

## Installation Operation and Maintenance Manual

# GENERAL INSTRUCTIONS SOLENOID OPERATED VALVES



**THIS DOCUMENT** is applicable to all Solenoid Operated Valves (SOV's). For service instructions specific to your product, please refer to the product specific manual and datasheet.

## **DESCRIPTION.**

SOV's control the direction of flow and can be used to isolate the flow of gasses and liquids

We offer both two ported two position (2/2), and three ported two position (3/2) SOV's. Two and Three ported SOV's are offered in both balanced poppet and pressure biased configurations. As well as normally closed (NC) and normally open (NO) versions. Three ported balanced poppet SOV's can be used in any 'universal' configuration.

A direct acting SOV is typically used for low flow applications. For high flow applications an indirect acting SOV is used. Indirect SOV's can be internally or externally piloted.

Depending on pressure, flow, solenoid power requirements and your application will determine which SOV is best suited.

The standard inlet and outlet ports are stated in the installation drawing, alternative thread sizes and forms can be supplied.

For Maximum Working Pressure and other information, please refer to the product specific datasheet.

## **PERFORMANCE DATA.**

The maximum flow rate, and flow performance under given criteria through the SOV can be supplied by BiS Wells Ltd. See valve datasheet / installation drawing for capacity factor (Cv) or orifice size,

## **CONSTRUCTION.**

The standard valve is constructed using a stainless steel Solenoid housing and an aluminium alloy valve body. A high-performance soft seat is manufactured from an engineering plastic. Alternative materials such as brass, bronze and stainless steel are available.

## **EXPLOSIVE ATMOSPHERES**

Only Solenoids approved for use in Explosive Atmospheres should be used in areas where explosive gasses and dusts are present. These solenoids are both ATEX and IECEx approved. Refer to the product specific datasheet to determine whether your solenoid is suitable.

**Please consult BiS Wells Ltd if you are unsure about your products suitability.**

**The Solenoid is a non-serviceable item. Solenoids should be returned to BiS Wells Ltd for service .**



## **INSTALLATION, OPERATION AND MAINTENANCE**

### **IMPORTANT**

1. Products must not be modified in any way.
2. Do not use a valve if you suspect it leaks or if its performance is hindered in some way. The valve must be removed from the line and serviced accordingly.
3. Ensure that these instructions are made available to the operator or end user.
4. The Solenoid is a non-serviceable item. Solenoids should be returned to BiS Wells Ltd for service.

### **INSTALLATION.**

Please ensure these instructions are read and understood before installing your product.

1. Only trained and experienced personnel should install this product.
2. Poor installation of the product can cause death or serious injury.
3. Consult the product specific datasheet for flow direction, mounting points and other information such as the location of the electrical conduit connection.
4. Refer to the product specific datasheet for conduit thread type, supply voltage, positive and negative electrical connections.
5. Refer to the product specific datasheet for internal and external earthing location.
6. Always check that the system medium is compatible with the wetted valve materials.
7. Always check that the external valve materials are suitable for the ambient conditions.
8. SOV's can be installed in any orientation. However, to prolong valve life and ensure optimum performance, it is recommended that valves are mounted vertically.
9. Thread lubricants and/or sealants must be used on tapered threads.
10. Gas or Fluid cleanliness is vital to ensure optimum performance and prolonged valve life.
11. Pressure supplied to the valve must be isolated before installation, and when installing gauges and similar components.
12. It is recommended that a safety relief valve is positioned upstream of the SOV.
13. Ensure vent outlets are not blocked.
14. All parallel female threads are designed to accept a bonded seal.
15. A 25-micron filter is recommended on the inlet supply to avoid damage to the valve seat from debris and other potential contamination. This is most advisable on new installations.
16. SOV's are supplied as standard with mounting holes. See product specific installation drawing.
17. For Solenoids approved for use in Explosive Atmospheres, the Zone, Ambient Temperature, Gas and Dust groups must be assessed for suitability.

## **MAINTENANCE**

Please ensure these instructions are read and understood before maintaining your product.

1. Only trained and experienced personnel should service this product.
2. Poor service of the product can cause death or serious injury.
3. Before maintenance work is undertaken, it is vital that any pressure stored within the valve is vented. This is applicable to SOV's that are currently installed in a line and to ones that have already been removed.
4. Ensure the electric supply to the solenoid is switched off before removal.
5. Valves can be returned to BiS Wells Ltd for maintenance and service.
6. Spares kits are available for purchase. When ordering spares kits please state model and serial numbers of the valve and, if possible, the gas or fluid in the system.
7. It is advisable to hold a Spares Kit for planned maintenance.
8. All maintenance work undertaken should be carried out in clean conditions.
9. Service intervals are the responsibility of the user.
10. A preventative maintenance plan should be put in place to ensure safe and continuous operation
11. If a filter has been fitted upstream of the valve it should be regularly cleaned or replaced.
12. Only lubricants compatible with the valves materials of construction and the system medium.
13. The Solenoid is a non-serviceable item. Solenoids should be returned to BiS Wells Ltd for service.

## **OPERATION**

Please ensure these instructions are read and understood before using your product.

1. During use ensure the maximum working pressure (MWP) is not exceeded. MWP is marked on the valve / tag and, also on the product specific datasheet. If unsure, please contact BiS Wells Ltd.
2. Misuse of the product can cause death or serious injury.
3. Regularly inspect the product for signs of damage before use.
4. Apply pressure in a controlled manner. Pressure spikes and/or shocks must be avoided.
5. Gas or Fluid cleanliness is vital to ensure optimum performance and prolonged valve life.
6. Remove excess moisture from the gas. Excess moisture can cause icing.
7. Ensure that vented fluids and gasses are done so in a safe and controlled manner. Some gasses can cause suffocation.