



DIRECT-ACTING PRESSURE REDUCING VALVE FOR STEAM AND AIR

MODEL DR20

COMPACT STAINLESS STEEL DIRECT-ACTING PRV FOR STEAM AND AIR

Benefits

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).



Specifications

Model	DR20-2	DR20-6	DR20-10
Connection	Screwed		
Size (in)	½, ¾, 1		
Maximum Operating Pressure (psig) PMO	230		
Maximum Operating Temperature (°F) TMO	428		
Maximum Allowable Pressure (psig) PMA	285		
Maximum Allowable Temperature (°F) TMA	428		
Primary Pressure Range (psig)	30 to 230		85 to 230
Adjustable Pressure Range (psig)	2 to 30, but not less than 1/30 of primary pressure	27 to 85	76 to 150
Secondary pressure must not exceed 90% of primary pressure			
Applicable Fluids*	Steam, Air		

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

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

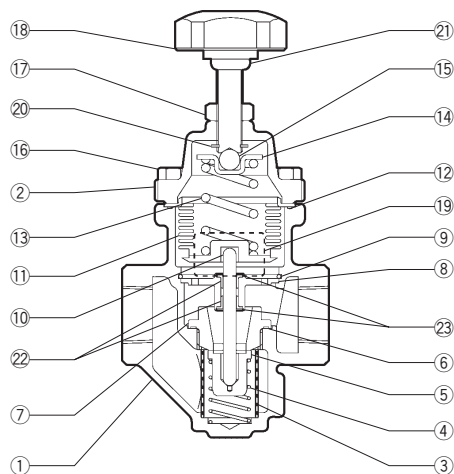
Connections and sizes in bold are standard

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

* 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



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.



Cv Values

Size (in)	1/2	3/4	1
Cv	2.0	3.0	3.6

Cv values are for maximum flow

Capacity Table

The following tables are used for sizing the DR20 when adjusted for maximum flow.

P₁ = Primary Pressure

P₂ = Secondary (Set) Pressure

* Minimum adjustable secondary pressure

** Maximum adjustable secondary pressure

Capacities are equivalent capacities of air at 68 °F under atmospheric pressure.

• DR20-2 (For secondary steam/air pressures of 2 to 30 psig)

(Steam: lb/h; Air: scfm)

P ₁ (psig)	P ₂ (psig)	Nominal Valve Size						P ₁ (psig)	P ₂ (psig)	Nominal Valve Size						P ₁ (psig)	P ₂ (psig)	Nominal Valve Size					
		Steam			Air					Steam			Air					Steam			Air		
		1/2"	3/4"	1"	1/2"	3/4"	1"			1/2"	3/4"	1"	1/2"	3/4"	1"			1/2"	3/4"	1"	1/2"	3/4"	1"
30	** 27	180	250	300	70	80	110	75	** 30	310	420	510	120	130	150	150	** 30	440	630	750	180	200	230
	15	170	240	290	70	70	90		15	300	410	500	120	130	150		15	380	540	650	160	170	190
	* 7	150	200	240	60	60	70		* 2.5	240	340	410	100	100	120		* 5	330	480	580	140	150	170
	* 2	100	140	180	40	50	50		** 30	330	480	570	140	150	170		** 30	460	640	770	190	200	240
40	** 15-30	220	310	390	90	100	120	85	15	320	440	530	130	140	160	175	15	390	550	660	160	170	200
	* 7	190	280	330	80	80	110		* 2.8	270	370	450	110	120	140		* 5.7	350	510	600	140	150	180
	* 2	150	220	260	60	70	80		** 30	380	540	640	150	160	190		** 30	470	660	800	190	200	240
	** 30	250	360	430	100	110	130		15	350	500	590	140	150	180		15	400	570	680	160	170	200
50	15	250	350	430	100	110	130	100	* 3.3	310	420	510	120	130	150	200	* 6.6	370	550	620	150	160	190
	* 2	180	360	310	70	80	90		** 30	430	620	740	180	190	220		** 30	480	680	810	190	210	250
	** 30	280	390	460	110	120	140		15	370	540	640	160	160	190		15	410	580	690	170	180	210
	* 2	200	280	340	80	90	100		* 4.2	330	470	560	140	140	170		* 7.6	370	530	640	150	160	190

• DR20-6 (For secondary steam/air pressures of 27 to 85 psig)

(Steam: lb/h; Air: scfm)

P ₁ (psig)	P ₂ (psig)	Nominal Valve Size						P ₁ (psig)	P ₂ (psig)	Nominal Valve Size						P ₁ (psig)	P ₂ (psig)	Nominal Valve Size					
		Steam			Air					Steam			Air					Steam			Air		
		1/2"	3/4"	1"	1/2"	3/4"	1"			1/2"	3/4"	1"	1/2"	3/4"	1"			1/2"	3/4"	1"	1/2"	3/4"	1"
30	*27	180	250	300	70	80	90	125	** 85	460	660	790	190	200	240	200	** 85	650	920	1110	270	280	330
40	*27-36	220	310	390	90	100	120		80	470	680	810	200	210	240		80	640	910	1100	260	280	320
50	** 45	240	350	420	100	110	130		50-75	500	690	830	200	210	250		75	630	900	1080	260	270	320
	*27-30	230	355	430	100	110	130		45	450	680	810	190	210	240		50	570	810	980	230	250	280
60	** 54	260	370	440	110	110	130		30	430	620	740	180	190	220		45	530	760	920	220	230	270
	45	280	390	460	110	120	140		*27	400	600	730	110	180	220		30	460	660	790	190	200	240
	*27-30	290	390	470	110	120	140		** 85	510	720	870	210	220	260		*27	450	640	770	180	200	230
75	** 67	290	400	480	120	120	150		80	520	730	870	210	230	270		85	710	1010	1210	290	310	360
	*27-50	310	420	510	120	130	150		75	520	740	890	220	230	270		80	700	990	1190	280	290	350
	50	520	730	870	210	220	260		*27	430	610	740	110	190	220		75	680	960	1160	280	290	350
85	** 76	310	440	530	120	140	160	45	500	700	850	200	210	250	50	600	850	1020	240	260	290		
	30-50	330	480	580	140	150	150	30	440	630	750	180	190	220	45	550	780	950	230	240	280		
	*27	330	480	570	140	140	170	*27	460	640	770	190	200	230	30	470	670	800	190	210	240		
100	** 85	330	480	580	140	150	170	175	** 80-85	580	830	990	240	250	300	230	75	680	960	1160	280	290	350
	80	360	510	610	140	150	180		75	570	820	980	240	190	290		50	600	850	1020	240	260	290
	75	370	530	630	150	160	190		50	550	770	920	220	240	270		45	550	780	950	230	240	280
	30-50	390	550	650	150	170	190		45	510	730	880	210	220	260		30	470	670	800	190	210	240
	*27	390	550	650	150	170	190		30	460	640	770	190	200	230		*27	460	650	790	190	200	230
	*27	370	530	640	150	160	190		*27	440	630	750	180	190	220								

• DR20-10 (For secondary steam/air pressures of 76 to 150 psig)

(Steam: lb/h; Air: scfm)

P ₁ (psig)	P ₂ (psig)	Nominal Valve Size						P ₁ (psig)	P ₂ (psig)	Nominal Valve Size						P ₁ (psig)	P ₂ (psig)	Nominal Valve Size					
		Steam			Air					Steam			Air					Steam			Air		
		1/2"	3/4"	1"	1/2"	3/4"	1"			1/2"	3/4"	1"	1/2"	3/4"	1"			1/2"	3/4"	1"	1/2"	3/4"	1"
80	* 76	310	450	540	130	140	160	150	** 135	390	550	660	160	170	200	200	** 150	570	810	980	230	250	290
	** 90	320	460	550	130	140	160		115	440	660	770	180	190	220		125	620	880	1060	250	270	310
	85	340	480	590	140	150	170		100	480	680	810	200	210	240		115	640	910	1100	260	280	320
	80	360	510	620	150	150	180		80-85	520	730	880	210	220	260		85-100	650	930	1100	270	280	330
	* 76	360	520	620	150	160	180		* 76	530	740	890	220	230	270		* 76-80	640	910	1100	260	270	320
	** 112	380	540	650	160	170	200		** 150	460	660	770	190	200	230		** 150	660	940	1120	270	280	330
100	100	430	610	740	180	190	220	175	125	510	730	880	210	220	260	230	125	690	990	1180	280	300	350
	85	460	660	790	190	200	240		115	550	790	950	220	240	280		115	710	1000	1210	290	310	360
	80	470	680	810	200	210	240		100	570	810	980	240	250	290		100	720	1010	1220	290	310	360
	* 76	480	690	820	200	210	250		* 76-85	580	830	990	240	250	290		85	710	1000	1210	290	310	360
																	80	690	990	1180	280	300	350
																	* 76	690	980	1180	280	290	350