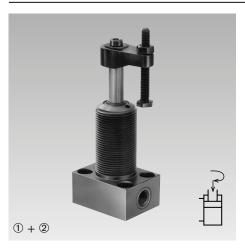


Compact Swing Clamps with Sturdy Swing Mechanism

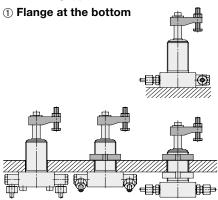
bottom flange, top flange, threaded-body type, double acting, max. operating pressure 350 bar



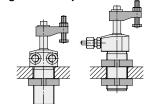




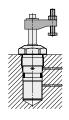
Connecting types



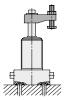
③ Flange at the top



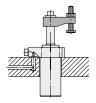
⑤ Threaded-body type



② Flange at the bottom with O-ring sealing



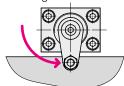
④ Flange at the top with O-ring sealing



Metallic wiper optional

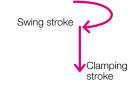
Application

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



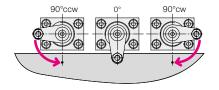
Function

This hydraulic clamping element is a pull-type cylinder where a part of the total stroke is used to swing the piston.



Swing direction

The units are available with clockwise and counterclockwise swing motion or without swing motion (0°).



Standard swing angles are 45°, 60° and 90° ±2°.

Special angles on request.

Other variants, as e.g. types with metallic wiper

0°-Version

on request.

Use as pure pull-type cylinder with a piston which is secured against torsion and which allows eccentric load as per clamping force diagram.

Option: metallic wiper

In addition to the FKM wiper the following swing clamps can be equipped with a metallic wiper.

- Flange at the top with O-ring sealing
- Threaded-body type

Part no.: Add only letter "M" to the part number of the swing clamp without metallic wiper.

Example of ordering:

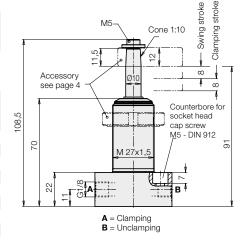
Swing clamp 1850124 with metallic wiper: **1850124M**

Versions

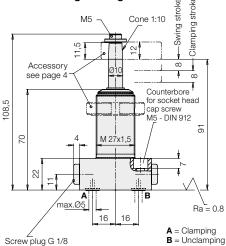
Only double-acting elements are available. Single-acting versions see data sheet B 1.849.

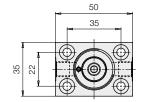
Technical data [mm] 14 Piston Ø Piston rod Ø [mm] 10 Effective piston area Clamping [cm²] 0.754 Unclamping [cm²] 1.54 Oil volume per stroke Clamping 1.2 [cm3] Unclamping 2.5 [cm3] Max. oil flow rate [cm³/s] 5 Clamping 10 Unclamping [cm³/s] Min. operating pressure 30 [bar] Max. operating pressure [bar] 350 Max, force to pull [kN] 2.63 [kN] Effective clamping force see diagram $(0, 45, 60, 90) \pm 2$ Swing angle [°] Swing stroke 8 [mm] Clamping stroke [mm] 8 Total stroke [mm] 16

Flange at the bottom

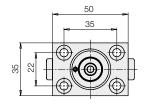


② Flange at the bottom with O-ring sealing





\\/-:---- 0 40 l--



Swing

direction

CW

CCW

CW

CCW

CW

CCW

Part no. Double acting

1850 102

1850112

1850122

1850132

1850142

1850152

1850 162

3001077

Weight: 0.42 kg

Swing

angle

0°

90°

90°

609

60°

459

45°

		iviax.	ciam	ping	arm	ieng	tn [n	nmj		
0.0		90	60	4	5 3	36	30	26		7
2,2								7	-	\Rightarrow
2			-				/	_	Щ	∜ F _{Sp}
						-		_ 1	#	' Sp
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1,5			+	_			+			
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ł			_				+			
0,5										
			+							
			-							
0										
0		100		20	00	3	300	350		
			Ope	ratin	g pre	essur	e p	[bar]		
	1,5	2,2 2 1,5 1 0,5	1,5	90 60	90 60 4	90 60 45 3 2,2 2 1,5 1,5 0,5 0 100 200	90 60 45 36 2,2 2 1,5 1,5 0,5 0 100 200 3	90 60 45 36 30 2,2 2 1,5 1 0,5 0 100 200 300	2,2 2 1,5 1,5 1 1 0,5 0	90 60 45 36 30 26 1,5 1 0,5 0 100 200 300 350

May clamping arm longth [mm]

Clamping force diagram

Weight: 0.42	2 kg	
Swing angle	Swing direction	Part no. Double acting
0°	_	1850 101
90°	CW	1850111
90°	CCW	1850 121
60°	CW	1850 131
60°	CCW	1850 141
45°	CW	1850 151
45°	CCW	1850 161

Materials

Housing and piston are made of high alloy steel. By nitrating, wear is reduced and protection against corrosion increased. FKM seals.

ш	\sim	ıoi	no	ıan

sure intensification. Use only flow control valves which allow oil return from the swing clamp without any impediments.

Important notes

1. Danger of injury

Hydraulic clamping elements can generate considerable forces.

Due to the 90° swing motion, the exact clamping and unclamping position cannot be determined in advance. Considerable injuries can be caused to fingers in the effective area of the clamping arm.

Remedy: protection device with electrical lockina

2. Admissible oil flow rate

In case of the admissible oil flow rate as per table the shortest possible clamping or unclamping time is 0.5 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

Throttling has to be made in the oil supply line to the swing clamp to rule out a possible pres-

3. Unimpeded swing motion

This swing clamp does not have an overload protection device. Therefore the swing motion must not be impeded and the clamping arm may only contact the workpiece after completion of the swing stroke.

4. Clamping arm assembly

4.1 All types

When tightening and untightening the lock nut, the clamping arm has to be backed up to avoid the introduction of moments to the piston rod and thereby any deterioration of the swing mechanism.

4.2 Threaded-body type

The clamping arm can only be fixed after the housing is firmly screwed in, since the final position cannot be determined in advance.

5. Adjustment of contact bolt

Spare O-ring (FKM) 7 x 1,5

The contact bolt may only contact the workpiece after completion of the swing motion. When tightening and untightening the fixing screw, the clamping arm has to be backed up (see 4.1).

6. Special clamping arm

When using special clamping arms with other lengths, the corresponding operating pressures as shown in the clamping force diagram must not be exceeded.

If longer clamping arms will be used, not only the operating pressure but also the flow rate have to be reduced (see 2.).

7. Bleeding

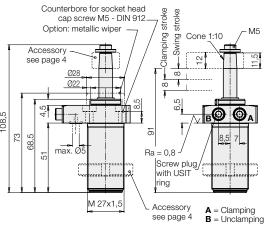
Air in the oil prolongs the clamping time considerably and leads to function troubles. Therefore bleeding has to be effected during start up, as described as follows for the different types.

Flange at the top Threaded-body type

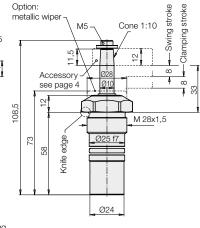
3 Flange at the top

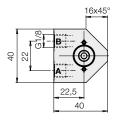
Accessory see page 4 A = Clamping see page 4

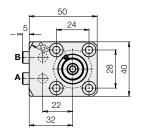
④ Flange at the top with O-ring sealing



5 Threaded-body type









Weight: 0.3	35 kg	
Swing angle	Swing direction	Part no. Double acting
0°	-	1850 103
90°	CW	1850113
90°	CCW	1850123
60°	CW	1850133
60°	CCW	1850143
45°	CW	1850153
45°	CCW	1850163

Weight: 0.4	2 kg	
Swing angle	Swing direction	Part no. Double acting
0°	-	1850 104
90°	CW	1850114
90°	CCW	1850124
60°	CW	1850134
60°	CCW	1850144
45°	CW	1850 154
45°	CCW	1850164
Spare O-rin	g (FKM) 7 x 1.5	3001077
Metallic wip	er (Spare)	0341111

Max. seating torque 100 Nm Weight: 0.27 kg

•	· ·	Part no.
Swing angle	Swing direction	Double acting
0°	_	1850105
90°	CW	1850115
90°	CCW	1850125
60°	CW	1850135
60°	CCW	1850145
45°	CW	1850155
45°	CCW	1850165

7.1 Flange at the top and at the bottom Loosen carefully the union nut of the tube at low oil pressure and pump until bubblefree oil comes out. Retigthen the union nut.

7.2 Flange with O-ring sealing

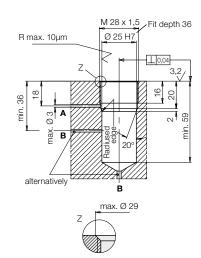
Loosen carefully the socket head cap screw M5 at low oil pressure and pump until bubble-free oil comes out. Retigthen the union nut.

7.3 Threaded-body type

There is no possibility for bleeding at the element itself. Remedy: plug the oil channels in the fixture body at the end. If required, loosen the plugs carefully and pump at low oil pressure until bubblefree oil comes out.

Retigthen the plugs.

Porting details in fixture



Option: metallic wiper

• Flange at the top with O-ring sealing **Part no.: 18501X4M**

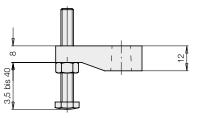
• Threaded-body type
Part no.: 18501X5M

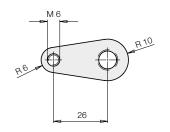
Römheld GmbH 3

Accessories

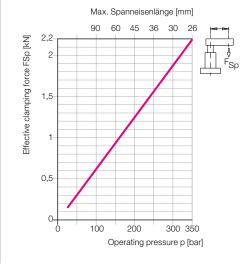
Clamping arm assembly, complete, max. 350 bar

Part no. 0354057

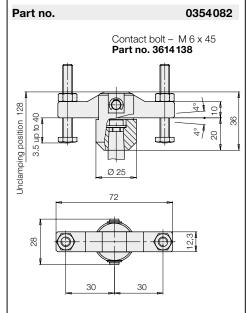




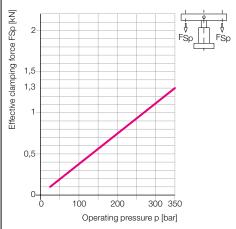
Clamping force diagram



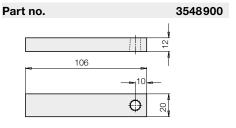
Double clamping arm, complete



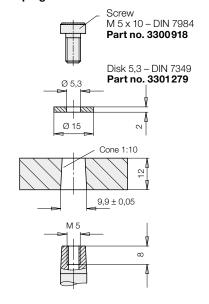
Clamping force diagram



Clamping arm - blank



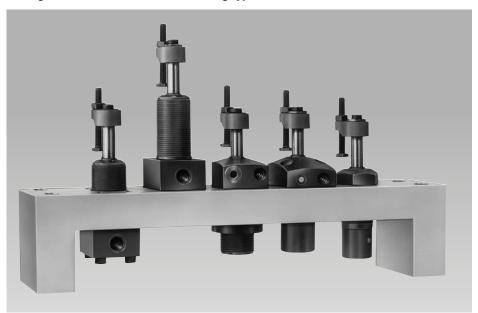
Connecting dimensions for special clamping arms

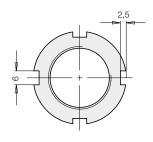


Flange nut as per DIN 1804

Part no.						3527076
	_	Ø 40)	_	1	
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0,5					6	
0 1		П М 27 х	1.5		A	

Arrangement of the different connecting types





Ø 34

Tube male stud coupling for G1/8

ND [bar]	Designation	Part no.
250	D 8L G 1/8	9208034
500	D 8S G 1/8	9208116

Thread reducing adaptor

ND [bar]	Designation	Part no
500	GWR 1/8 -1/4	3613003