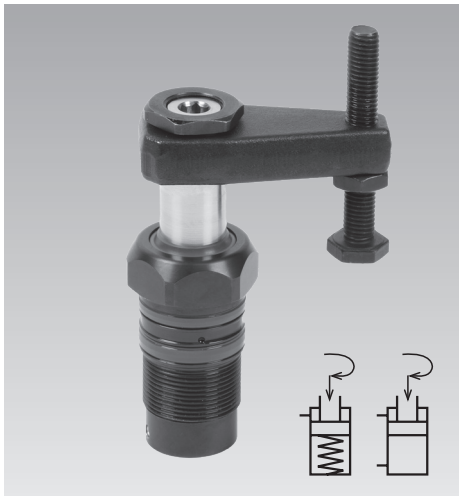
Swing Clamps with Overload Protection Device

threaded-body type, single and double acting, max. operating pressure 500 bar



Application

These hydraulic swing clamps are used when it is required to keep the fixture workpieces area free of straps and clamping components for unrestricted workpiece loading and unloading.

Description

This design allows the use of swing clamps even in restricted places. The threaded-body swing clamp can be sunk directly into the fixture up to the hexagon. Oil feed through two holes, allowing for 3 fitting and hose connections:

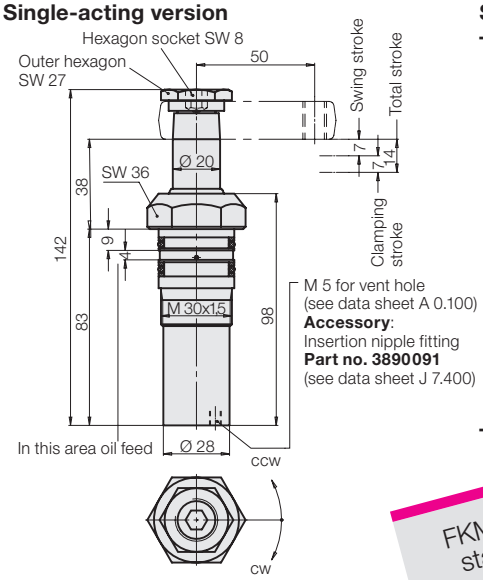
1. **Individual connection**
   With only one swing clamp being used, both connections can be tapped directly.
2. **Series connection**
   If several swing clamps arranged in a row are required, the arrangement and size of holes shown below must be complied with. Instead of the expander stopper also, of course, an G 1/4 plug **(Part no. 3610006)** may be used.
3. **Connecting housing**
   By means of the connecting housing available as an accessory, the swing clamps can be individually fixed with screws and piped (page 2)

Standard swing angles are 45°, 60°, and 90° ±2°. Mounting of the clamping arms can be made in any angular position.
All units are equipped with piston rod wipers and with an overload protection device which catches at every 180° angle. This is the initial position for the swing motion.

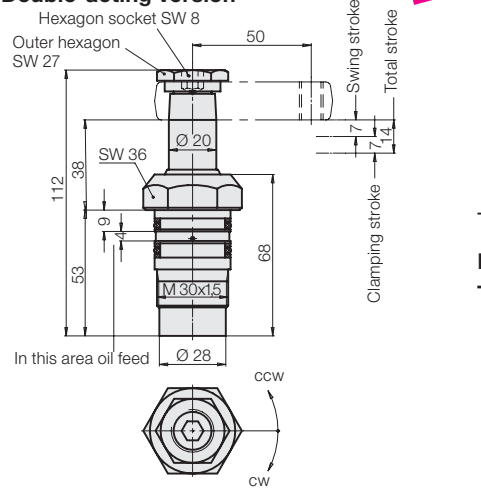
Important notes

Due to the screwed mounting, this initial position cannot be predetermined. Therefore, the clamping arm can only be fixed when the housing has been screwed in tight. The hexagon socket of the piston is used for counterholding when the clamping arm is tightened by means of the flanged nut.
Operating conditions, tolerances and other data see data sheet A 0.100.
When using single-acting swing clamps, it is absolutely necessary to follow the instructions for venting of the spring area on data sheet G 0.110.

Single-acting version



Double-acting version



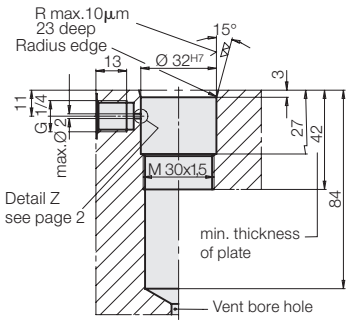
Effective piston area	1.01 cm²
Piston area ratio	◊ 4,1
Swing stroke	7 mm
Clamping stroke	7 mm
Total stroke	14 mm
Oil volume / stroke	1.5 cm³
Oil volume / return stroke	6 cm³
Max. oil flo w rate*	1.5 cm³/s
Seating torque	60 Nm
Min. actuation pressure to swing	◊ 30 bar 50 bar
Single acting	**Part no.**
Swing direction 90° cw **	**1881102**
Swing direction 90° ccw**	**1881202**
0-degree	**1881242**
Double acting	**Part no.**
Swing direction 90° cw**	**1891101**
Swing direction 90° ccw**	**1891201**
0-degree	**1891241**
Seal kit, external seals	**0131530**

◊ valid for double-acting version

*** Max. oil flow rate**
In case of the maximum oil flow rate as per chart the shortest possible clamping time is 1 second. If the flow rate of the pump divided by the number of swing clamps is higher than the indicated value in the chart, the flow rate has to be throttled to avoid any overload and thereby high wear. Throttling has to be made in the oil supply line to the swing clamp to rule out a possible pressure intensification. Use only flow control valves which allow oil return from the swing clamp without any impediments.

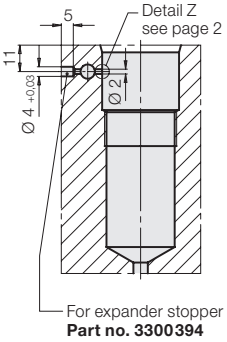
Mounting instructions, accessories and clamping force diagram see page 2

Single-acting version – Individual connection

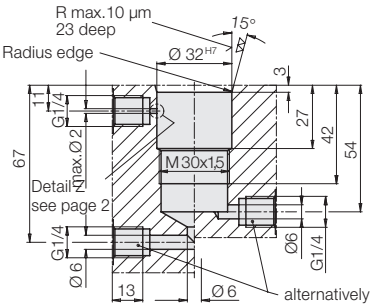


– Series connection

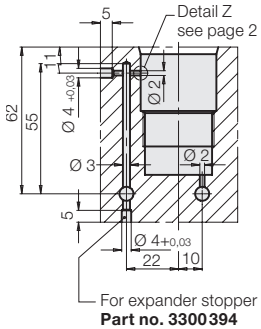
FKM wiper standard



Double-acting version – Individual connection



– Series connection



Code numbers for available swing angles

** Swing angle	Part no.
90°	18X1 X**0**X
60°	18X1 X**2**X
45°	18X1 X**3**X

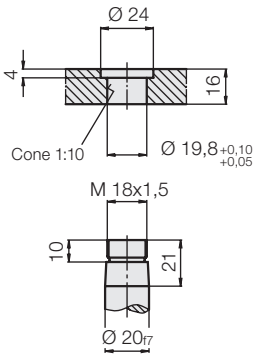
Mounting instructions

The screw-in thread must be cut with utmost care, especially in the area of the two joints. The round-off of the oil feed hole shown in detail “Z” is necessary or the lower O-ring will be damaged when screwed in. For this purpose there are two possibilities:

1. By means of a diameter 6 spherical grinder and a hand drill, the thread is deburred according to detail “Z”.
2. A diameter 5 steel ball is gauged with a light hammer blow as shown in the figure below.

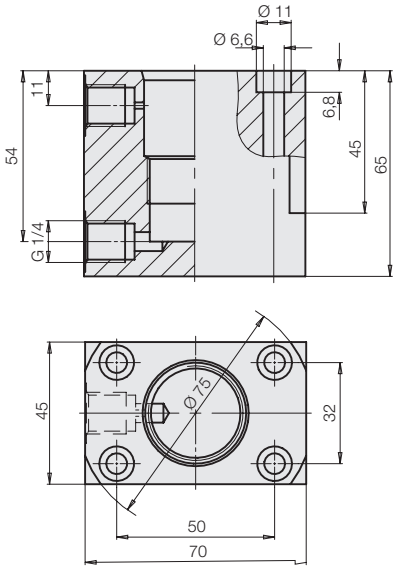
A final check with a finger shows best whether the transitions are smooth and free of burrs.

Strap attachment dimensions

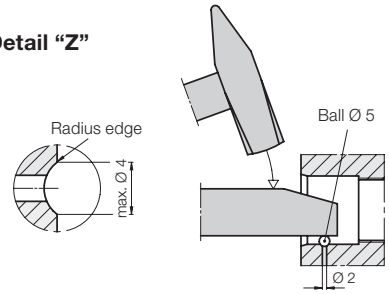


Connecting housing

for double acting swing clamp
Part no. 3467143

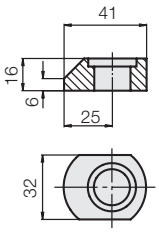


Detail “Z”



Clamping arm

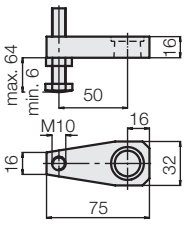




Weight [kg] 0.08
Part no. 3548159

Clamping arm, complete

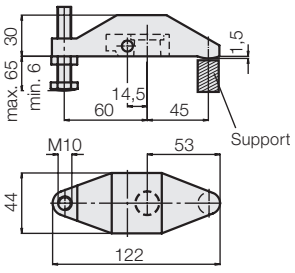




Weight [kg] 0.2
Part no. 0354001
Weight [kg] 0.18
Part no. 3921016
(without thread M 10)

Clamping strap, complete

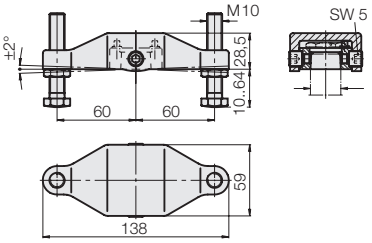




Weight [kg] 0.57
Part no. 0354000

Double clamping arm assembly, complete





Weight [kg] 0.83
Part no. 0354131

Effective clamping force as a function of max. operating pressure p

