

STC 3S012-020-A Series Solenoid Valves

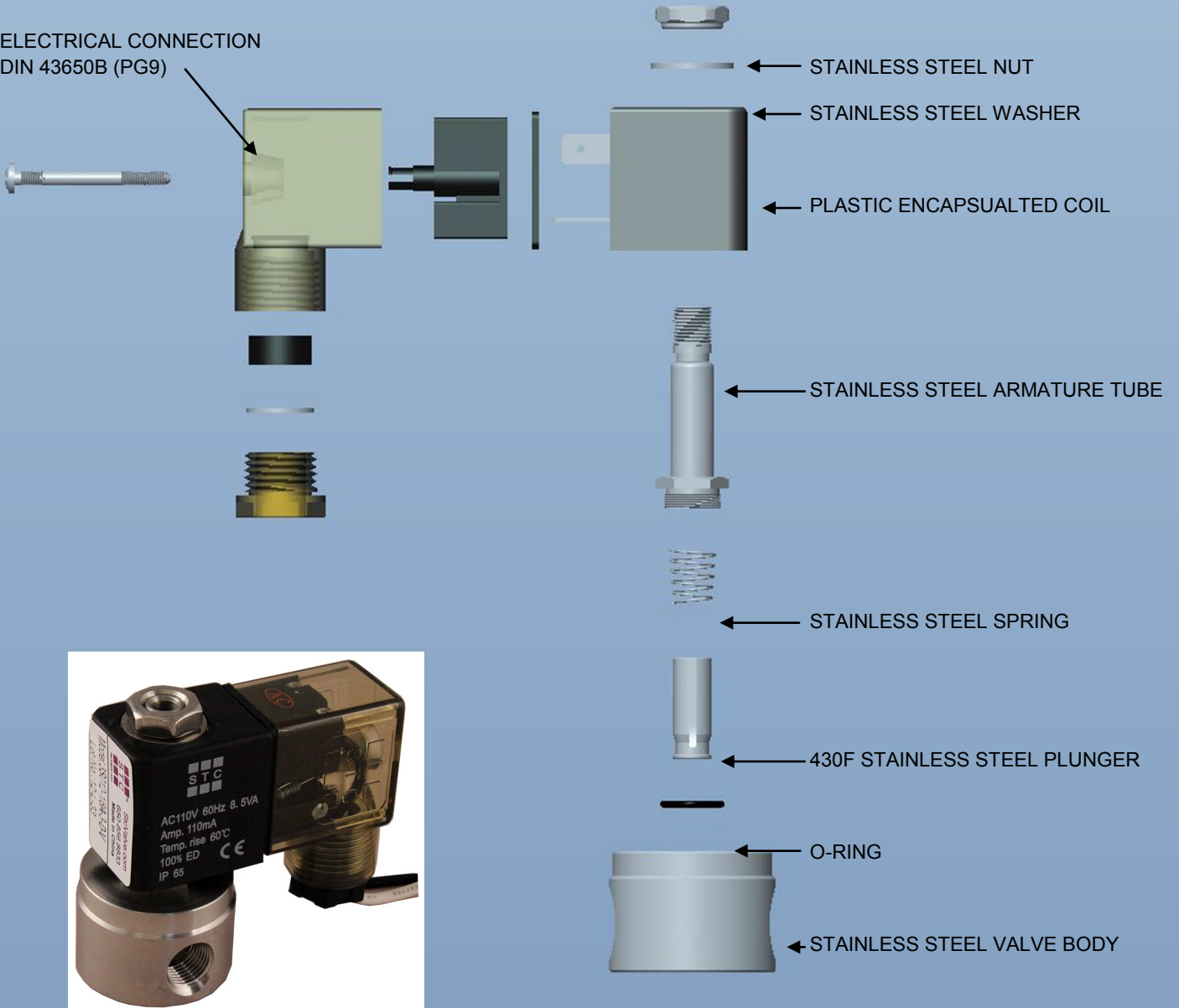


3S012-020-A Series Solenoid Valve Specifications

Valve Model	3S012-1/8-A	3S012-1/4-A	3S020-1/8-A	3S020-1/4-A
Port Size (NPT)	1/8	1/4	1/8	1/4
Valve Type	3 Way, Universal Valve that can be used as: 1. Normally Closed (NC) or 2. Normally Open (NO) or 3. Diverter Valve (divert one supply to two outlets)			
Action	Direct Acting, Response Time <20 msec.			
Orifice, Cv	1.2mm, Cv=0.05		2.0mm, Cv=0.20	
Operating Pressure	Normally Closed: Vacuum to 60 PSI Normally Open & Diverter: Vacuum to 150 PSI		Normally Closed: Vacuum to 30 PSI Normally Open & Diverter: Vacuum to 100 PSI	
Operating Temperature	NBR Seal: 14 to 176°F (-10 to 80°C); Option: Viton Seal: 5 to 248°F (-15 to 120°C)			
Body Materials	Stainless Steel			
Seal Materials	NBR, Option: Viton			
Coil Duty	H Class, IP65, 100% ED (Continuous Duty)			
Voltage	Options: 12, 24 VDC; 24,110/120, 220/240 VAC (50/60Hz)			
Voltage Tolerance	±10% of Specified voltage			
Coil Power	3 to 6.5W			
Electrical Connections	DIN			
Installation	No Orientation Requirement			
Service	Air, Liquid, Oil, Water			

3S012-020-A Series Solenoid Valve Components

ELECTRICAL CONNECTION
DIN 43650B (PG9)



Installation and Operation:

To connect the valve Inlet and Outlet:

Connect the inlet and outlet in the direction of the arrow marked on the valve.

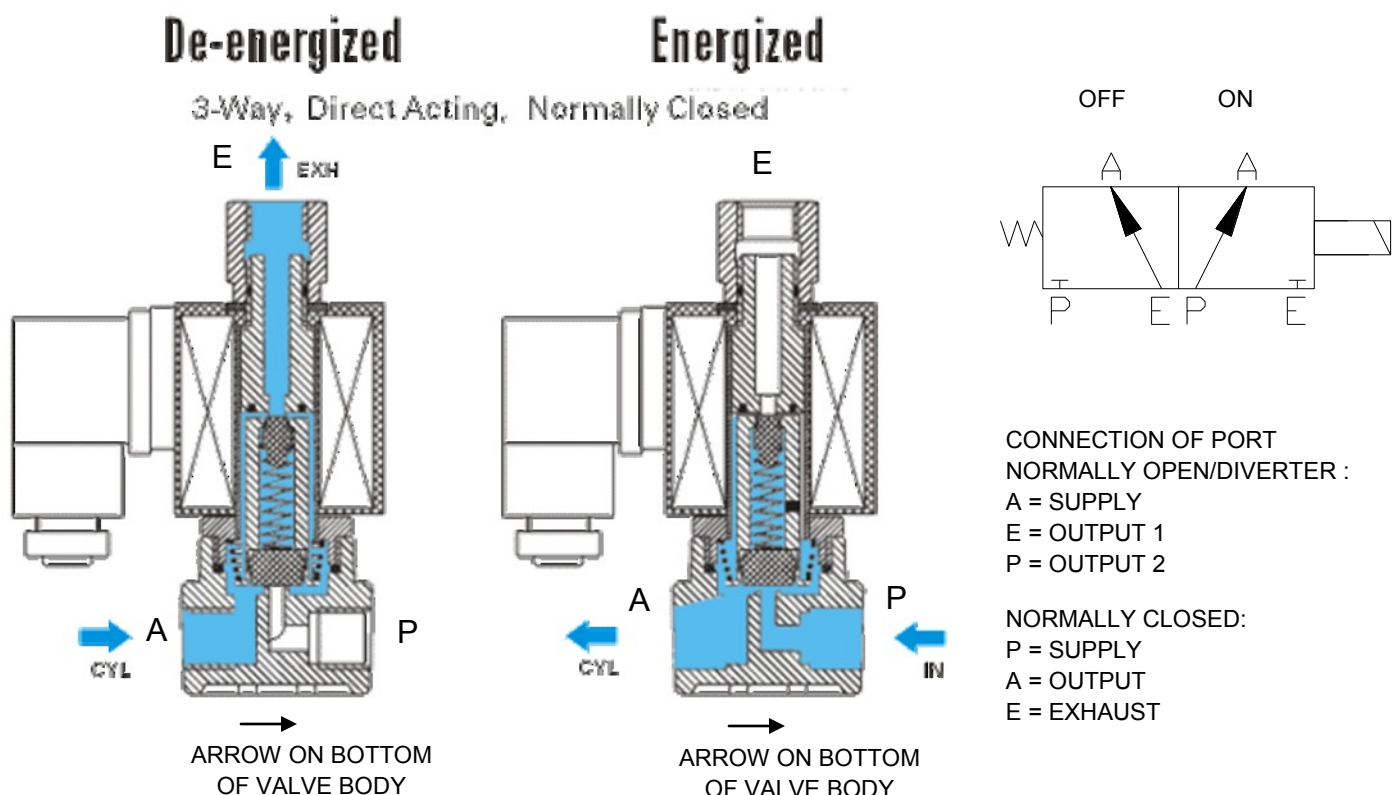
To install coil:

Put the coil onto the armature tube of the valve. Put the lock-washer and nut onto the armature tube. Hand tighten the nut, then use a wrench to tighten the nut to a quarter turn; **do not over-tighten the nut, it may cause the armature tube to fail pre-maturely.**

To connect DIN coil:

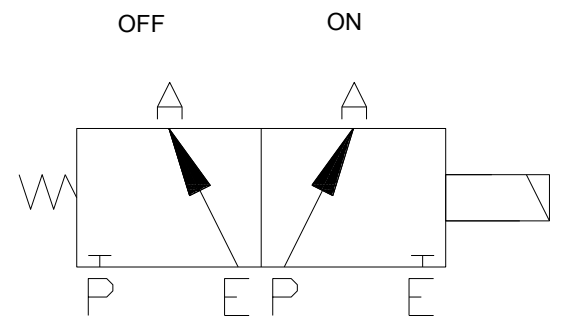
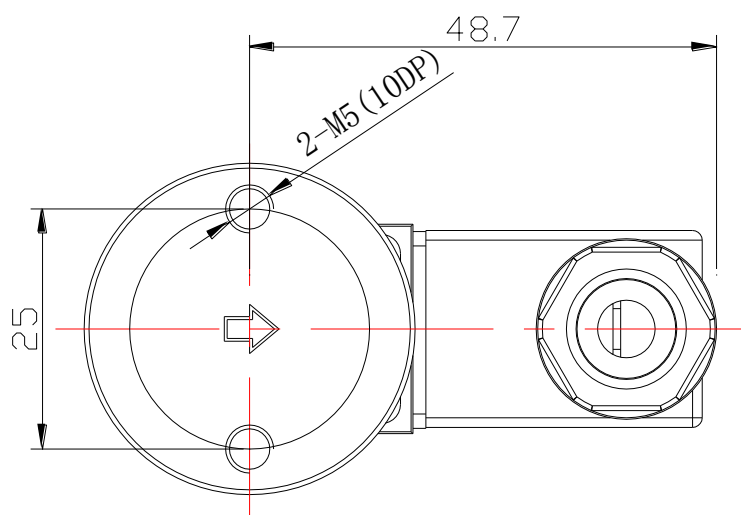
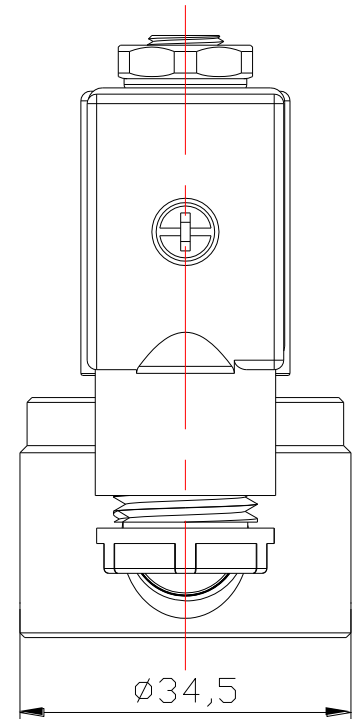
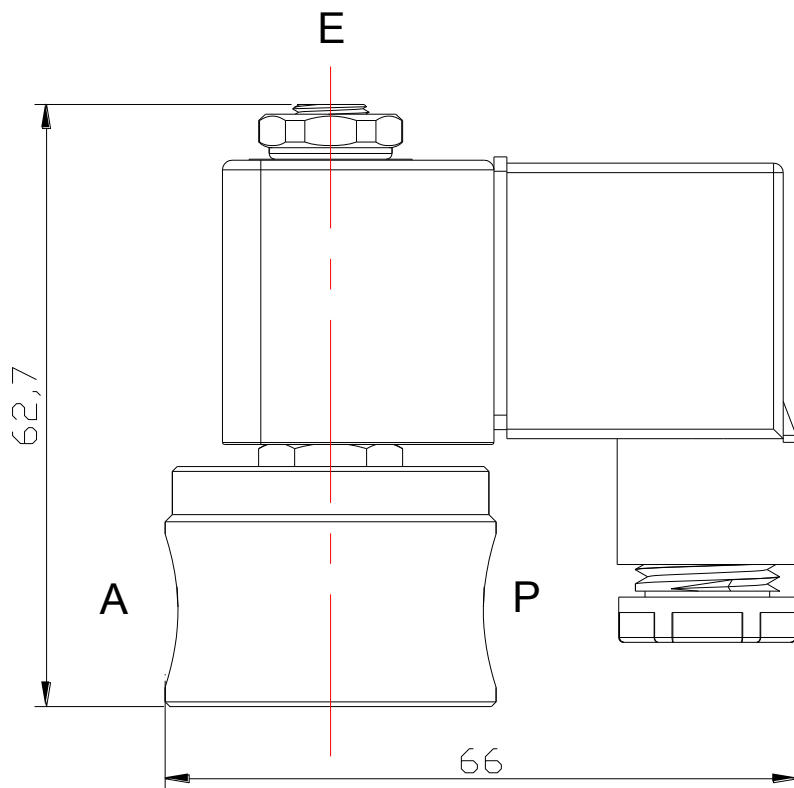
1. Remove the Philip screw from the plastic housing and unplug it from the DIN coil.
2. From the screw opening, push the terminal block out from the plastic housing.
3. Note the 1, 2 and ground markings on underside of DIN enclosure.
4. For DC DIN Coil, Connect 1 to Positive, 2 to Negative.
5. For AC DIN Coil, connect 1 to HOT wire, 2 to Neutral wire, and if required connect
6. **Do not energize the coil without installing it onto the valve, it will burn the coil and create fire hazards.**

Safety Note: Standard valves are supplied with continuous duty coils. The proper class of insulation for the service is indicated on the coil. The coil temperature may become hot after being energized for extended periods, but it is normal. Do not energize the coil without installing it onto the valve or connect the coil to a wrong voltage, as it may overheat and damage the coil; although the coil is made of flame retarded material, misuse of the coil in this manner could create fire hazards and generate smoke or burning odor which indicates excessive coil temperature and should disconnect the power to the coil immediately.



DIMENSIONS (MM)

MODEL: 3S012-020-1/4A



CONFIGURATION OF PORT CONNECTIONS FOR

1. NORMALLY CLOSED:

P = SUPPLY
A = OUTPUT
E = EXHAUST

2. NORMALLY OPEN:

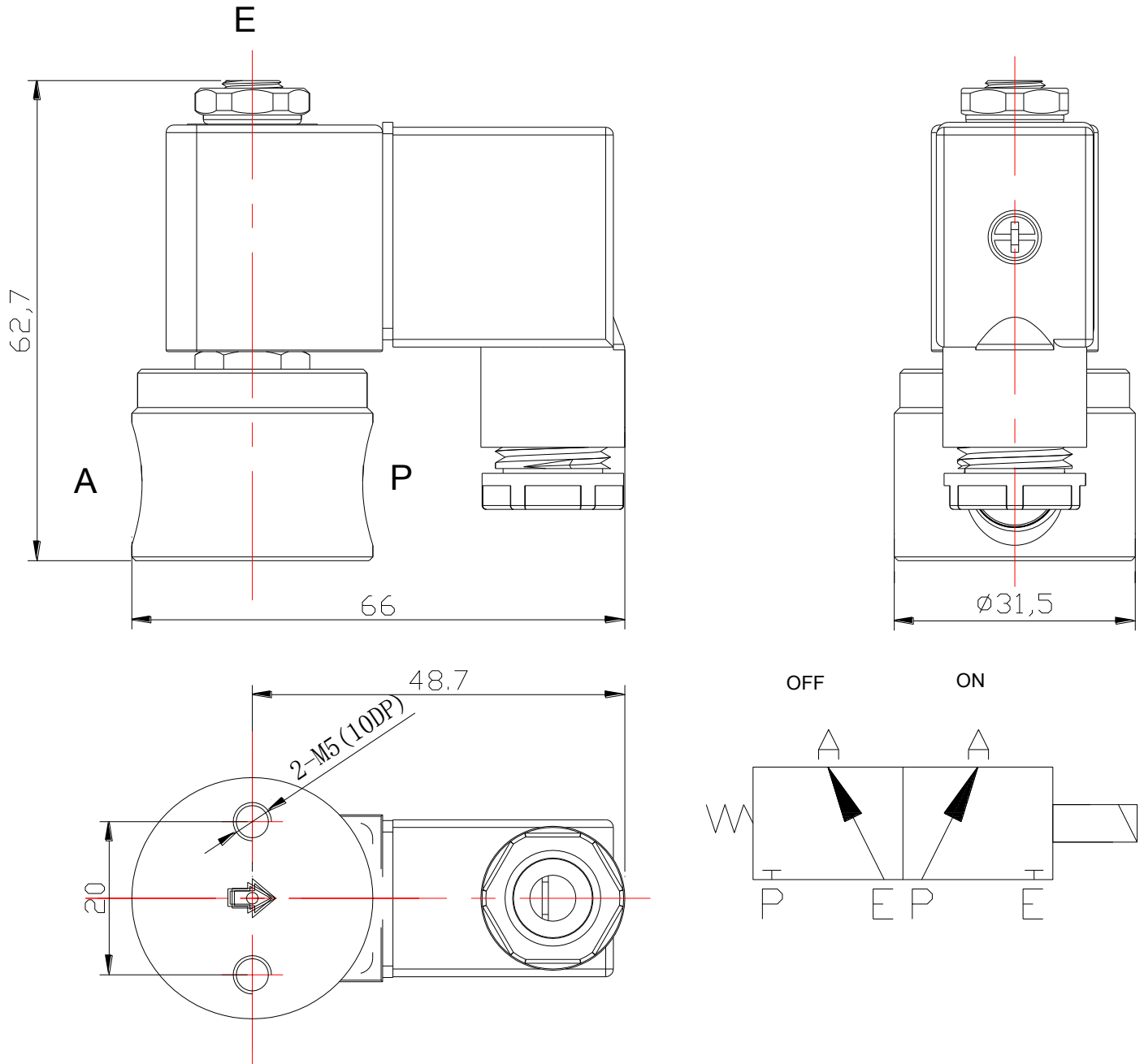
E = SUPPLY
A = OUTPUT
P = EXHAUST

3. DIVERTER VALVE:

A = SUPPLY
E = OUTPUT 1 (NO)
P = OUTPUT 2 (NC)

DIMENSIONS (MM)

MODEL: 3S012-020-1/8A



Direct Acting Valves

Models 2H012, 2P025, 2S012-050, 2V025-035, 2W010-040, 3S012-035

Warning: Do NOT over tighten the nut holding the coil to the armature tube. Over tightening may result in damage to the welded joint.

Attaching a Coil to a Valve:

1. After wiring the coil, fit the coil assembly over the armature tube. Ensure that the threads of the tube are accessible.
2. Fit the spring or lock washer over the assembly.
 - o For spring washers, the concave side should be oriented toward the coil.
3. Tighten the nut over the washer by hand.
 - o For spring washers, tighten the nut further until the spring coil is almost completely flat.
 - o For lock washers, tighten the nut another quarter turn.

Installation Procedure:

1. Connect the default outlet to the connector indicated by an arrow (2P025, 2W040) or the number "1" (2S050). The default outlet on model 2V is the farther port from the armature tube.
2. Connect the default inlet to the remaining connector.

Maintenance and Troubleshooting

Notes:

- After an extended period of operation, if you do not hear a clicking sound when the valve is operational, and the wiring is correct, the coil may be burned out and must be replaced. This commonly occurs when input voltages are higher than the coil's specifications. Using valves at low temperature may have small leak when first activated. To fix this, cycle the valve at the highest operating pressure available until there is no leak, this will create a proper mating surface between the seal and the valve orifice seat.

Procedure:

1. Remove any coils attached to the valve.
2. Unscrew the holding plate (for models 2P025 and 2V025) and the armature tube and remove it from the valve body. The plunger and spring are not fastened to the tube and will fall out.
3. Check for any debris that may have collected on the plunger and the hole in the center of the valve.
4. Place the spring back in the plunger, and insert the plunger back into the armature tube.
5. Screw the armature tube and holding plate back into the valve.

Reference Figures:

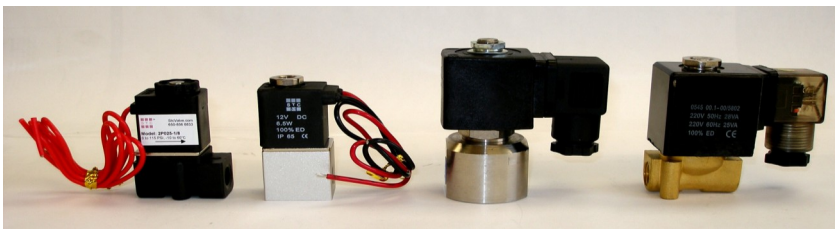


Figure 1: [left]: 2P025 [center left] 2V025 [center right] 2S050 [right] 2W040.



2H012

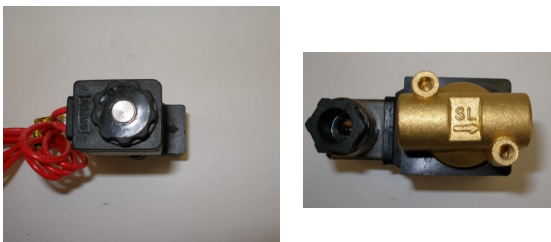


Figure 2: Model 2P025, 2S025-050 and 2W040 indicator arrows are on the valve body.

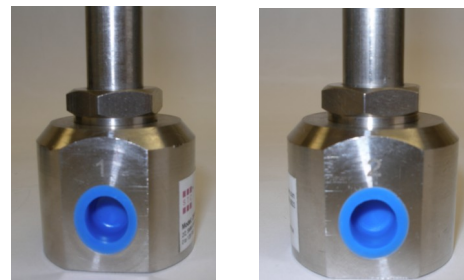


Figure 3: Numbering shown on model 2S050, above the connectors.




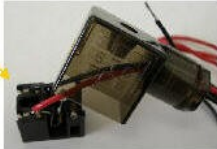

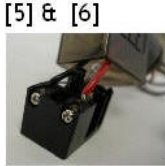
Electrical Connections

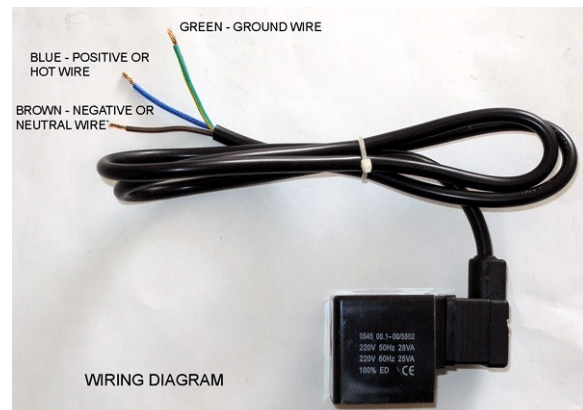
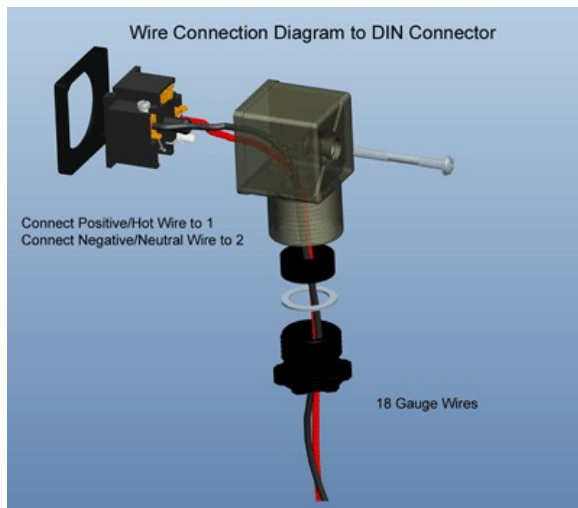
To connect DIN coil:

1. Remove the Philip screw from the plastic housing and unplug it from the DIN coil.
2. From the screw opening, use the screw to push the terminal block out of the plastic housing.
3. Note the 1, 2 and ground markings on underside of DIN enclosure.
4. For DC DIN Coil, Connect 1 to Positive, 2 to Negative.
5. For AC DIN Coil, connect 1 to HOT wire, 2 to Neutral wire, and if required connect ground to ground wire.

To connect Grommet coil:

1. For DC Coil, connect the RED wire to Positive, and the BLACK wire to Negative.
2. For AC Coil, connect the BLACK wire to HOT wire, and the WHITE wire to neutral wire.

<p>[1] Remove the Philip screw from the plastic housing.</p>		
<p>[2] Unplug the plastic housing from the DIN coil.</p>		
<p>[3] From the screw opening, use the screw to push the terminal block out of the plastic housing.</p>	<p>[3] Top of the wiring terminal block</p> 	
<p>[4] Note the 1, 2, and ground markings on underside of DIN enclosure.</p>		
<p>[5] For DC DIN coil, connect 1 to positive, 2 to negative.</p>		
<p>[6] For AC DIN coil, connect 1 to HOT wire, 2 to neutral wire, and if required connect ground to ground wire.</p>		



Terms and Conditions

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No merchandise is accepted for return 30 days after delivery date. No credit allowed on merchandise shipped as ordered and returned without obtaining an authorization number IN ADVANCE. A 20% restocking charge applies to all returns, and transportation charges must be fully prepaid. We will pay **ground** transportation charges on re-sent or returned merchandise due to STC's error.

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International Customers: Advance Payment Required via Bank Wire, Cashier's Check or Approved Credit Card.

Credit Application: To establish a net 30 day account, please mail or fax three trade references with complete mailing addresses and account numbers.

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