Swing clamp cylinders with reinforced swing mechanism

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.

Mounting 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:

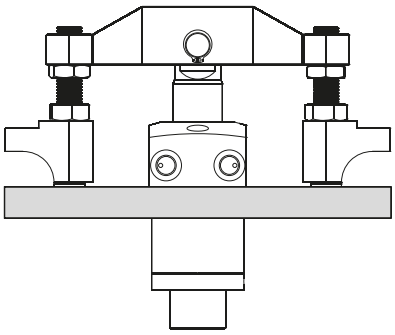
The clamping motion is initiated by a superimposed swing and stroke motion. After that, a linear clamping stroke follows.

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

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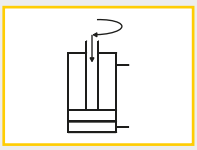


Design:

- **Type A** (upper flange)

Connections:

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

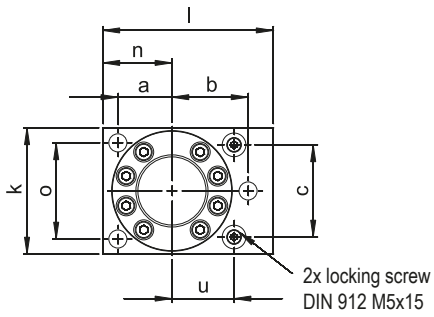
Advantages:

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

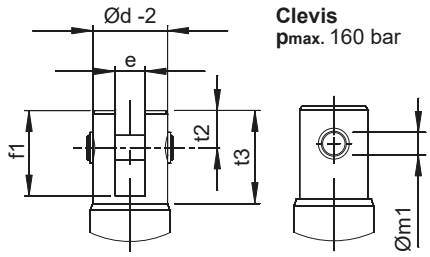
We also design and manufacture customized variants!

HYDROKOMP®
Hydraulische Komponenten GmbH

+49 6401 225999-0
sales@hydrokomp.de
Siemenstr. 16
35325 Mücke (Germany)
www.hydrokomp.de



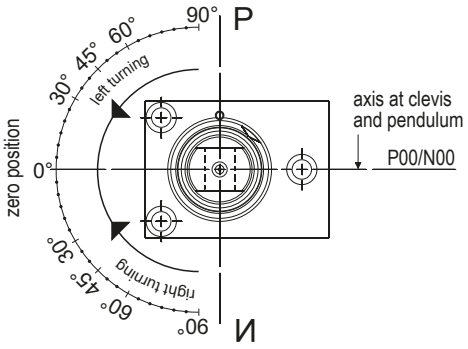
Clamp arm holder:

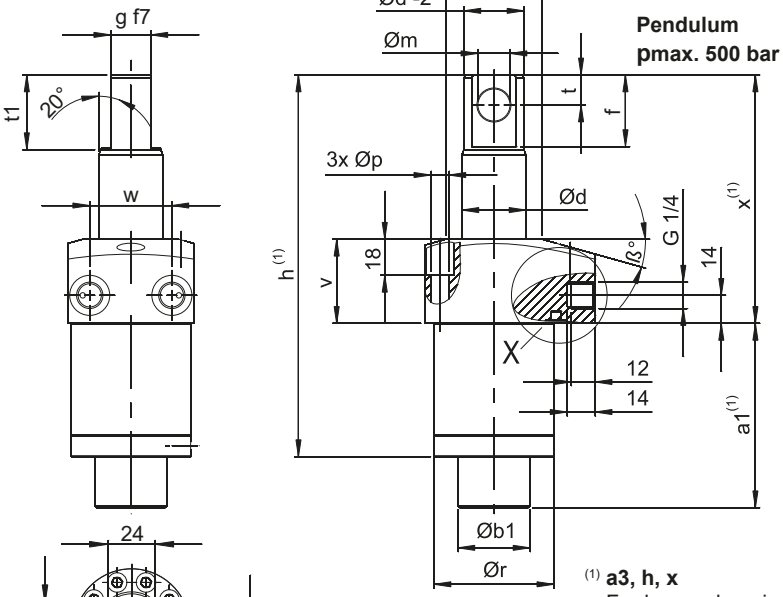


Clevis
pmax. 160 bar

Starting position:

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





(1) **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

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

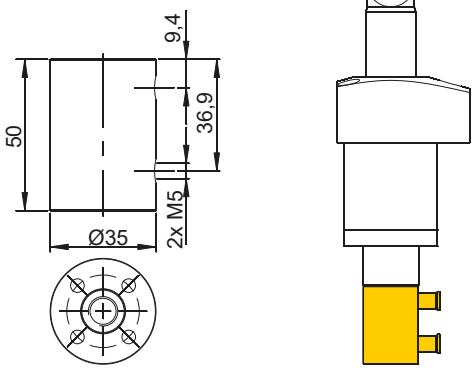
P = positive
N = negative

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.

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.

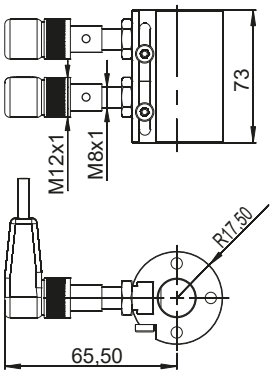
Pneumatic:
Order number: PKP-001

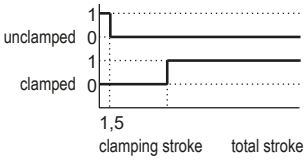


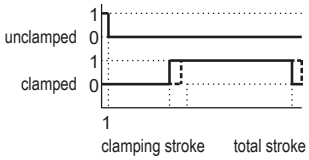
Inductive:
Order number: PKE-001

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:

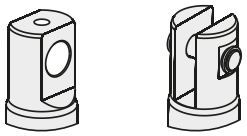
Piston Ø:	[mm]	25	40
Clamping stroke	[mm]	25	22
Swing stroke	[mm]	9	13
Total stroke	[mm]	34	35
Operating pressure, min.	[bar]	30	30
Volume flow, max.	[cm³/s]	8	20
Active piston area, clamping	[cm²]	1,76	4,52
Active piston area, unclamping	[cm²]	4,9	12,56
Oil requirement/stroke	[cm³]	6	15,8
Oil requirement/reset	[cm³]	16,7	44
ß	[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	195
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. Special clamp arms are available on request.

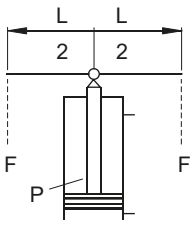
Compatible clamp arms: g h

Clamp arm holders:



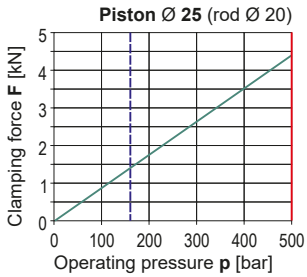
Pendulum (SPP) **Clevis** (SPG)

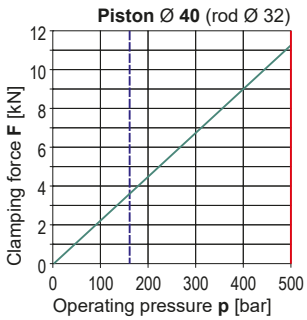
Clamping force F depending from operating pressure p:



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

Example:
- Piston Ø 25 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** - **A4022** - **PV0** - **N20** - **001**

1	**Swing motion:**	right= **R**, left = **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, page 2
	Clamping stroke [mm]:	see dimension table, page 2
3	**Clamp arm holder:**	clevis = **G**, pendulum = **P**
	Overload protection:	with reinforced swing mechanism = **V**
	Position control:	without = **0**, shift rod = **1**
	Starting position:	negative = **N**, positive = **P**
	Angle position [degree]:	angle position in relation to the zero position (see page 2)
4	**Connection type:**	threaded port= **001**, manifold with O-ring = **002**

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