

# 3V110-410 Series Solenoid Air Valves 3-Way, 2-Position, Single Solenoid (3/2/1)



## production parameter

1. The Anti-friction seal is added at both ends of the valve spool to make the valve spool more stable during the switching process and increase the valve lifetime.
2. Seals original imported from Japan; Optimize valve body inner flow path; Maximum increase the air flow area.
3. Valve Piloted Seat is from Taiwan, the surface design with 5 pcs stripe; Increased the strength of Manual ride spindle; The appearance is more distinctive.
4. The valve body surface treatment adopts a new environmental protection process.
5. Fully automated assembling & test line with good product consistency.

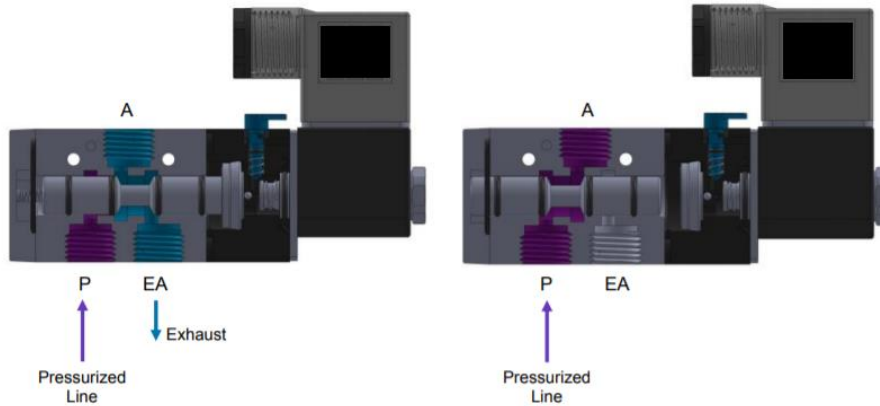
## Installation & Operation

To Connect the Valve Inlet & Outlets:

- Connect the pressurized line to the port marked "P". Connect outlet to port "A". Connect exhaust outlet to port "EA" (the exhaust connection is optional).

### Operation:

This valve is a three-way, air-pilot valve with a spool design that requires an input pressure supplied to port P to actuate. The valve will not actuate when no pressure is applied. As shown in the diagrams below, when the coil is de-energized (left diagram), the spool is held in Position 1 by an internal spring. When the coil is energized (right diagram), the solenoid lifts the plunger & the spool is pushed into Position 2 using the supplied pressure from port P. The pressurized flow is show in the diagrams below in purple; the exhaust flow is shown in blue



## To Install the Coil:

- Put the coils on to the armature tube of the valve. Place the lock washer & nut on to the armature tube. Hand tightens the nut, then use a wrench to tighten the nut another quarter-turn. Do not over-tighten the nut, as it may cause the armature tube to fail prematurely

## To Connect a DIN Coil:

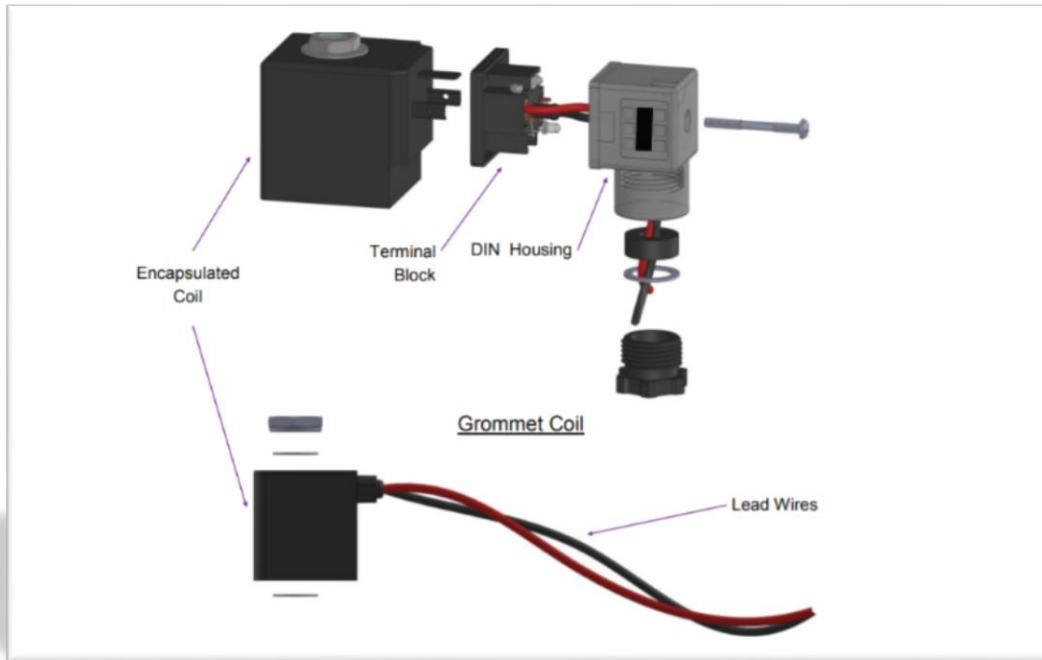
1. Remove the Philips-head screw from the plastic DIN housing & unplug it from the DIN coil
2. From the screw opening, push the terminal block out from the plastic DIN housing.
3. Note the "1", "2", and ground " $\perp$ " symbols on the underside of the DIN enclosure.
4. For DC DIN Coils, connect "1" to your Positive Lead & "2" to your Negative lead.
5. For AC DIN Coils, connect "1" to your HOT lead, "2" to your Neutral lead, & " $\perp$ " to your ground if required.

Do not energize the coil without installing it onto the valve or connect the coil to a different voltage than specified. This will burn the coil and could 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 body. The coil temperature may rise significantly if energized for extended periods—this is normal. Although the coil is made of flame-retardant material, misuse of the coil could create fire hazards & generate smoke and/or a burning odor. If these conditions are encountered, the coil temperature has risen above safe levels and the power should be disconnected immediately.

## DIN Coil



## 3-Way Solenoid Air Valve Installation, Maintenance & Troubleshooting Guide

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

**Note:** This valve is designed for AIR FLOW ONLY. The use of filtered lubricated air will prolong the life of the valve & its internal components.

### **Attaching a Coil to a Valve:**

- After wiring the coil, fit the coil assembly over the armature tube. Ensure that the threads of the tube are accessible.
- Fit the spring or lock washer over the assembly
- For spring washers, the concave side should be oriented toward the coil.
- Tighten the nut over the washer by hand.

- After an extended period of operation, the solenoid coil may burn out. This commonly occurs when input voltages are higher than the coil's specifications. If the valve does not make a clicking sound when energized/de-energized, the coil likely needs to be replaced.
- For standard washers, tighten the nut an additional ¼ turn with a wrench if necessary.
- For spring washers, continue to tighten the nut until the spring washer is almost completely compressed.

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