

# SANP ACTING RELAYS YT-520/525 SERIES

PRODUCT MANUAL

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## Contents

<b>1. Introduction</b> .....	<b>3</b>
1.1 General information for the users .....	3
1.2 Manufacturer Warranty .....	3
<b>2. Product Description</b> .....	<b>4</b>
2.1 General .....	4
2.2 Main Features and Functions .....	4
2.3 Label Description .....	4
2.4 Product Number .....	4
2.5 Product Specification .....	5
2.6 Parts and Assembly .....	5
2.7 Operation Logic .....	6
2.8 Dimension .....	7
<b>3. Installation</b> .....	<b>7</b>
3.1 Safety .....	7
3.2 YT-520/525 Installation .....	7
3.3 Installation Example .....	8
<b>4. Maintenance</b> .....	<b>9</b>
<b>5. Trouble-Shooting</b> .....	<b>9</b>

# 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 one (1) year, 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-520/525 series, senses supply pressure and changes the direction of the supply air flow when the supply pressure level is **lower** than setting pressure level. By using snap acting relay, valve system can “fail freeze” as the supply pressure fails.

### 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

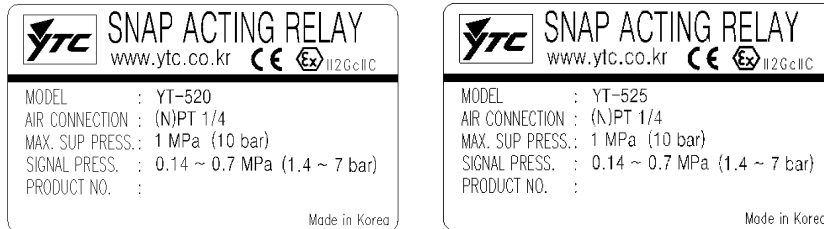
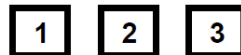


Fig. 1: YT-520/525 Body Label

- |                      |  |
|----------------------|--|
| 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-520 / 525



<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

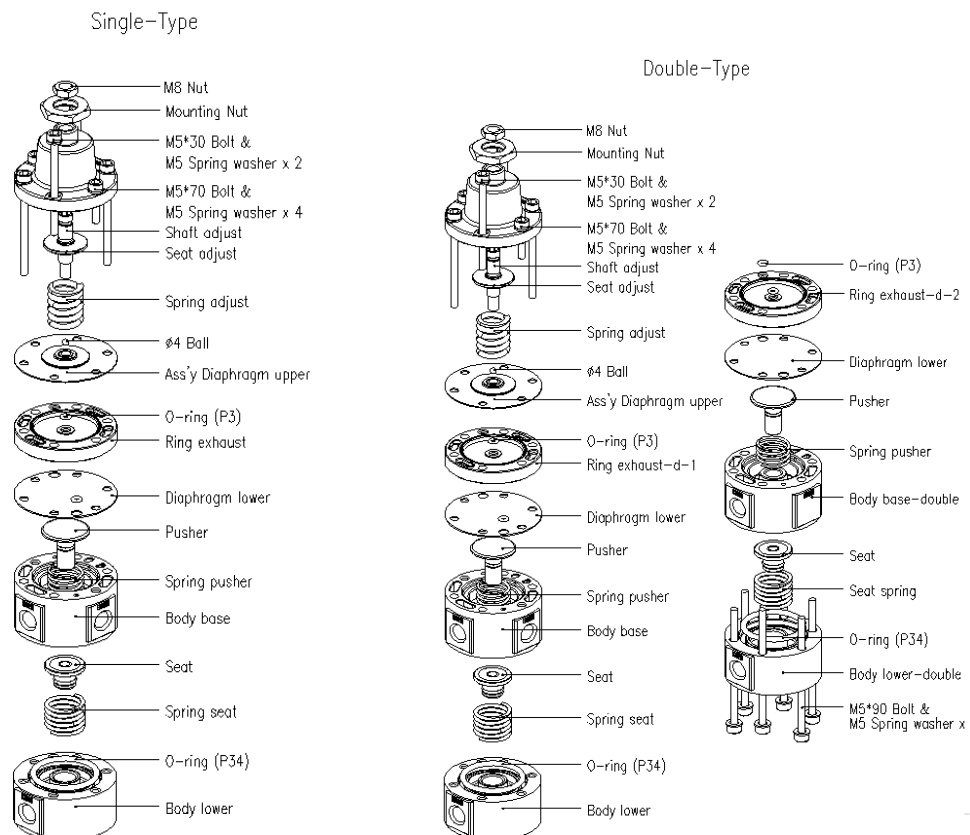
## 2.5 Product Specification

Model	YT-520		YT-525	
Acting Type	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	
In / Output Connection	PT, NPT 1/4		NPT 1/4	
Flow Capacity (Cv)	0.9			
Sensitivity	0.01 MPa			
Ambient Temperature	Standard Temp. :-20~70°C High Option Temp. : -20~120°C Low Option Temp: -40~70°C			
Material	Aluminum		Stainless Steel 316	
Weight	0.73 kg	1.2 kg	1.66 kg	3.1 kg

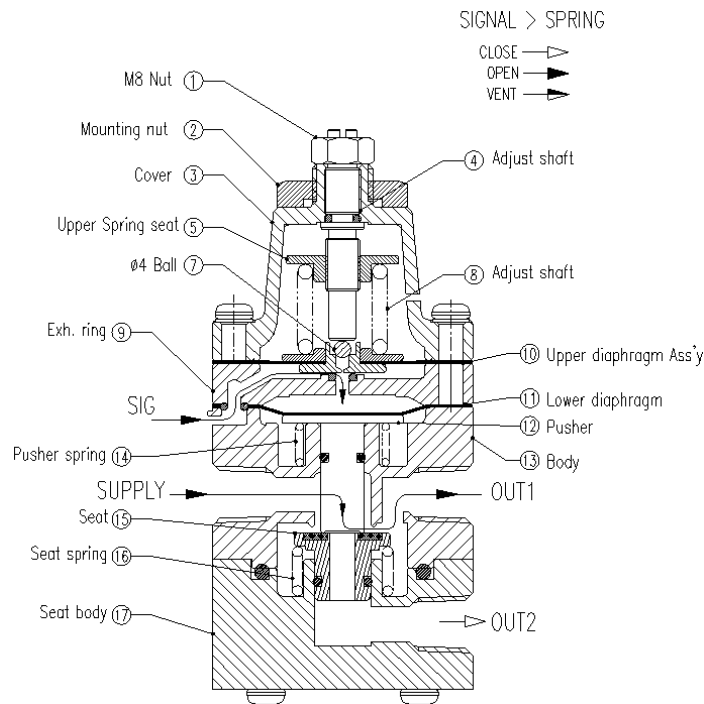


Tested under ambient temperature of 20°C, absolute pressure of 760mmHg, and humidity of 65%. Please contact Young Tech Co., Ltd for detailed testing specification.

## 2.6 Parts and Assembly

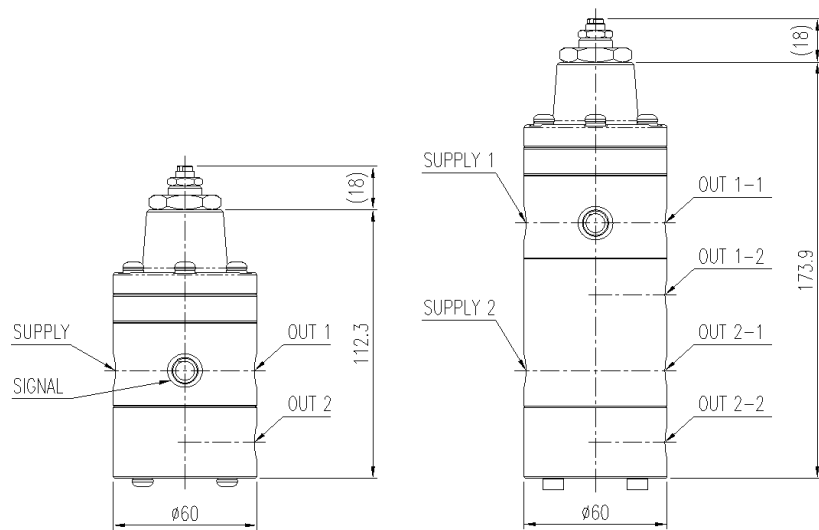


## 2.7 Operation Logic



When the signal (main) pressure is higher than the setting pressure level, the signal pressure pushes the upper diaphragm (10), and the pressure will be directed to lower chamber and pushes lower diaphragm (11). Lower diaphragm (11) pushes the pusher (12) and the seat (15), and the air channel to OUT1 port will be opened, and the supply pressure will be directed to OUT1 port. When the signal (main) pressure is lower than the setting pressure level, the upper diaphragm (10) will be pushed down and will block the channel to the lower chamber. Pressure from the lower chamber will be exhausted through the hole in the middle of the upper diaphragm (10), and as the pressure gets lower in the lower chamber, the lower diaphragm (11) will be lifted, and the pusher (12) and seat (15) will be disconnected. The supply pressure will be directed to OUT2 port through the seat (15).

## 2.8 Dimension



## 3. Installation

### 3.1 Safety

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

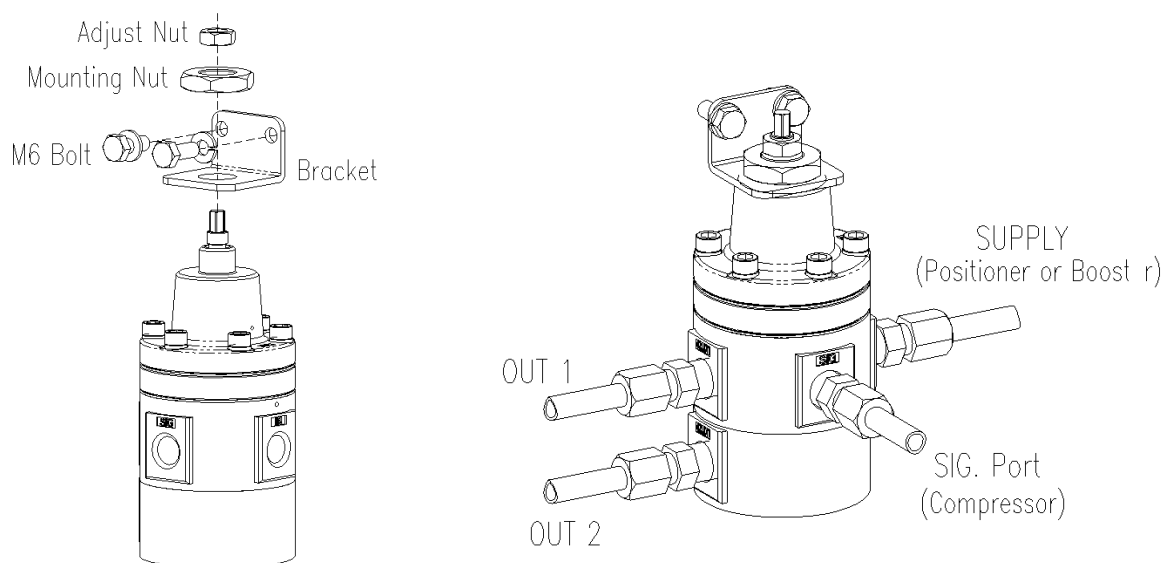


- Check unit's specification and ensure to use as specified.
- Use bypass valve or other supportive equipment to avoid entire system "shut down".
- Ensure to use filter regulator.
- Use manometer to monitor the pressure level when setting the pressure level.

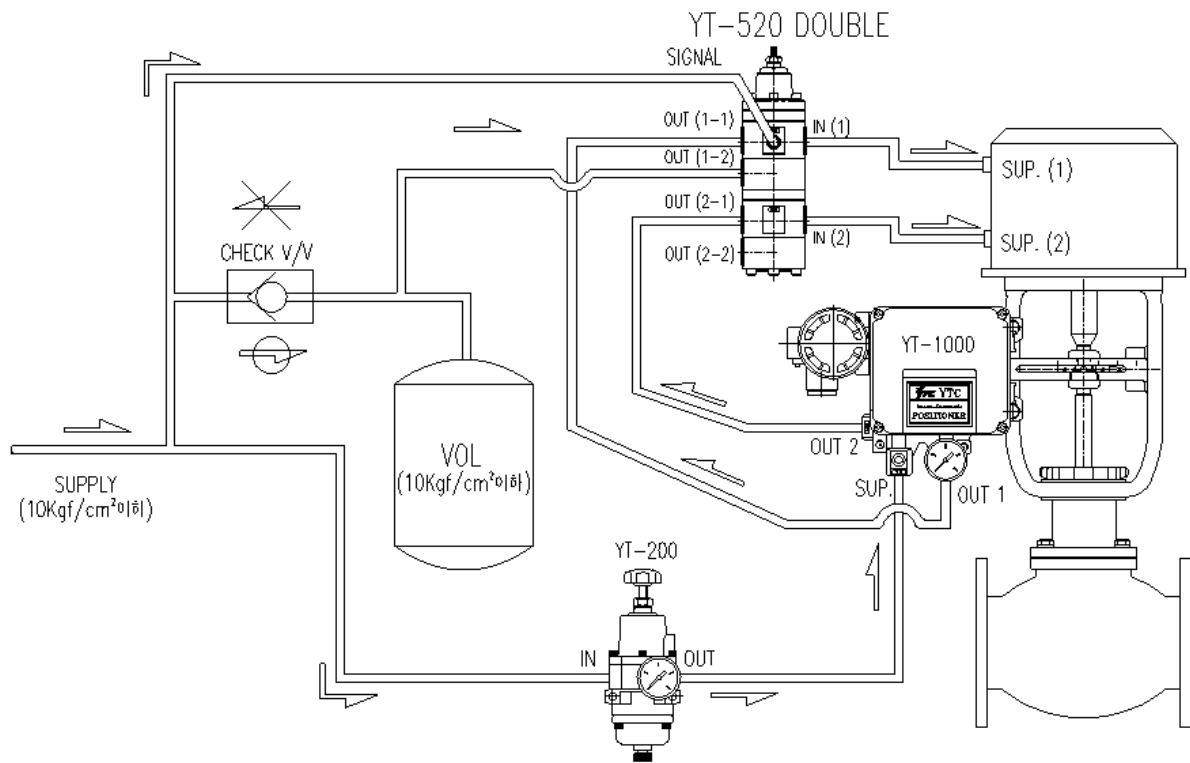
### 3.2 YT-520/525 Installation

YT-520/525 can be installed with or without a bracket depending on the field requirement.

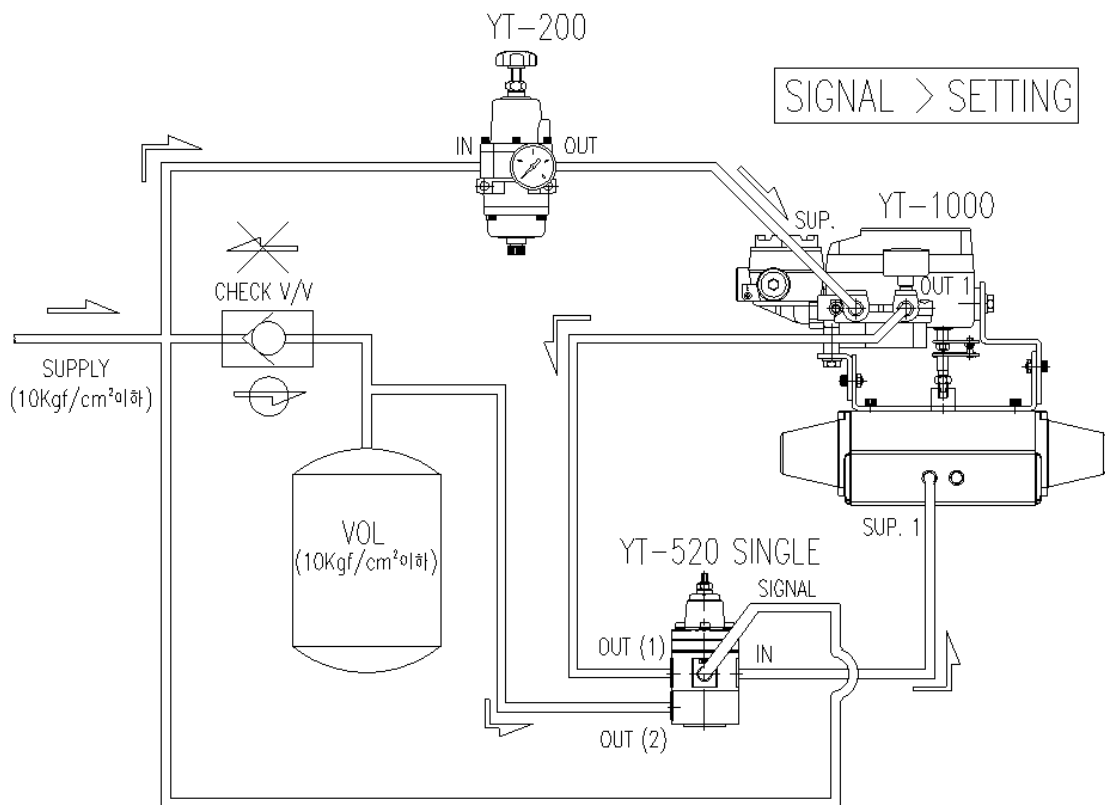
Please refer to YT-520/525 dimension to build appropriate bracket, if required.



### 3.3 Installation Example



Double acting linear actuator



Single acting rotary actuator



## 4. Maintenance

4.1 YT-520/525 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.

- Supply pressure is not being directed to OUT2 port when the signal pressure is lower than the 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>.
- Supply pressure is not being directed to OUT1 port when the signal pressure is higher than the 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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