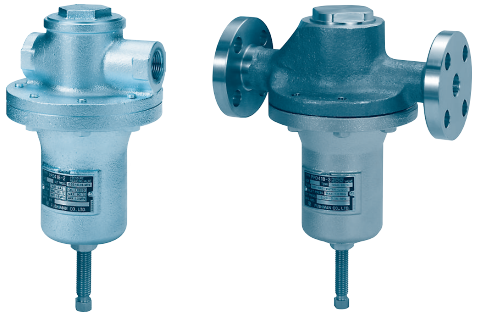
Direct acting

Type PPD41B-3 Pressure Reducing Valves

For liquid

- 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 closing.
- Built-in strainer (80 mesh)



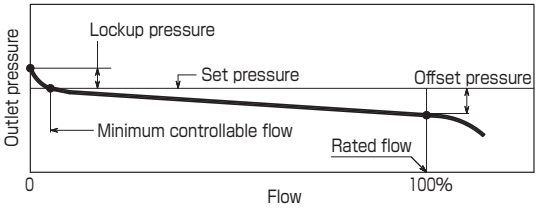
Specifications

Fluid	Pressure (MPa)		Temp. (℃)	Material for main parts					Connection
	Inlet	Outlet set range		Body	Bottom cover	Spring case	Valve disc	Diaphragm	
Oil & non-corrosive liquid	0.05 ~ 1.0	0.03~0.15 0.1~0.7	0 ~ 80	Bronze	Bronze	Cast iron	Stainless steel & synthetic rubber	Synthetic rubber	Screwed JIS Rc
				Stainless cast steel	Stainless steel				
				Stainless cast steel	Stainless steel		Stainless steel & Teflon	Teflon seated synthetic rubber	Flanged JIS10KFF

Performance

Min. differential pressure	0.02MPa
Lockup pressure	Max. 0.02MPa (Max. 0.03MPa for Teflon disc)
Offset pressure	10% of max. set range (min. 0.05MPa) or less
Min. controllable flow (water) (1)	1 ℓ/min (2 ℓ/min for Teflon disc) .
Seat leakage	0.01% of rated flow or less (0.05% of rated flow or less for Teflon disc)
Max. usable viscosity	200mm²/s (at operating temp.) (2)

Flow characteristic curve



Note (1) : Except for water, the flow rate should be devided by $\sqrt{\gamma}$ (γ : sp.gr., water (4℃) : 1).
(2) : When viscosity is over 20mm²/s, flow rate should be corrected.

Cv values

Size	15	20	25
Cv	1.8	2.6	3.9
Max. flow rate (water) ℓ/min (3)	30	55	90

Note (3) : Except for water, the flow rate should be devided by $\sqrt{\gamma}$ (γ : sp.gr., water (4℃) : 1).

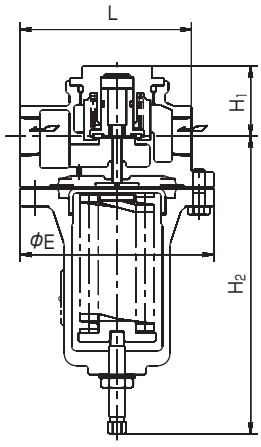
The flow rate calculated by following formula

$$Q = Cv \frac{\sqrt{\triangle P}}{0.696\sqrt{\gamma}}$$

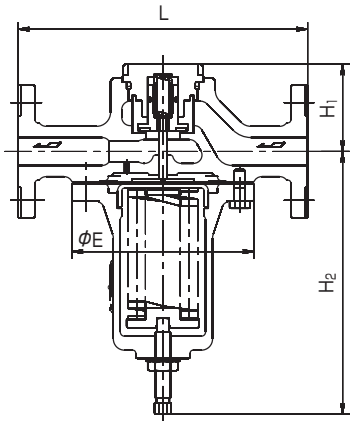
Where △P : Differential pressure (kPa)

The rated flow shall be smaller between Cv calculation and maximum flow rate (left table) which is based on the velocity 2.5m/s at the piping.

Construction



Body : Bronze, stainless cast steel



Body : Stainless cast steel

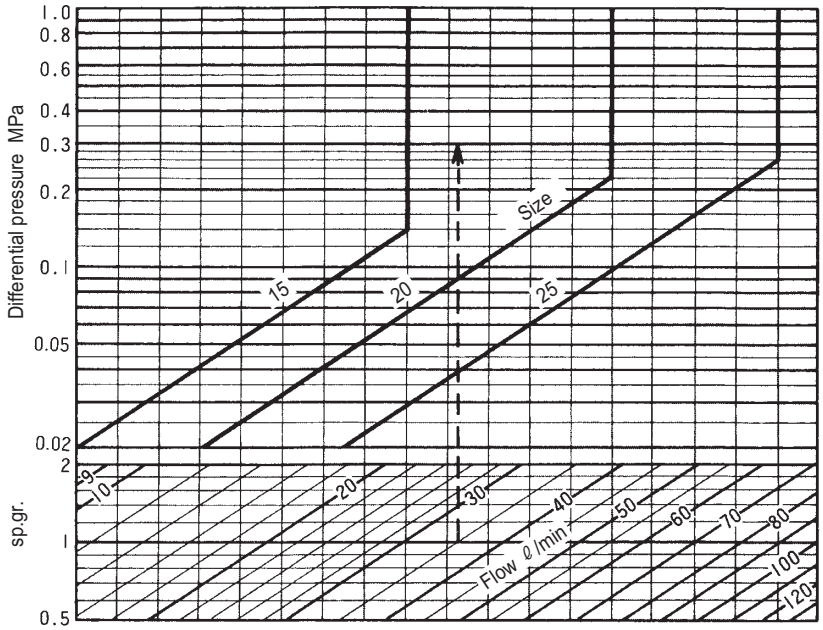
Dimensions and weights (mm, kg)

Material Connection	Size	Dimensions				Weight
		L	H_1	H_2	E	
Bronze Screwed	15	85	43	168	100	2.8
	20	115	47	222	130	5.5
	25	115	47	222	130	5.5
Stainless cast steel Screwed	15	135	49	224	130	6.8
	20	135	49	224	130	6.8
	25	135	49	224	130	6.7
Stainless cast steel Flanged JIS10K	15	207	63	210	130	8.3
	20	211	63	210	130	8.7
	25	211	63	210	130	9.3

Type PPD41B-3 Pressure Reducing Valves

Sizing

Use the following chart to select the suitable valve size.
When viscosity is over 20㎟/s, flow rate should be corrected.
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

Fluid : Water
Specific gravity : 1
Inlet pressure : 0.5MPa
Outlet pressure : 0.2MPa
Flow : 35 ℓ/min

Differential pressure : 0.5−0.2=0.3MPa

From intersecting point of 1 specific gravity line and 35 ℓ/min flow line, draw a vertical line upward to 0.3MPa differential pressure line.
The final intersecting point is between size 15 line and size 20 line.
The required valve size is 20.

Correction by viscosity

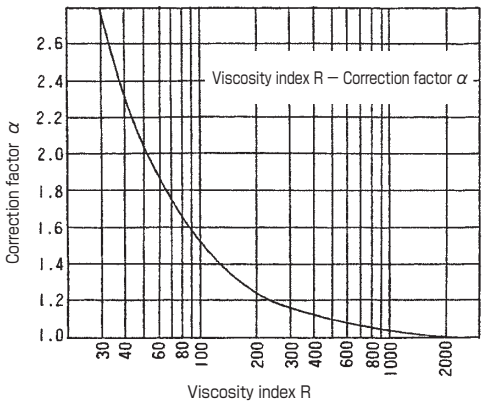
Correct the flow rate Q' by the following formula.

① $Cv=\dfrac{0.696Q\sqrt{\gamma}}{\sqrt{\triangle P}}$ $\left\{Cv=\dfrac{0.022Q\sqrt{\gamma}}{\sqrt{\triangle P}}\right\}$

Where Q : Flow rate ℓ/min
△P : Differential pressure kPa {MPa}
γ : Specific gravity (water : 1)

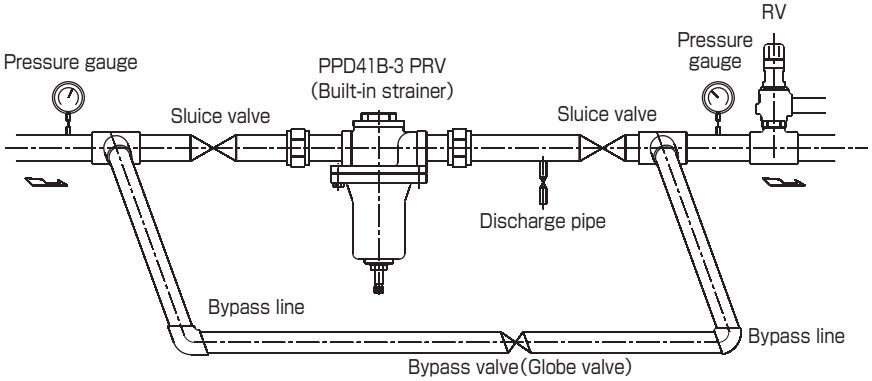
② $R=\dfrac{2642\times Q}{\sqrt{Cv}\times \text{Viscosity at operating temperature mm}^2/\text{s}}$

③ Then obtain correction factor α from the chart on right using viscosity index R.
Corrected flow rate $Q'=Q\times\alpha$



Remark : Refer to page 252 of "Calculation formula for Cv value and flow capacity" for further details.

Installation example



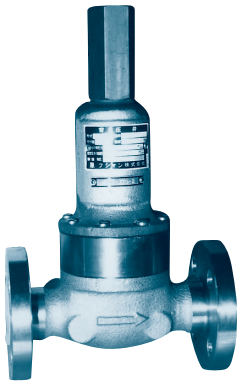
Note : Install upside-down in horizontal piping.

Direct acting

Type RPD52-2 Back Pressure Regulating Valves

For liquid

- For small flow rate.
- A valve disc of synthetic rubber ensures tight shut off when closed.
- Internal sensing and external sensing are available on request.
- Vetical and horizontal installation are possible.



Specifications

Fluid	Inlet set pressure range (MPa)	Temp. (℃)	Material for main parts				Connection
			Body	Spacer	Spring case	Valve disc & diaphragm	
Water, oil & non-corrosive liquid	0.01—0.06 0.05—0.25 0.2 —0.65 0.6 —1.2 1.0 —2.0	0 I 80	Bronze	Bronze	Cast iron	Synthetic rubber	Screwed JIS Rc
			Stainless cast steel	Stainless steel			Screwed JIS Rc
			Stainless cast stee				Flanged JIS 20KRF

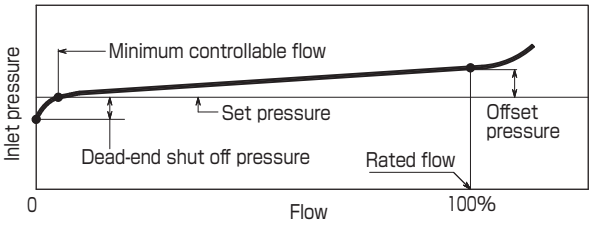
Remark : RPD52 for gas is available on request.

Performance

Offset pressure	15% of max. set range (min. 0.015MPa) or less
Min. controllable flow rate (water) (1)	0.5 ℓ /min
Seat leakage	0.01% of rated flow or less
Max. usable viscosity	400mm²/s (at operating temp.)

Note (1) : Except for water, the flow rate should be devided by $\sqrt{\gamma}$ (γ: sp.gr., water (4℃) : 1)

Flow characteristic curve



Cv values

Size	10	15	20	25
Cv	0.7	0.7	0.7	0.7

Sizing

Cv value is calculated by following formula.
(To verify that the Cv value is 0.7 or less.)

$$Cv = \frac{0.022 \times Q \sqrt{\gamma}}{\sqrt{\triangle P}}$$

Where :

Q : Flow rate ℓ /min

△P : Differential pressure MPa

γ : Specific gravity (water : 1)

When viscosity is over 20mm²/s, the flow rate shall be corrected.

Correction by viscosity

Correct the flow rate Q' by the following formula.

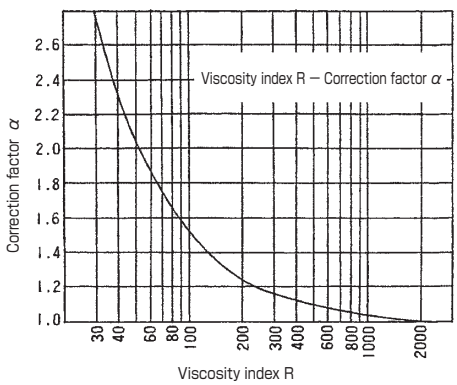
① $Cv = 0.022Q\sqrt{\gamma} / \sqrt{\triangle P}$

② $R = \frac{2642 \times Q}{\sqrt{Cv} \times \text{Viscosity at operating temperature mm}^2/\text{s}}$

③ Then obtain correction factor α from the chart on below using viscosity index R.

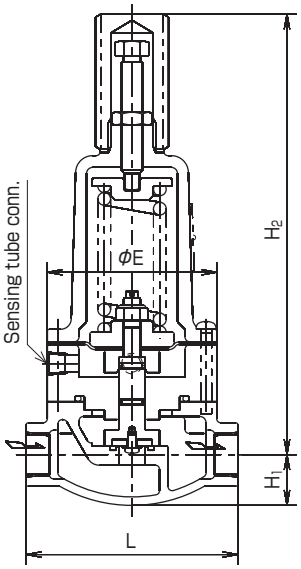
Corrected flow rate $Q' = Q \times \alpha$

Remark : Refer to page 252 of "Calculation formula for Cv value and flow capacity" for further details.

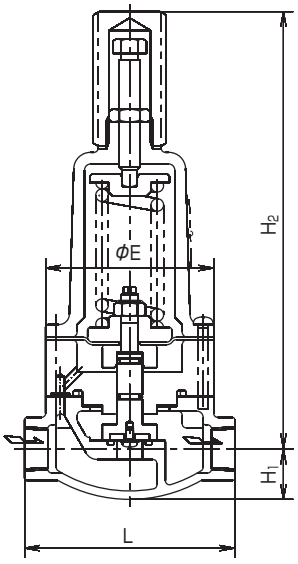


Type RPD52-2 Back Pressure Regulating Valves

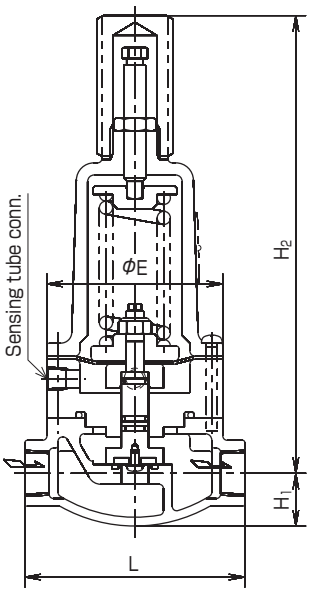
Construction & Dimensions



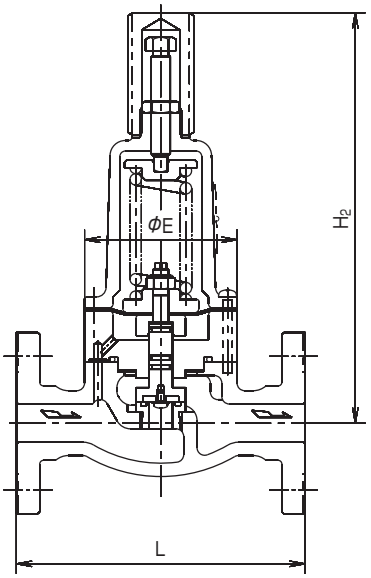
Body : Bronze
External sensing



Body : Bronze
Internal sensing



Body : Stainless cast steel
External sensing



Body : Stainless cast steel
Internal sensing

Dimensions (mm)

Body material (sensing)	Size	L	H_1	H_2	E	Connection
Bronze (external sensing)	10・15	100	24	208	80	Screwed JIS Rc
Bronze (internal sensing)	10・15	100	24	208	80	Screwed JIS Rc
Stainless cast steel (external sensing)	15	100	28	215	80	Screwed JIS Rc
Stainless cast steel (internal sensing)	15	100	28	215	80	Screwed JIS Rc
Stainless cast steel (internal sensing)	15	155	—	215	80	Flanged JIS20KRF
	20	155	—	215	80	
	25	155	—	215	80	

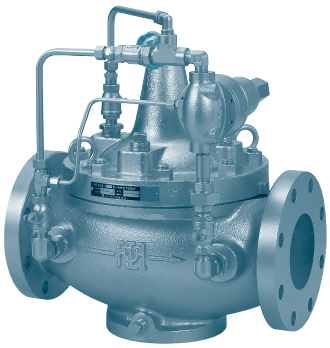
Remarks 1. External sensing of stainless cast steel body with flange connection is available.
2. Sensing tube is necessary for external sensing valve.

Pilot operated

Type RFD42 Back Pressure Regulating Valves

For liquid

- Versatile for many applications
- Large capacity for its size.
- Small offset



Specifications

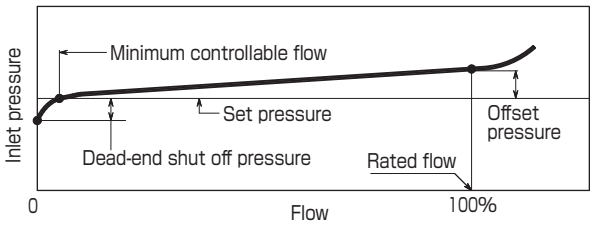
Fluid	Inlet set pressure range (MPa)	Temp. (℃)	Material for main valve (OD3)			Material for pilot valve (RPD52-2)			Connection
			Body & cover	Valve disc & diaphragm	Valve seat	Body	Spring case	Valve disc & diaphragm	
Water, light oil & non-corrosive liquid	0.05—0.25 0.2 —0.65 0.6 —1.2 1.0 —2.0	0 | 80	Cast iron (1)	Synthetic rubber	Bronze	Bronze	Cast iron	Synthetic rubber	Flanged JIS10KFF
									Flanged JIS16KFF
			Cast steel						Flanged JIS20KRF

Note (1) : For water lower than 60℃, rust-proof paint is applied for water contact surface.
Remark : Stainless cast steel body are available on request.

Performance

Max. differential pressure	1.5MPa
Min. differential pressure	0.04MPa
Offset pressure	10% of set pressure (min. 0.04MPa) or less
Dead-end shut off pressure (2)	0.01—0.03MPa (For set range 0.05—0.25MPa) 0.02—0.05MPa (For set range 0.2 —0.65MPa) 0.06—0.09MPa (For set range 0.6 —1.2 MPa) 0.08—0.12MPa (For set range 1.0 —2.0 MPa)
Usable max. viscosity fluid	Light oil 20mm^2/s or less
Min. controllable flow rate (water) (2)	5—15 ℓ/min
Seat leakage	0.01% of rated flow or less

Flow characteristic curve



Note (2) : The bigger the pressure difference between the inlet and the outlet, the bigger the dead-end shut off pressure and the min. controllable flow. Except for water, the flow rate should be devided by $\sqrt{\gamma}$ (γ: sp.gr., water (4℃) : 1).

Cv values

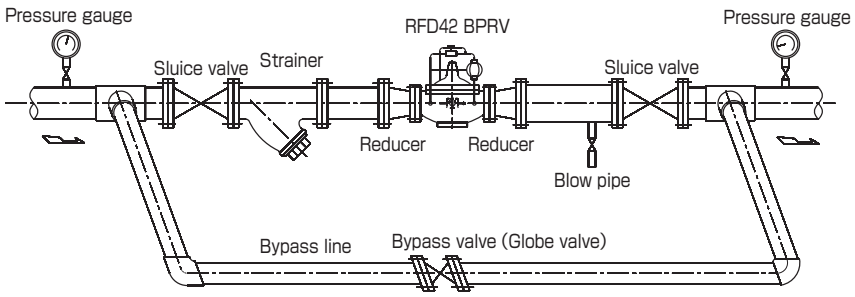
Size	40	50	65	80	100	125	150	200	250	300
Cv	22.5	40	62.5	90	160	250	360	640	1000	1440
Max. flow rate (water) ℓ/min (3)	533	800	1300	2000	3000	5000	7700	12000	17000	24000

Note (3) : Except for water, the flow rate should be devided by $\sqrt{\gamma}$ (γ: sp.gr., water (4℃) : 1).

Space required for disassembling and maintenance (mm)

Size	40	50	65	80	100	125	150	200	250	300
Above the center of pipe line	450	460	470	480	500	530	570	670	870	1040

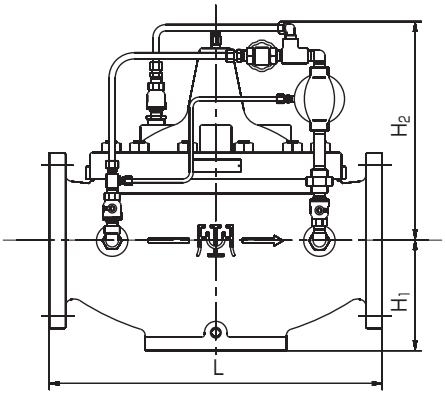
Installation example

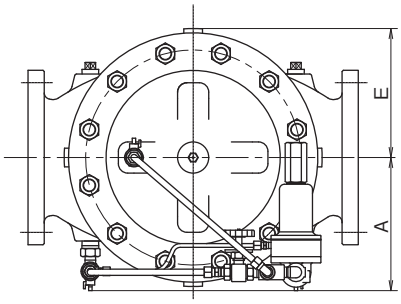


Note 1. Vertical and horizontal installation are possible. But avoid installation in horizontal with upside-down or sideway absolutely.
2. It is recommended that straight pipe lines of at least 600mm in length (for size 40), 900mm (for size 50—100), 1200mm (for size 125, 150), 1600mm (for size 200, 250) and 2000mm (for size 300) are provided in front of and behind the RFD42.

Type RFD42 Back Pressure Regulating Valves

Construction & Dimensions



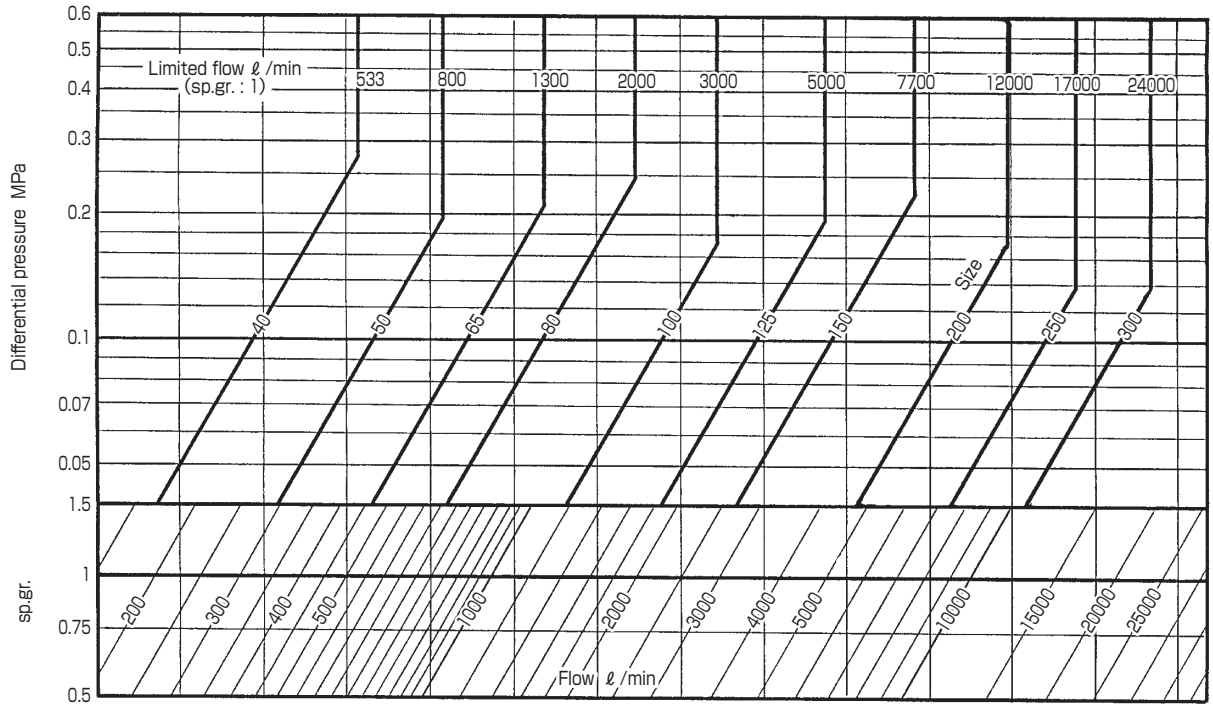


Dimensions and weights (mm, kg)

Material/Connection \ Size / Symbol		40	50	65	80	100	125	150	200	250	300
Cast iron JIS 10K	L	220	260	290	330	390	470	530	670	800	900
	H_1	75	90	97	110	125	155	175	220	275	333
	H_2	260	280	300	300	320	320	345	424	538	640
	A	110	120	135	145	180	200	220	270	320	375
	E	125	113	105	125	147	177	207	265	320	375
	Weight	16	20	32	39	62	94	138	240	420	695
Cast iron JIS 16K	L	220	260	290	334	394	474	534	678	808	908
Cast steel JIS 20K	L	216	260	286	330	390	480	536	684	816	916

Sizing

Use the following chart to select the suitable valve size.



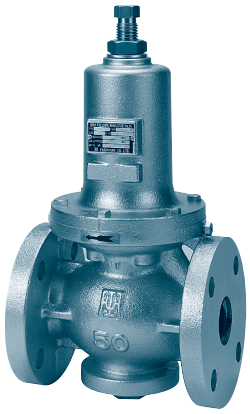
Direct acting

Type RMD31 Back Pressure Regulating Valves

For liquid

●Negligible influence is exerted by outlet pressure change due to the use of a pressure balancing construction.

●A valve disc made of synthetic rubber ensures tight shut off when closed.



Specifications

Fluid	Size	Inlet set pressure range (MPa)	Temp. (℃)	Material for main parts				Connection
				Body & spring case	Valve disc & diaphragm	Valve seat, liner & bush	Stem	
Water & non-corrosive liquid	15—80	0.035—0.3 0.2 —0.7	0 I 80	Cast iron	Synthetic rubber	Bronze	Synthetic rubber	Flanged JIS10KFF
	100	0.035—0.3 0.2 —0.55						
	125・150	0.035—0.4						

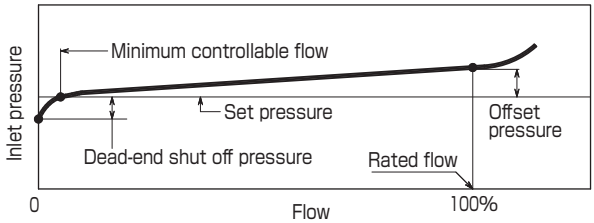
Remarks 1. Cast steel body and stainless cast steel body are available on request
2. Non-copper alloy for fluid contact is available.

Performance

Min. differential pressure	0.02MPa
Offset pressure	0.06MPa(for size 15—40, 65, 125, 150) 0.08MPa(for size 50, 80, 100)
Dead-end shut off pressure	0.01—0.02MPa
Min. controllable flow rate (water) (1)	3—5 ℓ/min
Seat leakage	0.01% of rated flow or less
Max. usable viscosity	400mm²/s (at operating temp.)

Note (1) : Except for water, the flow rate should be devided by $\sqrt{\gamma}$ (γ : sp.gr., water (4℃) : 1).

Flow characteristic curve



Cv values

Size	15—25	32	40	50	65	80	100	125	150
Cv	3.9	6.3	8.3	13	21	29	50	76	109
Max. flow rate (water) ℓ/min (2)	90	150	204	330	543	767	1323	2016	2892

Note (2) : Except for water, the flow rate should be devided by $\sqrt{\gamma}$ (γ : sp.gr., water (4℃) : 1).

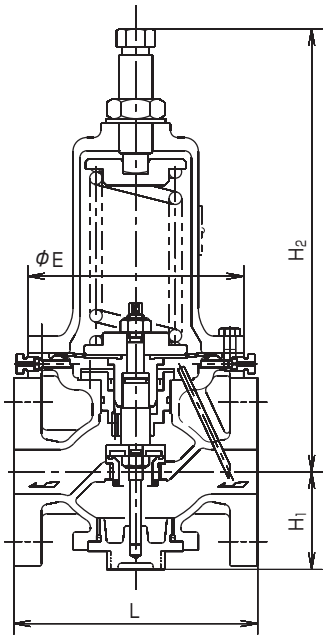
The flow rate is calculated by following formula

$$Q = Cv \frac{\sqrt{\triangle P}}{0.022\sqrt{\gamma}} \quad \ell/\text{min}$$

Where △P : Differential pressure (MPa)

The rated flow shall be smaller between Cv calculation and maximum flow rate (left table) which is based on the velocity 2.5m/s at the piping.

Dimensions and weight



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	317	155	12	206	70	317	155	16
20	200	70	317	155	13	210	70	317	155	17
25	200	70	317	155	13	210	70	317	155	17
32	175	70	317	155	14	220	70	317	155	18
40	190	80	325	155	16	220	80	325	155	21
50	195	80	325	155	17	225	80	325	155	22
65	230	104	425	210	34	280	109	425	210	38
80	250	104	425	210	35	280	109	425	210	39
100	290	127	460	250	58	330	121	465	250	65
125	365	174	607	320	98	380	174	607	320	114
150	415	207	787	380	159	470	207	787	380	170

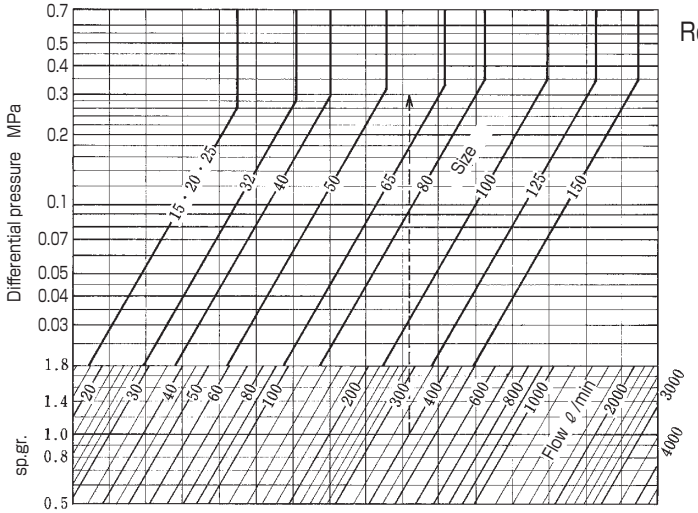
Type RMD31 Back Pressure Regulating Valves

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

Fluid : Water
Specific gravity : 1
Inlet set pressure : 0.3MPa
Flow : 400 ℓ /min
From intersecting point of 1.0 specific gravity line and 400 ℓ /min flow line, draw a vertical line upward to differential pressure 0.3− 0 = 0.3MPa line.
The final intersecting point is between size 50 line and size 65 line.
The required valve size is 65.



Correction by viscosity

Correct the flow rate Q' by the following formula.

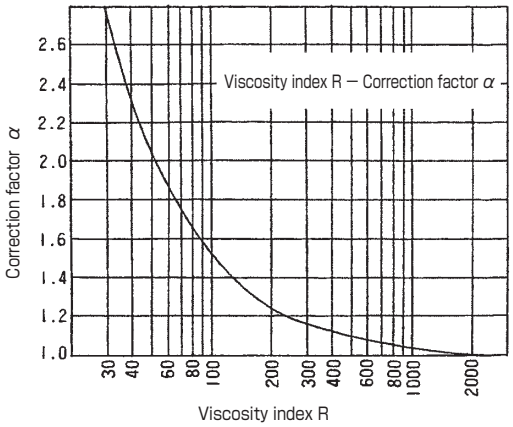
① $Cv = \dfrac{0.022Q\sqrt{\gamma}}{\sqrt{\triangle P}}$

Where Q : Flow rate ℓ /min
△P : Differential pressure MPa
γ : Specific gravity (water : 1)

② $R = \dfrac{2462 \times Q}{\sqrt{Cv} \times \text{Viscosity at operating temperature mm}^2/\text{s}}$

③ Then obtain correction factor α from the chart on below using viscosity index R.
Corrected flow rate $Q' = Q \times \alpha$

Remark : Refer to page 252 of "Calculation formula for Cv value and flow capacity" for further details.



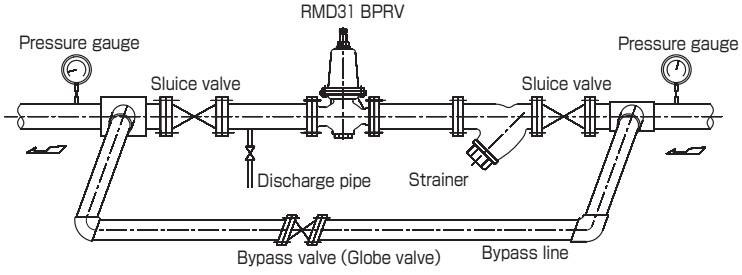
Space required for disassembling and maintenance

Size	15—32	40・50	65・80	100	125	150
Above the center of pipe line	470	480	640	730	930	1220

Installation example

Note 1. RMD31 can be installed in both horizontal and vertical piping. However, pipe arrangements where hot water flows downward is not possible due to the occurance of trouble by air.

2. It is recommended that straight pipe lines of at least 300mm in length (for 15—25), 600mm (for sizes 32 & 40), 900mm (for sizes 50 to 100) and 1200mm (for sizes 125 & 150) are provided in front of and behind the RMD31.



Pilot operated

Type PFD42 Pressure Reducing Valves

For liquid

- Versatile for many applications
- Large capacity for its size.
- Small offset
- Wide variety of accessories

Specifications

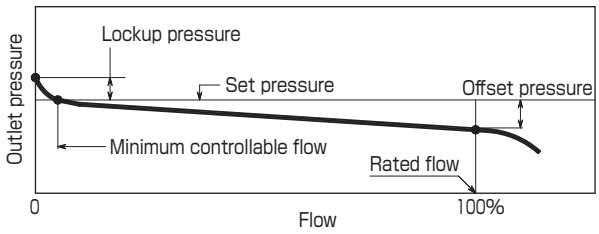
Fluid	Pressure (MPa)		Temp. (℃)	Material for main valve			Material for pilot valve			Connection
	Inlet	Outlet set range		Body & cover	Valve disc & diaphragm	Valve seat	Body	Spring case	Valve disc	
Water, light oil & non-corrosive liquid	0.055—1.0	0.015—0.07 0.05 —0.3 0.2 —0.8 0.7 —1.4 1.2 —1.96	0 I 80	Cast iron (1)	Synthetic rubber	Bronze	Bronze	Cast iron	Bronze or stainless steel (Synthetic rubber printed)	Flanged JIS10KFF
	0.055—1.6									Flanged JIS16KFF
	0.055—2.0			Cast steel						Flanged JIS20KRF

Note (1) : Rust-proof paint is appl ied for water contact surface.
Remark : Stainless cast steel body is available on request. Cast iron body coated with nylon (60℃ or less) is available on request.

Performance

Max. pressure range ability	10:1
Max. differential pressure	1.5MPa
Min. differential pressure	0.04MPa
Offset pressure	10% of set pressure (min. 0.04MPa) or less
Usable max. viscosity fluid	Light oil 20mm²/s or less
Seat leakage	0.01% of rated flow or less

Flow characteristic curve



Lockup pressure (MPa)

Outlet pressure set range	Lockup pressure
0.015—0.07	0.01—0.03
0.05 —0.3	0.02—0.05
0.2 —0.8	0.04—0.08
0.7 —1.4	0.06—0.1
1.2 —1.96	0.08—0.12

Min. controllable flow (ℓ/min)

Size	40	50	65	80	100	125	150	200	250	300
Min. controllable flow (water) (2)	10	10	10	10	75	100	135	200	335	500

Note (2) : Except for water, the flow rate should be divided by $\sqrt{\gamma}$ (γ : sp.gr., water (4℃) : 1).

Cv values

Size	40	50	65	80	100	125	150	200	250	300
Cv	22.5	40	62.5	90	160	250	360	640	1000	1440
Max. flow rate (water) ℓ/min (3)	533	800	1300	2000	3000	5000	7700	12000	17000	24000

Note (3) : Except for water, the flow rate should be devided by $\sqrt{\gamma}$ (γ : sp.gr., water (4℃) : 1).

The flow rate is calculated by following formula

$$Q = Cv \frac{\sqrt{\triangle P}}{0.022\sqrt{\gamma}}$$

Where Q : Flow rate (ℓ/min)

ΔP : Differential pressure (MPa)

The rated flow shall be smaller between Cv calculation and maximum flow rate (adove table) which is based on the velocity 5.6—7m/s at the piping.

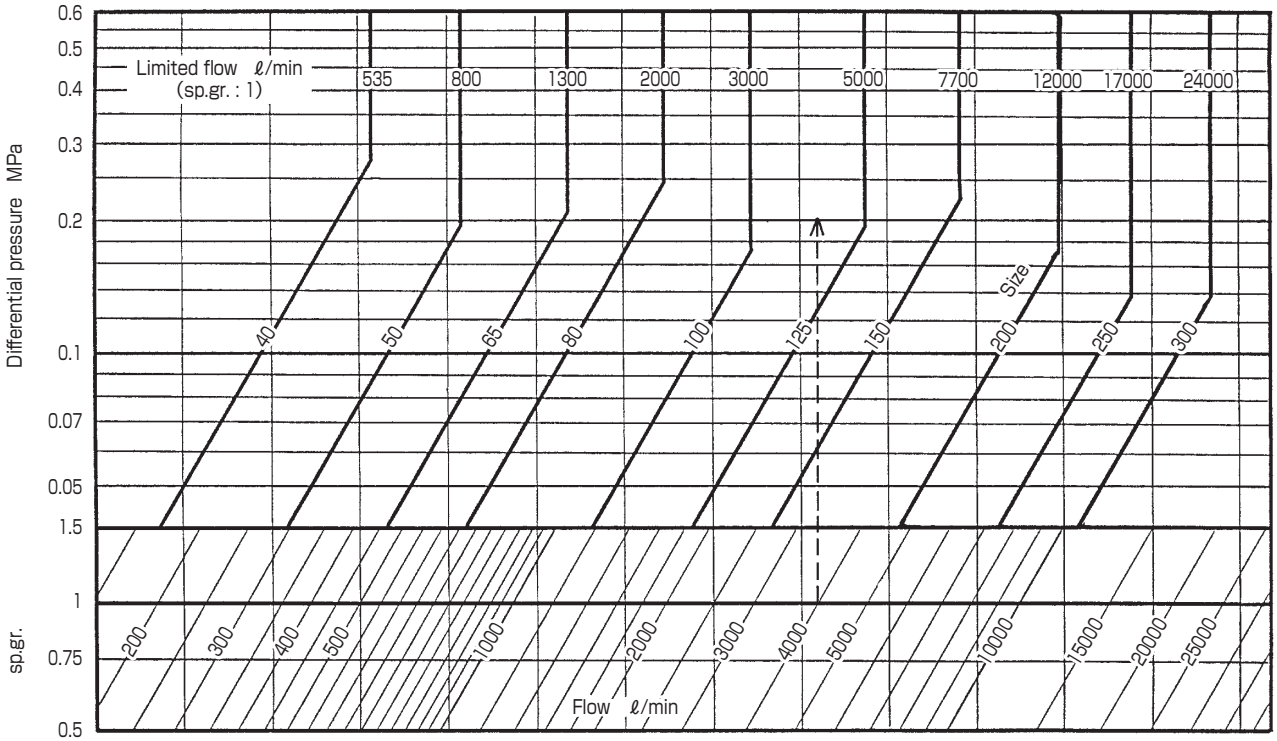
Type PFD42 Pressure Reducing Valves

Sizing

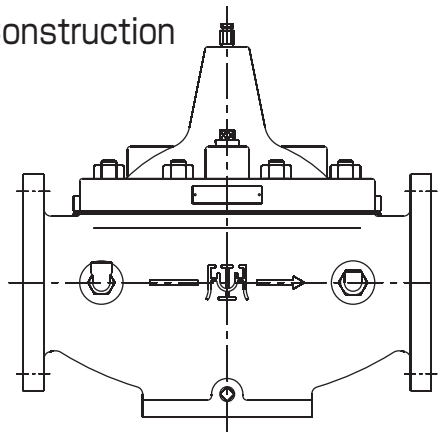
Use the following chart to select the suitable valve size.
In the event that the inlet pressure or the outlet pressure is not constant but stays within range, select the minimum difference in pressure between the inlet pressure and outlet pressure to choose the correct size.

Example

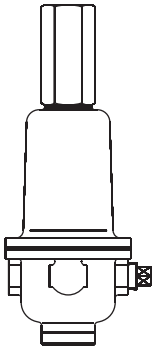
Fluid : Water Specific gravity : 1 Inlet pressure : 0.4MPa Outlet pressure : 0.2MPa Flow : 4000 ℓ /min
Differential pressure : 0.4−0.2=0.2MPa
From intersecting point of 1 specific gravity line and 4000 ℓ /min flow line, draw a vertical line upward to differential pressure 0.2MPa line.
The final intersecting point is between size 100 line and size 125 line.
The required valve size is 125.



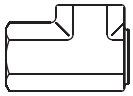
Construction



Type OD3 main valve

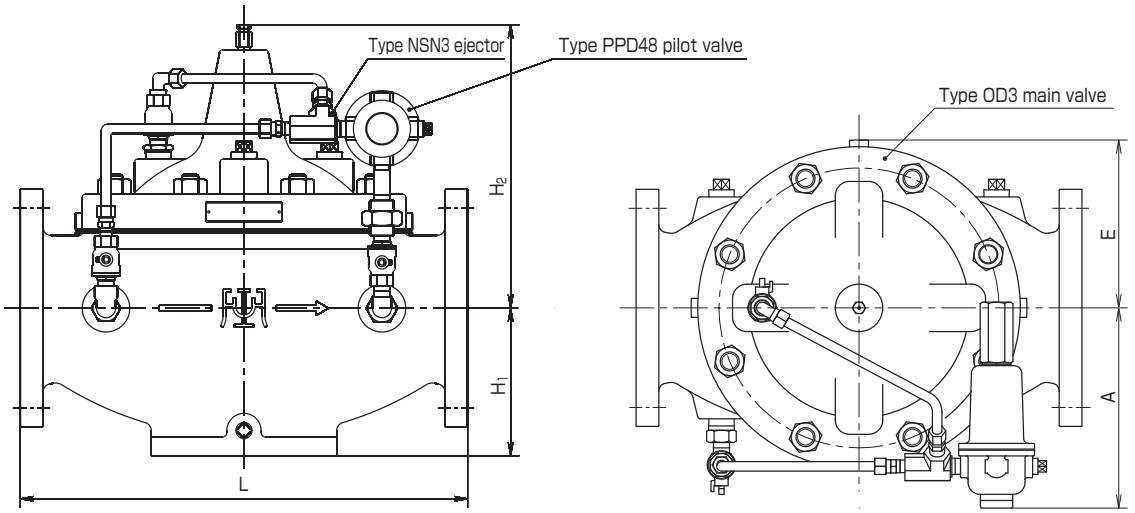


Type PPD48 pilot valve



Type NSN3 ejector

Type PFD42 Pressure Reducing Valves



Dimensions and weights

(mm, kg)

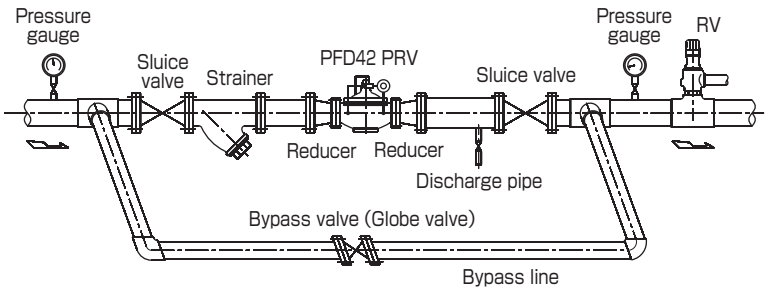
Material/Connection \ Symbol \ Size		40	50	65	80	100	125	150	200	250	300
Cast iron JIS10K	L	220	260	290	330	390	470	530	670	800	900
	H_1	75	90	97	110	125	155	175	220	275	333
	H_2	247	268	268	268	268	298	332	424	538	640
	A	130	142	153	163	193	214	231	270	320	375
	E	87	93	105	125	147	177	207	265	320	375
	Weight	16	20	32	39	62	94	138	240	420	695
Cast iron JIS16K	L	220	260	290	334	394	474	534	678	808	908
Cast steel JIS20K	L	216	260	286	330	390	480	536	684	816	916

Space required for disassembling and maintenance

(mm)

Size	40	50	65	80	100	125	150	200	250	300
Above the center of pipe line.	380	390	430	470	480	490	520	650	870	1040

Installation example



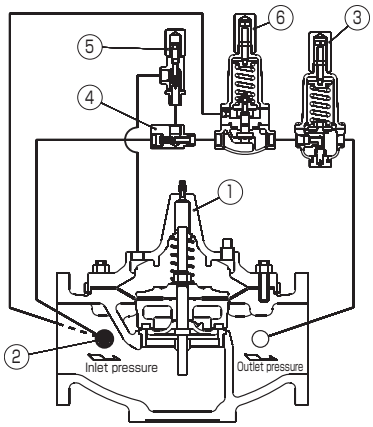
Note 1. Vertical and horizontal installation are possible. But avoid installation in horizontal with upside-down or sideway absolutely.
2. It is recommended that straight pipe lines of at least following table in length are provided in front of and behind the PFD42.

(mm)

Size	40	50—100	125・150	200・250	300
Length	600	900	1200	1600	2000

Typical PFD42 combination

Type PFD42S P.R.V.
(pressure reducing valve+sustaining valve)



Type PFD42S P.R.V.

It controls the outlet pressure to be constant and also sustains the inlet pressure so as not to be below the desired pressure level.

Composition

①	Main valve (OD3 diaphragm basic valve)	③	Pilot valve (PPD48 pressure reducing valve)	⑤	QRH5 flow control valve
②	FL14 strainer	④	NSN3 ejector	⑥	Pilot valve (RPD52-2 Back pressure regulating valve)

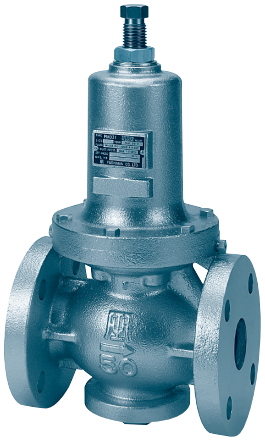
Remark : QRH5 flow control valve is not used for sizes over 100.

Direct acting

Type PMD31 Pressure Reducing Valves

For liquid

- 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.
- Use PPD41B-3 or PPD48(F) pressure reducing valve for size 25 and smaller with small flow rate.
- If a rapid on-off valve such as a flash valve is installed in the outlet of the pressure reducing valve, use P100-2Y or P110-2S pressure reducing valve.



Specifications

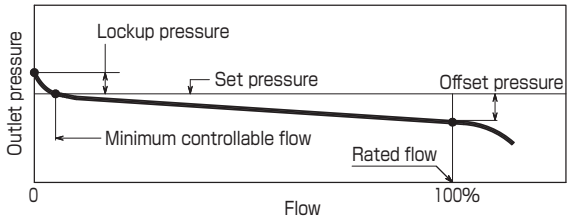
Fluid	Size	Pressure (MPa)		Temp. (℃)	Material for main parts				Connection
		Inlet	Outlet set range		Body & spring case	Valve disc & diaphragm	Valve seat, liner & bush	Stem	
Water & non-corrosive liquid	15—80	0.055 ~ 1.0	0.035—0.3 0.2 —0.7	0 ~ 80	Cast iron	Synthetic rubber	Bronze	Synthetic rubber	Flanged JIS10KFF
	100		0.035—0.3 0.2 —0.55						
	125・150		0.035—0.4						

Remarks
1. Cast iron body is not suitable for drinking water.
2. Cast steel body and stainless cast steel body are available on request.
3. Non-copper alloy for fluid contact is available.
4. ASME flange is available.

Performance

Min. differential pressure	0.02MPa
Offset pressure	10% of max. set range (min. 0.05MPa) or less
Lockup Pressure	0.01—0.02MPa
Min. controllable flow (water) (1)	3—5 ℓ/min
Seat leakage	0.01% of rated flow or less
Max. usable viscosity	200mm²/s (at operating temp.) (2)

Flow characteristic curve



Note (1) : Except for water, the flow rate should be devided by $\sqrt{\gamma}$ (γ : sp.gr., water (4℃) : 1).
(2) : Available up to 400mm²/s upon request.

Cv values

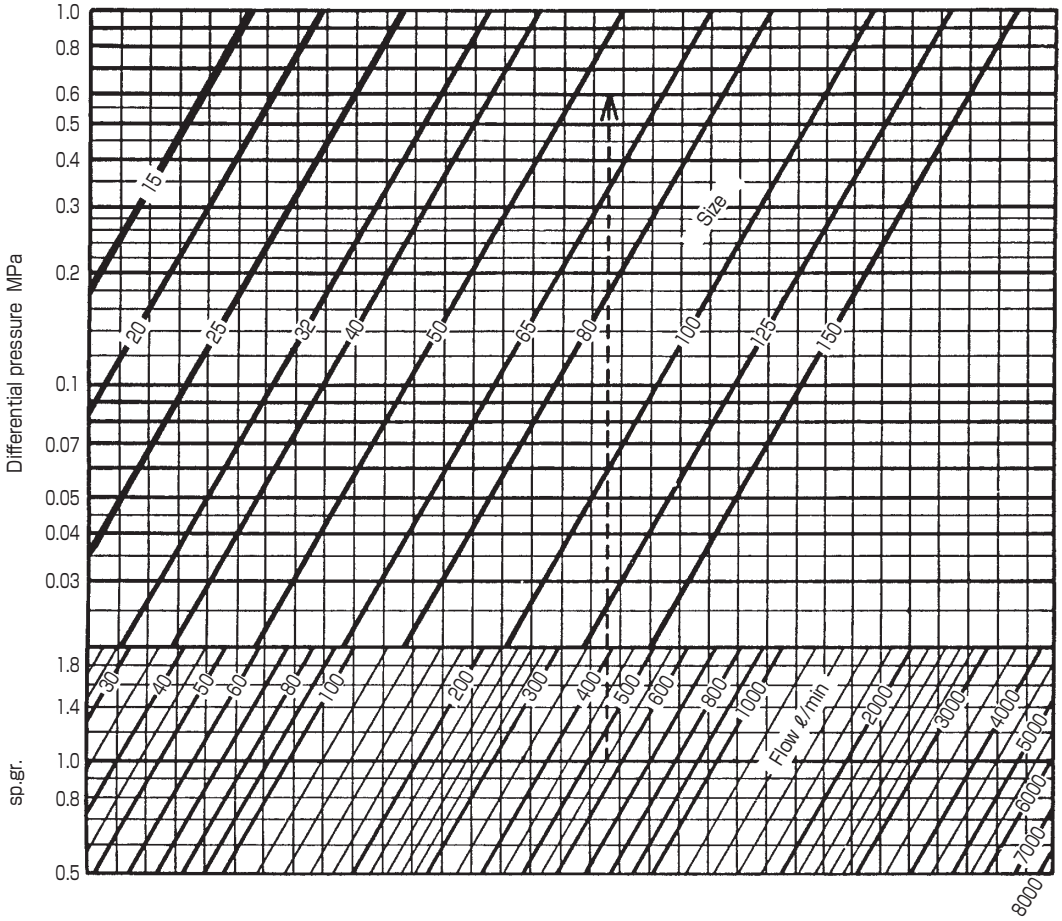
Size	15	20	25	32	40	50	65	80	100	125	150
Cv	1.8	2.6	3.9	6.3	8.3	13	21	29	50	76	109

Remark : For viscosity above 200㎟/s and under 400㎟/s, Cv values are half above table.

Type PMD31 Pressure Reducing Valves

Sizing

Use the following chart to select the suitable valve size.
When viscosity over 20㎟/s, flow rate should be corrected.
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

Fluid : Water
Specific gravity : 1
Inlet pressure : 0.7MPa
Outlet pressure : 0.1MPa
Flow : 550 ℓ/min

Differential pressure :
0.7−0.1＝0.6MPa

From intersecting point of 1.0 specific gravity line and 550 ℓ/min flow line, draw a vertical line upward to 0.6MPa differential pressure line.
The final intersecting point is between size 50 line and size 65 line.
The required valve size is 65.

Correction by viscosity

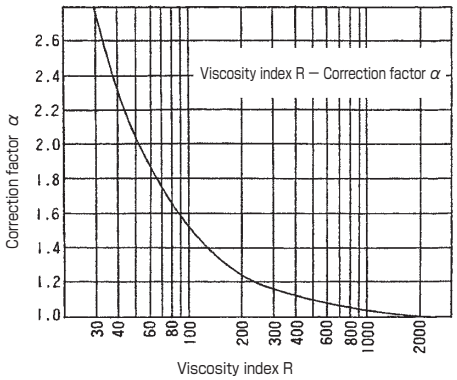
Correct the flow rate Q' by the following formula.

① $Cv=\dfrac{0.696Q\sqrt{\gamma}}{\sqrt{\triangle P}}$ $\left\{Cv=\dfrac{0.022Q\sqrt{\gamma}}{\sqrt{\triangle P}}\right\}$

Where Q : Flow rate ℓ/min
△P : Differential pressure kPa {MPa}
γ : Specific gravity (water : 1)

② $R=\dfrac{2642\times Q}{\sqrt{Cv}\times \text{Viscosity at operating temperature mm}^2/\text{s}}$

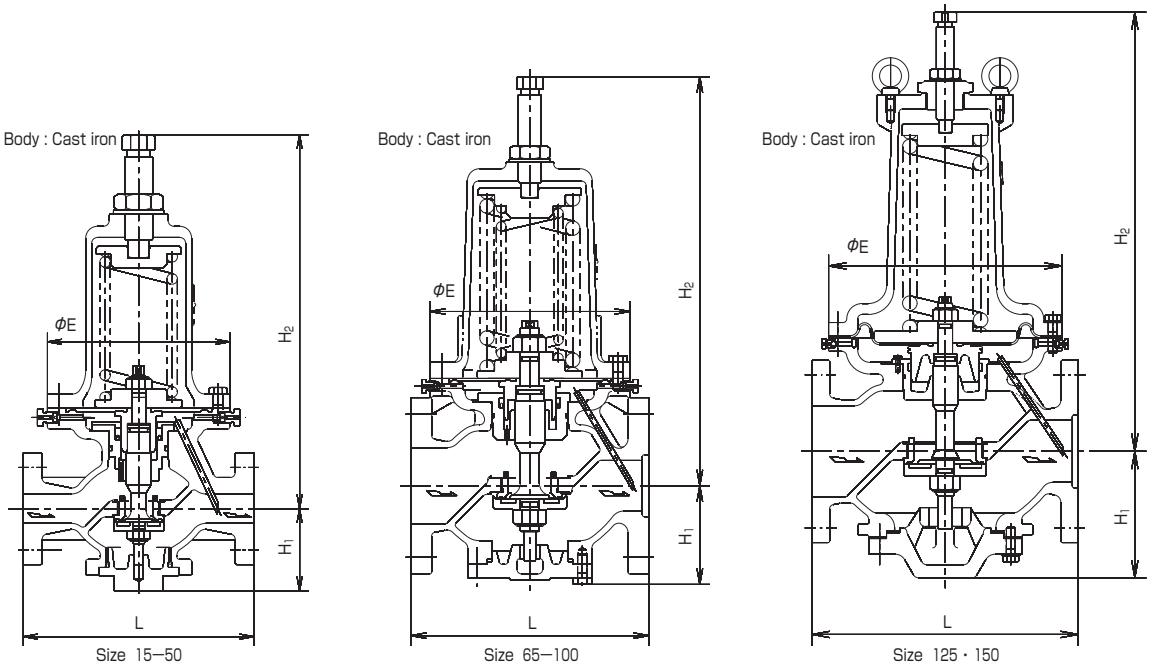
③ Then obtain correction factor α from the chart on right using viscosity index R.
Corrected flow rate Q'＝Q×α



Remark : Refer to page 252 of "Calculation formula for Cv value and flow capacity" for further details.

Type PMD31 Pressure Reducing Valves

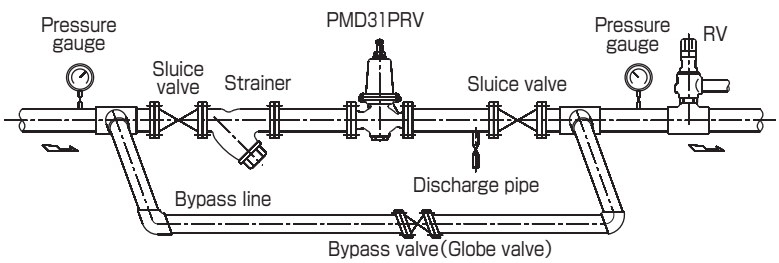
Construction & Dimensions



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	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 1. PMD31 can be installed in both horizontal and vertical piping. However, pipe arrangements where hot water flows downward is not possible due to the occurance of trouble by air.
2. It is recommended that straight pipe lines of at least 400mm in length (for sizes 15—25), 600mm (for sizes 32 & 40), 900mm (for sizes 50 to 100) and 1200mm (for sizes 125 & 150) are provided in front of and behind the PMD31.
3. If a rapid on-off valve such as a flash valve is installed in the outlet of the pressure reducing valve, install a water hammer arrester in order to prevent the surge in outlet pressure due to water hammer.