



GENERAL KNOWLEDGE

General Instruction for Solenoid

For your own safety, please read the instruction below before you inquiring / using our products.

Application

- Fluid in the pipeline MUST BE same as instruction shows on a solenoid.
- The fluid's temperature needs to be lower than valve's standard temperature.
- Our products normally allowed fluid's viscosity under 20 CST.
- If the highest working pressure difference lower than 0.05 MPa, please select Direct-Acting type. If the difference higher than 0.05 Mpa, please select Pilot-Operated type (Diaphragm type).
- Originally our products are working ONE DIRECTION, please install by fluid flow direction to avoid the reverse pressure. Could install stop-check valve if the counter current shows.
- Please install filter before installing Solenoid valve if the fluid isn't clean, to reduce any wastes and impurities from the pipeline.
- Please check your available flow aperture and nozzle diameter.
- Normally our products only have ON / OFF two switches, if its available, please install side-manual switch for your maintenance convenience.
- When there's water hammer phenomenon, please aware of valve switching time adjustment and choose the suitable product.
- Be aware of the effect caused by environmental temperature.

- Power voltage can allowed about $\pm 10\%$ fluctuation, volt-ampere is higher while using AC starts.
- The solenoid valve can be divided into two types. N.C. (Normal Closed) and N.O. (Normal Open), please select your suitable type.

Security

- Solenoids are not suitable for power on for a long time because of its design principles. If it powered on too long, metal coil will overheat cause shortened life and malfunction.
- Regular-type solenoid is not waterproof, please select waterproof type if the environment not allowed.
- Solenoid's highest standard pressure must exceed the highest pressure in the pipeline or it will cause shortened life and other malfunction.
- Please select full-stainless steel type if its corrosive fluid. High acid and alkaline fluids are suitable for PTFE valve body style.
- Dangerous environment that may cause explosion needs to select corresponding explosion-proof products.

Install Caution

- Clean the pipeline with fluids, make sure it already removed any dusts, impurities, rust and stop tapes.
- Please keep 1.5~2 turns screw thread while wrapping stop tapes.
- Sealant might be easily flow into the product, and may cause malfunction if using too much sealant while installing.

- It's better install with horizontal direction and coil face up.
- Make sure you have enough space for maintenance.
- Do not press coil parts while installing.
- Check the pipeline direction, leak or not, wire connection after the installment.

(Aluminum alloy)

| Caliber | Tightening torque suggest |
|----------|---------------------------|
| Rc 1/8 | 7~9 N·m |
| Rc 1/4 | 12~14 N·m |
| Rc 3/8 | 22~24 N·m |
| Rc 1/2 | 28~30 N·m |
| Rc 3/4 | 31~33 N·m |
| Rc 1 | 36~38 N·m |
| Rc 1-1/4 | 40~42 N·m |
| Rc 1-1/2 | 48~50 N·m |
| Rc 2 | 57~56 N·m |

(Brass, Stainless steel)

| Caliber | Tightening torque suggest |
|----------|---------------------------|
| Rc 1/8 | 18~20 N·m |
| Rc 1/4 | 23~25 N·m |
| Rc 3/8 | 31~33 N·m |
| Rc 1/2 | 41~43 N·m |
| Rc 3/4 | 62~65 N·m |
| Rc 1 | 83~86 N·m |
| Rc 1-1/4 | 97~100 N·m |
| Rc 1-1/2 | 104~108 N·m |
| Rc 2 | 132~136 N·m |

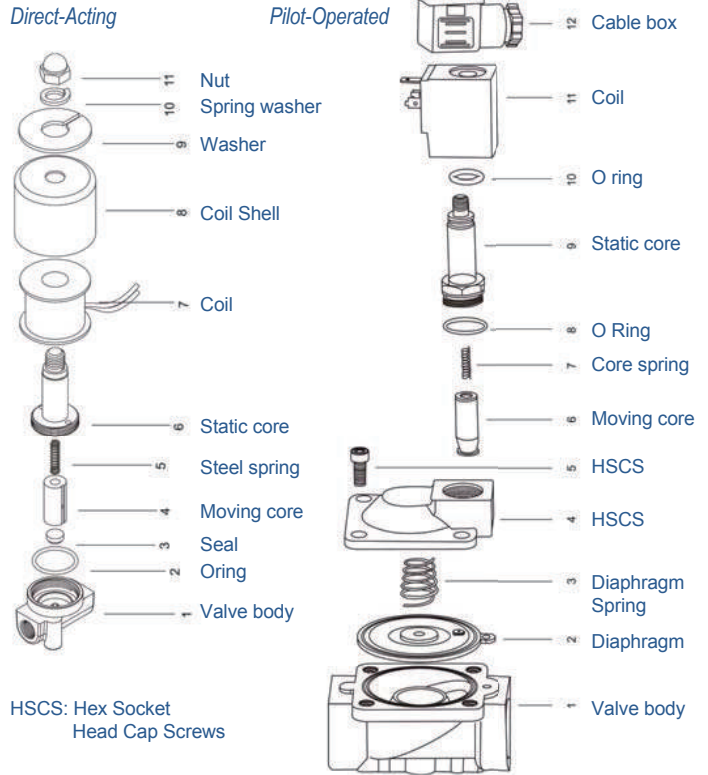


GENERAL KNOWLEDGE

Precautions in maintenance

- Solenoid coil and its drive element will heat after power on, please **DO NOT** touch or it will cause scald.
- If you need to decompose our product to inspect, please remove the power, and release the rest of the pressure in the pipeline. Make sure you are safe then continue the progress.
- To avoid rubber parts in the valve expansion or deformation, Please use neutral cleaner when you are cleaning the parts of valve.
- If you are not going to use our product of a long time after you used, please completely remove the rest of the fluid in the valve. If there's any fluid residue, it will get rusty in the next time you use and cause poor product performance.
- To keep its best situation, please arrange regular inspect and change parts by its usage frequency.

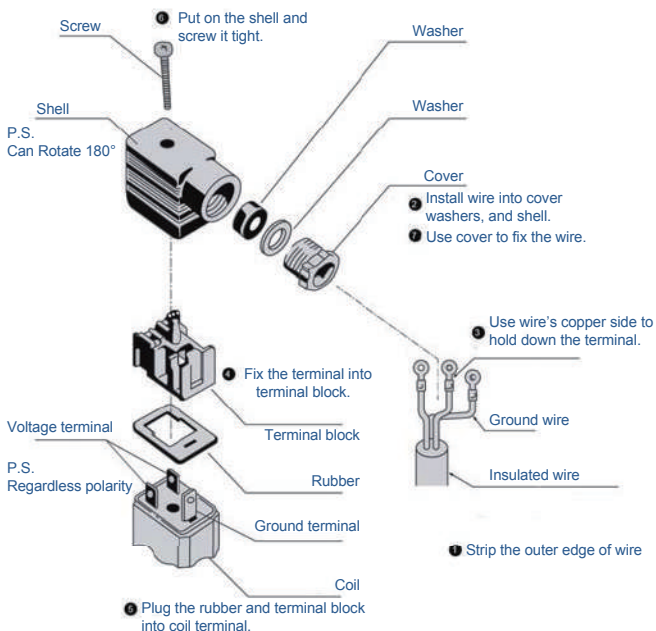
Exploded view



Cable box connection

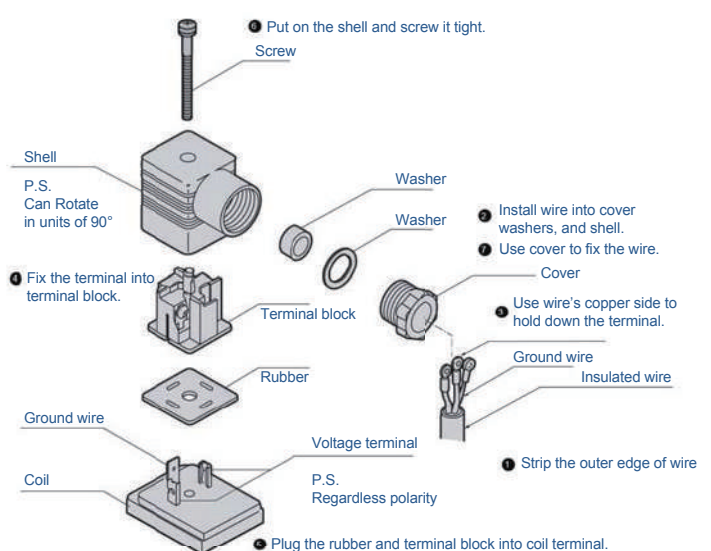
DIN Cable box (Pg9)

1. Please use insulated wire, Outer diameter $\varnothing 6 \sim \varnothing 10$ mm, section area $0.5 \sim 1.5 \text{ mm}^2$.
2. Tightening torque suggest $0.5 \text{ N} \cdot \text{m}$
3. If you need to change wire direction, take out cable box from shell, rotate 180 degrees then press into shell again.
4. Follow instruction from step 1 to step 7.



DIN Cable box (Pg11)

1. Please use insulated wire, Outer diameter $\varnothing 6 \sim \varnothing 10$ mm, section area $0.5 \sim 1.5 \text{ mm}^2$.
2. Tightening torque suggest $0.5 \text{ N} \cdot \text{m}$
3. If you need to change wire direction, take out cable box from shell, rotate 90 degrees then press into shell again.
4. Follow instruction from step 1 to step 7.





PRODUCT/ SOLENOID VALVE

ZS Series 2 Port Solenoid Valve



Cable waterproof coil
(Only for small valve body)



Standard coil



Power-save coil



Standard coil

Specifications Characteristics

| Model | ZS Series |
|-------------|--|
| Structure | Direct-Action, 2 port 2 way |
| Fluid | Air, Inert gas, Water, Light oil |
| Temperature | -5°C - 70°C - 110°C (VITON Diaphragm can reach 110°C) |
| Environment | Temp. -10 - 55°C ; Humidity. 10 - 90% RH |
| Caliber | Thread 1/8" - 1/2" G (Standard) / NPT (Select) |
| Pressure | 0 - 7 kgf/cm ² |
| Material | BRASS, Stainless steel SUS304 |
| Diaphragm | NBR · VITON · EPDM (Control different kinds of fluid) |
| Voltage | Reference below, Allowed voltage flow range ± 10% |
| Coil Level | 1. DIN waterproof Coil (Protect level. IP65) 2. Cable waterproof Coil (length. 300mm) (Protect level. IP65) 3. Power-Saving DIN waterproof Coil (Protect level. IP65) (Saving Energy 70%, Less temp rise, Long life) |
| Install | According to the flow direction. Horizontal installation |

Power-Save coil parameters

| Coil Code | Voltage | Power | | Electric | | |
|------------------|---------|----------|------|----------|--------|-------|
| | | Activate | Hold | Activate | Hold | |
| Small valve body | SM31 | AC220V | 78VA | 4.5VA | 350mA | 20mA |
| | SM42 | AC110V | 72VA | 5.0VA | 660mA | 45mA |
| | SM44 | AC24V | 19VA | 6.5VA | 940mA | 310mA |
| | SM46 | DC24V | 50W | 9W | 2185mA | 385mA |

| Coil Code | Voltage | Power | | Electric | | |
|----------------|---------|----------|-------|----------|--------|-------|
| | | Activate | Hold | Activate | Hold | |
| Big valve body | SM41 | AC220V | 130VA | 6VA | 590mA | 28mA |
| | SM42 | AC110V | 95VA | 8.0VA | 900mA | 75mA |
| | SM44 | AC24V | 19VA | 7.0VA | 930mA | 360mA |
| | SM46 | DC24V | 50W | 9W | 2185mA | 385mA |





PRODUCT/ SOLENOID VALVE

How to select model

ZS **040B-10** **V** **—** **AC220V**

Model Valve body spec. Diaphragm Etc. Voltage

| Diameter | Flow Path | BRASS | SUS304 | Diaphragm | Code | Spec. | Code | Voltage |
|----------|-----------|--------|---------|-----------|------|-----------------------|------|---------|
| 1/8" | 2.5 | 025-06 | 025B-06 | NBR | | DIN Waterproof | | AC110V |
| | 3 | 030-06 | 030B-06 | VITON | V | Cable Waterproof | F | AC220V |
| 1/4" | 2.5 | 025-08 | 025B-08 | EPDM | E | Power Save Waterproof | M | AC24V |
| | 3 | 030-08 | 030B-08 | | | Pilot lamp | L | DC24V |
| 3/8" | 4 | 040-10 | 040B-10 | | | | | |
| | 6 | 060-10 | 060B-10 | | | | | |
| | 7.5 | 075-10 | 075B-10 | | | | | |
| | 10 | 100-10 | 100B-10 | | | | | |
| 1/2" | 4 | 040-15 | 040B-15 | | | | | |
| | 6 | 060-15 | 060B-15 | | | | | |
| | 7.5 | 075-15 | 075B-15 | | | | | |
| | 10 | 100-15 | 100B-15 | | | | | |

N.C Specification list (According to the standard valve coil)

| Spec. Code | Diameter | Flow Path | CV | Pressure Range (kgf/ cm ²) | | | | | | | | Power | | Weight Kg |
|------------------|----------|-----------|-----|---|------------------|-----|-------|-----|-------------------|-----|---------------|-------------|----|--------------|
| | | | | Min. Pressure | Maximum Pressure | | | | | | AC 220V VA | DC 24V W | | |
| | | | | | Air | | Fluid | | Light Oil <20 CST | | | | | |
| | | | | | AC | DC | AC | DC | AC | DC | | | | |
| Small valve body | 1/8" | 025 □ -06 | 2.5 | 0.23 | 0 | 7 | 5 | 7 | 5 | 7 | 5 | 22 | 13 | 0.46 |
| | | 030 □ -06 | 3 | 0.3 | 0 | 5 | 4 | 5 | 4 | 5 | 4 | 22 | 13 | 0.46 |
| | 1/4" | 025 □ -08 | 2.5 | 0.23 | 0 | 7 | 5 | 7 | 5 | 7 | 5 | 22 | 13 | 0.45 |
| | | 030 □ -08 | 3 | 0.3 | 0 | 5 | 4 | 5 | 4 | 5 | 4 | 22 | 13 | 0.45 |
| Big valve body | 3/8" | 040 □ -10 | 4 | 0.6 | 0 | 7 | 5 | 7 | 5 | 5 | 5 | 22 | 20 | 0.6 |
| | | 060 □ -10 | 6 | 0.8 | 0 | 4 | 2.5 | 4 | 2.5 | 3 | 2.5 | 22 | 20 | 0.51 |
| | | 075 □ -10 | 7.5 | 1.0 | 0 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 22 | 20 | 0.49 |
| | | 100 □ -10 | 10 | 1.6 | 0 | 0.5 | 0.3 | 0.5 | 0.3 | 0.4 | 0.2 | 22 | 20 | 0.62 |
| | 1/2" | 040 □ -15 | 4 | 0.6 | 0 | 7 | 5 | 7 | 4 | 4 | 3 | 22 | 20 | 0.48 |
| | | 060 □ -15 | 6 | 0.8 | 0 | 4 | 2.5 | 4 | 2.5 | 3 | 2.5 | 22 | 20 | 0.46 |
| | | 075 □ -15 | 7.5 | 1.0 | 0 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 22 | 20 | 0.45 |
| | | 100 □ -15 | 10 | 1.65 | 0 | 0.5 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 22 | 20 | 0.59 |



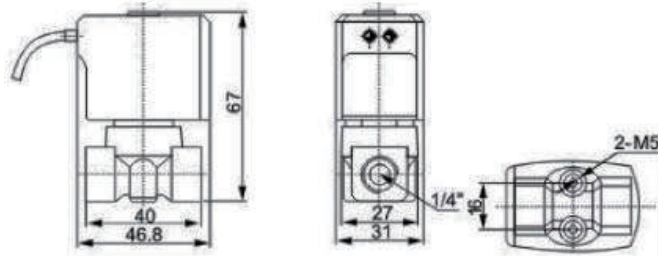
TXMC



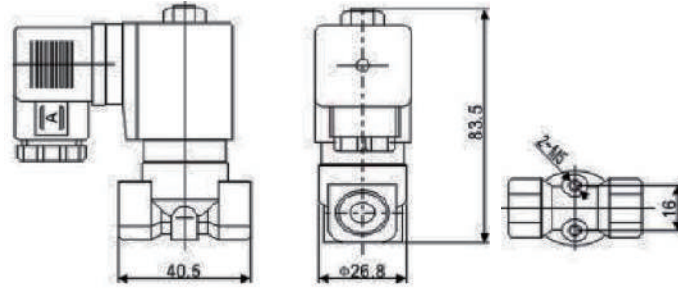
PRODUCT/ SOLENOID VALVE

Dimension (mm)

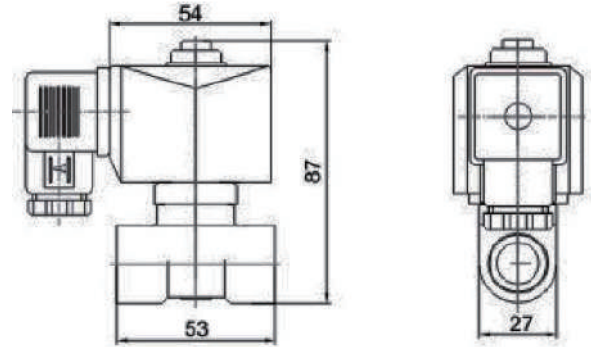
Cable waterproof coil (Flow path 2.5 · 3)



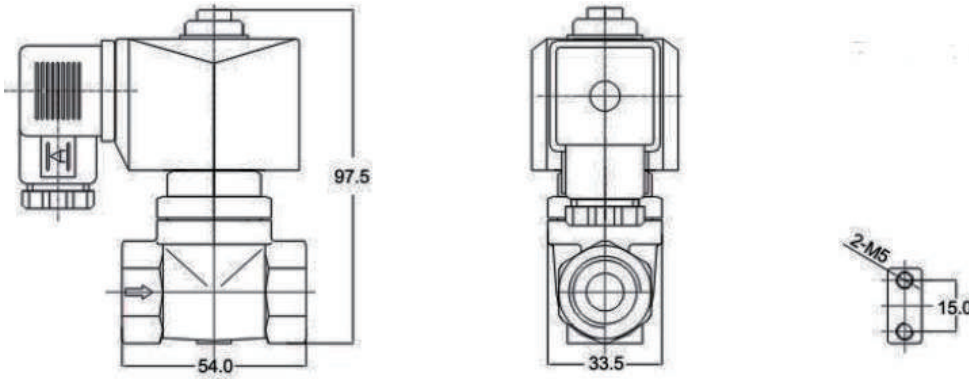
Standard coil (Flow path 2.5 · 3)



Standard coil (Flow path 4 · 6 · 7.5)



Standard coil (Flow path 10)



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