
OPERATION MANUAL

PRODUCT NAME: **MANIFOLD REGULATOR**

MODEL : (E, N) ARM2500-**A, B- (F, N) 02 (G1, G2)

(E, N) ARM3000-**A, B- (F, N) 03 (G1, G2)

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| <ul style="list-style-type: none"><input type="radio"/> Read this operation manual carefully to understand before installation and operation.<input type="radio"/> Pay extra attention on the clause concerning the safety.<input type="radio"/> Keep this operation manual available whenever necessary. |
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1. PRECAUTIONS FOR SAFETY

Precautions shown here are to ensure the product is used correctly and safely, and to prevent hazard and damage inflicting upon people from occurring. These precautions are divided into three categories, " Caution ", " Warning ", and " Danger " to indicate the degree of possible hazard and damage, and of urgency.

As all these are important for safety, never fail to follow them in addition of ISO4414, JIS B8370, and other safety regulations.

 Caution : Possible harmful effects are expected to be on people and possible loss is expected only of objects when wrong operation occurred.

 Warning : Possible loss or serious injury of people is expected when wrong operation occurred.

 Danger : Imminent danger that possible loss or serious injury of people is expected without evacuation.

*1 : ISO 4414 : Pneumatic fluid power—Recommendations for the application of equipment to transmission and control systems.

*2 : JIS B 8370 : Common regulations for pneumatic systems.

Warning

- ① Suitability of pneumatic equipment should be determined by a designer of the pneumatic system or a person who prescribes its specifications.

Since the product shown here is used in various operating conditions, its Suitability to a system should be determined by the pneumatic system designer or the person prescribes its specifications based on necessary analyses and tests. The person who determined the suitability of the system is responsible for the performance at a certain point of time and safety assurance of this system. A system should be constructed by referring to the latest product information and catalogues, discussing all the contents of specifications, and considering possibilities of equipment failure.

- ② Equipment should be handled by those who have sufficient knowledge and experience.

Compressed air fluid could be hazardous if it is handled incorrectly. Assembly, operation and maintenance of machinery and equipment for which pneumatic apparatuses are used should be performed by those who have sufficient knowledge and experience.

- ③ Never handle the machinery or equipment, or never take out the apparatuses until safety is confirmed.

- a. Check and maintenance of machinery or equipment should be performed after it is confirmed that dropping or uncontrollable running prevention measures are taken for the equipment on which the product is mounted.
- b. Apparatuses should be taken out after it is confirmed equipment Corresponding to air supply, that is an energy source, should be turned off ; and compressed air in the system should be exhausted.
- c. Re-starting of machinery or equipment should be done with ample care after it is confirmed that prevention measures for sudden movement are taken.

- ④ When the product is used in the following conditions or environment, Considerations for safety measures should be given along with consultation to our company.

- a. Outdoor usage, or usage in conditions or environment outside of the Specifications indicated.
- b. Usage for nuclear power, railroad, air navigation, vehicle, medical Equipment, appliances contacting food and beverage, entertainment apparatuses, emergency shutdown circuits, clutch/break circuits for pressing, and safety devices.
- c. Usage for applications which especially require safety because Considerable effects to people and properties are expected.

Air source

Warning

- ① Use clean air.

Do not use compressed air contains chemicals, synthetic oil based on organic solvent, or corrosive gas since it may cause breakage or malfunction of the product.

- ② For air containing a large amount of drain, install air dryer or aftercooler before regulator. It may cause malfunctions of pneumatic equipment.

Operation environment

Warning

Do not use the product in the following environment.

- ① Standard resin bonnet is made of polyacetal. The product cannot be used in atmosphere of the following materials, or places where those will be adhered to the product. Materials: synthetic fluid, thinner, acetone, alcohol, organic solvent such as ethylene chloride, chemicals such as sulfuric acid and nitric acid, cutting oil, kerosene, gasoline, and screw locking fluid.
- ② Places where vibration or impact will be generated.
- ③ Avoid exposure to sunlight by protection cover.
- ④ Shield radiation heat when heat source is nearby.

Installation

Warning

- ① "IN" mark shows air inlet pipe connections should be made rightly. Connected opposite directions, the device cannot work.
- ② The adjustment handle operation should be done by manual. The use of a tool in operation the adjustment handle will cause trouble.

Caution

- ① Do not apply impact from dropping at transferring or mounting. It may cause failure in accuracy of pressure gauge.
- ② Do not use the product in places with high humidity and temperature. It may cause malfunctions of pressure gauge.

Adjustment

⚠ Warning

- ① Do the setting while checking pressure at inlet side and pressure indicated on Pressure gauge at outlet side. If handle is turned too much, it may lead to breakage of inner parts.

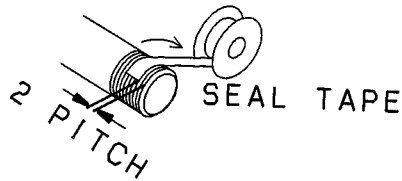
⚠ Caution

- ① For pressure adjustment, release locking and lock up after adjustment. Wrong procedure may cause breakage of handle and fluctuation of outlet pressure. Pulling the handle to release the locking ("Orange line" on the lower side of adjusting handle may be used for visual checking.; ARM3000 only.) The adjustment handle is able to lock by pushing. If it won't lock, turn it right or left and push down. ("Orange line" becomes invisible.; ARM3000 only.)
- ② Increase outlet pressure by rotation adjusting handle clockwise and decrease the pressure by rotating the handle counterclockwise.
- ③ Set outlet pressure to 85% or less of inlet pressure. It may cause fluctuation of outlet pressure.
- ④ For piping to IN port, sufficient port size required. In case of the Common IN type, supply from 2 ports on both ends as much as possible. It may cause fluctuation of outlet pressure.

Piping

⚠ Warning

- ① Sufficient air blow (flushing) or cleaning shall be done before piping in order to remove chips, cutting oils and dusts in piping. These may cause early clogging of element malfunction.
- ② When screw in piping or fitting, avoid entering of chips and sealing materials from piping screws into the inside of equipment. Or malfunction is led to occur. When use sealing tapes, leave 2 threads of a screw and starts taping.



Maintenance/Check

⚠ Warning

- ① Maintenance or check should be done by following the procedure in the operation manual. Incorrect handling of the product may cause breakage or malfunction of the equipment or device.
- ② Space should be kept more than 60mm at valve guide side (opposite side of handle) of the regulator. This makes maintenance and checking easier.

2. PURPOSE

This instrument aims at pressure controlling of air lines.

3. SPECIFICATIONS

Model	ARM2500	ARM3000
Proof pressure	1.5 MPa	
Max. working pressure	1.0 MPa	
Set pressure range	0.05~0.85 MPa	
Working fluid	AIR	
Ambient and fluid temp.	-5~60 °C (Should be no freezing)	
Construction	Relieving type	

4. PORT SIZE AND MASS

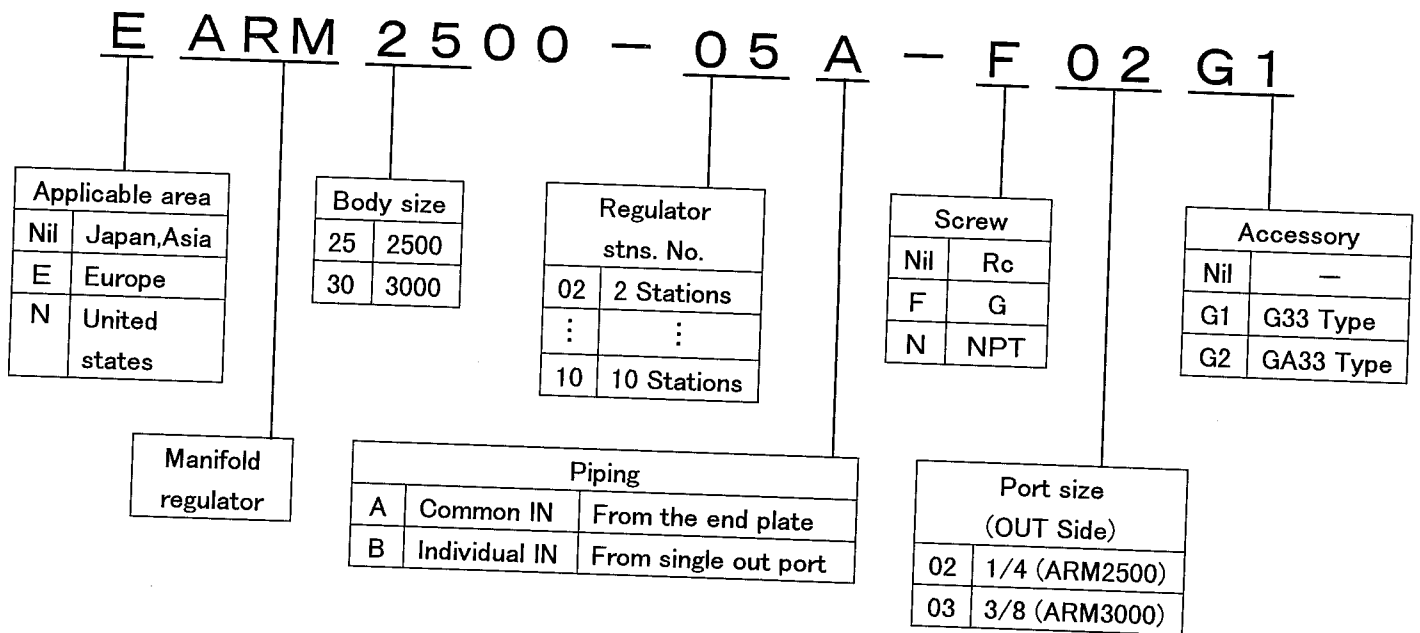
1) Port size and mass

Model	Piping	Port size [Rc]			Pressure gauge port size [Rc]	Mass [N]	
		IN side		OUT side		Regulator itself	End plate
		Body	End plate				
ARM2500	Common IN	—	3/8	1/4	1/8	2.5	0.6
	Individual IN	1/4	—	1/4	1/8		
ARM3000	Common IN	—	1/2	3/8	1/8	4.6	1.0
	Individual IN	3/8	—	3/8	1/8		

2) Mass with more than 2 stations

Model	Stns.	[N]								
	2	3	4	5	6	7	8	9	10	
ARM2500	6.67	9.41	12.06	14.81	17.46	20.20	22.85	25.60	28.34	
ARM3000	12.26	17.16	22.07	26.97	31.97	36.87	41.78	46.68	51.58	

5. HOW TO ORDER



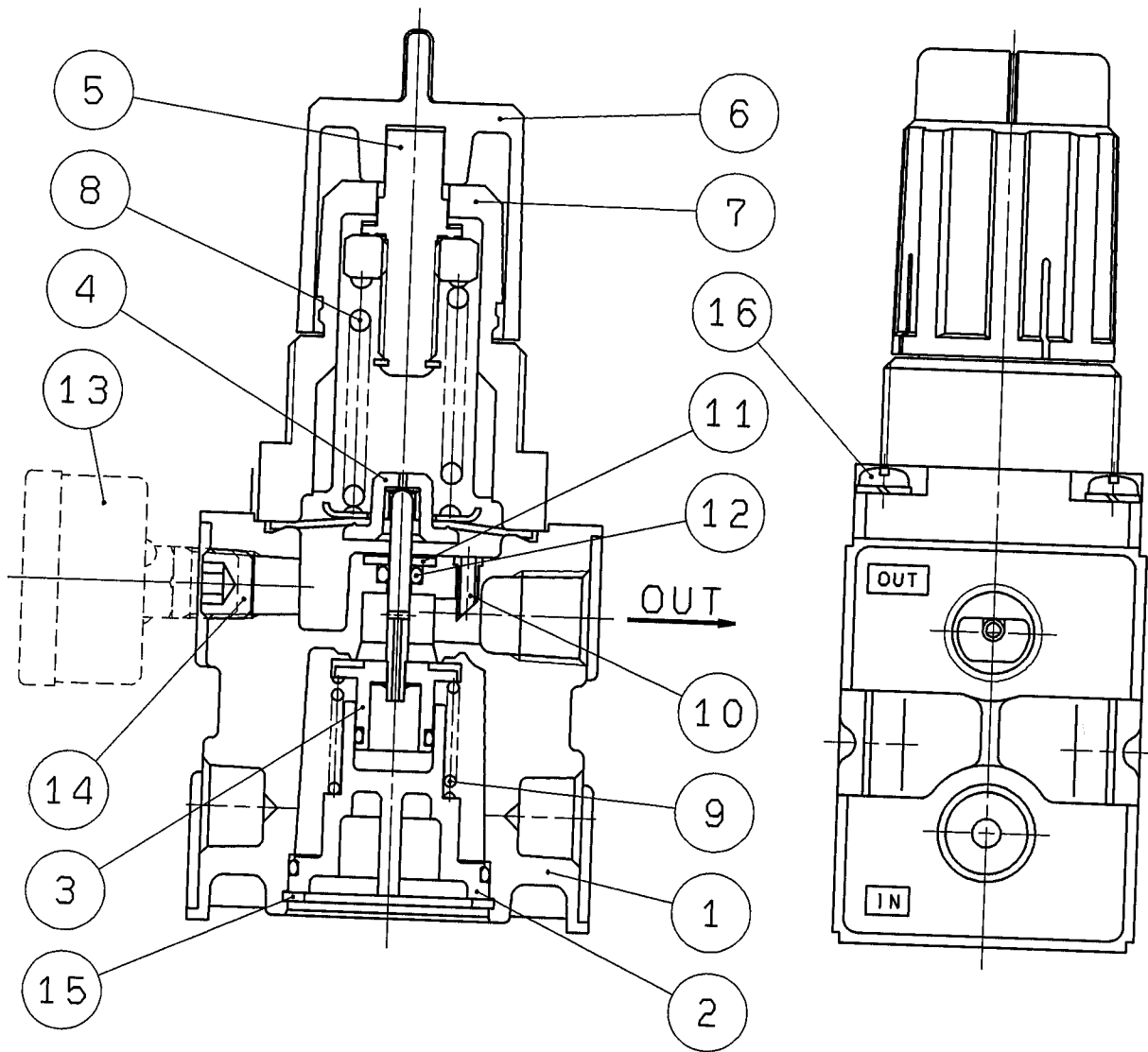
6. TROUBLESHOOTING

Trouble	Possible cause	Remedy
Pressure is not regulated.	<ol style="list-style-type: none"> Opposite flow direction or opposite installation of regulator. Broken pressure adjustment spring. Broken valve spring. Foreign materials caught in the valve seat or valve "0" ring. Damaged rubber lining on the valve. 	<ol style="list-style-type: none"> Check flow direction, and install the regulator correctly if wrong. Replace the pressure adjustment spring. Replace the valve spring. Remove the valve guide and clean the valve seat or valve "0" ring. Grease up after washing the sliding surface of valve "0" ring. Replace the valve.
Set pressure does not return to zero when pressure regulating handle is loosened.	<ol style="list-style-type: none"> Foreign materials caught in the valve seat or valve "0" ring. Damaged rubber lining on the valve. Broken valve spring. Drainage adhere to the valve. 	<ol style="list-style-type: none"> Clean the valve seat or valve "0" ring. Grease up after washing the sliding surface of valve "0" ring. Replace the valve. Replace the valve spring. Wash the sliding surface of valve "0" ring and grease up.
Air leaks near handle. (in side of handle)	<ol style="list-style-type: none"> Broken diaphragm. Dust caught in the relief valve seat. 	<ol style="list-style-type: none"> Replace the diaphragm. Wash the relief valve seat.
Air leaks near bonnet.	<ol style="list-style-type: none"> Loosened bonnet. Broken diaphragm. 	<ol style="list-style-type: none"> Fasten the bonnet evenly. Replace the diaphragm.

7. CONSTRUCTION / PARTS LIST

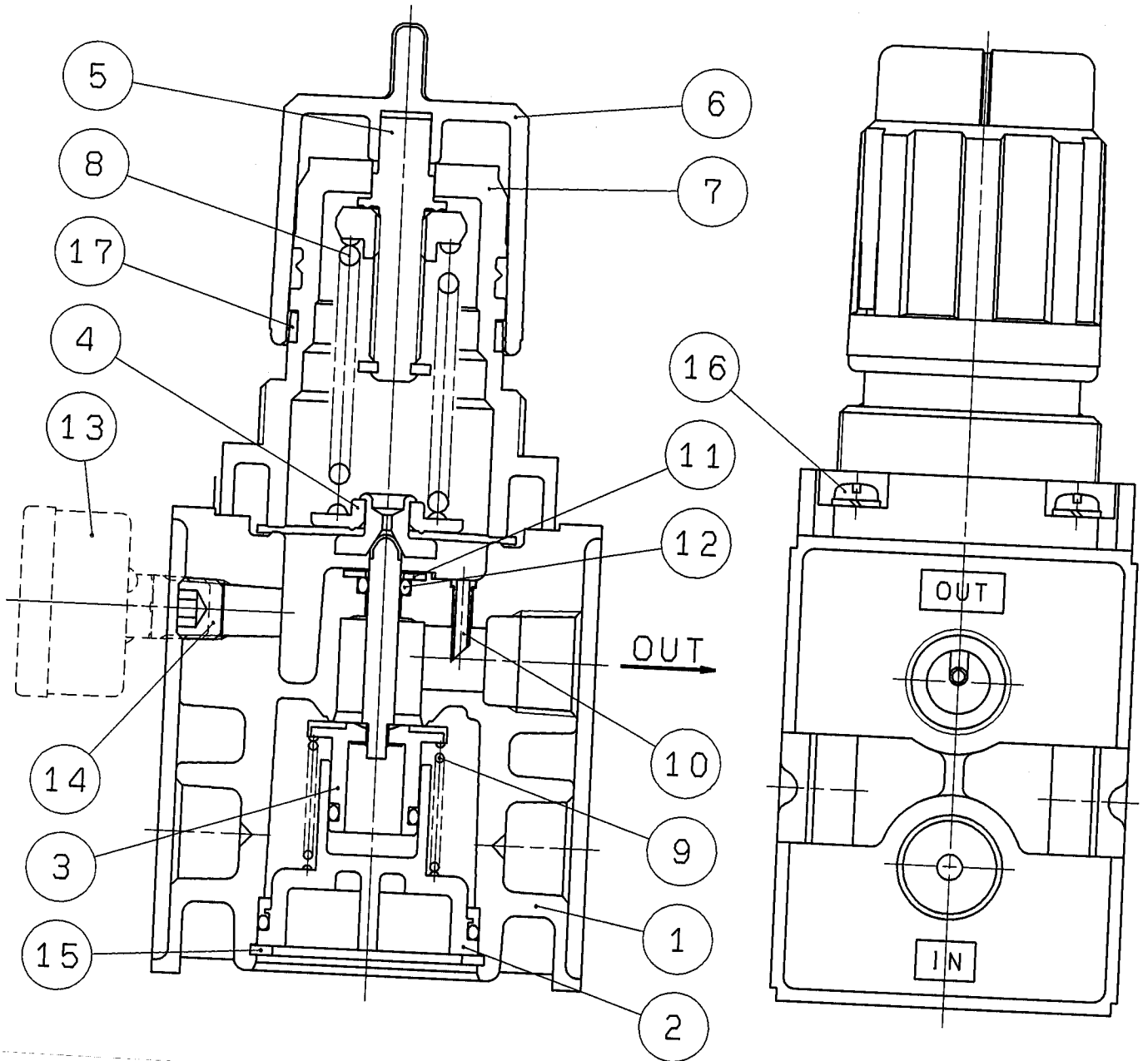
1) Regulator

① ARM2500 (Common IN)



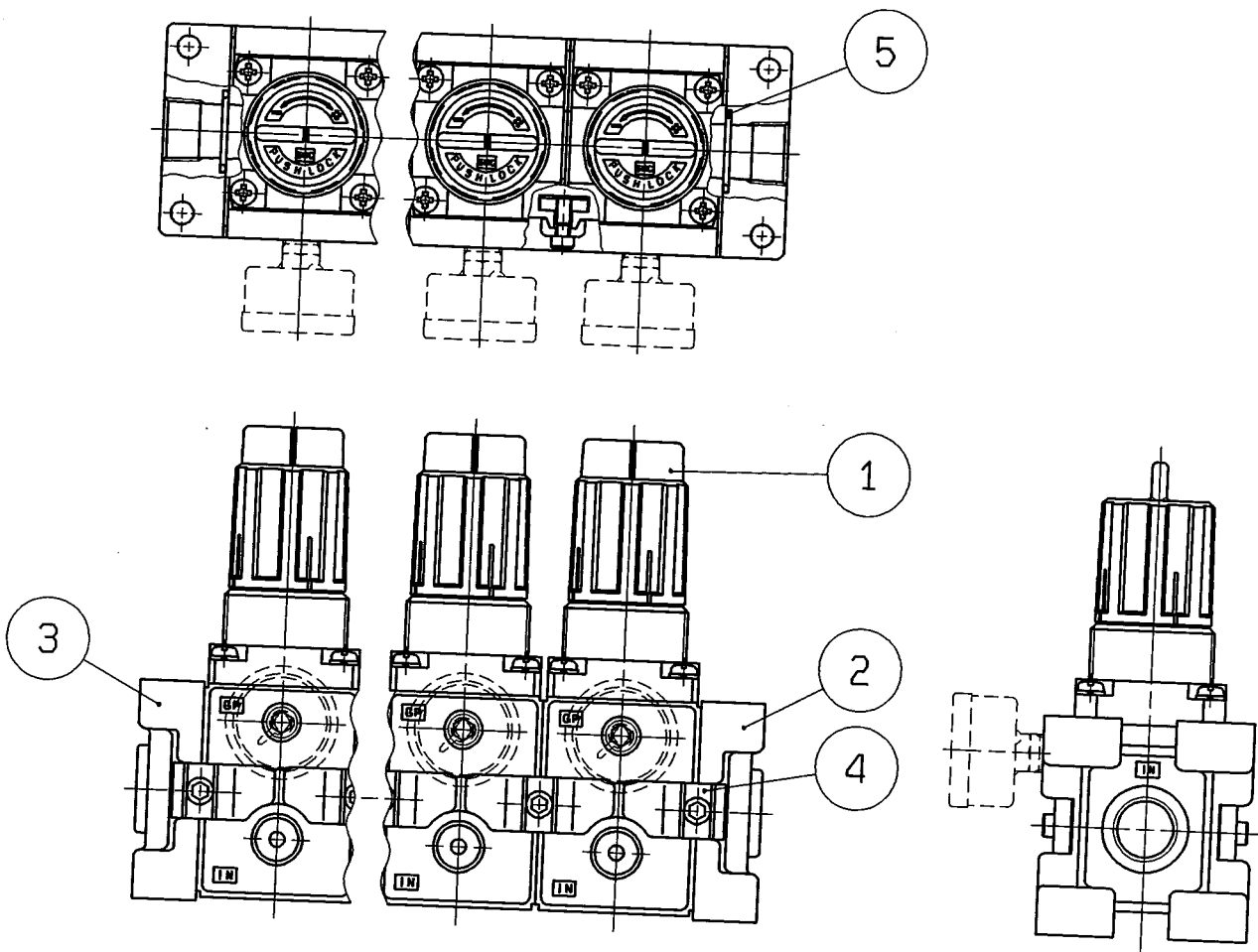
No.	Part name	No.	Part name
1	Body	9	Valve spring
2	Valve guide assembly	10	Static pressure tube
3	Valve assembly	11	"O" ring holder
4	Diaphragm assembly	12	"O" ring
5	Adjust screw assembly	13	Pressure gauge
6	Handle	14	Plug
7	Bonnet	15	Retaining ring
8	Adjust spring	16	Screw with spring washer

② ARM3000 (Common IN)



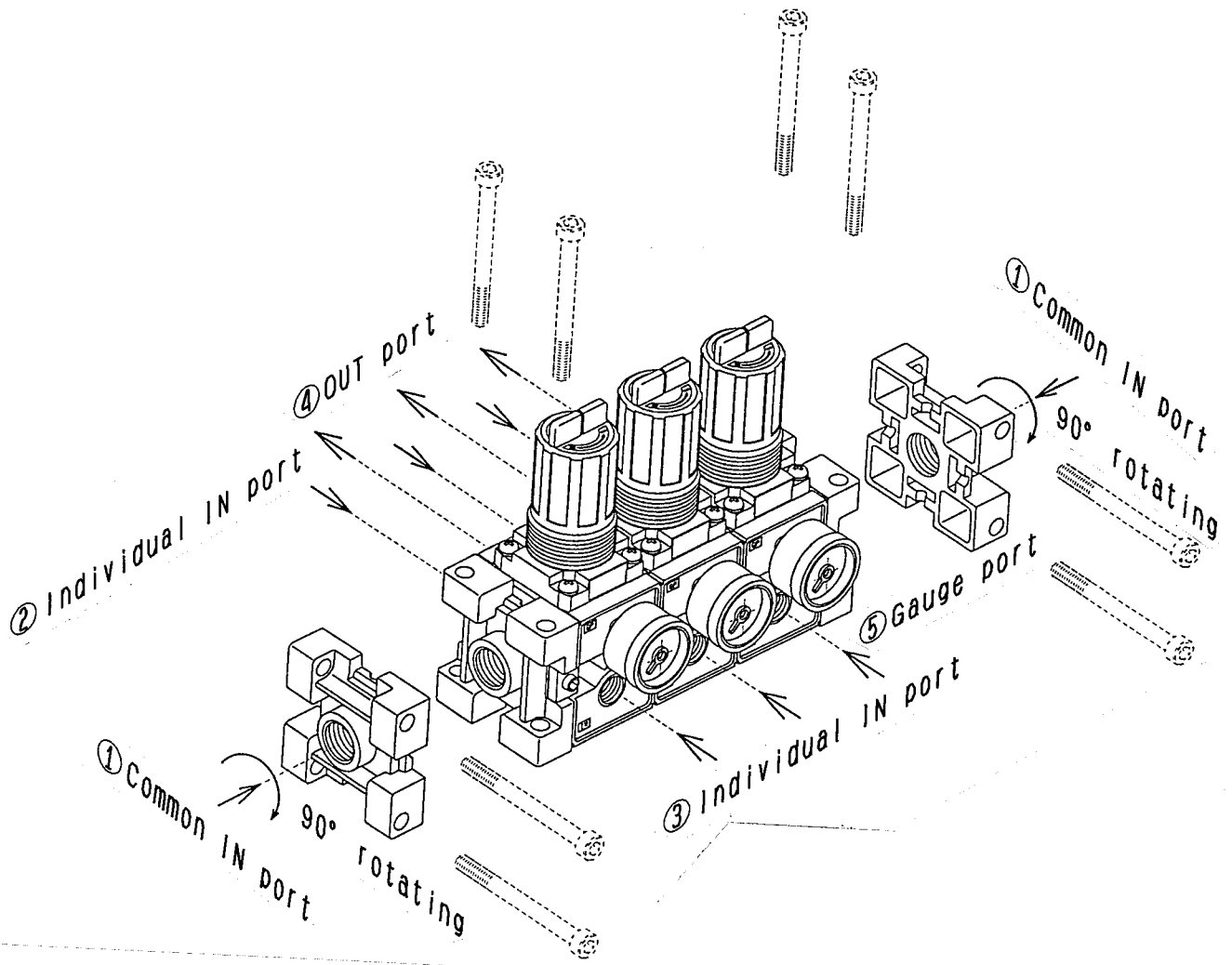
No.	Part name	No.	Part name
1	Body	10	Static pressure tube
2	Valve guide assembly	11	"O" ring holder
3	Valve assembly	12	"O" ring
4	Diaphragm assembly	13	Pressure gauge
5	Adjust screw assembly	14	Plug
6	Handle	15	Retaining ring
7	Bonnet	16	Screw with spring washer
8	Adjust spring	17	Set ring
9	Valve spring		

2) With more than 2 stations



No.	Part name	
1	Regulator	
2	End plate R	End plate assembly
3	End plate L	
4	Mounting bracket	
5	"O" ring	
4	Mounting bracket	Mounting bracket assembly
5	"O" ring	

<Example for use>



Port variation

Port type	Type	Common IN port	Individual IN port		OUT port	Gauge port
		①	②	③	④	⑤
Common IN	A	○	—	—	○	○
Individual IN	B	—	○	○	○	○

"—" part in the chart is closed its hole, and screw machining has not been performed.

8. SPARE PARTS

No.	Part name		Material		Part No.	
					ARM2500	ARM3000
3	Valve assembly		Brass bar / HNBR		13639A	13649A
4	Diaphragm assembly		Brass bar / Weatherproof NBR		1349161A	131515A
9	Valve spring		Stainless steel		136310	136410
13	Pressure gauge	G1	Japan, Asia, Europe	—	G33-10-(N) 01	
			United states	—	G33-P10-(N) 01-X30	
		G2	Japan, Asia, Europe	—	GA33-10-(N) 01	
			United states	—	GA33-P10-(N) 01-X30	