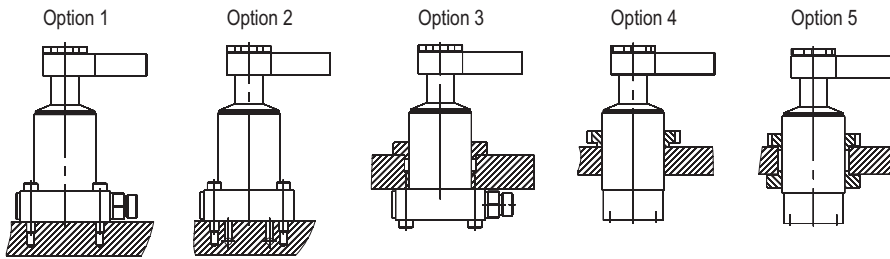


SWING CLAMP CYLINDERS

with thread/flange, overload protection, single-/double-acting, pmax. 500 bar

Mounting options:



Option:	Housing design:	Mounting via:	Oil connection via:
1	B	flange	G1/4 threaded port lateral
2	B	flange	manifold with O-ring lower
3	B	flange/built-in	G1/4 threaded port lateral
4	C	built-in	G1/4 threaded port lower
5	C	built-in	G1/4 threaded port lower

Description:

Swing clamp cylinders release the clamping point on the workpiece. With this, it is easy to change the workpiece.

This hydraulic swing clamp cylinder operates as single-acting or double-acting pull cylinder, whereas part of the stroke is used to rotate the piston. The model with 0° swing angle operates only vertical as pull cylinder.

To guarantee a long lifetime the cylinders have an integrated metal wiper as standard.

For oil supply, the cylinders are equipped with threaded port and manifold connection with O-ring for drilled channels.

You can select between right or left turning models with various standardized swing angles.

The integrated overload protection protects the swing mechanism from damage due to blockage of the rotation or improper assembly of the clamp arm.

Operating conditions:

For any risk of exceeding the permitted volume flow a throttle check valve must be interposed into the oil supply line (see data sheet 700-15). Counter-hold the clamp arm when tightening or loosening the counter nut in order to prevent torque transfer to the piston rod and to avoid damage to the ball guide.

Variations with 0°, 30°, 45°, 60° and 90° swing angles are available. The permitted operating pressure is depending from the clamp arm length.

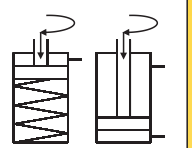
Except from standard clamp arms also special clamp arms can be assembled. The maximum operating pressure of 500 bar does not apply for each clamp arm length. For details about the permitted operating pressure, refer to page 4.

The safety instructions for swing clamp cylinders in our catalogue or on our website and the current accident prevention regulations must be considered.



Webcode: 024030

We also design and manufacture special designs



Housing designs:

- ☒ Type B and C (lower flange or threaded body)

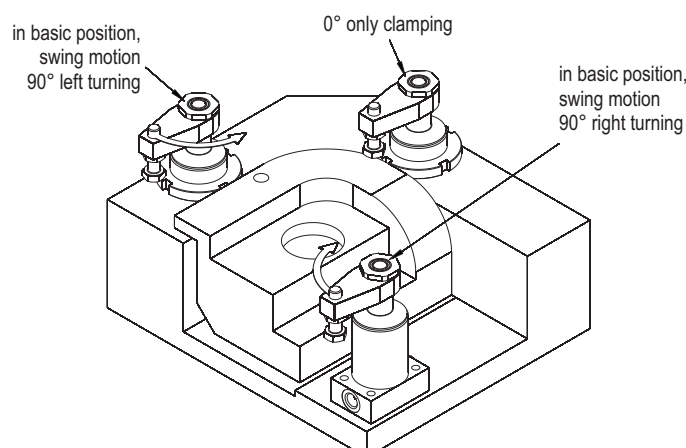
Connection types:

- ☒ G1/4 threaded port
- ☒ Manifold with O-ring

Advantages:

- ☒ Protecting metal wiper
- ☒ Integrated overload protection
- ☒ Easy to assemble with self designed clamp arms
- ☒ Standard and special clamp arms available (see page 3)

Application example:

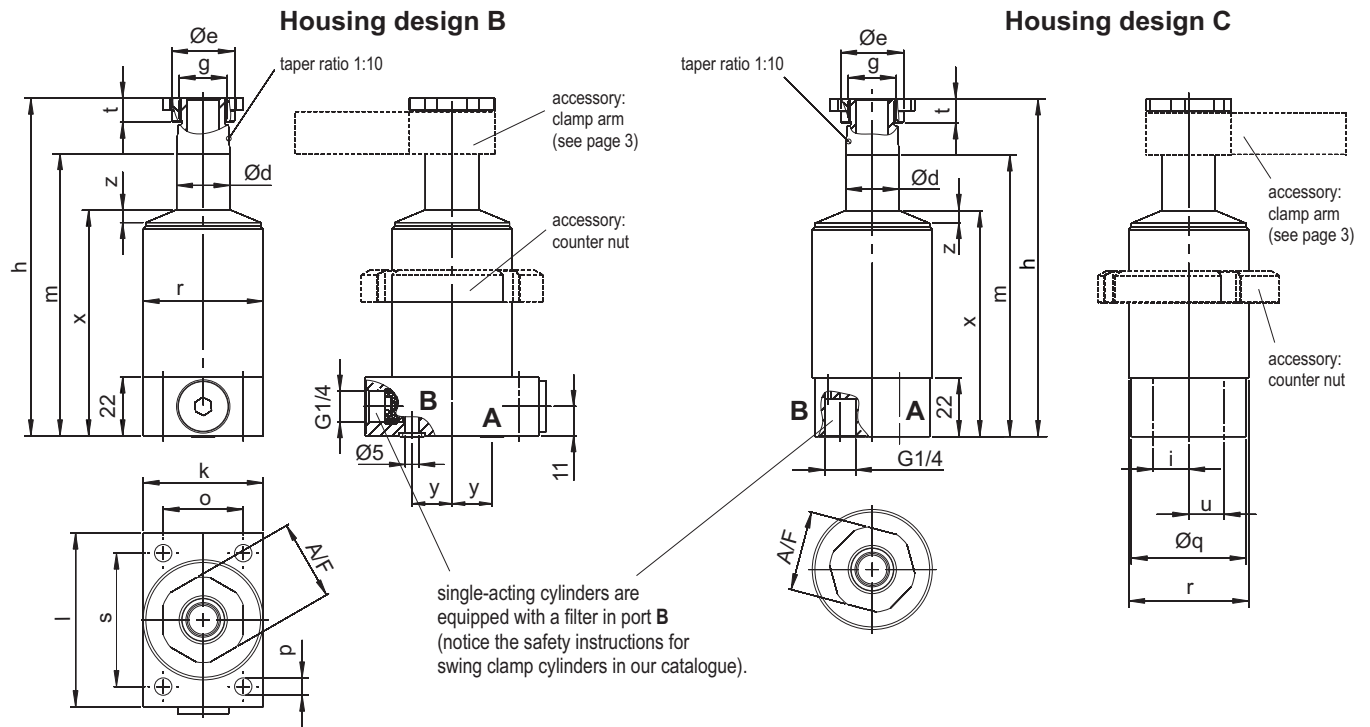


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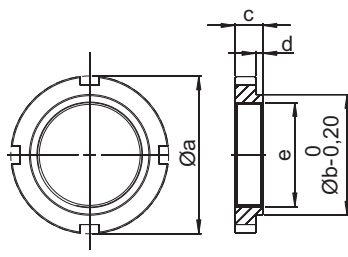
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Swing clamp cylinders, threaded body with flange



Counter nut:
DIN 1804
(accessory)



Installation instructions:

The swing clamp cylinders will be delivered ready for connection. If a modification of the threaded ports on manifold ports become necessary, proceed as follows:

single-/double-acting:

- insert G1/4 locking screws into the threaded ports **A**
- remove the cap screws with seals out of the manifold connection ports **A**
- insert the O-rings 7x1,5 into the countersink of the manifold connection ports **A**

For the application of single-acting cylinders it is important to note, if the ventilation of the spring chamber should be realized by the manifold connection port you must replace the filter at port **B** with a G1/4 locking screw.

Accessories for ports: Order no.:

G1/4 locking screw **7900-001**
O-Ring, 7x1,5 **6010-002**

Piston Ø	Øa	Øb	c	d	e	Order no.
25 mm	68	60	12	0,5	M45x1,5	7045-008
40 mm	90	80	13	0,5	M60x1,5	7060-007
50 mm	115	105	16	1	M80x2	7080-005
63 mm	130	120	16	1	M90x2	7090-003

Technical data:

Piston Ø:	[mm]	25			40			50			63		
Clamping stroke	[mm]	10	25	50	13	25	50	15	25	50	13	25	50
Swing stroke	[mm]	8	10	10	9	10	10	11	11	11	12	13	13
Total stroke	[mm]	18	35	60	22	35	60	26	36	61	25	38	63
Min. operating pressure	[bar]	30	30	30	30	30	30	30	30	30	30	30	30
Max. volume flow	[cm³/s]	3,2	3,2	3,2	10	10	10	18,4	18,4	18,4	27,7	27,7	27,7
Oil requirement/stroke	[cm³]	3,2	6	10,5	10	16	27,2	18,4	25,5	43,2	27,7	43	72
Oil requirement/return	[cm³]	8,8	17	29	27,7	44	76	51	71	120	75	116	194
d Ø	[mm]	20	20	20	32	32	32	40	40	40	50	50	50
e Ø	[mm]	23,5	23,5	23,5	33,5	33,5	33,5	45	45	45	55,5	55,5	55,5
A/F	[mm]	27	27	27	40	40	40	55	55	55	68	68	68
g	[mm]	M18x1,5	M18x1,5	M18x1,5	M28x1,5	M28x1,5	M28x1,5	M35x1,5	M35x1,5	M35x1,5	M45x1,5	M45x1,5	M45x1,5
h	[mm]	126,5	158,5	208,5	147,5	173,5	223,5	172	192	242	183	209	259
i	[mm]	12	12	12	12,5	12,5	12,5	19	19	19	25,5	25,5	25,5
k	[mm]	45	45	45	63	63	63	80	80	80	90	90	90
l	[mm]	65	65	65	85	85	85	100	100	100	115	115	115
m	[mm]	105,5(-1)	137,5(-1)	187,5(-1)	119,5(-1)	145,5(-1)	195,5(-1)	138	158	208	143(-1)	169(-1)	219(-1)
o	[mm]	30	30	30	44	44	44	60	60	60	68	68	68
p	[mm]	6,5	6,5	6,5	8,5	8,5	8,5	13,5	13,5	13,5	16	16	16
q Ø	[mm]	42,5	42,5	42,5	57,8	57,8	57,8	77	77	77	87	87	87
r	[mm]	M45x1,5	M45x1,5	M45x1,5	M60x1,5	M60x1,5	M60x1,5	M80x2	M80x2	M80x2	M90x2	M90x2	M90x2
s	[mm]	50	50	50	65	65	65	80	80	80	90	90	90
t	[mm]	9	9	9	10	10	10	11	11	11	12	12	12
u	[mm]	12	12	12	19,5	19,5	19,5	26,5	26,5	26,5	34	34	34
x	[mm]	84,5	100,5	125,5	94,5	107,5	132,5	110	120	145	116	129	154
y	[mm]	15	15	15	28	28	28	31	31	31	37,5	37,5	37,5
z	[mm]	5	5	5	6	6	6	6	6	6	9	9	9
available as single-acting type		yes	no	no	yes	no	no	yes	no	no	yes	no	no
available as double-acting type		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes



Swing clamp cylinders, threaded body with flange

Clamp arms:

For these swing clamps, standard clamp arms are available as accessories.
See data sheet **240-0 «Clamp arms»** (Webcode 024000).
Special clamp arms are available on request.

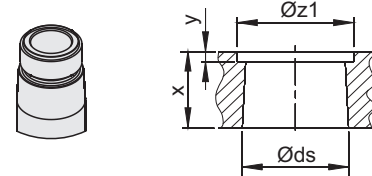
Compatible clamp arms: **c d e f**

Dimensions for in-house production of clamp arms:

Piston Ø	[mm]	25	40	50	63
Ø ds	[mm]	20	32	40	50
x	[mm]	16	23	28	34
y	[mm]	4	5	5	6
Ø z1	[mm]	24	34	46	56

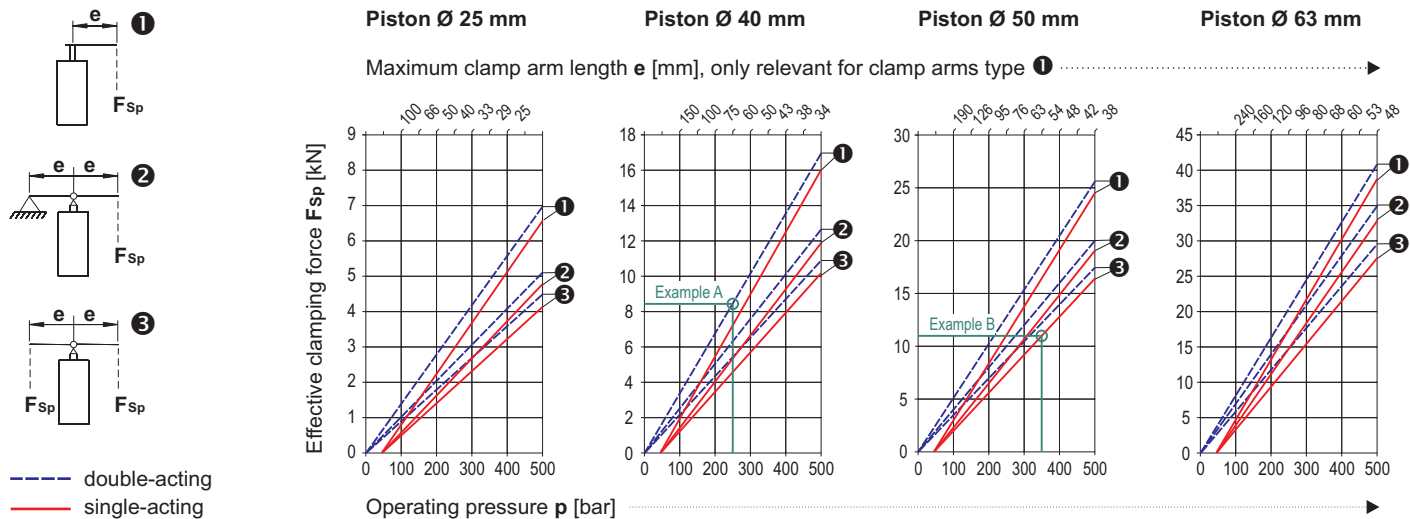
Attention: consider the interference contour for the housing.

Taper holder (SPK)
taper ratio 1:10



To fix the clamp arms, the swing clamp cylinders are equipped with a hexagon nut.
From a piston Ø of 50 mm, scope of supply includes a slotted nut instead.
See information sheet **«Assembly / disassembly of the clamp arms»**.

Effective clamping force F_{Sp} depending from operating pressure p :



Example A:

- double-acting cylinder, piston Ø 40 mm
- present operating pressure $p = 250$ bar
- clamp arm type 1, length $e = 60$ mm
- resulting clamping force $F_{Sp} \sim 8,5$ kN

Example B:

- single-acting cylinder, piston Ø 50 mm
- present operating pressure $p = 350$ bar
- clamp arm type 3, length $e = 54$ mm
- resulting clamping force $F_{Sp} \sim 11$ kN

The retraction force of the spring in single-acting swing clamp cylinders reduces the clamping force slightly. To achieve the same clamping force as with double-acting cylinders, the operating pressure must be increased slightly.

Order number key:

Example **SSZY - RE90 - B5015 - K10 - 002**

1	Swing motion:	right turning = R , left turning = L , neutral (0°) = N
	Operating method:	single-acting = E , double-acting = D
2	Swing angle [degree]:	standard = 0, 30, 45, 60, 90
	Housing design:	lower flange = B , built-in housing = C (see page 1)
3	Piston Ø [mm]:	see dimension table on page 2
	Clamping stroke [mm]:	see dimension table on page 2
4	Clamp arm holder:	taper = K
	Overload protection:	with = 1
5	Position control:	without = 0
	Connection type:	G1/4 threaded port = 001 , manifold with O-ring = 002

For additional help in model selection, see data sheet **«Swing Clamp Cylinders - Selection Guide»**.