

Direct acting

Type PLG61-2 Pressure Reducing Valves

For gas

- For low pressure use of PMD31L pressure reducing valve.
- Negligible influence is exerted by inlet pressure change due to the use of a pressure balancing construction.
- A valve disc made of synthetic rubber ensures tight shut off when closed.
- PRL pressure reducing valve will be used for size 65 and larger.
- External sensing type.



1 Pressure Reducing Valves (For gas)

Specifications

Fluid	Pressure (kPa)		Temp. (°C)	Material for main parts					Connection
	Inlet	Outlet set range		Body	Diaphragm case	Spring case	Valve seat	Valve disc & diaphragm	
Air & non-corrosive gases	2.5 400	0.5-1.4 1.2-3.3 3.0-8.0 7.0-20	0 80	Cast iron	Rolled steel	cast iron	Bronze	Synthetic rubber	Flanged JIS10KFF

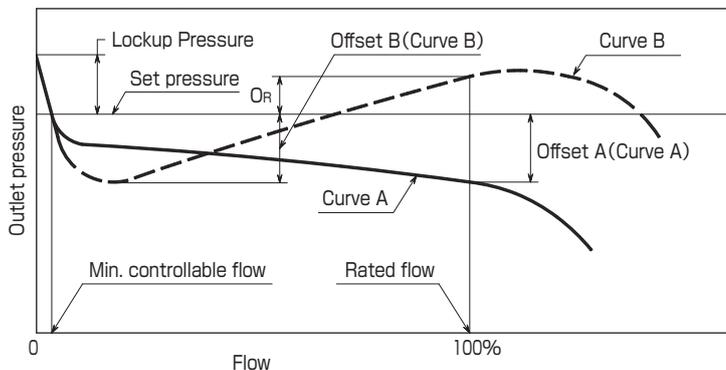
- Remarks
1. Cast steel body and stainless cast steel body are available on request.
 2. Non-copper alloy for fluid contact is available.
 3. ASME flange is available for size 20, 25, 40 and 50.
 4. 0.7MPa or less inlet pressure (in this case, set pressure range is 1.4-3.3, 3.0-8.0, 7.0-18kPa) is available on request.

Performance

Min. differential pressure	2.0kPa
Offset pressure (1)	15% of set pressure (Min. 0.3kPa) or less
Lockup pressure (2)	Size 15, 20, 25 : 0.4kPa or less Size 32, 40, 50 : 1.5kPa or less
Min. controllable flow (air) (2)	Size 15, 20, 25 : 0.5 - 2 m³/h (normal) Size 32, 40, 50 : 5 - 10 m³/h (normal)
Seat leakage	0.01% of rated flow or less

- Note (1) : It will be larger than 15%, depending on pressure condition.
 (2) : The bigger the pressure difference between the inlet and the outlet, the bigger the lockup pressure and the min. controllable flow.

Flow characteristic curve



Remark : Flow characteristic will normally follow curve A.
 In case of sizes 15-25, when there is a large difference in pressure between the inlet and outlet, it will follow curve B.
 In the event that O_R is bigger than offset B, choose O_R .

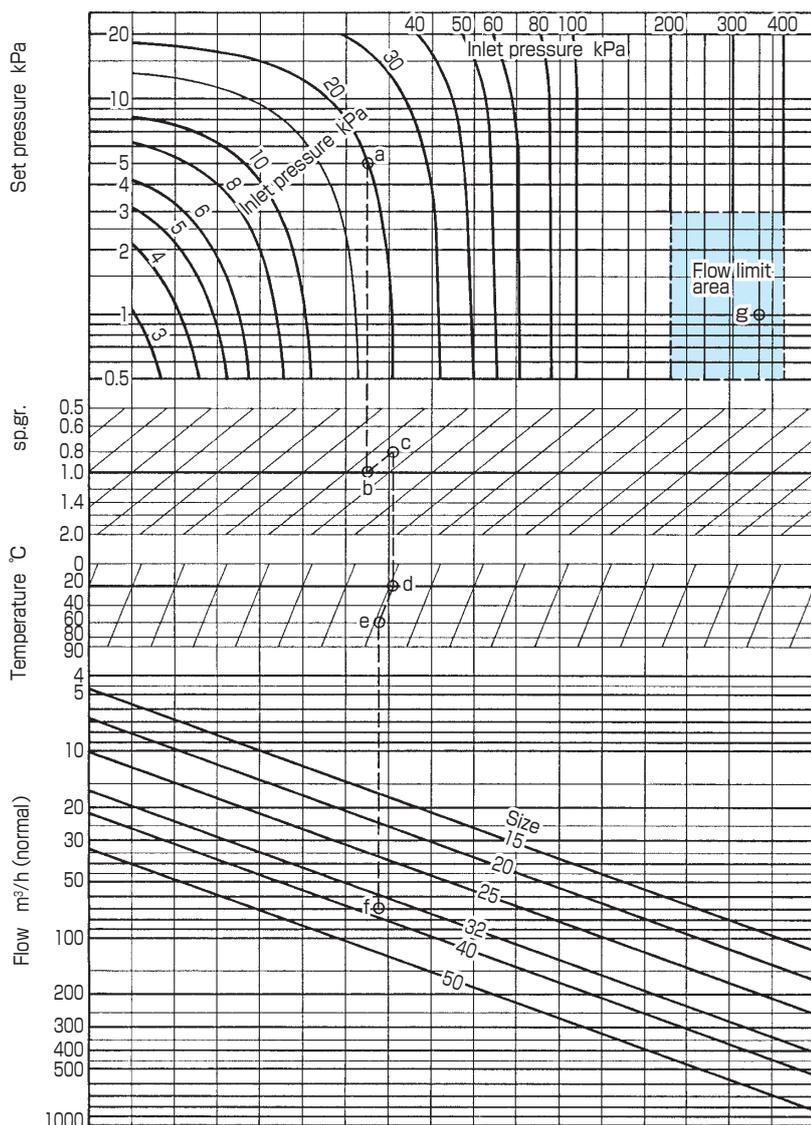
Cv values

Size	15	20	25	32	40	50
Cv	1.8	2.6	3.9	6.3	8.3	13

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Sizing

- When the inlet pressure is in range of 0.2–0.4MPa and the outlet pressure is in the range of 0.5–3.0kPa, use the table of Max. flow rate regardless of specific gravity and temperature. Under the condition where the inlet pressure is beyond 0.4MPa, the flow is at the maximum when it is 0.4MPa.
- In the event that the inlet pressure or the outlet pressure is not constant but stays within range, select the minimum difference in pressure between the inlet pressure and outlet pressure to choose the correct size.
- The valve size selected using the above method and the size of the piping are not always the same. The size of piping is determined separately taking allowable pressure loss, cost, etc., into consideration.



Example A

Inlet pressure : 20kPa
 Outlet pressure : 5kPa
 Temperature : 60°C
 Specific gravity : 0.8 (air : 1)
 Flow : 70m³/h (normal)
 Draw a perpendicular downward from the intersection of 20kPa inlet pressure line and 5kPa outlet pressure until it reaches 1.0 specific gravity line and obtain the intersecting point b.
 From the point b, draw a line upward along the oblique until it reaches 0.8 specific gravity line, the point c.
 Draw a perpendicular downward from the point c until it reaches 20°C temperature line and obtain the point d.
 From there, draw a line downward along the oblique line until it reaches 60°C temperature line, the point e.
 Draw a perpendicular downward from the point e until it reaches 70m³/h (normal) flow line, the point f.
 As the final point f is between size 32 line and size 40 line, the required valve size is 40.

Example B

Inlet pressure : 350kPa
 Outlet pressure : 1.0kPa
 Temperature : 40°C
 Specific gravity : 1.2
 Flow : 150m³/h (normal)
 The intersecting point of 350kPa inlet pressure line and 1.0kPa outlet pressure line the point g, is the flow limited area.
 In this case, use the table of Max. flow rate and select the valve size 32 which allows a flow of more than 150m³/h (normal).

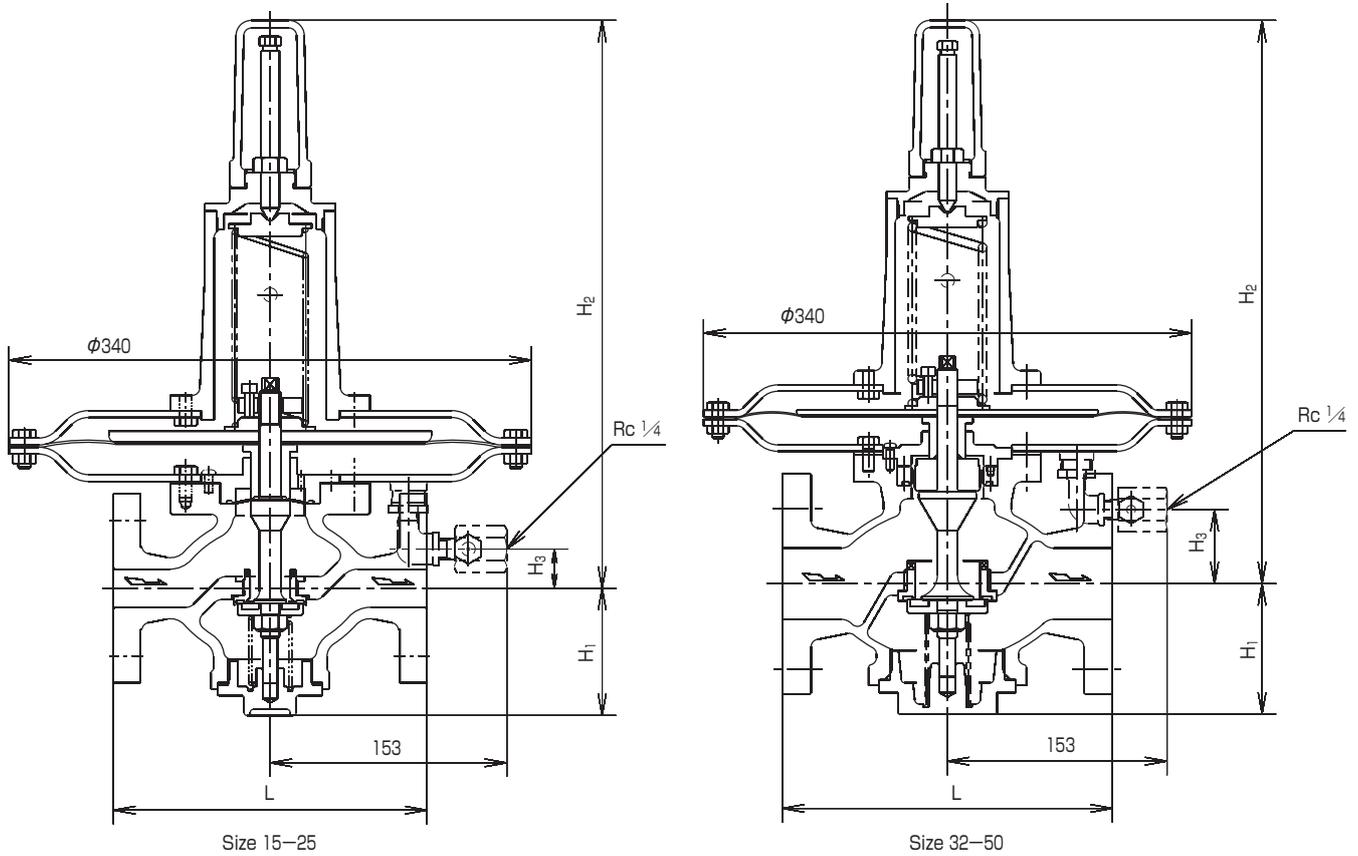
Maximum flow rate (m³/h(normal))

Size	Flow rate (³)
15	60
20	90
25	120
32	200
40	260
50	370

Note (³) : For any kind of fluid.

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Construction & Dimensions



Dimensions and weights (Connection : JIS10KFF)

(mm, kg)

Size	L		H ₁	H ₂	H ₃	Weights	
	Body : Cast iron	Body : Cast steel, Stainless cast steel				Body : Cast iron	Body : Cast steel, Stainless cast steel
15	180	180	81	368	25	18.5	20
20	185	185	81	368	25	18.5	20
25	196	196	84	372	30	20	21
32	220	230	92	395	53	23	25
40	220	230	92	395	53	24	25
50	230	230	92	395	53	25	27

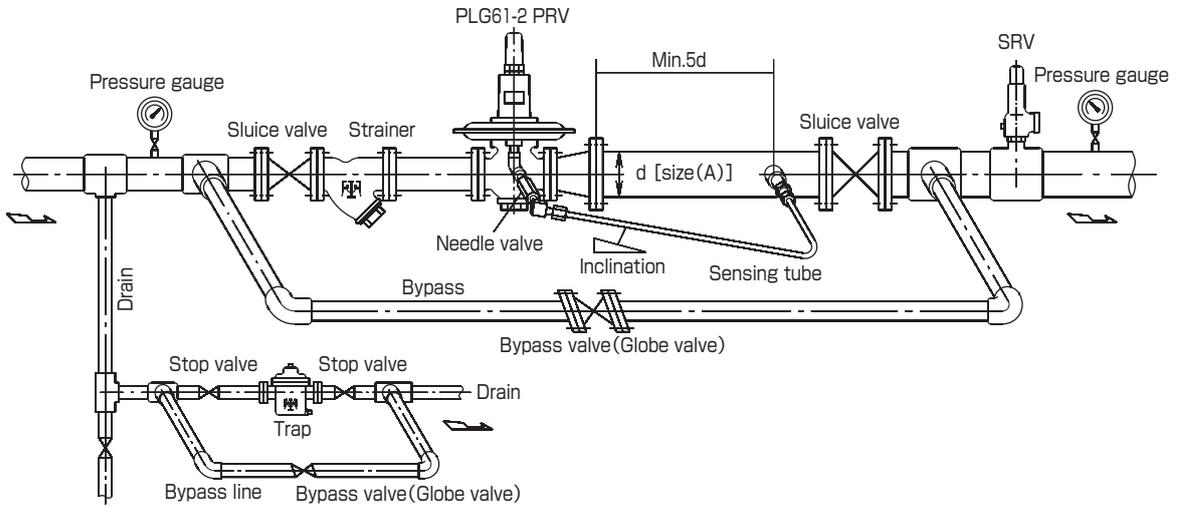
Space required for disassembling and maintenance

(mm)

Size	15 - 50
Above the center of pipe line	600
Beneath the center of pipe line	320

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Installation example



1. Before installation of the pressure reducing valve, the interior of the piping should be thoroughly cleaned. Defective operation is mostly caused by grit, scale and other foreign matter in the pipe, so ensure thorough removal of foreign matter.
2. The pressure reducing valve should be installed upright in horizontal piping and according to the arrow mark on the body.
3. Connect the pressure sensing tube to the inlet piping. The sensing tube should be inclined to avoid drain accumulation. (If drain is not mixed in the fluid, it does not have to be inclined.)
4. Needle valve should be fully opened during normal operation but in the event of unstable operation, it may be closed slightly. However, it should not be fully closed because this would disrupt the pressure reducing valve from operating normally.