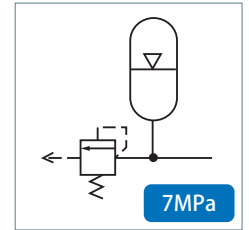
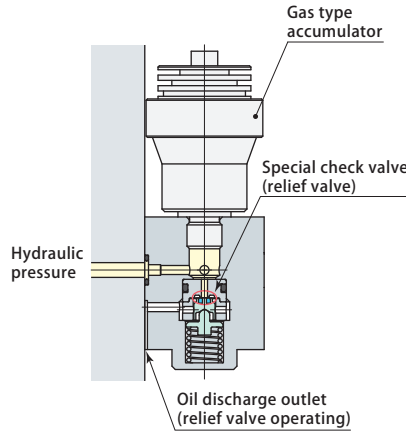




Accumulator model **WPC**



N₂ pressure type accumulator. Equipped with a relief valve for preventing breakdown of device in case of problems with circuit pressure (high pressure).

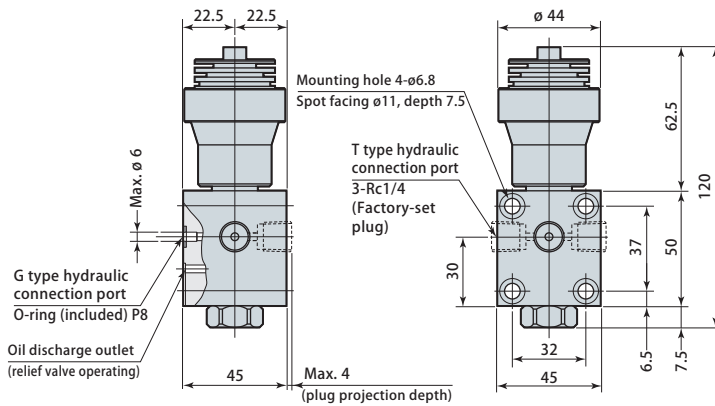
Specifications

Model	WPC13L-T <small>Gas pressure *</small>	WPC13L-G <small>Gas pressure *</small>	WPC40L-T <small>Gas pressure *</small>	WPC40L-G <small>Gas pressure *</small>
Mounting/piping methods	Piping mounting	Manifold	Piping mounting	Manifold
Working pressure range (MPa)	Refer to page → 216 for characteristic line diagram.			
Gas capacity (cm ³)		13		40
Oil discharge/absorption amount (cm ³)		10		30
Mass (kg)		1.1		1.6

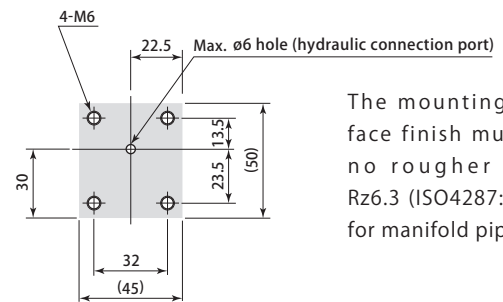
Proof pressure : 10.5 MPa Operating temperature: 0 ~ 60°C Fluid used: General mineral based hydraulic oil (ISO-VG32 equivalent)
 * Initially filled gas pressure can be set in range of 1 MPa to 6 MPa with 0.5 MPa increment. Specify gas pressure when ordering. Example : WPC13L-T3.0 (gas pressure 3 MPa)
 There is also a type that adopts fluorocarbon 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. Model designation WPC□L-□□-V).

Dimensions

WPC13L-G □ * No internal filter

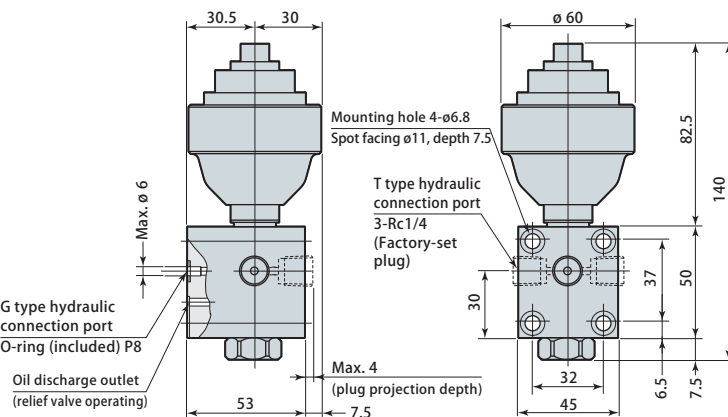


Mounting details

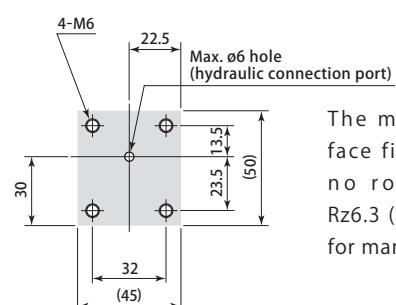


The mounting surface finish must be no rougher than Rz6.3 (ISO4287:1997) for manifold piping.

WPC40L-G □ * No internal filter



Mounting details

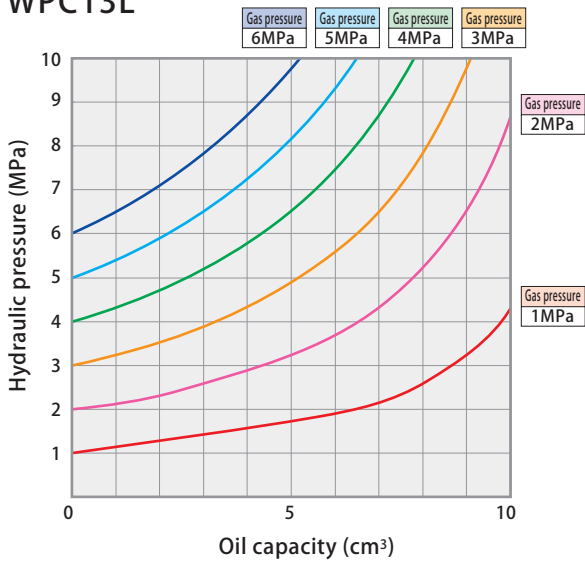


The mounting surface finish must be no rougher than Rz6.3 (ISO4287:1997) for manifold piping.

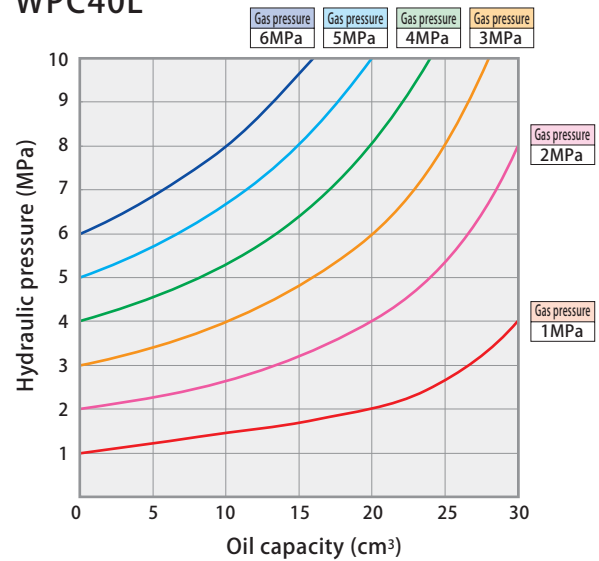
Mounting screws are not included.

Characteristic line diagram

WPC13L



WPC40L



Note: This characteristic line diagram represents theoretical values.

Model selection example

Condition (estimated temperature drop: 20°C)

Working clamp	CTU06×8 pieces	Piping	Inner diameter ø6×0.8 m×8 pieces
Working hydraulic pressure: P	6 MPa	Valve & hydraulic pressure equipment	VCB: 1 piece, VRG: 2 pieces

Selection procedure

1. Calculation of circuit capacity

Clamping capacity: $8.9 \times 2.35 \times 8 = 167 \text{ cm}^3$
Pressure bearing area Stroke Qty

Piping capacity: $0.28 \times 80 \times 8 = 179 \text{ cm}^3$

Valve & hydraulic pressure equipment capacity: $8 \times 3 = 24 \text{ cm}^3$

(Perform calculation with capacity of 8 cm³ for each of valves and hydraulic pressure equipment in hydraulic pressure circuit, when using Pascal product.)

Circuit capacity: $167 + 179 + 24 = 370 \text{ cm}^3$

2. Selection of oil capacity

Select the equipment having oil capacity capable of keeping volumetric change.

Volumetric change is obtained by using formula shown below.

$$\Delta V = V \times \Delta T \times \alpha$$

ΔV : Volumetric change (cm³) V : Circuit capacity (cm³)
 ΔT : Temperature change (°C) α : Thermal expansion coefficient (7.8×10^{-4})

$$\Delta V = 370 \times 20 \times 7.8 \times 10^{-4} = 5.8 \text{ cm}^3$$

Here, WPC40L is selected as an example (*1).

3. Selection of gas pressure

Select the pressure whose oil discharge amount (*2) under working hydraulic pressure satisfies ΔV calculated in step 2.

Read off characteristic line diagram.

If the working hydraulic pressure of the clamping circuit is 6 MPa, select the gas pressure 2 MPa, 3 MPa, or 4 MPa.

4. Verification of hydraulic pressure and residual discharge amount (*2) after temperature change

Select the one whose hydraulic pressure drop after temperature change is low and residual discharge amount (*2) satisfies the marginal oil amount (*3). Read off characteristic line diagram.

The hydraulic pressure after temperature change drops to 4.2 MPa with 2 MPa gas pressure (P2), to 4.7 MPa with 3 MPa gas pressure (P3), and to 4.9 MPa with 4 MPa gas pressure (P4), respectively.

The residual discharge amount (*2) is 20.9 cm³ for 2 MPa gas pressure (V2), 14.2 cm³ for 3 MPa (V3), and 7.5 cm³ for 4 MPa (V4), respectively.

Here, select WPC40L-□4 whose pressure drop is low.

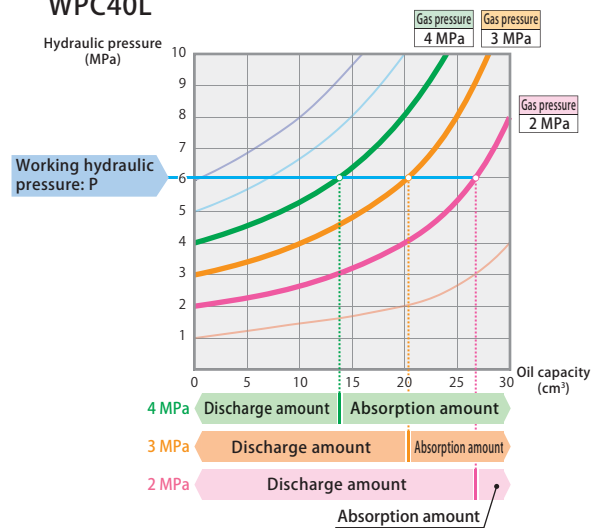
5. Select piping method.

*1: WPC13L is also available. Likewise, select appropriate one in consideration of steps 3 and 4.

*2: For when the temperature decreases. If the temperature increases, check the absorption amount.

*3: Allow adequate margin for residual discharge amount after temperature change, as there may be margin of error with gas filling pressure. Marginal oil amount: About 2.0 cm³

WPC40L



WPC40L

