

# STC 2T060 Series Direct Acting Isolation Solenoid Valve

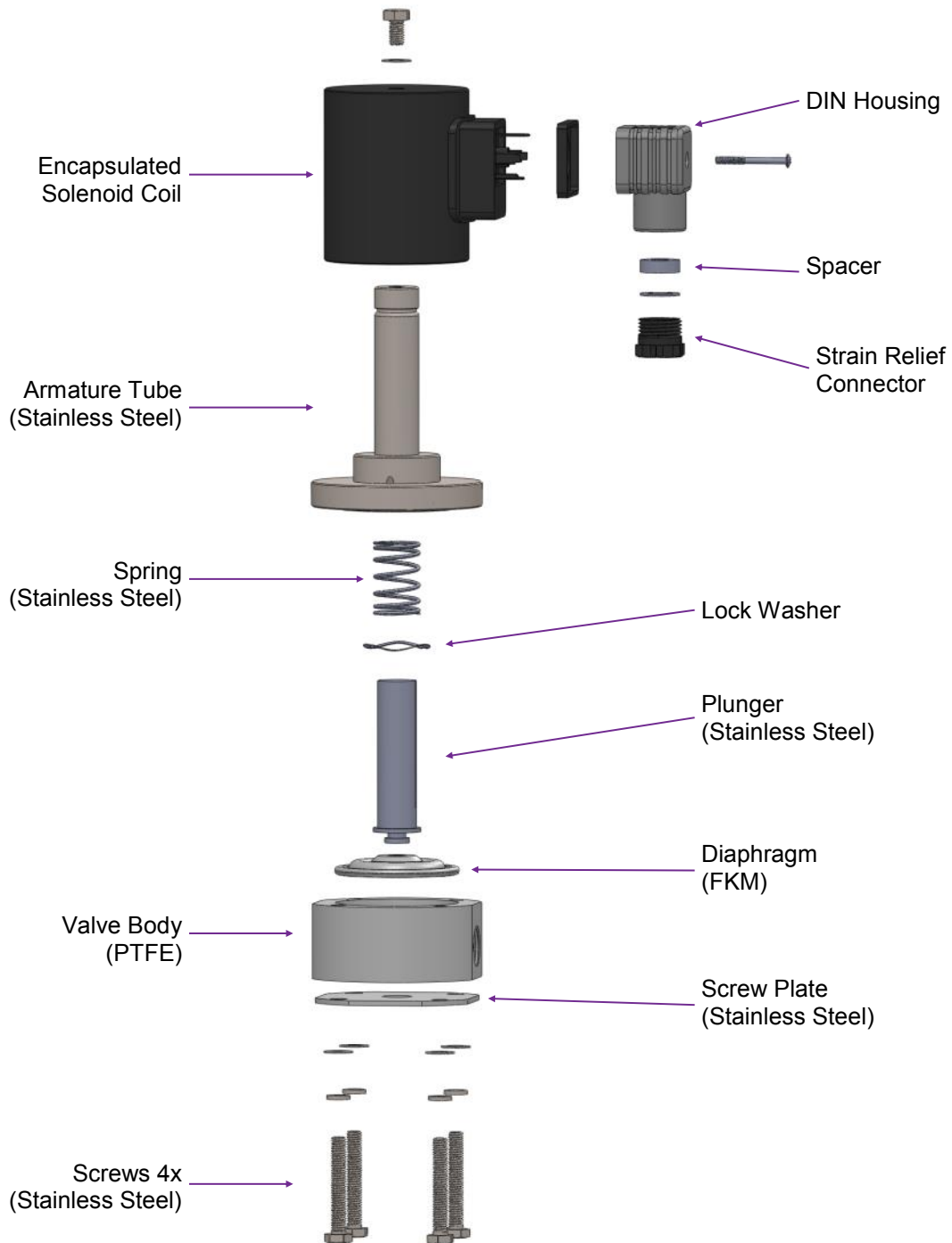
## 2 Way, Normally Closed, Isolated Diaphragm



### 2T060 Two-Way Solenoid Valve Specifications

| Valve Model            | 2T060-1/4   | 2T060-3/8 | 2T060-1/2 |
|------------------------|---|-----------|-----------|
| Port Size              | 1/4" NPT  | 3/8" NPT  | 1/2" NPT  |
| Orifice                | 6.0mm<br>Options: 2mm to 11mm   |           |           |
| Flow Coefficient (Cv)  | 2.8   |           |           |
| Valve Type             | 2 Way, Normally Closed (NC)   |           |           |
| Action                 | Direct Acting, Uni-Directional Flow, Isolated Diaphragm   |           |           |
| Wetted Surfaces        | Valve Body: PTFE (Teflon)<br>Seal: Viton (FKM)  |           |           |
| Seal Material          | Viton (FKM)   |           |           |
| Operating Temperature  | 14°F to 266°F (-10°C to 130°C)  |           |           |
| Operating Pressure     | Standard Option: Vacuum to 22 PSI<br>Upgrade Option: 0 PSI to 120 PSI   |           |           |
| Electrical Connections | DIN 43650, Form A   |           |           |
| Coil Power             | 20-30W  |           |           |
| Coil Duty              | 25% Duty Cycle<br>If coil is to be energized for longer than 1hr at a time,<br>we recommend installing a 2W200C-PS power save device. |           |           |
| Voltage Options        | 12VDC, 24VDC, 24VAC, 110/120VAC (50/60Hz), 220/240VAC (50/60Hz)   |           |           |
| Voltage Tolerance      | ±10% of Specified Voltage   |           |           |
| Ingress Protection     | IP65  |           |           |
| Insulation Class       | H Class   |           |           |
| Installation           | Optimum Position: Flow Horizontal and Solenoid Vertical   |           |           |
| Service                | High Purity Fluid, Corrosive Fluid & Gas, Acid, Alkali, etc.  |           |           |

# 2T060 Series Solenoid Valve Components



# Material Test Reports

This document certifies that STC products have been subjected to quality assurance procedures and meet the material and performance specifications published by Sizto Tech Corporation (STC). The products have been manufactured, processed, inspected, and tested according to STC internal requirements and ISO 9001 standards.

ISO 9001:2015 Certificate Number: **Qnb17180318**  
 Date of Issue: **01, March, 2018**  
 Valid Until: **28, February, 2021**

Individual materials and components used in this product have been tested and conform to applicable published standards according to chart below. Please be advised that STC does not conduct its own material analysis of all raw materials, rather, STC relies on the statements of its material suppliers & reserves the rights to independently test raw materials if necessary. Material Test Reports may be available for specific products upon request.

| Material                         | Use Location                          | Material Standard   |
|----------------------------------|---------------------------------------|---------------------|
| 316 Stainless Steel              | Metal Fittings, Valves, Air Cylinders | ASTM A240/A2666     |
| 304 Stainless Steel              | Valves, Air Cylinders                 | ASTM A240/A666      |
| CF8M Stainless Steel             | Valves                                | ASTM A351/A743      |
| Brass                            | Valves                                | ASTM B36/B62        |
| Nickel-Plated Brass              | Composite Fittings                    | ASTM B456/B927      |
| Acetal Homopolymer (Delrin)      | Valves                                | ASTM D4181/D6778—14 |
| Acetal Copolymer (POM)           | Composite Fittings                    | ASTM D4181/D6778—14 |
| FKM (Viton)                      | Seals                                 | ASTM D1418          |
| PTFE (Teflon)                    | Valves, Seals                         | ASTM D3294—15       |
| NBR (Buna N)                     | Seals                                 | ASTM D1387—06       |
| EPDM                             | Seals                                 | ASTM D3568—03       |
| Polybutylene Terephthalate (PBT) | Composite Fittings                    | ASTM D4000          |



# Installation & Operation

## To Connect the Valve Inlet & Outlet:

- Connect the inlet & outlet to the valve ports according to the flow direction arrow marked on the valve

## 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 tighten 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.

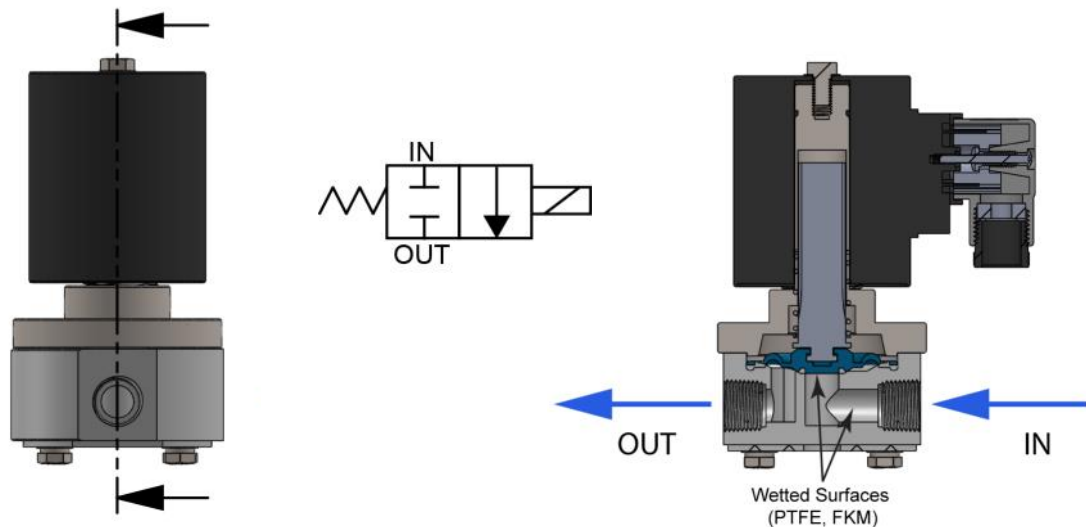
## To Connect a DIN Coil:

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 “⊥” 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, & “⊥” to your ground if required.

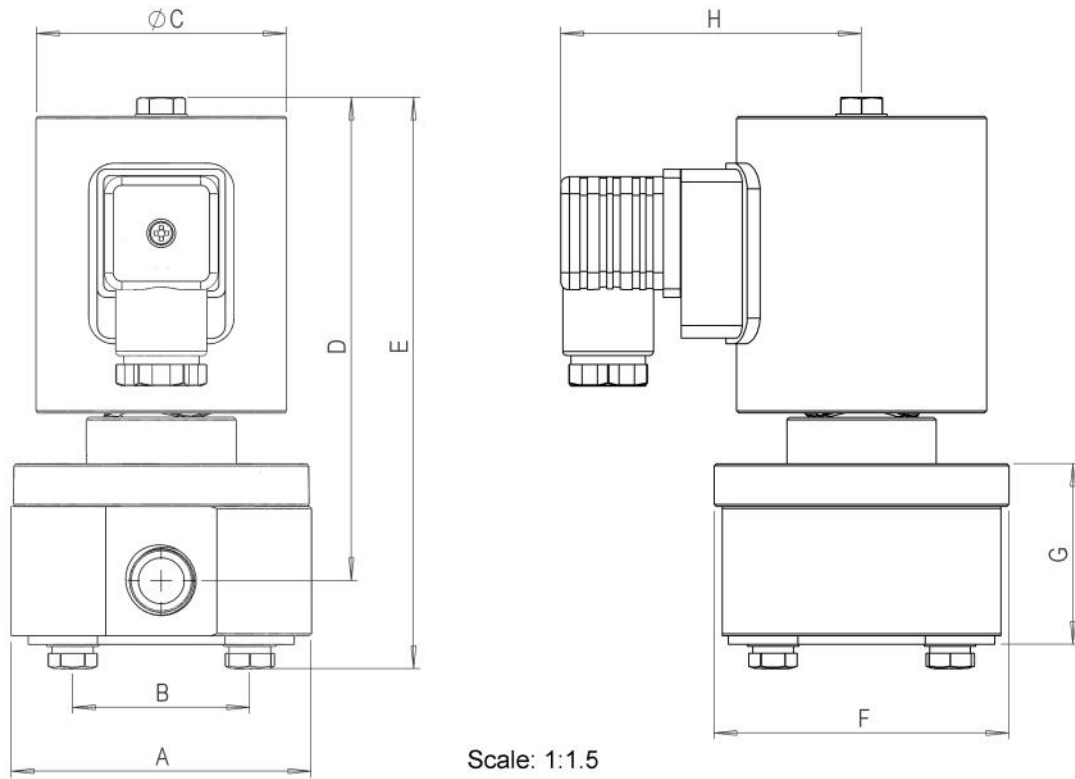
**Do not energize the coil without installing it onto the valve or connect the coil to a different voltage than specified. This will burn the coil and could create fire hazards.**

**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.

**Operation:** The 2T060 series solenoid valve is a direct acting valve & does not require a minimum differential pressure to operate. The cross-section below shows the valve in a closed (de-energized) state. When energized, the plunger directly lifts the isolated diaphragm, allowing the working medium to pass through the valve orifice. When de-energized the spring force returns the diaphragm to the valve orifice & seals the valve.



## 2T060 Series Solenoid Valve Dimensions



| Valve Model              | 2T060-1/4 | 2T060-3/8 | 2T060-1/2 |
|--------------------------|-----------|-----------|-----------|
| Port Size (NPT)          | 1/4"      | 3/8"      | 1/2"      |
| A (mm)                   | 31        | 70        | 70        |
| B (mm)                   | 42        | 42        | 42        |
| C (mm)                   | 36        | 60        | 60        |
| D (mm)                   | 83        | 113       | 113       |
| E (mm)                   | 96        | 133       | 133       |
| F (mm)                   | 54        | 106       | 106       |
| G (mm)                   | 35        | 42        | 42        |
| H (mm)                   | 55        | 72        | 72        |
| Approximate Weight (lbs) | 1.3       | 3         | 3         |

# 2-Way Direct Acting Valves

## 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.

### 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.
  - For standard washers, tighten the nut an additional  $\frac{1}{4}$  turn with a wrench if necessary.
  - For spring washers, continue to tighten the nut until the spring washer is almost completely compressed.

### Installation Procedure:

- Connect the default outlet to the outlet port indicated by an arrow or the number "1" on the valve body.
- Connect the default inlet to the pressure port indicated by the tail of the arrow or a "P" on the valve body.
- The arrow marked on the valve body indicates the direction of flow.

### Notes:

- 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.
- If you are using the valve at a low temperature, it may exhibit a small leak when first activated. To fix this, cycle the valve at the highest available operating pressure until there is no longer a leak. This process will create a proper mating surface between the seal and the orifice.

### Maintenance Procedure:

1. Turn off the power supply to the valve & ensure it is safely locked-out.
2. Remove any coils attached to the valve.
3. Unscrew the holding plate (if applicable) and the armature tube assembly and remove it from the valve body. The plunger & spring are not fastened to the tube and will fall out.
4. Check for any debris that may have collected on the plunger & the hole in the center of the valve. Clean any dirty surfaces or debris with clean water.
5. Place the spring back in the plunger & insert the plunger back into the armature tube.
6. Screw the armature tube & holding plate back into the valve.
7. Please refer to the diagram on Page 2 of this document for a breakdown of individual components.

For tips, maintenance guides, & procedural videos, visit us at [www.youtube.com/users/STCValves](http://www.youtube.com/users/STCValves)

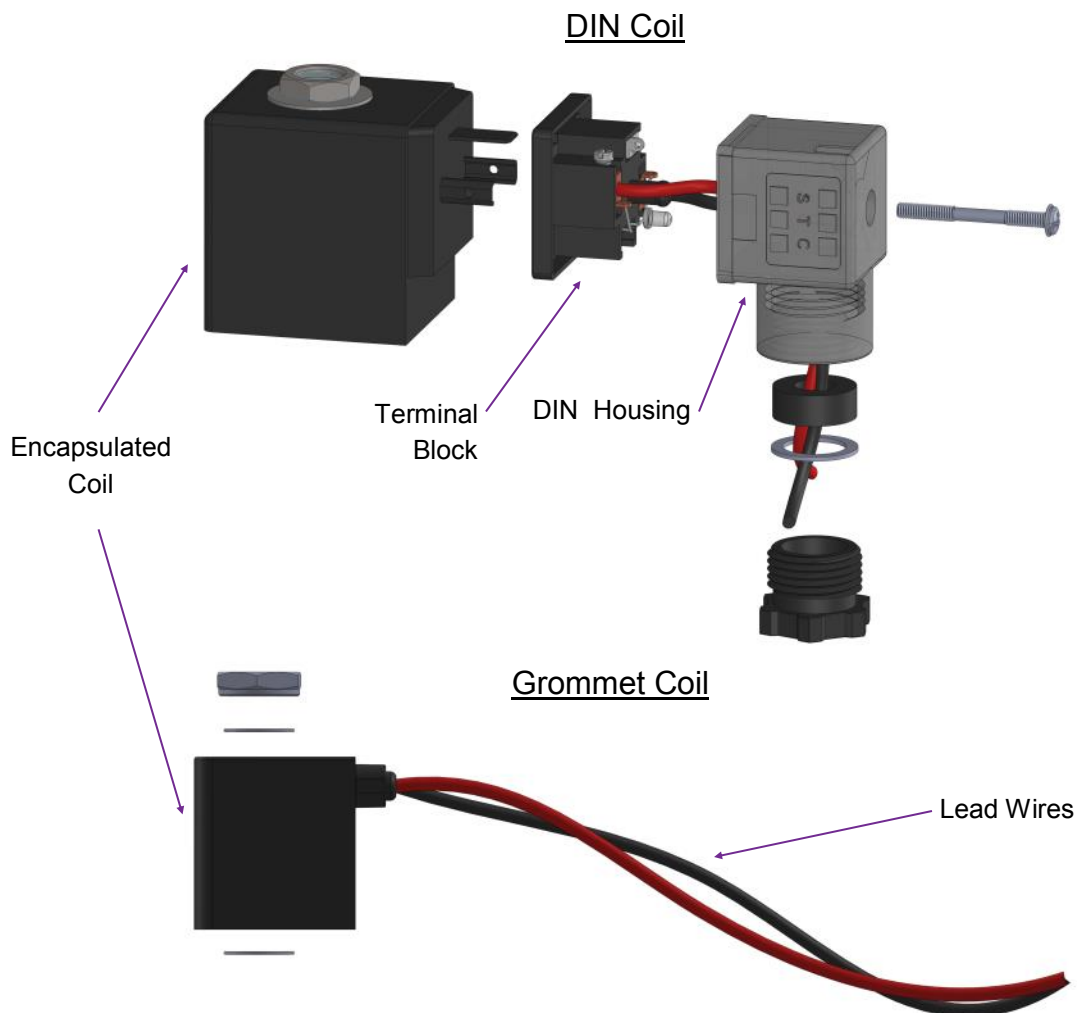
# Electrical Connections

## To Connect a DIN Coil:

- Remove the Philips screw from the plastic housing & unplug from the DIN coil.
- Use the removed screw to push the terminal block out of the plastic DIN housing.
- Note the “1”, “2”, and ground “⊥” symbols.
  - For DC DIN Coils, connect “1” to your positive lead & “2” to your negative lead.
  - For AC DIN Coils, connect “1” to your HOT lead, “2” to your NEUTRAL lead, and “⊥” to your ground lead, if required.

## To Connect a Grommet Coil:

- For DC Coils, connect the red wire to your positive lead & the black wire to your negative lead.
- For AC Coils, connect the black wire to your HOT lead & the white wire to your NEUTRAL lead.
- For Coils provided with Molded Cables, the color of the wire indicates the type of lead:
  - GREEN = Ground Wire
  - BLUE = Positive or HOT Wire
  - BROWN = Negative or Neutral Wire



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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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Sizto Tech Corporation, 892 Commercial Street, Palo Alto, CA 94303, USA

Credit Card Payments: Visa, MasterCard, Discover, or American Express accepted

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