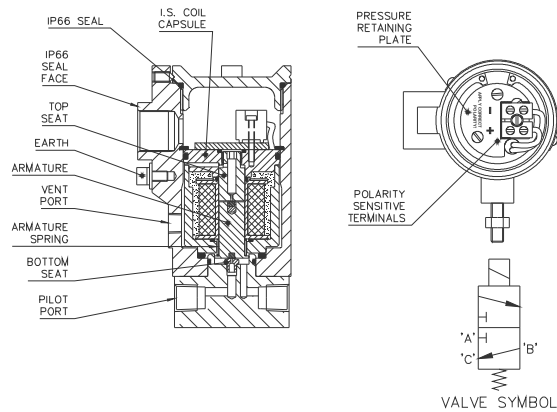




## Operation

The I.S. cartridge contains an epoxy-potted coil and diodes. This part must not be compromised by any application condition and is a non-serviceable item. The coil is polarity sensitive. Reversal of the terminal connections will cause the valve to cease to function.



The pressurised media is retained within the valve assembly (pressure boundary) by the mechanical strength of all its metal parts, seats and seals. Degradation of any of these components will cause the valve to leak.

The flow is controlled by actuating the Armature by engaging / disengaging. Energising the coil allows the Armature to rise opening the lower seat, which gives flow from port 'A' to port 'B' allowing gas to pass through and subsequently when the Armature is in its home position gives flow from port 'B' to port 'C'.

The ICO2S has an IP66 rating. Degradation of the IP66 seals / gaskets / sealing faces or failure to tighten all sealing joints, will allow water to leak inside the enclosure.

**For best practice, the valve should ideally be exercised at least once a month.**

## Removing an existing valve

### Tools

Electrical 3mm Screw driver  
Allen Keys: 2.5mm, 3mm, 4mm & 8mm.  
A/F sockets: 8mm & 10mm

1. Obtain work permit and check area for hazards.
2. Isolate valve from all pipeline and electrical supplies.
3. Loosen M5 locking screw and unscrew cover.
4. Disconnect supply cable and remove.
5. Remove pipe connections from valve.
6. Unscrew M6 mounting nuts and remove the valve.

## Installing a valve

### General requirements

- Remove all bungs and packaging.
- Pipe work and media must be clean.
- Inlet filters are recommended (e.g. 20 microns).
- Prevent pipe sealant from entering the system.
- Use only correct tools.
- Do not use valve as a lever.
- Earth equipment to prevent the build up of an electrostatic charge.
- Ensure all interfacing equipment is rated to the expected duty conditions and will not degrade the integrity of the ICO2S.

### Mounting

An ICO2S will function satisfactorily when mounted inclined from the vertical. However for maximum life and efficiency mount vertically. The ICO2S is not designed for use in vibration applications. Do not invert. Do not mechanically stress the equipment.

### High temperature applications

The ICO2S should not be used in environments > 64 °C. Ensure all associated parts, including cable glands and cabling, are fit for rated duty.

### Low temperature applications

Contact Maxseal sales for special operating conditions.

### Procedure

1. Make connections to the valve ports as required. DO NOT OVERTIGHTEN.
2. A pilot vent plug is supplied. But if the application is liable to blockage, (i.e. ice or dirt), use alternative vent methods. DO NOT BLOCK THIS VENT, AS THE PRODUCT WILL CEASE TO FUNCTION. THE VENT PORT MUST BE EXPOSED TO ATMOSPHERIC PRESSURE.
3. Loosen M5 locking screw and remove solenoid cover.
4. Install cable using an appropriate gland fit for duty.
5. Make terminal connections as labelled. All terminals must be tightened before commissioning.
6. Replace solenoid cover and lock M5 locking screw.

## Maintenance

**It is recommended that all products be returned to Thompson Valves for refurbishment.**

### Spares

Only Maxseal spares kits should be used.  
Main valve kits includes all soft parts and operating spring.

### Lubrication

-20°C to 64°C: Molykote 111 grease.  
-40°C to 50°C: Molykote 33 medium grease.

### Part A. Disassembling the valve

1. Remove two M4 Socket Caps Screws to release pilot body.
2. Slide out Spring Armature, then Armature.

### Part B. Examining a valve's components

Examine and replace all worn or damaged parts. Replace all seals and operating springs with Maxseal spare parts kit. All seals should be lubricated and have no deformation. All seating and sealing faces should be free from contaminant, marks, scratches, etc.

### Part C. Assembling a valve

1. Smear all seals with recommended grease.
2. Build assemblies in reverse order shown in part A.
3. Test valve at normal working pressure (2-8 bar / 2-10 bar).
3. If function of the valve is fine then continue fitting.
4. If needed continue onto part D.

Note: Torque M4 bolts to 3 Nm.

### Part D. Adjusting & testing a valve

1. Remove pressure retaining plate.
2. Gently screw top seat down until both seats on armature are sealed.
3. Back off top seat half a turn.
4. Make connections to valve ports as per markings.
5. Make terminal connections as labelled.
6. Test main valve at normal working pressure, (2-8 bar / 2-10bar) at pilot valve and 10 volts DC at solenoid.
7. Replace pressure retaining plate.

### Part E. Problems

If the ICO2S does not function as intended, do not install valve. Repeat the maintenance procedures Parts A to D. If the problem persists contact Maxseal Sales.

If you are not sure about any application, maintenance or technical issue, contact Maxseal Sales for advice.