

# Swing clamp cylinders

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

**240-20**

Issue: 10/2022

## 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.



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:

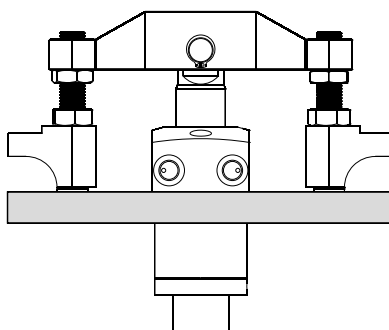
The clamping motion is initiated by a superimposed swing and stroke motion. After that, a linear clamping stroke follows.

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

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

These swing clamp cylinders are equipped with a reinforced swing mechanism. Thereby an overload protection is unnecessary. The reinforced swing mechanism compensates, for example the higher loads if double clamp arms should be used.

When using self designed double clamp arms it is recommended to insert a carrier with spring elements to guarantee the neutral position (see page 3).



Application example for a double clamp arm

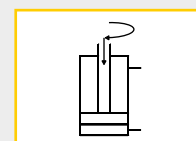
During the mounting of the clamping arm, make sure that torques are transferred in the piston rod. Hold against the clamping arm when you tighten or loosen the tightening screw.

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

**A**



**Webcode: 024020**



## Design:

- ✘ **Type A**  
(upper flange)

## Connections:

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

## Advantages:

- ✘ **Reinforced swing mechanism**
- ✘ **Protective metal wiper**
- ✘ **Inductive or pneumatic position control** (see page 2)
- ✘ **Standard and special clamp arms** available (see page 3)

**We also design and manufacture customized variants!**



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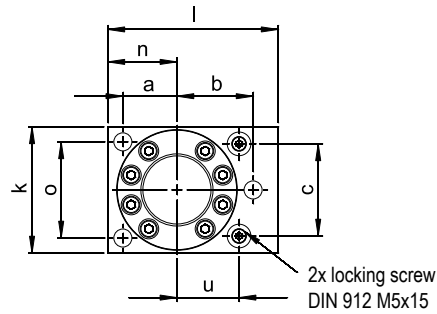
+49 6401 225999-0

sales@hydrokomp.de

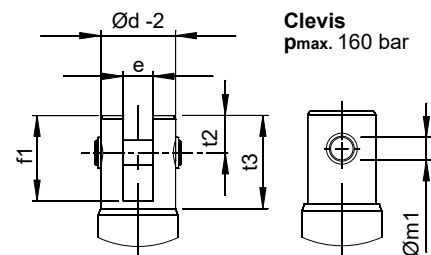
Siemenstr. 16  
35325 Mücke (Germany)

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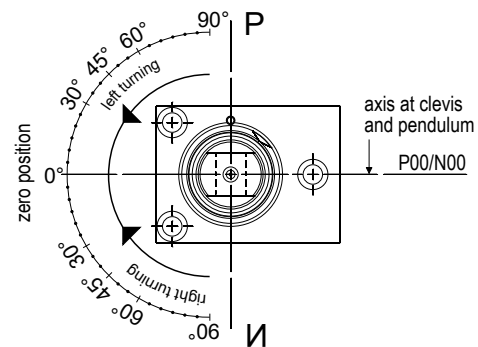


## Clamp arm holder:



## Starting position:

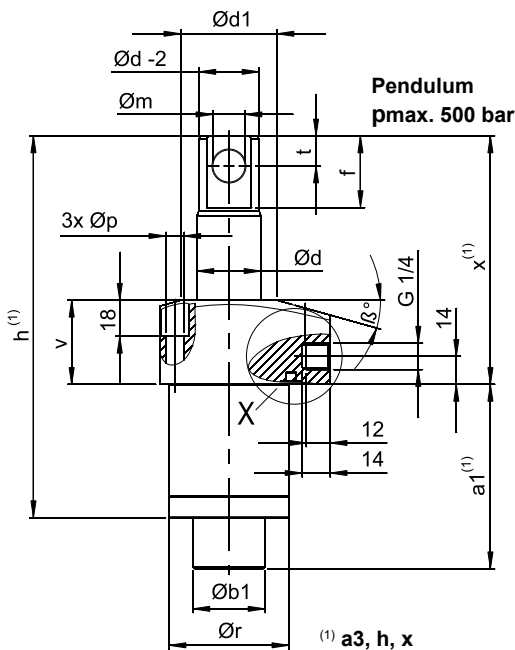
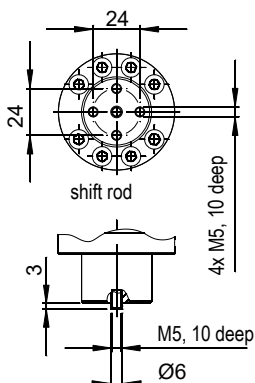
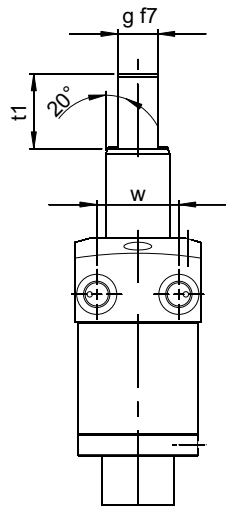
Swing clamp cylinder in basic position, the piston is extended.



**Angle position of the axis**  
of clevis or pendulum  
in relation to the zero position

P = positive  
N = negative

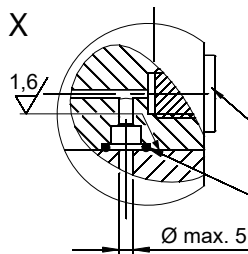
The swing angle is indicated  
in the order number key between  
0° and 90° in the sense of  
positive or negative in 5°  
steps freely selectable.



<sup>(1)</sup> a3, h, x  
For larger clamping strokes the difference to the standard clamping stroke must be added.

Required accessories for manifold connection:

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



## Position controls:

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.

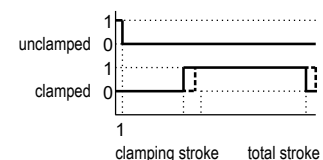
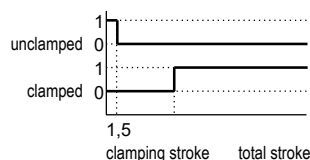
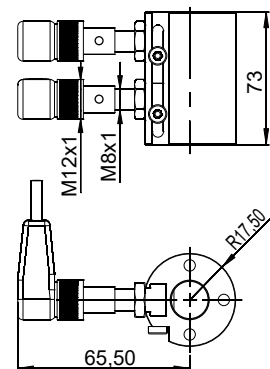
### Pneumatic:

**Order number: PKP-001**

### Inductive:

**Order number: PKE-001**

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
Supplied with two sensors and two angle plugs.	





## Technical data:

Piston Ø:	[mm]	25	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/reset	[cm³]	16,7	44
β	[degree]	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]	26	37
g f7	[mm]	12	20
h	[mm]	182	197
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
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
u	[mm]	26,5	31
v	[mm]	36	42
w	[mm]	28	41
x	[mm]	104,5	124
y	[mm]	18	19

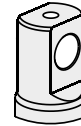
## Clamp arms:

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](http://www.hydrokomp.de). Special clamp arms are available on request.

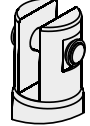
### Compatible clamp arms:



### Clamp arm holders:

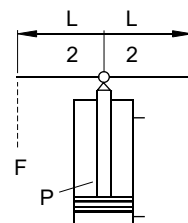


**Pendulum (SPP)**



**Clevis (SPG)**

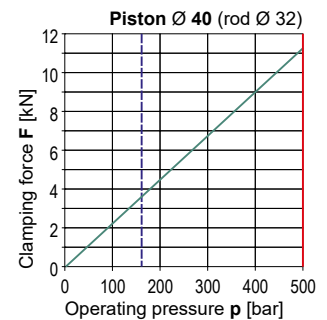
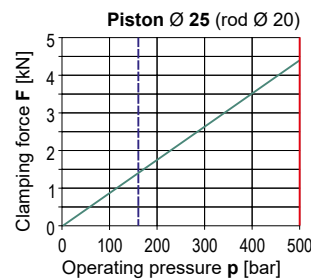
### Clamping force F depending from operating pressure p:



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

#### Example:

- Piston Ø 25 mm (rod Ø 20 mm)
  - Clamp arm holder pendulum
  - Present operating pressure  $p = 300 \text{ bar}$
- Resulting clamping force  $F \sim 2,6 \text{ kN}$



## Order number key:

Example: **SSZY** - **LD60** - **A4022** - **PV0** - **N20** - **001**

**1**

**Swing motion:**  
**Operating method:**  
**Swing angle [degree]:**

right= **R**, left = **L**, neutral 0° = **N**  
 double-acting = **D**  
 standard = **0, 30, 45, 60, 90**

**2**

**Housing design:**  
**Piston Ø [mm]:**  
**Clamping stroke [mm]:**

upper flange = **A**  
 see dimension table, page 2  
 see dimension table, page 2

**3**

**Clamp arm holder:**  
**Overload protection:**  
**Position control:**

clevis = **G**, pendulum = **P**  
 with reinforced swing mechanism = **V**  
 without = **0**, shift rod = **1**

**Starting position:**  
**Angle position [degree]:**

negative = **N**, positive = **P**  
 angle position in relation to the zero position  
 (see page 2)

**4**

**Connection type:**

threaded port= **001**, manifold with O-ring = **002**