



Swing Clamp

sturdy swing mechanism, cylindrical clamping arm mounting, double acting, max. operating pressure 250 bar



Advantages

- 3 sizes with 4 types of the body
- Sturdy swing mechanism
- High clamping force at low pressures
- Cylindrical seat of clamping arm
- Easy clamping arm mounting due to locking screw
- Clamping arm can be mounted in each position
- Indexing of the clamping arm in the pre-determined position by optional dowel pin
- High flow rates acceptable
- VITON®, wiper standard
- Metallic wiper optional
- Pneumatic or electrical position control for version with extended piston rod
- Mounting position: any

Application

Hydraulic swing clamps are used for clamping of workpieces when it is essential to keep the clamping area free of straps and clamping components for unrestricted workpiece loading and unloading. Due to the sturdy swing mechanism and the extended switch rod they are particularly suited for:

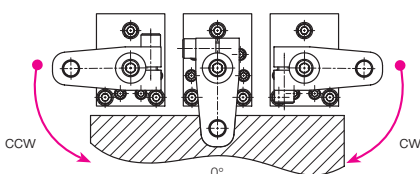
- Clamping fixtures with workpiece loading via handling systems
- Transfer lines
- Test systems for motors, gears, axis, etc.
- Automatic manufacturing systems
- Assembly lines
- Rotary indexing tables

Function

This hydraulic clamping element is a pull-type cylinder where a part of the total stroke is used to swing the piston.

Direction of rotation

The units are available with clockwise and counterclockwise rotation or without rotation (0°).



Description

The sturdy swing mechanism with swing slots in the piston rod does not require an overload protection device. In the case of a slight collision of the workpiece with the clamping arm e.g. during loading and unloading of the fixture, the angular position of the clamping arm will be maintained.

The swing mechanism endures a collision of the clamping arm with the workpiece during the swing motion.

The weight of the clamping arm is not so important. The installed throttle plugs limit the swing speed when using high flow rates.

Due to the favourable ratio of piston and piston rod, high clamping forces are already obtained with low oil pressure, as it is nowadays used in machine hydraulics. Therefore pressure intensifiers are not required.

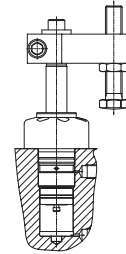
The cylindrical clamping arm seat facilitates the fabrication of special clamping arms. The locking fixation facilitates mounting, alignment or change of the clamping arms. Indexing possibility for exact angle positions is available.

The VITON®, wiper is resistant against standard coolants.

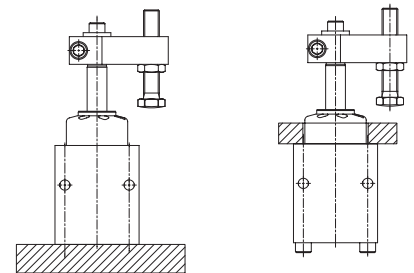
An optionally available metallic wiper offers protection in case of large quantities of swarf, especially against hot swarf.

All versions are also available with and extended piston rod to the bottom for pneumatic or electrical position control.

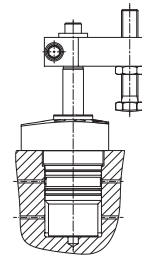
Built-in elements



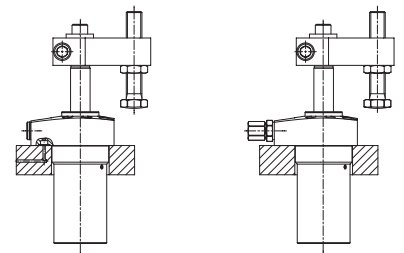
Block elements



Plug-in elements



Flange at the top



Important notes

Hydraulic clamping elements generate big forces.

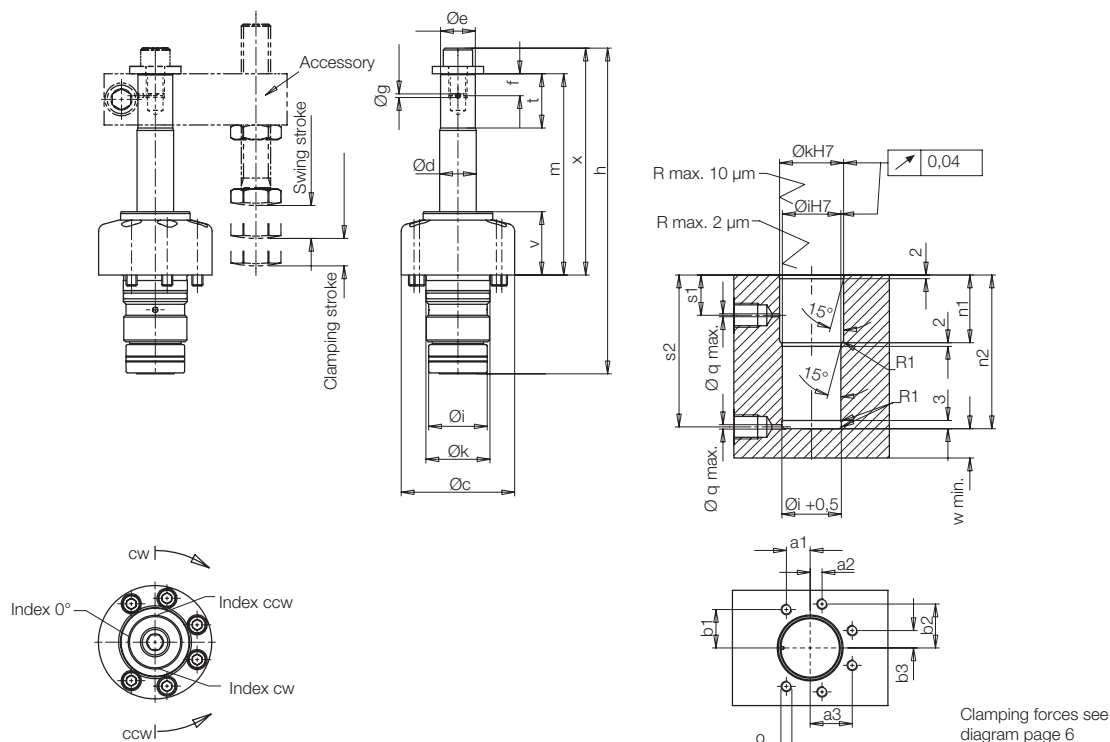
Considerable injuries can be caused to fingers in the effective area of the clamping arm. Therefore pay attention especially during start-up of the system.

Remedy: protection device with electrical locking.

Mounting of the clamping arm:
After placing of the clamping arm on the piston, first tighten the axial locking screw and stop ring with nominal moment. Push the clamping arm in its angular position (possibly index pin) upwards against the stop ring and tighten locking screw with nominal moment.

Operating conditions, tolerances and other data see data sheet A 0.100 and A 0.130.



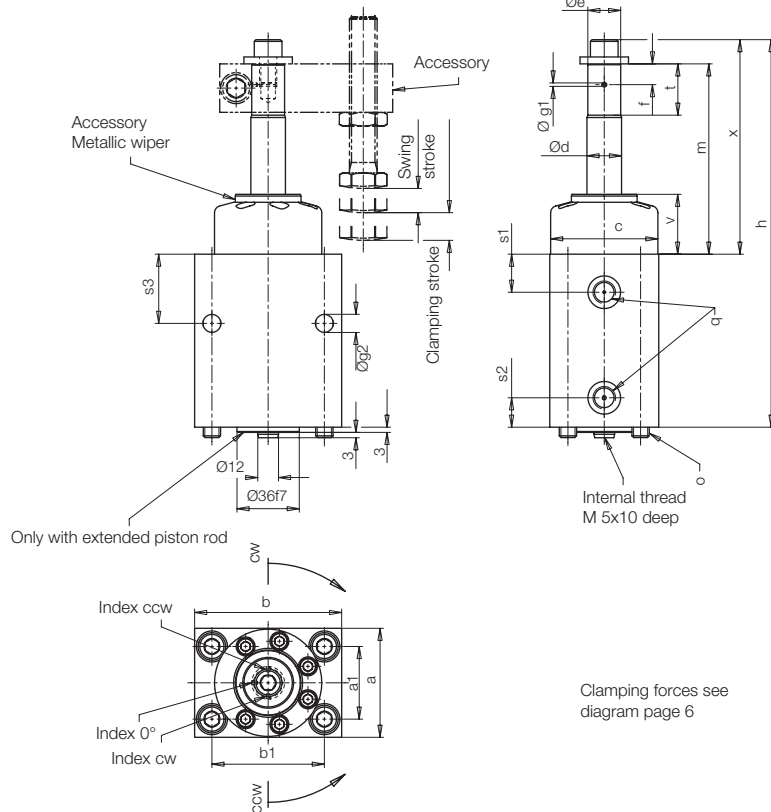
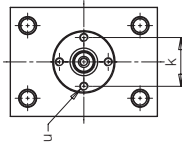


Clamping forces see diagram page 6

	Size 1		Size 2		Size 3		
Clamping stroke	[mm]	12	25	12	25	12	25
Swing stroke	[mm]	18	18	18	18	20	20
Total stroke	[mm]	30	43	30	43	32	45
Oper. press. to swing, min.	[bar]	30	30	30	30	30	30
Oil volume/stroke	[cm ³]	8.7	12.5	9.4	13.5	24.5	36.8
Oil volume/return stroke	[cm ³]	14.7	21	24.1	34.5	40.2	60.3
Ø d	[mm]	16	16	20	20	25	25
a1	[mm]	16	16	13	13	24.7	24.7
a2	[mm]	16	16	6.5	6.5	-	-
a3	[mm]	-	-	23	23	24.7	24.7
b1	[mm]	10.5	10.5	21	21	14.2	14.2
b2	[mm]	10.5	10.5	24	24	28.5	28.5
b3	[mm]	-	-	9.5	9.5	14.2	14.2
Ø c	[mm]	50	50	62	62	74	74
Ø e f8	[mm]	15	15	19	19	24	24
f	[mm]	12	12	12	12	12	12
Ø g H7 (3 mm deep)	[mm]	2	2	2	2	2	2
h	[mm]	160	199	178	217	195	234
Ø i	[mm]	25	25	32	32	40	40
Ø k	[mm]	30	30	35	35	44	44
m	[mm]	98	111	110	123	122	135
n1 (fit depth 18 mm)	[mm]	35	61	37	63	36	62
n2	[mm]	80	119	84	123	88	127
Ø q max. (unthrottled)	[mm]	3	3	3.5	3.5	4	4
o (depth of thread)	[mm]	M5 (8 deep)	M5 (8 deep)	M6 (8 deep)	M6 (8 deep)	M6 (8 deep)	M6 (8 deep)
s1	[mm]	20	20	22	22	19.5	19.5
s2	[mm]	78.5	117.5	84	122	87	126
t	[mm]	21.5	21.5	29.5	29.5	36.5	36.5
v	[mm]	30	30	34.6	34.6	35	35
v Metallic wiper	[mm]	35	35	39.6	39.6	40	40
w min.	[mm]	15	15	16	16	18	18
x	[mm]	110	123	124	137	139	152
Weight, approx.	[kg]	0.8	0.9	1.2	1.4	1.9	2.3
Part-no.							
Clockwise rotation 90°		1843-030-A090R	1843-043-A090R	1844-030-A090R	1844-043-A090R	1845-032-A090R	1845-045-A090R
Counterclockwise rotation 90°		1843-030-A090L	1843-043-A090L	1844-030-A090L	1844-043-A090L	1845-032-A090L	1845-045-A090L
0 degree		1843-030-A000	1843-043-A000	1844-030-A000	1844-043-A000	1845-032-A000	1845-045-A000



View from below



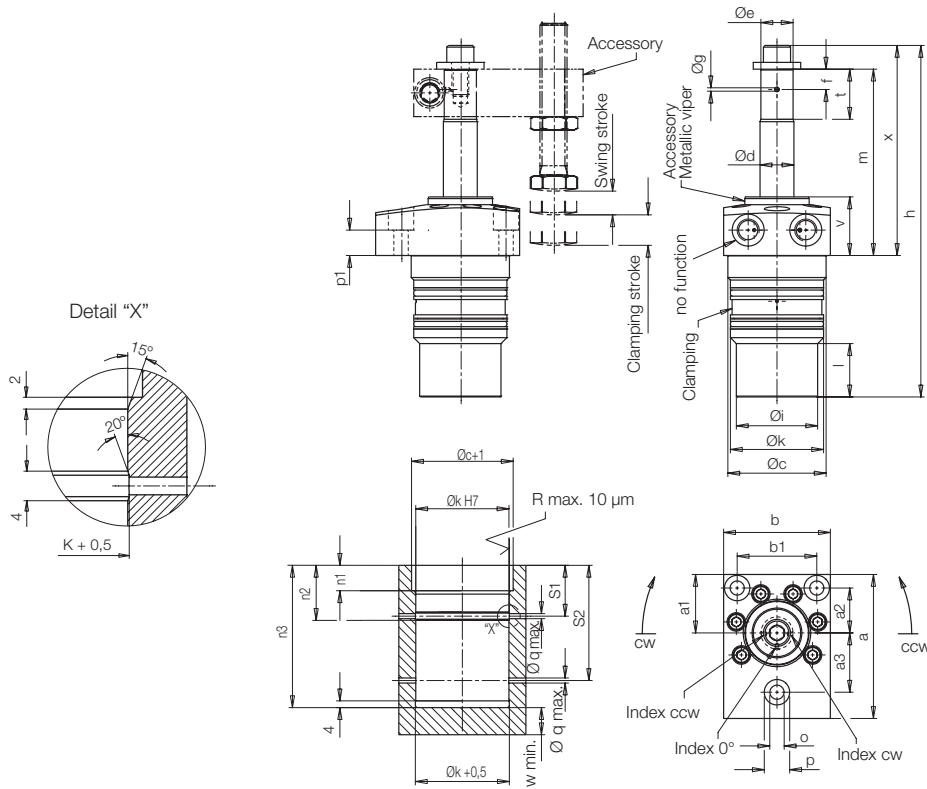
Clamping forces see diagram page 6

	Size 1		Size 2		Size 3		
Clamping stroke	[mm]	12	25	12	25	12	25
Swing stroke	[mm]	18	18	18	18	20	20
Total stroke	[mm]	30	43	30	43	32	45
Oper. press. to swing, min.	[bar]	30	30	30	30	30	30
Oil volume/stroke	[cm ³]	8.7	12.5	9.4	13.5	24.5	36.8
Oil volume/return stroke	[cm ³]	14.7	21	24.1	34.5	40.2	60.3
Ø d	[mm]	16	16	20	20	25	25
Ø c	[mm]	50	50	62	62	74	74
Ø e f8	[mm]	15	15	19	19	24	24
Ø g1 H7 (3 mm deep)	[mm]	2	2	2	2	2	2
Ø g2	[mm]	8.5	8.5	10.5	10.5	13	13
a	[mm]	45	45	63	63	75	75
a1	[mm]	30	30	42	42	50	50
b	[mm]	65	65	85	85	100	100
b1	[mm]	50	50	65	65	76	76
f	[mm]	12	12	12	12	12	12
m	[mm]	98	111	110	123	122	135
o (DIN 912) / projecting end	[mm]	M8 / 8	M8 / 9	M10 / 11	M10 / 13	M12 / 15	M12 / 16
q		G1/8	G1/8	G1/4	G1/4	G1/4	G1/4
s1	[mm]	20	20	22	22	23	23
s3	[mm]	37	37	40	40	44	44
t	[mm]	21.5	21.5	29.5	29.5	36.5	36.5
v	[mm]	30	30	34.6	34.6	35	35
v Metallic wiper	[mm]	35	35	39.6	39.6	40	40
x	[mm]	110	123	124	137	139	152

Part-no.	Block type without extended piston rod						
h	[mm]	205	257	224	275	247	299
s2	[mm]	16.5	16.5	17	17	21	21
Weight, approx.	[kg]	2.5	3.2	4.6	6.0	7.0	9.1
Clockwise rotation 90°		1843-030-B090R	1843-043-B090R	1844-030-B090R	1844-043-B090R	1845-032-B090R	1845-045-B090R
Counterclockwise rotation 90°		1843-030-B090L	1843-043-B090L	1844-030-B090L	1844-043-B090L	1845-032-B090L	1845-045-B090L
0 degree		1843-030-B000	1843-043-B000	1844-030-B000	1844-043-B000	1845-032-B000	1845-045-B000

Part-no.	Block type with extended piston rod						
h	[mm]	207	259	224	275	247	299
k	[mm]	28.2	28.2	28.2	28.2	28.2	28.2
s2	[mm]	13.5	13.5	17	17	21	21
u / Depth	[mm]	M5 / 6 deep	M5 / 6 deep	M5 / 6 deep	M5 / 6 deep	M5 / 6 deep	M5 / 6 deep
Weight, approx.	[kg]	2.5	3.3	4.7	6.2	7.1	9.3
Clockwise rotation 90°		1843-030-C090R	1843-043-C090R	1844-030-C090R	1844-043-C090R	1845-032-C090R	1845-045-C090R
Counterclockwise rotation 90°		1843-030-C090L	1843-043-C090L	1844-030-C090L	1844-043-C090L	1845-032-C090L	1845-045-C090L
0 degree		1843-030-C000	1843-043-C000	1844-030-C000	1844-043-C000	1845-032-C000	1845-045-C000

Part-nos. for version with metallic wiper: 184X-MXX-XXXX



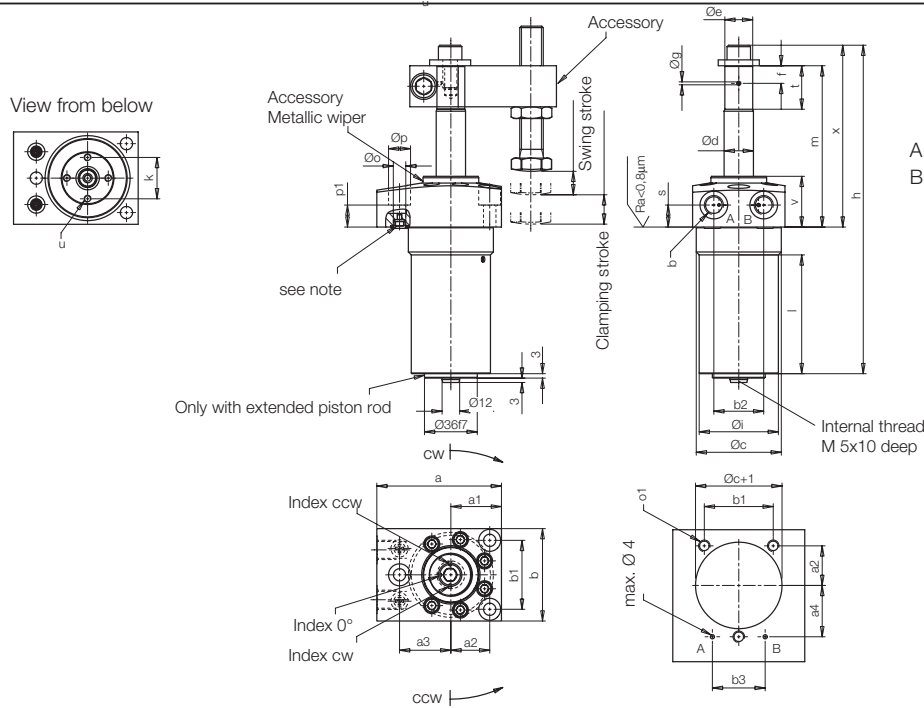
Clamping forces see diagram page 6

	Size 1		Size 2		Size 3		
Clamping stroke	[mm]	12	25	12	25	12	25
Swing stroke	[mm]	18	18	18	18	20	20
Total stroke	[mm]	30	43	30	43	32	45
Oper. press. to swing, min.	[bar]	30	30	30	30	30	30
Oil volume / stroke	[cm ³]	8.7	12.5	9.4	13.5	24.5	36.8
Oil volume / return stroke	[cm ³]	14.7	21	24.1	34.5	40.2	60.3
Ø d	[mm]	16	16	20	20	25	25
a	[mm]	75	75	85	85	100	100
a1	[mm]	26.5	26.5	34.5	34.5	42	42
a2	[mm]	20.5	20.5	26.5	26.5	32	32
a3	[mm]	35	35	35	35	46	46
b	[mm]	55	55	63	63	75	75
b1	[mm]	43	43	47	47	55	55
Ø c	[mm]	46	46	58	58	65	65
Ø e f8	[mm]	15	15	19	19	24	24
f	[mm]	12	12	12	12	12	12
Ø g H7 (3 mm deep)	[mm]	2	2	2	2	2	2
h	[mm]	189.5	241.5	207.5	259.5	226.5	278.5
Ø i	[mm]	35	35	48	48	55	55
Ø k	[mm]	42	42	55	55	63	63
l	[mm]	31.5	44.5	31.5	70.5	30	43
m	[mm]	98	111	110	123	122	135
n1	[mm]	15	15	15	15	18	18
n2	[mm]	32	32	33	33	39	39
n3 / Fit depth	[mm]	80 / 48	119 / 72	84 / 51	123 / 51	88 / 58	127 / 84
Ø q max. (unthrottled)	[mm]	3.5	3.5	3.5	3.5	3.5	3.5
o	[mm]	6.6	6.6	8.5	8.5	11	11
p	[mm]	11	11	15	15	18	18
p1	[mm]	14	14	15	15	11	11
s1	[mm]	30	30	31	31	37	37
s2 min.	[mm]	50	75	55	55	60	85
t	[mm]	21.5	21.5	29.5	29.5	36.5	36.5
v	[mm]	30	30	34.6	34.6	35	35
v Metallic wiper	[mm]	35	35	39.6	39.6	40	40
w min.	[mm]	15	15	16	16	18	18
x	[mm]	110	123	124	137	139	152
Weight, approx.	[kg]	1.4	1.8	2.4	2.9	3.3	4.3

Part-no.

Clockwise rotation 90°	1843-030-E090R	1843-043-E090R	1844-030-E090R	1844-043-E090R	1845-032-E090R	1845-045-E090R
Counterclockwise rotation 90°	1843-030-E090L	1843-043-E090L	1844-030-E090L	1844-043-E090L	1845-032-E090L	1845-045-E090L
0 degrees	1843-030-E000	1843-043-E000	1844-030-E000	1844-043-E000	1845-032-E000	1845-045-E000

Part-nos. for version with metallic wiper: 184X-MXX-XXXX



A = Clamping
B = Unclamping

Note:
For manifold mounting remove socket head cap screws and USIT-rings.
Screw in two plugs 3610-006. (Not included in the delivery).

Clamping forces see diagram page 6

	Size 1		Size 2		Size 3		
Clamping stroke	[mm]	12	25	12	25	12	25
Swing stroke	[mm]	18	18	18	18	20	20
Total stroke	[mm]	30	43	30	43	32	45
Oper. press. to swing, min.	[bar]	30	30	30	30	30	30
Oil volume/stroke	[cm ³]	8.7	12.5	9.4	13.5	24.5	36.8
Oil volume/return stroke	[cm ³]	14.7	21	24.1	34.5	40.2	60.3
Ø d	[mm]	16	16	20	20	25	25
a	[mm]	75	75	85	85	100	100
a1	[mm]	26.5	26.5	34.5	34.5	42	42
a2	[mm]	20.5	20.5	26.5	26.5	32	32
a3	[mm]	35	35	35	35	46	46
a4	[mm]	34	34	35	35	43	43
b	[mm]	55	55	63	63	75	75
b1	[mm]	43	43	47	47	55	55
b2	[mm]	25	25	34	34	38	38
b3	[mm]	31	31	36	36	36	36
Ø c	[mm]	48	48	58	58	68	68
Ø e f8	[mm]	15	15	19	19	24	24
f	[mm]	12	12	12	12	12	12
Ø g H7 (3 mm deep)	[mm]	2	2	2	2	2	2
Ø i	[mm]	45	45	54	54	65	65
m	[mm]	98	111	110	123	122	135
Ø o	[mm]	6.6	6.6	8.5	8.5	11	11
o 1	[mm]	M6	M6	M8	M8	M10	M10
Ø p	[mm]	11	11	15	15	18	18
p 1	[mm]	14	14	15	15	11	11
q		G1/8	G1/8	G1/4	G1/4	G1/4	G1/4
s	[mm]	13	13	15	15	15.5	15.5
t	[mm]	21.5	21.5	29.5	29.5	36.5	36.5
v	[mm]	30	30	34.6	34.6	35	35
v Metallic wiper	[mm]	35	35	39.6	39.6	40	40
x	[mm]	110	123	124	137	139	152

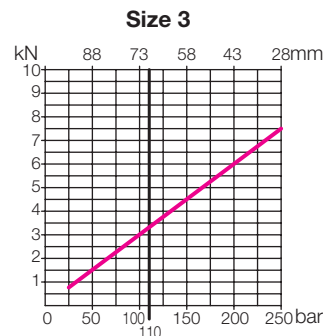
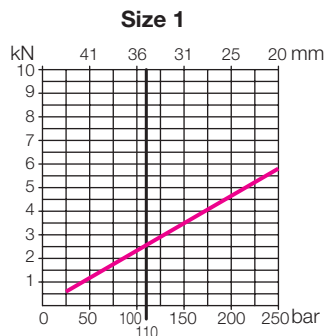
Part-no.	Flange at the top, without extended piston rod						
h	[mm]	205	259	224	275	247	299
l	[mm]	78.5	119.5	81	119	90	129
Weight, approx.	[kg]	1.8	2.2	2.8	3.3	4.3	5.2
Clockwise rotation 90°		1843-030-F090R	1843-043-F090R	1844-030-F090R	1844-043-F090R	1845-032-F090R	1845-045-F090R
Counterclockwise rotation 90°		1843-030-F090L	1843-043-F090L	1844-030-F090L	1844-043-F090L	1845-032-F090L	1845-045-F090L
0 degree		1843-030-F000	1843-043-F000	1844-030-F000	1844-043-F000	1845-032-F000	1845-045-F000

Part-no.	Flange at the top, with extended piston rod						
h	[mm]	207	259	224	275	247	299
k	[mm]	28.2	28.2	28.2	28.2	28.2	28.2
l	[mm]	80.5	117.5	81	119	90	129
u / Depth	[mm]	M5 / 6 deep	M5 / 6 deep	M5 / 6 deep	M5 / 6 deep	M5 / 6 deep	M5 / 6 deep
Weight, approx.	[kg]	1.9	2.4	2.9	3.7	4.4	5.4
Clockwise rotation 90°		1843-030-G090R	1843-043-G090R	1844-030-G090R	1844-043-G090R	1845-032-G090R	1845-045-G090R
Counterclockwise rotation 90°		1843-030-G090L	1843-043-G090L	1844-030-G090L	1844-043-G090L	1845-032-G090L	1845-045-G090L
0 degree		1843-030-G000	1843-043-G000	1844-030-G000	1844-043-G000	1845-032-G000	1845-045-G000

Part-nos. for version with metallic wiper: 184X-MXX-XXXX

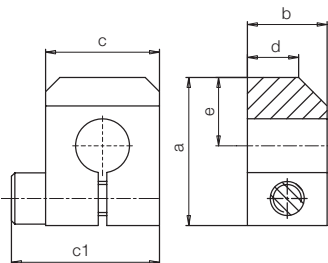


Effective clamping force F_{Sp} as function of operating pressure p



Clamping arm for operation pressure max. 250 bar

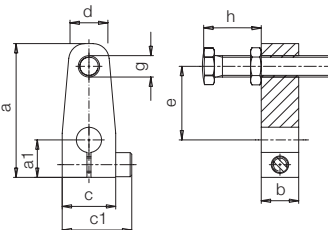
Swing clamp	Part-no.	a	b	c	c1	d	e	Weight [kg]
1843-XXX-XXXX	0354-219	40	20	26	32	10	20	0.12
1844-XXX-XXXX	0354-221	52	28	40	52	18	24	0.37
1845-XXX-XXXX	0354-223	67	35	50	66	25	28	0.77



Clamping arm for machining by the customer max. 50 bar

This clamping arm contains the contour for locking and locking screw. The long design allows fabrication of clamping arms for special applications!

Swing clamp	Part-no.	a	b	c	c1	d	e	Weight [kg]
1843-XXX-XXXX	0354-224	70	20	26	32	-	50	0.25
1844-XXX-XXXX	0354-225	120	28	40	52	-	92	0.99
1845-XXX-XXXX	0354-226	145	35	50	66	-	106	1.88



Clamping arm for operation pressure max. 110 bar

Swing clamp	Part-no.	a	a1	b	c	c1	d	e	g	h max.	h min.	Weight [kg]
1843-XXX-XXXX	0354-218	65	20	20	26	32	20	35	M10	56	6	0.26
1844-XXX-XXXX	0354-220	100	28	28	40	52	28	55	M16	71	9	0.88
1845-XXX-XXXX	0354-222	127	39	35	50	66	35	70	M20	87	12	1.76

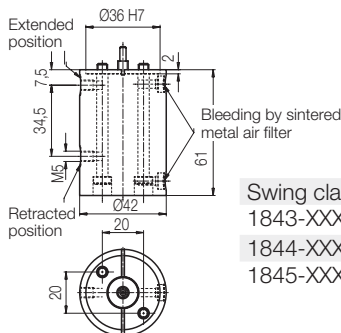
Metallic wiper, complete

Swing clamp	1843-XXX-XXXX	1844-XXX-XXXX	1845-XXX-XXXX
Part-no.	0341-104	0341-103	0341-105

Index pin to be hammered into the piston

Dowel pin 2m6 x 6 DIN 6325	Part-no. 3301-723
----------------------------	--------------------------

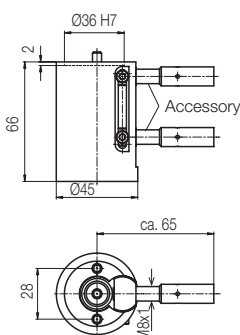
Pneumatic position monitoring



Swing clamp	Part-no.
1843-XXX-XXXX	0353-823
1844-XXX-XXXX	0353-823
1845-XXX-XXXX	0353-824

Further accessory
see data sheet J 7.400

Electrical position monitoring



Position monitoring up to total stroke 32 mm **Part-no. 0353-827**

Accessory Proximity switch with LED function display **Part-no. 3829-077**

Voltage	UB 10 ... 30 V DC
Constant current max. [mA]	200
Residual ripple	max. 15%
Switching function	Interlock
Output	PNP
Protection as per	DIN 40050 IP 67
Environmental temperature	TA - 25° ... +70°C

Right angle plug with cable **Part-no. 3829-088**
Connecting cable [m] 5