Beaumont Manufacturing
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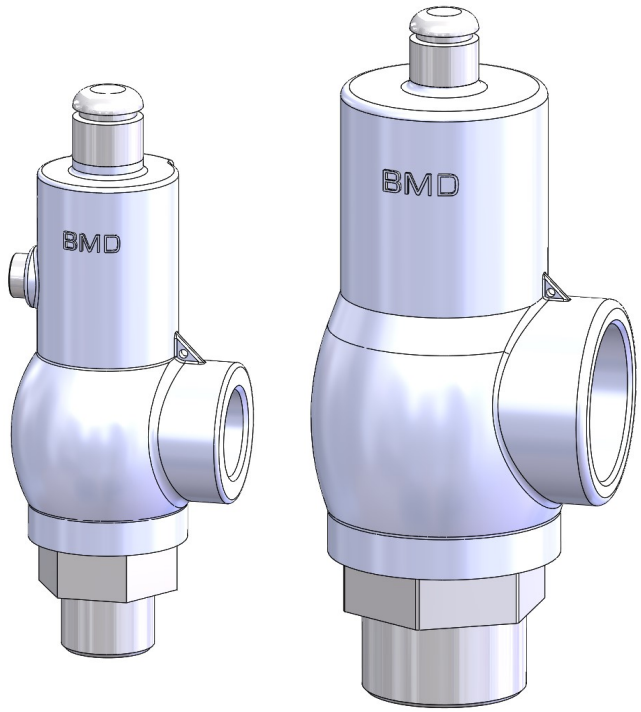
RV10 Relief Valve

The RV10 safety relief valve is well-suited for overpressure protection of production equipment, including compressors, scrubbers, separators, pipelines or anywhere overpressure protection may be required.

The RV10 design incorporates a non-rising stem to give the disk full guidance while opening and closing. The non-rising stem coupled with the valve's soft-seat design ensures long lasting set pressure repeatability and bubble-tight shutoff. The shorter stem also makes the valve more compact, making it ideal for requirements where space may be an issue.

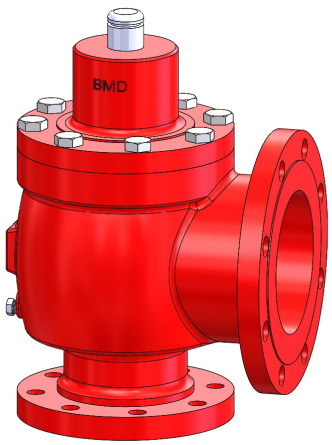
The RV10 is ASME certified for gas service and is available in NPT and flanged connections. Flanged sizes meet API 526 dimensions. The RV10 series covers set pressure ranges from 15 – 3000 psi (103-20684 kPa) with orifice sizes ranging from D to M. Orifice sizes exceed API minimum areas for increased flow rates.

The RV10 is manufactured in accordance with the ASME Boiler and Pressure Vessel Code, capacity tested and certified by the National Board, and meet the requirements of Section VIII, Division 1 of the ASME Code.



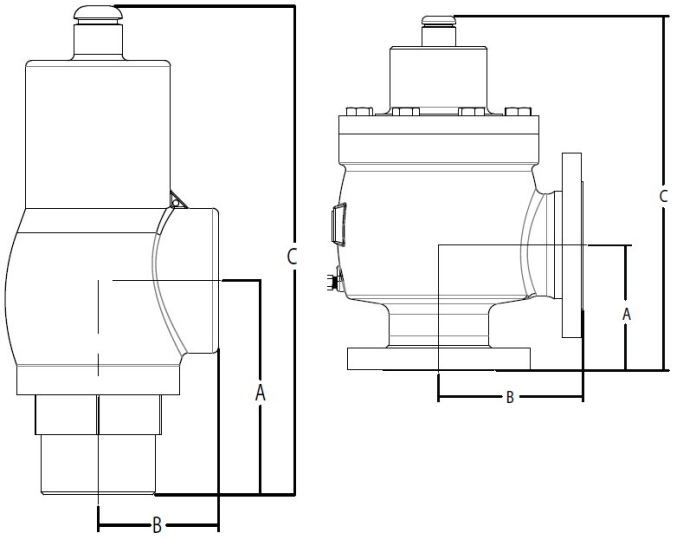
Specifications

Set Pressure Range: 15 – 3000 psi (Varies by Model)
Temperature Range: -50° F to 400° F (-45° C to 204° C)
Seat Tightness: Meet or exceed API 527
Materials:
Base: ASME SA105, SA479 316, A350 LF2 (Low Temp Option)
Body: ASME SA216 WCB, SA352 LCB (Low Temp Option)
Bonnet: ASME SA216 WCB, SA352 LCB (Low Temp Option)
Bolts: ASME SA193 Gr B7
Spring: 17-7 Stainless (Standard), Inconel® X-750 (NACE)
Trim: ASTM 304/316 Stainless
Soft Seat: Viton®, Carbon-Filled PTFE®, PEEK, Low-Temp HNBR



Dimensions

Dimensions in inches.



See Tables 2 and 3 for Dimensions

Table 1 - Air Capacities in SCFM (14.7 psia & 60° F)

Set Pressure (psi)	Orifice Letter Designation Orifice Area (in^2)								
	D	E	F	G	H	J	K	L	M
	0.130	0.220	0.357	0.478	0.913	1.440	2.100	3.300	4.100
15	59	100	162	217	414	653	952	1496	1859
20	68	115	187	250	477	753	1098	1725	2143
25	77	130	211	283	541	853	1243	1954	2427
30	86	145	236	316	604	952	1389	2182	2712
40	104	176	286	382	730	1152	1680	2640	3280
50	122	207	335	449	857	1352	1971	3098	3849
60	140	237	385	515	984	1551	2262	3555	4417
75	175	296	481	644	1230	1941	2830	4447	5525
100	225	380	617	826	1579	2490	3631	5706	7089
125	274	464	753	1009	1927	3039	4432	6964	8652
150	324	548	889	1191	2275	3588	5232	8222	10215
175	373	632	1026	1373	2623	4137	6033	9480	11779
200	423	716	1162	1555	2971	4686	6834	10739	13342
250	522	884	1434	1920	3667	5784	8435	13255	16468
300	621	1051	1706	2284	4363	6882	10036	15772	19595
350	720	1219	1978	2649	5060	7980	11638	18288	22722
400	820	1387	2251	3014	5756	9078	13239	20805	25848
450	919	1555	2523	3378	6452	10176	14841	23321	28975
500	1018	1723	2795	3743	7148	11275	16442	25838	32101
550	1117	1890	3067	4107	7845	12373	18044	28354	35228
600	1216	2058	3340	4472	8541	13471	19645	30871	38354
650	1315	2226	3612	4836	9237	14569	21246	33387	41481
700	1414	2394	3884	5201	9933	15667	22848	35904	44608
750	1514	2561	4156	5565	10630	16765	24449	38420	47734
800	1613	2729	4429	5930	11326	17863	26051	40937	50861
850	1712	2897	4701	6294	12022	18961	27652	43453	53987
900	1811	3065	4973	6659	12718	20059	29253	45970	57114
950	1910	3232	5245	7023	13415	21158	30855	48486	60240
1000	2009	3400	5518	7388	14111	22256	32456	51003	63367
1200	2406	4071	6607	8846	16896	26648	38862	61069	75873
1300	2604	4407	7151	9575	18288	28844	42065	66102	82126
1440	2882	4877	7913	10595	20238	31919	46549	73148	90881
1500	3001	5078	8240	11033	21073	33237	48470	76168	94633
2000	3992	6756	10962	14678	28035	44218	64484	101333	125898
2250	4488	7594	12324	16500	31517	49708	72492	113915	141531
2500	4983	8433	13685	18323	34998	55199	80499	126498	157164
2750	5479	9272	15046	20146	38479	60690	88506	139080	172797
3000	5975	10111	16407	21968	41960	66180	96513	151663	188430

Kd = .756

To convert capacities to another gas divide by the square root of the specific gravity of the desired gas.

To convert SCFM to m^3/hr multiply by 1.699

Table 2 - Inlet/Outlet Codes, Dimensions & Weights (NPT)

Inlet/Outlet Code	Inlet/Outlet	A, B, C Dims (inches)	Orifice Sizes	Pressure Range (psi)	Approximate Weight (lbs)
01	3/4" MNPT X 3/4" FNPT	3.25 X 1.88 X 8.13	D	15-3000	5
			E	15 - 2400	5
02	3/4" MNPT X 1" FNPT	3.25 X 1.88 X 8.13	D	15-3000	5
			E	15 - 2400	5
03	3/4" FNPT X 3/4" FNPT	2.25 X 1.88 X 7.25	D	15-3000	5
			E	15 - 2400	5
04	3/4" FNPT X 1" FNPT	2.25 X 1.88 X 7.25	D	15-3000	5
			E	15 - 2400	5
05	1" MNPT X 1" FNPT	3.25 X 1.88 X 8.13	D	15-3000	5.5
			E	15 - 2400	5.5
06	1" FNPT X 1" FNPT	3.25 X 1.88 X 8.13	D	15-3000	5.5
			E	15 - 2400	5.5
07	1" MNPT X 1 1/2" FNPT	4.50 X 2.38 X 10.12	D	15-3000	13
			E	15 - 2400	13
08	1" FNPT X 1 1/2" FNPT	3.38 X 2.38 X 9.00	D	15-3000	13
			E	15 - 2400	13
09	1" MNPT X 2" FNPT	4.50 X 2.38 X 10.12	D	15-3000	13
			E	15 - 2400	13
10	1" FNPT X 2" FNPT	3.38 X 2.38 X 9.00	D	15-3000	13
			E	15 - 2400	13
11	1 1/2" MNPT X 2" FNPT	4.50 X 2.38 X 10.12	D	15-3000	14
			E	15 - 2400	14
12	2" MNPT x 2" FNPT	4.50 X 2.38 X 10.12	D	15-3000	14
			E	15 - 2400	14
13	1 1/2" MNPT X 2" FNPT	4.44 X 2.38 X 10.13	F	15 - 2400	14
			G	15 - 2000	14
14	1 1/2" FNPT X 2" FNPT	4.63 X 2.38 X 10.38	F	15 - 2400	14
			G	15 - 2000	14
15	2" MNPT X 2" FNPT	4.44 X 2.38 X 10.13	F	15 - 2400	14
			G	15 - 2000	14
16	2" FNPT X 2" FNPT	4.63 X 2.38 X 10.38	F	15 - 2400	14
			G	15 - 2000	14
17	1 1/2" MNPT X 2" FNPT	4.25 X 3 X 12.31	H	15 - 850	26
18	1 1/2" FNPT X 2" FNPT	3 X 3 X 11.06	H	15 - 850	25
19	2" MNPT X 2" FNPT	4.25 X 3 X 12.31	H	15 - 850	26
20	2" MNPT X 2" FNPT	4.25 X 3 X 14.38	H	851-2000	31
21	2" FNPT X 2" FNPT	3 X 3 X 11.06	H	15 - 850	24
22	2" FNPT X 2" FNPT	4.25 X 3 X 13.13	H	851-2000	30
23	2" MNPT X 2 1/2" FNPT	4.25 X 3 X 12.31	H	15 - 850	25
24	2" MNPT X 2 1/2" FNPT	4.25 X 3 X 14.38	H	851 - 2000	30
25	2" FNPT X 2 1/2" FNPT	3 X 3 X 11.06	H	15 - 850	24
26	2" FNPT X 2 1/2" FNPT	3 X 3 X 13.13	H	851 - 2000	29
27	2 " MNPT X 3" FNPT	5.50 X 4.25 X 13.75	J	15 - 450	48
28	2 " MNPT X 3" FNPT	5.50 X 4.25 X 16.95	J	451 - 800	54
29	2 " FNPT X 3" FNPT	3.75 X 4.25 X 12.00	J	15 - 450	46
30	2 " FNPT X 3" FNPT	3.75 X 4.25 X 15.20	J	451 - 800	52
31	3" MNPT X 3" FNPT	5.50 X 4.25 X 13.75	J	15 - 450	50
			K	15 - 285	50
32	3" MNPT X 3" FNPT	5.50 X 4.25 X 16.95	J	451 - 800	56
			K	286 - 750	56

Table 3 - Inlet/Outlet Codes, Dimensions & Weights (Flanged)

Inlet/Outlet Code	Inlet/Outlet	A, B, C Dims (inches)	Orifice Sizes	Pressure Range (psi)	Approximate Weight (lbs)
50	2” 150 X 3” 150	5.38 X 4.88 X 13.75	J	15 - 285	61
51	2” 300 X 3” 150	5.38 X 4.88 X 13.75	J	285 - 450	62
52	2” 300 X 3” 150	5.38 X 4.88 X 16.88	J	451 - 740	69
53	2” 600 X 3” 150	5.38 X 4.88 X 16.88	J	451 - 1480	69
54	3" 300 X 4" 150	7.25 X 7.13 X 15.50	J	286 - 450	78
55	3" 300 X 4" 150	7.25 X 7.13 X 18.69	J	451 - 740	85
56	3" 150 X 4" 150	6.13 X 6.38 X 17.38	J*, K	15 - 285	117
57	3" 300 X 4" 150	6.13 X 6.38 X 17.38	K	15-740	121
58	3" 600 X 4" 150	7.25 X 7.13 X 18.69	J, K	740 - 1480	88
59	3" 900 X 4" 150	7.25 X 7.13 X 18.69	J	1481 - 1800	97
60	3" 150 X 4" 150	6.13 X 6.50 X 17.38	L	15 - 285	124
61	3" 300 X 4" 150	6.13 X 6.50 X 17.38	L	15 - 300	128
62	4" 300 X 6" 150	7.06 X 7.13 X 17.38	L	15 - 300	144
64	4" 300 X 6" 150	7.06 X 7.13 X 23.06	L	301 - 740	174
65	4" 600 X 6" 150	7.06 X 8.00 X 23.06	L	601 - 1250	185
66	4" 150 X 6" 150	7 X 7 X 17.25	M	15 - 250	92
67	4" 150 X 6" 150	7 X 7 X 23.00	M	251 - 285	166
69	4" 300 X 6" 150	7 X 7 X 23.00	M	251 - 740	174
70	4" 600 X 6" 150	7 X 8 X 23.00	M	251 - 1000	184

How to Order

Example Model No: **RV10-EN05-1VV-190**
RV10 Series Relief Valve, E Orifice, 1” Male NPT Inlet X 1” Female NPT Outlet, Carbon Steel Body/Bonnet with Stainless Trim, Viton® Seat and Viton® Seals with a 86-190 PSI Spring

RV10 - E N 05 - 1 VV 190

Orifice

D - D	**G** - G	**K** - K
E - E	**H** - H	**L** - L
F - F	**J** - J	**M** - M

Connection

N - NPT **F** - Flanged

Inlet/Outlet Combination

See Table 2 for NPT or Table 3 for Flanged

Materials - Body/Bonnet/Trim

1 - CS/CS/SS	**3** - SS/SS/SS	**5** - SS/CS/SS
2 - NACE - CS/CS/SS	**4** - NACE SS/SS/SS	**6** - LF2/LCB/SS

Seat/Seals*

VV - Viton®/ Viton® **TV** - Carbon-Filled PTFE/ Viton® **PV** - PEEK/ Viton® **HH** - Low-Temp HNBR

TH - Carbon-Filled PTFE/Low-Temp HNBR **PH** - PEEK/Low-Temp HNBR

Spring Code

Assigned by Factory

Repair kits available.

* **Viton seat option only applicable to set pressures ≤ 800 psi.**

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