DIRECT-ACTING PRESSURE REDUCING VALVE FOR AIR

MODEL A-DR20
CAST STAINLESS STEEL

COMPACT STAINLESS STEEL DIRECT-ACTING PRV WITH SOFT SEAT FOR AIR

Features

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

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

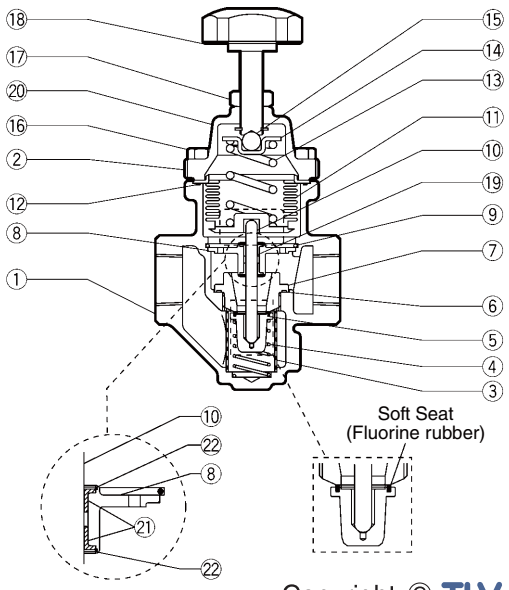
Specifications

Model		A-DR20-2	A-DR20-6	A-DR20-10
Connection		Screwed, Flanged		
Size		½″, ¾″, 1″ / DN 15, 20, 25		
Maximum Operating Pressure (barg)	PMO	10		
Maximum Operating Temperature (°C)	TMO	100		
Primary Pressure Range (barg)		2 – 10		6 – 10
Adjustable Pressure Range (barg)		0.14 – 2 but not less than 1/30 of primary pressure	1.8 – 6	5.4 – 9
		Secondary pressure must not exceed 90% of primary pressure		
Applicable Fluids*		Air		

* Do not use for toxic, flammable or otherwise hazardous fluids. 1 bar = 0.1 MPa
For installation in horizontal piping (with adjustment handle facing up).
PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 20
Maximum Allowable Temperature (°C) TMA: 220

⚠ 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.

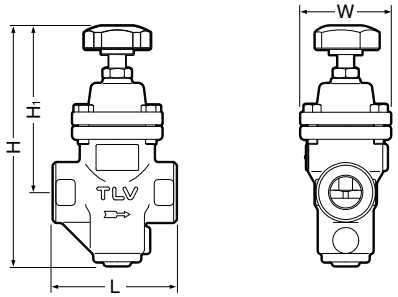
No.	Description	Material	DIN	ASTM/AISI*
①	Body	Cast Stainless Steel A351 Gr.CF8	1.4312	—
②	Cover	Cast Stainless Steel A351 Gr.CF8	1.4312	—
③V	Screen	Stainless Steel SUS430	1.4016	AISI430
④V	Coil Spring	Stainless Steel SUS304	1.4301	AISI304
⑤V	Main Valve	Fluorine Rubber FPM/ Stainless Steel SUS304	FPM/1.4301	A2000HK/AISI304
⑥MV	Valve Seat Gasket	Fluorine Resin PTFE	PTFE	PTFE
⑦V	Valve Seat	Stainless Steel SUS304	1.4301	AISI304
⑧S	Spacer	Cast Stainless Steel	—	A351 Gr.CF8
⑨	Snap Ring	Stainless Steel SUS304	1.4301	AISI304
⑩S	Valve Stem	Stainless Steel SUS303	1.4305	AISI303
⑪B	Bellows	Stainless Steel SUS321	1.4541	AISI321
⑫MSVB	Cover Gasket	Fluorine Resin PTFE	PTFE	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 SUS304	1.4301	AISI304
⑰	Locknut	Stainless Steel SUS304	1.4301	AISI304
⑱	Adjustment Handle	Nylon/Stainless Steel SUS304	–/1.4301	–/AISI304
⑲	Nameplate	Stainless Steel SUS304	1.4301	AISI304
⑳	Retaining Ring	Stainless Steel SUS304	1.4301	AISI304
㉑S	Slide Bearing**	Polymer Resin	—	—
㉒S	Snap Ring**	Stainless Steel SUS316	1.4401	AISI316



* Equivalent materials ** Incorporated with the spacer and must be replaced as a set with the spacer.
Replacement kits available: (M) maintenance parts, (S) repair parts for spacer,
(V) repair parts for main valve, (B) repair parts for bellows

Dimensions

● **A-DR20** Screwed

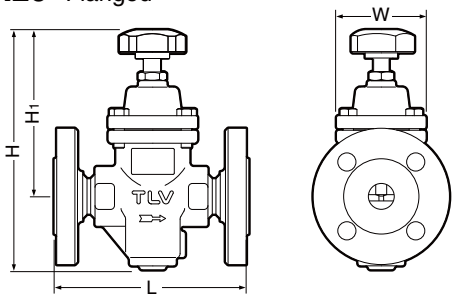


A-DR20 Screwed* (mm)

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

* BSP; other standards available

● **A-DR20** Flanged



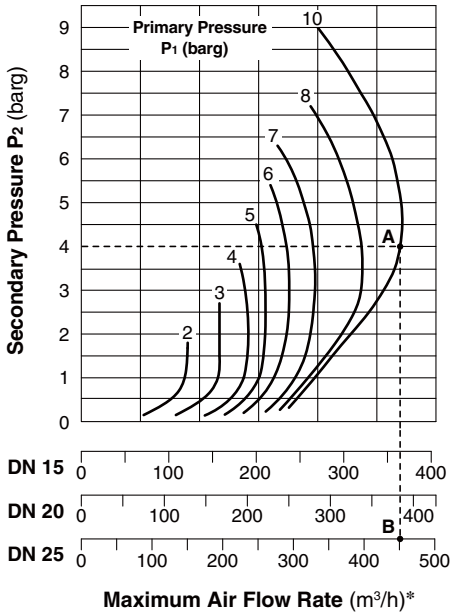
A-DR20 Flanged (mm)

DN	L			W	H	H_1	Weight* (kg)
	DIN 2501	ASME Class					
	PN25/40	150RF	300RF				
15	150	150	150	69	185	130	3.3
20							3.8
25	160	160	160				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 A-DR20 when adjusted for maximum flow.



* 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 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 A-DR20-6 should be selected (see the adjustable pressure range information given in the specifications (overleaf)).

Cv 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