

Direct acting

Type PMD31L Pressure Reducing Valves

For gas

- Stable operation.
- For low pressure use of PMD31 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.



1 Pressure Reducing Valves (For gas)

Specifications

Fluid	Pressure (Mpa)		Temp. (°C)	Material for main parts					Connection	
	Inlet	Outlet set range		Body	Diaphragm pusher & liner	Valve disc & diaphragm	Valve seat	Stem		Spring case
Air & non-corrosive gases	0.02	0.01	0 80	Cast iron	Bronze or stainless steel	Synthetic rubber	Bronze or stainless steel	Stainless steel	Cast iron	Flanged JIS10KFF
				Cast steel						
	0.4	0.05		Stainless cast steel	Stainless steel					

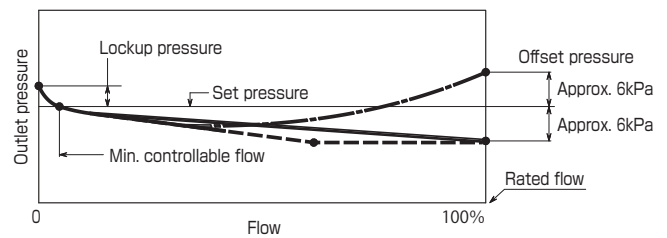
Remarks 1. ASME flange is available.
2. Non-copper alloy for fluid contact is available.

Performance

Min. differential pressure	0.01MPa
Offset pressure	Approx. 12% of max. set range (6kPa)
Lockup Pressure	Approx. 3-7kPa ⁽¹⁾
Min. controllable flow (air) ⁽²⁾	Approx. 3-8m ³ /h (normal) ⁽¹⁾
Seat leakage	0.01% of rated flow or less

Note ⁽¹⁾ : The bigger the pressure difference between the inlet and the outlet, the bigger the lockup pressure and the min. controllable flow.
⁽²⁾ : Except for air, the flow rate should be divided by \sqrt{G} (G : sp.gr., air : 1)

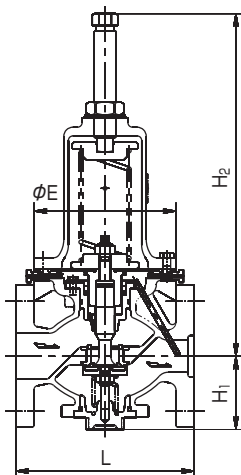
Flow characteristic curve



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

Construction



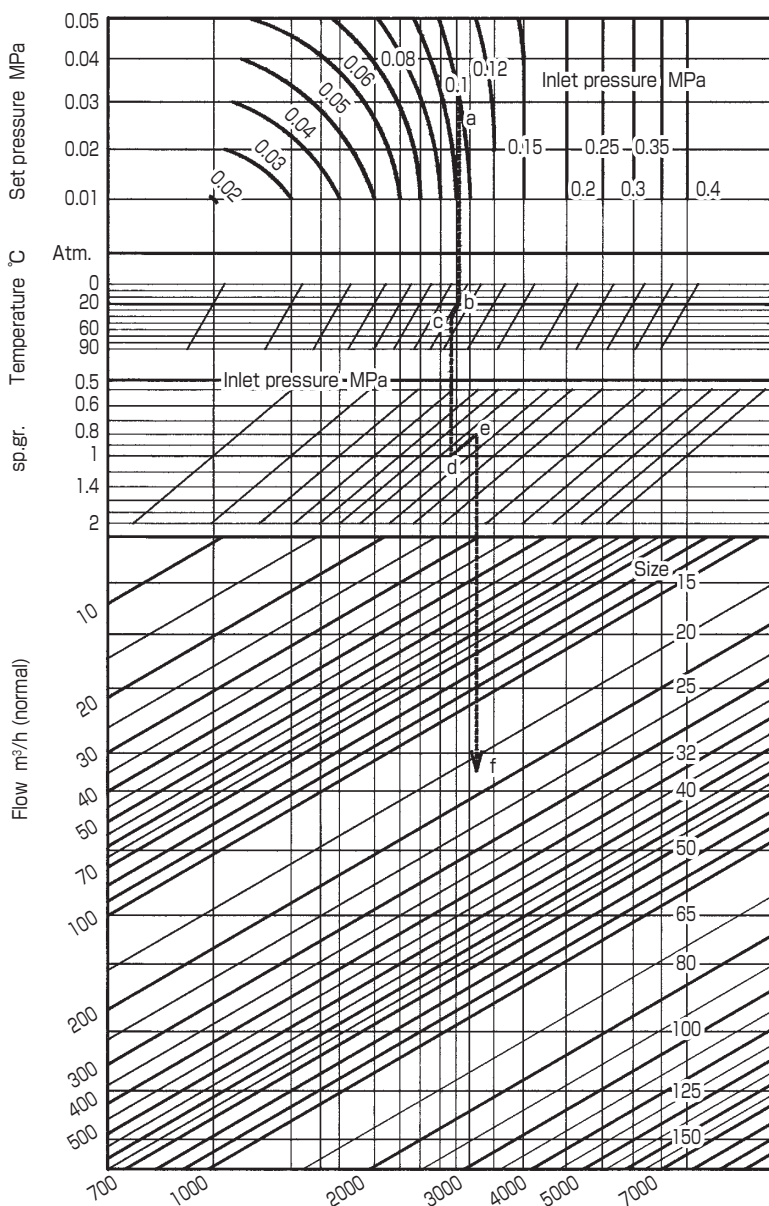
Dimensions and weights

(mm, kg)

Size	Body : Cast iron JIS10KFF					Body : Cast steel or stainless cast steel JIS10KFF				
	L	H ₁	H ₂	E	Weight	L	H ₁	H ₂	E	Weight
15	196	70	364	155	12	206	70	364	155	16
20 · 25	200	70	364	155	13	210	70	364	155	17
32	175	70	364	155	14	220	70	364	155	18
40	190	80	374	155	16	220	80	374	155	21
50	195	80	374	155	17	225	80	374	155	22
65	230	110	488	210	34	280	109	488	210	38
80	250	110	488	210	35	280	109	488	210	39
100	290	127	537	250	58	330	121	542	250	65
125	365	174	690	320	98	380	174	690	320	114
150	415	207	902	380	150	470	207	902	380	162

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Sizing



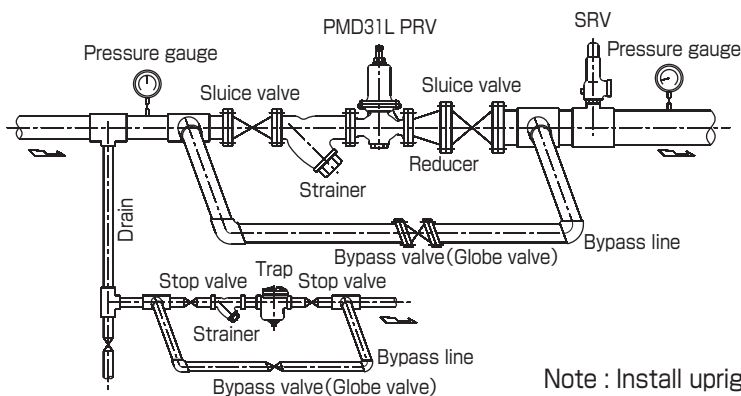
In the event that the inlet pressure or the outlet pressure is not constant but stays within range, select the minimum difference in pressure between the inlet pressure and outlet pressure to choose the correct size.

The valve size selected using this 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

Inlet pressure : 0.1MPa
 Outlet set pressure : 0.03MPa
 Temperature : 40°C
 Specific gravity : 0.8 (air : 1)
 Flow : 160m³/h (normal)
 From intersection (a) of 0.1MPa of inlet pressure line and 0.03MPa outlet set pressure line, draw a vertical line down to 20°C temperature line, point (b).
 From point (b), draw a line in parallel with oblique line to 40°C temperature line, point (c).
 Draw a vertical line from point (c) down to specific gravity 1.0 line, point (d).
 From point (d), draw a vertical line in parallel with oblique line to 0.8 specific gravity line, point (e).
 From point (e), draw a vertical line downward to 160m³/h (normal) flow line, point (f).
 Final point (f) is between size 32 line and size 40 line.
 The required valve size is 40.

Installation example



Space required for disassembling and maintenance (mm)

Size	15-32	40-50	65-80	100	125	150
Above the center of pipe line	520	530	650	720	1010	1330
Beneath the center of pipe line	190	200	340	400	450	550

Note : Install upright in horizontal piping.