GP-2000K-1, GP-2000K-3, GP-2000K-6

Air Loaded Valves for Steam

A high performance externally air piloted pressure reducing valve, the GP-2000K-1, GP-2000K-3, GP-2000K-6 is an ideal choice when set point changes are frequent and access to the PRV is difficult. The valve comes totally assembled and requires no field installation except downstream sensing line and air line connection.

High C_V, 20:1 turndown ratio and accurate control ±1% of pressure set point from 5% to 100% of flow. A rugged ductile iron body, hardened stainless steel working parts, double stainless steel diaphragms and in-line repairability add up to reliability on the job. Single seated for dead-end service.

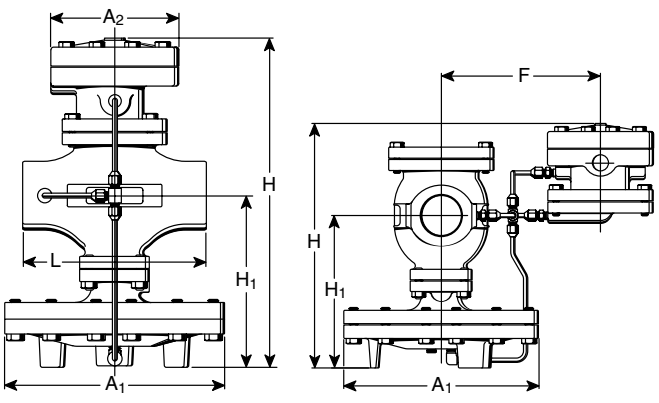
Table PTC-261-1. GP-2000K-1, GP-2000K-3, GP-2000K-6 Specifications

Application	Inlet Pressure (barg)	Reduced Pressure (barg)	Maximum Temperature (°C)	Minimum Differential (barg)	Materials				
					Body	Main Valve / Seat	Pilot Valve / Seat	Diaphragm	Color
Steam	1 - 20	**K-1:** 0,5 - 9 **K-3:** 2 - 14 **K-6:** 3 - 14	232	0,5	Ductile Iron ASTM A536	Stainless Steel AISI 420		Stainless Steel AISI 301	Dark Gray

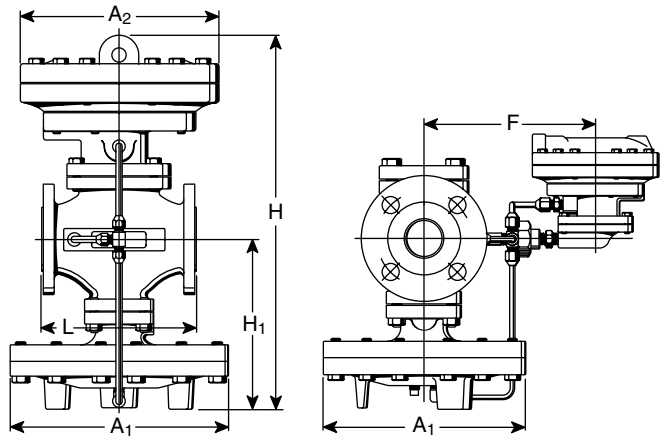
Table PTC-261-2. GP-2000K-1, GP-2000K-3, GP-2000K-6 Dimensions and Weights

Size	Face-to-Face		Cv	A_1	F	H Integral*	H Remote	H_1	A_2**	Weight	
	BSPT	PN 25/40								PN 25/40	BSPT
	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	kg
15 - 1/2"	150	150	5,0	200	175	335	300	170	82	18	16
20 - 3/4"	150	150	7,2	200	175	335	300	170	82	18	16
25 - 1"	160	160	10,9	226	179	341	305	175	82	22	20
32 - 1 1/4"	180	180	14,3	226	188	371	322	192	82	26	23
40 - 1 1/2"	180	200	18,8	226	188	371	322	192	82	27	23
50 - 2"	230	230	32,0	276	195	435	337	216	82	38	34
65 - 2 1/2"	–	290	60,0	352	211	489	391	251	82	67	–
80 - 3"	–	310	78,0	352	222	512	416	264	82	73	–
100 - 4"	–	350	120,0	401	239	595	505	321	82	115	–
150 - 6"	–	480	250,0	502	–	746	–	692	82	252	–

Shade indicates products that are CE Marked according to the PED (97/23/EC). All the other sizes comply with the Article 3.3 of the same directive.
* The above given data are for GP-2000K-1. For GP-2000K-3 and GP-2000K-6 add 32 mm to "H" dimension.
** The above given data are for GP-2000K-1. For GP-2000K-3 and GP-2000K-6, "A2" dimension = 172 mm.
Note: DN150 valve is available in integral version only and **is not CE Marked.**
For capacities see page PTC-267.
External Sensing Line is not included as standard, but could be delivered on request. Internal Sensing Kit is also available.



GP-2000K-1
1:1 Air to Steam Ratio

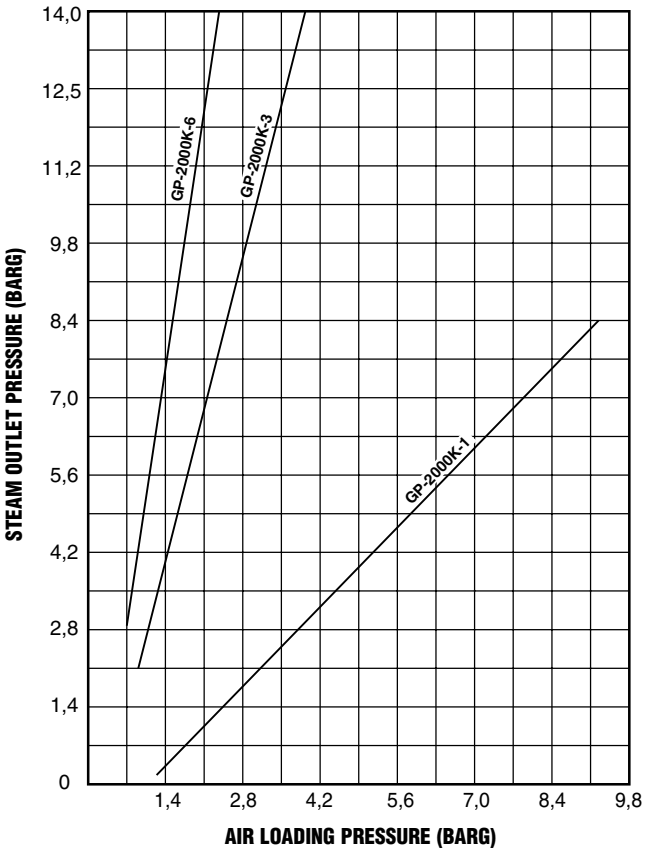


GP-2000K-2
1:2 Air to Steam Ratio

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Air Loading Charts

GP-2000K-1, 3, 6



How to Use the Air Loading Charts (GP-2000K-1, 3, 6)

- Enter the graph at the outlet pressure from the value on the vertical axis.
- Move horizontally to the right until the air loading lines are intersected.
- Then read vertically below the point of intersection for the air loading pressure required.

Selection Example (GDK-2000)

Using 1 1/2" GDK-2000
Steam Inlet Pressure P_1 ..... 14 bar
Steam Outlet Pressure P_2 ..... 5,25 bar
Differential Pressure ΔP ..... 8,75 bar

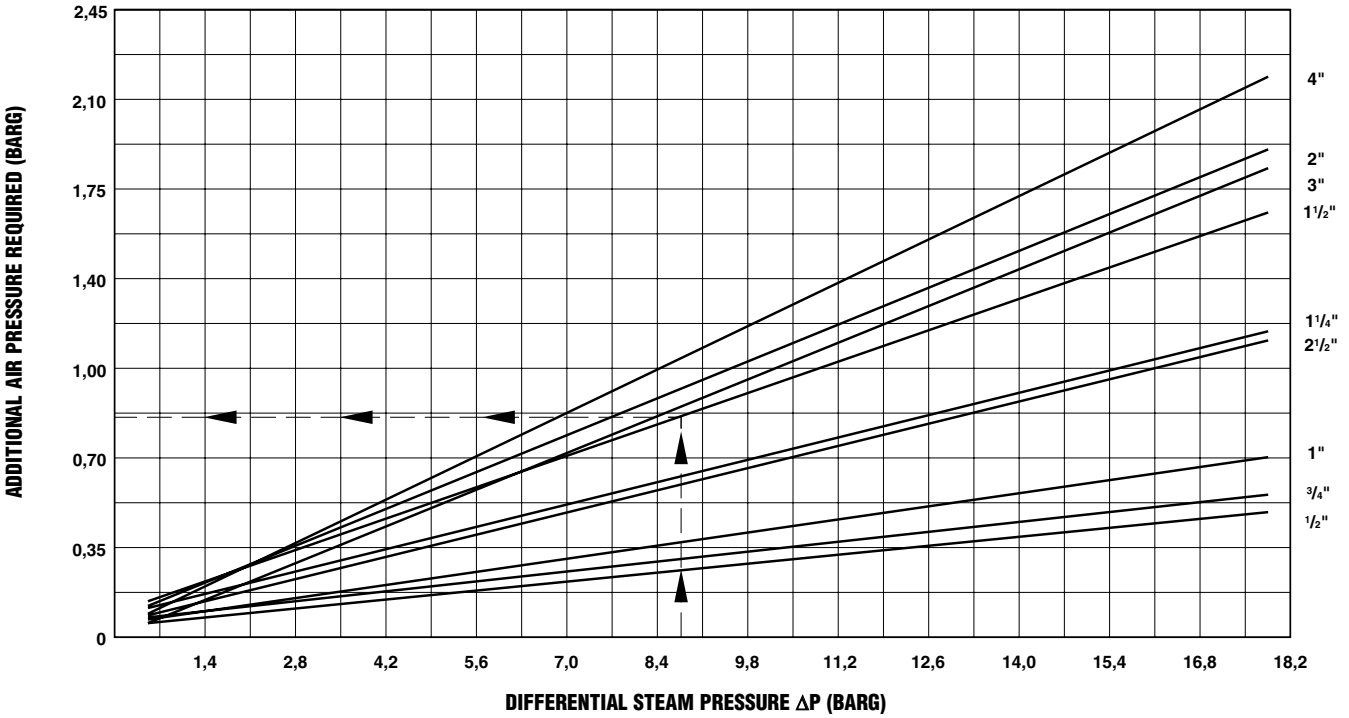
Read horizontally across the bottom of the chart to the 8,75 bar ΔP line.

Read vertically up to the diagonal line that corresponds to a 1 1/2" GDK-2000.

Read horizontally to the left for additional air signal required.

Outlet Pressure P_2 ..... 5,25 bar
Additional Air ΔP Air ..... 0,85 bar
Total Air Pressure Required ..... 6,10 bar

GDK-2000



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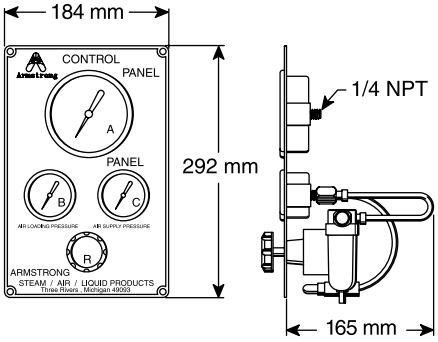
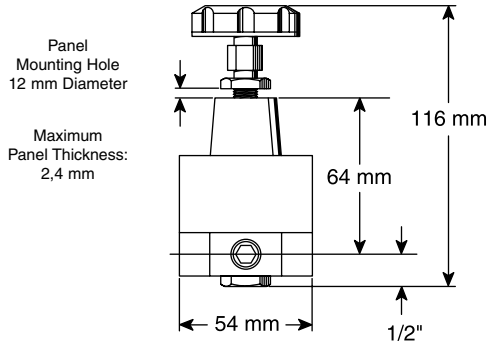
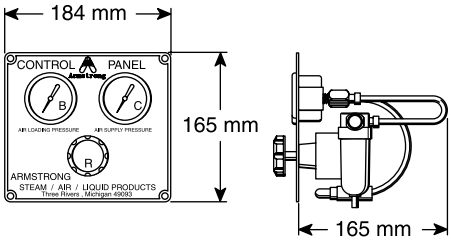
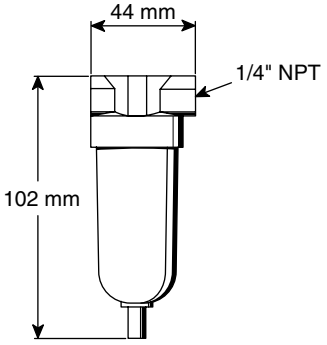
Control Panels & Air Loaders

Armstrong Control Panels and Air Loaders are designed to provide the necessary air loading signal to control any air-operated pressure reducing valve. While designed specifically to control Armstrong pressure reducing valves such as the GP-2000K-1, 3, 6 and GDK-2000, these panels can also remotely control other air-loaded valves. Panel is of rigid lightweight anodized aluminum for easy handling and installation. Control panel comes fully assembled with gauges suited to applications. Panel mate and panel mate filter are standard on panels and are also available separately.









"A" Panel "Y" Panel

Table PTC-263-1. Materials of Construction - Panel Mate - Filter

Name of Part	Panel Mate	Filter
Body	Zinc	
Bottom Plug	Brass	–
Pilot diaphragm	Nitrile	–
Main diaphragm	Nitrile	–
Pilot valve	Stainless steel	–
Main valve	Polycarbonate	–
Main valve seat	Teflon	–
Bowl	–	Zinc
Element	–	Porous polypropylene
Elastomers	Nitrile, neoprene and polyurethane	Nitrile and neoprene

Note: Panel material is anodized aluminum

Table PTC-263-2. Specifications - Control Panel

Standard Pressure Gauge Ranges (bar)		
Gauge	**Panel A**	**Panel Y**
Gauge A (bar)	0 - 7	–
Gauge B (bar)	0 - 7	
Gauge C (bar)	0 - 14	
Optional: Gauge A Ranges (bar)	0 - 2	–
	0 - 7	–
	0 - 20,5	–
Optional: Gauge B and C Ranges (bar)	0 - 2 / 0 - 4 0 - 7 / 0 - 10,5 0 - 14 / 0 - 20,5	
Maximum Inlet Air Pressure	14 bar	
Maximum Outlet Air Pressure	10,5 bar	

Table PTC-263-3. Specifications - Panel Mate - Filter

	Panel Mate* (bar)	Filter (bar)
Maximum Inlet Pressure	14	17
Maximum Outlet Pressure	10	–
Maximum Temperature	71°C	79°C

* **Note:** Use an Armstrong AF-10, 5 micron air filter upstream of panel mate to prevent fouling.

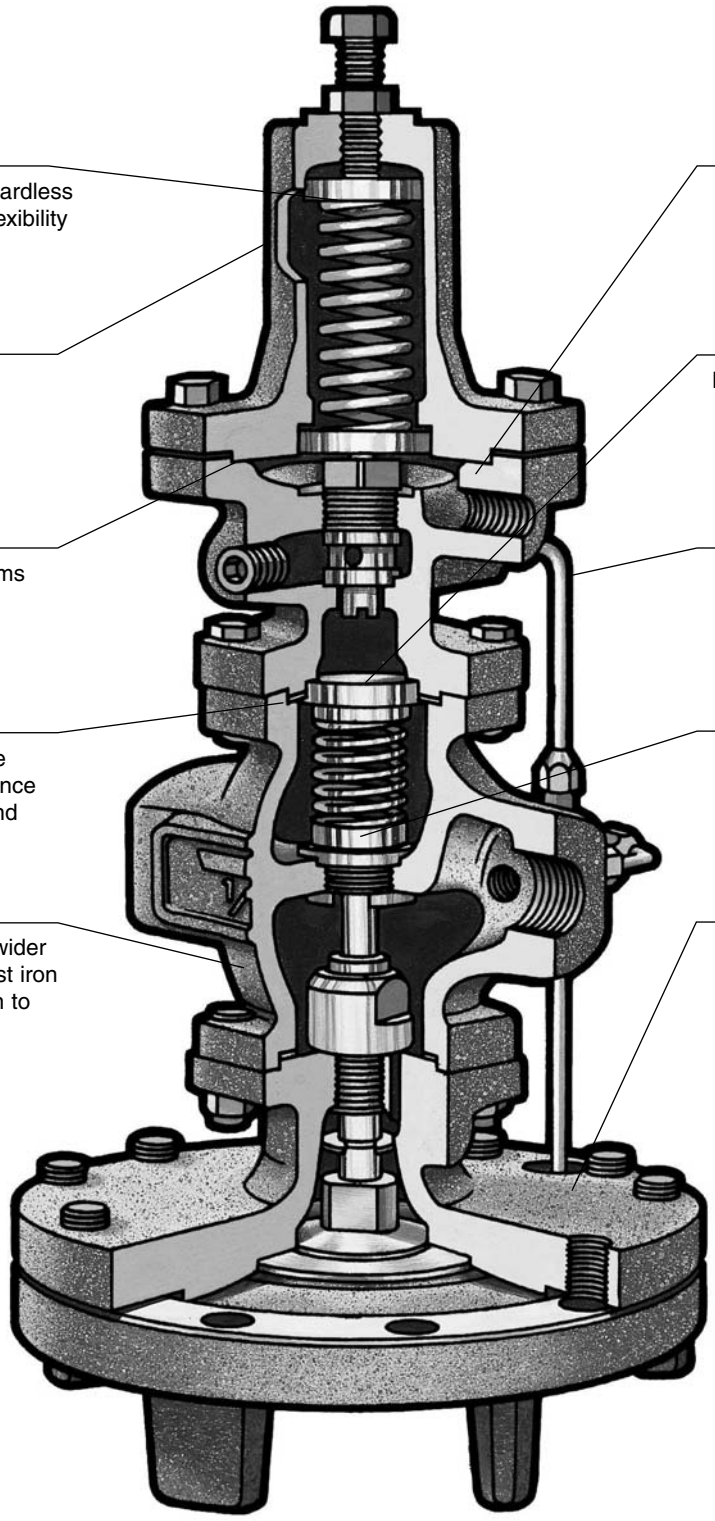
All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Externally Piloted

For Steam Service

This type of PRV incorporates two valves - a pilot and a main valve - in one unit. The pilot valve has a design similar to the direct acting valve. The discharge from the pilot valve acts on a set of double diaphragms, which controls through a piston the opening of the main valve. This increased diaphragm area can open a larger main valve, allowing a greater capacity per line size than the internally piloted piston-operated valve.

In addition, the diaphragms are more sensitive to pressure changes, which results in accuracy of ±1%. This greater accuracy is due also to the positioning of the sensing line downstream, where there is less turbulence. This valve also offers the flexibility to use different types of pilot valves: pressure, temperature, air loaded, solenoid or combination.



Interchangeable springs - regardless of valve size - means more flexibility in applications.

Enclosed spring chamber eliminates dirt fouling.

Dual stainless steel diaphragms provide corrosion resistance.

All cast mating parts are male and female to reduce the chance of leaks at gasket surfaces and assure proper alignment.

Ductile iron body provides a wider range of applications than cast iron and offers a less costly option to cast steel.

Available in both integral and remote mounted pilot.

Integral strainer protects the pilot valve from failure due to dirt.

Easily removable copper tubing permits troubleshooting while valve is in-line.

Easy access to main valve for quick inspection or maintenance by removing main valve spring and screen and lifting valve from stem. No special tools needed.

Design eliminates copper tubing from passing around the bottom diaphragm housing, minimizing chance of damage during shipping or installation.

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For Steam Service

The GP-2000 is a high performance, externally piloted reducing valve for large capacity requirements. Typical use is on intermittent service, including applications such as heat exchangers, steam coils, rotating dryers, process equipment and heating systems. With a 20:1 rangeability and high Cv, the GP-2000 is reliable and accurate (±1% of pressure set point from 5% to 100% of flow) over a long, trouble-free service life. Hardened stainless steel working parts are renewable in-line. Single seated for dead-end service. Available with both BSPT (1/2" - 2") and flanged connections in DN15 - DN150 sizes.

Table PTC-265-1. GP-2000 Specifications

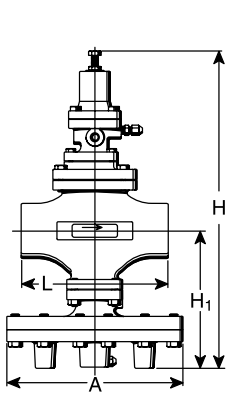
Application	Inlet Pressure (barg)	Reduced Pressure (barg)	Spring Color	Maximum Temperature (°C)	Minimum Differential (barg)	Materials				
						Body	Main Valve /Seat	Pilot Valve / Seat	Diaphragm	Color
Steam	1 - 20	0,1 - 0,2*	Yellow	232	0,5	Ductile Iron ASTM A536	Stainless Steel AISI 420		Stainless Steel AISI 301	Dark Gray
		0,2 - 1,5	Yellow							
		1 - 14	Green							

* **Note:** When using this spring range, remove one (1) pilot diaphragm. Capacities are reduced by 1/2 of capacity chart when this spring is being used.

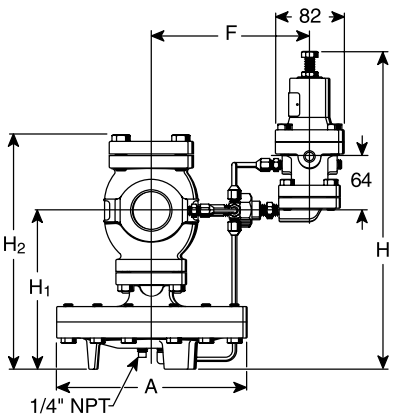
Table PTC-265-2. GP-2000 Dimensions and Weights

Size	Face-to-Face (L)		A	F	H Integral	H Remote	H_1	H_2	Weight		Cv
	BSPT	PN 25/40							BSPT	PN 25/40	
	mm	mm	mm	mm	mm	mm	mm	mm	kg	kg	
15 – 1/2"	150	150	200	176	398	362	170	244	14	16	5,0
20 – 3/4"	150	150	200	176	398	362	170	244	14	17	7,2
25 – 1"	160	160	226	180	404	367	175	254	19	23	10,9
32 – 1 1/4"	180	180	226	180	434	384	192	283	22	26	14,3
40 – 1 1/2"	180	200	226	180	434	384	192	283	22	26	18,8
50 – 2"	230	230	276	197	498	406	216	321	33	38	32,0
65 – 2 1/2"	–	290	352	211	552	440	251	375	–	67	60,0
80 – 3"	–	310	352	222	575	456	264	400	–	73	78,00
100 – 4"	–	350	401	240	658	511	321	489	–	114	120,0
150 – 6"	–	480	502	–	806	–	414	673	–	252	250,0

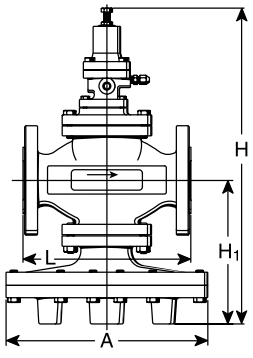
Shade indicates products that are CE Marked according to the PED (97/23/EC). All the other sizes comply with the Article 3.3 of the same directive.
Note: DN150 valve is available in integral version only.
For capacities see page PTC-267.
External Sensing Line is not included as standard, but could be delivered on request. Internal Sensing Kit is also available.
Pressure sensing line size: 1/4"



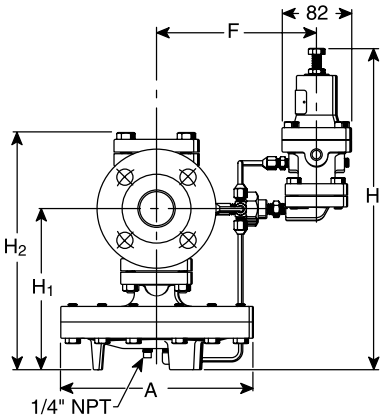
GP-2000 standard



GP-2000 Remote Mount



GP-2000 standard



GP-2000 Remote Mount

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

GP-2000R

For Steam Back Pressure Regulation

The GP-2000R is a high performance externally piloted throttling back pressure valve for large capacity applications. Typical applications would include those systems utilizing flash steam for low pressure heating or processes. The GP-2000R valves will function to maintain a constant upstream pressure. This valve is not a safety valve and should not be used for that purpose.

Table PTC-266-1. GP-2000R Specifications

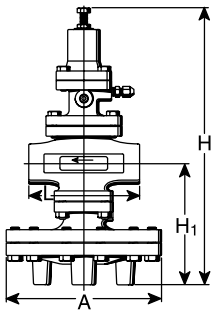
Application	Inlet Pressure (barg)	Reduced Pressure (barg)	Spring Color	Maximum Temperature (°C)	Minimum Differential (barg)	Materials				
						Body	Main Valve / Seat	Pilot Valve / Seat	Diaphragm	Color
Steam	1 - 14	*0,2 - 1,4	Yellow	232	0,2	Ductile Iron ASTM A536	Stainless Steel AISI 420		Stainless Steel AISI 301	Dark Gray
		1,4 - 11,0	Green							
		10,0 - 13,8	Brown							

Note: When using this spring range, remove one (1) pilot diaphragm. Capacities are reduced by 1/2 of capacity chart when this spring is being used.

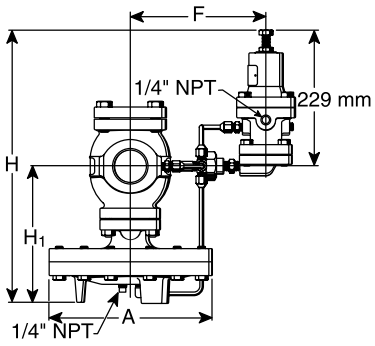
Table PTC-266-2. GP-2000R Dimensions and Weights

Size	Face-to-Face (L)		A	F	H Integral	H Remote	H_1	H_2	Weight		Cv
	BSPT	PN 25/40							BSPT	PN 25/40	
	mm	mm	mm	mm	mm	mm	mm	mm	kg	kg	
15 – 1/2"	150	150	200	176	398	362	170	244	14	16	5,0
20 – 3/4"	150	150	200	176	398	362	170	244	14	17	7,2
25 – 1"	160	160	226	180	404	367	175	254	19	23	10,9
32 – 1 1/4"	180	180	226	180	434	384	192	283	22	26	14,3
40 – 1 1/2"	180	200	226	180	434	384	192	283	22	26	18,8
50 – 2"	230	230	276	197	498	406	216	321	33	38	32,0
65 – 2 1/2"	–	290	352	211	552	440	251	275	–	67	60,0
80 – 3"	–	310	352	222	575	456	264	400	–	73	78,0
100 – 4"	–	350	401	240	658	511	321	489	–	114	120,0
150 – 6"	–	480	502	–	806	–	692	405	–	252	250,0

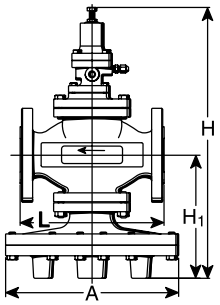
Shade indicates products that are CE Marked according to the PED (97/23/EC). All the other sizes comply with the Article 3.3 of the same directive.
Note: DN150 valve is available in integral version only, but **is not CE Marked.**
For capacities see page PTC-267.
External Sensing Line is not included as standard, but could be delivered on request. Internal Sensing Kit is also available.
Pressure sensing line size: 1/4"



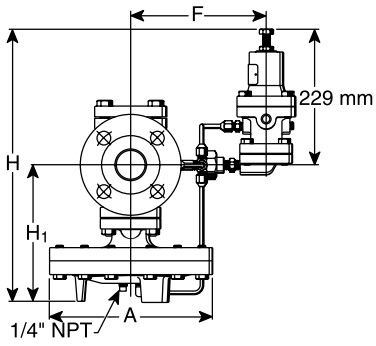
GP-2000R standard



GP-2000R Remote Mount



GP-2000R standard



GP-2000R Remote Mount

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

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Capacities for Steam

Table PTC-267-1. GP-2000, GP2000K-1, GP2000K-3, GP2000K-6, GDK-2000, GP-2000R Capacities for Steam (kg/h)

Inlet Pressure (barg)	Outlet Pressure (barg)	Connection Size (inches or mm)									
		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"
		15	20	25	32	40	50	65	80	100	150
1	0,5	89	128	194	255	335	571	1 071	1 392	2 142	4 465
1,5	1	101	145	220	289	380	648	1 215	1 580	2 430	5 063
	0,2	146	210	318	418	549	936	1 755	2 282	3 510	7 313
2	1,5	111	161	243	320	420	716	1 343	1 745	2 686	5 597
	0,2 - 0,5	175	252	382	501	659	1 123	2 105	2 737	4 210	8 769
3	2,5	130	188	284	373	491	836	1 568	2 038	3 136	6 536
	0,2 - 1,0	234	336	510	669	879	1 497	2 808	3 651	5 616	11 691
4	3	202	291	441	579	761	1 296	2 430	3 159	4 860	10 125
	0,2 - 1,5	292	421	637	836	1 099	1 872	3 510	4 563	7 020	14 614
5	4	223	322	487	640	841	1 432	2 685	3 493	5 370	11 194
	3	301	434	658	863	1 134	1 931	3 621	4 709	7 242	15 093
	0,5 - 2	351	505	765	1 003	1 319	2 246	4 211	5 475	8 422	17 537
6	5	243	350	530	695	914	1 557	2 919	3 795	5 838	12 169
	3,5	361	521	788	1 035	1 360	2 316	4 342	5 645	8 684	18 096
	0,5 - 2,5	409	589	892	1 171	1 539	2 620	4 913	6 386	9 826	20 460
7	5,5	314	453	686	900	1 183	2 014	3 776	4 909	7 552	15 740
	4	421	606	918	1 205	1 584	2 697	5 059	6 574	10 118	21 077
	0,5 - 3,0	468	673	1 020	1 338	1 759	2 995	5 615	7 300	11 230	23 383
8	6,5	335	483	732	960	1 262	2 149	4 030	5 238	8 060	16 790
	5	452	652	987	1 295	1 702	2 897	5 434	7 062	10 868	22 640
	0,5 - 3,5	526	758	1 147	1 505	1 979	3 369	6 319	8 214	12 638	26 306
10	8,5	374	538	815	1 070	1 407	2 395	4 493	5 840	8 986	18 715
	7	509	733	1 110	1 457	1 916	3 261	6 114	7 949	12 228	25 481
	0,5 - 4,5	643	926	1 402	1 840	2 419	4 118	7 721	10 038	15 442	32 151
12	10	467	673	1 019	1 337	1 758	2 992	5 612	7 295	11 224	23 383
	8	633	911	1 380	1 810	2 380	4 052	7 597	9 877	15 194	31 660
	1,0 - 5,5	760	1 095	1 657	2 175	2 859	4 867	9 126	11 863	18 252	37 997
14	11,5	559	805	1 220	1 600	2 104	3 581	6 714	8 731	13 428	27 984
	9	754	1 086	1 645	2 158	2 837	4 829	9 056	11 771	18 112	37 734
	1,0 - 6,5	877	1 263	1 912	2 509	3 299	5 616	10 530	13 689	21 060	43 843
15	12,5	579	834	1 263	1 657	2 179	3 709	6 956	9 043	13 912	28 984
	10	784	1 129	1 709	2 242	2 948	5 019	9 441	12 233	18 822	39 214
	1,0 - 7,0	936	1 347	2 040	2 676	3 519	5 990	11 231	14 600	22 462	46 765
17,5	14	730	1 052	1 593	2 090	2 748	4 677	8 771	11 403	17 542	36 545
	12	888	1 279	1 936	2 540	3 340	5 686	10 661	13 860	21 322	44 423
	1,0 - 8,0	1 082	1 558	2 359	3 095	4 069	6 926	12 986	16 882	25 972	54 113
20	14	992	1 428	2 162	2 837	3 729	6 348	11 904	15 476	23 808	49 602
	12	1 113	1 603	2 426	3 183	4 185	7 124	13 358	17 365	26 716	55 662
	1,0 - 9,5	1 228	1 769	2 678	3 513	4 619	7 862	14 741	19 164	29 482	61 380

Note: Maximum pressure reduction 20:1, except for GDK-2000 (10:1).
Minimum pressure reduction is 85% of inlet pressure.

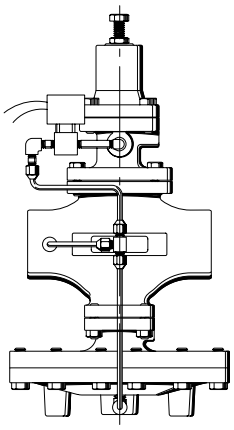
GP-2000 ON/OFF - For Steam Service

External Pilot Solenoid Operated Valves

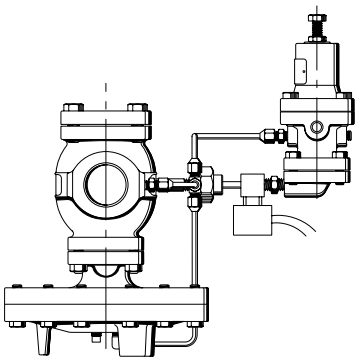
The GP-2000 On/Off option allows for remote shutoff of pressure reducing valves. Automatic shutoff during power failures and shutoff based on set points of pressure, temperature or liquid levels of process fluids. This option is available as an accessory item or may be factory installed on any of the GP-2000 Series valves. The GP-2000 On/Off is designed for a maximum pressure of 10 barg and a maximum temperature of 186°C, coil: 220V standard. Available with normally open or normally closed solenoid valves.

Non-Electric Gradient Monitoring Option

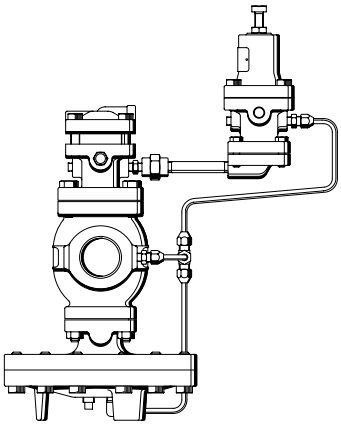
(Between Water and Steam Pressure)
The GP-2000W1P provides a safe and dependable shutdown of steam when the water pressure falls or drops rapidly on a constant pressure, steam-to-water exchanger. Unlike a solenoid option that shuts the steam down when the water pressure drops below a pre-set point, the GP-2000W1P always maintains a constant steam pressure until water pressure drops to within 0,2 barg above the steam pressure. Lower water pressure will cause the steam pressure to fall, thereby maintaining a minimum 0,2 barg difference. This will allow the exchanger to produce hot water even when water pressure is low, and ensures that steam pressure will stay functional as long as water pressure is above 0,2 barg.



GP-2000, GP-2000R



GP-2000 Remote Mount



GP-2000W1P

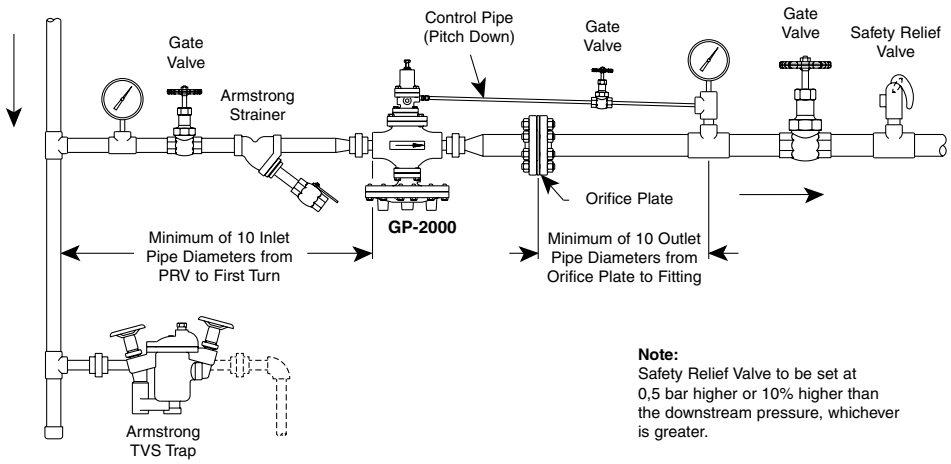
Noise Treatment

OSHA has established limits on the length of time any employee may be exposed to various sound levels. A sound level of 85 Dba or less is the acceptable standard for noise levels through a PRV in most applications. Certain facilities may require much less. Please consult Armstrong PRV Sizing Software or contact your local Representative for Dba levels for each application.

For Dba levels above 85 you can offer a 2" thick insulation cover for thermal conductivity and noise attenuation, a muffling orifice plate to reduce the velocity through the PRV, or a combination of both.

A muffling orifice plate consists of a 1/4" thick stainless steel plate installed between mating ANSI flanges. The orifice plate is installed in the enlarged piping downstream of the pressure regulator. Each orifice plate is engineered for specific applications to maximize noise reduction without reducing regulator capacity.

Consult Factory Representative for muffling orifice plate size and pricing.



Note:
Safety Relief Valve to be set at 0,5 bar higher or 10% higher than the downstream pressure, whichever is greater.

Insulation Cover

Muffling Orifice Plate

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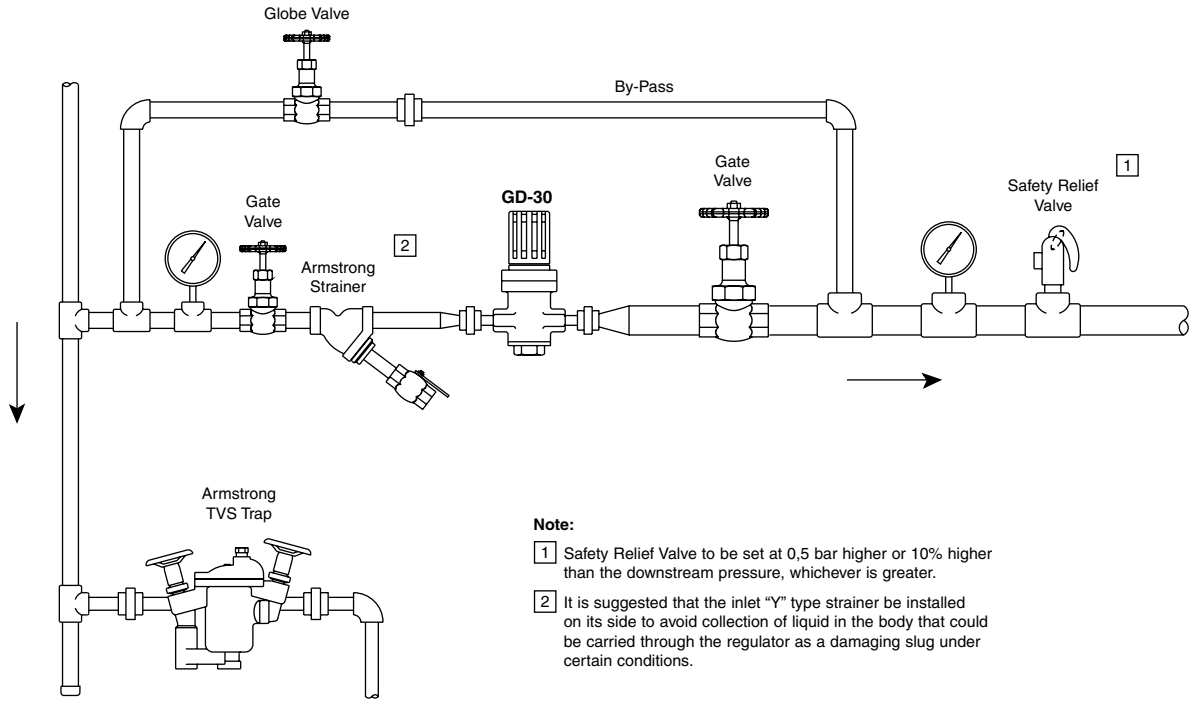
Direct Acting Single Stage Reduction



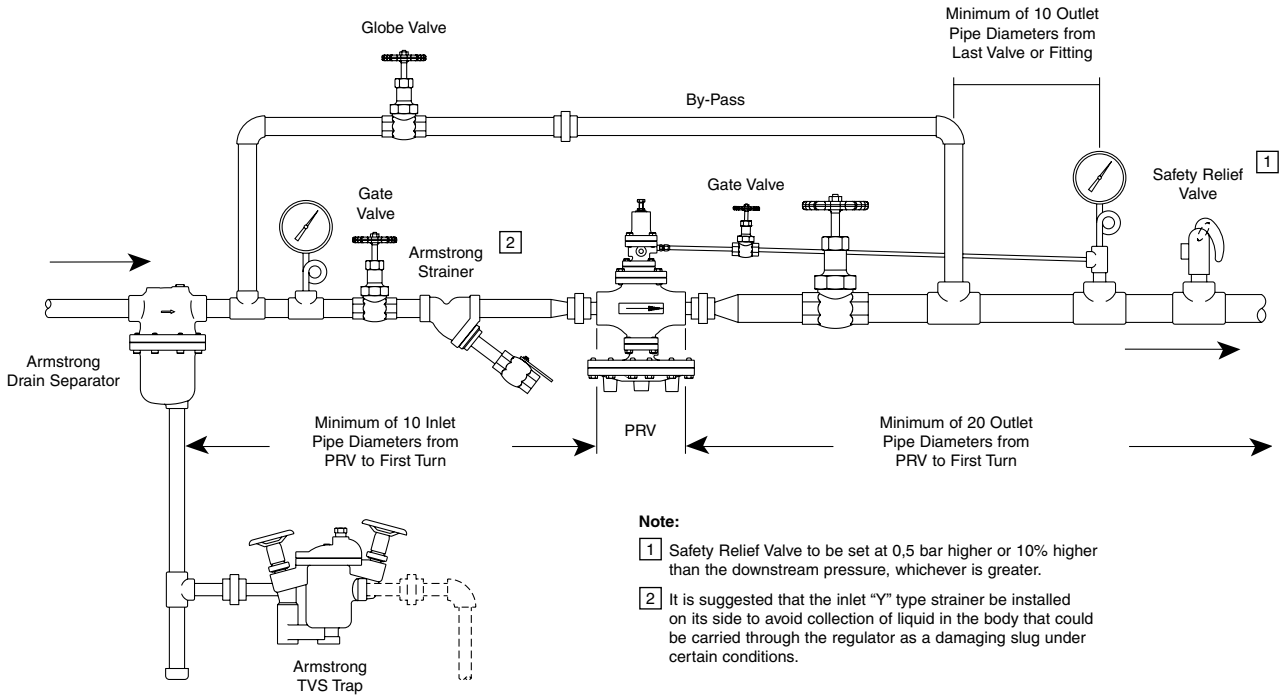
Note:

1 Safety Relief Valve to be set at 0,5 bar higher or 10% higher than the downstream pressure, whichever is greater.

2 It is suggested that the inlet "Y" type strainer be installed on its side to avoid collection of liquid in the body that could be carried through the regulator as a damaging slug under certain conditions.

Typical Direct Acting PRV Installation

External Pressure Pilot Single Stage Reduction



Note:

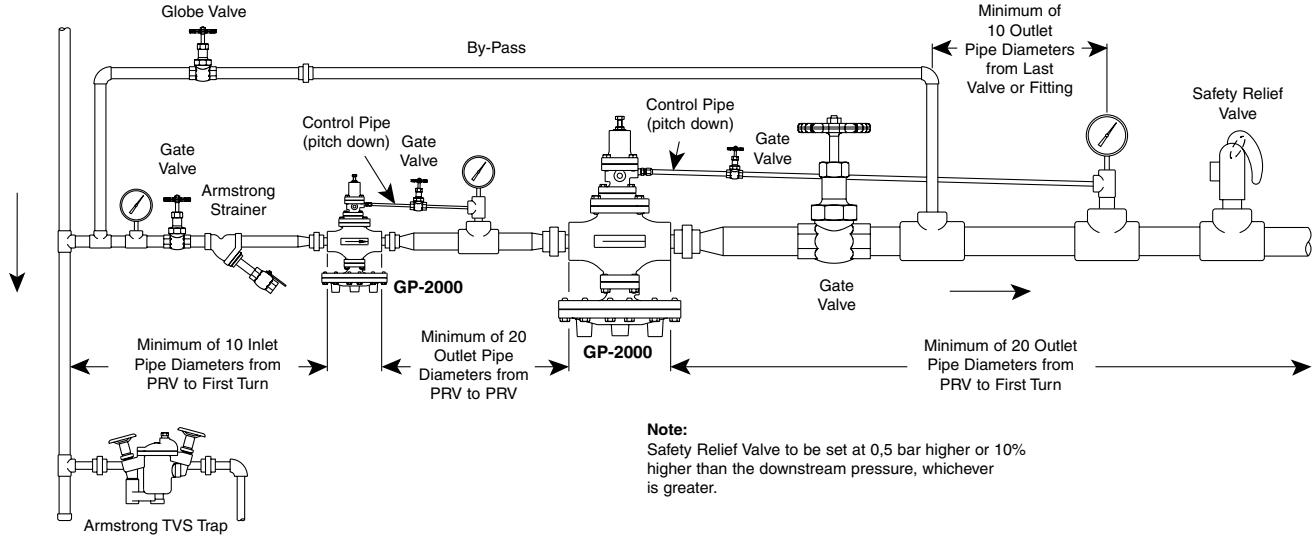
1 Safety Relief Valve to be set at 0,5 bar higher or 10% higher than the downstream pressure, whichever is greater.

2 It is suggested that the inlet "Y" type strainer be installed on its side to avoid collection of liquid in the body that could be carried through the regulator as a damaging slug under certain conditions.

Typical External Pressure Pilot PRV Installation

Application Data - Pressure Reducing Valves

External Pressure Pilot Two Stage Reduction



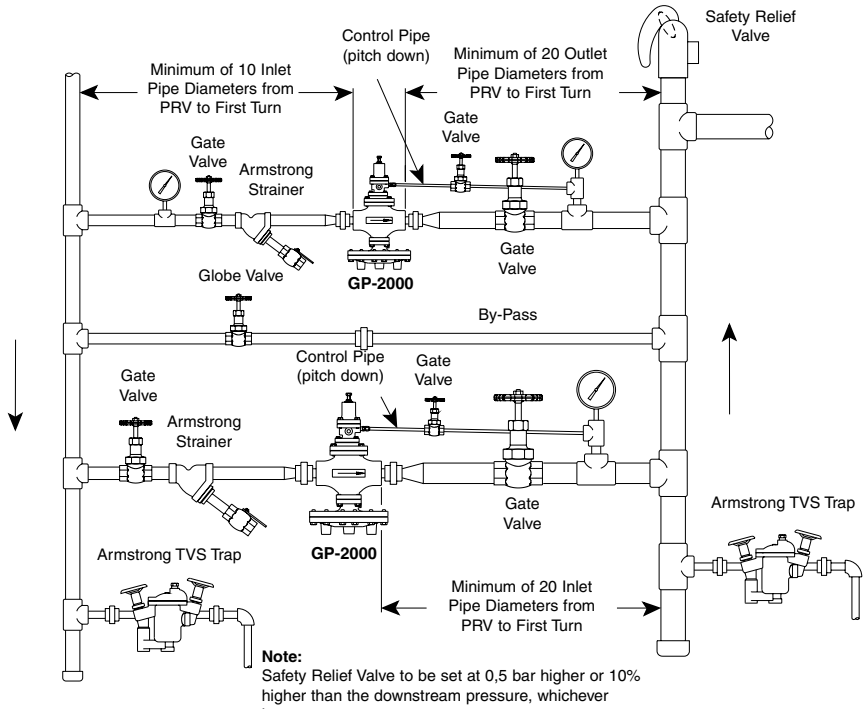
Note:
Safety Relief Valve to be set at 0,5 bar higher or 10% higher than the downstream pressure, whichever is greater.

This piping application is used when the pressure turndown ratio is greater than that of a single valve. Pressure reduction is accomplished by using two valves in series to reduce the pressure in stages. Depending on the volume of fluid required and pressure reduction, the second stage valve typically will be larger in size than the first stage valve.

Unless a specific intermediate pressure of the fluid is required, this intermediate pressure is typically selected so as to keep the pressure turndown ratios of both valves as similar as possible. This will help equalize and maximize the service life of both valves.

External Pressure Pilot One-Third to Two-Third Reduction Station

This piping application is used when the flow rangeability is greater than that of a single valve. Better control is achieved by piping two valves in parallel and sizing one to handle 1/3 the maximum load and the other 2/3 the maximum load. These two valves are staged by offsetting their pressure set points by 0,2 barg. The smaller valve is usually the lead valve and would have a pressure set point at the desired pressure. The larger valve is usually the lag valve and would have a pressure set point of 0,2 barg below the lead valve. This offset of set points will stage the valves so that the lag valve will remain closed until the lead valve can no longer pass the required flow and is wide open. This lack of flow will cause the set pressure to drop slightly until the lag valve opens and regulates at the higher demands of flow.



Note:
Safety Relief Valve to be set at 0,5 bar higher or 10% higher than the downstream pressure, whichever is greater.

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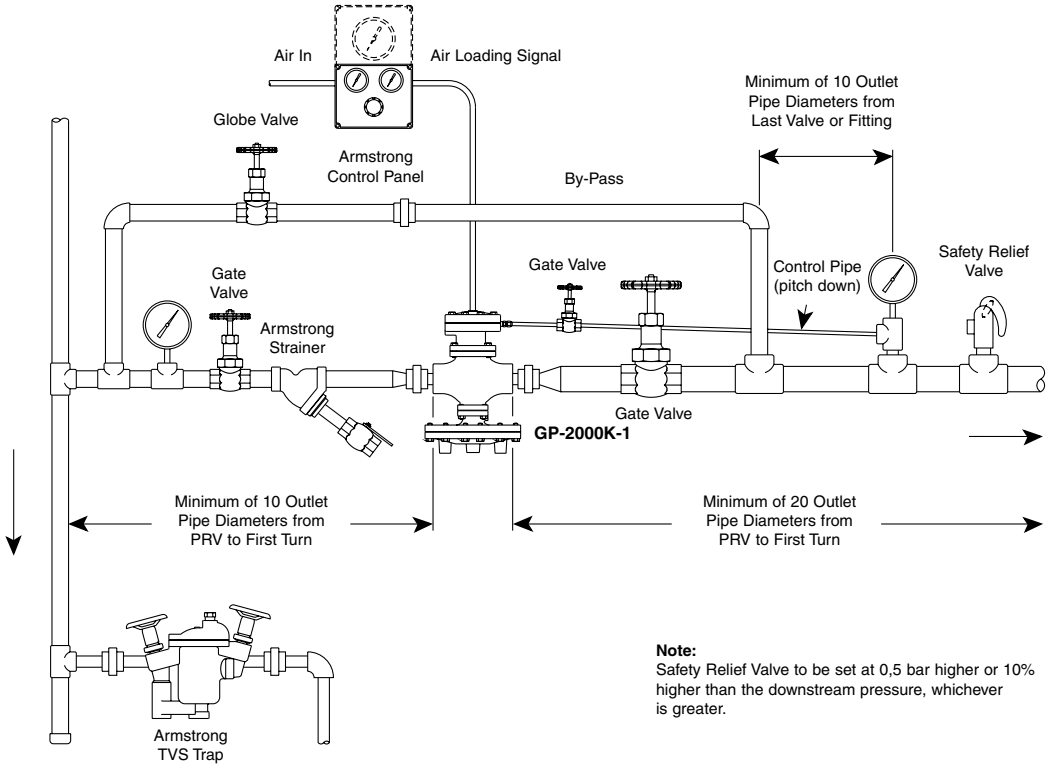
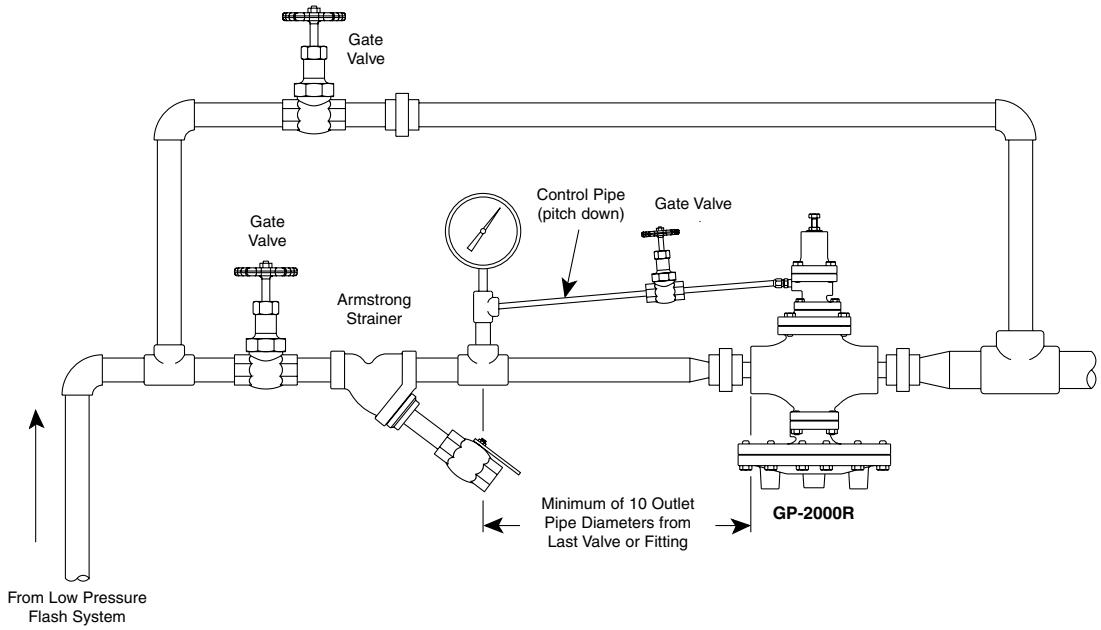
Air Loaded External Pilot Single Stage Reduction



Typical Air Loaded External Pilot Reduction Station. Complete with remote located air loading control panel.

External Back Pressure Pilot Installation



Typical External Pilot Back Pressure Installation. Used to maintain a constant upstream pressure in the piping system.

Sizing Data

Table PTC-272-1. Selection Formulas

C_V Value and Calculation	K_V Value and Calculation ($K_V = 0{,}86\ C_V$)
1. For Saturated Steam / Q = kg/h, P = bar (a) When $P_2 > \frac{P_1}{2}$ $Q = C_v\ 13{,}5\ \sqrt{\Delta P\ (P_1 + P_2)}$ When* $P_2 < \frac{P_1}{2}$ $Q = C_v\ 11{,}7\ P_1$	1. For Saturated Steam / Q = kg/h, P = bar (a) When $P_2 > \frac{P_1}{2}$ $Q = K_v\ 15{,}88\ \sqrt{\Delta P\ (P_1 + P_2)}$ When* $P_2 < \frac{P_1}{2}$ $Q = K_v\ 13{,}76\ P_1$
2. For Liquid / Q = m³/h, ΔP = bar, G = kg/dm³ $Q = 0{,}86\ C_v\ \frac{\sqrt{\Delta P}}{\sqrt{G}}$	2. For Liquid / Q = m³/h, ΔP = bar, G = kg/dm³ $Q = K_v\ \frac{\sqrt{\Delta P}}{\sqrt{G}}$
3. For Air / Q = Nm³/h, P = bar (a) When $P_2 > \frac{P_1}{2}$ $Q = C_v\ 22{,}4\ \sqrt{\Delta P \times P_2}$ When* $P_2 < \frac{P_1}{2}$ $Q = C_v\ 11{,}2\ P_1$	3. For Air / Q = Nm³/h, P = bar (a) When $P_2 > \frac{P_1}{2}$ $Q = K_v\ 26{,}36\ \sqrt{\Delta P \times P_2}$ When* $P_2 < \frac{P_1}{2}$ $Q = K_v\ 13{,}18\ P_1$
P_1 = Inlet pressure in bar (a) P_2 = Outlet pressure in bar (a) ΔP = Differential Pressure ($P_1 - P_2$) Q = Maximum flow capacity G = Specific gravity C_v = Valve flow coefficient	* Formula applies to **piloted valves only**. With direct acting valves, at critical flow or sonic flow, capacities decrease with greater differential pressure.

Ordering Information

Table PTC-272-2. Cv Values

Model	Connection Size														
	8	10	15	20	25	32	40	50	65	80	100	125	150	200	250
GD-30	–	–	1,3	1,5	2,5	–	5,6*	8,5*	–	–	–	–	–	–	–
GDK-2000	–	–	5,0	7,2	10,9	14,3	18,8	32,0	60,0	78,0	120,0	–	–	–	–
GP-2000 series	–	–	5,0	7,2	10,9	14,3	18,8	32,0	60,0	78,0	120,0	–	250,0	–	–

Note: 50% reduced ports are available for all 2000 Series - capacities and Cv are reduced by 50%
* GD-30 only

When ordering please specify:
1. Model number
2. Connection size and type
3. Quantity
4. Service fluid
5. Specific gravity (if other than steam, air, water)
6. Fluid temperature
7. Maximum inlet pressure
8. Desired reduced pressure or controlled temperature
9. Flow rate
10. Special conditions (if any)

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