# OUR PRODUCT RANGE

- Solenoid Valves
- Ball Valves
- Butterfly Valves
- Plug Valves
- Pneumatic Actuators
- Control Valves
- Lined Valves
- Knife Edge Gate Valves
- Safety Valves
- Pinch Valves
- Pressure Reducing Valves
- Accessories

Plot No. 123-124, Aira Estate, B/h Security Estate,
Nr. Kashiram Textile Mill, Narol, Ahmedabad-382405
(Gujarat) India.

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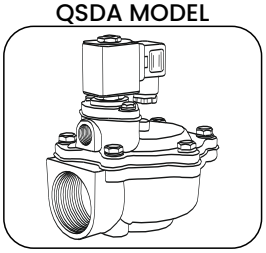
**CUSTOMER SERVICE**
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Mfg. & Mkt by:
**aira *Euro* automation pvt. ltd**
INDIA

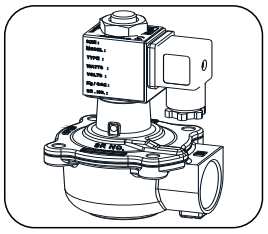
# 2/2-WAY ANGLE TYPE SOLENOID VALVES

**Installation, Operation & Maintenance**

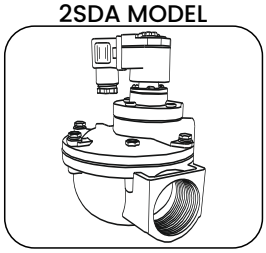
QSDA MODEL



ASDA MODEL



2SDA MODEL



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## 1. INTRODUCTION :

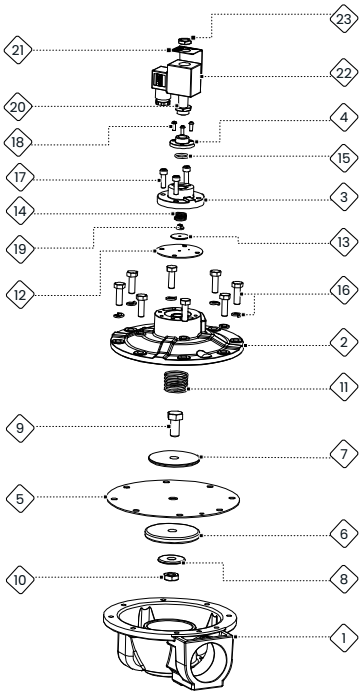
Thank you for choosing **"aira"** product. Each product is fully inspected after the production to offer you the highest quality. In order to fully utilize the product, we strongly recommend users to read the manual carefully and fully understand before operating /servicing the product.

**"aira"**offers high performance diaphragm operated pulse and pilot solenoid valves with threaded ports. available with integral pilot or as remotely pilot valves. Outlet at 90°to inlet. The pulse valves have just one moving part, the spring less construction of diaphragm providing fast ON-OFF operation. This high speed operation saves compressed air and provides kind of shock wave necessary to free the dust from filter bags.

## 2. VALVE SPECIFICATION :

| | |
|---|---|
| Pressure Rating | 0.6 To 8.5 Bar Max. |
| Temperature | Rated For 80°C max. (For High Temperature Upto 125°C Viton Diaphragm With Viton Seat Can Be Provide) |
| Coil Voltage | 12V, 24V, 48V, 110V, 230V, AC/DC |
| Coil Insulation | "F" Class, H Class |
| Coil Enclosure | IP 67 (Flameproof / Explosion Proof as per IS/ IEC-60079-1 |
| Meets | STD For Gas Group II C Zone 1 & 2 |
| Coil Rating | Continuos Rated |

## 3. EXPLODED VIEW




BILL OF MATERIAL :

| NO. | DESCRIPTION | MATERIAL | QTY. |
|---|---|---|---|
| 01 | BODY | ALUMINIUM | 01 |
| 02 | COVER | ALUMINIUM | 01 |
| 03 | SMALL COVER | ALUMINIUM | 01 |
| 04 | ADAPTOR | ALUMINIUM | 01 |
| 05 | BIG DIAPHRAGM | ASTM D3187 NBR | 01 |
| 06 | BIG DIAPHRAGM SEAT | ASTM D3187 NBR | 01 |
| 07 | ALUMINIUM PLATE | ALUMINIUM | 01 |
| 08 | S.S WASHER FOR BIG DIAPHRAGM | ASTM A276 TYPE S.S.304 | 01 |
| 09 | BIG DIAPHRAGM BOLT | ASTM A276 TYPE S.S.304 | 01 |
| 10 | BIG DIAPHRAGM NUT | ASTM A276 TYPE S.S.304 | 01 |
| 11 | BIG DIAPHRAGM SPRING | ASTM A276 TYPE S.S.304 | 01 |
| 12 | SMALL DIAPHRAGM | ASTM D3187 NBR | 01 |
| 13 | S.S. WASHER FOR SMALL DIAPHRAGM | ASTM A276 TYPE S.S.304 | 01 |
| 14 | SPRING FOR SMALL DIAPHRAGM | ASTM A276 TYPE S.S.304 | 01 |
| 15 | O-RING FOR ADAPTOR | ASTM D3187 NBR | 01 |
| 16 | BODY FITTING BOLT, SPRING WASHER | ASTM A276 TYPE S.S.304 | 08+ 08 |
| 17 | SMALL COVER FITTING L.N. BOLT | ASTM A276 TYPE S.S.304 | 04 |
| 18 | ADAPTOR FITTING SCREW | ASTM A276 TYPE S.S.304 | 03 |
| 19 | RIVET | ASTM A276 TYPE S.S.304 | 01 |
| 20 | 2200#-SINGLE SEATED 2 WAY HOUSING PLUNGER | STD. | 01 |
| 21 | NAME PLATE | ALUMINIUM | 01 |
| 22 | COIL | STD. | 01 |
| 23 | COIL FITTING NUT | ASTM A276 TYPE S.S.304 | 01 |

## 4. INSTALLATION

### GENERAL

- Do not install the product unless the safety instructions have been read and understood.
- The valve is designed for pulse operation.do not operate the valve in the open position continuously as it can cause oscillation (chattering) of the diaphragm leading to product failure due to the large amount of air consumed causing insufficient air supply on the inlet side.

### ENVIRONMENT

- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
- Do not expose to direct sunlight. Use a suitable protective cover.
- Do not install in a location subject to vibration or impact in excess of the product's specifications.
- Do not mount in a location exposed to radiant heat that would result in temperatures in excess of the product's specifications.
- Do not mount in area subject to electrostatic charging mechanisms.

### PIPING

- The compression fitting is used to seal the connection between the valve and the pipe work do not rely on the compression fitting to support the piping as it could become detached. Ensure that inlet and outlet piping is secured with separate fixings.
- Before connecting piping make sure to clean up chips, cutting oil,dust etc. When installing piping or fittings, ensure sealant material does not enter
- inside the port. When using seal tape, leave 1 thread exposed on the end of the pipe/fitting.
- Use steel tubing for the inlet and outlet piping.

### ELECTRICAL

- Verify name plate affixed on the solenoid.
- Connect the power supply according to the voltage rating of the solenoid
- Install valve in such a way that the rain water / other process fluid dripping along the cable does not fall on the SOV and has no possibility to run along the cable and enter into the terminal area.
- Ensure that the solenoid construction is selected properly meeting the environment in which the valve is to be installed in hazardous location or weather-proof solenoid having IP 67 for outdoor installation.



## 5. MAINTENANCE & INSTRUCTIONS

- The solenoid valve must be removed from the site and has to be maintained under safe conditions.
- All air and electrical connections must be switched off before removing valve from the line.
- It is recommended to replace complete set of O-ring even if one of the O-ring is damaged. This is to ensure trouble free operation of the valve and will avoid its premature failure.
- If necessary to clean the components, do not use Kerosene, Diesel, and Petrol to clean valve as this damage the O-Rings and other rubber material. Instead use light detergent soap solution.
- Ensure that the components are free from dust, lint and metal burrs.
- Twisting of O-ring should be avoided. Ensure that the twist is removed before fitting matching parts
- Pinching of O Ring at the groove corner at the time of closing gland should be avoided.
- User is requested to use safe practice for maintenance.
- It is important to place the dismantled valve parts on a clean paper or cloth in same sequence in which you have dismantled them.
- In case of difficulty you should contact the agent, distributor or **"aira"** directly

## 6. DISMANTLING & ASSEMBLY :

1) Turn off the pressure and vent the lines before loosening the lines or valves.
2) To Replace coil- open coil fitting nut & washer pull out coil assembly
3) Replace new coil assembly ensuring the construction, voltage and current meets the requirements.
4) Tighten the coil fitting nut applying torque of 0.2 kgm to 0.35 kgm to avoid over tightening of the coil
5) Measure and record resistance of the solenoid.
6) To Replace Plunger- open coil fitting nut & washer pull out coil assembly
7) Remove 2200# housing plunger assembly.
8) Replace the necessary defective parts ensuring that the plunger assembly spring and the retaining ring.
9) The Plunger is interchangeable and can be fitted in the existing guide assembly
10) To Replacement of Diaphragm-Remove cover by cover fitting bolt washer
11) Replace new diaphragm ensuring that the seat is facing downward towards the body and the ribs are facing cover.
12) Tighten the bolts by required torque.



## 7. SOLENOID VALVE COIL WIRING DIAGRAM :

### How To Wire A 3 Pin ISO4400 DIN43650 Electrical Connector

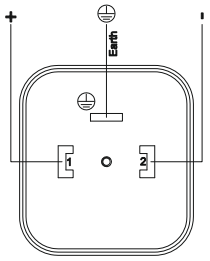



**Figure [A]**

- It Is Good Practice To + Ve Power Supply (Red Or Brown Wire) To Terminal 1 - Ve Power Return (Black Or Blue) To Terminal 2.
  It Is However Best Practice And Essential When Working In Damp Environments To Achieve Our IP65 Rating That The Correct Size Of The Cable Into The Conduit Entry Is Achieved So That The Rubber Grommet Fits Firmly Against The External Cable Sleeve To Prevent Water Ingress Into The Connector.

### Cable Entry Standard

PG9 Is For Cables 6 - 8mm
PG11 Is For Cables 8 - 10mm

- Also Ensure Correct Fitting Of The Gasket Between The Connector And The Coil With Correct Or Adequate Torque.

### TORQUE SETTINGS :

Strain Relief Nut : 1.8 N/m +/- 10%
Central Fixing Screw : 0.4 N/m +/- 10%
Contact Screw : 0.2 N/m +/- 10%

- It Is Also Important As Correct Sizing And Fitting Not Only Protects The Electrical System But Also Everything And Everyone Around The Connector. Keeping The Circuits Safe, Dry And Helping To Keep The Cable Securely Fixed In Place.



### ORIENTATION OF THE CONNECTOR IS ALSO IMPORTANT.

- Make Sure The Cable Conduit Entry Is Facing Down And That The Electrical Cable Has Sufficient Slack In It So That It Drops Under the Connector And Back Vertically Up And Into The Conduit Entry Of The Plug. This Will Help Prevent Water Ingress Into The Connector Keeping It Safe And Water Droplets Will Fall Away From The Conduit Entry Point.

## 8. INSTALLATION :

- Install The Unit In Clean & Acid Free Surrounding Atmosphere.
- Check Whether The Unit Is As Per Requirement, Its Port Size, And Fittings To Be Used On The Unit.
- Before Assembly, Please Make Sure That There Are No Damages With The Product And All Required Parts Are Available.
- Before Assembly, Please Make Sure That The Line Pressure Does Not Exceed The Maximum Pressure Specified On The Product Label.
- Before Assembly, Please Make Sure That There Is No Flow In The Line Where The Coil Will Be Connected, And That Such Possibility Has Been Prevented During The Assembly, During The Valve Mount The Proper Wrench Must Be Used.

**SOLENOID VALVE CONNECTION :**
**(A) RIGHT, (B) RIGHT, (C) WRONG**

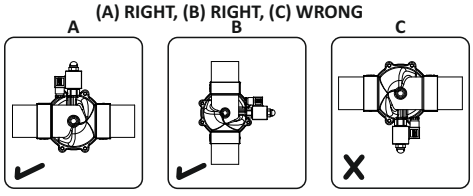



**Figure [C]**

- In Solenoid Valve Assembly Please Be Careful That Coil Should Not Be At The Lower Part When Conduction Assembly.
- Otherwise The Plunger In The Hive Shall Be Affected By The Residuals And Rusts Accumulated In Time And Prevent The Coil To Move The Plunger The Solenoid Valve May Be Assembled As Show In Above Figure.