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for Future Generations



YT-200 / 205 / 220 / 225 Series

Air Filter Regulator

Product manual

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1 Introduction

1.1 General Information for the users

Thank you for purchasing Rotork YTC Limited products. Each product has been fully inspected after its production to offer you the highest quality and reliable performance. Please read the product manual carefully prior to installing and commissioning the product.

- Installation, commissioning, and maintenance of the product may only be performed by trained specialist personnel who have been authorized by the plant operator accordingly.
- The manual should be provided to the end-user.
- The manual can be altered or revised without any prior notice. Any changes in product's specification, design, and/or any components may not be printed immediately but until the following revision of the manual.
- The manual should not be duplicated or reproduced for any purpose without prior approval from Rotork YTC Limited, Gimpo-si, South Korea.
- In case of any other problems that are not stated in this manual, please make immediate contact to Rotork YTC Limited.

1.2 Manufacturer Warranty

- For the safety, it is important to follow the instructions in the manual. Manufacturer will not be responsible for any damages caused by user's negligence.
- Any modifications or repairs to the product may only be performed if expressed in this manual. Injuries and physical damages caused by customer's modifying or repairing the product without a prior consultation with Rotork YTC Limited will not be compensated. If any alterations or modifications are necessary, please contact Rotork YTC Limited directly.
- Standard type with NBR rubber (ambient temperature range option 1) is subject to damage by ozone. If you suspect that ozone may be present at the site or if supplied air is likely to contain ozone, select a high temperature version (ambient temperature range option 2) or a low temperature version (ambient temperature range option 3) with SILICONE rubber.
- The warranty period for the product is (12) months from the date of shipment unless otherwise stated. Customers can extend the warranty period by an additional (12) months by registering the product's serial number or lot number, customer information, and installation address on the warranty extension application site Product Registration (https://www.rotork.com/en/service/product-registration).
- Manufacturer warranty will not cover products that have been subjected to abuse, accidents, alterations, modifications, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; damages that occurs in shipment, due to act of God, failure due to power surge, or cosmetic damage. Improper or incorrectly performed maintenance will void this limited warranty.

- For detailed warranty information, please contact the corresponding local Rotork YTC Limited office or main office in South Korea.

2 Product Description

2.1 General

Air filter regulator, YT-200 / 205 / 220 / 225, receives the main supply air pressure and supplies to the desirable level of pressure to a positioner or other pneumatically operating devices.

2.2 Main Features and Functions

- Maintains desirable pressure level, regardless of fluctuation of the main supply pressure.
- 5 micron filter filters most particles in the main supply pressure.
- Relief function is available which discharges to the atmosphere, if the output pressure is higher than setting pressure.
- By using aluminum or stainless steel body, it has high durability in various environments.
- Manual or Auto draining is available.

2.3 Label Description

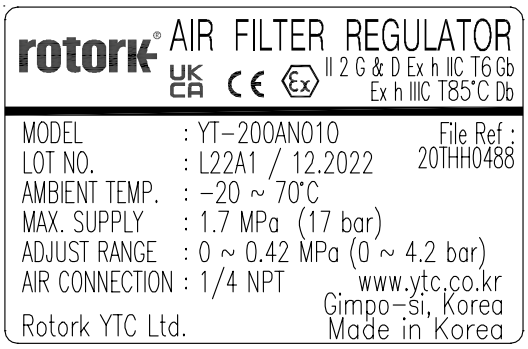


Fig. L-1: YT-200 (UKEX, ATEX)

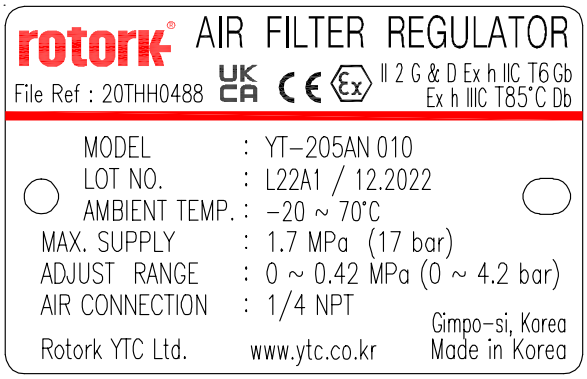


Fig. L-3: YT-205 (UKEX, ATEX)

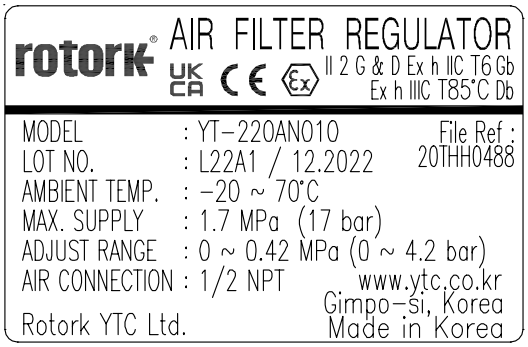


Fig. L-5: YT-220 (UKEX, ATEX)

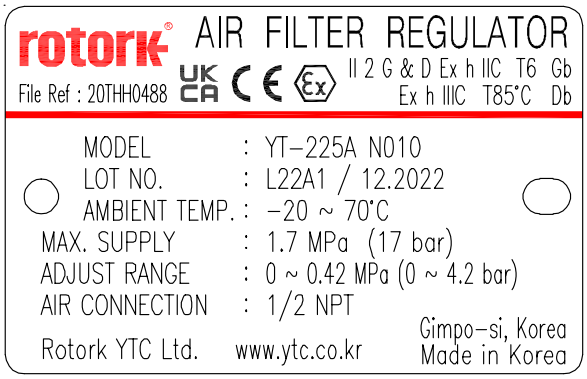


Fig. L-7: YT-225 (UKEX, ATEX)

- MODEL : Indicates the model number and additional symbols.
- LOT NO. : Indicates unique lot number.
- MONTH.YEAR : Indicates manufactured month and year.
- AMBIENT TEMP. : Indicates the allowable ambient temperature.
- MAX. SUPPLY : Indicates max. supply air pressure level.
- ADJUST RANGE : Indicates adjusting range of the output pressure.
- AIR CONNECTION : Indicates connection thread type.

2.4 Product Code

YT-200 / 205 / 220 / 225 [1] [2] [3] [4] [5]

[1]	Adjustable range	A : 0 to 0.42 MPa B : 0 to 0.84 MPa
[2]	Air Connection type	P : Rc : only YT-200 / 220 N : NPT
[3]	Gauge	0 : None 1 : 0 to 0.4 MPa 2 : 0 to 1.0 MPa
[4]	Ambient Temperature	1 : -20 to 70 °C (-4 to 158 °F) 2 : -20 to 120 °C (-4 to 248 °F) 3 : -40 to 70 °C (-40 to 158 °F) 4 : -50 to 70 °C (-58 to 158 °F)
[5]	Option	0 : Manual drain 1 : Auto drain [1)]

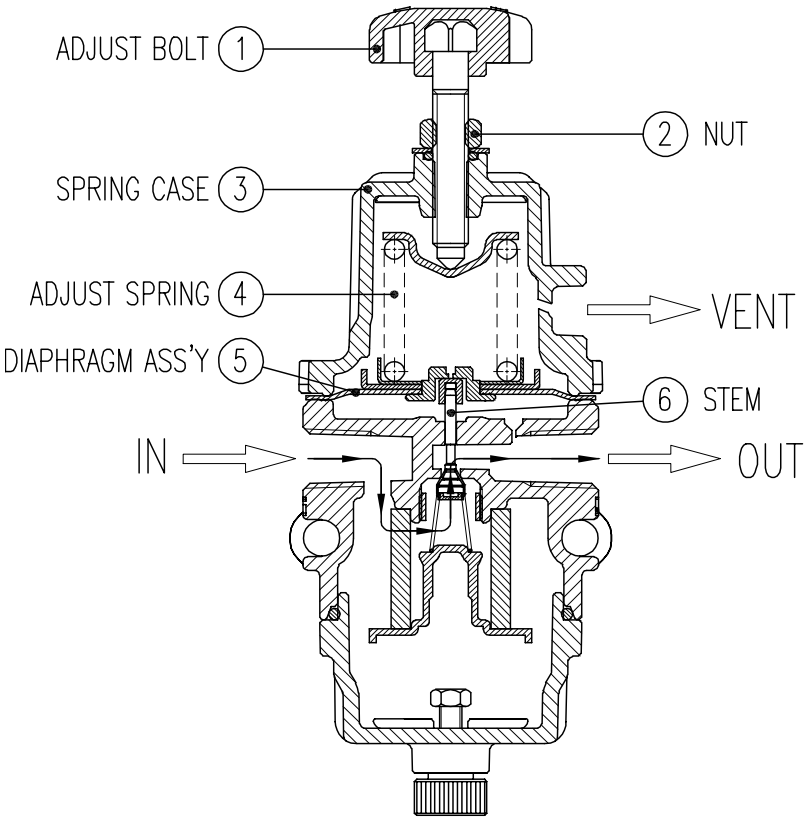
[1)] Auto drain is allowed for Only “1” of [4] Ambient temperature.

2.5 Product Specification

Model		YT-200	YT-220	YT-205	YT-225
Max. Supply Pressure		1.7 MPa (17 bar)			
Max. Out Pressure		0.42 MPa (A Type), 0.84 MPa (B Type)			
Air Connection		Rc 1/4 or 1/4 NPT	Rc 1/2 or 1/2 NPT	1/4 NPT	1/2 NPT
Gauge Connection		Rc 1/4 or 1/4 NPT	Rc 1/4 or 1/4 NPT	1/4 NPT	1/4 NPT
Ambient Temperature	**Standard**	-20 to 70 °C (-4 to 158 °F)			
	High	-20 to 120 °C (-4 to 248 °F)			
	Low	-40 to 70 °C (-40 to 158 °F)			
	Artic	-50 to 70 °C (-58 to 158 °F)			
Min. Filtering Size		5 micron			
Housing Material		Aluminum		Stainless Steel 316	
Weight	**Manual drain**	0.62 kg (1.4 lb)	0.88 kg (2 lb)	1.5 kg (3.3 lb)	2.2 kg (4.8 lb)
	Auto drain	0.71 kg (1.56 lb)	0.94 kg (2.1 lb)	1.7 kg (3.8 lb)	2.3 kg (5.1 lb)

⚠ Tested under ambient temperature of 20 °C, absolute pressure of 760 mmHg, and humidity of 65 %.
Please contact Rotork YTC Limited for detailed testing specification.

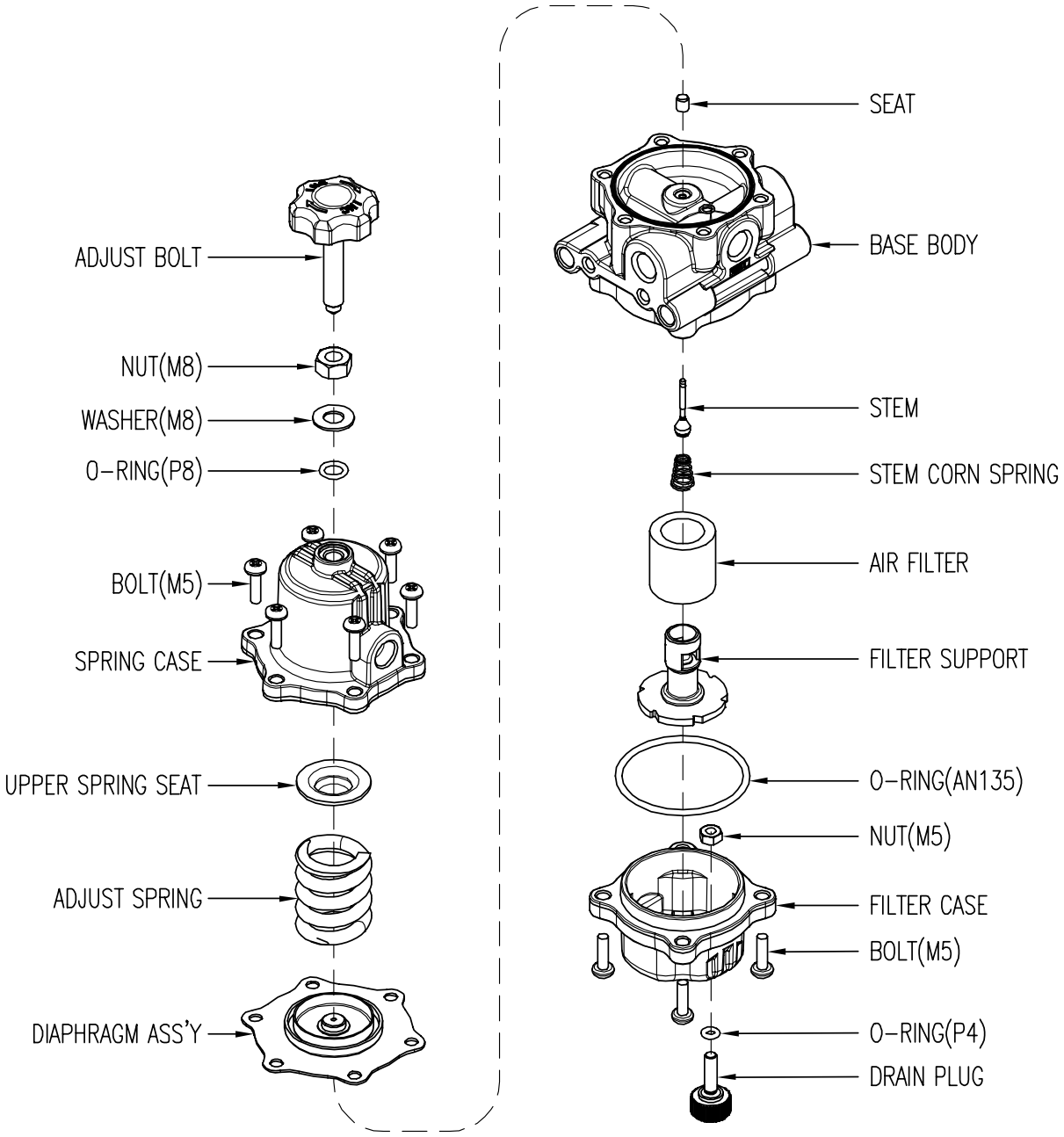
2.6 Operation Logic



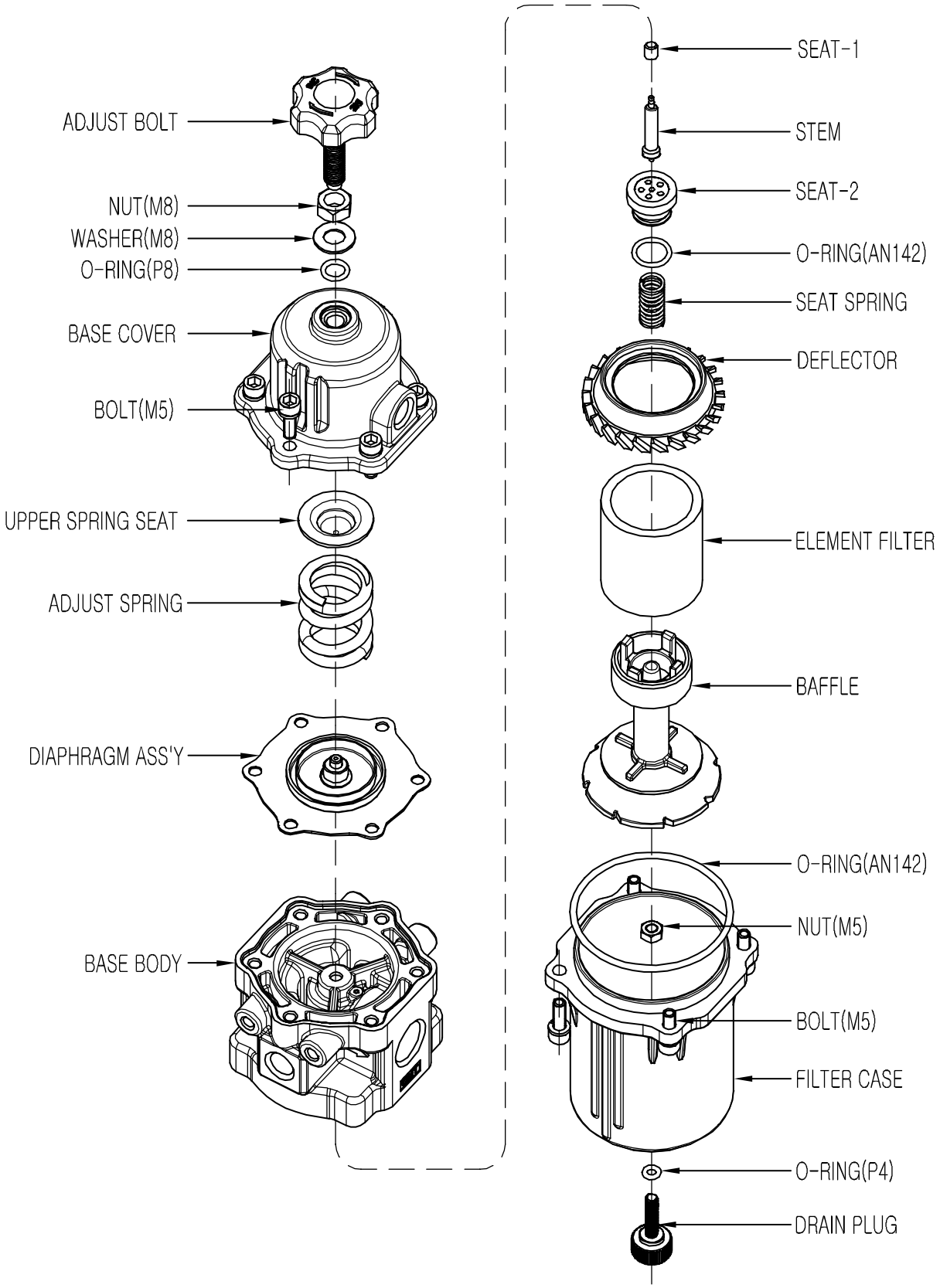
When ①the adjustment bolt is turned clockwise, ④the adjusting spring will take the force pressing ⑤the diaphragm and ⑥the stem will move downward and the supply pressure (IN) will go out to the secondary output port (OUT). When the pressure on the secondary port reaches set pressure, this pressure is transmitted to the bottom of ⑤the diaphragm through the output pressure sensing hole, and the set pressure is maintained by balancing the force with ④the adjusting spring. If the pressure on the secondary port is higher than the set pressure, the pressure delivered through the output pressure sensing hole pushes up ⑤the diaphragm and opens between the diaphragm and ⑥the stem. It is discharged to the atmosphere through ③the spring case hole to maintain the set pressure.

2.7 Parts and Assembly

2.7.1 YT-200 / 205 (Manual drain type)

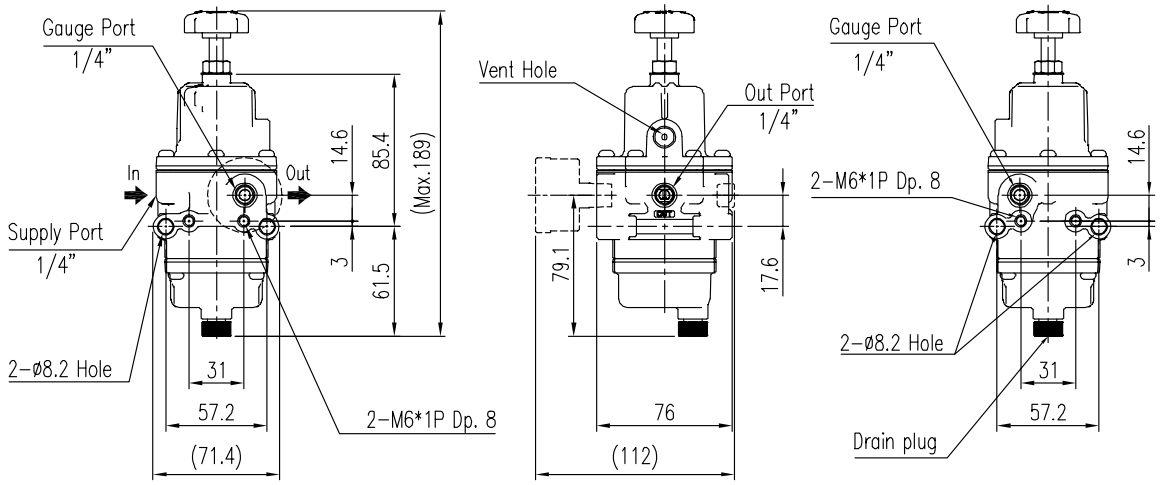


2.7.2 YT-220 / 225 (Manual drain type)

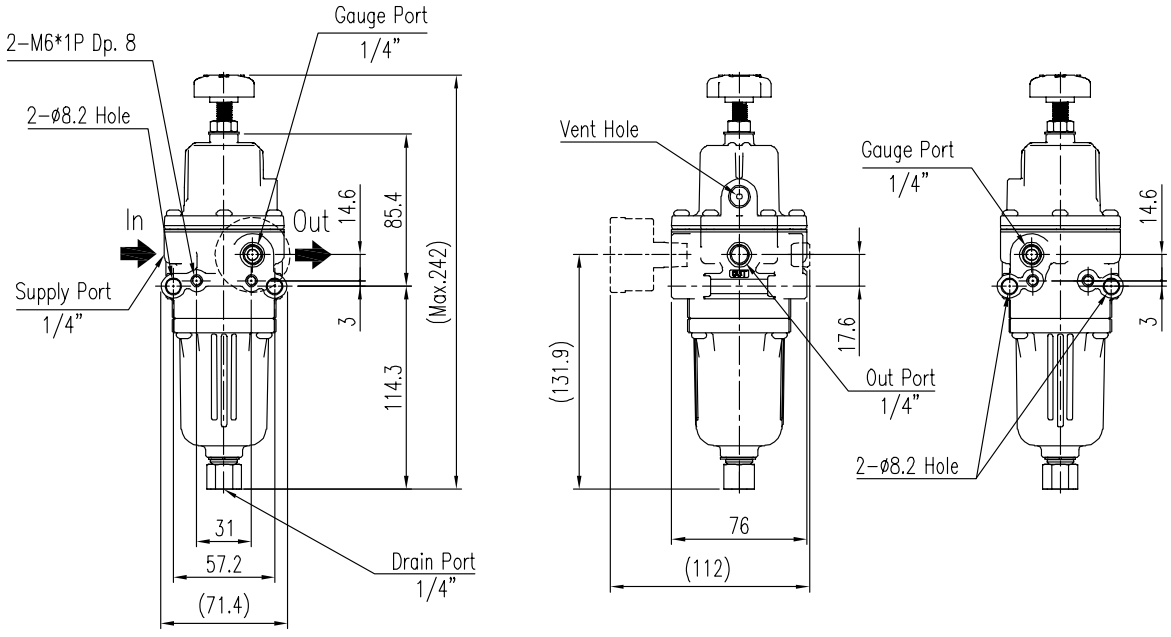


2.8 Product Dimension

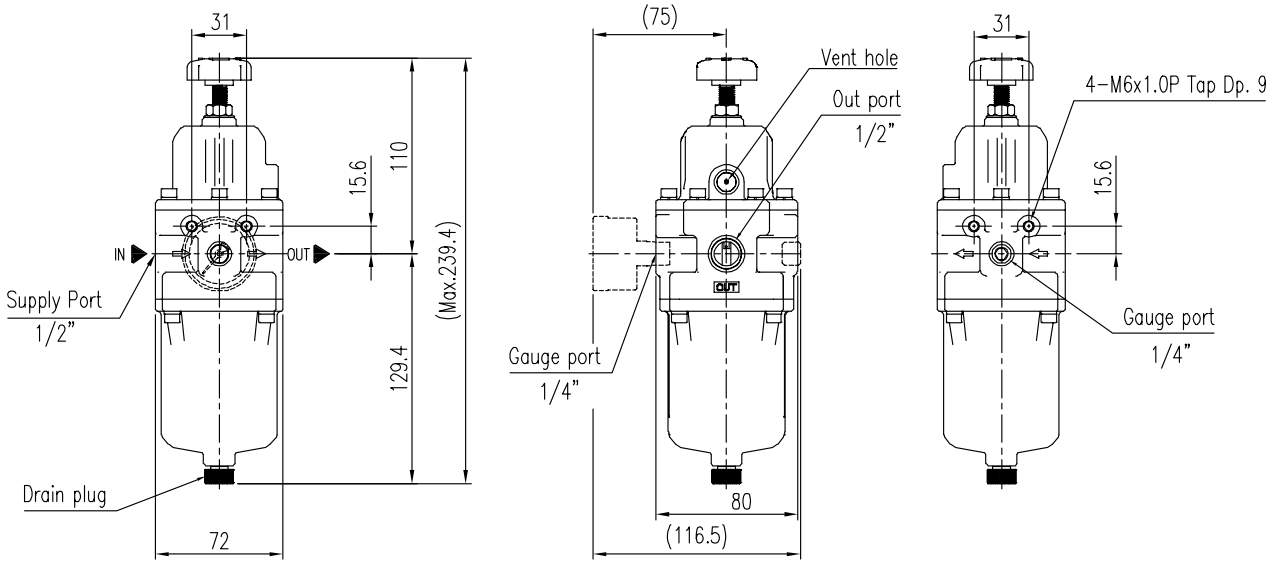
2.8.1 YT-200 / 205 (Manual drain type)



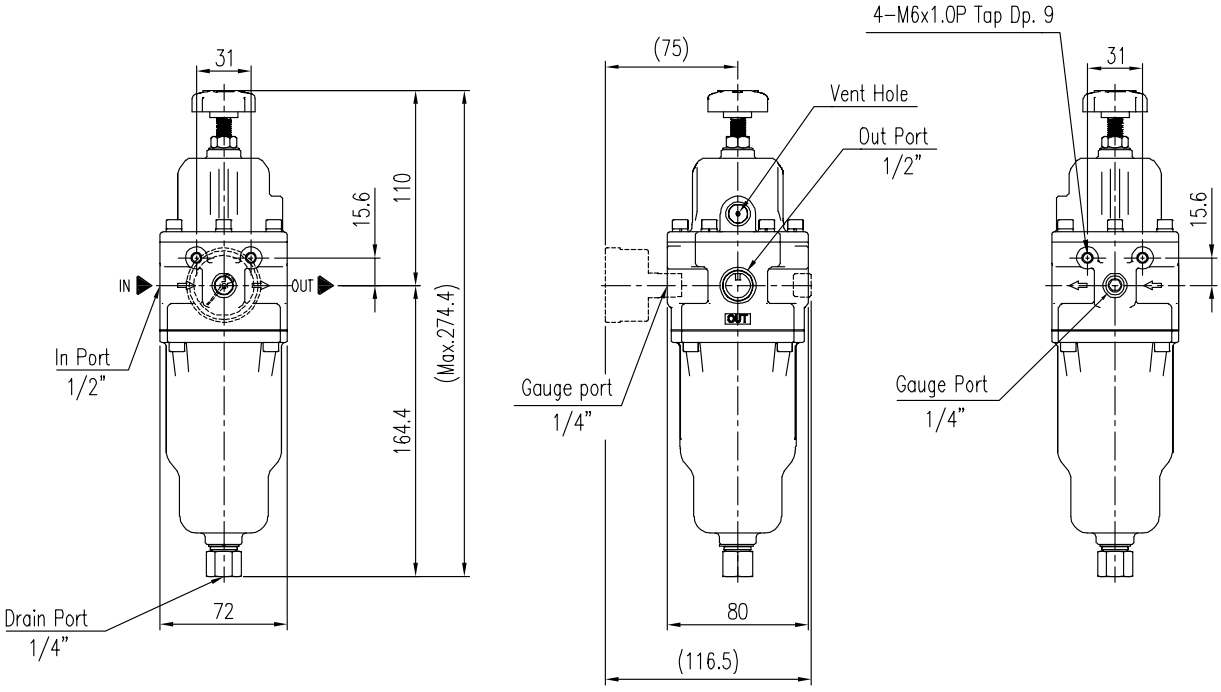
2.8.2 YT-200 / 205 (Auto drain type)



2.8.3 YT-220 / 225 (Manual drain type)

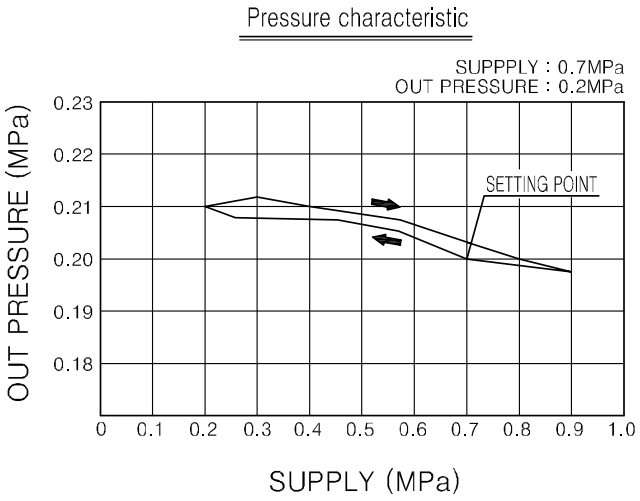


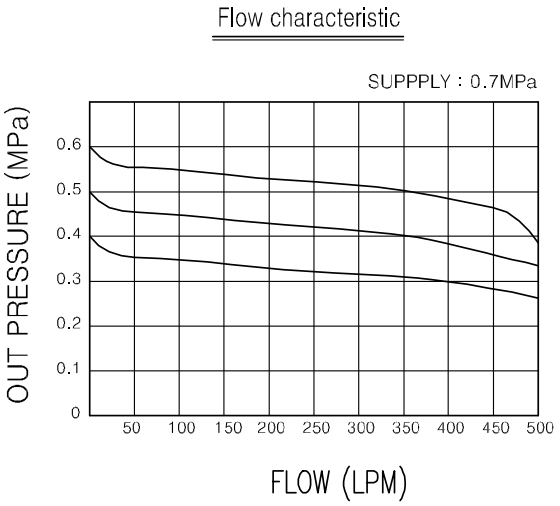
2.8.4 YT-220 / 225 (Auto drain type)



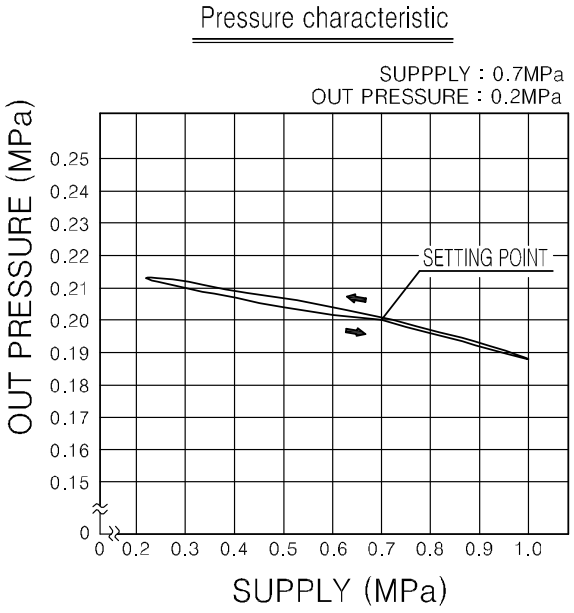
2.9 Pressure and Flow Characteristics

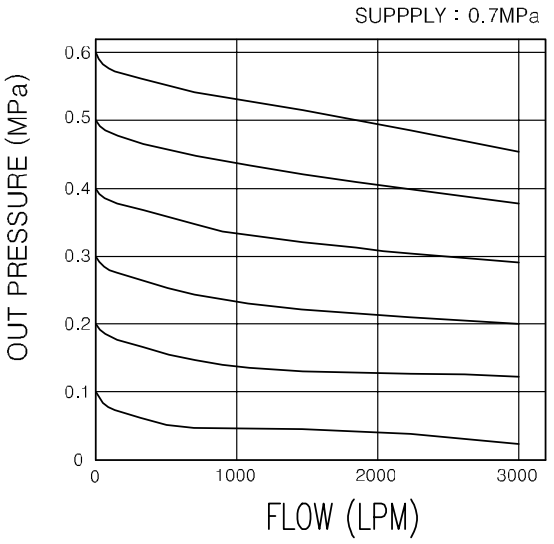
2.9.1 YT-200 / 205





2.9.2 YT-220 / 225



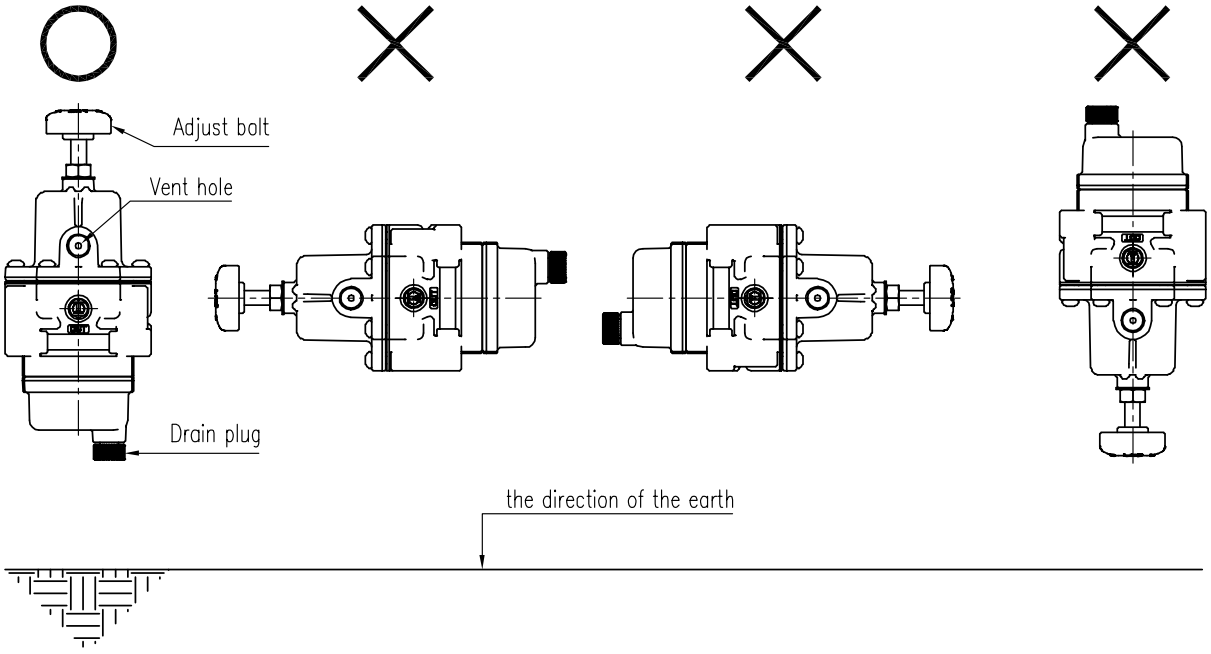


3 Installation

3.1 Safety

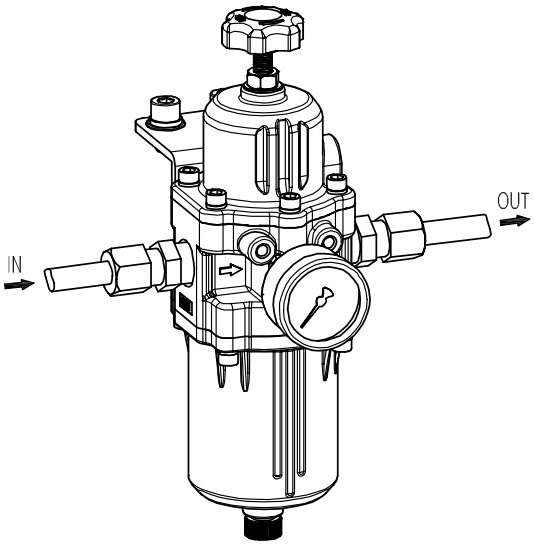
When installing a unit, please ensure to read and follow safety instructions.

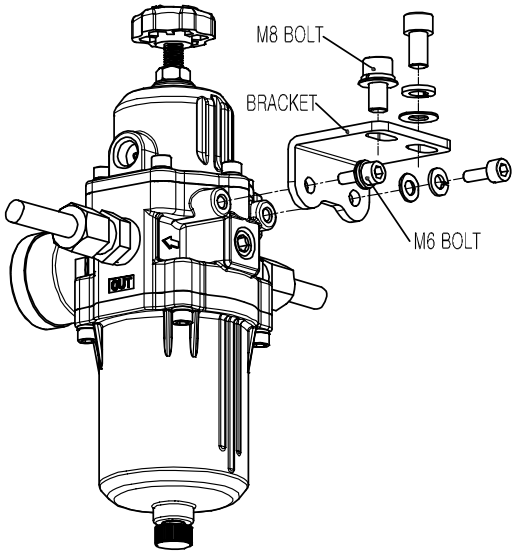
- Be sure to have protective equipment and comply with safety regulations.
- After setting the pressure, secure the nut so that the adjustment bolt does not turn.
- Supply pressure should be used with clean air.
- Use within specifications specified in the manual. Exceeding the specification may result in damage to the product or accident.
- If there is any impact on the product, it may cause malfunction or failure, so be careful during handling, installation and operation.
- For maintenance, periodically open the drain plug at the bottom of the product to discharge the condensate.
- Exhaust to the atmosphere are made through a small exhaust hole(vent hole) next to the spring case.
- Install the product with the adjustment bolt facing up. Otherwise, the life cycle of the product may be shortened or moisture and foreign substance may enter into the vent hole, leading to damaging internal parts.



3.2 Installation

- The air filter regulator can be installed with or without a bracket depending on the field conditions. The air filter regulator is used to supply constant air pressure to various devices such as positioner, actuator and solenoid valve. The product can be installed using only pneumatic piping without a separate bracket. Before connecting, be sure to blow out all piping to prevent impurities from entering in to the product and ensure that it is the right size meeting the required capacity.
- If you require brackets for installation, you can check the dimensions mentioned in the diagram on previous page and make the desired bracket type to suit each models. Below is an example of YT-220 with bracket installation.





3.3 How to Use

1) Before supplying air pressure to the product, turn the adjustment bolt counterclockwise so that the adjustment spring is not pressed at all.
2) Install a pressure gauge on the output port (OUT). This pressure gauge will show the output pressure that is depressurized from the primary pressure (IN).
3) Connect the output port to ball valves or other device with fittings, and the supply air pressure to the input port (IN).
4) Turn the adjust bolt clockwise, and then the secondary pressure goes up to the set value, turn the adjusting nut of the adjusting bolt clockwise to lock it completely to prevent the adjust bolt from moving.

4 Maintenance

4.1 Replacement of Parts (Repair Kit, Not applicable for YT-200, 220.)

YT-205 / 225 require regular maintenance. If necessary, replace the following parts.

- Ass'y-diaphragm : 1 ea

4.2 Draining condensed water

- When draining out condensed water, the main supply pressure to the product must be shut down completely or adjust the pressure level of 1 kgf/cm^2 or below.
- Slowly open drain plug to drain condensed water.
- After the draining, please close the drain plug surely.

4.3 Replacing Ass'y-diaphragm

- When replacing the ass'y-diaphragm, the main supply pressure to the product must be shut down completely or adjust the pressure level of 1 kgf/cm^2 or below.
- Loosen the nut of the adjust bolt and turn the adjust bolt counterclockwise to completely drop the output pressure to zero.
- Unscrew 6 bolts on spring case assembly in diagonal direction.
- Replace the diaphragm assembly.
- Lock the six bolts back on the spring case assembly. Be careful not to damage the diaphragm due to excessive torque when tightening.
- Raise the supply pressure to the air filter regulator and turn the adjust bolt clockwise to set the "set pressure". Tightened the nut of the adjust bolt.

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PUB126-097-00
Issue 02/25