



Solenoid Valve - Model P05



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Solenoid Valve - 2/2 - Pilot Piston - Normally Closed

Benefits & Features

- High flow piston body with remote pilot control
- Media temperature: -5°C to +130°C
- Two way normally closed (normally open version available. Model P55)
- Solenoid valve can be rated to EExd ATEX IECEX
- Various body material options



Specification

Configuration	Piston design
Port Sizes	1 1/2" to 2" screwed. 2" to 12" Flanged
Orifice	see table below
Kv	see table below
Body	see order table below
Media	Air, water, liquids etc. Subject to material compatibility
Pressure ranges	0.5 to 22 Bar
Seals	NBR (-10°C to + 80°C), VITON (-10°C to + 90°C) * FDA approved EPDM upon special request

Technical Data

	A	B	C	D	E	Orifice mm	Nominal Max. Bar	Pressure in Bar		KV Flow Factor L/min.	CV Flow Factor	
								Min. / Max. Operating Differential Pressures BAR				
								Min.	Max.			
P05	40	O				1 1/2"	40	20	0.5	22	686	48
P05	50	P				2"	50	20	0.5	22	1072	75
Model with PN16 flanges. PN10, PN25 & ANSI flanges available upon request.												
P05	50	FL				2"	50	20	0.5	22	1072	75
P05	65	FL				2 1/2"	65	20	0.5	22	1501	105
P05	80	FL				3"	80	20	0.5	22	2002	140
P05	100	FL				4"	100	20	0.5	22	3718	260
P05	150	FL				6"	150	20	0.5	22	7865	550
P05	200	FL				8"	200	20	0.5	22	14300	1000
P05	250	FL				10"	250	20	0.5	22	22880	1600
P05	300	FL				12"	300	20	0.5	22	31460	2200

Order Codes

A	Body	B	Ported Body	Flanged Body PN16. ANSI 150 available			C	Seals	D	Protection	
T	Bronze	O	1 1/2" BSP	2C	2" PN16	6C	6" PN16	0	NBR (-10°C to + 80°C)	P	IP65 Safe Area
C	Cast Iron	P	2" BSP	25C	2 1/2" PN16	8C	8" PN16	1	VITON (-10°C to + 90°C)	S	IP67 Safe Area
D	Ductile Iron			3C	3" PN16	10C	10" PN16	6	EPDM* (-10°C to + 90°C)	B	II 1/2 GD EEx-d IIB T6 (-20 to +40°C)
I	316 Stainless Steel			4C	4" PN16	12C	12" PN16	* FDA approved EPDM special request	C	II 1/2 GD EEx-d IIC T6 (-20 to +40°C)	
H	304 Stainless Steel			5C	5" PN16				H	Ex-d c IIB IP67 IECEX	
									T	Ex-d c IIC IP67 IECEX	
									R	Ex-d IIC EAC Ex	



Solenoid Valve - 2/2 - Pilot Piston - Normally Closed



IP65



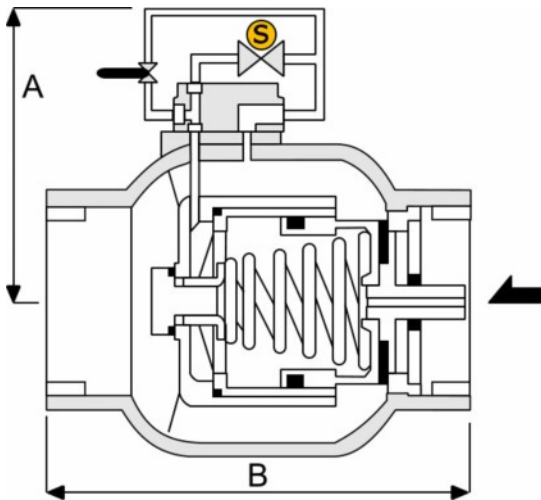
EExd IIB or IIC



IP67

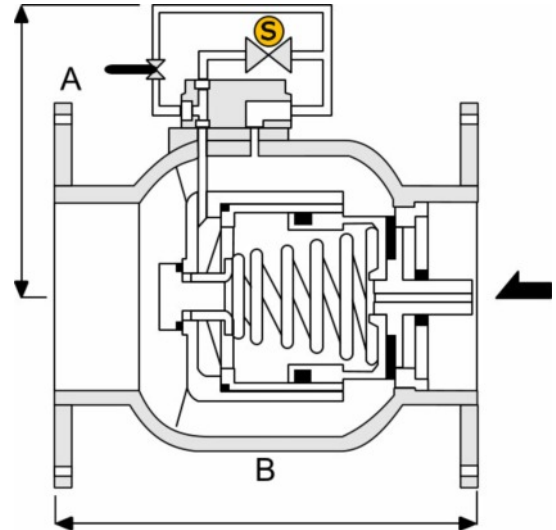
Weights & Dimensions

Screwed Port Model



Model		Weight Kg	Dimensions mm	
			A	B
P05	1 1/2"	4	120	170
P05	2"	10	200	190

Flanged Model

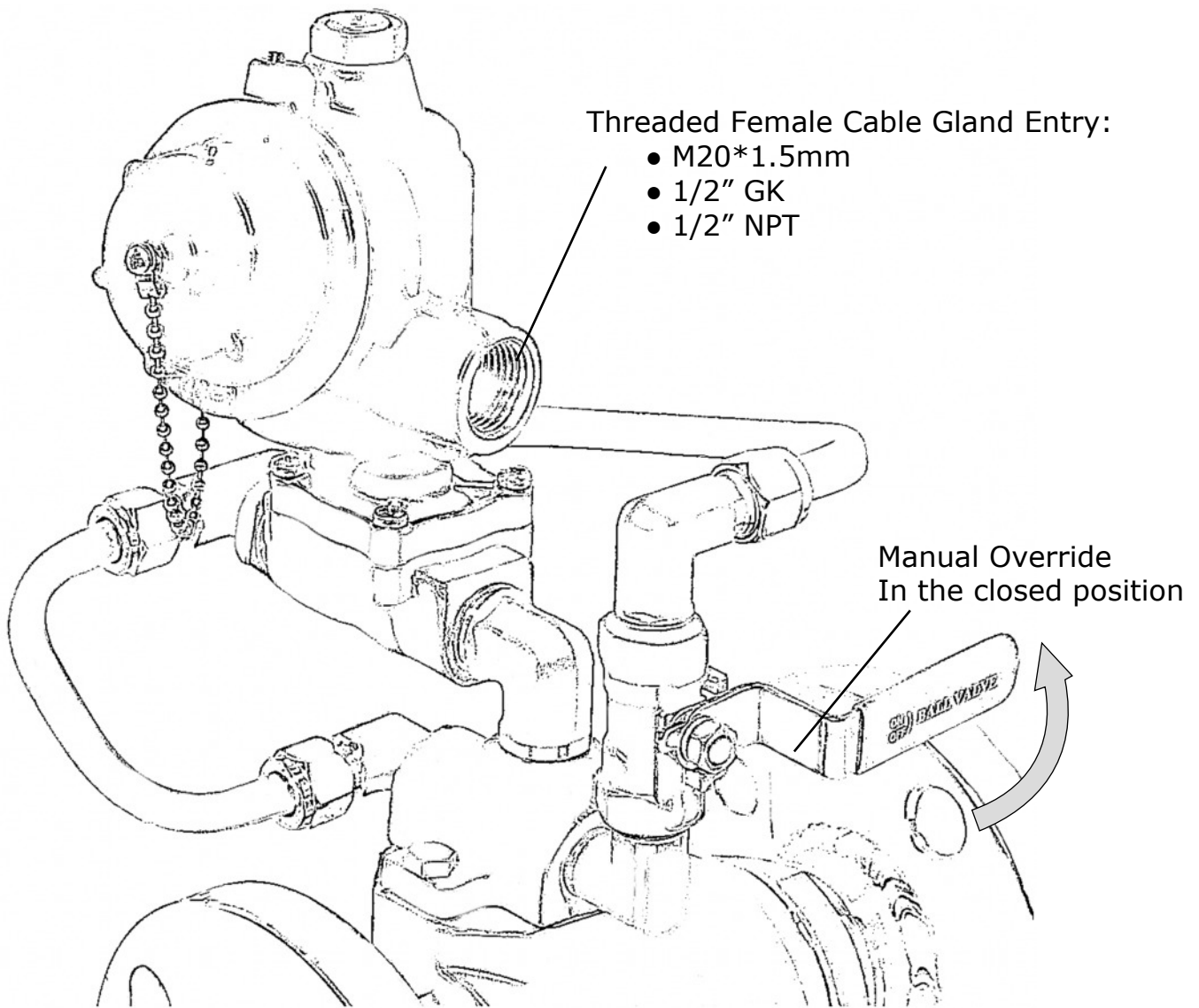


Model		Weight Kg	Dimensions mm	
			A	B
P05	2"	13	190	190
P05	2 1/2"	15	210	195
P05	3"	20	225	210
P05	4"	26	250	222
P05	5"	38	280	245
P05	6"	51	310	260
P05	8"	95	420	300
P05	10"	152	470	335
P05	12"	202	530	370



Electrical Wiring - IP67 Housing - Cable Gland Entry

Manual Override - Operation



Electrical Cable Gland Entry

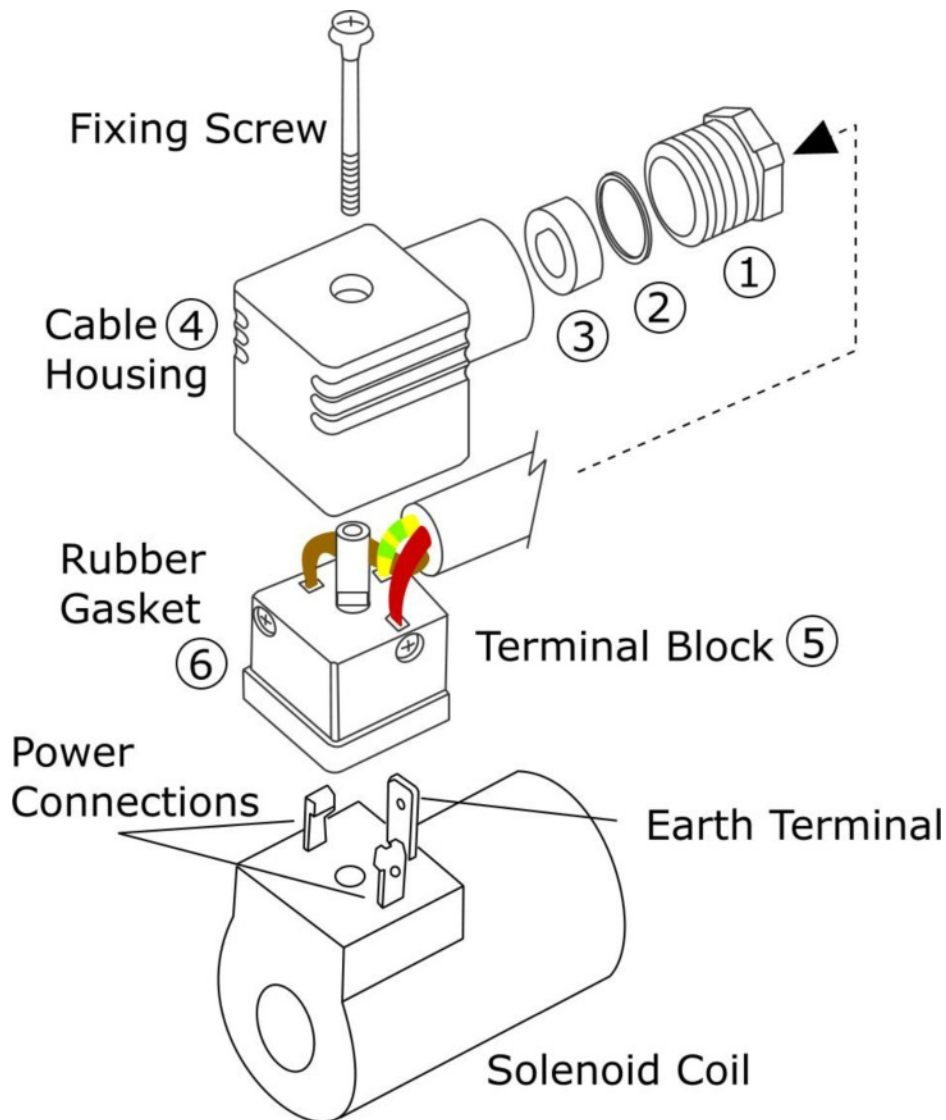
Three options are available: M20, 1/2" GK or 1/2" NPT. The thread is stamped on the side of the housing for easy identification

Manual Override

The manual override lever can be operated allowing the valve to open without power to the solenoid. Please note that the valve needs a minimum of 0.5 bar to open



DIN electrical socket connectors to protect solenoid coil terminals and wiring.



Section 1: DIN Connector Assembly

- Insert the electrical power cable through the gland assembly (1,2,3)
- Push the cable through cable housing (4)
- Connect power and earth cables to terminal block 5
- Push terminal block (5) backwards, inside cable housing (4)
- Place rubber gasket (6) on terminal block (5) front face
- Push terminal block onto solenoid coil terminals
- Push fixing screw through complete assembly
- Tighten fixing screw with small screwdriver
- Do not over tighten
- Tighten cable gland (1,2,3) by hand

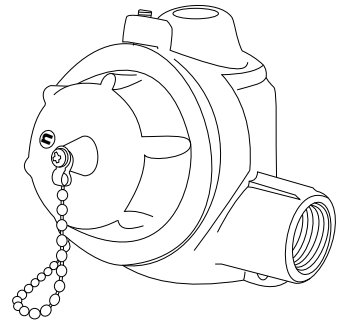


Electrical Wiring - IP67 Housing

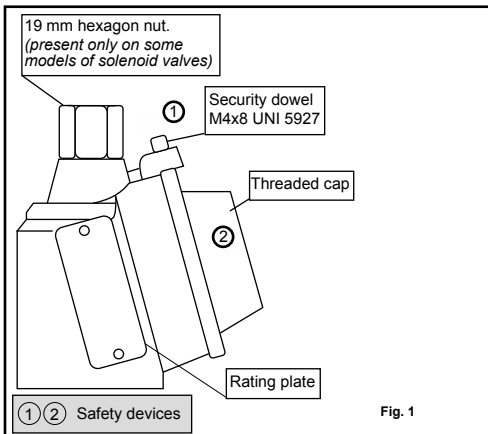
Installation Procedures & Methods



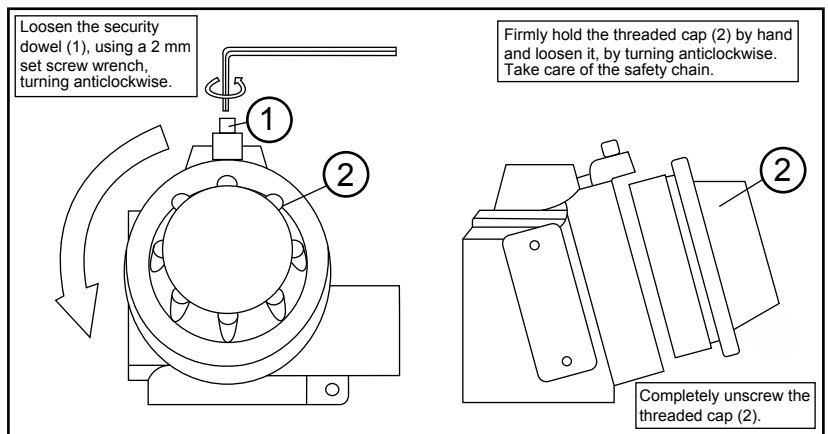
Attention: For safety purposes, always ensure that the power supply is disconnected. After de-energising, allow 15 minutes before continuing the following procedures



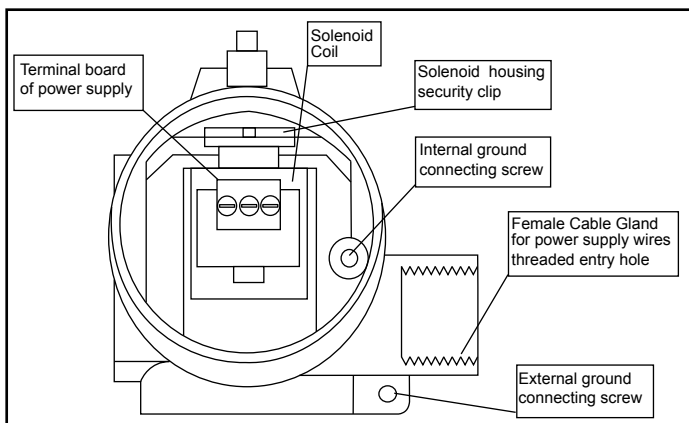
A



B

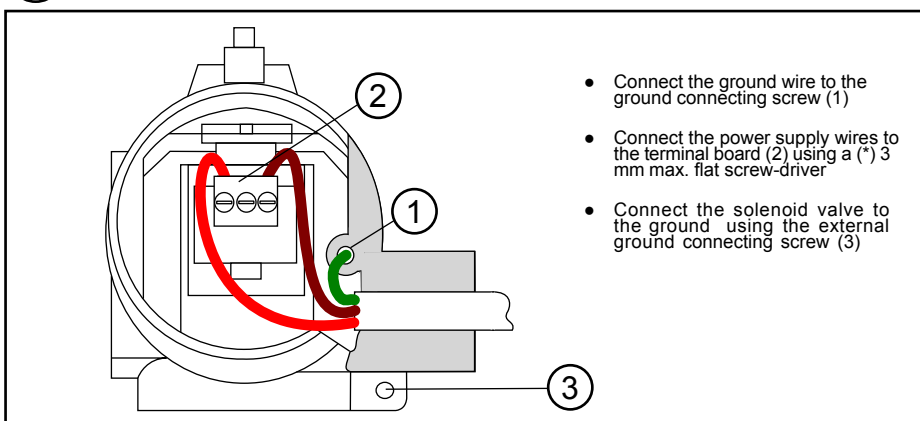


C



Pipe fittings used for cable entry (Cable, duct, conduit etc) are NOT supplied by the manufacturer. Installation engineers should ensure that the use of fittings are of the correct diameter and suitable to secure the tightness of the cable used. Where site conditions indicate, cable duct, conduit etc. must be ATEX approved, for a protection degree equal or greater than the protection degree indicated on the rating plate. The thread type is indicated on the housing: M20*1.5mm, 1/2"NPT or 1/2"GK

D





Solenoid Valve Installation & Maintenance

Installation Procedures & Methods

Section 1: How to install Solenoid Valves

Solenoid Valves can normally be installed and operate in any orientation. However, certain models are designed to operate in horizontal installations. Please contact Red Dragon for further information.

Installation Procedure:

Check that the Solenoid Valve is the correct product ordered for the application:

- Isolate the site electrical power supply
- Isolate the site media supply (dependant on the application)...air, water, steam etc. Leave until cool/safe.
- Insert the valve onto the pipe, ensuring that the flow direction is observed.....IN for incoming media, or an arrow stamped on the valve body.
- Ensure that the pipe connections are free from burrs or loose pipe thread tape
- Tighten all pipe joints
- Connect electrical power supply via DIN electrical socket connector, as detailed in section 1
- Ensure that DIN connector is properly connected to solenoid coil and the gasket is installed correctly
- Apply media pressure and check for leaks

Section 2: Maintenance Procedure for Solenoid Valves - IP65 Safe Area

In the unlikely event of a valve malfunction, or routine maintenance, follow these instructions:

- Isolate the site electrical power supply
- Isolate the site media supply (dependant on the application)...air, water, steam etc.
- Remove the solenoid coil by unscrewing the coil retention nut anti-clockwise
- Remove the coil tube stem by unscrewing anti-clockwise
- Carefully remove the plunger assembly (inside the coil stem)
- Check the plunger assembly for damage or worn seals
- Check the face inside the coil stem for foreign particles that could prevent correct operation
- For Pilot Diaphragm Solenoid Valves: remove the top cover housing and check the diaphragm for damage and blocked transfer port.
- Re-assemble the valve in reverse order, ensuring that all parts are cleaned and assembled correctly

Section 3: Maintenance Procedure for Solenoid Valves - IP67 Safe Area & EExd with Housing

In the unlikely event of a valve malfunction, or routine maintenance, follow these instructions:

- Isolate the site electrical power supply
- Isolate the site media supply (dependant on the application)...air, water, steam etc.
- Remove the solenoid coil by unscrewing the coil retention nut anti-clockwise
- Remove the coil tube stem by unscrewing anti-clockwise
- Carefully remove the plunger assembly (inside the coil stem)
- Check the plunger assembly for damage or worn seals
- Check the face inside the coil stem for foreign particles that could prevent correct operation
- For Pilot Diaphragm Solenoid Valves: remove the top cover housing and check the diaphragm for damage and blocked transfer port.
- Re-assemble the valve in reverse order, ensuring that all parts are cleaned and assembled correctly



Solenoid Valve Maintenance - IP67 Housing

Solenoid Coil Removal - Operations 1-2

Tools Required



1	Solenoid housing security clip extraction tool (KM/3062)
2	Flat screwdriver (max. 3x1)
3	Special fixed core wrench (KM/2621)
4	Fixed core wrench lever pin 8mm
5	Setscrew wrench no.2
6	19mm spanner



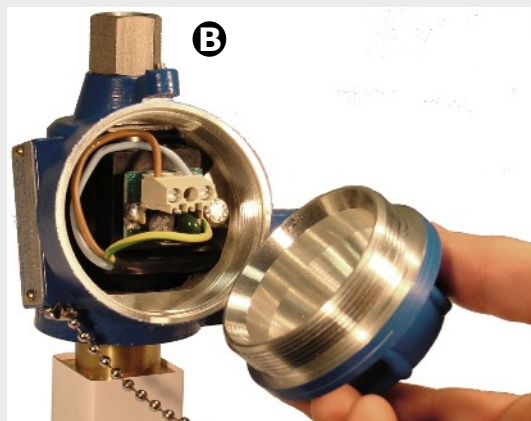
Ensure that the power supply is switched off before commencing the following procedures

Operation 1



Loosen the security dowl using the setscrew wrench 5

Operation 2



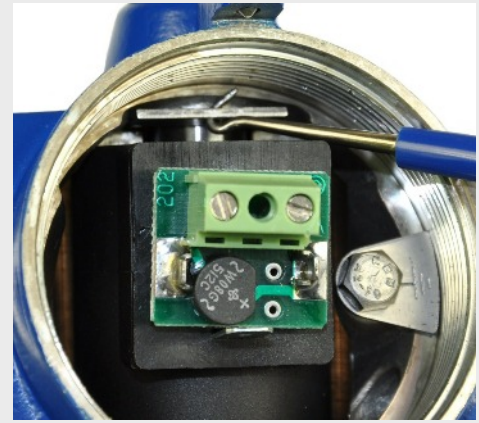
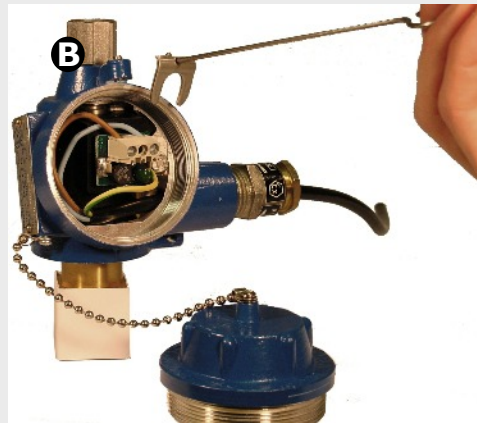
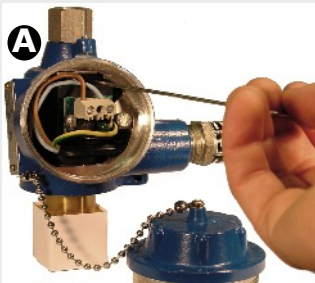
Unscrew the solenoid Housing threaded cap, By turning anti-clockwise

Solenoid Valve Maintenance - IP67 Housing

Solenoid Coil Removal - Operations 3-5

Operation 3

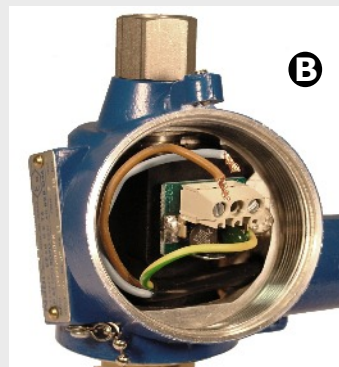
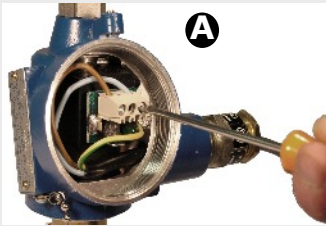
Insert the clip extraction tool in the solenoid housing security clip. Gently pull the clip away from the housing until it is extracted.



Operation 4

Loosen the terminal board screws and pull out the two power supply Wires (A)

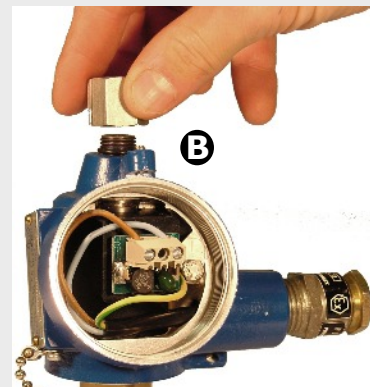
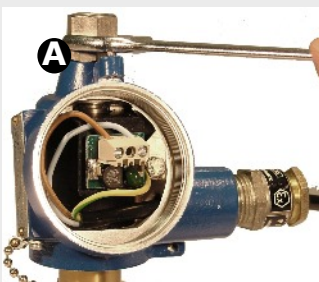
It is not necessary to unscrew the internal earth connecting wire.



Operation 5 (if fitted)

Depending on the model, loosen the hexagonal nut with a 19mm spanner, turning anti-clockwise (A)

Once loose, unscrew the nut by Hand (B)

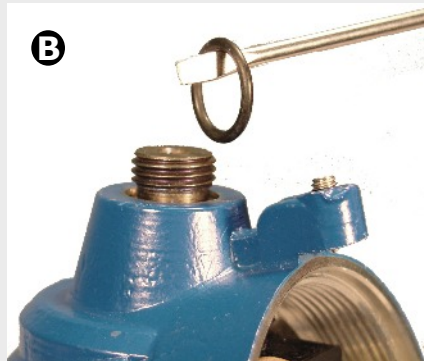
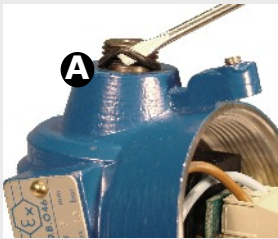




Solenoid Valve Maintenance - IP67 Housing

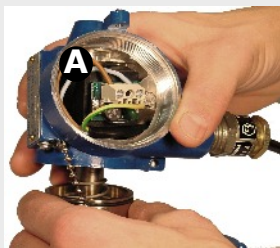
Solenoid Coil Removal - Operations 6-8

Operation 6



If operation 5 was necessary, carefully extract the O ring from the solenoid coil housing

Operation 7



Pull up the solenoid housing until the solenoid coil is clear of the pilot assembly tube C.

Operation 8



Extract the solenoid coil from the housing, by twisting it gently leading with the top edge.