

Provider / Power Unit

PROVIDER POWER UNIT

Maximum operating pressure ■ 500 MPa (for liquid) ■ 150 MPa (for N₂ gas)

Compressor with advanced features such as ultra-high pressure, oil-free, corrosion resistance and explosion proofing enable use in a wide range of applications!!



-For gas-
MG series

Power unit

-For liquid-
ML series (single acting type)

What is Provider?

Air pressure (max. 0.7 MPa) that can be easily obtained in any factory, with piston drive...



Provider is a balance-type compressor/pump that constantly generates high pressure up to 150 MPa for N₂ gas and 500 MPa for liquid. Three series are available: JHP, MG, and ML

JHP series: Small and compact, suitable for small-capacity intermittent operation

MG, ML series: Suitable for continuous operation, advanced functions can be added. (Support for a variety of functions such as oil-free and liquid use is possible)

Specifications

Maximum operating pressure (MPa)	Operating temperature range (°C)
500 MPa (for liquid) 150 MPa (for N ₂ gas) <small>For other gases, please inquire separately.</small>	5 ~ 40

Features

● You can freely set the pressure

Simply set an operating pressure of 0.1 up to 0.7 MPa, and the unit will then automatically and constantly generate a discharge pressure up to the required level.

● Explosion-proof structure

Air-pressure drive eliminates the concern of combustion and explosion due to electrical causes.

● Gas contact / liquid contact part

Materials appropriate for the application are available. A oil-free type is also available.

● Select a double-acting type Provider for easy large-capacity discharge

● Stable operation mechanism

The operation pressure and discharge pressure are balanced to maintain the set pressure, eliminating concern of trouble due to operation at an excessive load and other factors.

● Low-noise operation

The compressor generates high pressure through the reciprocating motion of a piston driven by air with no need for a motor or engine, enabling quiet operation. The operating air is discharged through a silencer, keeping the sound low.

● Economic price

No other power source is needed, so the compressor can be used at lower cost than other compressors.



1. The Provider for gas is subject to the High Pressure Gas Safety Act.
2. Use in an indoor environment from 5 to 40°C to prevent intake of particulate matter and condensation.

Lineup

To meet customer needs, the Provider Series has a full lineup.

JHP Series: Small and compact, suitable for small-capacity intermittent operation

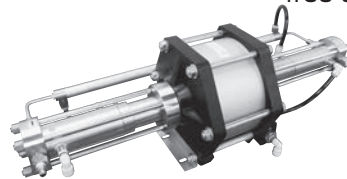


For gas

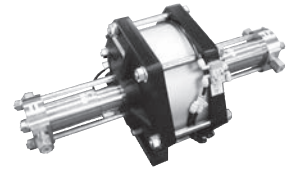


For liquids

MG, ML Series: Suitable for continuous operation, advanced functions can be added. (Support for a variety of functions such as oil-free and liquid use is possible)



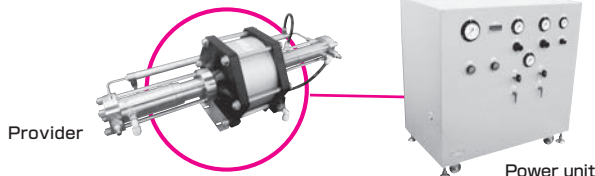
MG Series (for gas)



ML Series (for liquid / double action)

Power unit

All functions required for Provider operation are provided in a compact unit



Provider

Power unit

All parts and circuits that are required to generate high pressure are built into the power unit, allowing high pressure to be obtained in a simple and convenient way.

The Provider unit, air regulator, air filter, pressure gauge, discharge pressure/operation pressure control valve, strainer, and other parts are built in. Compact and lightweight, movable.

Applications

Typical application examples

Advanced functions surpass your expectations. Used in a wide range of applications.

- Withstand pressure, airtightness, and destruction testing equipment for testing and retesting of container accessories based on the High Pressure Gas Safety Act.
- Withstand pressure and airtightness testing equipment for instrumentation lines such as plant piping and connecting piping.
- Testing equipment for pressure gauges, Bourdon tubes and other devices in factory equipment
- Pressure sources for bellows and valve molds.
- Various types of hydraulic equipment and hydraulic units
- High pressure gas pressurizing and remaining gas filling
- High-pressure pressure keeping / adjustment equipment
- Pumps for chemical and pure water washing
- Pressurization injection pumps
- Various types of destruction testing equipment, other equipment that requires high pressure

Fluid used

Gases

[Air, N₂, He, H₂, O₂, etc.]

Liquids

[Water, hydraulic oil, organic solvents (NMP, methanol, etc.), etc.]

★ Separate specifications exist for gases other than air and N₂ gas, so please inquire.

Specifications

JHP Series (for gas)

Model		Maximum operating pressure (discharge pressure) *1 (MPa)	Multiplying factor (x) *2	Displacement*3 (mℓ / 1Stroke)	Air consumption*4 Nℓ / min
Double-acting type	JHP-M7WG	3.5	7	320	600
	JHP-M10WG	5	10	220	
	JHP-M14WG	7	14	150	
Two-stage compression type	JHP-150WG	15	30	90	950
	JHP-300WG	30	62	70	990
	JHP-500WG	50	110	70	1,080

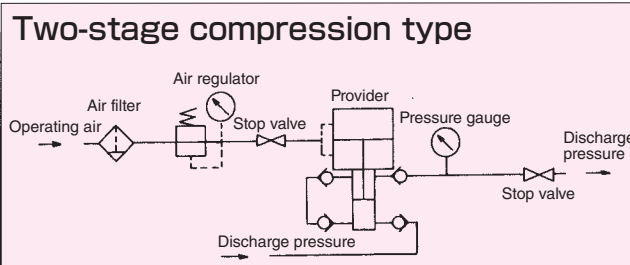
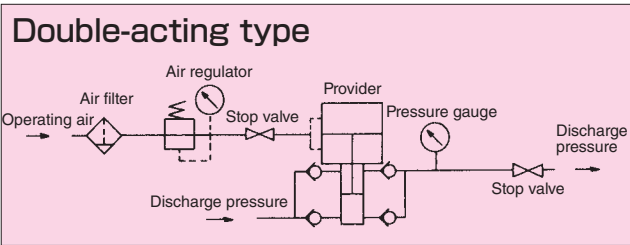
*1: Multiplying factor × operating pressure (calculated value) *2: Ratio of discharge pressure to operating pressure

*3: Intake cylinder cross-sectional area × stroke length *4: When operating pressure is 0.5 MPa (calculated value)

$$\text{Discharge volume per day} = \left[\frac{\text{Displacement}}{\ell / 1 \text{ stroke}} \right] \times \left[\frac{\text{Operation cycles}}{\text{Count/min}} \right] \times \left[\frac{60}{\text{min}} \right] \times \left[\frac{24}{\text{hour}} \right] \times \left[\frac{(\text{Intake pressure} + \text{Atmospheric pressure})}{\text{Atmospheric pressure}} \right] \text{ MPa}$$

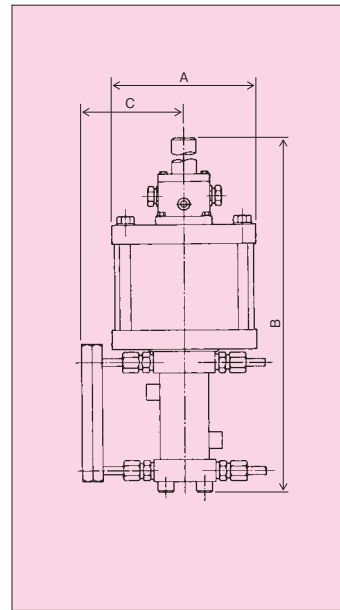
※ The discharge is calculated as shown above, however, the actual discharge will vary depending on the specifications, so please consult us.

Flow sheet



For required devices such as safety valves, etc. that are not on the flow sheet, please inquire and we will install the devices.

Dimensions

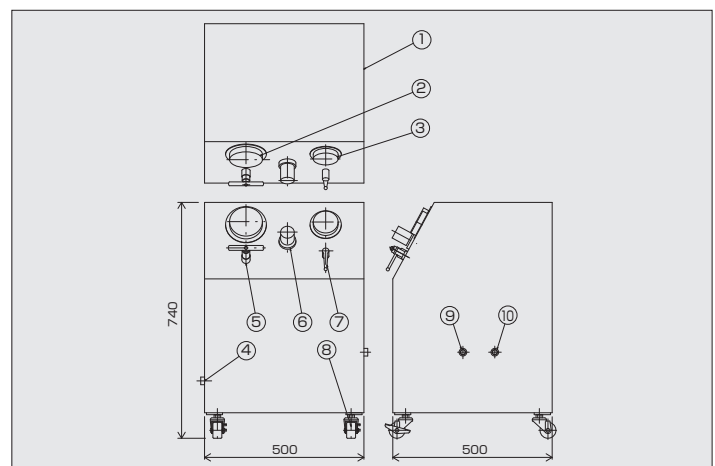


UNIT(mm)

Model	A	B	C	Weight
JHP-M-7WG	180	465	120	20kg
JHP-M-10WG	180	465	120	20kg
JHP-M-14WG	180	465	120	20kg
JHP-150WG	180	625	120	25kg
JHP-300WG	210	640	135	26kg
JHP-500WG	250	643	165	47kg

Power unit specifications

No.	Name	Count	Remarks
1	Unit box	1	Coating
2	Discharge pressure gauge	1	
3	Operating air pressure indicator	1	
4	Discharge pressure opening	1	Rc 1/4, etc.
5	Stop valve for discharge pressure	1	Needle valve
6	Pressure regulator	1	Air regulator
7	Stop valve for operating air pressure	1	Ball valve
8	Castors	4	
9	Operating air pressure opening	1	Rc 3/8
10	Intake port	1	Rc 3/8



* Materials used, dimensions, and specifications are subject to change without notice due to technical advancements.

Specifications

JHP Series (for liquids)

Model		Maximum operating pressure *1 (discharge pressure) (MPa)	Multiplying *2 factor (x)	Displacement *3 (ml / 1Stroke)	Air consumption *4 Nl / min	
Single-acting type	S type *5	JHP-200-8S	20	39	8	300
		JHP-400-4S	40	68	4	
		JHP-800-2S	80	157	2	
	M type *6	JHP-M-7	3.5	7	140	600
		JHP-M-10	5	10	90	
		JHP-M-14	7	14	60	
		JHP-100-40M	10	22	40	600
		JHP-200-20M	20	45	20	
		JHP-500-10M	50	100	10	
		JHP-1000-5M	100	175	5	

*1: Multiplying factor × operating pressure (calculated value)

*2: Ratio of discharge pressure to operating pressure

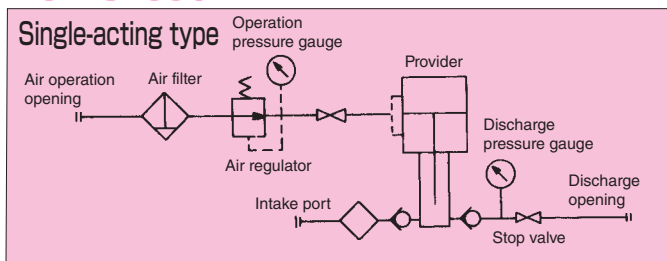
*3: Intake cylinder cross-sectional area × stroke length

*4: When operating pressure is 0.5 MPa (calculated value)

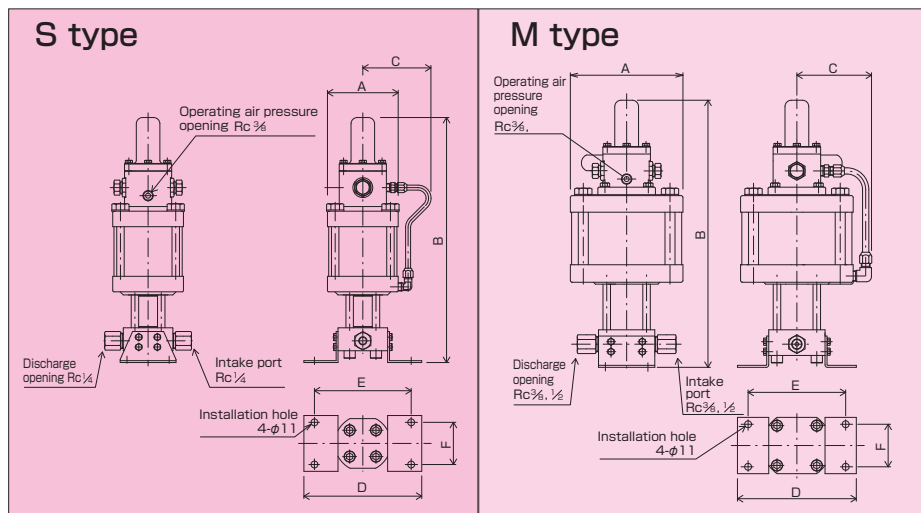
*5: Drive cylinder, small type

*6: Drive cylinder, standard type

Flow sheet



Dimensions



UNIT(mm)

Type	Model	A	B	C	D	E	F	Intake port	Weight
S	JHP-200-8S·JHP-400-4S JHP-800-2S	114	395	110	190	156	68	Rc 1/4	Approx. 9 kg
M	JHP-1000-5M·JHP-500-10M JHP-200-20M·JHP-100-40M	180	430	120	190	156	68	Rc 1/4	Approx. 15 kg to 20 kg
	JHP-M-7·JHP-M-10·JHP-M-14	180	432	120	190	156	68	Rc 3/8, 1/2	

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Specifications

MG Series (for gas)

Model		Maximum operating pressure (discharge pressure) *1 (MPa)	Multiplying factor (x) *2	Displacement*3 (mℓ / 1Stroke)	Air consumption *4 (Nℓ / min)
Single-acting type (Compression cylinder: Single)	MGS-NCs-10	1	2	570	700
	MGS-NC-20	2	4	502	950
	MGS-NC-35	3.5	7	282	
	MGS-NC-70	7	14	138	
	MGS-NE-500	50	100	37	1080
	MGS-NE-900	90	182	20	
Double-acting type (Compression cylinder: Double (Same diameter))	MGW-NC-15	1.5	3	1357	950
	MGW-NC-20	2	4	1004	
	MGW-NC-35	3.5	7	565	
	MGW-NC-70	7	14	276	
	MGW-NC-150	15	28	141	
	MGW-ND-20	2	4	1271	990
	MGW-ND-50	5	10	565	
	MGW-ND-250	25	53	106	1080
	MGW-NE-35	3.5	7	1004	
	MGW-NE-50	5	10	769	
	MGW-NE-70	7	14	565	
	MGW-NE-100	10	19	392	
	MGW-NE-150	15	30	251	
	MGW-NE-300	30	62	123	
	MGW-NE-700	70	149	50	
Two-stage compression type (Compression cylinder: Twin (Different diameters))	MGT-NC-150	15	32	125	950
	MGT-NC-250	25	52	70	990
	MGT-ND-300	30	62	70	
	MGT-ND-700	70	136	45	1080
	MGT-NE-150	15	30	196	
	MGT-NE-300	30	61	125	
	MGT-NE-500	50	100	70	
	MGT-NE-700	70	149	53	
	MGT-NE-900	90	189	45	1800
MGT-2D-1500	150	223	45		
For low intake pressure	MGT-ND-50/15	25	53	196	990
	MGT-ND-75/15	35	75	196	

*1: Multiplying factor × operating pressure (calculated value) *2: Ratio of discharge pressure to operating pressure

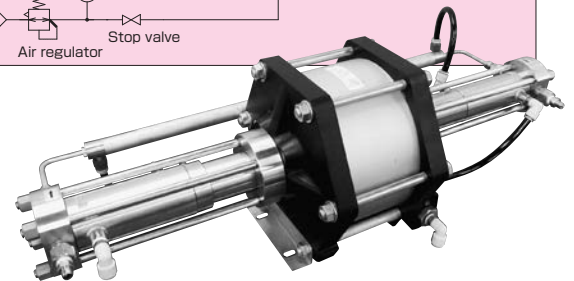
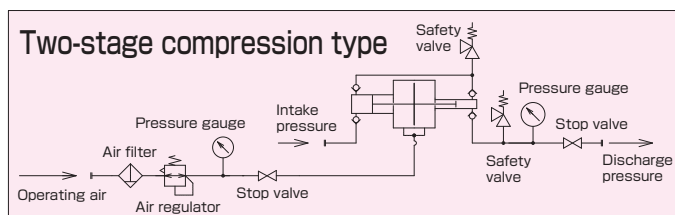
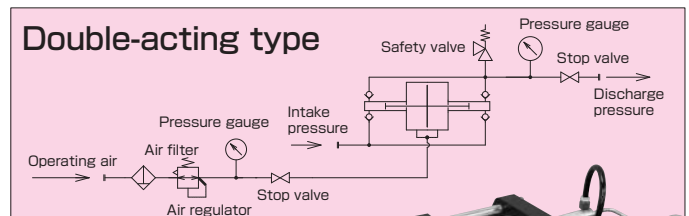
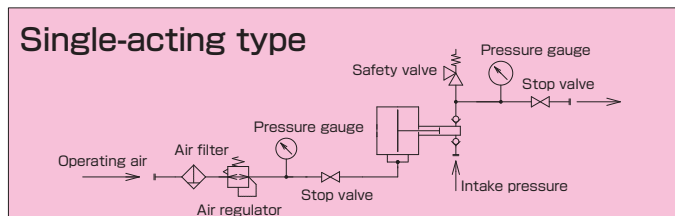
*3: Intake cylinder cross-sectional area × stroke length *4: When operating pressure is 0.5 MPa (calculated value)

*Other discharge pressures and an oil-free type are available. Please inquire for more information.

$$\text{Discharge volume per day} = \frac{\text{Displacement}}{\ell / \text{1stroke}} \times \frac{\text{Operation cycles}}{\text{Count/min}} \times \frac{60}{\text{min}} \times \frac{24}{\text{hour}} \times \frac{(\text{Intake pressure} + \text{Atmospheric pressure})}{\text{Atmospheric pressure}} \text{ MPa}$$

※ The discharge is calculated as shown above, however, the actual discharge will vary depending on the specifications, so please consult us.

Flow sheet



* Materials used, dimensions, and specifications are subject to change without notice due to technical advancements.

Specifications

ML Series (for liquids)

Model	Maximum operating pressure (discharge pressure) (MPa) *1	Multiplying factor (x) *2	Displacement*3 (ml / 1Stroke)	Air consumption*4 Nl / min	
Single-acting type (Compression) cylinder: Single	MLS-A-20	2	4	37	130
	MLS-A-75	7.5	16	9	
	MLS-A-150	15	32	5	
	MLS-A-200	20	44	3	
	MLS-A-300	30	64	2	
	MLS-C-35	3.5	7	141	700
	MLS-C-50	5	10	98	
	MLS-C-75	7.5	16	63	
	MLS-C-150	15	28	35	
	MLS-C-200	20	44	22	
	MLS-C-250	25	52	19	
	MLS-C-500	50	100	10	
	MLS-C-1000	100	177	6	
	MLS-C-1500	150	318	4	
	MLS-D-50	5	10	141	720
	MLS-D-100	10	22	63	
	MLS-D-300	30	62	22	
	MLS-D-1500	150	298	5	
	MLS-D-2500	250	445	3	
	MLS-E-70	7	13	141	1060
MLS-E-150	15	30	63		
MLS-E-250	25	53	35		
MLS-E-1000	100	182	12		
MLS-E-3000	300	597	3		
MLS-2D-5000	500	891	3	1400	

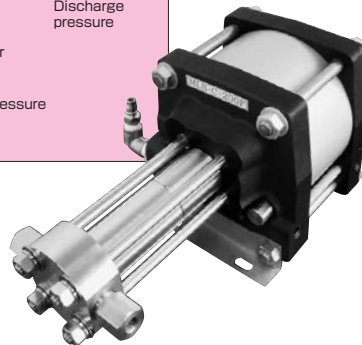
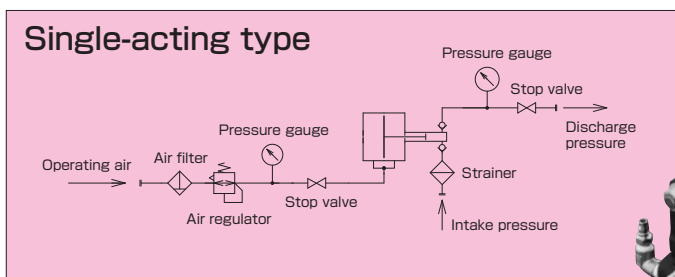
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*3: Intake cylinder cross-sectional area × stroke length *4: When operating pressure is 0.5 MPa (calculated value)

※In addition to the above, the double-acting type MLW Series and MLTW Series are also available. Please inquire.

(The displacement of the MLW Series is twice the displacement indicated in the table above.)

Flow sheet



* Materials used, dimensions, and specifications are subject to change without notice due to technical advancements.

Model indication (MG, ML type)

M L S - C - 200 FH

- ① **Fluid used**
 G : For gas L : For liquids
- ② **Discharge type**
 S : Single-acting type, one-stage compression
 T : Two-stage compression type W : Double-acting type, one-stage compression
- ③ **Drive air cylinder diameter**
 A : $\phi 80$ D : $\phi 190$
 B : $\phi 120$
 C : $\phi 160$
- ④ **Pressure specification**
 (Kgf/cm²)
- ⑤ **Other specifications**
 None: NBR O ring
 P : FFKM O ring
 F : Pure water specification
 V : Fluororubber O ring
 H : Hard chrome coat
 SEP : Separator (degreasing type)

Examples of equipment with Provider installed

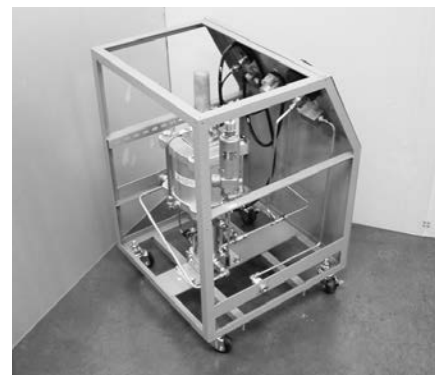
Power Unit



Appearance



Inside

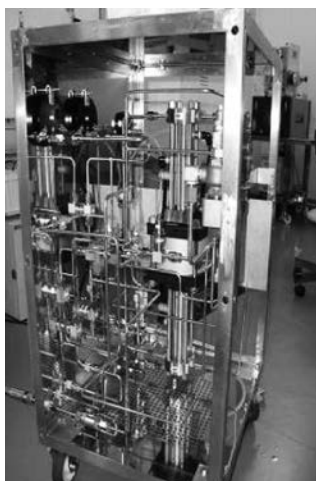


Inside

MGS type

JHP type (for gas)

Surge pressure unit for N₂ gas



By installing Provider and supplying air to drive Provider, this equipment pressurizes low-pressure nitrogen gas at 0.7 MPa to high-pressure nitrogen gas at 23 MPa.

[Design conditions]

- Fluid : N₂, etc.
- Pressure : 25 MPa
- Temperature : Normal temperature

N₂ gas supply device



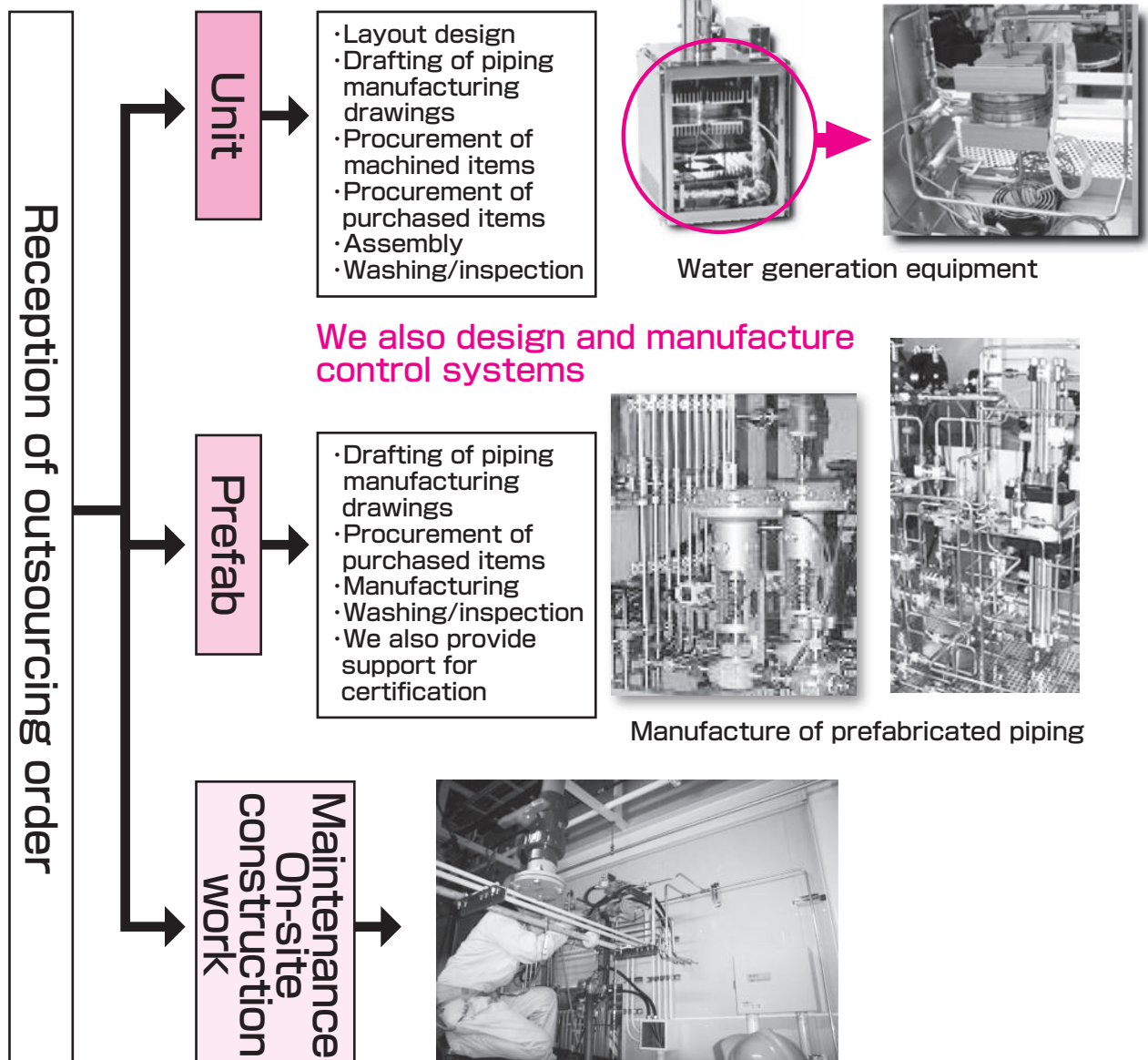
Two Provider units are installed to first pressurize gas, and then regulate the pressure with a pressure reducing valve and supply the gas through an automatic valve to exhaust the gas. The touch panel on the front of the equipment can be used to regulate parameters such as the valve operation time and open/close timing.

[Design conditions]

- Fluid : N₂, etc.
- Pressure : 25 MPa
- Temperature : Normal temperature

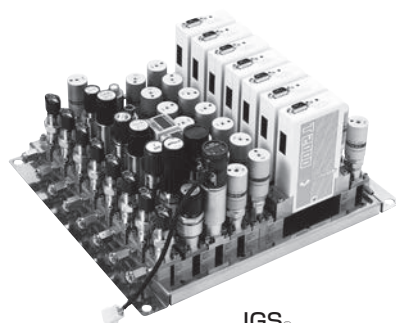
Engineering services, equipment/ piping design and manufacture

Taking advantage of our No. 1 record and experience in flow control technology and high-pressure gas certification, we help our customers navigate all phases of equipment use, from equipment design and manufacture to startup, modifications, and maintenance!

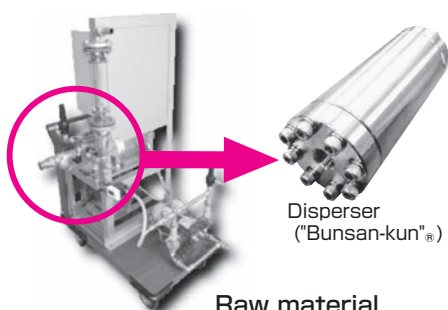


If you have trouble with unit or piping, please contact Fujikin local office by all means!

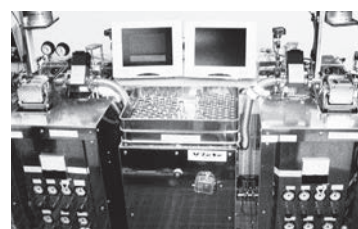
Taking advantage of our No. 1 record and experience in flow control technology and high-pressure gas minister certification, we help our customers navigate all phases of equipment use, from equipment design and manufacture to startup, modifications, and maintenance!



IGS[®]
(Integrated Gas System)



Raw material
dilution unit



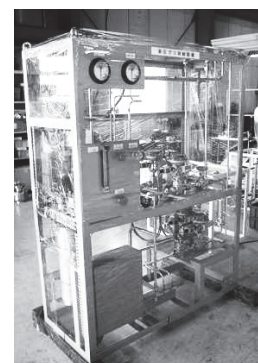
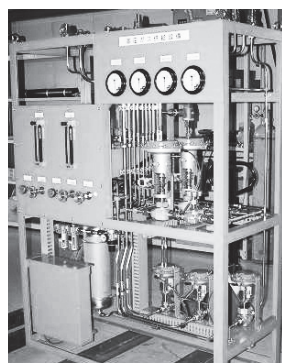
Automatic leak detector

Other examples of equipment manufactured

Gas valve stand

Supplies high-pressure gas to manufacturing processes that use a large furnace

Gas supply can be controlled by a control valve (our "MINUCON"[®] product, with high-pressure gas minister certification). The high-pressure gas piping is manufactured as a high-pressure gas minister certified item (pipes and tubes).



Strong record and cutting-edge manufacturing technology

Taking advantage of the "flow control technology" we have cultivated in many industries, we meet our customers' needs with a strong record of manufacturing accomplishments, including various equipment such as integrated gas systems, water generation equipment and fluid mixing/dispersal units, as well as prefabricated piping.

Support for high-pressure gas certification (piping and tubing, valves, joints) is possible

- We have by far the widest certification range in the industry
Design pressure : 99.9 MPa (max.),
temperature range: -269 to +800°C
- Please also consult us about
high-pressure/high-temperature piping.

Please inquire as well about manufacture and sales of other equipment that uses your component technology.

Fujikin's Flow Control Device Series

Mass flow controllers



Thermal Series FCST1000



Thermal Series FCST2000



Pressure Series FCS

Diaphragm type "mini" control valve



MINUCON®

Ultra high pressure hydrogen gas mixing valve device



Electronic valves



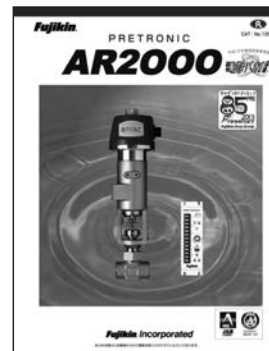
PRETRONIC SR100M



High performance small control valve SR100E



PRETRONIC SR100



PRETRONIC AR2000

Manual needle valve



Micro flow regulation valve



Administrative Offices

Corporate Headquarters

Kita Hankyu Bldg., 1-4-8 Shibata, Kita-ku, Osaka 530-0012, Japan
Tel: +81-6-6372-7141, +81-50-3160-7141 (IP), Fax: +81-6-6375-0697

Production Centers

Osaka Plant Kashiwara

1000-45 Enmyo-cho, Kashiwara, Osaka 582-0027, Japan
Tel: +81-72-977-4661, Fax: +81-72-977-5549

Osaka Plant Higashiosaka

3-9-21 Nagata, HigashiOsaka, Osaka 577-0015, Japan
Tel: +81-6-6787-2201, Fax: +81-6-6787-4541

EXPO MEMORIAL

TSUKUBA ADVANCED TECHNOLOGY CENTER

18 Miyukigaoka, Tsukuba, Ibaraki 305-0841, Japan
Tel: +81-29-856-3301, Fax: +81-29-856-5392

International Administrative Business Division

Tokyo Office

Akihabara Dai Bldg., 1-18-13 Sotokanda, Chiyoda-ku, Tokyo 101-0021, Japan
Tel: +81-3-5209-8191, Fax: +81-3-5209-8262

Osaka Office

Kita Hankyu Bldg., 1-4-8 Shibata, Kita-ku, Osaka 530-0012, Japan
Tel: +81-6-6372-7141, Fax: +81-6-6375-0697

China Service Center

No. 4, Songhu Industry Minizoom, Song-jiang High-Technology Park, Jiuting Zhen, Songjiang, Shanghai, P.R.C
Tel: +86-21-6769-6576, Fax: +86-21-6769-6536

Wuchan Service Center

Pingan Guojinrong Dasha 27F-10, Gongzhenglu 216, Wuchangqu, Hubei, China
Tel: +86-27-6396-1868, Fax: +86-27-6396-1808

Affiliated Companies

Fujikin of America Inc.

Fremont Office

454 Kato Terrace Fremont, CA 94539 U.S.A.
Tel: +1-408-980-8269, Fax: +1-408-980-0572

Austin Office

9442 North Capital of Texas Hwy. Suite 840 Austin, TX 78759 U.S.A.
Tel: +1-512-912-9095, Fax: +1-512-912-8095

New Jersey Office

777 Terrace Ave. Suite 110 Hasbrouck Heights, NJ 07604 U.S.A.
Tel: +1-201-641-1119, Fax: +1-201-641-1137

Oregon Office

7701 SW Nimbus Ave Beaverton, OR 97008 U.S.A
Tel: +1-503-626-2450

CARTEN-FUJIKIN Inc.

604 West Johnson avenue, Cheshire CT06410 U.S.A.
Tel: +1-203-699-2100, Fax: +1-203-699-2179

Carten Controls Ltd.

Unit 609, Northern Ext. Waterford Industrial Park, Waterford, Ireland
Tel: +353-51-355436, Fax: +353-51-378054

Fujikin (Deutschland) GmbH

Immermannstr. 33 - D-40210 Düsseldorf Germany
Tel: +49-211-350458, Fax: +49-211-363990

Fujikin of China Incorporated Shanghai Office

No. 4, Songhu Industry Minizoom, Song-jiang High-Technology Park, Jiuting Zhen, Songjiang, Shanghai, China P.R.C 20165
Tel: +86-21-6769-6576, Fax: +86-21-6769-6536

Beijing Office

Room 221502, Unit 2, 12th Floor, Building 6, No.1 Yard, Futong Street, ChaoYang District, Beijing, China
Tel: +86-10-8447-5269, Fax: +86-10-6474-8689

Xi'an Office

Room 1903A, Shaanxi Yongli International Financial Center, NO.6 Jinye Road, Yanta District, Xian City, Shaanxi Province, China
Tel: +86-29-8835-0535, Fax: +86-29-8886-7096

Nanjing Support Center

Kechuang Yihao Dasha Building B, 801 Pubin Road 88, Pukou District, Nanjing, Jiangsu, China
Tel: +86-25-5180-5210, Fax: +86-25-5180-5212

New Headquarters

Akihabara Dai Bldg., 1-18-13 Sotokanda, Chiyoda-ku, Tokyo 101-0021, Japan
Tel: +81-3-3252-0301, Fax: +81-3-5209-8835

Tohoku Plant

11-31 Aza Sodeyama, Iwayadou, Esashi, Oshu, Iwate 023-1101, Japan
Tel: +81-197-35-8701, +81-50-3161-0301 (IP), Fax: +81-197-35-8704

Osaka High-Tech Research & Creative Development Center

8-2-29 Nanko-Higashi, Suminoe-ku, Osaka 559-0031, Japan
Tel: +81-6-6612-0251, Fax: +81-6-6612-8541

US Connecticut Factory

604 West Johnson Avenue, Cheshire, CT 06410 U.S.A.
Tel: +1-203-699-2100, Fax: +1-203-699-2109

Korea Service Center

DIGITAL EMPIRE II 102dong Rm 212 88, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
Tel: +82-31-627-5006, Fax: +82-31-627-5007

Taiwan Service Center

3F-1, No 32, Tai Yuen St., Chupei City, Hsinchu County 302, Taiwan, R.O.C
Tel: +886-3-5600300, Fax: +886-3-5600320

America Service Center

454 Kato Terrace Fremont, CA 94539 U.S.A.
Tel: +1-408-980-8269, Fax: +1-408-980-0572

Fujikin Taiwan Incorporated Hsinchu Office

3F-1, No 32, Tai Yuen St., Chupei City, Hsinchu County 302, Taiwan, R.O.C
Tel: +886-3-5600300, Fax: +886-3-5600320

Tainan Office

Rm. A6, 1F., No.13, Guoji Rd., Sin shih Dist., Tainan City 74442, Taiwan (R.O.C.)
Tel: +886-6-589-1698, Fax: +886-6-589-1691

TK-FUJIKIN CORPORATION

Headquarter/Factory

7, Noksansandan 261-ro 88 beon-gil, Gangseo-gu, Busan, Korea
Tel: +82-51-970-6700, Fax: +82-51-831-1215

Sales Headquarter/Technical Service Center

DIGITAL EMPIRE II 102dong Rm 212 88, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea
Tel: +82-31-627-5006, Fax: +82-31-627-5007

Hwajeon/Factory

32, Hwajeonsandan 3-ro Gangseo-gu, Busan, Korea
Tel: +82-51-970-6700, Fax: +82-51-831-1215

Fujikin Vietnam Co., Ltd.

H-2B plot, Thang Long Industrial Park, Vong La Commune, Dong Anh District Ha Noi, Viet Nam
Tel: +84-24-38812566, Fax: +84-24-38812577

The Branch of Fujikin Vietnam Co., Ltd - BAC NINH FACTORY.

No14, Street8, VSIP Bac Ninh, Phu chan, Tu Son, Bac Ninh, Vietnam
Tel: +84-222-3765371, Fax: +84-222-3765372

The Branch of Fujikin Vietnam Co., Ltd - VWL Hanoi.

Room 308A, 3th Floor, UDIC COMPLEX Tower, Hoang Dao Thuy Street, Trung Hoa Ward, Cau Giay District, Hanoi City, Vietnam
Tel: +84-24-37368587, Fax: +84-24-37368592

The Rep Office of Fujikin Vietnam Co., Ltd.- VWL Ho Chi Minh.

1st Floor., Harmony Tower, N.47-49-51 Phung Khac Khoan Str., Da Kao Ward, Dist. 1, Ho Chi Minh City, Vietnam
Tel: +84-28-38226781, Fax: +84-28-38226782

Fujikin Singapore Pte.Ltd.

10 Eunos Road 8 #05-09 Singapore Post Centre Singapore 408600
Tel: +65-6848-5760, Fax: +65-6746-7021

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