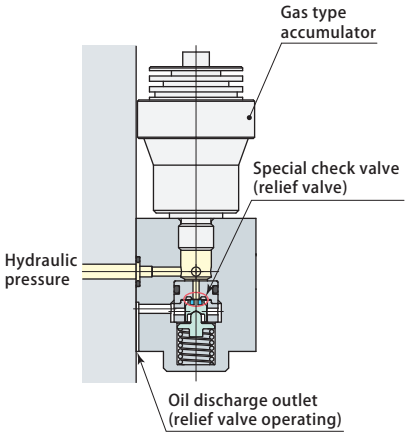
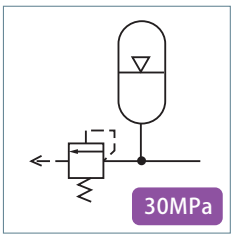
Accumulator model **WPC**





N_2 pressure type accumulator. Equipped with a relief valve for preventing breakdown of device in case of problems with circuit pressure (high pressure).

Specifications

Model	WPC13H-T Gas pressure *	WPC13H-G Gas pressure *	WPC40H-T Gas pressure *	WPC40H-G Gas pressure *
Mounting/piping methods	Piping mounting	Manifold mounting	Piping mounting	Manifold mounting
Working pressure range (MPa)	Refer to page→456 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: 37.5 MPa Operating temperature: 0 ~ 60°C Fluid used: General mineral based hydraulic oil (ISO-VG32 equivalent)

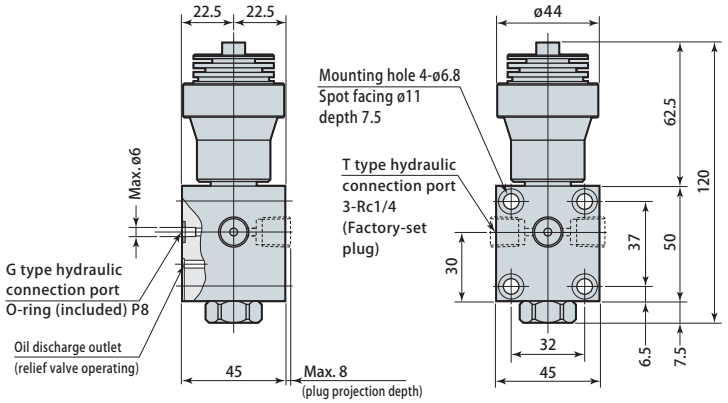
* Initially filled gas pressure can be set in range of 7 MPa to 25 MPa with 1 MPa increment. Specify gas pressure when ordering. Example: WPC13H-T10 (gas pressure 10 MPa)

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□H-□□-V)

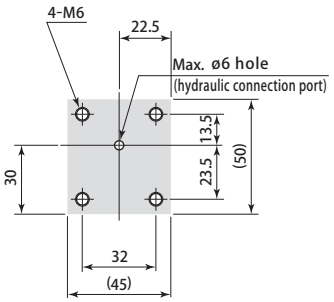
Dimensions

WPC13H-$^{T}_{G}$□

*No internal filter



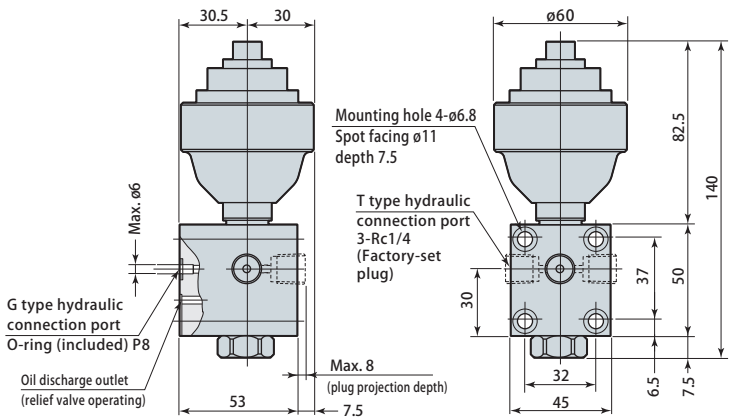
Mounting details



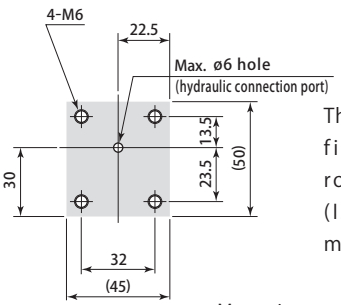
The mounting surface finish must be no rougher than Rz6.3 (ISO4287:1997) for manifold piping.

WPC40H-$^{T}_{G}$□

*No internal filter



Mounting details

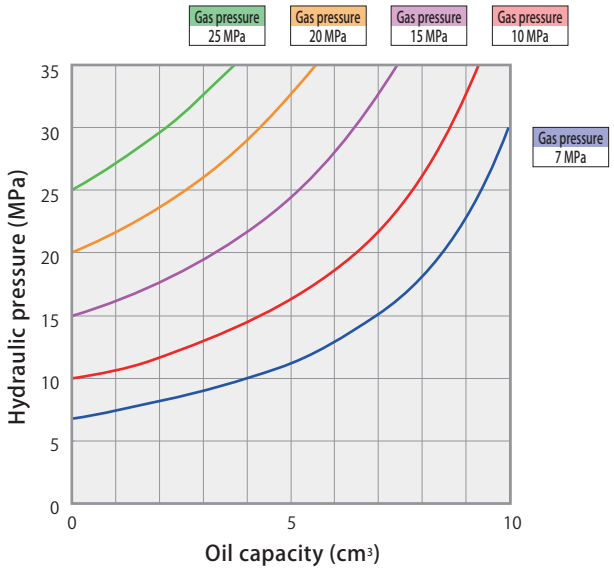


The mounting surface finish must be no rougher than Rz6.3 (ISO4287:1997) for manifold piping.

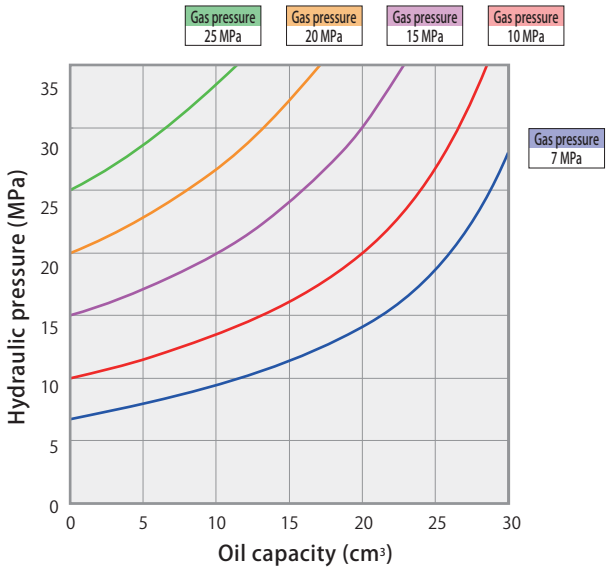
Mounting screws are not included.

Characteristic line diagram

WPC13H



WPC40H



Note: This characteristic line diagram represents theoretical values.

Model selection example

Condition (estimated temperature drop: 20℃)

Working clamp	CLW16×8 pieces	Piping	Inner diameter ø6×0.5 m×8 pieces
Working hydraulic pressure: P	25 MPa	Valve & hydraulic pressure equipment	VCB: 1 piece, VRG: 2 pieces

Selection procedure

1. Calculation of circuit capacity

Clamping capacity: $\underset{\text{Pressure bearing area}}{6.16} \times \underset{\text{Stroke}}{3.3} \times \underset{\text{Qty}}{8} = 163\ cm^3$

Piping capacity: $0.28 \times 50 \times 8 = 113\ cm^3$

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

(Perform calculation with capacity of 8 cm^3 for each of valves and hydraulic pressure equipment in hydraulic pressure circuit, when using Pascal product.)

Circuit capacity: $163 + 113 + 24 = 300\ cm^3$

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 (cm^3) V: Circuit capacity (cm^3)

ΔT: Temperature change (℃) α: Thermal expansion coefficient (7.8×10^{-4})

$\Delta V = 300 \times 20 \times 7.8 \times 10^{-4} = 4.7\ cm^3$

Here, WPC40H 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 is 25 MPa, select gas pressure 10 MPa, 15 MPa, or 20 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 19.3 MPa with 10 MPa gas pressure (P10), to 21 MPa with 15 MPa gas pressure (P15), and to 22 MPa with 20 MPa gas pressure (P20), respectively.

The residual oil discharge amount (∗2) is 19.3 cm^3 for 10 MPa gas pressure (V10), 11.3 cm^3 for 15 MPa (V15), and 3.3 cm^3 for 20 MPa (V20), respectively.

Here, select WPC40H-□20 whose pressure drop is low.

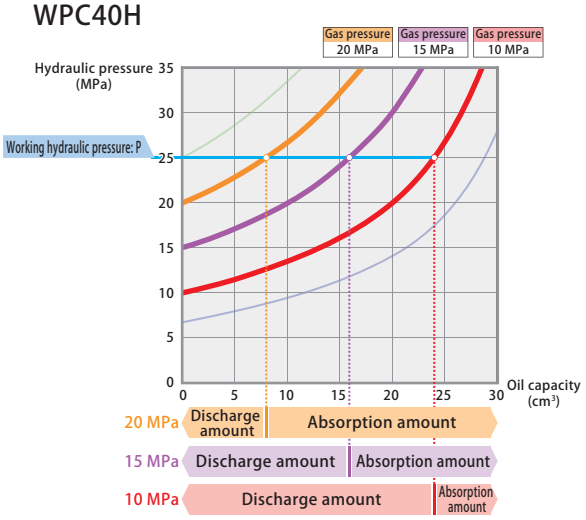
5. Select piping method.

∗1: WPC13H is also available. Likewise, select appropriate one in consideration of steps 3 and 4.

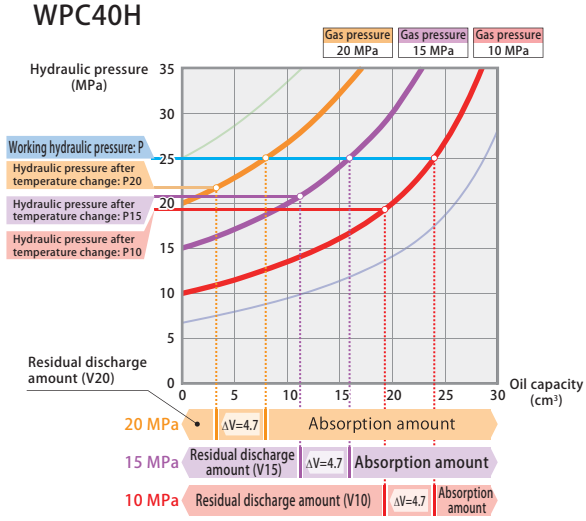
∗2: For when the temperature decreases. If the temperature increases, check the absorption amount.

∗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 cm^3

WPC40H



WPC40H



Control system