

TOGGLE CLAMPS, MANUAL AND PNEUMATIC



WE GENERATE EXCITEMENT.

Since its founding by Andreas Maier in 1890, our company has lived through many exciting times. Today we are the leading manufacturer in Europe, supplying over 5,000 different products from the fields of clamping, screwing and locking. With this extensive product range we can meet all of our customers' needs and requirements. But providing optimal quality means meeting the challenges at all levels: Expert consultation, modern team organisation, individual solutions (including special developments), flexibility in response to changing conditions, etc. And we ourselves find this so exciting that we look forward every day to shaping the market together with our employees and our customers – both now and in the future. That is something you can count on.



MANAGING DIRECTORS

> Volker Göbel
Johannes Maier
Hans-Günther Maier



THE AMF SERVICE GUARANTEE

> Assuredly on the way to the top

COMPANY HISTORY

- 1890** Company founded by Andreas Maier as a lock manufacturer.
- 1920** Production program extended to include spanners.
- 1928** Production-line assembly of „FELLBACH LOCKS“.
- 1951** With the introduction of clamping elements, AMF diversified into the fields of workpiece and tool clamping.
- 1965** Toggle clamps extend the AMF product range. AMF catalogues are now published in ten languages.
- 1975** Hydraulic clamping marks further specialisation.
- 1982** Clamping and fixture systems round off AMF's clamping expertise.
- 1996** Introduction of the AMF Team Organisation in all business sectors. Quality assurance certified to ISO 9001.
- 2001** Introduction of the AMF Service Guarantee for all products.
- 2004** Introduction of the ZPS zero-point clamping system.
- 2007** The Trec clamping system for automated welding and magnetic clamping technology extend the AMF product range.
- 2009** Development and marketing of AMF Vacuum clamping technology

5 Individual development

You cannot find the product you need? Talk to us; we will find the right solution for you – from a special version, right through to a completely new development.

4 Warranty

We believe in the high quality of our products. Complaints are dealt with quickly, unbureaucratically and generously – as far as possible, even well-beyond the guarantee period.

3 Certified quality

AMF stands for painstaking production in our own works. We have followed this tradition since 1890 – today, of course, with a modern quality assurance system to ISO 9001.

2 Short delivery times

From the AMF finished-product stores with over 5,000 articles, we can supply 98 % of orders from stock. And you can be sure that every stock article ordered is dispatched the same day.

1 Real technical advice

Many tasks and a multitude of solutions. From AMF Professional Products you can find the right way to solve your problem – fast and reliably – either at your local dealer or with the help of the specialist in our team. Just call us!

E Made in Germany

It goes without saying that our range of products is developed and manufactured by our team of employees in Germany.

PRODUCTS ON THE COVER

Link Clamp, pneumatic no. 6829V, page 79 | Vertical toggle clamp no. 6800S, page 37

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Vertical toggle clamp with safety latch

No. 6800S, Page 37



Swing clamp, pneumatic, block version

No. 6829BR/BL, Page 88



Link Clamp, pneumatic, flange-mounting version

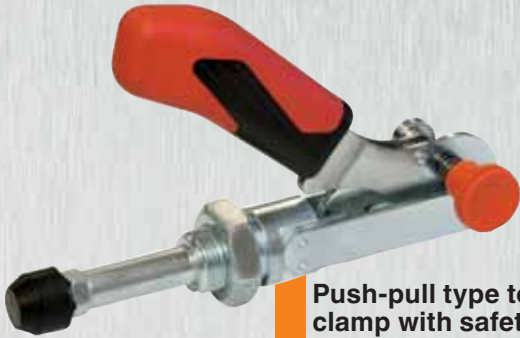
No. 6829V, Page 79



Push-pull type toggle clamp

No. 6841, Page 25





Push-pull type toggle clamp with safety latch
No. 6840S, Page 42



Horizontal toggle clamp with safety latch, black
No. 6832BS, Page 63

NEW!



Combination clamp
No. 6860, Page 24

Hook type toggle clamp horizontal with safety latch

No. 6848HS, Page 44

Hook type toggle clamp horizontal with safety latch stainless steel

No. 6848HSNI, Page 51



NEW!

> ADVANTAGES OF „TOGGLE“ PRINCIPLE

- > Large and quick opening.
- > Clearing the workpieces completely for unimpeded handling of work.
- > Large power transmission. Minimum operating effort giving maximum clamping force.
- > The clamps are self-arresting, they remain locked, resisting the force produced when machining components.

> APPLICATIONS

A wide range of uses can be found for these AMF toggle clamps owing to their favourable power to movement ratio, and their easy action. These versatile clamps can be used in the metal working industry when drilling, welding, bending, grinding, testing and fitting, as well as in the wood and plastic industry in glueing, drilling, cutting and milling jigs.

> QUALITY FEATURES

To rationalize effectively, a design should be selected which will function for many years. AMF toggle clamps are equipped with ample dimensioned rivets which are moving in case-hardened bushes (with exception of size 0 and 1 for space reasons). All parts are galvanized prior to assembly. The tempered and galvanized clamping screw (strength class 8.8) is quickly adjustable by the T-slot nut or the special nut. Certain toggle clamps are also available in STAINLESS STEEL versions. Please see pages 45 to 54.

AMF toggle clamps are designed for ambient temperatures from -10°C to +80°C and are free of paint-wetting impairment substances.

> DESIGN AND SERVICE LIFE

Due to the different applications the design is of importance. Besides our high quality standard types extra heavy duty toggle clamps no. 6811P and no. 6812P are available.

> FORCES WITH HAND- AND PNEUMATIC TOGGLE CLAMPS

The selection of the correct toggle clamp size depends on the required clamping forces (refer to specification tables). The forces are shown in kN and one should distinguish between:

- Holding force F1 or F2
- Clamping force F3 or F4
- Piston force F5 (6 bar air pressure)

> THE CLAMPING FORCE

is the force applied when closing the clamp, measured between the arms and the component. As opposed to the pneumatic toggle clamps the clamping forces of manual clamps can not be correctly formulated as it is dependent on the operator.

> THE HOLDING FORCE

is the force the closed arm transmits to the workpiece, without itself being deformed when machine forces apply. When maximum force is reached, the hinged point goes over the dead centre, thereby insuring, that the action is locked and cannot be released until such time as the handle is returned to its original position.

> MOUNTING POSSIBILITIES

The base are offered in three versions: toggle clamps with horizontal base, vertical base (preferably used on welded construction and on webs) and toggle clamps with angle base for front mounting. With all toggle clamps the clamping screws are included in the price. Large quantities can be supplied without clamping screw if required.



THE FEATURES OF OUR TOGGLE CLAMPS AT A GLANCE

- > Ergonomic two-component handle
- > Safety clamping piece with finger protection
- > Retainer for clamping screws
- > Stainless steel rivets
- > Removable rubber cap

Ergonomic 2-component handle with high ease of use due to increased grip area. The grip area made of soft components is combined with the hard base material, which sits firmly on the clamp.

Safety clamping piece with finger protection and integrated stop, tamper proof.

Rivets of stainless steel set in case-hardened steel bushes ensuring durability and provide a consistent performance.

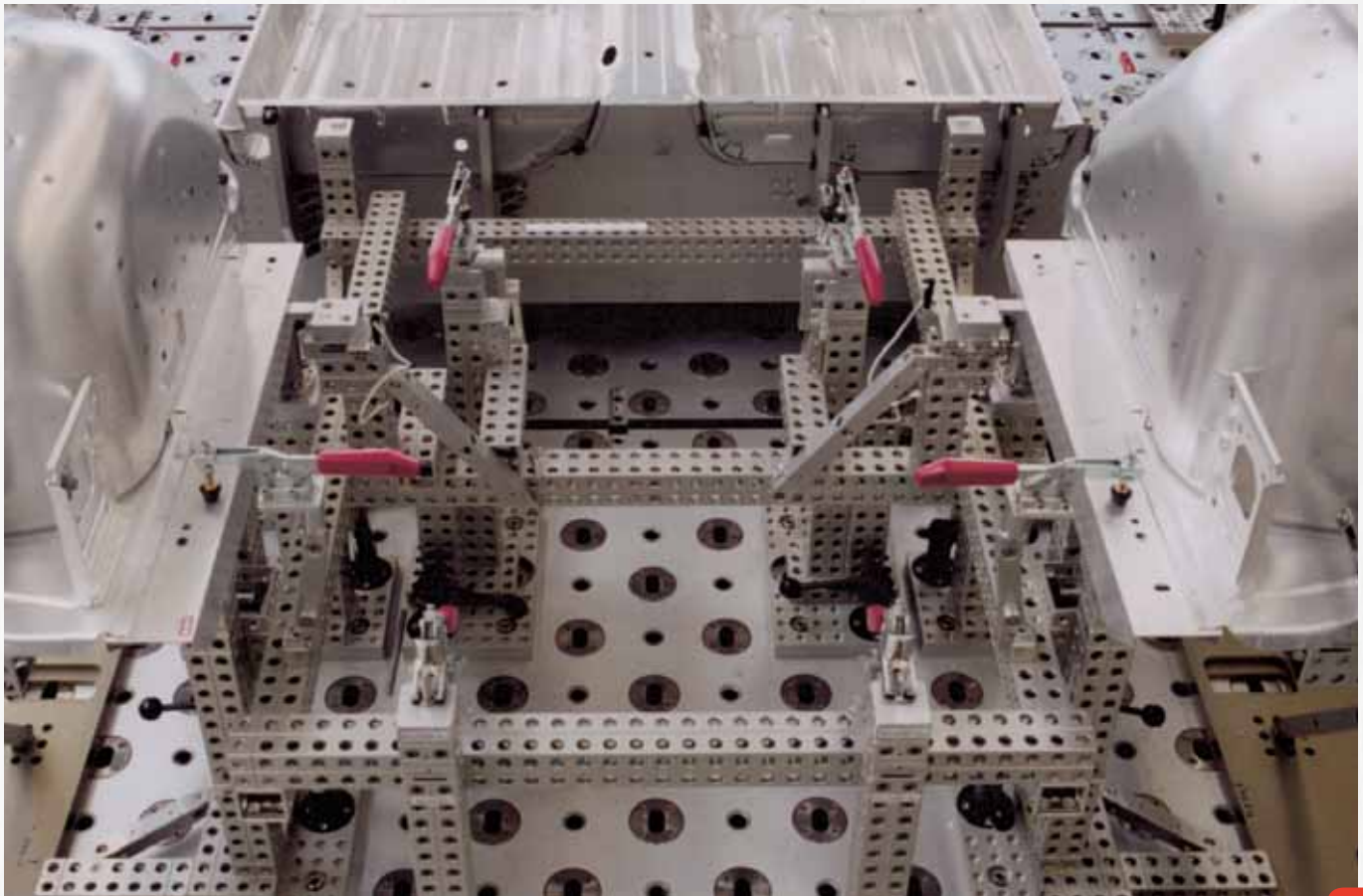
Retainer for clamping screws. Suitable for later insertion of pre-assembled clamping screws.

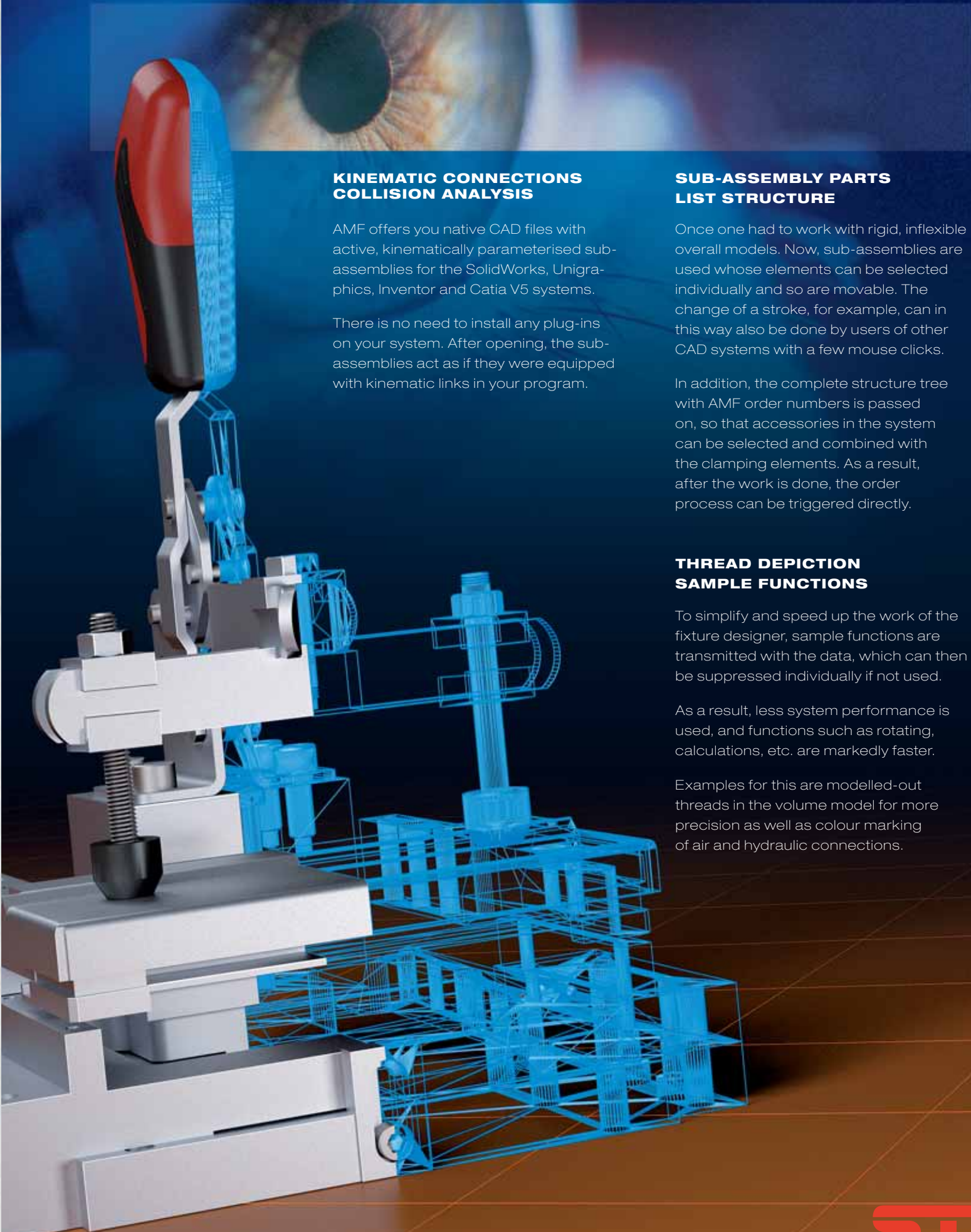
The opening angle can be changed by pressing in a stop pin.



Clamping screw (8.8) can be adjusted quickly using the washer-nut carried in the clamping arm.

Clamping screw with removable rubber cap.





KINEMATIC CONNECTIONS COLLISION ANALYSIS

AMF offers you native CAD files with active, kinematically parameterised sub-assemblies for the SolidWorks, Unigraphics, Inventor and Catia V5 systems.

There is no need to install any plug-ins on your system. After opening, the sub-assemblies act as if they were equipped with kinematic links in your program.

SUB-ASSEMBLY PARTS LIST STRUCTURE

Once one had to work with rigid, inflexible overall models. Now, sub-assemblies are used whose elements can be selected individually and so are movable. The change of a stroke, for example, can in this way also be done by users of other CAD systems with a few mouse clicks.

In addition, the complete structure tree with AMF order numbers is passed on, so that accessories in the system can be selected and combined with the clamping elements. As a result, after the work is done, the order process can be triggered directly.

THREAD DEPICTION SAMPLE FUNCTIONS

To simplify and speed up the work of the fixture designer, sample functions are transmitted with the data, which can then be suppressed individually if not used.

As a result, less system performance is used, and functions such as rotating, calculations, etc. are markedly faster.

Examples for this are modelled-out threads in the volume model for more precision as well as colour marking of air and hydraulic connections.

No. 6800

Vertical acting toggle clamp

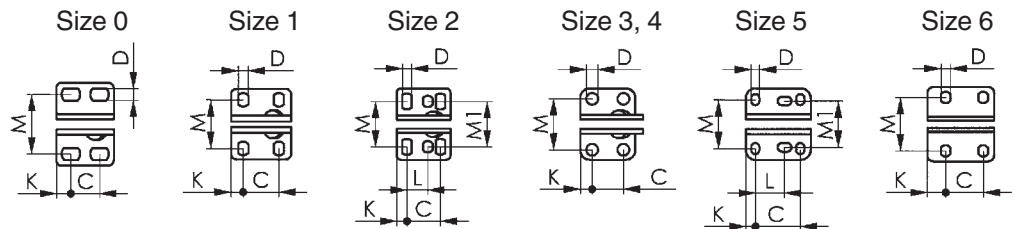
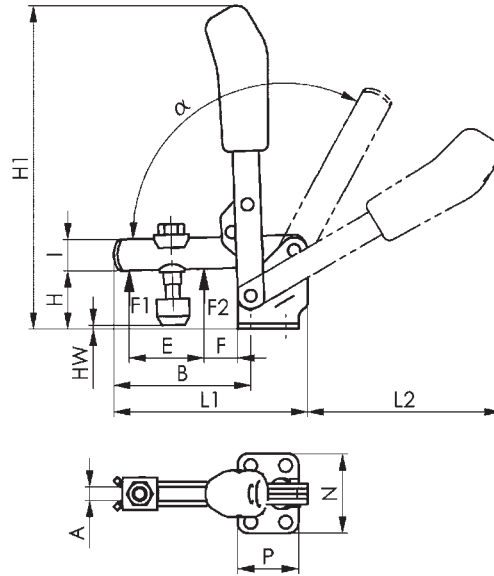
with open clamping arm and horizontal base.

Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 to 6, run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection, lock washer for the thrust bolt at the end of the clamping arm.

Complete with tempered, galvanized clamping screw no. 6890.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90001	0	0,5	0,7	M 4x 25	60
90019	1	0,6	1,1	M 5x 30	105
90027	2	0,8	1,2	M 6x 35	175
90035	3	1,2	2,5	M 8x 45	410
90043	4	1,7	3,0	M 8x 65	630
90050	5	3,0	5,0	M12x 80	1480
90068	6	3,4	5,5	M12x110	2200

Also available in „STAINLESS STEEL“ (no. 6800NI) and in matte-black galvanized version (no. 6800B).



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L	L1	L2	M	M1	N	P	α	α*
90001	0	4	31	8,5-13,5	4,5	14	5,5	18,0	81,0	-1,5	3,5	8	5,5	-	49	50	23,0	-	32	22	95°	-
90019	1	5	39	16,0	4,5	18	6,0	19,0	98,5	-4,0	2,0	10	5,5	-	61	59	22,5-26,0	-	35	27	95°	-
90027	2	6	52	20,0	5,5	25	11,0	23,0	130	-3,0	4,5	12	6,0	12,5	78	80	23,0-31,0	27	43	32	105°	60°
90035	3	8	79	20,0	7,5	36	19,0	33,0	186	2,0	11,0	18	7,5	-	112	112	32,0	-	46	35	105°	60°
90043	4	10	101	32,0	8,6	54	16,0	42,5	221	-6,0	22,5	20	13,0	-	141	130	45,0	-	64	53	105°	60°
90050	5	14	140	45,0	8,5	73	34,0	55,8	281	-3,0	27,5	25	9,5	26,5-31,5	195	185	45,0-50,0	45	70	65	115°	60°
90068	6	14	165	50,5	13,0	89	26,0	81,0	332	-2,5	55,0	30	24,5	-	231	207	71	-	100	90	140°	60°

* The opening angle can be changed by pressing in a stop pin.

No. 6802

Vertical acting toggle clamp

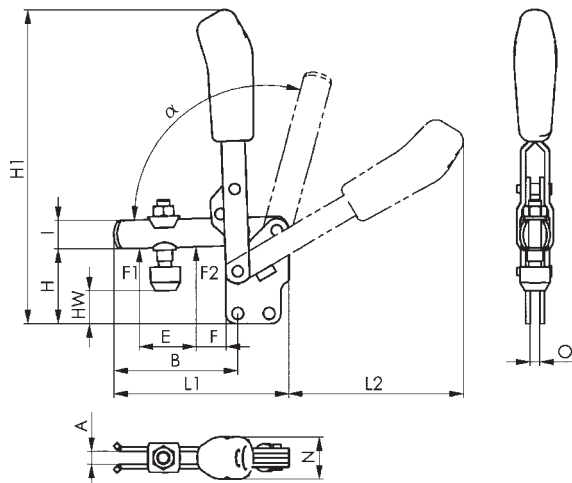
with open clamping arm and vertical base.

Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 to 6, run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection. Lock washer for the thrust bolt at the end of the clamping arm.

Complete with tempered, galvanized clamping screw no. 6890.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90217	1	0,6	1,1	M 5x 30	105
90225	2	0,8	1,2	M 6x 35	175
90233	3	1,2	2,5	M 8x 45	410
90241	4	1,7	3,0	M 8x 65	630
90258	5	3,0	5,0	M12x 80	1480
90266	6	3,4	5,5	M12x110	2200

Also available in matte-black galvanized version (no. 6802B).



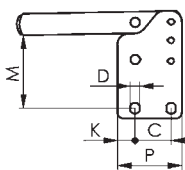
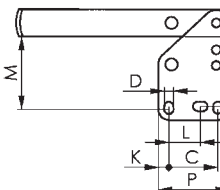
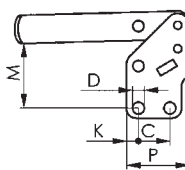
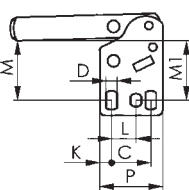
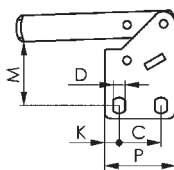
Size 1

Size 2

Size 3, 4

Size 5

Size 6



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L	L1	L2	M	M1	N	O	P	α	α^*
90217	1	5	39	16,0	4,5	18	6	29	108	6,0	12,5	10	5,5	-	61	59	23,5-25,0	-	20	5	27	95°	-
90225	2	6	52	20,0	5,5	25	11	38	144	11,5	19,5	12	6,0	12,5	78	80	28,5-32,0	30	21	5	32	105°	60°
90233	3	8	79	20,0	7,5	36	19	48	200	16,5	25,0	18	7,5	-	112	112	41,0	-	27	6	40	105°	60°
90241	4	10	101	32,0	8,6	54	16	65	244	16,5	45,5	20	13,0	-	141	130	55,5	-	35	8	53	105°	60°
90258	5	14	140	45,0	8,5	73	34	77	302	18,0	49,0	25	9,5	26,5-31,5	195	185	66,0	64	45	10	65	115°	60°
90266	6	14	165	50,5	13,0	89	26	117	366	33,0	90,5	30	24,5	-	231	207	102,0	-	45	10	90	140°	60°

* The opening angle can be changed by pressing in a stop pin.



No. 6803

Vertical acting toggle clamp

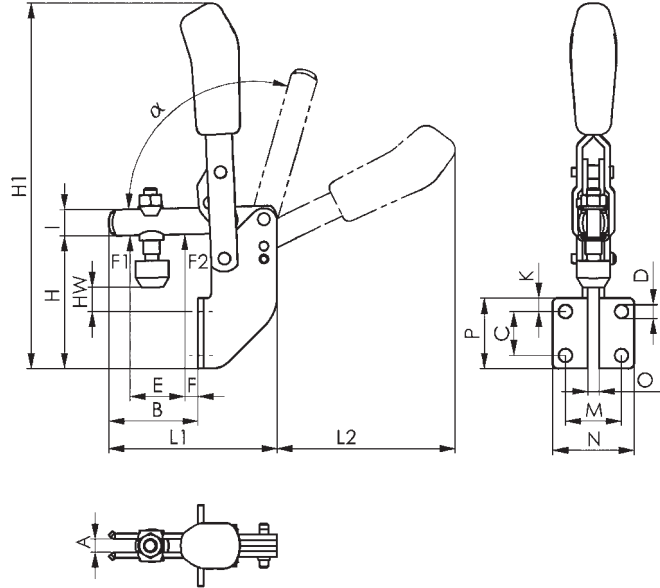
with open clamping arm and angle base.

Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 and 3, run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection. Lock washer for the thrust bolt at the end of the clamping arm.

Complete with tempered, galvanized clamping screw no. 6890.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90316	1	0,8	1,1	M5x30	125
90324	2	1,0	1,2	M6x35	220
90332	3	1,4	2,5	M8x45	400
90340	4	2,0	3,0	M8x65	650

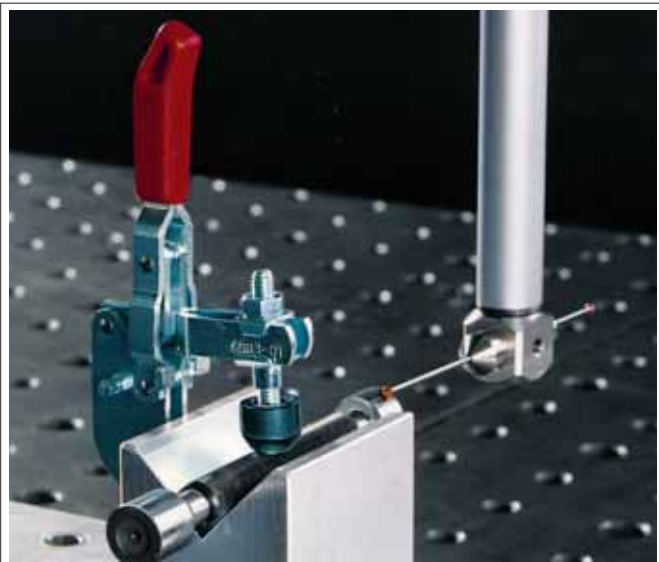
Also available in „STAINLESS STEEL“ version (no. 6803NI).



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L1	L2	M	N	O	P	α	α^*
90316	1	5	34	14	4,5	19	8	47	132	-1,5	5,5	10	10	60	58	20,0	30	5	30	105°	-
90324	2	6	40	20	5,5	25	9	61	180	2,0	11,0	12	6	78	63	25,5	38	5	32	105°	60°
90332	3	8	65	24	6,5	43	11	71	243	6,0	18,0	18	7	112	111	28,5	43	6	38	105°	60°
90340	4	10	84	32	8,5	50	17	102	280	11,0	40,0	20	54	140	129	32,0	52	8	96	105°	60°

* The opening angle can be changed by pressing in a stop pin.



No. 6804

Vertical acting toggle clamp

with solid arm and horizontal base.

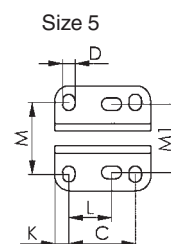
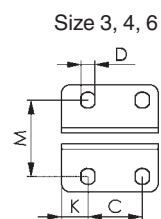
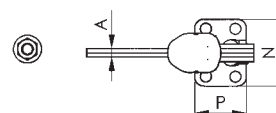
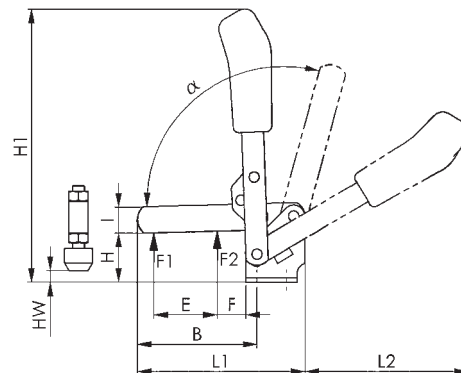
Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection.

Complete with tempered, galvanized clamping screw no. 6885 and sleeve to weld on.



Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90431	3	1,4	2,5	M8x45	340
90449	4	2,0	3,0	M8x65	585
90456	5	3,0	5,0	M12x80	1480
90464	6	3,5	5,5	M12x110	2200



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L	L1	L2	M	M1	N	P	α	α*
90431	3	6	81	20,0	7,1	43	19,5	34	186	0	12	18	7,5	-	114	111	32	-	46	35	105°	60°
90449	4	8	101	32,0	8,5	61	17,0	42	220	-8	21	20	13,0	-	140	129	45	-	64	53	105°	60°
90456	5	10	143	45,0	8,5	88	30,5	55	282	10	34	25	9,5	26,5-31,5	195	184	45-50	46,5	70	65	115°	60°
90464	6	10	165	50,5	13,0	90	20,5	81	335	-7	51	30	24,5	-	230	206	71	-	100	90	140°	60°

* The opening angle can be changed by pressing in a stop pin.



No. 6806

Vertical acting toggle clamp

with solid arm and vertical base.

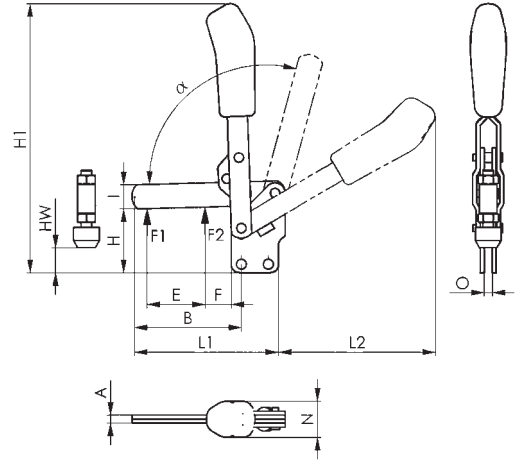
Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection.

Complete with tempered, galvanized clamping screw no. 6885 and sleeve to weld on.

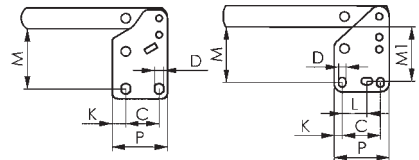


Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90555	3	1,4	2,5	M 8x 45	400
90563	4	2,0	3,0	M 8x 65	585
90571	5	3,0	5,0	M12x 80	1480
90589	6	3,5	5,5	M12x110	2200



Size 3, 4, 6

Size 5



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L	L1	L2	M	M1	N	O	P	α	α*
90555	3	6	81	20,0	7,1	43	19,5	48	205	8	20	18	7,5	-	112	117	42,0	-	27	6	35	105°	60°
90563	4	8	101	32,0	8,5	61	17,0	65	244	5	33	20	13,0	-	140	130	55,5	-	34	8	53	105°	60°
90571	5	10	143	45,0	8,5	88	30,5	76	302	8	45	25	9,5	26,5-	195	183	45-50	64	36	10	65	115°	60°
90589	6	10	165	50,5	13,0	90	20,5	117	370	18	75	30	24,5	-	230	204	102,0	-	39	10	90	140°	60°

* The opening angle can be changed by pressing in a stop pin.

No. 6805

Vertical acting toggle clamp

clamping arm with fixed distance of clamping screw and horizontal base.

Galvanized and passivated. Stainless steel rivets. Bearings are pre-lubricated.

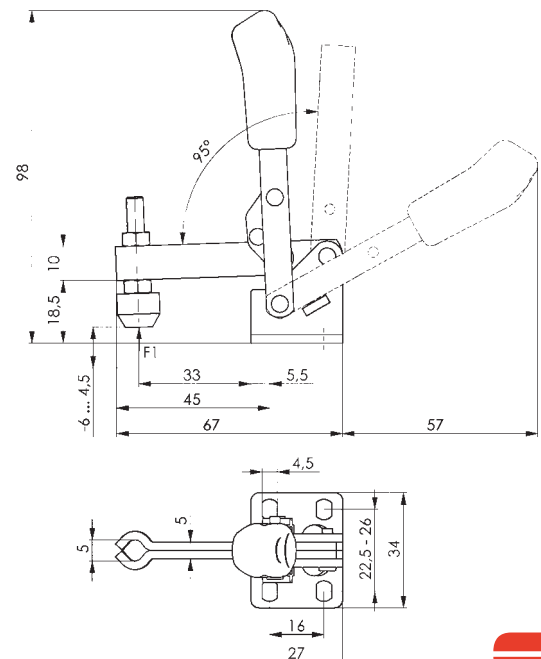
Ergonomic, oil-resistant handle with large grip surface and soft components.

Safety clamping piece with finger protection.

Complete with tempered, galvanized clamping screw no. 6885.



Order no.	Size	F1 [kN]	Clamping screw	Weight [g]
90514	1	1	M5x30	100



Specifications subject to change

No. 6811P

Heavy vertical toggle clamp

with horizontal base.

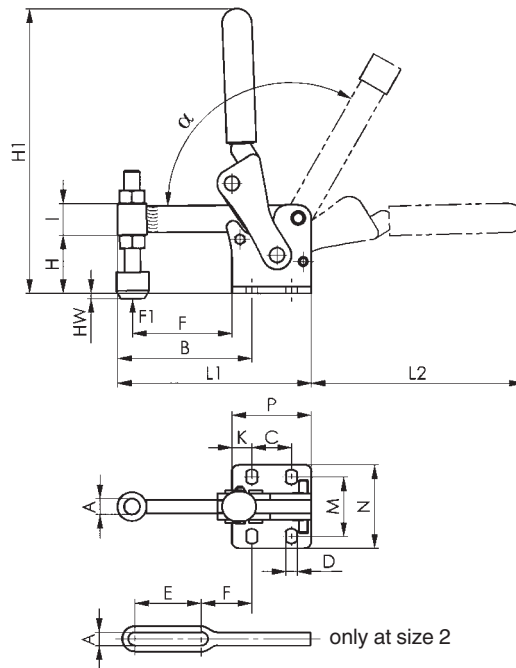
Reamed and case-hardened bearing bushes. Hardened, ground and permanently-lubricated pins. Clamp nuts on lever arm to vary friction in movement. Material: steel, blued. Lever arm made of cast steel, blued. Handle of red, oil-resistant plastic.

Complete with tempered, galvanized clamping screw no. 6885.

Order no.	Size	F1 [kN]	Clamping screw	Weight [g]
91314	2	2,5	M 6x 50	320
90878	4	5,0	M12x 80	1250
90886	6	6,0	M12x110	2130
90894	8	12,0	M12x110	4050

Note:

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



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L1	L2	M	N	P	α
91314	2	6,1	57	20	7,1	30	21	25	127	-13,5	6	15	8,5	85	94	32	47	37	120°
90878	4	12,2	100	30	8,5	-	75	44	216	-19,0	14	24	15	146	160	45	65	60	120°
90886	6	12,2	95	45	10,5	-	95	65	263	-22,0	35	30	15	181	185	52	78	75	120°
90894	8	12,2	151	55	12,5	-	120	71	303	-10,0	41	36	20	226	203	75	108	95	120°

No. 6812P

Heavy vertical toggle clamp

with vertical base and mounting holes.

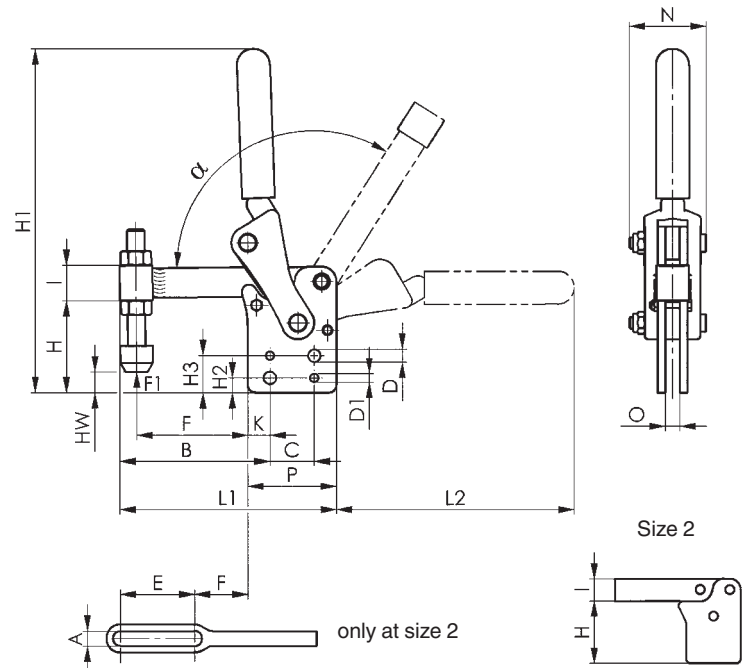
Reamed and case-hardened bearing bushes. Hardened, ground and permanently-lubricated pins. Clamp nuts on lever arm to vary friction in movement. Material: steel, blued. Lever arm made of cast steel, blued. Handle of red, oil-resistant plastic.

Complete with tempered, galvanized clamping screw no. 6885.

Order no.	Size	F1 [kN]	Clamping screw	Weight [g]
91330	2	2,5	M 6x 50	320
90902	4	10,0	M12x 80	1320
90910	6	12,0	M12x110	2120
90928	8	20,0	M12x110	4060

Note:

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



Dimensions

Order no.	Size	A	B	C	D	D1	E	F	H	H1	H2	H3	HW min.	HW max.	I	K	L1	L2	N	O	P	α
91330	2	6,2	48	-	-	-	30	12	42,0	144	-	-	3,5	22,8	15	-	85	94	31	6	37	190°
90902	4	12,2	101	30	8,5	5,7	-	75	62,0	233	10	25	-1,0	35,0	24	15	146	161	52	10	60	120°
90910	6	12,2	121	45	10,5	7,7	-	95	87,5	289	15	35	0,0	58,0	30	15	181	189	60	12	75	120°
90928	8	12,2	151	55	12,5	9,7	-	120	106,0	338	15	40	25,0	76,0	36	20	226	219	76	16	95	120°

No. 6809P

Modular clamp

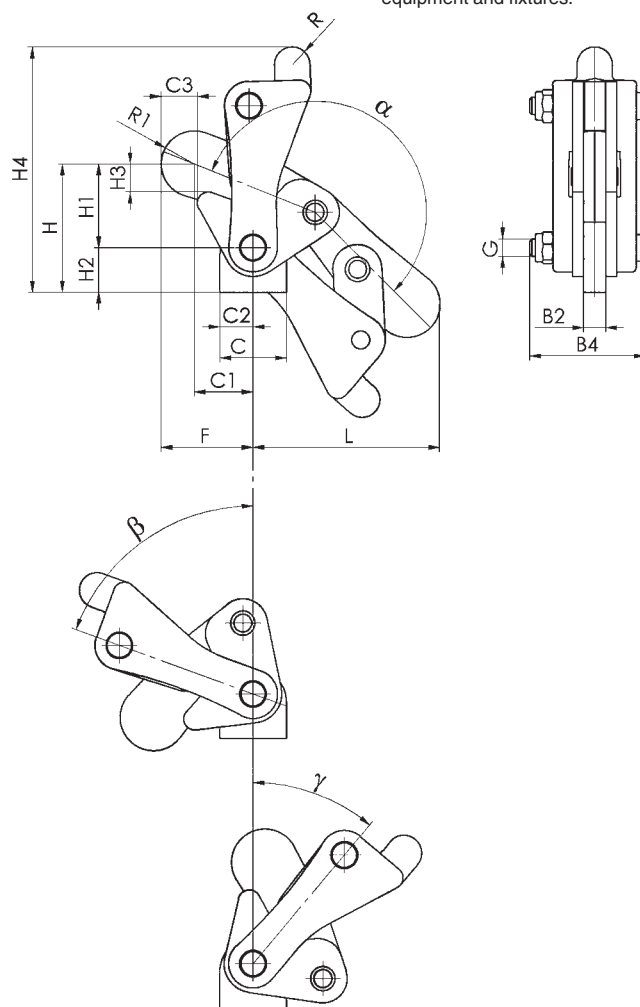
with swivelling foot, welding version.

Mechanism can be welded at an angle to its support. Reamed and case-hardened bearing bushes. Hardened, ground and permanently-lubricated pins. Clamp nuts on lever arm to vary friction in movement. Materials: steel, blued. Lever arm made of cast steel, blued.

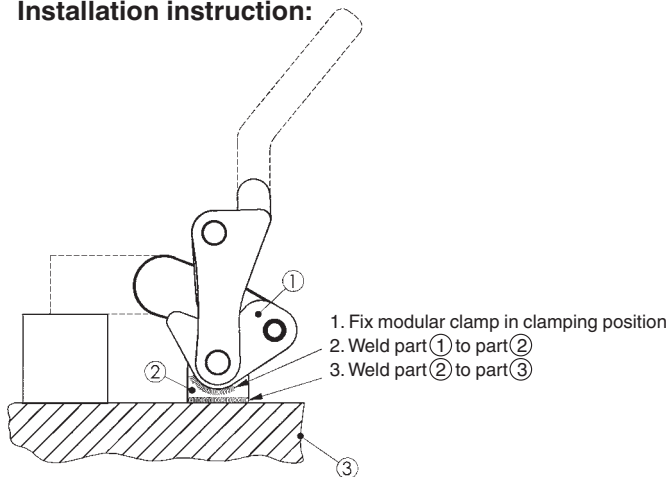
Order no.	Size	F1 [kN]	Weight [g]
90738	2	2,5	205
90746	4	7,0	855
90753	6	11,0	1600
90761	8	22,5	3100
90779	10	34,0	5560

Note:

These modular clamps can be supplemented with accessories just as you need to meet the requirements of your production equipment and fixtures.



Installation instruction:



Dimensions

Order no.	Size	B2	B4	C	C1	C2	C3	F	G	H	H1	H2	H3	H4	L	R	R1	α	β	γ
90738	2	6	31	22	22	11	12	32	M 6	38	18	20,0	5	76	58	5	10,0	200°	70°	40°
90746	4	10	52	30	26	15	16	41	M 8	58	38	20,0	12	112	82	8	15,0	200°	70°	40°
90753	6	12	60	36	36	18	20	55	M10	78	50	28,0	16	145	105	11	18,0	200°	70°	40°
90761	8	16	76	50	50	25	27	72	M12	98	65	33,0	19	172	135	14	22,5	200°	70°	40°
90779	10	20	90	70	52	35	22	77	M16	117	83	33,5	25	210	155	14	25,0	200°	60°	28°

No. 6810P

Modular clamp

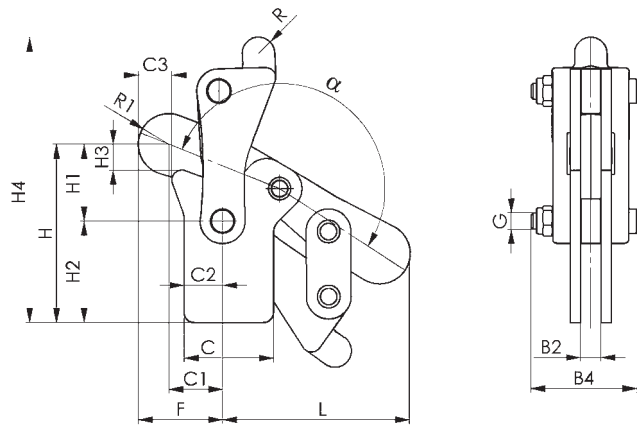
with vertical foot, welding version.

Reamed and case-hardened bearing bushes. Hardened, ground and permanently-lubricated pins. Clamp nuts on lever arm to vary friction in movement. Materials: steel, blued. Lever arm made of cast steel, blued.

Order no.	Size	F1 [kN]	Weight [g]
90803	2	2,5	245
90811	4	7,0	970
90829	6	11,0	1750
90837	8	22,5	3310
90845	10	34,0	5970

Note:

These modular clamps can be supplemented with accessories just as you need to meet the requirements of your production equipment and fixtures.



Dimensions

Order no.	Size	B2	B4	C	C1	C2	C3	F	G	H	H1	H2	H3	H4	L	R	R1	α
90803	2	6	31	30	22	14	12	32	M 6	52	18	34	5	90	58	5	10,0	190°
90811	4	10	52	44	26	19	16	41	M 8	88	38	50	12	142	82	8	15,0	190°
90829	6	12	60	55	36	28	20	55	M10	114	50	64	16	182	106	11	18,0	190°
90837	8	16	76	66	50	37	27	72	M12	140	64	76	19	218	135	14	22,5	190°
90845	10	20	90	80	52	40	22	77	M16	173	83	90	25	266	155	14	25,0	190°



Manual toggle-clamp application, for example in chemical plant: reliability and long life are important features of our toggle clamps, the illustration shows no. 6830 horizontal acting toggle clamps.



Horizontal toggle clamp no. 6830 in application on a fixture for leak testing. In this case a component to the camshaft adjustment is mounted.

No. 6830

Horizontal acting toggle clamp

with open clamping arm and horizontal base.

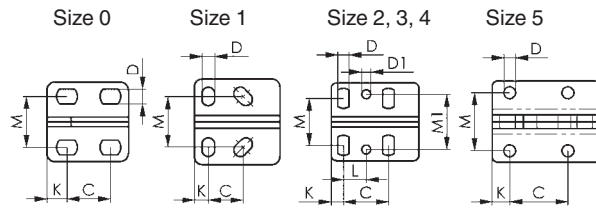
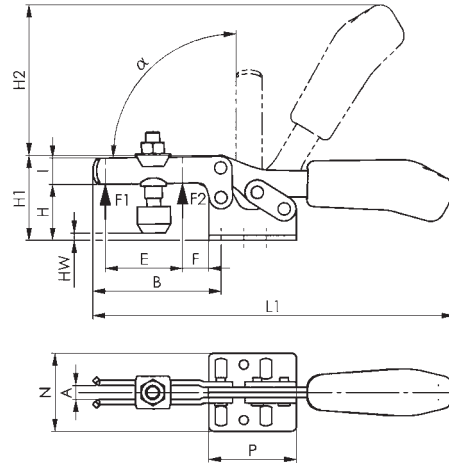
Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 to 5, run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components. Lock washer for the thrust bolt at the end of the clamping arm. Complete with tempered, galvanized clamping screw no. 6890.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
93005	0	0,25	0,4	M4x25	35
93013	1	0,8	1,1	M5x30	105
93021	2	1,0	1,2	M6x35	185
93039	3	1,8	2,5	M8x45	320
93047	4	2,0	3,0	M8x65	700
93054	5	3,0	5,0	M8x65	1080

Also available in „STAINLESS STEEL“ (no. 6830NI) and in matte-black galvanized version (no. 6830B).

Note:

For suitable sensor monitor for size 3 see no. 6897S.



Dimensions

Order no.	Size	A	B	C	D	D1	E	F	H	H1	H2	HW min.	HW max.	I	K	L	L1	M	M1	N	P	α
93005	0	4	28	11,5-15,5	4,6	-	9,0	5,5	14,5	23,0	34	-5,5	0,0	7,5	6,3	-	79	13,6	-	25,0	25,5	90°
93013	1	5	42	13,0-14,5	5,2	-	18,7	8,0	19,0	30,0	49	-3,0	2,5	10,0	5,5	-	120	18,0-21,5	-	34,0	34,0	90°
93021	2	6	64	26,0	5,6	5,6	32,0	16,0	24,0	45,0	68	-1,5	5,0	13,2	6,0	12,7	162	19,5-29,5	28,5	42,0	38,0	90°
93039	3	8	73	25,7	6,5	5,1	38,0	14,0	32,0	48,5	86	-2,0	9,0	15,0	7,0	13,0	206	22,0-31,8	31,6	44,5	50,0	90°
93047	4	10	113	41,0	8,5	8,5	63,0	27,0	45,0	75,0	115	-4,0	24,0	20,0	8,0	20,5	287	29,0-43,0	43,0	58,0	57,0	90°
93054	5	10	123	41,5	8,5	-	78,0	16,0	46,0	73,0	128	-1,5	25,0	25,0	12,5	-	321	41,5	-	58,0	77,0	90°



Horizontal toggle clamp with sensor monitoring for automation solutions

No. 6832

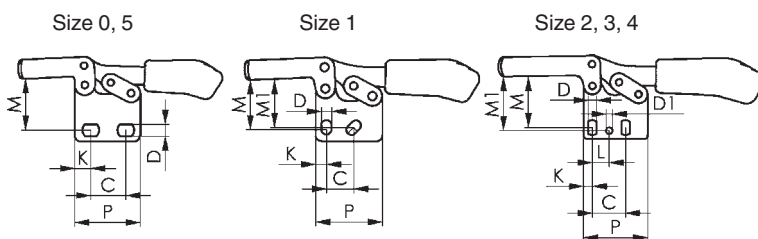
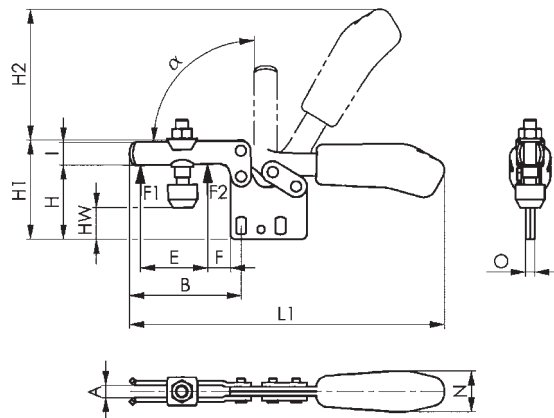
Horizontal acting toggle clamp

with open clamping arm and vertical base.

Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 to 5, run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components. Lock washer for the thrust bolt at the end of the clamping arm. Complete with tempered, galvanized clamping screw no. 6890.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
93203	0	0,25	0,4	M4x25	35
93211	1	0,8	1,1	M5x30	105
93229	2	1,0	1,2	M6x35	185
93237	3	1,8	2,5	M8x45	320
93245	4	2,0	3,0	M8x65	700
93252	5	3,0	5,0	M8x65	1080

Also available in matte-black galvanized version (no. 6832B).



Dimensions

Order no.	Size	A	B	C	D	D1	E	F	H	H1	H2	HW min.	HW max.	I	K	L	L1	M	M1	N	O	P	α
93203	0	4	28	11,5-15,5	4,6	-	9,0	5,0	24,5	33	34	4,7	10,7	7,5	6,3	-	79	20,0	-	12	3	25,5	90°
93211	1	5	41	13,0-14,5	5,2	-	18,5	8,0	31,5	43	49	8,0	15,0	10,0	5,5	-	119	23,5-25,5	24,5	18	5	34,0	90°
93229	2	6	64	26,0	5,6	5,6	32,0	16,5	40,0	61	68	15,0	22,0	13,2	6,0	12,7	164	29,5-34,0	34,0	21	5	38,0	90°
93237	3	8	73	25,7	6,5	5,1	36,0	15,0	49,0	65	86	14,5	26,0	15,0	7,0	13,0	206	37,5-42,5	42,0	27	6	50,0	90°
93245	4	10	113	41,0	8,5	8,5	63,0	27,0	66,5	97	115	17,5	46,0	20,0	8,0	20,5	287	52,0-59,0	59,0	34	8	57,0	90°
93252	5	10	123	41,5	8,5	-	78,0	16,0	65,0	92	127	21,5	45,0	25,0	12,5	-	321	57,0	-	36	10	77,0	90°



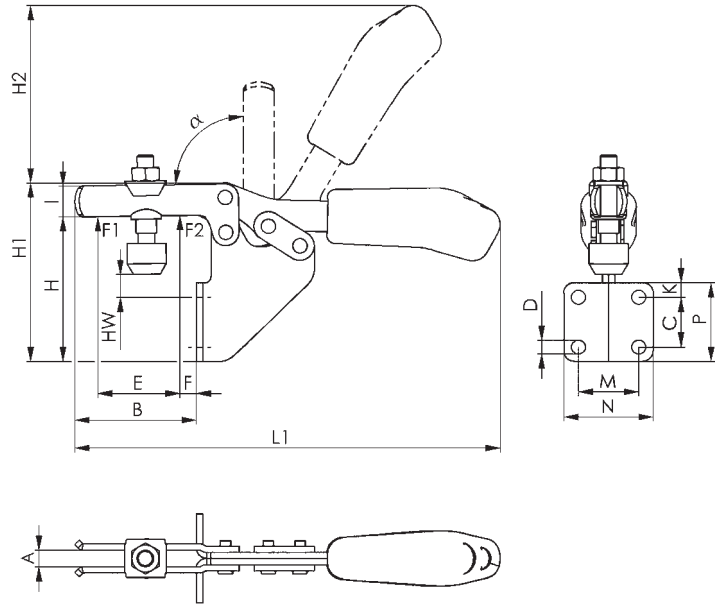
No. 6833

Horizontal acting toggle clamp

with open clamping arm and angle base.

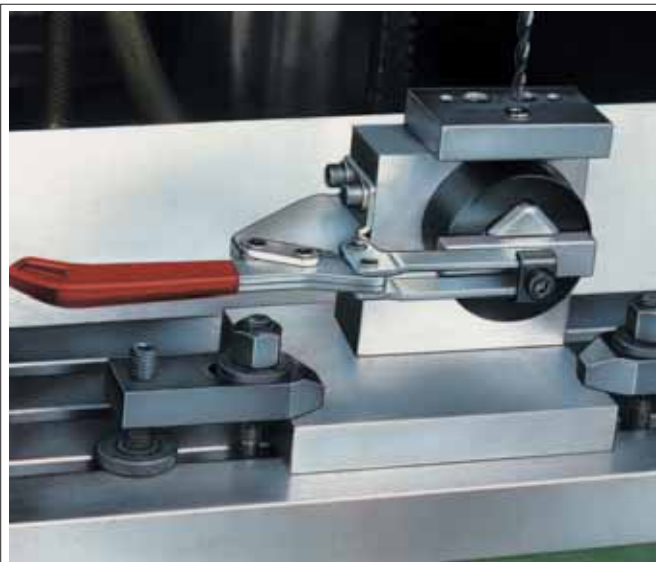
Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 and 3, run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components. Lock washer for the thrust bolt at the end of the clamping arm. Complete with tempered, galvanized clamping screw no. 6890.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
93179	1	0,8	1,1	M5x30	170
93328	2	1,0	1,2	M6x35	245
93336	3	1,8	2,5	M8x45	390
93542	4	2,0	3,0	M8x65	730



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	H2	HW min.	HW max.	I	K	L1	M	N	P	α
93179	1	5	32	13,5	5,2	18,5	4,0	57	68	49	14	20	10	8	120	19,0	31	28	90°
93328	2	6	52	20,0	5,6	32,0	10,5	73	94	68	22	29	13	6	162	25,5	37	32	90°
93336	3	8	59	24,0	6,8	37,0	8,0	70	86	86	5	16	15	7	206	29,0	43	38	90°
93542	4	10	93	32,0	8,5	63,0	15,0	102	133	115	11	40	20	40	282	32,0	52	82	90°



No. 6834

Horizontal acting toggle clamp

with solid arm and horizontal base.

Galvanized and passivated. Stainless steel rivets,

which run in hardened bushes. Bearings are pre-lubricated.

Ergonomic, oil-resistant handle with large grip surface and soft components.

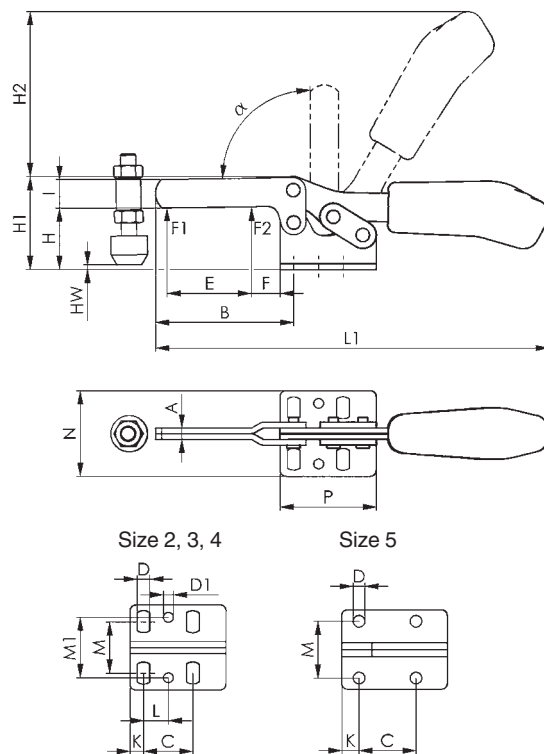
Complete with tempered, galvanized clamping screw no. 6885

and sleeve to weld on.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
93427	2	1,0	1,2	M 6x35	185
93435	3	1,8	2,5	M 8x45	320
93443	4	2,0	3,0	M 8x65	700
93450	5	3,0	5,0	M12x80	1080

Note:

For suitable sensor monitor for size 3 see no. 6897S.



Dimensions

Order no.	Size	A	B	C	D	D1	E	F	H	H1	H2	HW min.	HW max.	I	K	L	L1	M	M1	N	P	α
93427	2	5	63	26,0	5,6	5,6	35	16,0	24	45,0	68	-4,0	4	13	6,0	12,7	161	19,5-29,5	28,5	42	38	90°
93435	3	6	72	26,0	6,5	5,1	44	15,0	32	48,5	86	-3,5	9	15	7,0	13,0	205	22,0-31,8	32,0	45	50	90°
93443	4	8	111	41,0	8,5	8,5	66	26,0	45	75,0	114	-6,0	22	20	8,0	20,5	280	29,0-43,0	43,0	58	57	90°
93450	5	10	121	41,5	8,0	-	78	17,5	46	73,0	128	-13,0	12	25	12,5	-	320	41,5	-	58	77	90°

POSITIONING AND CLAMPING AT THE SAME TIME AND IN ONE OPERATION

The benefits at a glance:

- > Positioning and clamping in one operation
- > Robust and stable design
- > Workpiece easy to remove thanks to the fully retracted clamping arm
- > Optimised quality consistent with the AMF quality standard

Precise positioning and reliable clamping of individual components are of paramount importance when welding fixtures. In practice, this is guaranteed through the simultaneous use of rods and vertical toggle clamps, or by one's own complex design. The AMF Combiclamp accomplishes these two tasks in one operation, eliminating the need to use different toggle clamps. The sliding block guide on the Combiclamp converts the motion of the lever arm into a horizontal and vertical clamping movement, through which the workpiece is positioned and clamped at the same time. See for yourself the saving potential of using the new AMF Combiclamp!

PRESENT FIXTURE:



SET-UP WITH AMF-COMBICLAMP:

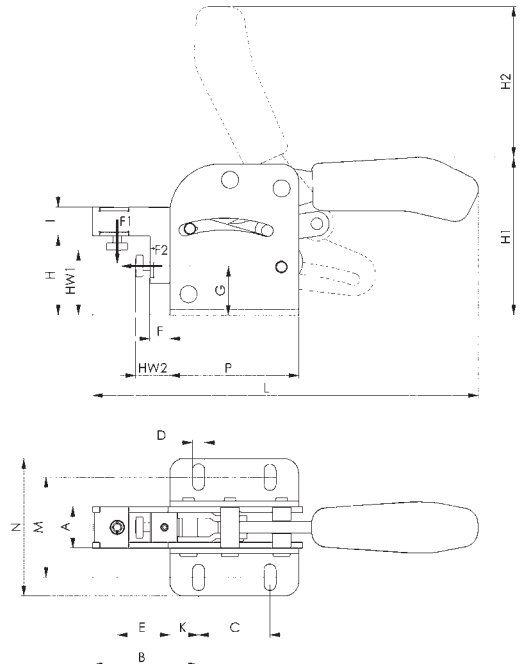


Nr. 6860

Combination clamp

Galvanized and passivated. Rivets made of stainless steel which run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components.

Order no.	Size	F1 [kN]	F2 [kN]	Weight [g]
93831	1	1,0	1,0	340
93880	2	2,0	2,0	700
93864	3	3,0	3,0	1620



Dimensions

Order no.	Size	A	B	C	D	E	F	G	H	H1	H2	HW1 min.	HW1 max.	HW2 min.	HW2 max.	I	K	L	M	N	P
93831	1	17,0	33	40	5,5	15	0,5	20,5	35,0	74	62	25	32	4	8	12	7,5	150	34,5-39,5	53	55
93880	2	19,5	56	50	6,5	32	9,0	28,0	46,0	94	87	30	40	10	20	16	12,5	219	60,0-80,0	75	75
93864	3	29,0	74	50	8,5	37	14,0	34,0	55,5	110	106	40	50	20	30	20	20,0	270	48,5-61,5	96	90

Specifications subject to change

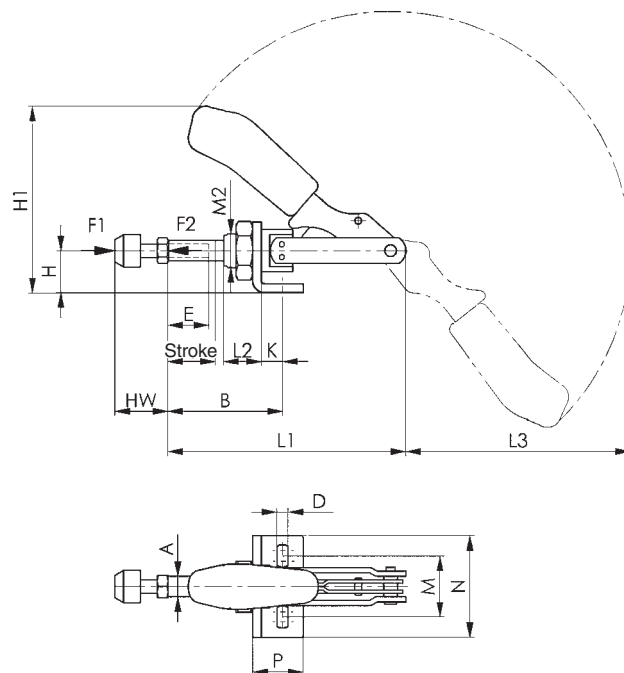
No. 6841

Push-pull type toggle clamp

with small angle base. For push- and pull-clamping.
 (Equal operation of rod and lever). Long rod-guide with attaching thread and nut.
 Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 and 3, run in hardened bushings. Lever-parts and rod of tempered steel.
 Bearings are pre-lubricated. Lever can be set to any angle relative to base.
 Ergonomic, oil-resistant handle with large grip surface and soft components.
Complete with tempered, galvanized clamping screw no. 6880.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
94094	0	0,8	0,8	M 4x20	65
94110	1	1,0	1,0	M 4x20	125
94128	2	2,0	2,0	M 6x25	245
94136	3	2,5	2,5	M 8x35	445
94151	5	4,5	4,5	M12x50	880
94367	5-M27	4,5	4,5	M12x50	900

Also available in „STAINLESS STEEL“ (no. 6841NI) and in matte-black galvanized version (no. 6841B).



Dimensions

Order no.	Size	A	B min.	B max.	D	E	H	H1	Stroke	HW min.	HW max.	K	L1	L2	L3	M	M2	N	P
94094	0	6,5	17,0	33,0	4,5	13	12	47	16	12	20	6,5	66,0	10	52	16,0	M10x1,0	25	16
94110	1	8,0	24,5	44,5	4,5	20	15	60	20	12	20	7,0	91,0	16	72	16,0-19,5	M12x1,5	30	20
94128	2	10,0	32,5	57,5	5,6	25	20	95	26	17	25	12,5	114,0	19	105	31,8-36,0	M16x1,5	50	34
94136	3	12,0	37,0	69,0	6,5	30	25	110	32	22	35	13,0	140,0	22	129	29,5-42,5	M20x1,5	60	30
94151	5	16,0	41,5	81,5	8,5	50	30	126	40	30	50	15,0	171,5	25	154	29,0-46,0	M24x1,5	65	35
94367	5-M27	16,0	41,5	81,5	8,5	50	30	126	40	30	50	15,0	171,5	25	154	29,0-46,0	M27x2,0	65	35

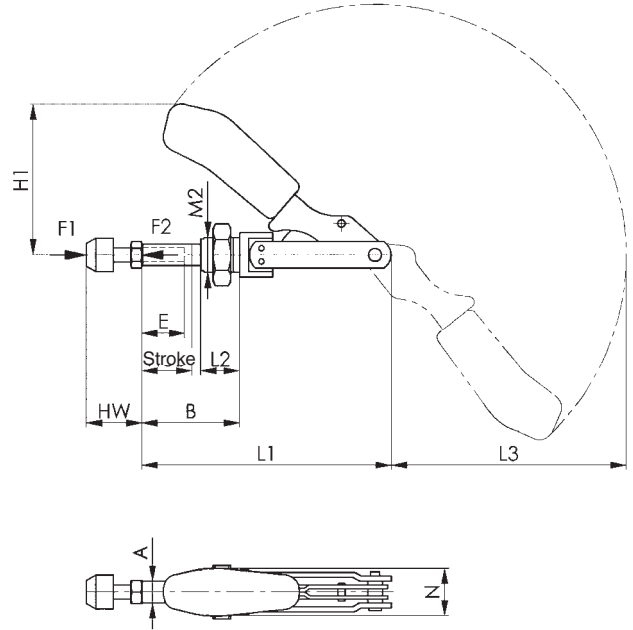


No. 6840

Push-pull type toggle clamp

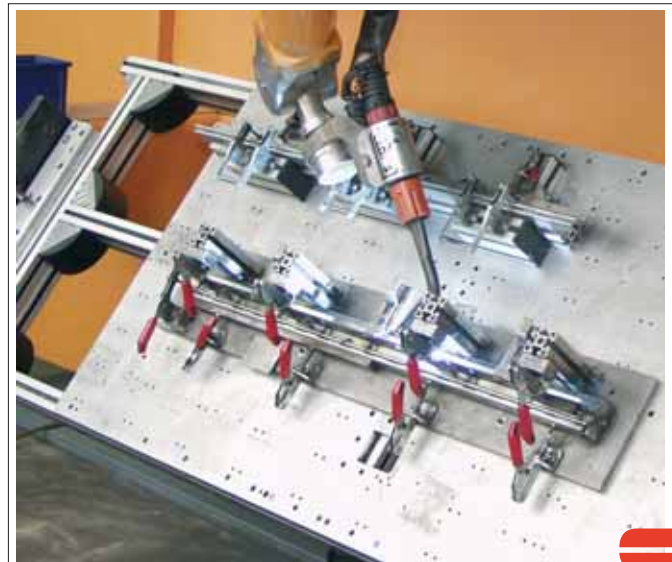
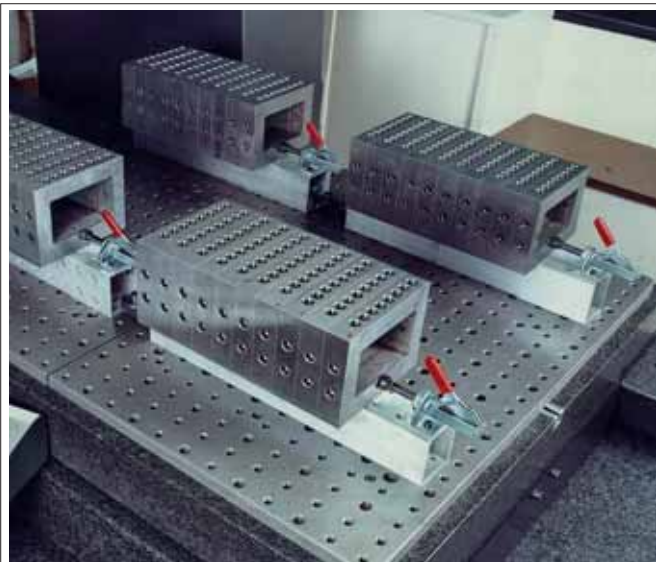
without angle base. For push- and pull-clamping.
 (Equal operation of rod and lever). Long rod-guide with attaching thread and nut.
 Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 and 3,
 run in hardened bushings. Lever-parts and rod of tempered steel. Bearings are
 pre-lubricated. Push-pull toggle clamp with threaded front for direct mounting
 in vertical metal plates or in fixtures.
 Ergonomic, oil-resistant handle with large grip surface and soft components.
Complete with tempered, galvanized clamping screw no. 6880.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
93906	0	0,8	0,8	M 4x20	60
93914	1	1,0	1,0	M 4x20	100
93922	2	2,0	2,0	M 6x25	245
93930	3	2,5	2,5	M 8x35	330
93955	5	4,5	4,5	M12x50	700
94359	5-M27	4,5	4,5	M12x50	720



Dimensions

Order no.	Size	A	B min.	B max.	E	H1	Stroke	HW min.	HW max.	L1	L2	L3	M2	N
93906	0	6,5	10,5	26,5	13	35	16	12	20	66,0	10	52	M10x1,0	15
93914	1	8,0	17,5	37,5	20	45	20	12	20	91,0	16	72	M12x1,5	18
93922	2	10,0	20,0	45,0	25	75	26	17	25	114,0	19	105	M16x1,5	21
93930	3	12,0	24,0	56,0	30	85	32	22	35	140,0	22	129	M20x1,5	27
93955	5	16,0	26,5	66,5	50	96	40	30	50	171,5	25	154	M24x1,5	31
94359	5-M27	16,0	26,5	66,5	50	96	40	30	50	171,5	25	154	M27x2,0	31



No. 6844

Push-pull type toggle clamp

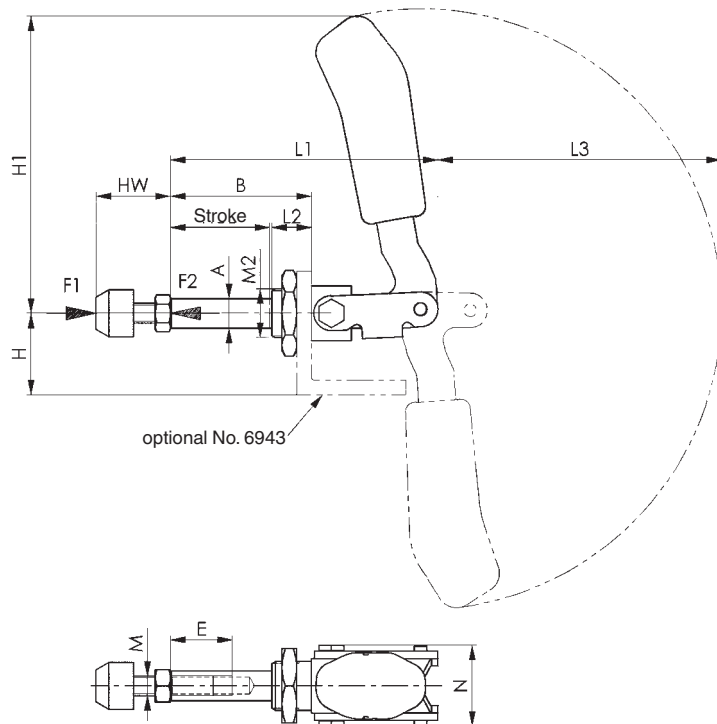
short version. For push- and pull-clamping.
 Long rod-guide with attaching thread and nut. Galvanized and passivated.
 Stainless steel rivet. Shoulder screws tempered. Bearings are pre-lubricated.
 Ergonomic, oil-resistant handle with large grip surface and soft components.
Complete with tempered, galvanized clamping screw no. 6880.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
94300	2	1,0	1,0	M 6x25	130
94318	3	2,5	2,5	M 8x35	320
94334	5	4,0	4,0	M12x50	1200
92676	5-M27	4,0	4,0	M12x50	1200

Also available in „STAINLESS STEEL“ version (no. 6844NI).

Application:

Toggle for direct fit up in metal plates or fixtures, using its front attaching thread or by means of solid base angle no. 6843.



Dimensions

Order no.	Size	A	B	E	H	H1	Stroke	HW min.	HW max.	L1	L2	L3	M	M2	N
94300	2	10	35	15	24	76	21	18	27	70	13	82	M 6	M16x1,5	31
94318	3	12	56	25	33	128	40	22	35	110	16	130	M 8	M20x1,5	33
94334	5	16	92	35	37	148	67	30	50	175	24	138	M12	M24x1,5	50
92676	5-M27	16	92	35	37	148	67	30	50	175	24	138	M12	M27x2,0	50



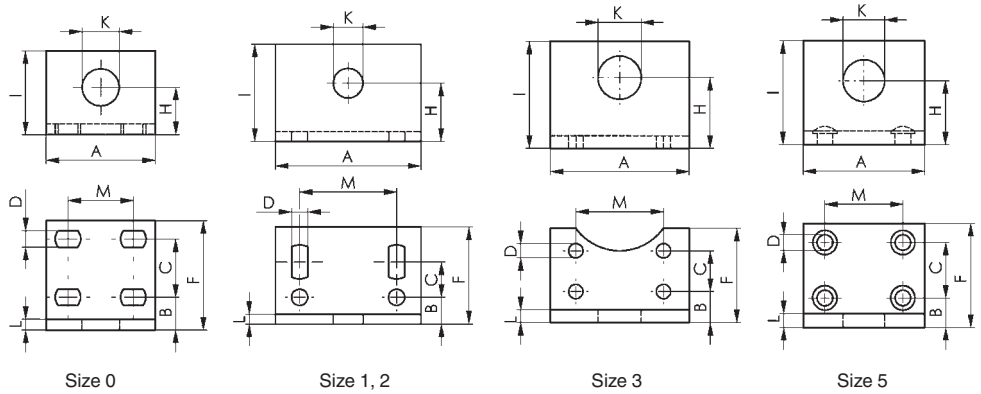
No. 6843

Angle base, solid

for no. 6840 and no. 6844.
Increased range of application due to enlarged height of center line.
Fastening by means of 4 screws.

Order no.	Size	A	B	C	D	F	H	I	K	L	M	Weight [g]
94003	0	30	9,0	16,0	4,5	30	13	23	10,2	3	15,5-20,5	35
94011	1	60	11,0	11-18	6,7	40	24	40	12,2	4	40,0	135
94029	2	60	11,0	11-18	6,7	40	24	40	16,0	5	40,0	160
94037	3	65	14,5	19,0	6,7	44	33	50	20,2	6	41,0	235
94052	5	70	17,0	32,0	9,0	60	37	60	24,0	8	45,0	450
94391	5-M27	70	17,0	32,0	9,0	60	37	60	27,0	8	45,0	440

Also available in „STAINLESS STEEL“ version (no. 6843NI).



No. 6845

Push-type toggle clamp

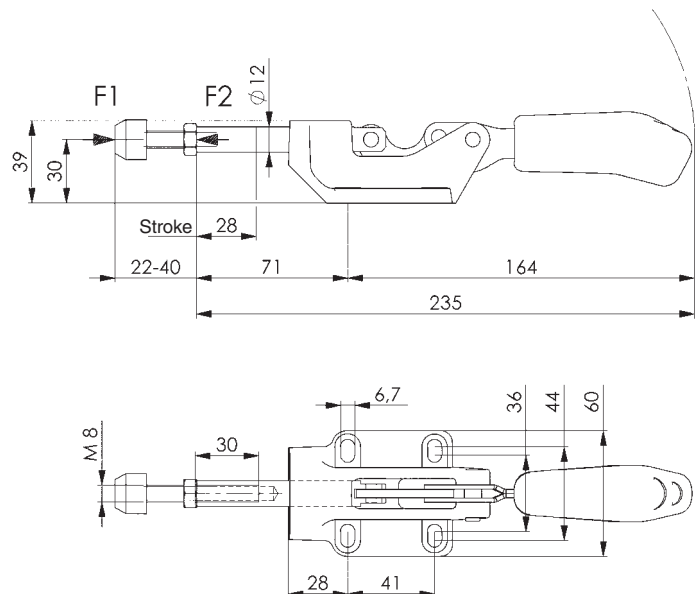
Push-type clamp.

(Opposed operation of rod and lever). Version with long rod-guide.
Base of malleable casting, varnished. Toggle parts and push rod are heat-treated steel, galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.
Ergonomic, oil-resistant handle with large grip surface and soft components.
Complete with tempered, galvanized clamping screw no. 6880-3.

Order no.	Size	F1 [kN]	Clamping screw	Weight [g]
94243	3	4	M8x35	540

Advantage:

- Low height in clamped position
- Compatible with AMF push-pull toggle clamp no. 6842-3



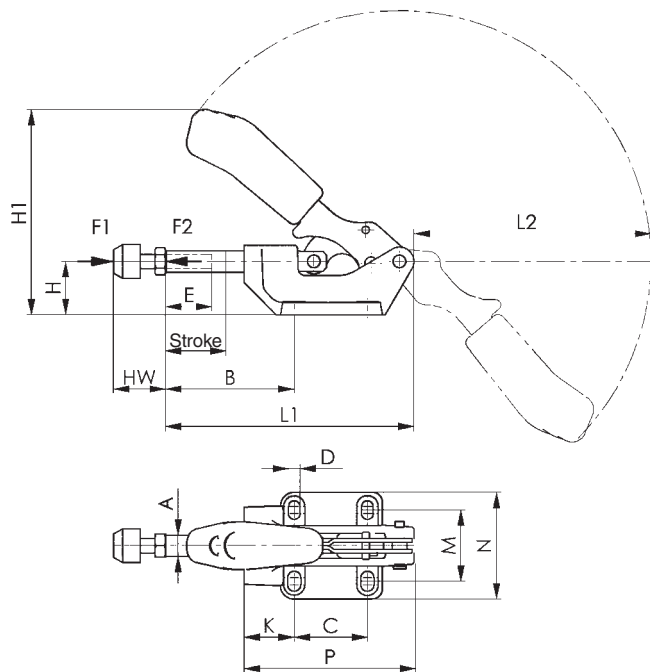
No. 6842

Heavy push-pull type toggle clamp

For push- and pull-clamping.

(Equal operation of rod and lever). Heavy-duty version with long rod-guide. Base of malleable casting, varnished. Toggle parts and push rod are heat-treated steel, galvanized and passivated. Rivets made of stainless steel, which, for size 3, run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components for size 3 and 5. Complete with tempered, galvanized clamping screw no. 6880.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
94235	3	4	4	M 8x35	540
94250	5	10	10	M12x50	1115
94276	7	25	25	M12x50	2840



Dimensions

Order no.	Size	A	B min.	B max.	C	D	E	H	H1	Stroke	HW min.	HW max.	K	L1	L2	M	N	P
94235	3	12	40	72	41	6,5	30	30	115	32	35	48	28	140	130	36-44	60	96
94250	5	16	58	98	41	8,5	50	38	134	40	30	50	46	172	140	41-50	70	122
94276	7	22	59	105	70	11,0	50	55	180	50	30	50	45	218	192	57-65	93	158

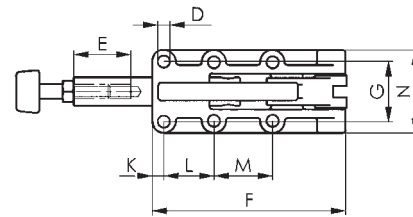
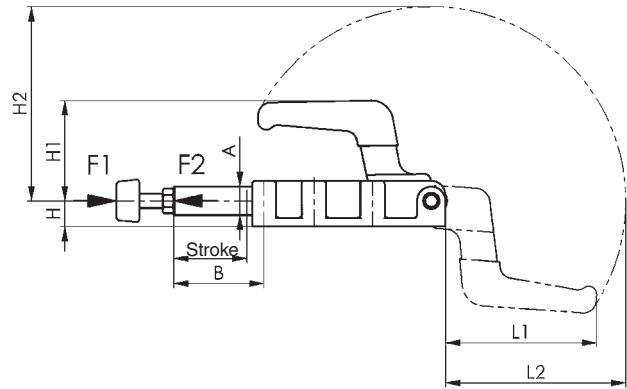


No. 6842PK

Heavy push-pull type toggle clamp

with **solid lever**. For push- and pull-clamping.
 (Equal operation of rod and lever). Heavy-duty version with long rod-guide.
 Base of malleable casting, burnished. Hardened pins. Lever-parts and rod
 of tempered steel, burnished. Handle made of red, oil-resistant plastic.
Complete with tempered, galvanized clamping screw no. 6880.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
92544	4	7	7	M 8x35	590
92569	5	12	12	M10x50	1650
92585	7	25	25	M12x50	4150
92601	8	45	45	M16x80	7420



Dimensions

Order no.	Size	A	B	D	E	F	G	H	H1	H2	Stroke	K	L	L1	L2	M	N
92544	4	14	63	5,5	30	90	33,3	12	42,5	96	32	25,0	36,5	69,0	88,0	-	47
92569	5	20	63	8,5	50	137	41,0	18	70,0	136	50	8,0	35,0	105,0	126,0	41	62
92585	7	25	114	10,5	50	198	54,0	22	93,5	196	75	12,0	45,0	151,5	183,5	45	84
92601	8	30	149	10,5	60	254	57,0	28	111,5	247	100	14,5	70,0	196,0	232,0	70	86

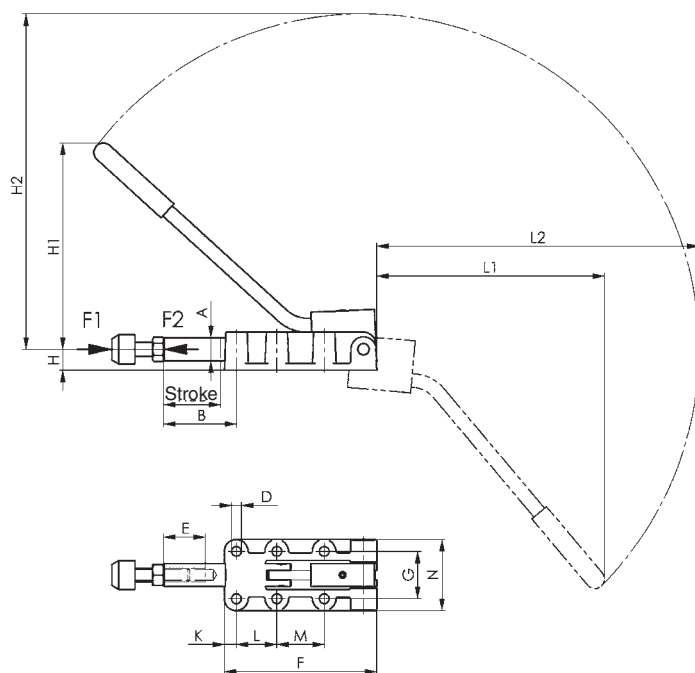
No. 6842PL

Heavy push-pull type toggle clamp

with reversible lever. For push- and pull-clamping.
 (Equal operation of rod and lever). Heavy-duty version with long rod-guide.
 Base of malleable casting, burnished. Hardened pins. Lever parts and rod
 made of tempered steel, burnished. Zinc-coated and passivated lever with
 handle made of red oil-resistant plastic.

Complete with tempered, galvanized clamping screw no. 6880.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
92627	4	7	7	M 8x35	650
92643	5	12	12	M10x50	1600
92668	7	25	25	M12x50	4280
92684	8	45	45	M16x80	7720



Dimensions

Order no.	Size	A	B	D	E	F	G	H	H1	H2	Stroke	K	L	L1	L2	M	N
92627	4	14	63	5,5	30	90	33,3	12	115,0	190,0	32	25,0	36,5	128	182	-	47
92643	5	20	63	8,5	50	137	41,0	18	178,5	290,5	50	8,0	35,0	197	279	41	58
92668	7	25	114	10,5	50	198	54,0	22	246,0	392,0	75	12,0	45,0	267	374	45	84
92684	8	30	149	10,5	60	254	57,0	28	323,0	523,0	100	14,5	70,0	365	501	70	86

No. 6847

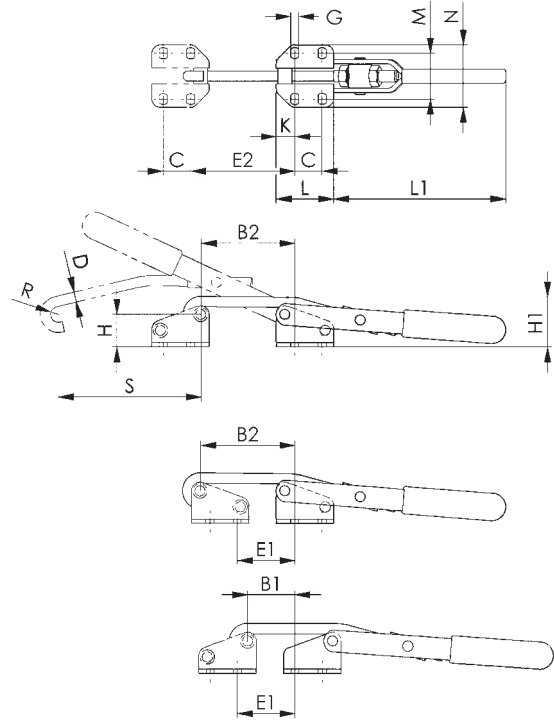
Hook type toggle clamp

Galvanized and passivated. Bushes case hardened and greased; rivets of stainless steel. Hook and clamping sleeve tempered. Handle made of red, oil-resistant plastic. Ergonomic, oil-resistant handle with large grip surface and soft components for size 1.



Order no.	Size	F1 [kN]	Adjustm. distance [mm]	Weight [g]
94524	1	2	8	100
94540	3	3	12	270
94565	5	5	14	850

Also available in „STAINLESS STEEL“ version (no. 6847NI).



Dimensions

Order no.	Size	B1	B2	C	D	E1	E2	G	H	H1	K	L	L1	M	N	R	S
94524	1	16-23	36-43	19	5,30	17-24	35-42	4,5	22,7	34,5	6	31	62,6	26,0-30,0	40	4,5	45
94540	3	32-44	65-77	19	7,10	39-51	72-84	5,5	22,7	36,0	13	40	123,5	31,5-35,5	45	5,5	99
94565	5	26-41	57-72	29	10,75	27-42	58-73	11,2	49,0	68,0	13	55	189,5	56,5-64,0	86	8,0	146

No. 6847G

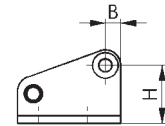
Counter catch

for no. 6847. Galvanized and passivated. Bushes case hardened; rivet of stainless steel.



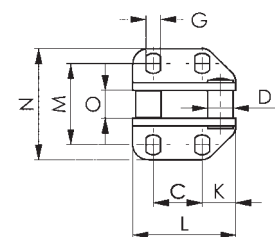
Order no.	Size	Height [mm]	Length [mm]	Weight [g]
94623	1	29	31	40
94649	3	29	40	70
94664	5	61	55	320

Also available in „STAINLESS STEEL“ version (no. 6847GNI).



Dimensions

Order no.	Size	B	C	D	G	H	K	L	M	N	O
94623	1	6	19	8	4,5	22,7	6	31	26,0-30,0	40	6,9
94649	3	6	19	10	5,5	22,7	13	40	31,3-35,8	45	10,9
94664	5	12	29	15	11,2	49,1	13	55	56,5-64,0	86	13,8



No. 6847K

Hook type toggle clamp

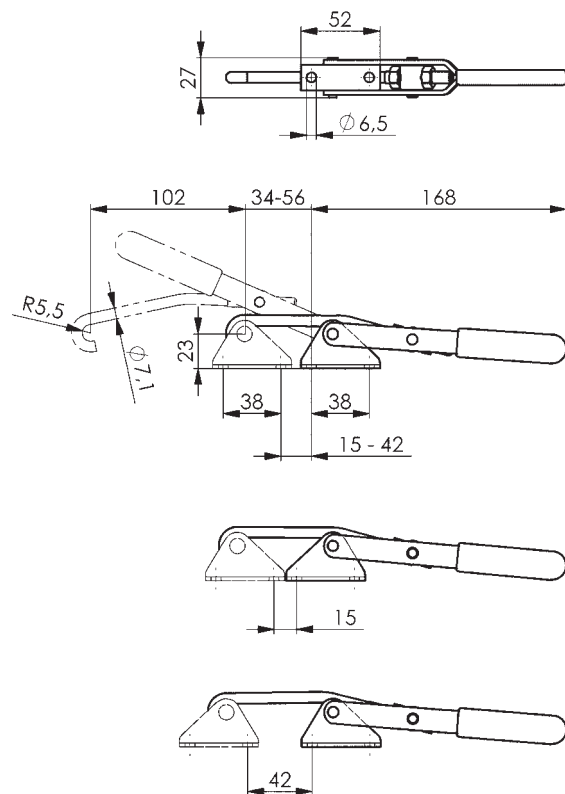
for cylindrical mounting surfaces.
Galvanized and passivated. Case-hardened, pre-lubricated, continuous bearing bushes. Stainless steel rivets. Tempered hook and clamping sleeve. Handle made of red, oil-resistant plastic. Use socket cap screws to ISO 4762 (DIN 912) for mounting.

Order no.	Size	F1 [kN]	Adjustm. distance [mm]	Weight [g]
94680	3	3	22	270

Also available in „STAINLESS STEEL“ version (no. 6847KNI).

Note:

The range of movement can be adjusted by swiveling the base and repositioning the catch.



No. 6847GK

Counter catch

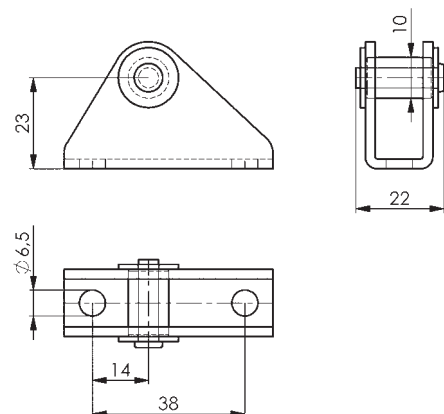
for cylindrical mounting surfaces.
For hook-type toggle clamp no. 6847K. Galvanized and passivated. Case-hardened, continuous bush. Stainless steel rivet. Use socket cap screws to ISO 4762 (DIN 912) for mounting.

Order no.	Size	Height [mm]	Length [mm]	Weight [g]
94672	3	32	52	65

Also available in „STAINLESS STEEL“ version (no. 6847GKNI).

Note:

The adjustment range of the clamp can be increased by turning the counter catch.



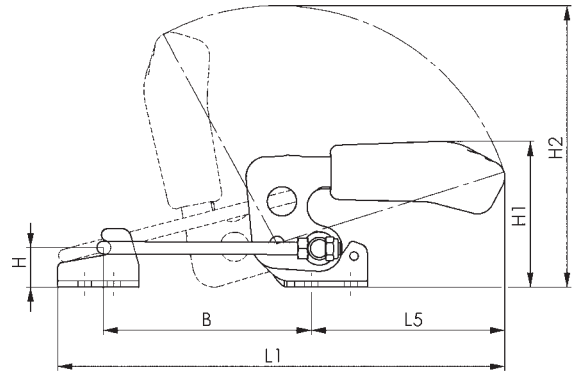
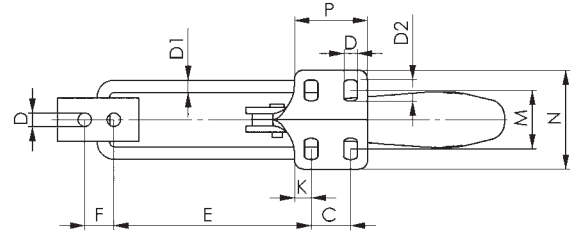
No. 6848H

Hook type toggle clamp horizontal

Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Tempered hook. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components. Supplied complete with counter catch.

Order no.	Size	F1 [kN]	Weight [g]
94698	2	1,6	120
94706	3	3,2	330
94714	4	7,0	810

Also available in „STAINLESS STEEL“ version (no. 6848HNI).



Dimensions

Order no.	Size	B min.	B max.	C	D	D1	D2	B min.	E max.	F	H	H1	H2	K	L1 min.	L1 max.	L5	M	N	P
94698	2	39,0	76	13	5,2	4	7,6	35,0	72	11	12	47	99,0	6,4	122	159	69	19,5-23,5	38,0	26,0
94706	3	53,5	101	19	6,5	6	10,4	48,6	96	14	19	70	135,5	8,0	169	216	93	24,5-32,0	48,0	35,0
94714	4	66,0	130	32	8,5	8	14,0	59,0	123	19	26	94	168,0	9,5	209	273	111	35,0-46,0	64,3	53,5

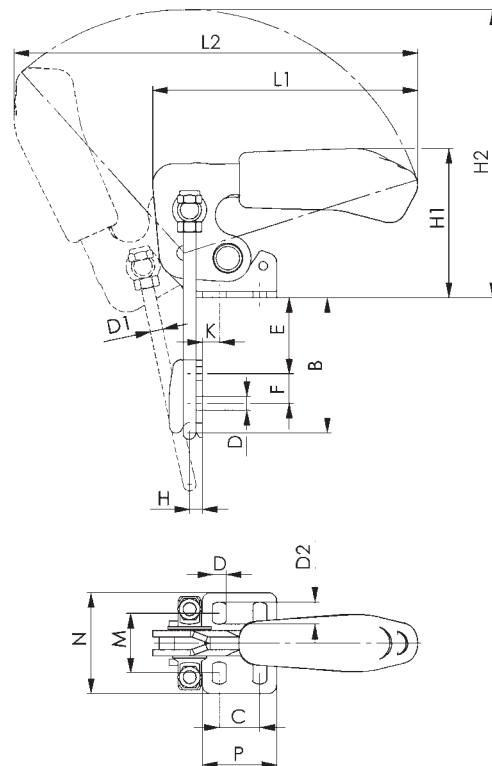
No. 6848V

Hook type toggle clamp vertical

Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Tempered hook. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components. **Supplied complete with counter catch.**

Order no.	Size	F1 [kN]	Weight [g]
94755	2	1,6	130
94763	3	3,2	340
94771	4	7,0	810

Also available in „STAINLESS STEEL“ version (no. 6848VNI).



Dimensions

Order no.	Size	B min.	B max.	C	D	D1	D2	B min.	E max.	F	H	H1	H2	K	L1	L2	M	N	P
94755	2	24,0	49	13	5,2	4	7,6	5	30	11	4,5	47,0	99	6,4	91	158	19,5-23,5	38,0	26,0
94763	3	34,5	64	19	6,5	6	10,4	7	36	14	6,0	70,0	136	8,0	125	199	24,5-32,0	48,0	35,0
94771	4	43,0	81	32	8,5	8	14,0	9	47	19	8,0	94,5	168	9,5	151	239	35,0-46,0	64,5	53,5

No. 6849PH

Heavy hook type toggle clamp

for high retaining force.

Pins hardened, ground and permanently-lubricated. Circlips are used to retain pins in bearing bushes, and to centre the clamping pin.

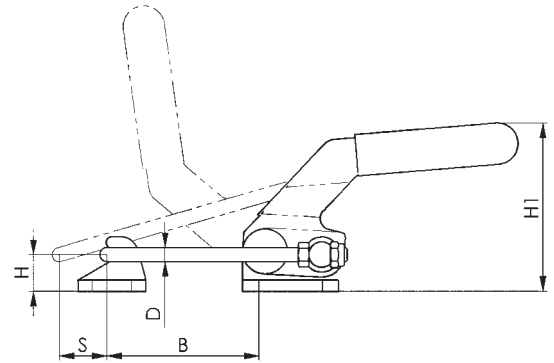
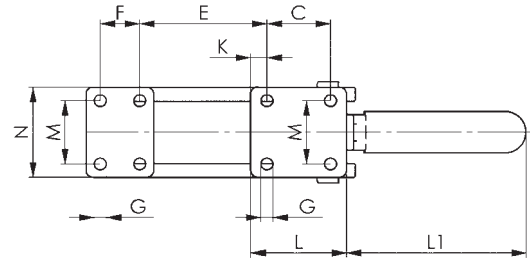
Foot, lever arm and catch are made of cast steel and blued.

Stirrup, pins and nuts are heat-treated and zinc-plated.

Handle grip is red, oil-resistant plastic.

Supplied complete with counter catch.

Order no.	Size	F1 [kN]	Adjustm. distance [mm]	Weight [g]
93849	4	15	62	2830
93856	5	27	80	4020



Dimensions

Order no.	Size	B	C	D	E	F	G	H	H1	K	L	L1	M	N	S
93849	4	42-107	45	10	24-90	28	8,5	26	122	12,0	68	130	45	64	44
93856	5	49-114	57	12	28-93	35	10,5	32	146	12,5	86	164	57	82	47



THE ADVANTAGES OF THE SAFETY LATCH

The patented safety latch will hold the clamping arm of a manual clamp in both the closed and open positions, so that it is protected against unintentional opening or closing through vibration or if the clamp is mounted overhead.

A clear argument for safety in the workplace!



No. 6800S

Vertical toggle clamp with safety latch

for open and clamped positions.

With open clamping arm and horizontal base.

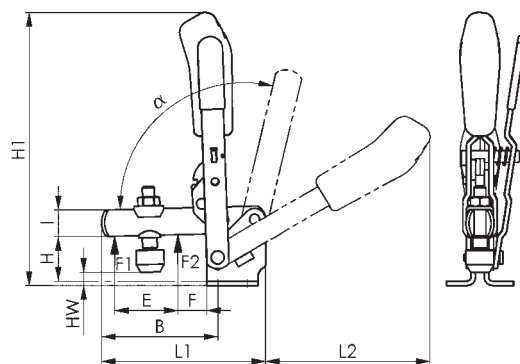
Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection.

Lock washer for the thrust bolt at the end of the clamping arm.

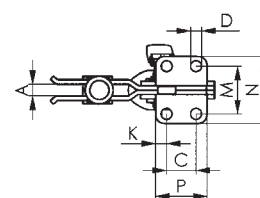
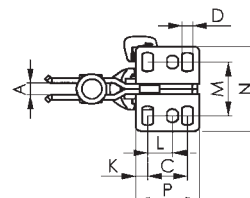
Complete with tempered, galvanized clamping screw no. 6890.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90134	2	1,0	1,2	M6x35	260
90142	3	1,4	2,5	M8x45	470
90159	4	2,0	3,0	M8x65	690



Size 2

Size 3, 4



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L	L1	L2	M	N	P	α	α^*
90134	2	6	52	20	5,5	25	11	23,0	130	-3	4,5	12	6,0	12,5	78	80	23-31	43	32	105°	60°
90142	3	8	79	20	7,5	36	19	33,0	186	2	11,0	18	7,5	-	112	112	32	46	35	105°	60°
90159	4	10	101	32	8,6	54	16	42,5	221	-6	22,5	20	13,0	-	141	130	45	64	53	105°	60°

* The opening angle can be changed by pressing in a stop pin.

No. 6802S

Vertical toggle clamp with safety latch

for open and clamped positions.

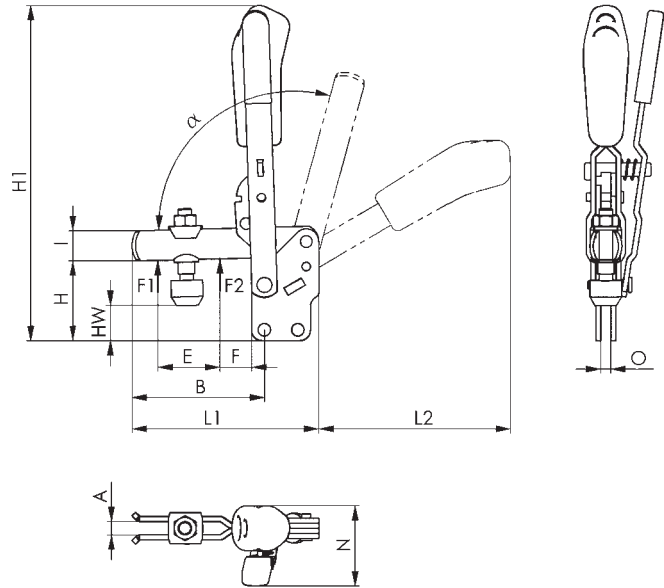
With open clamping arm and vertical base.

Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection. Lock washer for the thrust bolt at the end of the clamping arm.

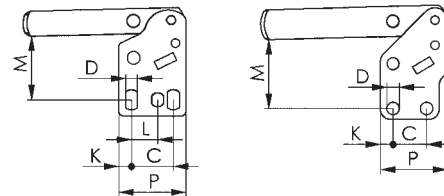
Complete with tempered, galvanized clamping screw no. 6890.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90209	2	1,0	1,2	M6x35	175
90274	3	1,4	2,5	M8x45	470
90282	4	2,0	3,0	M8x65	690



Size 2

Size 3, 4



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L	L1	L2	M	M1	N	O	P	α	α^*
90209	2	6	52	20	5,5	25	11	38	144	11,5	19,5	12	6,0	12,5	78	80	28,5-32	30	37,5	5	32	105°	60°
90274	3	8	79	20	7,5	36	19	48	200	16,5	25,0	18	7,5	-	112	112	41,0	-	46,5	6	40	105°	60°
90282	4	10	101	32	8,6	54	16	65	244	16,5	45,5	20	13,0	-	141	130	55,5	-	49,5	8	53	105°	60°

* The opening angle can be changed by pressing in a stop pin.

No. 6803S

Vertical toggle clamp with safety latch

for open and clamped positions.

With open clamping arm and angled base.

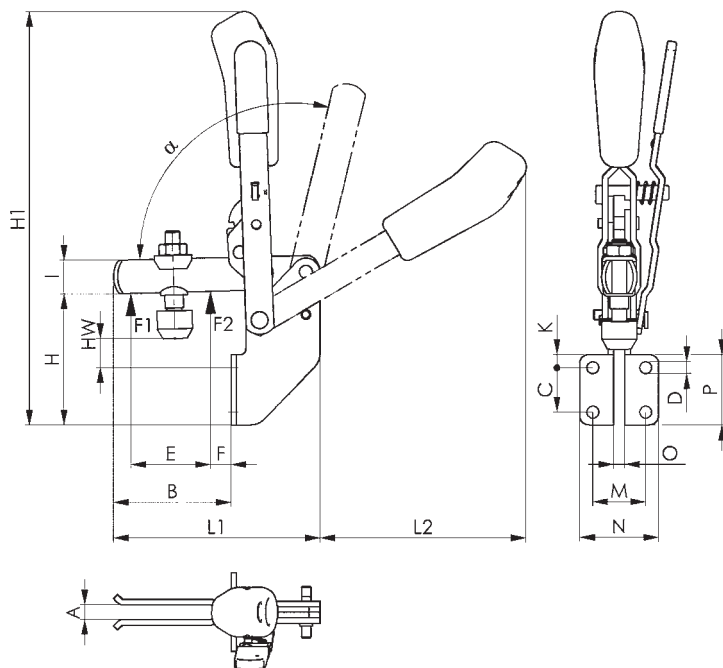
Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection.

Lock washer for the thrust bolt at the end of the clamping arm.

Complete with tempered, galvanized clamping screw no. 6890.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90357	2	1,0	1,2	M6x35	250
90365	3	1,4	2,5	M8x45	535
90373	4	2,0	3,0	M8x65	750



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L1	L2	M	N	O	P	α	α^*
90357	2	6	40	20	5,5	25	9	61	180	2	11	12	6	78	63	25,5	38	5	32	105°	60°
90365	3	8	65	24	6,5	43	11	71	243	6	18	18	7	112	111	28,5	43	6	38	105°	60°
90373	4	10	84	32	8,5	50	17	102	280	11	40	20	54	140	129	32,0	52	8	96	105°	60°

* The opening angle can be changed by pressing in a stop pin.

No. 6804S

Vertical toggle clamp with safety latch

for open and clamped positions.

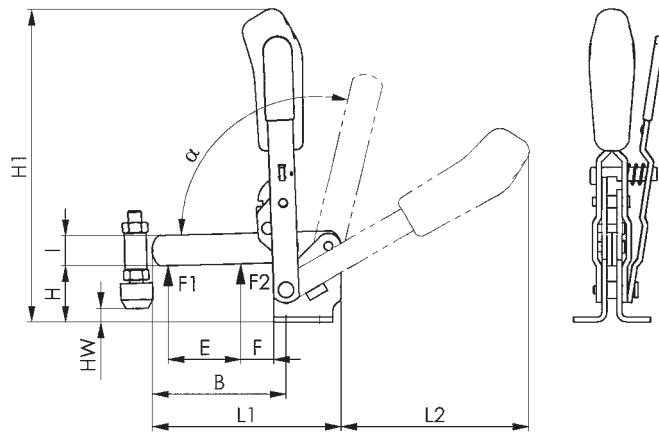
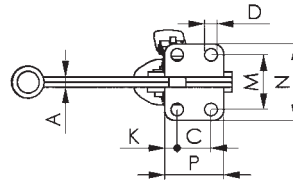
With solid clamping arm and horizontal base.

Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection.

Complete with tempered, galvanized clamping screw no. 6890 and sleeve to weld on.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90399	3	1,4	2,5	M8x45	470
90407	4	2,0	3,0	M8x65	690



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L1	L2	M	N	P	α	α^*
90399	3	6	81	20	7,1	43	19	48	186	0	12	18	7,5	112	112	32	46	35	105°	60°
90407	4	8	101	32	8,5	61	16	65	220	-8	21	20	13,0	140	130	45	64	53	105°	60°

* The opening angle can be changed by pressing in a stop pin.

No. 6830S

Horizontal toggle clamp with safety latch

for open and clamped positions.

With open clamping arm and horizontal base.

Galvanized and passivated. Stainless steel rivets which run in hardened bushes, bearings are lubricated.

Ergonomic, oil-resistant handle with large grip surface and soft components.

Lock washer for the thrust bolt at the end of the clamping arm.

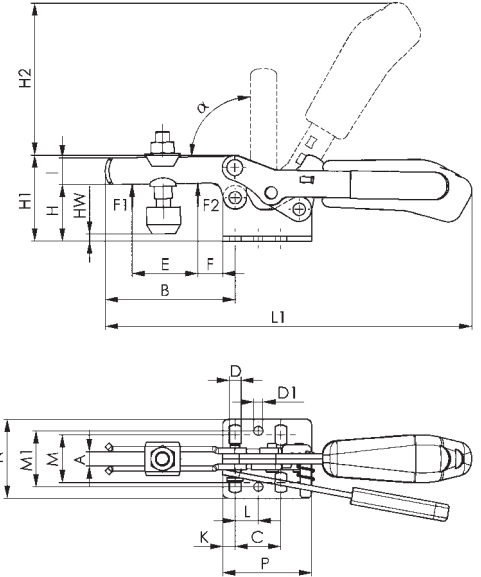
Complete with tempered, galvanized clamping screw no. 6890.



Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
92650	3	1,8	2,5	M8x45	390
93112	4	2,0	3,0	M8x65	800

Note:

For suitable sensor monitor for size 3 see no. 6897S.



Dimensions

Order no.	Size	A	B	C	D	D1	E	F	G	H	H1	HW min.	HW max.	I	K	L	L1	M	N	P	Q
92650	3	8	72	25,5	6,5	5,0	44	22	23	33	48	-1	11	15	7	-	206	22,0-31,8	45	50	8
93112	4	10	111	41,0	8,5	8,5	66	34	29	44	74	-6	23	20	8	20,5	287	29,0-43,0	58	57	1

No. 6832S

Horizontal toggle clamp with safety latch

for open and clamped positions.

With open clamping arm and vertical base.

Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

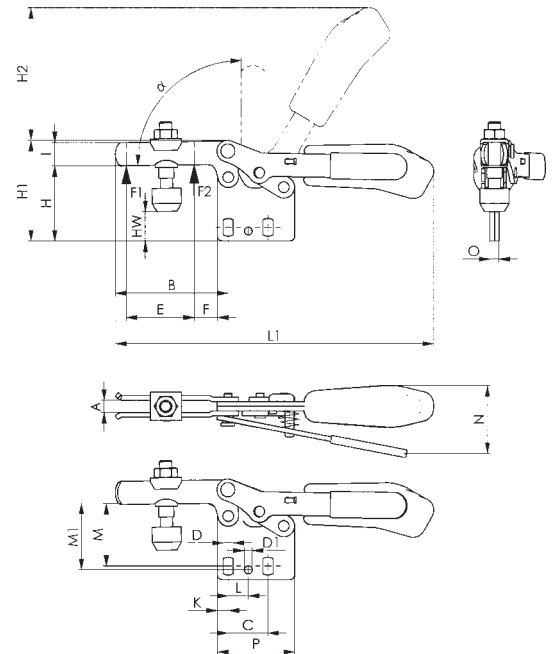
Ergonomic, oil-resistant handle with large grip surface and soft components.

Lock washer for the thrust bolt at the end of the clamping arm.

Complete with tempered, galvanized clamping screw no. 6890.



Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
93195	3	1,8	2,5	M8x45	390
93260	4	2,0	3,0	M8x65	800



Dimensions

Order no.	Size	A	B	C	D	D1	E	F	H	H1	H2	HW min.	HW max.	I	K	L	L1	M	M1	N	O	P	α
93195	3	8	73	25,7	6,5	5,1	38	14	49,0	65	86	14,5	26	15	7	13,0	206	37,5-42,5	42	48	6	50	90°
93260	4	10	113	41,0	8,5	8,5	63	27	66,5	97	115	17,5	33	20	8	20,5	287	52,0-59,0	59	51	8	57	90°

No. 6834S

Horizontal toggle clamp with safety latch

for open and clamped positions.

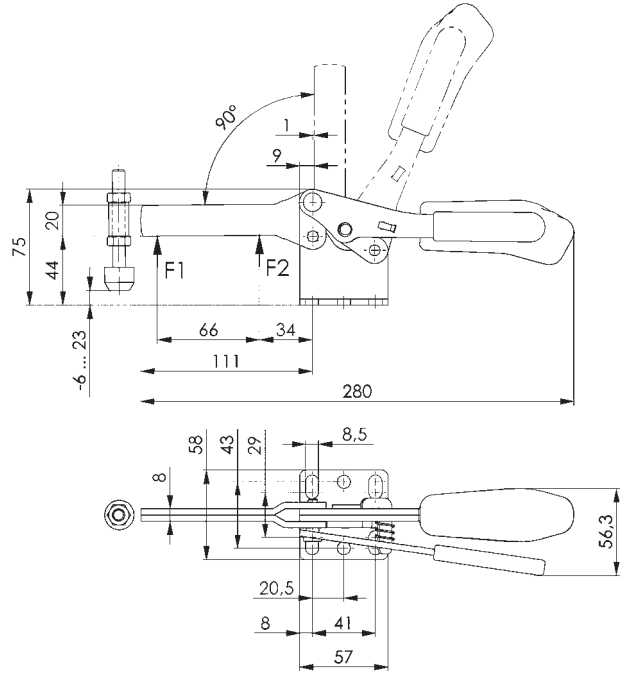
With solid clamping arm and horizontal base.

Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

Ergonomic, oil-resistant handle with large grip surface and soft components.

Complete with tempered, galvanized clamping screw no. 6885 and sleeve to weld on.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
93534	4	2	3	M8x65	800



No. 6840S

Push-pull type toggle clamp with safety latch

For open and clamped positions.

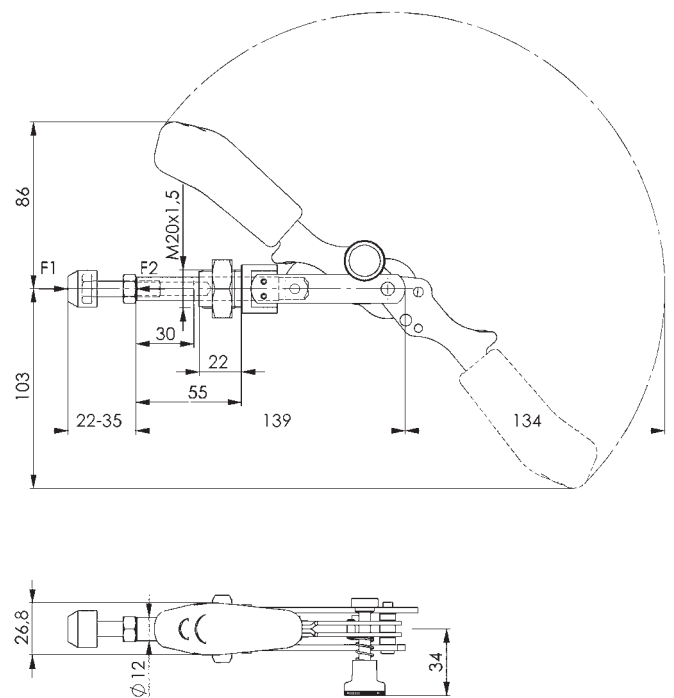
Without angle base. Push and pull-clamping (equal operation of rod and lever).

Long rod-guide with attaching thread and nut. Rivets made of stainless steel, lever-parts and rod of tempered steel. Bearings are pre-lubricated.

Ergonomic, oil-resistant handle with large grip surface and soft components.

Complete with tempered, galvanized clamping screw no. 6880.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
92619	3	2,5	2,5	M8x35	402



No. 6847S

Hook type toggle clamp with safety latch

Lock when closed

Galvanized and passivated. Case-hardened, pre-lubricated bearing bushes. Rivet is stainless steel. Hook and clamping sleeve tempered. Handle made of red, oil-resistant plastic.

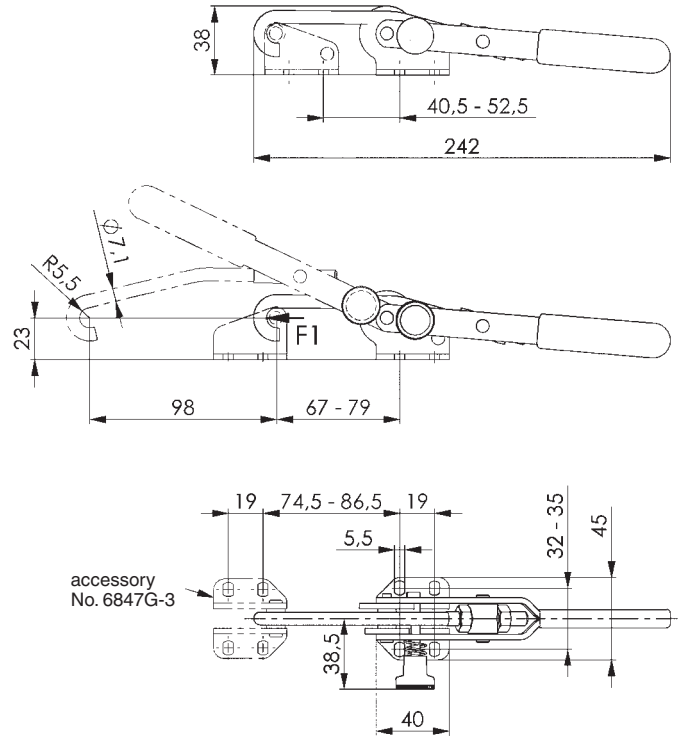
Order no.	Size	F1 [kN]	Weight [g]
93666	3	3	295

Note:

The engagement height of 23 mm must be observed to ensure secure latching.

On request:

A „stainless steel“ version is available.



No. 6847SU

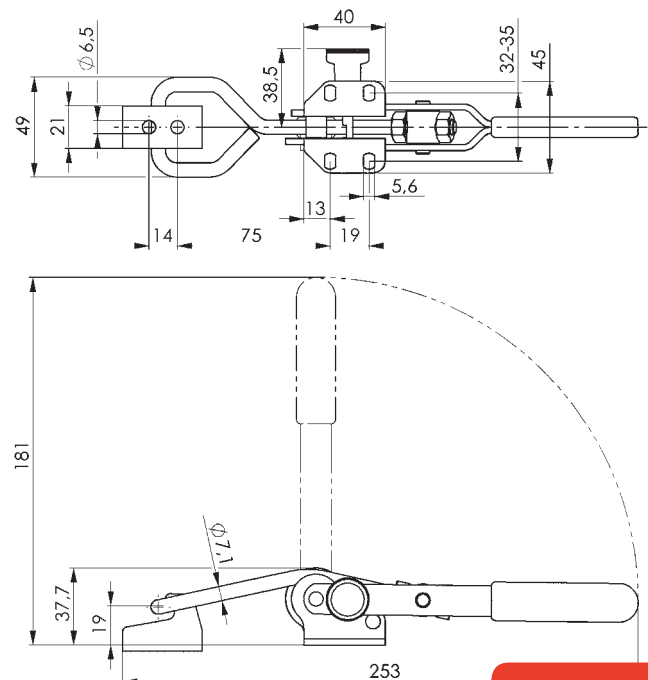
Hook type toggle clamp with safety latch

U-shackle, Locks when closed.

Galvanized and passivated. Case-hardened, pre-lubricated bearing bushes. Stainless steel rivets. Tempered shackle and clamping sleeve. Handle made of red, oil-resistant plastic.

Supplied complete with counter catch.

Order no.	Size	F1 [kN]	Weight [g]
91470	3	3	295



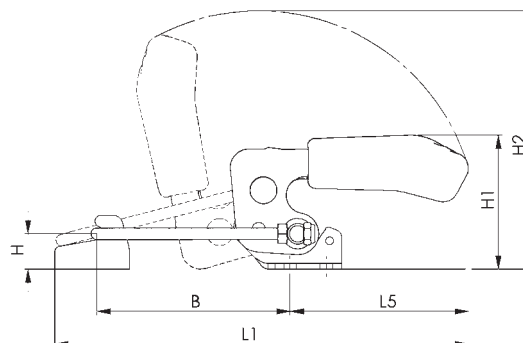
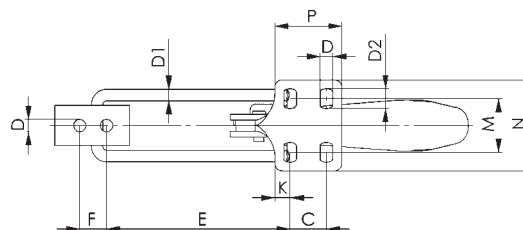
No. 6848HS

Hook type toggle clamp horizontal with safety latch

Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Tempered hook. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components. Supplied complete with counter catch.

Order no.	Size	F1 [kN]	Weight [g]
92692	4	7,0	850

NEW!



Dimensions

Order no.	Size	B min.	B max.	C	D	D1	D2	E min.	E max.	F	H	H1	H2	K	L1 min.	L1 max.	L5	M	N	P
92692	4	66	130	32	8,5	8	10,4	59	123	19	26	94	168	9,5	209	273	111	35-46	64,3	53,5

(material number 1.4301 / V2A or 1.4567) for special applications in areas such as the chemical and food industries. Especially well suited to applications on machines and devices that are subject to hygiene regulations or are used outdoors under unfavourable weather conditions or in corrosive environments.

THE ADVANTAGES OF STAINLESS STEEL:

Primary positive properties of the material are its resistance to corrosion due to humidity, water or other external influences and its resistance to acids. In addition, the material exhibits antimagnetic properties. Additional finishing work such as painting or galvanizing, either before or after installation or use, is generally not required. This saves time and eliminates additional costs.



STAINLESS STEEL

No. 6800NI

Vertical acting toggle clamp

with open clamping arm and horizontal base.

Stainless steel, polished. In sizes 2 to 4, rivets run in bearing bushes. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components.

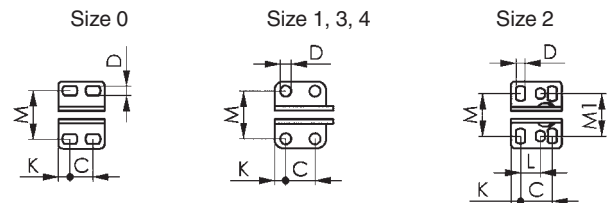
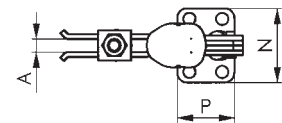
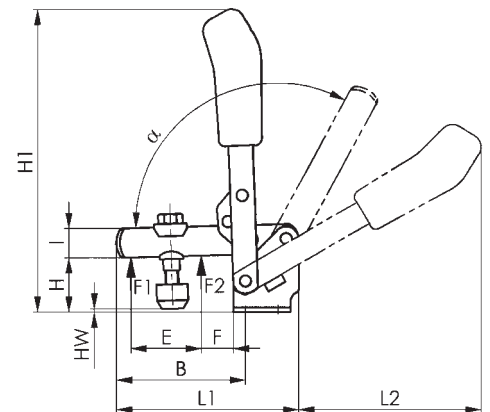
Supplied complete with stainless clamping screw no. 6890NI. Also suitable for use in the food industry.



STAINLESS STEEL



Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
95000	0	0,5	0,7	M4x25	60
95026	1	0,6	1,1	M5x30	105
95042	2	0,8	1,2	M6x35	175
95067	3	1,2	2,5	M8x45	410
95083	4	1,7	3,0	M8x65	630



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L	L1	L2	M	M1	N	P	α	α*
95000	0	4	31	8,5-13,5	4,5	14,0	5,5	18,0	81	-1,5	3,5	8	4,3	-	49	50	23	-	32	22	95°	-
95026	1	5	39	16	4,5	17,5	6,0	19,0	98	-4,2	2,0	10	5,5	-	61	57	24	-	35	27	95°	-
95042	2	6	52	20	5,5	25,0	11,0	23,0	129	-3,3	5,0	12	6,0	12,5	78	80	23-31	27	43	32	105°	60°
95067	3	8	79	20	7,5	36,0	19,0	33,0	186	2,4	11,2	18	7,5	-	79	112	32	-	46	35	105°	60°
95083	4	10	100	32	8,5	54,0	16,0	42,5	220	-6,0	22,0	20	13,0	-	141	130	45	-	64	53	105°	60°

* The opening angle can be changed by pressing in a stop pin.

No. 6803NI

Vertical acting toggle clamp

with open clamping arm and angle base.

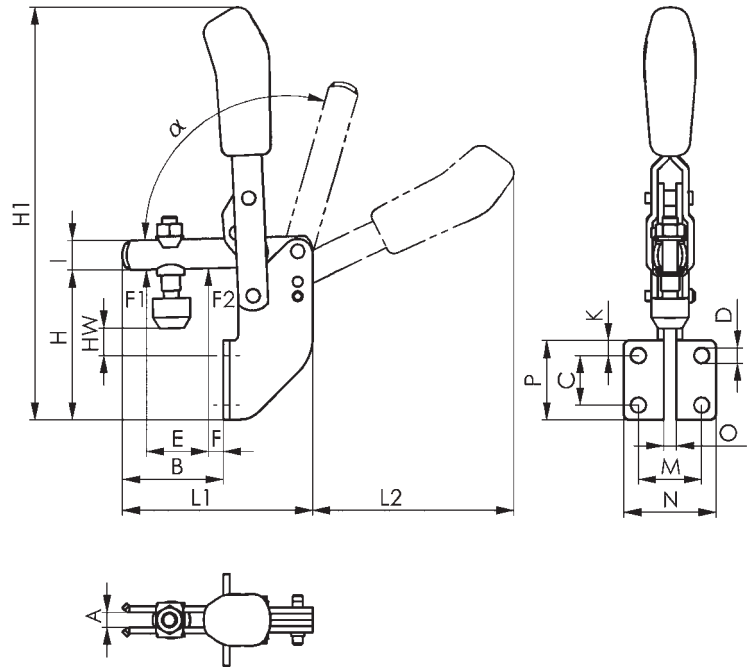
Stainless steel, polished. Rivets running in greased bushes.

Ergonomic, oil-resistant handle with large grip surface and soft components.

Supplied complete with stainless clamping screw no. 6890NI.

Also suitable for use in the food industry.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
95133	2	0,8	1,2	M6x35	220



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L1	L2	M	N	O	P	α	α^*
95133	2	6	41	20	6,1	25	6	60	167	8	15	12	6	77	81	25,5	37	5	32	105°	60°

* The opening angle can be changed by pressing in a stop pin.

No. 6830NI

Horizontal acting toggle clamp

with open clamping arm and horizontal base.

Stainless steel, polished. In sizes 2 to 5, rivets run in bearing bushes. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components.

Supplied complete with stainless clamping screw no. 6890NI.

Also suitable for use in the food industry.



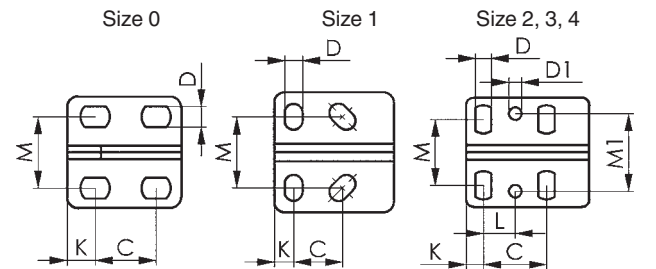
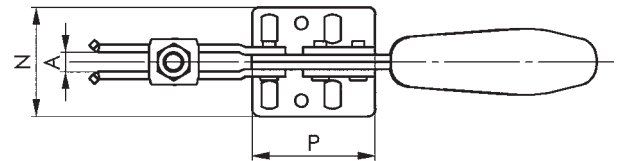
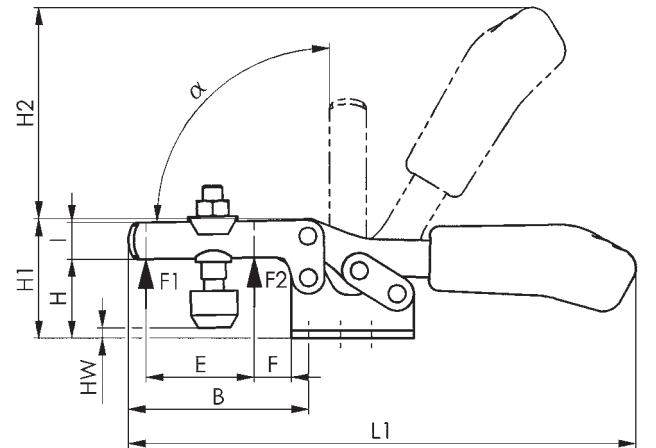
STAINLESS STEEL



Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
95141	0	0,25	0,4	M4x25	35
95166	1	0,80	1,1	M5x30	105
95182	2	1,00	1,2	M6x35	185
95208	3	1,80	2,5	M8x45	320
95224	4	2,00	3,0	M8x65	700

Note:

For suitable sensor monitor for size 3 see no. 6897S.



Dimensions

Order no.	Size	A	B	C	D	D1	E	F	H	H1	H2	HW min.	HW max.	I	K	L	L1	M	M1	N	P	α
95141	0	4	28	11,5-15,5	4,6	-	9,0	5	14,5	23,0	34	-5,0	0,6	7,5	6,25	-	79	16,0	-	25,0	25,5	90°
95166	1	5	42	13,3-14,7	5,2	-	18,6	8	19,0	30,0	49	-4,0	2,0	10,0	5,50	-	120	18,0-21,5	-	34,0	34,0	90°
95182	2	6	64	26,0	5,6	5,6	32,0	16	24,0	45,0	68	-1,6	5,0	13,0	6,00	12,7	162	19,5-29,5	28,5	42,0	38,0	90°
95208	3	8	73	25,7	6,5	5,1	36,0	36	32,0	48,5	86	-2,0	9,0	15,0	7,00	-	206	22,0-31,8	31,6	44,5	50,0	90°
95224	4	10	113	41,0	8,5	8,5	63,0	27	45,0	75,0	115	-4,0	24,0	20,0	8,00	20,5	281	29,0-43,0	43,0	58,0	57,0	90°

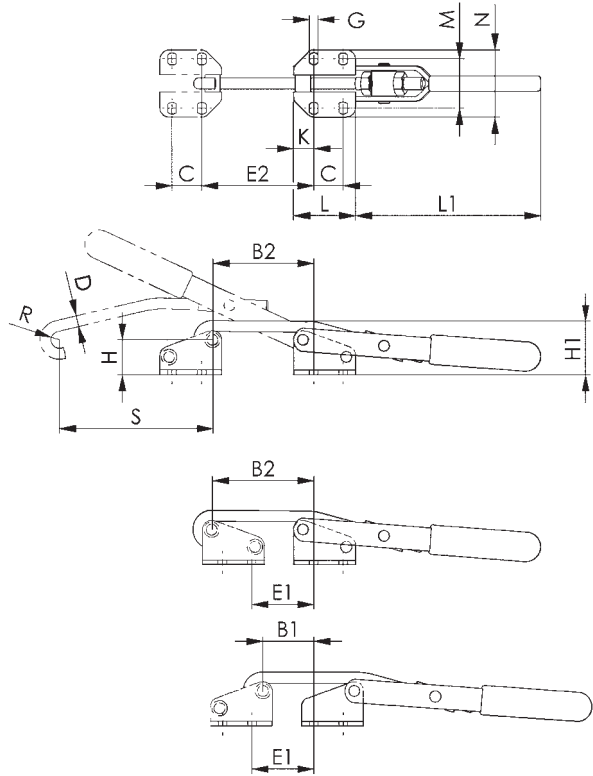
No. 6847NI

Hook type toggle clamp

Stainless steel, polished. Rivets running in greased bushes.
Handle of red high quality oil-resistant plastic. Ergonomic, oil-resistant handle with large grip surface and soft components for size 1.
Also suitable for use in the food industry.



Order no.	Size	F1 [kN]	Adjustm. distance [mm]	Weight [g]
95406	1	1,0	8	100
95422	3	1,5	12	270
95448	5	2,5	14	850



Dimensions

Order no.	Size	B1	B2	C	D	E1	E2	G	H	H1	K	L	L1	M	N	R	S
95406	1	16-23	36-43	19	5,30	17-24	35-42	4,5	22,7	34,5	6	31	62,6	26,0-30,0	40	4,5	45
95422	3	32-44	65-77	19	7,10	39-51	72-84	5,5	22,7	36,0	13	40	123,5	31,5-35,5	45	5,5	99
95448	5	26-41	57-72	29	10,75	27-42	58-73	11,2	49,0	68,0	13	55	189,5	56,5-64,0	86	8,0	146

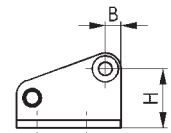
No. 6847GNI

Counter catch

For hook type toggle clamp no. 6847NI.
Stainless steel, polished.

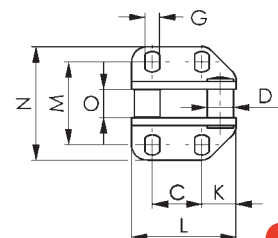


Order no.	Size	Height [mm]	Length [mm]	Weight [g]
95463	1	29	31	40
95489	3	29	40	70
95505	5	61	55	320



Dimensions

Order no.	Size	B	C	D	G	H	K	L	M	N	O
95463	1	6	19	8	4,5	22,5	6	31	26,0-30,0	41	6,8
95489	3	6	19	10	5,5	23,0	13	40	31,3-35,8	46	10,8
95505	5	12	29	15	11,0	49,0	13	55	56,5-64,0	88	13,7



No. 6847KNI

Hook type toggle clamp

for cylindrical mounting surfaces.
Stainless steel, polished. Rivets running in greased, continuous bearing bushes. Handle made of red, oil-resistant plastic.
Use socket cap screws to ISO 4762 (DIN 912) for mounting.
Also suitable for use in the food industry.



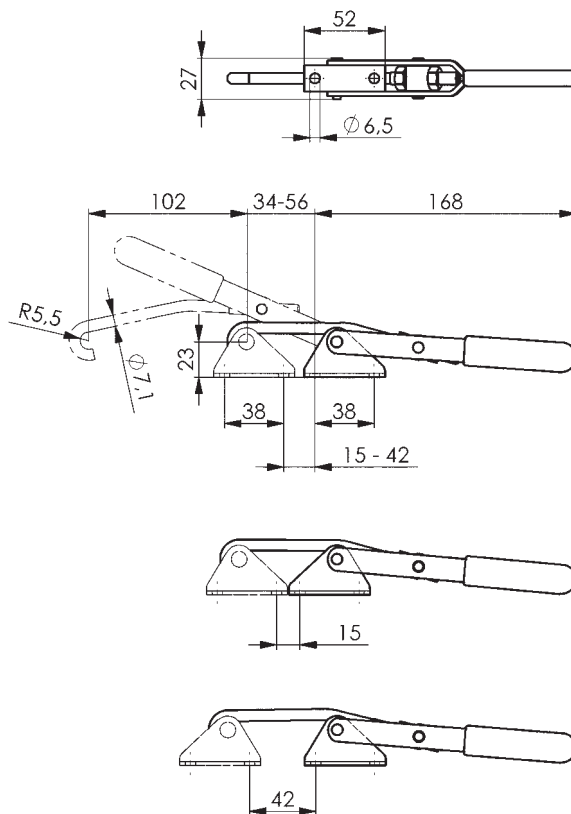
STAINLESS STEEL



Order no.	Size	F1 [kN]	Adjustm. distance [mm]	Weight [g]
95455	3	1,5	22	270

Note:

The range of movement can be adjusted by swiveling the base and repositioning the catch.



No. 6847GKNI

Counter catch

for cylindrical mounting surfaces.
For hook-type toggle clamp no. 6847KNI.
Stainless steel, polished. Continuous bush.
Use socket cap screws to ISO 4762 (DIN 912) for mounting.



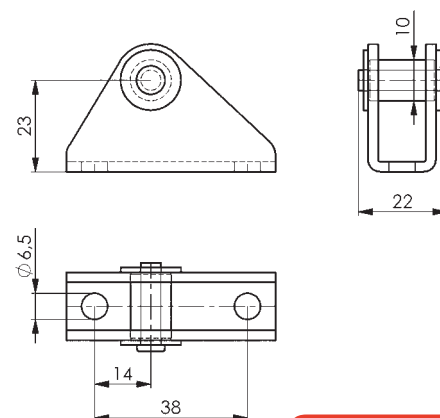
STAINLESS STEEL



Order no.	Size	Height [mm]	Length [mm]	Weight [g]
95596	3	32	52	65

Note:

The adjustment range of the clamp can be increased by turning the counter catch.



No. 6848HNI

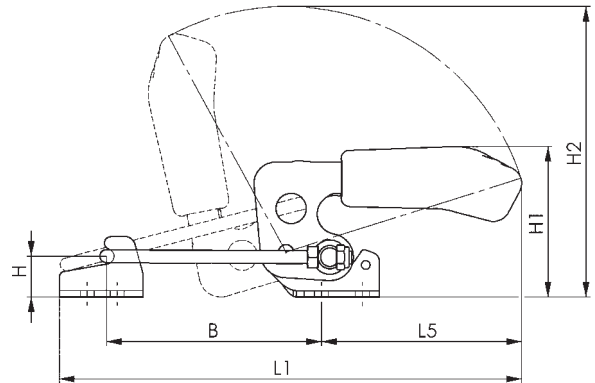
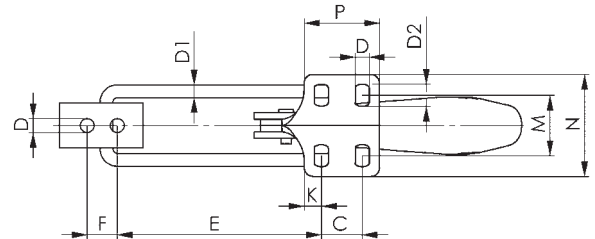
Hook type toggle clamp horizontal

Stainless steel, polished. Rivets running in greased bushes.
Ergonomic, oil-resistant handle with large grip surface and soft components.

Supplied complete with counter catch.
Also suitable for use in the food industry.



Order no.	Size	F1 [kN]	Weight [g]
95521	2	1,6	120
95547	3	3,2	330
95562	4	7,0	810



Dimensions

Order no.	Size	B min.	B max.	C	D	D1	D2	E min.	E max.	F	H	H1	H2	K	L1 min.	L1 max.	L5	M	N	P
95521	2	39,0	76	13	5,2	4	7,6	35,0	72	11	12	47	99,0	6,4	122	159	69	19,5-23,5	38,0	26,0
95547	3	53,5	101	19	6,5	6	10,4	48,6	96	14	19	70	135,5	8,0	169	216	93	24,5-32,0	48,0	35,0
95562	4	66,0	130	32	8,5	8	14,0	59,0	123	19	26	94	168,0	9,5	209	273	111	35,0-46,0	64,3	53,5

No. 6848HSNI

Hook type toggle clamp horizontal with safety latch

Stainless steel, polished. Rivets running in greased bushes.
Ergonomic, oil-resistant handle with large grip surface and soft components.

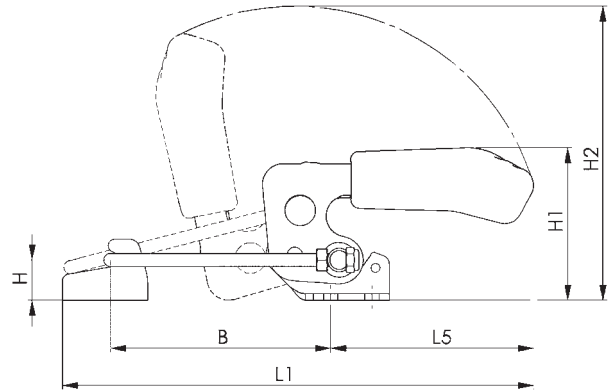
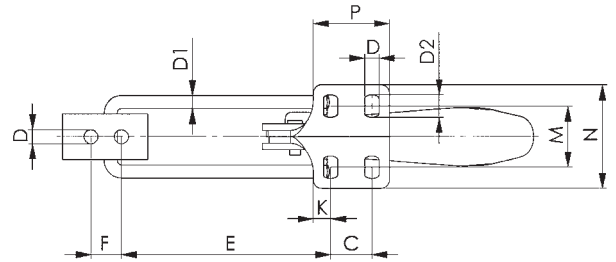
Supplied complete with counter catch.
Also suitable for use in the food industry.

Order no.	Size	F1 [kN]	Weight [g]
93658	4	7,0	850



STAINLESS STEEL

NEW!



Dimensions

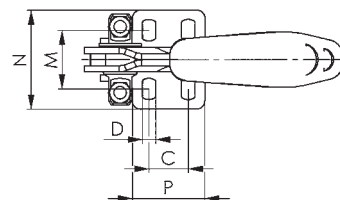
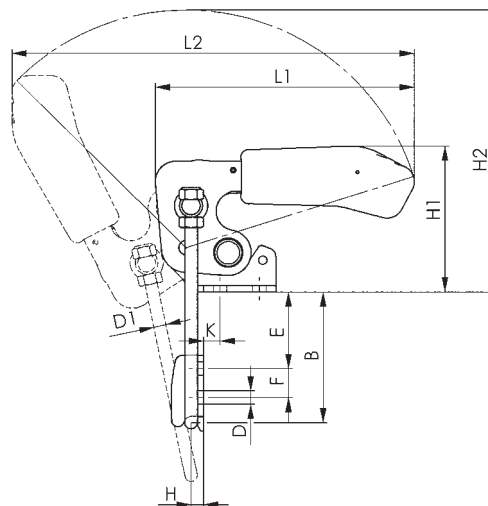
Order no.	Size	B min.	B max.	C	D	D1	D2	E min.	E max.	F	H	H1	H2	K	L1 min.	L1 max.	L5	M	N	P
93658	4	66	130	32	8,5	8	10,4	59	123	19	26	94	168	9,5	209	273	111	35-46	64,3	53,5

No. 6848VNI

Hook type toggle clamp vertical

Stainless steel, polished. Rivets running in greased bushes.
Ergonomic, oil-resistant handle with large grip surface and soft components.
Supplied complete with counter catch.
Also suitable for use in the food industry.

Order no.	Size	F1 [kN]	Weight [g]
95588	2	1,6	130
95604	3	3,2	340
95620	4	7,0	810



Dimensions

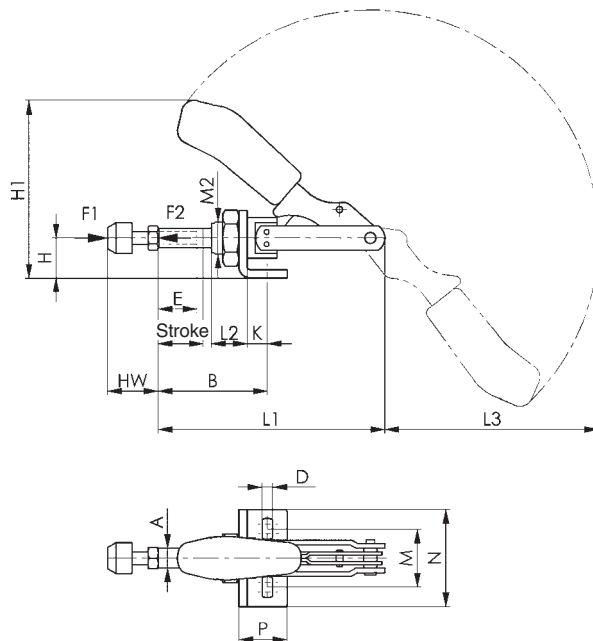
Order no.	Size	B min.	B max.	C	D	D1	D2	B min.	E max.	F	H	H1	H2	K	L1 min.	L1 max.	M	N	P
95588	2	24,0	49	13	5,2	4	7,6	5	30	11	4,5	47	99	6,4	91	158	19,5-23,5	38	26
95604	3	34,5	64	19	6,5	6	10,4	7	36	14	6,0	70,0	136	8,0	125	199	24,5-32,0	48,0	35,0
95620	4	43,0	81	32	8,5	8	14,0	9	47	19	8,0	94,5	168	9,5	151	239	35,0-46,0	64,5	53,5

No. 6841NI

Push-pull type toggle clamp

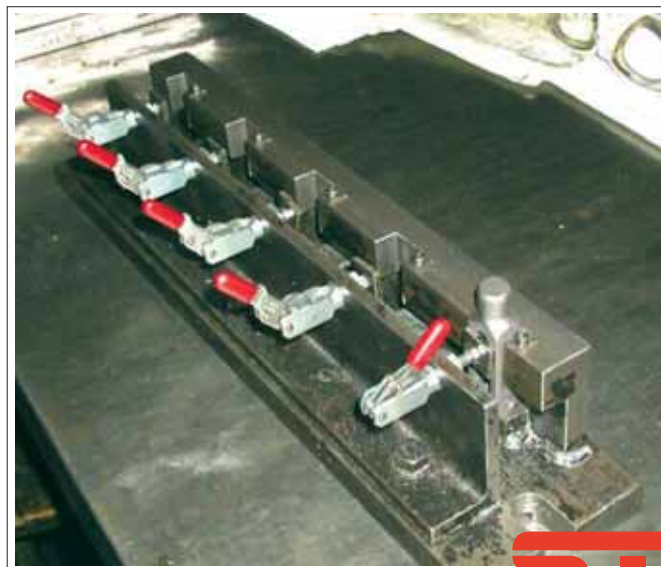
with small angle base. For push- and pull-clamping.
 (Equal operation of rod and lever). Stainless steel, polished.
 Long rod-guide with attaching thread and nut. Bush for size 3.
 Bearings pre-lubricated. Lever can be set to any angle relative to base.
 Ergonomic, oil-resistant handle with large grip surface and soft components.
Supplied complete with stainless clamping screw no. 6880NI.
 Also suitable for use in the food industry.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
95265	0	0,8	0,8	M4x20	65
95299	3	2,5	2,5	M8x35	445



Dimensions

Order no.	Size	A	B min.	B max.	D	E	H	H1	Stroke	HW min.	HW max.	K	L1	L2	L3	M	M2	N	P
95265	0	6,5	17	33	4,5	13	12	47	16	12	20	6,5	66	10	52	16,0	M10x1,0	25	16
95299	3	12,0	37	69	6,5	30	25	110	32	22	35	13,0	140	22	129	29,5-42,5	M20x1,5	60	30



No. 6844NI

Push-pull type toggle clamp

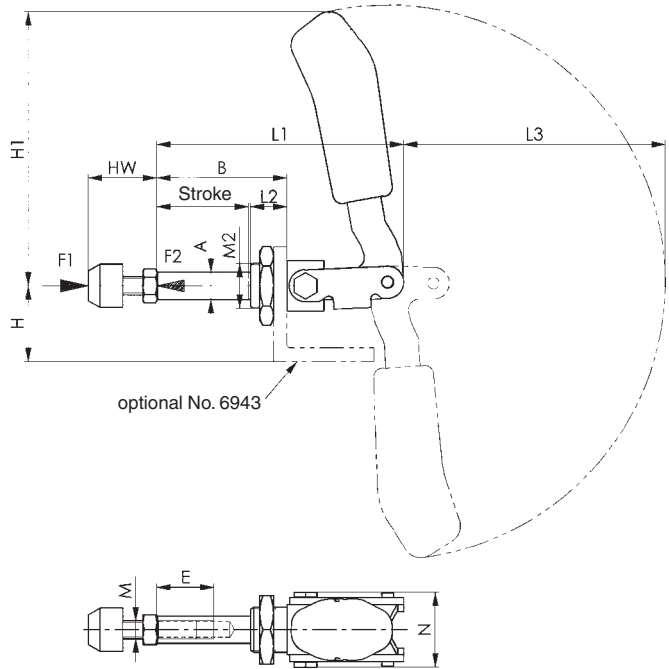
short version. For push and pull-clamping.
Stainless steel, polished. Long rod-guide with attaching thread and nut.
Shoulder screws pasted into thread. Bearings are pre-lubricated.
Ergonomic, oil-resistant handle with large grip surface and soft components.
Supplied complete with stainless clamping screw no. 6880NI.
Also suitable for use in the food industry.



Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
95349	2	1,0	1,0	M 6x25	130
95364	3	2,5	2,5	M 8x35	320
95380	5	4,0	4,0	M12x50	1200

Application:

Toggle for direct fit up in metal plates or fixtures, using its front attaching thread or by means of solid base angle no. 6843NI.



Dimensions

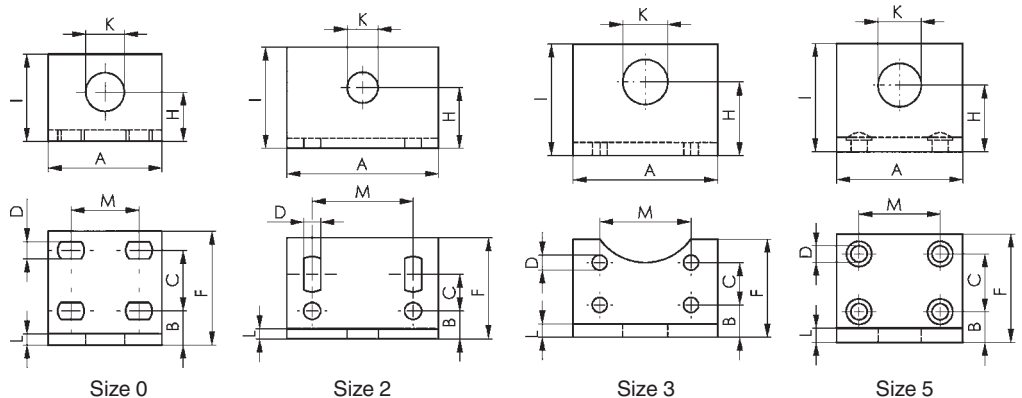
Order no.	Size	A	B	E	H	H1	Stroke	HW min.	HW max.	L1	L2	L3	M	M2	N
95349	2	10	35	15	24	76	21	18	27	70	13	82	M 6	M16x1,5	31
95364	3	12	56	25	33	128	40	22	35	110	16	130	M 8	M20x1,5	33
95380	5	16	92	35	37	142	67	30	50	175	24	155	M12	M24x1,5	50

No. 6843NI

Angle base, solid

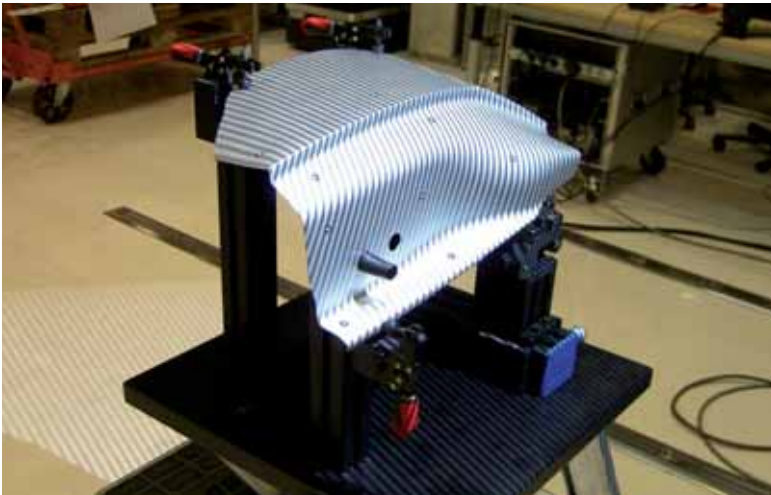
for no. 6841NI and no. 6844NI.
Stainless steel, polished.
Increased range of application due to enlarged height of center line.
Fastening by means of 4 screws.

Order no.	Size	A	B	C	D	F	H	I	K	L	M	Weight [g]
95091	0	30	9,0	16,0	4,5	30	13	23	10,2	3	15,5-20,5	35
95158	2	70	11,0	14,5	6,7	40	37	60	24,0	5	40	170
95174	3	65	14,5	11,5-17,5	6,7	44	33	50	20,2	6	41	260
95190	5	70	17,0	32,0	9,0	60	37	60	24,0	8	45	480



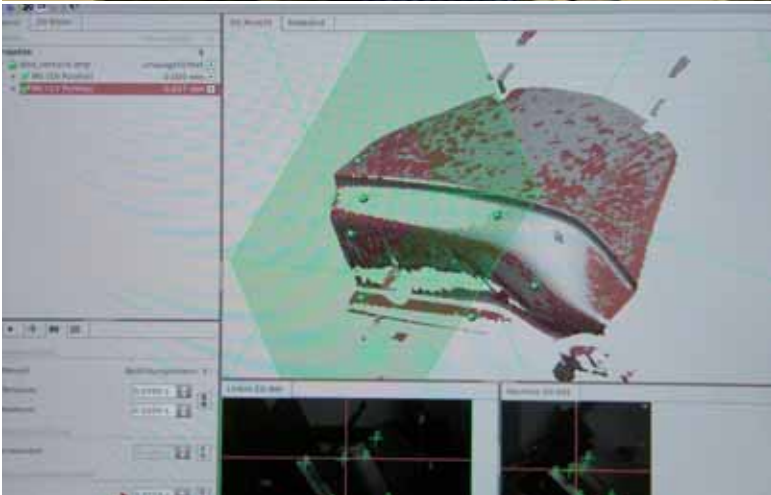
AMF TOGGLE CLAMPS FOR OPTICAL MEASUREMENT TECHNOLOGY

The new black toggle clamps are especially suited for the optical measurement of workpieces. The complete matte-black surface of the clamps prevents reflections. As a result, in the later evaluation of the measurement results on the PC, all unneeded clamp parts can be suppressed and only the actual workpiece is visible.



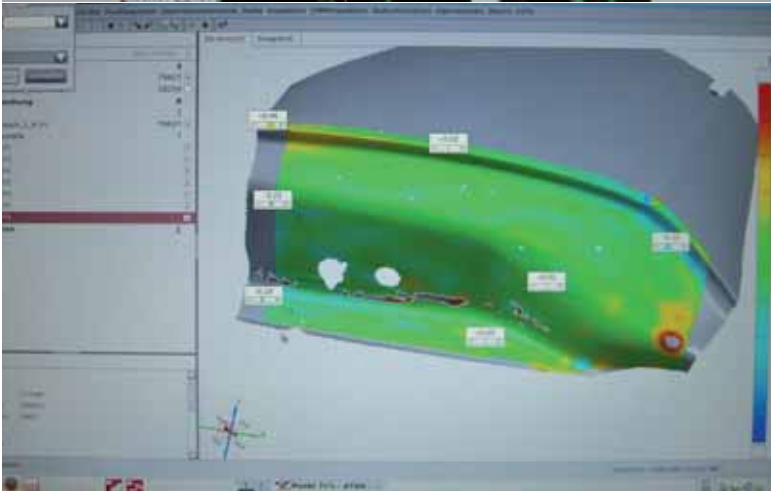
MARKING AND MEASURING OF THE WORKPIECE

For overlaying of several pictures, circular markings are attached to the object. A stripe pattern is projected onto the object surface by a white-light projector and photographed by two cameras from different angles of view.



EVALUATION

Within seconds, highly precise 3D coordinates of up to 4 million object points per measurement are calculated. For this, the black device with the black toggle clamps are „suppressed“.



VISUALISATION AND RESULT

Variances from the CAD are calculated. The 3D coordinates of the measurement points can be measured exactly and visualised in colour.

The complete 3D data set and the comparison results can be exported into common formats for further processing.

No. 6800B

Vertical toggle clamp, black

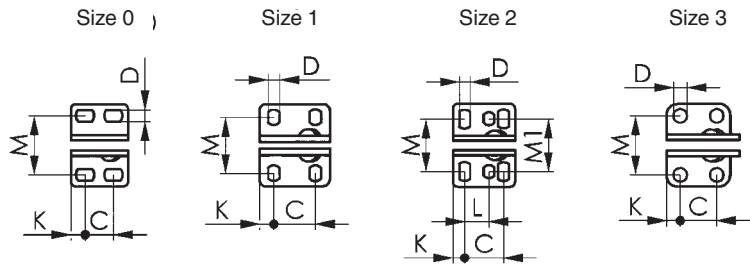
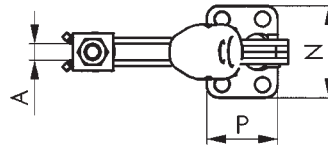
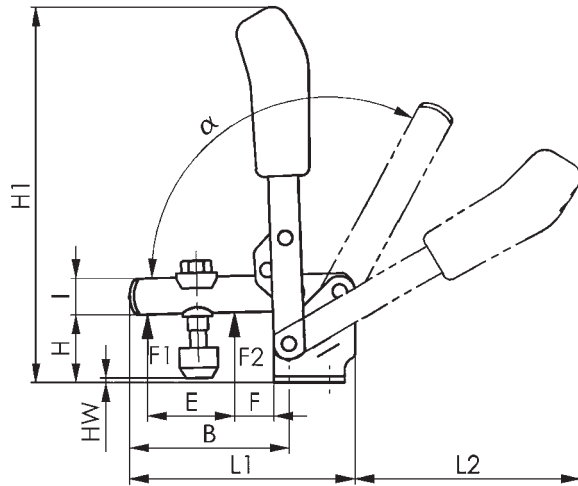
with open clamping arm and horizontal base.

Matte-black galvanized. Rivets made of stainless steel, which, for sizes 2 and 3, run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant black handle with large grip surface and soft components. Safety clamping piece with finger protection. Lock washer for the thrust bolt at the end of the clamping arm. Complete with tempered, matte-black clamping screw no. 6890B.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90167	0	0,5	0,7	M4x32	60
90175	1	0,6	1,1	M5x38	105
90183	2	0,8	1,2	M6x45	175
90191	3	1,2	2,5	M8x58	410

Note:

These clamps are suitable for photogrammetric use. The matte-black surface of the clamps prevents reflection while photographing. For suitable clamping arm extension see no. 6896.



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L	L1	L2	M	M1	N	P	α	α^*
90167	0	4	31	8,5-13,5	4,5	14	5,5	18	81,0	-1,5	3,5	8	5,5	-	49	50	23	-	32	22	95°	-
90175	1	5	39	16	4,5	18	6,0	19	98,5	-4,0	2,0	10	5,5	-	61	59	22,5-26	-	35	27	95°	-
90183	2	6	52	20	5,5	25	11,0	23	130	-3,0	4,5	12	6,0	12,5	78	80	23,0-31	27	43	32	105°	60°
90191	3	8	79	20	7,5	36	19,0	33	186	2,0	11,0	18	7,5	-	112	112	32	-	46	35	105°	60°

* The opening angle can be changed by pressing in a stop pin.

No. 6802B

Vertical toggle clamp, black

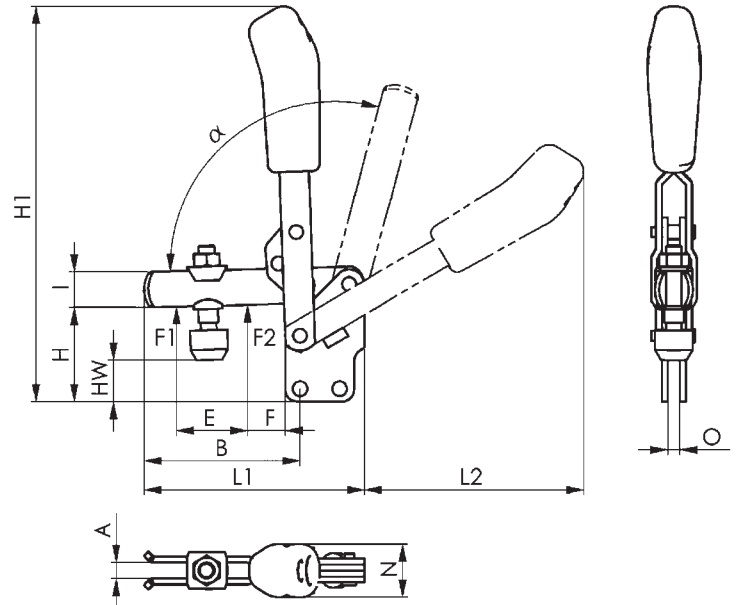
with open clamping arm and vertical base.

Matte-black galvanized. Rivets made of stainless steel, which, for sizes 2 and 3, run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant black handle with large grip surface and soft components. Safety clamping piece with finger protection. Lock washer for the thrust bolt at the end of the clamping arm. Complete with tempered, matte-black clamping screw no. 6890B.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90415	1	0,6	1,1	M5x38	105
90472	2	0,8	1,2	M6x45	175
90498	3	1,2	2,5	M8x58	410

Note:

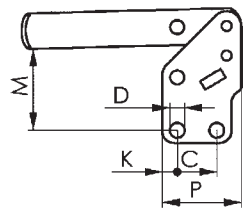
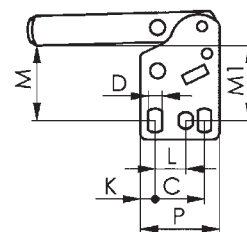
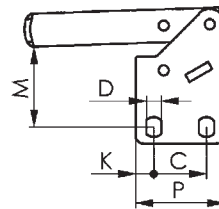
These clamps are suitable for photogrammetric use. The matte-black surface of the clamps prevents reflection while photographing. For suitable clamping arm extension see no. 6896.



Size 1

Size 2

Size 3



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L	L1	L2	M	M1	N	O	P	α	α^*
90415	1	5	39	16	4,5	18	6	29	108	6,0	12,5	10	5,5	-	61	59	23,5-25	-	20	5	27	95°	-
90472	2	6	52	20	5,5	25	11	38	144	11,5	19,5	12	6,0	12,5	78	80	28,5-32	30	21	5	32	105°	60°
90498	3	8	79	20	7,5	36	19	48	200	16,5	25,0	18	7,5	-	112	112	41	-	27	6	40	105°	60°

* The opening angle can be changed by pressing in a stop pin.

No. 6830B

Horizontal toggle clamp, black

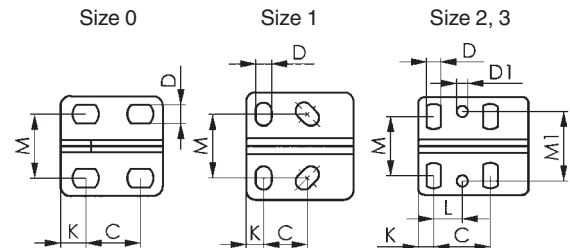
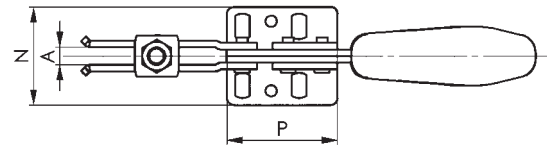
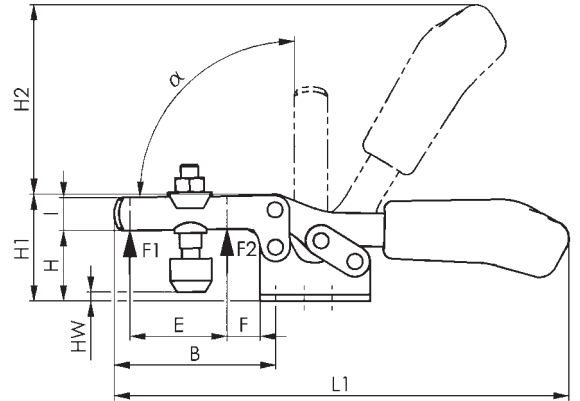
with open clamping arm and horizontal base.

Matte-black galvanized. Rivets made of stainless steel, which, for sizes 2 and 3, run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant black handle with large grip surface and soft components. Lock washer for the thrust bolt at the end of the clamping arm. Complete with tempered, matte-black clamping screw no. 6890B.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90423	0	0,3	0,4	M4x32	35
90480	1	0,8	1,1	M5x38	105
90506	2	1,0	1,2	M6x45	185
90522	3	1,8	2,5	M8x58	320

Note:

These clamps are suitable for photogrammetric use. The matte-black surface of the clamps prevents reflection while photographing. For suitable clamping arm extension see no. 6896. For suitable sensor monitor for size 3 see no. 6897S.



Dimensions

Order no.	Size	A	B	C	D	D1	E	F	H	H1	H2	HW min.	HW max.	I	K	L	L1	M	M1	N	P	α
90423	0	4	28	11,5-15,5	4,6	-	9,0	5,5	14,5	23,0	34,0	-7,9	3,1	7,5	6,25	-	79	16,0	-	25,0	25,5	90°
90480	1	5	42	13,0-14,5	5,2	-	18,8	8,0	19,0	30,0	49,0	-4,0	2,0	10,0	5,50	-	120	18,0-21,5	-	34,0	34,0	90°
90506	2	6	64	26,0	5,6	5,6	32,0	16,0	24,0	45,0	66,3	-2,6	5,0	13,2	6,00	12,7	162	19,5-29,5	28,5	42,0	38,0	90°
90522	3	8	73	25,7	6,5	5,1	37,0	14,0	32,0	48,5	86,0	-7,0	5,5	15,0	7,00	-	206	22,0-31,8	31,6	44,5	50,0	90°

No. 6832B

Horizontal toggle clamp, black

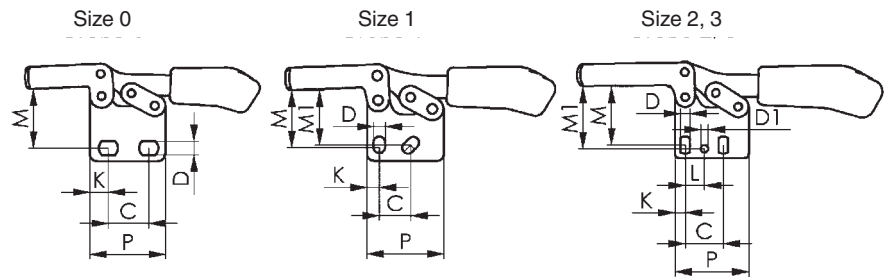
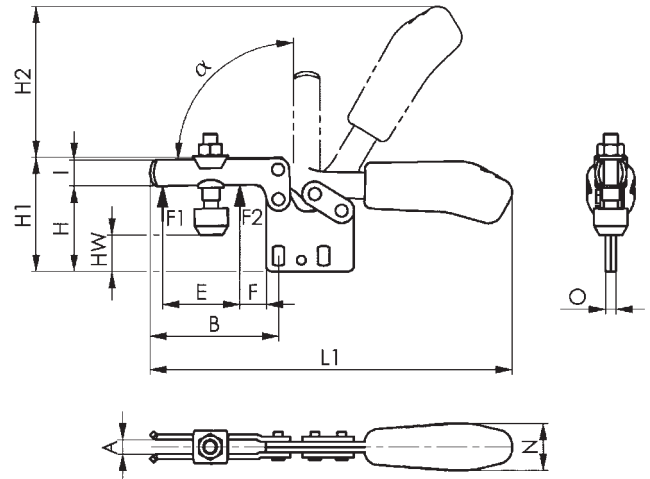
with open clamping arm and vertical base.

Matte-black galvanized. Rivets made of stainless steel, which, for sizes 2 and 3, run in hardened bushings. Bearings are pre-lubricated. Ergonomic, oil-resistant black handle with large grip surface and soft components. Lock washer for the thrust bolt at the end of the clamping arm. Complete with tempered, matte-black clamping screw no. 6890B.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90290	0	0,3	0,4	M4x32	35
90308	1	0,8	1,1	M5x38	105
90530	2	1,0	1,2	M6x45	185
90381	3	1,8	2,5	M8x58	320

Note:

These clamps are suitable for photogrammetric use. The matte-black surface of the clamps prevents reflection while photographing. For suitable clamping arm extension see no. 6896.



Dimensions

Order no.	Size	A	B	C	D	D1	E	F	H	H1	H2	HW min.	HW max.	I	K	L	L1	M	M1	N	O	P	α
90290	0	4	28,0	11,5-15,5	4,6	-	9,0	5,5	24,5	33	34	2,2	13,7	7,5	6,25	-	79,0	20,0	-	12	3	25,5	90°
90308	1	5	41,7	13,0-15,5	5,2	-	18,5	8,0	31,5	43	49	8,9	14,8	10,0	5,50	-	119,7	23,5-25,5	24,5	18	5	34,0	90°
90530	2	6	64,0	26,0	5,6	5,6	32,0	16,0	40,0	61	68	14,0	22,0	13,2	6,00	12,7	164,0	29,5-34,0	34,0	21	5	38,0	90°
90381	3	8	73,0	25,7	6,5	5,1	39,0	12,0	49,0	65	86	9,0	22,0	15,0	7,00	13,0	206,0	37,5-42,5	42,0	27	6	50,0	90°

No. 6841B

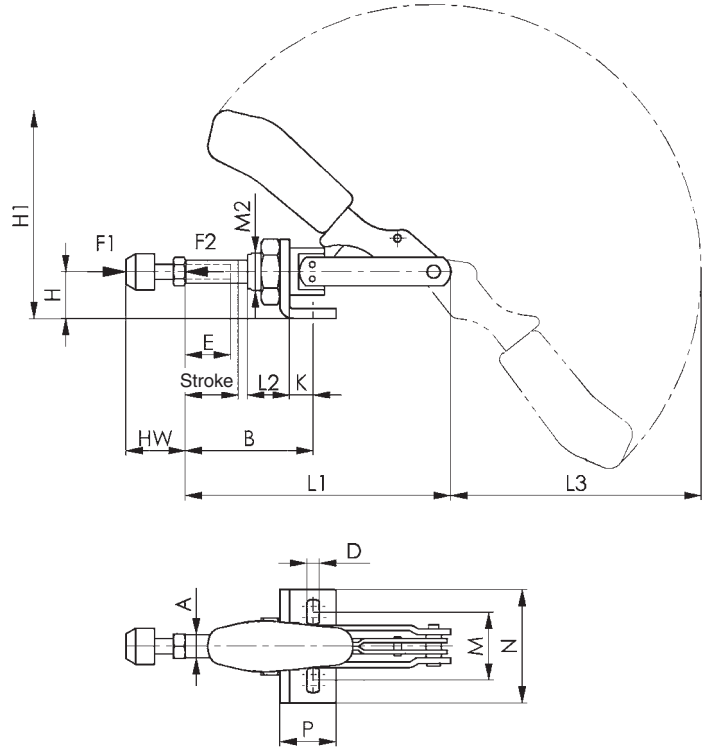
Push-pull type toggle clamp, black

with **small angle base**. For push- and pull-clamping.
 (Equal operation of rod and lever). Long rod-guide with attaching thread and nut. Matte-black galvanized. Rivets made of stainless steel.
 Lever-parts and rod of tempered steel. Bearings are pre-lubricated.
 Ergonomic, oil-resistant black handle with large grip surface and soft components. Lever can be set to any angle relative to base.
Complete with tempered, matte-black clamping screw no. 6880B.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90548	1	1,0	1,0	M4x20	125
91280	2	2,0	2,0	M6x25	245

Note:

These clamps are suitable for photogrammetric use. The matte-black surface of the clamps prevents reflection while photographing.



Dimensions

Order no.	Size	A	B min.	B max.	D	E	H	H1	Stroke	HW min.	HW max.	K	L1	L2	L3	M	M2	N	P
90548	1	8,0	24,5	44,5	4,5	20	15	60	20	12	20	7,0	91	16	72	16,0-19,5	M12x1,5	30	20
91280	2	10,0	32,5	57,5	5,6	25	20	95	26	17	25	12,5	114	19	105	31,8-36,0	M16x1,5	50	34

No. 6800BS

Vertical toggle clamp with safety latch, black

for open and clamped positions.

With open clamping arm and horizontal base.

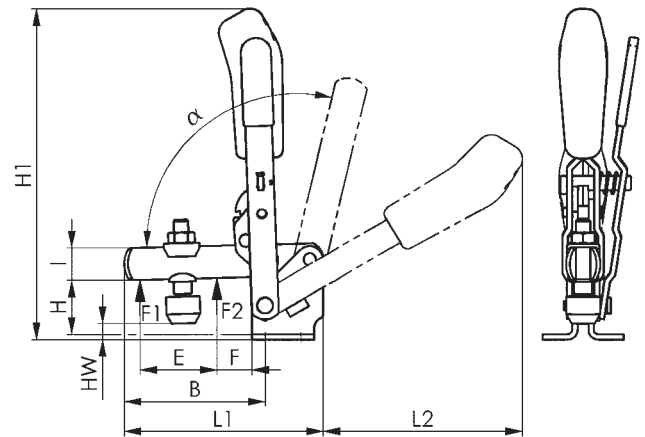
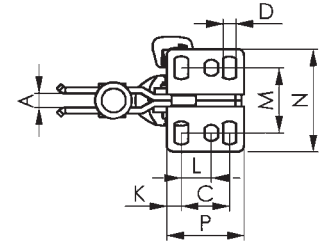
Matte-black galvanized. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection. Lock washer for the thrust bolt at the end of the clamping arm.

Complete with tempered, matte-black clamping screw no. 6890B.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
91348	2	1,0	1,2	M6x35	260

Note:

These clamps are suitable for photogrammetric use. The matte-black surface of the clamps prevents reflection while photographing. For suitable clamping arm extension see no. 6896.



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L	L1	L2	M	N	P	α	α^*
91348	2	6	52	20	5,5	25	11	23	130	-3	4,5	12	6	12,5	78	80	23-31	43	32	105°	60°

* The opening angle can be changed by pressing in a stop pin.

No. 6802BS

Vertical toggle clamp with safety latch, black

for open and clamped positions.

With open clamping arm and vertical base.

Matte-black galvanized. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection.

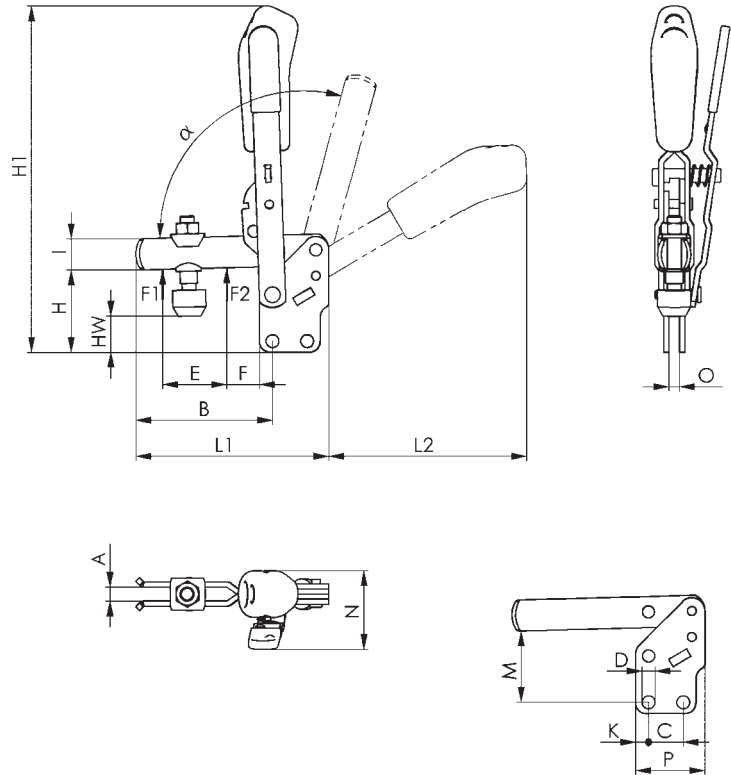
Lock washer for the thrust bolt at the end of the clamping arm.

Complete with tempered, matte-black clamping screw no. 6890B.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
99689	3	1,4	2,5	M8x45	470

Note:

These clamps are suitable for photogrammetric use. The matte-black surface of the clamps prevents reflection while photographing. For suitable clamping arm extension see no. 6896.



Dimensions

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L1	L2	M	N	O	P	α	α^*
99689	3	8	79	20	7,5	37	19	48	200	16,5	25	18	7,5	112	114	41	45,5	6	40	105°	60°

No. 6832BS

Horizontal toggle clamp with safety latch, black

for open and clamped positions.

With open clamping arm and vertical base.

Matte-black galvanized. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

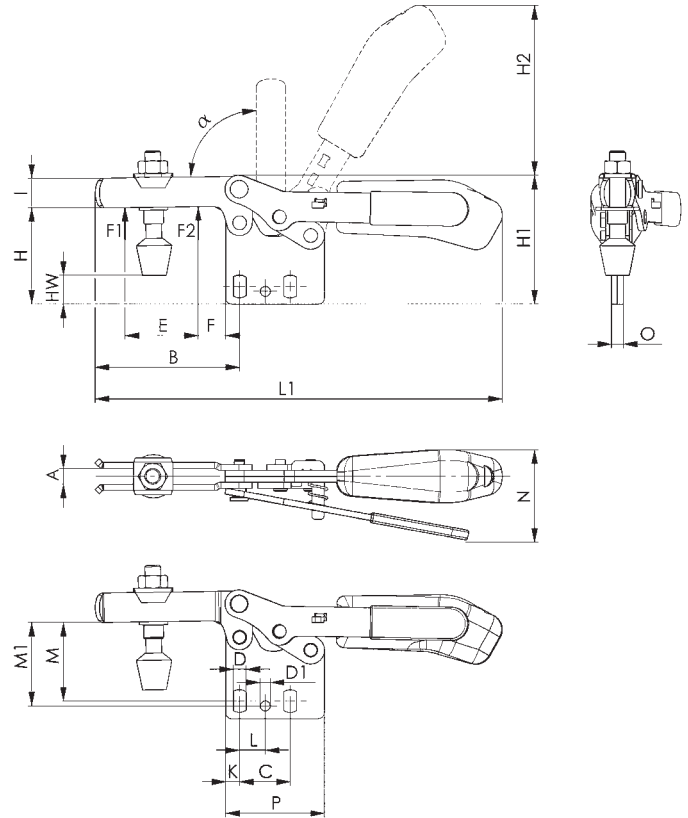
Ergonomic, oil-resistant black handle with large grip surface and soft components.

Lock washer for the thrust bolt at the end of the clamping arm.

Complete with tempered, matte-black clamping screw no. 6890B.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
99648	3	1,8	2,5	M8x45	390

NEW!



Dimensions

Order no.	Size	A	B	C	D	D1	E	F	H	H1	H2	HW min.	HW max.	I	K	L	L1	M	M1	N	O	P	α
99648	3	8	73	25,7	6,5	5,1	37	14	49	65	86	9	22	15	7	13	206	38-42	42	47	6	50	90°

> AMF PNEUMATIC TOGGLE CLAMPS

have definite advantages over the manual toggle clamps:

- > relieve operator of strenuous clamping movement
- > a number of clamps can be used simultaneously
- > a number of clamps can be operated with different sequences
- > one or more clamps can be controlled from the machine panel
- > one or more clamps can be operated from different positions.

> ADVANTAGES OF THE TOGGLE ACTION ...

- > in the event of air failure, clamp stays locked
- > low air consumption with maximum leverage
- > large opening angle, clearing the component for easy removal
- > assures maximum power-to movement ratio.

> SELECTION GUIDE

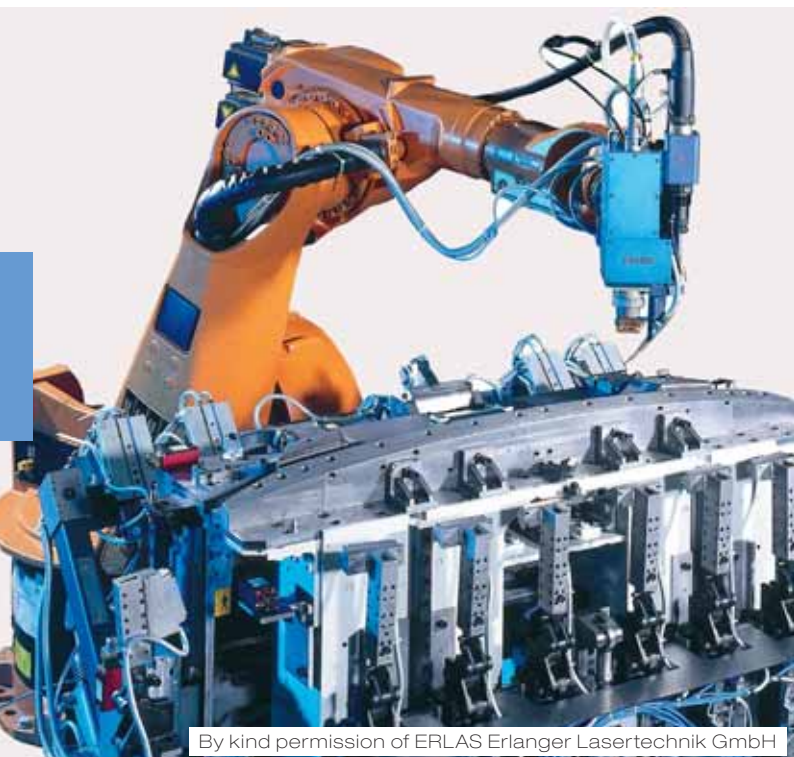
The pneumatic toggle clamp no. 6820 correspond in design and dimensions to the mechanical toggle clamp no. 6800. Therefore hand operated clamps can be replaced with pneumatic toggle clamps - if required.

Heavy duty pneumatic toggle clamps no. 6825C/CE and no. 6826C/CE are recommended to be incorporated in special and transfer machines. Tempered and ground bolts guarantee long life. The push type pneumatic toggle clamp no. 6850 corresponds in design and dimensions to the mechanical toggle clamp no. 6842 when pushed/closed, maximum forces of 2.5 - 10 kN can be reached.

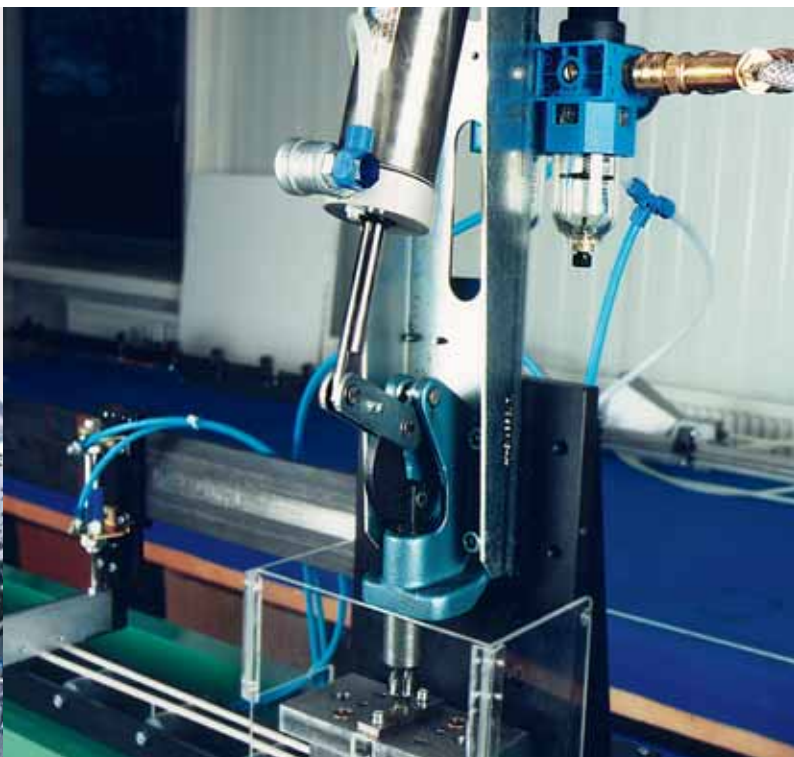
> CLAMPING AND HOLDING FORCES

As already explained for the hand operated toggle clamps, the selection of the correct clamp is of utmost importance. To select the correct size of pneumatic clamp, apart from the holding force, the possible clamping force at 6 bar air pressure (other pressure media may also be used at pressures up to max. 10 bar) is indicated in the tables

- > F3 is the possible clamping force at the end of the arm.
- > F4 is the force applied at the fulcum.
- > F5 is the piston force 6 bar air pressure.



By kind permission of ERLAS Erlanger Lasertechnik GmbH





No. 6850

Push type pneumatic toggle clamp

Thrust clamp.

Heavy version for long working life. Fitted with double-acting FESTO pneumatic cylinder with flow-restriction drillings for reduced speed (Size N-3 with pneumatic cylinder and adjustable speed), anodised, assembled and ready to connect.

Sizes 3 and N-3 with magnetic piston to signal end positions, for sizes 5 and 7, end position monitoring is not possible.

Materials: console galvanized and passivated, clamp body is malleable iron casting, painted. Toggle parts and push rod are heat-treated steel, galvanized and passivated. Rivet is stainless steel. Bearings are pre-lubricated.

Complete with tempered, galvanized clamping screw no. 6880.

Order no.	Size	F1 [kN]	F3 [kN]	F5 [kN]	Vn [dm ³]	Clamping screw	Weight [g]
95018	N-3	4	2,5	0,75	0,8	M8x35	1800
95034	3	4	2,5	0,75	0,8	M8x35	1800
95059	5	10	5,0	1,00	2,2	M12x50	3400
95075	7	25	10,0	1,80	4,5	M12x50	7680

F3 = maximum clamping force at 6 bar.

Vn = Air consumption per double stroke in dm³ at 6 bar.

Note:

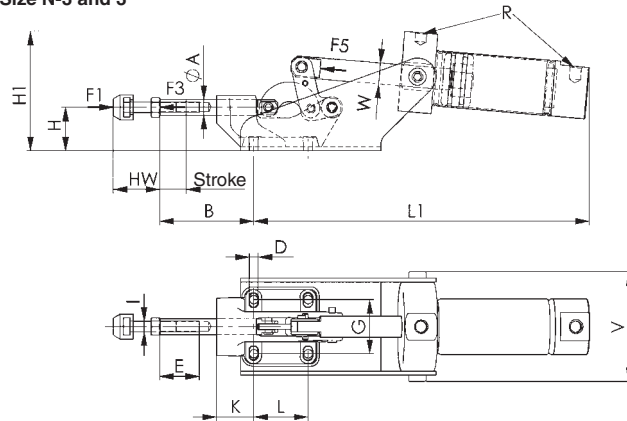
Size N-3 with pneumatic cylinder made of rectangular profile.

Sizes 5 and 7 are not to design, and have long consoles.

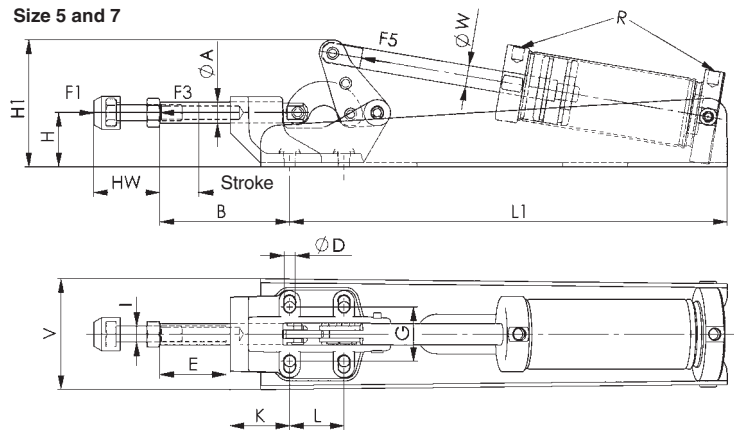
Please enquire separately for suitable fastening kits and proximity switches for end position monitoring.



Size N-3 and 3



Size 5 and 7



Dimensions

Order no.	Size	dia. A	B	D	E	G	H	H1	Stroke	HW min.	HW max.	I	K	L	L1	R	V	dia. W	Piston dia.	Piston stroke
95018	N-3	12	71	6,5	30	41	33	91	20,0	21,5	35	M 8	28	41	253	G1/8	83	16	40	62
95034	3	12	71	6,5	30	41	33	91	20,0	21,5	35	M 8	28	41	253	G1/8	83	16	40	62
95059	5	16	98	8,5	50	41	41	96	29,6	30,0	50	M12	45	41	330	G1/8	80	16	50	100
95075	7	22	105	11,0	50	57	59	128	38,0	30,0	50	M12	45	70	423	G1/4	96	16	63	125

Piston dia. = Cylinder dia. required for piston force F5 at 6 bar air pressure.

No. 6820K

Pneumatic toggle clamp

with horizontal cylinder attachment.

Fitted with FESTO plastic pneumatic cylinder, double-acting and ready to connect. Clamps galvanized and passivated, rivets made of stainless steel, which, for sizes 2 and 3, run in hardened bushings. Bearings are pre-lubricated.

Complete with tempered, galvanized clamping screw no. 6890.

The console is self-supporting and must be clear of other surfaces.

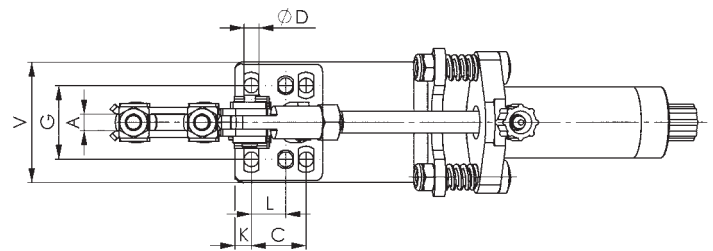
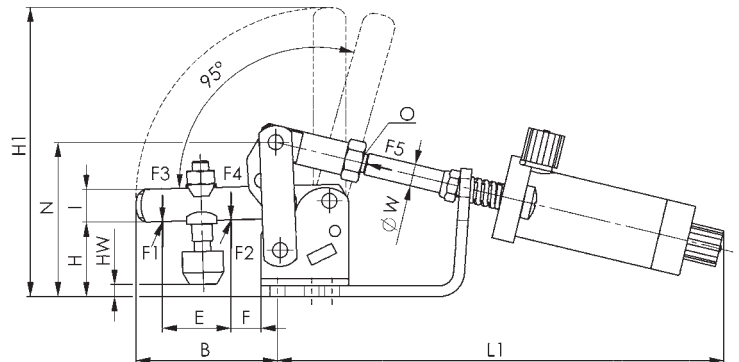
The speed of operation is controlled with a valve.

For sizes 2 and 3, the front air connection is on the side.

Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [N]	Vn [dm ³]	Clamping screw	Weight [g]
91710	0	0,5	0,7	0,07	0,09	38	0,03	M4x25	125
91728	1	0,8	1,1	0,13	0,18	60	0,06	M5x30	400
91736	2	1,0	1,2	0,35	0,50	170	0,17	M6x35	600
91744	3	1,4	2,5	0,55	1,00	265	0,30	M8x45	800

F3+F4 = maximum clamping force at 6 bar.

Vn = Air consumption per double stroke in dm³ at 6 bar.



Dimensions

Order no.	Size	A	B	C	dia. D	E	F	G	H	H1	HW min.	HW max.	I	K	L	L1	N	O	V	dia. W
91710	0	4	31	13,5	4,5	16	10	23	20	70	-1	6	8	5,0	-	132	40	M4	33	4
91728	1	5	38	16,0	4,5	19	14	24	23	85	-2	5	10	6,0	-	145	45	M6	34	6
91736	2	6	51	20,0	5,4	27	20	27	27	105	-1	8	12	6,0	12,5	163	56	M8	44	8
91744	3	8	80	20,0	7,1	43	27	32	40	155	2	14	18	7,5	-	206	76	M10x1,25	50	10

Order no.	Size	Piston dia.	Piston stroke	Dia. of compressed-air hoses Inside dia. x Outside dia.
91710	0	10	40	3x4,3
91728	1	12	40	4x6,2
91736	2	20	40	4x6,2
91744	3	25	50	4x6,2

Connection for plastic tube, FESTO-NW3 for 10 mm piston dia., FESTO-NW4 for 12, 20 and 25 mm piston dias.

Piston dia. = Cylinder dia. required for piston force F5 at 6 bar air pressure.

No. 6820N

Pneumatic toggle clamp

with horizontal cylinder attachment.

Fitted with pneumatic cylinder, double-acting, anodised and replaceable.

Magnetic piston for end-position monitoring. Adjustable speed. Clamps are galvanized and passivated. Stainless steel rivets, which, for sizes 2 to 4, run in bearing bushes. Bearings are pre-lubricated.

Complete with tempered, galvanized clamping screw no. 6890.

Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Vn [dm ³]	Clamping screw	Weight [g]
91967	1	0,8	1,1	0,20	0,3	0,10	0,08	M5x30	610
91975	2	1,0	1,2	0,70	1,0	0,30	0,26	M6x35	870
91983	3	1,4	2,5	0,65	1,1	0,50	0,35	M8x45	1160
91991	4	2,0	3,0	1,50	2,2	0,75	0,80	M8x65	1900

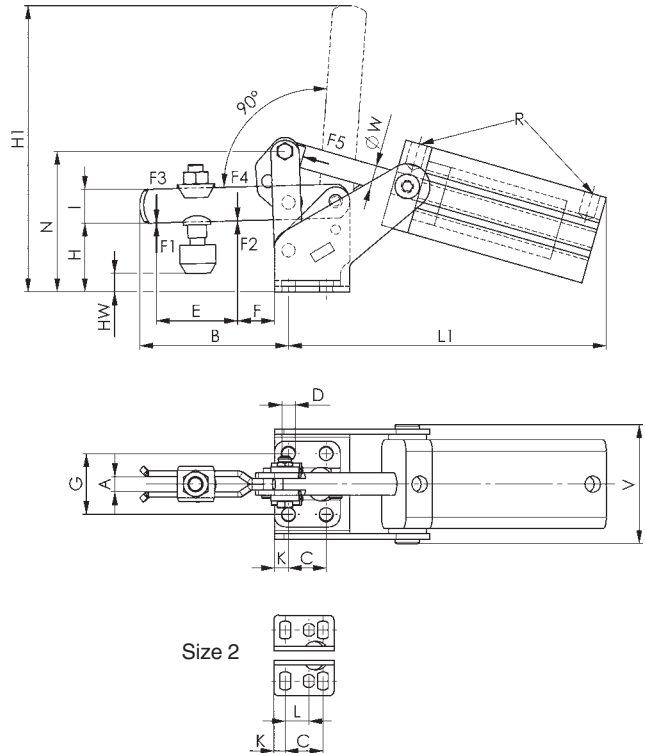
F3+F4 = maximum clamping force at 6 bar.

Vn = Air consumption per double stroke in dm³ at 6 bar.

Note:

Size 1 with round-shaped cylinder.

Please enquire separately for suitable fastening kits and proximity switches for end position monitoring.



Dimensions

Order no.	Size	A	B	C	D	E	F	G	H	H1	HW min.	HW max.	I	K	L	L1	N	R	V	dia. W	Piston dia.	Piston stroke
91967	1	5	38	16	4,5	17	8,0	24	22,0	84	-1,5	4,5	10	6,0	-	136	46,0	M5	50	6	16	34
91975	2	6	51	20	5,5	25	12,0	27	26,0	104	-1,0	7,0	12	6,0	12,5	171	55,0	M5	55	10	25	42
91983	3	8	80	20	7,5	38	19,5	32	36,0	152	5,0	14,0	18	7,5	-	178	74,5	G1/8	63	12	32	52
91991	4	10	100	32	8,5	54	22,0	45	45,5	189	-3,0	26,0	20	13,0	-	214	90,0	G1/8	77	16	40	62

Piston dia. = Cylinder dia. required for piston force F5 at 6 bar air pressure.

No. 6820F

Pneumatic toggle clamp

with horizontal cylinder attachment.

Fitted with FESTO pneumatic cylinder, double-acting, anodised, installed and ready to connect. **Magnetic piston for end-position monitoring.** With flow-restriction drillings for reduced speed.

Clamps are galvanized and passivated. Stainless steel rivets, which, for sizes 2 to 4, run in hardened bushes. Bearings are pre-lubricated. Complete with tempered, galvanized clamping screw no. 6890.



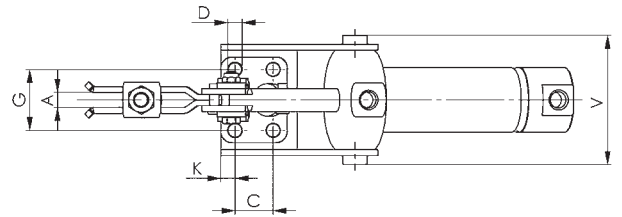
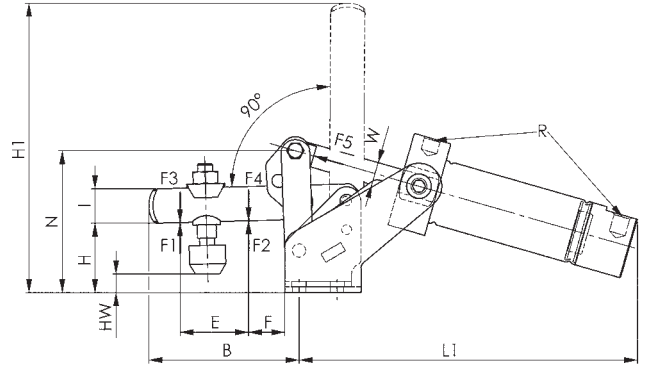
Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Vn [dm³]	Clamping screw	Weight [g]
92015	1	0,8	1,1	0,20	0,3	0,10	0,08	M5x30	610
92023	2	1,0	1,2	0,70	1,0	0,30	0,26	M6x35	870
92031	3	1,4	2,5	0,65	1,1	0,50	0,35	M8x45	1160
92049	4	2,0	3,0	1,50	2,2	0,75	0,80	M8x65	1900

F3+F4 = maximum clamping force at 6 bar.

Vn = Air consumption per double stroke in dm³ at 6 bar.

Note:

Please enquire separately for suitable fastening kits and proximity switches for end position monitoring.



Dimensions

Order no.	Size	A	B	C	D	E	F	G	H	H1	HW min.	HW max.	I	K	L	L1	N	R	V	dia. W	Piston dia.
92015	1	5	39	16	4,5	17	8,0	24	22,0	84	-1,5	4,5	10	6,0	-	136	46,0	M5	50	6	16
92023	2	6	52	20	5,5	25	12,0	27	26,0	104	-1,0	7,0	12	6,0	12,5	162	55,0	M5	55	10	25
92031	3	8	79	20	7,5	38	19,5	32	36,0	152	5,0	14,0	18	7,5	-	178	74,5	G1/8	68	12	32
92049	4	10	100	32	8,5	54	22,0	45	45,5	189	-3,0	26,0	20	13,0	-	214	90,0	G1/8	77	16	40

Piston dia. = Cylinder dia. required for piston force F5 at 6 bar air pressure.

No. 6821N

Pneumatic toggle clamp

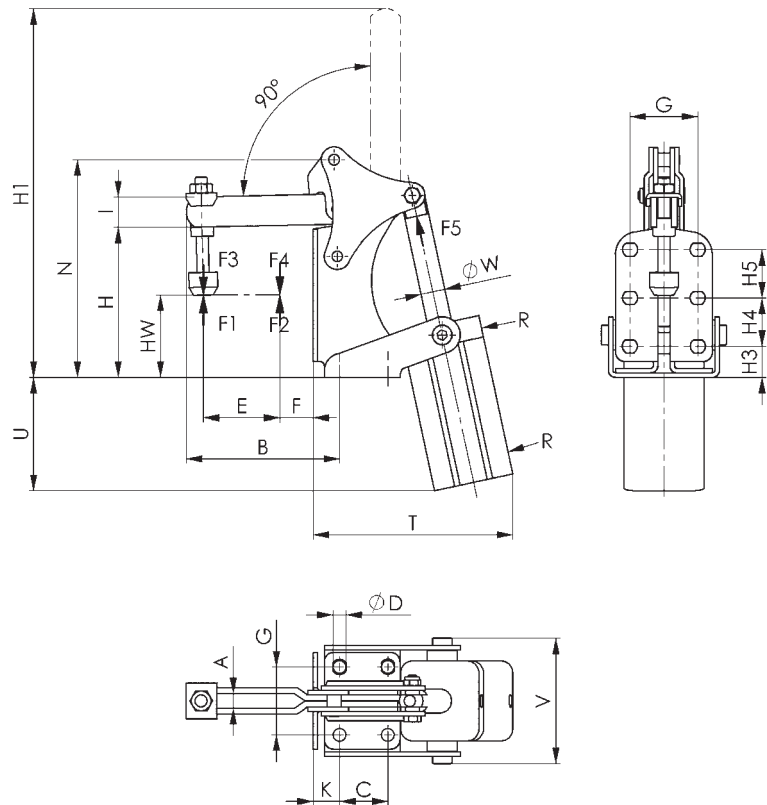
with vertical cylinder attachment.
 Space-saving angled form. Can be mounted vertically or horizontally.
 Fitted with pneumatic cylinder, double-acting, replaceable.
 Magnetic piston for end-position monitoring. Adjustable speed.
 Clamp are galvanized and passivated. Stainless steel rivets
 running in case-hardened bushes. Bearings are pre-lubricated.
Complete with tempered, galvanized clamping screw no. 6890.

Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Vn [dm ³]	Clamping screw	Weight [g]
91769	2	1,0	1,2	0,7	1,0	0,30	0,26	M6x35	800
91777	3	1,4	2,5	0,6	1,1	0,50	0,35	M8x45	1100
91785	4	2,0	3,0	1,5	2,2	0,75	0,80	M8x65	1600

F3+F4 = maximum clamping force at 6 bar.
 Vn = Air consumption per double stroke in dm³ at 6 bar.

Note:

Please enquire separately for suitable proximity switches for end position monitoring.



Dimensions

Order no.	Size	A	B	C	dia. D	E	F	G	H	H1	H3	H4	H5	HW min.	HW max.	I	K	N	R	T	U	V	dia. W
91769	2	6	56	12,5	5,5	27	8	27,0	65	145	16	12,5	12,5	37	46	12	16	94	M5	90	70	62	10
91777	3	8	82	16,0	6,5	42	14	25,4	72	185	18	16,0	-	38	50	18	16	108	G1/8	105	90	70	12
91785	4	10	102	32,0	8,5	52	22	45,0	100	244	22	32,0	32,0	50	79	20	18	144	G1/8	133	75	83	16

Order no.	Size	Piston dia.	Piston stroke
91769	2	25	42
91777	3	32	52
91785	4	40	62

Piston dia. = Cylinder dia. required for piston force F5 at 6 bar air pressure.

No. 6821F

Pneumatic toggle clamp

with vertical cylinder attachment.
 Space-saving angled form. Can be mounted vertically or horizontally.
 Fitted with FESTO pneumatic cylinder, double-acting, replaceable.
 Magnetic piston for end-position monitoring. With flow-restriction drillings for reduced speed. Clamps are galvanized and passivated. Stainless steel rivets running in case-hardened bushes. Bearings are pre-lubricated.
Complete with tempered, galvanized clamping screw no. 6890.

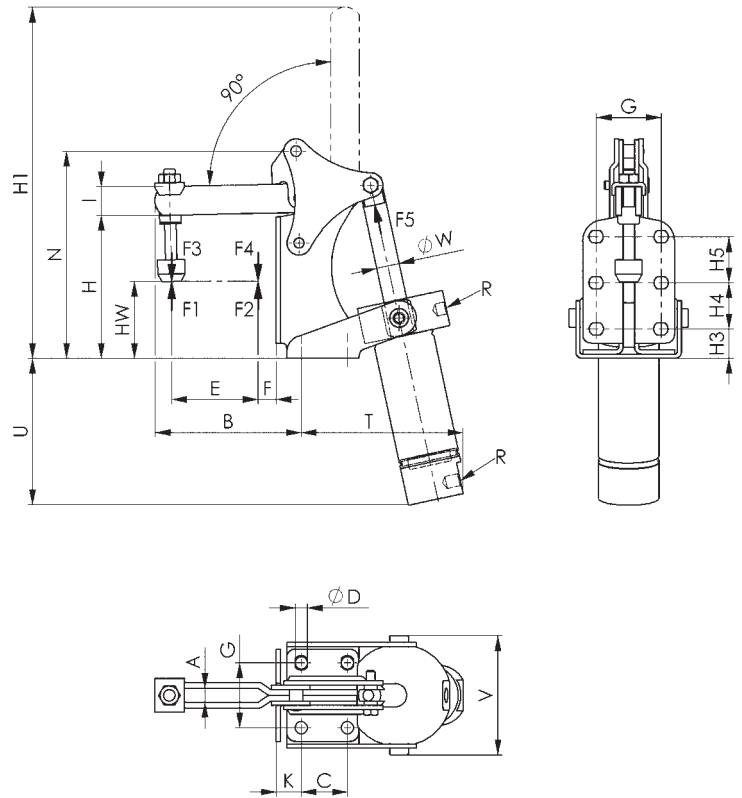


Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Vn [dm³]	Clamping screw	Weight [g]
91801	2	1,0	1,2	0,7	1,0	0,30	0,26	M6x35	800
91819	3	1,4	2,5	0,6	1,1	0,50	0,35	M8x45	1100
91827	4	2,0	3,0	1,5	2,2	0,75	0,80	M8x65	1600

F3+F4 = maximum clamping force at 6 bar.
 Vn = Air consumption per double stroke in dm³ at 6 bar.

Note:

Please enquire separately for suitable fastening kits and proximity switches for end position monitoring.



Dimensions

Order no.	Size	A	B	C	dia. D	E	F	G	H	H1	H3	H4	H5	HW min.	HW max.	I	K	N	R	T	U	V	dia. W	Piston dia.
91801	2	6	56	12,5	5,5	27	8	27,0	65	143	16	12,5	12,5	37	46	12	16	94	M5	90	68	62	10	25
91819	3	8	82	16,0	6,5	42	14	25,4	72	184	18	16,0	-	38	50	18	16	108	G1/8	105	94	70	12	32
91827	4	10	102	32,0	8,5	52	22	45,0	100	244	22	32,0	32,0	50	79	20	18	144	G1/8	133	102	83	16	40

Piston dia. = Cylinder dia. required for piston force F5 at 6 bar air pressure.

No. 6825C

Heavy pneumatic toggle clamp

with horizontal cylinder attachment.
Tempering steel, burnished. The axle bolts running in bearing bushes are tempered, ground and locked with circlips.

Magnetic piston for end-position monitoring.

Clamp is ready for installation and consists of:

- toggle clamp element no. 6815C
- double acting FESTO pneumatic cylinder



Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Vn [dm³]	Weight [g]
92205	4	6	9	1,5	2,2	0,75	1,0	4380
92213	6	12	18	2,5	3,5	1,00	1,8	7360
92221	8	20	30	4,0	6,0	1,80	4,3	16800

F3+F4 = maximum clamping force at 6 bar.

Vn = Air consumption per double stroke in dm³ at 6 bar.

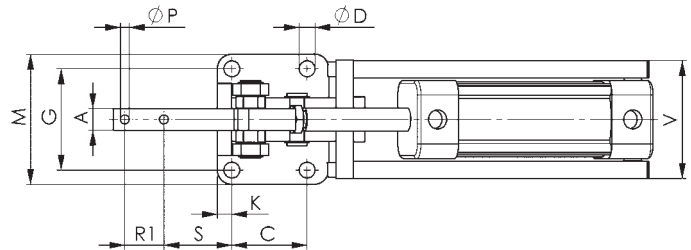
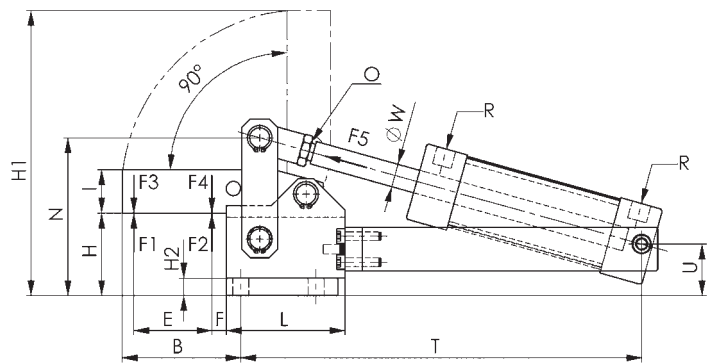
Application:

These pneumatic toggle clamps are of machine tool quality and can be installed in machines such as material handling lines and special machines. Opening and clamping position of the clamp can be controlled electrically and can be intergrated into automated manufacturing.

Note:

This heavy pneumatic toggle clamp is also available in a hydraulic drive version (article no. 6960C). In case of interest, please ask for our catalogue „Hydraulic Clamping Systems“.

Please enquire separately for suitable fastening kits and proximity switches for end position monitoring.



Dimensions

Order no.	Size	A	B	C	dia. D	E	F	G	H	H1	H2	I	K	L	M	N	O	dia. P	R	R1	S	T	U
92205	4	15	82	52	11	54	10,0	70	57	197	12	30	10,0	82	90	109	M12x1,25	6,2	G1/4	27	47,0	277	35,5
92213	6	20	90	55	11	60	10,0	83	61	220	12	40	11,0	90	105	129	M16x1,50	8,2	G1/4	26	53,0	315	40,0
92221	8	30	128	80	13	95	9,5	111	86	310	12	60	12,5	120	135	176	M16x1,50	13,2	G1/4	40	69,5	383	54,0

Order no.	Size	V	dia. W	Piston dia.	Piston stroke
92205	4	82	16	40	80
92213	6	101	16	50	100
92221	8	123	20	63	120

Piston dia. = Cylinder dia. required for piston force F5 at 6 bar air pressure.

No. 6825CE

Heavy pneumatic toggle clamp

with horizontal cylinder attachment.

With adjustable end position cushioning.

Magnetic piston for end-position monitoring. Tempered steel, blued. The axle bolts running in bronze bushes are tempered, ground and locked with circlips.

Clamp is ready for installation and consists of:

- toggle clamp element no. 6815C
- double acting FESTO pneumatic cylinder
- bearing block

These cylinders are made to DIN ISO 6432.

Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Vn [dm ³]	Weight [g]
92106	0	0,6	1,0	0,2	0,4	0,10	0,10	260
92122	1	0,8	1,2	0,6	0,8	0,19	0,15	500

F3+F4 = maximum clamping force at 6 bar.

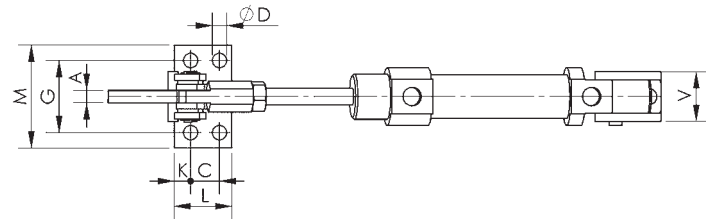
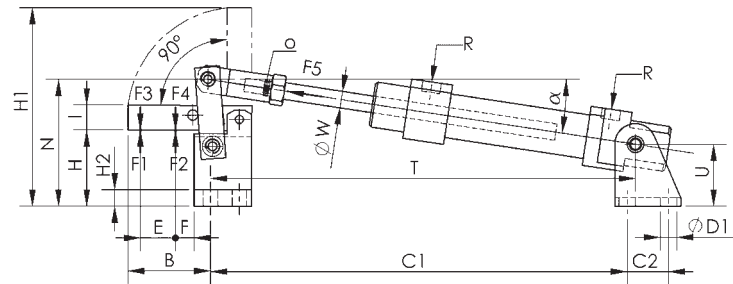
Vn = Air consumption per double stroke in dm³ at 6 bar.

Application:

These pneumatic toggle clamps are of machine tool quality and can be installed in machines such as material handling lines and special machines. Opening and clamping position of the clamp can be controlled electrically and can be intergrated into automated manufacturing.

Note:

Please enquire separately for suitable fastening kits and proximity switches for end position monitoring.



Dimensions

Order no.	Size	A	B	C	C1	C2	dia. D	dia. D1	E	F	G	H	H1	H2	I	K	L	M	N	O	R	T	U
92106	0	5	34	11	175	15	4,5	5,5	14	7	27	26	76	6	10	5,5	22	35	47,5	M6	M5	177	27
92122	1	6	41	14	200	20	7,0	6,5	17	9	35	37	96	8	12	8,0	28	50	62,0	M8	G1/8	204	30

Order no.	Size	V	dia. W	α	Piston dia.	Piston stroke
92106	0	18	6	6,6°	16	40
92122	1	24	8	9,0°	20	40

Piston dia. = Cylinder dia. required for piston force F5 at 6 bar air pressure.

No. 6825CE

Heavy pneumatic toggle clamp

with horizontal cylinder attachment.

With swivel mounting and adjustable end position cushioning.

Magnetic piston for end-position monitoring. Tempering steel, burnished. The axle bolts running in bearing bushes are tempered, ground and locked with circlips.

Clamp is ready for installation and consists of:

- toggle clamp element no. 6815C
- double acting FESTO pneumatic cylinder

These cylinders are made to

- ISO 6431
- VDMA 24562
- NFE 49003.1
- UNI 10290

Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Vn [dm ³]	Weight [g]
92239	4	6	9	1,5	2,2	0,75	1,0	5500
92247	6	12	18	2,5	3,5	1,00	1,8	7800
92254	8	20	30	4,0	6,0	1,80	4,3	17800

F3+F4 = maximum clamping force at 6 bar.

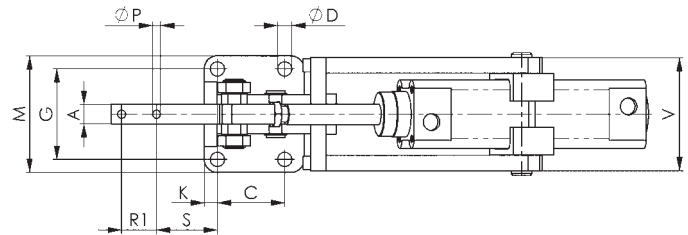
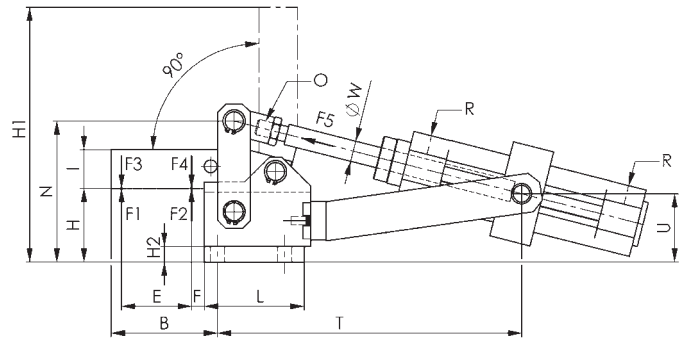
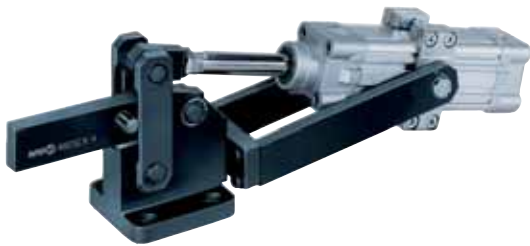
Vn = Air consumption per double stroke in dm³ at 6 bar.

Application:

These pneumatic toggle clamps are of machine tool quality and can be installed in machines such as material handling lines and special machines. Opening and clamping position of the clamp can be controlled electrically and can be intergrated into automated manufacturing.

Note:

Please enquire separately for suitable proximity switches for end position monitoring.



Dimensions

Order no.	Size	A	B	C	dia. D	E	F	G	H	H1	H2	I	K	L	M	N	O	dia. P	R	R1	S	T
92239	4	15	82	52	11	54	10,0	70	57	197	12	30	10,0	77,0	90	109	M12x1,25	6,2	G1/4	27	47,0	235
92247	6	20	90	55	11	60	10,0	83	61	218	12	40	11,0	85,0	105	129	M16x1,50	8,2	G1/4	26	53,0	280
92254	8	30	128	80	13	95	9,5	111	86	314	12	60	12,5	112,5	135	176	M16x1,50	13,2	G3/8	40	69,5	320

Order no.	Size	U	V	dia. W	Piston dia.	Piston stroke
92239	4	53	87,5	16	40	80
92247	6	55	101,0	20	50	100
92254	8	78	114,5	20	63	125

Piston dia. = Cylinder dia. required for piston force F5 at 6 bar air pressure.

No. 6826C

Heavy pneumatic toggle clamp

with vertical cylinder attachment.

Tempering steel, burnished. The axle bolts running in bearing bushes are tempered, ground and locked with circlips. **With magnetic piston for end-position monitoring.**

The clamp is ready for installation.

With double-acting FESTO pneumatic cylinder.



Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Vn [dm³]	Weight [g]
92262	4	6	9	1,5	2,2	0,75	1,0	5100
92270	6	12	18	2,5	3,5	1,00	1,8	7250
92288	8	20	30	4,0	6,0	1,80	4,3	16800

F3+F4 = maximum clamping force at 6 bar.

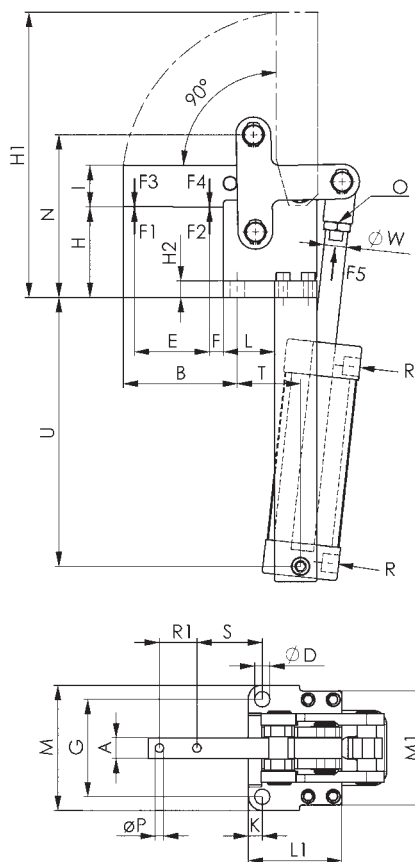
Vn = Air consumption per double stroke in dm³ at 6 bar.

Application:

These pneumatic toggle clamps are of machine tool quality and can be installed in machines such as material handling lines and special machines. Opening and clamping position of the clamp can be controlled electrically and can be integrated into automated manufacturing.

Note:

Please enquire separately for suitable fastening kits and proximity switches for end position monitoring.



Dimensions

Order no.	Size	A	B	dia. D	E	F	G	H	H1	H2	I	K	L	L1	M	M1	N	O	dia. P	R	R1	S	T
92262	4	15	82	11	54	10,0	70	65	205	12	30	10	37	67,0	90	82	117	M12x1,25	6,2	G1/4	27	47	46
92270	6	20	91	13	60	10,0	83	69	226	15	40	12	32	73,5	107	92	137	M16x1,50	8,2	G1/4	26	54	48
92288	8	30	125	17	95	9,5	115	94	318	20	60	15	49	109,0	145	124	184	M16x1,50	13,2	G1/4	40	67	77

Order no.	Size	U	dia. W	Piston dia.	Piston stroke
92262	4	193	16	40	74
92270	6	221	16	50	87
92288	8	255	16	63	120

Piston dia. = Cylinder dia. required for piston force F5 at 6 bar air pressure.

No. 6826CE

Heavy pneumatic toggle clamp

with vertical cylinder attachment.

With swivel mounting and adjustable end position cushioning.

Magnetic piston for end-position monitoring. Tempering steel, burnished. The axle bolts running in bearing bushes are tempered, ground and locked with circlips.

Clamp is ready for installation and consists of:

- toggle clamp element no. 6816CE
- double acting FESTO pneumatic cylinder

These cylinders are made to

- ISO 6431
- VDMA 24562
- NFE 49003.1
- UNI 10290



Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Vn [dm³]	Weight [g]
92296	4	6	9	1,5	2,2	0,75	1,0	5070
92304	6	12	18	2,5	3,5	1,00	1,8	7700
92312	8	20	30	4,0	6,0	1,80	4,3	17800

F3+F4 = maximum clamping force at 6 bar.

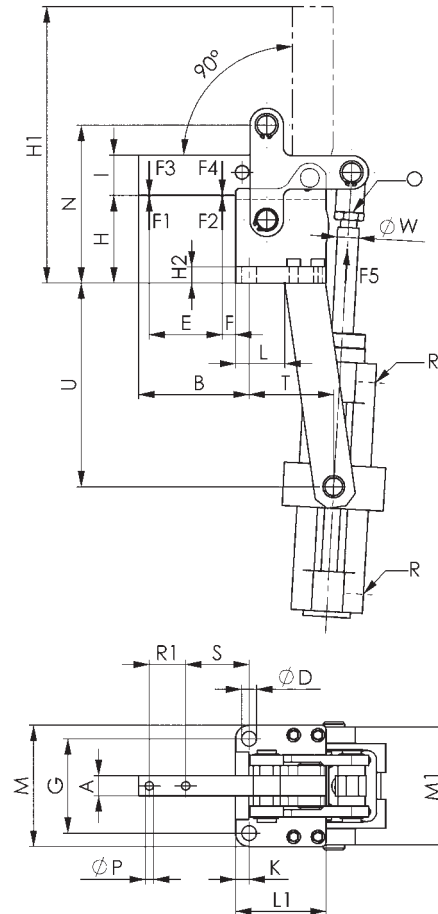
Vn = Air consumption per double stroke in dm³ at 6 bar.

Application:

These pneumatic toggle clamps are of machine tool quality and can be installed in machines such as material handling lines and special machines. Opening and clamping position of the clamp can be controlled electrically and can be integrated into automated manufacturing.

Note:

Please enquire separately for suitable proximity switches for end position monitoring.



Dimensions

Order no.	Size	A	B	dia. D	E	F	G	H	H1	H2	I	K	L	L1	M	M1	N	O	dia. P	R	R1	S	T
92296	4	15	82	11	54	10,0	70	65	205	12	30	10	36	67,0	90	87,5	117	M12x1,25	6,2	G1/4	27	47	63
92304	6	20	91	13	60	10,0	83	69	226	15	40	12	32	73,5	107	100,0	137	M16x1,50	8,2	G1/4	26	54	64
92312	8	30	125	17	95	9,5	115	94	318	20	60	15	49	109,0	145	115,0	184	M16x1,50	13,2	G3/8	40	67	101

Order no.	Size	U	dia. W	Piston dia.	Piston stroke
92296	4	151	16	40	80
92304	6	186	20	50	100
92312	8	192	20	63	125

Piston dia. = Cylinder dia. required for piston force F5 at 6 bar air pressure.

No. 6815C

Toggle clamp element

matching with heavy pneumatic toggle clamp, with horizontal cylinder attachment no. 6825C/CE. Tempering steel, burnished. The axle bolts are tempered, ground and locked with circlips.

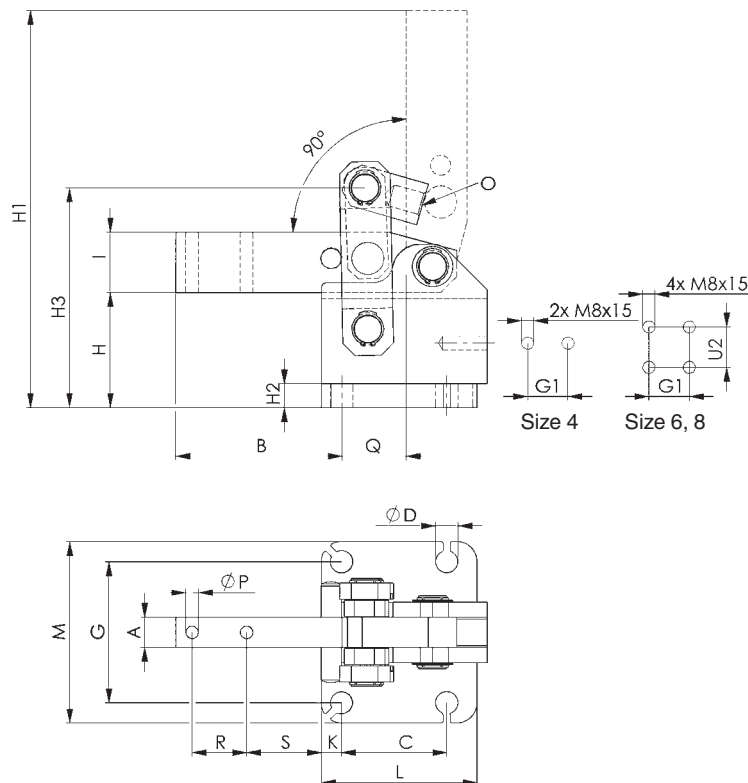


Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Weight [g]
92148	0	0,6	1,0	0,2	0,4	0,10	110
92155	1	0,8	1,2	0,6	8,0	0,19	230
92171	4	6,0	9,0	1,5	2,2	0,75	2535
92189	6	12,0	18,0	2,5	3,5	1,00	4215
92197	8	20,0	30,0	4,0	6,0	1,80	10670

The clamping forces F3 and F4 are achieved if a cylinder with the piston force F5 is connected.

Note:

Standard hydraulic and pneumatic cylinder can be connected to this clamp. In order to do so, the joint piece can be exchanged.



Dimensions

Order no.	Size	A	B	C	dia. D	E	F	G	G1	H	H1	H2	H3	I	K	L	L1	M	N	O	dia. P	Q	R	S
92148	0	5	34	11	4,5	14	14	27	-	25	76	6	52	10	7,0	50,0	22	35	47	M6	-	6	-	-
92155	1	6	40	14	7,0	17	17	35	-	36	97	8	70	12	8,0	64,0	28	50	62	M8	-	8	-	-
92171	4	15	82	52	11,0	54	20	70	18	57	195	12	122	30	10,0	154,0	77	90	109	M12x1,25	6,2	32	27	47,0
92189	6	20	90	55	11,0	60	21	83	24	61	220	12	147	40	11,0	169,5	85	105	129	M16x1,50	8,2	30	26	53,0
92197	8	30	128	80	13,0	95	22	111	34	86	310	12	196	60	12,5	240,0	125	135	176	M16x1,50	13,2	42	40	69,5

Order no.	Size	T	U	U1	U2	Piston dia.	Piston stroke	α
92148	0	-	-	-	-	16	40	6,5°
92155	1	-	-	-	-	20	40	9,0°
92171	4	277	35,5	32	-	40	80	16,0°
92189	6	315	40,0	21	24	50	100	16,0°
92197	8	383	54,0	21	40	63	120	19,0°

No. 6816CE

Toggle clamp element

matching with heavy pneumatic toggle clamp, with vertical cylinder attachment no. 6826CE. Tempering steel, burnished. The axle bolts are tempered, ground and locked with circlips.

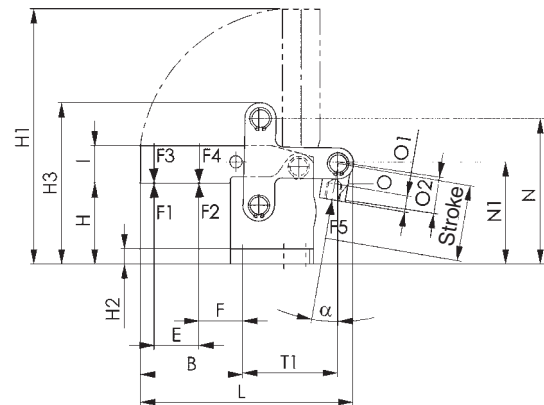
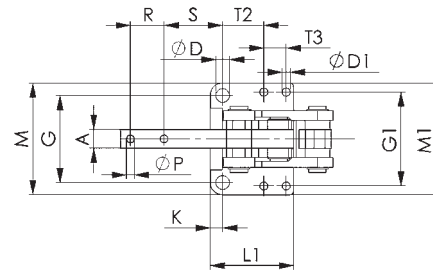


Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Weight [g]
92320	4	6	9	1,5	2,2	0,75	2400
92338	6	12	18	2,5	3,5	1,00	4300
92346	8	20	30	4,0	6,0	1,80	11000

The clamping forces F3 and F4 are achieved if a cylinder with the piston force F5 is connected. Position of cylinder see article no. 6826CE.

Note:

Standard hydraulic and pneumatic cylinders can be connected to this clamp. In order to do so, the joint piece can be exchanged.



Dimensions

Order no.	Size	A	B	dia. D	dia. D1	E	F	G	G1	H	H1	H2	H3	I	K	L	L1	M	M1	N	N1	O	O1	O2
92320	4	15	82	11	6,5	54	20,0	70	75,5	65	206	12	130	30	10	172	67,0	90	90	117	82	M12x1,25	14	29,5
92338	6	20	91	13	6,5	60	22,0	83	87,5	69	226	15	155	40	12	200	73,5	107	100	137	92	M16x1,50	18	37,0
92346	8	30	125	13	6,5	95	24,5	115	102,5	94	318	20	204	60	15	265	109,0	145	123	184	124	M16x1,50	17	32,0

Order no.	Size	dia. P	R	S	T1	T2	T3	Stroke	α
92320	4	6,2	27	47	76	33,0	18	74	9,0°
92338	6	8,2	26	54	88	29,5	24	87	7,5°
92346	8	13,2	40	67	120	44,0	40	120	6,5°

No. 6829V

Link Clamp, pneumatic, flange-mounting version

double-acting

Parts of mechanism are made of steel and blued. Piston rod non-rusting, polished. Body is made of aluminium, anodised. HART-COAT® surface for wear-resistance.

Complete with clamping screw.

Fastening options:

- From above, with socket cap screws through the flange
- By screwing the body into a tapped hole and locking with a grooved nut.
- By inserting the body into a plain hole and locking with two grooved nuts.

Accessories (not included in pack):

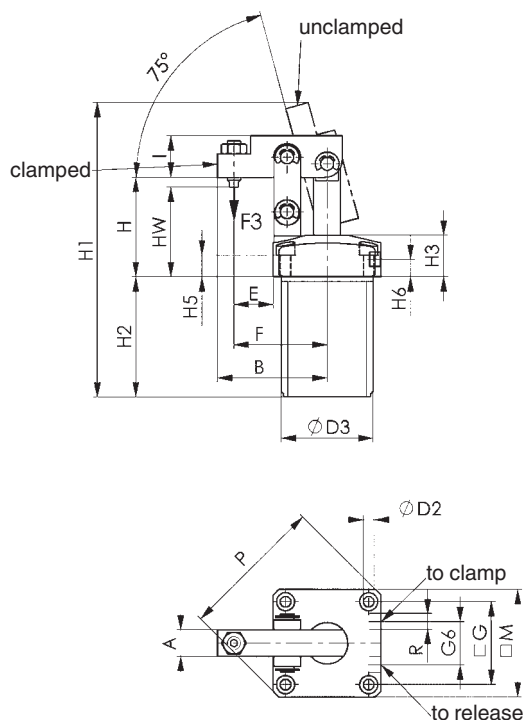
- Grooved nut no. 6829N
- Threaded flange no. 6829GF
- Clamping screw no. 6880



Order no.	Size	F3 [kN]	Clamping screw	Weight [g]
93609	25	0,23	M 6x25	580
93617	32	0,37	M 8x35	950
93625	40	0,56	M 8x35	1200
93633	50	0,76	M12x50	1900
93641	63	1,35	M12x50	2300

Note:

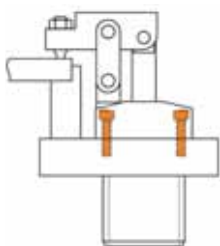
The lever mechanism can be dismantled so that it can be individually modified. The mounting holes in the flange are similar to those in threaded flange No. 6829GF. Operate only with lubricated air.



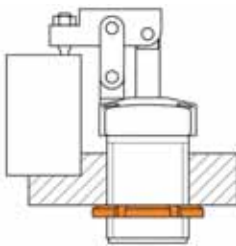
Dimensions

Order no.	Size	A	B	dia. D2	dia. D3	E	F	G	G6	H	H1	H2	H3	H5	H6	HW	I	M	P	R	Piston dia.
93609	25	14	50	5,5	M40x1,5	16,0	41,0	37	23	51	144	62	25	15	11,5	45-51	16	50	66	M5	25
93617	32	16	60	6,5	M50x1,5	22,0	52,0	45	23	57	170	73	25	13	10,5	51-57	20	60	80	G1/8	32
93625	40	16	68	6,5	M55x1,5	23,5	56,0	50	26	60	178	73	25	13	10,5	54-60	25	65	87	G1/8	40
93633	50	20	79	8,5	M65x1,5	26,0	63,5	58	32	65	200	80	25	11	10,5	59-65	30	75	100	G1/8	50
93641	63	20	88	8,5	M80x1,5	29,0	74,0	70	35	69	210	80	25	11	10,5	60-69	30	90	118	G1/8	63

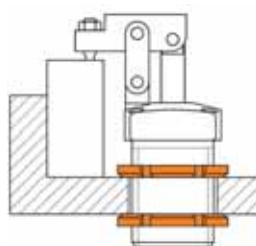
Examples of mountings:



from above with 4 socket cap screws through the flange.



By screwing the body into a tapped hole and locking with a grooved nut.



By inserting the body into a plain hole and locking with two grooved nuts.

No. 6828M

Pneumatic toggle clamp

double-acting.

Max. operating pressure 6 bar.

Mini design in block version for clamping and grasping uses. High-strength aluminium, red anodised. **Magnetic piston for end-position monitoring.** Clamping arm made of steel, burnished, with three holes.



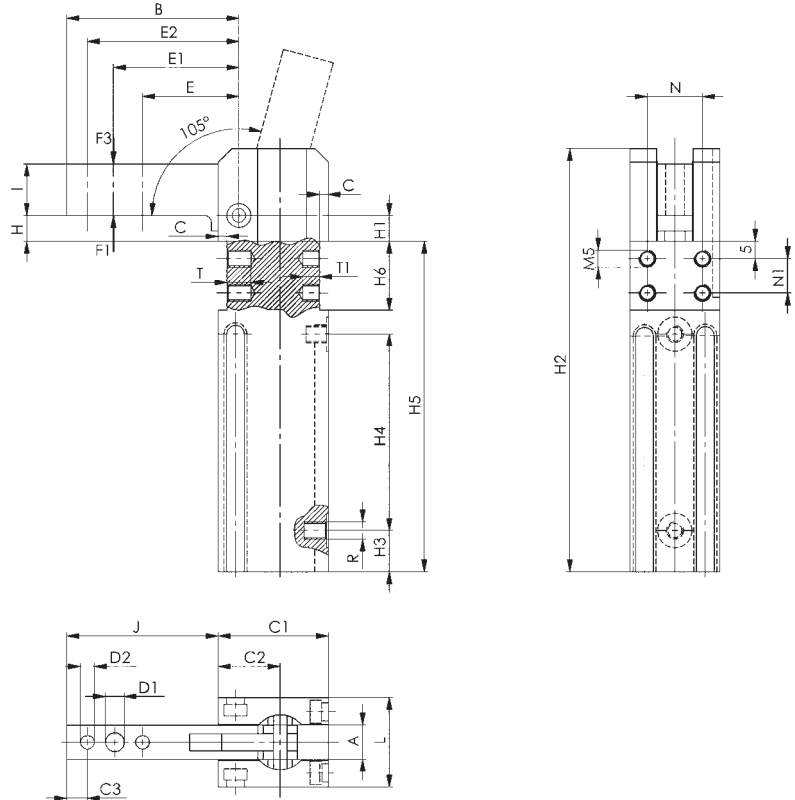
Order no.	Size	Clamping moment at 5 bar [Nm]	Holding moment max. [Nm]	Weight [g]
91843	16	8	25	300
91868	20	15	54	550
91884	25	25	75	850

Note:

Especially small and compact, with maintenance-free bearing bushes.

The clamp is self-locking.

Please enquire separately for suitable proximity switches for end position monitoring.



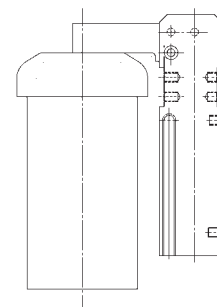
Dimensions

Order no.	Size	A	B	C	C1	C2	C3	D1	D2	H7	E	E1	E2	H	H1	H2	H3	H4	H5	H6 +0.1	I	J	L	N ±0.1	N1 ±0.1
91843	16	10	50	2,5	32	18	6	5,5	4	28	36,0	44	7,5	7,5	123	12,0	57	96	20	15	44	26	16	10	
91868	20	12	60	3,0	39	22	8	6,5	5	32	42,0	52	15,0	14,0	158	15,0	69	120	25	18	53	30	20	15	
91884	25	16	75	4,0	45	25	10	8,5	6	40	52,5	65	19,0	17,0	182	17,5	80	136	28	22	68	35	25	18	

Order no.	Size	R	T	T1	Piston dia.
91843	16	M5	7	5	16
91868	20	G1/8	8	6	20
91884	25	G1/8	8	6	25

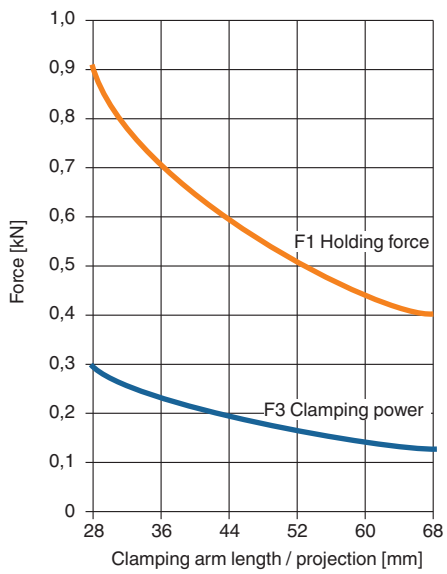
Potential use:

Mini clamp, e.g. as „cover close device“. Defined, locked close position through toggle lever mechanism.

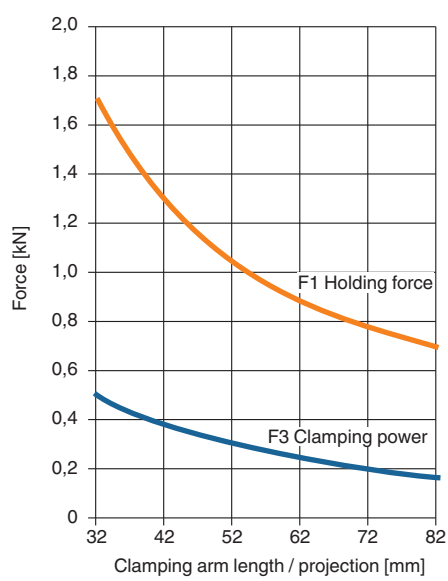


Force diagrams

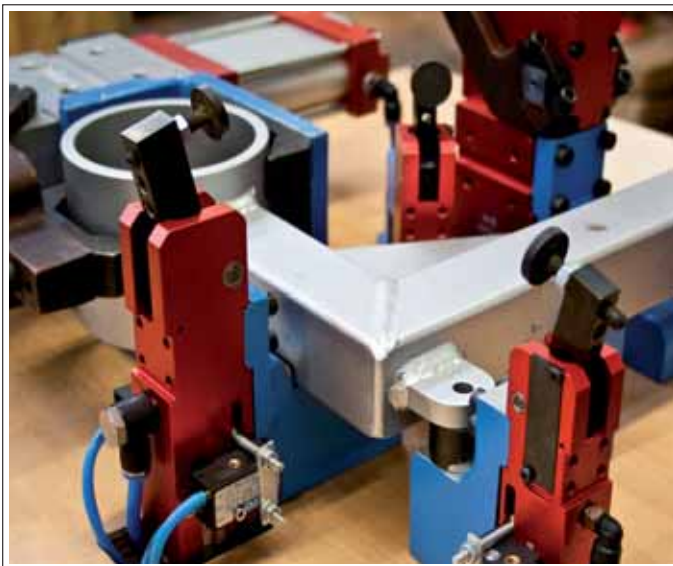
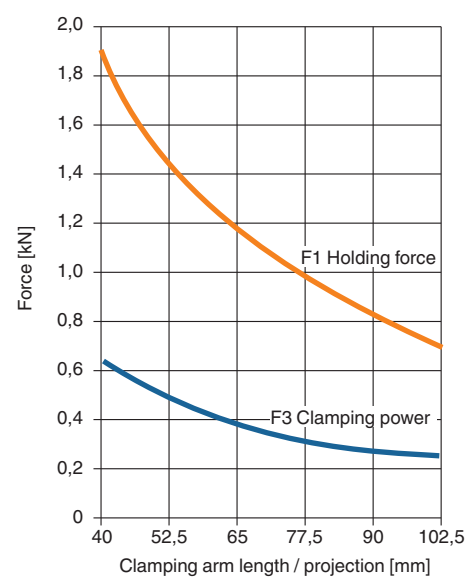
No. 6828M-16



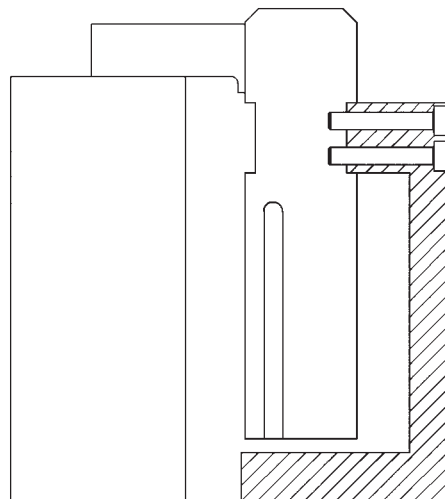
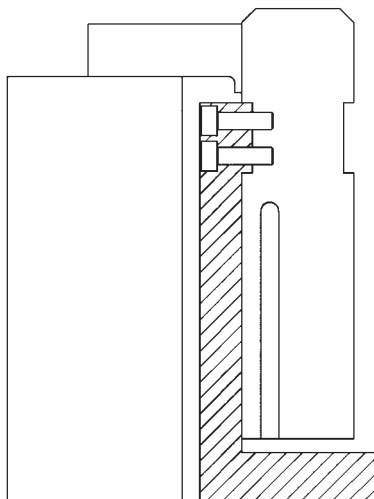
No. 6828M-20



No. 6828M-25



Examples of mountings:



No. 6828V

Heavy pneumatic toggle clamp

double-acting.

Max. operating pressure 6 bar.

With adjustable opening angle in the range from 15° to 105° in 15° steps, additionally 135°.

Housing is made of aluminium, red anodised.

Pneumatic end position cushioning, self-shut-off,

standard with inductive query 24V (Pepperl+Fuchs).

Clamp arm not included.

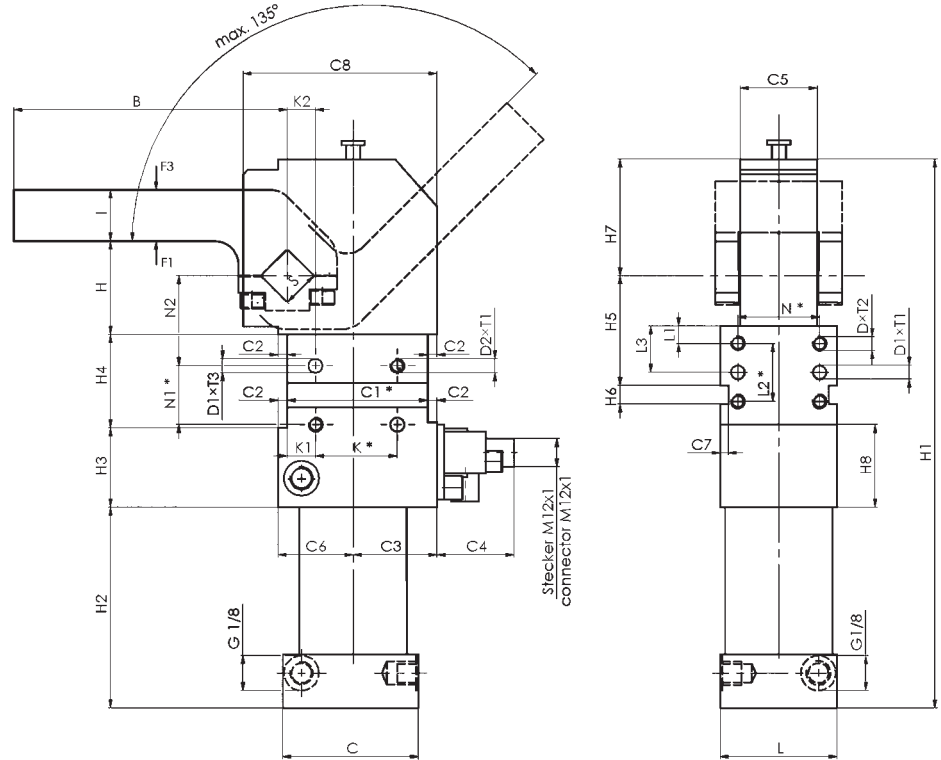
Accessories (not included in pack):

- Clamp arm variants: Clamp arm in the middle, right and left
- without M12 connector plug

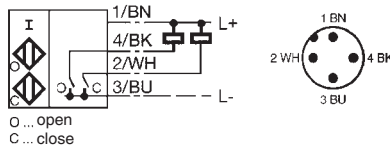
Order no.	Size	Clamping moment at 5 bar	Holding moment max.	Weight [Kg]
		[Nm]	[Nm]	
91835	40	120	380	1,4

Application:

These pneumatic toggle clamps are suitable for use in material handling lines and special machines. Opening and clamping position of the clamp can be controlled electrically, allowing integration into automated manufacturing processes.



Connection sketch:



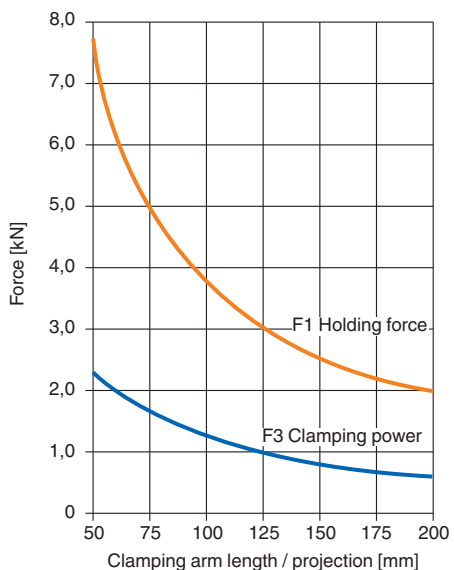
Dimensions

Order no.	Size	B	C	C1*	C2	C3	C4	C5 -0.5	C6	C7	C8	D	D1	H7	D2	H ±0.5	H1	H2	H3	H4 +0.1	H5 ±0.05	H6	N9	H7	H8	I ±0.1
91835	40	117	58	60	4	36	33	33	32	3,5	83	M6	ø 6	M6	40	235	86	34	40	47	8	50	35	22		

Order no.	Size	K*	K1 ±0.05	K2 ±0.05	L	L1 ±0.1	L2*	L3 ±0.05	N*	N1*	N2 ±0.05	S h9	T1	T2	T3	Piston dia.
91835	40	35	12	12	50	7,5	25	20	35	25	38,5	16	8	12	6	40

* Tolerance for peg holes ±0.02 mm; for threaded holes ±0.1 mm.

Force diagram No. 6828V-40



No. 6828SP

Clamp arm

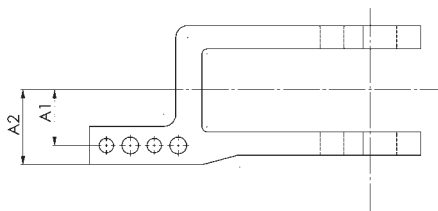
made of steel, for heavy pneumatic toggle clamp no. 6828V, size 40.



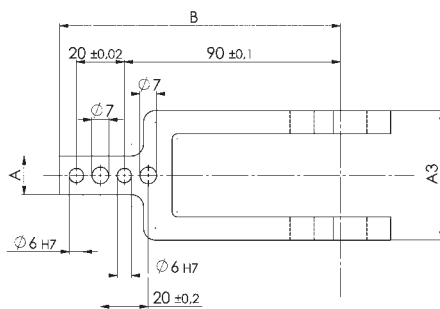
Order no.	Article no.	Size	A -0.1	A1 ±0.1	A2	A3	B	Weight [g]
92080	6828SPL-40	40	16	23	31	54	117	520
91900	6828SPM-40	40	16	23	31	54	117	520
92007	6828SPR-40	40	16	23	31	54	117	520

Clamp arm variants:

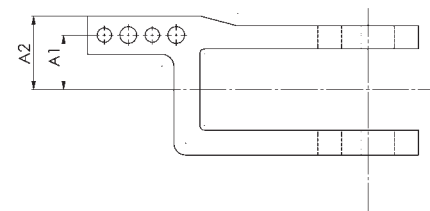
SPL (Clamp arm left)



SPM (Clamp arm in the middle)



SPR (Clamp arm right)



No. 6828V

Heavy pneumatic toggle clamp

double-acting.

Max. operating pressure 6 bar.

With continuously adjustable opening angle in the range 45° to 135°. Housing is made of aluminium, red anodised.

Pneumatic end position cushioning, self-shut-off, standard with inductive query 24V (Pepperl+Fuchs).

Clamp arm not included.

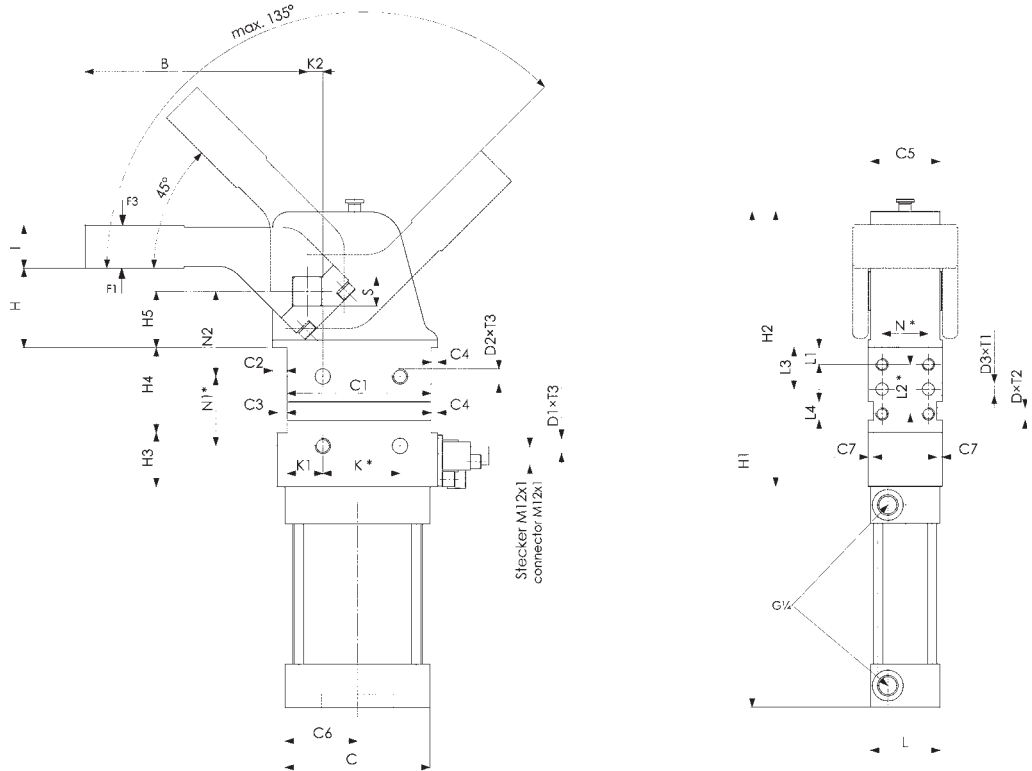
Accessories (not included in pack):

- Clamp arm variants: Clamp arm in the middle, right and left
- without M12 connector plug

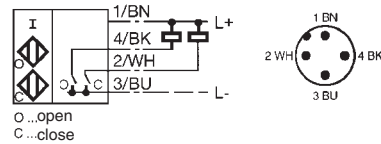
Order no.	Size	Clamping moment at 5 bar	Holding moment max.	Weight [Kg]
		[Nm]	[Nm]	
91850	50	160	800	3,5
91876	63	380	1500	4,6
91892	80	800	2500	15,6

Application:

These pneumatic toggle clamps are suitable for use in material handling lines and special machines. Opening and clamping position of the clamp can be controlled electrically, allowing intergration into automated manufacturing processes.



Connection sketch:



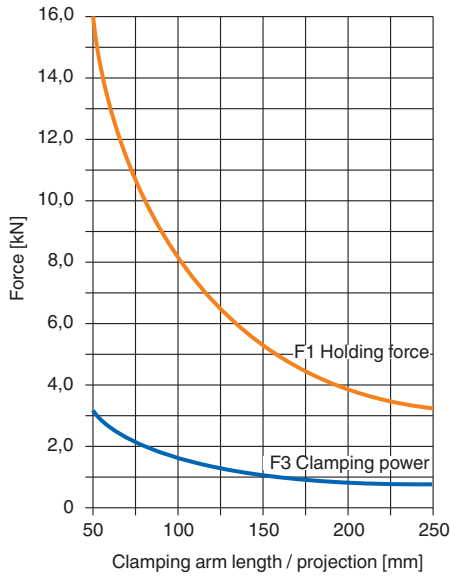
Dimensions

Order no.	Size	B	C	C1*	C2	C3	C4	C5	C6	C7	D	D1 H7	D2	D3	H ±0.5	H1	H2	H3	H4 +0.1	H5 ±0.05	I	K*	K1 ±0.1	K2 ±0.05
91850	50	144	92	93	9,5	6,5	4,5	45	47	3,5	M8	10	M10	8	51,5	321	178	35	55	36,5	28	50	23	10
91876	63	144	107	93	12,5	7,5	7,5	52	54	3,5	M8	10	M10	8	51,5	361	211	61	55	36,5	28	50	23	10
91892	80	179	140	134	20,0	8,0	8,0	74	76	3,5	M10	12	M12	8	70,0	486	270	55	80	50	35	70	36	15

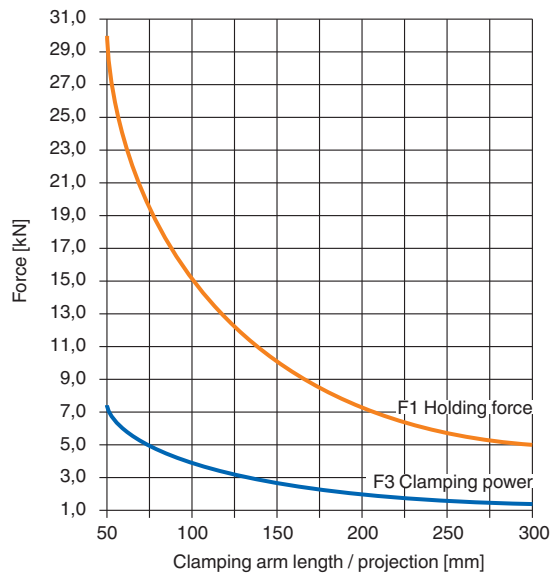
Order no.	Size	L	L1 ±0,1	L2*	L3 ±0.05	L4 N9	N*	N1*	N2 ±0.05	S	T1	T2	T3	Piston dia.
91850	50	48	11	32	27	12	30	45	55	19	10	11	12	50
91876	63	54	11	32	27	12	30	45	55	22	10	11	13	80
91892	80	76	15	50	40	12	50	75	65	30	12	15	13	80

* Tolerance for peg holes ±0.02 mm; for threaded holes ±0.1 mm.

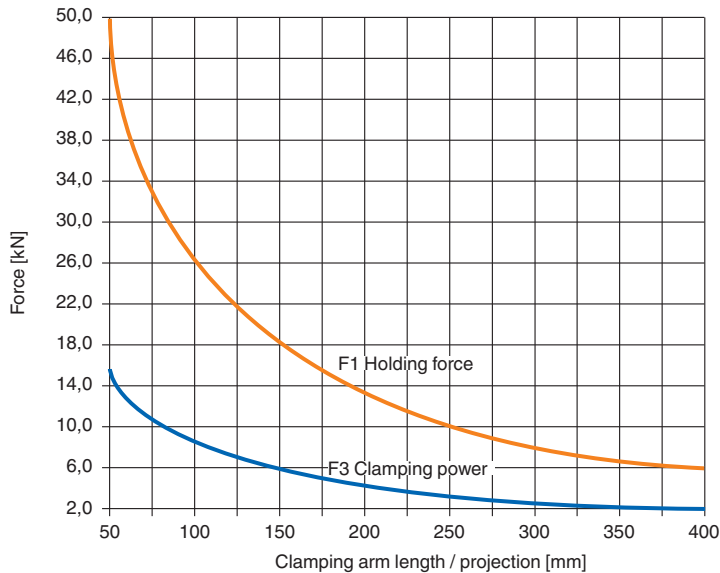
Force diagrams No. 6828V-50



No. 6828V-63



No. 6828V-80



No. 6828SP

Clamp arm

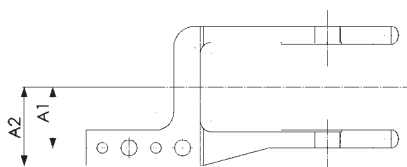
made of steel, for heavy pneumatic toggle clamp no. 6828V, size 50, 63, 80.



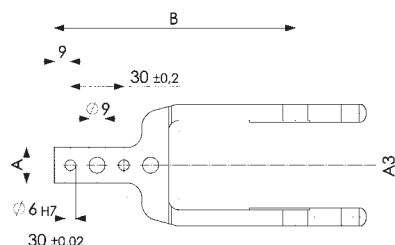
Order no.	Article no.	Size	A -0.1	A1 ±0.1	A2	A3	B	Weight [g]
92072	6828SPL-50	50	20	34,0	44	68	144	855
91959	6828SPM-50	50	20	34,0	44	68	144	855
92056	6828SPR-50	50	20	34,0	44	68	144	855
92130	6828SPL-63	63	20	37,0	47	78	144	1150
92098	6828SPM-63	63	20	37,0	47	78	144	1150
92114	6828SPR-63	63	20	37,0	47	78	144	1150
92395	6828SPL-80	80	25	50,5	63	108	179	1450
92353	6828SPM-80	80	25	50,5	63	108	179	1450
92379	6828SPR-80	80	25	50,5	63	108	179	1450

Clamp arm variants:

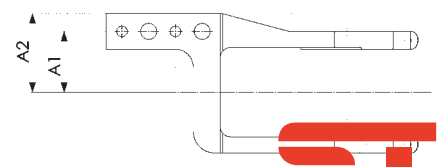
SPL (Clamp arm left)



SPM (Clamp arm in the middle)



SPR (Clamp arm right)



Specifications subject to change.

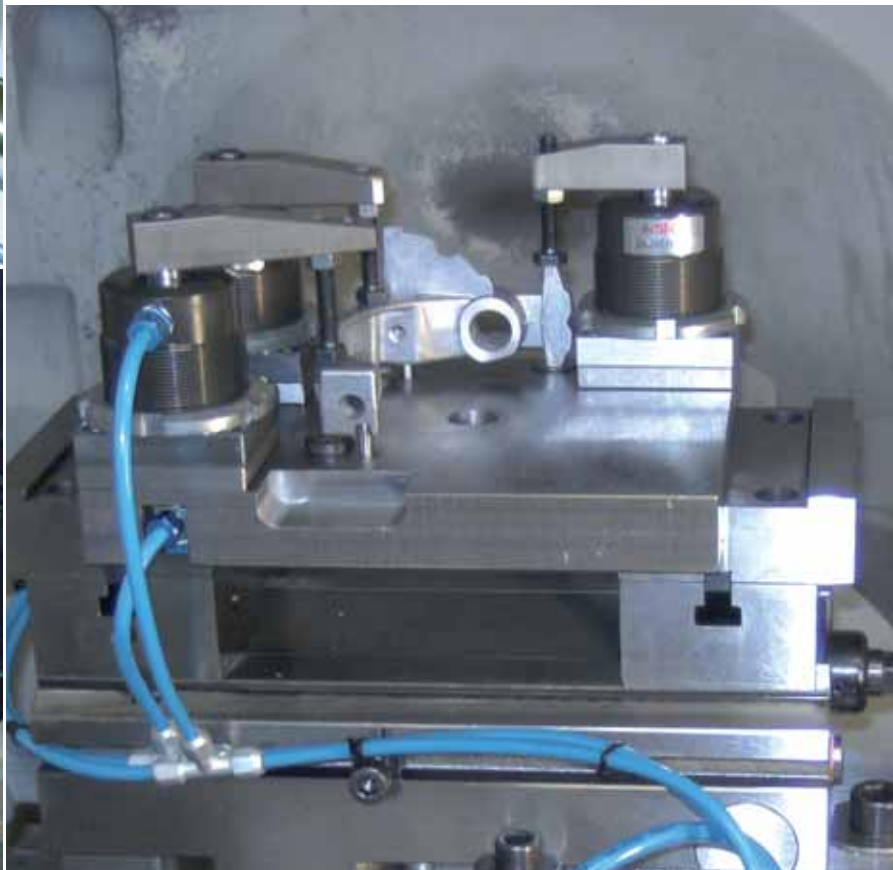
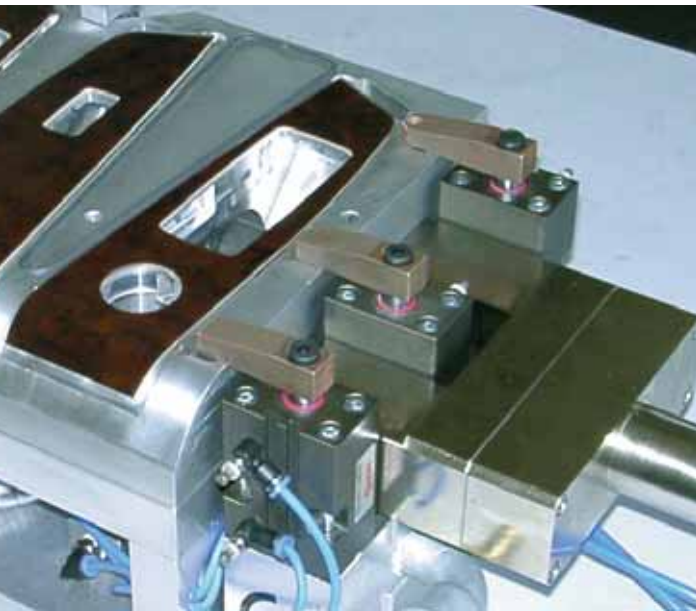
PNEUMATIC SWING CLAMPS

> APPLICATIONS

Pneumatic swing clamps are used where low clamping forces are needed (e.g. for welding), and where workpieces must be easily positioned from above.

> POINTS TO REMEMBER!

The swing action of toggle clamps must not be hindered. They can only clamp on their vertical stroke, not while swinging.



No. 6829KR/KL

Swing clamp, pneumatic, flange-mounting version

double-acting

For recessed installation in fixtures. Both compressed-air connections are in the flange. Piston rod non-rusting, polished. Body is made of aluminium, anodised. HART-COAT® surface for wear-resistance. Including screw and spring washer for simple setting of the clamp arm position.

Mounting:

- from above with cap screws through the flange
- from below in a bore in the fixture using grooved nuts and clamping against the flange
- from above with grooved nuts against the fixture

Accessories (not included in pack):

- Clamping arm 6829SP
- Grooved nut 6829N
- Clamping screw 6880



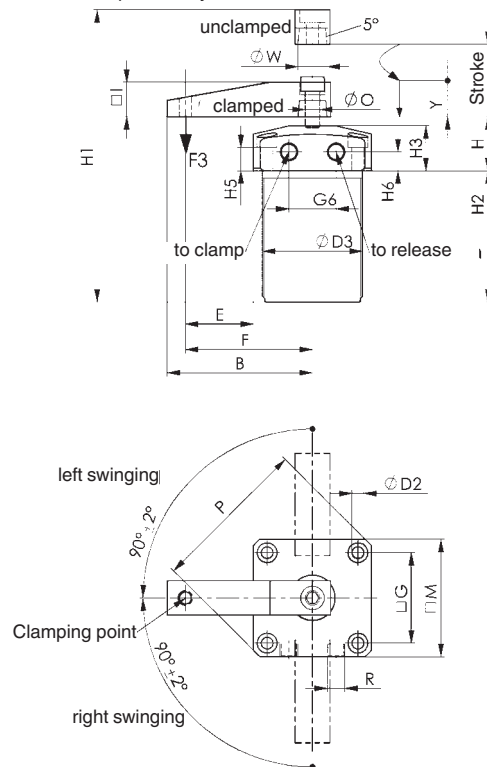
Order no.	Size	right swinging	left swinging	F3 [kN]	Connecting thread for clamping screws	Weight [g]
93484	25	√	-	0,17	M 6	500
93559	25	-	√	0,17	M 6	500
93492	32	√	-	0,27	M 8	650
93567	32	-	√	0,27	M 8	650
93500	40	√	-	0,45	M 8	800
93575	40	-	√	0,45	M 8	800
93518	50	√	-	0,70	M12	920
93583	50	-	√	0,70	M12	920
93526	63	√	-	1,10	M12	1080
93591	63	-	√	1,10	M12	1080

F3 = at 6 bar max. air pressure

Note:

The mounting holes in the flange are the same as in threaded flange no. 6828GF.

Operate only with lubricated air.

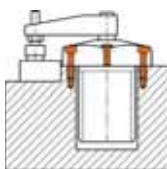


Dimensions

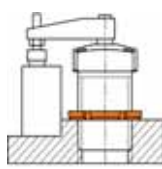
Order no.	Size	dia. D2	dia. D3	E	F	G	G6	H	H1	H2	H3	H5	H6	I	M	dia. O	P	R	dia. W	Piston dia.	Y Clamping stroke*	Stroke
93484	25	6,5	M40x1,5	25,0	50	37	23	30	135	62	25	15	11,5	16,0	50	M 8	66	M 5	14	25	14	27
93559	25	6,5	M40x1,5	25,0	50	37	23	30	135	62	25	15	11,5	16,0	50	M 8	66	M 5	14	25	14	27
93492	32	6,5	M50x1,5	30,0	60	45	23	30	152	73	25	13	10,5	19,0	60	M 8	80	G1/8	16	32	14	30
93567	32	6,5	M50x1,5	30,0	60	45	23	30	152	73	25	13	10,5	19,0	60	M 8	80	G1/8	16	32	14	30
93500	40	6,5	M55x1,5	37,5	70	50	26	30	152	73	25	13	10,5	19,0	65	M 8	87	G1/8	16	40	15	30
93575	40	6,5	M55x1,5	37,5	70	50	26	30	152	73	25	13	10,5	19,0	65	M 8	87	G1/8	16	40	15	30
93518	50	8,5	M65x1,5	42,5	80	58	32	30	164	80	25	11	10,5	25,5	75	M10	100	G1/8	20	50	15	32
93583	50	8,5	M65x1,5	42,5	80	58	32	30	164	80	25	11	10,5	25,5	75	M10	100	G1/8	20	50	15	32
93526	63	8,5	M80x1,5	45,0	90	70	35	30	164	80	25	11	10,5	25,5	90	M10	118	G1/8	20	63	15	30
93591	63	8,5	M80x1,5	45,0	90	70	35	30	164	80	25	11	10,5	25,5	90	M10	118	G1/8	20	63	15	30

* Swing clamps may only be loaded during the clamping stroke Y.

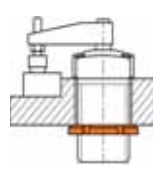
Examples of mountings:



with 4 cap screws from above



with grooved nut from above



with grooved nut from below

No. 6829BR/BL

Swing clamp, pneumatic, block version

double-acting

Piston rod non-rusting, polished. Body is made of aluminium, anodised. HART-COAT® surface for wear-resistance.

Magnetic piston to signal end positions. Including screw and spring washer for simple setting of the clamp arm position.

Mounting:

- on front or rear faces, using through holes
- from above with long socket bolts ISO 4762 (DIN 912)
- from below using tapped holes in base.

Accessories (not included in pack):

- Clamping arm 6829SP
- Clamping screw 6880



Order no.	Size	right swinging	left swinging	F3 [kN]	Connecting thread for clamping screws	Weight [g]
91496	12	✓	-	0,03	M 4	200
91397	12	-	✓	0,03	M 4	200
91504	16	✓	-	0,06	M 4	300
91405	16	-	✓	0,06	M 4	300
91512	20	✓	-	0,08	M 6	400
91413	20	-	✓	0,08	M 6	400
91520	25	✓	-	0,17	M 6	600
91421	25	-	✓	0,17	M 6	600
91538	32	✓	-	0,27	M 8	800
91439	32	-	✓	0,27	M 8	800
91546	40	✓	-	0,45	M 8	920
91447	40	-	✓	0,45	M 8	920
91553	50	✓	-	0,70	M12	1000
91454	50	-	✓	0,70	M12	1000
91561	63	✓	-	1,10	M12	1150
91462	63	-	✓	1,10	M12	1150

F3 = at 6 bar max. air pressure

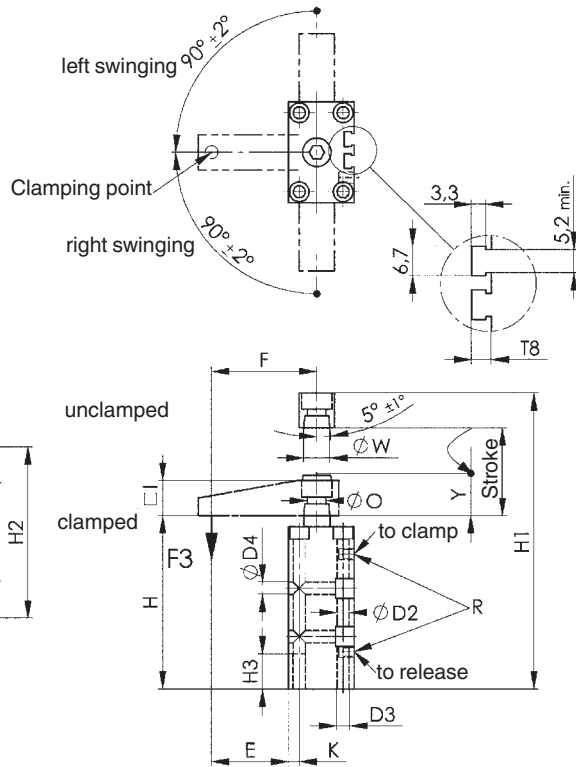
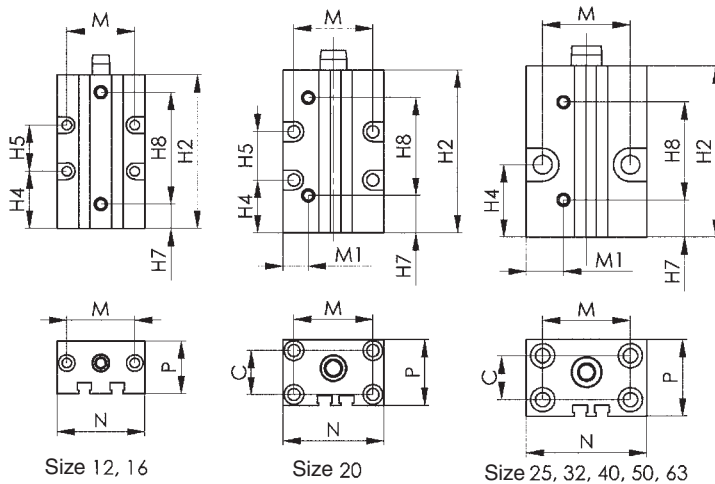
Note:

Suitable proximity switches for end-position monitoring are available using order no. 392241. Design: PUR cable 0.3 m with M8 plug connection and rotating knurled nuts.

Switching function: NOC.

Output: PNP.

Operate only with lubricated air.



Dimensions

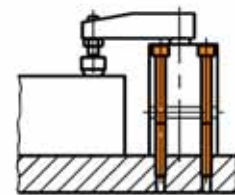
Order no.	Size	C	dia. D2	D3	dia. D4	E	F	H	H1	H2	H3	H4	H5	H7	H8	I	K	M	M1	N	dia. O
91496	12	-	4,3	M 5	4,3	25,0	35	76	105	70	15	26	21	11	51,0	12	10,0	31	20,0	40	M 5
91397	12	-	4,3	M 5	4,3	25,0	35	76	105	70	15	26	21	11	51,0	12	10,0	31	20,0	40	M 5
91504	16	-	4,3	M 5	4,3	30,0	41	76	105	70	15	26	21	11	51,0	12	13,0	31	21,0	42	M 5
91405	16	-	4,3	M 5	4,3	30,0	41	76	105	70	15	26	21	11	51,0	12	13,0	31	21,0	42	M 5
91512	20	20	5,5	M 6	5,5	35,0	48	80	125	74	20	24	22	17	44,5	16	5,0	36	11,5	46	M 8
91413	20	20	5,5	M 6	5,5	35,0	48	80	125	74	20	24	22	17	44,5	16	5,0	36	11,5	46	M 8
91520	25	20	6,5	M 8	8,5	35,0	50	83	125	78	20	32	-	17	44,5	16	7,5	40	17,0	55	M 8
91421	25	20	6,5	M 8	8,5	35,0	50	83	125	78	20	32	-	17	44,5	16	7,5	40	17,0	55	M 8
91538	32	30	6,5	M 8	8,5	40,0	60	96	145	90	20	43	-	22	50,0	19	7,5	45	18,0	60	M 8
91439	32	30	6,5	M 8	8,5	40,0	60	96	145	90	20	43	-	22	50,0	19	7,5	45	18,0	60	M 8
91546	40	37	8,5	M10	8,5	45,5	70	96	145	90	25	40	-	20	52,0	19	9,0	52	22,0	70	M 8
91447	40	37	8,5	M10	8,5	45,5	70	96	145	90	25	40	-	20	52,0	19	9,0	52	22,0	70	M 8
91553	50	46	8,5	M10	10,5	49,0	80	106	162	100	30	45	-	25	53,5	25	9,5	66	25,0	85	M10
91454	50	46	8,5	M10	10,5	49,0	80	106	162	100	30	45	-	25	53,5	25	9,5	66	25,0	85	M10
91561	63	60	10,5	M12	10,5	52,5	90	106	162	100	30	36	-	28	53,0	25	10,0	80	30,0	100	M10
91462	63	60	10,5	M12	10,5	52,5	90	106	162	100	30	36	-	28	53,0	25	10,0	80	30,0	100	M10

Order no.	Size	P	R	T8	dia. W	Piston dia.	Y Clamping stroke*	Stroke
91496	12	24	M 5	5,0	8	12	10	17
91397	12	24	M 5	5,0	8	12	10	17
91504	16	28	M 5	4,5	8	16	10	17
91405	16	28	M 5	4,5	8	16	10	17
91512	20	30	M 5	4,5	12	20	14	27
91413	20	30	M 5	4,5	12	20	14	27
91520	25	35	M 5	5,0	14	25	14	27
91421	25	35	M 5	5,0	14	25	14	27
91538	32	45	G1/8	6,5	16	32	14	30
91439	32	45	G1/8	6,5	16	32	14	30
91546	40	55	G1/8	8,0	16	40	15	30
91447	40	55	G1/8	8,0	16	40	15	30
91553	50	65	G1/8	6,5	20	50	15	31
91454	50	65	G1/8	6,5	20	50	15	31
91561	63	80	G1/8	8,5	20	63	15	31
91462	63	80	G1/8	8,5	20	63	15	31

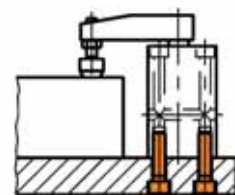
* Swing clamps may only be loaded during the clamping stroke Y.



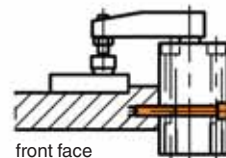
Examples of mountings:



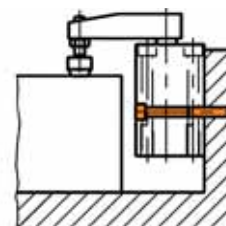
from above



from below



front face



rear face

No. 6829ER/EL

Swing clamp, pneumatic, screw-in version

double-acting

Piston rod non-rusting, polished. Body is made of aluminium, anodised. HART-COAT® surface for wear-resistance. Including screw and spring washer for simple setting of the clamp arm position.

Mounting:

- with grooved nut 6829N (DIN 70852)
- with threaded flange 6829GF

Accessories (not included in pack):

- Clamping arm 6829SP
- Grooved nut 6829N
- Thread flange 6829GF
- Clamping screw 6880

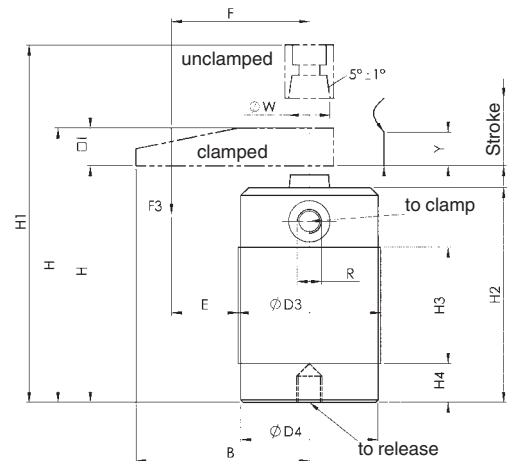
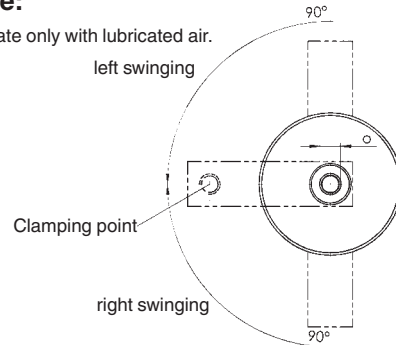


Order no.	Size	right swinging	left swinging	F3 [kN]	Connecting thread for clamping screws	Weight [g]
92809	25	✓	-	0,17	M 6	450
92858	25	-	✓	0,17	M 6	450
92817	32	✓	-	0,27	M 8	550
92866	32	-	✓	0,27	M 8	550
92825	40	✓	-	0,45	M 8	700
92874	40	-	✓	0,45	M 8	700
92833	50	✓	-	0,70	M12	850
92882	50	-	✓	0,70	M12	850
92841	63	✓	-	1,10	M12	1000
92890	63	-	✓	1,10	M12	1000

F3 = at 6 bar max. air pressure

Note:

Operate only with lubricated air.



Dimensions

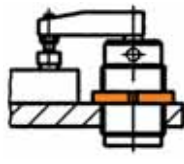
Order no.	Size	D3	dia. D4	E	F	H	H1	H2	H3	H4	I	dia. M	O	R	dia. W	Piston dia.	Y Clamping stroke*	Stroke
92809	25	M40x1,5	38	30,0	50	73	118	70	35	10	16,0	M 6	M 8	M 5	14	25	17	26
92858	25	M40x1,5	38	30,0	50	73	118	70	35	10	16,0	M 6	M 8	M 5	14	25	17	26
92817	32	M50x1,5	48	35,0	60	83	132	79	40	15	19,0	M 8	M 8	G1/8	16	32	14	30
92866	32	M50x1,5	48	35,0	60	83	132	79	40	15	19,0	M 8	M 8	G1/8	16	32	14	30
92825	40	M55x1,5	53	42,5	70	87	136	83	45	15	19,0	M 8	M 8	G1/8	16	40	17	30
92874	40	M55x1,5	53	42,5	70	87	136	83	45	15	19,0	M 8	M 8	G1/8	16	40	17	30
92833	50	M65x1,5	62	47,5	80	92	148	87	50	15	25,5	M12	M10	G1/8	20	50	22	30
92882	50	M65x1,5	62	47,5	80	92	148	87	50	15	25,5	M12	M10	G1/8	20	50	22	30
92841	63	M80x1,5	77	50,0	90	98	153	92	56	15	25,5	M12	M10	G1/8	20	63	15	27
92890	63	M80x1,5	77	50,0	90	98	153	92	56	15	25,5	M12	M10	G1/8	20	63	15	27

* Swing clamps may only be loaded during the clamping stroke Y.

Examples of mountings:



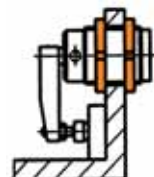
with grooved nut from below



with grooved nut from above



with threaded flange and grooved nut

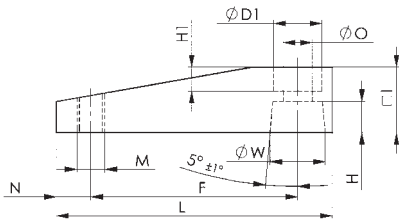


with two grooved nuts

No. 6829SP

Clamping arm

High-strength aluminium alloy.
HART-COAT® surface for wear-resistance
and reduced adhesion of weld spatter.
With thread for clamping screw No. 6880.



Order no.	Size	dia. D1	F	H	H1	I	L	M	N	dia. O	dia. W	Weight [g]
92486	12	9	35	5	5	12,0	45	M 4	4	5,5	8	13
92494	16	9	41	5	4	12,0	51	M 4	4	5,5	8	15
92502	20	14	48	6	8	16,0	64	M 6	6	8,5	12	31
93674	25	14	50	6	6	16,0	66	M 6	6	9,0	14	32
93682	32	14	60	9	7	20,0	80	M 8	9	9,0	16	55
93690	40	14	70	9	7	20,0	90	M 8	9	9,0	16	65
93708	50	17	80	10	9	25,5	105	M12	10	11,0	20	132
93716	63	17	90	10	9	25,5	115	M12	10	11,0	20	149

Note:

Fitting clamping arm:

- 1) Set up clamping arm with spring washer and screw without play.
- 2) Turn clamping arm into position.
- 3) Hold clamping arm fixed with wrench and tighten screw.

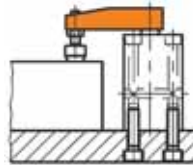
Clamping arm removal:

- 1) Hold clamping arm fixed with wrench and loosen screw.
 - 2) With light blows from below (plastic hammer), separate clamping arm from the piston rod.
- Caution! No side blows permitted!



Potential use:

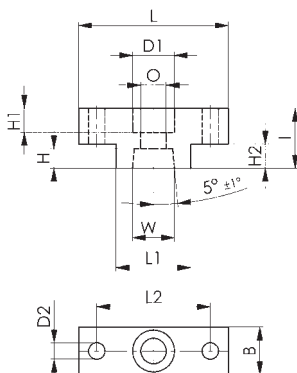
Clamping arm with clamping screw no. 6880



No. 6829AD

Adapter

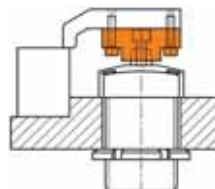
for mounting special clamping arms,
with taper bore and mounting holes for arm.
High-strength aluminium alloy. HART-COAT®
surface for wear-resistance and reduced
adhesion of weld spatter.



Order no.	Size	B	D1	D2	H	H1	H2	I	L	L1	L2	O	W	Weight [g]
92403	12/16	12	10	4,5	5,0	7,0	6	14	30	13	22	5,5	8	8
92411	20	16	14	5,5	5,5	10,5	8	20	40	18	30	8,5	12	20
92429	25	16	14	5,5	6,5	8,0	8	20	50	25	38	8,5	14	28
92437	32/40	19	14	7,0	9,0	11,0	10	25	60	30	45	8,5	16	50
92452	50/63	25	17	9,0	10,0	14,0	12	30	65	30	48	10,5	20	80

Potential use:

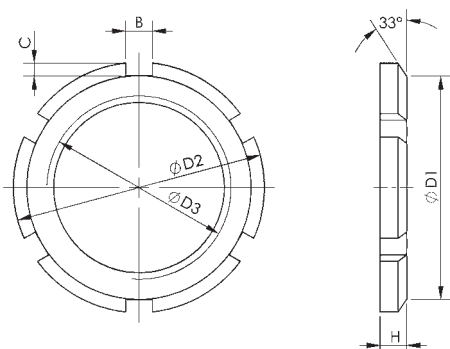
Adapter in use as a connecting element between an individual clamping arm and the piston rod of a pneumatic swing clamp no. 6829.



No. 6829N

Grooved nut (DIN 70852)

Steel, galvanized. Use hook spanner for tightening (see AMF catalogue „Hand Tools“).



Order no.	Size	B	C	dia. D1	dia. D2	dia. D3	H	Weight [g]
92924	25	7	3,3	49	56	M40x1,5	8	63
92932	32	8	3,8	60	68	M50x1,5	8	84
92940	40	8	3,8	67	75	M55x1,5	8	106
92957	50	11	4,3	76	85	M65x1,5	9	132
92973	63	11	4,3	91	100	M80x1,5	10	180

Potential use:

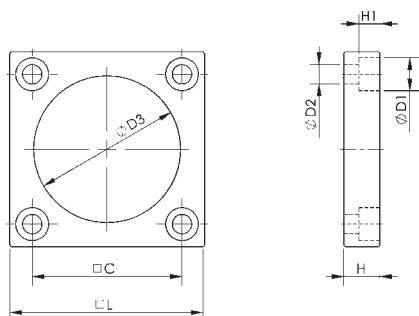
Grooved nut from above for locking swing clamp in a fixture.



No. 6829GF

Threaded flange

Steel, galvanized.
With four counterbored mounting holes.
Female thread for swing clamp.
Use grooved nut to lock in desired.



Order no.	Size	C	dia. D1	dia. D2	dia. D3	H	H1	L	Weight [g]
93062	25	37	9	5,5	M40x1,5	9	6	50	80
93070	32	45	11	6,5	M50x1,5	12	7	60	100
93088	40	50	11	6,5	M55x1,5	12	7	65	120
93096	50	58	13	8,5	M65x1,5	15	9	75	150
93104	63	70	13	8,5	M80x1,5	15	9	88	200

Advantage:

Avoids cutting a large thread in the fixture.

Note:

The mounting holes in the flange are the same as in pneumatic clamp flange no. 6829K and 6829V.

Potential use:

Swing clamp screwed into threaded flange.



No. 6829W

Swing Clamp with welding protection, pneumatic

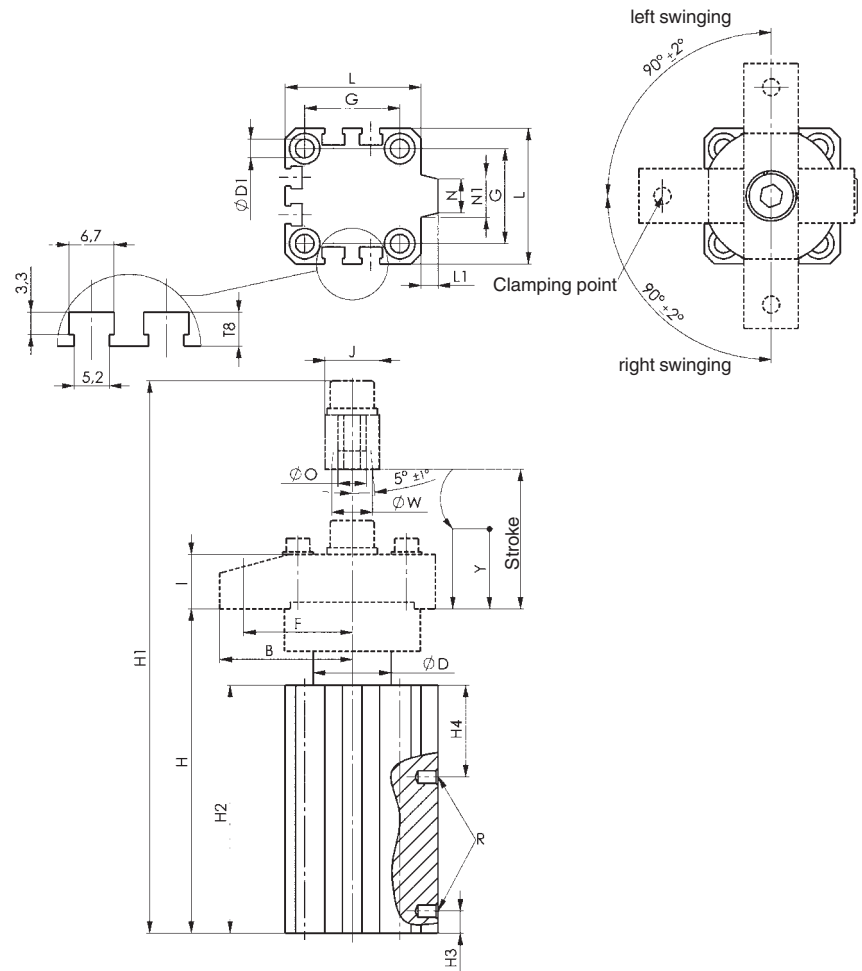
double acting

Piston rod non-rusting, polished and protected against weld spatter.
Body, welding protection and clamping arm made of aluminium.
HART-COAT® surface for wear-resistance.

Magnetic piston for end-position monitoring.
Clamp arm not included.

Accessories (not included in pack):

- Welding protection no. 6829WS
- Clamping arm no. 6829WSP



Order no.	Size	right swinging	left swinging	F3 [kN]	Weight [g]
91579	25	✓	-	0,2	326
92361	25	-	✓	0,2	326
91595	32	✓	-	0,3	537
92387	32	-	✓	0,3	537
91611	40	✓	-	0,6	680
92445	40	-	✓	0,6	680
91637	50	✓	-	0,9	1160
92460	50	-	✓	0,9	1160
91652	63	✓	-	1,4	1520
92478	63	-	✓	1,4	1520

Note:

Suitable proximity switches for end-position monitoring are available using order no. 392241.
Design: PUR cable 0.3 m with M8 plug connection and rotating knurled nuts. Switching function: NOC.
Output: PNP.

Operate only with lubricated air.

Dimensions

Order no.	Size	dia. D	dia. D1	F	G	H	H1	H2	H3	H4	I	J	L	L1	N	N1	dia. O	R	dia. W	Piston dia.	Y Clamping stroke*	Stroke
91579	25	23	5,5	32,0	29	95,5	139,0	73,0	6,5	27,0	14	16	40	5,0	10,0	12,5	8,3	M5	12	25	10	19,5
92361	25	23	5,5	32,0	29	95,5	139,0	73,0	6,5	27,0	14	16	40	5,0	10,0	12,5	8,3	M5	12	25	10	19,5
91595	32	30	5,5	45,0	34	113,0	168,0	80,0	9,0	34,5	18	22	45	4,5	14,5	16,5	10,5	G1/8	16	32	10	25,0
92387	32	30	5,5	45,0	34	113,0	168,0	80,0	9,0	34,5	18	22	45	4,5	14,5	16,5	10,5	G1/8	16	32	10	25,0
91611	40	30	5,5	45,0	40	114,0	173,0	80,0	9,0	34,5	22	22	52	5,0	17,5	22,0	10,5	G1/8	16	40	10	25,0
92445	40	30	5,5	45,0	40	114,0	173,0	80,0	9,0	34,5	22	22	52	5,0	17,5	22,0	10,5	G1/8	16	40	10	25,0
91637	50	37	6,6	65,0	50	149,4	227,9	101,5	11,0	39,0	25	25	64	6,0	20,0	23,0	12,5	G1/4	20	50	20	39,0
92460	50	37	6,6	65,0	50	149,4	227,9	101,5	11,0	39,0	25	25	64	6,0	20,0	23,0	12,5	G1/4	20	50	20	39,0
91652	63	47	6,6	72,5	60	152,9	231,4	104,0	9,0	35,0	25	25	77	7,0	28,0	33,0	12,5	G1/4	20	63	20	39,0
92478	63	47	6,6	72,5	60	152,9	231,4	104,0	9,0	35,0	25	25	77	7,0	28,0	33,0	12,5	G1/4	20	63	20	39,0

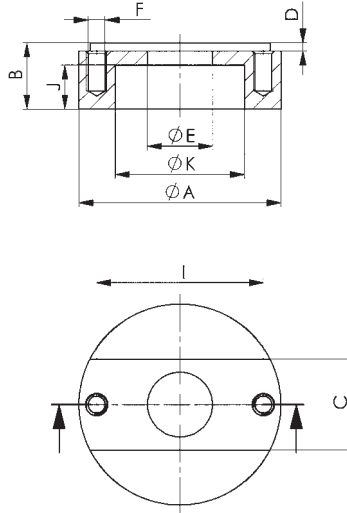
* Swing clamps may only be loaded during the clamping stroke Y.

No. 6829WS

Welding protection

for piston rod
for swing clamp with welding protection no. 6829W
for protection of the piston rod against weld spatter.
High-strength aluminium alloy, anodised.

Order no.	Size	dia. A	B	C	D	dia. E	F	I	J	dia. K	Weight [g]
91645	25	40	14,5	16,4	2,0	12,1	M4	32,0	10,5	25	32
91660	32	50	16,5	22,6	3,0	16,1	M5	41,3	11,0	32	55
91686	40	50	17,9	22,6	3,8	16,1	M6	41,4	11,0	32	58
91702	50	59	33,0	25,8	5,1	20,1	M6	46,5	25,0	39	122
91793	63	69	33,0	25,8	5,1	20,1	M6	59,5	25,0	50	160

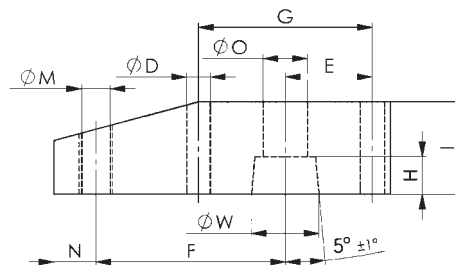


No. 6829WSP

Clamp arm

for swing clamp with welding protection no. 6829W.
High-strength aluminium alloy, black. HART-COAT®
surface for wear-resistance and reduced adhesion
of weld spatter. Ready for mounting, with connection
thread for clamping screw no. 6880.

Order no.	Size	dia. D	E	F	G	H	I	J	L	M	N	dia. O	dia. W	Weight [g]
91678	25	4,8	16,00	32,0	32,0	5,5	14	16	63,5	M6	7	8,3	12	36
91694	32	5,7	20,70	45,0	41,3	9,0	18	22	80,0	M8	10	10,5	16	83
91751	40	6,4	20,70	45,0	41,4	9,0	22	22	82,0	M8	10	10,5	16	84
91603	50	6,4	27,95	65,0	46,5	12,0	25	25	105,0	M10	10	12,5	20	144
91629	63	6,4	27,95	72,5	59,5	12,0	25	25	120,0	M10	10	12,5	20	168



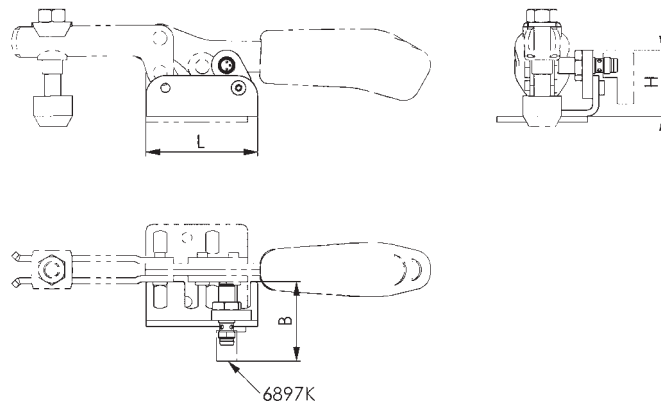
Nr. 6897S

Sensor monitor

for manual clamps.

For monitoring the closed position of the toggle clamp.

Complete with inductive sensor M8x1 for ambient temperatures from 0° to 60° C. Matching plug connection no. 6897K.



Order no.	Size	L x W x H	Weight [g]
90597	3	55 x 40 x 35	60

Note:

Sensor monitor size 3 can be used on both sides for horizontal toggle clamp no. 6830-3, 6834-3 and 6830B-3, only on one side for horizontal toggle clamp with safety latch no. 6830S-3 and 6834S-3.

Nr. 6897K

Plug connection for sensor monitor

for sensor monitor no. 6897S.

Angled plug connection, cable permanently injection-moulded on.



Order no.	Size	Cable length [m]	Weight [g]
90613	1	2	75
90639	2	5	150

Note:

IP68 acc. to IEC 529, silicone-free, halogen-free, gold-plated contacts.



No. 6890

Clamping screw

for open clamping arms

tempered, tensile strength class 8.8, galvanized and passivated, with removable rubber nose. Sizes 0-3 with washer/nut-element. Sizes 4-7 with nut.

Order no.	Size	Screw DIN 933	T-Nut DIN 508	Washer size	L	L3	Weight [g]
98988	0/0	M 4x 25	-	0/0	32	13-20	5
99002	0	M 4x 25	-	0	32	13-20	5
99010	1	M 5x 30	-	1	38	17-24	10
99028	2	M 6x 35	-	2	45	19-28	22
99077	2	M 6x 50	-	2	60	19-43	30
99036	3	M 8x 45	-	3	58	22-34	40
99044	4	M 8x 65	M 8x10	4	78	21-50	62
99051	5	M 8x 65	M 8x10	5	78	21-45	62
99085	6	M12x 80	M12x14	6	97	28-58	160
99069	7	M12x110	M12x14	6	127	28-88	180

No. 6890NI

Clamping screw

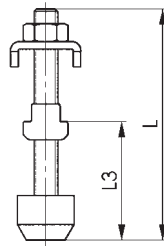
for open clamping arms

stainless steel. Size 4 with 2 washers.



STAINLESS STEEL

Order no.	Size	Screw DIN 933	Washer size	L	L3	Weight [g]
95950	0/0	M4x25	0/0	32	13-20	5
96040	0	M4x25	0	32	13-20	5
96057	1	M5x30	1	38	17-24	10
96065	2	M6x35	2	45	19-28	22
96073	3	M8x45	3	58	22-34	40
96081	4	M8x65	4	78	21-50	60



Application possibilities, in relation to toggle clamp size:

Item no. of toggle clamp	Size of clamping screw								
	0/0	0	1	2	3	4	5	6	7
6800	-	0	1	2	3	4	-	5	6
6800NI	-	0	1	2	3	4	-	-	-
6800S/6802S	-	-	-	2	3	4	-	-	-
6802	-	-	1	2	3	4	-	5	6
6803	-	-	1	2	3	4	-	-	-
6803NI	-	-	-	2	-	-	-	-	-
6803S	-	-	-	2	3	4	-	-	-
6820F/6820N	-	-	1	2	3	4	-	-	-
6820K	-	0	1	2	3	-	-	-	-
6821F/6821N	-	-	-	2	3	4	-	-	-
6830/6832	0	-	1	2	3	4	5	-	-
6830NI	0	-	1	2	3	4	-	-	-
6830S/6832S	-	-	-	-	3	4	-	-	-
6833	-	-	1	2	3	4	-	-	-
6895	-	0	1	2	3	4	5	6	-

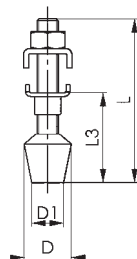
No. 6890B

Clamping screw, black

for open clamping arms

matte-black galvanized, complete with washer/nut element, washer, hex nut and screw with bonded pressure pad, made of oil-resistant neoprene to prevent damage to delicate workpieces. Hardness 85 Shore A, LABS-free (silicone-free). Strength class 8.8.

Order no.	Size	M x L	D	D1	L3	Weight [g]
99697	0/0	M4x34,5	10	-	11,5-23	6
99614	0	M4x34,5	10	-	11,5-22	6
99671	1	M5x38,0	13	10	17,0-24	11
99630	2	M6x46,0	16	10	20,0-27	17
99655	3	M8x63,0	18	13	27,0-37	39



Application possibilities, in relation to toggle clamp size:

Item no. of toggle clamp	Size of clamping screw				
	0/0	0	1	2	3
6800 B	-	0	1	2	3
6802 B	-	0	1	2	3
6830 B	0	-	1	2	3
6832 B	0	-	1	2	3

No. 6880

Clamping screw

for push-pull type clamps
tempered, tensile strength class 8.8,
galvanized and passivated, with nut
and removable rubber nose.

Order no.	Size	Screw DIN 933	L	L3	Weight [g]
98012	0+1	M 4x20	27	12-20	4
98038	2	M 6x25	35	17-25	15
98046	3	M 8x35	48	22-35	26
98053	5	M10x50	66	30-52	57
98061	7	M12x50	68	30-50	82
98475	8	M16x80	90	25-70	220

No. 6880NI

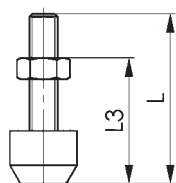
Clamping screw

for push-pull type clamps
stainless steel



STAINLESS STEEL

Order no.	Size	Screw DIN 933	L	L3	Weight [g]
96008	0+1	M 4x20	27	12-20	4
96016	2	M 6x25	35	18-27	15
96024	3	M 8x35	48	22-35	26
96032	7	M12x50	68	30-50	82



Application possibilities, in relation to toggle clamp size:

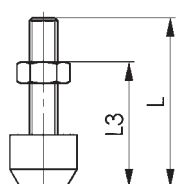
Item no. of toggle clamp	Size of clamping screw					
	0+1	2	3	5	7	8
6829SP	12+16	20+25	32+40	-	50+63	-
6840/6841	0+1	2	3	-	5	-
6841NI	0	-	3	-	-	-
6842	-	-	3	-	5+7	-
6842PK/6842PL	-	-	4	5	7	8
6844/6844NI	-	2	3	-	5	-
6850	-	-	3	-	5+7	-

No. 6880B

Clamping screw, black

for push-pull type clamps
matte-black, with nut and bonded
pressure pad, strength class 8.8.

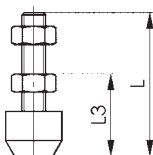
Order no.	Size	Screw DIN 933	L	L3	Weight [g]
99622	1	M4 x 20	23	10-17	4



No. 6885

Clamping screw

for solid and fixed clamping arms
tempered, tensile strength class 8.8, galvanized and passivated, with 2 nuts and removable rubber nose.



Order no.	Size	Screw DIN 933	L	L3	Weight [g]
98517	1	M 5x 30	38	14-25	10
98525	2	M 6x 35	45	17-25	20
98533	3	M 8x 45	58	22-32	35
98541	4	M 8x 65	78	22-52	40
98558	5	M12x 80	98	30-60	130
98566	6	M12x110	128	30-88	160
98582	8	M16x120	130	25-84	280

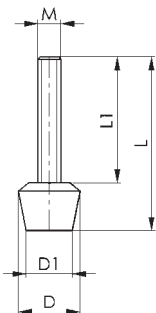
Application possibilities, in relation to toggle clamp size:

Item no. of toggle clamp	Size of clamping screw					
	1	2	3	4	5	6
6804	-	-	3	4	5	6
6804S/6806S	-	-	3	4	-	-
6805	1	-	-	-	-	-
6806	-	-	3	4	5	6
6811P/6812P	-	2	-	-	4	6+8
6834	-	2	3	4	5	-
6834S	-	-	-	4	-	-

No. 6894

Clamping screw

with a bonded pressure pad, made of oil resistant neoprene to prevent damage to delicate workpieces. Hardness 85 Shore A, LABS-free (silicone-free). Screw tempered, galvanized and passivated, strength class 8.8.



Order no.	M x L	D	D1	L1	Weight [g]
99408	M 4x 32	11	8	24	4
99416	M 5x 38	13	10	28	8
99390	M 6x 35	16	12	23	11
99424	M 6x 45	16	12	33	13
99556	M 6x 60	16	12	48	16
99432	M 8x 48	21	16	32	25
99499	M 8x 58	21	16	42	29
99440	M 8x 63	21	16	47	31
99457	M 8x 78	21	16	62	37
99580	M10x 66	26	20	46	53
99598	M10x 76	26	20	56	59
99606	M10x116	26	20	96	84
99465	M12x 70	31	24	46	78
99473	M12x100	31	24	76	105
99481	M12x130	31	24	106	131

Application possibilities, in relation to toggle clamp size:

Item no. of toggle clamp	Size of clamping screw				
	M4	M5	M6	M8	M12
6800	0	1	2	3+4	5+6
6800S/6802S/6804S/6806S	-	-	2	3+4	-
6802	-	1	2	3+4	5+6
6803	-	1	2	3+4	-
6803S	-	-	2	3+4	-
6804/6806	-	-	-	3+4	5+6
6805	-	1	-	-	-
6811P/6812P	-	-	2	-	4+6+8
6820F/6820N	-	1	2	3+4	-
6820K	0	1	2	3	-
6821F/6821N	-	-	2	3+4	-
6829SP	12+16	-	20+25	32+40	50+63
6830/6832	0	1	2	3+4+5	-
6830S/6832S/6834S	-	-	-	3+4	-
6833	-	1	2	3+4	-
6834	-	-	2	3+4	5
6840/6841	0+1	-	2	3	5
6842/6850	-	-	-	3	5+7
6842PK/6842PL	-	-	-	4	5+7
6844	-	-	2	3	5
6895	0	1	2	3+4+5	-

No. 6891

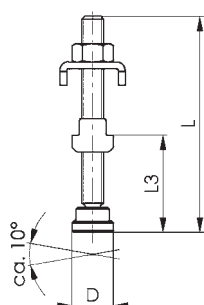
Self-aligning clamping screw

for open clamping arms

tempered, galvanized and passivated.

Sizes 1-3 with washer/nut-element.

Sizes 4-6 with T-nut.



Order no.	Size	Screw DIN 6332	T-Nut DIN 508	Washer size	D	L	L3	Weight [g]
99119	1	M 5x 35	-	1	12	37	12-22	12
99127	2	M 6x 50	-	2	12	52	14-33	20
99135	3	M 8x 75	-	3	16	78	18-52	47
99143	4	M 8x 75	M 8x10	4	16	78	15-50	62
99168	6	M12x100	M12x14	6	25	105	25-62	183

Application possibilities, in relation to toggle clamp size:

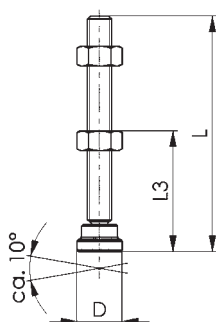
Item no. of toggle clamp	Size of clamping screw				
	1	2	3	4	6
6800/6802	1	2	3	4	5+6
6800S/6802S	-	2	3	4	-
6803	1	2	3	4	-
6803S	-	2	3	4	-
6820F/6820N	1	2	3	4	-
6820K	1	2	3	-	-
6821F/6821N	-	2	3	4	-
6830/6832	1	2	3	4	-
6830S/6832S	-	-	3	4	-
6833	1	2	3	4	-
6895	1	2	3	4	5+6

No. 6886

Self-aligning clamping screw

for solid and closed clamping arms

tempered, galvanized and passivated.



Order no.	Size	Screw DIN 6332	D	L	L3	Weight [g]
98616	1	M 5x 35	12	37	8-23	9
98632	4	M 8x 75	16	78	16-52	42
98665	6	M12x100	25	105	30-61	138

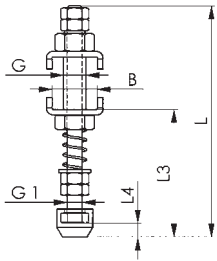
Application possibilities, in relation to toggle clamp size:

Item no. of toggle clamp	Size of clamping screw		
	1	4	6
6804	-	3+4	6
6804S/6806S	-	3+4	-
6805	1	-	-
6806	-	3+4	6
6811P/6812P	-	-	4+6+8
6834	-	3+4	5
6834S	-	4	-

No. 6892

Spring loaded screw

for open ended clamping arms,
tempered, galvanized and passivated.

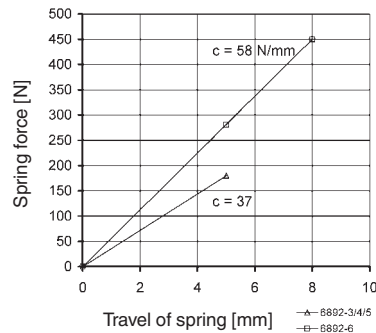


Order no.	Size	B	G	G1	Rubber nose	L	L3	L4	Weight [g]
99259	3	14,5	M 8	M5	6893-M5	90	39-52	5	55
99267	4	18,5	M 8	M5	6893-M5	90	40-53	5	63
99275	5	20,5	M 8	M5	6893-M5	90	40-48	5	64
99283	6	24,0	M12	M8	6893-M8	123	60-68	7	182

Application possibilities, in relation to toggle clamp size:

Item no. of toggle clamp	Size of clamping screw			
	3	4	5	6
6800/6802	3	4	-	5+6
6800S/6802S	3	4	-	-
6803	3	4	-	-
6803S	3	4	-	-
6820F/6820N	3	4	-	-
6820K	3	-	-	-
6821F/6821N	3	4	-	-
6830/6832	3	4	5	-
6830S/6832S	3	4	-	-
6833	3	4	-	-
6895	3	4	5	6

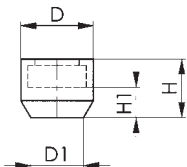
Spring rate:



No. 6893

Rubber nose

Made of oil resistant neoprene to prevent damage to delicate components. Hardness 70 Shore A. Fits the clamping screws no. 6880, no. 6885, no. 6890 and no. 6892, for placement on hexagon screw head ISO 272. Minimum order quantity is 10 pieces per size.



Order no.	Size	SW	D	D1	H	H1	Weight [g]
99309	M4	7	11,0	7	8,5	4,2	1
99325	M5	8	12,5	8	10,0	5,0	1
99333	M6	10	15,0	10	12,0	6,0	2
99341	M8	13	19,0	13	15,0	7,5	4
99358	M10	16	22,0	15	17,5	8,5	5
99374	M12-SW18	18*	25,0	18	20,0	9,5	8
99366	M12-SW19	19**	26,0	19	20,0	9,5	9
99382	M16	24	33,0	24	27,0	14,0	19

* According to new standard ISO 4017 (marked with a „6“ on its clamping face).

** According to old norm DIN 933.

No. 6895

Supporting arm for toggle clamps

Galvanized and passivated, complete with two tempered clamping screws no. 6890 and fastening screw.



Order no.	Size	Screw DIN 933	Distance between screws	Length [mm]	Weight [g]
99507	0	M 4x25	18- 60	70	40
99515	1	M 5x30	22- 72	85	65
99523	2	M 6x35	28- 85	100	90
99531	3	M 8x45	34-100	120	200
99549	4	M 8x65	40-125	150	370
99572	5	M 8x65	40-125	150	370
99564	6	M12x80	54-200	240	985

Application possibilities, in relation to toggle clamp size:

Item no. of toggle clamp	Supporting arm-Size						
	0	1	2	3	4	5	6
6800	0	1	2	3	4	-	5+6
6800S/6802S	-	-	2	3	4	-	-
6802	-	1	2	3	4	-	-
6803	-	1	2	3	4	-	-
6803S	-	-	1	3	4	-	-
6820F/6820N	-	1	2	3	4	-	-
6820K	0	1	2	3	-	-	-
6821F/6821N	-	-	2	3	4	-	-
6830/6832	0	1	2	3	4	5	-
6830S/6832S	-	-	-	3	4	-	-
6833	-	1	2	3	4	-	-



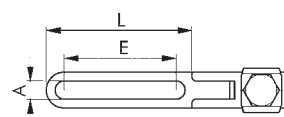
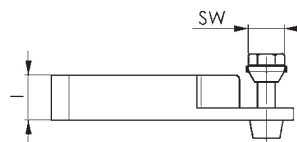
No. 6896

Clamping arm extension

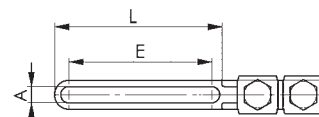
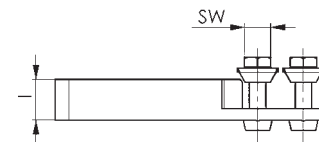
for manual clamps
steel, blued. Complete with fastening screw.
Without clamping screw.



Order no.	Size	Clamping screw	A	E	I	L	SW	Weight [g]
94045	0	M4	4,2	25	10	32,5	7	15
94060	1	M5	5,2	45	12	55,0	8	25
94086	2	M6	6,2	65	14	73,5	10	40
94102	3	M8	8,2	70	20	82,0	13	80



Size 0, 1, 2



Size 3

No. 6848GH

Counter catch

for no. 6848H.
Galvanized and passivated.

No. 6848GHNI

Counter catch

for no. 6848HNI.
Polished stainless steel.

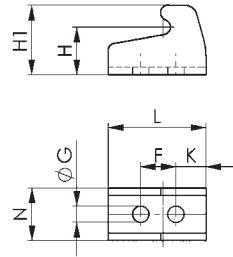


STAINLESS STEEL



Order no.	Size	F	dia. G	H	H1	K	L	N	Weight [g]
94821	2	11	5,2	12	18	8	26	18	16
94839	3	14	6,5	19	28	12	39	23	44
94847	4	19	8,5	26	38	17	56	30	108

Order no.	Size	F	dia. G	H	H1	K	L	N	Weight [g]
95638	2	11	5,2	12	18	8	26	18	16
95646	3	14	6,5	19	28	12	39	23	44
95653	4	19	8,5	26	38	17	56	30	108



No. 6848GV

Counter catch

for no. 6848V.
Galvanized and passivated.

No. 6848GVNI

Counter catch

for no. 6848VNI.
Polished stainless steel.

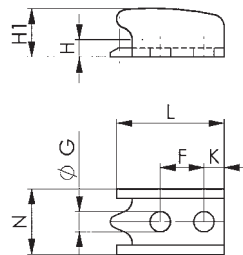


STAINLESS STEEL



Order no.	Size	F	dia. G	H	H1	K	L	N	Weight [g]
94854	2	11	5,2	5	12	5	26	18	14
94862	3	14	6,5	6	16	7	36	23	30
94870	4	19	8,5	8	22	9	48	30	66

Order no.	Size	F	dia. G	H	H1	K	L	N	Weight [g]
95661	2	11	5,2	5	12	5	26	18	14
95679	3	14	6,5	6	16	7	36	23	30
95687	4	19	8,5	8	22	9	48	30	66



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Article no.	Page	Article no.	Page	Article no.	Page	Article no.	Page	Article no.	Page
No. 6800	10	No. 6820K	67	No. 6829WS	94	No. 6844	27	No. 6849PH	36
No. 6800B	56	No. 6820N	68	No. 6829WSP	94	No. 6844NI	54	No. 6850	66
No. 6800BS	61	No. 6821F	71	No. 6830	20	No. 6845	28	No. 6860	24
No. 6800NI	45	No. 6821N	70	No. 6830B	58	No. 6847	32	No. 6880	97
No. 6800S	37	No. 6825C	72	No. 6830NI	47	No. 6847G	32	No. 6880B	97
No. 6802	11	No. 6825CE	73	No. 6830S	41	No. 6847GK	33	No. 6880NI	97
No. 6802B	57	No. 6825CE	74	No. 6832	21	No. 6847GKNI	49	No. 6885	98
No. 6802BS	62	No. 6826C	75	No. 6832B	59	No. 6847GNI	48	No. 6886	99
No. 6802S	38	No. 6826CE	76	No. 6832BS	63	No. 6847K	33	No. 6890	96
No. 6803	12	No. 6828M	80	No. 6832S	41	No. 6847KNI	49	No. 6890B	96
No. 6803NI	46	No. 6828SP	83	No. 6833	22	No. 6847NI	48	No. 6890NI	96
No. 6803S	39	No. 6828SP	85	No. 6834	23	No. 6847S	43	No. 6891	99
No. 6804	13	No. 6828V	82	No. 6834S	42	No. 6847SU	43	No. 6892	100
No. 6804S	40	No. 6828V	84	No. 6840	26	No. 6848GH	102	No. 6893	100
No. 6805	14	No. 6829AD	91	No. 6840S	42	No. 6848GHNI	102	No. 6894	98
No. 6806	14	No. 6829BR/BL	88	No. 6841	25	No. 6848GV	102	No. 6895	101
No. 6809P	17	No. 6829ER/EL	90	No. 6841B	60	No. 6848GVNI	102	No. 6896	101
No. 6810P	18	No. 6829GF	92	No. 6841NI	53	No. 6848H	34	No. 6897K	95
No. 6811P	15	No. 6829KR/KL	87	No. 6842	29	No. 6848HNI	50	No. 6897S	95
No. 6812P	16	No. 6829N	92	No. 6842PK	30	No. 6848HS	44		
No. 6815C	77	No. 6829SP	91	No. 6842PL	31	No. 6848HSNI	51		
No. 6816CE	78	No. 6829V	79	No. 6843	28	No. 6848V	35		
No. 6820F	69	No. 6829W	93	No. 6843NI	54	No. 6848VNI	52		

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90027	10	90571	14	91652	93	92205	72	92866	90
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90050	10	90613	95	91686	94	92239	74	92890	90
90068	10	90639	95	91694	94	92247	74	92924	92
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90159	37	90753	17	91728	67	92270	75	92957	92
90167	56	90761	17	91736	67	92288	75	92973	92
90175	56	90779	17	91744	67	92296	76	93005	20
90183	56	90803	18	91751	94	92304	76	93013	20
90191	56	90811	18	91769	70	92312	76	93021	20
90209	38	90829	18	91777	70	92320	78	93039	20
90217	11	90837	18	91785	70	92338	78	93047	20
90225	11	90845	18	91793	94	92346	78	93054	20
90233	11	90878	15	91801	71	92353	85	93062	92
90241	11	90886	15	91819	71	92361	93	93070	92
90258	11	90894	15	91827	71	92379	85	93088	92
90266	11	90902	16	91835	82	92387	93	93096	92
90274	38	90910	16	91843	80	92395	85	93104	92
90282	38	90928	16	91850	84	92403	91	93112	41
90290	59	91280	60	91868	80	92411	91	93179	22
90308	59	91314	15	91876	84	92429	91	93195	41
90316	12	91330	16	91884	80	92437	91	93203	21
90324	12	91348	61	91892	84	92445	93	93211	21
90332	12	91397	88	91900	83	92452	91	93229	21
90340	12	91405	88	91959	85	92460	93	93237	21
90357	39	91413	88	91967	68	92478	93	93245	21
90365	39	91421	88	91975	68	92486	91	93252	21
90373	39	91439	88	91983	68	92494	91	93260	41
90381	59	91447	88	91991	68	92502	91	93328	22
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90415	57	91470	43	92023	69	92585	30	93435	23
90423	58	91496	88	92031	69	92601	30	93443	23
90431	13	91504	88	92049	69	92619	42	93450	23
90449	13	91512	88	92056	85	92627	31	93484	87
90456	13	91520	88	92072	85	92643	31	93492	87
90464	13	91538	88	92080	83	92650	41	93500	87
90472	57	91546	88	92098	85	92668	31	93518	87
90480	58	91553	88	92106	73	92676	27	93526	87
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90514	14	91595	93	92130	85	92809	90	93559	87
90522	58	91603	94	92148	77	92817	90	93567	87
90530	59	91611	93	92155	77	92825	90	93575	87
90548	60	91629	94	92171	77	92833	90	93583	87

These conditions of sale apply to business conducted with companies, legal entities in the public sector, and legal entities with special budget in the public sector. Our deliveries and services are carried out exclusively on the basis of the conditions stated below. Deviating purchasing conditions of the buyer will not become part of the contract, not even through acceptance of the order, unless we have expressly accepted them.

1. Offer and entering into a contract

The basis of our delivery contracts is the latest edition of our catalogue. Orders are not considered as accepted until they have been confirmed by us in writing. When goods are supplied from stock and, for organisational reasons, you receive no separate confirmation, the invoice has the additional function of confirming the order. Details of dimensions and weights, and illustrations, drawings and data are not binding and may be changed by us at any time. Deviations cannot be excluded.

2. Prices

Prices are quoted in EUR ex-works excluding turnover tax, packing, freight, carriage, and insurance. Unless otherwise agreed, our list prices on the day of delivery apply. In order to cover our costs, orders under EUR 50.– net value are subject to a small order surcharge of EUR 10.–.

3. Delivery

Delivery delays are quoted to the best of our knowledge but without guarantee. Agreed delivery delays begin on the day we accept the order and refer to the completion of the goods in our works.

4. Transfer of risk

Risks are transferred to you when the goods are passed to a specific person, company, or organisation that is charged with the execution of carriage of the goods. This applies also to partial deliveries and when we have accepted the costs of carriage, delivery or erection. The risks are also transferred to you when you have defaulted on acceptance.

5. Dispatch

Goods are supplied ex-works. Dispatch is at your cost and risk. Scheduled, FOB, and CIF deliveries are also at your risk. In the absence of specific instructions concerning dispatch, we will arrange same as we think fit, but without accepting any responsibility for choosing the cheapest or most suitable method of dispatch. We make a handling charge of EUR 5.– if goods are sent at your request to a third party. You accept that your order can be supplied in partial deliveries insofar as this is reasonable.

6. Reservation of proprietary rights

Goods delivered remain our property until payment of all claims has been received in full or until redemption of cheques given in payment. The cancellation of individual positions in an open invoice and the drawing of a balance and its acceptance do not affect proprietary rights. You have the right to dispose of the goods as a normal commercial transaction, but you are forbidden to pawn, mortgage, or transfer ownership of them in settlement of a debt or debts. You surrender to us herewith your right to payment for goods for which we reserve our proprietary rights. You have the right to collect these payments as long as you meet your obligations to us. If we request it, you are obliged to name the third party and we have the right to publish this information and the transfer of rights.

7. Cancellation rights due to late payment or insolvency

If you do not pay for the goods by the time payment is due, and if you have not paid after expiry of a reasonable time limit set by us, we have the right to withdraw from the contract and demand the return of goods already supplied. Rights under § 323 BGB (BGB = German civil law code) remain otherwise unaffected. Application for the opening of insolvency proceedings gives us the right to withdraw from the contract and demand the immediate return of goods supplied before the bankruptcy court orders protective measures.

8. Packaging

Packages comply with the German packaging regulations (WO). Disposable packaging is charged at cost. The packaging is not returnable.

9. Tooling costs

In the absence of any agreement to the contrary, tooling made for the execution of an order remains our property in all cases. This applies even if we have made a charge for a proportion of the tooling costs.

10. Payment

Our invoices are payable net within 30 days of the date of the invoice, or with 2% discount if paid within 10 days. Invoices below EUR 50.– are payable immediately without discount. Our credit notes and your charges on us reduce the amount subject to discount. Late payment entitles us to interest at the rate the bank charges us for a current account overdraft but at least 8 percent above the current base rate of the European Central Bank. If payment is overdue, we are entitled, after giving you notice in writing, to cease fulfilling our obligations under the contract until payment is received.

11. Offsetting exclusion

You can only offset payments with legally-established or unopposed counter claims.

12. Guarantee

If you come to an agreement with us on properties of the goods, we include this agreement in our technical specifications. If we have to supply to your drawings, specifications, samples, etc., you accept the risk associated with suitability for the intended purpose. The point in time at which risk is transferred is decisive for the contractual condition of the goods. The deterioration of parts subject to wear in the course of normal use does not constitute a defect. If the goods supplied are defective, we will – at our choice and within a reasonable time limit set by you – supply a replacement or repair the goods. If such repair or replacement is not satisfactory, you have the right to reduce the price or withdraw from the contract. Any further guarantee claims are excluded. Recognisable defects must be notified at the latest within 10 days of receipt and defects that are not recognisable must be notified as soon as they are discovered. The guarantee period is 24 months and starts with dispatch of the goods from our works.

13. Hindered or impossible performance

If we are prevented from meeting our obligation by some unforeseeable event (e.g. disruption of our plant, or delay in the delivery of important raw materials), which, in spite of taking all reasonable care appropriate to the circumstances of the case, we have been unable to avert, and it has become impossible to execute the delivery or service punctually, the delivery delay will be extended to an appropriate extent.

14. Liability

Except in the case of injury to life or limb, or damage to health caused by our breach of duty, we are only liable in the event of intent or culpable negligence on our part.

15. Customer specials

Orders for customer specials must be in writing and include binding details of execution, quantities etc. For technical reasons we reserve the right to supply 10% more or less than the quantity specified. If technical changes or cancellations are required, the costs incurred will be charged to the customer.

16. Deliveries of samples and return of goods

Samples will be charged. When goods have been sent for testing or as samples, we will credit you with the additional price against subsequent orders, as long as the net contract value is at least EUR 125.–. The return of goods is only possible with prior agreement. Customer specials may not be returned. For goods returned for reasons outside our responsibility (e.g. wrongly ordered), we charge 10% of the value of the goods but at least EUR 7.50, to cover administration costs.

17. Place of fulfilment, court of jurisdiction

The place of fulfilment for all obligations arising from this contract is D-70707 Fellbach. The court of jurisdiction for any legal dispute arising from this contract is D-71332 Waiblingen. (All disputes that arise from this contract or about its validity will be decided by a court of arbitration according to the Arbitration Rules of the German Committee for Arbitration Courts/Settlement and Arbitration Procedure of the International Chamber of Commerce. Such decisions will be final and normal legal procedures are excluded.) German law applies (BGB and HGB = civil and commercial codes). The application of UN purchasing law (CISG) is excluded.

18. Validity clause

If individual conditions should be found to be not legally valid, the remaining conditions continue to apply. The invalid conditions will be replaced by conditions which fulfil as closely as possible the commercial intent of the contract with reasonable consideration of the interests of both parties. With the publication of these Conditions for Sales, Deliveries and Payment, all previous versions become invalid. This does not apply to contracts agreed before publication.

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