

Direct acting

# Type PMD31 Pressure Reducing Valves

For gas

1 Pressure Reducing Valves (For gas)



- Stable operation.
- 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.
- For smaller flow rate, use PPD41B-3 pressure reducing valve (size 15–25).

## Specifications

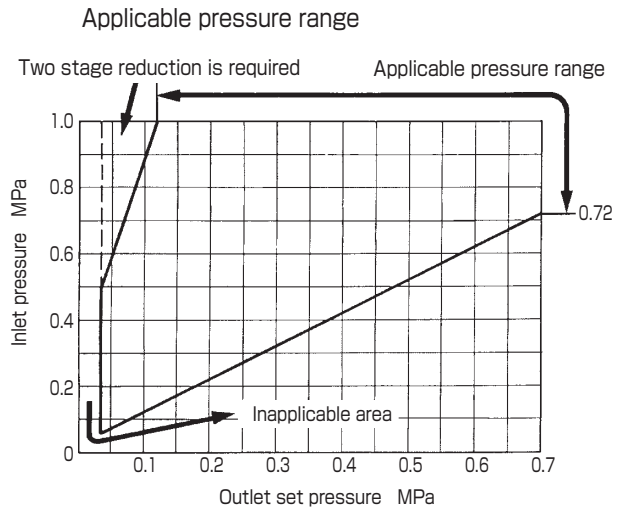
Fluid	Pressure (MPa)		Temp. (°C)	Size	Material for main parts				Connection
	Inlet	Outlet set range			Body & spring case	Valve disc & diaphragm	Valve seat, liner & bush	Stem	
Air & non-corrosive gases	0.055–1.0	0.035–0.3 0.2–0.7	0–80	15–25 32–80	Cast iron	Synthetic rubber	Bronze	Stainless steel	Flanged JIS10KFF
		0.035–0.3 0.2–0.55		100					
		0.035–0.4		125, 150					

Remarks 1. Cast steel body and stainless cast steel body are available on request.  
2. Non-copper alloy material to allow contact with fluid is available.

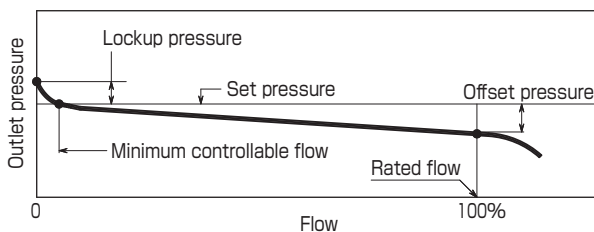
## Performance

Applicable pressure range	Refer to illustration
Min. differential pressure	0.02MPa
Offset pressure	10% of max. set range or less
Lockup pressure	0.01–0.02MPa
Min. controllable flow (air) <sup>(1)</sup>	5–10m <sup>3</sup> /h (normal)
Seat leakage	0.01% of rated flow or less

Note <sup>(1)</sup> : Except for air, the flow rate should be divided by  $\sqrt{G}$  (G : sp.gr., air : 1).



Flow characteristic curve



## Cv values

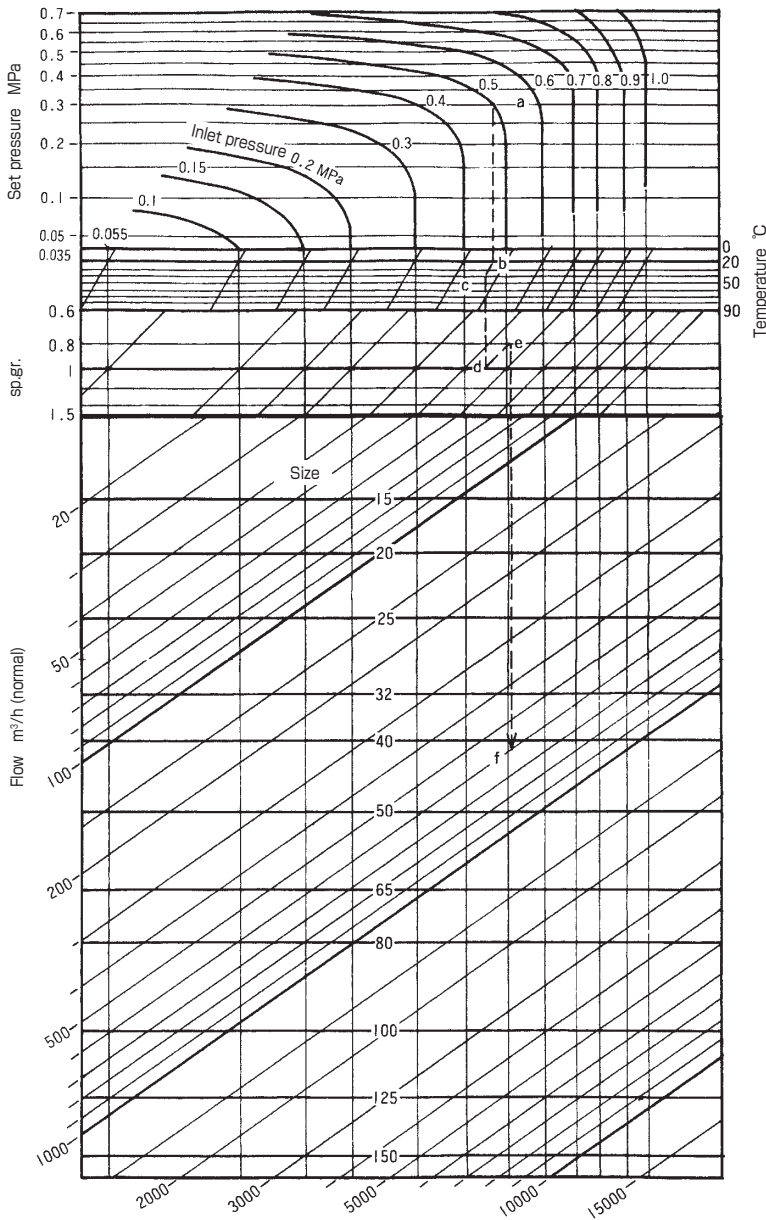
Size	15	20	25	32	40	50	65	80	100	125	150
Cv	1.8	2.6	3.9	6.3	8.3	13	21	29	50	76	109

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## Sizing

Use the following chart to select the suitable valve size.

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.



### Example

Inlet pressure : 0.5MPa

Outlet set pressure : 0.3MPa

Temperature : 40°C

Specific gravity : 0.8 (air : 1 )

Flow : 600m<sup>3</sup>/h (normal)

From the intersection (a) of 0.5MPa of inlet pressure line and 0.3MPa outlet pressure line, draw a vertical line down to 20°C temperature line, point (b).

From point (b), draw a line in parallel with the oblique line to 40°C temperature line, point (c). Draw a vertical line from point (c) down to 1 specific gravity line, point (d).

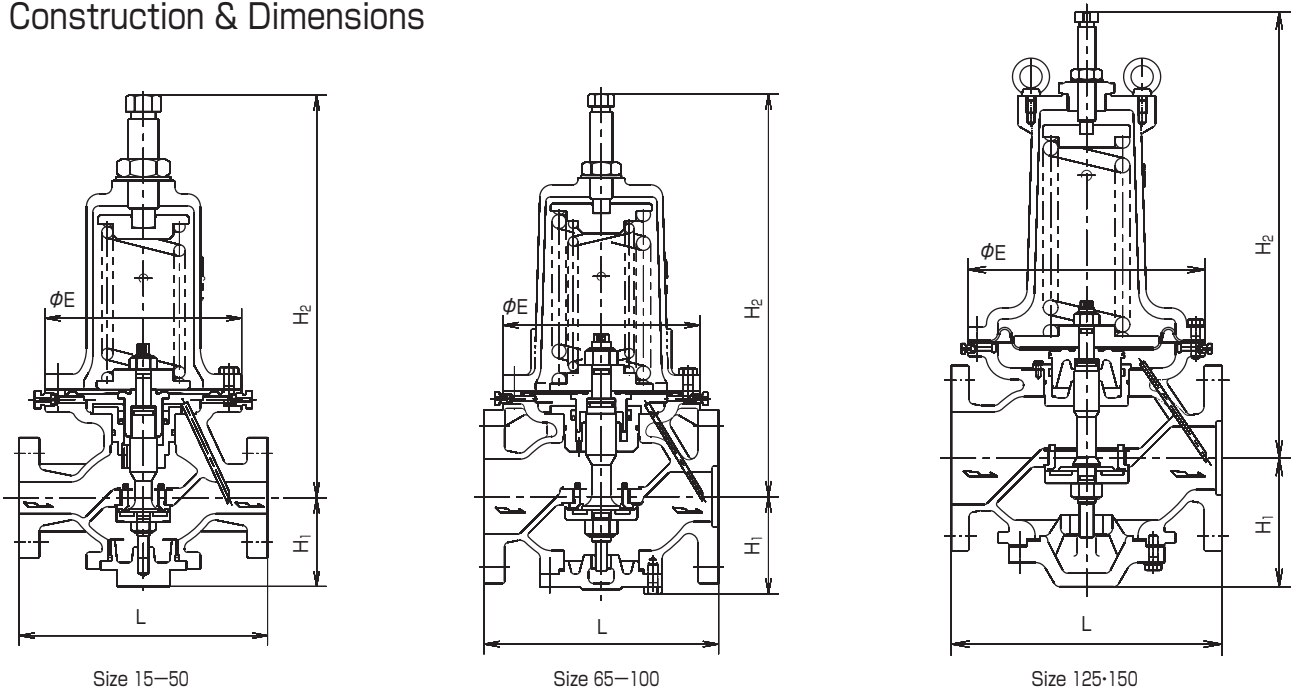
From point (d), draw a line in parallel with the oblique line to 0.8 specific gravity line, point (e). From point (e), draw a vertical line downward to 600m<sup>3</sup>/h (normal) flow line, point (f).

The final point (f) is between the size 40 line and the size 50 line.

The required valve size is 50.

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## Construction & Dimensions

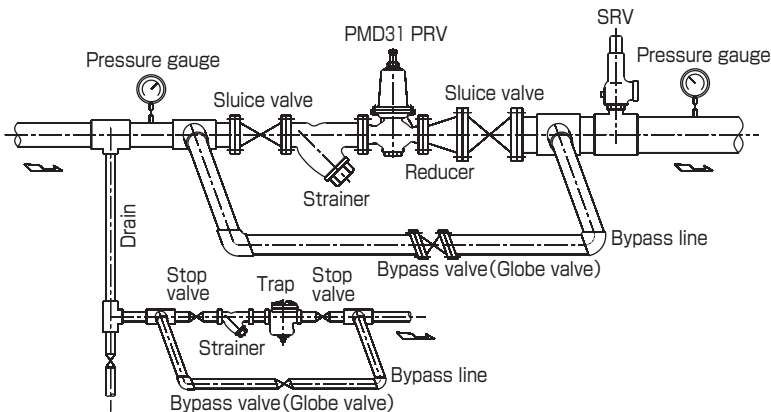


### Dimensions and weights

(mm, kg)

Size	Body : Cast iron					Body : Cast steel or Stainless cast steel				
	L	H <sub>1</sub>	H <sub>2</sub>	E	Weight	L	H <sub>1</sub>	H <sub>2</sub>	E	Weight
15	196	70	318	155	12	206	70	318	155	16
20 · 25	200	70	318	155	13	210	70	318	155	17
32	175	70	318	155	14	220	70	318	155	18
40	190	80	328	155	16	220	80	328	155	21
50	195	80	328	155	17	225	80	328	155	22
65	230	104	429	210	34	280	109	429	210	38
80	250	104	429	210	35	280	109	429	210	39
100	290	127	466	250	58	330	121	471	250	65
125	365	174	612	320	98	380	174	612	320	114
150	415	207	792	380	159	470	207	792	380	170

## Installation example



## Space required for disassembling and maintenance (mm)

Size	Above the center of pipe line	Beneath the center of pipe line
15-32	470	190
40 · 50	480	200
65 · 80	590	340
100	650	400
125	930	450
150	1220	550

Note : PMD31 can be installed in both horizontal and vertical piping.