

GD-10, GD-10F, AF-10

For Air and Non-Corrosive Gases

The GD-10/10F is a lightweight direct acting diaphragm valve used primarily for pneumatic tool air supply and non-hazardous gas regulation. Screwed connections make it easy to support in position without external sensing lines or other parts. Zinc or aluminum bodies eliminate rust and scale. Plug, seat and diaphragm are renewable in-line, and you can make quick adjustments externally with locking handle. Quarter-inch pressure gauge connection is standard, and all units are capable of tight shutoff for dead-end service.

GD-10 available in sizes 1/4" - 2." Highly efficient Model AF-10 air filters with zinc or aluminum bodies are used to remove liquids and solid particles from compressed air. The AF-10 is available in sizes 1/4" - 1"

For a fully detailed certified drawing, refer to list below.

GD-10 CDY #1003

GD-10F CDY #1002

AF-10 CDY #1004

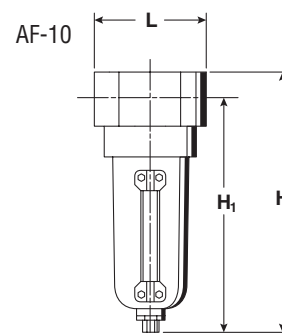
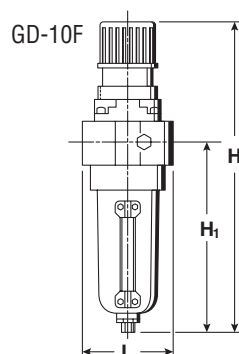
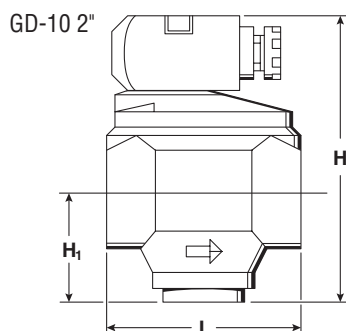
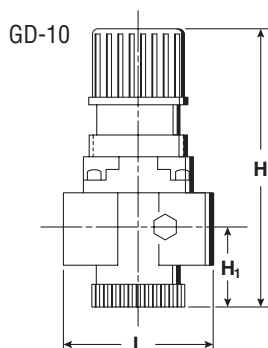
GD-10/GD-10F/AF-10 Specifications

Model	Application	Inlet Pres. psig (bar)	Reduced Pressure psig (bar)	Min. Differ. psig (bar)	Max. Temp. °F (°C)	Materials				
						Body in (mm)	Bowl	Main Valve in (mm)	Valve Plug in (mm)	Diaphragm
GD-10	Air and Other Non-Corrosive Gases	15 - 300 (1 - 20)	5 - 125 (.34 - 8.6)	7 (.48)	175 (79)	Zinc 1/4, 3/8, 1/2, 3/4 (6, 9, 15, 20) Aluminum 1 - 2 (25 - 50)	—	Zinc 1/4, 3/8, 1/2, 3/4 (6, 9, 15, 20) Aluminum 1 - 2 (25 - 50)	Brass 1/4, 3/8, 1/2, 3/4 (6, 9, 15, 20) Nylon 1 - 2 (25 - 50)	Nitrile
GD-10F		15 - 250 (1 - 17)	5 - 125 (.34 - 8.6)	7 (.48)		Zinc			Brass	Nitrile
AF-10		0 - 250 (0 - 17)	—	—		Zinc 1/4, 3/8, 1/2, 3/4 (6, 9, 15, 20) Aluminum 1 (25)	—	—	—	—

Pressure and
Temperature Controls

GD-10 Dimensions and Weights

Symbol	Connection Size											
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
	1/4	8	3/8	10	1/2	15	3/4	20	1, 1-1/4, 1-1/2	25, 32, 40	2	50
L	2-5/8	67	2-5/8	67	2-5/8	67	3-1/2	98	4-1/4	108	6	152
H	5-3/8	136	5-3/8	136	5-3/8	136	5-7/8	149	7-1/8	181	9-3/4	248
H ₁	1-1/2	38	1-1/2	38	1-1/2	38	1-1/2	38	2-3/8	60	3-9/16	90
Wt, lb (kg)	1-1/2 (.7)		1-1/2 (.7)		1-1/2 (.7)		2 (.9)		3 (1.4)		10 (4.5)	
C _v	1.4		1.4		1.4		2.6		5.8		43	



GD-10/GD-10F Capacities—Air

scfm						m³/hr					
Inlet	Outlet	Connection Size				Inlet	Outlet	Connection Size			
		in						mm			
psig		1/4, 3/8, 1/2	3/4	1*, 1-1/4, 1-1/2	2**	bar		8, 10, 15	20	25*, 32, 40	50**
15	8	19	35	78	580	1.0	0.6	32	60	133	985
30	23	24	44	98	727	2.0	1.6	40	75	167	1,235
	15	33	61	136	1,011		1.0	56	104	232	1,718
40	5 - 7	38	70	157	1,166	2.8	.34 - 48	64	120	267	1,981
	33	26	49	109	810		2.3	45	83	186	1,377
50	20	42	77	173	1,280	3.4	1.4	71	131	293	2,174
	5 - 12	46	86	192	1,427		.34 - .83	79	147	327	2,424
75	40	34	63	141	1,046	5.2	2.8	58	107	240	1,777
	30	46	86	191	1,416		2.1	78	145	324	2,405
100	5 - 17	55	102	228	1,687	6.9	.34 - 1.17	93	173	387	2,867
	60	49	91	203	1,503		4.1	83	154	344	2,553
125	45	66	123	273	2,026	8.6	3.1	112	208	464	3,442
	7 - 30	76	141	316	2,339		.48 - 2.1	129	240	536	3,975
150	80	64	118	264	1,958	10.3	5.5	108	201	449	3,327
	60	86	159	355	2,634		4.1	146	271	604	4,475
175	10 - 42	97	181	403	2,991	12.1	.69 - 2.9	165	307	686	5,082
	100	79	146	326	2,413		6.9	134	248	553	4,101
200	75	106	196	437	3,241	13.8	5.2	179	333	743	5,507
	13 - 55	119	220	491	3,643		.89 - 3.8	202	374	835	6,190
250†	120	93	173	387	2,868	17.2†	8.3	159	295	657	4,873
	85	129	240	535	3,967		5.9	219	408	909	6,741
300	15 - 67	140	260	579	4,295	20.0	1.03 - 4.6	238	441	984	7,298
	125	126	235	524	3,884		8.6	215	399	890	6,599
350**	100	149	276	617	4,573	24.1**	6.9	253	470	1,048	7,769
	18 - 80	161	299	667	4,947		1.24 - 5.5	274	508	1,134	8,405
425**	200	161	298	666	4,934	29.3**	8.6	273	507	1,131	8,383
	20 - 92	182	339	755	5,599		1.38 - 6.3	310	575	1,283	9,513
250†	25 - 125	225	417	931	6,903	17.2†	1.7 - 8.6	382	709	1,582	11,729
300	30 - 125	267	496	1,107	8,207	20.0	2.1 - 8.6	454	843	1,881	13,944
350**	35 - 125	—	—	—	9,511	24.1**	2.4 - 8.6	—	—	—	16,159
425**	43 - 125	—	—	—	11,467	29.3**	3.0 - 8.6	—	—	—	19,482

* GD-10F not available above 3/4" (20 mm).

** 2" (50 mm) GD-10 valve maximum inlet pressure is 425 psi (30 bar).

† GD-10F has a maximum inlet pressure of 250 psi (17 bar).

GD-10F Dimensions and Weights

Symbol	Connection Size							
	in	mm	in	mm	in	mm	in	mm
	1/4	8	3/8	10	1/2	15	3/4	20
L	2-3/4	70	2-3/4	70	2-3/4	70	3-7/8	98
H	9-3/8	238	9-3/8	238	9-3/8	238	10-7/8	276
H ₁	5-3/4	146	5-3/4	146	5-3/4	146	6-3/8	162
Wt, lb (kg)	2-1/2 (1.2)	2-1/2 (1.2)	4-1/2 (2.0)	4-1/2 (2.0)				
C _v	1.4				2.6			

AF-10 Dimensions and Weights

Symbol	Connection Size									
	in	mm	in	mm	in	mm	in	mm	in	mm
	1/4	8	3/8	10	1/2	15	3/4	20	1	25
L	2-3/4	70	2-3/4	70	2-3/4	70	3-7/8	98	4-3/4	121
H	6-3/8	162	6-3/8	162	6-3/8	162	7	178	11-3/8	289
H ₁	5-3/4	146	5-3/4	146	5-3/4	146	6-3/8	162	10	254
Wt, lb (kg)	2 (.9)					3 (1.4)				

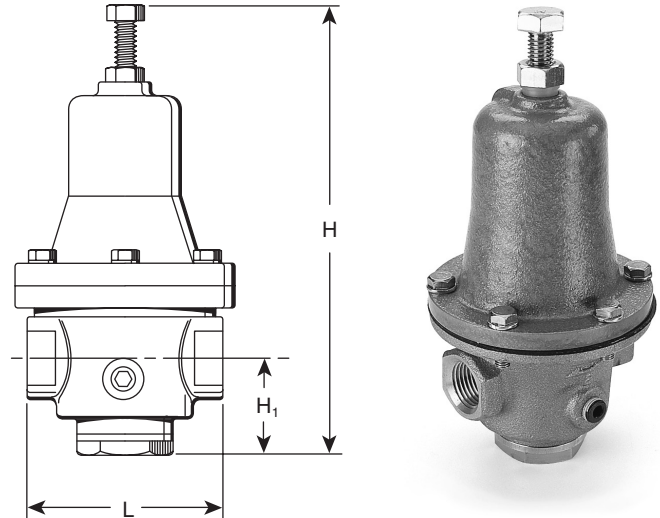


For Non-Potable Water Service Only

An industrial-grade valve for non-potable water systems, the GD-24 is lightweight, compact and economical. Comes with screwed connections and will mount in any position. Requires no external sensing lines. Bronze body and high temperature diaphragm suitable for hot or cold process water service. Valve, seat and diaphragm are renewable in line. External adjusting screw with lock. Six sizes, 1/2" through 2". ANSI Class IV shutoff.

Illegal for potable water service per SDWA section 1417 (As Amended).

For a fully detailed certified drawing, refer to CDY #1023.



GD-24 Specifications								
Application	Maximum Pressure psig (bar)	Reduced Pressure Range psig (bar)	Minimum Differential psig (bar)	Maximum Temperature °F (°C)	Materials			
					Body	Main Valve	Valve Seat	Diaphragm
Hot or Cold Water	20 - 230 (1.3 - 16)	7 - 80 (.48 - 5.5)	7 (.48)	175* (79)	Cast Bronze ASTM 584		Stainless Steel AISI 304	NBR**

*With Viton® diaphragm maximum temperature is 210°F (99°C).

**Viton optional.

GD-24 Capacities—Water														
ΔP	gpm						ΔP	l/min						
	Connection Size							Connection Size						
	in							mm						
DP (psig)	1/2	3/4	1	1-1/4	1-1/2	2	DP (bar)	15	20	25	32	40	50	
7	4	5	8	11	19	26	0.5	15	20	30	40	70	100	
10	5	6	9	13	22	32	0.7	18	24	36	48	84	120	
15	6	8	12	15	27	39	1.0	22	29	44	59	103	147	
25	8*	10	15	20	35	50	1.7	30*	38	57	76	132	189	
50	11	14*	21	28	49	71	3.4	40	53*	80	107	187	268	
75	13	17	26*	35	61*	87	5.2	49	66	98*	131	231*	328	
100	15	20	30	40*	70	100*	6.9	57	76	114	151*	265	378*	
125	17	22	34	45	78	112	8.6	63	85	127	169	296	423	
150	18	24	37	49	86	122	10.3	70	93	139	185	325	464	
175	20	26	40	53	93	132	12.0	75	100	150	200	351	501	
200	21	28	42	57	99	141	13.8	80	107	161	214	375	535	

*At flows greater than this, velocities will exceed 10 ft/sec and pipe erosion could occur.

NOTE: Maximum pressure reduction ratio 10:1.

GD-24 Dimensions and Weights												
Symbol	Connection Size											
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
	1/2	15	3/4	20	1	25	1-1/4	32	1-1/2	40	2	50
L	3-1/4	83	3-1/2	89	4	102	4-3/4	121	6	152	7-1/4	184
H ₁	1-3/4	45	2	51	2-1/2	64	3-1/4	83	3-1/2	89	4-1/2	115
H	7-3/4	197	8-1/2	216	9-5/8	245	11-1/4	286	13-1/2	343	16	407
Wt, lb (kg)	4	(1.8)	5-1/4	(2.4)	7-1/4	(3.3)	10-3/8	(4.7)	18	(8.2)	31-1/2	(14.3)
C _v	1.5		2		3		4		7		10	

For Steam, Air and Non-Corrosive Gases

The GD-30 is a compact, high performance direct acting valve. Economical to buy and use, it's ideal for those low to moderate flow applications where accuracy of +/-10% is acceptable. The GD-30 is well suited for laundry and dry cleaning equipment, hospital equipment, tire molds, humidifiers, small heaters and applications in food processing. It provides tight shutoff for dead-end service on steam. Turndown ratio is 10:1 and ANSI Class IV Shutoff.

For a fully detailed certified drawing, refer to:

GD-30 (bronze only) CDY #1038

GD-30S (stainless steel) CDY #1089

GD-30/30S Specifications

Model Number	Inlet Pressure psig (barg)	Reduced Pressure psig (barg)	Spring Color	Minimum Differential psig (barg)	Application	Maximum Temp. °F (°C)	Materials		
							Body	Valve/Seat	Bellows
GD-30	15 - 250 (1 - 17)	3 - 15 (.21 - 1.0) 7 - 60 (0.5 - 4.0)	Yellow Blue Green	7 (.48)	Steam, Air, Non-Corrosive Gases	410 (210)	Cast Bronze ASTM B584	Stainless Steel AISI 440/304	Phosphor Bronze ASTM B103*
GD-30S	15 - 300 (1 - 20)	50 - 140 (3.4 - 9.6)			Steam, Air, Non-Corrosive Gases	430 (220)	Stainless Steel AISI 316		Stainless Steel AISI 316L

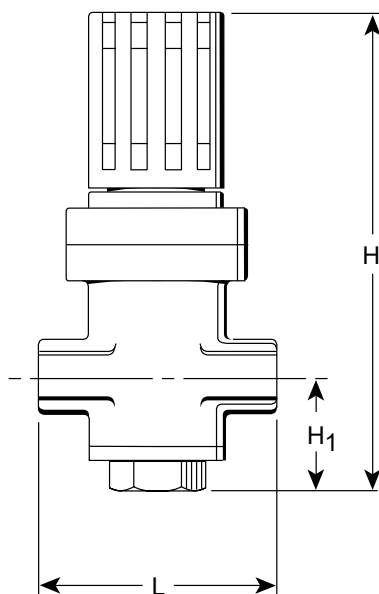
*Stainless steel optional

GD-30/30S Dimensions and Weights

Symbol	Connection Size									
	in	mm	in	mm	in	mm	in	mm	in	mm
	1/2	15	3/4	20	1	25	1-1/2*	40	2*	50
L	3-1/8	80	3-3/8	85	3-3/4	95	5-1/2	140	5-7/8	150
H ₁	2	47	2	47	2	47	3	77	3	77
H	7-1/2	191	7-1/2	191	7-1/2	191	12-1/8	307 1	2-1/8	307
Weight lb (kg)	4-1/4 (1.9)		4-1/4 (1.9)		4-1/2 (2.0)		21-3/8 (9.7)		22 (10)	
C _v	1.3		1.5		2.5		5.6		8.5	

NOTE: GD-30 capacities cannot be determined with a formula—consult capacity tables. Reference note under formula key on page 275.

*GD-30S available in 1/2", 3/4", and 1" only.



GD-30 Capacities—Steam

	lb/hr							kg/hr							
	Inlet	Outlet	Connection Size					Inlet	Outlet	Connection Size					
			in							mm					
	psig		1/2	3/4	1	1-1/2		2	barg		15	20	25	40	50
	C _v Factor		1.3	1.5	2.5	5.6		8.5	C _v Factor		1.3	1.5	2.5	5.6	8.5
GD-30S Only	15	7	49	56	92	198	297	1.0	.5	22	25	42	90	135	
	20	13	53	61	105	216	331	1.4	.9	24	28	48	98	150	
		7	42	55	63	180	264		.5	19	25	35	82	120	
	30	23	62	71	112	242	408	2.0	1.6	28	32	51	110	185	
		15	53	60	101	209	309		1.0	24	27	46	95	140	
		3	33	40	60	139	216		.2	15	18	27	63	98	
	40	32	99	121	187	407	617	2.8	2.2	45	55	85	185	280	
		20	79	97	159	330	517		1.4	36	44	72	150	235	
		4	40	55	77	159	264		.3	18	25	35	72	120	
	50	40	130	143	242	539	837	3.4	2.8	59	65	110	245	380	
		20	99	115	187	407	628		1.4	45	52	85	185	285	
		5	48	62	88	193	297		.3	22	28	40	88	135	
	60	48	137	154	265	584	899	4.0	3.3	62	70	120	265	408	
		40	150	165	289	617	969		2.8	68	75	131	280	440	
		18	90	104	170	374	584		1.2	41	47	77	170	265	
		6	55	73	99	220	331		.4	25	33	45	100	150	
	80	64	176	205	342	738	1168	5.5	4.4	80	93	155	335	530	
		54	187	225	353	782	1201		3.7	85	102	160	355	545	
		23	121	137	220	489	749		1.6	55	62	100	222	340	
		8	60	77	108	231	363		.5	27	35	49	105	165	
	100	80	203	242	397	863	1355	6.9	5.5	92	110	180	392	615	
		66	225	262	437	958	1465		4.5	102	119	198	435	665	
		40	198	231	375	837	1278		2.8	90	105	170	380	580	
		10	68	79	132	297	473		.7	31	36	60	135	215	
	120	96	231	276	452	991	1520	8.3	6.6	105	125	205	450	690	
		70	276	311	518	1168	1818		4.8	125	141	235	530	825	
		45	240	267	450	980	1509		3.1	109	121	204	445	685	
		12	110	121	198	462	705		.8	50	55	90	210	320	
150	120	287	333	551	1212	1862	10.3	8.3	130	151	250	550	845		
	85	364	421	705	1531	2369		5.9	165	191	320	695	1075		
	55	298	353	595	1278	2005		3.8	135	160	270	580	910		
	15	132	165	254	562	848		1.0	60	75	115	255	385		
180	140	408	485	794	1719	2677	12.4	9.7	185	220	360	780	1215		
	115	430	507	860	1829	2832		8.0	195	230	390	830	1285		
	70	386	430	739	1619	2501		4.8	175	195	335	735	1135		
	18	165	187	309	683	1035		1.2	75	85	140	310	470		
200	140	461	518	871	1983	3063	13.8	9.7	209	235	395	900	1390		
	115	474	540	904	2005	3085		8.0	215	245	410	910	1400		
	80	430	496	827	1818	2810		5.5	195	225	375	825	1275		
	20	209	242	386	848	1300		1.4	95	110	175	385	590		
225	140	485	573	948	2060	3195	15.5	9.7	220	260	430	935	1450		
	115	496	584	961	2071	3207		8.0	225	265	436	940	1455		
	85	463	540	904	1983	3063		5.9	210	245	410	900	1390		
	23	254	298	496	1079	1675		1.6	115	135	225	490	760		
250	140	525	606	1014	2226	3438	17.2	9.7	238	275	460	1010	1560		
	120	551	584	1038	2248	3471		8.3	250	265	471	1020	1575		
	70	463	529	893	1939	2997		4.8	210	240	405	880	1360		
	25	276	320	529	1146	1796		1.7	125	145	240	520	815		
275	140	529	613	1023	—	—	18.9	9.7	240	278	464	—	—		
	120	529	613	1023	—	—		8.3	240	278	464	—	—		
	70	470	542	902	—	—		4.8	213	246	409	—	—		
	28	295	344	562	—	—		1.9	134	156	255	—	—		
300	140	529	613	1023	—	—	20.0	9.7	240	278	464	—	—		
	100	529	613	1023	—	—		6.9	240	278	464	—	—		
	70	478	551	926	—	—		4.8	217	250	420	—	—		
	30	309	359	595	—	—		2.7	140	163	270	—	—		

NOTE: For air capacities scfm, multiply steam capacities (lb/hr) by 0.36. For air capacities m3/hr, multiply steam capacities (kg/hr) by 1.35. Maximum pressure reduction ratio 10:1.

Pressure and
Temperature Controls

For Steam, Air and Non-Corrosive Gas Service

The GD-45 is a compact, high-performance, direct-acting valve. Inexpensive to buy and use, it is ideal for those moderate flow applications that do not justify the higher cost of pilot-controlled valves.

The GD-45 is well-suited for laundry and dry-cleaning equipment, hospital equipment, tire molds, humidifiers, small heaters, and applications in food processing. It provides tight, quick, easy installation.

Quick, easy installation

- Lightweight and compact
- Piping supports the valve of ductile iron for greater durability and higher inlet pressure
- Screwed connections
- No external sensing lines or parts needed
- Maximum turndown ratio 10:1
- ANSI Class IV shutoff

Simple selection

- 1/2", 3/4" and 1"
- Match pipe size normally
- Three pressure range springs (for best control when ranges overlap, use smaller range spring)

Long life/easy maintenance

- Highly resilient phosphor-bronze bellows
- Hardened stainless-steel working parts
- Integral strainer (removable for cleaning) for protection from wear or dirt
- Teflon gaskets used at all joints for improved leakage prevention

For a fully detailed certified drawing, refer to CDY #1090.

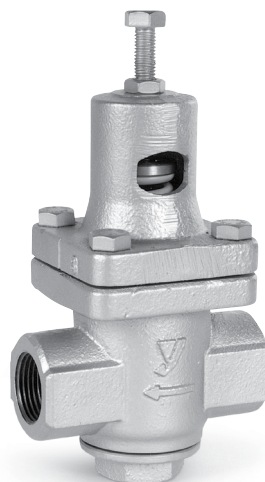
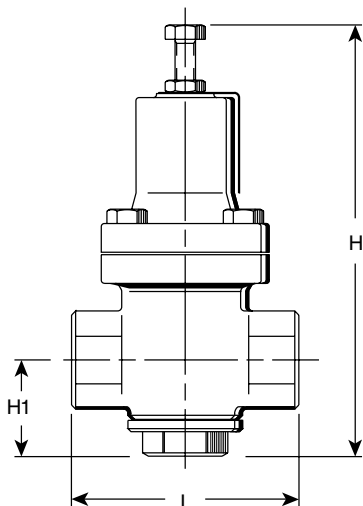
GD-45 Specifications

Service	Inlet Pressure psig (barg)	Reduced Pressure psig (barg)	Minimum Differential psig (barg)	Maximum Temperature °F (°C)	Materials		
					Body	Valve/Seat	Bellows
Steam, Air Non-Corrosive Gases	15 - 300 (1 - 20)	3 - 15 (.21 - 1.0) Yellow	7 (.48)	450 (232)	ASTM A536 Ductile Iron	Hardened Stainless Steel AISI 420	Phosphor Bronze ASTM B103
		7 - 60 (0.5 - 4.0) Blue					
		50 - 140 (3.4 - 9.6) Green					

GD-45 Dimensions and Weights

Symbol	Connection Size					
	in	mm	in	mm	in	mm
	1/2	15	3/4	20	1	25
L	4-3/8	111	4-3/8	111	4-3/8	111
H _i	1-7/8	47	1-7/8	47	1-7/8	47
H	8-1/2	216	8-1/2	216	8-1/2	216
Wt, lb (kg)	7 (3.2)					
Cv	1.3		1.5		2.5	

NOTE: GD-45 capacities cannot be determined with a formula—consult capacity tables. Reference note under formula key on page 275.



GD-45 Capacities—Steam

lb/hr						kg/hr				
Inlet	Outlet	Connection Size				Inlet	Outlet	Connection Size		
		in						mm		
psig		1/2	3/4	1		barg		15	20	25
C _v Factor		1.3	1.5	2.5		C _v Factor		1.3	1.5	2.5
15	7	49	56	92	1.0	.5	22	25	42	
20	13	53	61	105	1.4	.9	24	28	48	
	7	42	55	63		.5	19	25	35	
30	23	62	71	112	2.0	1.6	28	32	51	
	15	53	60	101		1.0	24	27	46	
	3	33	40	60		.2	15	18	27	
40	32	99	121	187	2.8	2.2	45	55	85	
	20	79	97	159		1.4	36	44	72	
	4	40	55	77		.3	18	25	35	
50	40	130	143	242	3.4	2.8	59	65	110	
	20	99	115	187		1.4	45	52	85	
	5	48	62	88		.3	22	28	40	
60	48	137	154	265	4.0	3.3	62	70	120	
	40	150	165	289		2.8	68	75	131	
	18	90	104	170		1.2	41	47	77	
	6	55	73	99		.4	25	33	45	
80	64	176	205	342	5.5	4.4	80	93	155	
	54	187	225	353		3.7	85	102	160	
	23	121	137	220		1.6	55	62	100	
	8	60	77	108		.5	27	35	49	
100	80	203	242	397	6.9	5.5	92	110	180	
	66	225	262	437		4.5	102	119	198	
	40	198	231	375		2.8	90	105	170	
	10	68	79	132		.7	31	36	60	
120	96	231	276	452	8.3	6.6	105	125	205	
	70	276	311	518		4.8	125	141	235	
	45	240	267	450		3.1	109	121	204	
	12	110	121	198		.8	50	55	90	
150	120	287	333	551	10.3	8.3	130	151	250	
	85	364	421	705		5.9	165	191	320	
	55	298	353	595		3.8	135	160	270	
	15	132	165	254		1.0	60	75	115	
180	140	408	485	794	12.4	9.7	185	220	360	
	115	430	507	860		8.0	195	230	390	
	70	386	430	739		4.8	175	195	335	
	18	165	187	309		1.2	75	85	140	
200	140	461	518	871	13.8	9.7	209	235	395	
	115	474	540	904		8.0	215	245	410	
	80	430	496	827		5.5	195	225	375	
	20	209	242	386		1.4	95	110	175	
225	140	485	573	948	15.5	9.7	220	260	430	
	115	496	584	961		8.0	225	265	436	
	85	463	540	904		5.9	210	245	410	
	23	254	298	496		1.6	115	135	225	
250	140	525	606	1 014	17.2	9.7	238	275	460	
	120	551	584	1 038		8.3	250	265	471	
	70	463	529	893		4.8	210	240	405	
	25	276	320	529		1.7	125	145	240	
300	140	528	616	1 023	20	9.7	240	280	465	
	120	551	627	1 038		8.3	250	285	477	
	70	484	550	913		4.8	220	250	415	
	30	319	352	583		2.0	145	160	265	

NOTE: For air capacities scfm, multiply steam capacities (lb/hr) by 0.36. For air capacities m³/hr, multiply steam capacities (kg/hr) by 1.35. Maximum pressure reduction ratio 10:1.

Pressure and
Temperature Controls

For Air, Water, Non-Corrosive and Non-Viscous Liquids

The GD-200/200H offers high capacity and highly accurate control with a large, cupped diaphragm for a long stroke. Compact and rugged, the GD-200's composition valve and stainless steel seat mean high performance over a long service life. Well suited to non-viscous liquid pressure reduction, the valve is widely applied in domestic water

applications, construction equipment, irrigation, tank car loading and industrial or commercial air conditioning. Upstream variations do not affect balanced pressure valve, and composition disc assures tight shutoff. Turndown ratio is 10:1, and sizes range from 2" through 6". ANSI Class IV Shutoff.

GD-200/200H Specifications

Model Number	Pressure			Spring Color	Application	Max. Temp. °F (°C)	Min. Diff. psig (bar)	Materials				
	Inlet psig (bar)	Reduced psig (bar)						Body	Main Valve	Valve Seat	Diaphragm	Connection
		2" - 3" (50 - 80 mm)	4" - 6" (100 - 150 mm)									
GD-200	150 (10)	7 - 36 (.48 - 2.5) 37 - 100 (2.5 - 6.9)	7 - 36 (.48 - 2.5) 37 - 72 (2.5 - 5.0)	Yellow	Liquid Gas	175 (79)**	7 (.48)	Ductile Iron ASTM A536	NBR	Stainless Steel AISI 304	NBR***	ANSI 150 lb. Flg.
GD-200H	300 (20)	*72 - 130 (4.9 - 8.8)	*72 - 108 (4.9 - 7.3)	Black								ANSI 300 lb. Flg.

*This spring range for GD-200H only.

**With Viton® diaphragm maximum temperature is 210°F (99°C).

***Viton optional.

GD-200/200H Capacities—Air

scfm								m3/hr							
Inlet	Outlet	Connection Size						Inlet	Outlet	Connection Size					
		in								mm					
psig		2	2-1/2	3	4	5	6	bar		50	65	80	100	125	150
15	8	216	377	485	917	1,011	1,456	1.03	0.55	366	641	824	1,557	1,718	2,473
20	13	235	412	530	1,000	1,103	1,589	1.38	0.90	400	700	900	1,699	1,874	2,699
	7	305	534	686	1,296	1,429	2,058		0.48	518	907	1,166	2,202	2,428	3,497
25	18	254	444	570	1,077	1,188	1,711	1.72	1.24	431	754	969	1,831	2,019	2,907
	7	374	655	842	1,591	1,755	2,527		0.48	636	1,113	1,431	2,703	2,981	4,293
30	23	270	473	609	1,149	1,268	1,826	2.07	1.59	459	804	1,034	1,953	2,154	3,102
	7	440	770	990	1,870	2,063	2,970		0.48	748	1,308	1,682	3,178	3,505	5,047
40	32	321	561	722	1,363	1,503	2,165	2.76	2.21	545	954	1,226	2,316	2,554	3,678
	20	476	833	1,071	2,024	2,232	3,214		1.38	459	804	1,034	1,953	2,154	3,102
	7 - 12	531	929	1,194	2,256	2,488	3,583		.48 - .83	902	1,578	2,029	3,833	4,227	6,087
50	40	389	681	875	1,654	1,824	2,626	3.45	2.76	661	1,157	1,487	2,810	3,099	4,462
	30	527	922	1,185	2,239	2,469	3,555		2.07	809	1,416	1,820	3,438	3,792	5,461
	7 - 17	628	1,099	1,413	2,668	2,943	4,238		.48 - 1.17	1,067	1,867	2,400	4,534	5,000	7,200
60	48	457	800	1,029	1,943	2,143	3,086	4.14	3.31	777	1,360	1,748	3,302	3,642	5,244
	35	628	1,099	1,413	2,669	2,944	4,239		2.41	895	1,566	2,014	3,803	4,195	6,041
	7 - 22	725	1,269	1,631	3,081	3,398	4,893		.48 - 1.5	1,232	2,155	2,771	5,234	5,773	8,313
75	60	559	979	1,258	2,377	2,621	3,775	5.17	4.14	950	1,663	2,138	4,038	4,453	6,413
	45	754	1,319	1,696	3,204	3,534	5,089		3.10	1,067	1,867	2,401	4,535	5,001	7,202
	7 - 30	870	1,523	1,959	3,699	4,080	5,876		.48 - 2.1	1,479	2,588	3,328	6,285	6,932	9,983
100	80	729	1,275	1,640	—	—	—	6.89	5.52	1,238	2,167	2,786	—	—	—
	60	980	1,715	2,205	4,166	4,594	6,616		4.14	1,281	2,241	2,882	5,444	6,004	8,646
	10 - 42	1,113	1,948	2,504	4,730	5,217	7,513		.69 - 2.9	1,891	3,309	4,255	8,037	8,864	12,765
125	100	898	1,572	2,021	—	—	—	8.62	6.89	1,526	2,670	3,433	—	—	—
	70	1,206	2,111	2,714	5,317	5,864	8,444		5.17	1,665	2,914	3,747	7,077	7,806	11,241
	13 - 55	1,356	2,372	3,050	5,762	6,355	9,151		.89 - 3.8	2,303	4,031	5,182	9,789	10,796	15,547
150	100	1,331	2,329	2,995	—	—	—	10.34	6.89	2,261	3,957	5,088	—	—	—
	80	1,517	2,655	3,414	—	—	—		5.52	2,049	3,586	4,610	—	—	—
	15 - 67	1,598	2,797	3,596	6,793	7,492	10,788		1.03 - 4.6	2,715	4,752	6,110	11,541	12,729	18,329
180	100	1,772	3,100	3,986	—	—	—	12.41	6.89	3,010	5,268	6,773	—	—	—
	90	1,848	3,235	4,159	—	—	—		6.21	2,578	4,512	5,801	—	—	—
	18 - 80	1,889	3,306	4,251	8,030	8,856	12,753		1.24 - 5.5	3,210	5,618	7,223	13,643	15,047	21,668
200	100	2,044	3,577	4,598	—	—	—	13.79	6.89	3,472	6,077	7,813	—	—	—
	20 - 92	2,083	3,646	4,688	8,855	9,766	14,063		1.38 - 6.3	3,540	6,195	7,965	15,044	16,593	23,894
250	25 - 100	2,569	4,495	5,779	10,917	12,041	17,338	17.24	1.72 - 6.9	4,364	7,637	9,819	18,548	20,457	29,458
300	25 - 100	3,054	5,344	6,871	12,979	14,315	20,613	20.00	1.72 - 6.9	5,188	9,080	11,674	22,051	24,321	35,022

NOTE: Maximum pressure reduction ratio 10:1.

NOTES: Available in sizes below 2" upon request. Differential valve (GD-21) available upon request.

Designs, materials, weights and performance ratings are approximate and subject to change without notice. Visit armstronginternational.com for up-to-date information.

GD-200/200H



GD-200/200H Capacities—Water

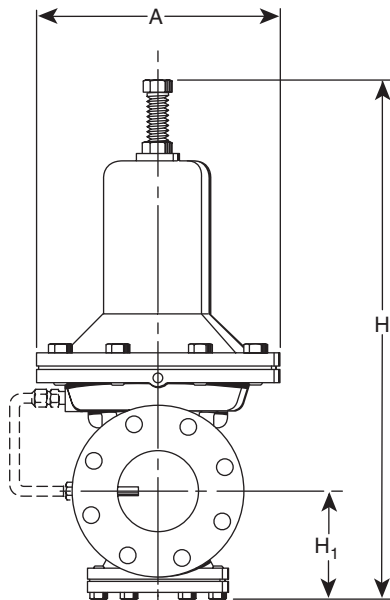
gpm								l/min						
ΔP	Connection Size							ΔP	Connection Size					
	in								mm					
DP (psig)	2	2-1/2	3	4	5	6		DP (bar)	50	65	80	100	125	150
7	42	74	95	180	198	286	0.5	160	280	361	681	751	1,082	
10	51	89	114	215	237	342	0.7	192	335	431	814	898	1,293	
15	62	108	139	263	290	418	1.0	235	411	528	997	1,100	1,583	
20	72	125	161	304	335	483	1.4	271	474	609	1,151	1,270	1,828	
25	80	140*	180	340	375	540	1.7	303	530*	681	1,287	1,420	2,044	
35	95*	166	213*	402*	444	639	2.4	360*	627	806*	1520*	1,680	2,419	
50	113	198	255	481	530*	764	3.4	428	749	964	1,820	2,006*	2,891	
75	139	242	312	589	650	900*	5.2	525	918	1,180	2,229	2,459	3,407*	
100	160	280	360	680	750	1,080	6.9	606	1,060	1,363	2,574	2,839	4,088	
125	179	313	402	760	839	1,207	8.6	677	1,185	1,524	2,878	3,174	4,571	
150	196	343	441	833	919	1,323	10.0	742	1,298	1,669	3,153	3,477	5,007	

*At flows greater than this, velocities will exceed 10 ft/sec and pipe erosion could occur.
NOTE: Minimum flow is 1.3 gpm (4.9 l/min).

GD-200/200H Dimensions and Weights

Size		GD-200 Face-to-Face		GD-200H Face-to-Face		A		H		H ₁		C _v	Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		lb	kg
2	50	7-5/8	195	7-7/8	200	6	152	16-1/4	415	3-1/8	81	16	43	19.2
2-1/2	65	10-5/8	270	10-7/8	277	7	178	21-1/2	550	4-1/16	105	28	88	40.0
3	80	10-5/8	270	11-1/8	283	7-1/2	191	22-9/16	577	4-9/16	120	36	97	43.7
4	100	12-1/8	308	12-3/4	342	9	229	25-1/6	637	5-1/4	135	68	154	70.0
5	125	15	380	15-7/8	403	10	254	33	839	6-1/2	169	75	317	144.0
6	150	15-3/4	400	16-5/8	422	11	280	35-9/16	908	7-1/2	194	108	381	173.0

For a fully detailed certified drawing, refer to:
GD-200 CD #2106
GD-200H CD #2107



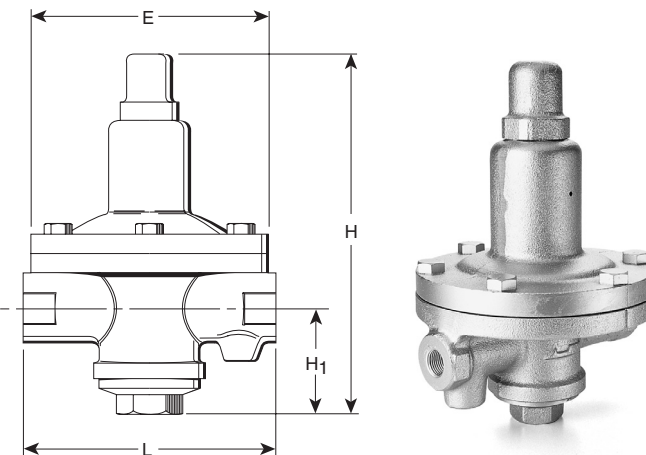


GD-6N (Steam), GD-6 (Liquid, Gas)

For Steam, Air and Water

The GD-6N and GD-6 are compact, direct acting diaphragm valves ideal for low-flow applications, including laundry/dry cleaning equipment, hospital equipment, tire/plastic molds and food processing. Lightweight and compact, the valves require no external sensing lines or additional parts. External adjusting screw with locking nut and cover make for quick, easy setting and adjustment. Tight shutoff for dead-end service. Removable stainless steel diaphragm, hardened stainless steel working parts (6N), integral removable strainer (6N) and in-line renewable valve and seat. Available in 3/8", 1/2", 3/4" and 1" sizes with a choice of two set pressure spring ranges.

For a fully detailed certified drawing, refer to CDY #1040.



GD-6N/GD-6 Specifications

Model	Application	Inlet Pressure psig (bar)	Reduced Pressure psig (bar)	Spring Color	Minimum Differential psig (bar)	Maximum Temperature °F (°C)	Materials			
							Body	Main Valve	Valve Seat	Diaphragm
GD-6N	Steam	15 - 150 (1 - 10)	3 - 15 (.21 - 1.0) and 15 - 60 (1 - 4)	Yellow Stripe	7 (.48)	450 (232)	Cast Iron ASTM A278	Stainless Steel AISI 304	Stainless Steel AISI 420	Stainless Steel AISI 304
GD-6	Liquid Gas			Yellow/Blue Stripe		175 (79)		Brass (w/Disc) ASTM B16	Bronze ASTM B584	

GD-6N Capacities—Steam

lb/hr						kg/hr					
Inlet	Outlet	Connection Size				Inlet	Outlet	Connection Size			
		in						mm			
psig		3/8	1/2	3/4	1	bar		10	15	20	25
15	3 - 8	18	25	51	76	1.0	.2 - .6	8.2	11.3	23.1	34.5
20	13	12	17	34	51	1.4	.9	5.4	7.7	15.4	23.1
	3 - 10	21	30	59	89		.2 - .7	9.5	13.6	26.8	40.4
25	18	14	20	41	61	1.7	1.2	6.4	9.1	18.6	27.7
	15	19	28	55	83		1.0	8.6	12.7	24.9	37.6
3 - 12	24	34	68	102	.2 - .8		10.9	15.4	30.8	46.3	
30	23	16	23	47	71	2.1	1.6	7.3	10.4	21.3	32.2
	20	21	30	59	89		1.4	9.5	13.6	26.8	40.4
	3 - 15	27	38	76	115		.2 - 1	12.2	17.2	34.5	52.2
40	32	21	30	60	90	2.8	2.2	9.5	13.6	27.2	40.8
	25	28	40	79	119		1.7	12.7	18.1	35.8	54.0
	4 - 20	33	47	94	140		.3 - 1.4	15.0	21.3	42.6	63.5
50	40	25	36	73	109	3.4	2.8	11.3	16.3	33.1	49.4
	32	33	47	94	141		2.2	15.0	21.3	42.6	64.0
	5 - 25	39	55	111	166		.3 - 1.7	17.7	24.9	50.3	75.3
60	48	30	43	55	128	4.1	3.3	13.6	19.5	24.9	58.1
	40	37	53	107	160		2.8	16.8	24.0	48.5	72.6
	6 - 30	45	64	128	192		.4 - 2.1	20.4	29.0	58.1	87.1
75	60	37	52	104	156	5.2	4.1	16.8	23.6	47.2	70.8
	48	47	67	135	202		3.3	21.3	30.4	61.2	91.6
	7 - 37	54	77	153	230		.5 - 2.6	24.5	34.9	69.4	104.3
100	65	61	87	173	260	6.9	4.5	27.7	39.5	78.5	117.9
	10 - 50	69	98	196	294		.7 - 3.4	31.3	44.5	88.9	133.4
125	13 - 60	84	119	239	358	8.6	.9 - 4.1	38.1	54.0	108.4	162.4
150	15 - 60	99	142	283	425	10.3	1 - 4.1	44.9	64.4	128.4	192.8

NOTE: For air capacities scfm, multiply steam capacities (lb/hr) by 0.36.
For air capacities m3/hr, multiply steam capacities (kg/hr) by 1.35.
Maximum pressure reduction ratio 10:1.
ANSI Class IV Shutoff.

GD-6N/GD-6 Dimensions and Weights

Symbol	Connection Size							
	in	mm	in	mm	in	mm	in	mm
	3/8	10	1/2	15	3/4	20	1	25
L	6-1/2	165	6-1/2	165	7-1/4	185	7-1/4	185
H	9-1/2	237	9-1/2	237	10-1/4	261	10-1/4	261
H ₁	2-1/4	57	2-1/4	57	3	76	3	76
E	6-1/8	155	6-1/8	155	7	175	7	175
Wt lb (kg)	12 (5.5)		12 (5.5)		18 (8.2)		18 (8.2)	
C _v	.35		.5		1.0		1.5	

GD-6 Capacities—Water

gpm					l/min				
ΔP	Connection Size				ΔP	Connection Size			
	in					mm			
psig	3/8	1/2	3/4	1	bar	10	15	20	25
5	.8	1.1	2.2	3.4	.35	3.0	4.2	8.3	12.9
10	1.1	1.6	3.2	4.7	.7	4.2	6.0	12.1	17.8
15	1.4	1.9	3.9	5.8	1.0	5.3	7.2	14.8	22.0
25	1.8	2.5	5.0	7.5	1.7	6.8	9.5	18.9	28.4
50	2.5	3.5	7.1	10.6	3.5	9.5	13.2	26.9	40.1
75	3.0	4.3	8.7	13.0	5.2	11.4	16.3	32.9	49.2
100	3.5	5.0	10.0	15.0	6.9	13.2	18.9	37.9	56.8
125	3.9	5.6	11.2	16.8	8.6	14.8	21.2	42.4	63.6
147	4.2	6.1	12.1	18.2	10.0	15.9	23.1	45.8	68.9

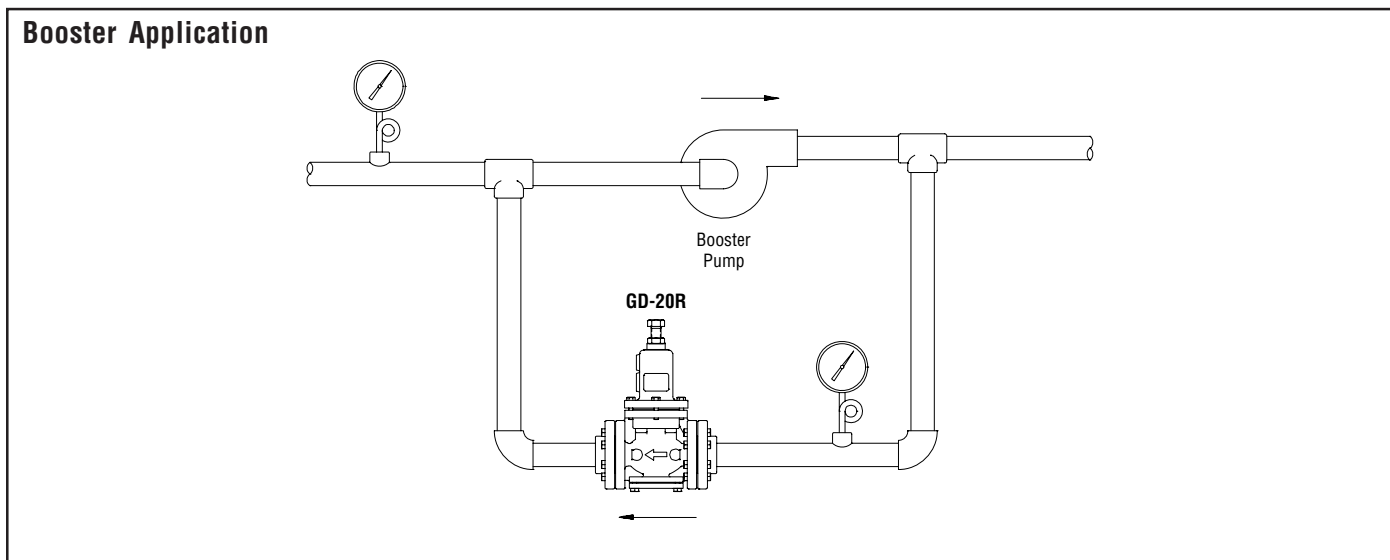
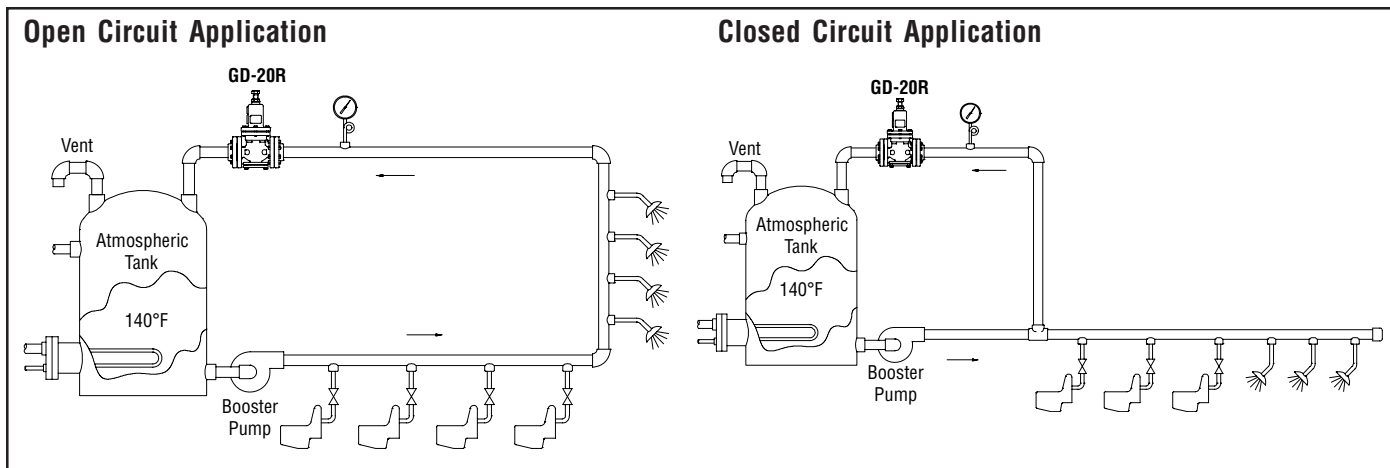


Model GD-20R

Back Pressure Valve for Liquid Service

Installation and Maintenance Instructions

Typical Installations:



This bulletin should be used by experienced personnel as a guide to the installation of the Model GD-20R Back Pressure Valve. Selection or installation of equipment should always be accompanied by competent technical assistance. You are encouraged to contact Armstrong International, Inc. or its local representative for additional information.

Installation Instructions

1. A basket strainer is recommended before the back-pressure valve to reduce the chance of contamination or dirt fouling.
2. Before installing the back-pressure regulating valve, be sure to blow out the pipe line, removing all dirt, pipe scale, chips, etc.
3. Pressure gauges should be installed before the back-pressure valve. Note: pressure gauges should be installed before and after the back-pressure valve on a booster application.
4. Install tight closing valves before and after the back-pressure valve to isolate valve when needed.
5. To prevent air troubles, be sure to install an air vent at air pockets.
6. Piping a by-pass line with a globe valve around the back-pressure valve will allow system operation while the back-pressure valve is being serviced.

Adjustment Procedures

1. Close the isolation valves before and after the back-pressure valve and remove all foreign matter and contaminant via the by-pass line or other path to drain before operation.
2. When adjusting pressure, loosen the lock nut and slowly turn the adjusting screw to prevent hunting, water-hammer, etc., resulting in damage to the valve and other equipment.
3. Regulation should be made while there is flow.
4. To increase initial setting pressure, loosen the lock nut and turn the adjusting screw clock-wise. To decrease the setting pressure, turn the adjusting screw counter-clockwise.
5. For larger sizes, 2 1/2" - 6", adjust the opening of the needle valve on the conductor pipe to prevent fluctuation in the secondary pressure due to an air obstruction.
6. After adjustment, tighten the lock nut to assure a stable set point.

Troubleshooting Guide

Problem	Causes	Solutions
Pressure before the valve fluctuates	The setting is wrong	Check the setting pressure
	The valve size is wrong	Check the size selection
	The strainer is clogged	Disassemble and clean the strainer
	The pressure gauge is out of order	Replace the defective pressure gauge
Leakage is evident	The valve (disc) and the valve seat are contaminated by foreign matter or have defect	Disassemble and clean the valve body and valve seat. If flaw is evident--replace.
	The diaphragm or the O-ring(s) have a flaw	Replace the diaphragm, or the O-ring(s) as needed
Abnormal noise is heard	Air trouble	Install an air vent at air pocket
	Valve is oversized	Change the size to the correct size

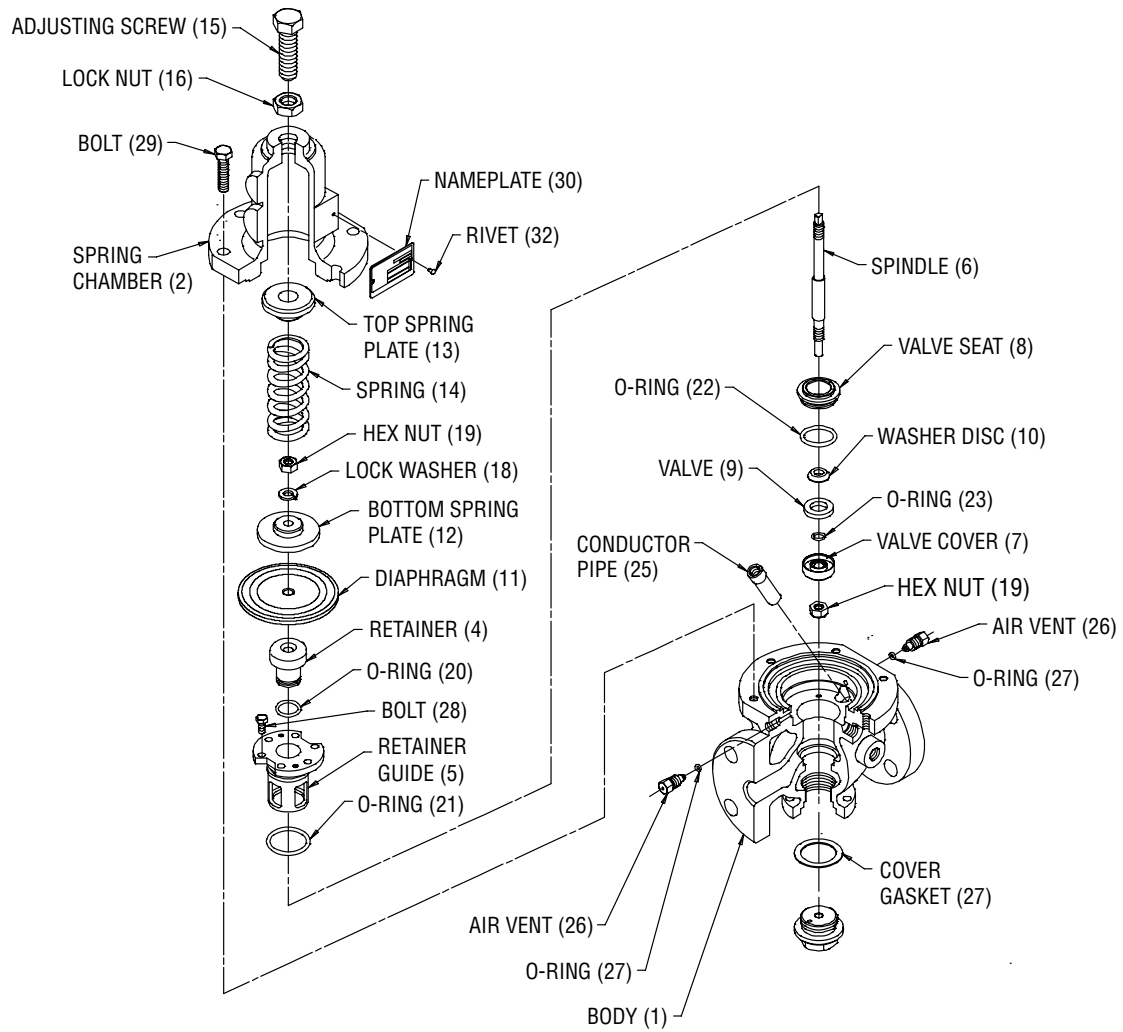
Disassembly

1. Relieve the pipe pressure completely and make sure there is zero pressure.
2. To remove the spring housing, loosen the lock nut and turn the adjusting screw counterclockwise until the load of the adjusting spring is relaxed. (Unload the spring)
3. To remove the diaphragm, hold the spindle and remove the hex nut.
4. To remove the valve, disc and the spindle, loosen and remove the retainer guide clamping bolt and pull the retainer guide.

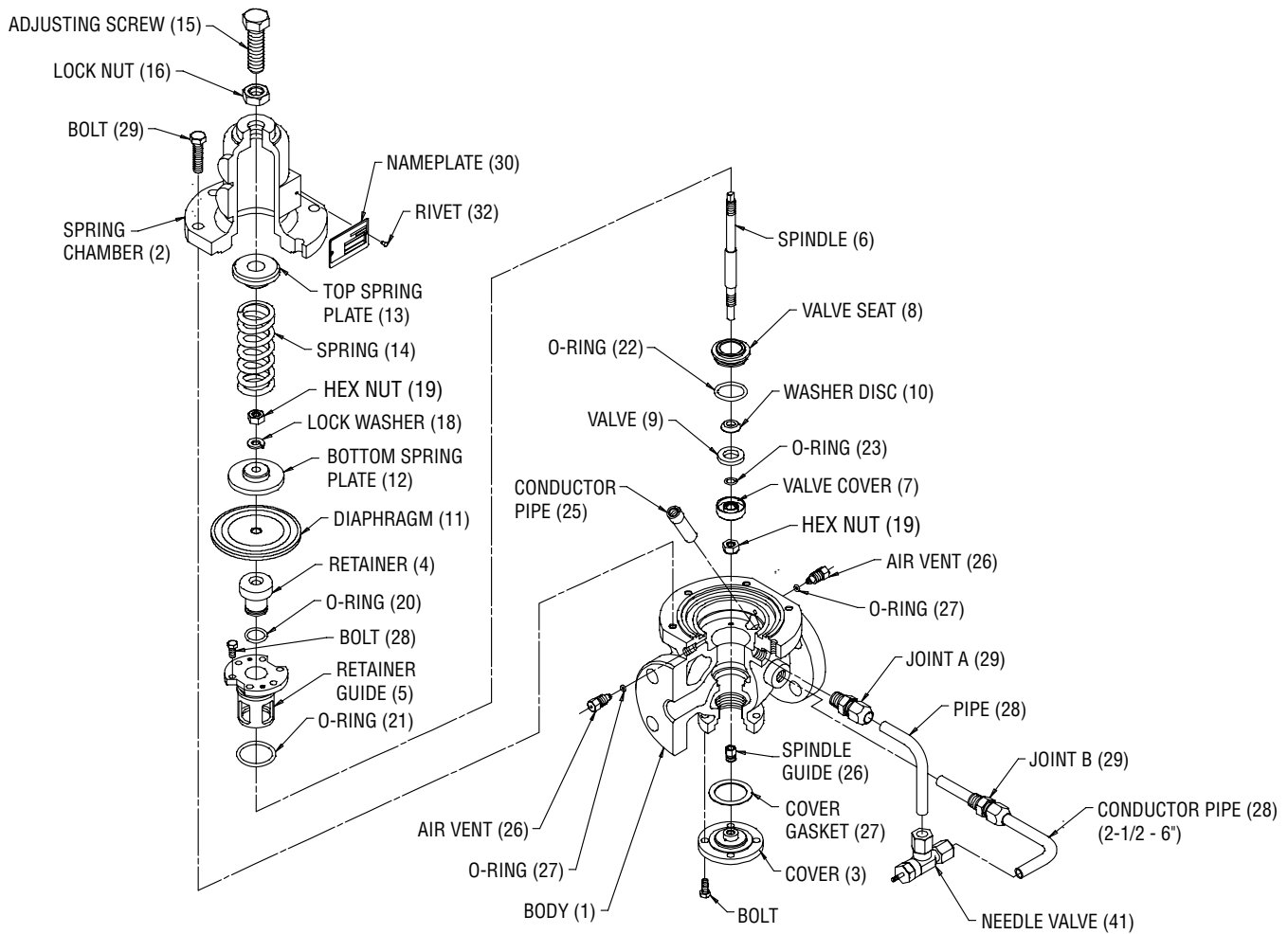
Reassembly

1. Make sure that the diaphragm, valve seat and valve have no flaws.
2. Reassemble the valve in the reverse way of disassembly. However, make sure that the O-ring(s) are installed prior to greasing.
3. After confirming there are no flaws on the O-ring(s), apply silicone grease to the O-ring(s).
4. Install the spring chamber after confirming whether the border of the diaphragm is properly fitted into the groove of the body.

GD-20R 1/2" - 2"



GD-20R 2-1/2" - 6"



Armstrong Pressure/Temperature Controls Group

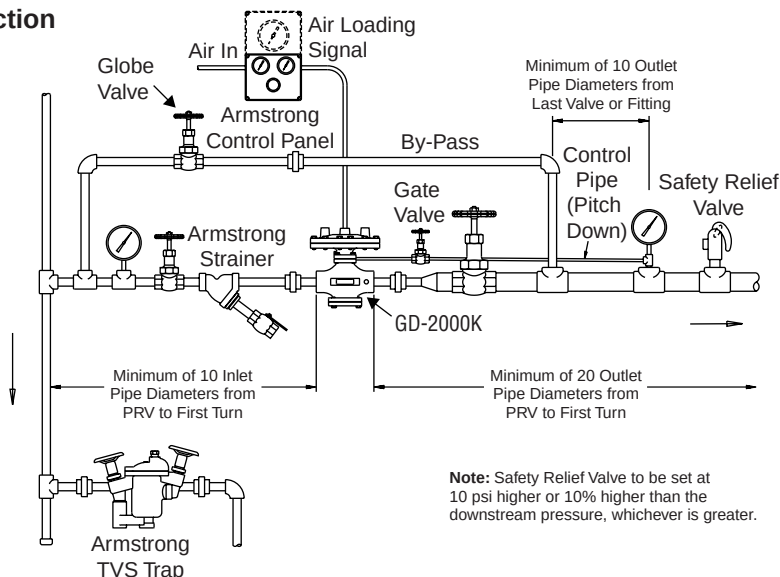
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Model GD-2000K Pressure Reducing Valve Installation and Maintenance Instructions

Typical Single Stage Reduction For Steam



This bulletin should be used by experienced personnel as a guide to the installation of the Model GD-2000K Pressure Reducing Valve. Selection or installation of equipment should always be accompanied by competent technical assistance. You are encouraged to contact Armstrong International, Inc. or its local representative for additional information.

Installation Instructions

1. An Armstrong Inverted Bucket Steam Trap is recommended to drain condensate at inlet of PRV.
2. An Armstrong Y-strainer should be installed before the PRV to reduce the chance of dirt fouling.
3. Pressure gauges should be installed before and after the PRV. The downstream gauge should be installed in or near the control pipe (5/16" O.D.).
4. Control pipe connects into a 1/4" tapping on the side of the main valve. Be certain the control pipe is **pitched away** from the PRV. Erratic control could result if this is not done. Pipe length should be a minimum of 10 outlet pipe diameters.
5. If two stage reduction is needed, a minimum of 20 pipe diameters between valves is recommended.
6. By-pass line around PRV will allow system operation while valve is being serviced.
7. Install PRV with main diaphragm housing up and making sure the flow is in the direction of the arrow on the PRV body.
8. Do not install quick opening and closing valve on the downstream side of PRV.

GD-2000K Startup and Adjustment Procedures

Improper adjustment of the pressure reducing valve may cause hunting, improper control and possible damage to the valve itself. Adjust the valve as follows:

1. Check to make sure all stop valves are closed.
2. Open the stop valve for the trap installed before the pressure reducing valve.
3. Open the stop valve and adjust the valve travel of the by-pass line globe valve. Blowdown the fluid to remove foreign matter. After blowing it down, close the by-pass line globe valve.
4. Set the operating air pressure to "no-pressure".
5. Open the sensing pipe gate valve.
6. Open the stop valve at the outlet side of the pressure reducing valve. Adjust the position of the stop valve so that a little fluid flows.

7. Confirm that the condensate is discharged from the inside of the pressure reducing valve, and slowly open the stop valve on the inlet side.
8. Be sure to allow some bleed-off the operating air pressure to the needle valve. (For standard unit needle valves, the valve opening should be turned 1/2 to 1 turn.)
9. While watching the outlet pressure gauge, increase the operating air pressure (at standard control unit, etc.), until the desired pressure is reached.
10. After the system stabilizes, make any necessary adjustments.
11. When the adjustment is completed, secure the handle of the standard control unit's pressure reducing valve.
12. Check for leakage. Retighten if necessary.

Troubleshooting Guide

Problem	Cause	Solution
Pressure does not reach the desired value.	Incorrect pressure is being used.	Correct the pressure. (Note that the reduced pressure must be 90% or below the inlet pressure (gauge pressure).
	Main diaphragm (11) is damaged.	Remove plug (24-1) and open the by-pass valve. If the fluid runs out from plug, replace the main diaphragm.
	Sensing pipe is clogged.	Disassemble and clean.
	Nominal size is too small for the specifications.	Change the nominal size appropriately.
	Pressure is not adjusted correctly.	Observe the adjustment steps and readjust pressure.
	Strainer installed before pressure reducing valve is clogged.	Disassemble and clean.
	Pressure gauge is faulty.	Replace.
Outlet pressure raises above the specified value.	Check for foreign matter stuck to main valve (5) and main valve seat (6), or for scratches on components.	Set the operating air pressure to "no-pressure". If fluid runs out from tee when it is supplied from inlet side of the pressure reducing valve, clean the main valve and main valve seat. When any scratches are identified, lap the main valve and main valve seat.
	Reduced pressure is not adjusted correctly.	Observe the adjustment steps and readjust pressure.
	Foreign matter is stuck to clearance between main spindle (8) and guide (9).	Remove them for inspection and cleaning.
	Trap is not provided for dead end pipe.	Install a trap.
	Fluid leaks from by-pass valve.	Repair or replace.
Valve operation is not stable.	Flow at the connection of the sensing pipe fluctuates excessively.	Examine the connecting pipe and change it if scale build-up is present.
	Condensate remains in the sensing pipe.	Connect the sensing pipe in upward slope to pressure reducing valve.
	Sliding movement of main spindle (8) and guide (9) is sticking.	Disassemble and clean the valve, or replace the parts for proper movement.
	The operating air pressure is too high or insufficient.	Observe the adjustment steps and readjust pressure. Check gauges for proper function.

Disassembly

Main Valve

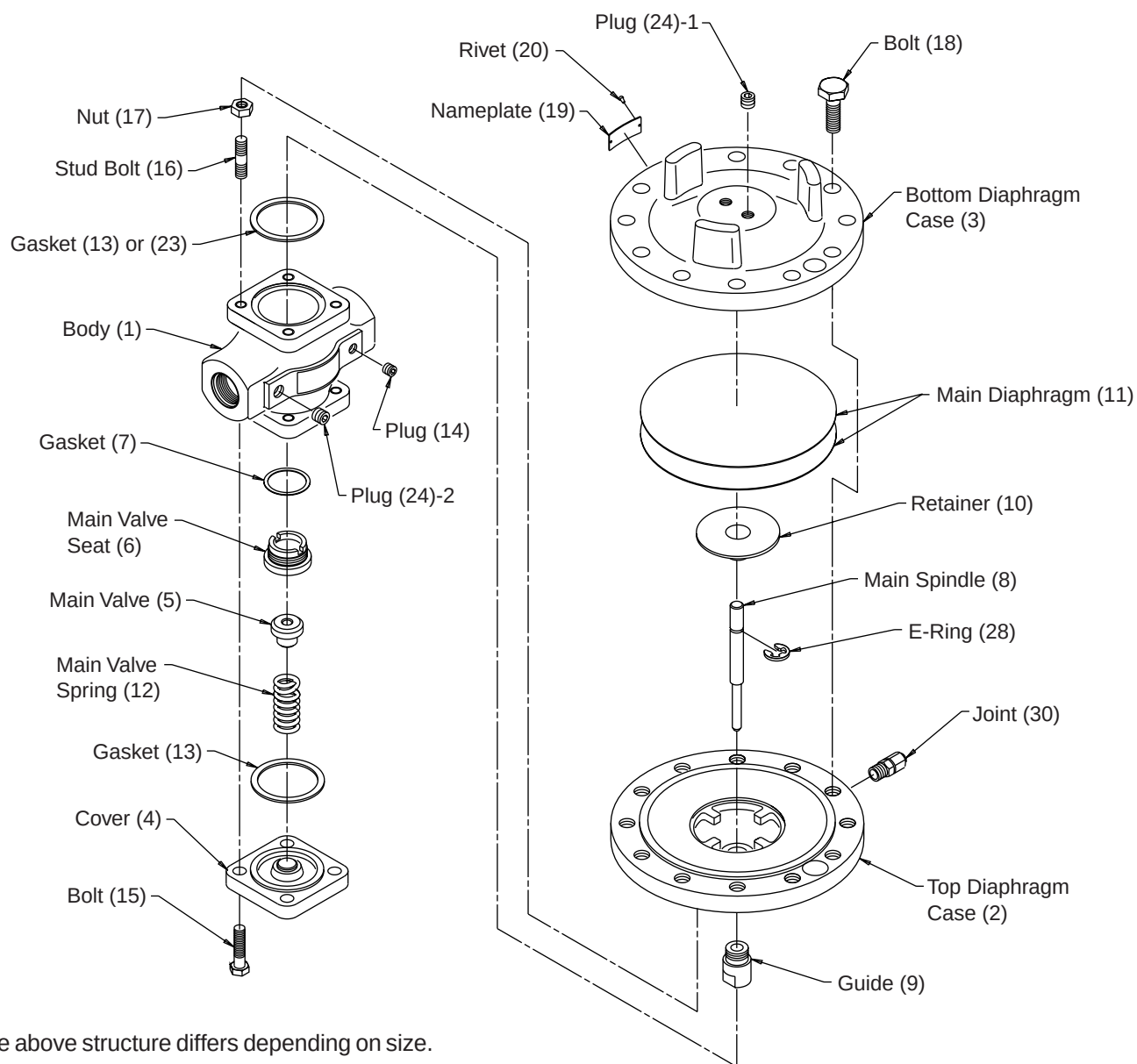
1. Remove bolts from cover (4). Remove the cover from the body (1) and remove main valve spring (12) and main valve (5).
2. Special tools are required when removing main valve seat (6) due to dimensions unique to Armstrong-Yoshitake.

Main Diaphragm

1. Remove bolt (18) of bottom diaphragm case (3). Remove the bottom diaphragm case, main diaphragm (11) and retainer (10).

Reassembly

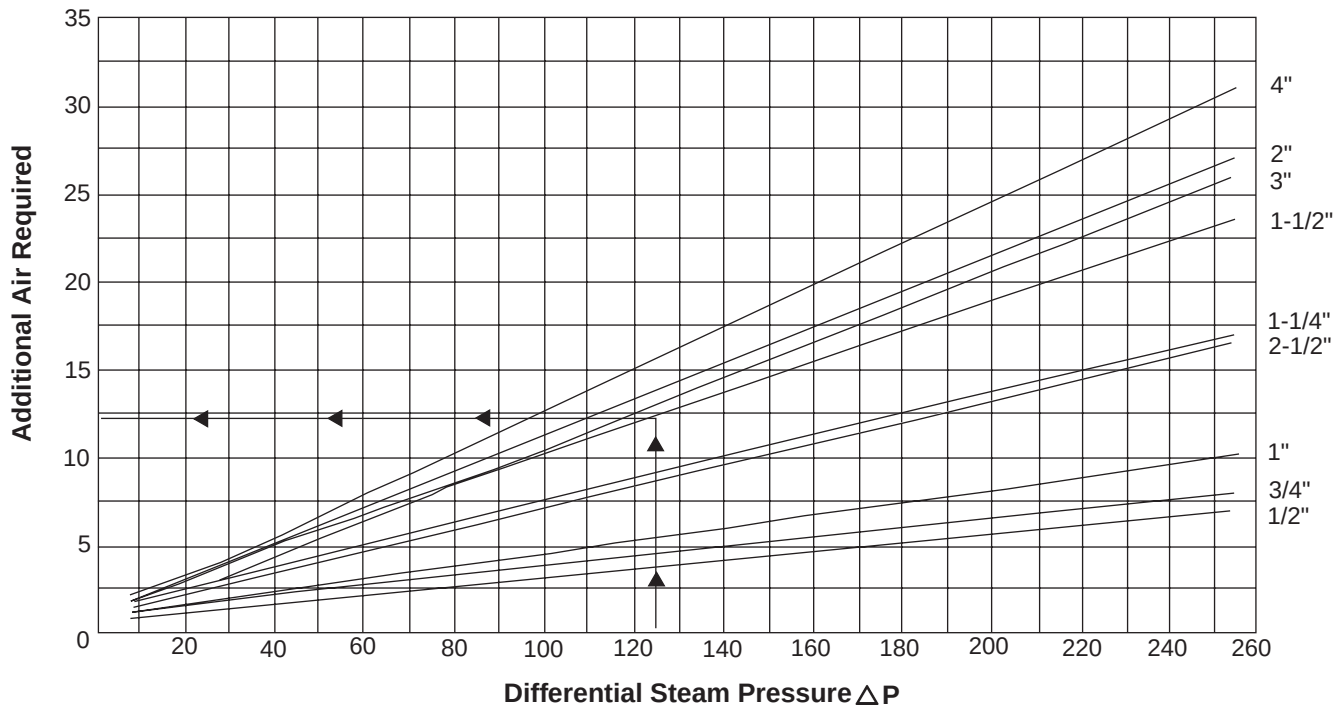
1. Check that there is no damage on the main valve, main valve seat, pilot valve, and pilot valve seat. Any damage on the sealing surface may cause leakage.
 2. Move the sliding section (pilot valve, main spindle, etc.) two or three times and confirm they are moving smoothly. If they do not move smoothly, original performance may be affected. Re-lap and cleaning must be performed. (See Bulletin AY-768).
 3. After the main valve, spring and spring plate are assembled correctly, mount the main diaphragm. Incorrect assembly may affect the original performance.
 4. Replace gaskets with new ones when disassembling. Using old gaskets may cause steam leakage, resulting in burns.
 5. Tighten the nuts evenly. Tightening insufficiently may cause steam leakage, resulting in burns.
 6. Assemble in the reverse order of disassembly.
- Note:** Apply a fluid sealant (heat and steam resistant) to the bottom sealing surface of the top and bottom sealing surface of the main diaphragm.



The above structure differs depending on size.

GD-2000K

Air Loading vs. Steam Outlet



Use this chart to determine the air loading pressure you need to control a specific steam outlet pressure.

Air Loading vs. Steam Outlet (Selection Example)

Example: Using 1-1/2" GD-2000K

Steam initial pressure $P_1 = 200$ psig
 Steam outlet pressure $P_2 = 75$ psig
 Differential pressure $\Delta P = 125$ psig

Read horizontally across the bottom of the chart to the 125 psig ΔP line. Then read vertically up to the diagonal line that corresponds to a 1-1/2" GD-11K. Then read horizontally to the left for additional air signal required.

Outlet pressure $P_2 = 75$ psig
 Additional air ΔP air = 12 psig
 Total air pressure required = 87 psig



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