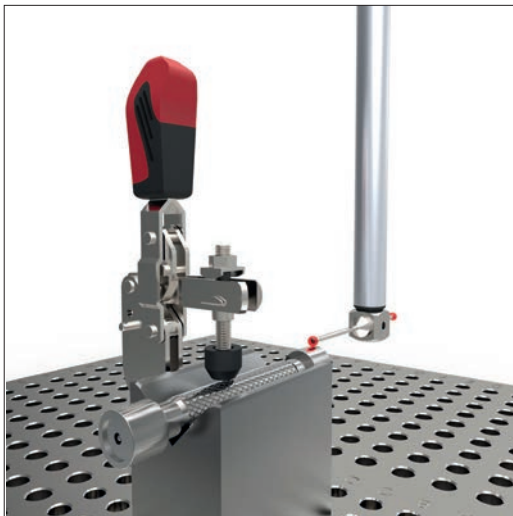
Welding Fixtures



Machining and Jig Assemblies

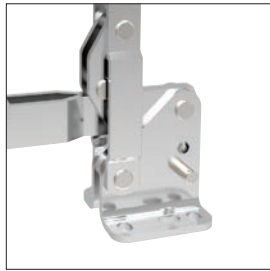


Cmm's

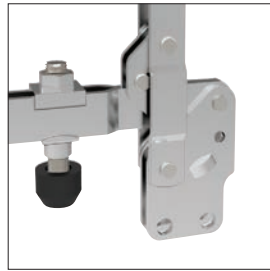




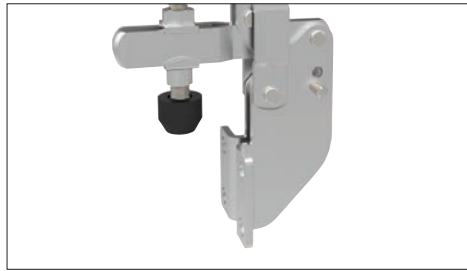
STEEL TOGGLE CLAMPS



Horizontal base



Vertical base



Angled base

Mounting Base Variations



Vertical acting



Horizontal acting



Push-pull

Clamping Variations



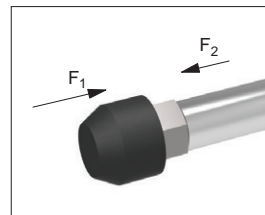
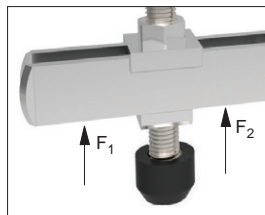
Hook type



Latch type

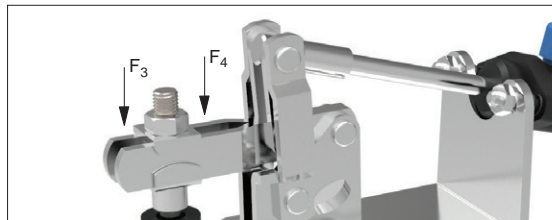
Explanation of forces

The force transmitted to the workpiece by the toggle clamp's closed arm, without itself being deformed when machine forces are applied. The holding force value is dependent upon the proximity of the measuring load point to the toggle clamp's pivot point (therefore two values, F_1 and F_2 are provided).



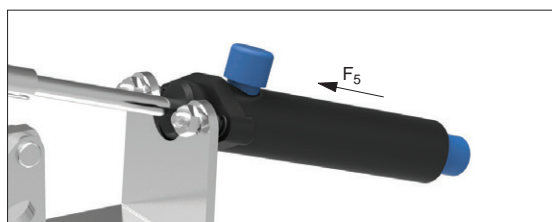
Holding Forces F_1 or F_2

The force applied to the workpiece when the toggle clamp's arm is closed. These clamping forces can only be stated for pneumatic toggle clamps, clamping forces of manual clamps cannot be easily measured as they are dependent upon the operator.



Clamping Forces F_3 or F_4

For pneumatically controlled toggle clamps only, F_5 is the piston force required (at 6 bar to) achieve the stated clamping force.



Piston Forces F_5

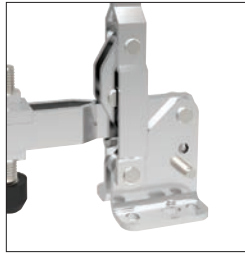
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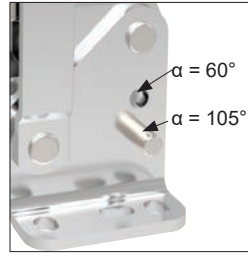
Quality Features



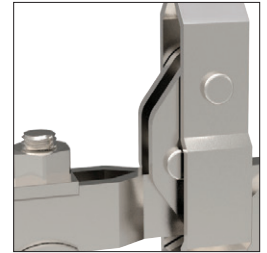
Ergonomic soft grip
2-component handle



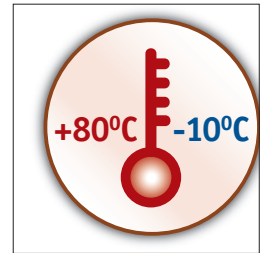
Stainless rivets and
hardened bushings



Moveable stop for
variable opening angle



Operator
finger protection



Temperature resistant

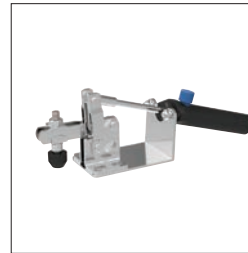
Unique Features



Safety catches



Heavy duty versions



Pneumatic versions



Matt black surface for
optical measurement

Materials



Steel, zinc plated
and passivated



Stainless steel (304)



Steel, matt black
vario-spektron coated



Protective cap and
handle made of an
electrostatic conductive
(dissipative) material.