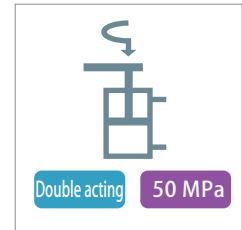


Swing clamp

model
PLB

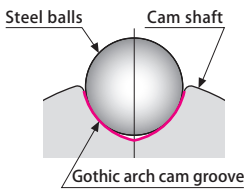


ROEMHELD-compatible model

High-speed swinging capability, superior durability and a wide variety of mounting and piping types

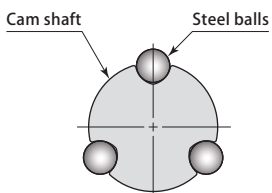
Gothic arch cam groove

Superior durability, high frequency, and high-speed swinging operation is achieved thanks to lowered and controlled seating surface pressure. This is made possible by adopting gothic arch cam grooves that use steel balls with larger surface area.



3-point ball support

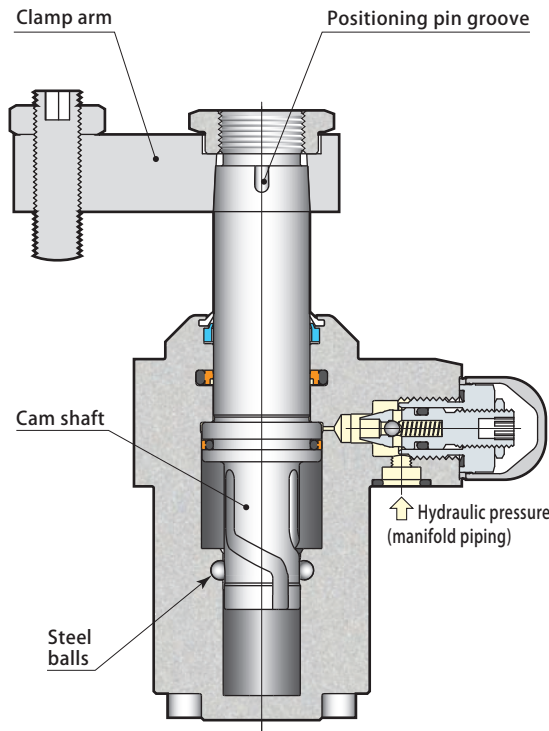
Smooth, stable and high-speed swinging operation has been achieved by 3-point ball support mechanism.



Large diameter cam shaft and wide distance between the cam grooves offers higher rigidity. A overload protection mechanism is not needed due to improvement of durability and impact resistance, providing stable and secure high-speed swing operation.

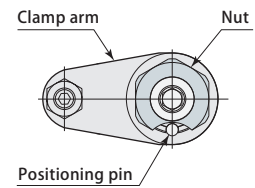


Cam groove view



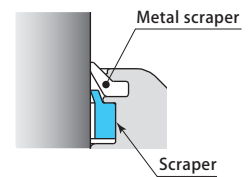
Clamp arm positioning & replacement

Positioning pin groove adopted with all models. Positioning (angle) of clamp arm can be performed easily.



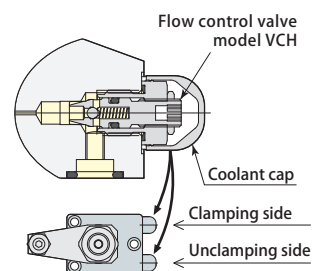
Metal scraper

Protecting the scraper from chips which become hot due to dry cutting.



Flow control valve Patented

For manifold piping, operating speeds can be adjusted individually by mounting a flow control valve (option), making sequential operation on same circuit or control of synchronization operation easier. [page → 359](#)



50MPa clamp & work support

Swing clamp

Swing clamp (ROEMHELD-compatible)

Swing clamp (ENERPAC-compatible)

Link clamp

Clamp cylinder

Work support

Option

Model designation

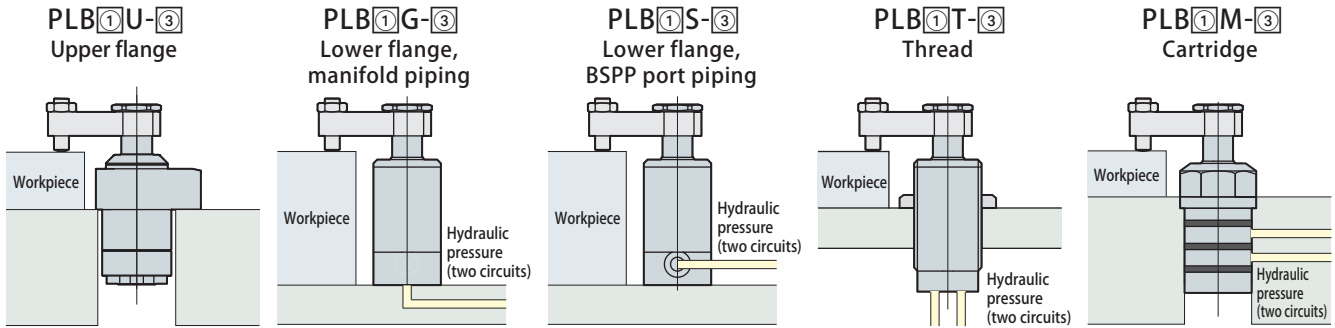
PLB^①^②-^③ (Example : PLB06U-R)

PLB	① Size (refer to specification table)	② Mounting and piping types (refer to diagram below)	③ Swing direction, swing angle (when clamping) (refer to diagram below)
	06 16 (25) (40)	U : Upper flange pages → 345 and 346 G : Lower flange, manifold piping page → 347 S : Lower flange, BSPP port piping page → 348 T : Thread page → 349 M : Cartridge * page → 350	L : Counter-clockwise, swing angle 90° (L45) : Counter-clockwise, swing angle 45° (L60) : Counter-clockwise, swing angle 60° R : Clockwise, swing angle 90° (R45) : Clockwise, swing angle 45° (R60) : Clockwise, swing angle 60° (C) : Straight, swing angle 0°

*: Cartridges are available only in 06 and 16 sizes.

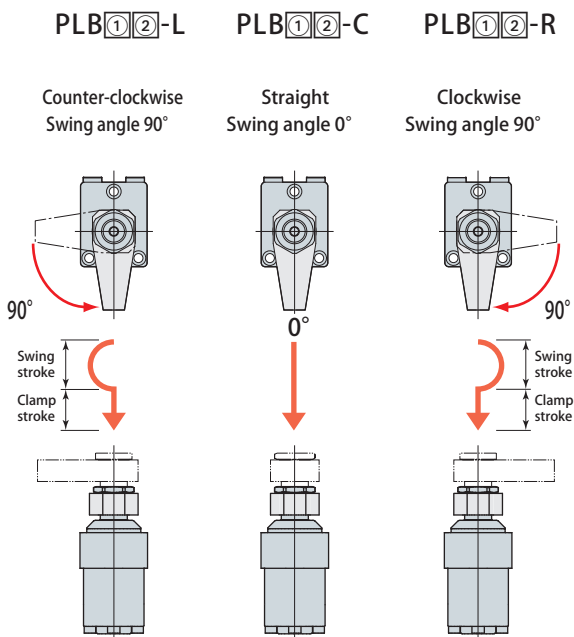
Those in brackets () are made to order.

Mounting and piping types

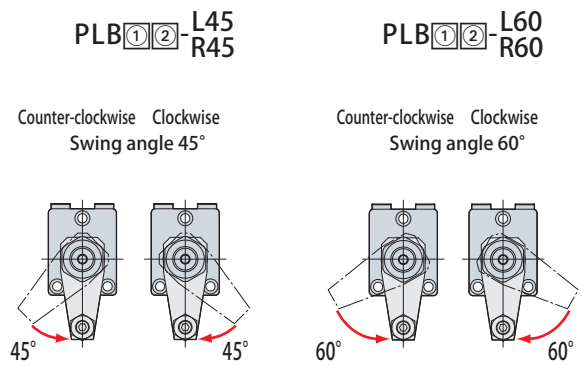


Refer to page → 341 for details on piping method.

Swing direction (when clamping)



Swing angle



Refer to pages → 351 to 354 for details.

Specifications

Model		PLB06	PLB16	PLB25	PLB40	
Cylinder force (hydraulic pressure 50 MPa)	(kN)	8.8	22.6	35.3	57.7	
Cylinder inner diameter	(mm)	25	40	50	63	
Rod diameter	(mm)	20	32	40	50	
Effective area (clamp)	(cm ²)	1.8	4.5	7.1	11.5	
Swing angle		90° ± 3°				
		45° ± 5°				
		60° ± 5°				
Positioning pin groove position accuracy		± 1°				
Repeated clamp positioning accuracy		± 0.5°				
Full stroke	(mm)	18	22	26	24	
Swing stroke	(mm)	7	8	11	9	
Clamp stroke	(mm)	11	14	15	15	
Cylinder capacity	Clamp	(cm ³)	3.2	10.0	18.4	27.7
	Unclamp	(cm ³)	8.8	27.6	51.1	74.8
Recommended tightening torque (locknut) (N·m)		25	100	190	400	

Working pressure range: 3.5 ~ 50 MPa Operating temperature: 0 ~ 70°C

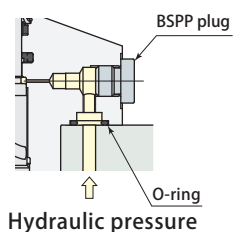
Fluid used: General mineral based hydraulic oil (ISO-VG32 equivalent)

Fluorocarbon has been adopted for seal sections where cutting fluid is applied, as a measure for the use of chlorine-based cutting fluid (this is not thermal resistant specification.)

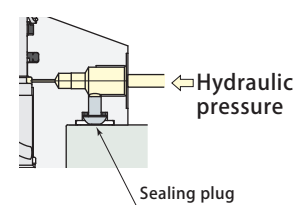
There is no overload protection mechanism.

Piping method

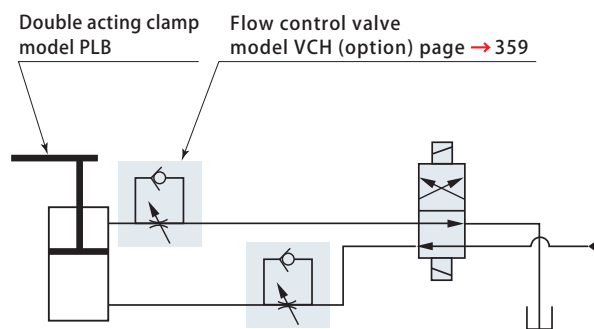
Upper flange manifold piping



Upper flange BSPP port piping



Hydraulic circuit diagram (reference)



Two piping methods are available for model PLB□U-□ (upper flange), manifold piping and BSPP port piping.

For BSPP port piping, remove BSPP plug and O-ring and mount sealing plug that is included, as needed. (Sealing plug is not mounted with shipment.)

Use flow control valve for meter-in control. Using it in meter-out control results in abnormally high pressure due to back pressure on clamping side during unclamping, leading to malfunction.

For upper flange manifold piping, flow control valve model VCH can be mounted.

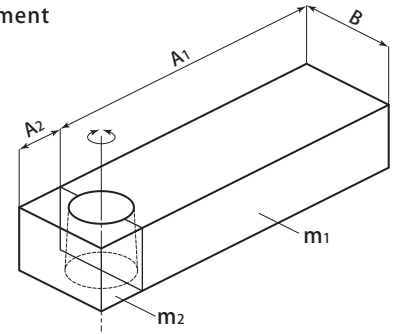
Swing speed adjustment

1. Adjust swing speed with flow control valve to ensure that the relationship between inertial moment and 90° swing time of clamp arm remains lower than the line — in the graph. Clamp stroke (perpendicular operation) time is not included in 90° swing time.

Example of calculation for inertial moment

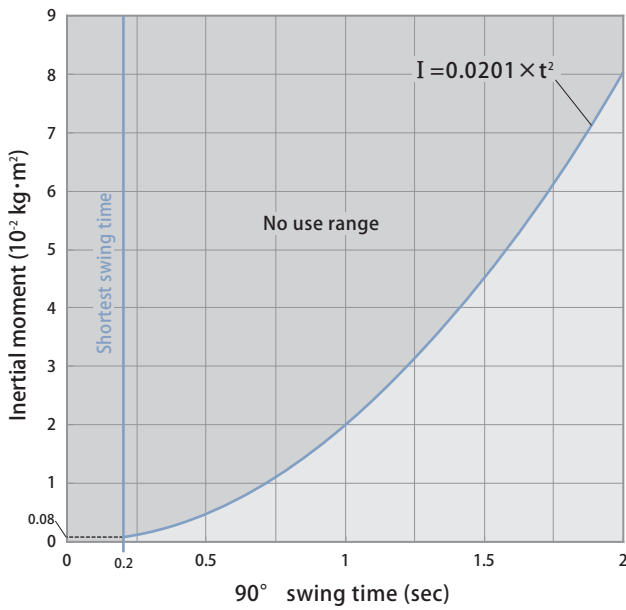
$$I = \frac{1}{12} m_1(4A_1^2+B^2) + \frac{1}{12} m_2(4A_2^2+B^2)$$

I : Inertial moment (kg·m²)
m : Mass (kg)

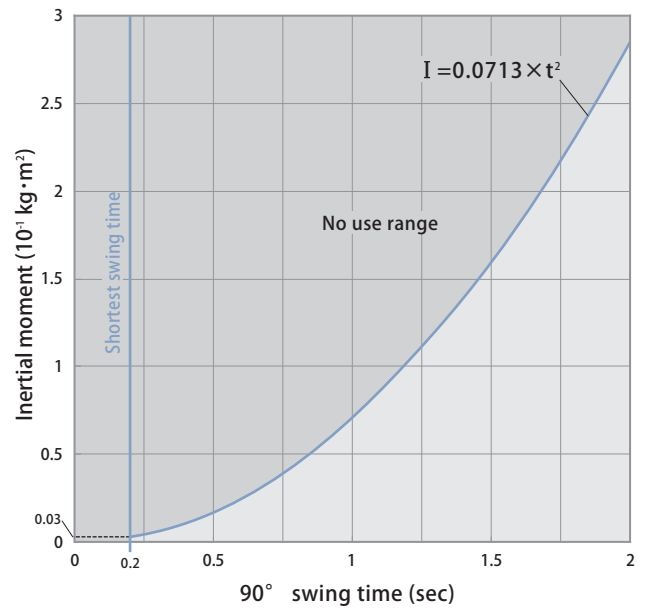


2. Use with 90° swing time shorter than line — results in excessive load on cylinder and piston, which may cause malfunction.

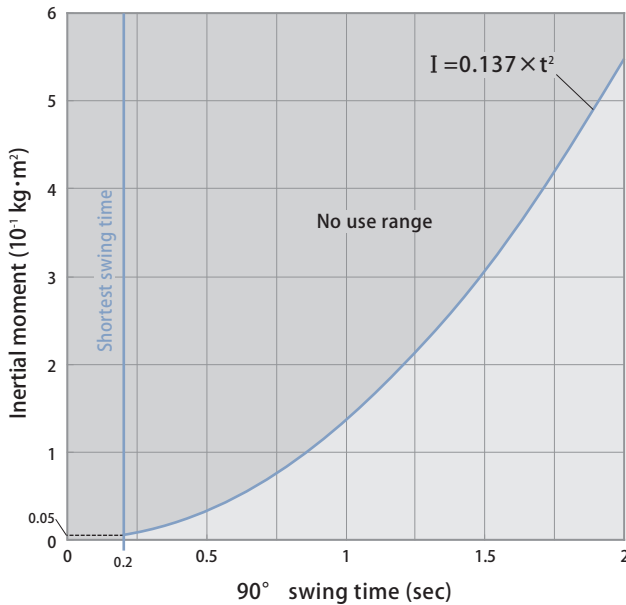
PLB06



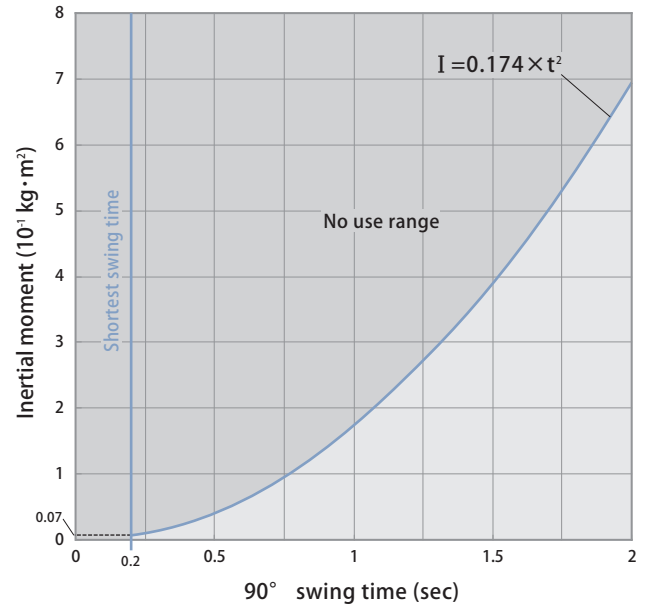
PLB16



PLB25



PLB40



I : Inertial moment (kg·m²) t : 90° swing time (sec)

Performance table

Clamping force varies depending on clamp arm length (LH) and hydraulic pressure. Select an appropriate clamp model based on considerations for clamp arm length (LH), working hydraulic pressure and mounting dimensions.

Note 1. Do not use arm lengths that exceed maximum arm length (Max. LH). It results in excessive load on cylinder and piston, may cause malfunction.

2. Calculate values that do not appear on table using a formula below.

How to read performance table (Example 1)

For clamp arm length (LH) of 50 mm and where clamping force of 5.0 kN or more is necessary, the working hydraulic pressure for each model is:

- Not usable with PLB06
- 15 MPa for PLB16
- 10 MPa for PLB25
- 5 MPa for PLB40

How to read performance table (Example 2)

When working hydraulic pressure is 20 MPa with PLB06, clamping force necessary for clamp arm length (LH) is:

- 3.2 kN for LH = 30 mm
- 3.0 kN for LH = 50 mm
- 2.8 kN for LH = 70 mm
- Not usable with LH = 100 mm

PLB06 $F = \frac{P}{5.66+0.0213 \times LH}$ indicates nonusable range

Hydraulic pressure (MPa)	Cylinder force (kN)	Clamping force (kN)											Max. arm length Max. LH (mm)
		Clamp arm length LH (mm)											
		25	30	40	50	60	70	80	90	100	120		
50	8.8	8.1											27
45	8.0	7.3	7.1										30
40	7.1	6.5	6.4										35
35	6.2	5.7	5.6	5.4									41
30	5.3	4.8	4.8	4.6	4.5								50
25	4.4	4.0	4.0	3.8	3.7	3.6							63
20	3.5	3.2	3.2	3.1	3.0	2.9	2.8	2.7					85
15	2.7	2.4	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	1.8		128
10	1.8	1.6	1.6	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.2		↑
5	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.6		128

PLB16 $F = \frac{P}{2.21+0.00745 \times LH}$ indicates nonusable range

Hydraulic pressure (MPa)	Cylinder force (kN)	Clamping force (kN)											Max. arm length Max. LH (mm)
		Clamp arm length LH (mm)											
		35	40	50	60	70	80	90	100	120	140		
50	22.6	20.2											39
45	20.4	18.2	17.9										44
40	18.1	16.2	15.9	15.5									50
35	15.8	14.2	14.0	13.5									59
30	13.6	12.1	12.0	11.6	11.3	11.0							71
25	11.3	10.1	10.0	9.7	9.4	9.2	8.9						89
20	9.0	8.1	8.0	7.7	7.5	7.3	7.1	6.9	6.8	6.4			121
15	6.8	6.1	6.0	5.8	5.6	5.5	5.3	5.2	5.1	4.8	4.6		186
10	4.5	4.0	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.2	3.1		↑
5	2.3	2.0	2.0	1.9	1.9	1.8	1.8	1.7	1.7	1.6	1.5		186

50MPa clamp & work support

Swing clamp

Swing clamp (ROHMHELD-compatible)

Swing clamp (ENERPAC-compatible)

Link clamp

Clamp cylinder

Work support

Option

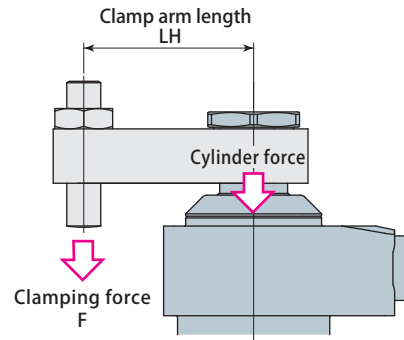
Clamping force calculation example

Clamp models	PLB06
Hydraulic pressure (P)	15 MPa
Clamp arm length (LH)	40 mm
Cylinder force	2.7 kN
Clamping force (F)	2.3 kN

Calculation formula

$$F = \frac{P}{5.66+0.0213 \times LH}$$

$$= \frac{15}{5.66+0.0213 \times 40} \doteq 2.3 \text{ kN}$$



PLB25 $F = \frac{P}{1.41+0.00412 \times LH}$ indicates nonusable range

Hydraulic pressure (MPa)	Cylinder force (kN)	Clamping force (kN)										Max. arm length Max. LH (mm)	
		Clamp arm length LH (mm)											
		40	50	60	70	80	90	100	120	140	160		
50	35.3	31.7											40
45	31.8	28.5											45
40	28.3	25.3	24.7										52
35	24.7	22.2	21.6	21.1									61
30	21.2	19.0	18.5	18.1	17.6								73
25	17.7	15.8	15.4	15.0	14.7	14.3	14.0						91
20	14.1	12.7	12.3	12.0	11.7	11.5	11.2	10.9	10.5				122
15	10.6	9.5	9.3	9.0	8.8	8.6	8.4	8.2	7.9	7.5	7.2		185
10	7.1	6.3	6.2	6.0	5.9	5.7	5.6	5.5	5.2	5.0	4.8		↑
5	3.5	3.2	3.1	3.0	2.9	2.9	2.8	2.7	2.6	2.5	2.4		185

PLB40 $F = \frac{P}{0.867+0.00247 \times LH}$ indicates nonusable range

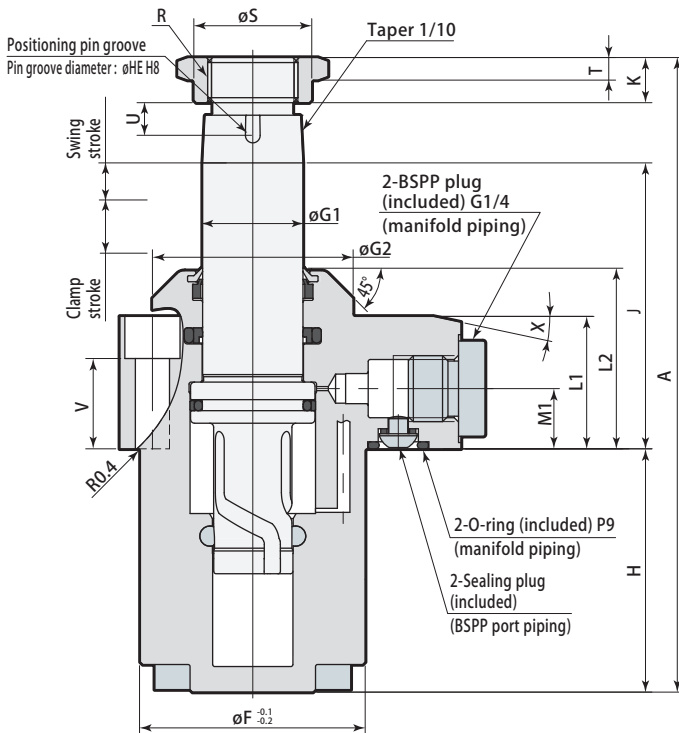
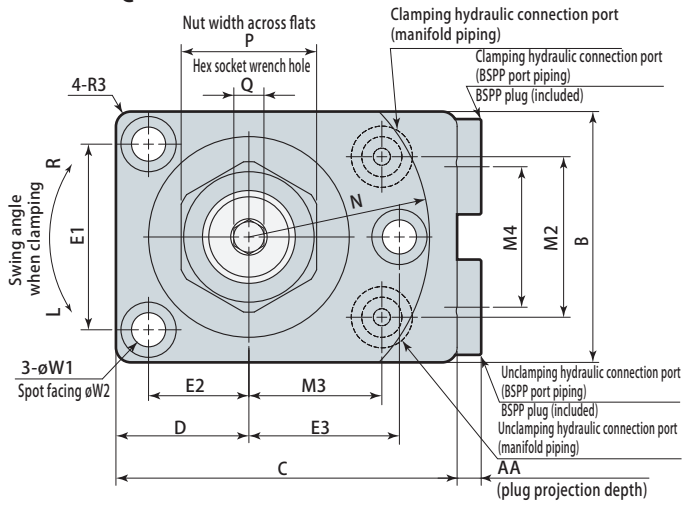
Hydraulic pressure (MPa)	Cylinder force (kN)	Clamping force (kN)										Max. arm length Max. LH (mm)	
		Clamp arm length LH (mm)											
		45	50	60	70	80	90	100	120	140	160		
50	57.7	51.1											48
45	51.9	46.0	45.4										54
40	46.1	40.9	40.4	39.4									62
35	40.4	35.8	35.3	34.5	33.7								73
30	34.6	30.7	30.3	29.6	28.9	28.2							89
25	28.8	25.6	25.2	24.6	24.1	23.5	23.0	22.5					112
20	23.1	20.5	20.2	19.7	19.2	18.8	18.4	18.0	17.2	16.5			152
15	17.3	15.3	15.1	14.8	14.4	14.1	13.8	13.5	12.9	12.4	11.9		237
10	11.5	10.2	10.1	9.9	9.6	9.4	9.2	9.0	8.6	8.2	7.9		↑
5	5.8	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.3	4.1	4.0		237

50MPa clamp & work support
Swing clamp
Swing clamp (ROEMHELD-compatible)
Swing clamp (ENERPAC-compatible)
Link clamp
Clamp cylinder
Work support
Option

Dimensions

(mm)

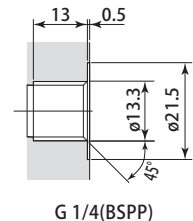
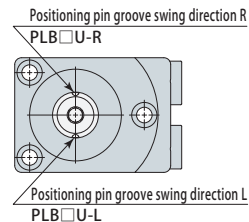
PLB⁰⁶₁₆U-^L_R^C



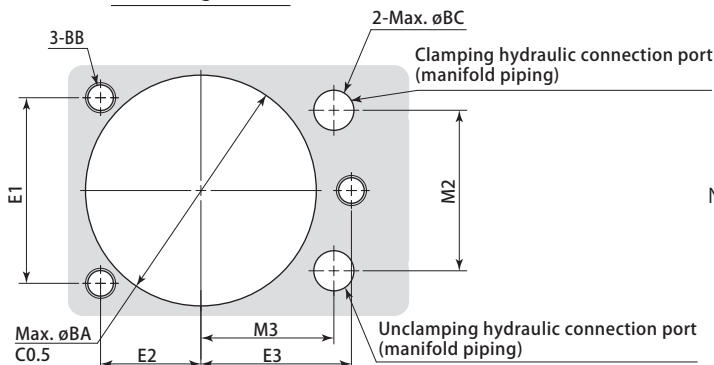
Model	PLB06U- ^L _R ^C	PLB16U- ^L _R ^C
Swing stroke	7	8
Clamp stroke	11	14
A	126.5	147.5
B	50	63
C	68	80.5
D	26.5	34.5
E1	37	48
E2	20	27
E3	30	38
F	44.8	59.8
G1	20	32
G2	40	54
H	48.5	53.5
J	57	66
K	9	10
L1	26.4	31.4
L2	36	42
M1	14	14
M2	32	46
M3	26.5	31
M4	28	41
N	36	45.3
P	27	36
Q	6	10
R	M18×1.5	M28×1.5
S	23.5	33.5
T	4.5	4.5
U	6.5	10.5
V	18	19
W1	6.8	9
W2	11	14
X	12°	27°
AA	4.8	4.8
BA	46	61
BB	M6	M8
BC	7	7
HE	3 ^{+0.014} ₀	5 ^{+0.018} ₀
Mass	1.3 kg	2.4 kg
Recommended tightening torque (mounting screw)	11 N·m	25 N·m

Positioning pin position for unclamping

BSPP piping port detail diagram



Mounting details



Note 1. This diagram indicates unclamped condition.

- Flow control valve (VCH) can be mounted for manifold piping specification. Refer to page → 359.
- The mounting surface finish must be no rougher than Rz 6.3 (ISO4287:1997) for manifold piping specification.
- Positioning pins and mounting screws are not included.
- Material used for O-ring is fluorocarbon (with hardness Hs90).

50MPa clamp & work support

Swing clamp

Swing clamp (ROEMHELD-compatible)

Swing clamp (ENERPAC-compatible)

Link clamp

Clamp cylinder

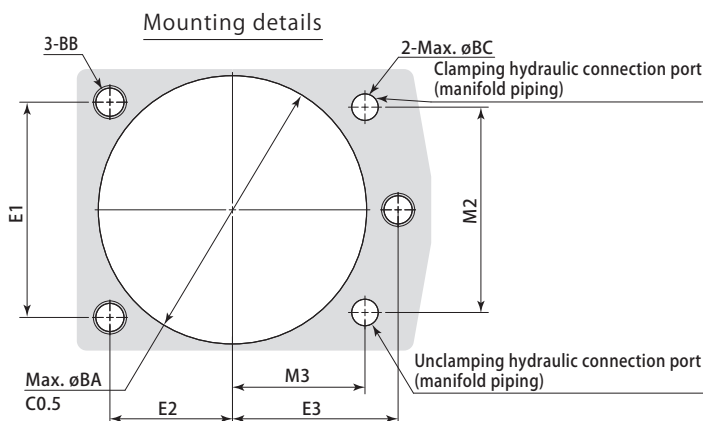
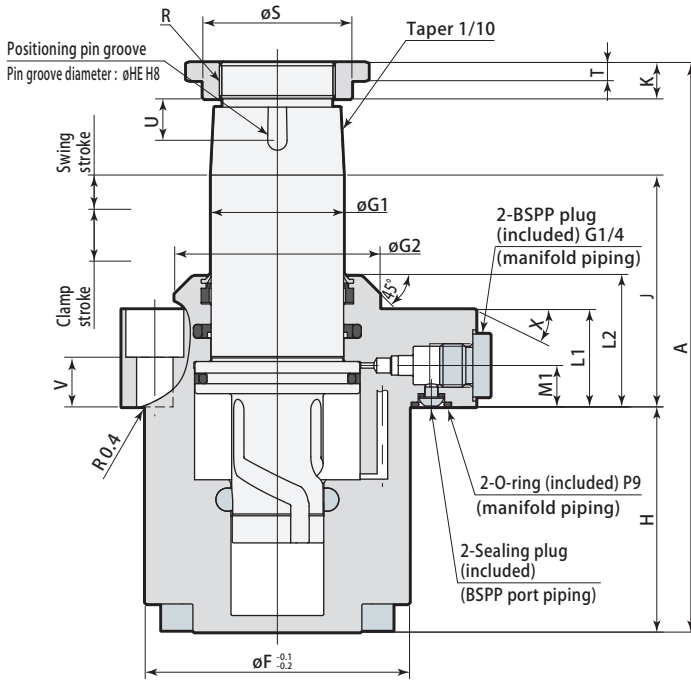
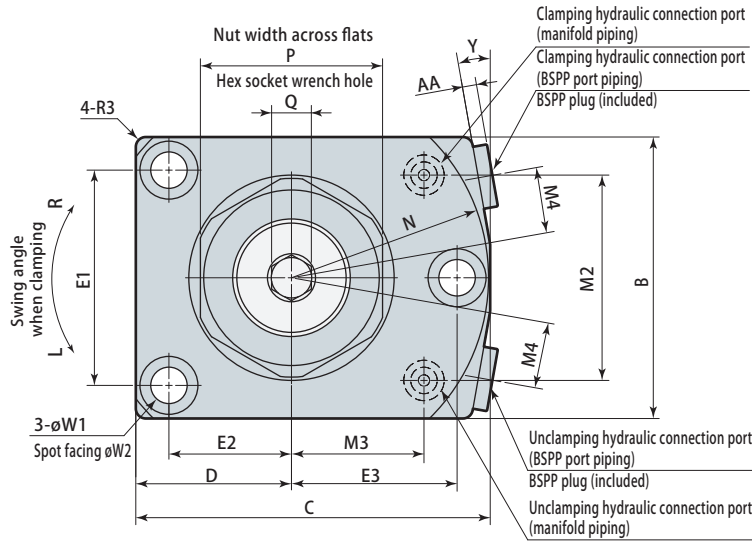
Work support

Option

Dimensions

PLB²⁵₄₀U-R^L_C

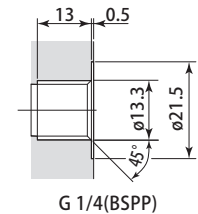
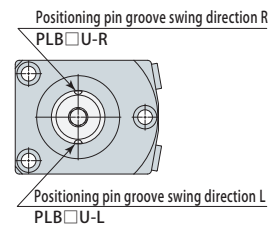
(mm)



Model	PLB25U-L _R ^C	PLB40U-L _R ^C
Swing stroke	11	9
Clamp stroke	15	15
A	172	182
B	85	95
C	107	122
D	47	55
E1	65	72
E2	37	42
E3	50	55
F	79.8	89.8
G1	40	50
G2	62	74
H	68	73
J	70	69
K	11	12
L1	29.4	29.4
L2	40	40
M1	12	12
M2	62	75
M3	40	45
M4	20.5	23.5
N	59.5	66
P	55	65
Q	12	14
R	M35 × 1.5	M45 × 1.5
S	45	55.5
T	5.5	5.5
U	12.5	16.5
V	15	14
W1	11	14
W2	17.5	20
X	26°	25°
Y	10°	12°
AA	4.3	4.3
BA	81	91
BB	M10	M12
BC	7	7
HE	6 ^{+0.018} ₀	8 ^{+0.022} ₀
Mass	4.8 kg	6.5 kg
Recommended tightening torque (mounting screw)	49 N·m	60 N·m

Positioning pin position for unclamping

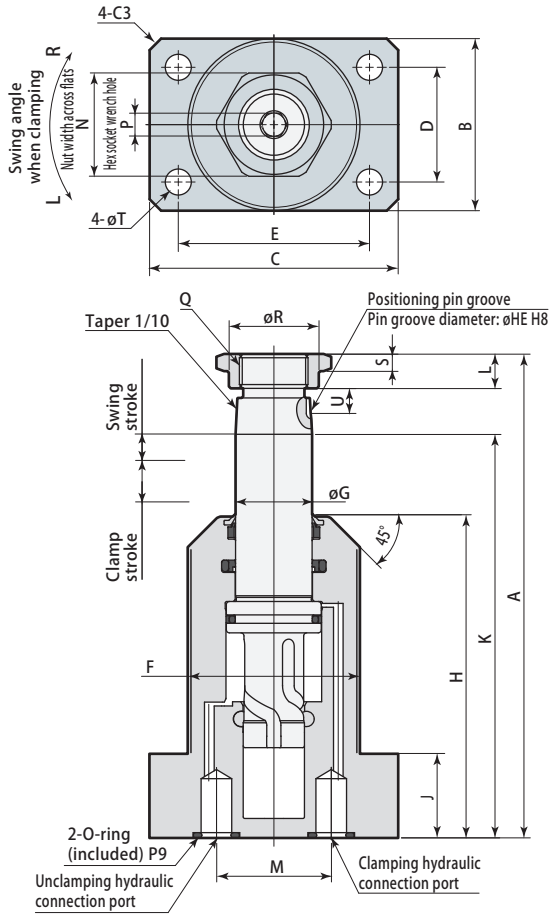
BSPP piping port detail diagram



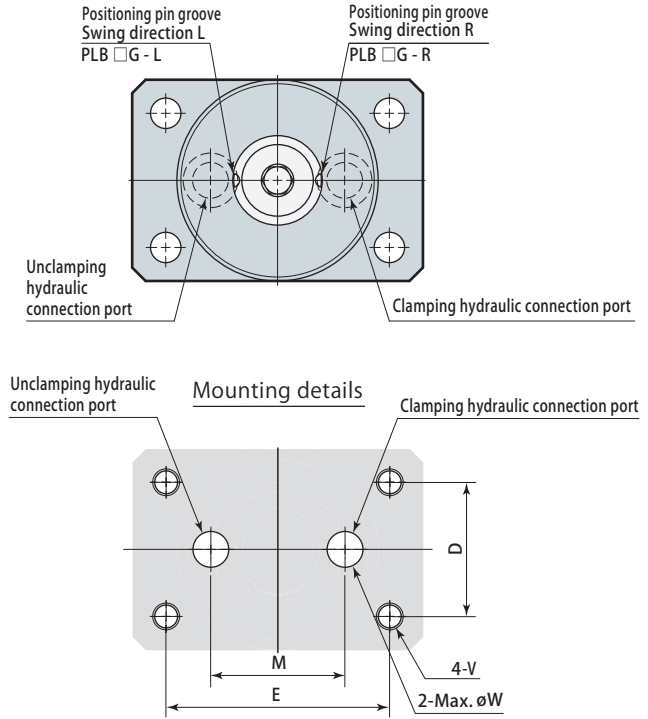
- Note 1. This diagram indicates unclamped condition.
- Flow control valve (VCH) can be mounted for manifold piping specification. Refer to page → 359.
 - The mounting surface finish must be no rougher than Rz 6.3 (ISO4287:1997) for manifold piping specification.
 - Positioning pins and mounting screws are not included.
 - Material used for O-ring is fluorocarbon (with hardness Hs90).

Dimensions

06
16
25
40
L
G-R
C



Positioning pin position for unclamping



Mounting surface finish must be no rougher than Rz 6.3 (ISO 4287:1997).

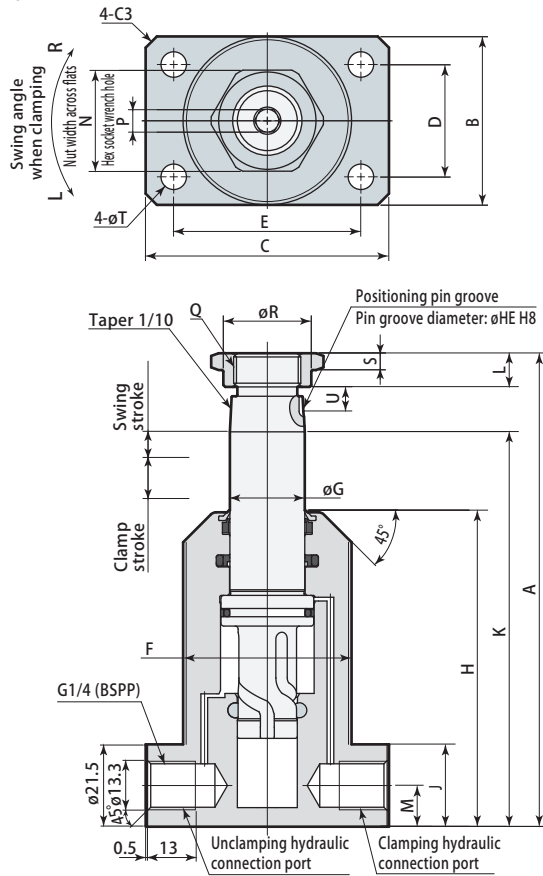
- Note 1. This diagram indicates unclamped condition.
- Note 2. Positioning pins and mounting screws are not included.
- Note 3. Material used for O-ring is fluorocarbon (with hardness Hs90).

(mm)

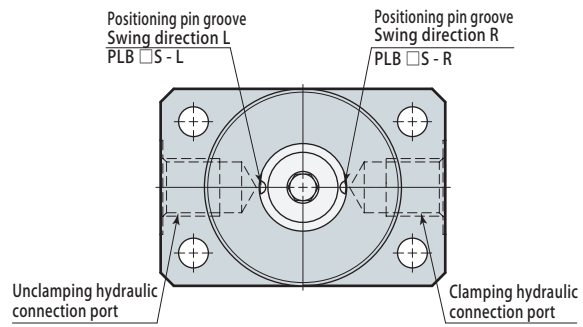
Model	PLB06G- $\frac{L}{C}$	PLB16G- $\frac{L}{C}$	PLB25G- $\frac{L}{C}$	PLB40G- $\frac{L}{C}$
Swing stroke	7	8	11	9
Clamp stroke	11	14	15	15
A	126.5	147.5	172	182
B	45	63	80	90
C	65	85	100	115
D	30	44	60	68
E	50	65	80	90
F	M45 × 1.5	M60 × 1.5	M80 × 2.0	M90 × 2.0
G	20	32	40	50
H	84.5	95.5	108	113
J	22	22	22	22
K	105.5	119.5	138	142
L	9	10	11	12
M	30	56	62	75
N	27	36	55	65
P	6	10	12	14
Q	M18 × 1.5	M28 × 1.5	M35 × 1.5	M45 × 1.5
R	23.5	33.5	45	55.5
S	4.5	4.5	5.5	5.5
T	6.8	9	14	15.5
U	6.5	10.5	12.5	16.5
V	M6	M8	M12	M14
W	7	7	7	7
HE	3 ^{+0.014} ₀	5 ^{+0.018} ₀	6 ^{+0.018} ₀	8 ^{+0.022} ₀
Mass	1.2 kg	2.4 kg	4.5 kg	6.2 kg
Recommended tightening torque (mounting screw)	11 N·m	25 N·m	60 N·m	100 N·m

Dimensions

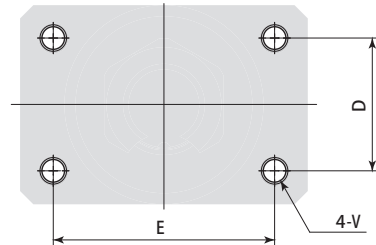
06
16
25
40
L
S-R
C



Positioning pin position for unclamping



Mounting details



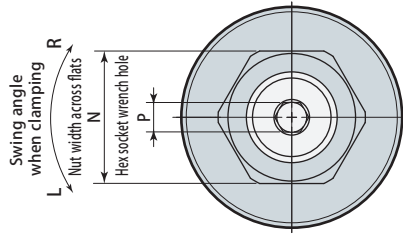
Note 1. This diagram indicates unclamped condition.
2. Positioning pins and mounting screws are not included.

(mm)

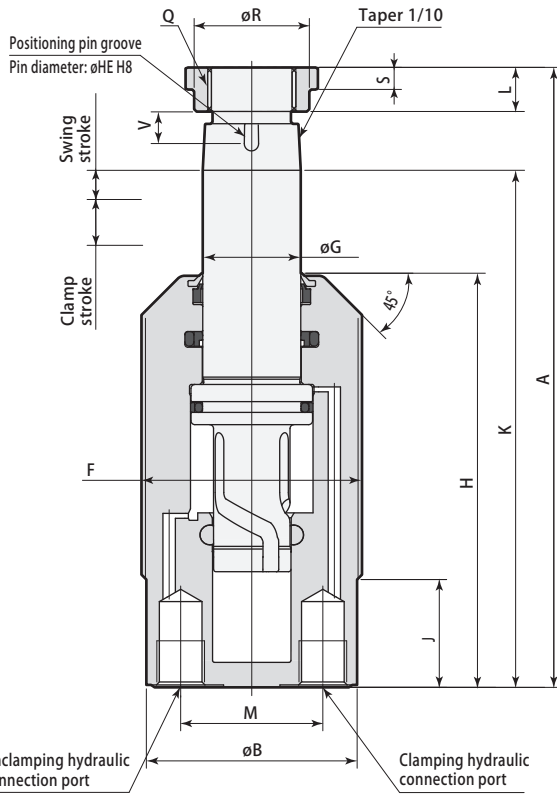
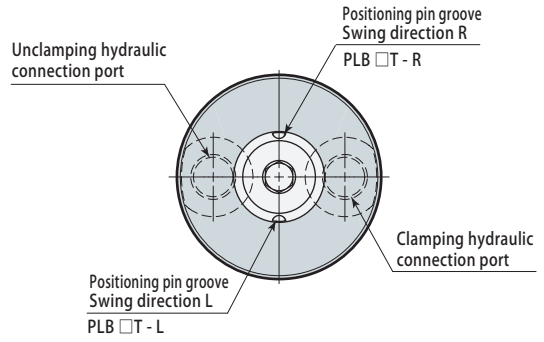
Model	PLB06S- $\frac{L}{R}$ - $\frac{L}{C}$	PLB16S- $\frac{L}{R}$ - $\frac{L}{C}$	PLB25S- $\frac{L}{R}$ - $\frac{L}{C}$	PLB40S- $\frac{L}{R}$ - $\frac{L}{C}$
Swing stroke	7	8	11	9
Clamp stroke	11	14	15	15
A	126.5	147.5	172	182
B	45	63	80	90
C	65	85	100	115
D	30	44	60	68
E	50	65	80	90
F	M45 × 1.5	M60 × 1.5	M80 × 2.0	M90 × 2.0
G	20	32	40	50
H	84.5	95.5	108	113
J	22	22	22	22
K	105.5	119.5	138	142
L	9	10	11	12
M	11	11	11	11
N	27	36	55	65
P	6	10	12	14
Q	M18 × 1.5	M28 × 1.5	M35 × 1.5	M45 × 1.5
R	23.5	33.5	45	55.5
S	4.5	4.5	5.5	5.5
T	6.8	9	14	15.5
U	6.5	10.5	12.5	16.5
V	M6	M8	M12	M14
HE	3 $^{+0.014}_0$	5 $^{+0.018}_0$	6 $^{+0.018}_0$	8 $^{+0.022}_0$
Mass	1.2 kg	2.4 kg	4.5 kg	6.2 kg
Recommended tightening torque (mounting screw)	11 N·m	25 N·m	60 N·m	100 N·m

Dimensions

06
16
25
40
L
R
C

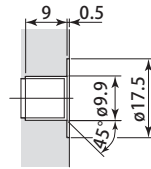


Positioning pin position for unclamping



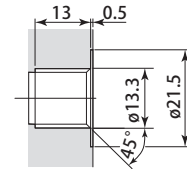
BSPP piping port detail diagram

PLB⁰⁶₁₆T-L



G 1/8(BSPP)

PLB²⁵₄₀T-L



G 1/4(BSPP)

Note 1. This diagram indicates unclamped condition.
2. Positioning pins are not included.

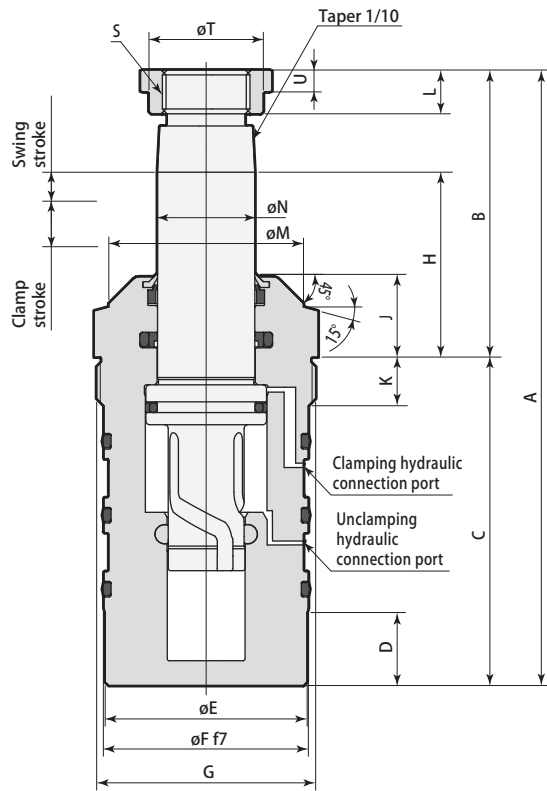
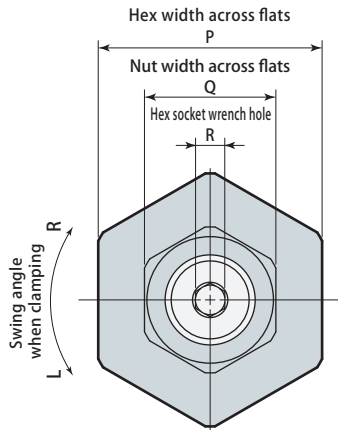
(mm)

Model	PLB06T-L R C	PLB16T-L R C	PLB25T-L R C	PLB40T-L R C
Swing stroke	7	8	11	9
Clamp stroke	11	14	15	15
A	126.5	147.5	172	182
B	43	58	77	87
F	M45×1.5	M60×1.5	M80×2.0	M90×2.0
G	20	32	40	50
H	84.5	95.5	108	113
J	22	22	22	22
K	105.5	119.5	138	142
L	9	10	11	12
M	29	41	54	68
N	27	36	55	65
P	6	10	12	14
Q	M18×1.5	M28×1.5	M35×1.5	M45×1.5
R	23.5	33.5	45	55.5
S	4.5	4.5	5.5	5.5
U	6.5	10.5	12.5	16.5
HE	3 ^{+0.014} ₀	5 ^{+0.018} ₀	6 ^{+0.018} ₀	8 ^{+0.022} ₀
Mass	1.0 kg	2.0 kg	4.0 kg	5.5 kg

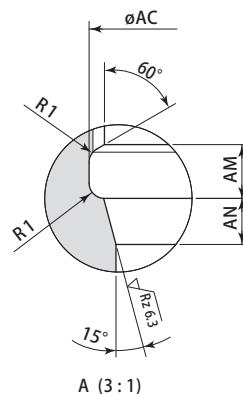
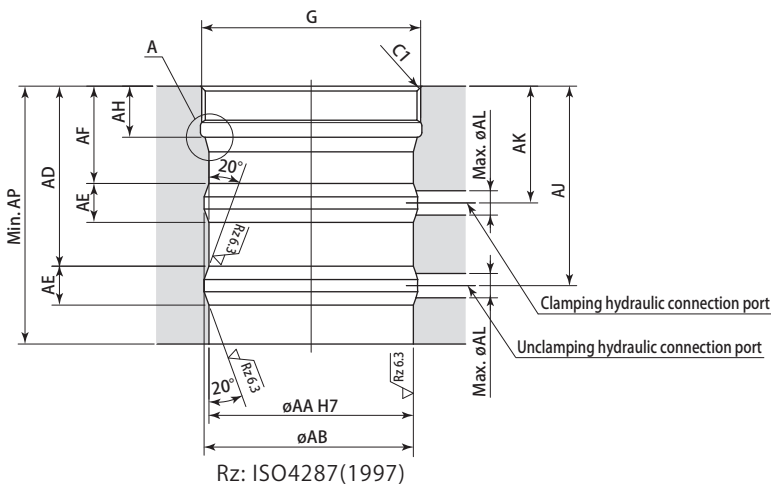
Dimensions

PLB⁰⁶₁₆M-^L_R/^C

(mm)



Mounting details



Model	PLB06M- ^L _R / ^C	PLB16M- ^L _R / ^C
Swing stroke	7	8
Clamp stroke	11	14
A	126.5	162
B	59	86
C	67.5	76
D	15	15
E	41.5	54.5
F	42 ^{+0.025} _{-0.050}	55 ^{+0.030} _{-0.060}
G	M45×1.5	M60×1.5
H	38	58
J	17	34
K	10	11
L	9	10
M	40	54
N	20	32
P	46	55
Q	27	36
R	6	10
S	M18×1.5	M28×1.5
T	23.5	33.5
U	4.5	4.5
AA	42 ^{+0.025} ₀	55 ^{+0.030} ₀
AB	44	57
AC	45.5	60.5
AD	37	41.5
AE	8	10
AF	20	24
AH	10.5	12.5
AJ	41	46.5
AK	24	29
AL	5	5
AM	3.5	3.5
AN	3	3
AP	52.5	61
Recommended tightening torque (body)	65 N·m	220 N·m
Mass	0.9 kg	2.1 kg

Note 1. This diagram indicates unclamped condition.
2. Positioning pins are not included.

50MPa clamp & work support

Swing clamp

Swing clamp (ROEMHELD-compatible)

Swing clamp (ENERPA-C-compatible)

Link clamp

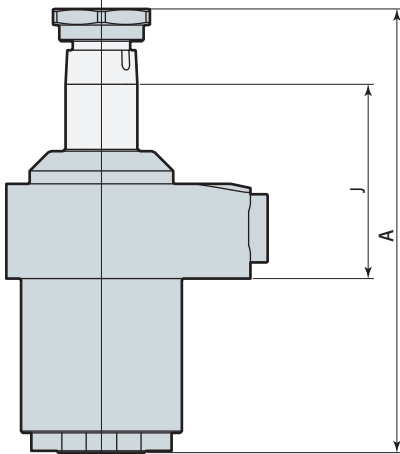
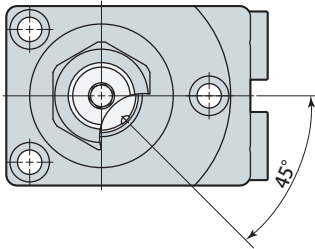
Clamp cylinder

Work support

Option

Upper flange, swing angle 45°

06
16
25
40
PLB U-L45
R45



PLB	① Size (refer to specification table)	② Mounting and piping types	③ Swing direction, swing angle (when clamping)
	06 16 25 40	U : Upper flange	L45 : Counter-clockwise, swing angle 45° R45 : Clockwise, swing angle 45°

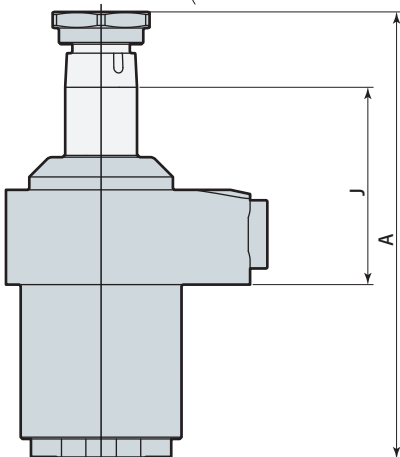
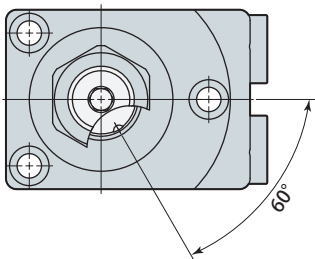
* Made to order
(mm)

Model	PLB06U-L45 R45	PLB16U-L45 R45	PLB25U-L45 R45	PLB40U-L45 R45
Swing angle	45° ± 5°			
Full stroke	15.1	18.7	21.5	20.1
Swing stroke	4.1	4.7	6.2	5.1
Clamp stroke	11	14	15	15
Cylinder capacity	Clamp	2.7 cm ³	8.5 cm ³	15.0 cm ³
	Unclamp	7.4 cm ³	23.5 cm ³	41.6 cm ³
A	123.6	144.2	167.5	178.1
J	54.1	62.7	65.2	65.1

Note 1. This diagram indicates unclamped condition.
2. Refer to specifications (page → 341), dimensions (pages → 345 and 346) for specifications and dimensions of products that are not listed on this diagram.

Upper flange, swing angle 60°

06
16
25
40
PLB U-L60
R60



PLB	① Size (refer to specification table)	② Mounting and piping types	③ Swing direction, swing angle (when clamping)
	06 16 25 40	U : Upper flange	L60 : Counter-clockwise, swing angle 60° R60 : Clockwise, swing angle 60°

* Made to order
(mm)

Model	PLB06U-L60 R60	PLB16U-L60 R60	PLB25U-L60 R60	PLB40U-L60 R60
Swing angle	60° ± 5°			
Full stroke	16	19.7	22.5	21.1
Swing stroke	5	5.7	7.5	6.1
Clamp stroke	11	14	15	15
Cylinder capacity	Clamp	2.8 cm ³	8.9 cm ³	15.9 cm ³
	Unclamp	7.9 cm ³	24.8 cm ³	44.2 cm ³
A	124.5	145.2	168.5	179.1
J	55	63.7	66.5	66.1

Note 1. This diagram indicates unclamped condition.
2. Refer to specifications (page → 341), dimensions (pages → 345 and 346) for specifications and dimensions of products that are not listed on this diagram.

50MPa clamp & work support

Swing clamp

Swing clamp (ROEMHELD-compatible)

Swing clamp (ENERPAC-compatible)

Link clamp

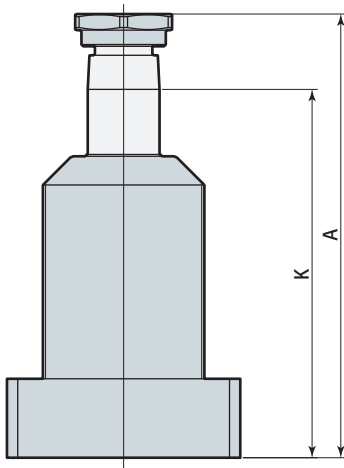
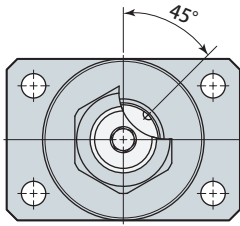
Clamp cylinder

Work support

Option

Lower flange (Manifold piping, BSPP port piping) Swing angle 45°

06
16 G L45
25 S R45
40



① Size (refer to specification table) ② Mounting and piping types ③ Swing direction, swing angle (when clamping)

PLB	06	G : Lower flange, manifold piping S : Lower flange, BSPP port piping	L45 : Counter-clockwise, swing angle 45° R45 : Clockwise, swing angle 45°
	16		
	25		
	40		

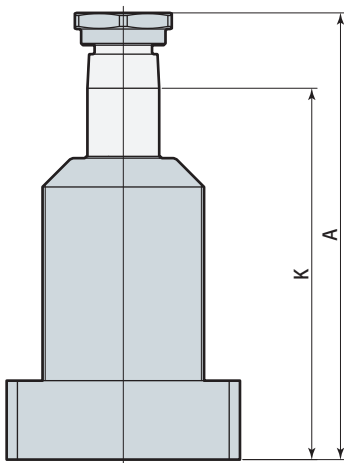
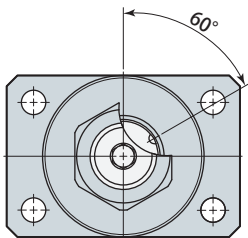
* Made to order
(mm)

Model	PLB06 ^G _S -L45-R45	PLB16 ^G _S -L45-R45	PLB25 ^G _S -L45-R45	PLB40 ^G _S -L45-R45	
Swing angle	45° ± 5°				
Full stroke	15.1	18.7	21.2	20.1	
Swing stroke	4.1	4.7	6.2	5.1	
Clamp stroke	11	14	15	15	
Cylinder capacity	Clamp	2.7 cm ³	8.5 cm ³	15.0 cm ³	23.2 cm ³
	Unclamp	7.4 cm ³	23.5 cm ³	41.6 cm ³	62.7 cm ³
A	123.6	144.2	167.2	178.1	
K	102.6	116.2	133.2	138.1	

Note 1. This diagram indicates unclamped condition.
2. Refer to specifications (page → 341), dimensions (pages → 347 and 348) for specifications and dimensions of products that are not listed on this diagram.

Lower flange (Manifold piping, BSPP port piping) Swing angle 60°

06
16 G L60
25 S R60
40



① Size (refer to specification table) ② Mounting and piping types ③ Swing direction, swing angle (when clamping)

PLB	06	G : Lower flange, manifold piping S : Lower flange, BSPP port piping	L60 : Counter-clockwise, swing angle 60° R60 : Clockwise, swing angle 60°
	16		
	25		
	40		

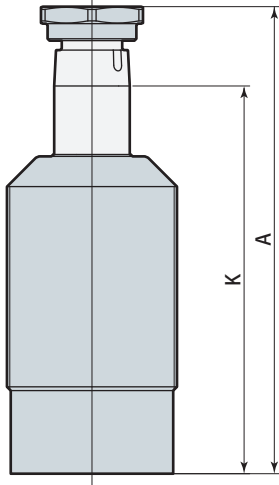
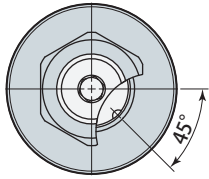
* Made to order
(mm)

Model	PLB06 ^G _S -L60-R60	PLB16 ^G _S -L60-R60	PLB25 ^G _S -L60-R60	PLB40 ^G _S -L60-R60	
Swing angle	60° ± 5°				
Full stroke	16	19.7	22.5	21.1	
Swing stroke	5	5.7	7.5	6.1	
Clamp stroke	11	14	15	15	
Cylinder capacity	Clamp	2.8 cm ³	8.9 cm ³	15.9 cm ³	24.3 cm ³
	Unclamp	7.9 cm ³	24.7 cm ³	44.2 cm ³	65.8 cm ³
A	124.5	145.2	168.5	179.1	
K	103.5	117.2	134.8	139.1	

Note 1. This diagram indicates unclamped condition.
2. Refer to specifications (page → 341), dimensions (pages → 347 and 348) for specifications and dimensions of products that are not listed on this diagram.

Thread, swing angle 45°

06
16
25
40
PLB T-L45
R45



① Size (refer to specification table)

② Mounting and piping types

③ Swing direction, swing angle (when clamping)

PLB	06	T : Thread	-	L45 : Counter-clockwise, swing angle 45° R45 : Clockwise, swing angle 45°
	16			
	25			
	40			

* Made to order

(mm)

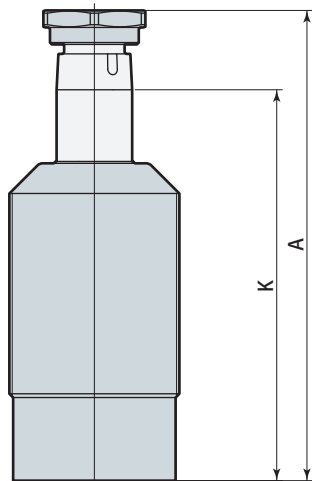
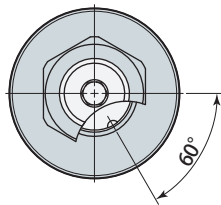
Model	PLB06T-L45 R45	PLB16T-L45 R45	PLB25T-L45 R45	PLB40T-L45 R45
Swing angle	45° ± 5°			
Full stroke	15.1	18.7	21.2	20.1
Swing stroke	4.1	4.7	6.2	5.1
Clamp stroke	11	14	15	15
Cylinder capacity	Clamp	2.7 cm ³	8.5 cm ³	15.0 cm ³
	Unclamp	7.4 cm ³	23.5 cm ³	41.6 cm ³
A	123.6	144.2	167.5	178.1
K	102.6	116.2	133.2	138.1

Note 1. This diagram indicates unclamped condition.

2. Refer to specifications (page → 341), dimensions (page → 349) for specifications and dimensions of products that are not listed on this diagram.

Thread, swing angle 60°

06
16
25
40
PLB T-L60
R60



① Size (refer to specification table)

② Mounting and piping types

③ Swing direction, swing angle (when clamping)

PLB	06	T : Thread	-	L60 : Counter-clockwise, swing angle 60° R60 : Clockwise, swing angle 60°
	16			
	25			
	40			

* Made to order

(mm)

Model	PLB06T-L60 R60	PLB16T-L60 R60	PLB25T-L60 R60	PLB40T-L60 R60
Swing angle	60° ± 5°			
Full stroke	16	19.7	22.5	21.1
Swing stroke	5	5.7	7.5	6.1
Clamp stroke	11	14	15	15
Cylinder capacity	Clamp	2.8 cm ³	8.9 cm ³	15.9 cm ³
	Unclamp	7.9 cm ³	24.7 cm ³	44.2 cm ³
A	124.5	145.2	168.5	179.1
K	103.5	117.2	134.5	139.1

Note 1. This diagram indicates unclamped condition.

2. Refer to specifications (page → 341), dimensions (page → 349) for specifications and dimensions of products that are not listed on this diagram.

50MPa clamp & work support

Swing clamp

Swing clamp (ROEMHELD-compatible)

Swing clamp (ENERPAC-compatible)

Link clamp

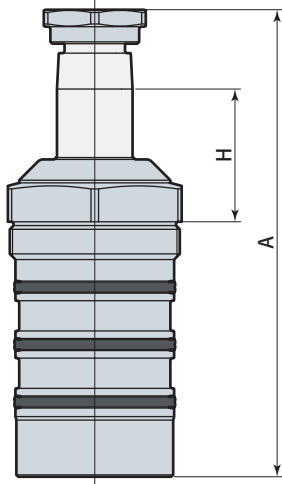
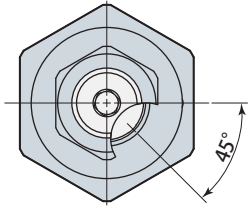
Clamp cylinder

Work support

Option

Cartridge, swing angle 45°

PLB⁰⁶₁₆M-L45
R45



① Size (refer to specification table)

② Mounting and piping types

③ Swing direction, swing angle (when clamping)

PLB	06	M : Cartridge	- L45 : Counter-clockwise, swing angle 45° R45 : Clockwise, swing angle 45°
	16		

* Made to order

(mm)

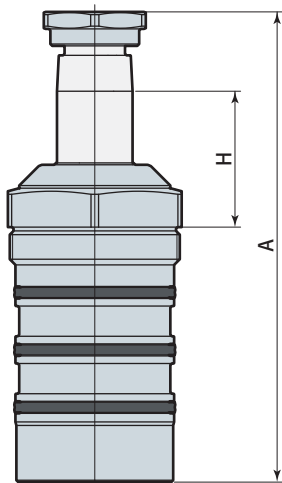
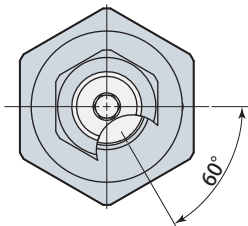
Model		PLB06M-L45 R45	PLB16M-L45 R45
Swing angle		45° ± 5°	
Full stroke		15.1	18.7
Swing stroke		4.1	4.7
Clamp stroke		11	14
Cylinder capacity	Clamp	2.7 cm ³	8.5 cm ³
	Unclamp	7.4 cm ³	23.5 cm ³
A		123.6	158.7
H		35.1	54.7

Note 1. This diagram indicates unclamped condition.

2. Refer to specifications (page → 341), dimensions (page → 350) for specifications and dimensions of products that are not listed on this diagram.

Cartridge, swing angle 60°

PLB⁰⁶₁₆M-L60
R60



① Size (refer to specification table)

② Mounting and piping types

③ Swing direction, swing angle (when clamping)

PLB	06	M : Cartridge	- L60 : Counter-clockwise, swing angle 60° R60 : Clockwise, swing angle 60°
	16		

* Made to order

(mm)

Model		PLB06M-L60 R60	PLB16M-L60 R60
Swing angle		60° ± 5°	
Full stroke		16	19.7
Swing stroke		5	5.7
Clamp stroke		11	14
Cylinder capacity	Clamp	2.8 cm ³	8.9 cm ³
	Unclamp	7.9 cm ³	24.7 cm ³
A		124.5	159.7
H		36	55.7

Note 1. This diagram indicates unclamped condition.

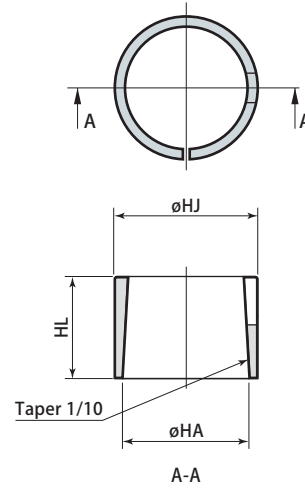
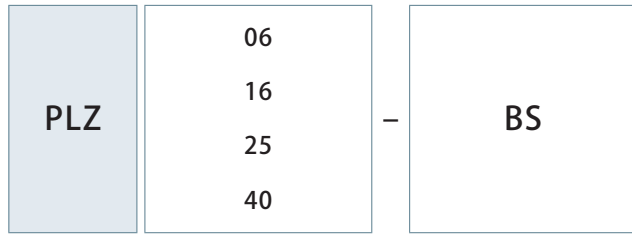
2. Refer to specifications (page → 341), dimensions (page → 350) for specifications and dimensions of products that are not listed on this diagram.

Model designation

Taper sleeve

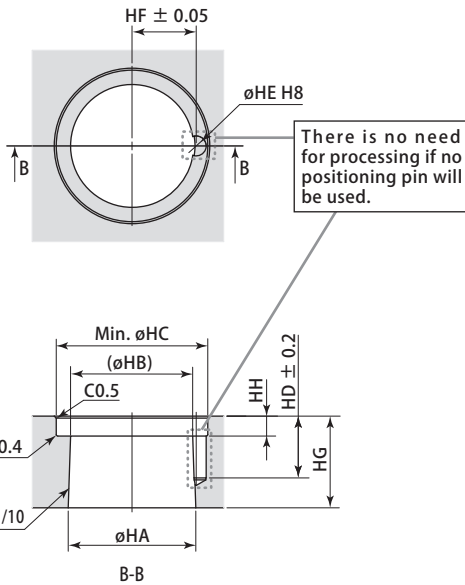
PLZ ①-BS (Example: PLZ06-BS)

① Size (refer to specification table)

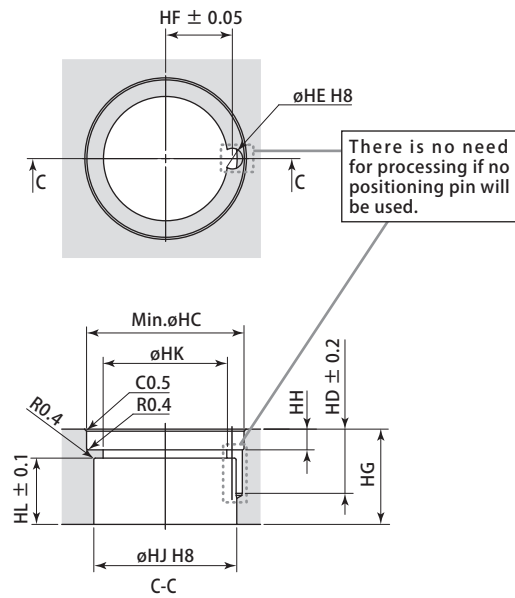


Clamp arm processing diagram

Not using taper sleeve



Using taper sleeve



(mm)

Clamp models	PLB06	PLB16	PLB25	PLB40
HA	20 ^{-0.020} _{-0.041}	32 ^{-0.025} _{-0.050}	40 ^{-0.025} _{-0.050}	50 ^{-0.025} _{-0.050}
HB	18.8	30.2	37.7	47.2
HC	24	38	47	59
HD	10.5	15.5	17.5	22.5
HE	3 ^{+0.014} ₀	5 ^{+0.018} ₀	6 ^{+0.018} ₀	8 ^{+0.022} ₀
HF	10.1	16.1	20.1	25.1
HG	16	23	28	34
HH	4	5	5	6
HJ	22 ^{+0.033} ₀	34.5 ^{+0.039} ₀	43 ^{+0.039} ₀	54 ^{+0.046} ₀
HK	19	30	38	47
HL	10	16	21	26
Positioning pin	$\phi 3(h8) \times 6$	$\phi 5(h8) \times 10$	$\phi 6(h8) \times 12$	$\phi 8(h8) \times 16$
Taper sleeve models	PLZ06-BS	PLZ16-BS	PLZ25-BS	PLZ40-BS

50MPa clamp & work support

Swing clamp

Swing clamp (ROEMHELD-compatible)

Swing clamp (ENERPAC-compatible)

Link clamp

Clamp cylinder

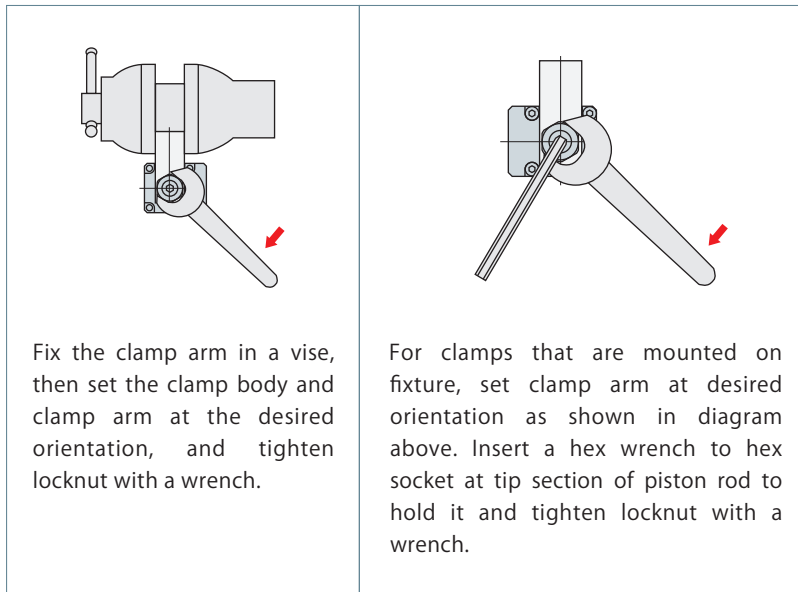
Work support

Option

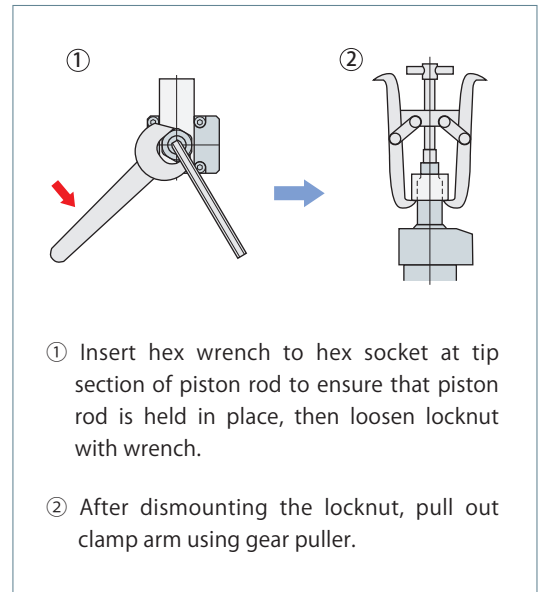
Mounting & dismounting of clamp arm

1. Swing clamp may be damaged if excessive torque is applied to piston rod, since structure is intended for swinging using cam mechanism with lead grooves. Follow instructions shown below to prevent excessive torque from being applied on piston rod when mounting or dismounting clamp arm.
2. Be sure to tighten the locknut with specified tightening torque (refer to recommended tightening torque on [pages → 341](#)). If the tightening torque is insufficient, clamp arm may slip during operation.

Mounting of clamp arm



Dismounting of clamp arm



Mounting of clamp and work support

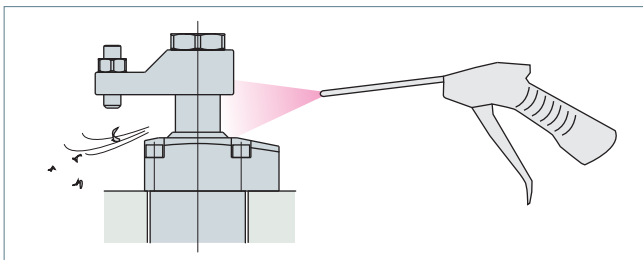
Use screws with strength class of 12.9 for mounting clamp and work support and be sure to apply specified torque for tightening, by referring to recommended tightening torque of mounting screws indicated below.

Recommended tightening torque of mounting screws (strength class 12.9)

Mounting screw size	Tightening torque
M4 × 0.7	2.8 N·m
M5 × 0.8	7 N·m
M6 × 1	11 N·m
M8 × 1.25	25 N·m
M10 × 1.5	49 N·m
M12 × 1.75	60 N·m

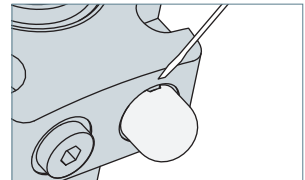
Caution in use of equipment

1. Clamp and work supports have been developed for the purpose of clamping workpiece for machine tools. Do not use them for other purposes.
2. Always protect them with a cover to ensure sliding surfaces are not exposed to weld slags when using them as fixture for welding.
3. Clean sliding surfaces and top part of clamp body with air blowing periodically to ensure smooth operations.



Mounting & dismounting of optional parts

1. When mounting or dismounting a flow control valve or air bleeding valve, be sure to set pressure within hydraulic circuit to 0 MPa before starting.
2. When mounting a flow control valve or air bleeding valve, be sure to tighten it with the specified tightening torque (refer to pages → 359 and 360 for recommended tightening torque).
3. When mounting a coolant cap (resin : POM), firmly press the body of cover. If it is not mounting properly, use a plastic mallet to tap it into place.
4. When dismounting a coolant cap, use a sharp-pointed tool such as a precision screw driver by hooking the notched portion.



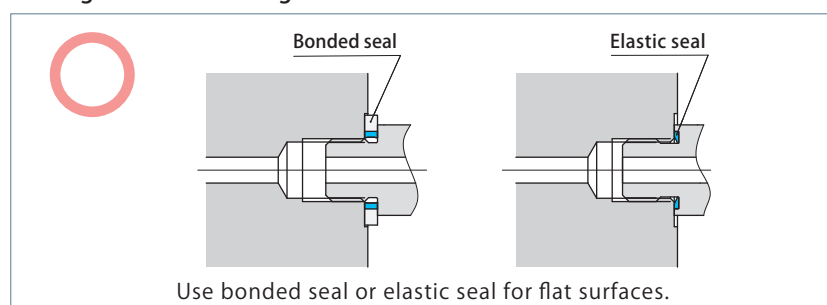
Caution for hydraulic piping

1. Most problems that occur with hydraulic equipment are caused by foreign substances such as metal chips and dust that enter into hydraulic circuits. Refer to "Piping Hydraulic & Pneumatic Equipment-Practical Notes" provided with the product for mounting and hydraulic piping of the product.
2. After performing hydraulic piping, always be sure to bleed out air in the hydraulic circuit. Insufficient bleeding can lead to malfunction.
3. When using multiple clamps, operating speeds and timings vary due to variance in pipe resistance and internal resistance of clamps. Adjust operating speeds and timings using flow control valve.
4. The special scraper has superior scraping capability to remove oil film on the surface of the rod, there are cases where grease and working fluids (oil films) inside the clamp are scraped and expelled to the outside. This may result in accumulation of oil in the external perimeters of piston rod on the upper part of the scraper, but this does not indicate an oil leak.

BSPB port sealing method

1. "Sealing method for flange surfaces" has been adopted as standard means for this product. Use fittings and connectors of bonded seal or elastic body seal. Do not use fittings of "Sealing method for tapered surfaces" (O-ring seal method).
2. Seal tapes and liquid packing are not necessary. Seal fittings with included with packing.
3. When mounting, clean metal chips and dust off surfaces that will come into contact with packing.

Sealing method for flange surfaces



Sealing method for tapered surfaces

