HPS | High Pressure Swing Clamp Cylinder

Piston: Ø25~Ø63 mm | Pressure Max: 500 bar

Introduction

- Swing clamp cylinders are typically used in applications where there is a need to maintain clear space for placing and clamping workpieces.
- The clamping action of a swing Clamp cylinder consists of two parts (as shown in Figure 1). It first rotates to a specific angle and then lowers to clamp the workpiece. It's essential not to clamp the workpiece during the rotational stroke, as it can damage the internal rotational mechanism.
- The swing clamp cylinders contains a clutch, which serves to separate the shaft and the internal rotational mechanism when the rotation speed is excessive, heavy clamping arm is installed, or when it collides with other objects during rotation. This is to protect the rotational mechanism from damage due to abnormal external forces.
- Swing clamp cylinders can be single-acting (with spring return) or double-acting, offering both clockwise and counterclockwise rotation. The standard rotation angle is 90°, with options for 60°, 45°, 30°, and 0° (as shown in Figure 2).
- Installation methods include base mounting and full-threaded mounting.
- You can choose pipe thread types or manifold-mounted types.

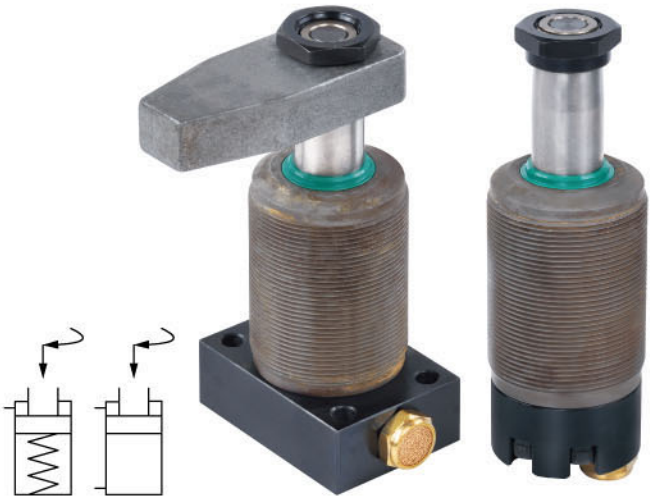


Figure 1

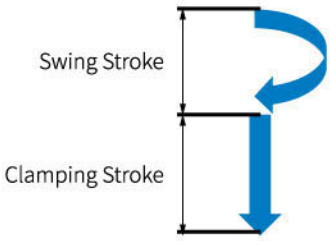
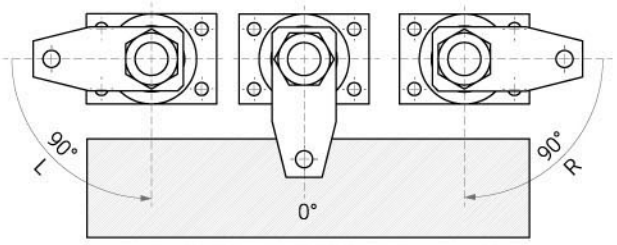


Figure 2



Precautions

- For the length of clamping arm and operating pressure, please refer to the effective clamping force and operating pressure chart in the product specifications. Using a clamping arm whose length that exceeds the specified range can lead to cylinder damage.
- If you experience unreliable or unstable rotation, consider installing a flow control valve to reduce the rate of hydraulic fluid intake.
- For the maximum filling speed, consult the product specifications. Avoid using excessively high filling speeds to prevent excessively rapid rotation.

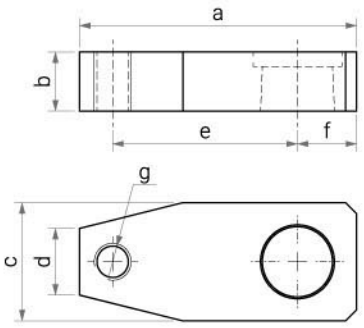
Part-No.

HPS - 25 S A R × 90

1 2 3 4 5 6

No.	Meaning	Option
1	Series	HPS
2	The Diameter of Piston	Ø25 / Ø40 / Ø50 / Ø63
3	Acting Type	S: Single-Acting / D: Double-Acting
4	Mounting Type	A: Threaded Type B: Flange, Pipe Thread Type C: Flange, Manifold-Mounted Type
5	Rotating Direction	Turn Right R or Turn Left L
6	Rotating Angle	90°, 60°, 45°, 0°

Accessories: Clamping Arm Specifications



Items	a	b	c	d	e	f	g
HPS-25 w/ Threaded Inserts	75	16	32	16	50	16	M10
HPS-25 w/o Threaded Inserts	75	16	32	16	N/A	16	N/A
HPS-40 w/ Threaded Inserts	115	23	48	22	77	25	M16
HPS-40 w/o Threaded Inserts	115	23	48	22	N/A	25	N/A

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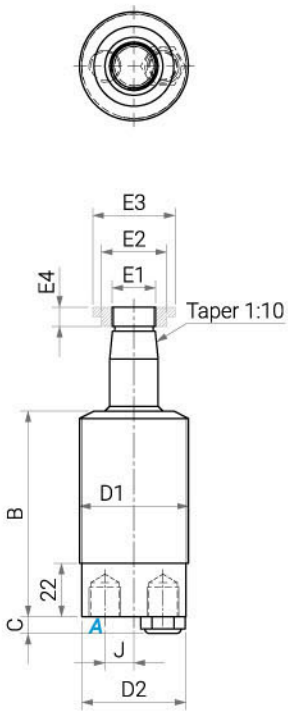
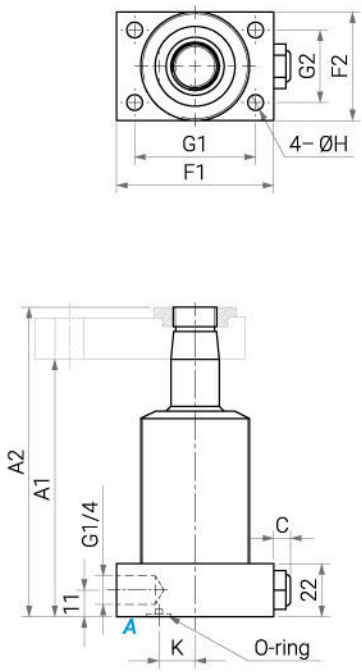
Specifications

A Clamping. **B** Unclamping.

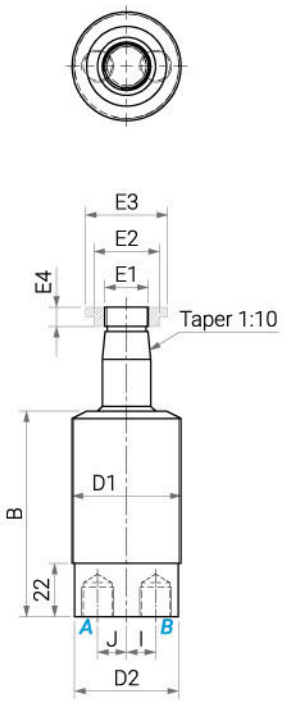
Single-Acting Full-Threaded Type



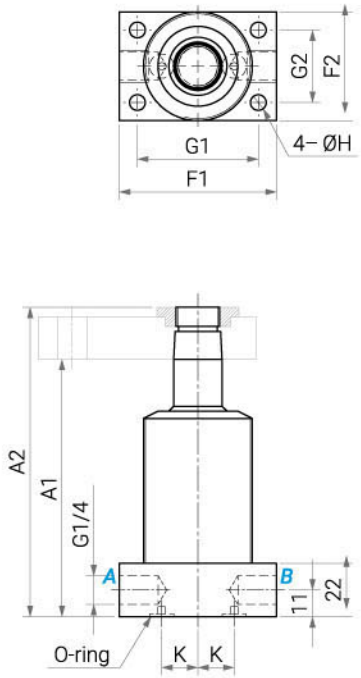
Single-Acting Base-Mounted Type



Double-Acting Full-Threaded Type



Double-Acting Base-Mounted Type



Items	Unit	HPS-25	HPS-40	HPS-50	HPS-63
Piston Diameter	mm	Ø25	Ø40	Ø50	Ø63
Rod Diameter	mm	Ø20	Ø32	Ø40	Ø50
Swing Stroke	mm	7	8	11	9
Clamping Stroke	mm	11	14	15	15
Full Stroke	mm	18	22	26	24
Max. Filling Speed	cc/s	3.2	10	18.4	27.7
Oil Volume / Stroke	cc	3.2	10	18.4	27.7
Oil Volume / Return Stroke	cc	8.8	27.7	51	74.8
Rotation Direction	–	Right / Left			
Rotation Angle	–	90°, 60°, 45°, 0°			
Acting	–	Single / Double			
Min. Pressure	bar	40	40	40	40
A1	mm	106.5	119.5	138	142

Items	Unit	HPS-25	HPS-40	HPS-50	HPS-63
A2	mm	128	147.5	172	182
B	mm	85	94.5	110	116
C	mm	7	7	7	7
D1	mm	M45×1.5	M60×1.5	80	90
ØD2	mm	Ø43	Ø58	Ø77	Ø88
E1	mm	M18×1.5	M28×1.5	M35×1.5	M45×1.5
ØE2	mm	Ø23.5	Ø33.8	Ø45	Ø55
E3	mm	30	40	55	68
E4	mm	10	11	11	13
F1	mm	65	85	100	115
F2	mm	45	63	80	90
G1	mm	50	65	80	90
G2	mm	30	44	60	68
H	mm	Ø6.5	Ø8.5	Ø13.5	Ø16
I	mm	12	12.5	19	25.5
J	mm	12	19.5	26.5	34
K	mm	15	28	31	37.5
O-ring	mm	S8	S8	S8	S8

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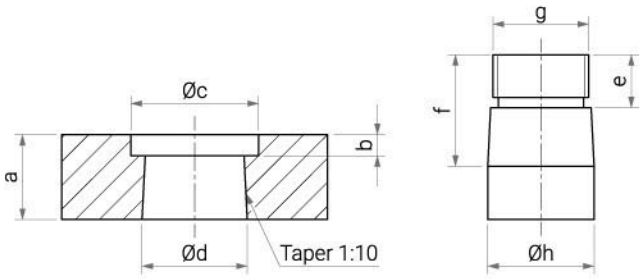
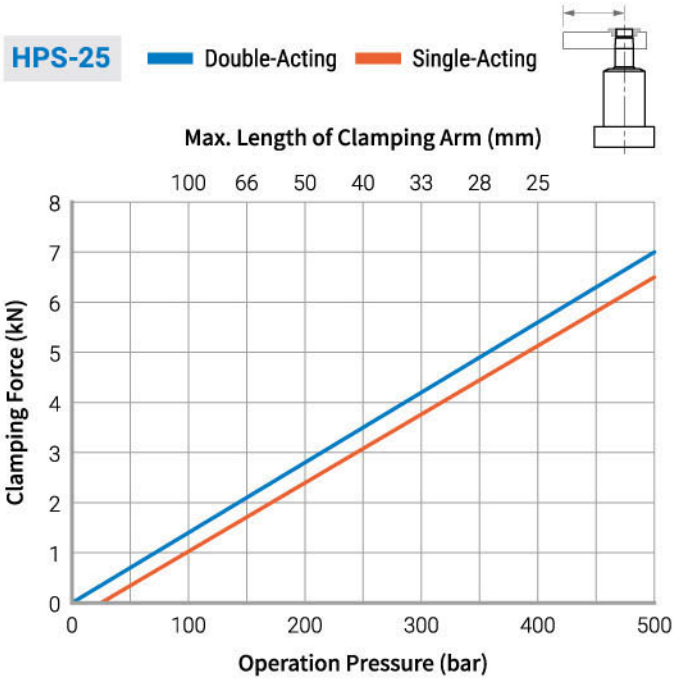
Dimensions of Clamping Arms



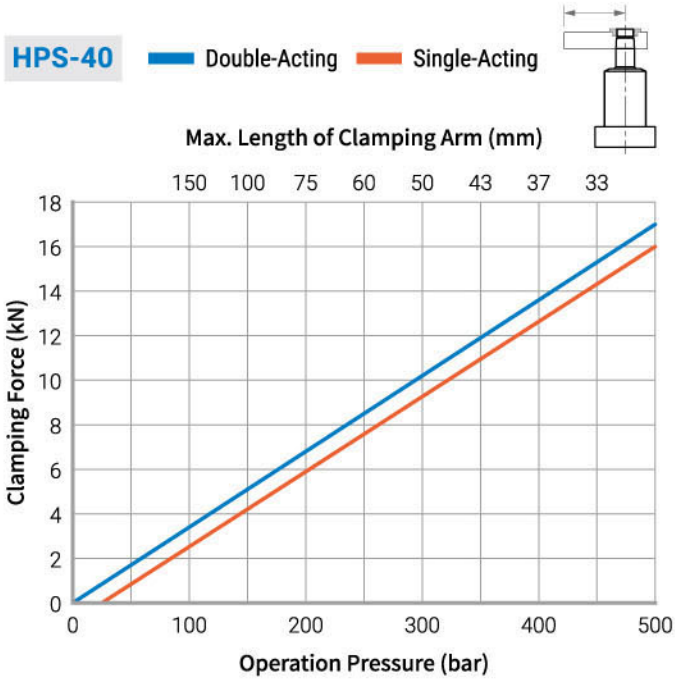
Type	a	b	Øc	Ød	e	f	g	Øh
HPS-25	16	4	24	19.9	10	21	M18×1.5	20
HPS-40	23	5	34	31.9	11	28	M28×1.5	32
HPS-50	28	5	46	39.9	12	34	M35×1.5	40
HPS-60	34	6	56	49.9	13	40	M45×1.5	50

Effective Clamping Force & Operating Pressure Chart

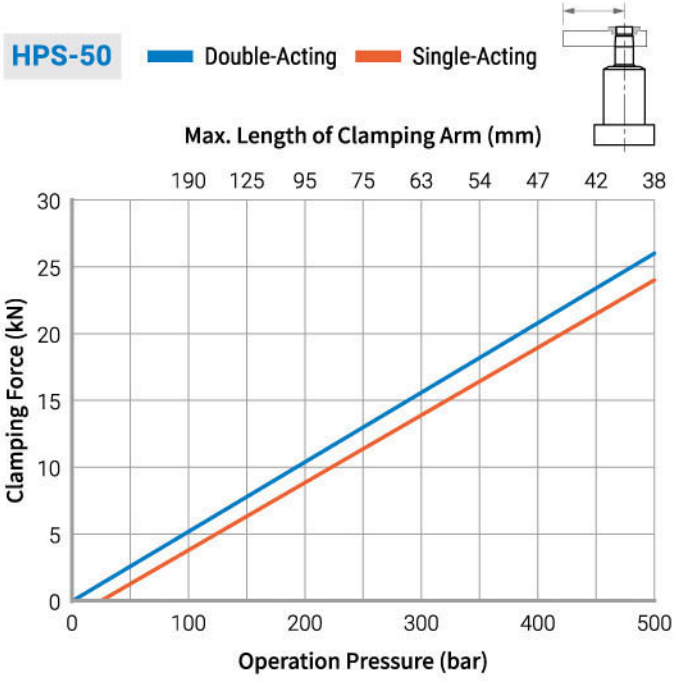
HPS-25



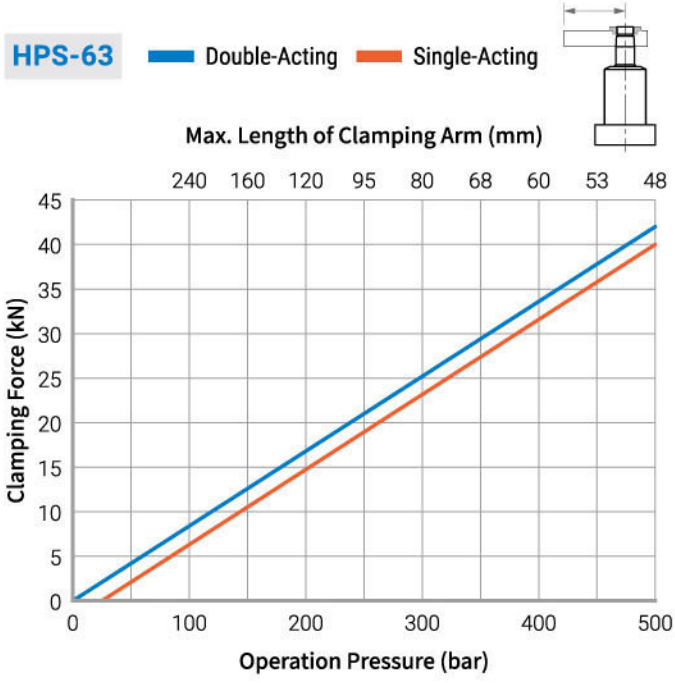
HPS-40



HPS-50



HPS-63



HPS | The Method of Installing Clamping Arms

The Method of Locking The Clamping Arm

CORRECT

Turn the nut with one hand while holding the clamping arm steady with the other.

WRONG

The Method to Remove The Clamping Arm

CORRECT

WRONG