DIRECT-ACTING PRESSURE REDUCING VALVE FOR STEAM AND AIR

MODEL DR20 STAINLESS STEEL

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).

Pressure Equipment Directive (PED)

Classification according to PED 2014/68/EU, fluid group 2

Size	Category	CE marking
DN 15 to DN 25	—*	Art. 4, Sec. 3 (sound engineering practice), CE marking not allowed

* Manufactured in accordance with sound engineering practice

Specifications

Model		DR20-2	DR20-6	DR20-10
Connection		Screwed, Flanged		
Size		½", ¾", 1" / DN 15, 20, 25		
Maximum Operating Pressure (barg)	PMO	16		
Maximum Operating Temperature (°C)	TMO	220		
Primary Pressure Range (barg)		2 to 16		6 to 16
Adjustable Pressure Range (barg)		0.14 to 2, but not less than 1/30 of primary pressure	1.8 to 6	5.4 to 10
		Secondary pressure must not exceed 90% of primary pressure		
Applicable Fluids*		Steam, Air		

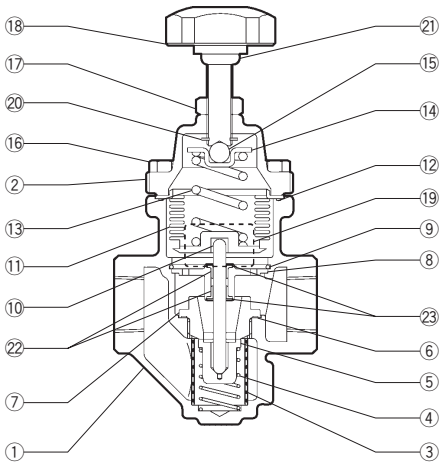
* Do not use with toxic, flammable or otherwise hazardous fluids.

1 bar = 0.1 MPa

PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 20
Maximum Allowable Temperature (°C) TMA: 220
Minimum Allowable Temperature (°C): -40

No.	Description	Material	DIN*	ASTM/AISI*
①	Body	Cast Stainless Steel A351/A351M Gr.CF8	1.4312	—
②	Cover	Cast Stainless Steel A351/A351M Gr.CF8	1.4312	—
③V	Screen	Stainless Steel SUS430	1.4016	AISI430
④V	Coil Spring	Stainless Steel SUS304	1.4301	AISI304
⑤V	Main Valve	Stainless Steel SUS420F	1.4028	AISI420F
⑥MV	Valve Seat Gasket	Fluorine Resin PTFE	—	—
⑦V	Valve Seat	Stainless Steel SUS420F	1.4028	AISI420F
⑧S	Spacer	Cast Stainless Steel A351/A351M Gr.CF8	1.4312	—
⑨	Snap Ring	Stainless Steel SUS304	1.4301	AISI304
⑩S	Valve Stem	Stainless Steel SUS303	1.4305	AISI303
⑪B	Bellows	Stainless Steel SUS316L	1.4404	AISI316L
⑫MSVB	Cover Gasket	Fluorine Resin PTFE	—	—
⑬	Coil Spring	Stainless Steel SUS304	1.4301	AISI304
⑭	Spring Guide	Carbon Tool Steel SPCC	1.0330	A109
⑮	Steel Ball	High-Cr Bearing Steel SUJ2	1.2067	A485
⑯	Cover Bolt	Stainless Steel	—	—
⑰	Locknut	Stainless Steel SUS304/SUS316	1.4301/1.4401	AISI304/AISI316
⑱	Adjustment Handle	Nylon/Stainless Steel	—	—
⑲	Nameplate	Stainless Steel SUS304/SUS316L	1.4301/1.4404	AISI304/AISI316L
⑳	Retaining Ring	Stainless Steel SUS304	1.4301	AISI304
㉑	Retainer	Carbon Tool Steel SPCC	1.0330	A109
㉒S	Slide Bearing**	Polymer Resin	—	—
㉓S	Snap Ring**	Stainless Steel SUS316	1.4401	AISI316
㉔	Flange***	Cast Stainless Steel A351/A351M Gr.CF8 or CF3M	1.4312 or 1.4435	—

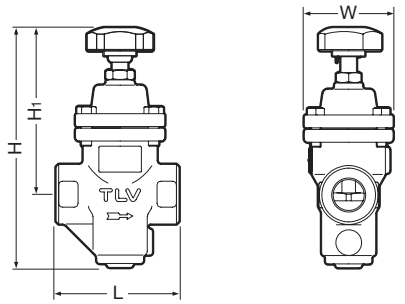
CAUTION To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.



* Equivalent materials ** 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

Dimensions

- **DR20**
  Screwed

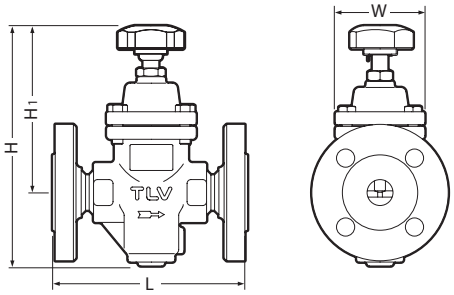


DR20 Screwed* (mm)

Size	L	W	H	H_1	Weight (kg)
½″	95	69	185	130	1.9
¾″					1.8
1″					

* DIN EN 10226, other standards available

- **DR20**
  Flanged

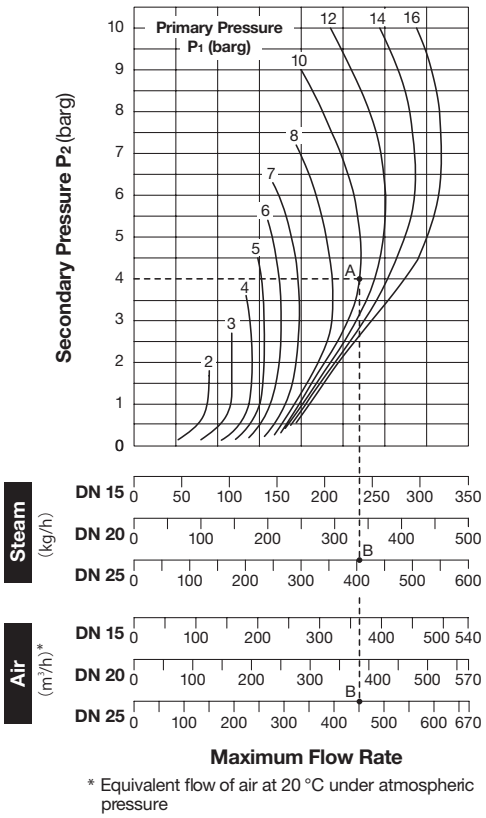


DR20 Flanged (mm)

DN	L DIN EN 1092-1 PN25/40	W	H	H_1	Weight* (kg)
15	150	69	185	130	3.3
20					3.8
25	160				4.2

Other standards available, but length and weight may vary
* Weight is for DIN PN 25/40

Sizing Chart and Flow Graph (Max. Flow Rate)



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

Sizing Example
For a primary pressure of 10 barg, a set pressure of 4 barg, and a maximum saturated steam flow rate of 400 kg/h, or air flow rate of 400 m³/h, select an appropriate size.

Locate point A, where the primary pressure (P_1 = 10 barg) intersects the set pressure (P_2 = 4 barg).
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 DN 25 flow rate line.

- The DN 25 size should be selected.
- For a set pressure of 4 barg, model DR20-6 should be selected (see the adjustable pressure range information given in the specifications (overleaf)).

Cv & Kvs Values

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

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
LRQA CERTIFIED

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