



บริษัท เอดีดี เฟอ์เนส จำกัด

ADD FURNACE CO.,LTD.

44 ซอยบรมราชชนนี 70 ถนนบรมราชชนนี แขวงศาลาธรรมสพน์ เขตทวีวัฒนา กรุงเทพฯ 10170

โทร: 02-888-3472 โทร: ออกแบบ: 08-08-170-170 แฟกซ์: 02-888-3258

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Products Catalogue

Governors
Regulators
Auto-Changeovers
Hoses & Valves
Safety Devices
Vaporisers
SNG Generator

ITO Corporation
Innovation Technology Origination



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User Guide

Terminology and Advice

Pressure Tiers of City Gas in Japan and Product Category

High pressure city gas which is sent from the production plant is reduced to medium pressure using pressure governors and distributed to large-scale plants and facilities. The pressure is further reduced to low or intermediate pressure for distribution to regular households and commercial facilities. Relative city gas facilities including our governors are typically designed based on following pressure tiers in Japan.

Full Form	Condensed Description	Pressures
High Pressure	HP	1.00MPa or more
Medium Pressure A	MPA	0.30MPa~0.99MPa
Medium Pressure B	MPB	Approx. 0.05~0.30MPa
Low Intermediate Pressure	LM	Approx. 10.0~20.0kPa
Low Pressure	LP	1.00kPa~2.50kPa

The product category is expressed in condensed description.
E.g. AB Governor = A reducing governor from Medium Pressure A to B.

Connections

Described by a condensed description, the complete description is given as table 1.

Condensed Description	Table 1: Connection Full Description	JIS Code
Union	A union joint assembled at product outlet connection. PT threaded for connection. See description below.	B 2301 MOD:ISO 49
Rc-R PT Thread	JIS taper pipe threads. Shown as R for male/external thread and Rc for female/internal thread in short.	B 0203 MOD:ISO 7
Flange	JIS flange connections. A welded neck flange pipe screwed into the regulator or a regulator that has an end face finished to match a declared flange specifications. FF for a flat face flange or RF for a raised face flange shown in the description.	B 2220

Dimensions in mm

Expressed in mm in this catalogue. See table 2 for your conversion.

Outlet Pressure in MPa, kPa

A regulator delivers a stable outlet pressure within the declared range. Interchangeable springs are available for some models.

Manual-Reset OPSO (MR-OPSO) in MPa, kPa

The ITO "MR-OPSO", a manual-reset type OPSO, shuts off gas upstream of pressure governor to avoid abnormal pressure increases. Manual reset type overpressure shut-off valve to be reset by pushing or pulling a reset button.

Auto-Reset OPSO (AR-OPSO) in MPa, kPa

The ITO "AR-OPSO", an inner auto-reset type over pressure shut-off valve incorporated additionally, works to avoid outlet pressure rises if any foreign object is caught between the main valve disc and the main orifice, inner sealing failed.

Safety Relief Valve in MPa, kPa

A valve that opens and releases overpressure into the air to prevent abnormal pressure increases.

Strainer Incorporated

Incorporated with a net-like part to filter any foreign bodies such as pipe scale or rust coming from the upstream pipework.

Table 2 : Length

cm	mm	in
100.0	1000.0	39.4
1.0	10.0	0.394
0.1	1.0	0.0394
2.54	25.4	1.0
30.5	305.0	12.0

Table 3 : Pressure Conversion

MPa	kPa	kgf/cm ²	mm H ₂ O	in H ₂ O	PSI	bar	mbar
1.0	1000.0	10.197	1.02×10 ⁵	4010.05	145.0	10	10,000
0.001	1.0	0.0102	102.0	4.02	0.145	0.01	10
0.098	98.0	1.0	10000.0	394.0	14.2	0.9807	980.7
9.8×10 ⁻⁶	0.0098	0.0001	1.0	0.0394	0.00142	0.0001	0.1
2.49×10 ⁻⁴	0.249	0.00254	25.4	1.0	0.0361	0.00249	2.49
0.0069	6.9	0.0703	703.0	27.7	1.0	0.06895	68.95
0.1	100	1.0197	10197	401.76	14.5	1.0	1,000
0.0001	0.1	0.00102	102.1	0.402	0.0145	0.001	1.0

Selection Parameters

To order our governors, provide the 7 items below to your ITO sales representatives.

1. Model
2. Inlet Pressure Range (P1)
3. Outlet Pressure Range (P2)
4. Maximum Flow Rate (Q)
5. Gas Type and Specific Gravity
6. Gas Temperature
7. Type of Connection and Face-to-Face Dimensions



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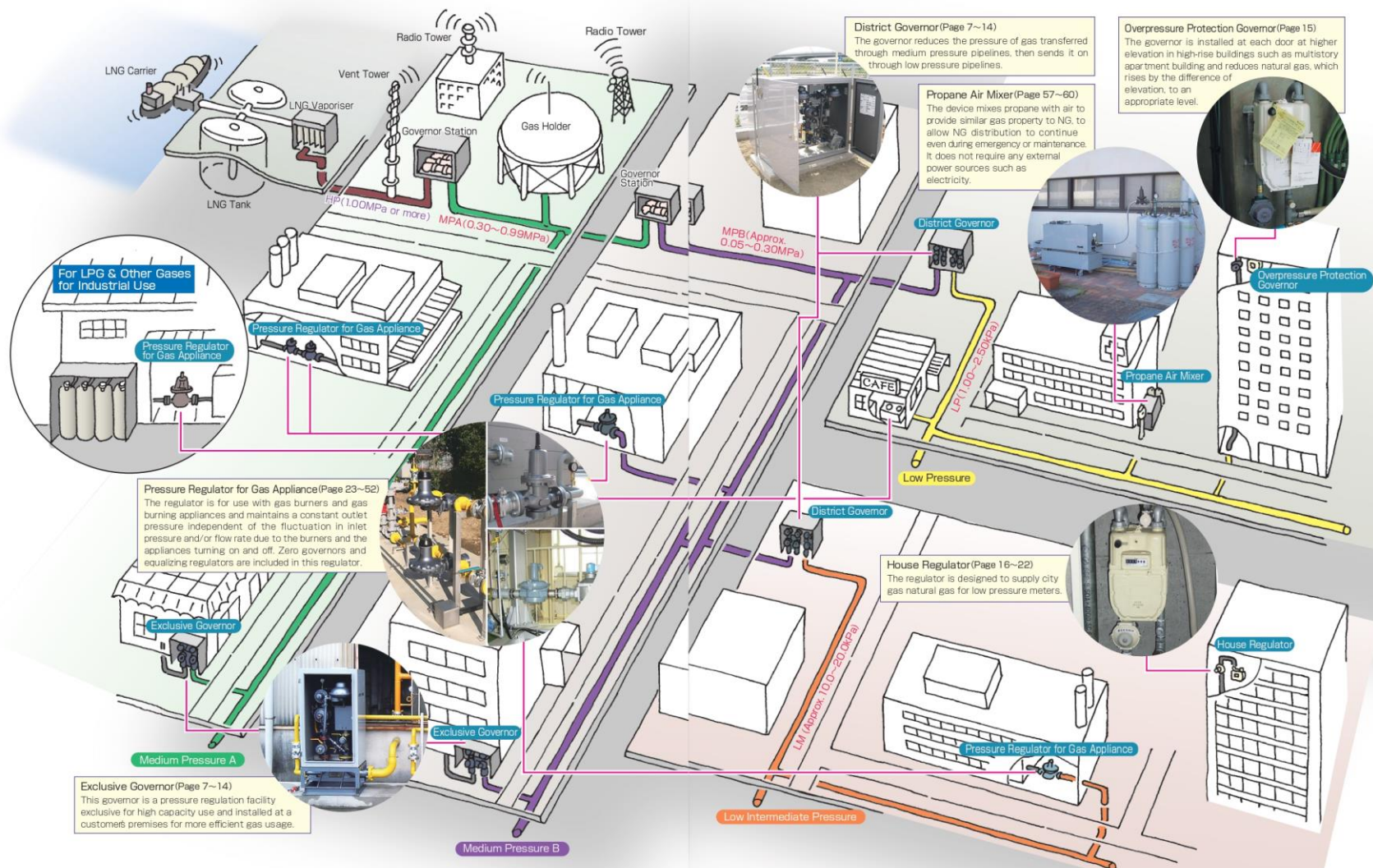
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City Gas Natural Gas Solutions in Application Map



*See page 53~56 regarding accessories and other equipment.



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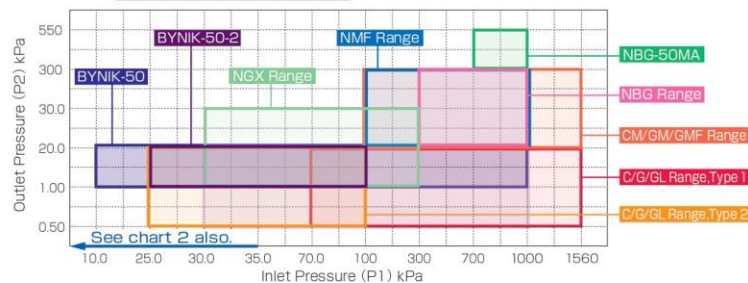
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Selection Guide for Governors

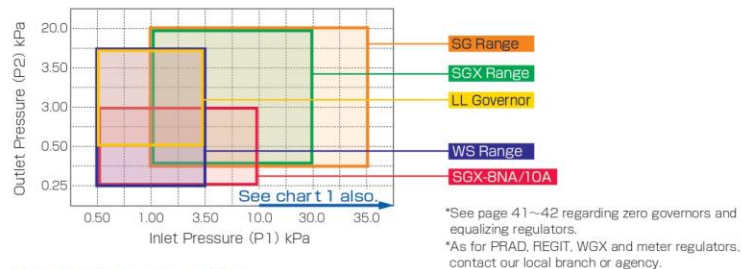
Step 1 : Selecting Model Code

See the charts below and select a model code (range) based on your required inlet (P1) and outlet pressures (P2).

● Chart 1 (For Medium Pressure Inlet)



● Chart 2 (For Low Intermediate or Low Pressure Inlet)



Step2 : Selecting Size

Check the maximum flow rate on the selected model code page and choose a governor to meet your requirement.

Step3 : Gas Application

See page 5~6 and ensure the gas to be used is applicable for the model. At the same time, confirm if the governor can fit your other conditions of use such as our declared hydrostatic and air-tightness pressure and working temperature range, to satisfy all requirements.

Step 4 : Checking Piping Details

Confirm that the type of connection and face-to-face dimension of the governor to fit in the piping at the installation site.

- ❗ Pressure losses due to length of piping, valves, pipe joints and flow meters and so on shall be taken into consideration.
- ❗ This catalogue indicates flow rates measured under static conditions. Select the governor with a margin for your required capacity especially when there is a momentary pressure fluctuation due to solenoid valves rapidly turning on and off.

Converting the Flow Rate and Reading the Performance Curve

Converting the Flow Rate

Flow rate is expressed in m³/h (normal) of 0.6 specific gravity natural gas in this catalogue. If you use any other gas, please convert it using the following formula. Substitute the coefficient of conversion of your gas type into K in the conversion formula below to convert the flow rate.

Converting the Flow Rate of Gas into the Flow Rate of Air

$$Q_{\text{Air}} \left(\frac{\text{Nm}^3}{\text{h}} \right) = Q \left(\frac{\text{Nm}^3}{\text{h}} \right) \times K$$

Converting the Flow Rate of Air into the Flow Rate of Gas

$$Q \left(\frac{\text{Nm}^3}{\text{h}} \right) = \frac{Q_{\text{Air}} \left(\frac{\text{Nm}^3}{\text{h}} \right)}{K}$$

Gas Type	City Gas		Natural Gas*	Propane	Nitrogen	Carbon Dioxide	Argon	Helium	Hydrogen	Ammonia
	13A	PA-13A	NG	C3H8	N2	CO2	Ar	He	H2	NH3
K Coefficient of Conversion	0.81	1.16	0.81	1.23	0.98	1.24	1.17	0.37	0.26	0.77

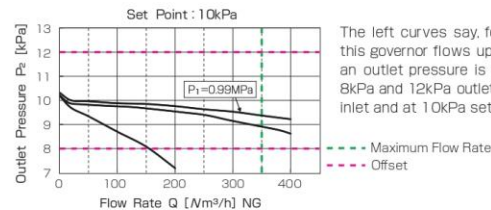
*Based on the specific gravity of 0.6.

If you use gas not listed above, see page 5~6 to find the specific gravity and calculate the coefficient of conversion (K) with the formula below.

$$\text{Coefficient of Conversion } K = \sqrt{\text{Specific Gravity}}$$

Reading the Performance Curve

The flow rates will vary depending on different inlet pressures and maximum & minimum limits on outlet pressures even at the same set point. You can see how much gas flows through your selected governor with in your acceptable pressure range (= offset). The curves represent the characteristic of a governor at each inlet pressure.



Nm³/h, m³/h(normal).....Meters cubed per hour (normal): measurement of volume rate of a gas at atmospheric pressure and 0°C.

Specific Gravity.....The rate of weight of a given volume fluid to the weight of equal volume of liquid/gas at stated temperature.

Offset.....The deviation from set point for a given flow.

Flow Rate.....The rate of flow through the regulator specified by the manufacturer for a given inlet & outlet pressure and offset.

Maximum Flow Rate.....Our guaranteed flow rate at maximum for which the governor performs at its optimum at the declared outlet pressure for the declared inlet pressures within the range of delivery (=offset).



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Usable Gases

If you request gas type not listed in the table below, contact our local branch or agency.

Category		Governor																Regulator									
		SGF Range		H5-EX(S) -NR /H-5EX	NBG Range		NMF Range		BYNIK Range		WGK Range		NGX Range		SG Range	SGX Range		LL Governor	WS Range		Medium Pressure		Low Pressure		Stainless Steel		
Model Code		SGF-15 SGF-15L SGF-15S	SGF-20L SGF-20S SGF-25			NBG-50- MA	NBG-50 NBG-50H	NMF-20 NMF-25- 40 NMF-25- 40-2	NMF-40 NMF-50 NMF-50-2 NMF-80 NMF-100	BYNIK-50	BYNIK-50- 2 BYNIK-50- 2-S	WGX-20 WGX-25	WGX-25- 2		NGX-80 NGX-100	NGX-20 NGX-25 NGX-25-2 NGX-32 NGX-50 NGX-50-2	SG-24A SG-32B SG-36A	SGX-80A SGX-10A	SGX-15N/SGX-20N SGX-25N/SGX-40N SGX-40/SGX-50N SGX-50/SGX-80 SGX-100	GZ-20 G-3B ARO- 40A GX-4 GY-6	WS-100 WS-101 WS-102 WS-103 WS-104	CM-100	GMF-70 GMF-100 GMF-200	GMF-300 GMF-400 GMF-500 GM-1000	C-10A C-20 GL-50 GL-70	G-32A G-36C GL-300 GL-400 GL-500	AC-15
Body Material		ADC12		ADC12	Type L: FCD450 Type S: AC4C-T6		FCD-S		AC4C-T6		FCD400			AC4C-T6 (NGX-80/NGX-100/FCD-S)		FCD400 (SG-32B/FCD-S)	ADC12 (SGX-40/SGX-50/FCD450 SGX-80/SGX-100/FCD-S)		ADC12	ADC12	ZDC2	FCD-S		ADC12	FCD-S	SCS13	
Hydrostatic Test	Inlet	—	—	H5-EX : 0.50MPa H-5EX : 0.80MPa	1.50MPa		1.50MPa		1.50MPa		0.60MPa			1.50MPa		0.07MPa	—		—	10.0kPa (WS-103/ WS-104 : 20.0kPa)		2.70MPa		Type1 : 2.70MPa Type2 : 0.80MPa		0.80MPa	3.30MPa
	Outlet	—	—	0.30MPa	0.99MPa	0.60MPa	0.45MPa		0.30MPa		0.40MPa	0.20MPa		0.30MPa		0.03MPa	—		—	0.80MPa		0.30MPa		0.30MPa	0.80MPa		
Air-Tightness Test	Inlet	20.0kPa		H5-EX : 0.40MPa H-5EX : 0.50MPa	1.10MPa		1.10MPa (NMF-50-2 : 0.33MPa)		1.10MPa	0.40MPa		0.44MPa		0.40MPa		0.04MPa	11.0kPa 33.0kPa (SGX-80/SGX-100 : 66.0kPa)	10.0kPa	10.0kPa	1.80MPa		Type1 : 1.80MPa Type2 : 0.50MPa		0.50MPa	2.10MPa		
	Outlet	20.0kPa		5.50kPa	0.73MPa	0.44MPa	0.33MPa (NMF-50-2 : 0.33MPa)		55.0kPa		15.0kPa	22.0kPa	55.0kPa		5.50kPa	10.0kPa		10.0kPa	0.30MPa		5.50kPa		5.50kPa	0.30MPa			
Maximum Outlet Pressure		—	—	—	0.55MPa		0.30MPa		20.0kPa		10.0kPa		8.0kPa	20.0kPa		30.0kPa	20.0kPa	3.00kPa	20.0kPa	3.00kPa	2.70kPa	0.30MPa		20.0kPa		20.0kPa	0.30MPa
Working Temperature Range *1		-15~60℃		-10~60℃	-25~60℃		Type L: 0~60℃ Type S: -15~60℃		-5~60℃		-15~60℃		-10~60℃		-15~60℃ (NGX-80/NGX-100 : -5~60℃)		-5~60℃ (SGX-80/SGX-100 : -5~60℃)	-15~60℃ (SGX-80/SGX-100 : -5~60℃)	-5~60℃	-5~55℃	-5~60℃ (CM-100 : -25~60℃)		-5~60℃ (C-10A/C-20 : -25~60℃)		-5~60℃		
Argon Gas (Ar) S.G. : 1.38		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ammonia Gas (NH ₃) S.G. : 0.60		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	✓	
Ethane Gas (C ₂ H ₆) S.G. : 1.05		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	R
Air S.G. : 1.00		x	x	x	R ^{*4}	R	R	R	x	x	x	x	x	R	R	R	x	R	x	x	R	R	R	R	R	R	R
Coke-Oven Gas ^{*3} (COG) S.G. : 0.3~0.8 ^{*2}		x	x	x	R ^{*4} M	R	R	R	x	x	x	x	x	x	R	M	x	Use Type C	x	x	R	M	R	M	R	x	x
Hydrogen Gas (H ₂) S.G. : 0.07		✳	✳	✳	He	He	He	He	He	He	✳	✳	He	He	He	He	He	He	He	He	He	He	He	He	He	He	He
Nitrogen Gas (N ₂) S.G. : 0.97		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Natural Gas (NG) S.G. : 0.65~0.7 ^{*2}		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	R
City Gas (13A)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	R
Carbon Dioxide (CO ₂) S.G. : 1.54		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Biogas ^{*2} ^{*3}		x	x	x	M	M	M	M	x	x	x	x	x	M	M	M	M	M	x	x	M	M	M	M	M	R	R
Butane Gas (C ₄ H ₁₀) S.G. : 2.01		✓	✓	✓	x	✓	✓	✓	x	✓	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	R
Propane Gas (C ₃ H ₈) S.G. : 1.56		✓	✓	✓	x	✓	✓	✓	x	✓	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	R
Helium Gas (He) S.G. : 0.14		✳	✳	✳	He	He	He	He	He	He	✳	✳	He	He	He	He	He	He	He	He	He	He	He	He	He	He	He
Methane Gas (CH ₄) S.G. : 0.55		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	R
Sulfur Hexafluoride Gas (SF ₆) S.G. : 5.11		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	R
Prohibited Gases		Acetylene Gas, Sulfurous Acid Gas, Carbon Monoxide Gas, Chlorine Gas, Ozone Gas, Butadiene Gas, Butylene Gas,																Hydrogen Sulfide Gas, Oxygen Gas, Propylene Gas and so on.									

*1 During continuous operation.

*2 The specific gravity of COG, NG and biogas varies depending on the application. Please specify the specific gravity of the gas when placing your order.

*3 The content of hydrogen sulfide shall be 10 ppm or less in fluid.

*4 If alternative rubber parts of NBG-50H are required, contact your ITO sales representative.

✓ : Use standard product. R : Change rubber parts. ✳ : Contact your ITO sales representative.

x : Cannot be used. M : Change materials used for main parts.

He : Carry out air-tightness test using helium.

(If alternative raw material is required, please inform our local branch or agency when placing your order)



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PRAD-AB Range

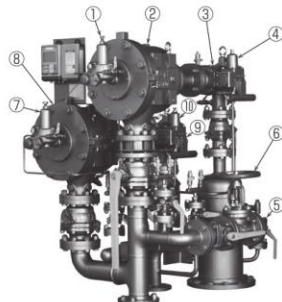
AB Governor Unit

Incorporated: Relief MR-OPSO Strainer

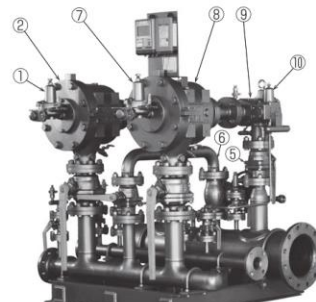


Japan Gas Association
Technical Prize

- The PRAD-AB range is a unit of pressure reducing governors from *Medium Pressure A* to *Medium Pressure B* and multiple safety devices into one same compact body.
- Widely used as an *Exclusive Governor* or a *District Governor*.
- Pilot-operated governors used, which provides outstanding stability of outlet pressure.
- The easily removable and attachable main valve to the main governor and the combined SOV and strainer filter make maintenance easier.
- 2 options, large flow rate type with an adjustable restrictor, or the high stability type with a fixed restrictor.
- The inlet and outlet directions of PRAD-AB-H can be selected from 4 options. Please specify your required mounting position when placing your order.



PRAD-AB-V Height: 1185
Width: 1174
Depth: 970



PRAD-AB-H Height: 1385
Width: 1275
Depth: 1180

Main Components

No.	Item Name
①	Main Manual-Reset OPSO
②	Main Filter
③	Main Regulator
④	Main Pilot Regulator
⑤	Safety Relief Valve
⑥	Bypass V-Port Valve
⑦	Sub Manual-Reset OPSO
⑧	Sub Filter
⑨	Sub Regulator
⑩	Sub Pilot Regulator

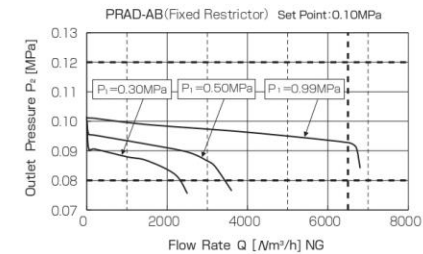
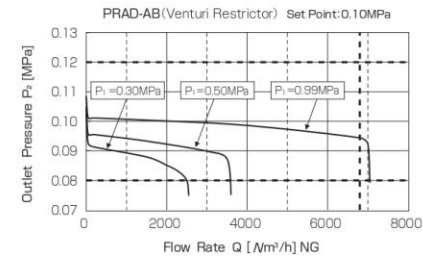
Specifications

Model		PRAD-AB-V (Vertical Type) PRAD-AB-H (Horizontal Type)					
Set Point (MPa)		0.06	0.10	0.15	0.18	0.20	
Maximum Flow Rate (Nm³/h)		Venturi Restrictor: 6800 Fixed Restrictor: 6500					
Inlet Pressure (MPa)		0.30~0.99					
Outlet Pressure (MPa)	Main Line	0.06	0.10	0.15	0.18	0.20	
	Sub Line	0.04	0.08	0.13	0.16	0.18	
Lockup Pressure (MPa)	Main Line	0.08	0.12	0.17	0.20	0.22	
	Sub Line	0.06	0.10	0.15	0.18	0.20	
Safety Relief Valve (MPa)	Start-to-Discharge	0.12±0.01	0.16±0.01	0.21±0.01	0.24±0.01	0.26±0.01	
	Stop-to-Discharge	0.09~0.13	0.13~0.17	0.18~0.22	0.21~0.25	0.23~0.27	
MR-OPSO (MPa)	Main Line	0.10	0.14	0.19	0.22	0.24	
	Sub Line	0.16	0.20	0.25	0.28	0.30	
Reset Method		Manual by Pulling the Red Indicator					
Inlet Connection		JIS 10K 80A Flange (FF)					
Outlet Connection		JIS 10K 200A Flange (FF)					
Sensing Line Connection		JIS 10K 50A Flange (FF)					
Strainer Mesh Gauge		400 Mesh					

*A fine mesh strainer to prevent particles from dusty gas is also available.

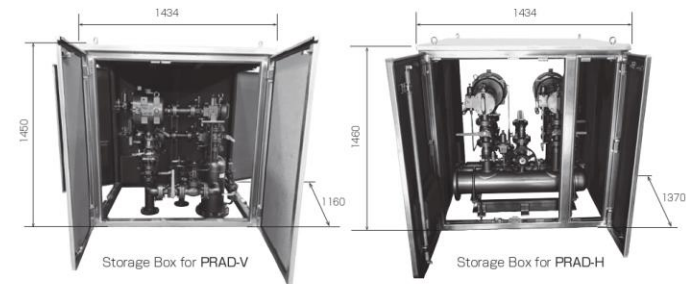
*PRAD-AB requires 0.1MPa or more differential pressure between inlet and outlet.

Flow Rate



Storage Box

A dedicated aesthetically designed storage box offers additional protection from rain, wind and noise and providing full security.





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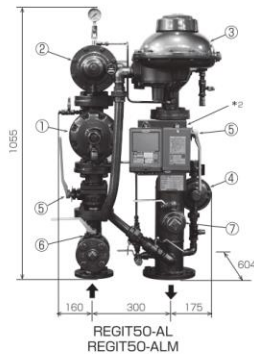
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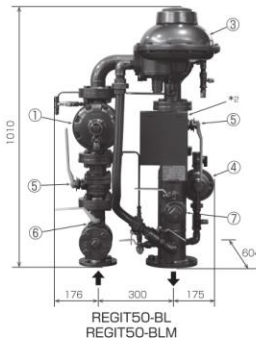
REGIT50 Range

AL/ALM Governor Unit BL/BLM Governor Unit

Incorporated: (A) OPSO (Relief) (M) OPSO
(Strainer) *AL/BL only.



REGIT50-AL
REGIT50-ALM



REGIT50-BL
REGIT50-BLM

The REGIT50 Range is a unit of pressure reducing governors from Medium Pressure A or B to Low Pressure or Low Intermediate Pressure and multiple safety devices into one compact body.
Widely used as an Exclusive Governor or small-scale District Governor.
Only direct-operated governors used, which provides outstanding quick response and easy maintenance. The ITO Active Venturi System (AVS)*1 enables flat flow rate characteristics different from conventional direct-operated type.
*1: Patented



Japan Gas Association
Technical Grand Prize

Main Components

No.	Item Name	Quantity	
		REGIT50-AL REGIT50-ALM	REGIT50-BL REGIT50-BLM
①	Manual-Reset OPSO	1	1
②	Medium Pressure A to B Governor	1	1
③	Medium Pressure B to Low Pressure Governor/ Medium Pressure B to Intermediate Pressure Governor	1	1
④	Safety Relief Valve	1	1
⑤	Ball Valve	2	2
⑥	Ball Valve	1	1
⑦	Ball Valve	1	1

*2 Auto-recording pressure gauge is available as a separate accessory.

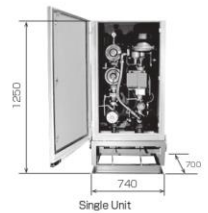
Specifications

Model		REGIT50-AL	REGIT50-BL	REGIT50-ALM	REGIT50-BLM
Maximum Flow Rate (Nm ³ /h)		550	800	730	634
Inlet Pressure (MPa)		0.30 ~ 0.99	0.06 ~ 0.30	0.30 ~ 0.99	0.06 ~ 0.30
Outlet Pressure (kPa)		1.90 ~ 2.30	9.00 ~ 20.0 ^{*3}		
Lockup Pressure (kPa)		≤ 2.50	≤ Set Point × 1.2		
Safety Relief Valve Working Pressure		2.70 ~ 8.00 kPa ^{*3}		9.00 ~ 30.0 kPa ^{*3}	
Auto-Reset OPSO	Working Pressure	≤ 5.00 kPa Resets automatically after outlet pressure resumes its normal range.			
	Reset Method				
Manual-Reset OPSO	Working Pressure	8.00 ~ 13.0 kPa ^{*3}		9.00 ~ 30.0 kPa ^{*3}	
	Reset Method	Manual Operation by the Reset Button			
Inlet Connection		JIS 10K 50A Flange(FF)			
Outlet Connection		JIS 10K 100A Flange(FF)			
Strainer Mesh Gauge		100 Mesh ^{*4}			

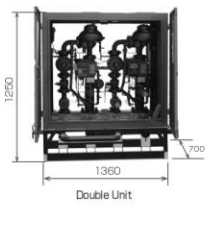
*3 Interchangeable springs are available.

*4 The strainer with 200 mesh is also available.

Mounting pipework and storage box are available as separate accessories.

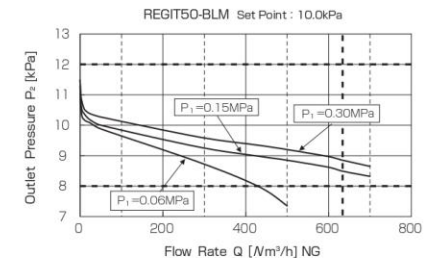
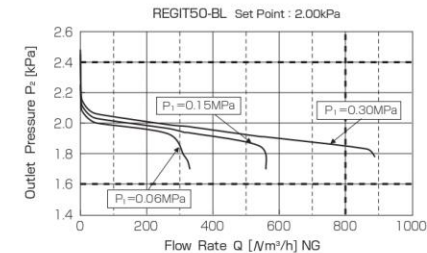
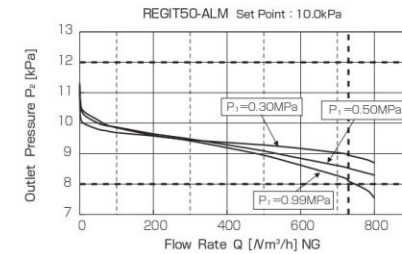
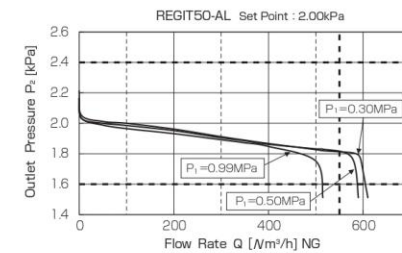


Single Unit



Double Unit

Flow Rate





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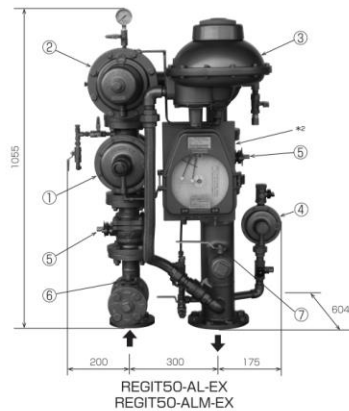
REGIT50-EX Range

AL/ALM Governor Unit

Incorporated: (AR-OPSO) (Relief) (MR-OPSO) (Strainer) *AL only.

The REGIT50-EX range is a unit of pressure reducing governors from Medium Pressure A to Low Pressure or Low Intermediate Pressure and multiple safety devices into one compact body. Simplified REGIT (see page 9~10 for more description) to achieve larger flow rate, AL 700Nm³/h*1 ALM 1,000Nm³/h

*1: AL with SGX-100 also up to 1,000m³/h at max.

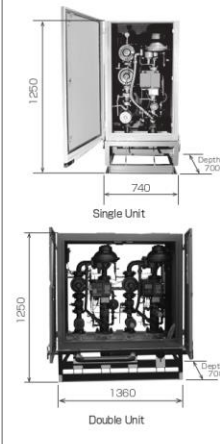


Main Components

No.	Item Name	Quantity
①	Manual-Reset OPSO	1
②	Medium Pressure A to B Governor	1
③	Medium Pressure B to Low Pressure Governor/ Medium Pressure B to Intermediate Pressure Governor	1
④	Safety Relief Valve	1
⑤	Ball Valve	2
⑥	Ball Valve	1
⑦	Ball Valve	1

*2 Auto-recording pressure gauge is available as a separate accessory.

Mounting pipework and storage box are available as separate accessories.



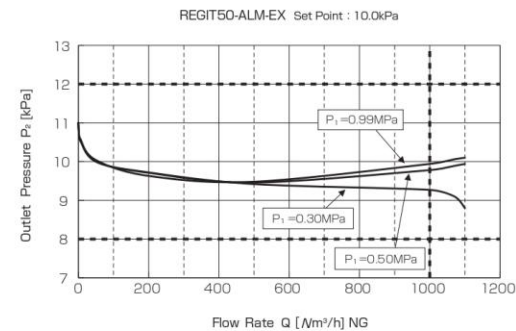
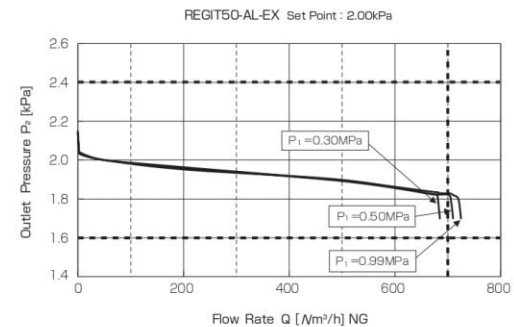
Specifications

Model		REGIT50-AL-EX	REGIT50-ALM-EX	
Maximum Flow Rate (Nm³/h)		700	1000	
Inlet Pressure (MPa)		0.30 ~ 0.99		
Outlet Pressure (kPa)		1.90 ~ 2.30	9.00 ~ 20.0 ^{*3}	
Lockup Pressure (kPa)		≤2.50	≤Set Point × 1.2	
Safety Relief Valve Working Pressure		2.70 ~ 8.00kPa ^{*3}	9.00 ~ 30.0kPa ^{*3}	
Auto-Reset OPSO	Working Pressure	≤5.00 kPa	/	
	Reset Method	Resets automatically after outlet pressure resumes its normal range.		
Manual-Reset OPSO	Working Pressure	8.00 ~ 13.0kPa ^{*3}		9.00 ~ 30.0kPa ^{*3}
	Reset Method	Manual Operation by the Reset Button		
Inlet Connection		JIS 10K 50A Flange(FF)		
Outlet Connection		JIS 10K 100A Flange(FF)		
Strainer Mesh Gauge		100 Mesh ^{*4}		

*3 Interchangeable springs are available.

*4 The strainer with 200 mesh is also available.

Flow Rate





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REGIT-AB Range

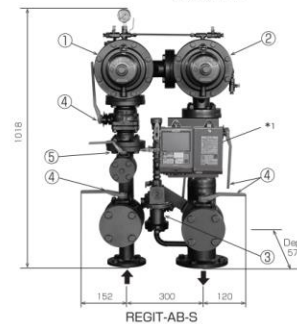
AB Governor Unit

Incorporated (AR-OPSO) (Relief Strainer)

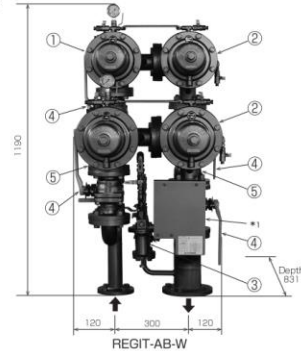


Japan Gas Association Technical Prize

- The REGIT-AB range is a unit of pressure reducing governors from Medium Pressure A to Medium Pressure B and multiple safety devices into one same compact body regardless of the single (REGIT-AB-S) or double unit (REGIT-AB-W).
- Widely used as an Exclusive Governor or small-scale District Governor.
- Only direct-operated governors used, which provides outstanding quick response and easy maintenance.
- The REGIT-AB-W has a double line structure, which allows its use without suspending gas supply during maintenance and so does not require installation of temporary governors.



REGIT-AB-S



REGIT-AB-W

Main Components

No.	Item Name	Quantity
①	Auto-Reset OPSO	1
②	Medium Pressure A to B Governor	1
③	Safety Relief Valve	1
④	Ball Valve	4
⑤	Ball Valve	2

*Auto-recording pressure gauge is available as a separate accessory.

Main Components

No.	Item Name	Quantity
①	Auto-Reset OPSO	2
②	Medium Pressure A to B Governor	2
③	Safety Relief Valve	1
④	Ball Valve	4
⑤	Ball Valve	2

*Auto-recording pressure gauge is available as a separate accessory.

Specifications

Model		REGIT-AB-S/REGIT-AB-W		
Set Point (MPa)		0.10	0.15	0.20
Maximum Flow Rate (Nm³/h)		1000		
Inlet Pressure (MPa)		0.30 ~ 0.99		
Outlet Pressure (MPa)	Main Line	0.10±0.01	0.15±0.015	0.20±0.02
	Sub Line*	0.07±0.01	0.12±0.015	0.17±0.02
Lockup Pressure (MPa)	Main Line	≤ 0.12	≤ 0.18	≤ 0.24
	Sub Line	≤ 0.084	≤ 0.144	≤ 0.204
Safety Relief Valve (MPa)	Start-to-Discharge	0.23~0.25		0.27~0.29
	Stop-to-Discharge	0.21~0.25		0.25~0.29
Auto-Reset OPSO	Working Pressure	0.15MPa	0.20MPa	0.25MPa
	Reset Method	Resets automatically after outlet pressure resumes its normal range.		
Inlet Connection		JIS 10K 50A Flange (FF)		
Outlet Connection		JIS 10K 100A Flange (FF)		
Strainer Mesh Gauge		100 Mesh*		

*1 For REGIT-AB-W only.

*2 The strainer with 200 mesh is also available.

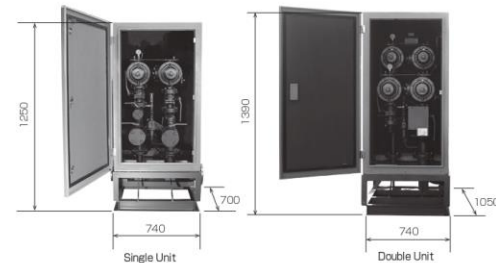
Auto-Reset OPSO (AR-OPSO)

The ITO "AR-OPSO"; an inner auto-reset type over pressure shut-off valve incorporated additionally, works to avoid outlet pressure rises if any foreign object is caught between the main valve disc and the main orifice, inner sealing failed.

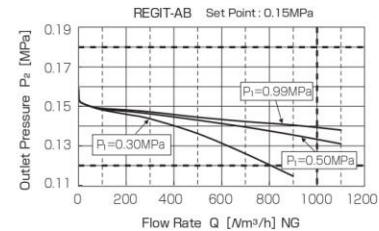
Safety Relief Valve

A valve that opens and releases overpressure into the air to prevent abnormal pressure increases.

Mounting pipework and storage box are available as separate accessories.



Flow Rate





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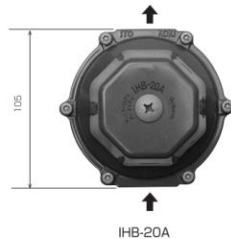
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IHB-20A

Overpressure Protection Governor

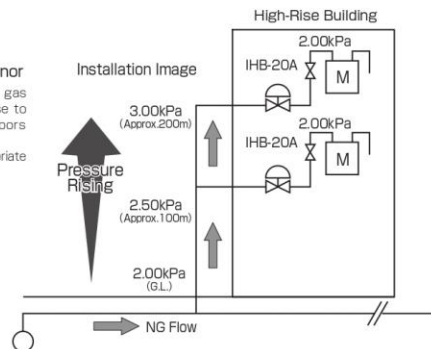
- IHB-20A reduces **Low Pressure** city gas natural gas, which rises by the difference of elevation, to an appropriate level declared in the contract that supply pressure is less than 2.50 kPa for domestic meters in Japan.
- It is installed at each floor at higher elevation in high-rise buildings such as multistory apartment building.



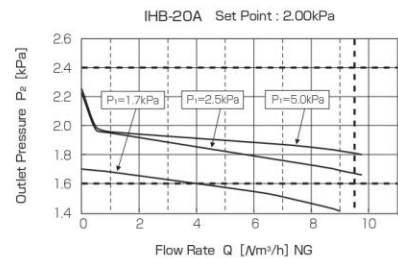
Specifications

Model	IHB-20A	IHB-20A-R
Maximum Flow Rate (Nm ³ /h)	9.5	
Inlet Pressure (kPa)	1.70~5.00	
Outlet Pressure (kPa)	1.90±0.40	
Lockup Pressure (kPa)	≤ 2.50	
Connection	Rc 3/4	
Mounting Position (Direction of the Gas Flow)	Vertical (Outlet down) / Horizontal	Vertical (Inlet down) / Horizontal

- **Overpressure Protection Governor**
The specific gravity of city gas natural gas is lighter than air so the pressure will rise to supply city gas natural gas to higher floors in high-rise buildings. IHB-20A reduces the pressure to an appropriate level.



Flow Rate



MHR-25

House Regulator

Incorporated: (Relief) (MR-OPSO) (Strainer)

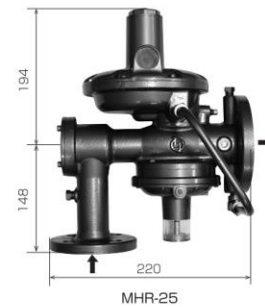
- MHR-25 is a meter regulator from **Medium Pressure B** to **Low Pressure** or **Low Intermediate Pressure** and multiple safety devices into one compact body.
- Designed to supply city gas natural gas for meters with outstanding quick response and flat flow rate characteristics.

Specifications

Model	MHR-25
Maximum Flow Rate (Nm ³ /h)	140
Inlet Pressure	0.05~0.30MPa
Outlet Pressure	1.50~20.0kPa*1
Lockup Pressure	≤ 2.50kPa*2
Safety Relief Valve	Start-to-Discharge 3.20±0.40kPa*2 Stop-to-Discharge 2.52~3.60kPa*2
Manual-Reset OPSO	Working Pressure 4.20±0.40kPa*2 Reset Method Manual by Pulling the Indicator
Inlet Connection	JIS 10K 25A Flange (FF)
Outlet Connection	JIS 10K 40A Flange (FF)
Strainer Mesh Gauge	150 Mesh

*1 Interchangeable springs are available.

*2 Based on 2.00 kPa set point.



Interchangeable Spring Selection

No.	②	③	④
Set Point Range (kPa)	1.50~3.00	3.00~5.00	5.00~8.00

No.	⑤	⑥
Set Point Range (kPa)	8.00~13.0	13.0~20.0

■ shows the standard spring.

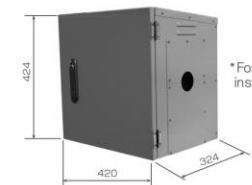
○ Safety Relief Valve

A valve that opens and releases overpressure into the air to prevent abnormal pressure increases.

○ Manual-Reset OPSO (MR-OPSO)

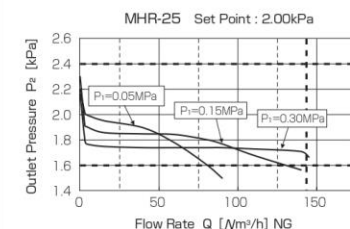
The ITO "MR-OPSO" a manual-reset type OPSO, shuts off gas upstream of pressure governor to avoid abnormal pressure increases. Manual reset type overpressure shut-off valve to be reset by pulling the indicator.

Storage Box for MHR-25



* For horizontal installation only.

Flow Rate





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IGL Range

House Regulator

Incorporated: (AR-OPSO)¹ or (Relief)² (Strainer)

*1 IGL-H range for indoor installation only.

*2 IGL-S range for outdoor installation only.

The IGL range is a meter regulator from *Low Pressure* or *Low Intermediate Pressure* to *Low Pressure*.

The (AR-OPSO) incorporated for H type for indoor use.

The (Relief) incorporated for the S type for outdoor use.

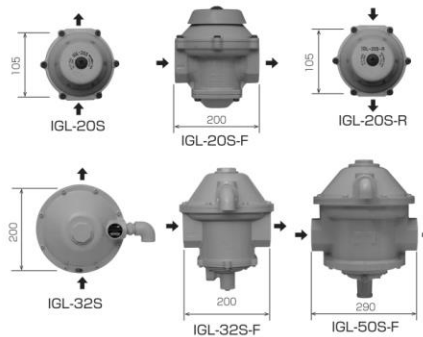
Designed to supply city gas natural gas for low pressure meters.

*IGL-50S-F combines both AR-OPSO and safety relief valve.

IGL-H type



IGL-S type

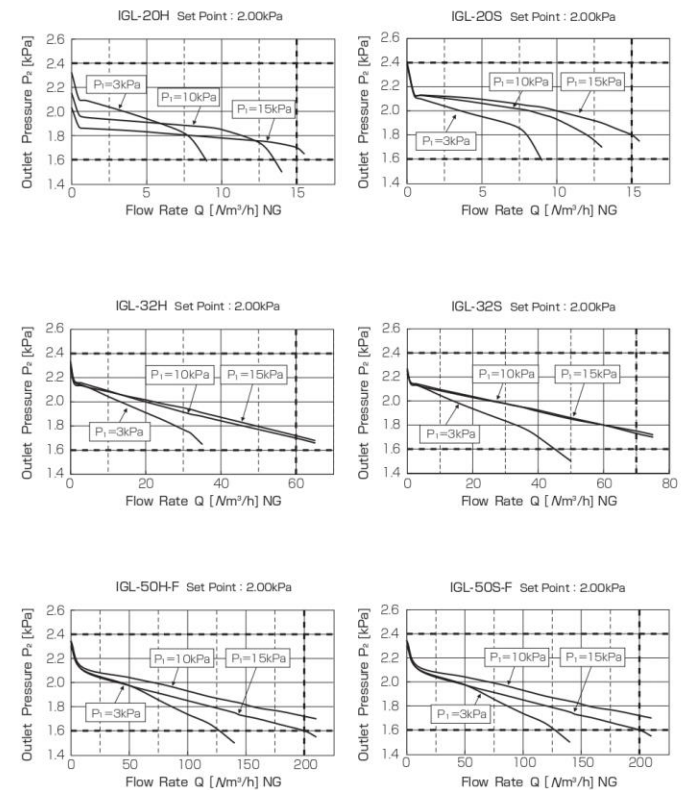


Specifications

Model	IGL-20H	IGL-32H	IGL-32H-F	IGL-50H-F	IGL-20S	IGL-20S-F	IGL-20S-R	IGL-32S	IGL-32S-F	IGL-50S-F
Maximum Flow Rate (Nm ³ /h)	15	60	200		15		70	200		
Inlet Pressure	3.00~15.0kPa									
Outlet Pressure	2.00±0.30kPa									
Lockup Pressure	≤2.50kPa									
Auto-Reset OPSO	≤5.00kPa									
Working Pressure	≤5.00kPa									
Safety Relief Valve	Start-to-Discharge: 5.60~8.40kPa Stop-to-Discharge: 5.04~8.40kPa									
Connection	Rc3/4	Rc1 1/4	Rc2		Rc3/4		Rc1 1/4	Rc2		
Strainer Mesh Gauge	125 Mesh	150 Mesh			125 Mesh		150 Mesh			
Installation Site	Indoor				Outdoor					
Mounting Position (Direction of the Gas Flow) ^{*3}	Vertical (↑)	Horizontal	Vertical (↑)	Horizontal	Vertical (↑)	Horizontal	Vertical (↑)	Horizontal		

*3 If you need to change the standard mounting position, please inform us when placing your order.
It is essential to adjust the setting pressure and to change the direction of the waterproof vent protector.

Flow Rate





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44 ซอยบรมราชชนนี 70 ถนนบรมราชชนนี แขวงศาลาธรรมสพน์ เขตทวีวัฒนา กรุงเทพฯ 10170

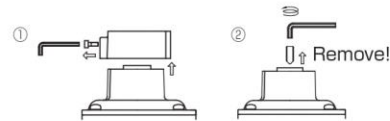
โทร: 02-888-3472 โทร: ออกแบบ: 08-08-170-170 แฟกซ์: 02-888-3258

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H5-EX(S)-NR

House Regulator

- H5-EX(S)-NR is a meter regulator from medium pressure to low pressure.
- Designed to supply gas for low pressure meters.
- Even if you convert a gas from LPG to NG after installation, you can change the set point from LPG to NG by an easy operation. To do this remove an inner adjusting screw and it will still ensure a proper and stable gas supply, there is no need to exchange your fixed-type meter regulator and no need to adjust it manually.



Specifications

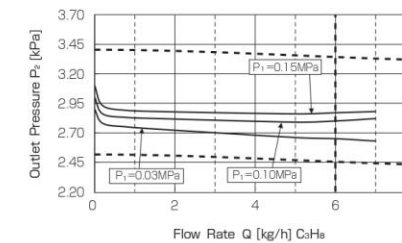
Model	H5-EX(S)-NR	
Gas Type	LPG	NG
Maximum Flow Rate	6kg/h	5.5m³/h(normal)
Inlet Pressure	0.03~0.15MPa	0.03~0.20MPa
Outlet Pressure	2.96±0.44kPa	2.16±0.32kPa
Lockup Pressure	≤3.50kPa	≤2.70kPa
Inlet Connection	R1/2	
Outlet Connection	Rc1/2	

*An inner safety relief valve is not incorporated.

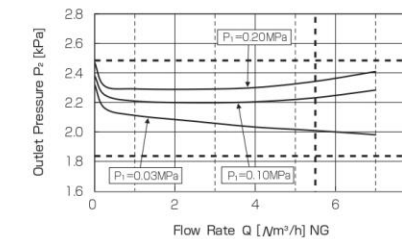
*Unless otherwise specified, the product is preset at the factory for LPG use.

Flow Rate

H5-EX(S)-NR for LPG Set Point: 2.96kPa



H5-EX(S)-NR for NG Set Point: 2.16kPa





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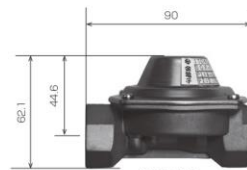
โทร: 02-888-3472 โทร: ออกแบบ: 08-08-170-170 แฟกซ์: 02-888-3258

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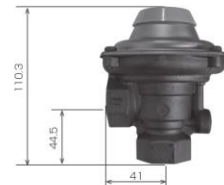
SGF Range

House Regulator

- The SGF range is a meter regulator from low pressure to low pressure with a large capacity driven by low differential pressure for city gas natural gas.
- Indoor installation only.
- Installed at each door at higher elevation in high-rise buildings such as multistory apartment building and reduces low pressure city gas natural gas, which rises by the difference of elevation, to an appropriate level.



SGF-15



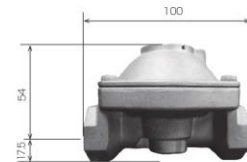
SGF-20L



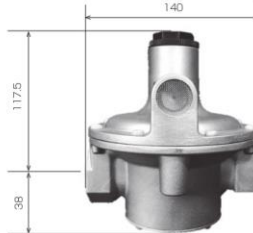
SGF-15L



SGF-20S



SGF-15S

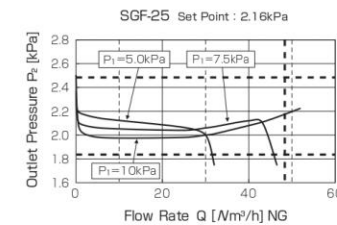
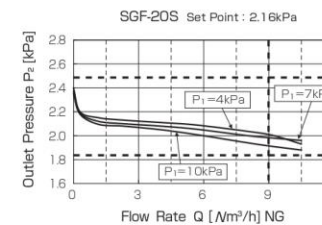
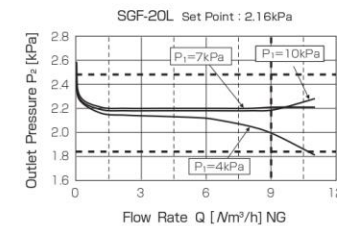
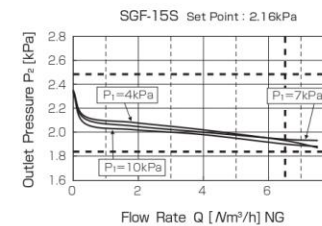
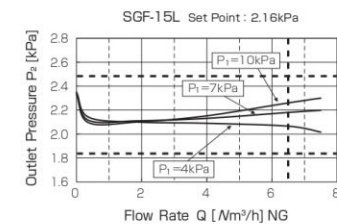
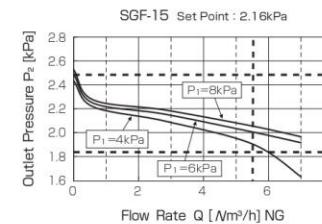


SGF-25

Specifications

Model	SGF-15	SGF-15S/SGF-15L	SGF-20S/SGF-20L	SGF-25				
Maximum Flow Rate (Nm³/h)	5.5	4	6.5	6	9	24.8	40.9	48.3
Inlet Pressure (kPa)	4.00~8.00	2.30~4.00	4.0~10.0	2.3~4.00	4.00~10.0	5	7.5	10
Outlet Pressure (kPa)	2.16±0.32							
Lockup Pressure (kPa)	≤2.70							
Connection	Rc 1/2		Rc 3/4		Rc 1			
Strainer Mesh Gauge	N/A		60Mesh					

Flow Rate





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NBG Range

AA Governor

Incorporated: (Strainer)

- The NBG-50-MA range is a direct-operated governor from Medium Pressure A to Medium Pressure A.
- The NBG-50MA with a higher outlet capability of 0.30~0.55 MPa is newly added to our product line. This product can correspond to the co-generation system incorporating a 2000~5000 kW gas engine, which are used in factories or large-scale commercial use, such as hospitals and hotels.

Specifications

Model	NBG-50-MA-S	NBG-50-MA-L
Type	Straight Type	Angle Type
Maximum Flow Rate (Nm ³ /h)	1600	
Inlet Pressure (MPa)	0.70~0.99	
Outlet Pressure (MPa)	0.30~0.55	
Lockup Pressure (MPa)	≤ Set Point + 0.05	
Connection	JIS 10K 50A Flange (FF)	
Vent Connection	Rc 1/4	
Strainer Mesh Gauge	100 Mesh*	

*1 The strainer with 200 mesh is also available.



AB Governor

Incorporated: (AR-OPSO) (Strainer)

*NBG-50H only.

- The NBG range is a direct-operated governor from Medium Pressure A to Medium Pressure B, which provides outstanding quick response and easy maintenance.
- The NBG-50 incorporates the ITO balancing piston system, which minimises any outlet pressure fluctuations caused by differing inlet pressures. This system allows the NBG range to give accurate and stable pressure control.
- Since this model has the simple structure of a direct-operated regulator, it gives quick responses and is easy to handle and maintain.

Specifications

Model	NBG-50-S	NBG-50-L	NBG-50H-S	NBG-50H-L
Type	Straight Type	Angle Type	Straight Type	Angle Type
Maximum Flow Rate (Nm ³ /h)	1000			
Inlet Pressure (MPa)	0.30~0.99			
Outlet Pressure (MPa)	0.02~0.30**			
Lockup Pressure (MPa)	≤ Set Point × 1.3 (Minimum: Set Point + 0.012)			
Working Pressure	≤ Set Point × 1.2 (Minimum: Set Point + 0.012)			
Auto-Reset OPSO	Resets automatically after outlet pressure resumes its normal range.			
Reset Method	≤ Lockup Pressure + 0.03 MPa			
Connection	JIS 10K 50A Flange (FF)			
Vent Connection	Rc 1/4			
Strainer Mesh Gauge	100 Mesh*			

** Interchangeable springs are available.

*3 The strainer with 200 mesh is also available.

*NBG-50H range requires 0.1MPa or more differential pressure between inlet and outlet.

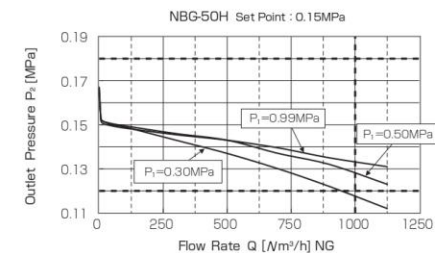
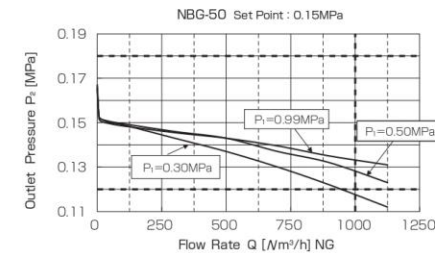
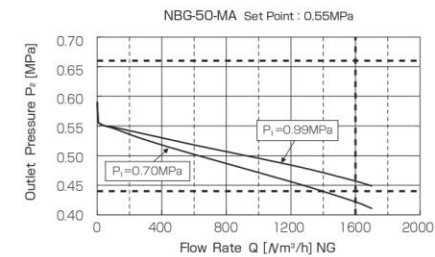


Interchangeable Spring Selection

No.	⑤	①	②	②+④	③+④	⑥+⑦
Colour	Green	Red	Blue	Blue+Black	Yellow+Black	White+White
Set Point Range (MPa)	0.02~0.03	0.03~0.06	0.06~0.10	0.10~0.15	0.15~0.20	0.20~0.30

shows the standard spring.

Flow Rate





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โทร: 02-888-3472 โทร: ออกแบบ: 08-08-170-170 แฟกซ์: 02-888-3258

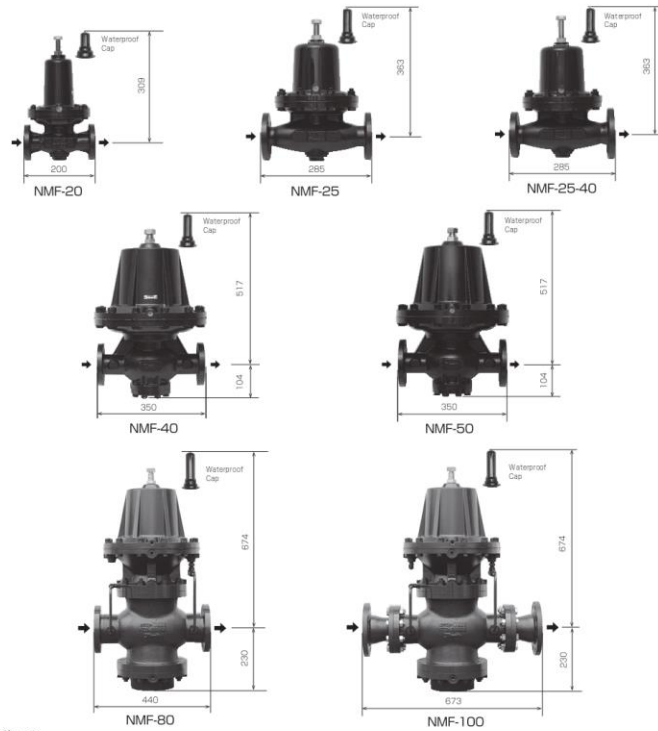
<https://www.add-furnace.com> E-mail: sales@add-furnace.com

NMF Range

AB Governor

Incorporated : (Strainer*)
*NMF-20 only.

The NMF range is a direct-operated governor from Medium Pressure A to Medium Pressure B, which provides outstanding quick response and easy maintenance.



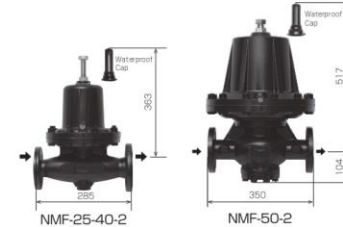
Specifications

Model	NMF-20	NMF-25	NMF-25-40	NMF-40	NMF-50	NMF-80	NMF-100
Maximum Flow Rate (Nm ³ /h)	130	190	380	580	950	1600	1600
Inlet Pressure	0.10~0.99MPa						
Outlet Pressure	0.02~0.30MPa *						
Lockup Pressure	≤Set Point×1.3MPa (Minimum : Set Point+0.012MPa)						
Inlet Connection	JIS 10K 20A Flange (FF)	JIS 10K 25A Flange (FF)	JIS 10K 25A Flange (FF)	JIS 10K 40A Flange (FF)	JIS 10K 50A Flange (FF)	JIS 10K 80A Flange (FF)	JIS 10K 100A Flange (FF)
Outlet Connection	JIS 10K 20A Flange (FF)	JIS 10K 25A Flange (FF)	JIS 10K 40A Flange (FF)	JIS 10K 40A Flange (FF)	JIS 10K 50A Flange (FF)	JIS 10K 80A Flange (FF)	JIS 10K 100A Flange (FF)
Vent Connection	Rc1/4						

*1 Interchangeable springs are available.

BB Governor

The NMF, for the medium pressure B to B, even driven by low differential pressure.



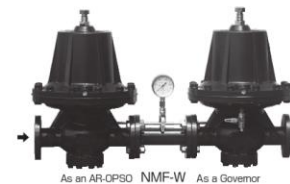
Specifications

Model	NMF-25-40-2	NMF-50-2
Maximum Flow Rate (Nm ³ /h)	200	300
Inlet Pressure(kPa)	50.0 ~ 100	
Outlet Pressure(kPa)	10.0 ~ 30.0	
Lockup Pressure(kPa)	≤Set Point+12.0kPa	
Inlet Connection	JIS 10K 25A Flange (FF)	JIS 10K 50A Flange (FF)
Outlet Connection	JIS 10K 40A Flange (FF)	JIS 10K 50A Flange (FF)

NMF-W

NMF-W unit is also available, which doubled NMF connected in series with additional AR-OPSO function.

The upstream NMF as an OPSO shuts off gas to avoid pressure rises at outlet of this unit if inner sealing of the downstream NMF failed. Of course, the upstream NMF will function as a back-up governor even if the downstream NMF falls, and the outlet pressure abnormally rises at the unit outlet, and keep stable supply at the pre-set pressure.



Interchangeable Spring Selection

Set Point Range (MPa)	0.02~0.03	0.02~0.06	0.02~0.10	0.02~0.15	0.02~0.20	0.02~0.30
No.	④	⑤	①	②	③	⑥
NMF-20	④	⑤	①	②	③	⑥
NMF-25~NMF-100	④①	⑤①	①①+①①	②②	③②+③①	⑥②+⑥②

shows the standard spring.



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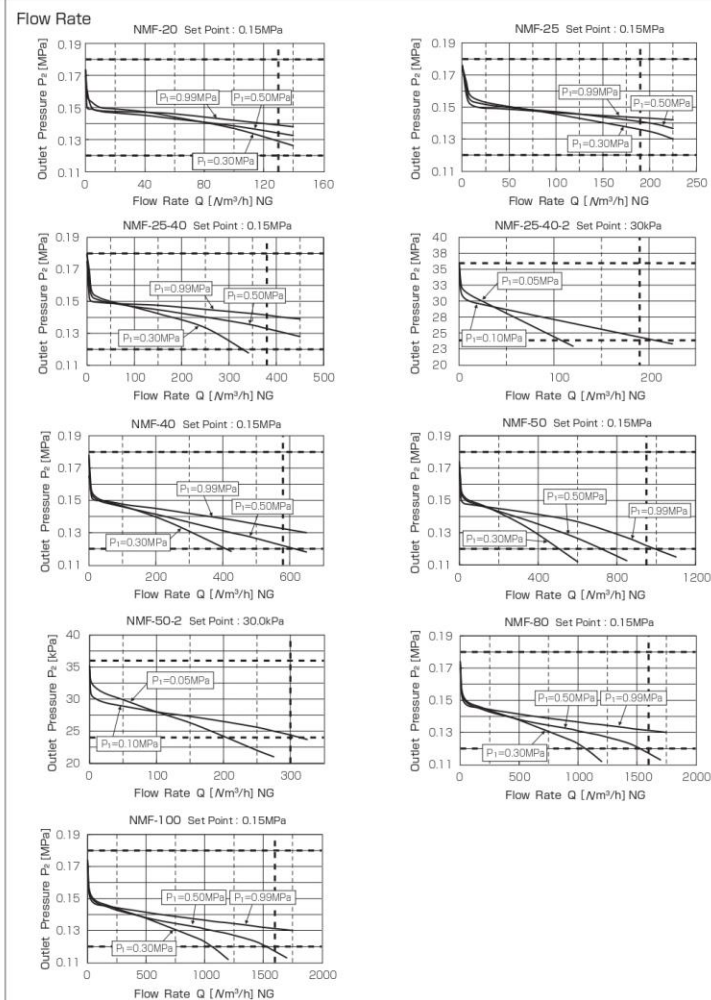
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NMF Range



WGX Range

Low Pressure Governor

- The WGX range is a direct-operated governor from medium pressure to low pressure.
- The ITO Air Stabiliser Rubber (vent rubber) gives quick responses.
- Easy maintenance, flexible mounting position, offers a wide range of applications.

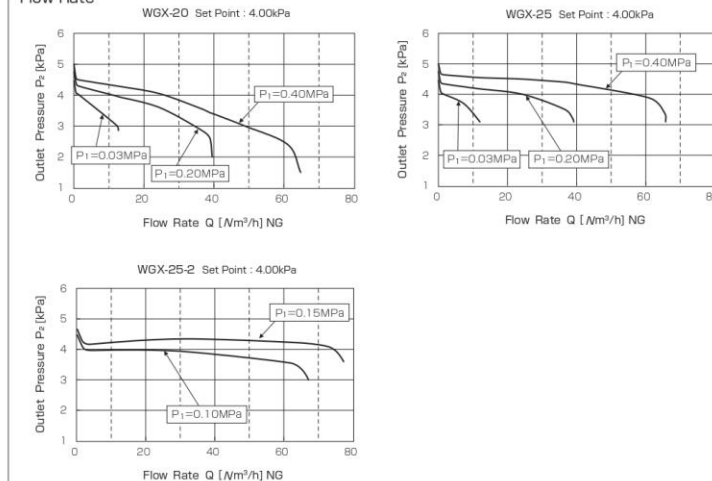


Specifications

Model	WGX-20	WGX-25	WGX-25-2	
Maximum Flow Rate	64m³/h(normal)	65m³/h(normal)	58m³/h(normal)	69m³/h(normal)
Inlet Pressure(kPa)	0.03~0.40MPa		0.05~0.10MPa	0.10~0.15MPa
Outlet Pressure(kPa)	2.00~10.0 *			3.00~8.00 **
Lockup Pressure(kPa)	≤Set Point×1.25kPa			
Connection	Rc3/4		Rc1	

* Interchangeable springs are available.

Flow Rate





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BYNIK-50 Range

AL/ALM BL/BLM Governor

Incorporated: (AR-OPSO) (Strainer)
(MR-OPSO)
*BYNIK-50-2-S ONLY



Japan Gas Association
Technical Prize

- The BYNIK-50 range is the most advanced direct-operated governor from *Medium Pressure A or B to Low Pressure or Low Intermediate Pressure.*
- The ITO innovations minimise any outlet pressure fluctuation despite varying inlet pressures. This allows the BYNIK-50 more accurate and stable pressure control for use in multiple inlet pressure tiers.
- External adjusting parts allow an on-site adjustment of the static and dynamic characteristics.



Specifications

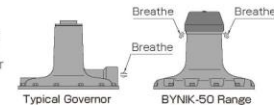
Model		BYNIK-50	BYNIK-50-2	BYNIK-50-2-S-1	BYNIK-50-2-S-2
Maximum Flow Rate(Nm ³ /h)		350Nm ³ /h	265Nm ³ /h	350Nm ³ /h	350Nm ³ /h
Inlet Pressure(kPa)		0.01~0.99	0.025~0.15	0.025~0.30	
Outlet Pressure(kPa)		1.00~20.0kPa *1 *2			
Lockup Pressure(kPa)		≤Set Point×1.25kPa			
Auto-Reset OPSO	Working Pressure	Lockup Pressure+(Inlet Pressure×0.015kPa (Minimum 5.00kPa))			Lockup Pressure+(Inlet Pressure×0.015kPa (Minimum 5.00kPa))
	Reset Method	Resets automatically after outlet pressure resumes its normal range			Resets automatically after outlet pressure resumes its normal range
Manual-Reset OPSO	Working Pressure	2.80~33.4 *2			Manual by Pulling the Red Indicator
	Reset Method				
Connection		JIS 10K 50A Flange (FF)			
Strainer Mesh Gauge		200 Mesh			

*1 Interchangeable springs are available.

*2 The outlet pressure varies depending on the mounting position. Please specify your required mounting position when placing your order.

Waterproof Cover Cap

It can be installed outdoors as the vent of the BYNIK-50 is not on the cover and can breathe through a space between the cover cap covering the vent and top of the cover. No storage box or waterproof vent protector is required.



Auto-Reset OPSO(AR-OPSO)

An inner auto-reset type over pressure shut-off valve incorporated additionally, works to avoid outlet pressure rises if any foreign object is caught between the main valve disc and the main orifice, inner sealing failed.

Manual-Reset OPSO(MR-OPSO)(Only BYNIK-50-2-S)

A manual reset type OPSO, shuts off gas to prevent abnormal pressure increases at the regulator outlet, even after the pressure relief valve has been opened. Reset by pulling the reset button.

Extra Relief Valve Mountable (Other Available Accessory)

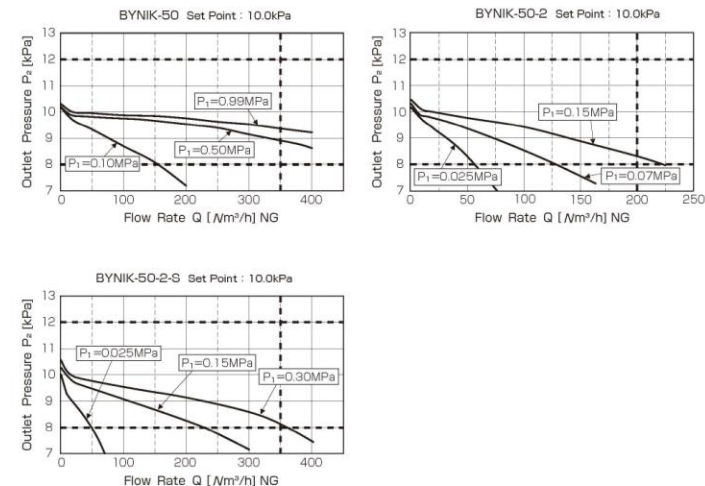
An additional relief valve can be mounted directly onto the body instead of installing independently on the pipeline, this enables savings in piping construction cost.

Interchangeable Spring Selection

No.	①	②	③	④	⑤	⑥	⑦
Colour	—	—	Yellow	Silver	Red	Green	Blue
Set Point Range(kPa)	1.00~1.90	1.90~2.30	2.30~3.00	3.00~5.00	5.00~8.00	8.00~13.0	13.0~20.0

— shows the standard spring.

Flow Rate





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โทร: 02-888-3472 โทร: ออกแบบ: 08-08-170-170 แฟกซ์: 02-888-3258

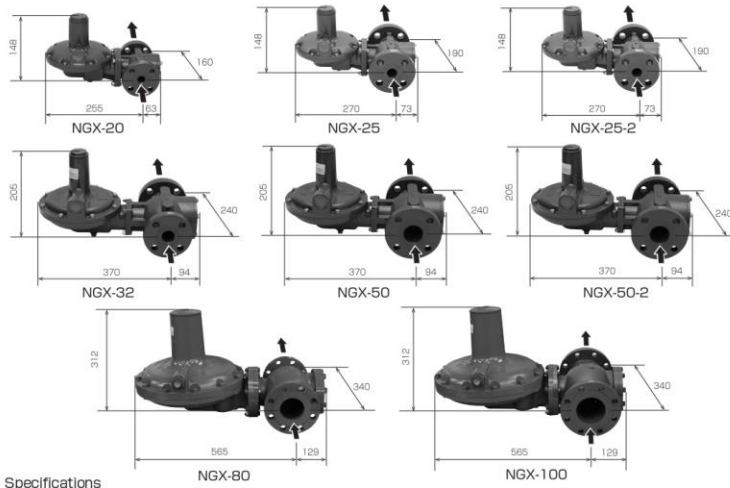
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NGX Range

BL/BLM Governor

Incorporated: (AR-OPSD) (Strainer)

- The NGX range is a direct-operated governor from Medium Pressure B to Low Pressure or Low Intermediate Pressure.
- It is the high performance governor with built-in strainers, and integrated JIS flanges.
- It is suitable to install it indoors since the safety relief valve is not incorporated.



Specifications

Model	NGX-20	NGX-25	NGX-25-2	NGX-32	NGX-50	NGX-50-2	NGX-80	NGX-100
Maximum Flow Rate (Nm ³ /h)	85	185	155	330	330	185	845	905
Inlet Pressure(MPa)	0.03~0.30 ^{*1}	0.03~0.10	0.03~0.30 ^{*1}	0.03~0.30 ^{*1}	0.03~0.10	0.03~0.30 ^{*2}	0.03~0.30 ^{*2}	0.03~0.30 ^{*2}
Outlet Pressure(kPa)	1.00~30.0 ^{*3*4}						1.00~20.0 ^{*3*4}	
Lockup Pressure(kPa)	≤Set Point×1.25							
Auto-Reset OPSO	Working Pressure Reset Method	Lockup Pressure + (Inlet Pressure × 0.015kPa (Minimum 5.00kPa))						
		Resets automatically after outlet pressure resumes its normal range.						
Inlet Connection	JIS 10K 20A Flange(FF)	JIS 10K 25A Flange(FF)	JIS 10K 32A Flange(FF)	JIS 10K 50A Flange(FF)	JIS 10K 50A Flange(FF)	JIS 10K 80A Flange(FF)	JIS 10K 100A Flange(FF)	JIS 10K 100A Flange(FF)
Outlet Connection	JIS 10K 20A Flange(FF)	JIS 10K 32A Flange(FF)	JIS 10K 50A Flange(FF)	JIS 10K 50A Flange(FF)	JIS 10K 50A Flange(FF)	JIS 10K 80A Flange(FF)	JIS 10K 100A Flange(FF)	JIS 10K 100A Flange(FF)
Vent Connection	Rc3/4			Rc1			Rc3/8	
Strainer Mesh Gauge	100 Mesh ^{*5}							

^{*1} Custom-made products for inlet pressure 0.30~1.00MPa are also available.

^{*2} Custom-made products for inlet pressure 0.30~0.50MPa are also available.

^{*3} Interchangeable springs are available.

^{*4} The outlet pressure varies depending on the mounting position. Please specify your required mounting position when placing your order.

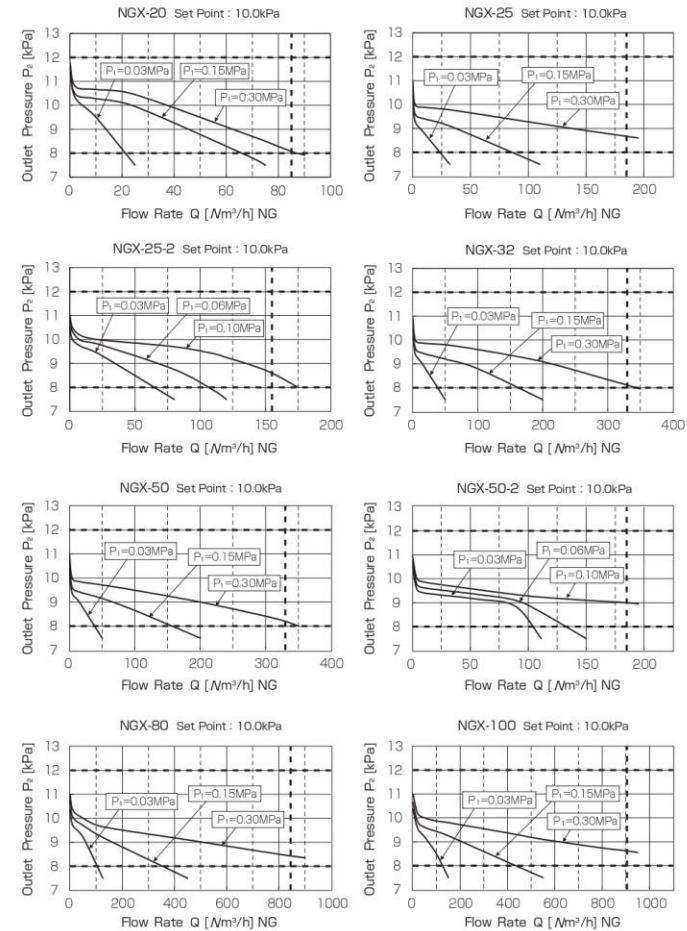
^{*5} The strainer with 200 mesh is also available.

Interchangeable Spring Selection

Model	NGX-20/25/25-2/32/50/50-2					NGX-80/100				
No.	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
Spring Colour	White	Red	Blue	Yellow	Green	Black	-	-	-	-
Set Point Range (kPa)	1.00~1.50	1.50~3.00	3.00~5.00	5.00~8.00	8.00~13.0	13.0~20.0	20.0~30.0	100~200	200~400	400~1000

shows the standard spring.

Flow Rate





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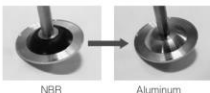
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SGX Range

Available Configurations and Options Model Reference Guide

SGX- [] - []

Model	Connection	Code	Function						
8NA	Rc1/4	A	No Lockup Function (Aluminum Valve Disc Type)  This type governor has no lockup function and regulates pressure by using an aluminum valve disc instead of a regular rubber (NBR) disc.						
10A	Rc3/8								
15N	Rc1/2								
20N	Rc3/4								
25N	Rc1								
40N	Rc1 1/2	C	High Temperature Resistance Governor for COG Use this type governor if you use a gas that can corrode copper alloy, such as coke oven gas (COG), or if a governor becomes too hot due to hot fluid gas or extremely high ambient temperatures. Inner rubber parts or some metal parts will be exchanged. <table border="1" data-bbox="787 721 945 777"><tr><th>Working Temperature Range</th></tr><tr><td>0 ~ 80 °C</td></tr></table>	Working Temperature Range	0 ~ 80 °C				
Working Temperature Range									
0 ~ 80 °C									
40	Rc1 1/2								
50N	Rc2								
50	Rc2								
80	JIS 10K 80A	H	Variable Governor with External Handle This type governor has an external handle to make the outlet pressure setting easier. <table border="1" data-bbox="464 859 827 889"><tr><th>Set Point Range</th></tr><tr><td>0.50~4.00 kPa</td></tr></table> 	Set Point Range	0.50~4.00 kPa				
Set Point Range									
0.50~4.00 kPa									
100	JIS 10K 100A								
		Q	Quick Response Governor This type governor gives quick responses. Its fast stroking keeps the outlet pressure stable even if the flow rate changes rapidly after solenoid valves are operated on the line by changing the vent diameters on the body or the cover. * The maximum inlet pressure will be lower than the standard unit. <table border="1" data-bbox="464 1013 756 1058"><tr><th>Model</th><th>Maximum Inlet Pressure</th></tr><tr><td>SGX-15NQ~SGX-50Q</td><td>10.0kPa</td></tr><tr><td>SGX-40NQ/SGX-50NQ</td><td>15.0kPa</td></tr></table>  An external stabiliser (enclosed) to be fitted onto the vent of SGX-40NQ, SGX-50NQ.	Model	Maximum Inlet Pressure	SGX-15NQ~SGX-50Q	10.0kPa	SGX-40NQ/SGX-50NQ	15.0kPa
Model	Maximum Inlet Pressure								
SGX-15NQ~SGX-50Q	10.0kPa								
SGX-40NQ/SGX-50NQ	15.0kPa								
		W	With Auto-Reset OPSO Valve  Doubled SGX connected in series with additional AR-OPSO function. The upstream SGX as an OPSO shuts off gas to avoid pressure rises at outlet of this unit if inner sealing of the downstream SGX failed. Also the upstream SGX will function as a back-up governor even if the downstream SGX fails, and the outlet pressure abnormally rises at the unit outlet, and keep stable supply at the pre-set pressure.						

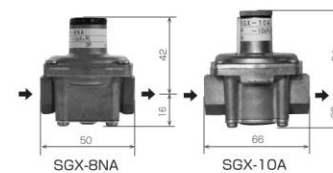
[R] - Safety Relief Valve, [Z] - Zero Governor/ Equalizing Regulator, [ZT] - Equalizing Regulator
For more details, see each description within this catalogue.

Available Configurations at a Glance

Model	SGX-8NA	SGX-10A	SGX-15N	SGX-20N	SGX-25N	SGX-40N	SGX-40	SGX-50N	SGX-50	SGX-80	SGX-100
Type A	No Lockup Function (Aluminum Valve Disc Type)	✓ ^{*)}	✓ ^{*)}	×	✓	✓	✓	✓	✓	×	×
Type C	High Temperature Resistance Governor for COG	×	×	✓	✓	×	✓	×	✓	✓	✓
Type H	Variable Governor with External Handle	×	×	✓	✓	×	×	×	×	×	×
Type Q	Quick Response Governor	×	×	✓	✓	✓	✓	✓	✓	×	×
Type W	With Auto-Reset OPSO Valve	×	×	×	×	✓	✓	✓	✓	×	×

^{*)} The standard model of SGX-8NA and SGX-10A is Type A.

Governor for Low Differential Pressures



The SGX range is a direct-operated governor from **Low Pressure** or **Low Intermediate Pressure** to **Low Pressure** or **Low Intermediate Pressure** with a large capacity driven by low differential pressure.

Specifications

Model	SGX-8NA	SGX-10A
Maximum Flow Rate	4.3Nm ³ /h	7.4Nm ³ /h
Inlet Pressure	0.50~10.0kPa	
Outlet Pressure	0.25~3.00kPa ^{*)}	
Connection	Rc1/4	Rc3/8
Vent Connection	Rc1/8	

* No lockup function.

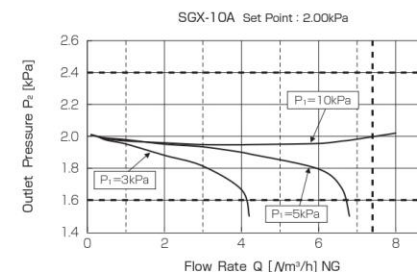
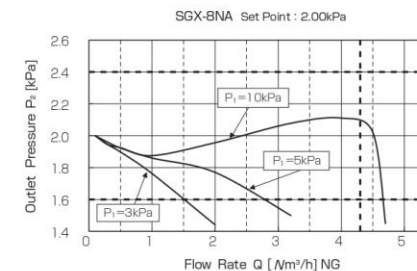
^{*)} Interchangeable springs are available.

Interchangeable Spring Selection

Model	SGX-8NA/10A				
No.	①	②	③	④	⑤
Set Point Range(kPa)	0.25~0.50	0.50~1.00	1.00~1.50	1.50~2.00	2.00~3.00

shows the standard spring.

Flow Rate





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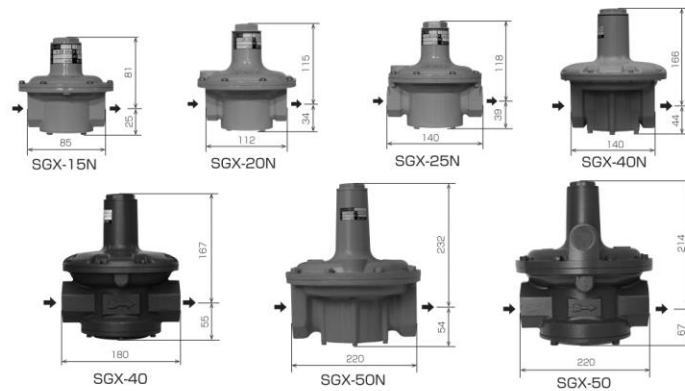
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SGX Range

Governor for Low Differential Pressures

The SGX series is a direct-operated governor from **Low Pressure** or **Low Intermediate Pressure** to **Low Pressure** or **Low Intermediate Pressure** with a large capacity driven by low differential pressures.



Specifications

Model	SGX-15N	SGX-20N	SGX-25N	SGX-40N	SGX-40	SGX-50N	SGX-50
Maximum Flow Rate (Nm³/h)	32	50	70	200	215	390	430
Inlet Pressure	1.00~30.0kPa						
Outlet Pressure	0.50~20.0kPa*1						
Lockup Pressure	≤2.95kPa*2						
Connection	Rc1/2	Rc3/4	Rc1	Rc1 1/2			Rc2
Vent Connection	Rc1/2	Rc1/4		Rc3/4			Rc1

*1 Interchangeable springs are available.

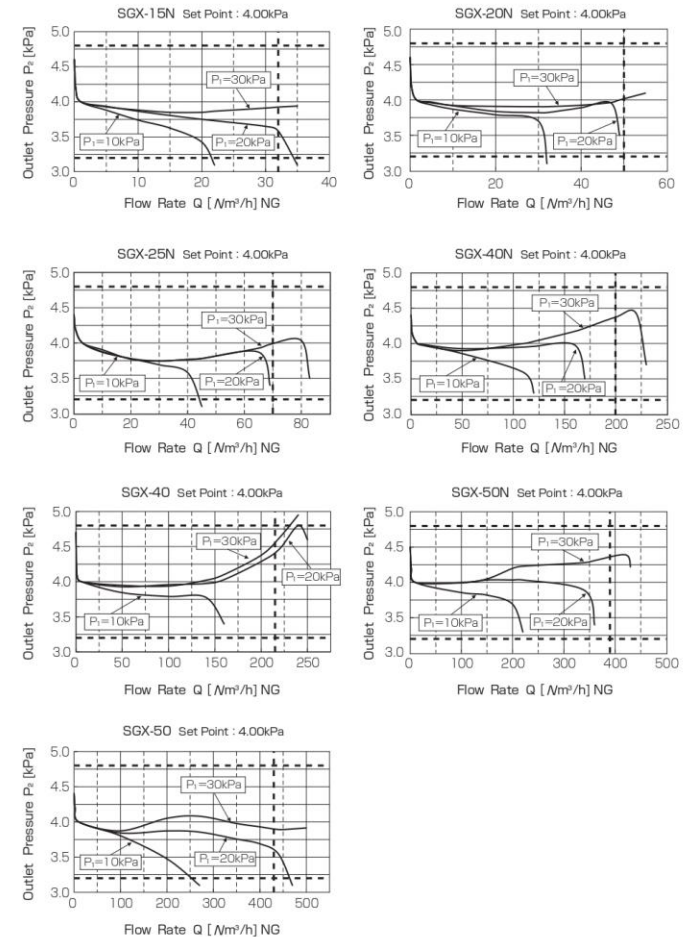
*2 Set Outlet Pressure at 2.00kPa.

Interchangeable Spring Selection

Model	SGX-15N/20N/25N/40N/40/50N/50					
No.	①	②	③	④	⑤	⑥
Spring Colour	White	Red	Blue	Yellow	Green	Black
Set Point Range(kPa)	0.50~1.50	1.50~3.00	3.00~5.00	5.00~8.00	8.00~13.0	13.0~20.0

shows the standard spring.

Flow Rate





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SGX Range

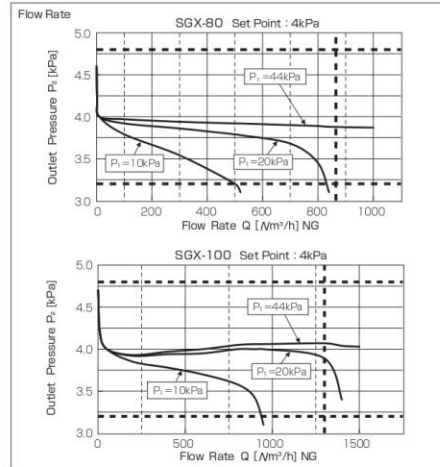
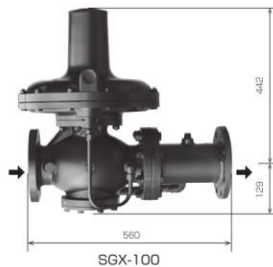
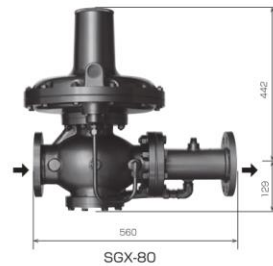
Governor for Low Differential Pressures

- The SGX-80 and SGX-100 incorporate a feedback mechanism that loads pressure to the diaphragm chamber of the main governor from the outlet side by the auxiliary adjusting governor. This allows stable pressure control despite their large capacity.
- This product is a large capacity regulator driven by low differential pressures, suitable for installation on the low pressure line.

Specifications

Model	SGX-80	SGX-100
Maximum Flow Rate(Nm³/h)	865	1300
Inlet Pressure(kPa)	1.50~60.0 *1	
Outlet Pressure(kPa)	1.00~20.0 *1 *2	
Lockup Pressure(kPa)	≤2.95 *3	
Inlet Connection	JIS 10K 80A Flange(RF)	JIS 10K 100A Flange(RF)
Outlet Connection	JIS 10K 80A Flange(RF)	JIS 10K 100A Flange(RF)
Vent Connection	Rc1	

- *1 The differential pressure between inlet and outlet shall be 40.0kPa or less.
 *2 Interchangeable springs are available.
 *3 Set Outlet Pressure at 2.00kPa.



Interchangeable Spring Selection

Model	SGX-80/100					
No.	①	②	③	④	⑤	⑥
Set Point Range(kPa)	1.00~1.50	1.50~4.00	4.00~8.00	8.00~11.0	11.0~16.0	16.0~20.0

shows the standard spring.

*When changing the adjusting spring of the main governor, it is also essential to change the adjusting spring of the auxiliary adjusting governor.

Model	Auxiliary Adjusting Valve(SGX-20NRTG)					
Colour	White	Red	Blue	Yellow	Green	Black
Set Point Range(kPa)	1.00~1.50	1.50~3.00	3.00~5.00	5.00~8.00	8.00~13.0	13.0~20.0

shows the standard spring.

SG Range

Governor for Low Differential Pressures

Incorporated: (Relief)

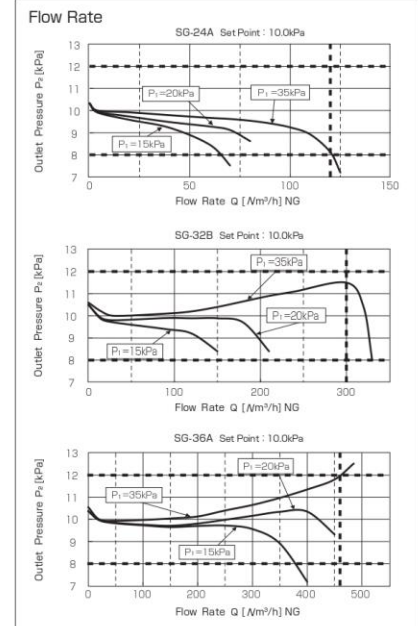
- The SG range is a direct-operated governor from Low Pressure or Low Intermediate Pressure to Low Pressure or Low Intermediate Pressure with a large capacity driven by low differential pressures.

Specifications

Model	SG-24A	SG-32B	SG-36A
Maximum Flow Rate (Nm³/h)	120	300	460
Inlet Pressure(kPa)	1.00~35.0		
Outlet Pressure(kPa)	0.50~20.0 *1		
Lockup Pressure(kPa)	≤2.60 *2		
Connection	Rc1	Rc1 1/2	Rc2
Safety Relief Valve (kPa)	Start-to-Discharge	4.80~7.60 *2	
	Stop-to-Discharge	4.24~7.60 *2	
Vent Connection	Rc1	Rc1/4	

*1 Interchangeable springs are available.

*2 Set Outlet Pressure at 2.00kPa.



Interchangeable Spring Selection

No.	①	②	③	④	⑤	⑥	⑦	⑧	⑨
Set Point Range(kPa)	1.00~4.00	3.50~10.0	5.00~15.0	10.0~20.0	15.0~20.0	0.30~1.00	0.50~2.00	6.00~12.0	
SG-24A	1.00~4.00	3.50~10.0	5.00~15.0	10.0~20.0	15.0~20.0				
SG-32B	1.30~3.70	0.80~1.50	8.00~16.0	3.00~10.5	14.0~20.0	2.00~8.00	6.00~12.0		
SG-36A	1.00~4.00	3.50~10.0	5.00~15.0	10.0~20.0	15.0~20.0				

shows the standard spring.

requires additional supporting diaphragm disc.



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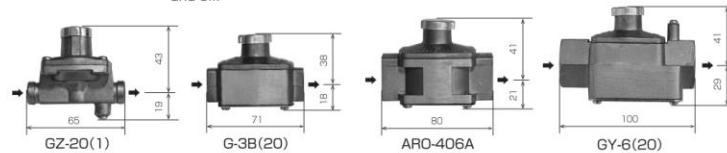
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GZ/G/ARO/GY

LL Governor

- GZ, G, ARO and GY are for use with gas burners within a gas appliance using low pressure natural gas city gas or LP gas.
- Maintains a constant outlet pressure independent of the fluctuation in inlet pressure and/or flow rate due to gas appliance burners in appliance turning on and off.



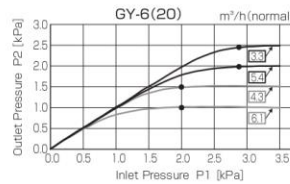
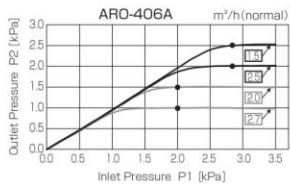
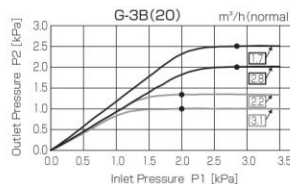
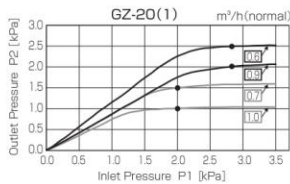
Specifications

Model	GZ-20	G-3B	ARO-406A	GY-6
Inlet Pressure(kPa)	≤3.50			
Connection	Rc 1/8	Rc 3/8	Rc 1/2	Rc 3/4
Mounting Position	Horizontal			

- * No lockup function.
- * Do not install the product where negative pressure may occur at the inlet and/or the outlet

Outlet Pressure Stability within a Rated Capacity

— P1=2.80kPa set point — P1=2.00kPa set point
Numbers in each ☐ indicate guaranteed maximum flow rate with in specific gravity of 1.



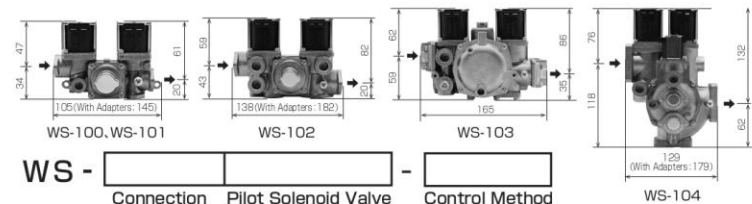
<How to read the curves>

For example, see the lowest curve for GZ-20(1). This shows:
Preset outlet to 1.0kPa at 2.0kPa inlet
at 1.0Nm³/h flow rate.
And delivery will be less than 1.0kPa at 1.5kPa inlet at 1.0Nm³/h flow rate.

WS Range

Solenoid Valve

- Solenoid technology is an electro-mechanical device that controls the gas flow by opening or closing the valve orifices.
- The WS range is a unit of double solenoid valves and a pressure regulator for gas appliance in one compact body to reduce installation space, cost and decrease assembly process and possible gas leakage points.



WS -

Code	Connection
100	Rc 1/4
101	Rc 3/8
102	Rc 1/2
103	Rc 3/4
104	Rc 1

Pilot Solenoid Valve

Code	Pilot Solenoid Valve
	Not Included*
P	Included

*1 Only WS-104-100 incorporates the pilot solenoid valve without P code in the model.

Control Method

Code	Control Method
100	ON-OFF
300	HI-LOW-OFF
400	Equalization Proportional

Range Specification

Inlet Pressure(kPa)	≤3.50
---------------------	-------

Selectable Specifications

Voltage	DC90V AC100V AC200V
Coil Connection	FASTON Terminal (187 Series) Lead Wire



Other Available Accessories



Specifications

Model	Connection	Power Consumption Per One Solenoid Valve	Pilot Solenoid Valve	Mounting Position
WS-100-100	Rc 1/4	5W±1W	N/A	Any Position
WS-101-100	Rc 3/8	5W±1W	N/A	
WS-102-100	Rc 1/2	9.5W±2W	N/A	
WS-102P-100	Rc 1/2	5W±1W	Included	
WS-103-100	Rc 3/4	9.5W±2W	N/A	*2
WS-103P-100	Rc 3/4	5W±1W	Included	
WS-103-400	Rc 3/4	9.5W±2W	N/A	
WS-104-100	Rc 1	5W±2W	Included	
WS-104-300	Rc 1	10W±2W	N/A	
WS-104-400	Rc 1	10W±2W	N/A	

*1 Strainer Mesh Gauge: 60 Mesh

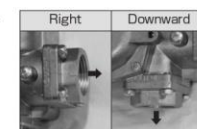
*2 Any position except one with the adjusting screw facing downward. If the adjusting screw is required to face upward, please inform us when placing your order.

An adapter set for inlet and outlet are provided with the kit of WS-100, 101, 102 and 104 range if requested.

An Example of an Adapter Set



Outlet direction of WS-103 range is selectable. Please specify when placing your order.





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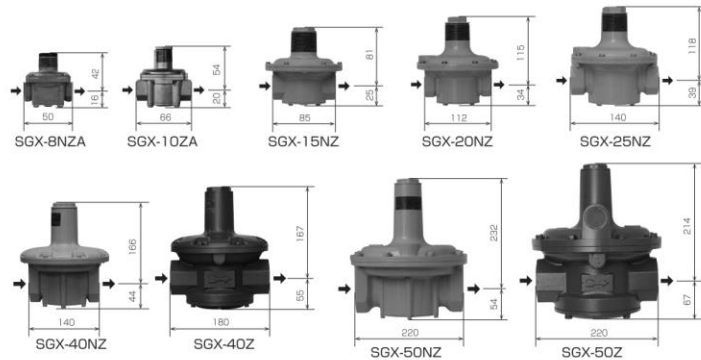
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SGX-Z Range

Zero Governor

Zero governors maintain a constant outlet pressure regardless of changes to the condition of the inlet pressure and flow rate. Moreover, by combining with other devices, this product keeps a constant mixture ratio of air and gas, and this can make it easy to control combustion temperature automatically.



Specifications

Model	SGX-8NZA	SGX-10ZA	SGX-15NZ	SGX-20NZ	SGX-25NZ	SGX-40NZ	SGX-40Z	SGX-50NZ	SGX-50Z
Inlet Pressure	$\leq 5.00 \text{ kPa}$								
Outlet Pressure	$0 \pm 0.10 \text{ kPa}$								
Lockup Pressure	0.60 kPa								
Connection	Rc1/4	Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1 1/2	Rc2	Rc2	Rc2
Vent Connection	Rc1/8								

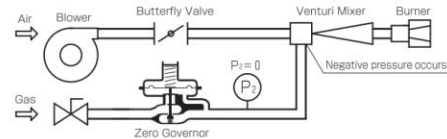
Available Configurations at a Glance

Model	SGX-8NZA	SGX-10ZA	SGX-15NZ	SGX-20NZ	SGX-25NZ	SGX-40NZ	SGX-40Z	SGX-50NZ	SGX-50Z
Type A No Lockup Function (Aluminum Valve Disc Type)	✓*	✓*	×	✓	✓	✓	✓	✓	✓
Type C High Temperature Resistance Governor for COG	×	×	✓	✓	✓	×	✓	×	✓

* The standard model of SGX-8NZA and SGX-10ZA is Type A.

Gas Mixing by Venturi Mixer

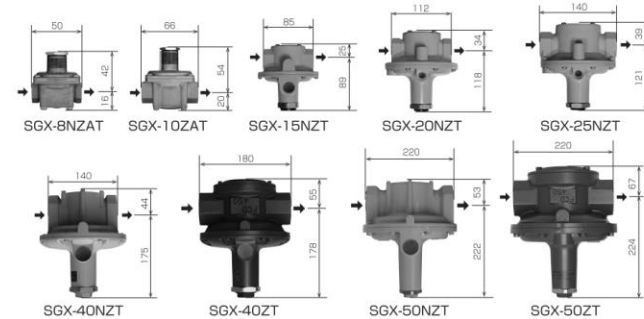
The venturi mixer draws in gas by ejecting air at high pressure through the inner nozzle. The gas pressure is reduced to zero (atmospheric pressure) by the zero governor & makes gas proportional to the amount of air drawn in. The governor maintains constant air and gas ratio even if the amount of air changes due to the opening and closing of the butterfly valve.



SGX-ZT/SGX-Z Range

Equalizing Regulator

Equalizing regulators can regulate the outlet pressure regardless of changes of condition and gas flow of the inlet pressure. By adding air pressure (loading pressure) from the vent in the cover, the outlet pressure is in proportion to loading pressure. By installing together with other equipment and/or appliances, this product keeps a constant mixture ratio of air and gas, and this can make it easy to control combustion temperature automatically.



Specifications

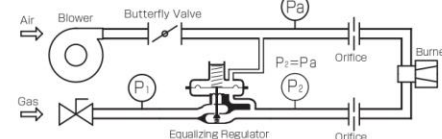
Model	SGX-8NZAT	SGX-10ZAT	SGX-15NZT	SGX-20NZT	SGX-25NZT	SGX-40NZT	SGX-40ZT	SGX-50NZT	SGX-50ZT
Inlet Pressure	$\leq 10.0 \text{ kPa}$								
Loading Pressure Range	$\leq 9.00 \text{ kPa}$								
Outlet Pressure	Loading Pressure $\pm 0.10 \text{ kPa}$								
Lockup Pressure	$\leq \text{Loading Pressure} \pm 0.60 \text{ kPa}$								
Connection	Rc1/4	Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1 1/2	Rc2	Rc2	Rc2
Loading Connection	Rc1/8								
Mounting Position	Horizontal								

* No lockup function type and high temperature resistance for COG type are also available. Please refer to page 41 for details of available configurations and options.

* Please use air for loading.

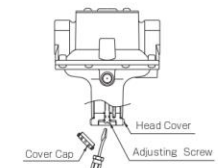
Gas Mixing by Equalizing Regulator

The equalizing regulator keeps the upstream pressure of the orifices on the gas line as the same as an air line by loading the air to the regulator cover vent from the air line. It fixes the air ratio to be mixed. The regulator maintains constant air and gas ratio even if the amount of air changes due to the opening and closing of the butterfly valve.



■ With External Adjusting Knob

SGX-ZT range has an external knob fitted on the cover cap to make small adjustments to the set point without removing the head cover thus keeping the original loading pressure sealed in the cover.





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CM/GM/GMF Range

Medium Pressure Regulator

Incorporated (Strainer)
*CM-100, CM-100A and GMF-70 only.

The CM, GM, GMF range is of direct-operated regulators to be used with high inlet pressure up to 1.56MPa, and reduce outlet pressure to the range of 0.02~0.30 MPa.
The JIS 20K flanged connection for high pressure inlet.



CM-100	
Maximum Flow Rate (Nm ³ /h)	37
Inlet	JIS 20K 15A Flange (RF)
Outlet	JIS 10K 15A Flange (FF)
Strainer Mesh Gauge	110 Mesh



CM-100A	
Maximum Flow Rate (Nm ³ /h)	37
Inlet	JIS 20K 15A Flange (RF)
Outlet	JIS 10K 15A Flange (FF)
Strainer Mesh Gauge	110 Mesh



CM-100A (without Flange)	
Maximum Flow Rate (Nm ³ /h)	37
Inlet	Rc 1/2
Outlet	Rc 1/2
Strainer Mesh Gauge	110 Mesh



GMF-70	
Maximum Flow Rate (Nm ³ /h)	130
Inlet	JIS 20K 20A Flange (RF)
Outlet	JIS 10K 20A Flange (FF)
Strainer Mesh Gauge	60 Mesh



GMF-100	
Maximum Flow Rate (Nm ³ /h)	190
Inlet	JIS 20K 25A Flange (RF)
Outlet	JIS 10K 25A Flange (FF)



GMF-200	
Maximum Flow Rate (Nm ³ /h)	380
Inlet	JIS 20K 25A Flange (RF)
Outlet	JIS 10K 40A Flange (FF)



GMF-300	
Maximum Flow Rate (Nm ³ /h)	580
Inlet	JIS 20K 40A Flange (RF)
Outlet	JIS 10K 40A Flange (FF)



GMF-400	
Maximum Flow Rate (Nm ³ /h)	950
Inlet	JIS 20K 50A Flange (RF)
Outlet	JIS 10K 50A Flange (FF)



GMF-500	
Maximum Flow Rate (Nm ³ /h)	950
Inlet	JIS 20K 50A Flange (RF)
Outlet	JIS 10K 50A Flange (FF)



GM-1000	
Maximum Flow Rate (Nm ³ /h)	1600
Inlet	JIS 20K 80A Flange (RF)
Outlet	JIS 10K 80A Flange (FF)

Range Specification

Inlet	0.10~1.56MPa
Outlet	0.02~0.30 MPa*
Lockup Pressure (MPa)	≤ Set Point × 1.3 (Minimum: Set Point + 0.012)

* Interchangeable springs are available.

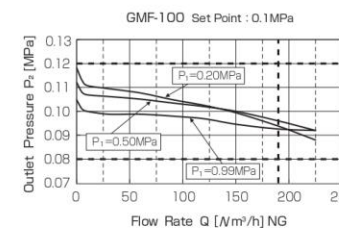
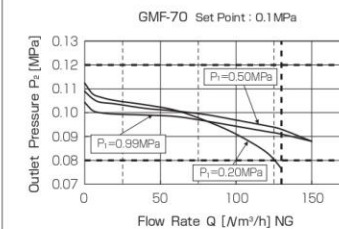
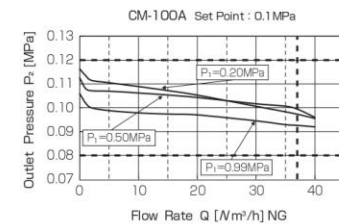
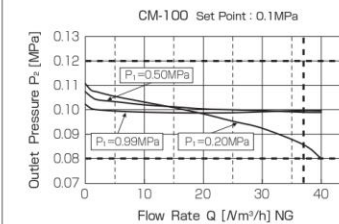
Interchangeable Spring Selection

Set Point Range (MPa)	0.02~0.03	0.02~0.07	0.02~0.15	0.02~0.20	0.02~0.30
No. CM-100	(5)	(6)	(1)	(2)	(3)
GMF-70	(4)	(5)	(1)	(2)	(3)

Set Point Range (MPa)	0.02~0.03	0.02~0.06	0.02~0.10	0.02~0.15	0.02~0.20	0.02~0.30
No. GMF-100~200			(A1)	(A1)+(B1)		
GMF-300~500	(B1)	(A2)	(A1)	(A1)+(B1)	(A2)+(B1)	(A2)+(B2)
GM-1000			(A1)	(A1)+(B1)		

shows the standard spring.

Flow Rate





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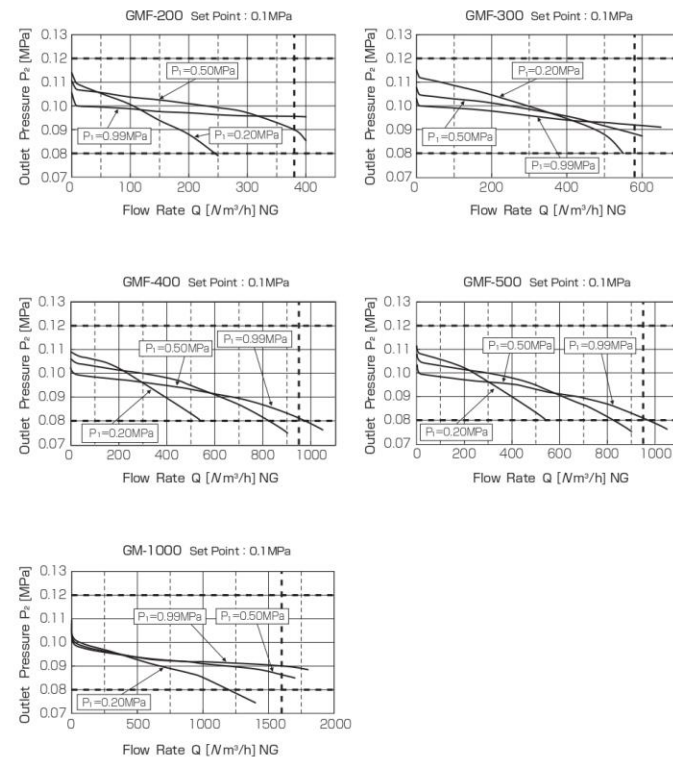
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CM/GM/GMF Range

Flow Rate



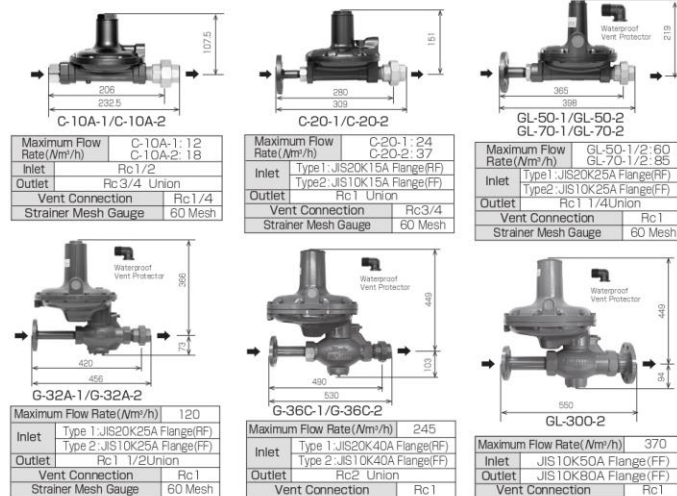
C/G/GL Range

Low Pressure Regulator

Incorporated (Relief) (Strainer)*

*C-10A, C-20, GL-50, GL-70 and G-32A only.

The C, G, GL range is a direct-operated regulator to reduce outlet pressure to 20kPa or less.
Available for type 1 or type 2 according to the inlet pressure. Type 1 for high pressure pipe line use up to 1.56MPa with a JIS 20K flanged connection at inlet, and Type 2 for medium pressure pipe line use between 0.025~0.10MPa with JIS 10K flanged connection at inlet.



Range Specification

Regulation Type	Type 1	Type 2
Inlet Pressure (MPa)	0.07~1.56	0.025~0.10
Outlet Pressure (kPa)	0.50~20.0*	0.50~20.0*
Lockup Pressure (kPa)	≤Set Point x 1.3	≤Set Point x 1.3

* Interchangeable springs are available.

Interchangeable Spring Selection

No.	(1)	(2)	(3)	(4)	(5)
C-10A	2.30~3.60	1.50~2.30	3.60~5.50	7.50~10.0	9.00~15.0
C-20	1.80~3.40	5.00~10.0	9.00~15.0	14.0~20.0	0.80~1.80
GL-50 GL-70	1.00~4.00	3.50~10.0	5.00~15.0	10.0~20.0	15.0~20.0
G-32A	1.30~3.70	0.80~1.50		8.00~16.0	3.00~10.5
G-36C GL-300 GL-400 GL-500	1.50~3.50	3.20~10.5	1.25~2.50	0.80~1.50	8.00~16.0
No.	(6)	(7)	(8)	(9)	SGX No.1 (Whal)
C-10A	14.0~20.0	5.50~8.00	4.00~8.00	9.00~12.0	0.50~1.50
C-20	1.30~3.00	3.00~6.00	16.0~20.0	8.00~12.0	0.50~1.50
GL-50 GL-70		0.30~1.00	0.50~2.00	6.00~12.0	
G-32A	14.0~20.0	2.00~8.00	6.00~12.0		
G-36C GL-300 GL-400 GL-500	14.0~20.0	3.00~6.00		8.00~12.0	

shows the standard spring.

requires either a supporting diaphragm disc or a material change from the standard diaphragm disc.



Maximum Flow Rate (Nm³/h)	GL-400-2: 495 GL-500-2: 620
Inlet	JIS10K50A Flange(RF)
Outlet	JIS10K80A Flange(RF)
Vent Connection	Rc 1



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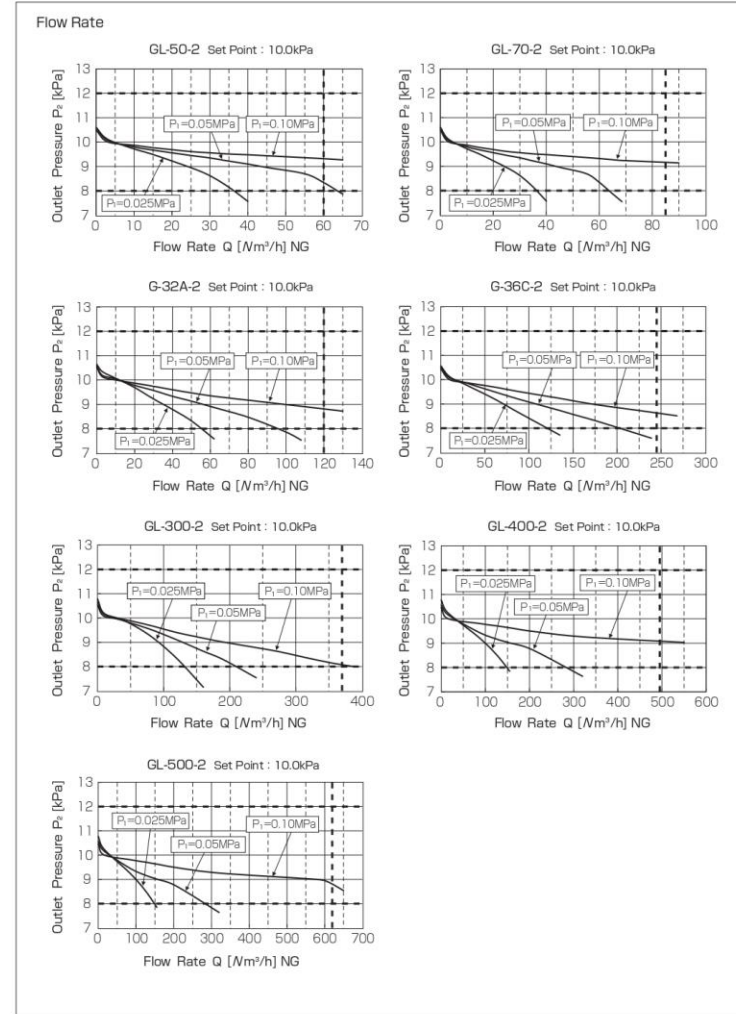
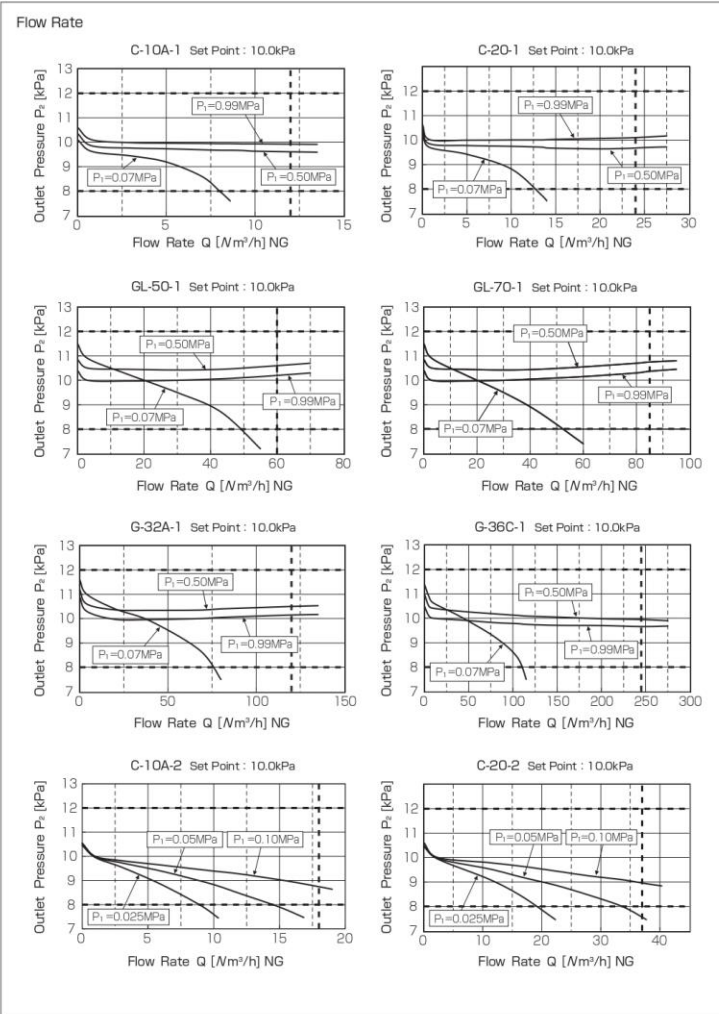
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C/G/GL Range





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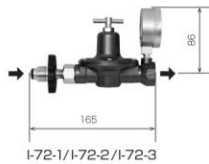
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I-72/CM-H/GMF-H Range

Variable Type Pressure Regulator

Incorporated : (Strainer)

The variable type pressure regulator has an external handle linked to the adjusting screw to make the outlet pressure setting easier without using a wrench or other tools.



I-72-1/I-72-2/I-72-3



CM-100-H1/CM-100-H2



GMF-70-H1/GMF-70-H2

Specifications

Model	I-72-1/I-72-2/I-72-3
Maximum Flow Rate	6.2 Nm ³ /h
Inlet Connection	JIS POL with Handwheel*
Outlet Connection	Rc 1/2
Strainer Mesh Gauge	200 Mesh

* According to JIS B 8245.

Specifications

Model	CM-100-H1/CM-100-H2
Maximum Flow Rate	37 Nm ³ /h
Inlet Connection	JIS 20K 15A Flange (RF)
Outlet Connection	JIS 10K 15A Flange (FF)
Strainer Mesh Gauge	110 Mesh

Specifications

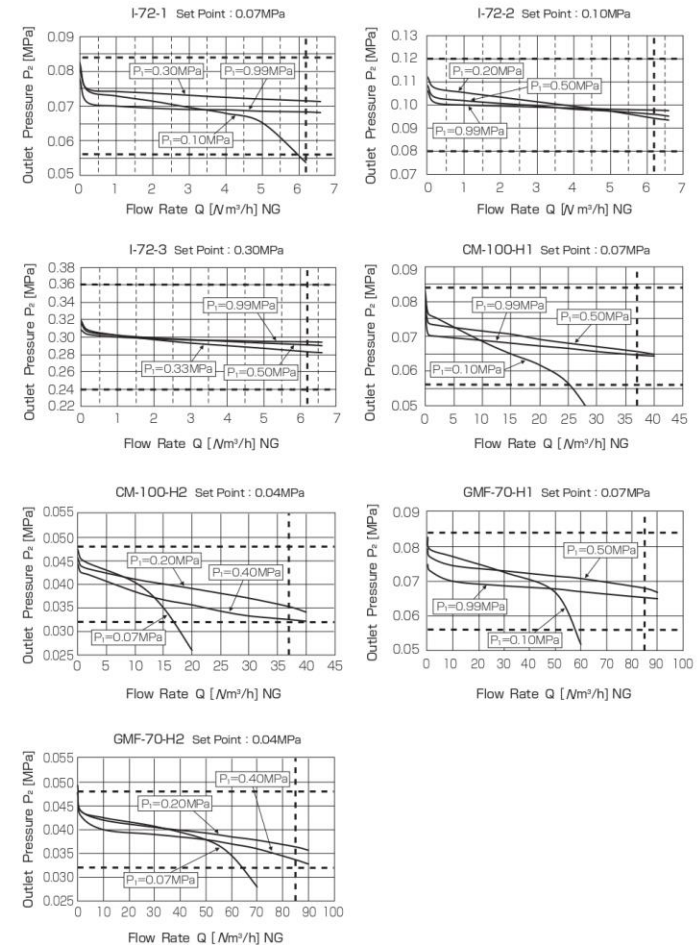
Model	GMF-70-H1/GMF-70-H2
Maximum Flow Rate	85 Nm ³ /h
Inlet Connection	JIS 20K 20A Flange (RF)
Outlet Connection	JIS 10K 20A Flange (FF)
Strainer Mesh Gauge	60 Mesh

Specifications

Model	I-72-1	I-72-2	I-72-3	CM-100-H1	CM-100-H2	GMF-70-H1	GMF-70-H2
Inlet Pressure (MPa)	0.13~1.56	0.17~1.56	0.40~1.56	0.10~1.56	0.07~0.40	0.10~1.56	0.07~0.40
Variable Outlet Pressure Range (MPa)	0.01~0.07	0.01~0.16	0.01~0.35	0.02~0.30 ¹⁾	0~0.04	0.02~0.30 ¹⁾	0~0.04

¹⁾ Interchangeable springs are available.
See page 44 regarding the springs of CM-100 and GMF-70.

Flow Rate





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AC/AM Range

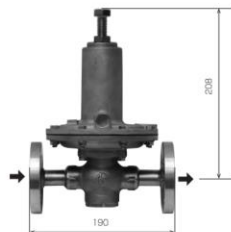
Stainless Steel Regulator

Incorporated: (Strainer)*AM-150 and AM-150F only

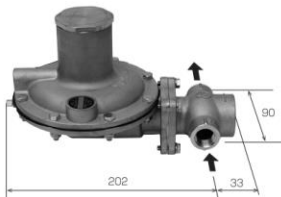
*Regulators with key components manufactured from stainless steel for use with various fluids such as a compressed gas including ammonia, nitrogen, or hydrogen.



AM-150



AM-150F



AC-15

Specifications

Model	AM-150	AM-150F	AC-15
Maximum Flow Rate	28 Nm ³ /h	19 Nm ³ /h	19 Nm ³ /h
Inlet Pressure	0.10~1.80MPa	0.07~0.15MPa	0.07~0.15MPa
Outlet Pressure	0.03~0.30MPa*	0.50~15.0kPa*	0.50~15.0kPa*
Lockup Pressure	≤0.095MPa	≤3.50kPa	≤3.50kPa
Safety Relief Valve	N/A	Working Pressure : 7±1.4kPa	Working Pressure : 7±1.4kPa
Connection	Rc 1/2	JIS 20K 15A Flange	Rc 1/2
Vent Connection		Rc 1/4	
Strainer Mesh Gauge	80 Mesh		N/A

*1 Interchangeable springs are available.

AM-150 Interchangeable Spring Selection

No.	①	②	③	④
Set Point Range (MPa)	0.03~0.20	0.05~0.30	0.00~0.09	0.00~0.02

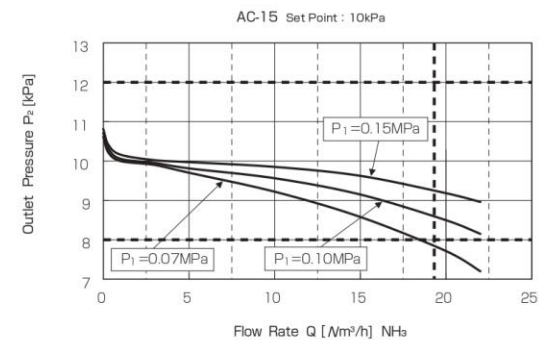
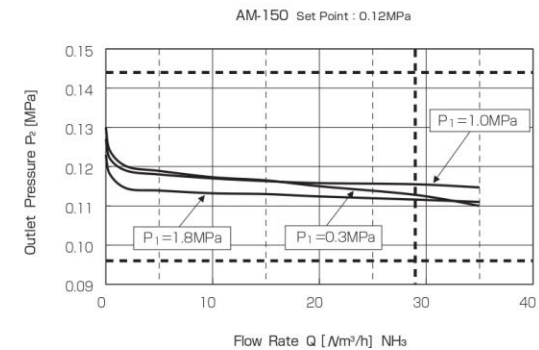
■ shows the standard spring.

AC-15 Interchangeable Spring Selection

No.	①	②	③	④	⑤
Set Point Range (kPa)	2.50~4.00	4.00~10.0	9.00~15.0	0.50~1.00	1.00~3.00

■ shows the standard spring.

Flow Rate





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CM-R/GMF-R/SGX-R/SG-R Range

Safety Relief Valve

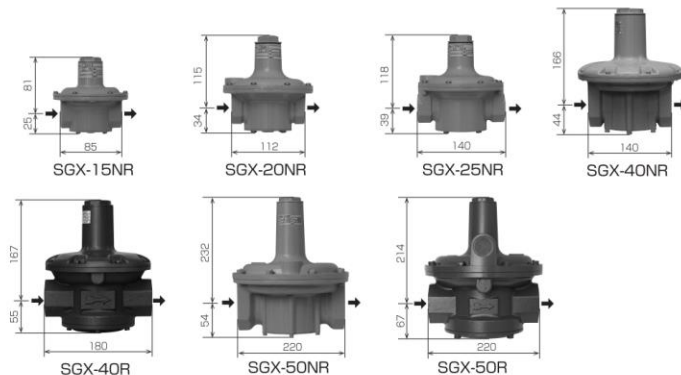
- Overpressure relief to prevent abnormal pressure increases if the inner sealing failed or temperature increased in the pipeline.
- Simply install it on the pipeline and this direct-operated valve performs its function.
- The large diaphragm in these valves gives extremely sensitive and stable operation.
- Resets automatically after outlet pressure resumes its normal range.



Specifications

Model	CM-100R	CM-100RH	GMF-70R
Start-to-Discharge	0.02~0.15MPa*1	0.02~0.28MPa	0.02~0.15MPa*1
Connection	Rc 1/2		JIS 10K 20A Flange (FF)

*1 Interchangeable springs are available.



Specifications

Model	SGX-15NR	SGX-20NR	SGX-25R	SGX-40NR	SGX-40R	SGX-50NR	SGX-50R
Start-to-Discharge	1.00~20.0kPa*2						
Connection	Rc 1/2	Rc 3/4	Rc 1	Rc 1 1/2			Rc 2

*2 Interchangeable springs are available.



Specifications

Model	SG-24AR	SG-32BR	SG-36ARA
Start-to-Discharge	1.00~20.0kPa*2		
Connection	Rc 1	Rc 1 1/2	Rc 2

*2 Interchangeable springs are available.

Interchangeable Spring Selection

See the following pages for further information regarding springs.

CM-100R → CM-100 (Page 44)
GMF-70R → GMF-70 (Page 44)
SGX-R Range → SGX Range (Page 35)
SG-R Range → SG Range (Page 38)

HCV Range

Manual-Reset OPSO

Incorporated: (Strainer)



- A manual-reset type OPSO, shuts off gas to avoid abnormal pressure increases at the regulator outlet in case of regulator failure.
- Reset by pushing a reset button.
- Activated by gas pressure loading to the diaphragm chamber.

Specifications

Model	HCV-20-M	HCV-25-M	HCV-50	HCV-50-M	HCV-50-MA-L	HCV-50-MA-S
Pressure Range	0.20~1.56MPa		0.06~0.99MPa			
Adjustable Operating Pressure Range	0.08~0.30MPa		0.003~0.03 MPa*1	0.06~0.30 MPa	0.30~0.85MPa	
Air-Tightness Test	Body	1.80MPa	1.10MPa			
	Diaphragm	0.33MPa	0.033MPa	0.33MPa	1.10MPa	
Hydrostatic Test	Body	2.70MPa	1.50MPa			
	Diaphragm	0.80MPa	0.045MPa	0.45MPa	1.50MPa	
Connection	JIS 20K 20A Flange (RF)	JIS 20K 25A Flange (RF)	JIS 10K 50A Flange (FF)			
Impulse Line Connector			Rc 1/4			
Face-to-Face Dimension	130mm		260mm	122mm×175mm		260mm
Working Temperature Range	-5~60℃		-15~60℃			
Strainer Mesh Gauge	60 Mesh		100 Mesh			
Mounting Position	Horizontal or Vertical *2					

*1 Interchangeable springs are available.

*2 If the mounting position is known, please inform us when placing your order. It is essential to change the direction of the cover to prevent rainwater ingress.

Interchangeable Spring Selection

No.	①	②	③	④	⑤	⑥
Set Point Range(kPa)	6.80~8.00	8.00~13.0	12.0~21.0	21.0~30.0	28.0~40.0	3.00~5.00

■ shows the standard spring.



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High Pressure Valves

High Pressure Valves

Incorporated: (Strainer)
*D7 range only.

We offer a wide range of valves to meet various usage.



D1 Range

Specifications

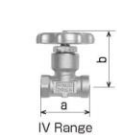
Model	D1-15F	D1-20F	D1-25F	D1-40F	D1-50F
Pressure Range	≤2.40MPa				
Air-Tightness Test	2.50MPa				
Hydrostatic Test	4.00MPa				
Connection	JIS 20K Flange (RF)				
	15A	20A	25A	40A	50A
Dimensions (a×b) (mm)	110×118	120×126	130×156	180×183	220×205
Working Temperature Range	-5~60°C				



D7 Range

Specifications

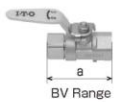
Model	D7-15F	D7-20F	D7-25F
Pressure Range	≤2.40MPa		
Air-Tightness Test	2.50MPa		
Hydrostatic Test	4.00MPa		
Connection	JIS 20K Flange (RF)		
	15A	20A	25A
Dimensions (a×b×c) (mm)	110×118×78	120×127×94	130×155×110
Working Temperature Range	-5~60°C		
Strainer Mesh Gauge	100 Mesh		



IV Range

Specifications

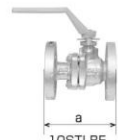
Model	IV-206C	IV-215B
Pressure Range	≤2.40MPa	
Air-Tightness Test	2.50MPa	
Hydrostatic Test	4.00MPa	
Connection	Rc1/4	Rc1/2
Dimensions (a×b) (mm)	45×51	65×65
Working Temperature Range	-35~60°C	



BV Range

Specifications

Model	BV-206	BV-215
Pressure Range	≤1.56MPa	
Air-Tightness Test	1.80MPa	
Hydrostatic Test	2.70MPa	
Connection	Rc1/4	Rc1/4
Dimension (a) (mm)	52	53
Working Temperature Range	-25~60°C	



10STLB
*Supplied by ITO.

Specifications

Model	10STLB
Pressure Range	≤1.18MPa
Air-Tightness Test	1.28MPa
Hydrostatic Test	2.06MPa
Connection	JIS 10K Flange (FF)
	15A 20A 25A 32A 40A 50A
Dimension (a) (mm)	108 117 127 140 165 178
Working Temperature Range	-5~80°C



20STLB
*Supplied by ITO.

Specifications

Model	20STLB
Pressure Range	≤2.40MPa
Air-Tightness Test	2.50MPa
Hydrostatic Test	3.60MPa
Connection	JIS 20K Flange (RF)
	15A 20A 25A 40A 50A
Dimension (a) (mm)	140 152 165 178 190
Working Temperature Range	-10~80°C

Accessories & Other Equipment

Y-Type Strainers

- Filters any foreign bodies such as pipe scale or rust coming from the upstream pipework.
- Designed so that collected solids can be disposed of and the filter cleaned without having to be removed from the line.



10FDY



10FDYBF

Specifications

Model	10FDY									
Connection	Rc1/4	Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1 1/4	Rc1 1/2	Rc2	Rc2 1/2	Rc3
Dimension (a) (mm)	65	70	85	100	115	135	150	180	220	250

*Supplied by ITO.

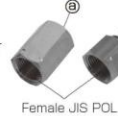
Specifications

Model	10FDYBF											
Connection	JIS 10K Flange (FF)											
	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A
Dimension (a) (mm)	125	140	150	170	190	230	305	360	415	465	515	580
												680
												800

*Supplied by ITO.

POL Adapters

Male JIS POL×PT thread adapter



Female JIS POL

Model	PC-106	PC-112	PC-115
Connection (A)	Rc1/4	Rc3/8	Rc1/2

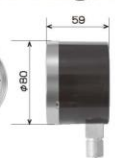
Model	PC-206	PC-212	PC-215	PC-220
Connection (B)	R1/4	R3/8	R1/2	R3/4

Pressure Gauges

We offer pressure gauges in a wide range.



G3/8



G1/2

Maximum Scale Value
10.0kPa
20.0kPa
50.0kPa



G3/8



G1/2

Maximum Scale Value
0.10MPa
0.20MPa
0.40MPa
1.00MPa
2.00MPa
2.50MPa
3.50MPa

Cylinder Stands

- Increases the stability of cylinders on poor standings.
- Can be bolted to the ground or use stabilisers incorporated into the base.
- Available in a range of sizes for varying dimensions of cylinders.



For Indoor Use (TMF)



For 10kg LPG (TM-10)



For 20kg LPG (TM-20)



For 50kg LPG (TM-50)



For Compressed Gas (TMG-7)



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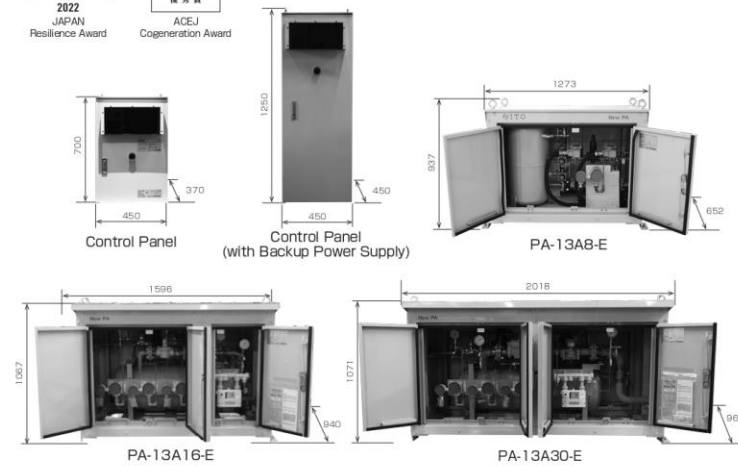
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Propane Air Mixer-New PA Package

New PA Package

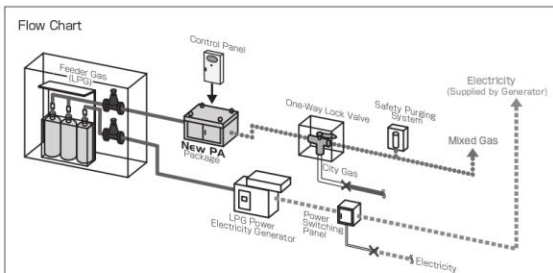


- This device temporarily supplies "City Gas" (Natural Gas) when emergencies shut down gas supply lines.
- Mixing propane with air to create a synthetic gas identical to city gas.
- Easy operation. Touch the screen to start-up with the audio guidance.
- For your safety and security, automatically performs gas leakage test.

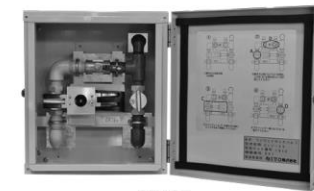


Specifications

Model	PA-13A8-E	PA-13A16-E	PA-13A30-E
Capacity	8m³/h(normal)(139.6kW)	16m³/h(normal)(279kW)	30m³/h(normal)(523kW)
Feeder Gas	LPG containing 95% or more propane		
Total Calorific Value of Mixed Gas	62.8MJ/m³(15000kcal)		
Outlet Pressure(kPa)	1.50~2.50		
Power Consumption(W)	40		



One-Way Lock Valve



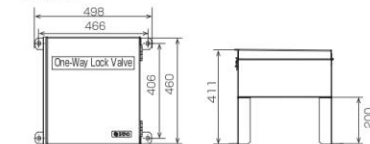
Specifications

Model	OLV-25	OLV-25-02
Connection	Rc 1	
Anchor Bolt Diameter	φ17mm	φ10mm
Installation Method	Floor Mounted	Wall Mounted

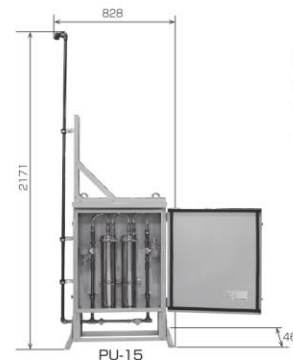
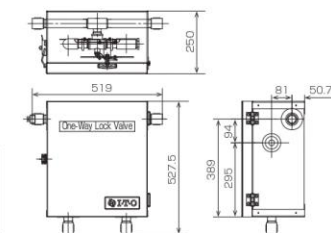
- It switches gas supply from city gas sourced to mixed gas by the New PA.
- "One-way lock valve" system prevents improper valve operation occurring.
- A locking panel fixes a valve in closed status should another valve be opened at the same time.

External Dimensions

OLV-25



OLV-25-02



Safety Purging System

- Removing gas component and odorant from the mixed gas.
- Only separated air from the mixed gas released to the atmosphere, though the trapping filter ("the Column").
- Purge the mixed gas safely to the atmosphere, to keep the gas density within correct range for the internal piping of the New PA.

Specifications

Model	PU-15
Inlet Connection	Rc 1/2
Trapping Capability	11.6L (Propane Air Mixed Gas)



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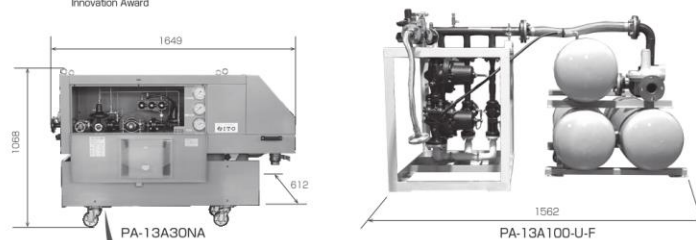
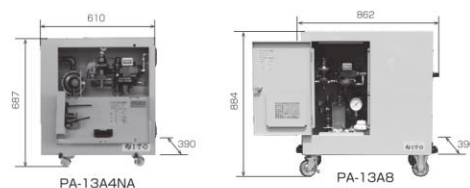
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Propane Air Mixers—PA System Range

- Mixes propane with air to provide similar gas property to NG, to allow NG distribution to continue even during emergency or maintenance.
- Does not require any external power sources such as electricity.
- Safety devices ensure total security of the system without any complicated calorific value adjustments.
- Compact & lightweight body allows easy portability.



Specifications

Model	PA-13A4NA	PA-13A8	PA-13A30NA	PA-13A100-U-F
Capacity	4m ³ /h(normal) (69.8kW)	8m ³ /h(normal) (139.6kW)	30m ³ /h(normal) (523kW)	100m ³ /h(normal) (1743kW)
Feeder Gas	LPG containing 95% or more propane.			
Total Calorific Value of Mixed Gas	62.8MJ/m ³ (15000kcal)			
Outlet Pressure(kPa)	1.50~2.50	1.70~2.30	1.50~2.50	1.50~2.50

* There are wide country differences in mix within LPG and also the blend of natural gas in use. The PA requires exact matching of both source and target gas to ensure correct, most efficient, safe and highest quality burning. Please contact your ITO sales representative to enable us to carry out this match.

Other Available Accessories

●LPG Cylinder Stand

- Easy to assemble and highly portable.
- Increases the stability of cylinders on poor standings.



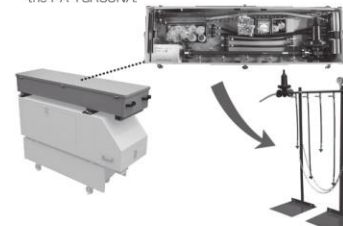
●LPG Cylinder Cover

- To be attached to the PA-13A8 and hides the LPG cylinder.



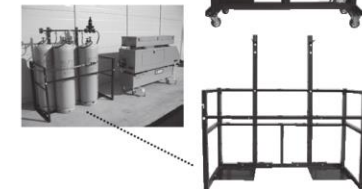
●Equipment Cabinet

- All the equipment required for start-up procedure is packed into an easy-transportable cabinet mounted on the PA-13A30NA.



●Cylinder Cage

- Increases the stability of cylinders even in places without walls.
- Able to install five 50kg cylinders.
- Easy-assembly only with 1~2 people.



●Portable Gas Detector

- For leakage test at the start-up.



●Gas Densitometer

- For checking purging at the start of operation.



●Gas Alarm

- Installed within 30 cm from the floor to inspect gas leakage of propane air mixed gas heavier than air.



●Cylinder Cabinet

- Storage and protection for LPG cylinders and/or PA system.
- Offered in a wide range of sizes to meet various cylinder installations.





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Propane Air Mixer-MX-500W

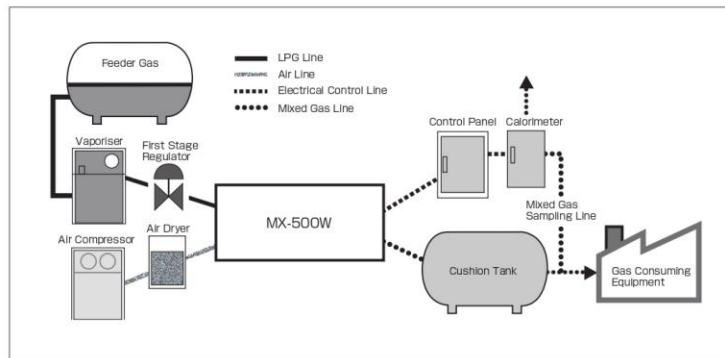
- Mixes LPG with air to provide similar gas property to NG, to allow NG distribution to continue even during emergency or maintenance.
- The control panel stabilises mixed gas properties, keeps the fluctuation within the preset value based on the feedback from the calorimeter when the feeder gas composition remains constant.
- This will be achieved even with the butane rich LPG.



Specifications

Model	MX-500W
Capacity	370m³/h(normal)
Feeder Gas	C ₃ H ₈ : C ₄ H ₁₀ =50:50
Total Calorific Value of Mixed Gas	62.8MJ/m³(15000kcal/m³)
Outlet Pressure	30.0±3.0kPa~40.0±3.0kPa

*This item can be manufactured to your specific request.
Please contact your ITO sales representative.



Notes



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User Guide

Terminology and Advice

Connections

The inlet or outlet connections are described by:

- A code, which is from the ITO codification system.
- A condensed description, the complete description is given as table 1.

Condensed Description	Table 1 : Connection Full Description	JIS Code
With Union	A union joint assembled at product outlet connection unless otherwise specified. PT threaded for connection. See description below.	B 2301 MOD:ISO 49
Without Flange	The product provided without any flanged connections. Typically PT thread connection provided instead.	B 0203 MOD:ISO 7
With Ball Valve	A ball valve assembled at the product outlet unless otherwise specified.	B 0203 MOD:ISO 7
Rc-R PT Thread	JIS taper pipe threads. Shown as R for male / external thread and Rc for female / internal thread in short.	B 0203 MOD:ISO 7
Flange	JIS Flange connections. A welded neck flange pipe screwed into the regulator or a regulator that has an end face finished to match a declared flange specification.	B 2220
JIS POL	JIS POL connections. Most widely used in this industry, POL is the common name of cylinder valve-to-hose or cylinder valve-to-regulator connections. JIS POL thread specification is left-hand, W22.5, 14 threads per inch, internal or external thread.	B 8245

Dimensions in mm

Expressed in mm in this catalogue. See table 2 for your conversion.

Inlet Pressure(P₁) in MPa, kPa

Range of inlet pressure (P_{1min}~P_{1max}) which allows the regulator to deliver a stable outlet pressure (P₂) within the declared range for whatever capacity less than the declared one. See table 2 for your pressure unit conversion.

Outlet Pressure(P₂) in MPa, kPa

If (ADJ) mark is noted, it's an adjustable regulator which P₂ can be re-adjusted. Typically interchangeable springs are available, contact your ITO sales representative for further information.

Capacity (Q) in kg/ h

This is our guaranteed flow rate at minimum with propane for which a P₂ is delivered stably within the declared range (P_{2min}~P_{2max}) for whatever P₁ in declared range (P_{1min}~P_{1max}) unless otherwise specified.

Safety Relief Valves in MPa, kPa

If a safety relief valve working pressure is shown in the specification table, the product incorporates an internal relief valve, a small-spring loaded pressure relief valve contained within the regulator at the centre of diaphragm to prevent the outlet pressure from exceeding a predetermined pressure.

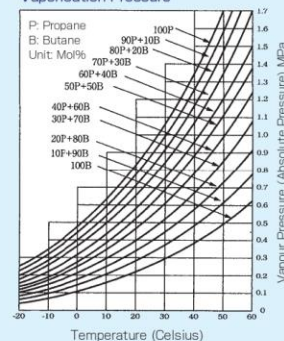
Table 2 : Length

cm	mm	in
100.0	1000.0	39.4
1.0	10.0	0.394
0.1	1.0	0.0394
2.54	25.4	1.0
30.5	305.0	12.0

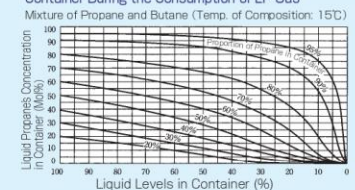
Table 3 : Pressure Conversion

MPa	kPa	kgf/cm ²	mm H ₂ O	in H ₂ O	PSI	bar	mbar
1.0	1000.0	10.197	1.02×10 ⁴	401.065	145.0	10	10,000
0.001	1.0	0.0102	102.0	4.02	0.145	0.01	10
0.098	98.0	1.0	10000.0	394.0	14.2	0.9807	980.7
9.8×10 ⁻⁶	0.0098	0.0001	1.0	0.0394	0.00142	0.0001	0.1
2.49×10 ⁻⁴	0.249	0.00254	25.4	1.0	0.0361	0.00249	2.49
0.0069	6.9	0.0703	703.0	27.7	1.0	0.06895	68.95
0.1	100	1.0197	10197	401.76	14.5	1.0	1,000
0.0001	0.1	0.00102	10.21	0.402	0.0145	0.001	1.0

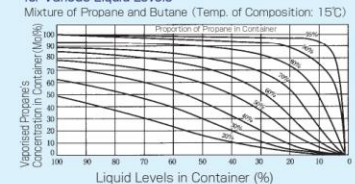
Propane and Butane Gas Vaporisation Pressure



Changes in the Composition of Residual Liquid in the Container During the Consumption of LP Gas



Change of Vaporised LP Gas Composition in Container for Various Liquid Levels





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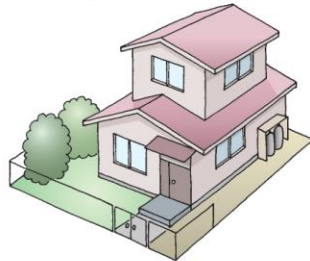
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Application Map for LPG

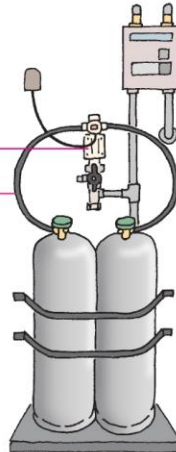
Residential Supply (Independent Housing)



Supply LPG for a household, typically to a house building in Japan. Install a cylinder, or 2 (~ 4) cylinders with a single stage or an automatic changeover regulator for up to 10kg/h capacity. Upstream equipment inc. a gas meter and a high or low pressure rubber hose(s) (excl. meter downstream hose) which belongs to an LPG distributor as "supply equipment". Also, LIA-700; high durability supply equipment approved by the Japan L.P.Gas Instrument Inspection Association under Japanese LPG Law, to ensure 10 year lifetime.

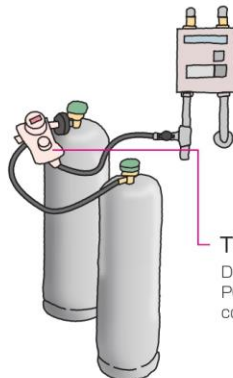
Double Stage Automatic Changeover Regulators Page 73~76 (with Signal Transmitting Function)

First and second stage regulator combined into one compact body and automatically changes to the "reserve" cylinders when the "service" cylinders are empty or vaporising capacity is not sufficient. With a signal transmitting function, interlocking a signal to an information sender enables cylinders replacement without discontinuation of gas supply & a delivery in a planned way.



High Pressure Hoses Page 100

High pressure rubber hose with JIS POL for inlet cylinder connection(s). Variable additional functions are also available with model LIHS, with liquid non-return, TIH with tensile trigger SOV etc.

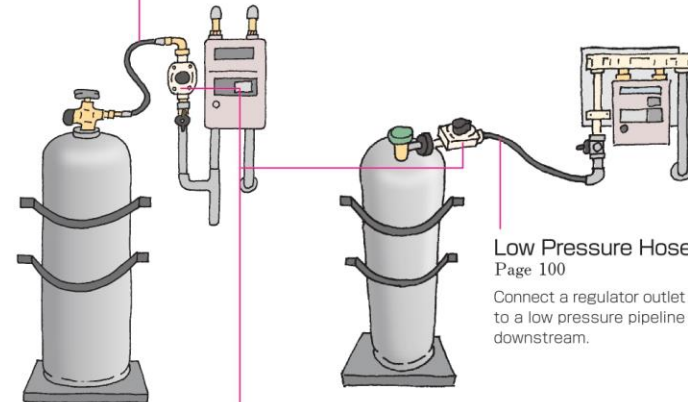


Twin Star Page 75

Double stage automatic changeover regulator with POL connection on one side, which can be directly connected to an LP gas cylinder.

High Pressure Hoses Page 100

High pressure rubber hose with JIS POL for inlet cylinder connection(s). Variable additional functions are also available with model LIHS, with liquid non-return, TIH with tensile trigger SOV etc.



Low Pressure Hoses Page 100

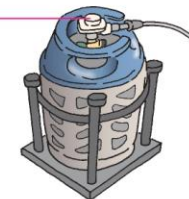
Connect a regulator outlet to a low pressure pipeline downstream.

Single Stage Regulators Page 89~90

It reduces the pressure from the cylinder pressure directly down to the appliance pressure.

Clip-On Regulators Page 89

A single stage regulator directly mounted on a cylinder with dedicated quick-coupling connectors. The safety SOV incorporated in outlet for additional safety.





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Application Map for LPG

Residential Supply

(Small-Medium Size Area Distribution)



Supply LPG to 2~70 households, typically for a condominium, apartment or small-medium size housing complex. Put cylinders, or a bulk tank with an ACO capacity range from 10~70kg/h. Typically in Japan, it's a double stage, which delivers LPG to whole installation at low pressure. Smart meter shut-off and/or alert if preset "abnormal" situation is found after the meter at any dwelling. An automatic changeover incorporating leakage detecting system can also check for risk of gas leakage on whole downstream pipelines from the ACO outlet.

Gas Leakage Detecting Kits Page 97

Install with an ACO, monitoring whether gas keeps flowing during period of no gas consumption. No flow detected proves no leakage. But if gas flows for 24 hours x 30 days, a gas flow recorder in the kit shows an alert of a gas leaking risk at downstream piping.

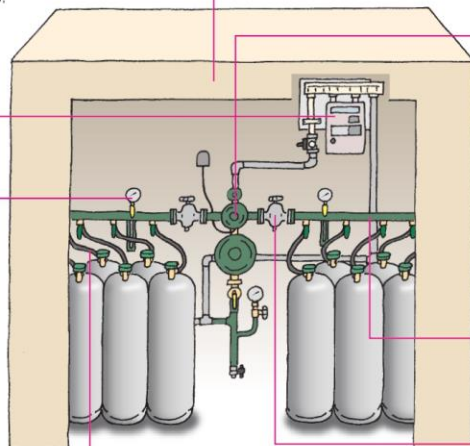
Cylinder Cabinets Page 105

Storage & protection of cylinders.

Pressure Gauges

Page 105

We offer pressure gauges in a wide range. PG installation kit includes gauge adaptors & fittings and highly recommended to connect manifolds.



High Pressure Hoses Page 100

High pressure rubber hose with JIS POL for inlet cylinder connection(s). Variable additional functions are also available with model LIHS, with liquid non-return, TIH with tensile trigger SOV etc.

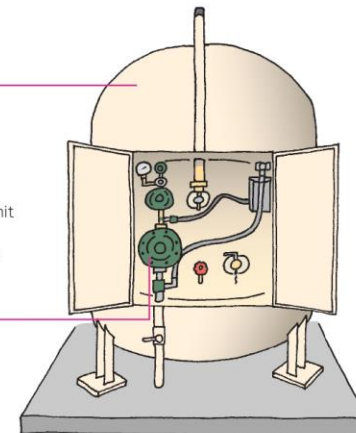
Bulk Tank Supply Systems

Page 113

A skid-based factory pre-assembled unit containing all necessary equipment, requiring simple fitting to low pressure piping at site.

Regulators for Bulk Tank (with Excess Flow Valve)

Page 114



Double Stage Automatic Changeover Regulators

Page 77~85

(with Signal Transmitting Function)
(Incorporating Gas Leakage Detecting System)

1st & 2nd stage regulator combined into one compact body and automatically changes to the "reserve" cylinders when the "service" cylinders are empty or vaporising ability is not sufficient. With a signal transmitting function, interlocking a signal to an information sender, ACO enables cylinders replacement without discontinuation of gas supply & a delivery in a planned way. With a gas detecting kit, ACO can recognise a risk of gas leakage on whole downstream pipelines from the ACO outlet. Detectable even with a small leakage, this is recommended for underground piping inspection.

High Pressure Manifold Assembly Kits Page 101~102

Manifolding cylinders using HP hoses. Non-return valves assembled to the manifold piping, and HP hoses and accessories packed in the kit.

Valves Page 103~104

We offer a range of valves for LPG supply equipment.



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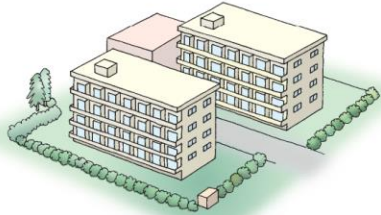
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Application Map for LPG

Residential Supply

(Area Distribution for 70~300 Households)



Supply LPG to 70 or more households typically large size housing complex or estate.
A kind of a "city (town) gas" distribution, therefore typically managed under strict authority controls. Install a bulk tank with regulators and an earthquake-actuated shut-off system.
Sometimes used with a vaporiser(s), the air heating type is commonly used in Japan to reduce costs and sustainable area supply against black out risk. Typically installed in 2 ways, "Double LP Regulators" or "a HP Bypass" installation.

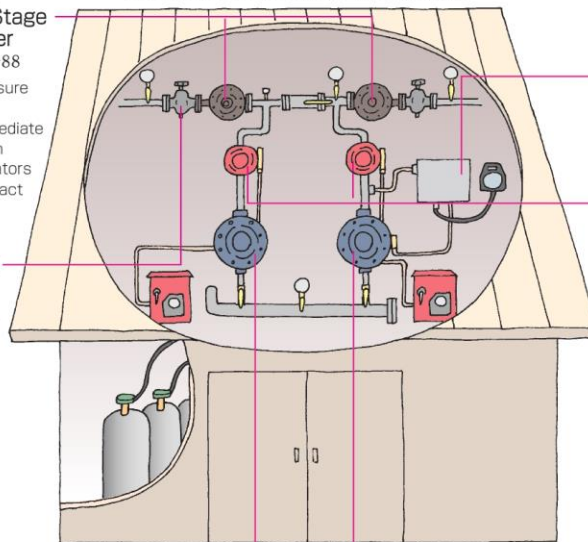
Double LP Regulators Installation

Separate Type First Stage Automatic Changeover Regulators Page 87~88

The ACO reduces the pressure from the cylinder/vessel pressure down to an intermediate pressure. It's a combination of 2 units of 1st stage regulators or combined into one compact body.

Valves Page 103~104

We offer a range of valves for LPG supply equipment.



Second Stage Regulators Page 93~94

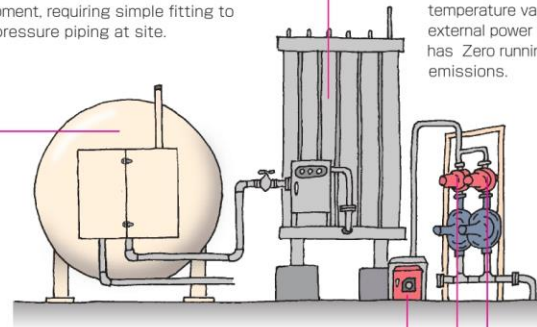
It reduces the pressure from intermediate pressure down to the appliance pressure.

Bulk Tank Supply Systems Page 113

A skid-based factory pre-assembled unit containing all necessary equipment, requiring simple fitting to low pressure piping at site.

Air Heating Type Vaporisers (ecoRiser) Page 111~112

Vaporises liquid LPG using only air movement. This ambient temperature vaporiser uses no external power source, therefore has Zero running costs & Zero emissions.



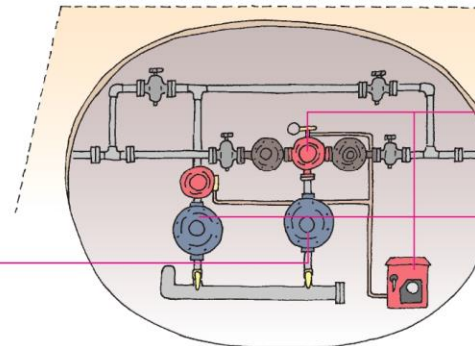
Pressure Monitoring Type Gas Leakage Detecting Cabinets Page 98

Install with a regulator monitoring & recording, downstream pressure changes. When no gas is consumed, it records the regulator locking up to the pre-set pressure and proves no leakage on the downstream piping.

Earthquake-Actuated Shut-Off System Page 107~108

A totally mechanical (no electricity required), highly accurate valve which shuts off gas supplies when an earthquake occurs.

High Pressure Bypass Installation



Single Stage Regulators Page 89~90

It reduces the pressure from the cylinder pressure directly down to a low pressure. Typically installed at a bypass line.



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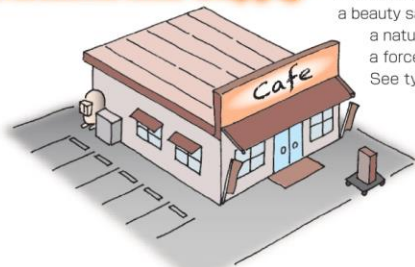
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Application Map for LPG

Commercial Supply



Supply to LP gas commercial users such as a restaurant, a hospital, a school, a hotel or a beauty salon etc. There are two installations, a natural vaporisation supply, and a forced vaporisation supply. See typical installations below.

Double Stage Automatic Changeover Regulators Page 77~85 (with Signal Transmitting Function)

First and second stage regulator combined into one compact unit and automatically changes to the "reserve" cylinders when the "service" cylinders are empty or vaporising ability is not sufficient. With a signal transmitting function, interlocking a signal to an information sender enables cylinders replacement without discontinuation of gas supply & a delivery in a planned way.

Valves Page 103~104

We offer a range of valves for LPG supply equipment.

Pressure Gauges Page 105

We offer pressure gauges in a wide range. PG installation kit includes gauge adaptors & fittings and highly recommended to connect manifolds.

High Pressure Manifold Assembly Kits Page 101~102

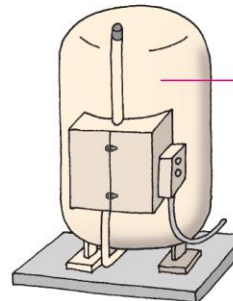
Manifolding cylinders using high pressure hoses. Non-return valves assembled to the manifold piping, and HP hoses and accessories packed in the kit.

High Pressure Hoses Page 100

High pressure rubber hose with JIS POL for inlet cylinder connection(s). Variable additional functions are also available with model LIHS, with liquid non-return, TIH with tensile trigger SOV etc.

Cylinder Cabinets Page 105

Storage & protection of cylinders.

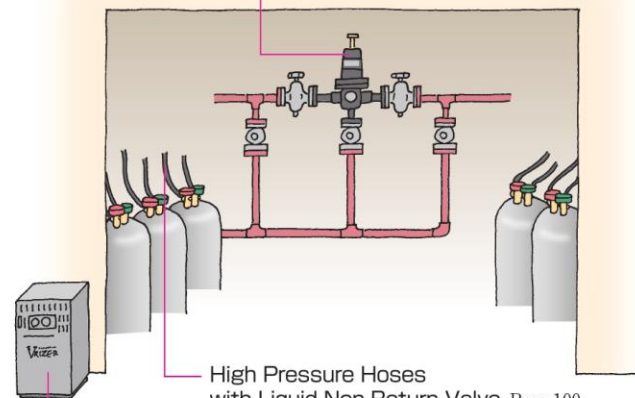


Bulk Tank Supply Systems Page 113

A skid-based factory pre-assembled unit containing all necessary equipment, requiring simple fitting to low pressure piping at site.

Liquid Automatic Changeover Devices Page 109

Automatically changes liquid LPG supply from "service" cylinders or tanks to "reserve" side when the "service" side is empty. It eliminates gas run outs and ensures a continuous liquid LPG flow.



High Pressure Hoses with Liquid Non-Return Valve Page 100

Liquid non-release valve is incorporated.

Electrical Heating Type Vaporisers Page 110

Heats up internal water storage by an electrical heater(s), the heated water forces the liquid LPG to vaporise. This minimises supply facilities and its installation space.



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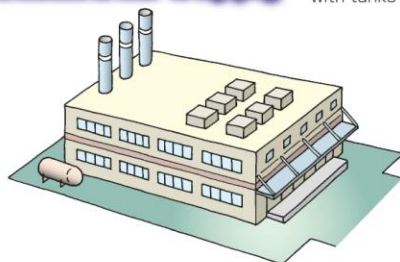
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Application Map for LPG

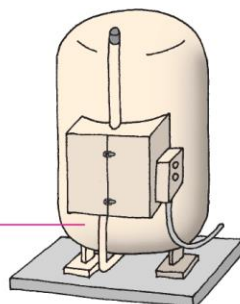
Industrial Supply

LPG supply for industrial use. Typically installed with tanks and large size regulators.



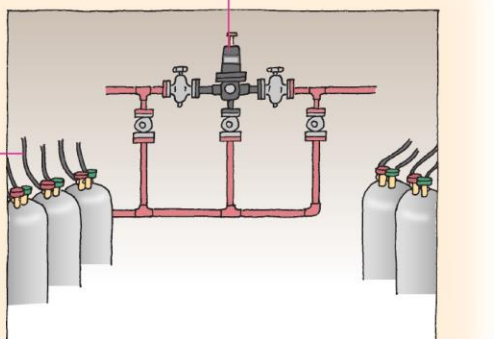
Bulk Tank Supply Systems Page 113

A skid-based factory pre-assembled unit containing all necessary equipment, requiring simple fitting to low pressure piping at site.



Liquid Automatic Changeover Devices Page 109

Automatically changes liquid LPG supply from "service" cylinders or tanks to "reserve" side when the "service" side is empty. It eliminates gas run outs and ensures a continuous liquid LPG flow.



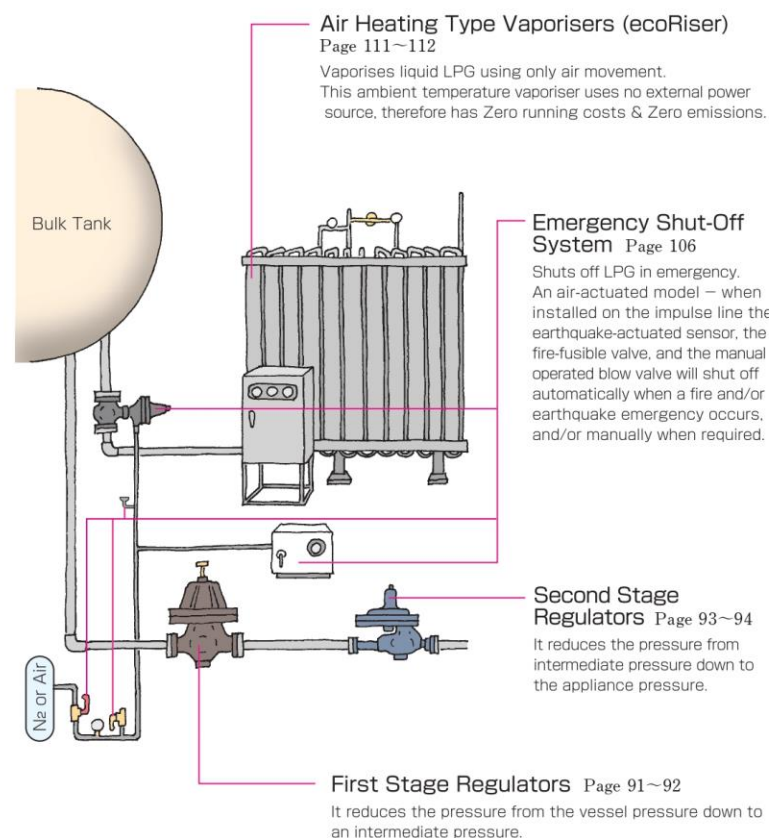
High Pressure Hoses with Liquid Non-Return Valve Page 100

Liquid non-release valve is incorporated.



Electrical Heating Type Vaporisers Page 110

Heats up internal water storage by an electrical heater(s), the heated water forces the liquid LPG to vaporise. This minimises supply facilities and its installation space.





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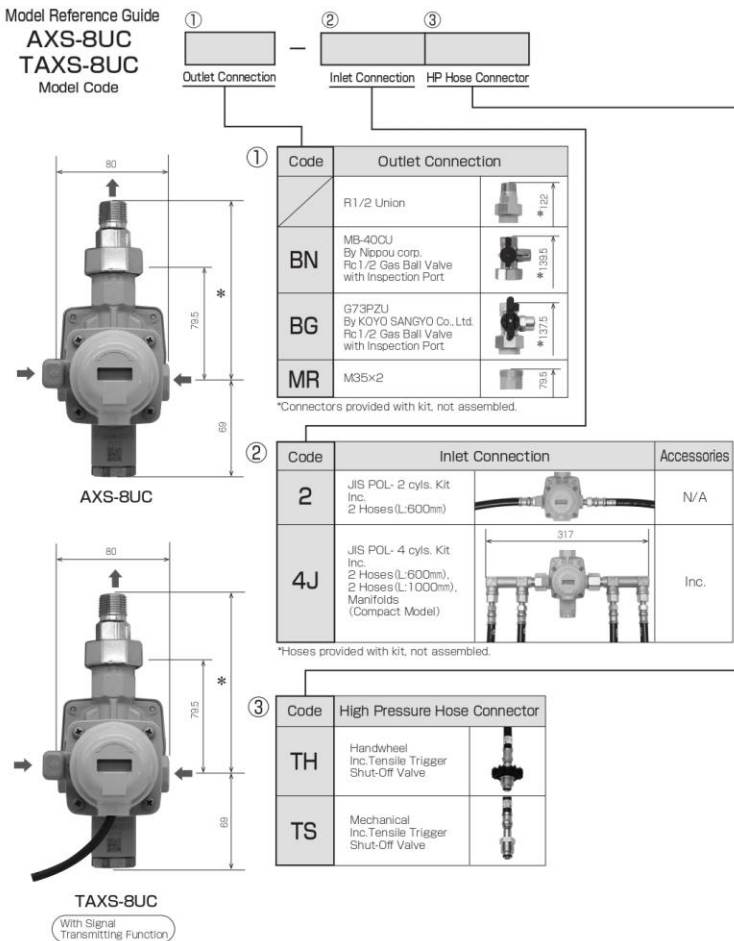
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8kg/h Double Stage Automatic Changeover Regulators

Model Reference Guide
AXS-8UC
TAXS-8UC
Model Code



Range Specification

Capacity(Propane)	8kg/h
Inlet Pressure	0.15~1.56MPa
Outlet Pressure	2.55~3.30kPa
Lockup Pressure	≤ 3.50kPa
Safety Relief Valve Working Pressure	5.60~8.40kPa
Starting Pressure of Replenishment	0.07≤P<0.15MPa

Accessories



Bracketx2
15A U-boltx2
M5 Butterfly Nutx4
M5 Flat Washerx4
Tapping Screwx4

Model Reference Guide

*If the specification you require is not offered in the table below, contact our local branch or agency.

ACO without Signal Transmitting Function	ACO with Signal Transmitting Function
Model	Model
AXS-8UC-2TH	TAXS-8UC-2TH
AXS-8UC-2TS	TAXS-8UC-2TS
AXS-8UC-4JTH	TAXS-8UC-4JTH
AXS-8UC-4JTS	TAXS-8UC-4JTS
AXS-8UCBN-2TH	TAXS-8UCBN-2TH
AXS-8UCBN-2TS	TAXS-8UCBN-2TS
AXS-8UCBN-4JTH	TAXS-8UCBN-4JTH
AXS-8UCBN-4JTS	TAXS-8UCBN-4JTS
AXS-8UCBG-2TH	TAXS-8UCBG-2TH
AXS-8UCBG-2TS	TAXS-8UCBG-2TS
AXS-8UCBG-4JTH	TAXS-8UCBG-4JTH
AXS-8UCBG-4JTS	TAXS-8UCBG-4JTS
AXS-8UCMR-2TH	TAXS-8UCMR-2TH
AXS-8UCMR-2TS	TAXS-8UCMR-2TS
AXS-8UCMR-4JTH	TAXS-8UCMR-4JTH
AXS-8UCMR-4JTS	TAXS-8UCMR-4JTS



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8kg/h Double Stage Automatic Changeover Regulators

Model Reference Guide
AXS-8C
TAXS-8C
Model Code

① **Outlet Connection**

② **Inlet Connection**

③ **HP Hose Connector**

AXS-8C

TAXS-8C

Model Code

Outlet Connection

Code	Hose Assembled	Cylinder Mounted
R1/2 Union		
BN	MB-40CU By Nippon corp. Rc 1/2 Gas Ball Valve with Inspection Port	
BG	G73P2U By KOYO SANGYO Co.Ltd. Rc 1/2 Gas Ball Valve with Inspection Port	

*Connectors provided with kit, not assembled.

Inlet Connection

Code	Hose Assembled	Accessories	Cylinder Mounted AXS-8C-TH-R	Cylinder Mounted AXS-8C-TS-R	Accessories
2	JIS POL- 2 cys. Kit inc. 2 Hoses (L:600mm)	—			N/A
4	JIS POL- 4 cys. Kit inc. 4 Hoses (L:600mm), Manifolds				—
4J	JIS POL- 4 cys. Kit inc. 2 Hoses (L:600mm), 2 Hoses (L:1000mm), Manifolds (Compact Model)				—

*Interchangeable Inlet Connectors.

High Pressure Hose Connector

Code	TH	TS
Handwheel Inc. Tensile Trigger Shut-Off Valve		

*Hoses provided with kit, not assembled. (Only AXS-8C-TH-R-TS-R assembled with hoses.)

Range Specification

Capacity (Propane)	8kg/h
Inlet Pressure	0.15~1.56MPa
Outlet Pressure	2.55~3.30kPa
Lockup Pressure	≤3.50kPa
Safety Relief Valve Working Pressure	5.60~8.40kPa
Starting Pressure of Replenishment	0.07≤P<0.15MPa

Accessories



Model Reference Guide

*If the specification you require is not offered in the table below, contact our local branch or agency.

Hose Assembled	
Model	
AXS-8C-2TH, AXS-8C-2TS	
AXS-8C-4TH, AXS-8C-4TS	
AXS-8C-4JTH, AXS-8C-4JTS	
AXS-8CBN-2TH, AXS-8CBN-2TS	
AXS-8CBN-4TH, AXS-8CBN-4TS	
AXS-8CBN-4JTH, AXS-8CBN-4JTS	
AXS-8CBG-2TH, AXS-8CBG-2TS	
AXS-8CBG-4TH, AXS-8CBG-4TS	
AXS-8CBG-4JTH, AXS-8CBG-4JTS	
Cylinder Mounted	
Model	
AXS-8C-TH-R, AXS-8C-TS-R	

*The TAXS range for telemetry is also available.

*Hoses provided with kit, not assembled.

Specifications

Model	AXS-8CW(Rc 1/4)	AXS-8CW(Rc 1/2)
(With Signal Transmitting Function)	TAXS-8CW(Rc 1/4)	TAXS-8CW(Rc 1/2)
Capacity (Propane)	8kg/h	8kg/h
Inlet Pressure	0.10~1.56MPa	0.10~1.56MPa
Outlet Pressure	2.55~3.30kPa	2.55~3.30kPa
Lockup Pressure	≤3.50kPa	≤3.50kPa
Safety Relief Valve Working Pressure	5.60~8.40kPa	5.60~8.40kPa
Inlet Connection	Rc 1/4	Rc 1/2
Outlet Connection	R1/2 Union	R1/2 Union
Starting Pressure of Replenishment	< 0.10MPa	< 0.10MPa

*The TAXS range for telemetry is also available.

Specifications

Model	AX-8-GB	AX-6-GB
(With Signal Transmitting Function)	TAX-8-GB	TAX-6-GB
Capacity (Propane)	8kg/h	6kg/h
Inlet Pressure	0.10~1.60MPa	0.10~1.60MPa
Outlet Pressure	2.70kPa~4.50kPa	2.70kPa~4.50kPa
Lockup Pressure	≤5.00kPa	≤5.00kPa
Safety Relief Valve Working Pressure	7.40~15.0kPa	7.40~15.0kPa
Inlet Connection	M20x1.5	M20x1.5
Outlet Connection	Rp1/2	Rp1/2
Starting Pressure of Replenishment	≥50.0kPa	≥50.0kPa



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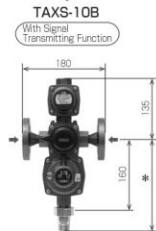
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10kg/h Double Stage Automatic Changeover Regulators

Model Reference Guide

AXS-10B
TAXS-10B
AX-10BHL
TAX-10BHL
Model Code



Code	Inlet Connection		Accessories	
	(T)AXS-10B		(T)AX-10BHL	
Without Flange	Rc 1/2		N/A	JIS20K 15A Flange
F	JIS20K 15A Flange		A	Rc 1/2
2	JIS POL-2 cyls. Kit Inc. 2 Hoses (L:600mm)		N/A	
4	JIS POL-4 cyls. Kit Inc. 4 Hoses (L:600mm), Manifolds		B	
4J	JIS POL-4 cyls. Kit Inc. 2 Hoses (L:600mm), 2 Hoses (L:1000mm), Manifolds (Compact Model)		B	
6	JIS POL-6 cyls. Kit Inc. 4 Hoses (L:600mm), 2 Hoses (L:1000mm), Manifolds		C	
6J	JIS POL-6 cyls. Kit Inc. 2 Hoses (L:600mm), 4 Hoses (L:1000mm), Manifolds (Compact Model)		B	

*Hoses provided with kit, not assembled.

Code	High Pressure Hose Connector		Code	Outlet Connection	
	(T)AXS-10B			(T)AX-10BHL	
TH	Handwheel Inc. Tensile Trigger Shut-Off Valve		With Union	R3/4 Union	
TS	Mechanical Inc. Tensile Trigger Shut-Off Valve				

*The outlet connector of (T)AXS-10B provided with kit, not assembled.

Range Specification

Capacity (Propane)	10kg/h
Inlet Pressure	0.10~1.56MPa
Outlet Pressure	2.55~3.30kPa
Lockup Pressure	≤3.50kPa
Safety Relief Valve Working Pressure	5.60~8.40kPa
Starting Pressure of Replenishment	<0.10MPa

Accessories

(A)	(B)	(C)
15A Flange Gasketx2*	Bracketx2 15A U-Boltx2 M5 Butterfly Nutx4 M5 Flat Washerx4 Tapping Screwx4	Bracketx4 15A U-Boltx4 M5 Butterfly Nutx8 M5 Flat Washerx8 Tapping Screwx8

Model Reference Guide

*If the specification you require is not offered in the table below, contact our local branch or agency.

ACO without Leakage Detecting System	
Model	
AXS-10B	
AXS-10B(with Union)	
AXS-10BF	
AXS-10BF(with Union)	
AXS-10B-2TH, AXS-10B-2TS	
AXS-10B-4TH, AXS-10B-4TS	
AXS-10B-6TH, AXS-10B-6TS	
AXS-10B-4JTH, AXS-10B-4JTS	
AXS-10B-6JTH, AXS-10B-6JTS	

*The TAXS range for telemetry is also available.

ACO Incorporating Leakage Detecting System	
Model	
AX-10BHL	
AX-10BHL(without Flange)	
AX-10BHL-2TH, AX-10BHL-2TS	
AX-10BHL-4TH, AX-10BHL-4TS	
AX-10BHL-6TH, AX-10BHL-6TS	
AX-10BHL-4JTH, AX-10BHL-4JTS	
AX-10BHL-6JTH, AX-10BHL-6JTS	

*The TAX range for telemetry is also available.

*See page 97 regarding gas flow recorders.

AX-10-OPSO

TAX-10-OPSO

With Signal
Transmitting Function

Specifications

Capacity (Propane)	10kg/h
Inlet Pressure	0.10~1.60MPa
Outlet Pressure	2.70~4.50kPa
Lockup Pressure	≤5.00kPa
Safety Relief Valve Working Pressure	7.40~8.90kPa
OPSO Working Pressure	9.00~11.0kPa
Working Pressure of Replenishment	≥50.0kPa



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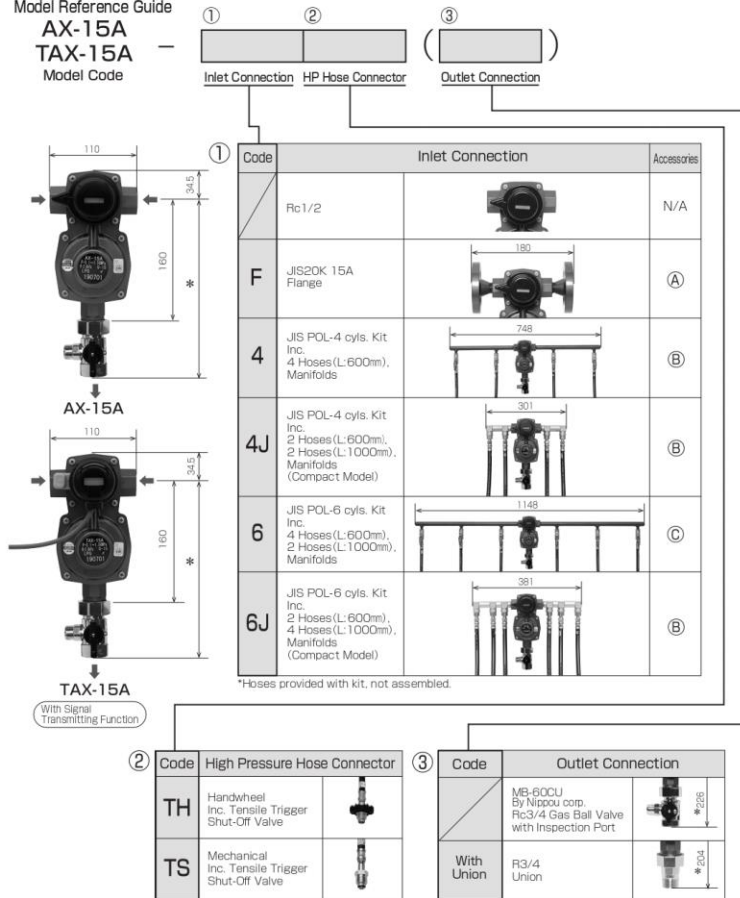
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15kg/h Double Stage Automatic Changeover Regulators

Model Reference Guide
AX-15A
TAX-15A
Model Code



Range Specification

Capacity (Propane)	15kg/h
Inlet Pressure	0.10~1.56MPa
Outlet Pressure	2.55~3.30kPa
Lockup Pressure	≤ 3.50kPa
Safety Relief Valve Working Pressure	5.60~8.40kPa
Replenishment of Starting Pressure	< 0.10MPa

Accessories

(A) 15A Flange Gasketx2 *Bolts, nuts and washers are not included.	(B) Bracketx2 15A U-Boltx2 M5 Butterfly Nutx4 M5 Flat Washerx4 Tapping Screwx4	(C) Bracketx4 15A U-Boltx4 M5 Butterfly Nutx8 M5 Flat Washerx8 Tapping Screwx8
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Model Reference Guide

*If the specification you require is not offered in the table below, contact our local branch or agency.

ACO without Signal Transmitting Function	ACO with Signal Transmitting Function
Model	Model
AX-15A	TAX-15A
AX-15A (with Union)	TAX-15A (with Union)
AX-15AF	TAX-15AF
AX-15AF (with Union)	TAX-15AF (with Union)
AX-15A-4TH	TAX-15A-4TH
AX-15A-4TS	TAX-15A-4TS
AX-15A-6TH	TAX-15A-6TH
AX-15A-6TS	TAX-15A-6TS
AX-15A-4JTH	TAX-15A-4JTH
AX-15A-4JTS	TAX-15A-4JTS
AX-15A-6JTH	TAX-15A-6JTH
AX-15A-6JTS	TAX-15A-6JTS



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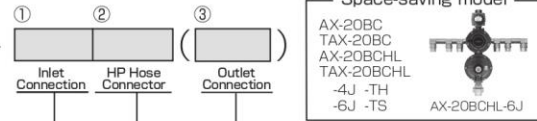
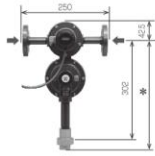
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20kg/h Double Stage Automatic Changeover Regulators

Model Reference Guide

AX-20B
TAX-20B
AX-20BHL
TAX-20BHL
Model Code



Code	Inlet Connection	Accessories
Without Flange	JIS20K15A Flange	(A)
4	Rc 1/2	N/A
4J	JIS POL- 4 cys. Kit Inc. 4 Hoses (L:600mm), Manifolds	(B)
6	JIS POL- 6 cys. Kit Inc. 4 Hoses (L:600mm), 2 Hoses (L:1000mm), Manifolds	(B)
6J	JIS POL- 6 cys. Kit Inc. 2 Hoses (L:600mm), 4 Hoses (L:1000mm), Manifolds (Compact Model)	(C)

*Hoses provided with kit, not assembled.

Code	High Pressure Hose Connector	Code	Outlet Connection
TH	Handwheel Inc. Tensile Trigger Shut-Off Valve	Rc 3/4 Union	
TS	Mechanical Inc. Tensile Trigger Shut-Off Valve	With BV	MB-60CU Rc3/4 Ball Valve for Union
		With KBV	RBS-325-20Rc Rc3/4 Gas Ball Valve with Inspection Port

*MB-60CU and RBS-325-20Rc provided with kit, not assembled.

Range Specification

Capacity (Propane)	20kg/h
Inlet Pressure	0.10~1.56MPa
Outlet Pressure	2.55~3.30kPa
Lookup Pressure	≤ 3.50kPa
Safety Relief Valve Working Pressure	5.60~8.40kPa
Replenishment of Starting Pressure	< 0.10MPa

Accessories

(A)	(B)	(C)
15A Flange Gasketx2*	Bracketx2 15A U-Boltx2 M5 Butterfly Nutx4 M5 Flat Washerx4 Tapping Screwx4	Bracketx4 15A U-Boltx4 M5 Butterfly Nutx8 M5 Flat Washerx8 Tapping Screwx8
*Bolts, nuts and washers are not included.		

Model Reference Guide

*If the specification you require is not offered in the table below, contact our local branch or agency.

ACO without Leakage Detecting System
Model
AX-20B
AX-20B(with BV), AX-20B(with KBV)
AX-20B (without Flange), AX-20B(without Flange)(with KBV)
AX-20B-4TH, AX-20B-4TS
AX-20B-4TH(with BV), AX-20B-4TS(with BV), AX-20B-4TH(with KBV), AX-20B-4TS(with KBV)
AX-20B-6TH, AX-20B-6TS
AX-20B-6TH(with BV), AX-20B-6TS(with BV), AX-20B-6TH(with KBV), AX-20B-6TS(with KBV)
AX-20B-4JTH, AX-20B-4JTS
AX-20B-4JTH(with BV), AX-20B-4JTS(with BV), AX-20B-4JTH(with KBV), AX-20B-4JTS(with KBV)
AX-20BC-4JTH, AX-20BC-4JTS
AX-20B-6JTH, AX-20B-6JTS
AX-20B-6JTH(with BV), AX-20B-6JTS(with BV), AX-20B-6JTH(with KBV), AX-20B-6JTS(with KBV)
AX-20BC-6JTH, AX-20BC-6JTS

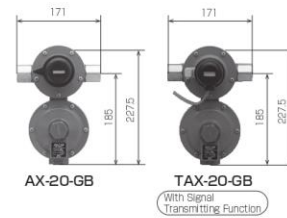
*The TAX range for telemetry is also available.

ACO Incorporating Leakage Detecting System
Model
AX-20BHL
AX-20BHL(without Flange)
AX-20BHL-4TH, AX-20BHL-4TS
AX-20BHL-6TH, AX-20BHL-6TS
AX-20BHL-4JTH, AX-20BHL-4JTS
AX-20BCHL-4JTH, AX-20BCHL-4JTS
AX-20BHL-6JTH, AX-20BHL-6JTS
AX-20BCHL-6JTH, AX-20BCHL-6JTS

*The TAX range for telemetry is also available.

*See page 37 regarding gas flow recorders.

Specifications	
Capacity (Propane)	20kg/h
Inlet Pressure	0.10~1.60MPa
Outlet Pressure	2.70~4.50kPa
Lookup Pressure	≤ 5.00kPa
Safety Relief Valve Working Pressure	7.40~8.90kPa
Starting Pressure of Replenishment	≥ 50.0kPa





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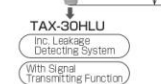
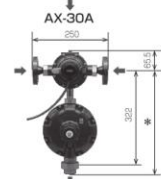
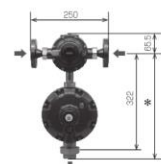
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30kg/h Double Stage Automatic Changeover Regulators

Model Reference Guide

AX-30A
TAX-30A
AX-30HLU
TAX-30HLU
Model Code



With Signal Transmitting Function



Code	Inlet Connection	Accessories
Without Flange	JIS20K15A Flange	(A)
	Rc1/2	N/A
4	JIS POL- 4 cyls. Kit Inc. 4 Hoses (L:600mm), Manifolds	(B)
4J	JIS POL- 4 cyls. Kit Inc. 2 Hoses (L:600mm), 2 Hoses (L:1000mm), Manifolds (Compact Model)	(B)
6	JIS POL- 6 cyls. Kit Inc. 4 Hoses (L:600mm), 2 Hoses (L:1000mm), Manifolds	(C)
6J	JIS POL- 6 cyls. Kit Inc. 2 Hoses (L:600mm), 4 Hoses (L:1000mm), Manifolds (Compact Model)	(B)

*Hoses provided with kit, not assembled.

Code	High Pressure Hose Connector
TH	Handwheel Inc. Tensile Trigger Shut-Off Valve
TS	Mechanical Inc. Tensile Trigger Shut-Off Valve

Code	Outlet Connection
	Rc1 Union
With BV	BV-25U Rc1 Ball Valve for Union

*If the code of inlet connection is 4J or 6J, the union is provided with kit, not assembled.
* BV-25U provided with kit, not assembled.

Range Specification

Capacity (Propane)	30kg/h
Inlet Pressure	0.10~1.56MPa
Outlet Pressure	2.55~3.30kPa
Lockup Pressure	±3.50kPa
Safety Relief Valve Working Pressure	5.60~8.40kPa
Starting Pressure of Replenishment	<0.10MPa

Accessories

A	B	C
15A Flange Gasketx2	Bracketx2 15A U-Boltx2 M5 Butterfly Nutx4 M5 Flat Washerx4 Tapping Screwx4	Bracketx4 15A U-Boltx4 M5 Butterfly Nutx8 M5 Flat Washerx8 Tapping Screwx8

*Bolts, nuts and washers are not included.

Model Reference Guide

*If the specification you require is not offered in the table below, contact our local branch or agency.

ACO Without Leakage Detecting System	
ACO without Signal Transmitting Function Model	ACO with Signal Transmitting Function Model
AX-30A	TAX-30A
AX-30A(with BV)	TAX-30A(with BV)
AX-30A(without Flange)	TAX-30A(without Flange)
AX-30A-4TH	TAX-30A-4TH
AX-30A-4TS	TAX-30A-4TS
AX-30A-4TH(with BV)	TAX-30A-4TH(with BV)
AX-30A-4TS(with BV)	TAX-30A-4TS(with BV)
AX-30A-6TH	TAX-30A-6TH
AX-30A-6TS	TAX-30A-6TS
AX-30A-6TH(with BV)	TAX-30A-6TH(with BV)
AX-30A-6TS(with BV)	TAX-30A-6TS(with BV)
AX-30A-4JTH	TAX-30A-4JTH
AX-30A-4JTS	TAX-30A-4JTS
AX-30A-4JTH(with BV)	TAX-30A-4JTH(with BV)
AX-30A-4JTS(with BV)	TAX-30A-4JTS(with BV)
AX-30A-6JTH	TAX-30A-6JTH
AX-30A-6JTS	TAX-30A-6JTS
AX-30A-6JTH(with BV)	TAX-30A-6JTH(with BV)
AX-30A-6JTS(with BV)	TAX-30A-6JTS(with BV)

ACO Incorporating Leakage Detecting System	
ACO without Signal Transmitting Function Model	ACO with Signal Transmitting Function Model
AX-30HLU	TAX-30HLU
AX-30HLU(without Flange)	TAX-30HLU(without Flange)
AX-30HLU-4TH	TAX-30HLU-4TH
AX-30HLU-4TS	TAX-30HLU-4TS
AX-30HLU-6TH	TAX-30HLU-6TH
AX-30HLU-6TS	TAX-30HLU-6TS
AX-30HLU-4JTH	TAX-30HLU-4JTH
AX-30HLU-4JTS	TAX-30HLU-4JTS
AX-30HLU-6JTH	TAX-30HLU-6JTH
AX-30HLU-6JTS	TAX-30HLU-6JTS

*See page 97 regarding gas flow recorders.



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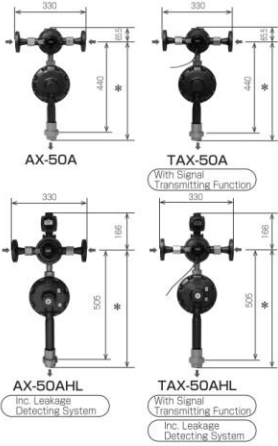
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50kg/h Double Stage Automatic Changeover Regulators

Model Reference Guide

AX-50A
TAX-50A
AX-50AHL
TAX-50AHL
Model Code



Code	Outlet Connection	
	(T)AX-50A	(T)AX-50AHL
	Rc1 1/4 Union	Rc1 1/4 Union
With BV	BV-32U Rc1 1/4 Ball Valve for Union	

*BV-32U provided with kit, not assembled.

Range Specification

Capacity (Propane)	50kg/h
Inlet Pressure	0.10~1.56MPa
Outlet Pressure	2.55~3.30kPa
Lockup Pressure	≤3.50kPa
Safety Relief Valve Working Pressure	5.60~8.40kPa
Starting Pressure of Replenishment	< 0.10MPa
Inlet Connection	JIS20K20A Flange

Accessories

20A Flange Gasket×2*
*Bolts, nuts and washers are not included.

Model Reference Guide

*If the specification you require is not offered in the table below, contact our local branch or agency.

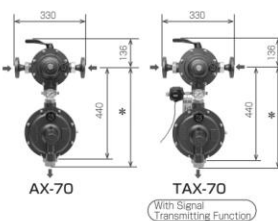
ACO Without Leakage Detecting System	
Model	Model
AX-50A	TAX-50A
AX-50A(with BV)	TAX-50A(with BV)
ACO Incorporating Leakage Detecting System	
Model	Model
AX-50AHL	TAX-50AHL

*See page 97 regarding gas flow recorder.

70kg/h Double Stage Automatic Changeover Regulators

Model Reference Guide

AX-70
TAX-70
Model Code



Code	Outlet Connection	
	(T)AX-70A	(T)AX-70AHL
	Rc1 1/4 Union	Rc1 1/4 Union
With BV	BV-32U Rc1 1/4 Ball Valve for Union	

*BV-32U provided with kit, not assembled.

Range Specification

Capacity (Propane)	70kg/h
Inlet Pressure	0.10~1.56MPa
Outlet Pressure	2.55~3.30kPa
Lockup Pressure	≤3.50kPa
Safety Relief Valve Working Pressure	5.60~8.40kPa
Starting Pressure of Replenishment	< 0.10MPa
Inlet Connection	JIS20K20A Flange

Accessories

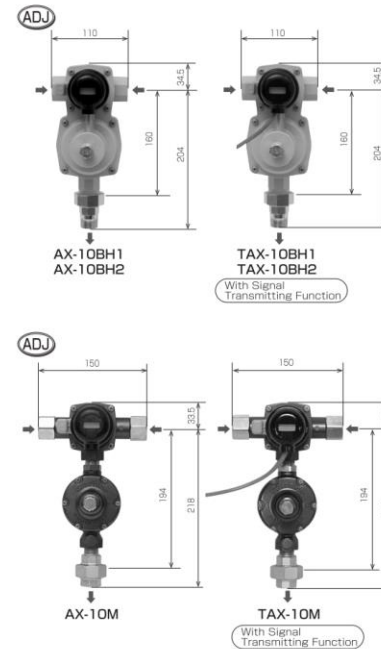
20A Flange Gasket×2*
*Bolts, nuts and washers are not included.

Model Reference Guide

*If the specification you require is not offered in the table below, contact our local branch or agency.

ACO without Signal Transmitting Function	
Model	Model
AX-70A	TAX-70A
AX-70A(with BV)	TAX-70A(with BV)

Variable Type Double Stage Automatic Changeover Regulators



Model	AX-10BH1	AX-10BH2
ACO with Signal Transmitting Function	TAX-10BH1	TAX-10BH2
Capacity (Propane)	10kg/h	
Inlet Pressure	0.10~1.56MPa	
Variable Outlet Pressure Range	3.50~5.50kPa	5.50~10.0kPa
Outlet Pressure	Set Point±20% kPa	
Lockup Pressure	≤Set Point+30% kPa	
Safety Relief Valve Working Pressure	Set Point+3.50~6.50kPa	
Inlet Connection	Rc1/2	
Outlet Connection	R3/4 Union	

Model	AX-10M
ACO with Signal Transmitting Function	TAX-10M
Capacity (Propane)	10kg/h
Inlet Pressure	0.20~1.56MPa
Variable Outlet Pressure Range	0.01~0.09MPa
Outlet Pressure	Set Point±20% MPa
Lockup Pressure	≤Set Point+30% MPa
Inlet Connection	Rc1/2 *
Outlet Connection	Rc1/2 Union

*The 4 or 6 cyls. kit is also available.

Model	AX-30AM
ACO with Signal Transmitting Function	TAX-30AM
Capacity (Propane)	30kg/h
Inlet Pressure	0.20~1.56MPa
Variable Outlet Pressure Range	0.02~0.10MPa
Outlet Pressure	Set Point±20% MPa
Lockup Pressure	≤Set Point+30% MPa
Inlet Connection	JIS20K15A Flange
Outlet Connection	Rc1/2 Union
Accessories	15A Flange Gasket×2*
	*Bolts, nuts and washers are not included.



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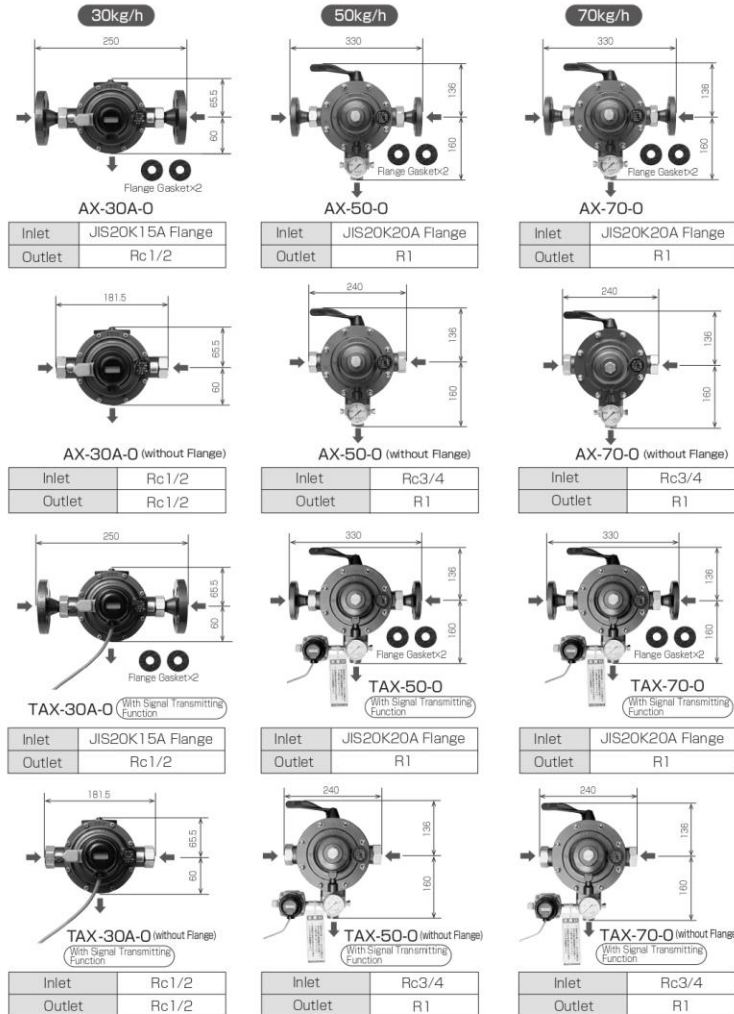
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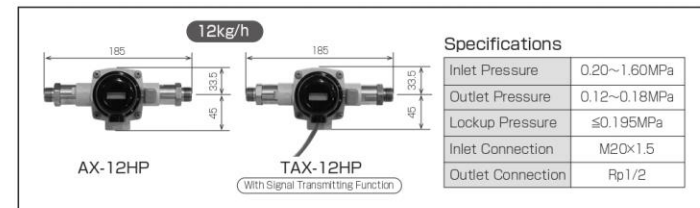
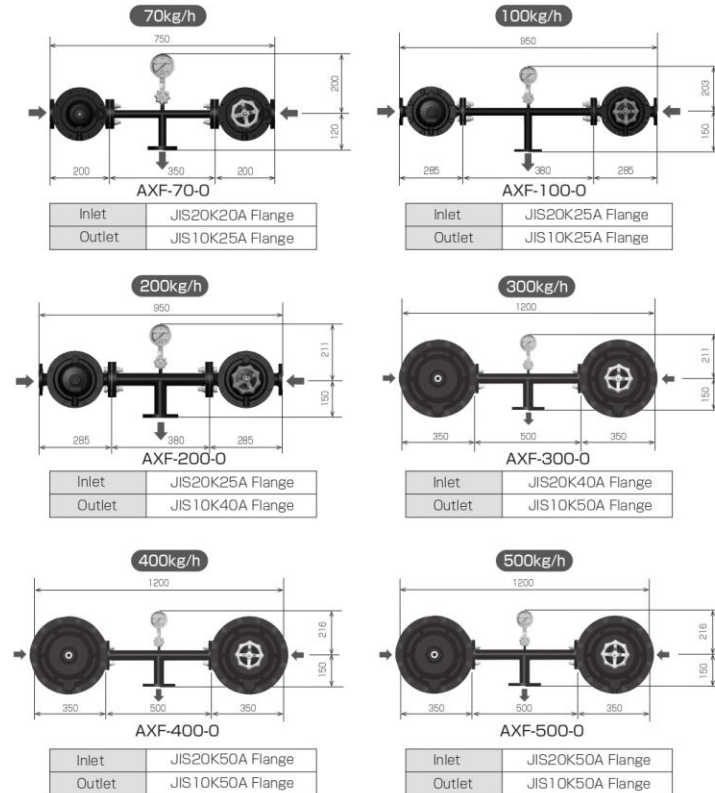
Separate Type First Stage Automatic Changeover Regulators

*Bolts, nuts and washers are not included. Flange gaskets are supplied with flange type (T)AX range.



Range Specification

Inlet Pressure	0.10~1.56MPa	Outlet Pressure	0.032~0.083MPa	Lockup Pressure	≤0.095MPa
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Single Stage Regulators

*Flange gaskets, bolts, nuts and washers are not included.

Range Specification

Inlet Pressure	0.07~1.56MPa	Outlet Pressure	2.30~3.30kPa
Lockup Pressure	≤3.50kPa	Safety Relief Valve Working Pressure	5.60~8.40kPa

5kg/h		5kg/h		5kg/h	
HS-5B (H)		HS-5B (S)		HS-5B (Rc 1/4)	
Inlet	JIS POL Handwheel	Inlet	JIS POL Mechanical	Inlet	Rc 1/4
Outlet	Rc 1/2	Outlet	Rc 1/2	Outlet	Rc 1/2

7kg/h		7kg/h		7kg/h	
HS-7A (H)		HS-7A (S)		HS-7A (Rc 1/4)	
Inlet	JIS POL Handwheel	Inlet	JIS POL Mechanical	Inlet	Rc 1/4
Outlet	Rc 1/2	Outlet	Rc 1/2	Outlet	Rc 1/2

1kg/h	
SHT-1B	
Inlet	Clip On Connector
Outlet	Quick Coupling Adapter

10kg/h		10kg/h		20kg/h	
C-10A-1		C-10A-1 (with BV)		C-20-1	
Inlet	Rc 1/2	Inlet	Rc 1/2	Inlet	JIS20K15A Flange
Outlet	Rc 3/4 Union	Outlet	Rc 3/4 Ball Valve for Union	Outlet	Rc 1 Union
20kg/h		50kg/h		50kg/h	
C-20-1 (with BV)		GL-50-1		GL-50-1 (with BV)	
Inlet	JIS20K15A Flange	Inlet	JIS20K25A Flange	Inlet	JIS20K25A Flange
Outlet	Rc 1 Ball Valve for Union	Outlet	Rc 1 1/4 Union	Outlet	Rc 1 1/4 Ball Valve for Union
70kg/h		70kg/h		100kg/h	
GL-70-1		GL-70-1 (with BV)		G-32A-1	
Inlet	JIS20K25A Flange	Inlet	JIS20K25A Flange	Inlet	JIS20K25A Flange
Outlet	Rc 1 1/4 Union	Outlet	Rc 1 1/4 Ball Valve for Union	Outlet	Rc 1 1/2 Union
100kg/h		200kg/h			
G-32A-1 (with BV)		G-36C-1			
Inlet	JIS20K25A Flange	Inlet	JIS20K40A Flange		
Outlet	Rc 1 1/2 Ball Valve for Union	Outlet	Rc 2 Union		



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First Stage Regulators

*Flange gaskets, bolts, nuts and washers are not included.

Range Specification

Inlet Pressure	0.10~1.56MPa	Outlet Pressure	0.057~0.083MPa	Lockup Pressure	≤0.095MPa
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GM-100

Inlet	JIS20K15A Flange
Outlet	JIS10K15A Flange



CM-100A

Inlet	JIS20K15A Flange
Outlet	JIS10K15A Flange



CM-100A (without Flange)

Inlet	Rc 1/2
Outlet	Rc 1/2



GM-50

Inlet	JIS20K20A Flange
Outlet	JIS10K20A Flange



GMF-70

Inlet	JIS20K20A Flange
Outlet	JIS10K20A Flange



GMF-100

Inlet	JIS20K25A Flange
Outlet	JIS10K25A Flange



GMF-200

Inlet	JIS20K25A Flange
Outlet	JIS10K40A Flange



For 0.30MPa Outlet

Range Specification

Inlet Pressure	0.40~1.56MPa	Outlet Pressure	0.24~0.36MPa	Lockup Pressure	≤0.39MPa
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CM-100 3K

Inlet	JIS20K15A Flange
Outlet	JIS10K15A Flange



GMF-70 3K

Inlet	JIS20K20A Flange
Outlet	JIS10K20A Flange

For Vaporiser (SMV)

Range Specification

Inlet Pressure	0.07~0.96MPa	Outlet Pressure	0.032~0.083MPa	Lockup Pressure	≤0.095MPa
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CM-30VS

Inlet	JIS10K15A Flange
Outlet	JIS10K15A Flange



CM-50VS

Inlet	JIS10K20A Flange
Outlet	JIS10K25A Flange

For Vaporiser

Range Specification

Inlet Pressure	0.10~1.56MPa	Outlet Pressure	0.032~0.083MPa	Lockup Pressure	≤0.095MPa
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CM-50V

Inlet	JIS20K20A Flange
Outlet	JIS10K20A Flange



CM-50V (without Flange)

Inlet	Rc 3/4
Outlet	Rc 3/4



GMF-100V

Inlet	JIS20K20A Flange
Outlet	JIS10K25A Flange



GMF-300V

Inlet	JIS20K25A Flange
Outlet	JIS10K40A Flange



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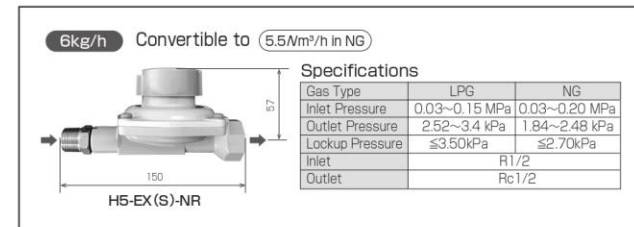
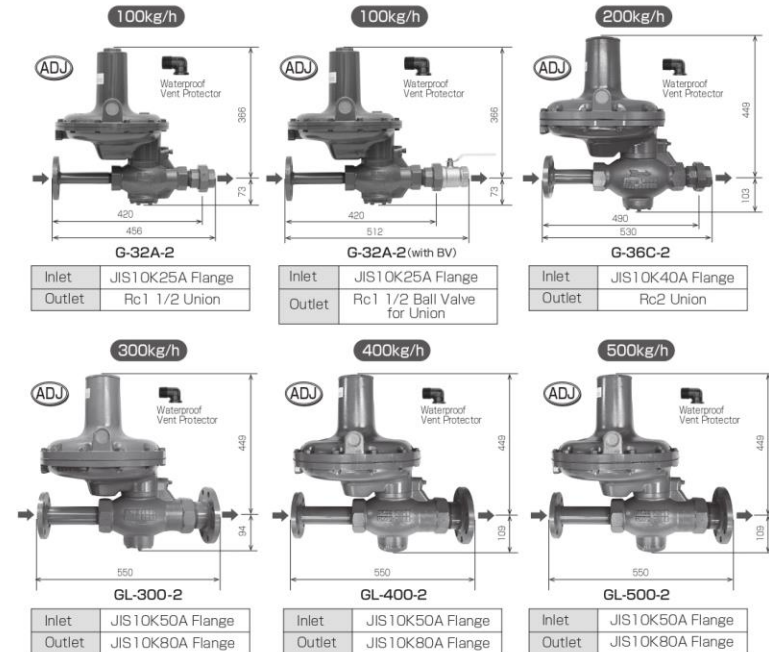
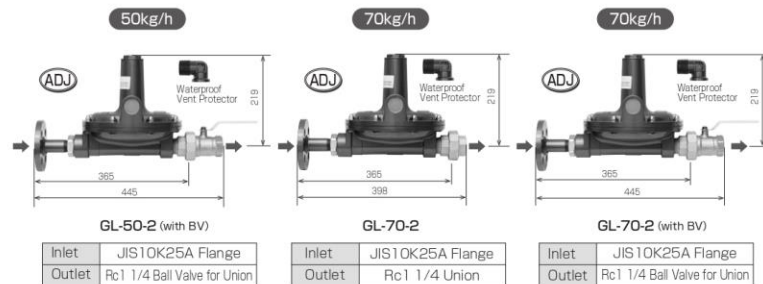
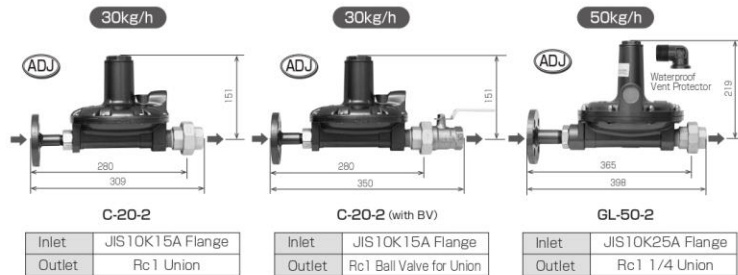
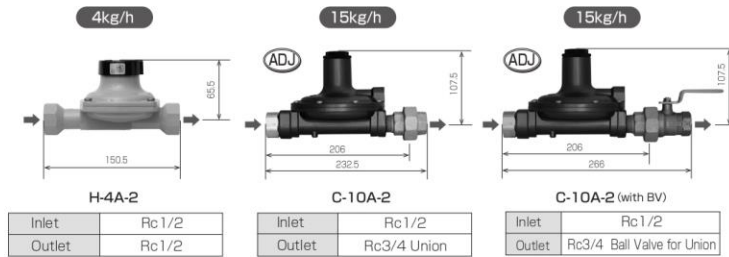
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Second Stage Regulators

*Flange gaskets, bolts, nuts and washers are not included.

Range Specification

Inlet Pressure	0.025~0.10MPa	Outlet Pressure	2.30~3.30kPa	Lockup Pressure	≤ 3.50kPa	Safety Relief Valve Working Pressure	5.60~8.40kPa
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Gas Flow Recorders

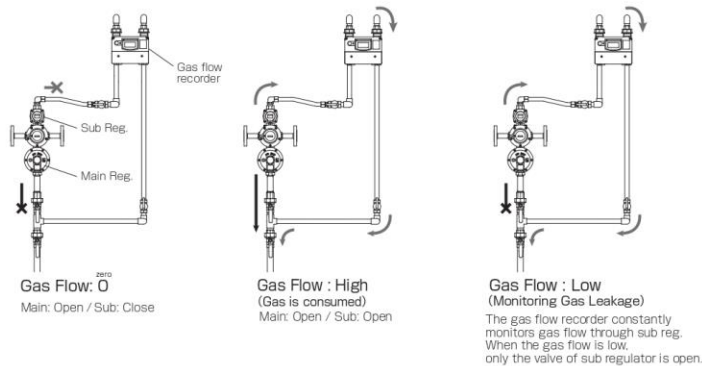


Accessories

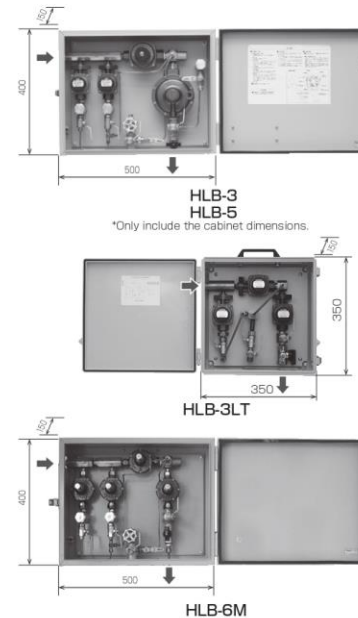


Made By	Yazaki Energy System Corp.	Aichi Tokai Denki Co., Ltd.	TOYO GAS METER Co., Ltd.
Model	EY25MTP-YL	EA25MT-2LD RicomirE RicomirIE	ETG25MTF
Connector Spacing	130mm	90mm 130mm	130mm
Connections	M36×2		
Air-Tightness Test	10.0kPa		
Working Pressure	≤ 3.50kPa		
Alert When	1. Small Gas Leak Detected 2. Lockup Pressure over Limit 3. Supply Pressure out of Range 4. Low Battery 5. Approval Certification Expired		
Auto Shut-Off When	1. Pressure Too Low 2. Safety Check, On-Going Reset Procedure 3. Functional Test 4. Low Battery 5. Approval Certification Expired		
Alert & Shut-Off Indication	LCD and Red Diode Flashing		

How to Detect Gas Leakage in the Underground Pipeline



Pressure Monitoring Type Gas Leakage Detecting Cabinets

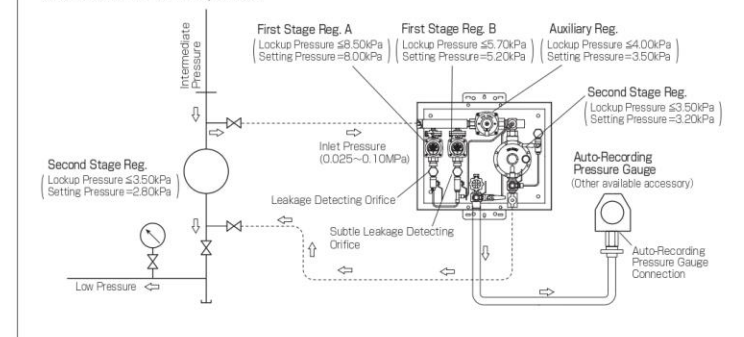


Model		HLB-3 HLB-3LT	HLB-5
Inlet Pressure		0.025~0.10MPa	
Outlet Pressure		3.20±0.10kPa	
Capacity(Propane)		0.2kg/h	
Lockup Pressure		≤ 3.50kPa	
Minimum Detectable Leak Rate		3L/h	5L/h
Detected Pressure	No Leakage	8.00±0.50kPa	
	Min. Gas Leakage	6.00±0.25kPa	
	108/h Gas Leakage	5.25±0.25kPa	5.35±0.25kPa
	188/h Gas Leakage	4.40±0.40kPa	4.60±0.40kPa
Inlet Connection		Rc 1/4	
Outlet Connection		Rc 1/2	
Auto-Recording Pressure Gauge Connection		G3/8	
Installation Method		Wall Mounted	

Model		HLB-6M
Inlet Pressure		0.20~0.40MPa
Applicable Outlet Pressure Range		10.0~150kPa*
Capacity(Propane)		0.2kg/h
Lockup Pressure		≤ 37.0kPa*
Minimum Detectable Leak Rate		6L/h
Detected Pressure	No Leakage	180±15.0kPa
	Min. Gas Leakage	150±10.0kPa
	188/h Gas Leakage	115±10.0kPa
Inlet Connection		Rc 1/4
Outlet Connection		Rc 1/2
Auto-Recording Pressure Gauge Connection		Rc 1/4
Installation Method		Wall Mounted

*1 Interchangeable springs are available.
*2 Based on 25.0kPa setting pressure.

Flow Chart of HLB-3,HLB-5





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ADD FURNACE CO.,LTD.

44 ซอยบรมราชชนนี 70 ถนนบรมราชชนนี แขวงศาลาธรรมสพน์ เขตทวีวัฒนา กรุงเทพฯ 10170

โทร: 02-888-3472 โทร: ออกแบบ: 08-08-170-170 แฟกซ์: 02-888-3258

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Signal Transmitting System, Relay Barrier

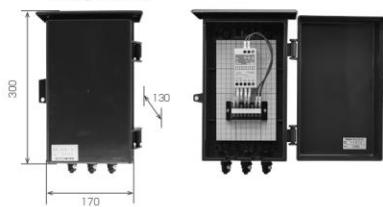
Changeover Indicator



PS-05K

Working Pressure	≤ 0.20MPa
Signal Set Point	55.0±2.00kPa
Connection	Rc1/4
Contact Form	Non-Voltage, Normally Open Contact
Max. Allowable Voltage	DC200V
Max. Allowable Current	DC0.5A
Contact Resistance	≤ 1.0Ω
Lead Wire	VCTF0.5mm²(2 conductors)×1m

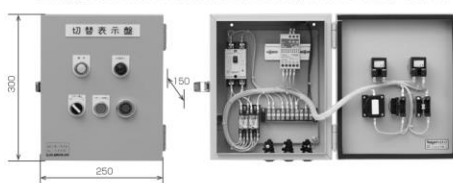
Relay Barrier



RS-2

Type of Protection	Intrinsic Safety
Rated Voltage	AC100V~240V 50/60Hz
Power Consumption	9.6VA

Changeover Alarm Box Incorporating with a Relay Barrier

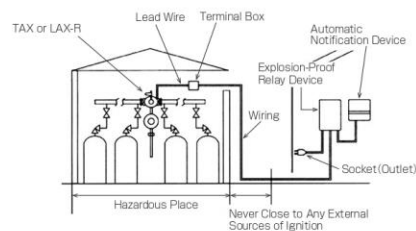


IB-EXA

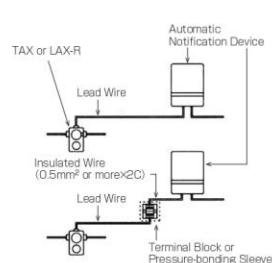
Type of Protection	Intrinsic Safety
Rated Voltage	AC100VAC200V 50/60Hz
Power Consumption	100V:11VA 200V:11.9V

Application

Installation in a Hazardous Place

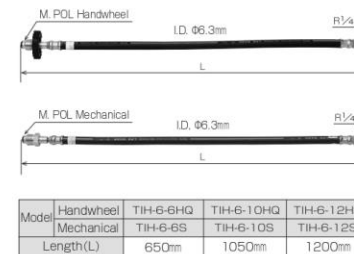


Installation in a Non-Hazardous Place

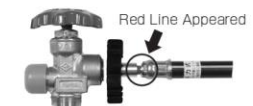


Hoses, POL Adapters

Tensile Triggered HP Hose



Tensile Trigger Shut-Off Valve (Shut-Off Situation)



When abnormal tension is applied to the hose, the stop valve built in the connector body is activated and stops the gas supply.

HP Hose with Liquid Non-Return Valve



Outdoor Low Pressur Hose



Supplied by ITO.

POL Adapters

Model	PC-106	PC-112	PC-115
Connection①	Rc1/4	Rc3/8	Rc1/2

Cylinder Outlet Cap



HP Hose O-Ring



*All the POL connections are JIS POL according to JIS B 8245.



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High Pressure Manifold Assembly Kits

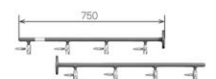
15A Unilateral Flange Type



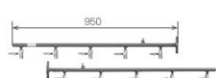
PHW-4B



PHW-6B



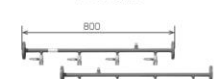
PHW-8B



PHW-10B



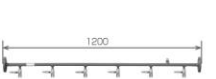
PHW-6FB



PHW-8FB



PHW-10FB



PHW-12FB

With High Pressure Hoses

Model	High Pressure Hose(Provided with Kit)	Connector
PHW-4B-TH	600mm x 4	Handwheel Inc. Tensile Trigger Shut-Off Valve
PHW-4B-TS	600mm x 4	Mechanical Inc. Tensile Trigger Shut-Off Valve

Model	High Pressure Hose(Provided with Kit)	Connector
PHW-6B-TH	600mm x 4 1000mm x 2	Handwheel Inc. Tensile Trigger Shut-Off Valve
PHW-6B-TS	600mm x 4 1000mm x 2	Mechanical Inc. Tensile Trigger Shut-Off Valve

Model	High Pressure Hose(Provided with Kit)	Connector
PHW-8B-TH	600mm x 4 1000mm x 4	Handwheel Inc. Tensile Trigger Shut-Off Valve
PHW-8B-TS	600mm x 4 1000mm x 4	Mechanical Inc. Tensile Trigger Shut-Off Valve

Model	High Pressure Hose(Provided with Kit)	Connector
PHW-10B-TH	600mm x 6 1000mm x 4	Handwheel Inc. Tensile Trigger Shut-Off Valve
PHW-10B-TS	600mm x 6 1000mm x 4	Mechanical Inc. Tensile Trigger Shut-Off Valve

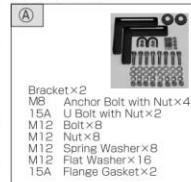
Model	High Pressure Hose(Provided with Kit)	Connector
PHW-6FB-TH	600mm x 4 1000mm x 2	Handwheel Inc. Tensile Trigger Shut-Off Valve
PHW-6FB-TS	600mm x 4 1000mm x 2	Mechanical Inc. Tensile Trigger Shut-Off Valve

Model	High Pressure Hose(Provided with Kit)	Connector
PHW-8FB-TH	600mm x 4 1000mm x 4	Handwheel Inc. Tensile Trigger Shut-Off Valve
PHW-8FB-TS	600mm x 4 1000mm x 4	Mechanical Inc. Tensile Trigger Shut-Off Valve

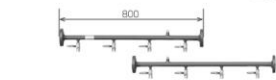
Model	High Pressure Hose(Provided with Kit)	Connector
PHW-10FB-TH	600mm x 6 1000mm x 4	Handwheel Inc. Tensile Trigger Shut-Off Valve
PHW-10FB-TS	600mm x 6 1000mm x 4	Mechanical Inc. Tensile Trigger Shut-Off Valve

Model	High Pressure Hose(Provided with Kit)	Connector
PHW-12FB-TH	600mm x 6 1000mm x 6	Handwheel Inc. Tensile Trigger Shut-Off Valve
PHW-12FB-TS	600mm x 6 1000mm x 6	Mechanical Inc. Tensile Trigger Shut-Off Valve

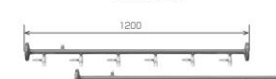
Accessories



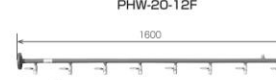
20A Bilateral Flange Type



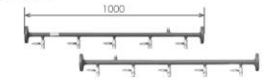
PHW-20-8F



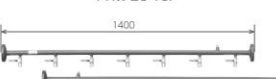
PHW-20-12F



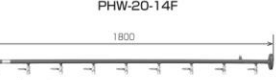
PHW-20-16F



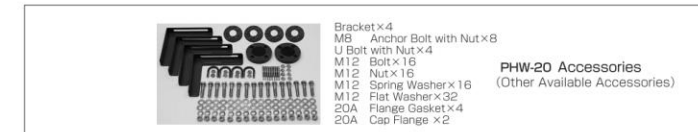
PHW-20-10F



PHW-20-14F



PHW-20-18F



15A Thread Type



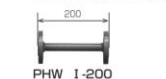
PHW-4R



PHW-8R



15A Straight Flange Connector



PHW I-200



PHW I-300

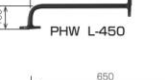


PHW I-400

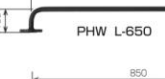
15A Angle Flange Connector



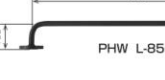
PHW L-150



PHW L-450



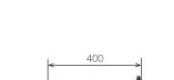
PHW L-650



PHW L-850



PHW-LF



PHW-LF2



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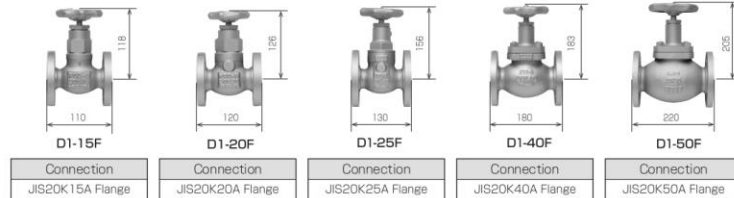
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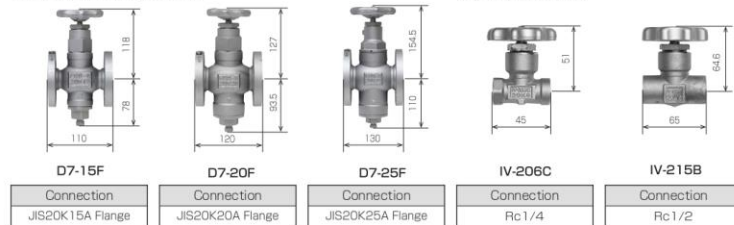
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Valves

Globe Valve



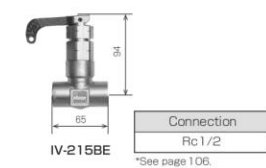
Strainer Incorporated



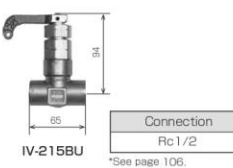
Gas Valve



Orifice Valve



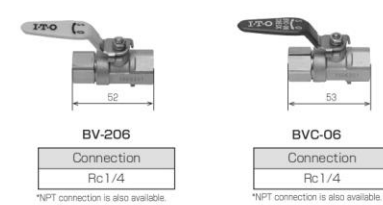
Blow Valve



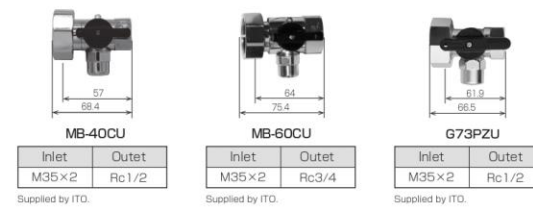
Ball Valve



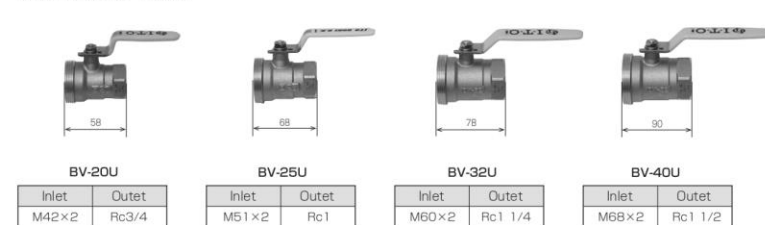
Inc. Check Valve



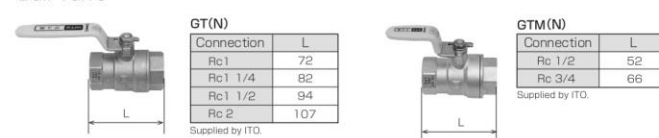
With Inspection Port



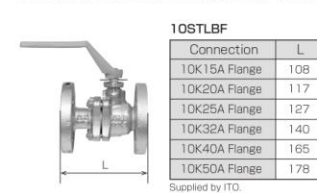
Ball Valve for Union



Ball Valve



Ductile Iron 10K Flange Ball Valve



Ductile Iron 20K Flange Ball Valve





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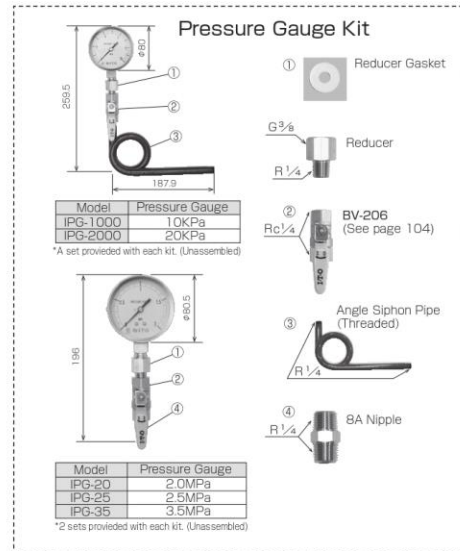
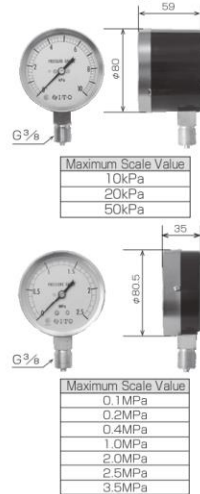
44 ซอยบรมราชชนนี 70 ถนนบรมราชชนนี แขวงศาลาธรรมสพน์ เขตทวีวัฒนา กรุงเทพฯ 10170

โทร: 02-888-3472 โทร: ออกแบบ: 08-08-170-170 แฟกซ์: 02-888-3258

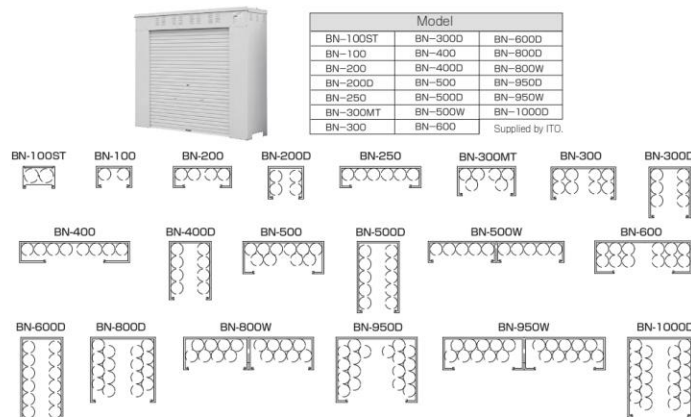
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Pressure Gauges

Pressure Gauge



Cylinder Cabinets



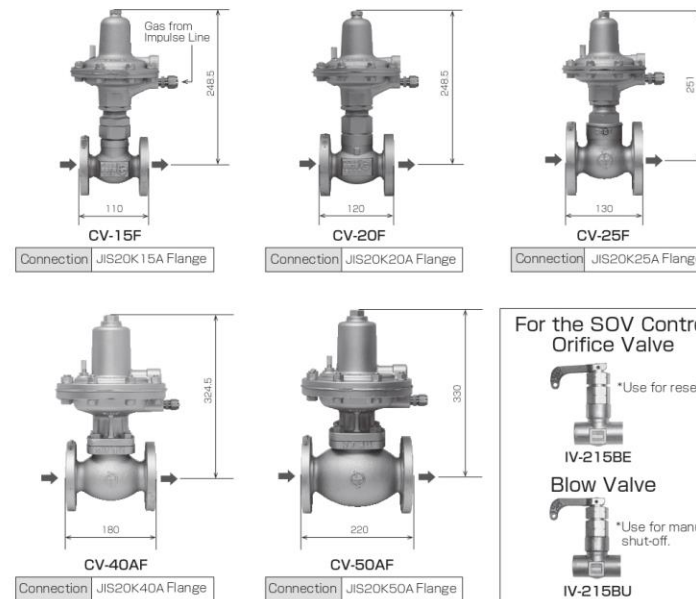
Emergency Shut-Off System

Operating Pressure

Model	Pressure Range	0.30MPa	0.50MPa	0.70MPa	1.00MPa	1.50MPa	2.00MPa
CV-15F~CV-40AF	0.10MPa	0.11MPa	0.13MPa	0.15MPa	0.20MPa	0.25MPa	
CV-50AF	0.10MPa	0.13MPa	0.15MPa	0.20MPa	0.30MPa	0.35MPa	

*Use compressed air or nitrogen for the impulse line.

Air-Actuated Shut-Off Valve



For the SOV Control Orifice Valve



Earthquake-Actuated Sensor



Model	CP-400B
Vibration Acceleration	320~400gal
Vibration Frequency	1.4~3.3Hz
Tripping Method	Steel Ball Dropping Type + Magnet & Heavy Bob Dropping Type
Operating Pressure Range	0.10~0.35MPa
Activation Display	Pressure Gauge
Reset Method	Manual Operation by the Reset Lever
Installation Method	Ground Line Installation
Connection	Copper Pipe(φ8 Outer Diameter)

*Use compressed air or nitrogen for the impulse line.



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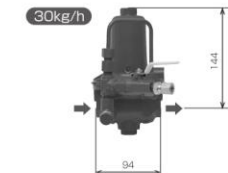
โทร: 02-888-3472 โทร: ออกแบบ: 08-08-170-170 แฟกซ์: 02-888-3258

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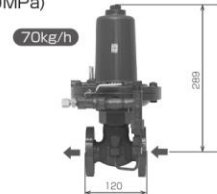
Earthquake-Actuated Shut-Off System

Shut-Off Valve

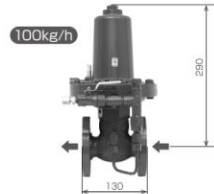
EQ Range
(Pressure Range : 0.025~0.20MPa)



Connection	Rc 1/2
Accessories	N/A



Connection	JIS20K20A Flange
Accessories	(A)



Connection	JIS20K25A Flange
Accessories	(B)



Connection	JIS20K40A Flange
Accessories	N/A



Connection	JIS10K50A Flange
Accessories	N/A



Connection	JIS10K80A Flange
Accessories	N/A

With Signal Transmitting Function



Model
EQ-15
EQ-20
EQ-25
EQ-40
EQ-50
EQ-80

Changeover Indicator



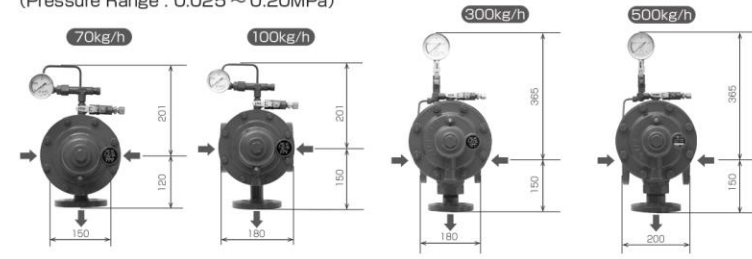
PS-05K (For Shut-Off Valve)	
Connection	Rc 1/4

Reset Valve Inc. Excess Flow Valve



ERV-8	
Connection	R1/4xRc1/4

EQT Range (Dual Inlets for 1st Stage Reg. of Separated ACO)
(Pressure Range : 0.025 ~ 0.20MPa)



Model	Connection	Accessories
EQT-20	JIS10K20A Flange	(A) (B)
EQT-25	JIS10K25A Flange	N/A
EQT-40	JIS10K40A Flange	N/A
EQT-50	JIS10K50A Flange	N/A

EQH Range
(Pressure Range : 0.07~1.56MPa)

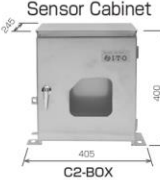
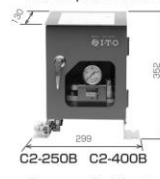


Model	Connection	Accessories
EQH-20	JIS20K20A Flange	(A)
EQH-25	JIS20K25A Flange	(B)
EQH-40	JIS20K40A Flange	N/A

Accessories

(A)	M12 Stud Boltx2 M12 Hexagon Nutx4 M12 Spring Washerx4
(B)	M16 Stud Boltx2 M16 Hexagon Nutx4 M16 Spring Washerx4

Earthquake-Actuated Sensor



Model	C2-250B	C2-400B
Vibration Acceleration	200~250gal	320~400gal
Vibration Frequency	1.4~3.3Hz	
Tripping Method	Steel Ball Dropping Type +Magnet & Heavy Bob Dropping Type	
Operating Pressure Range	0.025~0.20MPa	
Activation Display	Pressure Gauge	
Reset Method	Manual Operation by the Reset Lever	
Installation Method	Ground Line Installation	
Connection	Copper Pipe(φ8 Outer Diameter)	

Accessories	M12 Flat Washer x3 M8 Flat Washer x6 M8 Anchor Boltx3 Insect Screenx1
Model	C2-BOX
Accessories	M8 Anchor Boltx4



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Liquid Automatic Changeover Devices

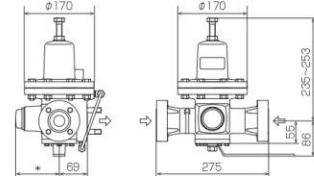


LAX-20C



LAX-20C-R
With Signal
Transmitting Function

External Dimensions



* LAX-20C: 107
LAX-20C-R: 118.5

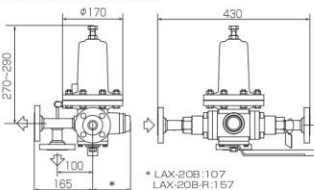
Accessories



Specifications

Gas Type	LPG(Liquid LPG)											
Maximum Flow Rate	300kg/h											
Changeover Pressure	0.05~0.15MPa											
Changeover Operating Pressure Allowance	±0.01MPa											
Required Inlet Pressure (Minimum Pressure at Reserve Side)	(Changeover Pressure +ΔP)~ 1.56MPa The values for ΔP are shown below:											
	<table><tr><td>Q Flow Rate(kg/h)</td><td>100</td><td>150</td><td>200</td><td>250</td><td>300</td></tr><tr><td>ΔP(MPa)</td><td>0.03</td><td>0.07</td><td>0.11</td><td>0.14</td><td>0.18</td></tr></table>	Q Flow Rate(kg/h)	100	150	200	250	300	ΔP(MPa)	0.03	0.07	0.11	0.14
Q Flow Rate(kg/h)	100	150	200	250	300							
ΔP(MPa)	0.03	0.07	0.11	0.14	0.18							
Connection	Equivalent to JIS20K20A Flange											

External Dimensions



* LAX-20B: 107
LAX-20B-R: 157

Accessories

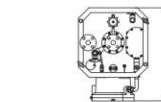
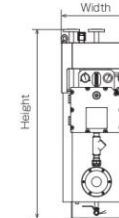


Specifications

Gas Type	LPG (Liquid LPG)					
Maximum Flow Rate	300kg/h					
Changeover Pressure	0.05~0.15MPa					
Changeover Operating Pressure Allowance	±0.01MPa					
Required Inlet Pressure (Minimum Pressure at Reserve Side)	(Changeover Pressure + ΔP) ~ 1.56MPa The values for ΔP are shown below:					
	Q: Flow Rate(kg/h)	100	150	200	250	300
	ΔP (MPa)	0.03	0.07	0.11	0.14	0.18
Connection	JIS20K20A Flange					

Electrical Heating Type Vaporisers

f RIZER Type S

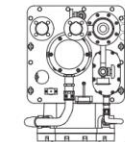
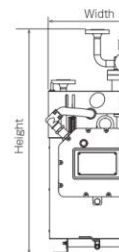


*Control Panel Incorporated.

Specifications

Items	Model	S-50	S-100	S-150	S-200	S-300
Vaporisation Capacity (LPG)		50kg/h	100kg/h	150kg/h	200kg/h	300kg/h
Heat Source	Heater Capacity	7.5kW	15kW	22.5kW	30kW	45kW
	Rated Voltage	220/380/440V 3-Phase				
Hot Water Control Temperature		60~75°C (70°C Set Point)				
Hot Water Superheat Prevention		80°C				
Liquid Carryover Protection		By means of Float Valve				
Working Pressure for Safety Valve		1.80MPa				
Inlet Pressure		0.10~1.56MPa				
Connection	Liquid Inlet Flange	Equivalent to JIS 20K20A				
	Gas Outlet Flange	Equivalent to JIS 20K25A				
External Dimensions	Width	420mm	420mm	480mm	580mm	580mm
	Depth	570mm	570mm	630mm	740mm	740mm
	Height	1115mm	1183mm	1253mm	1215mm	1315mm

f RIZER ITOS



*Control Panel Incorporated.

Specifications

Items		Model		ITOS-30	ITOS-50	ITOS-100	ITOS-150	ITOS-200	ITOS-300
Vaporisation Capacity (LPG)				30kg/h	50kg/h	100kg/h	150kg/h	200kg/h	300kg/h
Heat Source	Heater Capacity			4.5kW	7.5kW	15kW	22.5kW	30kW	45kW
	Rated Voltage			220V Single-Phase		220/380/440V 3-Phase			
Hot Water Control Temperature						60~80℃(75℃ Set Point)			
Hot Water Superheat Prevention						85℃			
Liquid Carryover Protection						By means of Float Valve			
Working Pressure for Safety Valve						1.75MPa			
Inlet Pressure						0.10~1.60MPa			
Connection	Liquid Inlet Flange			DN20 (PN25)			DN25 (PN25)		
	Gas Outlet Flange			DN20 (PN25)			DN25 (PN25)		



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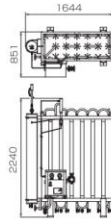
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Air Heating Type Vaporiser SR-SK Range for LPG Bulk Supply System



SR-50ASK

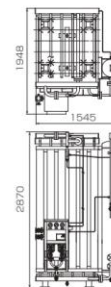


Model	SR-50ASK
Nominal Vaporising Ability Propane	50kg/h
Atmospheric Temperature	≥ -5°C
Outlet Gas Temperature	≥ -10°C
Nominal Continuous Operating Time*	4hours
Inlet Pressure	0.15~1.56MPa
Outlet Pressure	0.06~0.10MPa
Lockup Pressure	≤ 0.96MPa
Liquid Carryover Protection	Temperature Sensing Shut-Off (-20°C Set Point)
Working Pressure for Safety Valve	0.96MPa
Liquid Inlet	JIS 20K15A Flange
Gas Outlet	JIS 20K20A Flange

*Declared at being around 1m/sec. of wind speed.



SR-100BSK

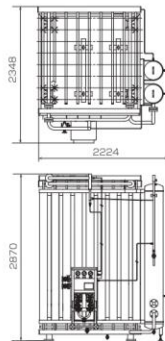


Model	SR-100BSK
Nominal Vaporising Ability Propane	100kg/h
Atmospheric Temperature	≥ -5°C
Outlet Gas Temperature	≥ -10°C
Nominal Continuous Operating Time*	10hours
Inlet Pressure	0.15~1.56MPa
Outlet Pressure	Service Side 0.09~0.11MPa Reserve Side 0.06~0.08MPa
Lockup Pressure	≤ 0.96MPa
Liquid Carryover Protection	Temperature Sensing Shut-Off (-20°C Set Point)
Working Pressure for Safety Valve	0.96MPa
Liquid Inlet	JIS 20K15A Flange
Gas Outlet	JIS 20K25A Flange

*Declared at being around 1m/sec. of wind speed.



SR-200ASK



Model	SR-200ASK
Nominal Vaporising Ability Propane	200kg/h
Atmospheric Temperature	≥ -5°C
Outlet Gas Temperature	≥ -10°C
Nominal Continuous Operating Time*	10hours
Inlet Pressure	0.15~1.56MPa
Outlet Pressure	Service Side 0.09~0.11MPa Reserve Side 0.06~0.08MPa
Lockup Pressure	≤ 0.96MPa
Liquid Carryover Protection	Temperature Sensing Shut-Off (-20°C Set Point)
Working Pressure for Safety Valve	0.96MPa
Liquid Inlet	JIS 20K15A Flange
Gas Outlet	JIS 20K40A Flange

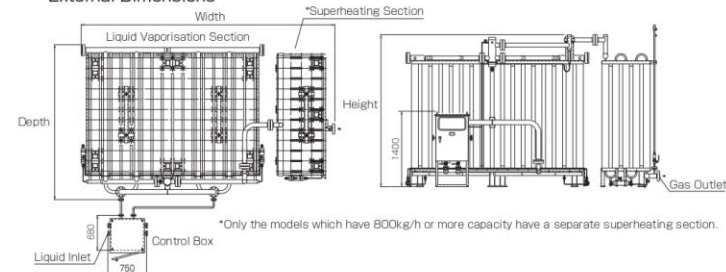
*Declared at being around 1m/sec. of wind speed.

Air Heating Type Vaporiser SR-W Range



*Long fin type, SR-WL is also available, which a minimal space requires.

External Dimensions



*Only the models which have 800kg/h or more capacity have a separate superheating section.

Specifications

Model		100W	150W	200W	300W	400W	500W	600W	700W	800W	1000W	1500W
Nominal Vaporising Ability Propane, kg/h		100	150	200	300	400	500	600	700	800	1000	1500
Atmospheric Temperature		≥ -5℃										
Outlet Gas Temperature		≥ -10℃										
Nominal Continuous Operating Time*		≤5hours										
Inlet pressure		0.15~1.56MPa										
Outlet Pressure	Service Side	0.10~0.12MPa										
	Reserve Side	0.07~0.09MPa										
Liquid Carryover Protection		Temperature Sensing Shut-Off(-20℃ Set Point)										
Working Pressure for Safety Valve		1.56MPa										
Liquid Inlet		JIS20K20A Flange										
Gas Outlet		JIS20K Flange										
		25A	40A			50A			80A			
External Dimensions(mm)	Width	2032	2832		3032	2832	3632	4232	4432	4932	5812	5760
	Depth	1080	1140	1340	1740	2340		2540	2750	2950		5394
	Height	2850					2900			2950		



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Bulk Tank Supply Systems

170T 298T 298Y 498T 498Y 980T 980Y 2900T 2900Y

① Vaporising Method ② Capacity ③ Supply Method ④ Low Pressure Line

Code	Vaporising Method	Code	Capacity (Regulator or Vaporiser)	Code	Supply Method	Code	Low Pressure Line
0	Natural Vaporisation	1	10kg/h	1	Double Stage Regulator	Single	
3K	Hot Water Circulating Vaporiser	2	20kg/h	2	General Type	Double	
5K	Dual Vaporisation	3	30kg/h	4	Multifunctional Type		
10K-BK	Air Heating Type Vaporiser	5	50kg/h				
R	Hot Water Circulating Vaporiser	10	100kg/h				
3M	Forced Vaporisation						
5M	Electrical Heating Type Vaporiser						
10M-BK							
V							

*The numbers show the vaporising ability. (3 : 30kg/h, 5 : 50kg/h, 10 : 100kg/h)

*Image for illustration purposes.

Double Stage Regulators for Bulk Tanks (with Excess Flow Valves)

Range Specification Inlet Pressure 0.07~1.56MPa Outlet Pressure 2.55~3.30kPa Lockup Pressure ≤3.50kPa

10kg/h 20kg/h 30kg/h 50kg/h

BRVS-10A (POL) BRVS-10A (Rc 1/4) BRV-20A

For Underground Tank Model BRV-20A BRV-30A BRV-50A

First Stage Regulators for Bulk Tanks (with Excess Flow Valves)

Range Specification Model BRV-30AM BRV-50AM BRV-70M BRV-100M BRV-200M

Inlet Pressure 0.10~1.56MPa 0.15~1.56MPa

Outlet Pressure 0.057~0.083MPa 0.032~0.083MPa

Lockup Pressure ≤0.095MPa

30kg/h 50kg/h 70kg/h 100kg/h 200kg/h

BRV-30AM BRV-50AM BRV-70M BRV-100M BRV-200M

For Underground Tank Model BRV-30AM BRV-50AM BRV-70M BRV-100M

*Please inform our local branch or agency about accessories.