NBG Range

AA Governor

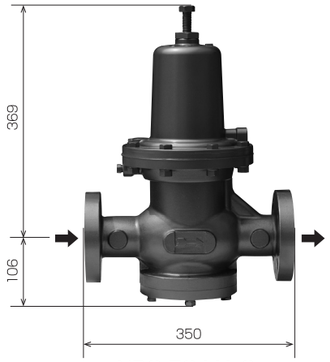
Incorporated: (Strainer)

- 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.

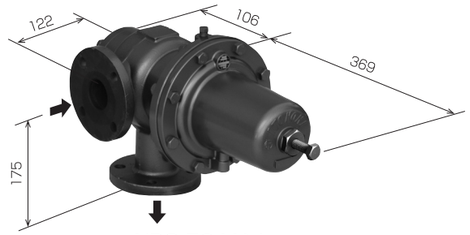
Specifications

Model	NBG-50-MA-S	NBG-50-MA-L
Type	Straight Type	Angle Type
Maximum Flow Rate(*N* m³/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	Rc1/4	
Strainer Mesh Gauge	100 Mesh*1	

*1 The strainer with 200 mesh is also available.



NBG-50-MA-S



NBG-50-MA-L

AB Governor

Incorporated : (AR-OPSO*)(Strainer)

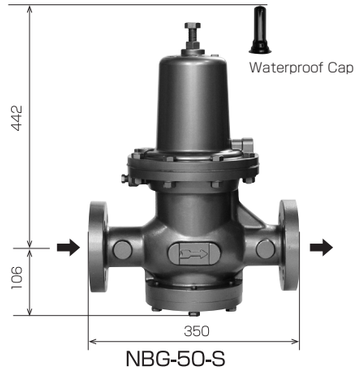
*NBG-50H only.

- 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 (*N*m³/h)		1000			
Inlet Pressure(MPa)		0.30～0.99			
Outlet Pressure(MPa)		0.02～0.30*2			
Lockup Pressure (MPa)		≦Set Point ×1.3 (Minimum : Set Point+0.012)		≦Set Point ×1.2 (Minimum : Set Point+0.012)	
Auto-Reset OPSO	Working Pressure			≦Lockup Pressure+0.03MPa	
	Reset Method			Resets automatically after outlet pressure resumes its normal range.	
Connection		JIS 10K 50A Flange (FF)			
Vent Connection		Rc1/4			
Strainer Mesh Gauge		100 Mesh*3			

*2 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.



NBG-50-S
NBG-50H-S

NBG-50-L
NBG-50H-L

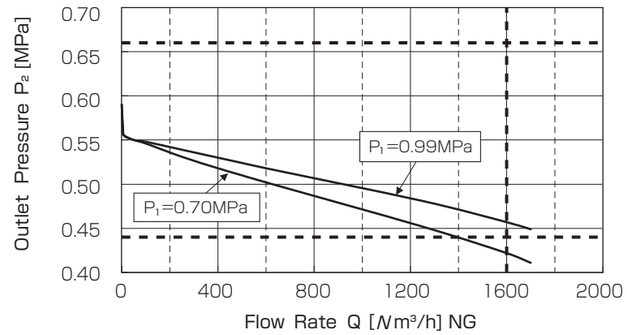
Interchangeable Spring Selection

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

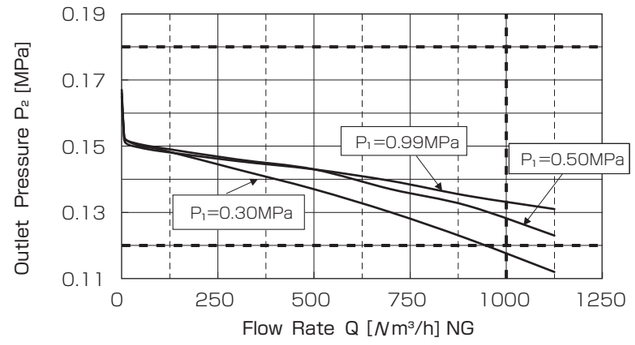
shows the standerd spring.

Flow Rate

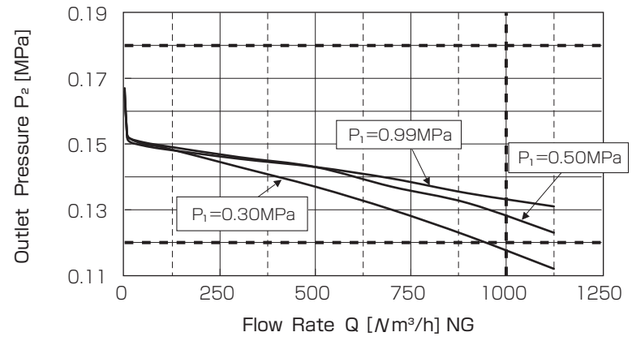
NBG-50-MA Set Point : 0.55MPa



NBG-50 Set Point : 0.15MPa



NBG-50H Set Point : 0.15MPa

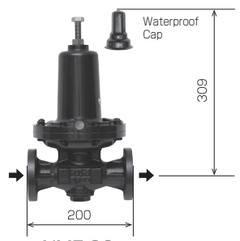


NMF Range

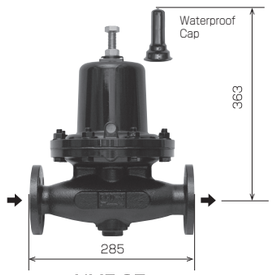
AB Governor

Incorporated : Strainer*
*NMF-20 only.

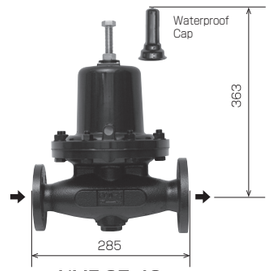
・The NMF range is a direct-operated governor from *Medium Pressure A* to *Medium Pressure B*, which provides outstanding quick response and easy maintenance.



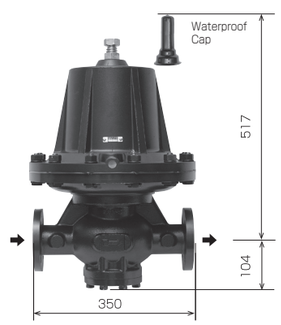
NMF-20



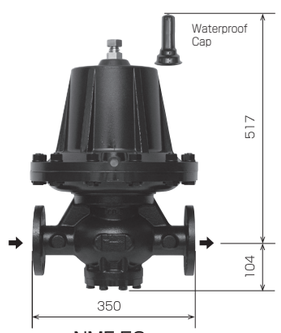
NMF-25



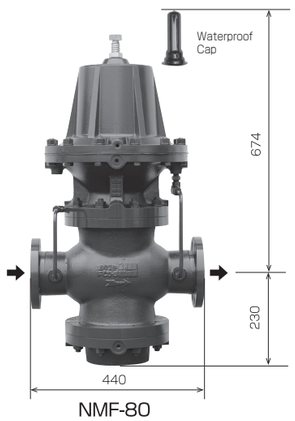
NMF-25-40



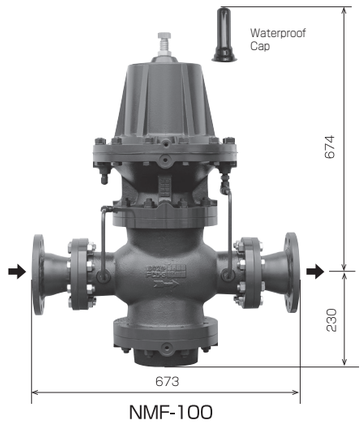
NMF-40



NMF-50



NMF-80



NMF-100

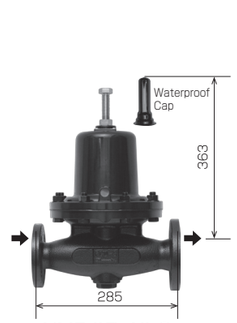
Specifications

Model	NMF-20	NMF-25	NMF-25-40	NMF-40	NMF-50	NMF-80	NMF-100
Maximum Flow Rate (Nm³/h)	130	190	380	580	950	1600	1600
Inlet Pressure	0.10～0.99MPa						
Outlet Pressure	0.02～0.30MPa *1						
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						

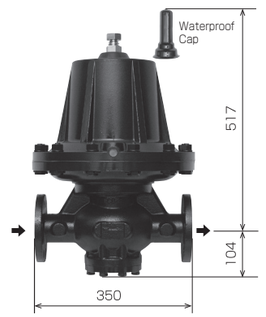
*1 Interchangeable springs are available.

BB Governor

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



NMF-25-40-2



NMF-50-2

Specifications

Model	NMF-25-40-2	NMF-50-2
Maximum Flow Rate (Nm³/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 Conecction	JIS 10K 40A Flange (FF)	JIS 10K 50A Flange (FF)


As an AR-OPSO NMF-W As a Governor

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 fails, and the outlet pressure abnormally rises at the unit outlet, and keep stable supply at the pre-set pressure.

Interchangeable Spring Selection

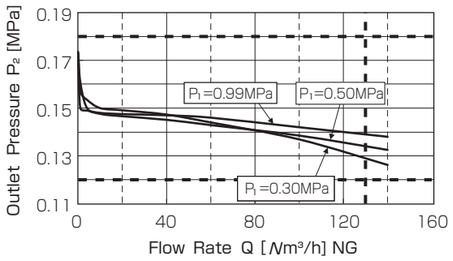
Set Point Range(MPa)		0.02～0.03	0.02～0.06	0.02～0.10	0.02～0.15	0.02～0.20	0.02～0.30
No.	NMF-20	④	⑤	①		②	③
	NMF-25～NMF-100	A0	A1	A1+B1	A2	A2+B1	A2+B2

shows the standard sping.

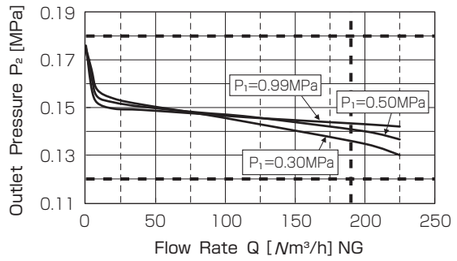
NMF Range

Flow Rate

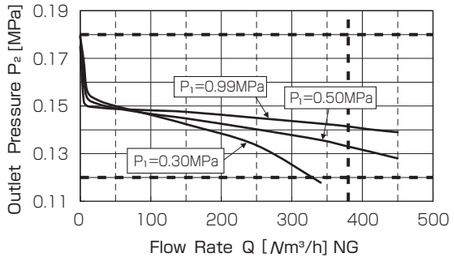
NMF-20 Set Point : 0.15MPa



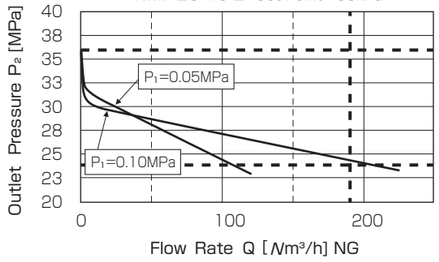
NMF-25 Set Point : 0.15MPa



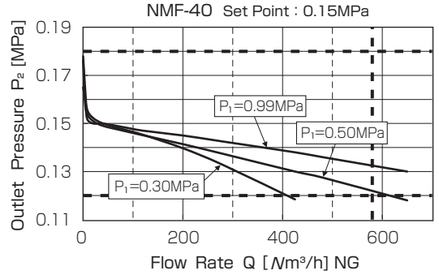
NMF-25-40 Set Point : 0.15MPa



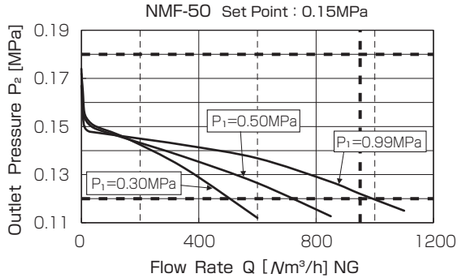
NMF-25-40-2 Set Point : 30kPa



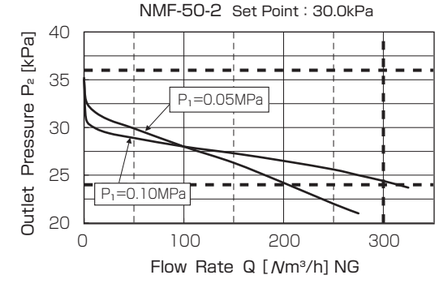
NMF-40 Set Point : 0.15MPa



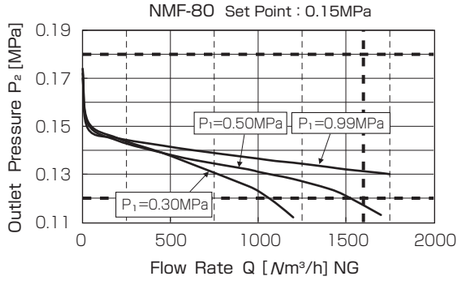
NMF-50 Set Point : 0.15MPa



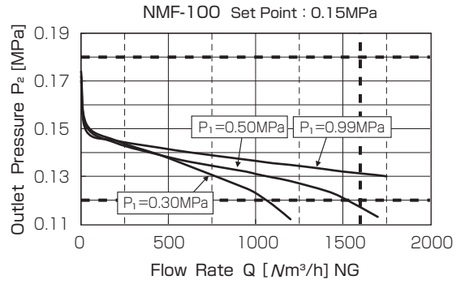
NMF-50-2 Set Point : 30.0kPa



NMF-80 Set Point : 0.15MPa



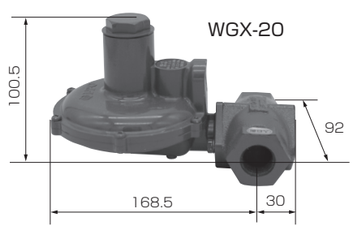
NMF-100 Set Point : 0.15MPa

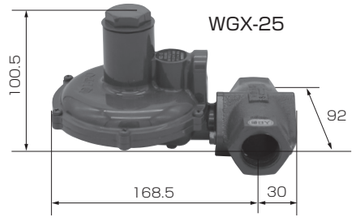


WGX Range

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.





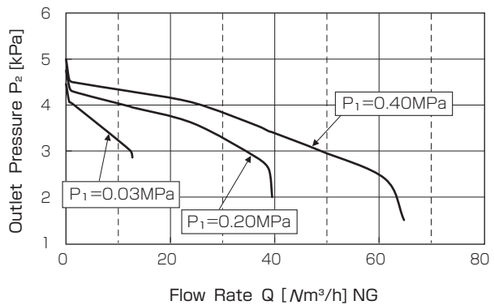
Specifications

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 *1		3.00～8.00 *1	
Lockup Pressure(kPa)	≦Set Point×1.25kPa			
Connection	Rc3/4	Rc1		

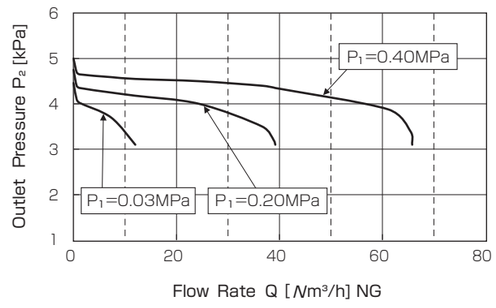
*1 Interchangeable springs are available.

Flow Rate

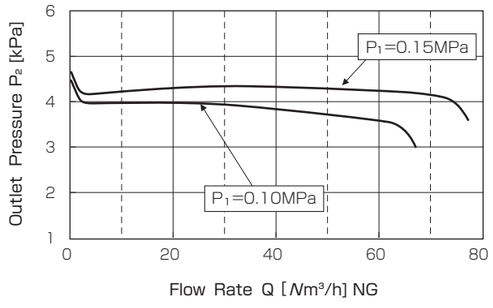
WGX-20 Set Point : 4.00kPa



WGX-25 Set Point : 4.00kPa



WGX-25-2 Set Point : 4.00kPa



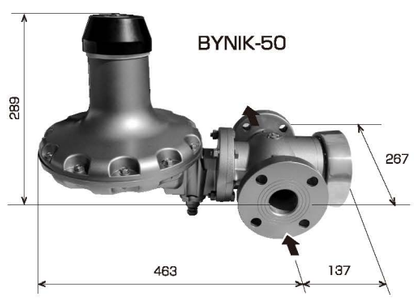
BYNIK-50 Range

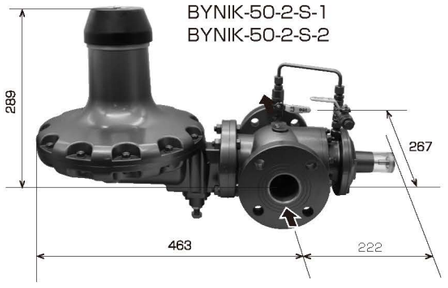
AL/ALM BL/BLM Governor

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

- 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.

Japan Gas Association
Technical Prize





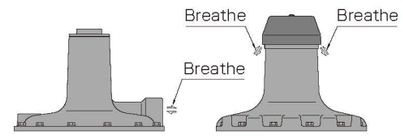
Specifications

Model		BYNIK-50	BYNIK-50-2	BYNIK-50-2-S-1	BYNIK-50-2-S-2
Maximum Flow Rate(Nm³/h)		350Nm³/h	265Nm³/h	350Nm³/h	350Nm³/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〔Minimum5.00kPa〕)			Lockup Pressure+(Inlet Pressure×0.015kPa〔Minimum5.00kPa〕)
	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	
	Reset Method			Manual by Pulling the Red Indicator	
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 thecover. No storage box or waterproof vent protector is required.



Typical Governor　　BYNIK-50 Range

●Auto-Reset OPSO(AR-OPSO)

An inner auto-reset type over pressure shut-off valve incorporated additionary, 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.

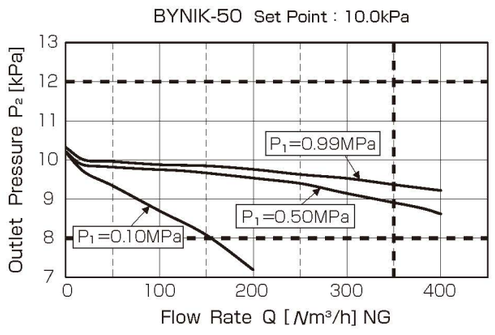
Interchangeable Spring Selection

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

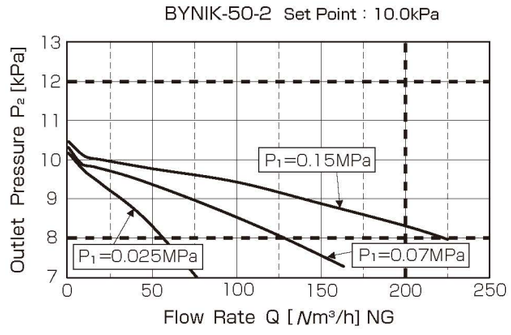
shows the standard spring.

Flow Rate

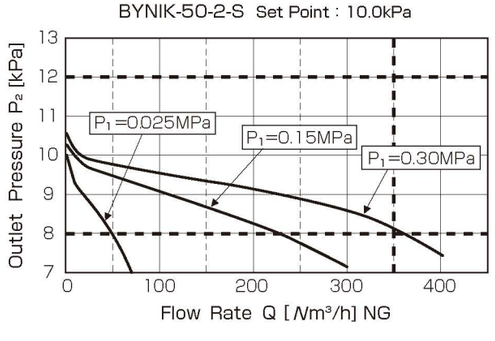
BYNIK-50 Set Point : 10.0kPa



BYNIK-50-2 Set Point : 10.0kPa



BYNIK-50-2-S Set Point : 10.0kPa

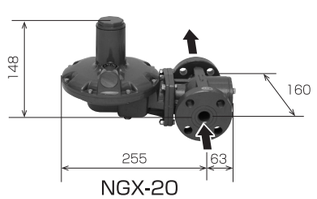


NGX Range

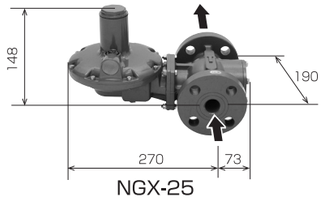
BL/BLM Governor

Incorporated: (AR-OPSO) (Strainer)

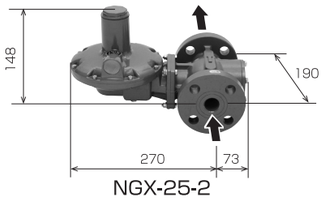
- The NGX range is a direct-operated governor from *Medium Pressure **B*** to ***L**ow Pressure or **L**ow Inter**m**ediate Pressure*.
- It is the high performance governor with built-in strainers, and integrated JIS flanges.
- It is suitable to install it indoors since the safety relief valve is not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



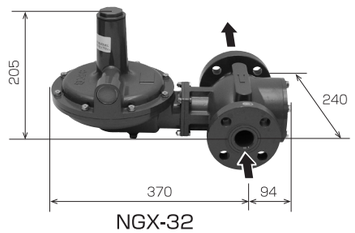
NGX-20



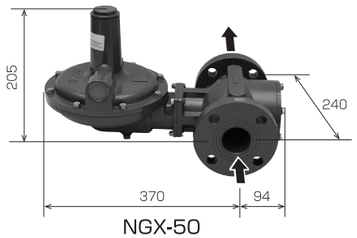
NGX-25



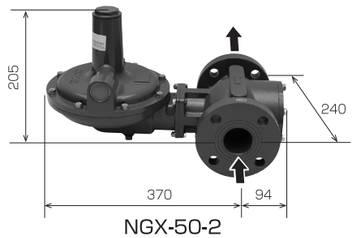
NGX-25-2



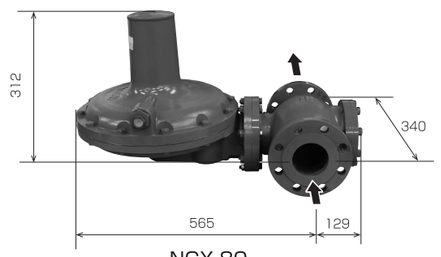
NGX-32



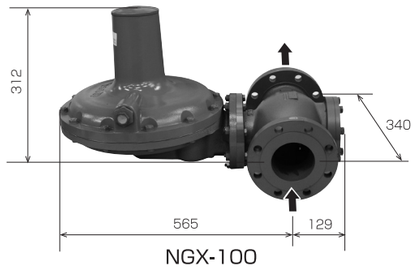
NGX-50



NGX-50-2



NGX-80



NGX-100

Specifications

Model		NGX-20	NGX-25	NGX-25-2	NGX-32	NGX-50	NGX-50-2	NGX-80	NGX-100
Maximum Flow Rate (Nm³/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		0.03～0.10	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	Lockup Pressure + (Inlet Pressure×0.015kPa (Minimum 5.00kPa))							
	Reset Method	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 80A Flange(RF)	JIS 10K 100A Flange(RF)
Outlet Connection		JIS 10K 20A Flange(FF)	JIS 10K 32A Flange(FF)		JIS 10K 50A Flange(FF)	JIS 10K 50A Flange(FF)		JIS 10K 80A Flange(RF)	JIS 10K 100A Flange(RF)
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 availabie

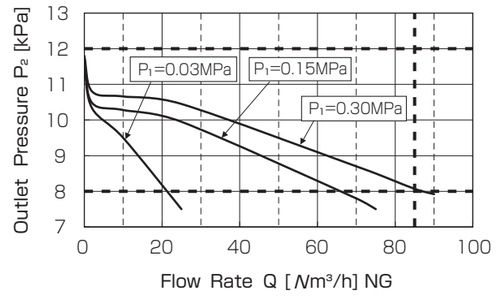
Interchangeable Spring Selection

Model	NGX-20/25/25-2/32/50/50-2							NGX-80/100				
No.	①	②	③	④	⑤	⑥	⑨	①	②	③	④	⑤
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	1.00～2.00	2.00～4.00	4.00～10.0	10.0～16.0	16.0～20.0

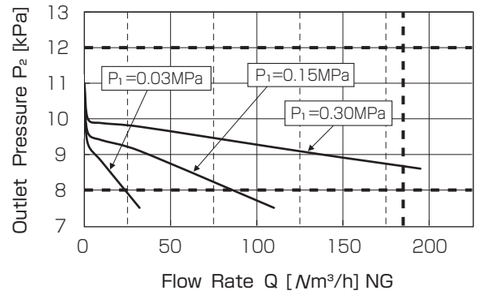
shows the standard spring.

Flow Rate

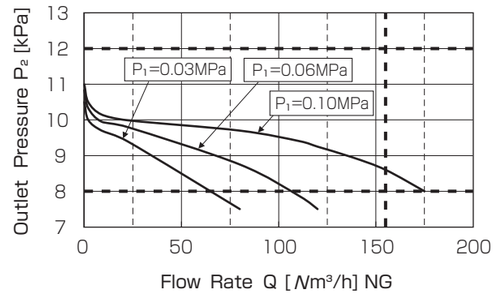
NGX-20 Set Point : 10.0kPa



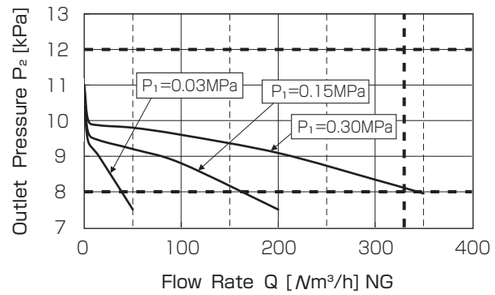
NGX-25 Set Point : 10.0kPa



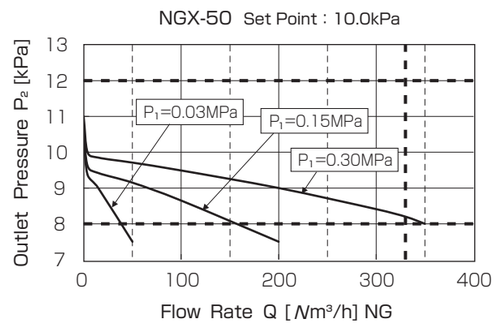
NGX-25-2 Set Point : 10.0kPa



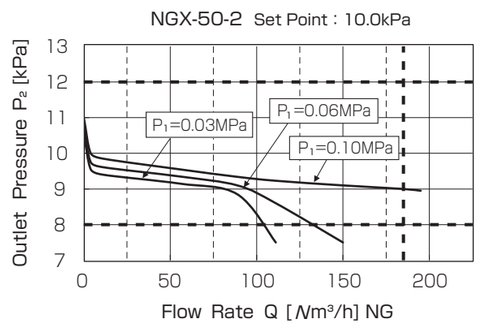
NGX-32 Set Point : 10.0kPa



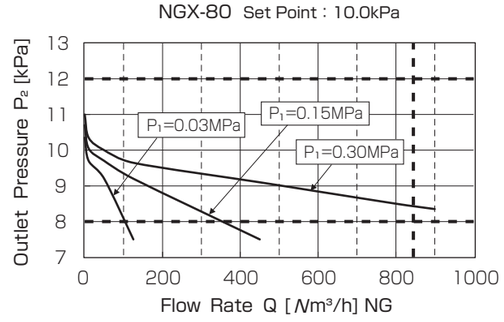
NGX-50 Set Point : 10.0kPa



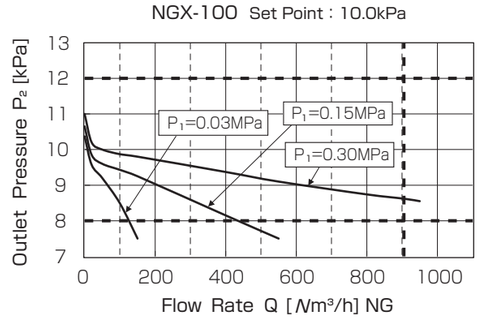
NGX-50-2 Set Point : 10.0kPa



NGX-80 Set Point : 10.0kPa



NGX-100 Set Point : 10.0kPa



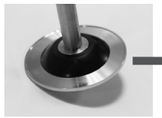
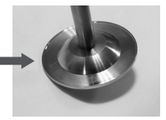
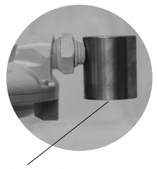
SGX Range

Available Configurations and Options

Model Reference Guide

SGX– ☐ – ☐

Model	Connection
8NA	Rc1/4
10A	Rc3/8
15N	Rc1/2
20N	Rc3/4
25N	Rc1
40N	Rc1 1/2
40	Rc1 1/2
50N	Rc2
50	Rc2
80	JIS 10K 80A
100	JIS 10K 100A

Code	Function
A	**No Lockup Function (Aluminum Valve Disc Type)**  NBR  Aluminum This type governor has no lockup function and regulates pressure by using an aluminum valve disc instead of a regular rubber (NBR) disc.
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. Working Temperature Range: 0 ~80 ℃
H	**Variable Governor with External Handle** This type governor has an external handle to make the outlet pressure setting easier. Set Point Range: 0.50~4.00 kPa 
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; Model / Maximum Inlet Pressure: SGX-15NQ~SGX-50Q: 10.0kPa; SGX-40NQ/SGX-50NQ: 15.0kPa  An external stabiliser (enclosed) to be fitted onto the vent of SGX-40NQ, SGX-50NQ.
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.

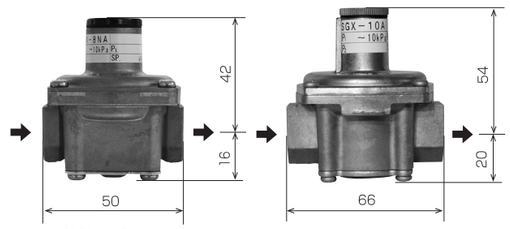
Available Configurations at a Glance

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)	✓*1	✓*1	×	✓	✓	✓	✓	✓	✓	×	×
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	×	×	×	✓	✓	✓	✓	✓	✓	×	×

*1 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 ***L**ow Pressure* or ***L**ow Inter**m**ediate Pressure* to ***L**ow Pressure* or ***L**ow Inter**m**ediate Pressure* with a large capacity driven by low differential pressure.



SGX-8NA SGX-10A

Specifications

Model	SGX-8NA	SGX-10A
Maximum Flow Rate	4.3Nm³/h	7.4Nm³/h
Inlet Pressure	0.50~10.0kPa	
Outlet Pressure	0.25~3.00kPa*1	
Connection	Rc1/4	Rc3/8
Vent Connection	Rc1/8	

* No lockup function.
*1 Interchangeable springs are available.

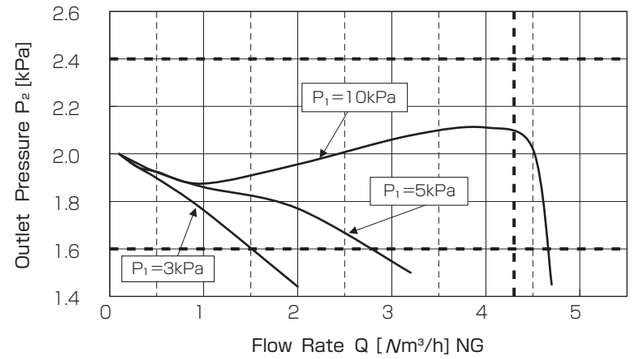
Interchangeable Spring Selection

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

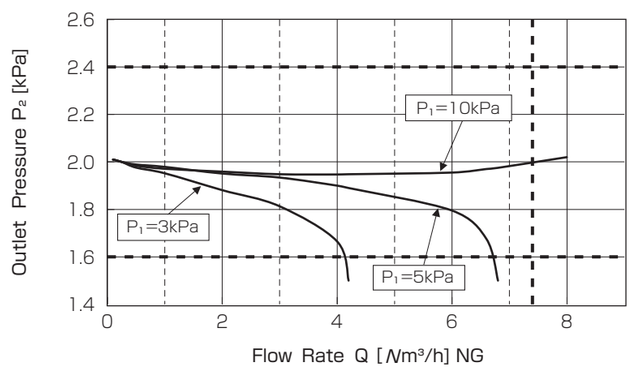
shows the standard spring.

Flow Rate

SGX-8NA Set Point : 2.00kPa



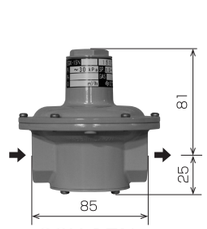
SGX-10A Set Point : 2.00kPa



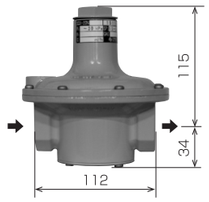
SGX Range

Governor for Low Differential Pressures

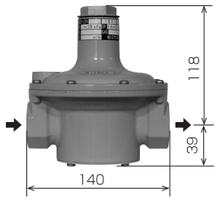
The SGX series is a direct-operated governor from ***L**ow Pressure* or ***L**ow Inter**m**ediate Pressure* to ***L**ow Pressure* or ***L**ow Inter**m**ediate Pressure* with a large capacity driven by low differential pressures.



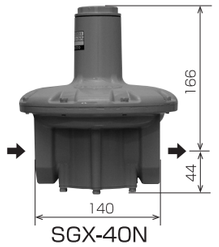
SGX-15N



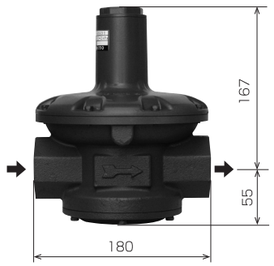
SGX-20N



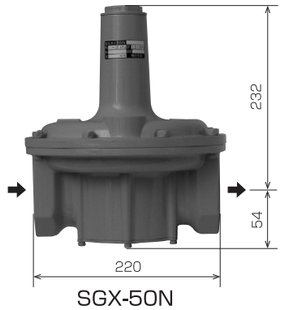
SGX-25N



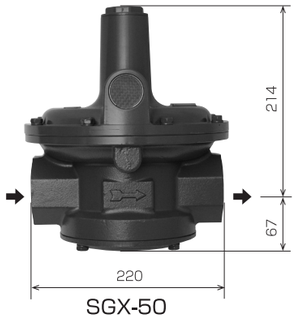
SGX-40N



SGX-40



SGX-50N



SGX-50

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.

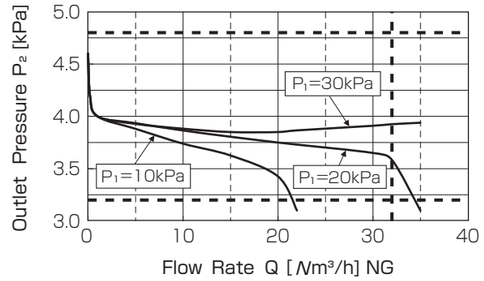
Interchangeable Spring Selection

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

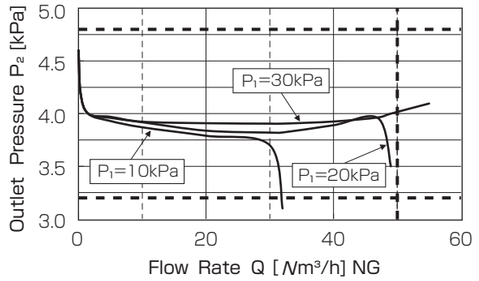
shows the standard spring.

Flow Rate

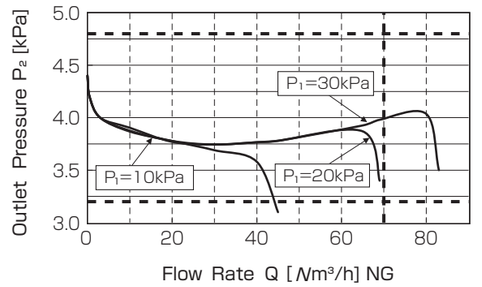
SGX-15N Set Point : 4.00kPa



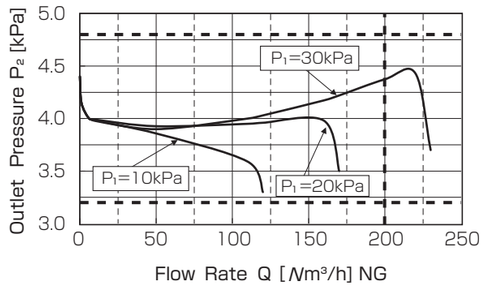
SGX-20N Set Point : 4.00kPa



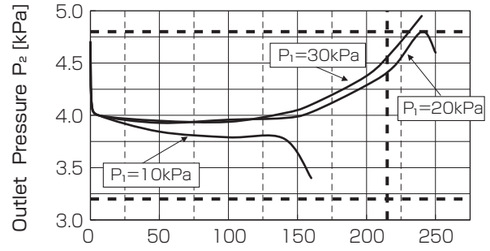
SGX-25N Set Point : 4.00kPa



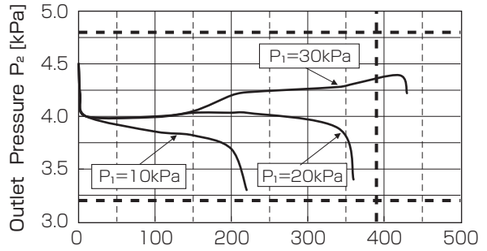
SGX-40N Set Point : 4.00kPa



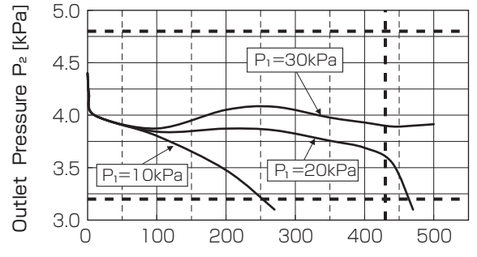
SGX-40 Set Point : 4.00kPa



SGX-50N Set Point : 4.00kPa



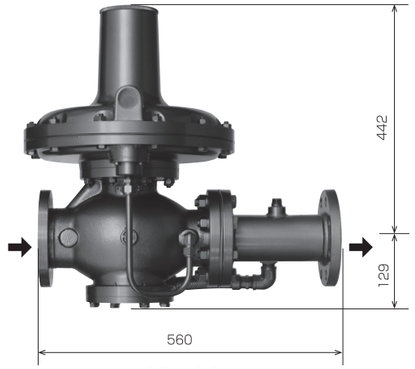
SGX-50 Set Point : 4.00kPa



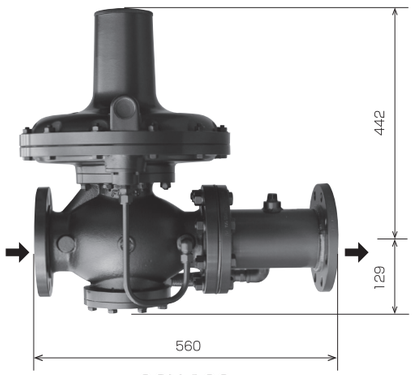
SGX Range

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.



SGX-80



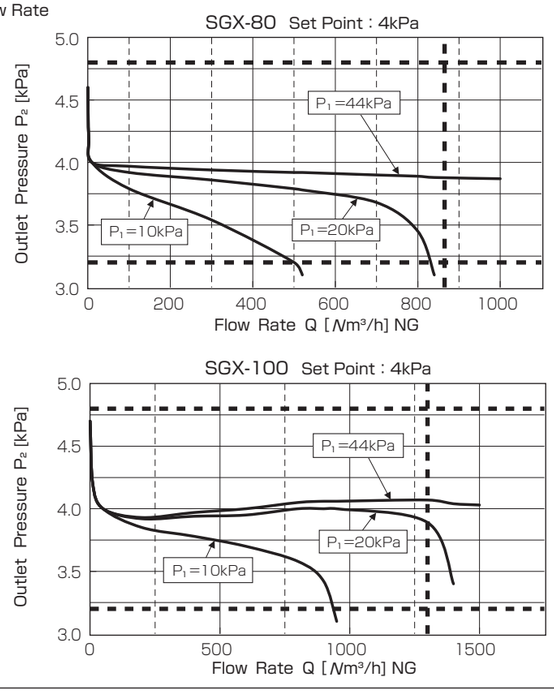
SGX-100

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(FF)	JIS 10K 100A Flange(FF)
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.

Flow Rate



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

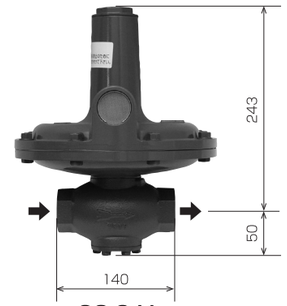
shows the standard spring.

SG Range

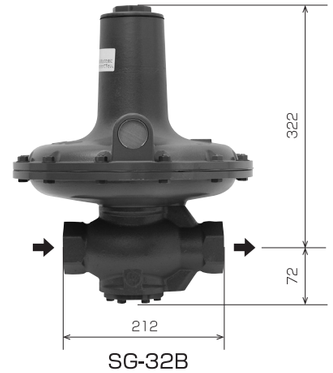
Governor for Low Differential Pressures

Incorporated: Relief

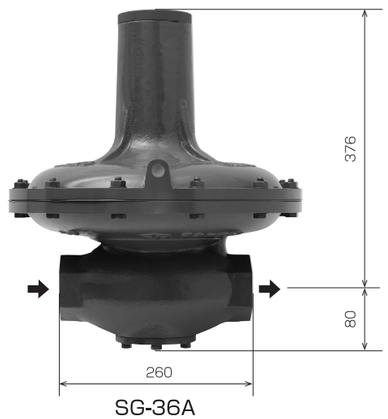
- The SG range is a direct-operated governor from ***L**ow Pressure* or ***L**ow Inter**m**ediate Pressure* to ***L**ow Pressure* or ***L**ow Inter**m**ediate Pressure* with a large capacity driven by low differential pressures.



SG-24A



SG-32B



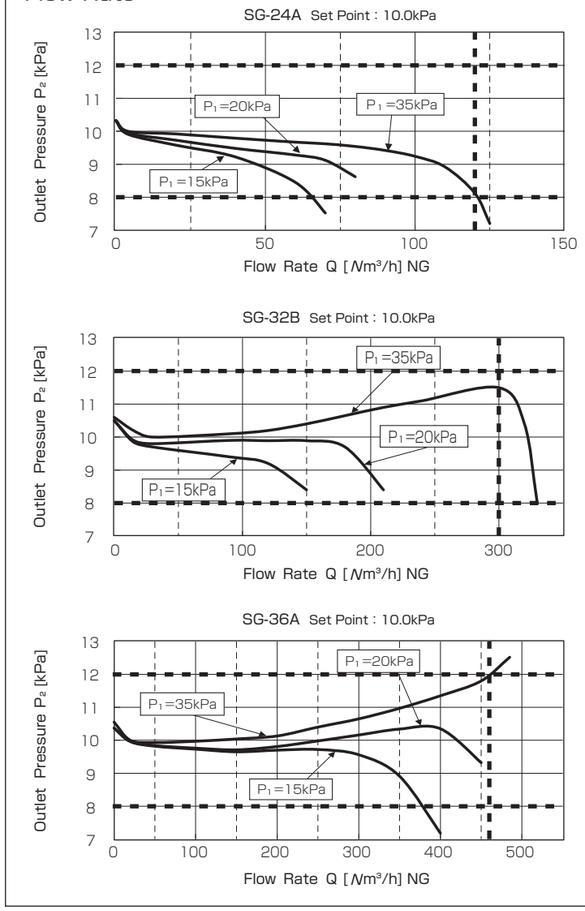
SG-36A

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.

Flow Rate



Interchangeable Spring Selection

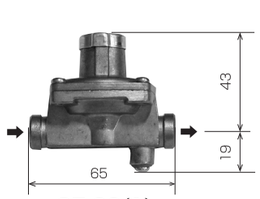
No.		①	②	③	④	⑤	⑥	⑦	⑧	⑨
Set Point Range (kPa)	SG-24A	1.00～4.00	3.50～10.0	5.00～15.0	10.0～20.0	15.0～20.0		0.30～1.00	0.50～2.00	6.00～12.0
	SG-32B	1.30～3.70	0.80～1.50		8.00～16.0	3.00～10.5	14.0～20.0	2.00～8.00	6.00～12.0	
	SG-36A	1.00～4.00	3.50～10.0	5.00～15.0	10.0～20.0	15.0～20.0				

shows the standard spring. requires additional supporting diaphragm disc.

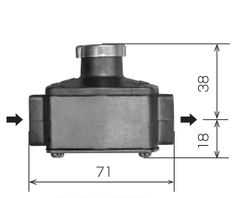
GZ/G/ARO/GY

LL Governor

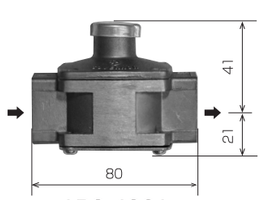
- GZ, G, ARO and GY are for use with gas burners within a gas appliance using low pressure natural gas city gas or LP gas.
- Maintains a constant outlet pressure independent of the fluctuation in inlet pressure and/or flow rate due to gas appliance burners in appliance turning on and off.



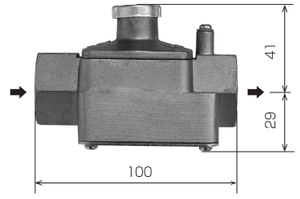
GZ-20(1)



G-3B(20)



ARO-406A



GY-6(20)

Specifications

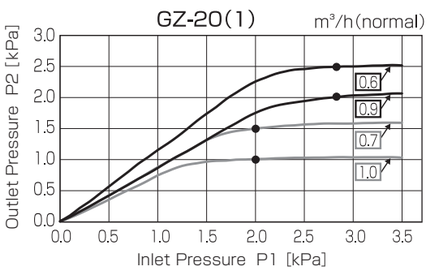
Model	GZ-20	G-3B	ARO-406A	GY-6
Inlet Pressure(kPa)	≦3.50			
Connection	Rc1/8	Rc 3/8	Rc 1/2	Rc 3/4
Mounting Position	Horizontal			

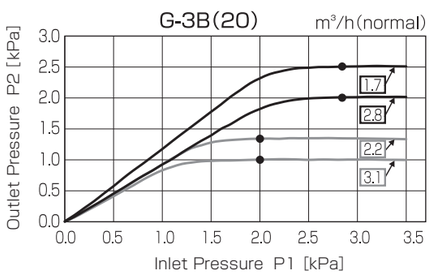
* No lockup function.
* Do not install the product where negative pressure may occur at the inlet and/or the outlet

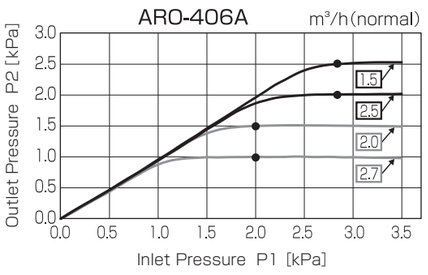
Outlet Pressure Stability within a Rated Capacity

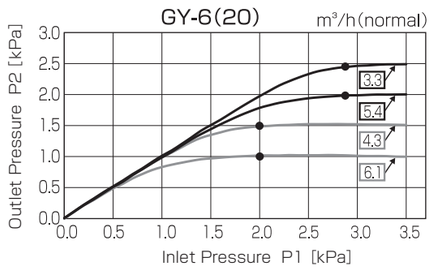
—— P1=2.80kPa set point —— P1=2.00kPa set point

Numbers in each ☐ ☐ indicate guaranteed maximum flow rate with in specific gravity of 1.







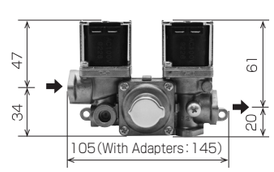


<How to read the curves>
For example, see the lowest curve for GZ-20(1). This shows;
Preset outlet to 1.0kPa at 2.0kPa inlet at 1.0N/m³/h flow rate.
And delivery will be less than 1.0kPa at 1.5kPa inlet at 1.0N/m³/h flow rate.

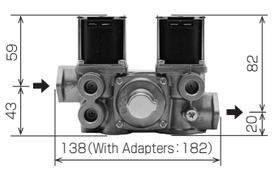
WS Range

Solenoid Valve

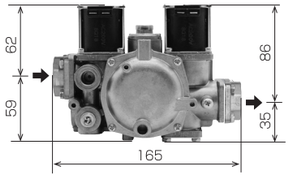
- Solenoid technology is an electro-mechanical device that controls the gas flow by opening or closing the valve orifices.
- The WS range is a unit of double solenoid valves and a pressure regulator for gas appliance in one compact body to reduce installation space, cost and decrease assembly process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



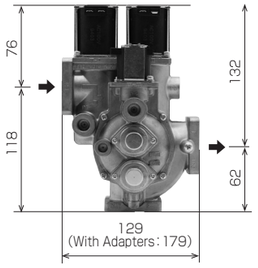
WS-100、WS-101



WS-102



WS-103



WS-104

WS - [Connection] [Pilot Solenoid Valve] - [Control Method]

Code	Connection
100	Rc1/4
101	Rc3/8
102	Rc1/2
103	Rc3/4
104	Rc1

Code	Pilot Solenoid Valve
	Not Included*1
P	Included

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

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

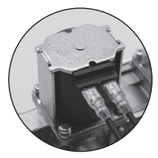
Range Specification

Inlet Pressure(kPa)	≦3.50

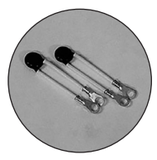
Selectable Specifications

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


FASTON Terminal


Lead Wire

Other Available Accessories


Surge Absorber as a Countermeasure of Reverse Voltage

Specifications

Model	Connection	Power Consumption Per One Solenoid Valve	Pilot Solenoid Valve	Mounting Position
WS-100-100	Rc1/4	5W±1W	N/A	Any Position
WS-101-100	Rc3/8		N/A	
WS-102-100	Rc1/2	9.5W±2W	N/A	
WS-102P-100		5W±1W	Included	
WS-103-100	Rc3/4	9.5W±2W	N/A	
WS-103P-100		5W±1W	Included	
WS-103-400		9.5W±2W	N/A	
WS-104-100	Rc1	5W±2W	Included	*2
WS-104-300			N/A	
WS-104-400		10W±2W	N/A	

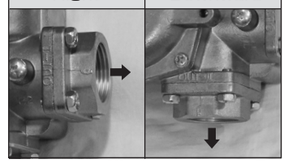
*Strainer Mesh Gauge:60 Mesh
*2 Any position except one with the adjusting screw facing downward. If the adjusting screw is required to face upward, please inform us when placing your order.

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.

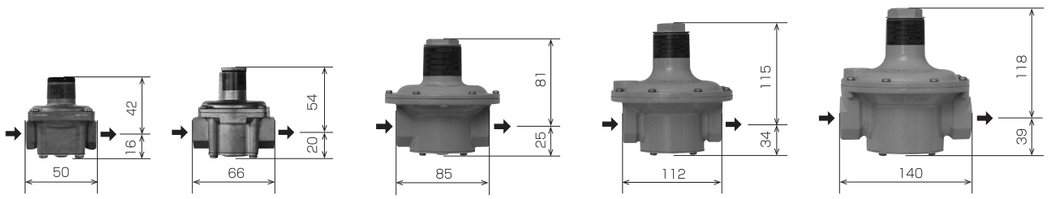
Right	Downward



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	≦5.00kPa	≦10.0kPa							
Outlet Pressure	0±0.10 kPa	0±0.05 kPa	0±0.10 kPa				0±0.05 kPa	0±0.10 kPa	0±0.05 kPa
Lockup Pressure	-	-	0.60 kPa						
Connection	Rc1/4	Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1 1/2		Rc2	
Vent Connection	Rc1/8		Rc1/2	Rc1/4		Rc3/4		Rc1	

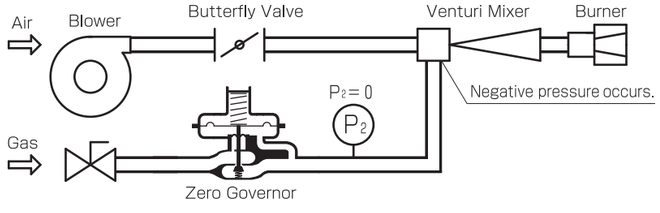
Available Configurations at a Glance

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)	✓*1	✓*1	×	✓	✓	✓	✓	✓	✓
Type C	High Temperature Resistance Governor for COG	×	×	✓	✓	✓	×	✓	×	✓

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

Gas Mixing by Venturi Mixer

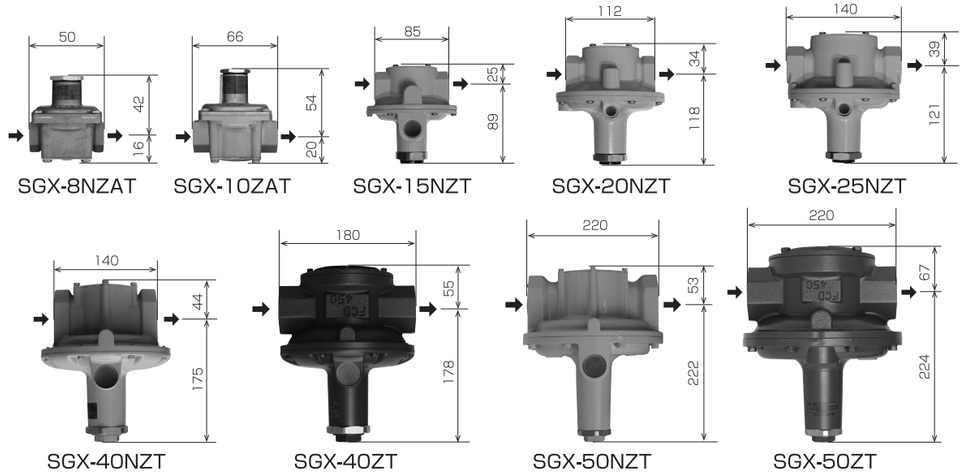
The venturi mixer draws in gas by ejecting air at high pressure through the inner nozzle. The gas pressure is reduced to zero (atmospheric pressure) by the zero governor & makes gas proportional to the amount of air drawn in.
The governor maintains constant air and gas ratio even if the amount of air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



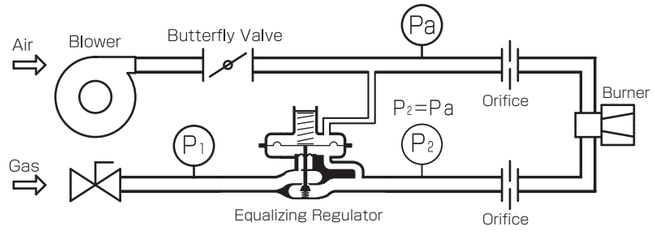
Specifications

Model	SGX-8NZAT / SGX-8NZA	SGX-10ZAT / SGX-10ZA	SGX-15NZT / SGX-15NZ	SGX-20NZT / SGX-20NZ	SGX-25NZT / SGX-25NZ	SGX-40NZT / SGX-40NZ	SGX-40ZT / SGX-40Z	SGX-50NZT / SGX-50NZ	SGX-50ZT / SGX-50Z
Inlet Pressure	≦10.0kPa		≦15.0kPa						
Loading Pressure Range	≦9.00kPa		≦14.0kPa						
Outlet Pressure	Loading Pressure ±0.10kPa	Loading Pressure ±0.05kPa	Loading Pressure±0.10kPa						
Lockup Pressure	-	-	≦Loading Pressure±0.60kPa						
Connection	Rc1/4	Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1 1/2		Rc2	
Loading Connection	Rc1/8		Rc1/2	Rc1/4		Rc3/4		Rc1	
Mounting Position	Horizontal		SGX-Z:Horizontal SGX-ZT:Inverse Horizontal(Cover faces downward.)						

* 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.