

# TOGGLE CLAMPS MANUAL AND PNEUMATIC



CLAMPING. SCREWING. LOCKING.



## 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.

### 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 magnetic clamping technology extend the AMF product range.
- 2009** Development and marketing of AMF Vacuum clamping technology
- 2012** AMF-Writer and AMF-Cleaner for automated labelling and cleaning via the tool spindle



#### 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 espached 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.

#### MANAGING DIRECTORS

> Johannes Maier  
Volker Göbel

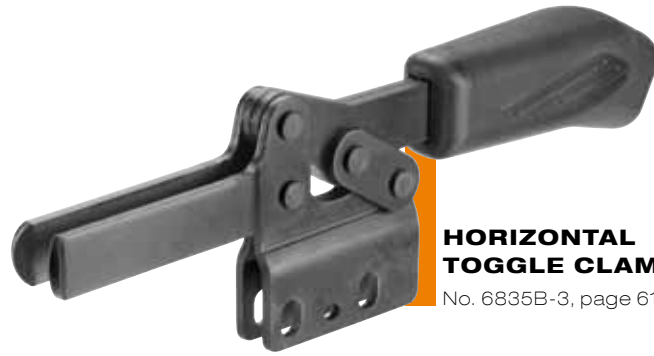
#### THE AMF SERVICE GUARANTEE

> Assuredly on the way to the top

#### PRODUCTS ON THE COVER

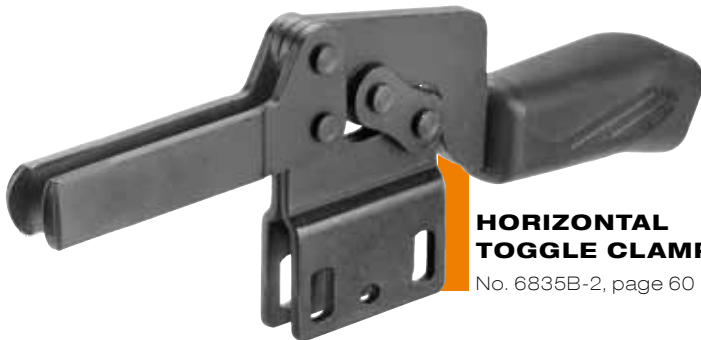
Vertical acting toggle clamp no. 6800, page 10 · Hook type toggle clamp no. 6848H, page 34 · Pneumatic toggle clamp no. 6820M, page 72

<b>VERTICAL ACTING TOGGLE CLAMPS</b>		<b>10 - 18</b>
<b>HORIZONTAL ACTING TOGGLE CLAMPS</b>		<b>19 - 23</b>
<b>PUSH-PULL TYPE TOGGLE CLAMPS</b>		<b>24 - 31</b>
<b>HOOK TYPE TOGGLE CLAMPS</b>		<b>32 - 36</b>
<b>TOGGLE CLAMPS WITH SAFETY LATCH</b>		<b>37 - 44</b>
<b>STAINLESS STEEL TOGGLE CLAMPS</b>		<b>45 - 54</b>
<p>STAINLESS STEEL</p>		
<b>BLACK TOGGLE CLAMPS FOR OPTICAL MEASUREMENT TECHNOLOGY</b>		<b>55 - 67</b>
<b>PNEUMATIC TOGGLE CLAMPS AUTOMATION CLAMPS</b>		<b>68 - 89</b>
<b>PNEUMATIC SWING CLAMPS</b>		<b>90 - 98</b>
<b>ACCESSORIES</b>		<b>99 - 106</b>



**HORIZONTAL  
TOGGLE CLAMP, BLACK**

No. 6835B-3, page 61

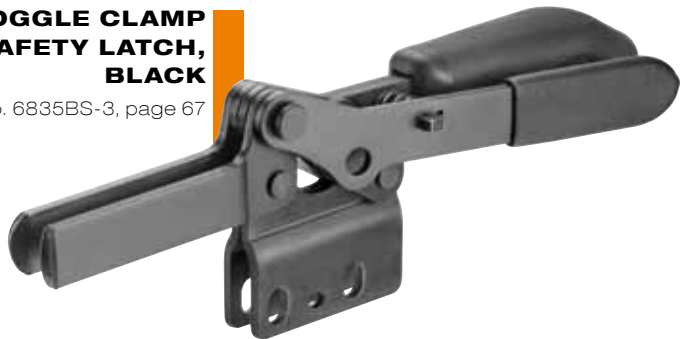


**HORIZONTAL  
TOGGLE CLAMP, BLACK**

No. 6835B-2, page 60

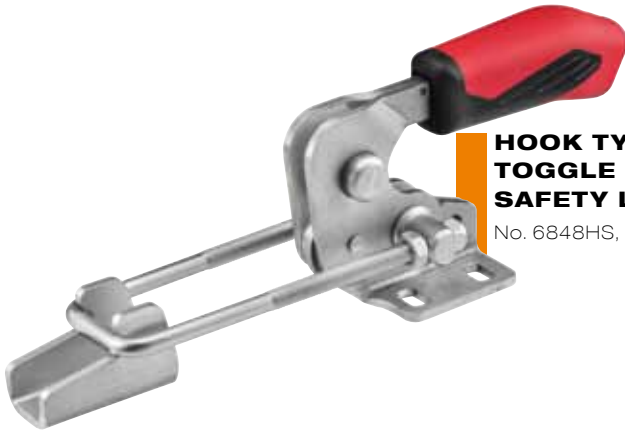
**HORIZONTAL TOGGLE CLAMP  
WITH SAFETY LATCH,  
BLACK**

No. 6835BS-3, page 67



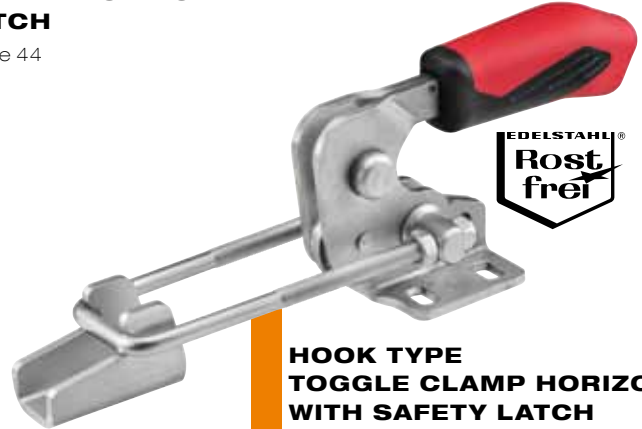
**HORIZONTAL TOGGLE CLAMP  
WITH SAFETY LATCH,  
BLACK**

No. 6835BS-2, page 66



**HOOK TYPE  
TOGGLE CLAMP HORIZONTAL WITH  
SAFETY LATCH**

No. 6848HS, page 44



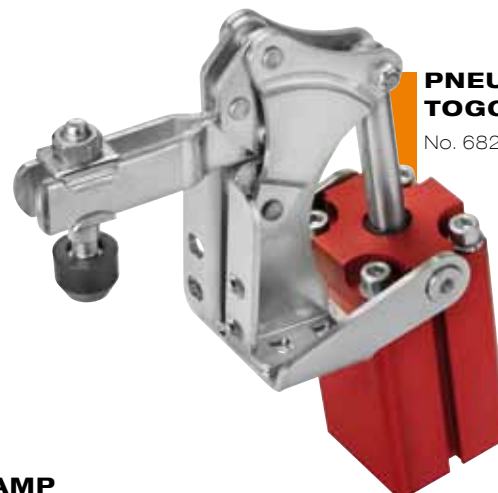
**HOOK TYPE  
TOGGLE CLAMP HORIZONTAL  
WITH SAFETY LATCH**

No. 6848HSNI, page 51



**PNEUMATIC  
TOGGLE CLAMP**

No. 6820M, page 72



**PNEUMATIC  
TOGGLE CLAMP**

No. 6821M, page 74



**COMBINATION CLAMP**

No. 6860, page 24

## > 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 44 to 52.

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.

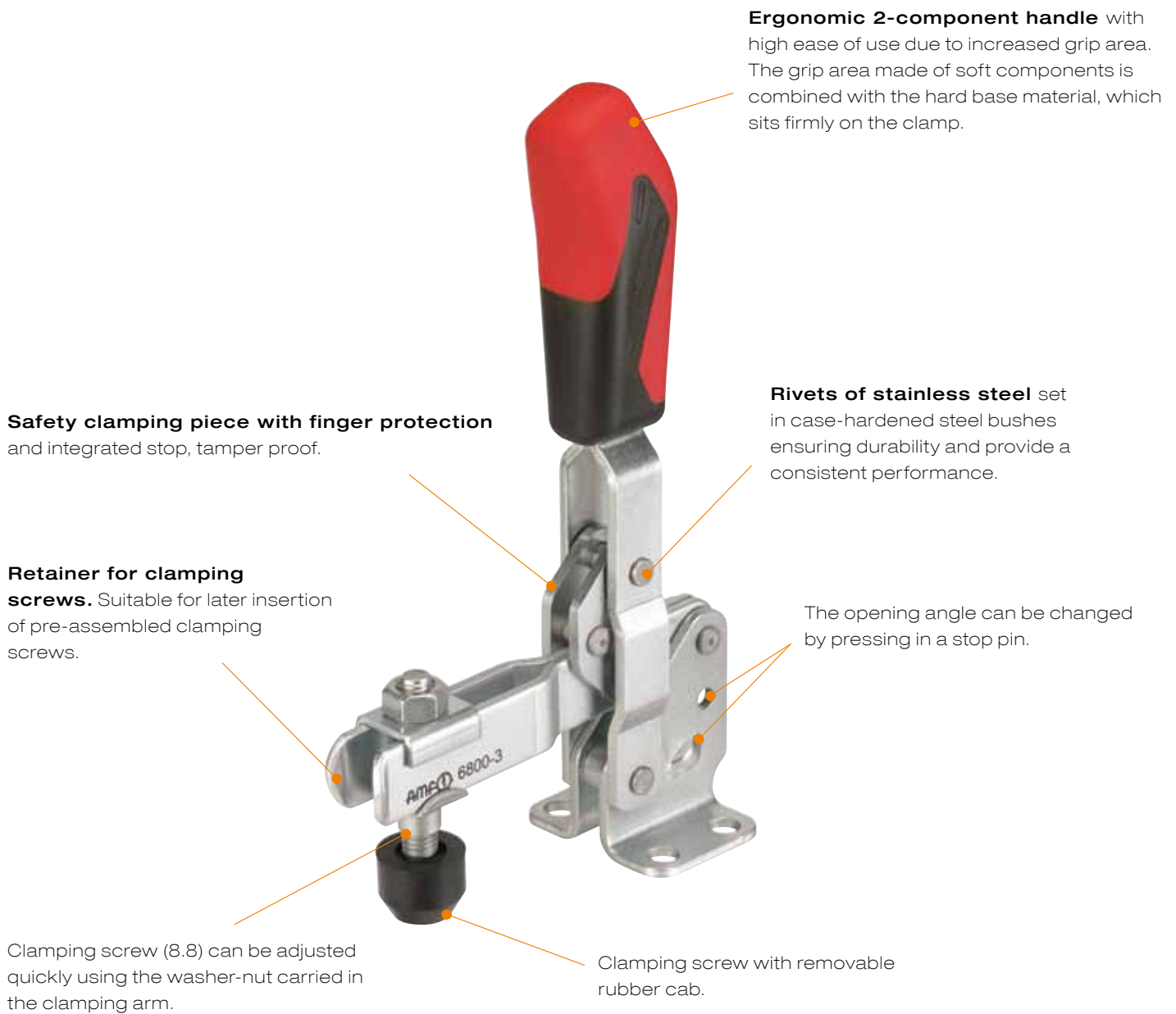
## > MOUNTING POSSIBILITIES

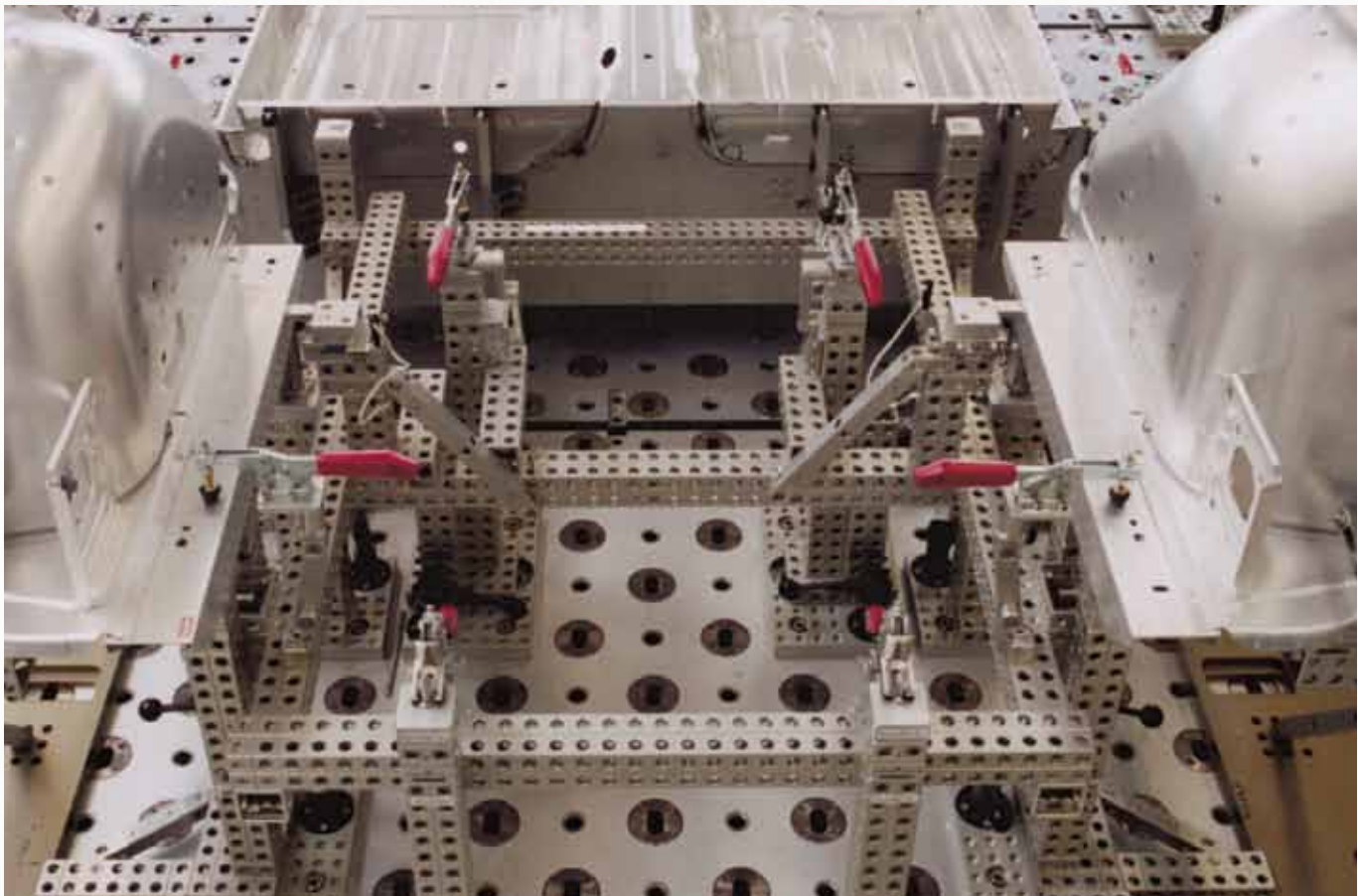
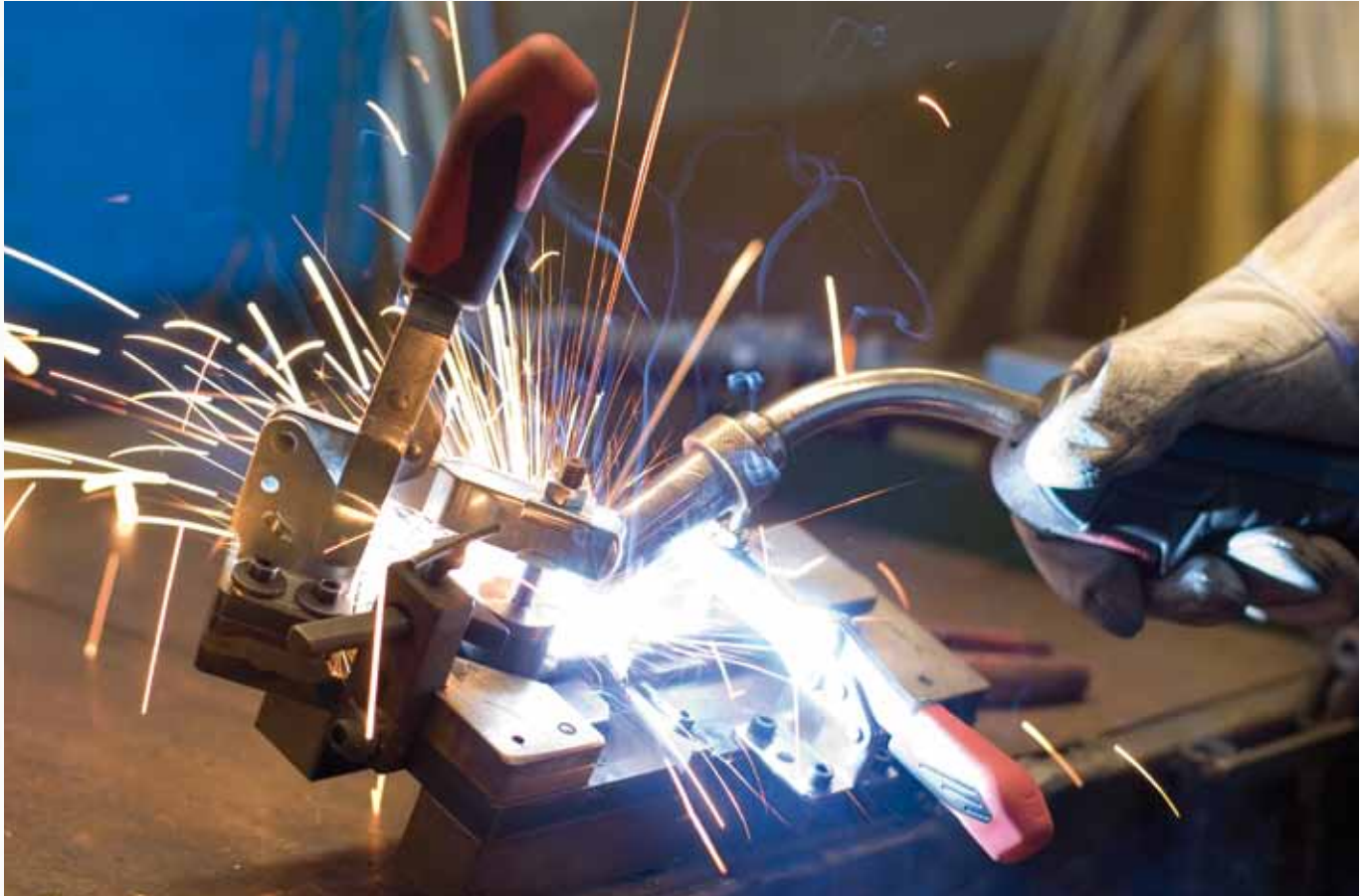
The base are offered in three versions: toggle clamps with horizontal base, vertical base (preferably used on welded construction and on webs) and toggle clamps with angle base for front mounting. With all toggle clamps the clamping screws are included in the price. Large quantities can be supplied without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



## THE FEATURES OF OUR TOGGLE CLAMPS AT A GLANCE

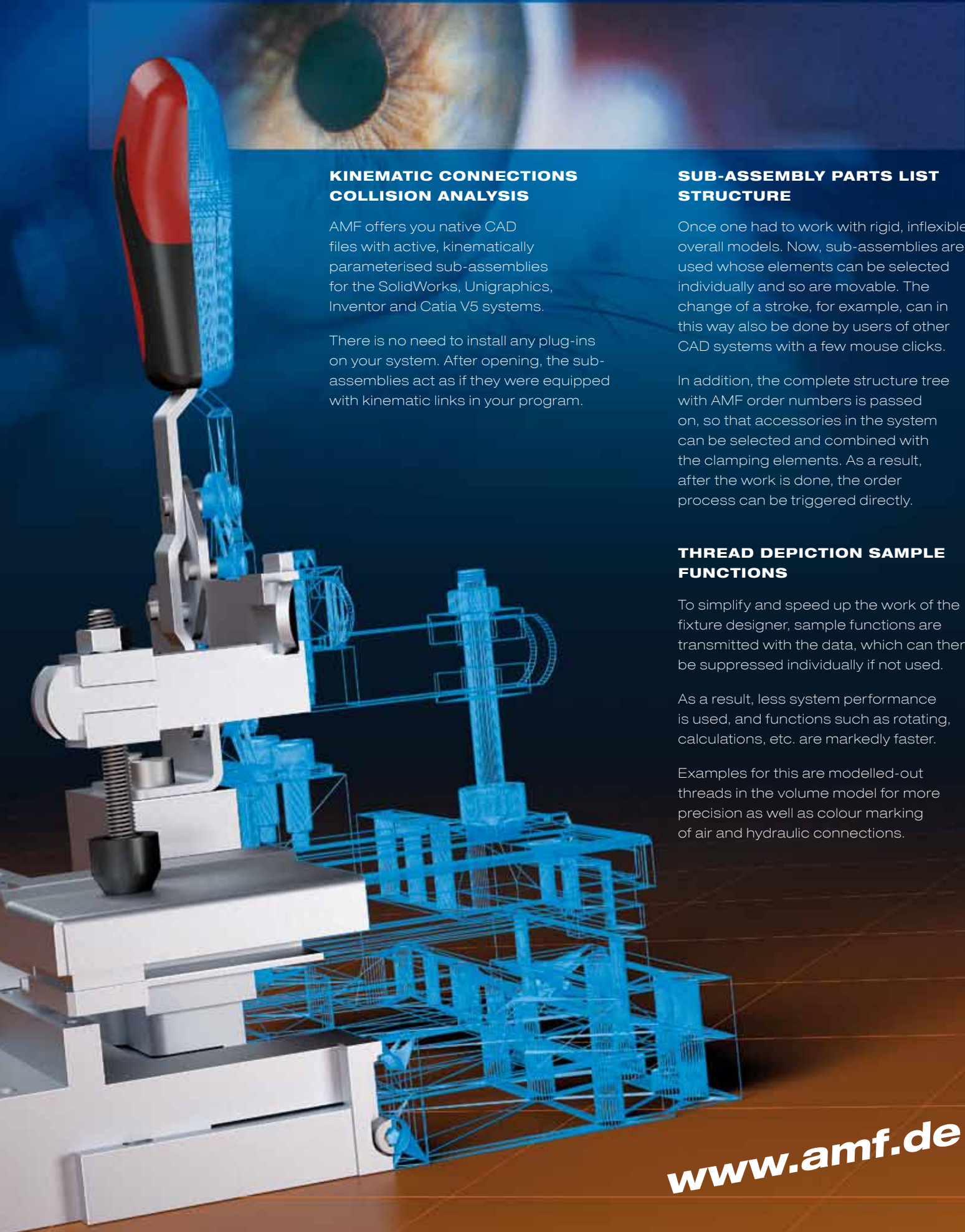
- > Ergonomic two-component handle
- > Safety clamping piece with finger protection
- > Retainer for clamping screws.
- > Stainless steel rivets
- > Removable rubber cap





Subject to technical alterations.





## 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.

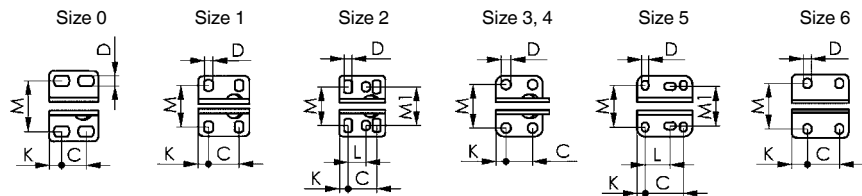
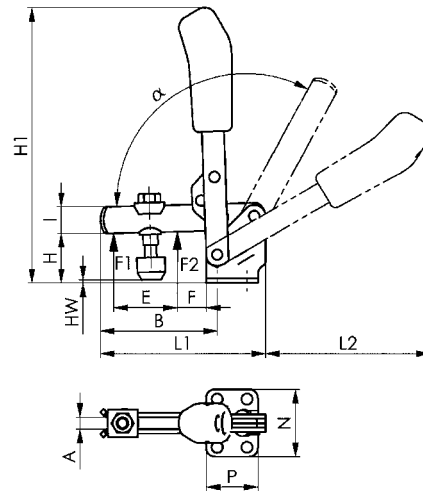
Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 to 6, run in hardened bushings. Bearings are pre-lubricated.

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“ version (no. 6800NI) and in matte-black 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	$\alpha$	$\alpha^*$
90001	0	4	31,0	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	39,0	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	52,0	20,0	5,5	25	11,0	23,0	139,5	-3,0	4,5	12	6,0	12,5	78	89	23,0-31,0	27	43	32	105°	60°
90035	3	8	79,0	20,0	7,5	37	19,0	33,0	186,0	2,0	11,0	18	7,5	-	112	112	32,5	-	46	35	105°	60°
90043	4	10	101,0	32,0	8,6	54	16,0	42,5	221,0	-6,0	22,5	20	13,0	-	141	130	43,5-46,5	-	64	53	105°	60°
90050	5	14	140,0	45,0	8,5	73	34,0	55,8	281,0	-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	165,5	50,5	13,0	89	28,0	81,0	333,0	-2,5	55,0	30	24,5	-	231	206	67,5-72,5	-	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.

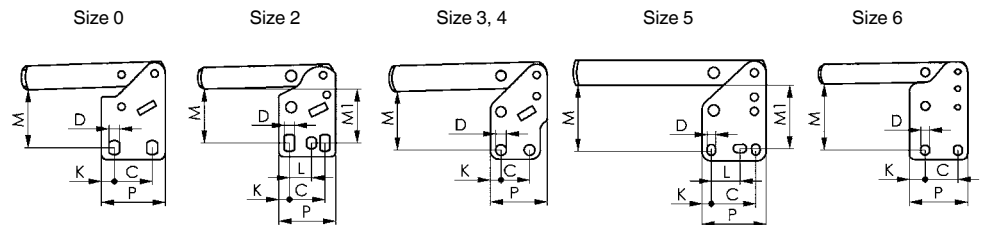
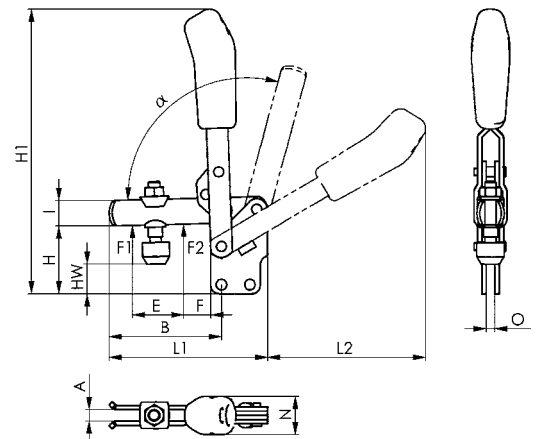
Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 to 6, run in hardened bushings. Bearings are pre-lubricated.

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 version (no. 6802B)!



### 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	109,0	6,0	12,5	10	5,5	-	61	59	23,5-25,0	-	19	5	27	95°	-
90225	2	6	52	20,0	5,5	25	11	38	144,5	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	114	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	72	35	77	301	18,0	49,0	25	9,5	26,5-31,5	195	183	66,0	64	45	10	65	115°	60°
90266	6	14	165	50,5	13,0	89	28	117	369	33,0	90,5	30	24,5	-	231	206	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.

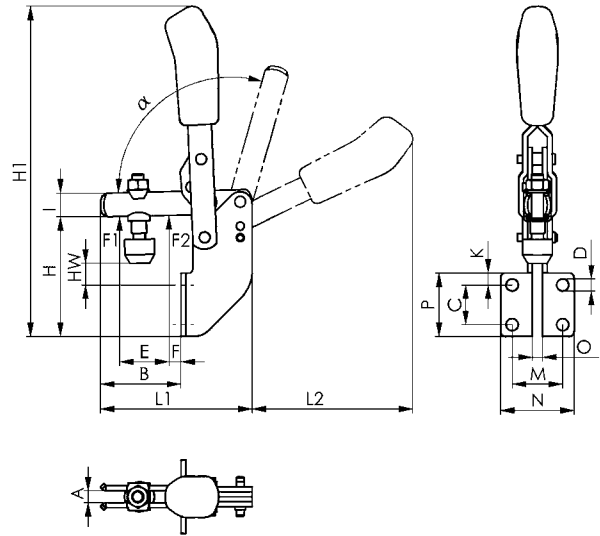
Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 and 3, run in hardened bushings. Bearings are pre-lubricated.

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	$\alpha$	$\alpha^*$
90316	1	5	34,5	14	4,5	18	7	45	125	2,5	9,0	10	10	61	58	20,0	30,0	5	30	98°	-
90324	2	6	41,0	20	6,1	25	6	60	167	7,5	15,5	12	6	77	81	25,5	37,0	5	32	105°	60°
90332	3	8	63,0	24	6,5	37	11	71	223	9,0	17,5	18	7	111	112	28,5	42,5	6	38	105°	60°
90340	4	10	84,0	32	8,5	54	11	102	280	11,0	40,0	20	54	141	129	32,0	52,0	8	96	105°	60°

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



Subject to technical alterations.

## No. 6804

### Vertical acting toggle clamp

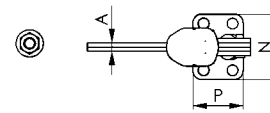
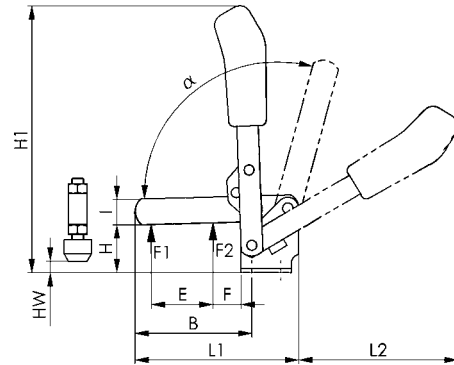
with solid arm and horizontal base.

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

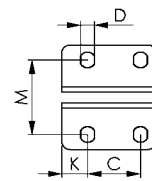
Ergonomic, oil-resistant handle with large grip surface and soft components. Safety clamping piece with finger protection.

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

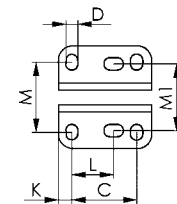
Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90431	3	1,4	2,5	M8x45	340
90449	4	2,0	3,0	M8x65	585
90456	5	3,0	5,0	M12x80	1480
90464	6	3,5	5,5	M12x110	2200



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	P	α	α*
90431	3	6	81,0	20,0	7,5	43	19,5	33,5	186	0	12,0	18	7,5	-	108,5	116,5	32,5	-	46	35	105°	60°
90449	4	8	101,0	32,0	8,6	61	17,0	42,5	221	-8	21,0	20	13,0	-	141,5	129,5	45,0	-	64	53	105°	60°
90456	5	10	141,0	45,0	8,5	88	30,5	55,5	281	-6	25,5	25	9,5	26,5-31,5	196,5	184,0	45-50	45	70	65	115°	60°
90464	6	10	166,5	50,5	13,0	90	20,5	81,0	331	-5	51,0	30	24,5	-	232,0	206,0	68-72	-	100	90	140°	60°

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



Subject to technical alterations.

## No. 6806

### Vertical acting toggle clamp

with solid arm and vertical base.

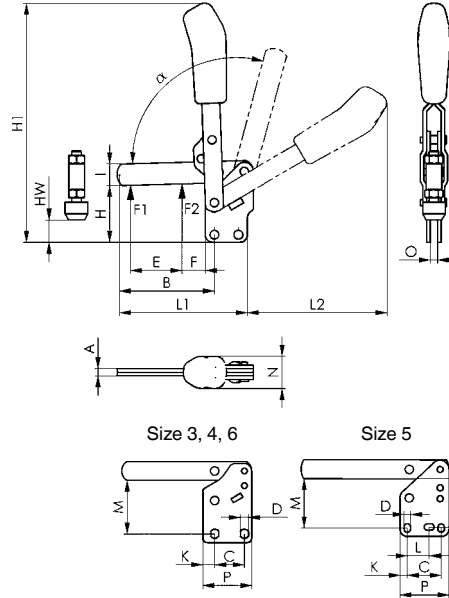
Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

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



### 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	$\alpha$	$\alpha^*$
90555	3	6	81,0	20,0	7,5	43	19,5	48	200	14,5	26,0	18	7,5	-	108,5	116,0	41,0	-	27	6	35	105°	60°
90563	4	8	101,0	32,0	8,6	61	17,0	65	244	13,0	44,0	20	13,0	-	141,5	129,5	55,5	-	34	8	53	105°	60°
90571	5	10	141,0	45,0	8,5	88	30,5	77	302	15,0	47,0	25	9,5	26,5-31,5	196,5	184,0	66,0	64	36	10	65	115°	60°
90589	6	10	166,5	50,5	13,0	90	20,5	117	369	28,5	86,5	30	24,5	-	232,0	206,0	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.

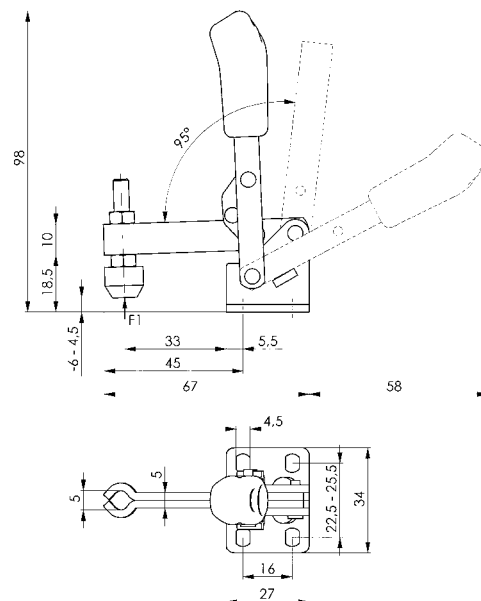
Galvanized and passivated. Stainless steel rivets. Bearings are pre-lubricated.

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



Subject to technical alterations.

## No. 6811P

### Heavy vertical toggle clamp

with horizontal base.

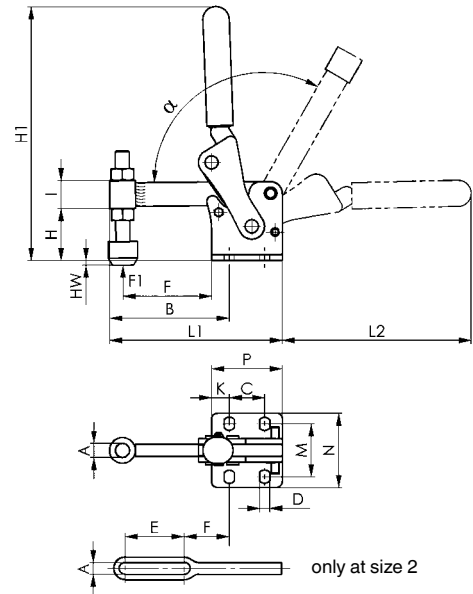
Reamed and case-hardened bearing bushes. Hardened, ground and permanently-lubricated pins. Clamp nuts on lever arm to vary friction in movement. Material: steel, blued. Lever arm made of cast steel, blued. Handle of red, oil-resistant plastic.

**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	$\alpha$
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°



Subject to technical alterations.

## No. 6812P

### Heavy vertical toggle clamp

with vertical base and mounting holes.

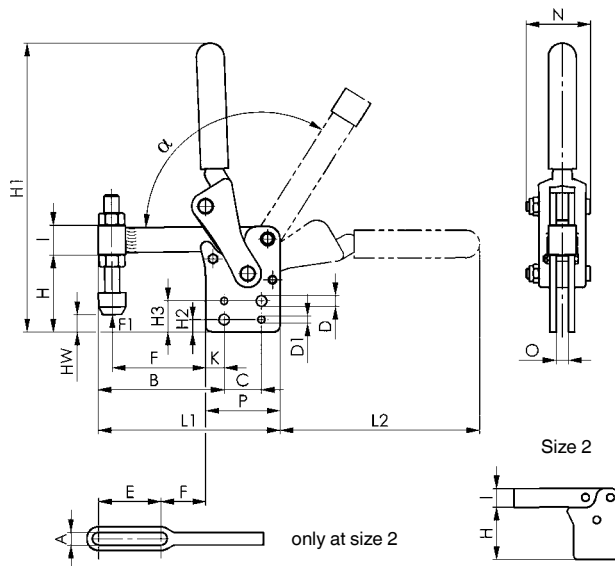
Reamed and case-hardened bearing bushes. Hardened, ground and permanently-lubricated pins. Clamp nuts on lever arm to vary friction in movement. Material: steel, blued. Lever arm made of cast steel, blued. Handle of red, oil-resistant plastic.

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	$\alpha$
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.

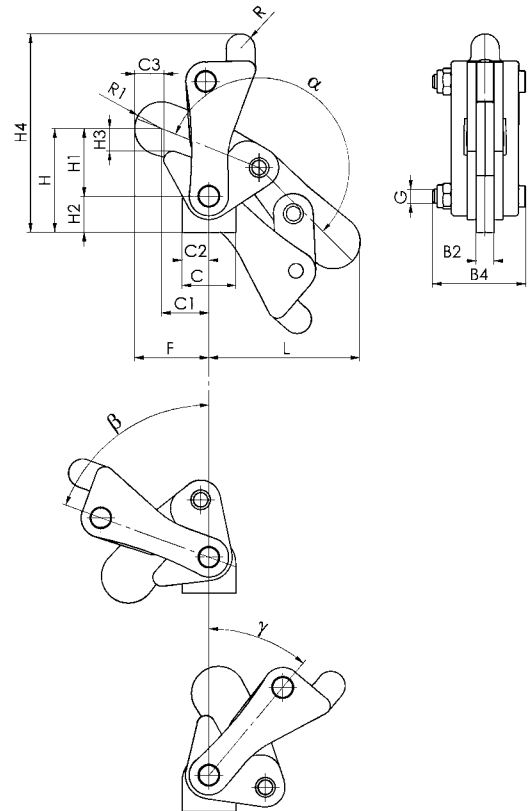
Mechanism can be welded at an angle to its support. Reamed and case-hardened bearing bushes. Hardened, ground and permanently-lubricated pins. Clamp nuts on lever arm to vary friction in movement.

Materials: steel, blued. Lever arm made of cast steel, blued.

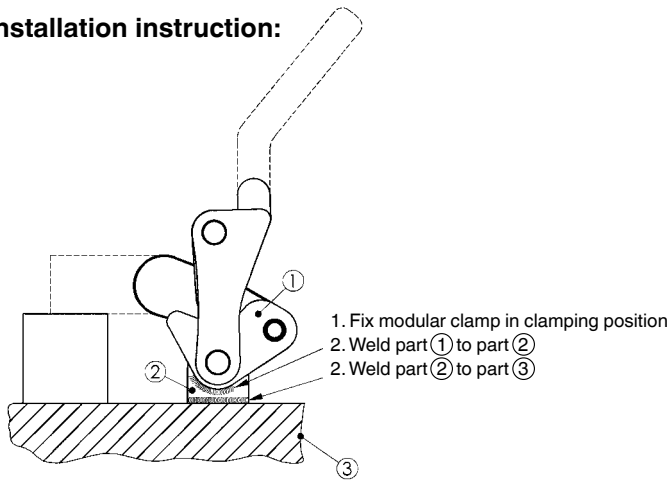
Order no.	Size	F1	Weight [g]
		[kN]	
90738	2	2,5	205
90746	4	7,0	855
90753	6	11,0	1600
90761	8	22,5	3100
90779	10	34,0	5560

### 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	$\alpha$	$\beta$	$\gamma$
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.

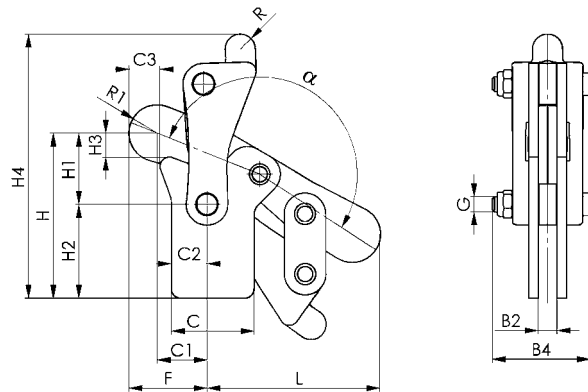
Reamed and case-hardened bearing bushes. Hardened, ground and permanently-lubricated pins. Clamp nuts on lever arm to vary friction in movement.

Materials: steel, blued. Lever arm made of cast steel, blued.

Order no.	Size	F1	Weight [g]
		[kN]	
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	$\alpha$
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.

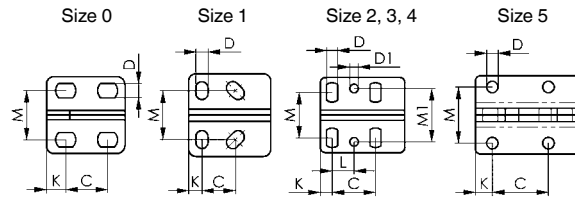
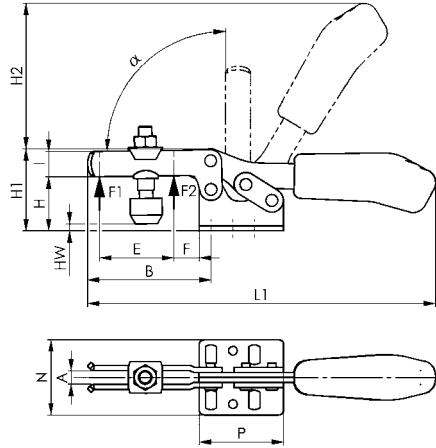
Complete with tempered, galvanized clamping screw no. 6890.

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“ version (no. 6830NI) and in matte-black 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	$\alpha$
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	16,0	-	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	45,5	50,0	90°
93047	4	10	113	41,0	8,5	8,5	63,0	27,0	45,0	75,0	126	-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	+1,7	25,0	25,0	12,5	-	321	41,5	-	58,0	77,0	90°



Subject to technical alterations.

## No. 6832

### Horizontal acting toggle clamp

with open clamping arm and vertical base.

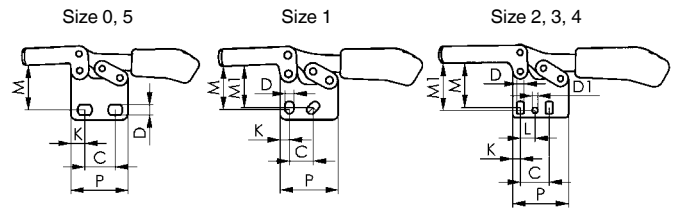
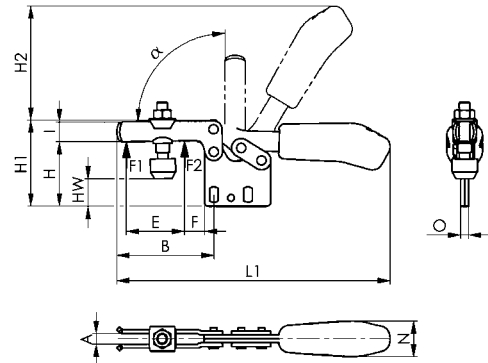
Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 to 5, run in hardened bushings. Bearings are pre-lubricated.

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 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	24,5	33,0	34	4,7	10,7	7,5	6,3	-	79	20,0	-	12	3	25,5	90°
93211	1	5	42	13,0-14,5	5,2	-	18,5	8	31,5	43,0	49	8,0	15,0	10,0	5,5	-	120	23,5-25,5	24,5	18	5	34,0	90°
93229	2	6	64	26,0	5,6	5,6	32,0	16	40,0	61,0	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	38,5	14	49,0	65,0	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	66,5	97,0	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	65,0	92,5	128	21,5	45,0	25,0	12,5	-	321	57,0	-	36	10	77,0	90°



Subject to technical alterations.

## No. 6833

### Horizontal acting toggle clamp

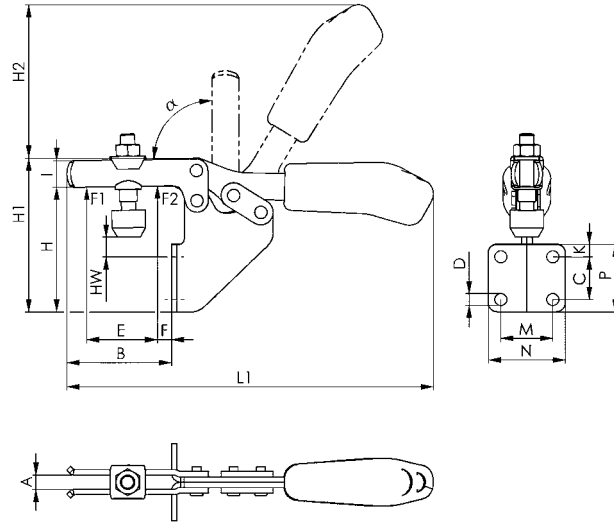
with open clamping arm and angle base.

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.

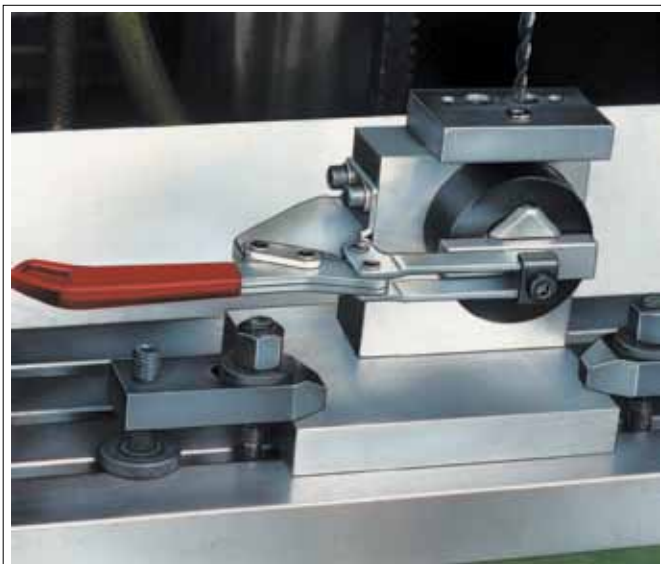
Complete with tempered, galvanized clamping screw no. 6890.

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	$\alpha$
93179	1	5,0	32	13,5	5,2	18,5	4,0	57	68,0	49	14	20,0	10,0	8	120	19,0	31,0	28	90°
93328	2	6,2	52	20,0	5,6	32,0	10,5	73	94,0	68	22	29,5	13,2	6	162	25,5	37,0	32	90°
93336	3	8,0	59	24,0	6,8	37,0	6,5	70	86,5	86	5	16,0	15,0	7	206	28,5	42,5	38	90°
93542	4	10,0	93	32,0	8,5	63,0	15,0	102	133,0	120	11	40,0	20,0	40	282	32,0	52,0	82	90°



Subject to technical alterations.

## 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.

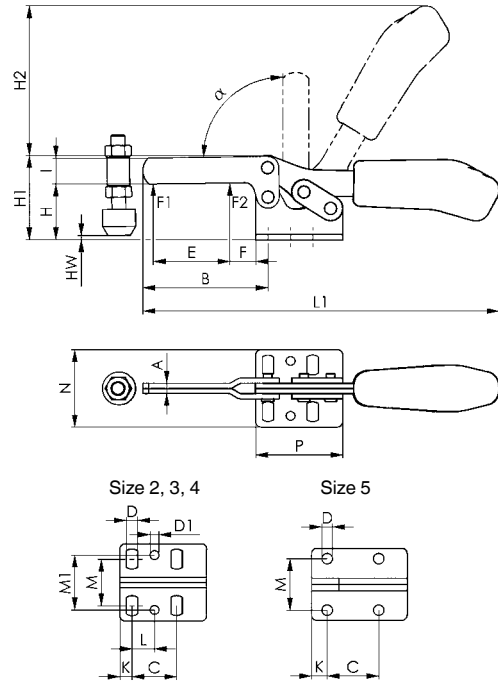
Ergonomic, oil-resistant handle with large grip surface and soft components.

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	$\alpha$
93427	2	5	63	26,0	5,6	5,6	35	16,0	24	45,0	66	-2,0	7,5	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	11,0	15	7,0	13,0	205	22,0-31,8	32,0	45,5	50	90°
93443	4	8	111	41,0	8,5	8,5	66	26,0	45	75,0	114	-6,0	22,0	20	8,0	20,5	280	29,0-43,0	43,0	58	57	90°
93450	5	10	121	41,5	8,5	-	78	17,5	46	73,0	128	-13,0	12,5	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:

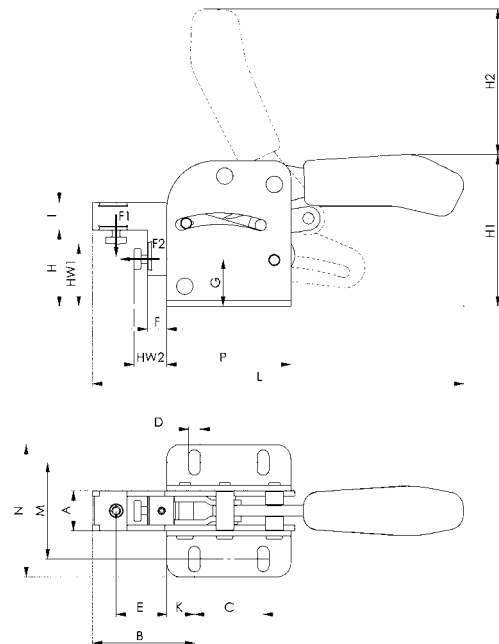


### No. 6860

### 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	22	36,0	74	62	25	32	5	10	12	7,5	150	34,5-39,5	53	55
93880	2	19,5	56	50	6,5	32	9,0	28	46,0	94	87	30	40	14	24	16	12,5	219	48,5-61,5	75	75
93864	3	29,0	74	50	8,5	37	14,0	34	55,5	110	106	40	50	20	30	20	20,0	270	60,0-80,0	96	90

Subject to technical alterations.



## No. 6841

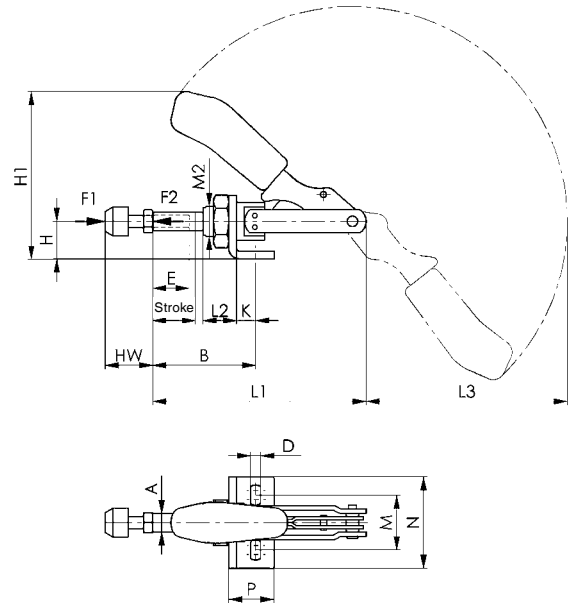
### Push-pull type toggle clamp

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“ version (no. 6841NI) and in matte-black 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	49,3	16	12	20	6,5	66,5	10	54,0	16,0	M10x1,0	25	16
94110	1	8,0	24,5	44,5	4,5	20	15	60,5	20	12	20	7,0	91,0	16	74,0	16,0-19,5	M12x1,5	30	20
94128	2	10,0	32,5	58,5	5,6	20	20	85,5	26	17	25	12,5	114,0	19	105,0	31,8-36,0	M16x1,5	50	34
94136	3	12,0	37,0	69,0	6,5	30	25	108,0	32	22	35	13,0	140,0	22	127,5	29,5-42,5	M20x1,5	60	30
94151	5	16,0	41,5	81,5	8,5	50	30	129,5	40	30	50	15,5	171,5	25	158,0	29,0-46,0	M24x1,5	65	35
94367	5-M27	16,0	41,5	81,5	8,5	50	30	129,5	40	30	50	15,5	171,5	25	158,0	29,0-46,0	M27x2,0	65	35

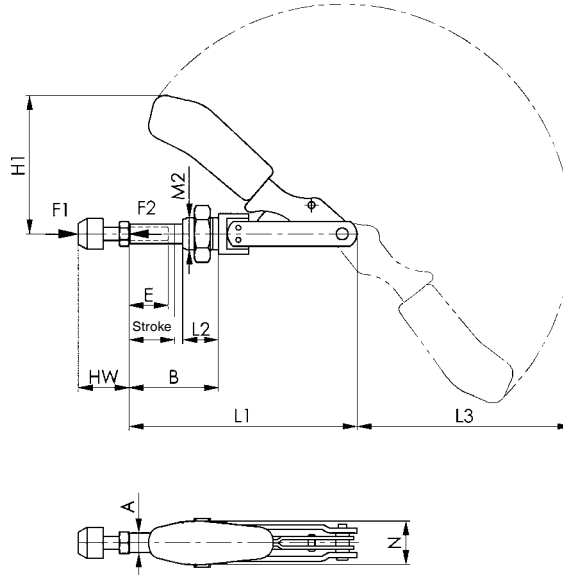


## No. 6840

### Push-pull type toggle clamp

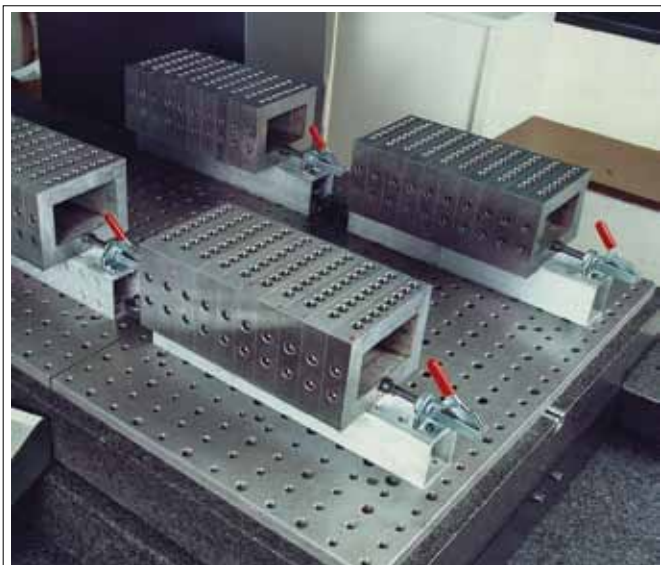
without angle base. For push- and pull-clamping. (Equal operation of rod and lever). Long rod-guide with attaching thread and nut. Galvanized and passivated. Rivets made of stainless steel, which, for sizes 2 and 3, run in hardened bushings. Lever-parts and rod of tempered steel. Bearings are pre-lubricated. 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	37,0	16	12	20	66,5	10	54	M10x1,0	15,0
93914	1	8,0	17,5	37,5	20	45,5	20	12	20	91,0	16	74	M12x1,5	18,0
93922	2	10,0	20,0	46,0	20	66,0	26	17	25	114,0	19	105	M16x1,5	22,0
93930	3	12,0	24,0	56,0	30	82,5	32	22	35	140,0	22	127	M20x1,5	27,0
93955	5	16,0	26,5	66,5	50	99,0	40	30	50	171,5	25	158	M24x1,5	34,5
94359	5-M27	16,0	26,5	66,5	50	99,0	40	30	50	171,5	25	158	M27x2,0	34,5



Subject to technical alterations.

## 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.

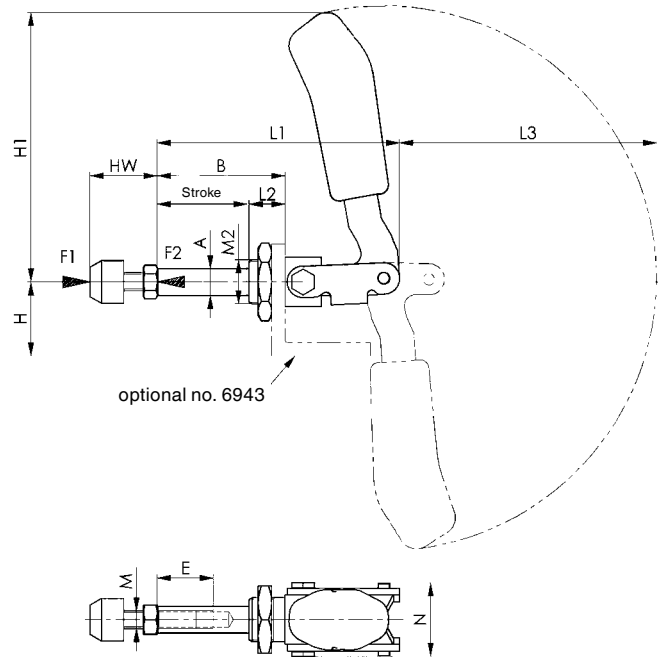
**Complete with tempered, galvanized clamping screw no. 6880.**

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	36	15	24	73	21,5	17	25	68,5	13	68	M6	M16x1,5	30,5
94318	3	12	57	25	33	123	40,0	22	35	108,0	16	115	M8	M20x1,5	33,0
94334	5	16	92	45	37	149	67,0	30	50	175,0	24	139	M12	M24x1,5	49,0
92676	5-M27	16	92	45	37	149	67,0	30	50	175,0	24	139	M12	M27x2,0	49,0



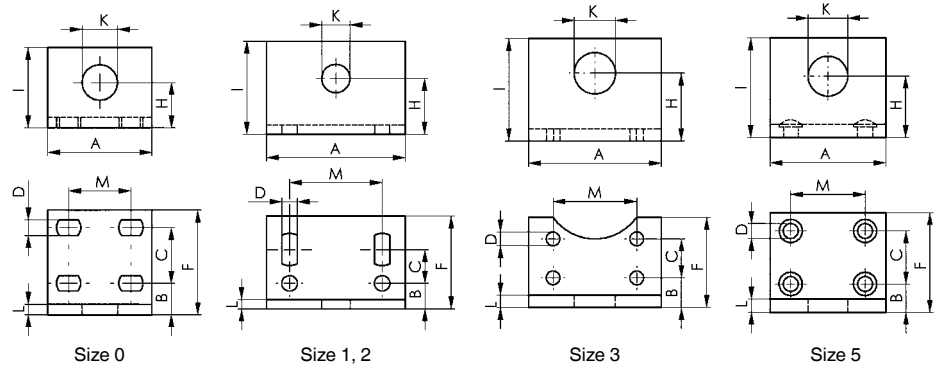
## No. 6843

### 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	16,2	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-pull type toggle clamp

#### Push-type clamp.

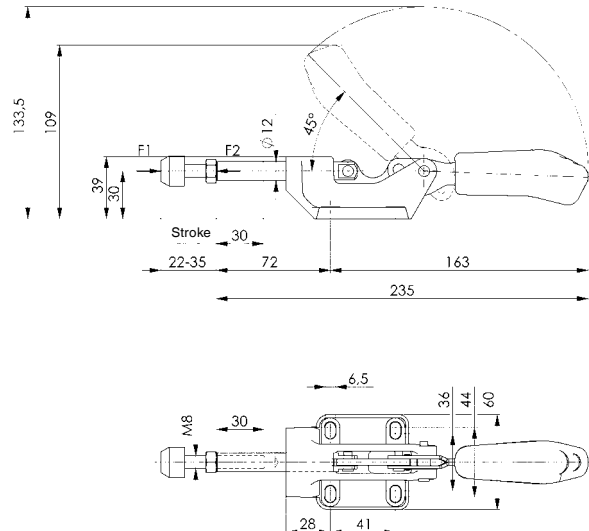
(Opposed operation of rod and lever). Version with long rod-guide. Base of malleable casting, varnished. Toggle parts and push rod are heat-treated steel, galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated. Ergonomic, oil-resistant handle with 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



Subject to technical alterations.

## No. 6842

### Heavy push-pull type toggle clamp

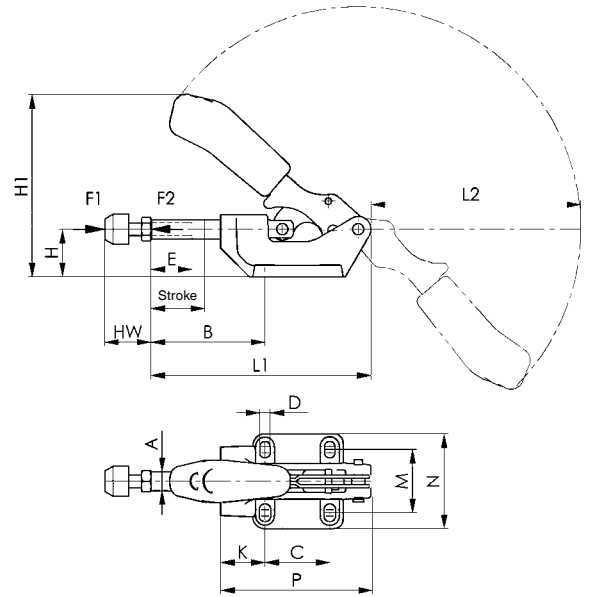
#### For push- and pull-clamping.

(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	116,0	32	22	35	28	139	135	36-44	60	95
94250	5	16	58	98	41	8,5	50	38	137,5	40	30	50	45	174	156	41-50	71	121
94276	7	22	59	105	70	11,0	50	55	179,0	50	30	50	45	218	192	57-65	93	158



Subject to technical alterations.

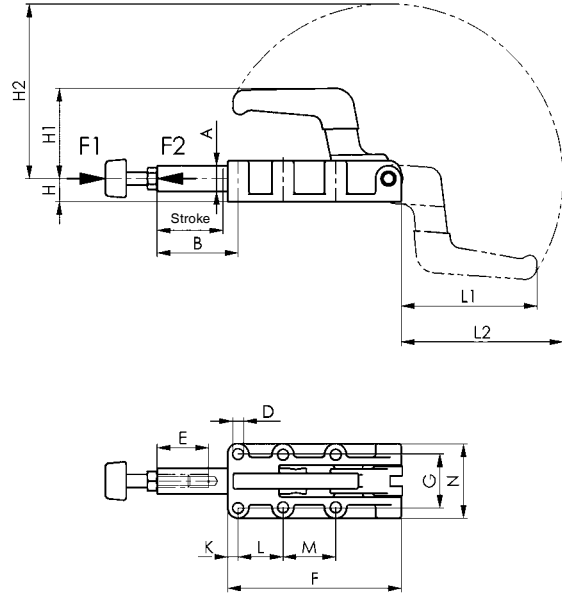
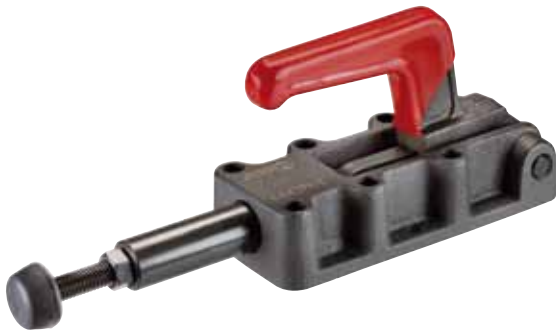
## No. 6842PK

### 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	58
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

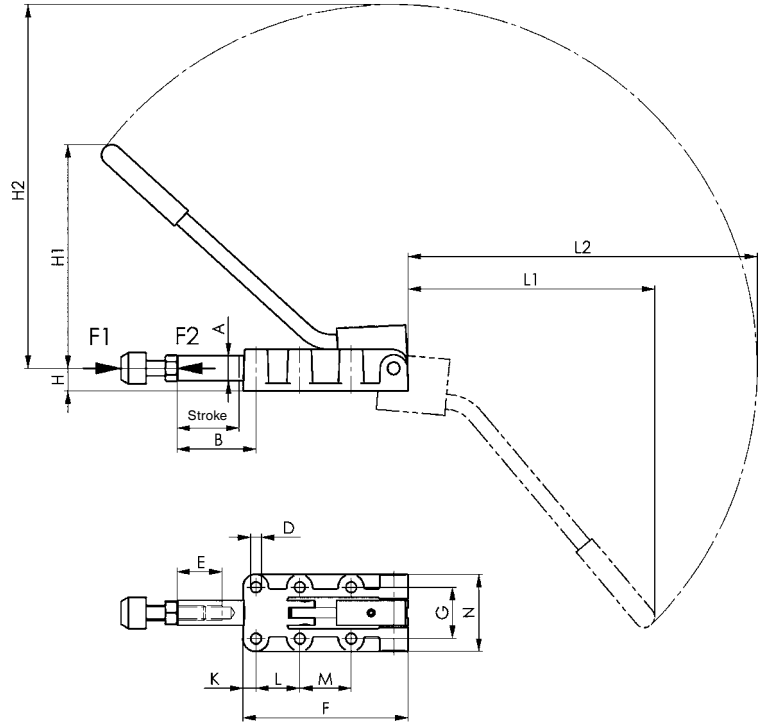
## No. 6842PL

### 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

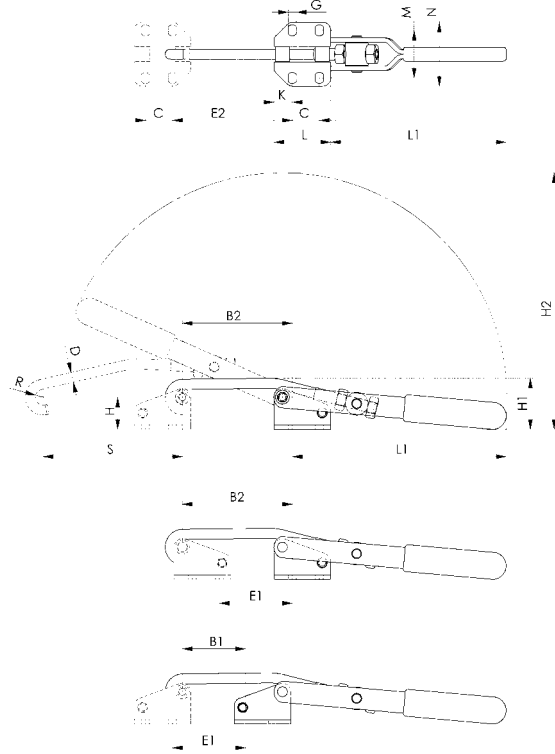
## No. 6847

### 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	Adjustm. distance	Weight [g]
		[kN]	[mm]	
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	H2	K	L	L1	M	N	R	S
94524	1	16-23	35-42	19	5,30	17-24	35-42	4,5	22,7	34,5	111	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	181	13	40	123,5	31,5-35,5	45	5,5	98
94565	5	26-40	57-71	29	10,75	27-42	58-73	11,2	49,0	69,0	282	13	55	189,5	55,5-63,0	85	8,0	147

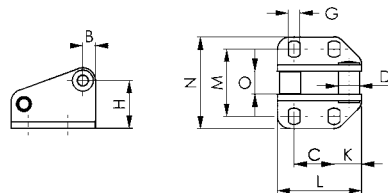
## No. 6847G

### Counter catch

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

Order no.	Size	Height	Length	Weight [g]
		[mm]	[mm]	
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

Subject to technical alterations.



## 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.

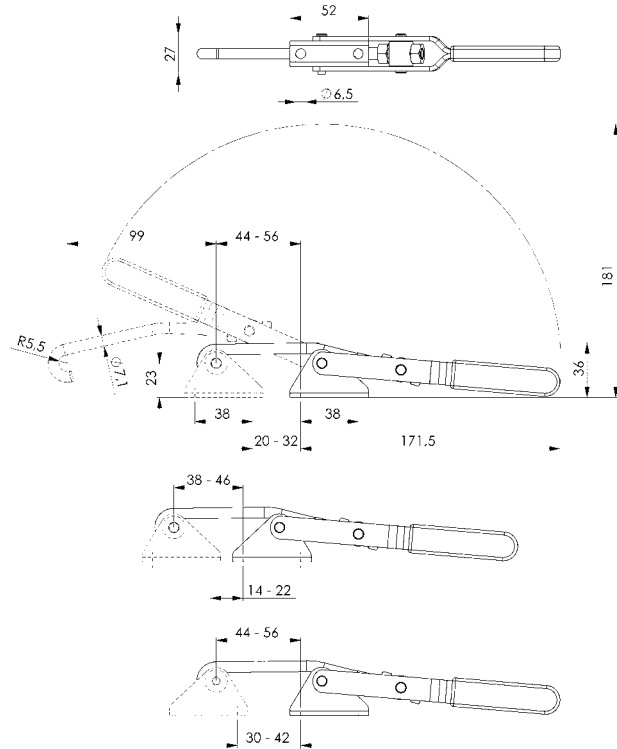


Order no.	Size	F1 [kN]	Adjustm. distance [mm]	Weight [g]
94680	3	3	22	270

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.

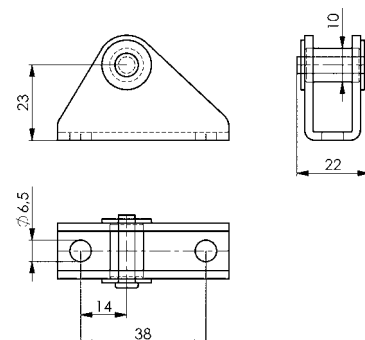


Order no.	Size	Height [mm]	Length [mm]	Weight [g]
94672	3	32	52	65

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

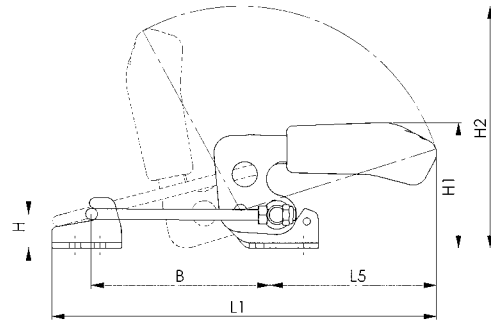
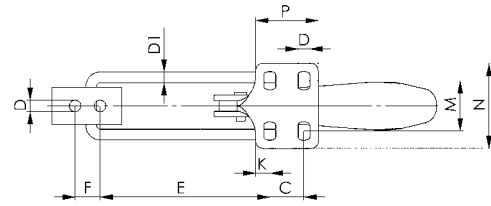
### Hook type toggle clamp horizontal

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	Weight
		[kN]	[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	E min.	E max.	F	H	H1	H2	K	L1 min.	L1 max.	L5	M	N	P
94698	2	42,0	76	13	5,2	4	38,0	72	11	12	47,0	99,0	6,4	125	159	69	19,5-23,5	38,0	26,0
94706	3	53,5	101	19	6,5	6	48,6	96	14	19	70,0	135,5	8,0	169	216	93	24,5-32,0	48,0	35,0
94714	4	66,0	130	32	8,5	8	59,0	123	19	26	94,5	171,5	9,5	209	273	111	35,0-46,0	64,3	53,5

## No. 6848V

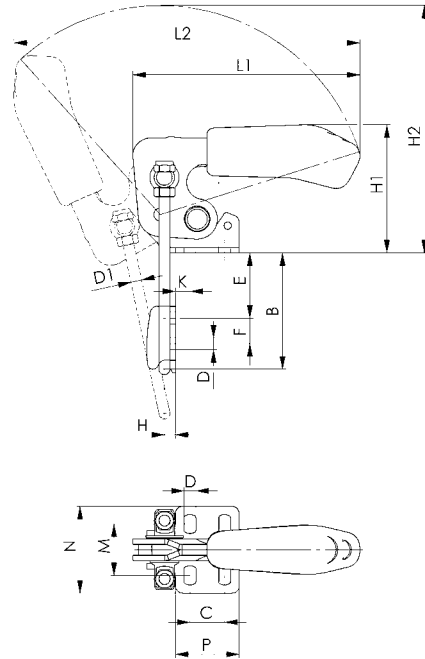
### Hook type toggle clamp vertical

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	Weight
		[kN]	[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	E min.	E max.	F	H	H1	H2	K	L1	L2	M	N	P
94755	2	24,0	49	13	5,2	4	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	7	36	14	6,0	70,0	136	8,0	125	190	24,5-32,0	48,0	35,0
94771	4	43,0	81	32	8,5	8	9	47	19	8,0	94,5	168	9,5	151	239	35,0-46,0	64,5	53,5

## No. 6849PH

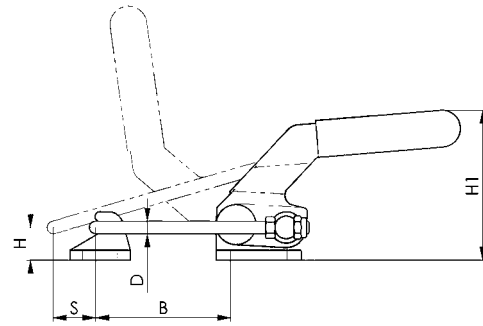
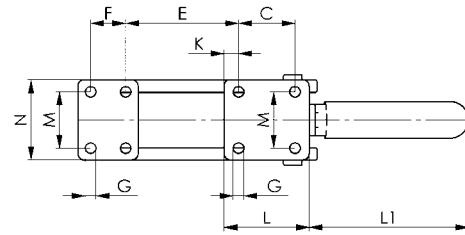
### Heavy hook type toggle clamp

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	Adjustm. distance	Weight
		[kN]	[mm]	[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



Subject to technical alterations.

## 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

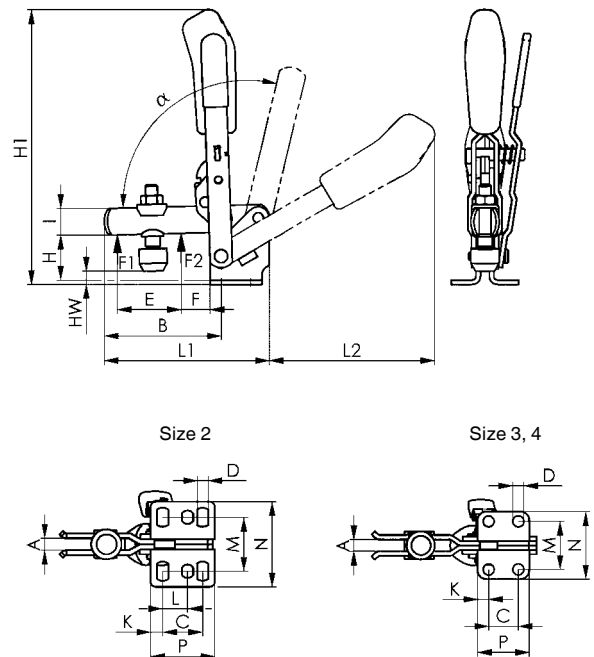
#### Vertical toggle clamp with safety latch

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



### Dimensions:

Order no.	Size	A	B	C	D	E	F	H	H1	HW min.	HW max.	I	K	L	L1	L2	M	N	P	$\alpha$	$\alpha^*$
90134	2	6	52	20	5,5	25	11	23,0	139,5	-3	4,5	12	6,0	12,5	78	89	23-31	43	32	105°	60°
90142	3	8	79	20	7,5	36	19	33,0	186,0	2	11,0	18	7,5	-	112	112	32,5	46	35	105°	60°
90159	4	10	101	32	8,6	54	16	42,5	221,0	-6	22,5	20	13,0	-	141	130	45,0	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.

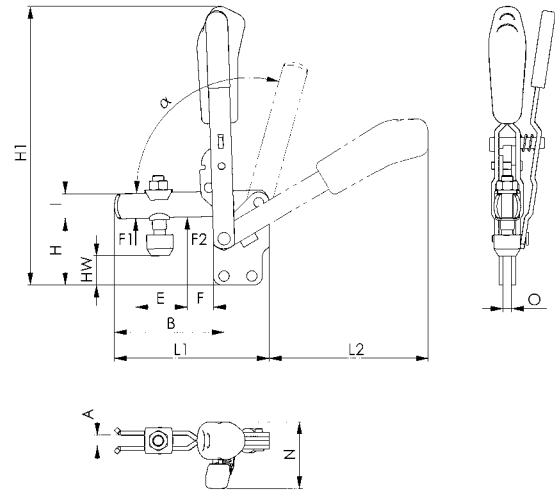
With open clamping arm and vertical base.

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.

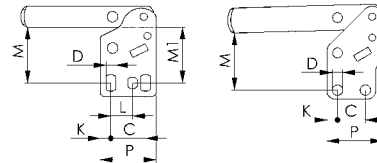
Complete with tempered, galvanized clamping screw no. 6890.

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	$\alpha$	$\alpha^*$
90209	2	6	52	20	5,5	25	11	38	154	11,5	19,5	12	6,0	12,5	78	89	28,5-32	30	37,5	5	32	105°	60°
90274	3	8	79	20	7,5	37	19	48	200	10,0	18,5	18	7,5	-	111	114	41,0	-	48,0	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	-	53,0	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.

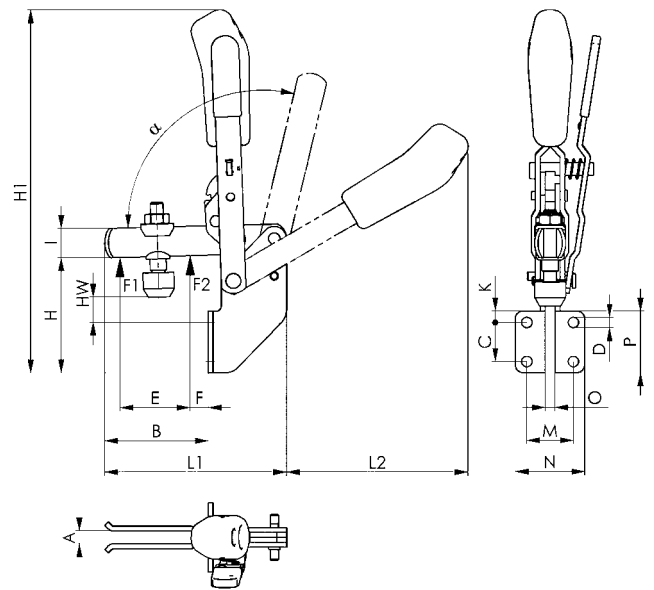
With open clamping arm and angled base.

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	$\alpha$	$\alpha^*$
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.

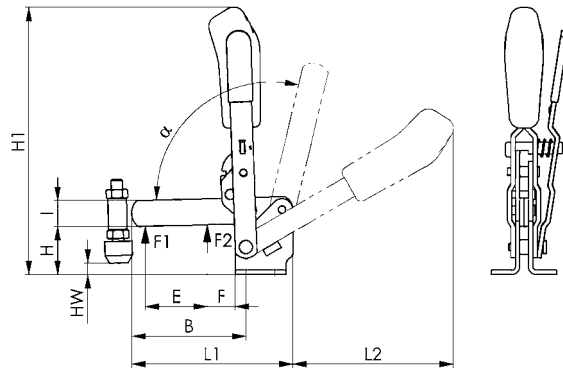
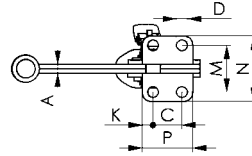
With solid clamping arm and horizontal base.

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	$\alpha$	$\alpha^*$
90399	3	6	81	20	7,1	43	19	48,0	186	0	12	18	7,5	112	112	32	46	35	105°	60°
90407	4	8	101	32	8,5	61	16	42,5	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.

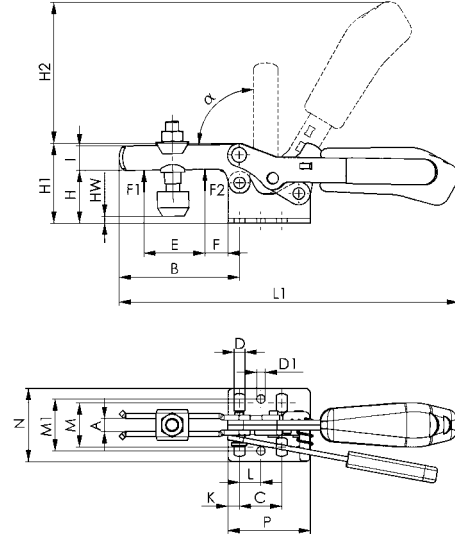
Complete with tempered, galvanized clamping screw no. 6890.



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	H	H1	H2	HW min.	HW max.	I	K	L	L1	M	M1	N	P	α
92650	3	8	73	25,7	6,5	5,1	38	14	32	48,5	86,0	-2	9	15	7	13,0	206	22,0-31,8	31,6	45,5	50	90°
93112	4	10	113	41,0	8,5	8,5	63	27	45	75,0	126,5	-4	24	20	8	20,5	287	29,0-43,0	43,0	58	57	90°

## No. 6832S

### Horizontal toggle clamp with safety latch

for open and clamped positions.

With open clamping arm and vertical base.

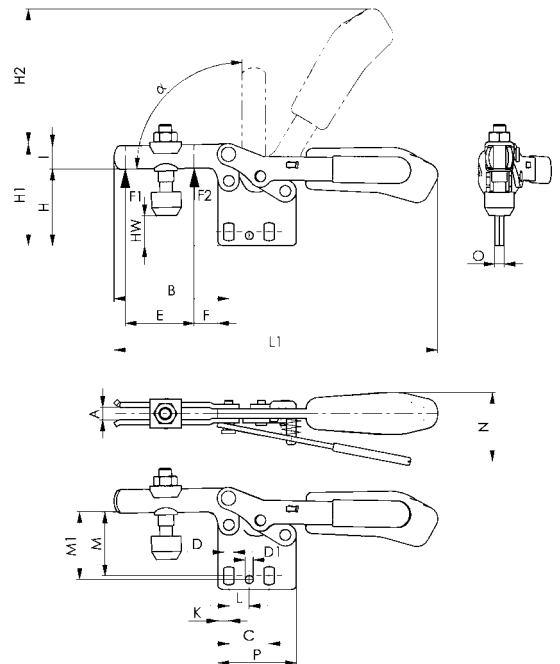
Galvanized and passivated. Stainless steel rivets, which run in hardened bushes. Bearings are pre-lubricated.

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	46	20	8	20,5	287	52,0-59,0	59	51	8	57	90°

Subject to technical alterations.

## No. 6834S

### Horizontal toggle clamp with safety latch

for open and clamped positions.

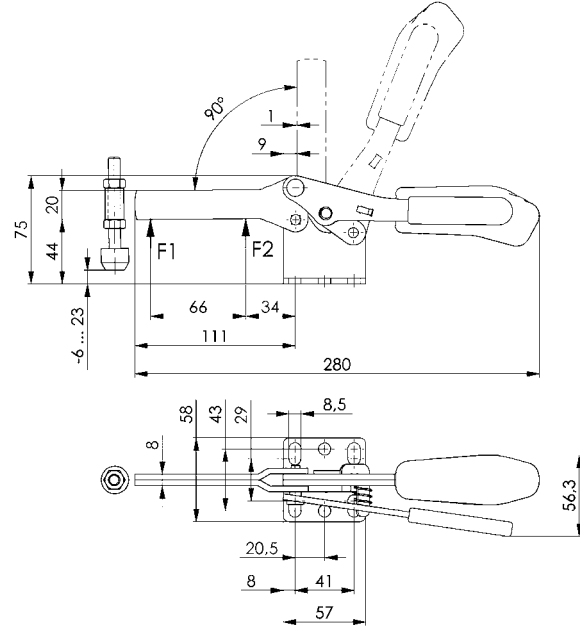
With solid clamping arm and horizontal base.

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.

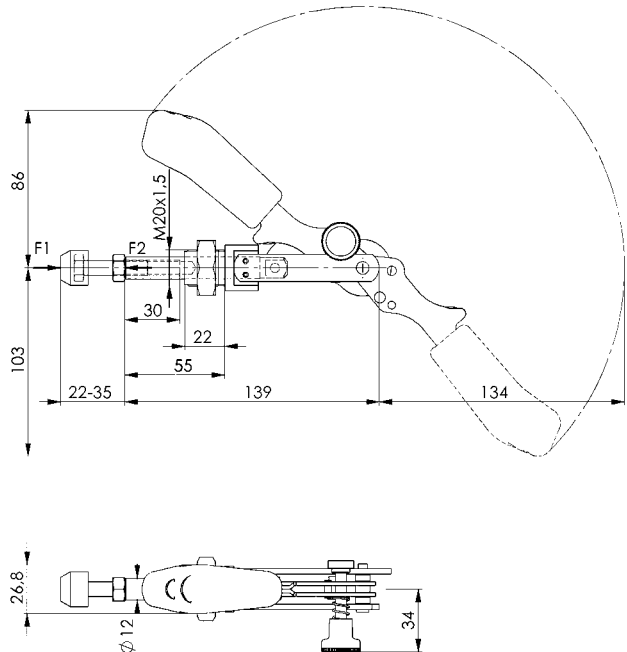
Without angle base. Push and pull-clamping (equal operation of rod and lever).

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.



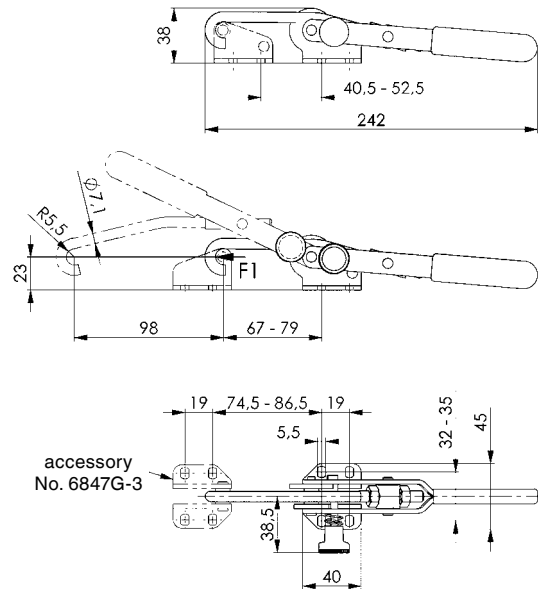
Order no.	Size	F1	Weight
		[kN]	[g]
93666	3	3	295

#### 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

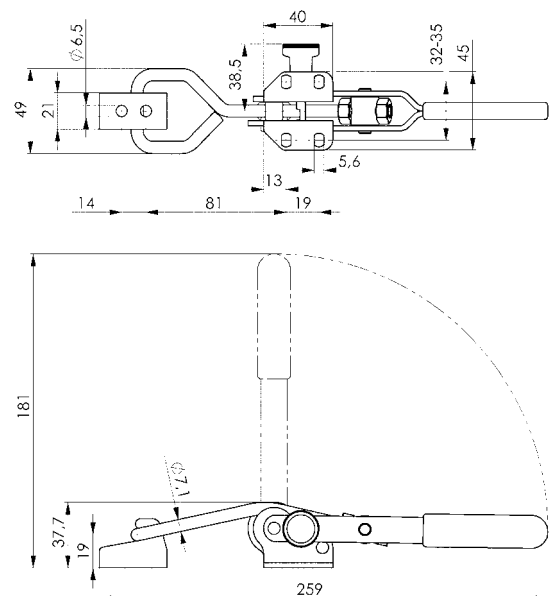
U-shackle, locks when closed.

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	Weight
		[kN]	[g]
91470	3	3	295



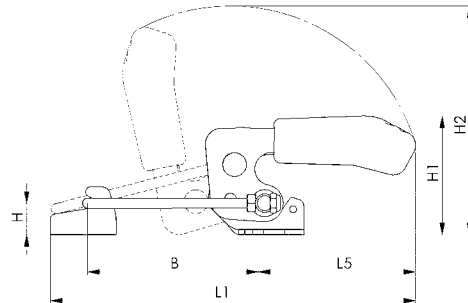
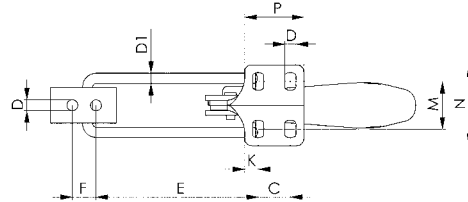
## No. 6848HS

### 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	Weight
		[kN]	[g]
92692	4	7,0	850



### Dimensions:

Order no.	Size	B min.	B max.	C	D	D1	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	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.



## 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.

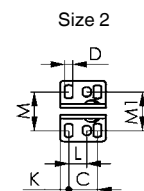
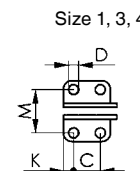
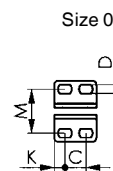
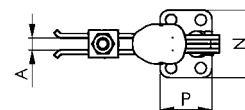
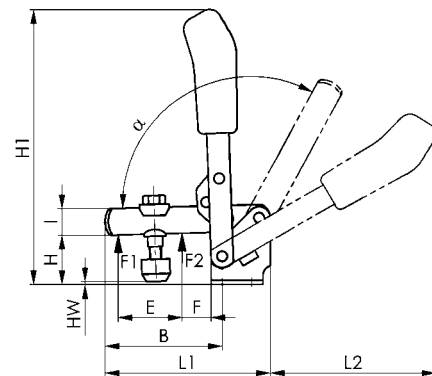
Ergonomic, oil-resistant handle with large grip surface and soft components.

Supplied complete with stainless clamping screw no. 6890NI.

Also suitable for use in the food industry.



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	$\alpha$	$\alpha^*$
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.

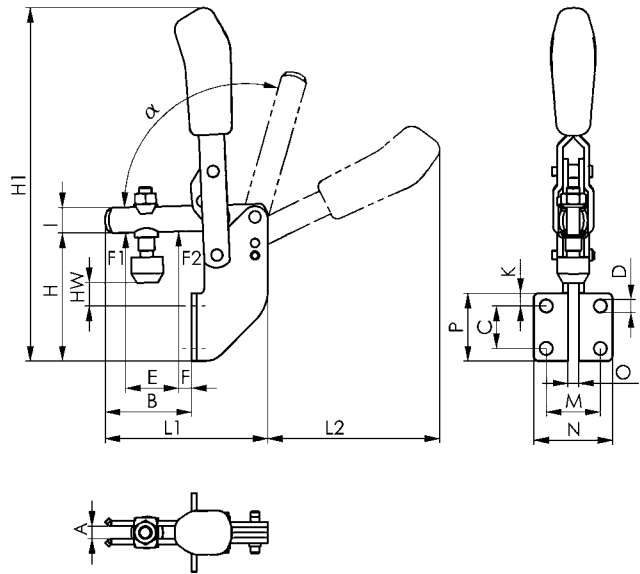
Stainless steel, polished. Rivets running in greased bushes.  
Ergonomic, oil-resistant handle with large grip surface and soft components.

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	$\alpha$	$\alpha^*$
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.

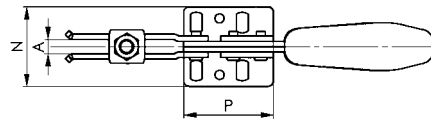
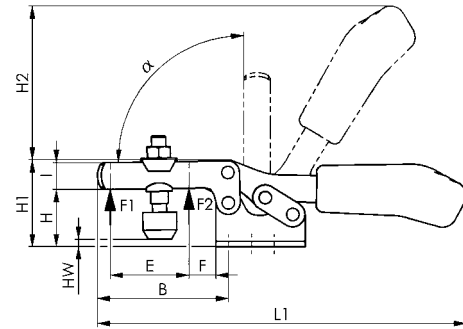
Also suitable for use in the food industry.



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:

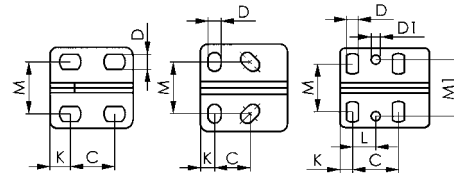
For suitable sensor monitor for size 3 see no. 6897S.



Size 0

Size 1

Size 2, 3, 4



### 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	$\alpha$
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	14	32,0	48,5	86	-2,0	9,0	15,0	7,00	13,0	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	126	-4,0	24,0	20,0	8,00	20,5	287	29,0-43,0	43,0	58,0	57,0	90°

## No. 6847NI

### Hook type toggle clamp

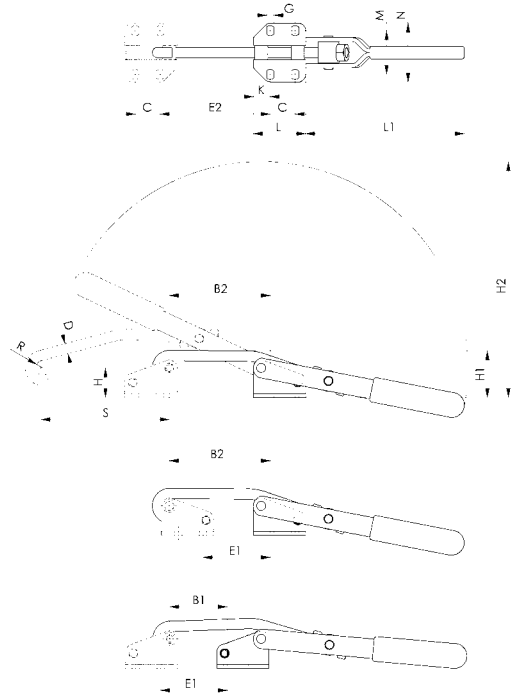
Stainless steel, polished. Rivets running in greased bushes.  
 Handle of red high quality oil-resistant plastic.  
 Ergonomic, oil-resistant handle with large grip surface and soft components for size 1.  
 Suitable for use in food industry.



STAINLESS STEEL



Order no.	Size	F1	Adjustm. distance	Weight
		[kN]	[mm]	
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	H2	K	L	L1	M	N	R	S
95406	1	15-23	34-42	19	6	15-24	34-42	4,5	22,7	35,0	111	6	31	63	26,0-30,0	40	4,5	45
95422	3	32-44	65-77	19	8	39-51	72-84	5,6	22,7	36,0	181	13	40	121	31,5-35,5	45	5,5	97
95448	5	26-40	57-71	29	12	27-42	58-73	11,2	49,0	70,5	281	13	55	188	56,5-64,0	86	8,0	146

## No. 6847GNI

### Counter catch

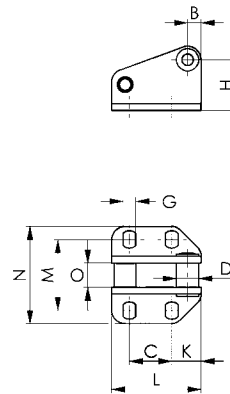
For hook type toggle clamp no. 6847NI.  
 Stainless steel, polished.



STAINLESS STEEL



Order no.	Size	Height	Length	Weight
		[mm]	[mm]	
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	22,7	6	31	26,0-30,0	40	6,9
95489	3	6	19	10	5,6	22,7	13	40	31,3-35,8	45	10,9
95505	5	12	29	15	11,2	49,1	13	55	56,5-64,0	86	13,8

Subject to technical alterations.



## No. 6847KNI

### Hook type toggle clamp

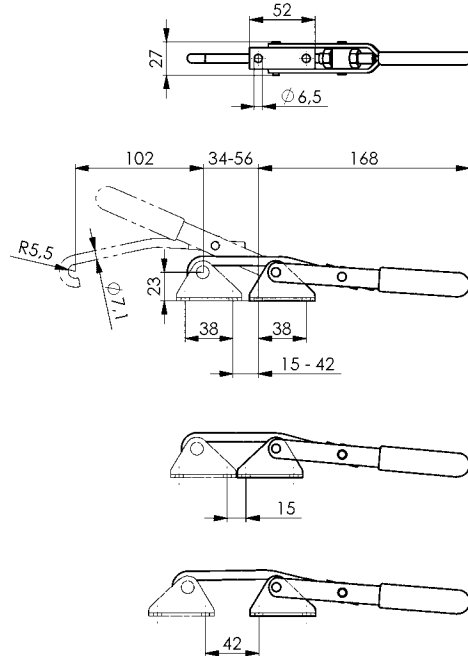
for cylindrical mounting surfaces.  
Stainless steel, polished. Rivets running in greased, continuous bearing bushes. Handle made of red, oil-resistant plastic. Use socket cap screws to ISO 4762 (DIN 912) for mounting.  
Also suitable for use in the food industry.



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

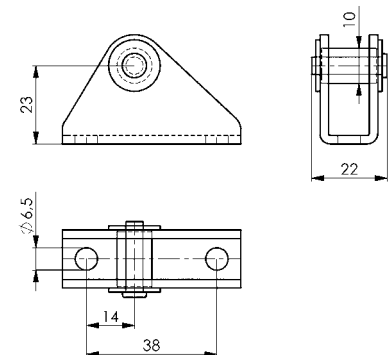
for cylindrical mounting surfaces.  
For hook-type toggle clamp no. 6847KNI. Stainless steel, polished. Continuous bush. Use socket cap screws to ISO 4762 (DIN 912) for mounting.



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

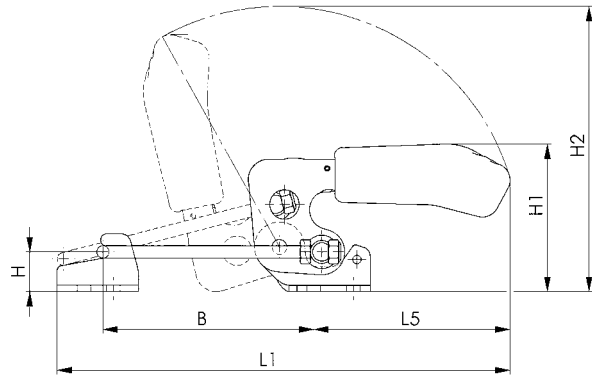
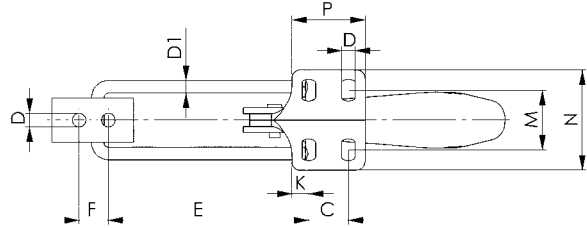
### Hook type toggle clamp horizontal

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	Weight
		[kN]	[g]
95521	2	1,6	120
95547	3	3,2	330
95562	4	7,0	810



### Dimensions:

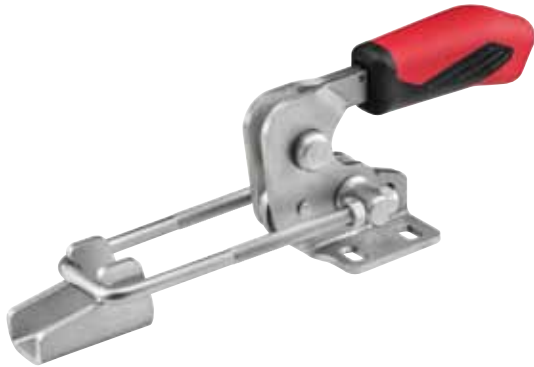
Order no.	Size	B min.	B max.	C	D	D1	E min.	E max.	F	H	H1	H2	K	L1 min.	L1 max.	L5	M	N	P
95521	2	42,0	76	13	5,2	4	38,0	72	11	12	47,0	99	6,4	125	159	69	19,5-23,5	38,0	26,0
95547	3	53,5	101	19	6,5	6	48,6	96	14	19	70,0	137	8,0	169	217	94	24,5-32,5	48,0	35,0
95562	4	72,0	127	32	8,5	8	65,0	120	19	26	94,5	168	9,5	214	270	111	35,0-46,0	64,5	53,5

## No. 6848HSNI

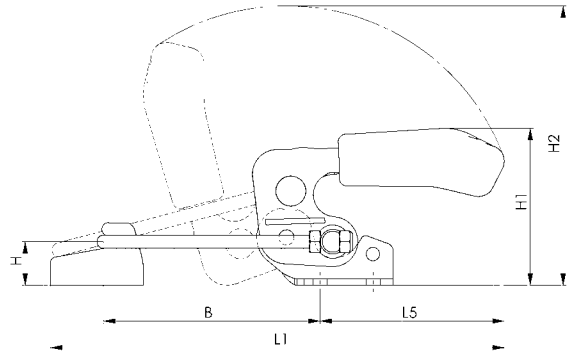
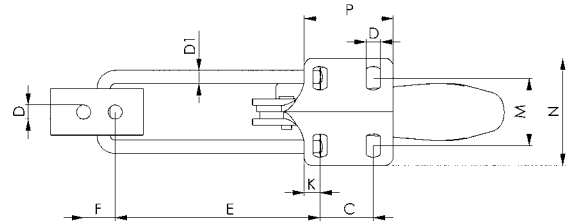
### Hook type toggle clamp horizontal with safety latch

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



### Dimensions:

Order no.	Size	B min.	B max.	C	D	D1	E min.	E max.	F	H	H1	H2	K	L1 min.	L1 max.	L5	M	N	P
93658	4	72	130	32	8,5	8	65	123	19	26	94	168	9,5	215	273	111	35-46	64,5	53,5

## No. 6848VNI

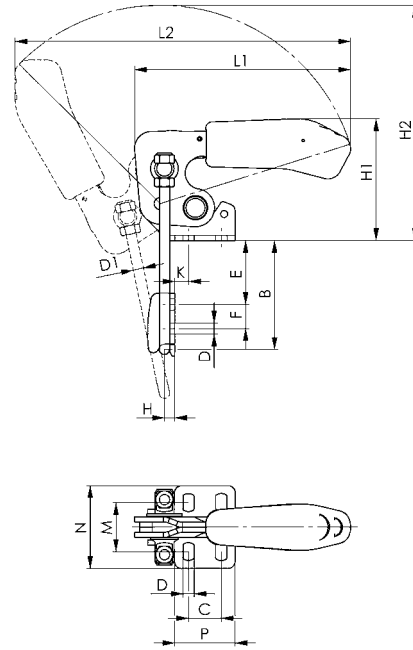
### Hook type toggle clamp vertical

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	Weight
		[kN]	[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	E min.	E max.	F	H	H1	H2	K	L1 min.	L1 max.	M	N	P
95588	2	24	47	13	5,2	4	5,0	28	11	4,5	47,0	99	6,8	91	158	19,5-23,5	38,0	26,0
95604	3	33	63	19	6,5	6	6,5	37	14	6,0	70,0	137	8,0	125	195	24,5-32,5	48,0	35,0
95620	4	43	81	32	8,5	8	9,0	47	19	8,0	94,5	171	9,6	155	244	35,0-46,0	64,5	53,5

## No. 6841NI

### Push-pull type toggle clamp

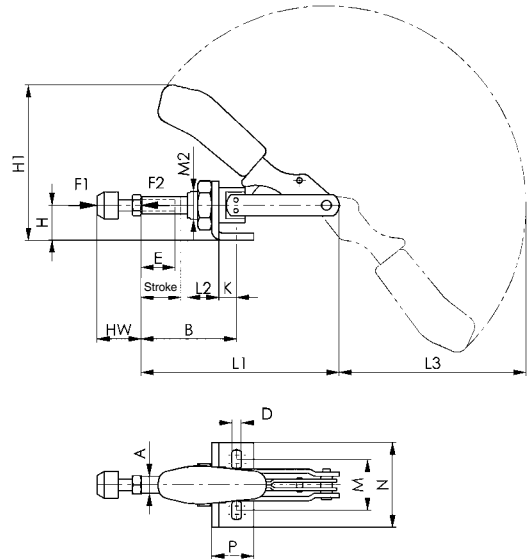
with small angle base. For push- and pull-clamping. (Equal operation of rod and lever). Stainless steel, polished. Long rod-guide with attaching thread and nut. Bush for size 3. Bearings pre-lubricated. Lever can be set to any angle relative to base. Ergonomic, oil-resistant handle with large grip surface and soft components.

Supplied complete with stainless clamping screw no. 6880NI.

Also suitable for use in the food industry.

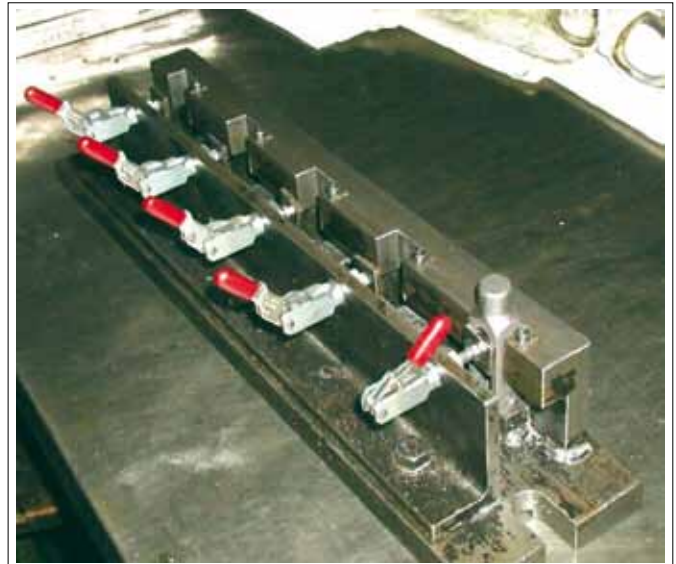


STAINLESS STEEL



### 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	49,3	16	12	20	6,5	66,5	10	54	16,0	M10x1,0	25	16
95299	3	12,0	37	69	6,5	30	25	110,0	32	22	35	13,0	140,0	22	132	29,5-42,5	M20x1,5	60	30



Subject to technical alterations.

## 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.**

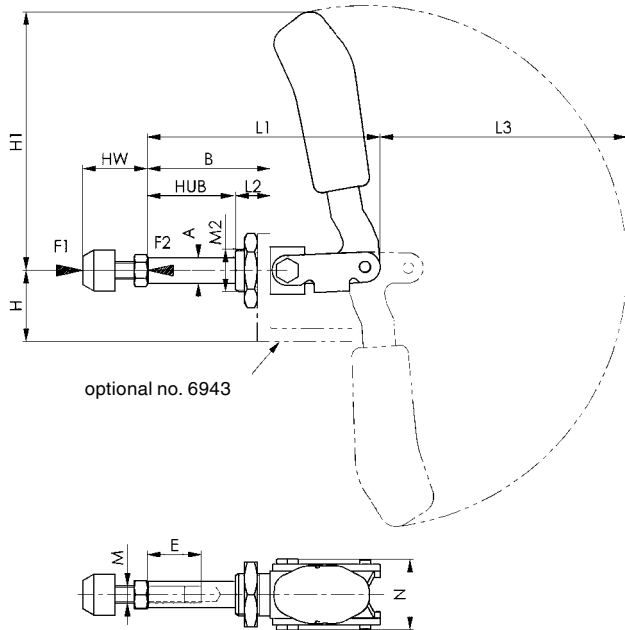
Also suitable for use in the food industry.



Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
95349	2	1,0	1,0	M6x25	130
95364	3	2,5	2,5	M8x35	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	36	15	24	73,0	21,5	17	27,0	68,5	13	69	M6	M16x1,5	30,5
95364	3	12	57	25	33	120,5	40,0	22	37,5	108,0	16	115	M8	M20x1,5	33,0
95380	5	16	92	45	37	149,0	67,0	30	50,0	175,0	24	139	M12	M24x1,5	49,0

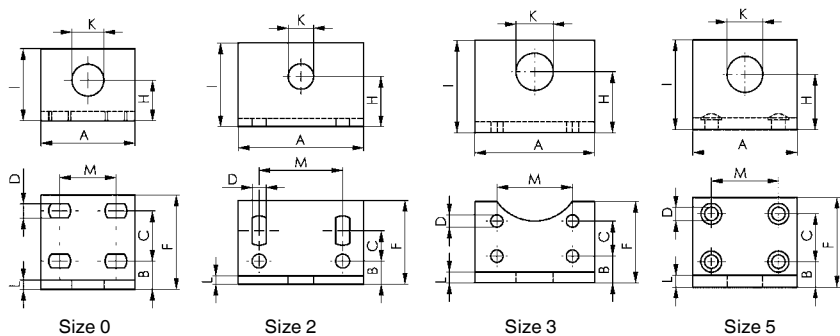
## No. 6843NI

### 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	4,5	30	13	23	10,2	3	15,5-20,5	35
95158	2	60	11,0	11-18	6,7	40	24	40	16,2	5	40	170
95174	3	65	14,5	19	6,7	44	33	50	20,2	6	41	260
95190	5	70	17,0	32	9,0	60	37	60	24,0	8	45	480

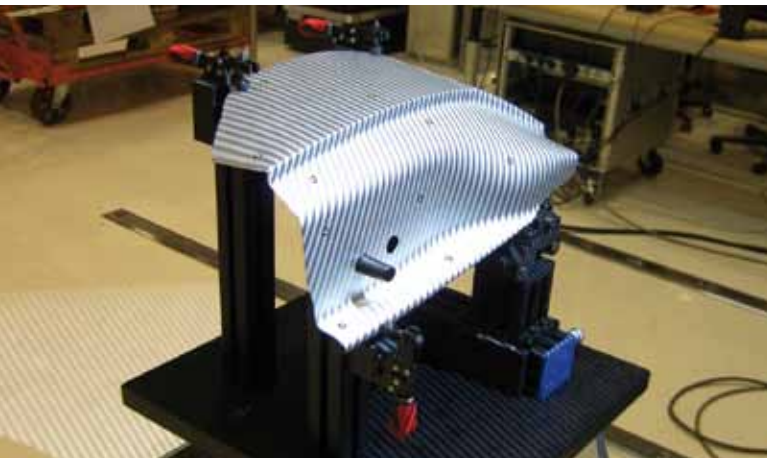


Subject to technical alterations.

## AMF TOGGLE CLAMPS FOR OPTICAL MEASUREMENT TECHNOLOGY

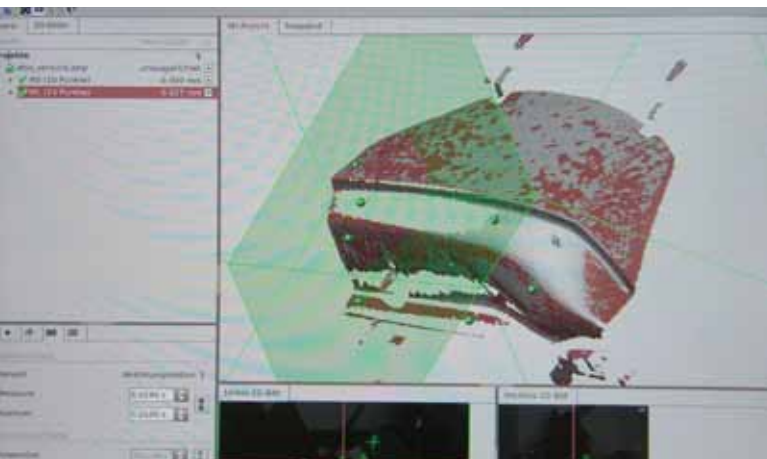
The black toggle clamps are especially suited for the optical measurement of workpieces.

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. All black toggle clamps are blackened using the Vario-Spektrox® process. This offers effective protection against corrosion and film rust formation. In addition, environmentally damaging emissions are not created with this process.



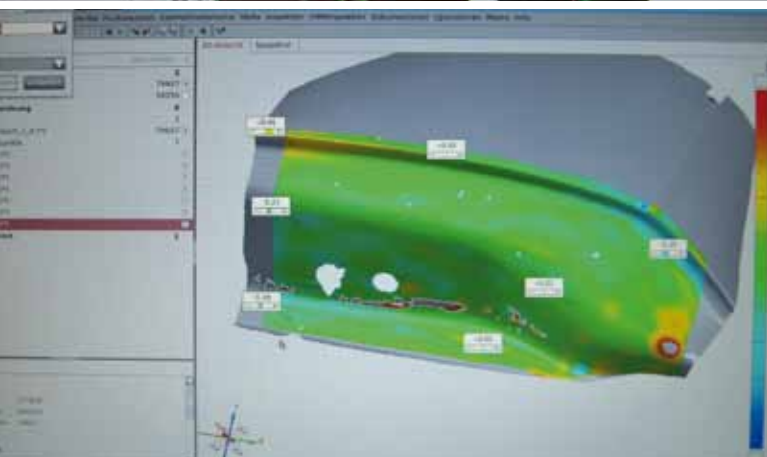
### MARKING AND MEASURING OF THE WORKPIECE

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 surface. 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.**

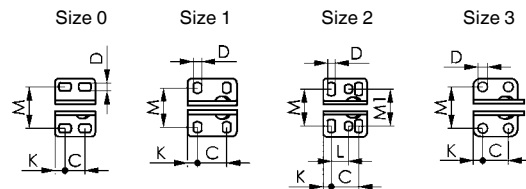
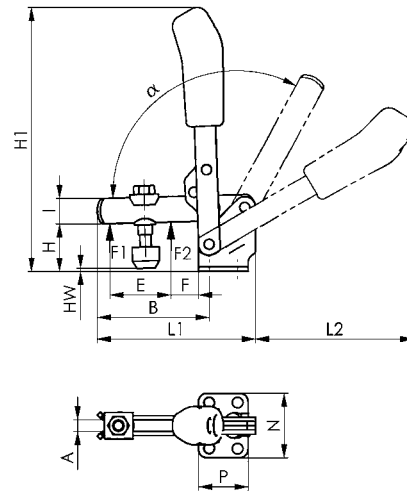


Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90167	0	0,5	0,7	M4x34,5	60
90175	1	0,6	1,1	M5x38,0	105
90183	2	0,8	1,2	M6x46,0	175
90191	3	1,2	2,5	M8x63,0	410

#### 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	$\alpha$	$\alpha^*$
90167	0	4	32	8,5-13,5	4,5	14	5,5	18	81,0	-4,0	6,5	8	5,5	-	49,0	50,0	23,0	-	32	22	95°	-
90175	1	5	39	16	4,5	18	6,0	19	97,5	-3,7	1,6	10	5,5	-	61,0	58,0	22,5-26	-	34	27	95°	-
90183	2	6	52	20	5,5	25	11,0	23	130,0	-4,4	4,4	12	6,0	12,5	78,0	80,0	23,0-31	27	43	32	105°	60°
90191	3	8	79	20	7,5	36	19,0	33	188,0	-2,8	7,6	18	7,5	-	111,5	111,5	32,5	-	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 surface. 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.

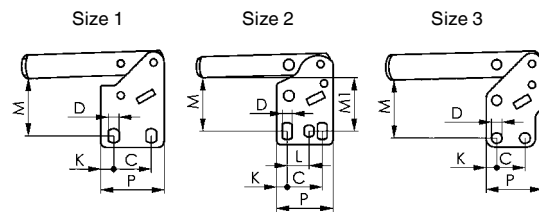
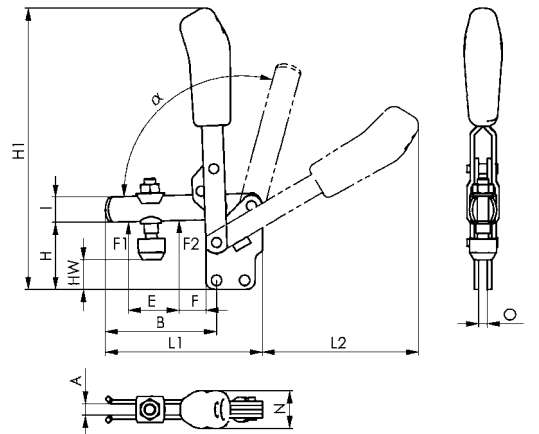
**Complete with tempered, matte-black clamping screw no. 6890B.**

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	M6x46	175
90498	3	1,2	2,5	M8x63	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	O	P	$\alpha$	$\alpha^*$
90415	1	5	39	16	4,5	18	6	29	110,5	6,8	12	10	5,5	-	61	58	23,5-25	-	19	5	27	95°	-
90472	2	6	52	20	5,5	25	11	38	144,5	10,5	19	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	201,0	11,4	22	18	7,5	-	112	113	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 surface. 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.**

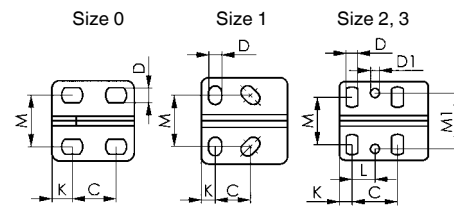
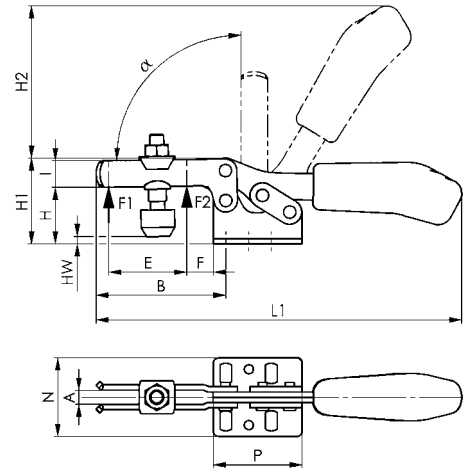
Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
90423	0	0,3	0,4	M4x32	35
90480	1	0,8	1,1	M5x38	105
90506	2	1,0	1,2	M6x45	185
90522	3	1,8	2,5	M8x58	320

#### 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	$\alpha$
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	45,5	50,0	90°

## No. 6832B

### Horizontal toggle clamp, black

#### With open clamping arm and vertical base.

Matte black surface. 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.

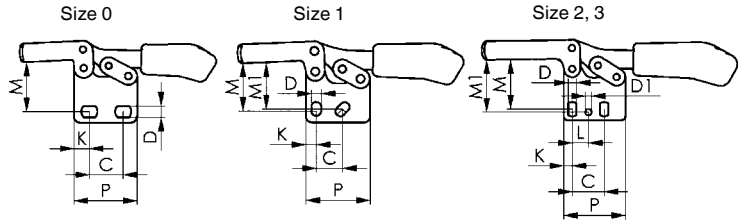
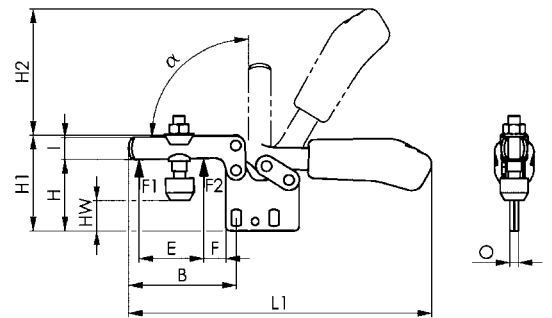
**Complete with tempered, matte-black clamping screw no. 6890B.**

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
482471	1	0,8	1,1	-	95
90530	2	1,0	1,2	M6x45	185
456400	2	1,0	1,2	-	170
90381	3	1,8	2,5	M8x58	320
482497	3	1,8	2,5	-	280

#### 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°
482471	1	5	41,7	13,0-15,5	5,5	-	18,5	8,0	31,5	43	49	-	-	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°
456400	2	6	64,0	26,0	5,6	5,6	32,0	16,0	40,0	61	68	-	-	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°
482497	3	8	73,0	25,7	6,5	5,1	39,0	12,0	49,0	65	86	-	-	15,0	7,00	13,0	206,0	37,5-42,5	42,0	27	6	50,0	90°

## No. 6835B-2

### Horizontal toggle clamp, black

With open clamping arm and vertical, open base.

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

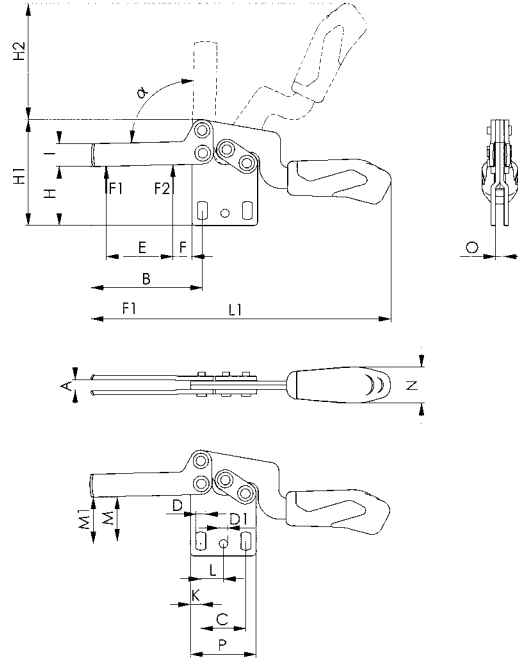
Ergonomic, oil-resistant black handle with large grip surface and soft components. Lock washer for the thrust bolt at the end of the clamping arm.

Order no.	Size	F1 [kN]	F2 [kN]	Weight [g]
90670	2	1,0	1,2	190

#### 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	I	K	L	L1	M	M1	N	O	P	α
90670	2	6,2	64	26,0	5,6	4,8	38,6	11,0	34	61	67	13,2	6	13,1	173,5	23,0-28,0	27	21	5	38	90°

## No. 6835B-3

### Horizontal toggle clamp, black

With open clamping arm and vertical, open base.

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

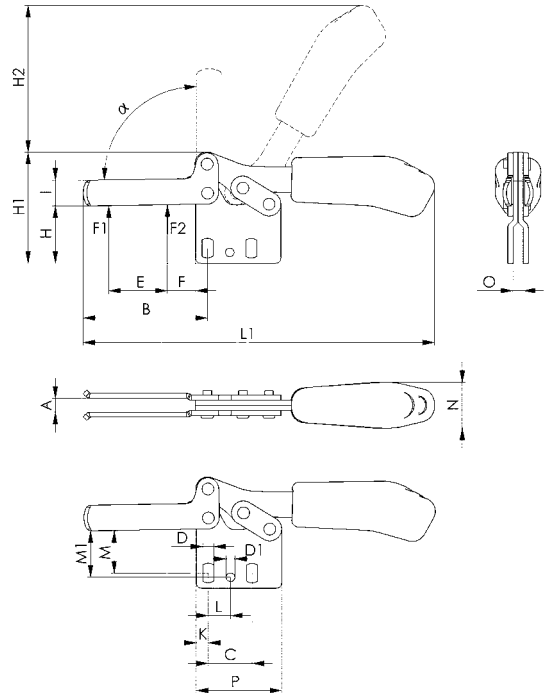
Ergonomic, oil-resistant black handle with large grip surface and soft components. Lock washer for the thrust bolt at the end of the clamping arm.

Order no.	Size	F1 [kN]	F2 [kN]	Weight [g]
90696	3	1,8	2,5	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	I	K	L	L1	M	M1	N	O	P	$\alpha$
90696	3	8,0	73	25,7	6,5	5,1	34,5	16,5	34	65	86	15,0	7	13,0	206,0	22,5-27,5	27	27	6	50	90°

## No. 6841B

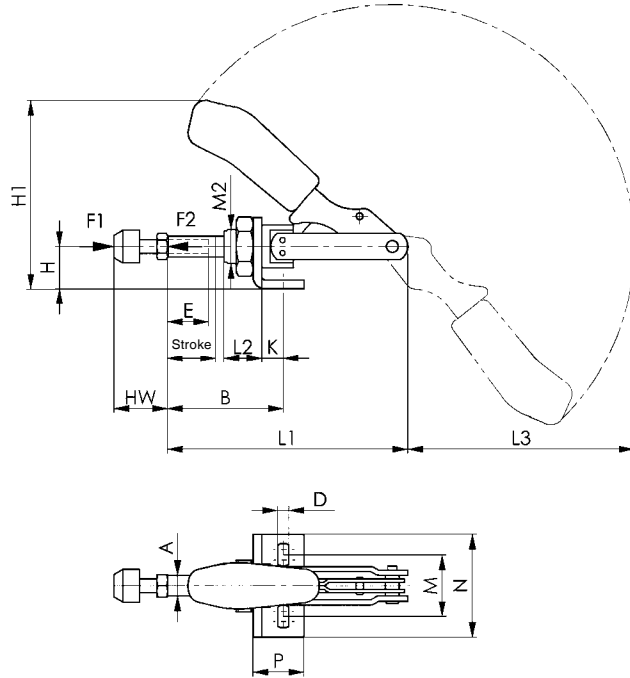
### Push-pull type toggle clamp, black

**With small angle base.** Push- and pull-clamping. (Equal operation of rod and lever). Long rod-guide with attaching thread and nut. Matte black surface. Stainless steel rivets. 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 surface. Stainless steel rivets, which run in hardened bushes. 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.

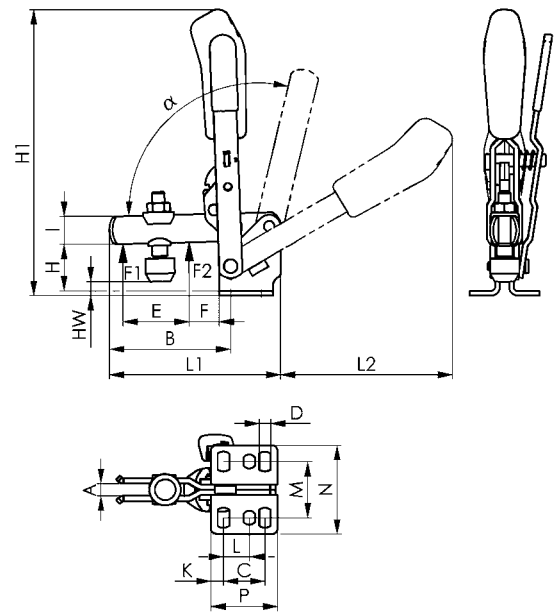
Complete with tempered, matte-black clamping screw no. 6890B.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
91348	2	1,0	1,2	M6x46	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	$\alpha$	$\alpha^*$
91348	2	6	52	20	5,5	26	11	23	139	-4,4	4,4	12	6	12,5	78	88	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 surface. Stainless steel rivets, which run in hardened bushes. 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.

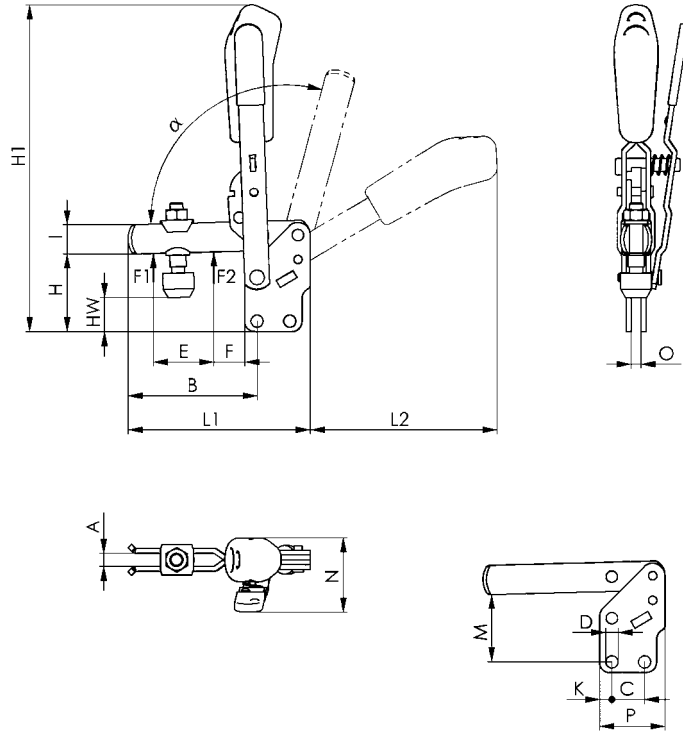
Complete with tempered, matte-black clamping screw no. 6890B.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
99689	3	1,4	2,5	M8x63	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	$\alpha$	$\alpha^*$
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 surface. 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.

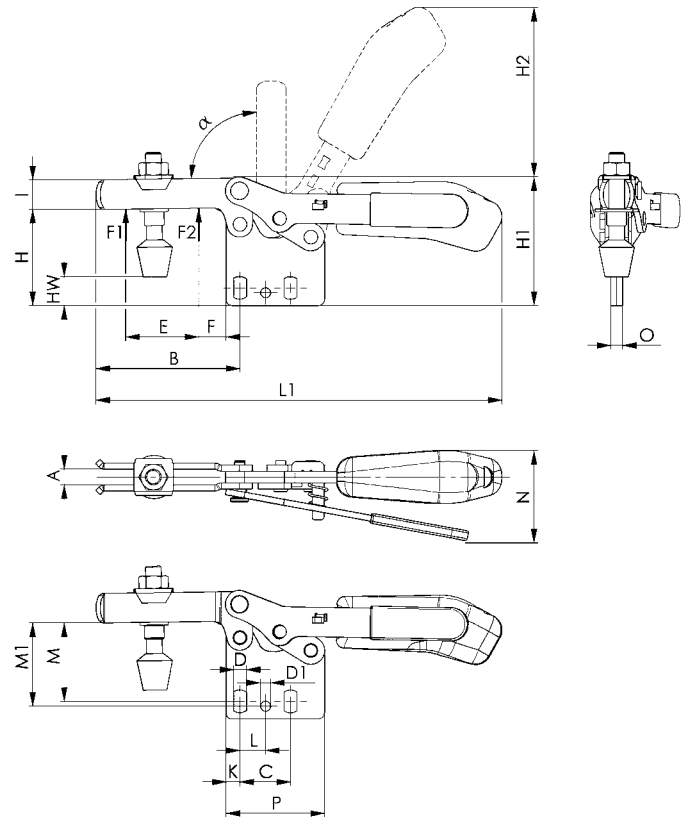
Complete with tempered, matte-black clamping screw no. 6890B.

Order no.	Size	F1 [kN]	F2 [kN]	Clamping screw	Weight [g]
99648	3	1,8	2,5	M8x63	390

#### 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	$\alpha$
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°

No. 6835BS-2

## Horizontal toggle clamp with safety latch, black

For open and clamped positions. With open clamping arm and vertical, open base.

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

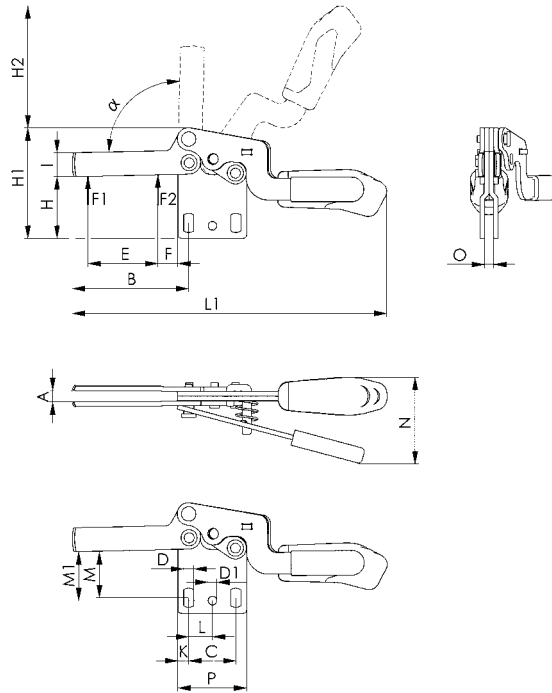
Ergonomic, oil-resistant black handle with large grip surface and soft components. Lock washer for the thrust bolt at the end of the clamping arm.

Order no.	Size	F1 [kN]	F2 [kN]	Weight [g]
90712	2	1,0	1,2	230

### 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	I	K	L	L1	M	M1	N	O	P	$\alpha$
90712	2	6,2	64	26,0	5,6	4,8	38,6	11,0	34	61	67	13,2	6	13,1	173,5	23,0-28,0	27	48,0	5	38	90°

## No. 6835BS-3

### Horizontal toggle clamp with safety latch, black

For open and clamped positions. With open clamping arm and vertical, open base.

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

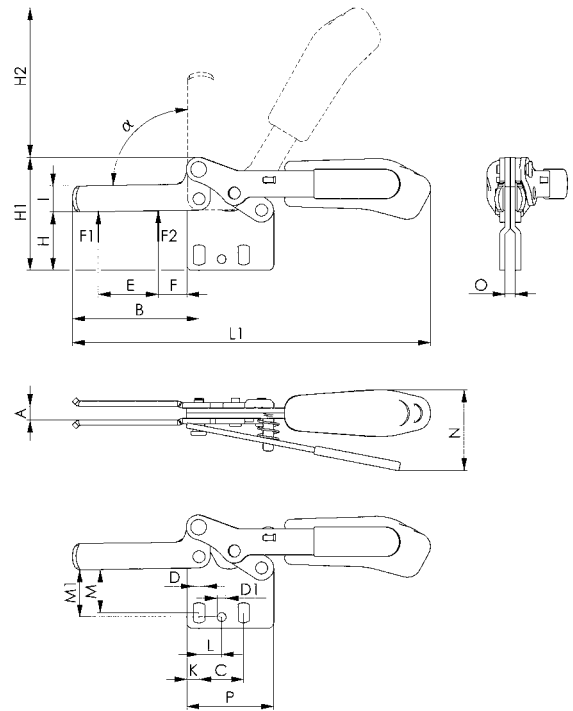
Ergonomic, oil-resistant black handle with large grip surface and soft components. Lock washer for the thrust bolt at the end of the clamping arm.

Order no.	Size	F1 [kN]	F2 [kN]	Weight [g]
90662	3	1,8	2,5	350

#### 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	I	K	L	L1	M	M1	N	O	P	$\alpha$
90662	3	8,0	73	25,7	6,5	5,1	34,5	16,5	34	65	86	15,0	7	13,0	206,0	22,5-27,5	27	46,5	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
- > 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

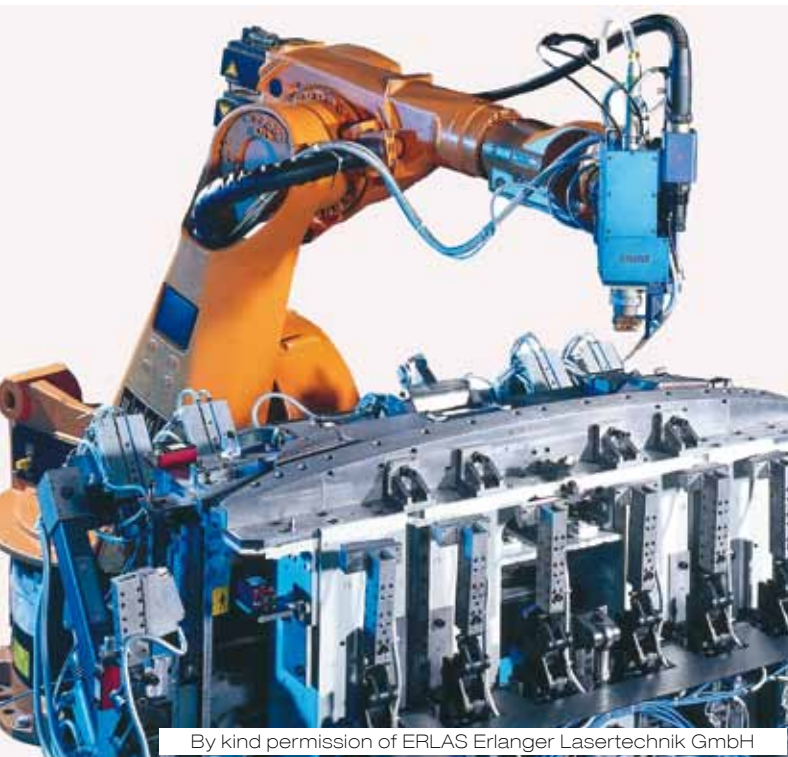
The pneumatic toggle clamp no. 6820 correspond in design and dimensions to the mechanical toggle clamp no. 6800. Therefore hand operated clamps can be replaced with pneumatic toggle clamps - if required.

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.

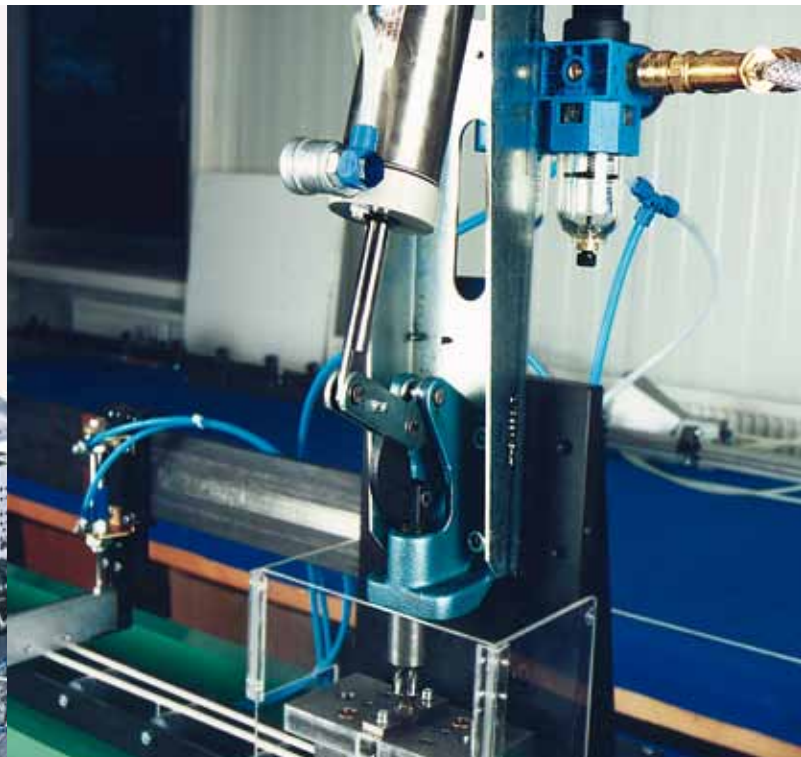
## > CLAMPING AND HOLDING FORCES

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 bezeichnet die Kolbenkraft bei 6 bar.



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 FE-STO pneumatic cylinder with flow-restriction drillings for reduced speed, anodised, assembled and ready to connect. **Sizes 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 <sup>3</sup> ]	Clamping screw	Weight [g]
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 dm<sup>3</sup> at 6 bar.

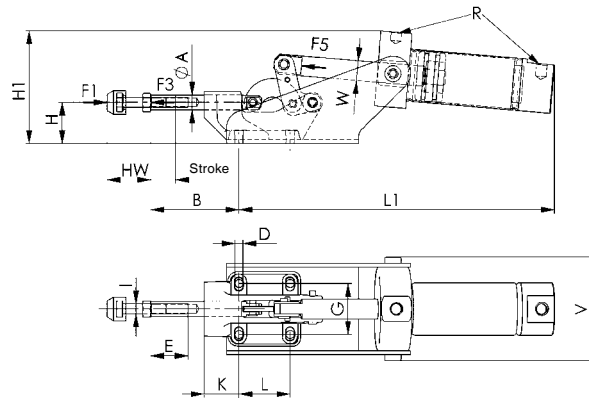
#### Note:

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

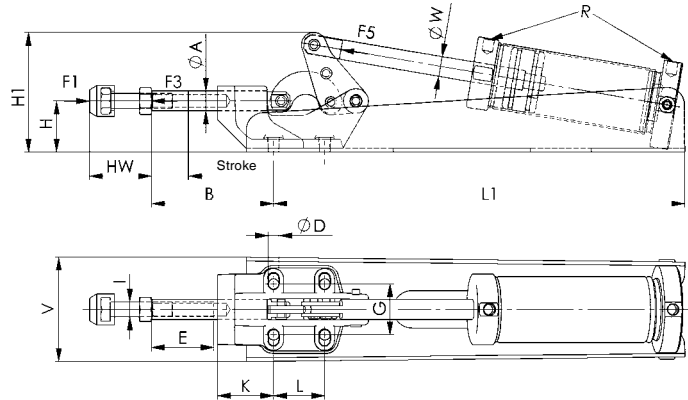
Please enquire separately for suitable fastening kits and proximity switches for end position monitoring.



Size 3



Size 5, 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
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

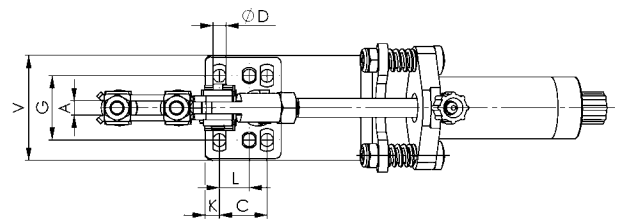
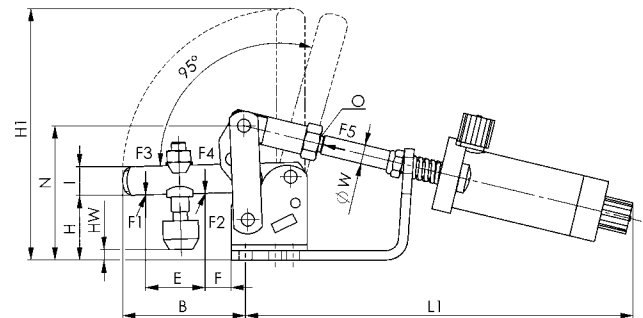
with horizontal cylinder attachment.

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 <sup>3</sup> ]	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 dm<sup>3</sup> at 6 bar.



### Dimensions:

Order no.	Size	A	B	C	dia. D	E	F	G	H	H1	HW min.	HW max.	I	K
91710	0	4	31	13,5	4,5	16	10	23	20	70	-1	6	8	5,0
91728	1	5	38	16,0	4,5	19	14	24	23	85	-2	5	10	6,0
91736	2	6	51	20,0	5,4	27	20	27	27	105	-1	8	12	6,0
91744	3	8	80	20,0	7,1	43	27	32	40	155	2	14	18	7,5

Order no.	Size	L	L1	N	O	V	dia. W	Piston dia.	Piston stroke	Dia. of compressed-air hoses Inside dia. x Outside dia.
91710	0	-	132	40	40	33	4	10	40	3x4,3
91728	1	-	145	45	45	34	6	12	40	4x6,2
91736	2	12,5	163	56	56	44	8	20	40	4x6,2
91744	3	-	206	76	76	50	10	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. 6820M

### Pneumatic toggle clamp

with horizontal cylinder attachment.

Fitted with pneumatic cylinder, double-acting, red anodised.

**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 bearing bushes. Bearings are pre-lubricated.

**Complete with tempered, galvanized clamping screw no. 6890.**

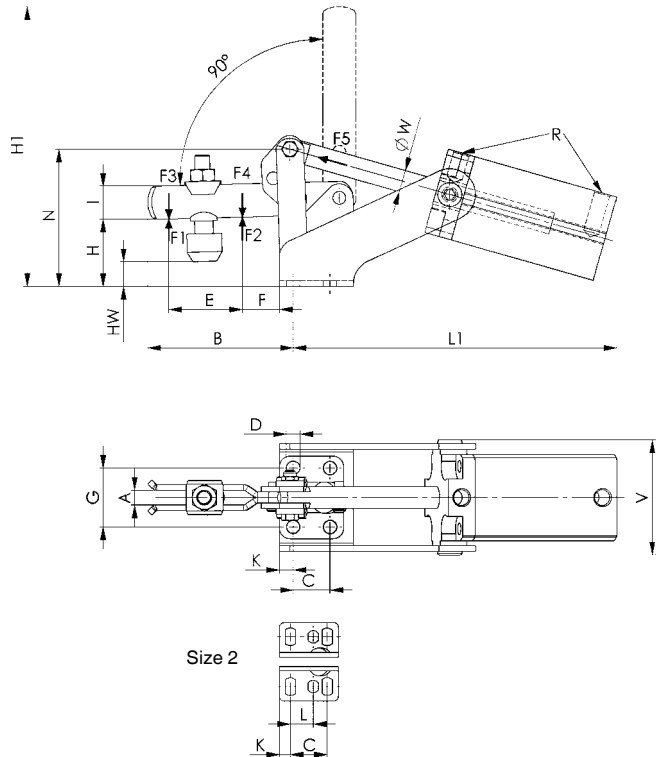
Order no.	Size	F1	F2	F3	F4	F5	Vn	Clamping screw	Weight
		[kN]	[kN]	[kN]	[kN]	[kN]			
90688	1	0,8	1,1	0,2	0,3	0,1	0,08	M5x30	340
90704	2	1,0	1,2	0,70	1,0	0,3	0,26	M6x35	595
90720	3	1,0	2,5	0,65	1,1	0,5	0,35	M8x45	1030
90795	4	2,0	3,0	1,50	2,2	0,75	0,80	M8x65	1720

F3+F4 = maximum clamping force at 6 bar.

Vn = Air consumption per double stroke in dm<sup>3</sup> at 6 bar.

### 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.



### 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.
90688	1	5	39,0	16	4,5	18	6,0	24	22	84	-1,5	4,5	10	6,0	-	136	45,5	M5	50,0	6	16
90704	2	6	51,5	20	5,5	25	11,0	27	26	102	-1,0	7,0	12	6,0	12,5	144	55,0	M5	54,5	10	25
90720	3	8	79,0	20	7,5	36	19,0	32	36	149	5,5	14,0	18	7,5	-	176	74,5	G1/8	62,5	12	32
90795	4	10	101,0	32	8,6	48	22,5	45	46	186	-3,0	25,5	20	13,0	-	201	90,0	G1/8	77,5	16	40

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.**

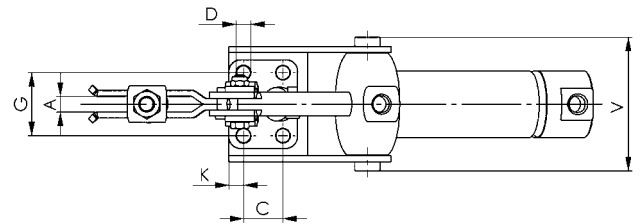
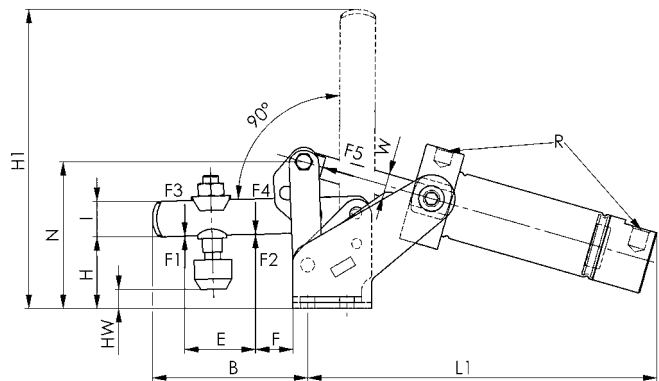
Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Vn [dm <sup>3</sup> ]	Clamping screw	Weight [g]
92015	1	0,8	1,1	0,20	0,3	0,10	0,08	M5x30	260
92023	2	1,0	1,2	0,70	1,0	0,30	0,26	M6x35	870
92031	3	1,4	2,5	0,65	1,1	0,50	0,35	M8x45	1160
92049	4	2,0	3,0	1,50	2,2	0,75	0,80	M8x65	1900

F3+F4 = maximum clamping force at 6 bar.

Vn = Air consumption per double stroke in dm<sup>3</sup> 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. 6821M

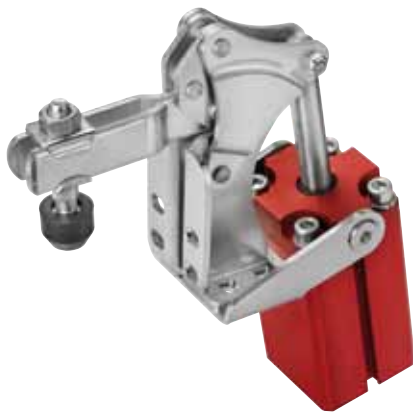
### Pneumatic toggle clamp

with vertical cylinder attachment.

Space-saving angled form.

Can be mounted vertically or horizontally. Fitted with pneumatic cylinder, double-acting, red anodised. **Magnetic piston for end-position monitoring.** With flow-restriction drillings for reduced 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	F2	F3	F4	F5	Vn	Clamping screw	Weight
		[kN]	[kN]	[kN]	[kN]	[kN]			
93781	2	1	1,2	0,70	1,0	0,30	0,26	M6x35	625
93872	3	1	2,5	0,65	1,1	0,50	0,35	M8x45	1050
93898	4	2	3,0	1,50	2,2	0,75	0,80	M8x65	1900

F3+F4 = maximum clamping force at 6 bar.

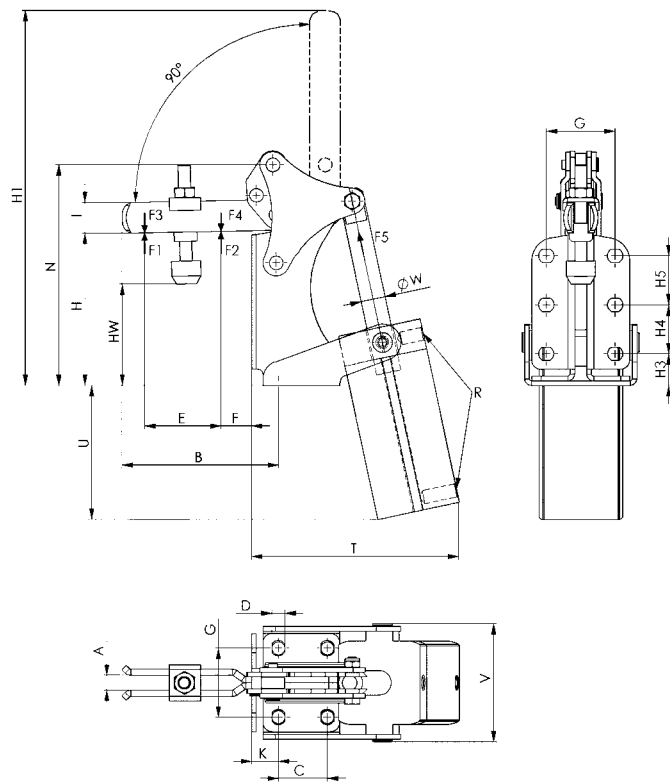
Vn = Air consumption per double stroke in dm<sup>3</sup> at 6 bar.

### 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.



### 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.
93781	2	6	56	12,5	5,5	25,0	6,5	27	65,0	143	15,8	12,5	12,5	38,4	46	12	15,3	94	M5	72,5	68	55	10	25
93872	3	8	81	16,0	6,5	37,0	12,5	25	68,7	184	18,0	16,0	-	38,0	48	18	16,5	107	G1/8	86,0	94	62	12	32
93898	4	10	102	32,0	8,5	48,3	19,3	45	100,0	244	20,5	32,0	32,0	50,0	79	20	17,5	144	G1/8	112,5	102	77	16	40

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.**

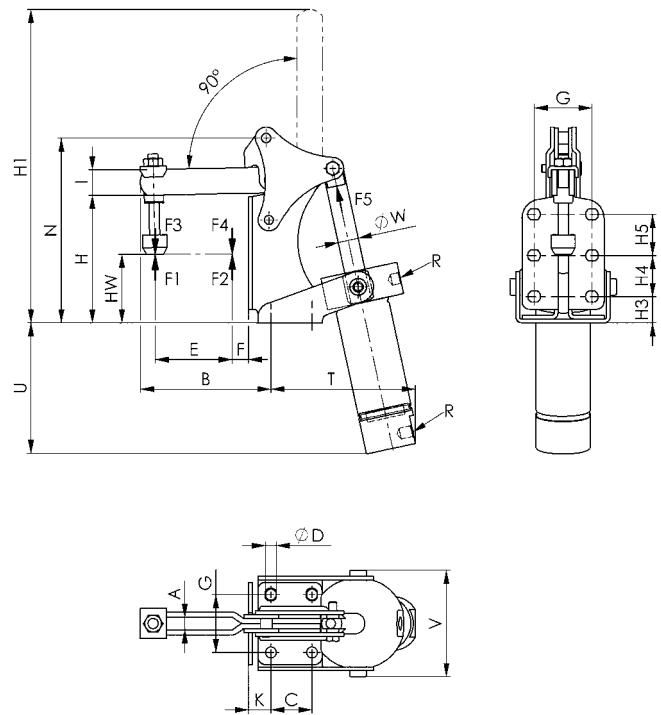
Order no.	Size	F1 [kN]	F2 [kN]	F3 [kN]	F4 [kN]	F5 [kN]	Vn [dm <sup>3</sup> ]	Clamping screw	Weight [g]
91801	2	1,0	1,2	0,7	1,0	0,30	0,26	M6x35	800
91819	3	1,4	2,5	0,6	1,1	0,50	0,35	M8x45	1100
91827	4	2,0	3,0	1,5	2,2	0,75	0,80	M8x65	1600

F3+F4 = maximum clamping force at 6 bar.

Vn = Air consumption per double stroke in dm<sup>3</sup> 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 [dm <sup>3</sup> ]	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 dm<sup>3</sup> at 6 bar.

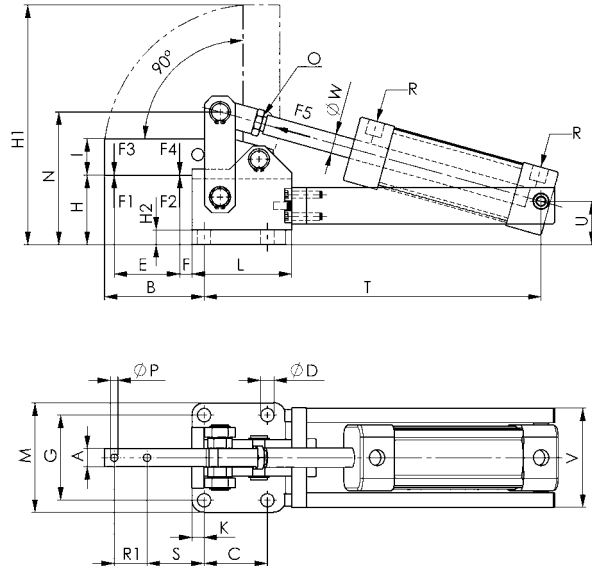
### Application:

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
92205	4	15	82	52	11	54	10,0	70	57	197	12	30	10,0	82
92213	6	20	90	55	11	60	10,0	83	61	220	12	40	11,0	90
92221	8	30	128	80	13	95	9,5	111	86	310	12	60	12,5	120

Order no.	Size	M	N	O	dia. P	R	R1	S	T	U	V	dia. W	Piston dia.	Piston stroke
92205	4	90	109	M12x1,25	6,2	G1/4	27	47,0	277	35,5	82	16	40	80
92213	6	105	129	M16x1,50	8,2	G1/4	26	53,0	315	40,0	101	16	50	100
92221	8	135	176	M16x1,50	13,2	G1/4	40	69,5	383	54,0	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 <sup>3</sup> ]	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.

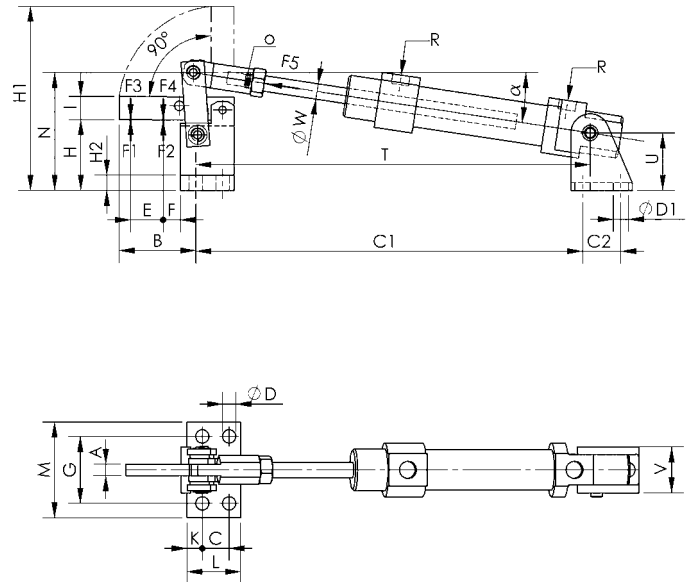
Vn = Air consumption per double stroke in dm<sup>3</sup> at 6 bar.

### 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
92106	0	5	34	11	175	15	4,5	5,5	14	7	27	26	76	6	10
92122	1	6	41	14	200	20	7,0	6,5	17	9	35	37	96	8	12

Order no.	Size	K	L	M	N	O	R	T	U	V	dia. W	α	Piston dia.	Piston stroke
92106	0	5,5	22	35	47,5	M6	M5	177	27	18	6	6,6°	16	40
92122	1	8,0	28	50	62,0	M8	G1/8	204	30	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 <sup>3</sup> ]	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.

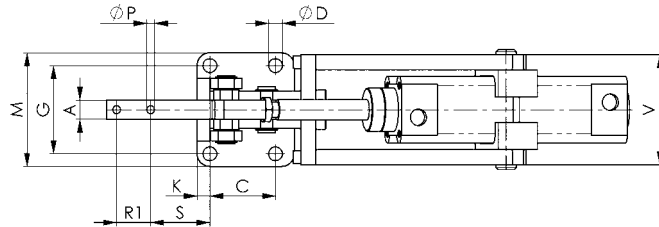
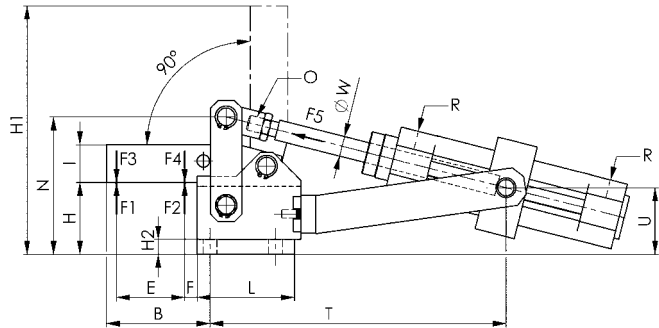
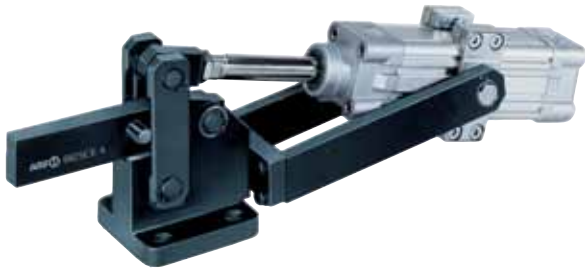
Vn = Air consumption per double stroke in dm<sup>3</sup> at 6 bar.

### 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	C	dia. D	E	F	G	H	H1	H2	I	K	L	M
92239	4	15	82	52	11	54	10,0	70	57	197	12	30	10,0	77,0	90
92247	6	20	90	55	11	60	10,0	83	61	218	12	40	11,0	85,0	105
92254	8	30	128	80	13	95	9,5	111	86	314	12	60	12,5	112,5	135

Order no.	Size	N	O	dia. P	R	R1	S	T	U	V	dia. W	Piston dia.	Piston stroke
92239	4	109	M12x1,25	6,2	G1/4	27	47,0	235	53	87,5	16	40	80
92247	6	129	M16x1,50	8,2	G1/4	26	53,0	280	55	101,0	20	50	100
92254	8	176	M16x1,50	13,2	G3/8	40	69,5	320	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 [dm <sup>3</sup> ]	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.

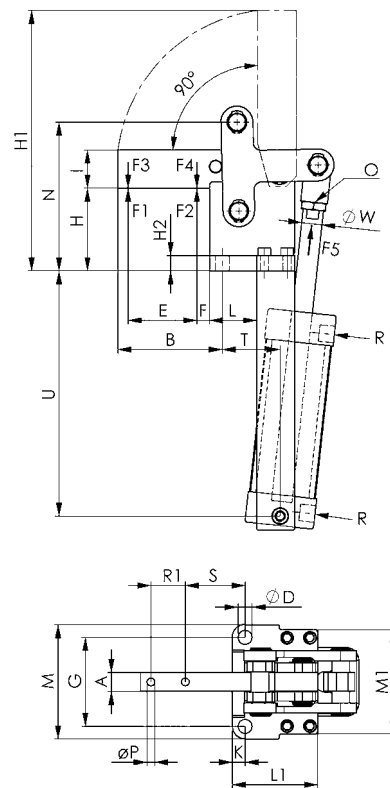
Vn = Air consumption per double stroke in dm<sup>3</sup> at 6 bar.

### 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
92262	4	15	82	11	54	10,0	70	65	205	12	30	10	37	67,0
92270	6	20	91	13	60	10,0	83	69	226	15	40	12	32	73,5
92288	8	30	125	17	95	9,5	115	94	318	20	60	15	49	109,0

Order no.	Size	M	M1	N	O	dia. P	R	R1	S	T	U	dia. W	Piston dia.	Piston stroke
92262	4	90	82	117	M12x1,25	6,2	G1/4	27	47	46	193	16	40	74
92270	6	107	100	137	M16x1,50	8,2	G1/4	26	54	48	221	16	50	87
92288	8	145	124	184	M16x1,50	13,2	G1/4	40	67	77	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 [dm <sup>3</sup> ]	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.

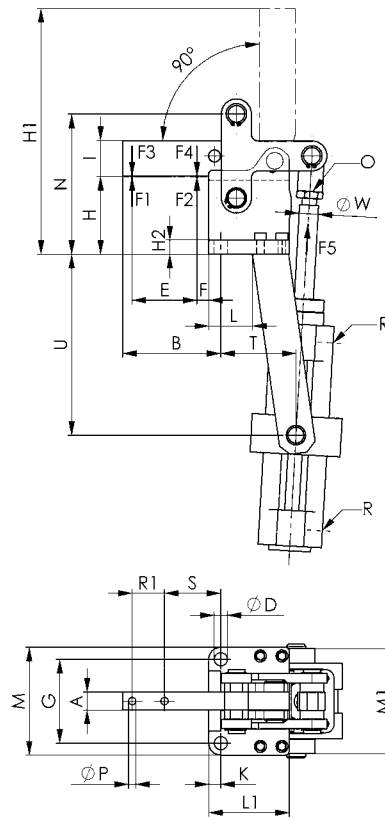
Vn = Air consumption per double stroke in dm<sup>3</sup> at 6 bar.

### 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
92296	4	15	82	11	54	10,0	70	65	205	12	30	10	36	67,0
92304	6	20	91	13	60	10,0	83	69	226	15	40	12	32	73,5
92312	8	30	125	17	95	9,5	115	94	318	20	60	15	49	109,0

Order no.	Size	M	M1	N	O	dia. P	R	R1	S	T	U	dia. W	Piston dia.	Piston stroke
92296	4	90	87,5	117	M12x1,25	6,2	G1/4	27	47	63	151	16	40	80
92304	6	107	100,0	137	M16x1,50	8,2	G1/4	26	54	64	186	20	50	100
92312	8	145	115,0	184	M16x1,50	13,2	G3/8	40	67	101	192	20	63	125

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



## No. 6815C

### Toggle clamp element

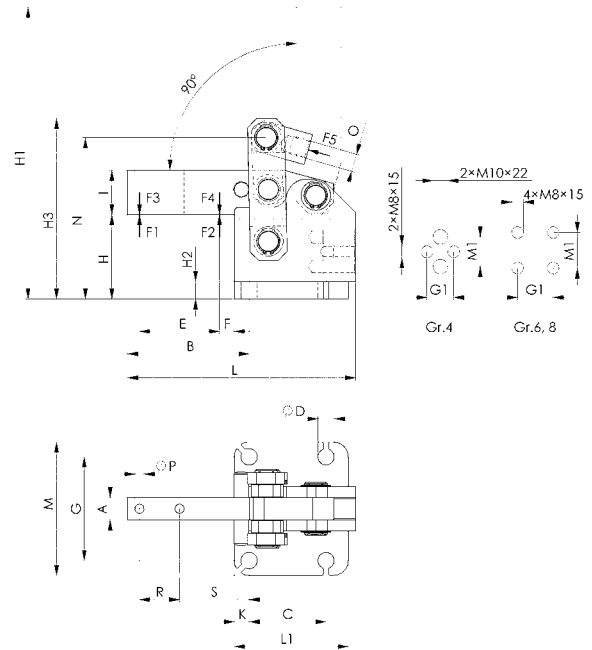
matching with heavy pneumatic toggle clamp, with horizontal cylinder attachment no. 6825C/CE. Tempering steel, burnished. The axle bolts are tempered, ground and locked with circlips.

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	0,8	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	M1	N	O	dia. P	R	S	Piston dia.	Piston stroke
92148	0	5	33,5	11	4,5	14	8,5	27	-	25,5	75,5	6	53,5	10	5,5	50	22,0	35	-	47,5	M6	-	-	-	16	40
92155	1	6	41,0	14	7,0	17	9,0	35	-	37,0	96,0	8	68,0	12	8,0	61	28,0	50	-	61,5	M8	-	-	-	20	40
92171	4	15	82,0	52	11,0	54	10,0	70	18	57,0	197,0	12	122,0	30	10,0	154	77,0	90	20	109,0	M12x1,25	6,2	27	47,0	40	80
92189	6	20	90,0	55	11,0	60	10,0	83	24	61,0	215,0	12	147,0	40	11,0	169	85,0	105	24	129,0	M16x1,50	8,2	26	53,0	50	100
92197	8	30	127,5	80	13,0	95	9,5	111	34	86,0	306,0	12	196,0	60	12,5	235	112,5	136	40	176,0	M16x1,50	13,0	40	69,5	63	120

## No. 6816CE

### Toggle clamp element

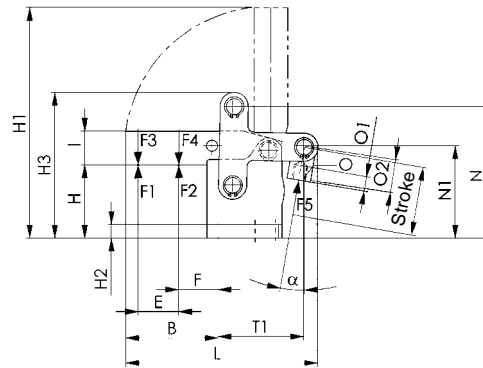
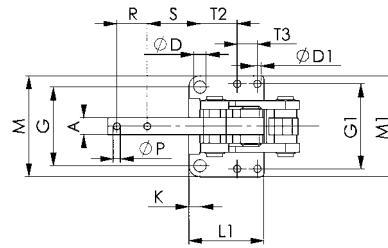
matching with heavy pneumatic toggle clamp, with vertical cylinder attachment no. 6826CE. Tempering steel, burnished. The axle bolts are tempered, ground and locked with circlips.

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
92320	4	15	82	11	6,5	54	20,0	70	75,5	65	206	12	130	30	10	172	67,0
92338	6	20	91	13	6,5	60	22,0	83	87,5	69	226	15	155	40	12	200	73,5
92346	8	30	125	13	6,5	95	24,5	115	102,5	94	318	20	204	60	15	265	109,0

Order no.	Size	M	M1	N	N1	O	O1	O2	dia. P	R	S	T1	T2	T3	Stroke	α
92320	4	90	90	117	82	M12x1,25	14	29,5	6,2	27	47	76	33,0	18	74	9,0°
92338	6	107	100	137	92	M16x1,50	18	37,0	8,2	26	54	88	29,5	24	87	7,5°
92346	8	145	123	184	124	M16x1,50	17	32,0	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):

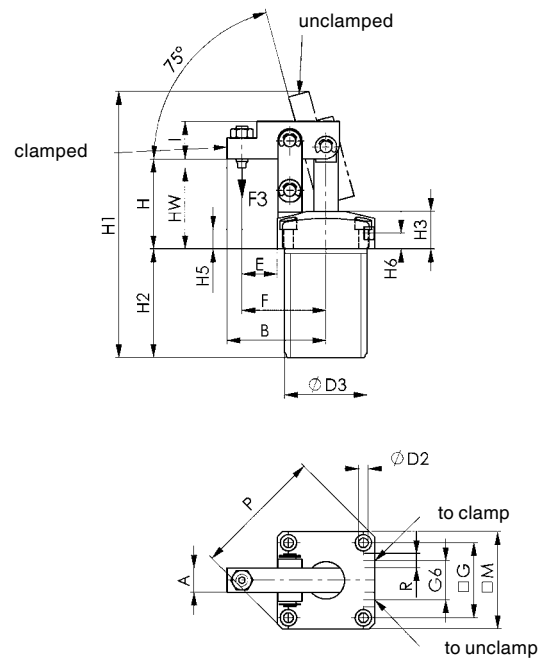
- Grooved nut no. 6829N
- Threaded flange no. 6829GF
- Clamping screw no. 6880



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:

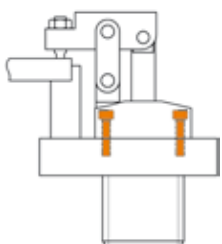
The lever mechanism can be dismantled so that it can be individually modified. The mounting holes in the flange are similar to those in threaded flange No. 6829GF. Operate only with lubricated air.



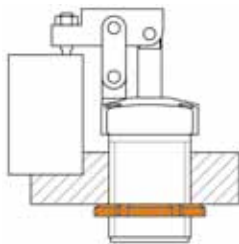
### Dimensions:

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

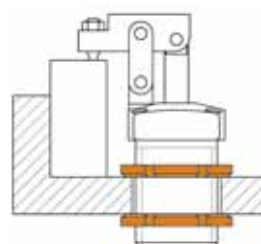
### Examples of mountings:



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.

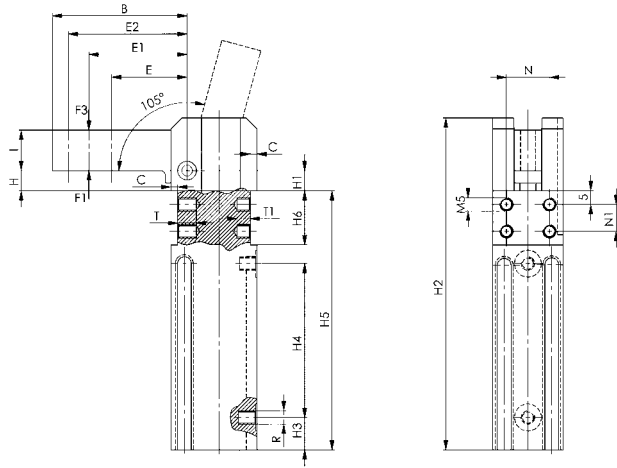
High-strength aluminium, red anodised. **Magnetic piston for end-position monitoring.** Clamping arm made of steel, burnished, with three holes.



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

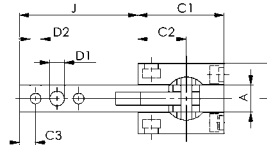
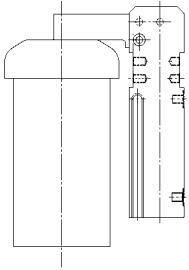
#### Note:

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.



#### Potential use:

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



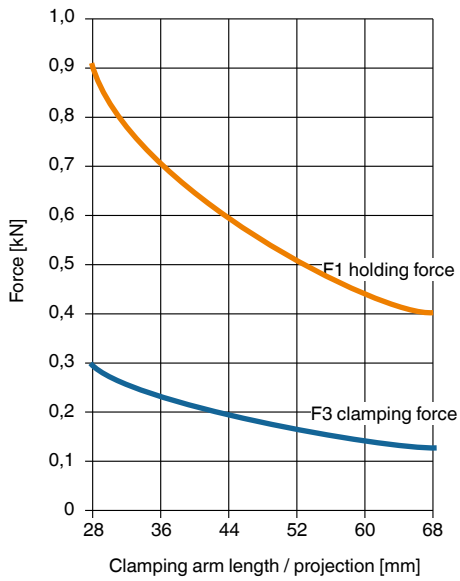
#### Dimensions:

Order no.	Size	A	B	C	C1	C2	C3	D1	D2 H7	E	E1	E2	H	H1	H2
91843	16	10	50	2,5	32	18	6	5,5	4	28	36,0	44	7,5	7,5	123
91868	20	12	60	3,0	39	22	8	6,5	5	32	42,0	52	15,0	14,0	158
91884	25	16	75	4,0	45	25	10	8,5	6	40	52,5	65	19,0	17,0	182

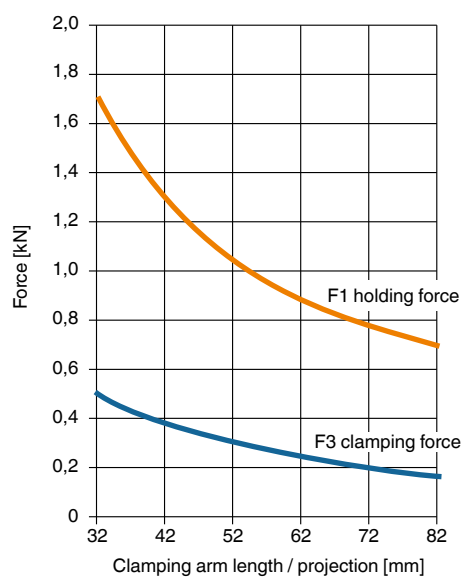
Order no.	Size	H3	H4	H5	H6 +0.1	I	J	L	N ±0.1	N1 ±0.1	R	T	T1	Piston dia.
91843	16	12,0	57	96	20	15	44	26	16	10	M5	7	5	16
91868	20	15,0	69	120	25	18	53	30	20	15	G1/8	8	6	20
91884	25	17,5	80	136	28	22	68	35	25	18	G1/8	8	6	25

## Force diagrams

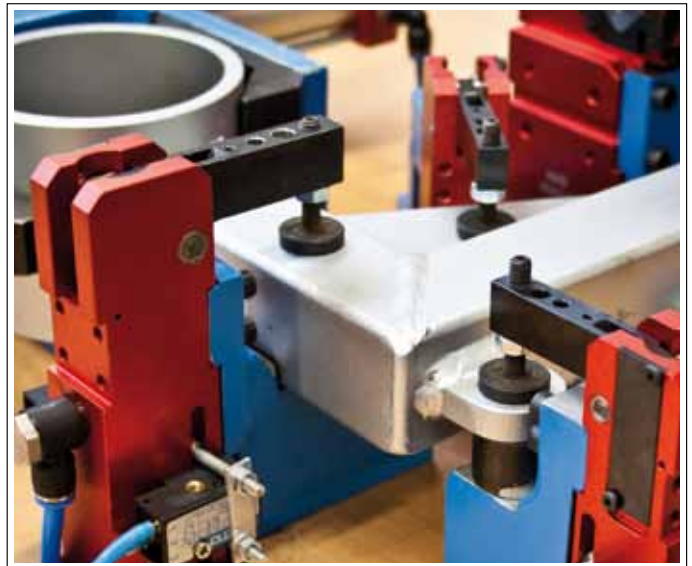
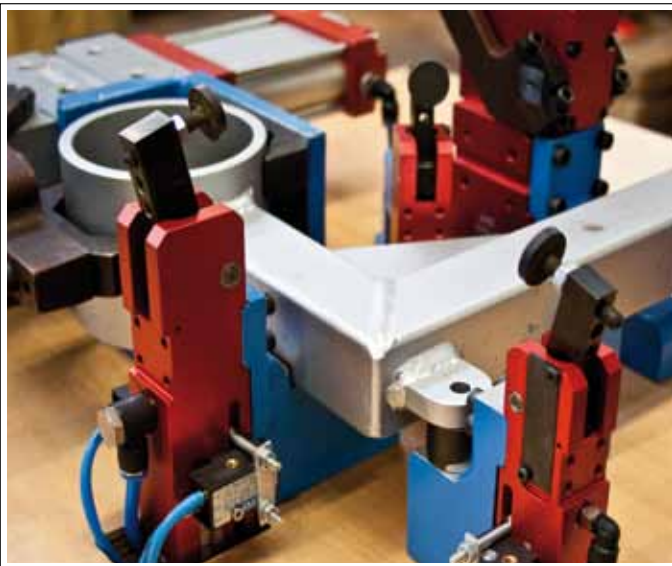
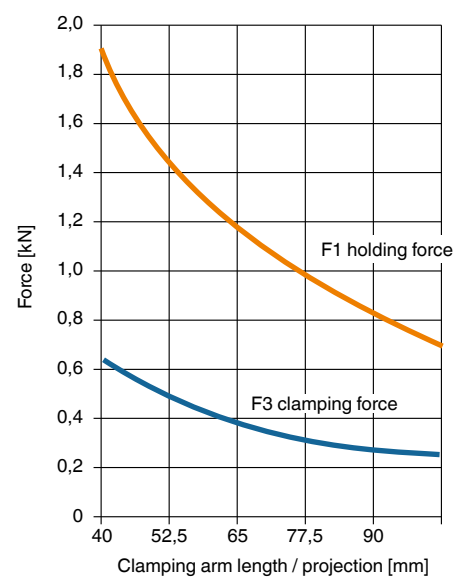
No. 6828M-16



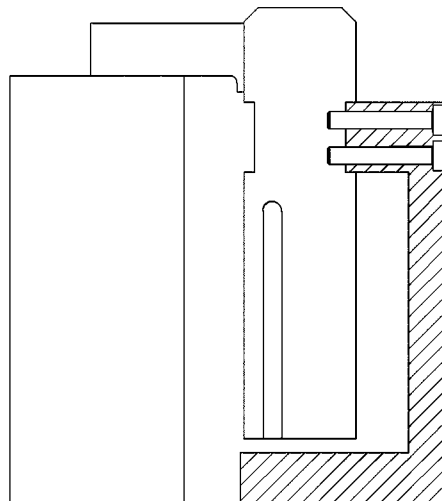
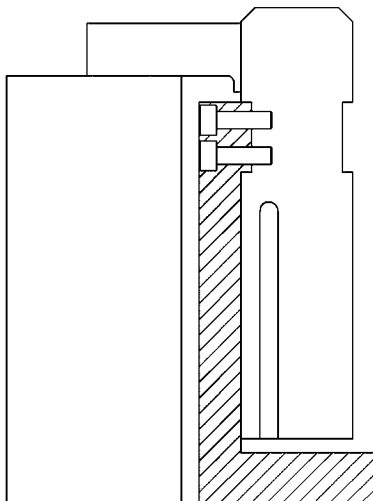
No. 6828M-20



No. 6828M-25



## Examples of mountings:



## No. 6828V

### Heavy pneumatic toggle clamp

Double-acting.

Max. operating pressure 6 bar.

With continuously adjustable opening angle in the range 10° 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.**

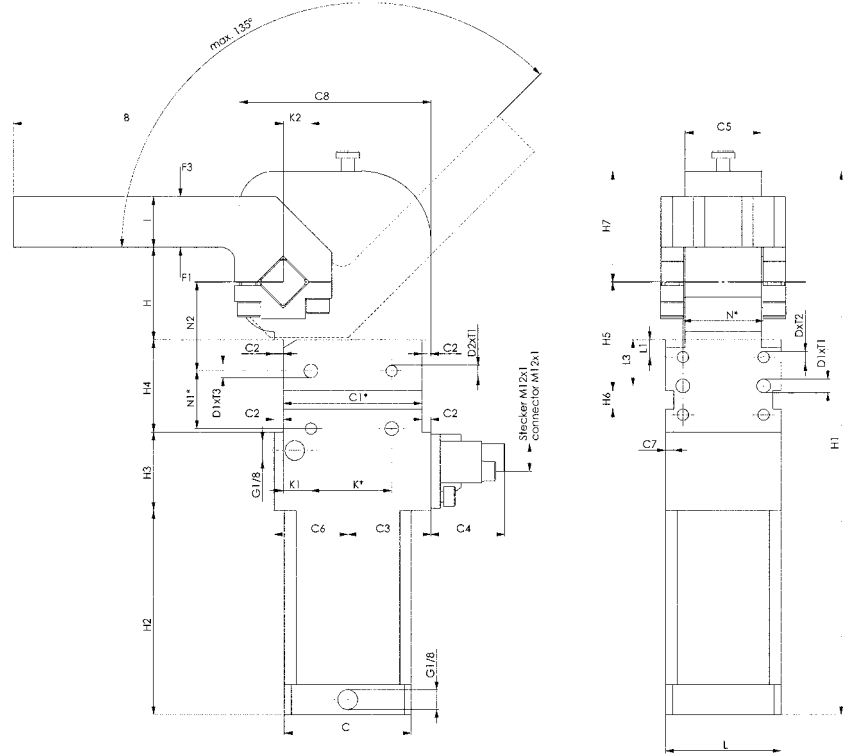
Accessories (not included in scope of delivery):

- Clamping arm no. 6828SP centre, right and left
- Without connecting plug M12

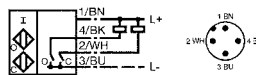
Order no.	Size	Clamping moment at 5 bar	Holding moment max.	Weight
		[Nm]	[Nm]	[Kg]
91835	40	120	380	1,4

### 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 intergration into automated manufacturing processes.



Connection sketch:



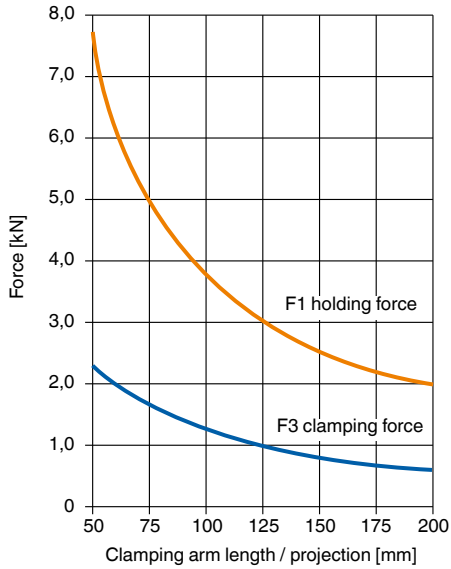
### Dimensions:

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
91835	40	117	58	60	4	36	33	33	32	3,5	83	M6	ø 6	M6	40	235	86	34	40	47

Order no.	Size	H6 N9	H7	H8	I ±0,1	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	8	50	35	22	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

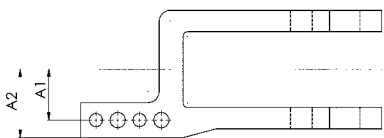
made of steel, for heavy pneumatic toggle clamp no. 6828V, size 40.



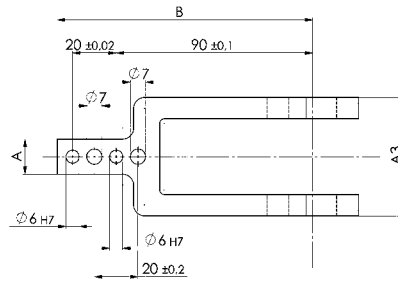
Order no.	Size	Article no.	A -0.1	A1 ±0.1	A2	A3	B	Weight [g]
92080	40	6828SPL-40	16	23	31	54	117	520
91900	40	6828SPM-40	16	23	31	54	117	520
92007	40	6828SPR-40	16	23	31	54	117	520

### Clamp arm variants:

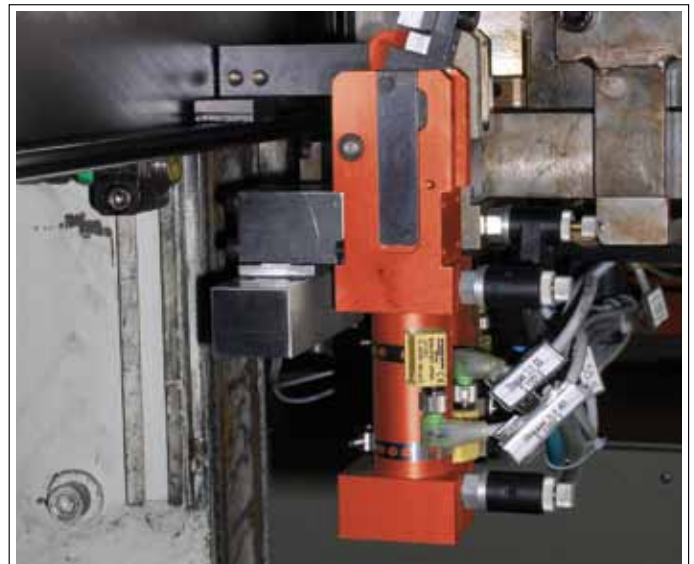
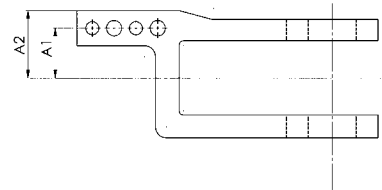
SPL (Clamp arm left)



SPM (Clamp arm in the middle)



SPR (Clamp arm right)



Subject to technical alterations.

## 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.**

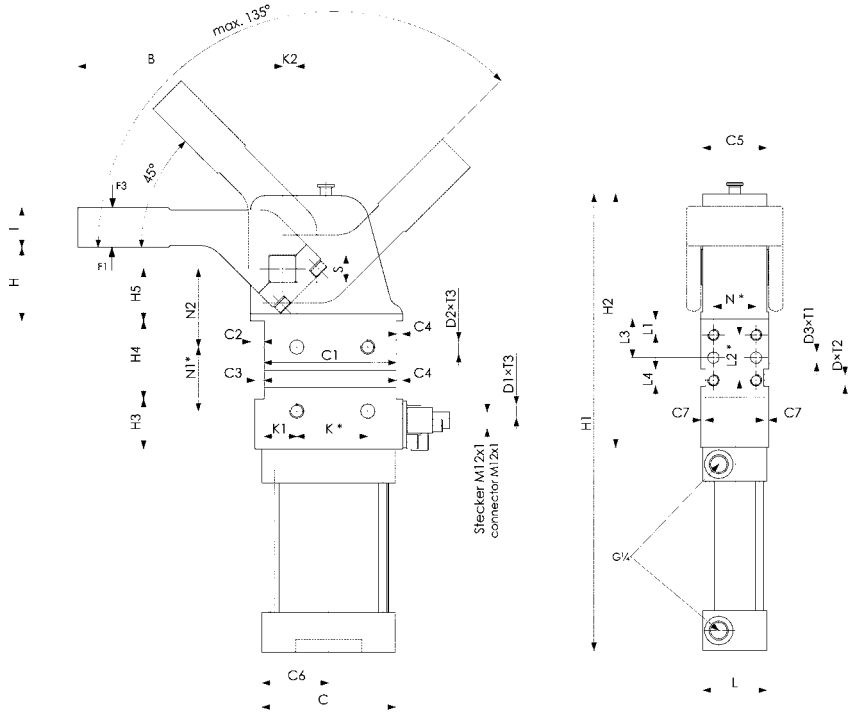
Accessories (not included in pack):

- Clamp arm no. 6828SP in the middle, right and left
- without M12 connector plug

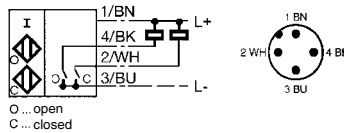
Order no.	Size	Clamping moment at 5 bar	Holding moment max.	Weight [Kg]
		[Nm]	[Nm]	
91850	50	160	800	3,5
91876	63	380	1500	4,6
91892	80	800	2500	15,6

### 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
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
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
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

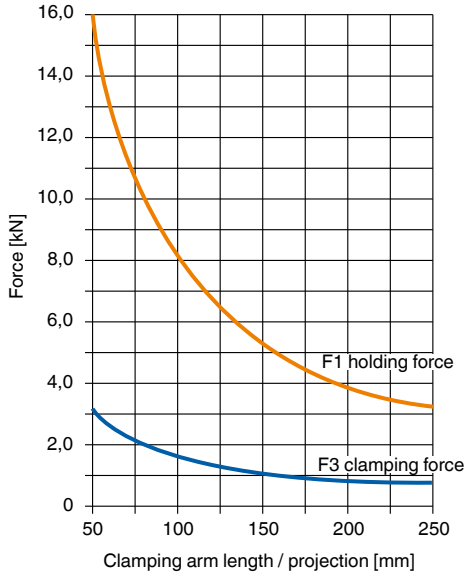
Order no.	Size	K*	K1 ±0.1	K2 ±0.05	L	L1 ±0,1	L2*	L3 ±0.05	L4 N9	N*	N1*	N2 ±0.05	S	T1	T2	T3	Piston dia.
91850	50	50	23	10	48	11	32	27	12	30	45	55	19	10	11	12	50
91876	63	50	23	10	54	11	32	27	12	30	45	55	22	10	11	13	63
91892	80	70	36	15	76	15	50	40	12	50	75	65	30	12	15	13	80

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

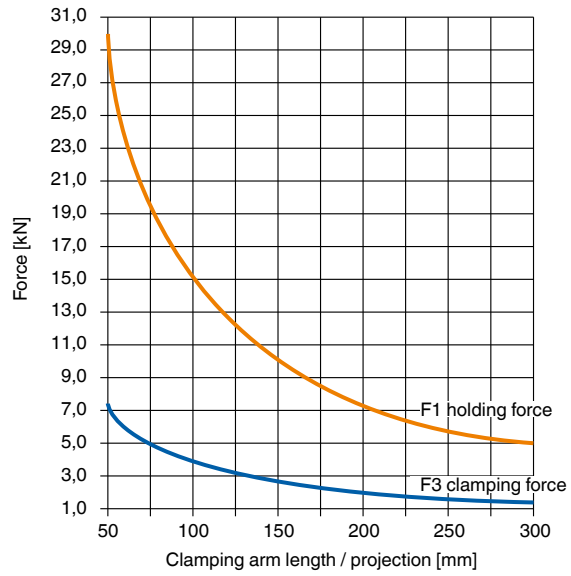
Subject to technical alterations.



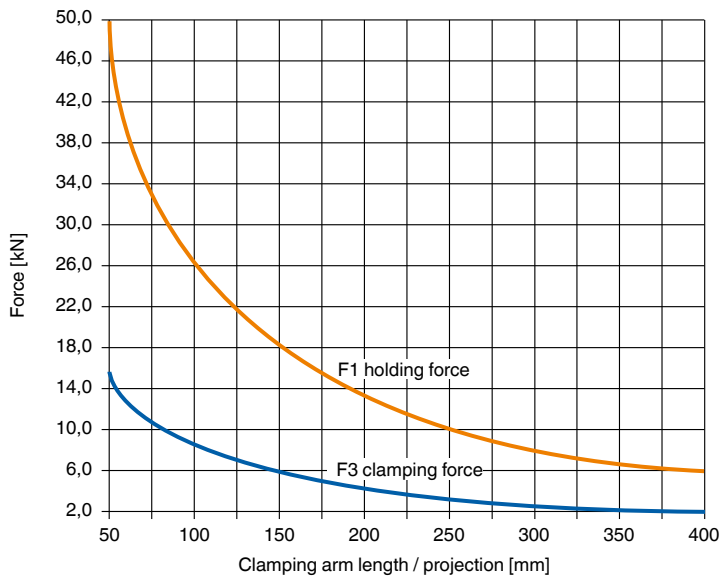
## Force diagrams no. 6828V-50



## No. 6828V-63



## No. 6828V-80



## No. 6828SP

### Clamp arm

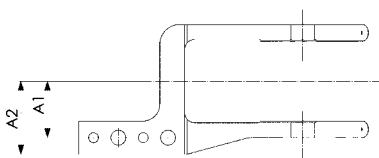
made of steel, for heavy pneumatic toggle clamp no. 6828V, size 50, 63, 80.



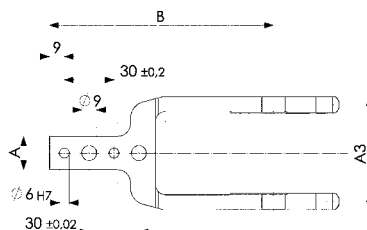
Order no.	Size	Article no.	A -0.1	A1 ±0.1	A2	A3	B	Weight [g]
92072	50	6828SPL-50	20	34,0	44	68	144	855
91959	50	6828SPM-50	20	34,0	44	68	144	855
92056	50	6828SPR-50	20	34,0	44	68	144	855
92130	63	6828SPL-63	20	37,0	47	78	144	1150
92098	63	6828SPM-63	20	37,0	47	78	144	1150
92114	63	6828SPR-63	20	37,0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

### Clamp arm variants:

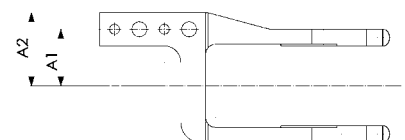
SPL (Clamp arm left)



SPM (Clamp arm in the middle)



SPR (Clamp arm right)



Subject to technical alterations.

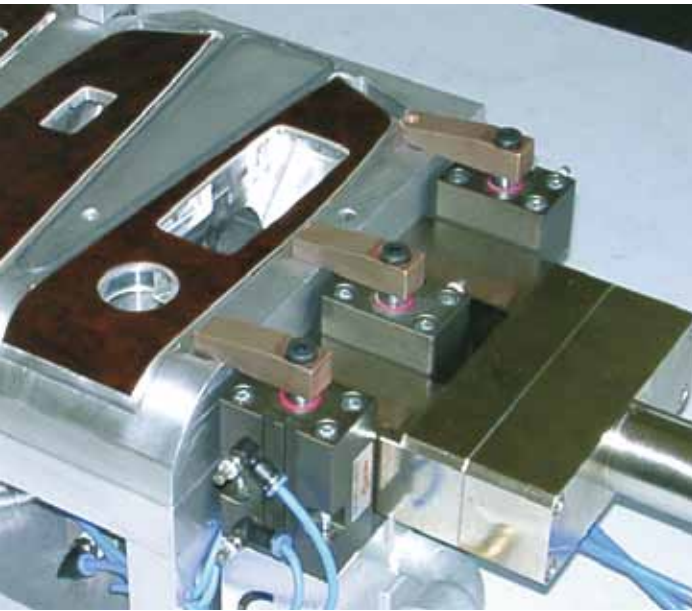
# PNEUMATIC SWING CLAMPS

## > 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

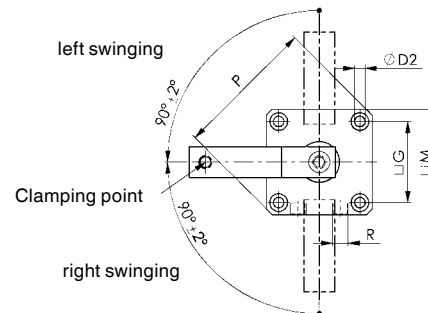
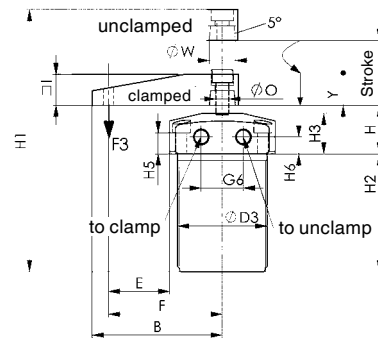


Order no.	Size	right swinging	left swinging	F3 [kN]	Connecting thread for clamping screws	Weight [g]
93484	25	●	-	0,17	M 6	500
93559	25	-	●	0,17	M 6	500
93492	32	●	-	0,27	M 8	650
93567	32	-	●	0,27	M 8	650
93500	40	●	-	0,45	M 8	800
93575	40	-	●	0,45	M 8	800
93518	50	●	-	0,70	M12	920
93583	50	-	●	0,70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

F3 = at 6 bar max. air pressure

#### Note:

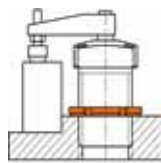
The mounting holes in the flange are the same as in threaded flange no. 6828GF. Operate only with lubricated air.



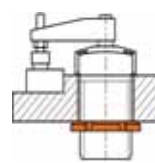
#### Examples of mountings:



with 4 cap screws from above



with grooved nut from above



with grooved nut from below

#### 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

## 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

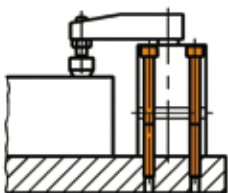
F3 = at 6 bar max. air pressure

#### Note:

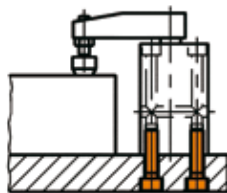
Suitable proximity switches for end-position monitoring are available using order no. 392241. Design: PUR cable 0.3 m with M8 plug connection and rotating knurled nuts. Switching function: NOC. Output: PNP. Operate only with lubricated air.



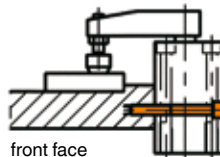
### Examples of mountings:



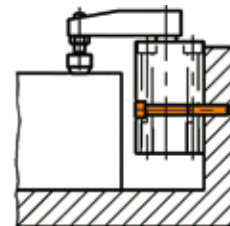
from above



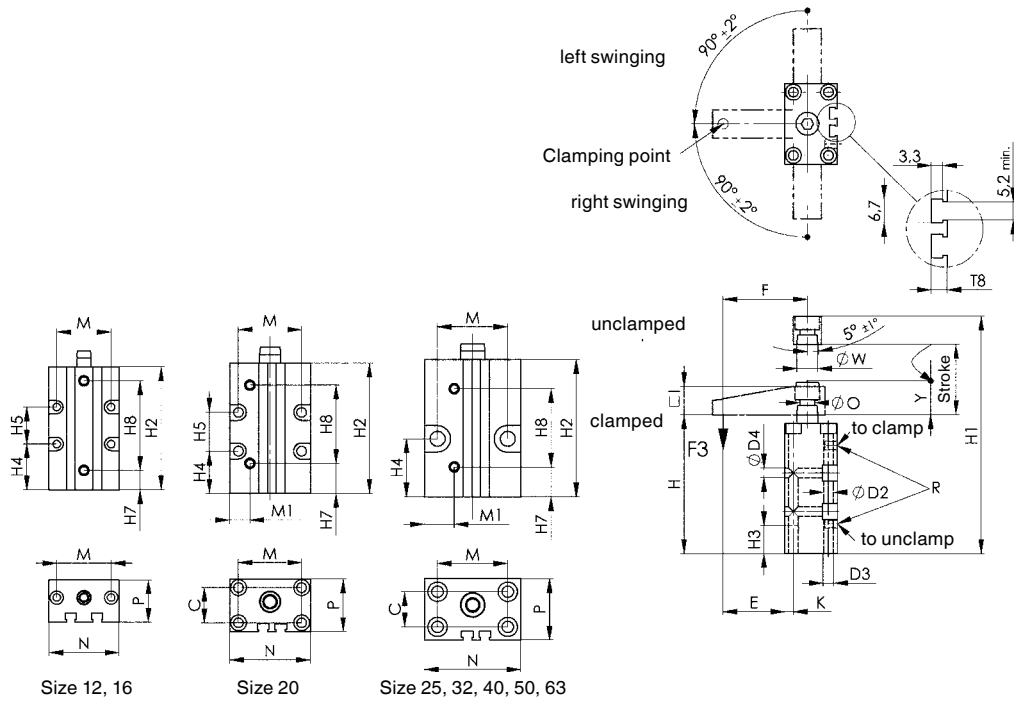
from below



front face



rear face



## Dimensions:

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

Order no.	Size	I	K	M	M1	N	dia. O	P	R	T8	dia. W	Piston dia.	Y Clamping stroke*	Stroke
91496	12	12	10,0	31	20,0	40	M 5	24	M 5	5,0	8	12	10	17
91397	12	12	10,0	31	20,0	40	M 5	24	M 5	5,0	8	12	10	17
91504	16	12	13,0	31	21,0	42	M 5	28	M 5	4,5	8	16	10	17
91405	16	12	13,0	31	21,0	42	M 5	28	M 5	4,5	8	16	10	17
91512	20	16	5,0	36	11,5	46	M 8	30	M 5	4,5	12	20	14	27
91413	20	16	5,0	36	11,5	46	M 8	30	M 5	4,5	12	20	14	27
91520	25	16	7,5	40	17,0	55	M 8	35	M 5	5,0	14	25	14	27
91421	25	16	7,5	40	17,0	55	M 8	35	M 5	5,0	14	25	14	27
91538	32	19	7,5	45	18,0	60	M 8	45	G1/8	6,5	16	32	14	30
91439	32	19	7,5	45	18,0	60	M 8	45	G1/8	6,5	16	32	14	30
91546	40	19	9,0	52	22,0	70	M 8	55	G1/8	8,0	16	40	15	30
91447	40	19	9,0	52	22,0	70	M 8	55	G1/8	8,0	16	40	15	30
91553	50	25	9,5	66	25,0	85	M10	65	G1/8	6,5	20	50	15	31
91454	50	25	9,5	66	25,0	85	M10	65	G1/8	6,5	20	50	15	31
91561	63	25	10,0	80	30,0	100	M10	80	G1/8	8,5	20	63	15	31
91462	63	25	10,0	80	30,0	100	M10	80	G1/8	8,5	20	63	15	31

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

## 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

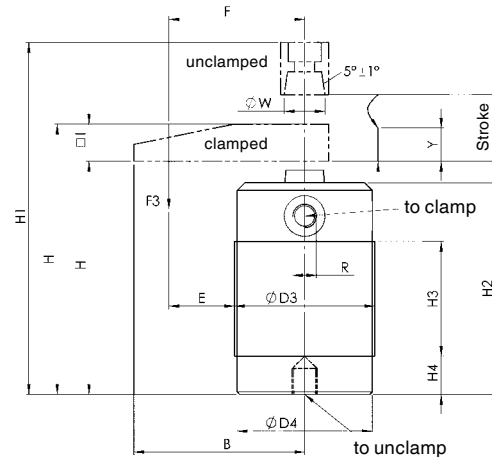
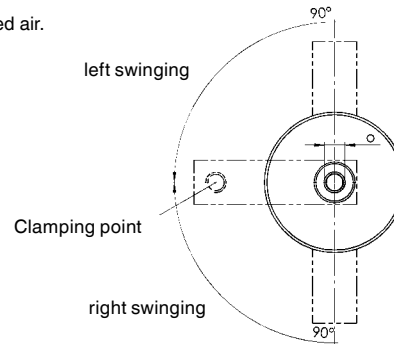


Order no.	Size	right swinging	left swinging	F3 [kN]	Connecting thread for clamping screws	Weight [g]
92809	25	●	-	0,17	M 6	450
92858	25	-	●	0,17	M 6	450
92817	32	●	-	0,27	M 8	550
92866	32	-	●	0,27	M 8	550
92825	40	●	-	0,45	M 8	700
92874	40	-	●	0,45	M 8	700
92833	50	●	-	0,70	M12	850
92882	50	-	●	0,70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

#### Examples of mountings:



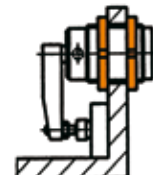
with grooved nut from below



with grooved nut from above



with threaded flange and grooved nut



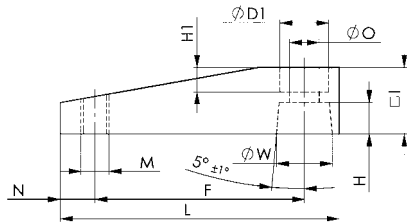
with two grooved nuts

Subject to technical alterations.

## 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	5,0	5,0	12	45	M4	4	5,5	8	13
92494	16	9	41	5,0	4,0	12	51	M4	4	5,5	8	15
92502	20	14	48	5,5	7,5	16	64	M6	6	8,5	12	31
93674	25	14	50	6,5	6,0	16	66	M6	6	8,5	14	32
93682	32	14	60	9,0	7,0	19	80	M8	10	8,5	16	55
93690	40	14	70	9,0	7,0	19	90	M8	10	8,5	16	65
93708	50	17	80	10,0	9,0	25	105	M12	10	10,5	20	132
93716	63	17	90	10,0	9,0	25	115	M12	10	10,5	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.

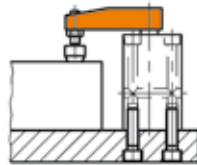
Clamping arm removal:

- 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!



### Application example:

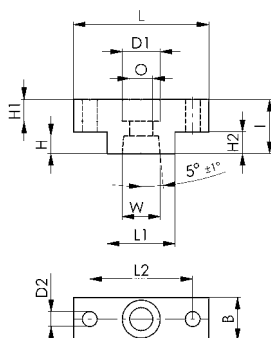
Clamping arm with clamping screw no. 6880.



## No. 6829AD

### Adapter

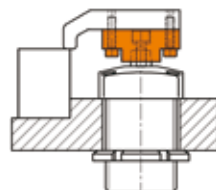
for mounting special clamping arms, with taper bore and mounting holes for arm. High-strength aluminium alloy. HART-COAT® surface for wear-resistance and reduced adhesion of weld spatter.



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

### Application example:

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)

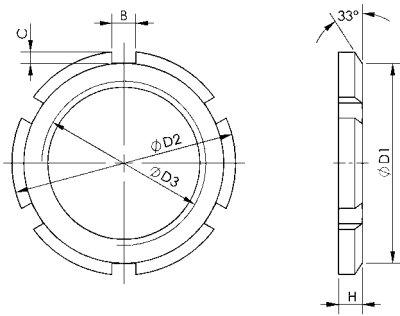
Steel, galvanized.  
Use hook spanner for tightening (see AMF catalogue „Hand Tools“).

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



### Application example:

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:

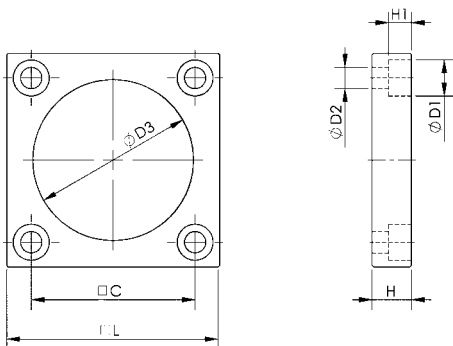
Avoids cutting a large thread in the fixture.

### Note:

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

### Application example:

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

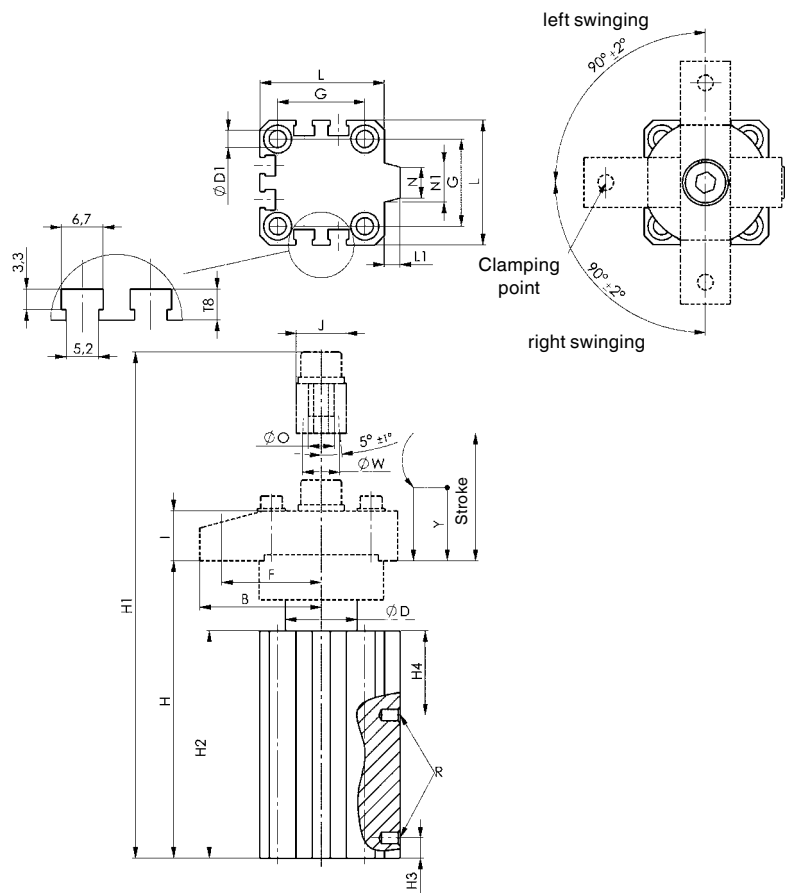


Order no.	Size	right swinging	left swinging	F3 [kN]	Weight [g]
91579	25	●	-	0,2	326
92361	25	-	●	0,2	326
91595	32	●	-	0,3	537
92387	32	-	●	0,3	537
91611	40	●	-	0,6	680
92445	40	-	●	0,6	680
91637	50	●	-	0,9	1160
92460	50	-	●	0,9	1160
91652	63	●	-	1,4	1520
92478	63	-	●	1,4	1520

#### 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.

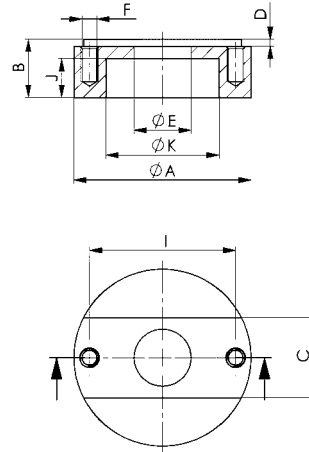
## No. 6829WS

### 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

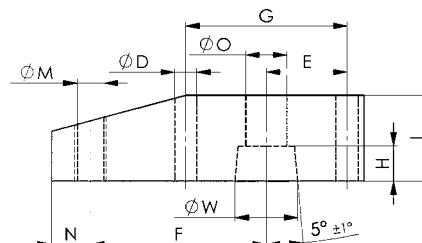


## No. 6829WSP

### 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

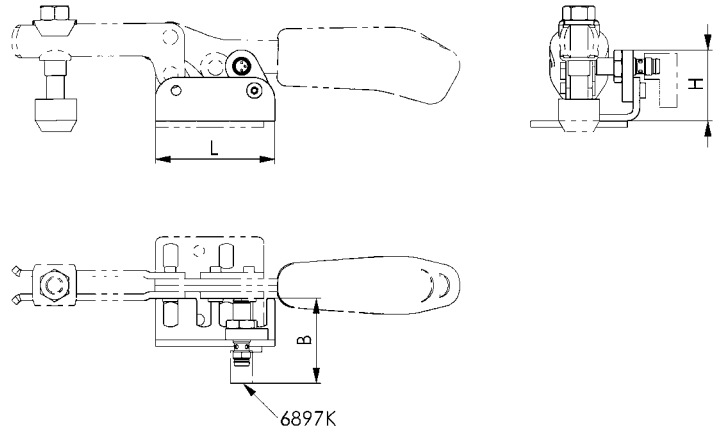
for manual clamps.

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.



## 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.

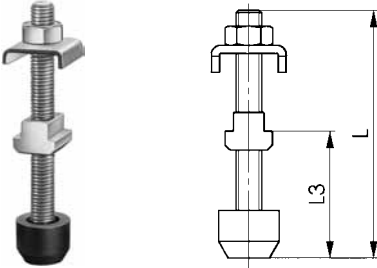


Subject to technical alterations.

## 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.

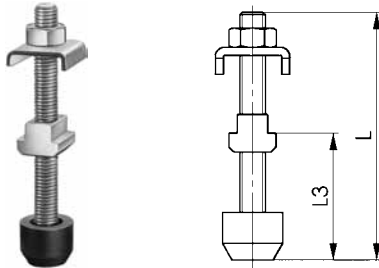


Order no.	Size	Screw DIN 933	T-Nut DIN 508	Washer size	L	L3	Weight [g]
98988	0/0	M 4x 25	-	0/0	32	13-20	5
99002	0	M 4x 25	-	0	32	13-20	5
99010	1	M 5x 30	-	1	38	17-24	10
99028	2	M 6x 35	-	2	45	19-28	22
99077	2	M 6x 50	-	2	60	19-43	30
99036	3	M 8x 45	-	3	58	22-34	40
99044	4	M 8x 65	M 8x10	4	78	21-50	62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

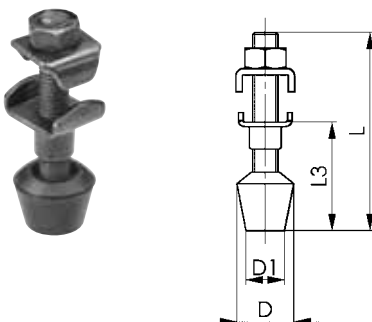


Order no.	Size	Screw DIN 933	Washer size	L	L3	Weight [g]
95950	0/0	M4x25	0/0	32	13-20	5
96040	0	M4x25	0	32	13-20	5
96057	1	M5x30	1	38	17-24	10
96065	2	M6x35	2	45	19-28	22
96073	3	M8x45	3	58	22-34	40
96081	4	M8x65	4	78	21-50	60

## 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
92635	2	M6x60,0	16	10	20,0-40	22
99655	3	M8x63,0	18	13	27,0-37	39

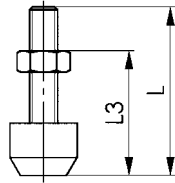
Subject to technical alterations.

## 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

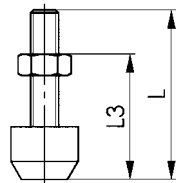
### Clamping screw

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

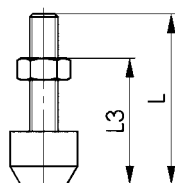


## No. 6880B

### Clamping screw, black

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

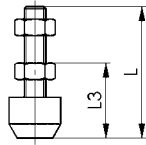
Order no.	Size	Screw DIN 933	L	L3	Weight [g]
99622	1	M4 x 20	23	10-17	4
99705	2	M6 x 25	35	17-25	15



## 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.

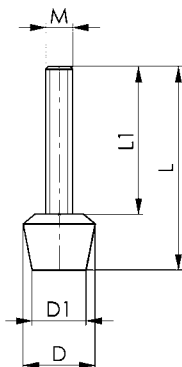


Order no.	Size	Screw DIN 933	L	L3	Weight [g]
98517	1	M 5x 30	38	14-25	10
98525	2	M 6x 35	45	17-25	20
98533	3	M 8x 45	58	22-32	35
98541	4	M 8x 65	78	22-52	40
98558	5	M12x 80	98	30-60	130
98566	6	M12x110	128	30-88	160
98582	8	M16x120	130	25-84	280

## 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.



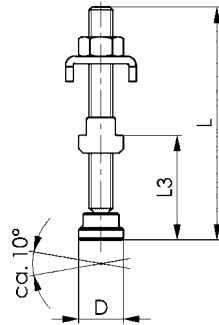
Order no.	M x L	D	D1	L1	Weight [g]
99408	M 4x 32	11	8	24	4
99416	M 5x 38	13	10	28	8
99390	M 6x 35	16	12	23	11
99424	M 6x 45	16	12	33	13
99556	M 6x 60	16	12	48	16
99432	M 8x 48	21	16	32	25
99499	M 8x 58	21	16	42	29
99440	M 8x 63	21	16	47	31
99457	M 8x 78	21	16	62	37
99580	M10x 66	26	20	46	53
99598	M10x 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

## 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

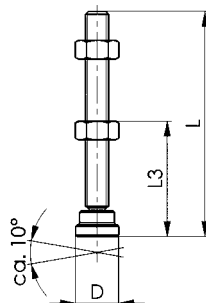


## No. 6886

### 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

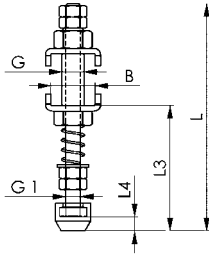


## No. 6892

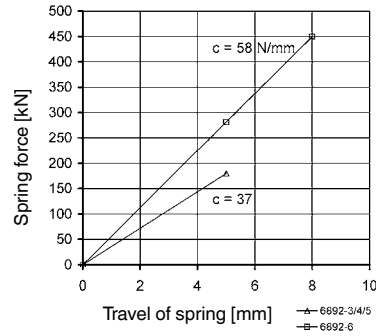
### Spring loaded screw

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



### Spring rate:



## No. 6893

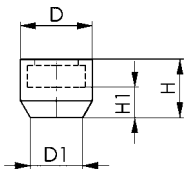
### Rubber nose

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	M 4	7	11,0	7	8,5	4,2	1
99325	M 5	8	12,5	8	10,0	5,0	1
99333	M 6	10	15,0	10	12,0	6,0	2
99341	M 8	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.



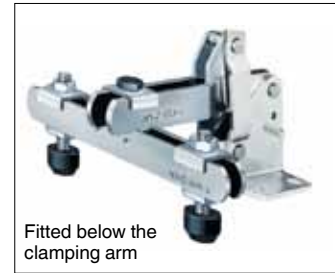


## No. 6895

### 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

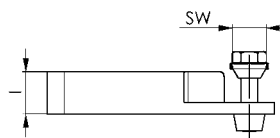


## No. 6896

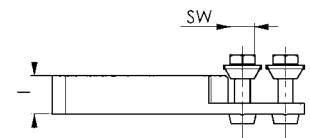
### Clamping arm extension

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



Gr. 0, 1, 2



Gr. 3

## No. 6848GH

### Counter catch

for no. 6848H.  
Galvanized and passivated.

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

## No. 6848GHNI

### Counter catch

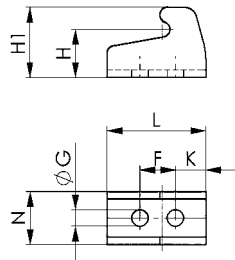
for no. 6848HNI.  
Polished stainless steel.



STAINLESS STEEL



Order no.	Size	F	dia. G	H	H1	K	L	N	Weight [g]
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.

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

## No. 6848GVNI

### Counter catch

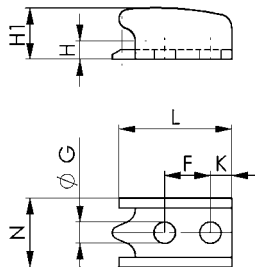
for no. 6848VNI.  
Polished stainless steel.



STAINLESS STEEL



Order no.	Size	F	dia. G	H	H1	K	L	N	Weight [g]
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



**... BY ITEM NO.**

Article no.	Page	Article no.	Page	Article no.	Page	Article no.	Page	Article no.	Page
No. 6800	10	No. 6820K	71	No. 6829WS	98	No. 6842PK	30	No. 6848HS	44
No. 6800B	56	No. 6820M	72	No. 6829WSP	98	No. 6842PL	31	No. 6848HSNI	51
No. 6800BS	63	No. 6821F	75	No. 6830	20	No. 6843	28	No. 6848V	35
No. 6800NI	45	No. 6821M	74	No. 6830B	58	No. 6843NI	54	No. 6848VNI	52
No. 6800S	37	No. 6825C	76	No. 6830NI	47	No. 6844	27	No. 6849PH	36
No. 6802	11	No. 6825CE	77	No. 6830S	41	No. 6844NI	54	No. 6850	70
No. 6802B	57	No. 6825CE	78	No. 6832	21	No. 6845	28	No. 6860	24
No. 6802BS	64	No. 6826C	79	No. 6832B	59	No. 6847	32	No. 6880	101
No. 6802S	38	No. 6826CE	80	No. 6832BS	65	No. 6847G	32	No. 6880B	101
No. 6803	12	No. 6828M	84	No. 6832S	41	No. 6847GK	33	No. 6880NI	101
No. 6803NI	46	No. 6828SP	87	No. 6833	22	No. 6847GKNI	49	No. 6885	102
No. 6803S	39	No. 6828SP	89	No. 6834	23	No. 6847GNI	48	No. 6886	103
No. 6804	13	No. 6828V	86	No. 6834S	42	No. 6847K	33	No. 6890	100
No. 6804S	40	No. 6828V	88	No. 6835BS-2	66	No. 6847KNI	49	No. 6890B	100
No. 6805	14	No. 6829AD	95	No. 6835BS-3	67	No. 6847NI	48	No. 6890NI	100
No. 6806	14	No. 6829BR/BL	92	No. 6835B-2	60	No. 6847S	43	No. 6891	103
No. 6809P	17	No. 6829ER/EL	94	No. 6835B-3	61	No. 6847SU	43	No. 6892	104
No. 6810P	18	No. 6829GF	96	No. 6840	26	No. 6848GH	106	No. 6893	104
No. 6811P	15	No. 6829KR/KL	91	No. 6840S	42	No. 6848GHNI	106	No. 6894	102
No. 6812P	16	No. 6829N	96	No. 6841	25	No. 6848GV	106	No. 6895	105
No. 6815C	81	No. 6829SP	95	No. 6841B	62	No. 6848GVNI	106	No. 6896	105
No. 6816CE	82	No. 6829V	83	No. 6841NI	53	No. 6848H	34	Nr. 6897K	99
No. 6820F	73	No. 6829W	97	No. 6842	29	No. 6848HNI	50	Nr. 6897S	99

**... BY ORDER NO.**

Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page
456400	59	90464	13	91348	63	91678	98	92239	78
482471	59	90472	57	91397	92	91686	98	92247	78
482497	59	90480	58	91397	93	91694	98	92254	78
90001	10	90498	57	91405	92	91702	98	92262	79
90019	10	90506	58	91405	93	91710	71	92270	79
90027	10	90514	14	91413	92	91728	71	92288	79
90035	10	90522	58	91413	93	91736	71	92296	80
90043	10	90530	59	91421	92	91744	71	92304	80
90050	10	90548	62	91421	93	91751	98	92312	80
90068	10	90555	14	91439	92	91793	98	92320	82
90134	37	90563	14	91439	93	91801	75	92338	82
90142	37	90571	14	91447	92	91819	75	92346	82
90159	37	90589	14	91447	93	91827	75	92353	89
90167	56	90597	99	91454	92	91835	86	92361	97
90175	56	90613	99	91454	93	91843	84	92379	89
90183	56	90639	99	91462	92	91850	88	92387	97
90191	56	90662	67	91462	93	91868	84	92395	89
90209	38	90670	60	91470	43	91876	88	92403	95
90217	11	90688	72	91496	92	91884	84	92411	95
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90431	13	91280	62	91645	98	92205	76	92692	44
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90456	13	91330	16	91660	98	92221	76	92817	94

**... BY ORDER NO.**

Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page
92825	94	93583	91	94391	28	95505	48	99119	103
92833	94	93591	91	94524	32	95521	50	99127	103
92841	94	93609	83	94540	32	95547	50	99135	103
92858	94	93617	83	94565	32	95562	50	99143	103
92866	94	93625	83	94623	32	95588	52	99168	103
92874	94	93633	83	94649	32	95596	49	99259	104
92882	94	93641	83	94664	32	95604	52	99267	104
92890	94	93658	51	94672	33	95620	52	99275	104
92924	96	93666	43	94680	33	95638	106	99283	104
92932	96	93674	95	94698	34	95646	106	99309	104
92940	96	93682	95	94706	34	95653	106	99325	104
92957	96	93690	95	94714	34	95661	106	99333	104
92973	96	93708	95	94755	35	95679	106	99341	104
93005	20	93716	95	94763	35	95687	106	99358	104
93013	20	93781	74	94771	35	95950	100	99366	104
93021	20	93831	24	94821	106	96008	101	99374	104
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93179	22	93930	26	95059	70	98038	101	99473	102
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93328	22	94086	105	95174	54	98558	102	99564	105
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93559	91	94334	27	95455	49	99069	100	99705	101
93567	91	94359	26	95463	48	99077	100		
93575	91	94367	25	95489	48	99085	100		



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A large, empty grid of small squares, typical of graph paper, occupying the central portion of the page. The grid is composed of thin, light gray lines forming a uniform pattern of squares.



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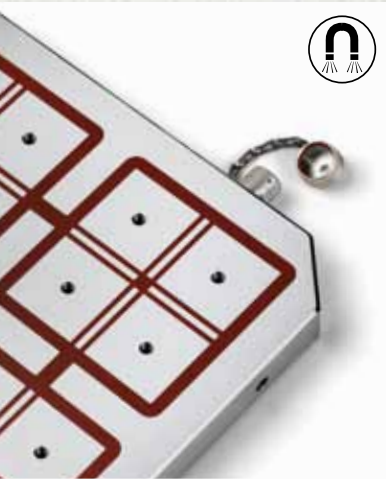
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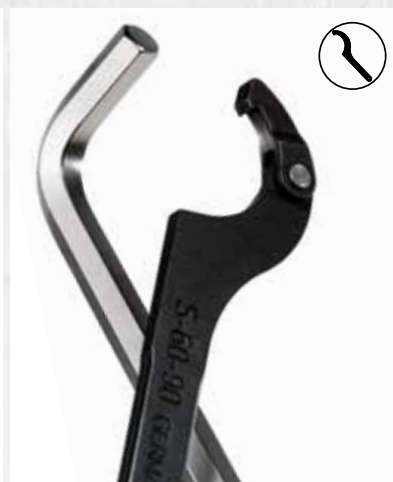
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