

Swing clamp cylinders

block housing, with overload protection, double-acting, pmax. 500 bar

240-40

Issue: 12/2023

Description:

This hydraulic swing clamp cylinder operates as 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 hydraulic 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 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.

Models with 0°, 30°, 45°, 60° and 90° swing angles are available. The permitted operating pressure is depending from the clamp arm length. Models with other swing angles can be supplied as special designs Except from standard clamp arms also special clamp arms can be assembled.

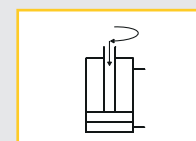
The maximum operating pressure of 500 bar does not apply for each clamp arm length. For details about the permitted operating pressure see the diagrams below.

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

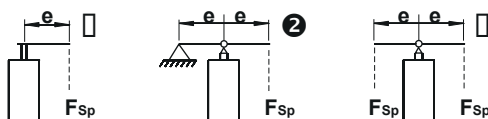


F

Webcode: 024040



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

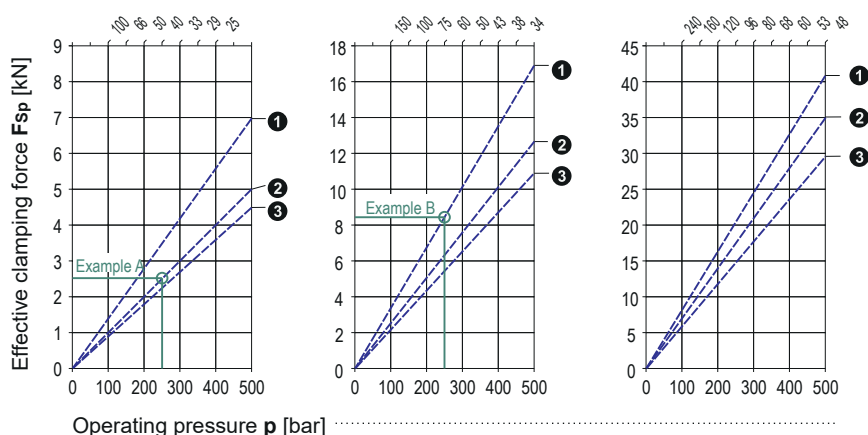


Piston Ø 25 mm

Piston Ø 40 mm

Piston Ø 63 mm

Maximum clamp arm length e [mm], only relevant for clamp arms type ①



Example A:

- cylinder with piston Ø 25 mm
- present operating pressure $p = 250$ bar
- clamp arm type 2, length 40 mm
- resulting clamping force $F_{Sp} \sim 2,5$ kN

Example B:

- cylinder with 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

Housing design:

- ✗ Type F (block housing)

Connections:

- ✗ threaded port G1/4
- ✗ manifold with O-ring

Advantages:

- ✗ Protecting metal wiper
- ✗ Integrated overload protection
- ✗ Oil supply through drilled channels or threaded port connection
- ✗ Fixture can be easily loaded and unloaded
- ✗ Easy to assemble with self designed clamp arms
- ✗ Standard and special clamp arms available (See Data sheet 240-0, Page 2)

We also design and manufacture customized variants!



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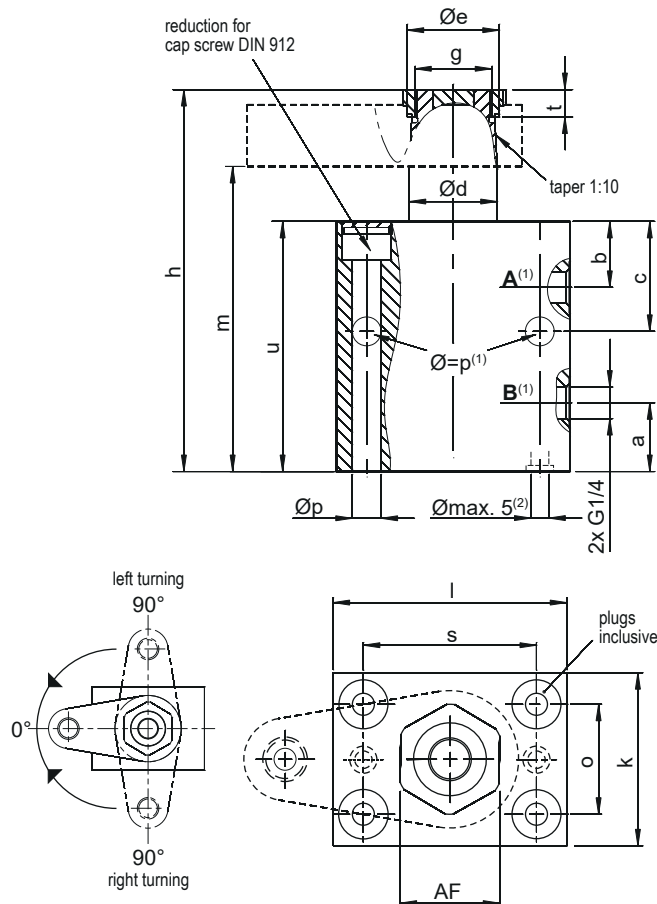
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Technology that connects



Technical data:

| Piston Ø | [mm] | 25 | 40 | 63 |
|-------------------------|---------|---------|---------|---------|
| Clamping stroke | [mm] | 8 | 8 | 11 |
| Swing stroke | [mm] | 8 | 9 | 12 |
| Total stroke | [mm] | 16 | 17 | 23 |
| Min. operating pressure | [bar] | 30 | 30 | 30 |
| Max. volume flow | [cm³/s] | 3,2 | 10 | 27,7 |
| Oil requirement/stroke | [cm³] | 2,5 | 7,3 | 23 |
| Oil requirement/reset | [cm³] | 6,8 | 20 | 62 |
| a | [mm] | 22 | 25 | 26 |
| b | [mm] | 18 | 24 | 30 |
| c | [mm] | 33 | 40 | 50 |
| d Ø | [mm] | 20 | 32 | 50 |
| e Ø | [mm] | 23,5 | 33,5 | 55,5 |
| AF | [mm] | 27 | 36 | 68 |
| g | [mm] | M18x1,5 | M28x1,5 | M45x1,5 |
| h | [mm] | 110 | 139 | 174 |
| k | [mm] | 45 | 63 | 95 |
| l | [mm] | 65 | 85 | 125 |
| m | [mm] | 89 | 111 | 134 |
| o | [mm] | 30 | 40 | 65 |
| p Ø | [mm] | 8,5 | 10,5 | 17 |
| s | [mm] | 50 | 63 | 95 |
| t | [mm] | 9 | 10 | 12 |
| u | [mm] | 71 | 91 | 110 |

(1) With the flange design, the two threaded ports A/B and the two cross holes are omitted.

(2) Only relevant for bottom flange design.

Accessories for ports:

Order number:

G1/4-locking screw.....

7900-001

O-Ring, 8x2

6012-001

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.

Dimensions for in-house production of clamp arms:

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

Attention: consider the interference contour for the housing.

To fix the clamp arms, the swing clamp cylinders are equipped with a hexagon nut.

From a piston Ø of 63 mm, scope of supply includes a slotted nut instead.

See information sheet **«Assembly / disassembly of the clamp arms»**.

Order number key:

Example: **SSZY** - **RD45** - **F6311** - **K10** - **002**

1

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

right turning = **R**, Left turning = **L**, Neutral 0° = **N**
double-acting = **D**
standard = **0, 30, 45, 60, 90**

2

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

block housing = **F**
see dimension table on page 2
see dimension table on page 2

3

Clamp arm holder:
Overload:
Position control:

Taper = **K**
with = **1**
without = **0**

4

Oil supply:

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

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