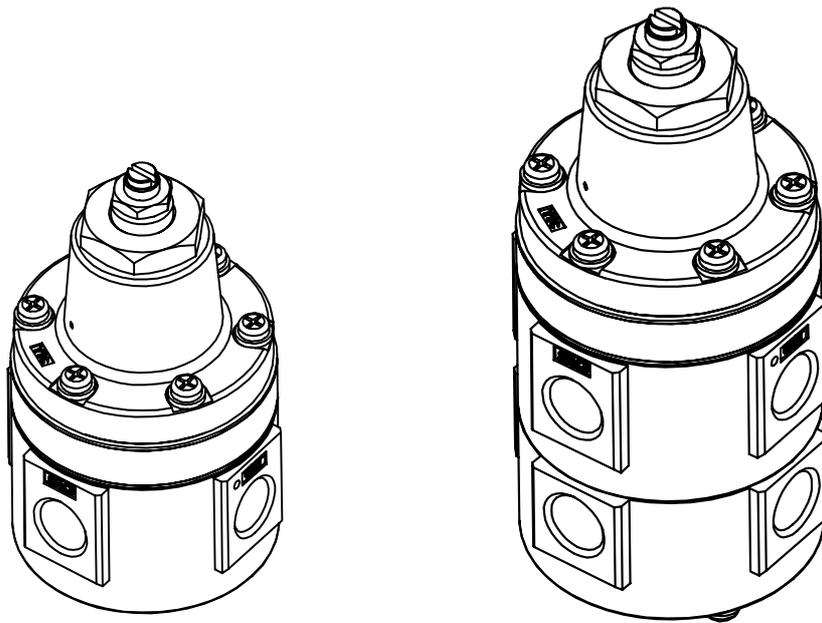


Lock Up Valves  
YT-400, YT-405

# USER'S MANUAL



YTC

V.1.01

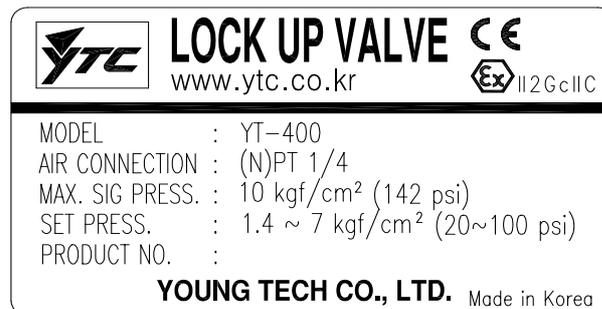
## Product Description

Lock Up Valve, YT-400 (YT-405), senses the main supply pressure and shuts down the air flow when the pressure is lower than setting level to avoid system shutdown or damages to pipelines.

## Product Characteristic

- Due to its compact size and light weight, Lock Up Valve can be installed without bracket.
- It responses to less than 0.1kgf/cm<sup>2</sup> pressure change/s.
- Epoxy powder coating resists against the corrosion.
- 100 mesh screen filters small dust entering.

## Label



- MODEL:** Indicates product's model, suffix, and options (if any).
- AIR CONNECTION:** Indicates the port size of air connection.
- MAX. SIG. PRESS.:** Indicates maximum level of signal pressure.
- SET PRESS.:** Indicates pressure range.
- PRODUCT NO.:** Indicates serial number.

## Suffix Symbol

YT-400(YT-405) follows suffix symbols as below.

**YT-400 / YT-405**    **1**    **2**

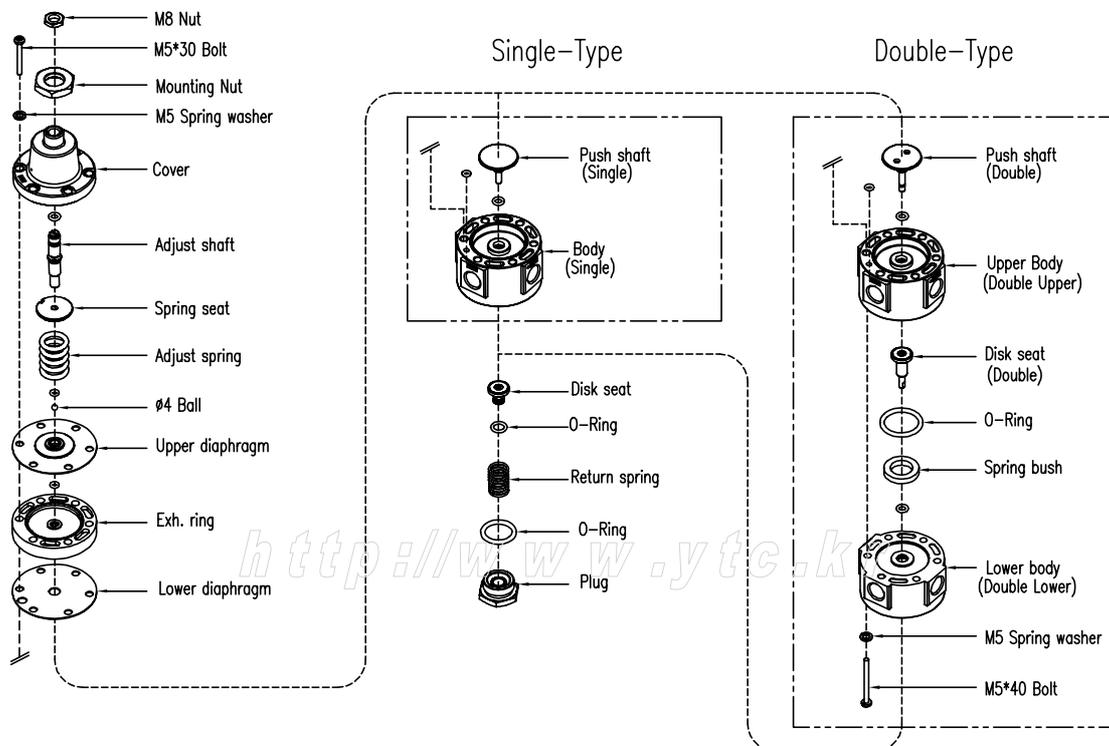
<b>1 Acting Type</b>	S : Single Acting
	D : Double Acting
<b>2 Connection Typ</b>	P : PT 1/4
	N : NPT 1/4 *

\* NPT 1/4 Connection type is only available for YT-405 model.

### Specification

Category	YT-400S	YT-400D	YT-405S	YT-405D
Max Supply Pressure	Max. 10.2kgf/cm <sup>2</sup> (142psi)			
Max Signal Pressure	Max. 7.1kgf/cm <sup>2</sup> (100psi)			
Setting Pressure Range	1.4-7.1kgf/cm <sup>2</sup> (20~100psi)			
Flow Capacity (Cv)	0.9			
In/Output Port Connection	PT (NPT) 1/4		NPT 1/4	
Signal Port Connection	PT (NPT) 1/4		NPT 1/4	
Differential Pressure	Below 0.1kgf/cm <sup>2</sup> (1.4psi)			
Hysteresis	1%			
Ambient Temperature	-20℃~70℃			
Material	Aluminum Diecasting		Stainless Steel 316	
Weight	0.15kg	0.7kg	1.1kg	1.5kg

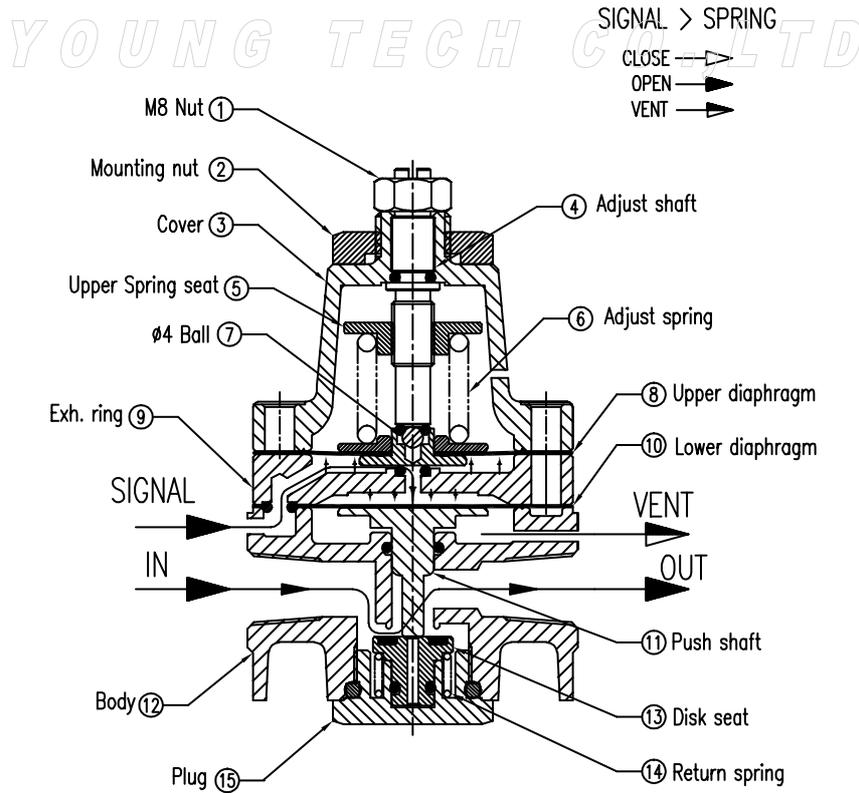
### Parts and Assembly



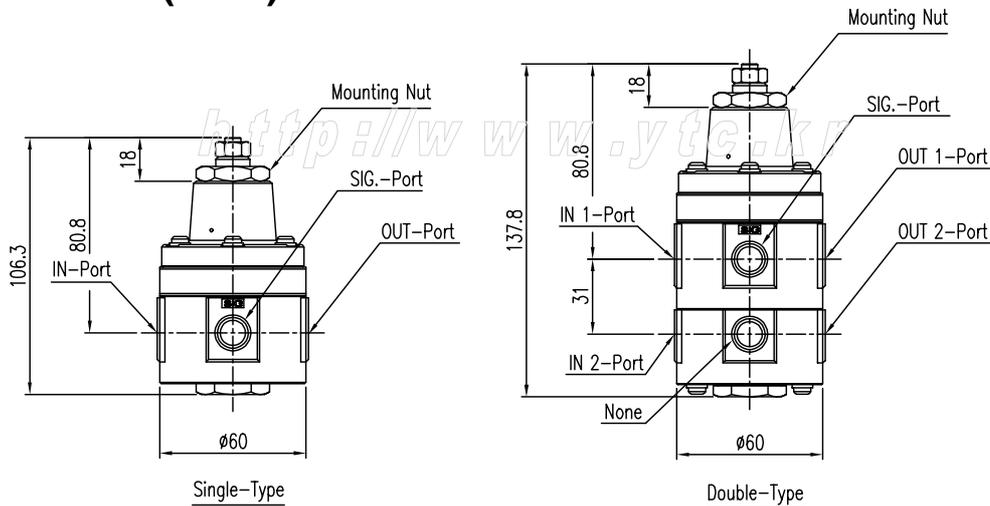
Please be knowledgeable of product's major parts and assembly steps for future maintenance.

### Operation Logic

When signal pressure is greater than setting pressure level, upper diaphragm(⑧) is being pushed upward by signal pressure. As it gets pushed upward, vent port through lower diaphragm(⑩) opens, so signal pressure pushes down lower diaphragm(⑩). Lower diaphragm(⑩) pushes push-shaft(⑪) and push-shaft(⑪) pushes disk-seat(⑬), which supply pressure will vent out through Lock Up Valve. Opposingly, when signal pressure is less than setting pressure level, upper diaphragm(⑧) is being pushed downward and lower diaphragm(⑩) will block signal-in port.  $\varnothing 4$  Ball(⑦) will be detached from upper diaphragm(⑧) and the pressure will be exhausted.



### Dimension (outer)



## Installing

### ⚠ Caution

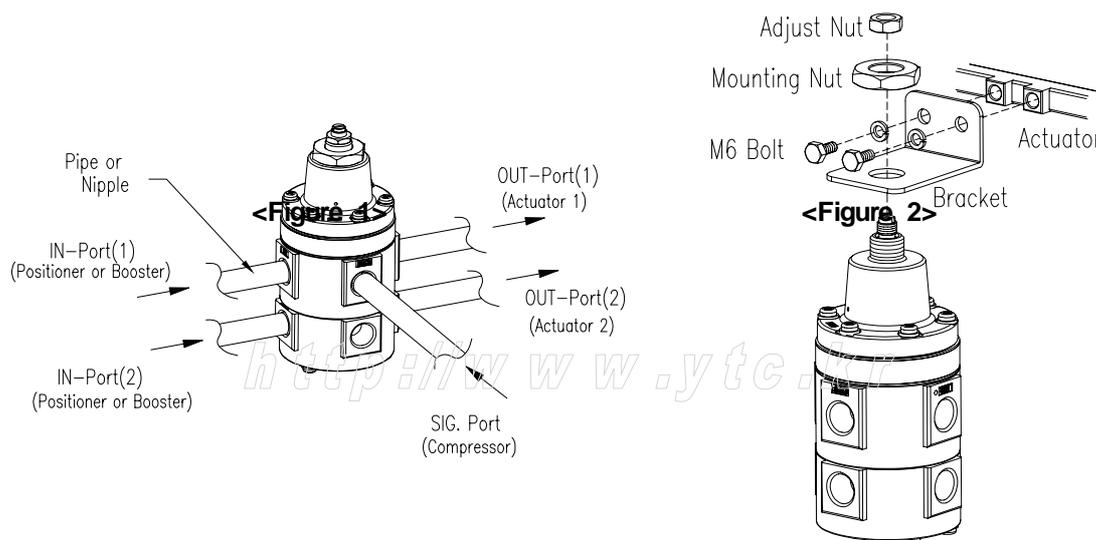
When installing the product, please follow below procedures.

- Always wear safety equipments and follow safety procedures.
- Please operate within the range of specified capacity in the manual. If exceeded, the product can be damaged and may result serious damages and accident.
- Air must be clean, dry, and non-corrosive, which must pass filter.
- Make sure no substances entering into signal pressure port. Any metal or sharp substance may damage diaphragm.
- Make sure to use pressure reading devise when setting pressure level.
- Install in correct order when other devices are being operated. Make sure the Lock Up Valve is connected to the actuator.

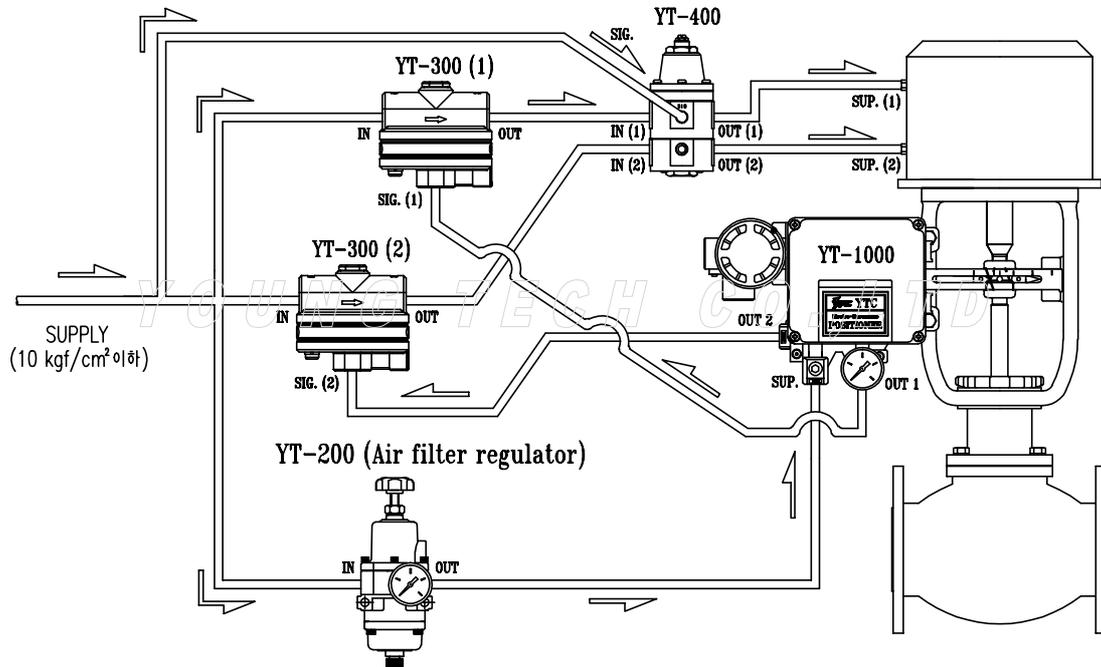
## Pipe Connection

YT-400 must be installed between actuator and positioner without a bracket <Figure 1>, which can be installed on through the pipeline. Before connecting with pipeline, please make sure pipeline is emptied, and the size of the pipeline is appropriate for required capacity.

If YT-400 must be installed on the bracket, please make a bracket according to the product's dimension. <Figure 2>

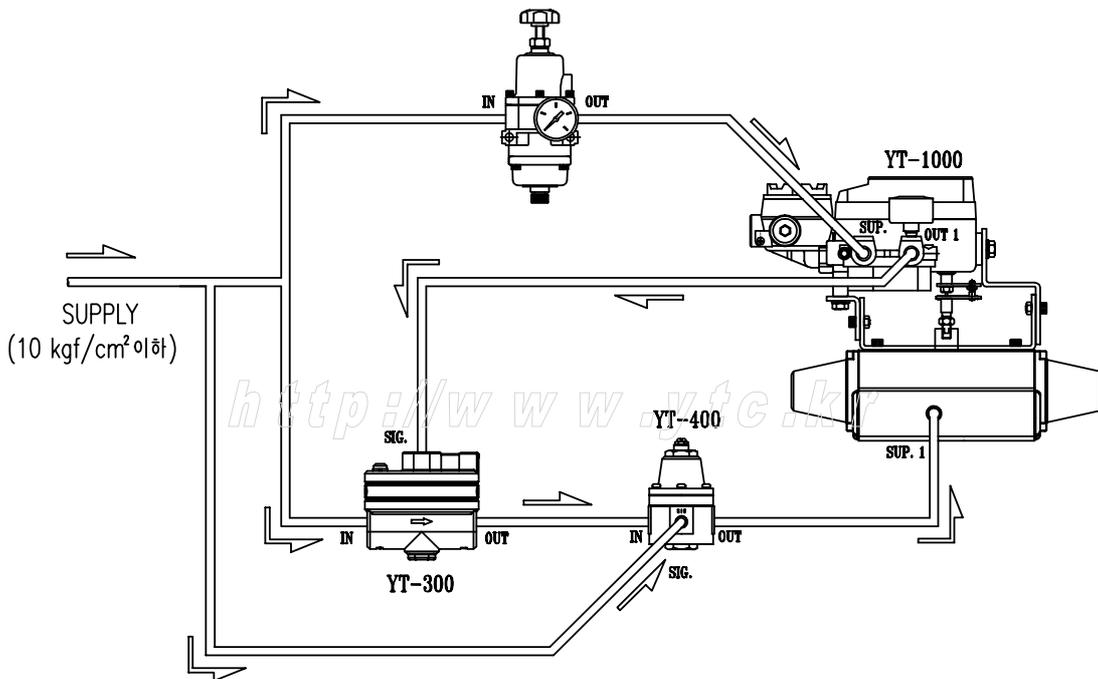


Install Example



<Linear Actuator Type>

YT-200 (Air filter regulator)



<Rotary Actuator Type>

## Maintenance

Please refer to below table (repair kit) and parts' name (pg 2). Before replacing any parts, please make sure to follow field's safety instruction and manual to avoid any accidents and damages to the product.

### Repair kit

Part Name	YT-400S, 405S	YT-400D, 405D
Upper Diaphragm Assembly	1 (set)	1 (set)
Lower Diaphragm	1 (ea)	1 (ea)
Disk	1 (ea)	1 (ea)
O-ring	7 (ea)	9 (ea)

When using Repair Kit, all of the parts must be replaced at the same time. Partial replacing part may result shortening product's life cycle.

## Troubleshooting

▶ **Lock Up Valve does not block pressure when signal pressure is lower than setting pressure level**

Please check if setting pressure is correctly set. If setting pressure is extremely high, please lower the setting pressure level. Default setting pressure level is 3 kgf/cm<sup>2</sup> when manufactured.

▶ **Lock Up Valve blocks pressure when signal pressure is higher than setting pressure level.**

Please check if setting pressure is correctly set. If setting pressure is too low, please increase the setting pressure level. Default setting pressure level is 3 kgf/cm<sup>2</sup> when manufactured.

▶ **Air pressure is exhausted through spring case holes.**

Upper diaphragm may be damaged. If it is damaged, please replace the upper diaphragm. If problem persists, please open the spring case and clean the surface.

▶ **Air pressure is exhausted through Lock Up Valve body holes.**

Either lower diaphragm or O-ring may be damaged. If lower diaphragm is damaged, please replace it. If O-ring is damaged, please contact YTC office.

## Manufacturer Warranty

- For the safety, it is imperative to follow install instruction in the manual. It is not manufacturer's responsibility for any damages due to the user's negligence.
- It is not manufacturer's responsibility for any damages or accident due to user's alteration of the product and parts. If alteration or modification is necessary, please contact the manufacturer directly.
- Manufacturer warrants the product from the date of original retail purchase of the product for one (1) year, except as otherwise stated.
- Manufacturer warranty will not cover the products that the product have been subjected to abuse, accident, alteration, modification, 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, and cosmetic damage. Improper or incorrectly performed maintenance or report voids this Limited Warranty.
- For detailed warranty information, please contact the corresponding local Young Tech Co., Ltd office or headquarter office in South Korea.

## Young Tech Co., Ltd

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User Manual and other information on the documents are subjected to change without any notice.  
Please visit website for most updated information. Printed Date: June, 2007