



# DIRECT-ACTING PRESSURE REDUCING VALVE FOR STEAM AND AIR

## MODEL DR20

### COMPACT STAINLESS STEEL DIRECT-ACTING PRV FOR STEAM AND AIR

#### Features

**Extremely compact pressure reducing valve for use on small process equipment.**

1. Exceptionally light and compact PRV.
2. Wetted parts are of all stainless steel construction with high durability and corrosion resistance for long service life.
3. Stable secondary pressure.
4. High flow rate for its class.
5. Capable of a 30:1 pressure reduction.
6. Easy to operate and adjust.
7. Built-in screen ensures extended trouble-free operation.

For installation in horizontal piping (with adjustment handle facing up).



Patented

#### Specifications

Model	DR20-2	DR20-6	DR20-10
Connection	Screwed, Flanged		
Size	15, 20, 25 / DN 15, 20, 25		
Maximum Operating Pressure (MPaG) PMO	1.6		
Maximum Operating Temperature (°C) TMO	220		
Primary Pressure Range (MPaG)	0.2 to 1.6		0.6 to 1.6
Adjustable Pressure Range (MPaG)	0.014 to 0.2, but not less than 1/30 of primary pressure	0.18 to 0.6	0.54 to 1.0
Secondary pressure must not exceed 90% of primary pressure			
Applicable Fluids*	Steam, Air		

\* Do not use with toxic, flammable or otherwise hazardous fluids.

1 MPa = 10.197 kg/cm<sup>2</sup>

PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS): Maximum Allowable Pressure (MPaG) PMA: 2.0  
Maximum Allowable Temperature (°C) TMA: 220

No.	Description	Material	JIS*	ASTM/AISI*
①	Body	Cast Stainless Steel	—	A351/A351M Gr.CF8
②	Cover	Cast Stainless Steel	—	A351/A351M Gr.CF8
③ <sup>V</sup>	Screen	Stainless Steel	SUS430	AISI430
④ <sup>V</sup>	Coil Spring	Stainless Steel	SUS304	AISI304
⑤ <sup>V</sup>	Main Valve	Stainless Steel	SUS420F	AISI420F
⑥ <sup>MV</sup>	Valve Seat Gasket	Fluorine Resin	PTFE	—
⑦ <sup>V</sup>	Valve Seat	Stainless Steel	SUS420F	AISI420F
⑧ <sup>S</sup>	Spacer	Cast Stainless Steel	—	A351/A351M Gr.CF8
⑨	Snap Ring	Stainless Steel	SUS304	AISI304
⑩ <sup>S</sup>	Valve Stem	Stainless Steel	SUS303	AISI303
⑪ <sup>B</sup>	Bellows	Stainless Steel	SUS316L	AISI316L
⑫ <sup>MSVB</sup>	Cover Gasket	Fluorine Resin	PTFE	—
⑬	Coil Spring	Stainless Steel	SUS304	AISI304
⑭	Spring Guide	Carbon Tool Steel	SPCC	A109
⑮	Steel Ball	High-Cr Bearing Steel	SUJ2	A485
⑯	Cover Bolt	Stainless Steel	—	—
⑰	Locknut	Stainless Steel	SUS304	AISI304
⑱	Adjustment Handle	Nylon/Stainless Steel	—	—
⑲	Nameplate	Stainless Steel	SUS304	AISI304
⑳	Retaining Ring	Stainless Steel	SUS304	AISI304
㉑	Retainer	Carbon Tool Steel	SPCC	A109
㉒ <sup>S</sup>	Slide Bearing**	Polymer Resin	—	—
㉓ <sup>S</sup>	Snap Ring**	Stainless Steel	SUS316	AISI316
㉔	Flange***	Cast Stainless Steel	—	A351/A351M Gr.CF8 or CF3M

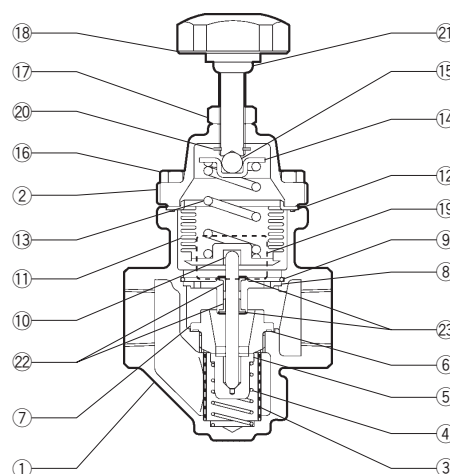
\* Equivalent \*\* Incorporated with the spacer and must be replaced as a set with the spacer.

\*\*\* Shown on reverse

Replacement kits available: (M) maintenance parts, (S) repair parts for spacer,  
(V) repair parts for main valve, (B) repair parts for bellows

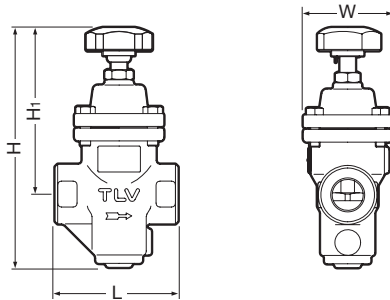
#### CAUTION

To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.



## Dimensions

### • DR20 Screwed

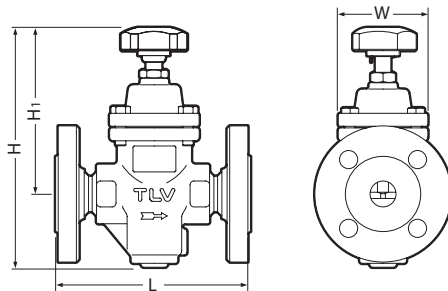


### DR20 Screwed\* (mm)

Size	L	W	H	H <sub>1</sub>	Weight (kg)
15	95	69	185	130	1.9
20					1.8
25					

\* Rc(PT), other standards available

### • DR20 Flanged



### DR20 Flanged (mm)

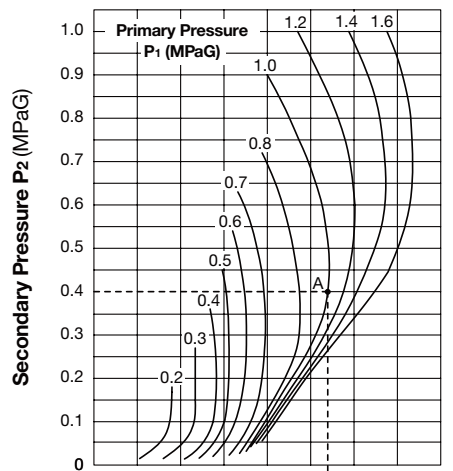
DN	L	W	H	H <sub>1</sub>	Weight* (kg)
	DIN EN 1092-1				
	PN25/40				
15	150	69	185	130	3.3
20					3.8
25					4.2

Other standards available, but length and weight may vary

\* Weight is for DIN PN 25/40

## Sizing Chart and Flow Graph

The following graph is used for sizing the DR20 when adjusted for maximum flow.



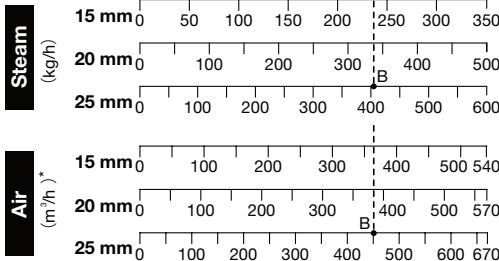
### Sizing Example

For a primary pressure of 1.0 MPaG, a set pressure of 0.4 MPaG, and a maximum saturated steam flow rate of 400 kg/h, or an air flow rate of 400 m<sup>3</sup>/h, select an appropriate size.

Locate point A, where the primary pressure ( $P_1 = 1.0$  MPaG) intersects the set pressure ( $P_2 = 0.4$  MPaG).

Move straight down from point A until reaching a size with a rated flow rate exceeding the desired flow rate. This first occurs at point B on the 25 mm flow rate line.

- The 25 mm size should be selected.
- For a set pressure of 0.4 MPaG, model DR20-6 should be selected (see the adjustable pressure range information given in the specifications (overleaf)).



Maximum Flow Rate

\* Equivalent flow of air at 20 °C under atmospheric pressure

## Cv & Kvs Values

Size (mm)	15	20	25
Cv (US)	2.0	3.0	3.6
Cv (UK)	1.7	2.5	3.0
Kvs (DIN)	1.7	2.6	3.1

Cv & Kvs values are for maximum flow

Manufacturer

**TLV® CO., LTD.**

Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001  
ISO 14001

