



Pneumatic Swing Clamp for adjustable magnetic sensors double acting, max. operating pressure 7 bar



The opposite figure shows a pneumatic swing clamp. Clamping arm and flange are accessories

Pneumatic swing clamp with accessories

1. Clamping arm (page 3)
2. Magnetic sensor with hose clamp (page 4)
3. Y-cable (see page G 2.140)

Application

Pneumatic swing clamps are used for applications which require only low clamping forces. The installed magnetic piston allows monitoring of clamping and unclamping position.

Description

When pressurising the element, the clamping arm swings and lowers by 90° to the clamping position and then lowers to the clamping point. The position monitoring gives the required information regarding the position of the piston, but not regarding the position of the clamping arm. Monitoring is made by electronic sensors (see accessory) which detect the magnetic field of the magnetic piston. The switching points can be continuously adjusted by displacement of the magnetic sensors.

Special features

When adjusting the clamping screw it has to be considered that for the swing motion a part of the total stroke is required. Make sure that the swing motion can be effected without any interference. When using special clamping arms with other lengths, the corresponding operating pressures as shown in the clamping force diagram must not be exceeded.

Pneumatic accessories

see data sheet J 7.400

Installation

On fixtures flange-type swing clamps (flange is an accessory) or threaded versions with corresponding collar nuts can be easily adjusted to different workpiece heights.

Material

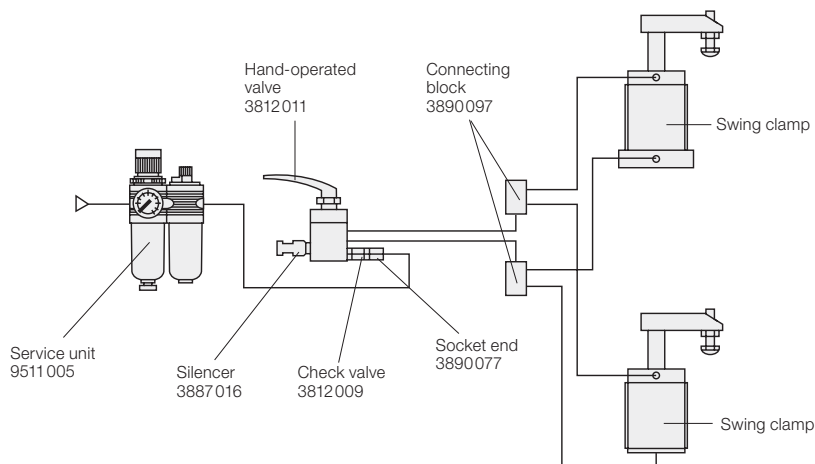
The swing clamps are supplied in corrosion resistant quality. Guide bushing, housing, piston, and flange are made of hardcoated aluminium. The piston rod is made of corrosion resistant steel.

Important note

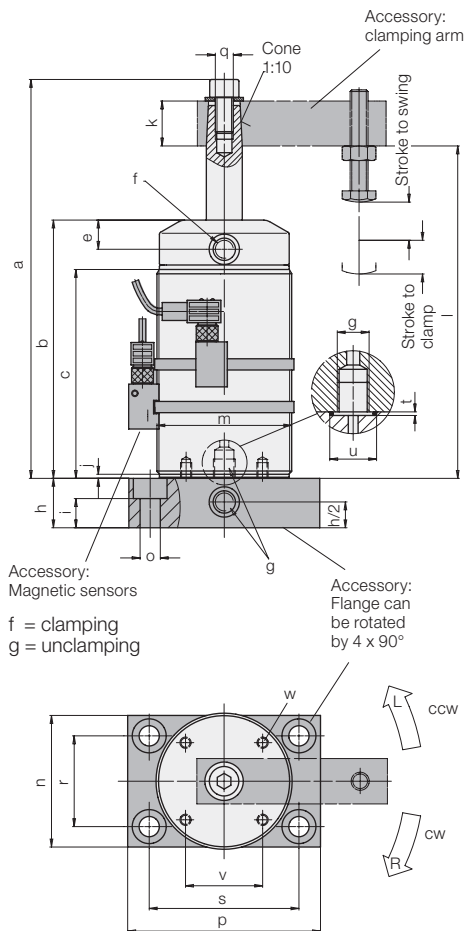
Operating of these pneumatic elements has to be effected with an additional service unit in order to guarantee that the clamping elements are supplied with correctly prepared compressed air.



Connecting example

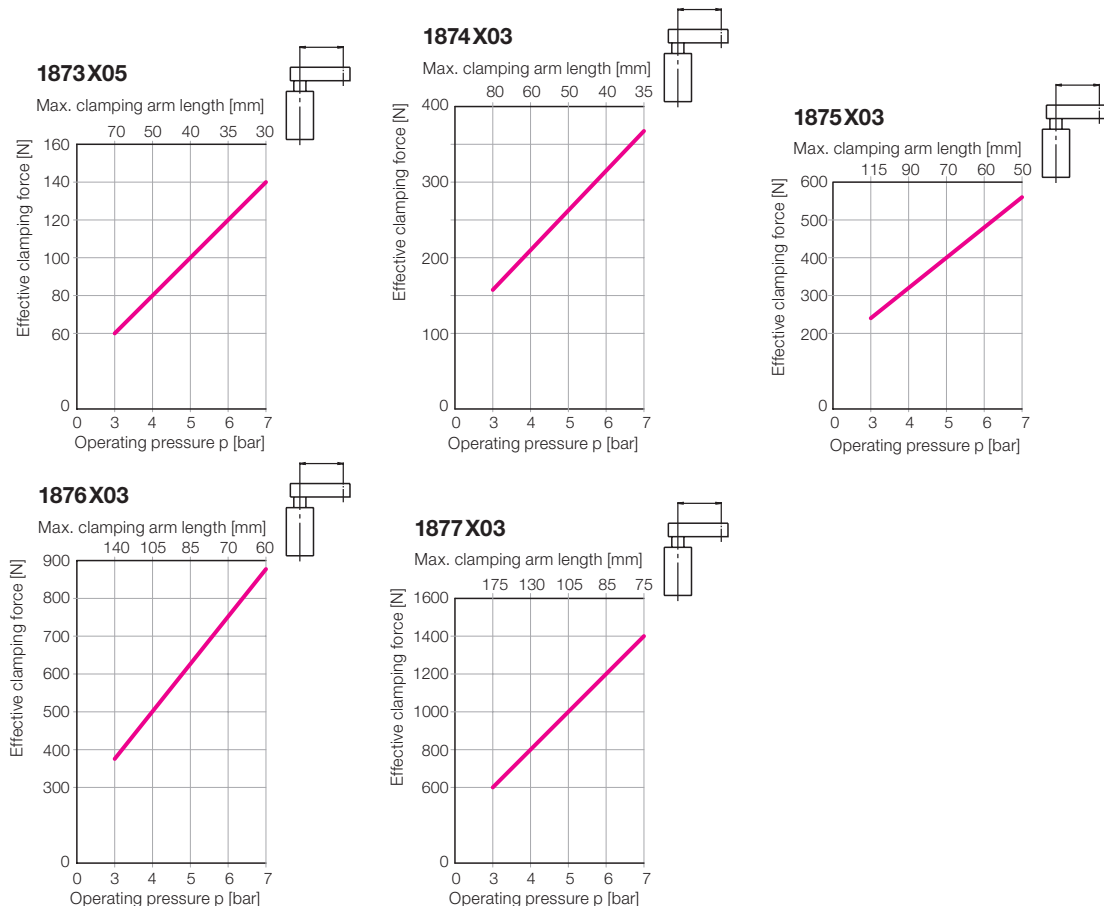


Technical data Dimensions • Effective clamping force



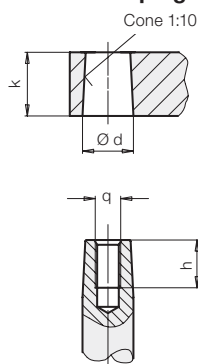
Piston Ø	[mm]	20	32	40	50	63
Piston rod Ø	[mm]	8	12	16	20	25
Stroke to swing	[mm]	7.5	9.5	17	18	23
Stroke to clamp	[mm]	7	9	15	15	18
Pulling force at 4 bar	[N]	105.5	276.4	422.2	659.7	1050.5
* air pressure 5 bar	[N]	131.9	345.5	527.7	824.6	1313.1
6 bar	[N]	158.3	414.6	633.3	989.6	1575.8
Min. operating pressure	[bar]			3		
Max. operating pressure	[bar]			7		
Angle of rotation	[°]			90° ± 2°		
Weight	[kg]	0.20	0.30	0.70	0.90	2.1
a	[mm]	114.3	133.1	182.6	198.5	240.5
b	[mm]	75	86.5	115	125	156
c	[mm]	58.5	67.5	93	101	124
e	[mm]	9.5	12	13	13	17
f	[mm]	M5	M5	G 1/8	G 1/8	G 1/4
g	[mm]	M5	M5	G 1/8	G 1/8	G 1/4
h	[mm]	12	16	22	22	25
i	[mm]	5.5	9.5	13	13	14
j	[mm]	2	2	2	2	2
k	[mm]	12	16	20	25	30
l	[mm]	97.5	109.5	153	159	198
m	[mm]	M30x1.5	M40x1.5	M50x1.5	M60x1.5	M80x1.5
n	[mm]	30	38	50	58	75
o	[mm]	6.6	6.6	9	9	11
p	[mm]	60	65	80	85	110
q	[mm]	M4	M6	M8	M12	M10
r	[mm]	17	23	30	40	55
s	[mm]	43	50	60	66	88
t	[mm]	1.1	1.1	1.1	1.1	1.5
Ø u	[mm]	9.8	9.8	14.3	14.3	19.8
v	[mm]	14.2	17.6	26.88	34	38.9
w	[mm]	M4x5.5	M5x5	M5x7	M5x7	M8x10
Clockwise rotation						
Part No.		1873305	1874303	1875303	1876303	1877303
Counterclockwise rotation						
Part No.		1873405	1874403	1875403	1876403	1877403
Accessory: flange						
Part No.		0345403	0345404	0345405	0345406	0345407

* Effective clamping force see diagram



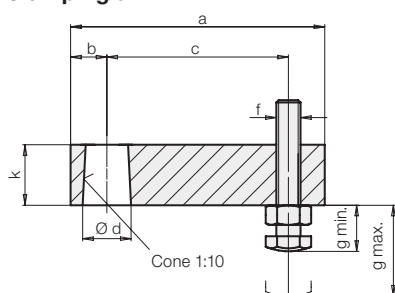
Accessory: Clamping arms • Mounting parts

Seat of clamping arm (dimensions)



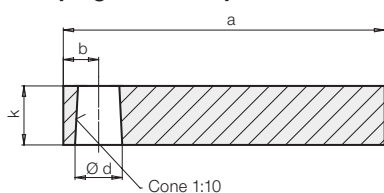
Swing clamp	$\varnothing d + 0.05$	$\square k$	h	q
1873X05	7.85	12	9	M 4
1874X03	11.85	16	15	M 6
1875X03	15.85	20	19	M 8
1876X03	19.85	25	18	M 12
1877X03	24.85	30	25	M 10

Clamping arm



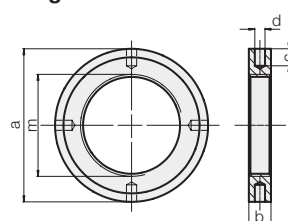
Swing clamp	a	b	c	$\varnothing d + 0.05$	f	g min.	g max.	$\square k$	Part no.
1873X05	42	7	30	7.85	M 4	8	20.5	12	0187324
1874X03	52	10	35	11.85	M 6	12	17.5	16	0187424
1875X03	70	12	50	15.85	M 6	12	28.5	20	0187524
1876X03	82	14	60	19.85	M 8	15	25	25	0187624
1877X03	104	18	75	24.85	M 10	19	36.5	30	0187724

Clamping arms for special versions



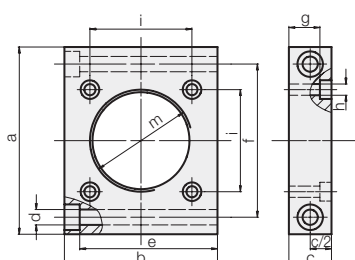
Swing clamp	a	b	$\varnothing d + 0.05$	$\square k$	Part no.
1873X05	62	7	7.85	12	3548355
1874X03	72	10	11.85	16	3548356
1875X03	95	12	15.85	20	3548357
1876X03	116	14	19.85	25	3548353
1877X03	143	18	24.85	30	3548358

Flanged nut



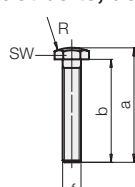
Swing clamp	$\varnothing a$	b	c	$\varnothing d$	m	Part no.
1873X05	50	10	7	4 x 5	M30 x 1.5	3548355
1874X03	62	12	8	4 x 6	M40 x 1.5	3548356
1875X03	75	13	10	6 x 6	M50 x 1.5	3548357
1876X03	90	13	10	6 x 6	M60 x 1.5	3548353
1877X03	115	16	12	6 x 8	M80 x 1.5	3548358

Threaded nut



Swing clamp	a	b	c	$\varnothing d$	e	f	g	$\varnothing h$	i	m	Part no.
1873X05	65	55	15	5.5	49.3	50	10.4	4.5	30	M30 x 1.5	3527073
1874X03	80	65	15	5.5	59.3	60	10.4	4.5	40	M40 x 1.5	3527044
1875X03	95	75	20	6.6	68.2	75	14.3	5.5	50	M50 x 1.5	3527045
1876X03	110	90	25	9	81	90	18.2	6.6	60	M60 x 1.5	3527046
1877X03	140	120	25	11	109	115	16	9	75	M80 x 1.5	3527047

Contact bolts, dome head



Swing clamp	a	b	f	R	SW	Part no.
1873X05	32.5	30	M 4	15	7	3614 141
1874X03	33.5	30	M 6	20	10	3614 137
1875X03	48.5	45	M 6	20	10	3614 138
1876X03	50	45	M 8	20	13	3614 139
1877X03	66.5	60	M 10	35	17	3614 140

Accessory Magnetic sensors

Compared with traditional reed switches the electronic magnetic sensors offer the following advantages:

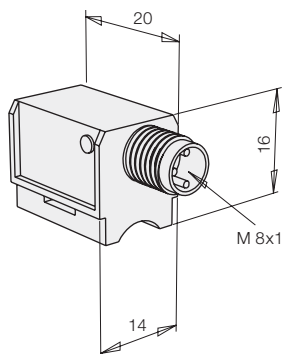
- Indifference to shock and vibration
- Bounce-free output signal
- Only one switching point
- Wear resistant
- Protection against reverse battery
- Protected against short circuits

Electric connection is made as per traditional inductive proximity switches.

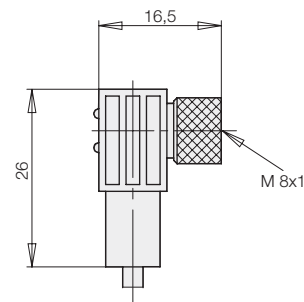
Up to four magnetic sensors can be connected in series.

The magnetic sensor is mounted at the swing clamp body with a hose clamp.

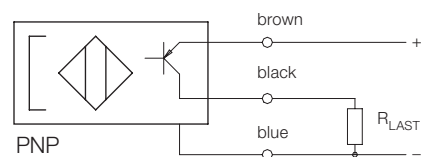
Electronic magnetic sensor



Connecting cable with right angle plug



Connecting scheme



Hose clamp for swing clamp

Part no.

1873X05	3829 132
1874X03	3829 133
1875X03	3829 120
1876X03	3829 134
1877X03	3829 135

Technical data

Electronic magnetic sensor

Connecting cable with right angle plug

Cylinder body material	PA 12 - GF 30; yellow	
Voltage	10 – 30 V DC	10 – 30 V DC
Residual ripple	max. 10 %	
Current load I_{LAST}	200 mA	
Current consumption	< 2 mA	
Voltage drop (max. load)	< 1.8 V	
Output	pnp, interlock	
Protected against short circuits	yes	
Protection against reverse battery	installed	
Switching frequency	1 kHz	
Switching hysteresis	< 1 mm	
Protection as per DIN 40050	IP 67	IP 67
Environmental temperature	–25 °C up to +70 °C	–25 °C up to +90 °C
Plug connection	M8 x 1 plug	M8 x 1 plug
LED	Function display (red)	Voltage (green) Function display (yellow)
Cable, length of cable		PUR, 5 m
Part No. (1 off)	3829 119	3829 099