

# LOCK UP VALVES YT-400/405/430/435 SERIES

## PRODUCT MANUAL



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## 1. Introduction

### 1.1 General Information for the users

Thank you for purchasing Young Tech Co., Ltd 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 commission the product.

- For the safety, it is important to follow the instructions in the manual. Young Tech Co., Ltd will not be responsible for any damages caused by user's negligence.
- The manual should be provided to the end-user.
- Any modifications or repairs to the product may only be performed if expressed in this manual.
- 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 Young Tech Co., Ltd, Gimpo-si, South Korea.

### 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.
- Manufacturer will not be responsible for any damages or accidents as a result of any alteration or modification of the product and its parts. If any alteration or modifications are necessary, please contact Young Tech Co., Ltd directly.
- Manufacturer warrants the product from the date of original purchase of the product for eighteen (18) months, except as otherwise stated.
- 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 Young Tech Co., Ltd – South Korea.

## 2. Product Description

### 2.1 General

Snap acting relay, YT-400/405/430/435 series, senses the main supply pressure and shuts down the air flow when the pressure is lower than the setting level to avoid system's shut-down.

### 2.2 Main Features and Functions

- Responses to very small changes to supply pressure with high accuracy.
- Enhanced versatility by having different material of body and options.
- Internal 100 mesh screen filters small dust entering into the product.

### 2.3 Label Description

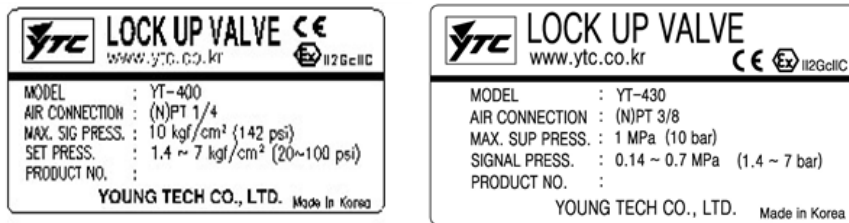


Fig. 1: YT-400/405/430/435 Body Label

- |                      |  |
|----------------------|--|
| A. Model:            | Indicates the model number               |
| B. Air Connection :  | Indicates the connection size.           |
| C. Max. Sup. Press.: | Indicates maximum supply pressure range. |
| D. Signal Press.:    | Indicates signal pressure range.         |
| E. Product No.:      | Indicates the lot number.                |

### 2.4 Product Number

YT-400 / 405/ 430 / 435    **1**    **2**    **3**

<b>1</b>	Acting Type	S	Single Acting
		D	Double Acting

<b>2</b>	Connection Type	1	PT
		2	NPT

<b>3</b>	Ambient Temp	1	-20 ~ 70 'C
		2	-20 ~ 120 'C
		3	-40 ~ 70 'C

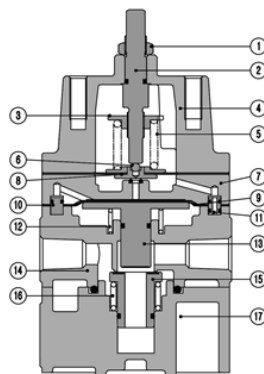
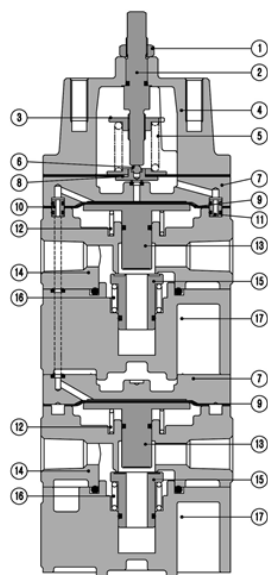
## 2.5 Product Specification

Model	YT-400		YT-405		YT-430		YT-435	
Acting Type	Single	Double	Single	Double	Single	Double	Single	Double
Signal Pressure	0.14 ~ 0.7 MPa (1.4 ~ 7 bar)							
Max Supply Pressure	1 MPa (10 bar)							
Signal Connection	PT, NPT 1/4		NPT 1/4		NPT 1/4			
In / Output Connection	PT, NPT 1/4		NPT 1/4		NPT3/8			
Flow Capacity (Cv)	0.9				1.8			
Diff. Press.	Below 0.01 MPa (0.1 bar)							
Lock up Press.	0.7 MPa (7 bar)							
Ambient Temperature	Standard Temp. :-20~70°C High Option Temp. : -20~120°C Low Option Temp: -40~70°C							
Material	Aluminum		Stainless Steel 316		Aluminum		Stainless Steel 316	
Weight	0.45 kg	0.7 kg	1.3 kg	1.5 kg	1.3 kg	2.3 kg	3.3 kg	5.8 kg



Tested under ambient temperature of 20°C, absolute pressure of 760mmHg, and humidity of 65%. Please contact Young Tech Co., Ltd for detailed testing specification.

## 2.6 Parts and Assembly

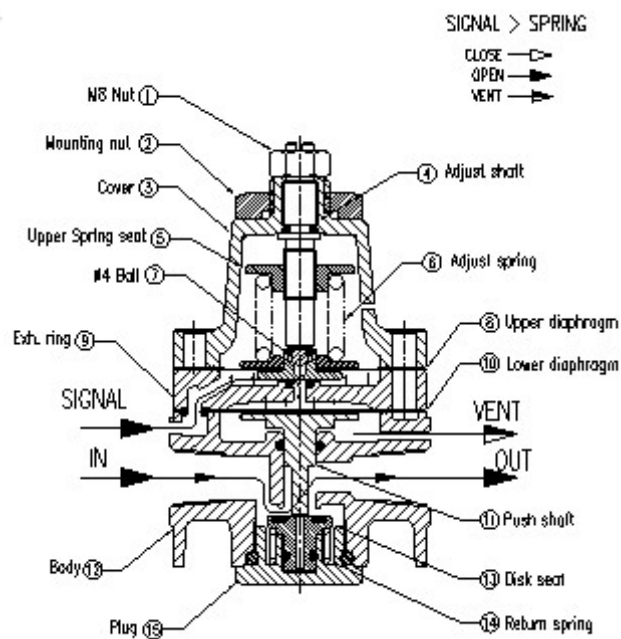


### 주요부품 리스트

NO.	PART NAME	MATERIAL
1	M8 NUT	STS 304
2	SHAFT ADJUST	STS 303
3	SEAT SPRING UPPER	C3804B0
4	COVER BASE	ALDC12
5	SPRING ADJUST	HSNG
6	#4 BALL	STS440C
7	RING EXHAUST	ALDC12
8	ASSY DIAPHRAGM UPPER	STS 303 + C3804B0 + NBR
9	DIAPHRAGM LOWER	NBR
10	TUBE SIGNAL-1	AL
11	TUBE SIGNAL-2	AL
12	SPRING PUSHER	STS 304
13	PUSHER	C3804B0
14	BODY LOWER	ALDC12
15	SEAT	C3804B0 + NBR
16	SPRING SEAT	STS 304
17	BODY BASE	ALDC12

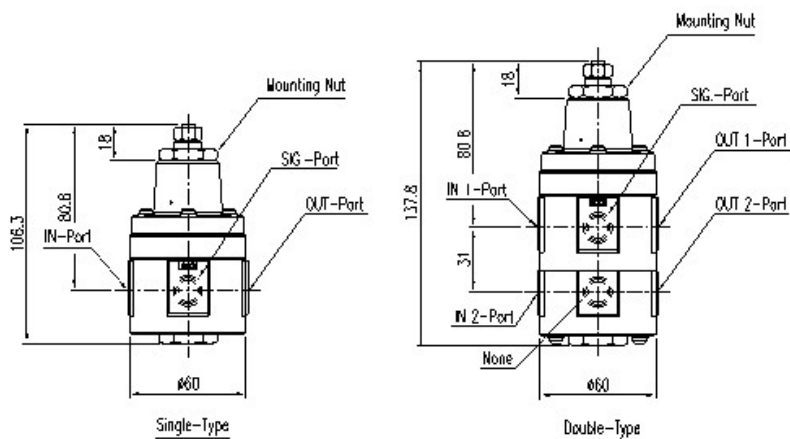
## 2.7 Operation Logic

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.

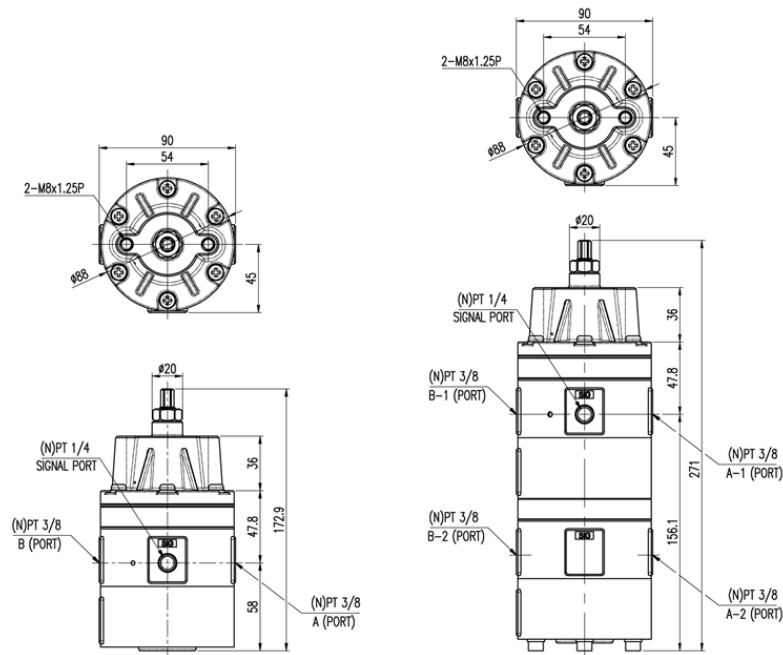


## 2.8 Dimension

### 2.8.1 YT-400 & YT-405



## 2.8.2 YT-430 & YT-435



## 3. Installation

### 3.1 Safety

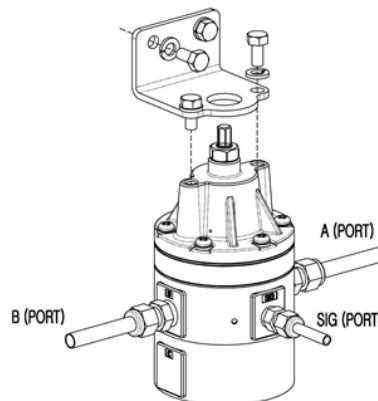
When installing a unit, please ensure to read and follow safety instructions.



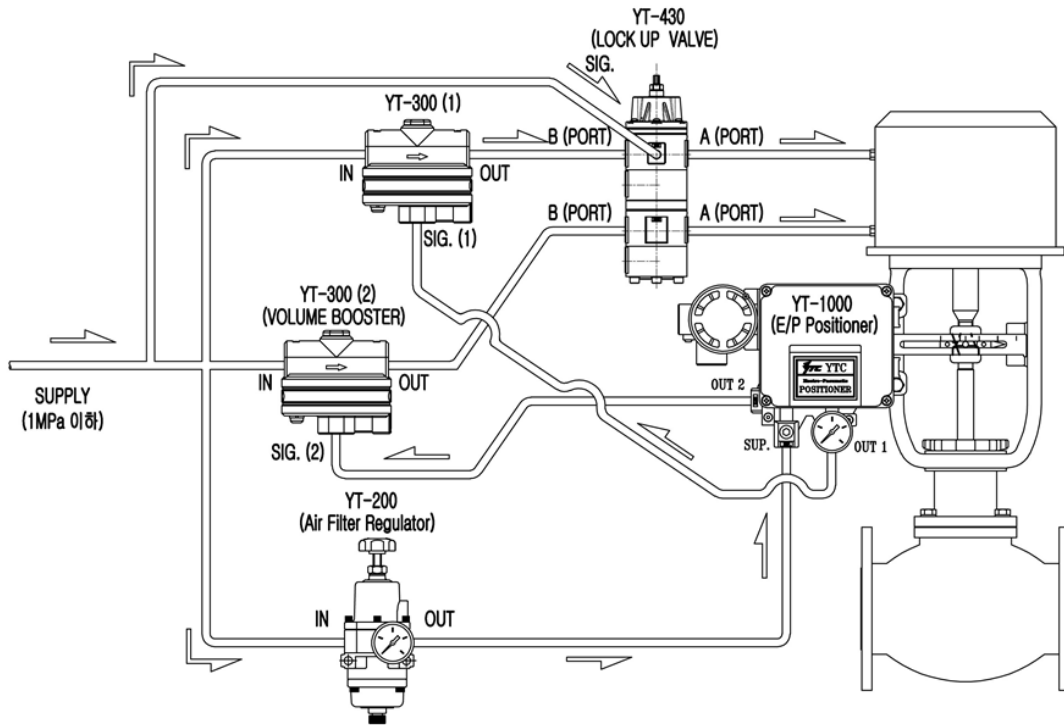
- Check unit's specification and ensure to use as specified.
- Use bypass valve or other supportive equipment to avoid entire system "shut down".
- Ensure to use filter regulator.
- Use manometer to monitor the pressure level when setting the pressure level.

### 3.2 YT-400/405/430/435 Installation

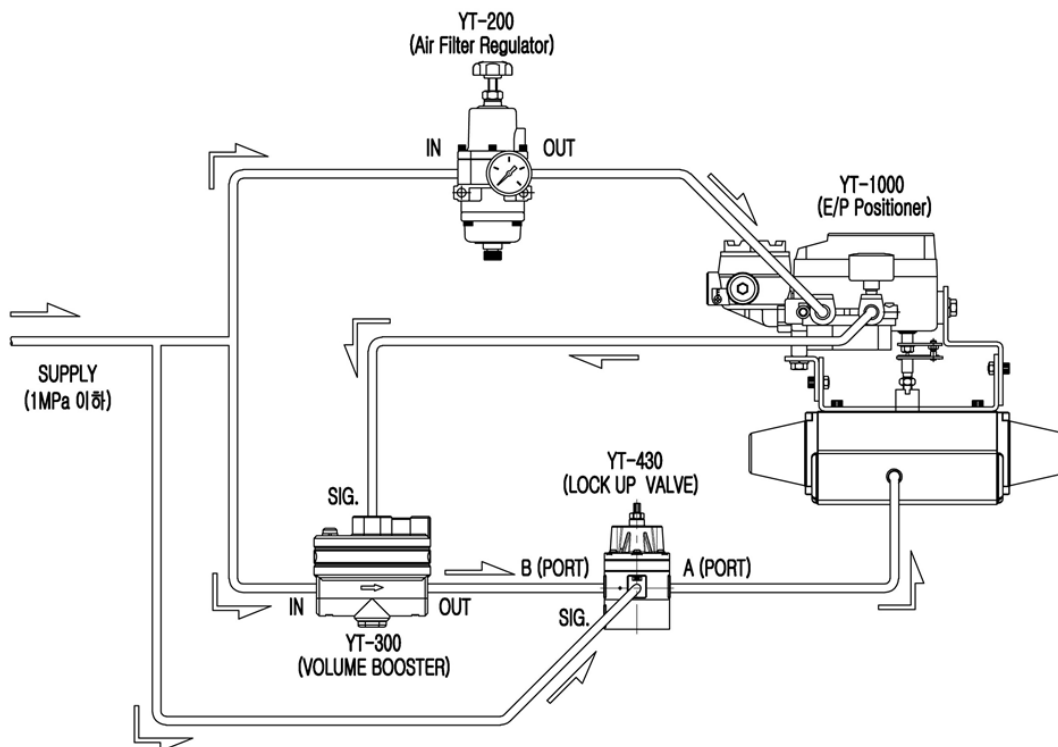
YT-400/405/430/435 can be installed with or without a bracket depending on the field requirement. Please refer to YT-400/405/430/435 dimension to build appropriate bracket, if required.



### 3.3 Installation Example



Double acting linear actuator



Single acting rotary actuator



## 4. Maintenance

4.1 YT-400/405/430/435 requires regular maintenance. Please refer to below repair kit part list. It is suggested to replace all three parts at the same time to guarantee the life cycle of the product.

- Upper diaphragm assembly: 1 each
- Lower diaphragm: 1 each
- O-rings: 2 each

## 5. Trouble-Shooting

Please follow trouble-shooting when the product is not functioning properly.

- Lock up valve does not block pressure when signal pressure is lower than setting pressure level.
  - Please check if the setting pressure level is correct. If the setting pressure level is extremely high, please lower the setting pressure level. The factory default setting pressure level is 3 kgf/cm<sup>2</sup>.
- Lock up valve blocks pressure when signal pressure is higher than setting pressure level.
  - Please check if the setting pressure level is correct. If the setting pressure level is extremely low, please raise the setting pressure level. The factory default setting pressure level is 3 kgf/cm<sup>2</sup>.
- Supply pressure is leaking through the cover holes.
  - Please check if the upper diaphragm assembly has been damaged on the diaphragm surface.

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**Manufacturer:****Young Tech Co., Ltd**

#3022, Hagun-ri, Yangchon-myeon

Kimpo-si, Kyeonggi-do, 415-843

South Korea

Tel: +82-31-986-8545

Fax: +82-31-986-2683

Email: [ytic@ytic.co.kr](mailto:ytic@ytic.co.kr)

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