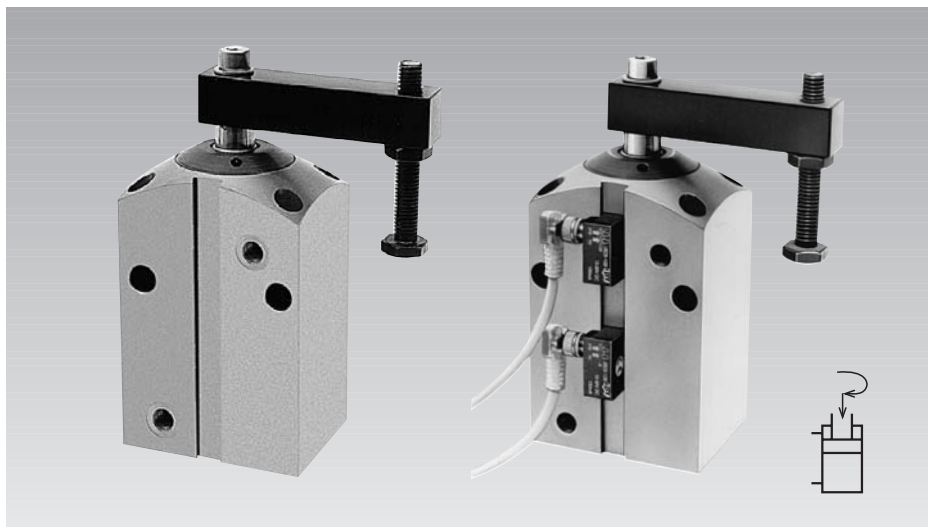




## Pneumatic Swing Clamp

block-type, for adjustable magnetic sensors  
 double acting, max. operating pressure 7 bar



### Advantages

- Compact design
- Easy adjustment of switching point positions
- Diverse mounting possibilities
- 5 standard sizes are available
- optionally with thread connection or for manifold mounting with O-ring sealing

### 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

The block-type offers universal mounting possibilities.

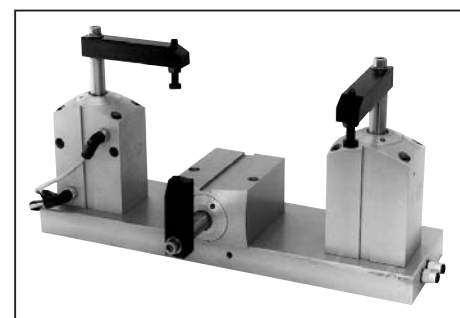
### Material

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 notes

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.

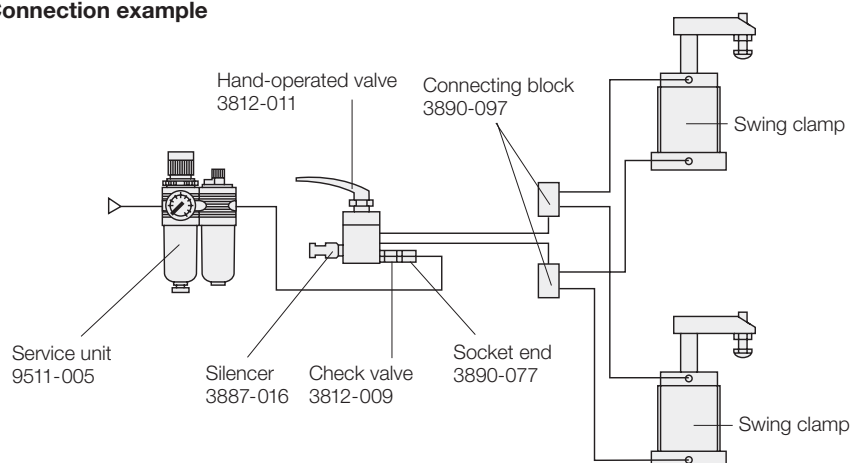
Operating conditions, tolerances and other data see data sheet A 0.100.



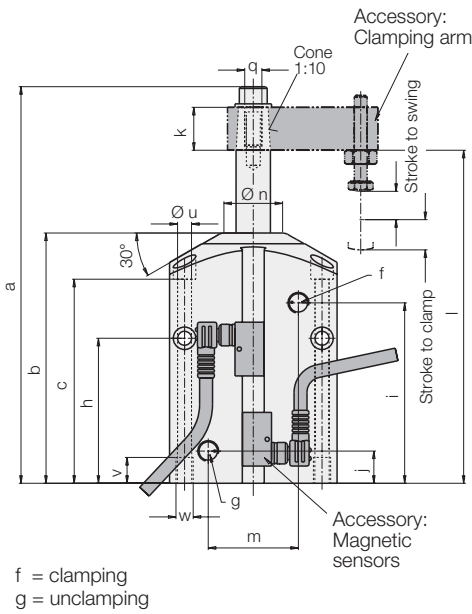
### Versions

- Versions with pipe thread (Figure at the left-hand side) see page 2
- Manifold mounting with O-ring sealing Version **K** (Figure in the centre), see page 3
- Manifold mounting with O-ring sealing Version **B** (Figure at the right-hand side), see page 3

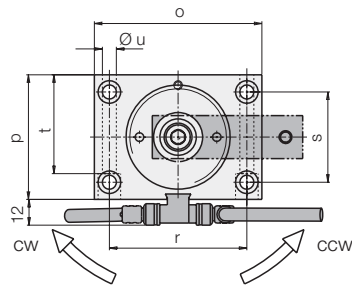
### Connection example



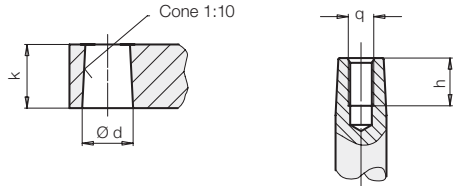
## Threaded body Technical characteristics • Accessories



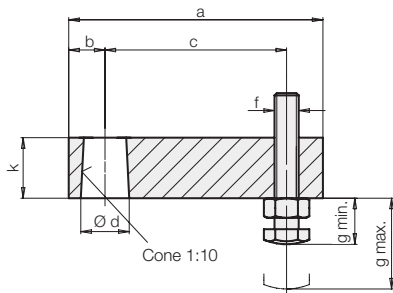
f = clamping  
g = unclamping



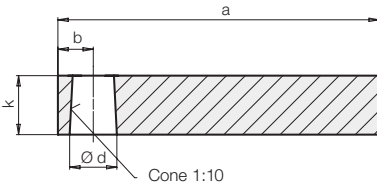
### Seat of clamping arm



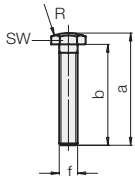
### Clamping arm



### Clamping arms for special versions



### Contact bolt, dome head



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 5 bar	[N]	131.9	345.5	527.7	824.6	1313.1
pressure 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]	0.35	0.8	1.3	2.0	3.33
a	[mm]	120.5	143	189.5	203.5	239.5
b	[mm]	76	94.5	120.5	130	150
c	[mm]	55.5	72	99	104	118
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]	41	59.5	71.5	76	80
i	[mm]	53.5	63	88	95	100
j	[mm]	17	20	19	17.5	18
□ k	[mm]	12	16	20	25	30
l	[mm]	103.5	119.5	159	164	197
m	[mm]	22	28	42	44	58
Ø n	[mm]	14	24	30	38	42
o	[mm]	54	68	80	90	106
p	[mm]	35	52	60	70	85
q	[mm]	M4	M6	M8	M12	M10
r	[mm]	40	55	64	72	86
s	[mm]	22	38	42	48	66
t	[mm]	25	40	46	50	70
u	[mm]	5.5	6.5	6.5	8.5	8.5
Ø u	[mm]	10	12	12	15	15
w	[mm]	M8	M8	M8	M10	M10
Clockwise rotation	<b>Part-no.</b>	<b>1873-106</b>	<b>1874-106</b>	<b>1875-106</b>	<b>1876-106</b>	<b>1877-106</b>
Counterclockwise rotation	<b>Part-no.</b>	<b>1873-206</b>	<b>1874-206</b>	<b>1875-206</b>	<b>1876-206</b>	<b>1877-206</b>

\* Effective clamping force see diagram (page 3, column 1)

Swing clamp	Ø d + 0.05	□ k	h	q
<b>1873-X06</b>	7.85	12	9	M 4
<b>1874-X06</b>	11.85	16	15	M 6
<b>1875-X06</b>	15.85	20	19	M 8
<b>1876-X06</b>	19.85	25	18	M 12
<b>1877-X06</b>	24.85	30	25	M 10

Swing clamp	a	b	c	Ø d + 0.05	f	g min.	g max.	□ k	Part-no.
<b>1873-X06</b>	54	7	42	7.85	M 4	8	28	12	<b>0187-326</b>
<b>1874-X06</b>	68	10	52	11.85	M 6	12	27	16	<b>0187-426</b>
<b>1875-X06</b>	78	12	58	15.85	M 6	12	42	20	<b>0187-526</b>
<b>1876-X06</b>	90	14	68	19.85	M 8	15	42	25	<b>0187-626</b>
<b>1877-X06</b>	110	18	80	24.85	M10	19	56	30	<b>0187-726</b>

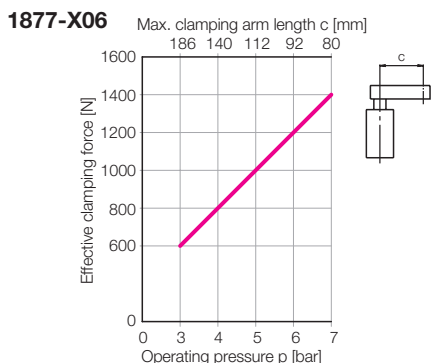
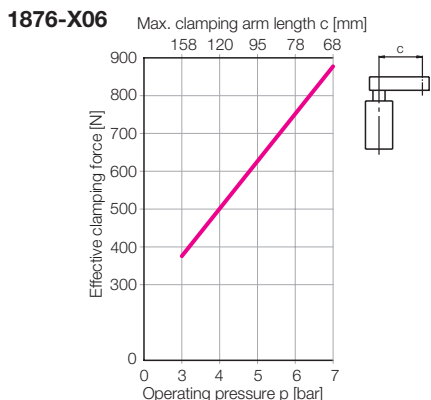
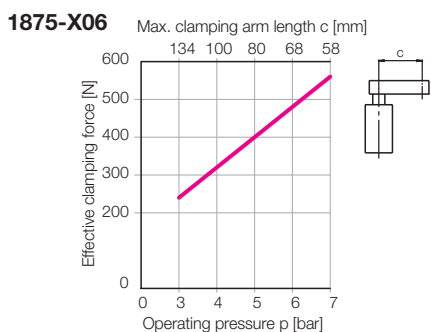
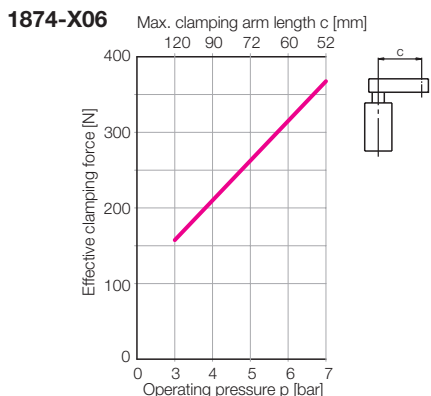
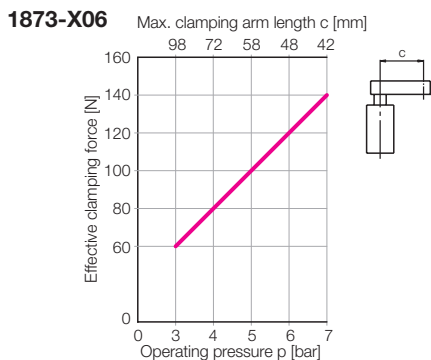
Swing clamp	a	b	Ø d + 0.05	□ k	Part-no.
<b>1873-X06</b>	62	7	7.85	12	<b>3548-355</b>
<b>1874-X06</b>	72	10	11.85	16	<b>3548-356</b>
<b>1875-X06</b>	95	12	15.85	20	<b>3548-357</b>
<b>1876-X06</b>	116	14	19.85	25	<b>3548-353</b>
<b>1877-X06</b>	143	18	24.85	30	<b>3548-358</b>

Swing clamp	a	b	f	R	SW	Part-no.
<b>1873-X06</b>	32.5	30	M 4	15	7	<b>3614-141</b>
<b>1874-X06</b>	33.5	30	M 6	20	10	<b>3614-137</b>
<b>1875-X06</b>	48.5	45	M 6	20	10	<b>3614-138</b>
<b>1876-X06</b>	50	45	M 8	20	13	<b>3614-139</b>
<b>1877-X06</b>	66.5	60	M 10	35	17	<b>3614-140</b>

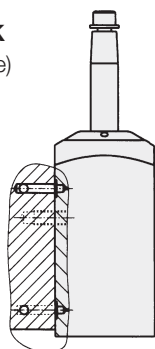
# Manifold mounting with O-ring sealing

## Technical characteristics

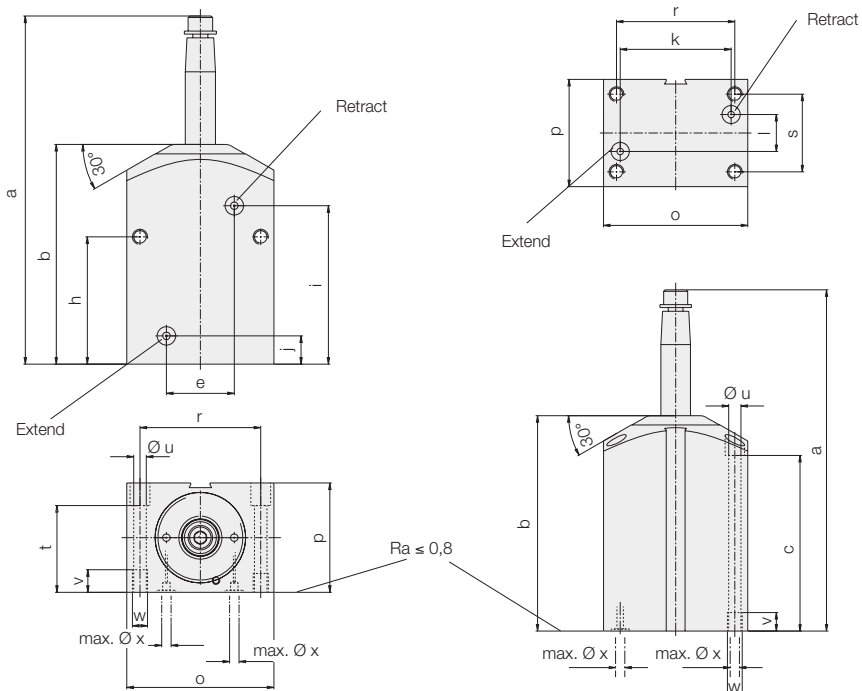
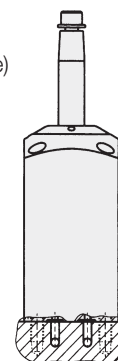
### Effective clamping force



**Version K**  
(Broad side)



**Version B**  
(Bottom side)



### Swing clamp

	1873-106X	1874-106X	1875-106X	1876-106X	1877-106X
Clockwise rotation	<b>1873-206X</b>	<b>1874-206X</b>	<b>1875-206X</b>	<b>1876-206X</b>	<b>1877-206X</b>
Counterclockwise rotation					
Piston Ø	[mm] 20	[mm] 32	[mm] 40	[mm] 50	[mm] 63
Piston rod Ø	[mm] 8	[mm] 12	[mm] 16	[mm] 20	[mm] 25
a	[mm] 120.5	[mm] 143	[mm] 189.5	[mm] 203.5	[mm] 239
b	[mm] 76	[mm] 94.5	[mm] 120.5	[mm] 130	[mm] 150
c	[mm] 55.5	[mm] 72	[mm] 99	[mm] 104	[mm] 118
e	[mm] 16	[mm] 28	[mm] 36	[mm] 44	[mm] 58
h	[mm] 41	[mm] 59.5	[mm] 71.5	[mm] 76	[mm] 80
i	[mm] 53.5	[mm] 63	[mm] 88	[mm] 95	[mm] 100
j	[mm] 20	[mm] 20	[mm] 19	[mm] 17.5	[mm] 18
k	[mm] 39	[mm] 53	[mm] 60	[mm] 72	[mm] 86
l	[mm] -	[mm] 14	[mm] 20	[mm] 20	[mm] 20
o	[mm] 54	[mm] 68	[mm] 80	[mm] 90	[mm] 106
p	[mm] 35	[mm] 52	[mm] 60	[mm] 70	[mm] 85
r	[mm] 40	[mm] 55	[mm] 64	[mm] 72	[mm] 86
s	[mm] 22	[mm] 38	[mm] 42	[mm] 48	[mm] 66
t	[mm] 25	[mm] 40	[mm] 46	[mm] 50	[mm] 70
Ø u	[mm] 5.5	[mm] 6.5	[mm] 6.5	[mm] 8.5	[mm] 8.5
v	[mm] 10	[mm] 12	[mm] 12	[mm] 15	[mm] 15
w	[mm] M8	[mm] M8	[mm] M8	[mm] M10	[mm] M10
max. Ø x	[mm] 5	[mm] 5	[mm] 5	[mm] 5	[mm] 5
Dimensions O-ring	[mm] 7x1.5	[mm] 7x1.5	[mm] 7x1.5	[mm] 7x1.5	[mm] 7x1.5

**Part-no., spare O-ring**      **3000-342**   **3000-342**   **3000-342**   **3000-342**   **3000-342**

O-rings are included in delivery. Other dimensions see page 2.

### Order:

Please add the corresponding identification letter to the **part-no.** of the required pneumatic block-type swing clamp: **K** or **B**

### Example of ordering:

Pneumatic block-type swing clamp 1875-106 with air supply on the broad side  
**Part-no. 1875-106 K**

## 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

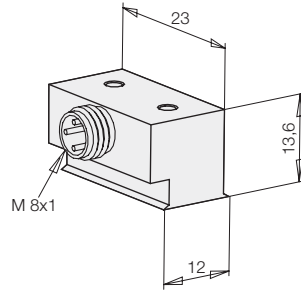
Electric connection is made as per traditional inductive proximity switches; up to four magnetic sensors can be connected in series. Minimum distance of the switching points: 6 mm.

### Important notes

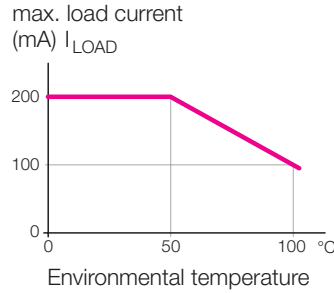
Steel can influence the magnetic field of the magnetic piston and thereby the position of the switching points. If there is the same influence for each stroke (e.g. because of adjoining steel components) it can be compensated by displacing the magnetic sensors. But if the influence differs from stroke to stroke, as e.g. in the case of swarf, a cover has to be provided 30 mm over the magnetic sensors. Covers have to be provided to protect the cylinders against ferritic swarf.

**Further information about voltage supply for position controls see data sheet A 0.120.**

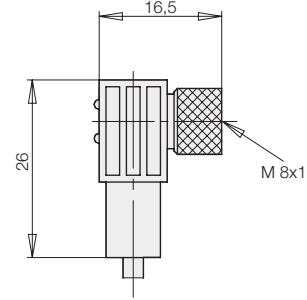
### Electronic magnetic sensor



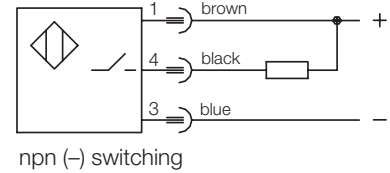
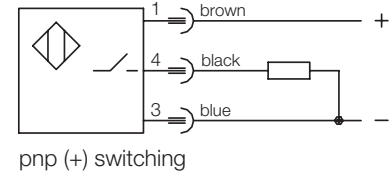
### Temperature curve



### Connecting cable with right angle plug



### Connecting scheme



### Technical characteristics

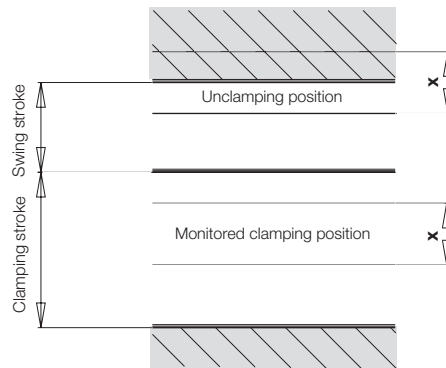
	Electronic magnetic sensor		Connection cable with right angle plug	
Cylinder body material	aluminium black lacquered			
Voltage	10 – 30 V DC		10 – 30 V DC	
Residual ripple	max. 10%			
Current load I <sub>LOAD</sub>	200 mA – up to 50 °C 150 mA – at 75 °C 100 mA – at 100 °C			
Current consumption	< 15 mA			
Voltage drop (max. load)	< 2 V			
Protected against short circuits	yes			
Protection against reverse battery	installed			
Switching frequency	1 kHz			
Switching hysteresis	3 mm			
Protection as per DIN 40050	IP 67		IP 67	
Environmental temperature	–25 °C up to +100 °C		–25 °C up to +90 °C	
Plug connection	M8 plug		M8 plug	
LED	no		Voltage (green) Function display (yellow)	
Cable, length of cable			PUR, 5 m	
Output (interlock)	<b>pnp</b>	<b>nnp</b>	<b>pnp</b>	<b>nnp</b>
<b>Part-no.</b>	<b>3829-234</b>	<b>3829-240</b>	<b>3829-099</b>	<b>3829-124</b>

### Further accessory

see data sheet G 2.140

- Pin-and-socket connector
- Y-distributor
- Reversing plug
- Voltage regulator

### Range of magnetic signal



Type	≈ x [mm]
1873-X06	4
1874-X06	4
1875-X06	5
1876-X06	6
1877-X06	7