

GP-2000/GP-2000EN

Direct type	Pilot type	Piston	Diaphragm
Bellows	Internal sensing	External sensing	Stainless steel
With handle	Built-in strainer	Low pressure	Remote
Valve leakage 0	Nylon		



Screwed type



Flanged type

■Features

1. Large-size diaphragm and external sensing method control reduced pressure more stably.
2. Since the Cv value is high, flow capability and control capability are significantly improved, one or two sizes smaller than the regular nominal size can be applied.
3. Spherical main valve offers great sealability and great reduction of valve seat leakage (compliant with ANSI Class IV).
4. Pressure management at low pressure (0.02 MPa or less) is available. (GP-2000L)²

■Specifications

Model		GP-2000		GP-2000EN
Application		Steam		
Reduced pressure sensing method		External sensing *1		
Inlet pressure		0.1-2.0 MPa	0.1-1.0 MPa	0.1-2.0 MPa
Reduced pressure		0.02-0.15 MPa	0.02-0.15 MPa *2	0.02-0.15 MPa
		0.1-1.4 MPa *2	0.1-0.85 MPa *2	0.1-1.4 MPa
		1.3-1.7 MPa		1.3-1.7 MPa
Minimum differential pressure		85% or less of inlet pressure (gauge pressure)		
Maximum pressure reduction ratio		0.05 MPa		
Maximum temperature		20:1		
Valve seat leakage		220°C		
Valve seat leakage		0.01% or less of rated flow		
Material	Body	Ductile cast iron		
	Main valve	Stainless steel		
	Valve seat	Stainless steel		
	Pilot valve	Stainless steel		
	Pilot valve seat	Stainless steel		
	Diaphragm	Stainless steel		
Reduced pressure sensing pipe		Copper pipe φ8-2 m		
Connection		JIS Rc screwed	JIS 20K RF flanged	JIS 10K FF flanged
				EN PN25 flanged

*1 External sensing is standard. When installing the pressure reducing valve, be sure to connect the provided sensing pipe and joint. Unless the sensing pipe is connected, the valve will not operate.

(Available with internal sensing type (nominal size: 15A to 100A) in different specifications. Note that Cv value of internal sensing type is lower than that of external sensing type.)

*2 Available with the GP-2000L, reduced pressure of 0.01 to 0.02 MPa, from 15A to 100A, inlet pressure of 0.1 to 0.5 MPa and maximum pressure reduction of 50:1.

· Available with external pilot type.

· Available with ASME flanged.

■ Dimensions (mm) and Weights (kg)

· Screwed type

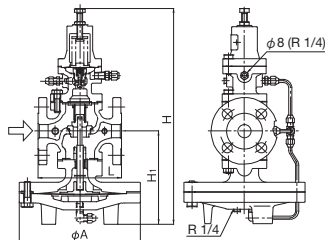
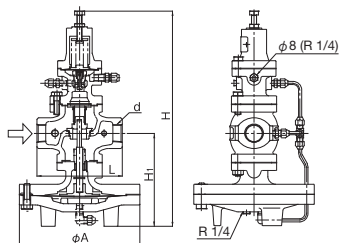
Nominal size	d	L	H ₁	H	A	Weight
15A	Rc 1/2	150	170	398	200	14.0
20A	Rc 3/4	150	170	398	200	14.0
25A	Rc 1	160	175	404	226	18.5
32A	Rc 1-1/4	180	192	434	226	21.5
40A	Rc 1-1/2	180	192	434	226	21.5
50A	Rc 2	230	216	498	276	33.0

* Available with NPT connection.

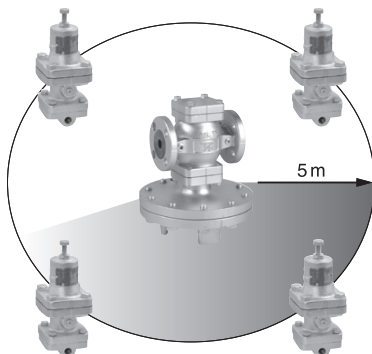
· Flanged type (JIS 20K RF)

Nominal size	L	H ₁	H	A	Weight
15A	146 (142)	170	398	200	15.5 (15.3)
20A	146 (142)	170	398	200	16.0 (15.8)
25A	156 (152)	175	404	226	21.0 (20.6)
32A	176 (172)	192	434	226	24.0 (23.6)
40A	196 (192)	192	434	226	24.5 (24.1)
50A	222 (218)	216	498	276	36.0 (35.8)
65A	282 (278)	251	552	352	64.5 (64.2)
80A	302 (294)	264	575	352	71.5 (68.8)
100A	342 (330)	321	658	401	111.0 (106.9)
125A	400 (388)	321	658	401	115.0 (112.0)
150A	465 (453)	414	814	502	234.3 (230.0)
200A	469 (469)	414	814	502	242.0 (238.0)

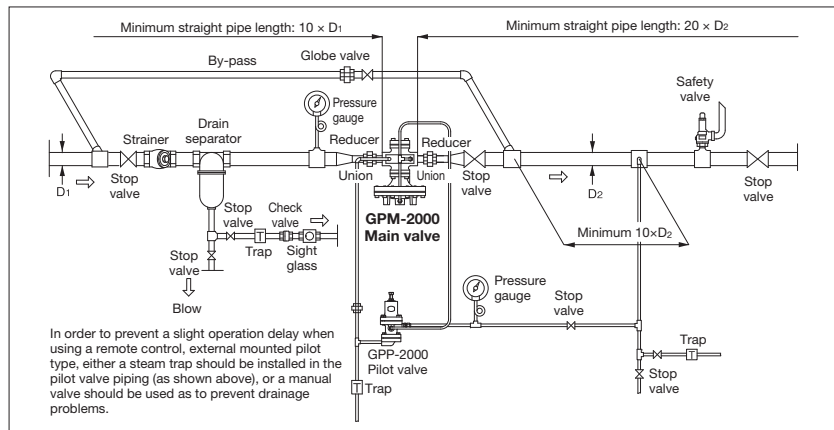
* The above values in parentheses are the dimensions of JIS 10K FF flanged.



Manual Set Point Type Remote Control (Maximum distance of 5 meters)



Piping Example



Variation



GPP-2000 pilot valve

GPM-2000 main valve
(screwed)GPM-2000 main valve
(flanged)

■GP-2000 Flow Rate Table

(kg/h)

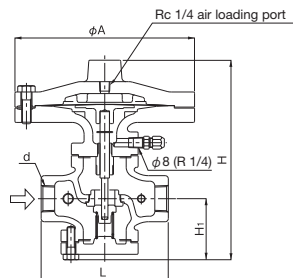
P ₁ (MPa)	P ₂ (MPa)	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A
2.0	0.1-0.9	1,260	1,814	2,746	3,603	4,737	8,064	13,608	17,640	27,216	28,224	56,700	58,968
	1	1,232	1,775	2,687	3,525	4,634	7,889	13,330	17,280	26,661	27,648	55,543	57,765
	1.2	1,136	1,636	2,477	3,250	4,273	7,273	12,290	15,931	24,580	25,490	51,208	53,257
	1.4	1,012	1,458	2,207	2,896	3,808	6,481	10,952	14,197	21,904	22,715	45,633	47,459
1.8	0.1-0.8	1,140	1,641	2,485	3,260	4,286	7,296	12,312	15,960	24,624	25,536	51,300	53,352
	0.9	1,113	1,603	2,426	3,183	4,185	7,125	12,039	15,606	24,078	24,969	50,162	52,169
	1	1,067	1,537	2,327	3,053	4,014	6,832	11,544	14,965	23,089	23,944	48,102	50,026
	1.2	954	1,374	2,081	2,730	3,590	6,111	10,325	13,385	20,651	21,416	43,024	44,745
1.6	0.1-0.7	1,020	1,468	2,223	2,917	3,835	6,528	11,016	14,280	22,032	22,848	45,900	47,736
	1	893	1,286	1,947	2,554	3,358	5,716	9,658	12,520	19,317	20,033	40,245	41,855
	1.3	664	956	1,448	1,900	2,498	4,253	7,186	9,315	14,378	14,905	29,943	31,141
1.4	0.1-0.6	900	1,296	1,962	2,574	3,384	5,760	9,720	12,600	19,440	20,160	40,500	42,120
	1	702	1,011	1,531	2,009	2,642	4,497	7,599	9,851	15,199	15,762	31,664	32,931
	1.1	620	893	1,352	1,773	2,331	3,969	6,706	8,694	13,413	13,910	27,945	29,062
1.2	0.1-0.5	780	1,123	1,700	2,230	2,932	4,992	8,424	10,920	16,848	17,472	35,100	36,504
	1	477	687	1,040	1,365	1,795	3,055	5,162	6,692	10,325	10,708	21,512	22,372
1.0	0.1-0.4	660	950	1,438	1,887	2,481	4,224	7,128	9,240	14,256	14,784	29,700	30,888
	0.5	635	914	1,385	1,817	2,388	4,066	6,870	8,906	13,740	14,249	28,626	29,771
	0.8	435	627	950	1,246	1,638	2,789	4,713	6,109	9,426	9,775	19,637	20,423
0.9	0.1-0.4	600	864	1,308	1,716	2,256	3,840	6,480	8,400	12,960	13,440	27,000	28,080
	0.5	551	793	1,201	1,576	2,072	3,528	5,961	7,728	11,923	12,364	24,840	25,833
	0.7	413	595	901	1,182	1,554	2,646	4,471	5,796	8,942	9,273	18,630	19,375
0.8	0.1-0.3	540	777	1,177	1,544	2,030	3,456	5,832	7,560	11,664	12,096	24,300	25,272
	0.5	462	665	1,007	1,322	1,738	2,958	4,998	6,480	9,997	10,368	20,828	21,662
0.7	0.1-0.3	480	691	1,046	1,372	1,804	3,072	5,184	6,720	10,368	10,752	21,600	22,464
	0.5	364	525	794	1,042	1,371	2,333	3,943	5,111	7,886	8,178	16,430	17,087
0.6	0.1-0.2	420	604	915	1,201	1,579	2,688	4,536	5,880	9,072	9,408	18,900	19,656
	0.3	395	570	862	1,132	1,488	2,533	4,280	5,549	8,561	8,878	17,836	18,550
	0.5	248	357	541	710	934	1,590	2,686	3,482	5,373	5,572	11,195	11,643
0.5	0.1-0.2	360	518	784	1,029	1,353	2,304	3,888	5,040	7,776	8,064	16,200	16,848
	0.3	308	443	671	881	1,158	1,972	3,332	4,320	6,665	6,912	13,885	14,441
	0.4	228	329	498	653	859	1,462	2,471	3,203	4,943	5,126	10,298	10,710
0.4	0.05-0.15	300	432	654	858	1,128	1,920	3,240	4,200	6,480	6,720	13,500	14,040
	0.3	206	297	450	591	777	1,323	2,235	2,898	4,471	4,636	9,315	9,687
0.3	0.05-0.1	240	345	523	686	902	1,536	2,592	3,360	5,184	5,376	10,800	11,232
	0.2	182	262	397	521	685	1,166	1,971	2,555	3,943	4,089	8,215	8,543
0.2	0.05	180	259	392	515	677	1,152	1,944	2,520	3,888	4,032	8,100	8,424
	0.1	154	221	335	440	579	986	1,666	2,160	3,332	3,456	6,942	7,220
0.1	0.05	91	131	198	260	342	583	985	1,277	1,971	2,044	4,107	4,271

■ Dimensions (mm) and Weights (kg)

· Screwed type

Nominal size	d	L	H ₁	H	A	Weight
15A	Rc 1/2	150	74	244	200	12.4
20A	Rc 3/4	150	74	244	200	12.4
25A	Rc 1	160	76	251	226	16.4
32A	Rc 1-1/4	180	90	282	226	19.9
40A	Rc 1-1/2	180	90	282	226	19.9
50A	Rc 2	230	103	319	276	30.5

* Available with NPT connection.



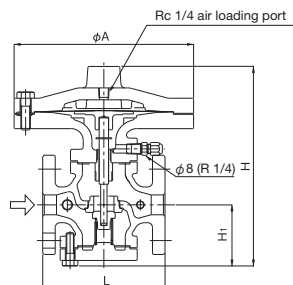
Screwed type

· Flanged type

Nominal size	L	H ₁	H	A	Weight
15A	146 (142)	74	244	200	13.9 (13.7)
20A	146 (142)	74	244	200	14.4 (14.2)
25A	156 (152)	76	251	226	19.2 (18.8)
32A	176 (172)	90	282	226	22.4 (22.0)
40A	196 (192)	90	282	226	22.9 (22.5)
50A	222 (218)	103	319	276	33.5 (33.5)
65A	282 (278)	122	373	352	61.8 (61.5)
80A	302 (294)	135	399	352	69.1 (66.9)
100A	342 (330)	167	488	401	108.6 (105.0)

* The above values in parentheses are the dimensions and weights of JIS 10K FF flanged.

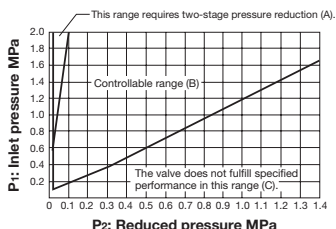
· Please contact us about other specifications.



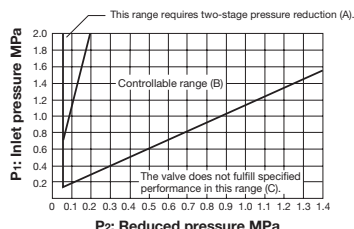
Flanged type

Specifications Selection Chart

· GP-2000, GPK-2001 · 2003

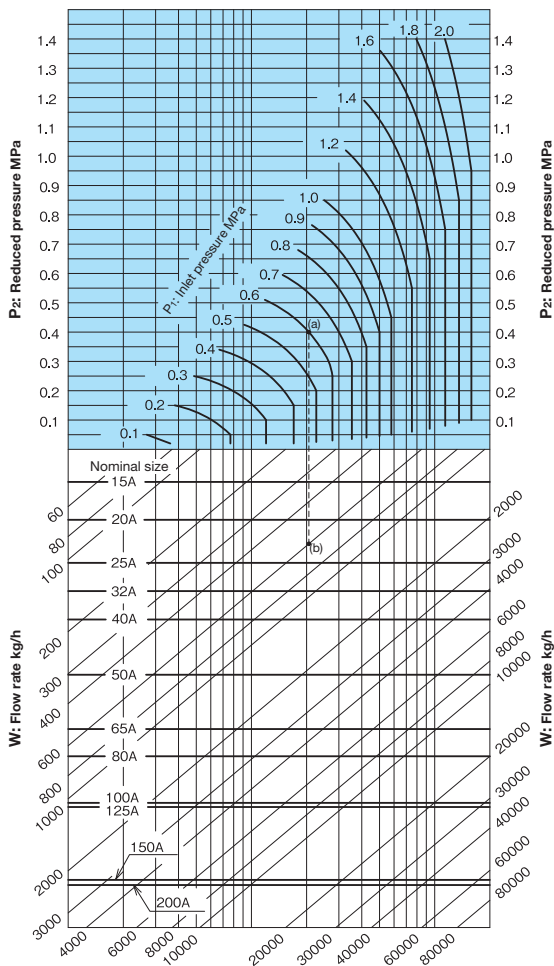


· GDK-2000



Please refer to the above selection chart to select the most appropriate pressure reducing valve. Find the point of intersection of inlet pressure (P_1) and reduced pressure (P_2). When the point of intersection is within range (A), reduce pressure in two stages. When within range (B), controllable range. When within range (C), maximum performance cannot be obtained. When reducing pressure in two stages, maximize the distance between the valves (at least 3 m).

■ Nominal Sizes Selection Chart for GP-2000 Series (For Steam/External Sensing)

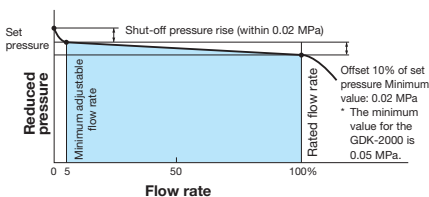


[Example]

When selecting the nominal size of a pressure reducing valve whose inlet pressure (P_1), reduced pressure (P_2), and flow rate are 0.6 MPa, 0.4 MPa, and 600 kg/h, respectively, first find intersection point (a) of the inlet pressure of 0.6 MPa and the reduced pressure of 0.4 MPa. Trace down vertically from this intersection point to find intersection point (b) with the flow rate of 600 kg/h. Since intersection point (b) lies between nominal sizes 20A and 25A, select the larger one, 25A.

· Set the safety factor at 80 to 90%.

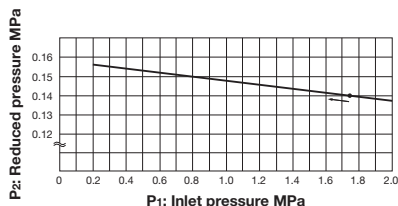
Flow Characteristic Chart



When selecting a nominal size, set the flow rate at 80 to 90% of the rated flow rate, allowing for the pressure loss and heat loss of the stop valve, strainer, etc. to be used before or after the pressure reducing valve. To enable the pressure reducing valve to show a maximum flow characteristic, do not select a small piping diameter, as a countermeasure against the effect of piping resistance. Select a nominal size based on the nominal sizes selection chart.

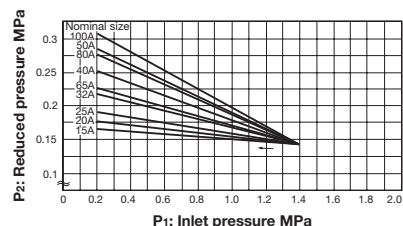
Pressure Characteristic Chart

GP-2000, GPK-2001 · 2003



This chart shows variation in reduced pressure when the inlet pressure of 1.75 MPa is changed between 0.2 MPa and 2.0 MPa while the reduced pressure is set at 0.14 MPa.

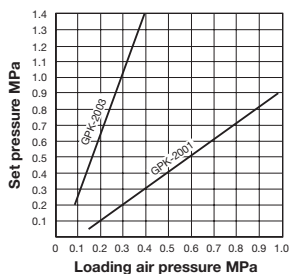
GDK-2000



This chart shows variation in reduced pressure when the inlet pressure of 1.4 MPa is changed between 0.2 MPa and 1.4 MPa while the reduced pressure is set at 0.14 MPa.

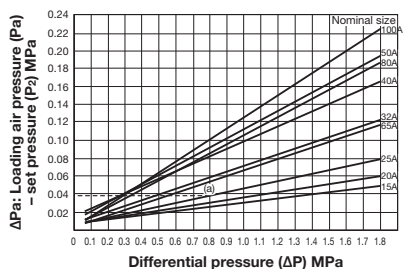
Loading Air Pressure-set Pressure Chart

GP-2000, GPK-2001 · 2003



Basically, the set pressure to the loading air pressure is as shown in the chart above. The set pressure is slightly different depending on the working conditions. For the actual use, adjust loading air pressure suitable for the necessary set pressure.

GDK-2000



How to read the chart (GDK-2000)

When the nominal size is 25A, the inlet pressure (P₁) is 1.0 MPa, and the reduced pressure (P₂) is 0.2 MPa, the loading air pressure is calculated as follows: Trace up vertically from the differential pressure (ΔP) before and after the pressure reducing valve (1.0 MPa - 0.2 MPa = 0.8 MPa) to find intersection point (a) with the nominal size of 25A. Calculate ΔPa [loading air pressure (Pa) - set pressure (P₂)] = 0.037 MPa by horizontally tracing to the left from intersection point (a). Thus, the loading air pressure is: (Pa) = ΔPa + P₂ = 0.037 + 0.2 = 0.237 MPa.