SWING CLAMP CYLINDERS

upper flange, without/with position control, double-acting, pmax. 500 bar

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.

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

Assembly example

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

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

The swing clamp cylinder can be optionally supplied with a inductive or pneumatic position control. This feature controls the clamp and unclamp position of the cylinder. The position control is not included in the scope of supply of the standard cylinder. For position controls, refer to page 3.

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.

Operating conditions:

The clamping motion is initiated by a superimposed swing and stroke motion. After that, a linear clamping stroke follows.

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

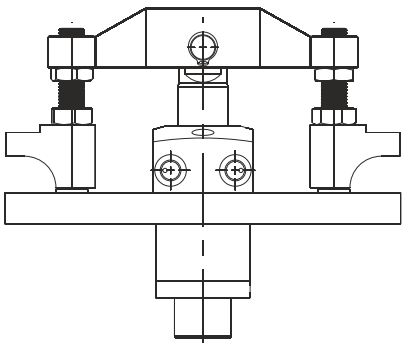
Except from standard clamp arms also special clamp arms can be assembled. The maximum operating pressure of 500 bar does not apply for each clamp arm length. Details about the permitted operating pressure, refer to page 4.

For retaining clamp arms, the piston rod is optionally available with different holders. You can select between pendulum, clevis or taper.

The pendulum allows to retain double clamp arms. With this feature it is possible e.g. to clamp two workpieces at the same time or to create a support on one side during the clamping process.

Due to moments of inertia it should be principally refrained from an overload protection when using double clamp arms.

When using self designed double clamp arms it is recommended to insert a carrier with spring elements to guarantee the neutral position. Details refer to page 4.

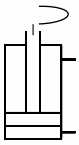


Application example for a double clamp arm

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

Webcode: 024020

We also design and manufacture special designs



Connections:

- **G1/4 threaded port**
- **Manifold connection with O-ring**

Advantages:

- **Protecting metal wiper**
- **Oil supply through drilled channels or threaded port connection**
- **Fixture can be easily loaded and unloaded**
- **Easy to assemble with self designed clamp arms**
- **Inductive or pneumatic position control available** (see page 2)
- **Standard and special clamb arms available** (see page 3)
- **Various contact bolts available** (see data sheet 1000-1)

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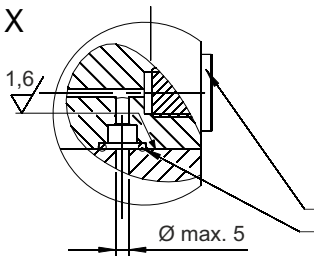
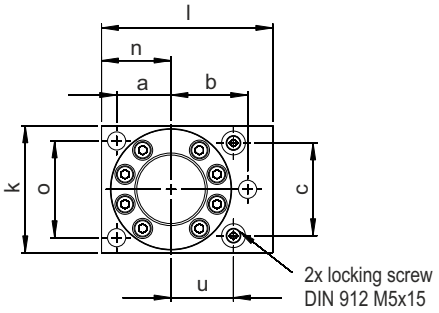
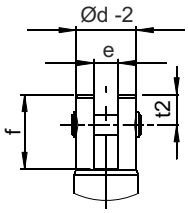


Required accessories
for manifold connection:

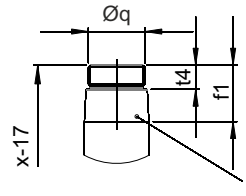
Accessory:	**Order number:**
2x G1/4 locking screw	**7900-001**
2x O-ring, 8x2	**6012-001**



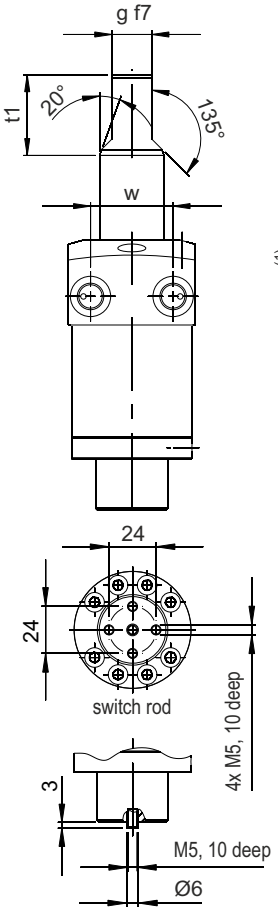
Clamp arm holder:

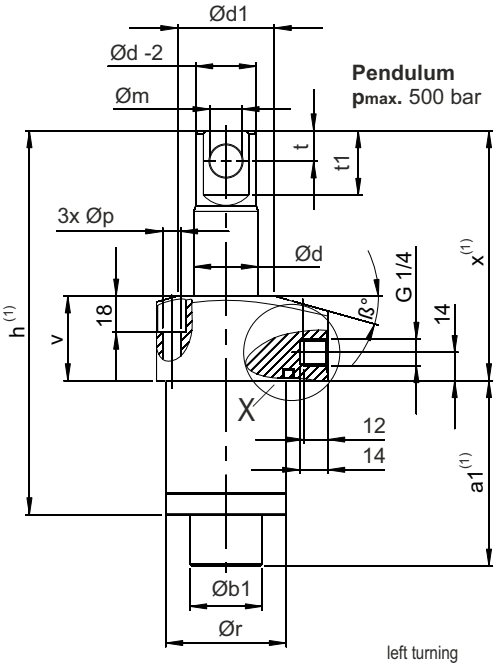


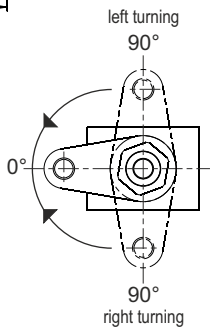
Clevis
pmax. 160 bar



Taper
pmax. 500 bar

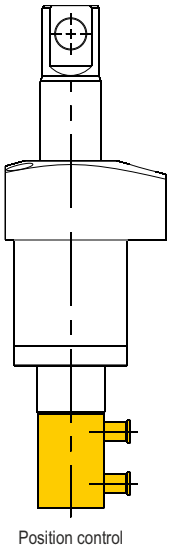




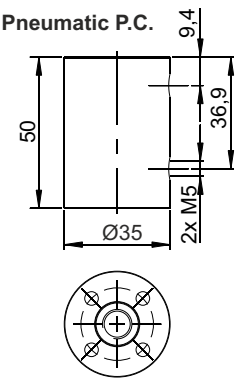


(1) **a3, h, x**
For higher clamping strokes the difference has to be summed up to the standard clamping stroke.

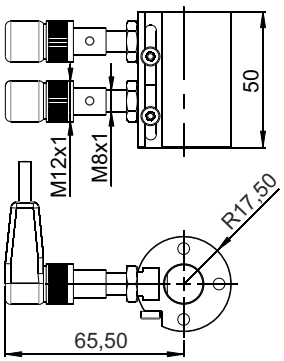
Position control (P.C.):



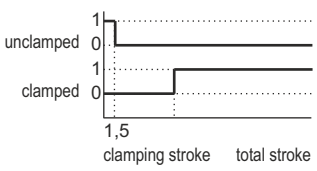
Pneumatic P.C.

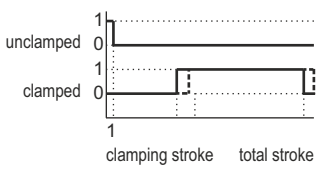


Inductive P.C.	
Size	M8x1
Operating voltage	12...30 V DC
Rated switching distance	1,5 mm
Assured switching distance	0...1,2 mm
Rated operating current	100 mA
Switching function	Closing switch
Output	PNP
Housing material	CuZn plated
Protection grade	IP 67
Ambient temperature	-25...70°C
Type of connection	Plug
Cable length	5 m
LED display	Yes
Short-circuit protected	Yes



Position controls can be ordered separately. The position control has to be assembled with the included fastening screws on the lower side of the cylinder. The inductive position control is supplied with two sensors and two angle plugs.





Technical data:

Piston Ø:	[mm]	32	40
Clamping stroke	[mm]	25	22
Swing stroke	[mm]	9	13
Total stroke	[mm]	34	35
Operating pressure, min.	[bar]	30	30
Volume flow, max.	[cm³/s]	8	20
Active piston area, clamping	[cm²]	1,76	4,52
Active piston area, unclamping	[cm²]	4,9	12,56
Oil requirement/stroke	[cm³]	6	15,8
Oil requirement/return	[cm³]	16,7	44
ß	[Grad]	15,6	15,6
a	[mm]	20	27
a1	[mm]	84	92
b	[mm]	30	38
b1 Ø	[mm]	22	36
c	[mm]	32	46
d Ø	[mm]	20	32
d1 Ø	[mm]	36	45,3
e +0,1	[mm]	8	12
f	[mm]	20	32
f1	[mm]	28	34
g f7	[mm]	12	20
h	[mm]	175	190
k	[mm]	50	63
l	[mm]	70	85
m H7 Ø	[mm]	10	16
m1 Ø	[mm]	6	10
n	[mm]	26,5	34,5
o	[mm]	37	48
p Ø	[mm]	6,6	9
q	[mm]	M28x1,5	M35x1
r Ø -0,1	[mm]	44,8	59,8
t	[mm]	9	15
t1	[mm]	21	33
t2	[mm]	10	15
t3	[mm]	29	40
t4	[mm]	12	12
u	[mm]	26,5	31
v	[mm]	36	42
w	[mm]	28	41
x	[mm]	104,5	124
y	[mm]	18	19

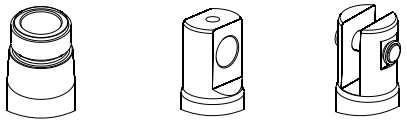
Clamp arms:

For these swing clamp cylinders, standard clamp arms are available as accessories. All necessary information about this can be found on the data sheet **240-0** ***«Clamp arms»*** in the catalogue or at www.hydrokomp.de.

Compatible clamp arms: C D E G H

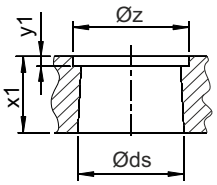
Special clamp arms are available on request.

Clamp arm holders:



Taper | Pendulum | Clevis

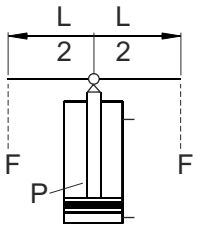
Dimensions for house production of clamp arms:



Piston Ø	[mm]	32	40
Ø ds	[mm]	20	32
x1	[mm]	16	23
y1	[mm]	4	5
Ø z	[mm]	24	34
Taper ratio		1:10	1:10

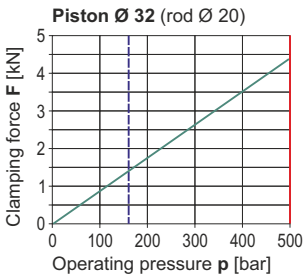
Attention: values only valid for taper.
Consider the interference contour for the housing.

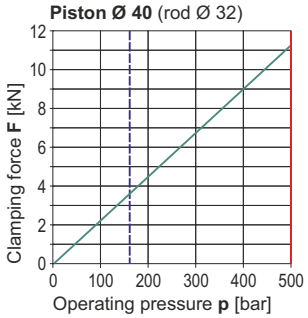
Clamping force F depending from operating pressure p:



with clevis $p_{max.}$ = 160 bar
with pendulum $p_{max.}$ = 500 bar

Example:
- Piston Ø 32 mm (rod Ø 20 mm)
- Clamp arm holder pendulum
- Present operating pressure **p** = 300 bar
  resulting clamping force **F** ~ 2,6 kN





Order number key:

Example **SSZY** – **LD60** – **A3225** – **P02** – **001**

1	**Swing motion:**	right turning = **R**, left turning = **L**, neutral (0°) = **N**
	Operating method:	double-acting = **D**
	Swing angle [degree]:	standard = **0**, **30**, **45**, **60**, **90**
2	**Housing design:**	upper flange = **A**
	Piston Ø [mm]:	see dimension table above
	Clamping stroke [mm]:	see dimension table above
3	**Clamp arm holder:**	clevis = **G**, taper = **K**, pendulum = **P**
	Overload protection:	without = **0**
	Position control:	without = **0**, inductive = **1**, pneumatic = **2**, switch rod = **3**
4	**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»***.