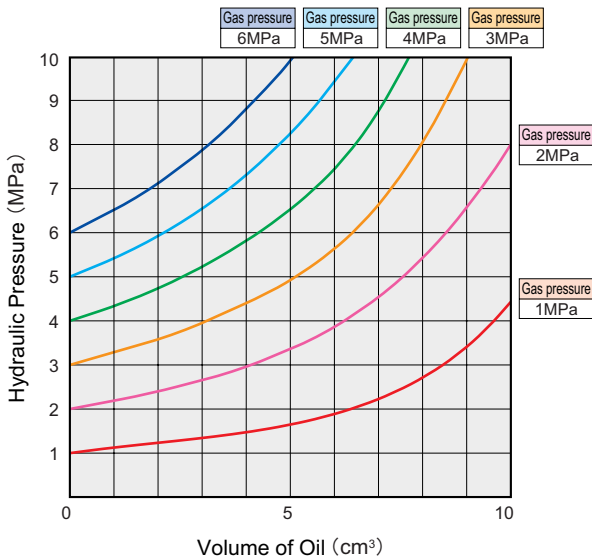
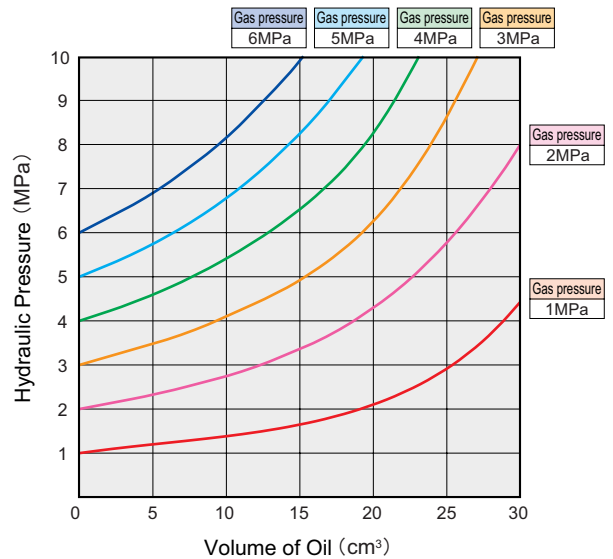




**PERFORMANCE DIAGRAM WPC13L**



**WPC40L**



NOTE : All figures on the diagrams are theoretical.

**MODEL SELECTION**

**CONDITIONS**

Work Clamp Used	CLG0.9 X 8 pcs	Piping	Inside Ø6X0.5m X 8 pcs
Hydraulic pressure (P)	6.0MPa	Expected temperature drop	20°C

**SELECTION PROCEDURE**

1. To select gas pressure of WPC  
 In case the working pressure is 6 MPa, gas pressure should be 2 MPa. As temperature is basically going to drop during the use, you need to choose a model of which discharge volume is larger.

2. To work out Total Circuit Volume  
 Clamp's Cylinder Capacity :  $12.6 \times 2.65 \times 8 = 267\text{cm}^3$   
 Number of Clamp  
 Clamp Stroke  
 Cylinder Area (Clamping side)

Volume in the pipes :  $0.28 \times 50 \times 8 = 112\text{cm}^3$   
 Total Circuit Volume :  $267 + 112 = 379\text{cm}^3$

3. To work out volume of WPC  
 Find a volume transition out of the formula below.

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

$\Delta V$  : Volume Transition (cm<sup>3</sup>)  
 $V$  : Total Circuit Volume (cm<sup>3</sup>)  
 $\Delta T$  : Temperature Change (°C)  
 $\alpha$  : Thermal Expansion Coefficient ( $7.8 \times 10^{-4}$ )

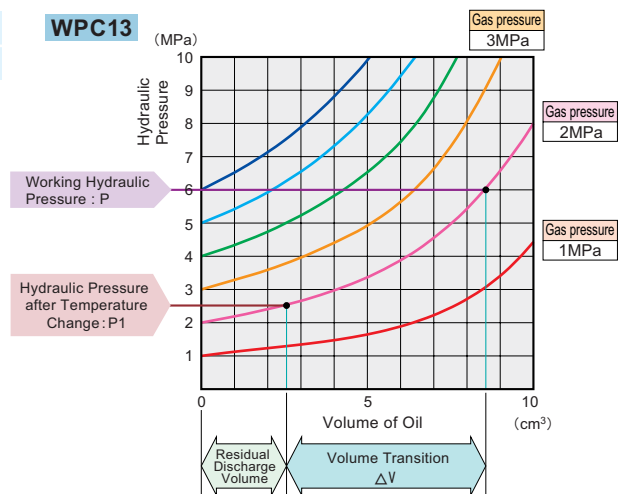
$\Delta V = 379 \times 20 \times 7.8 \times 10^{-4} = 5.9(\text{cm}^3)$   
 Out of calculation above, you can choose either model WPC13 or WPC40. However, you have to note that hydraulic pressure as well as residual discharge volume after temperature change are different.

4. How to check hydraulic pressure & residual discharge volume after temperature change. Find out of Performance Diagram on the right.

After temperature change, in case of WPC13 hydraulic pressure (P1) goes down to 2.5 MPa and in case of WPC40 it goes down to 4.2 MPa. Residual discharge volume becomes 2.6cm<sup>3</sup> for WPC13 and 19.5cm<sup>3</sup> for WPC40. The charging gas pressure fluctuates. It is safer to have a margin of residual discharge volume after temperature change. Marginal volume is about 2.0cm<sup>3</sup>.

5. Select a type of mounting.

**WPC13**



**WPC40**

