

## Solenoid Valve - Model L03 - 1/4" 2/2 Normally Closed



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## Solenoid Valve - 2/2 - Normally Closed

### Benefits & Features

- Direct Acting with spring return
- Suitable for gaseous and liquid media
- Two way normally closed
- Ideal for dependable on off control
- Brass or 316 Stainless Steel bodies
- Sub base mount option for orifice sizes 1.8mm
- IP65, EExd IIB or EExd IIC versions
- Ex-d IIC -60°C to +60°C ambient versions
- ATEX, EAC Ex (CU TR 012) and IECEx, Ex-d approved



Stainless Steel body  
with EExd housing

### Specification

<b>Configuration</b>	Direct acting poppet design
<b>Port Sizes</b>	1/4" BSP or NPT. Sub base mount option
<b>Orifice</b>	see table below
<b>Kv</b>	see table below
<b>Body</b>	Brass or 316 Stainless Steel
<b>Media</b>	Air, gases, liquids etc. Subject to material compatibility
<b>Pressure ranges</b>	See individual data tables below
<b>Seals</b>	see order code table
<b>Voltage</b>	12, 24, 48, 110, 220, 230 AC/DC. Other voltages upon request

### Technical Data

							Port Size BSP or NPT	Orifice Mm	Min. /Max. Operating Differential Pressures. BAR.			KV Flow Factor L/min.
									Min.	Normally Closed Maximum		
										AC	DC	
L03	A	08	B	C	D	E	¼"	0.8	0	60	60	0.2
L03		08				/AP100	¼"	0.8	0	100	100	0.2
L03		18					¼"	1.8	0	25	20	1.2
L03		25					¼"	2.5	0	20	18	1.6
L03		32					¼"	3.2	0	8	6	1.8



Stainless Steel body  
with IP67 housing



Sub base mount  
EExd



Sub base mount  
IP65



Sub base mount  
IP67 safe area

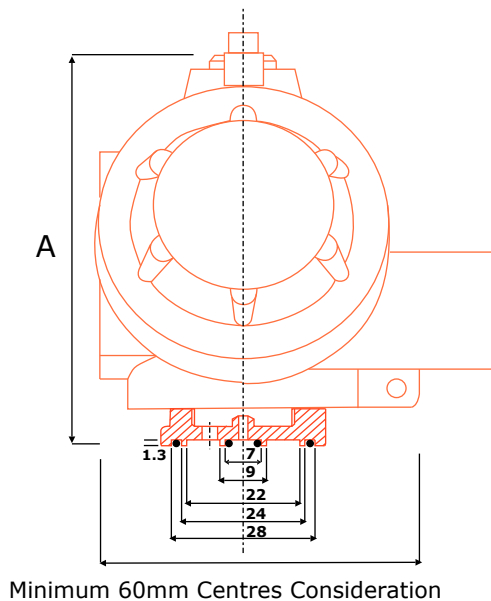


Brass body  
with IP65 coil  
+ Manual Override

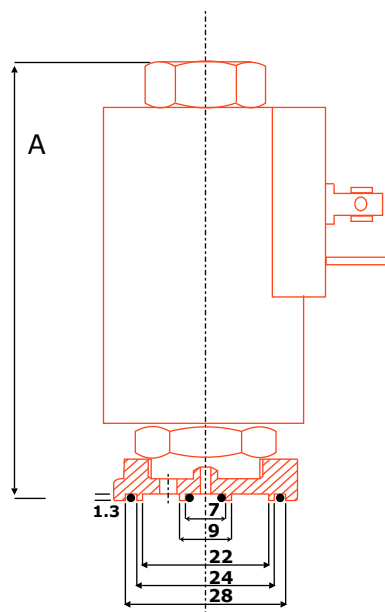
## Solenoid Valve - 2/2 - Normally Closed

### Dimensions

Sub Base Mount EExd & IP67 Housing versions



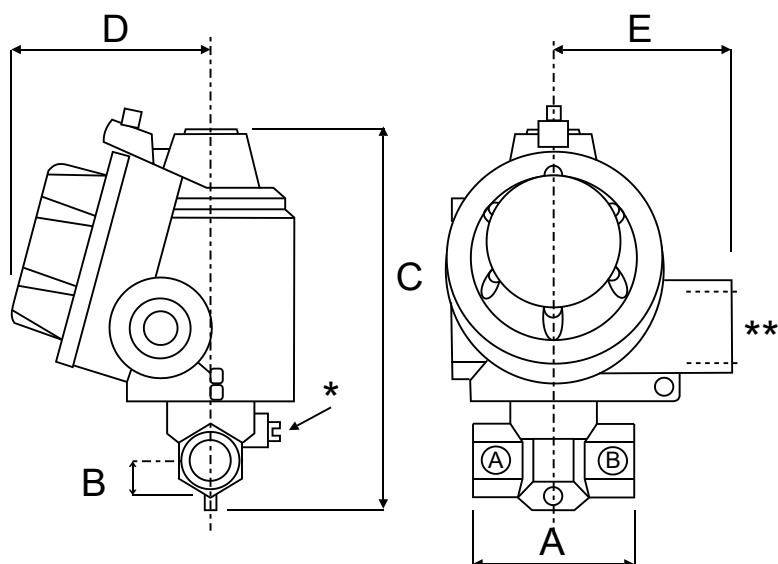
Sub Base Mount: IP65



### Dimensions

EExd & IP67 Housing versions

Weight Kg	Dimensions mm				
	A	B	C	D	E
0.3	50	10.5	115	60	54

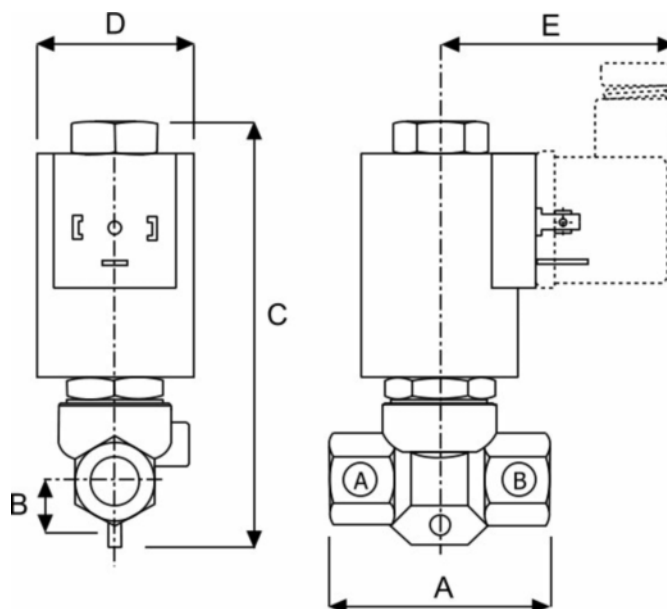


## Solenoid Valve - 2/2 - Normally Closed

### Dimensions

#### IP65

Weight Kg	Dimensions mm				
	A	B	C	D	E
0.3	50	10.5	96	36	54



### Order Codes: Seal Kits

#### IP65

#### IP65

Seal Material	Port Size (Brass Body)	Port Size (Stainless Steel Body)
	1/4"	1/4"
NBR	KGIP/L03T.0	KGIP/L03I.0
VITON	KGIP/L03T.1	KGIP/L03I.1
EPDM	KGIP/L03T.6	KGIP/L03I.6
HNBR	KGIP/L03T.7	KGIP/L03I.7

#### IP67

#### IP67

Seal Material	Port Size (Brass Body)	Port Size (Stainless Steel Body)
	1/4"	1/4"
NBR	KGEX/L03T.0	KGEX/L03I.0
VITON	KGEX/L03T.1	KGEX/L03I.1
EPDM	KGEX/L03T.6	KGEX/L03I.6
HNBR	KGEX/L03T.7	KGEX/L03I.7

### Order Codes: Complete Valve

A	Body	B	Port	C	Seals (fluid temp. min / max)	D	Protection	E	Options
T	Brass	C	1/4" BSP	0	NBR (-10°C to + 70°C)	P	IP65 Safe Area	X	Manual Override
I	316 Stainless Steel	D	1/4" NPT	1	VITON (-10°C to + 90°C)	S	IP67 Safe Area	/AP30	1.8mm Orifice
		U	Sub base*	2	UREPAN (-10°C to + 90°C)	B	II 1/2 GD Ex-d IIB T6 (-20 to +40°C)	/AP100	0.8mm Orifice
			*1.8mm orifice only	3	PTFE (-10°C to + 120°C)	C	II 1/2 GD Ex-d IIC T6 (-20 to +40°C)	/SG	Degreased
				6	EPDM (-10°C to + 90°C)	/LT	II 1/2 GD Ex-d IIC T6 (-60 to +60°C)		
				7	HNBR (-45°C to + 90°C)	H	Ex-d c IIB IP67 IECEX		
				8	KALREZ (-10°C to + 90°C)	T	Ex-d c IIC IP67 IECEX		
						R	Ex-d IIC EAC Ex		

# 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

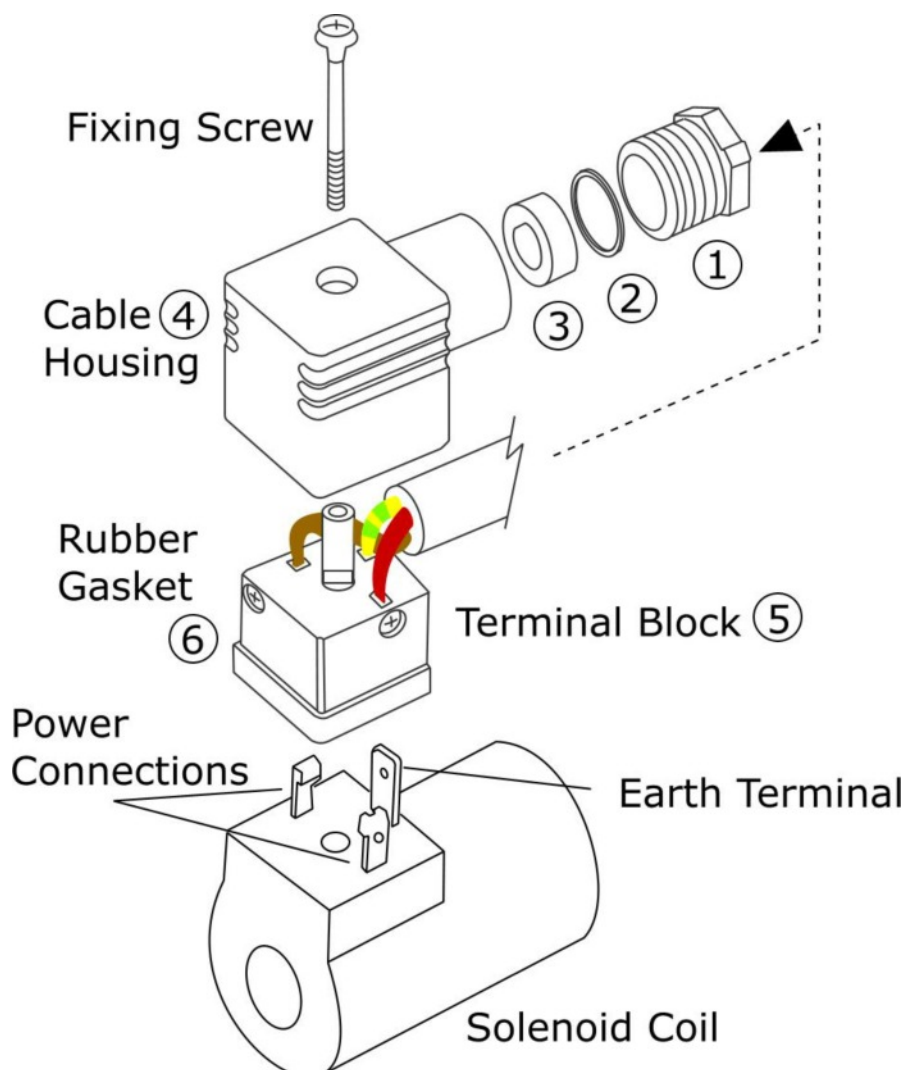
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## Solenoid Valve Wiring - IP65 DIN Connector

### IP65 DIN Connector



### Section 1: DIN Connector Assembly

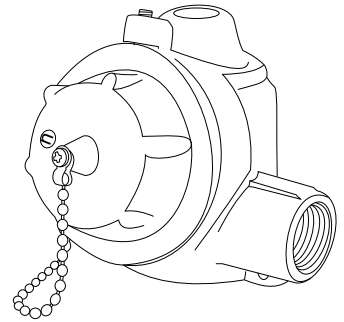
- Insert the electrical power cable through the gland assembly (1,2,3)
- Push the cable through cable housing (4)
- Connect power and earth cables to terminal block 5
- Push terminal block (5) backwards, inside cable housing (4)
- Place rubber gasket (6) on terminal block (5) front face
- Push terminal 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

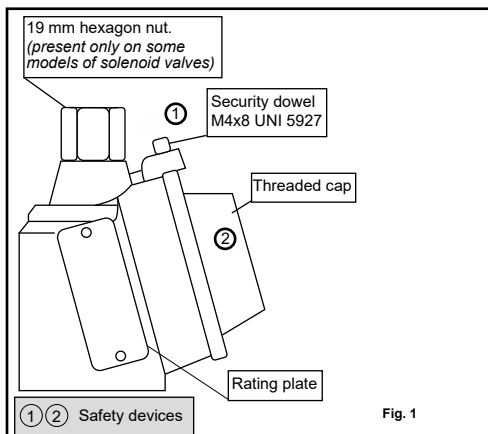
### Installation Procedures & Methods



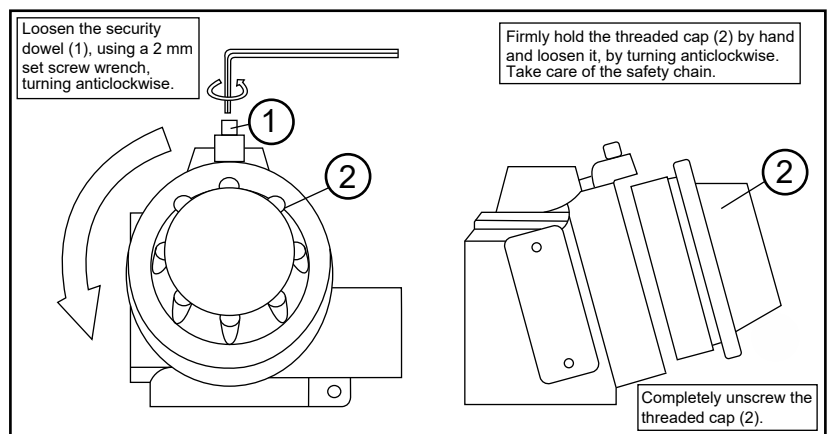
**Attention: For safety purposes, always ensure that the power supply is disconnected. After de-energising, allow 15 minutes before continuing the following procedures**



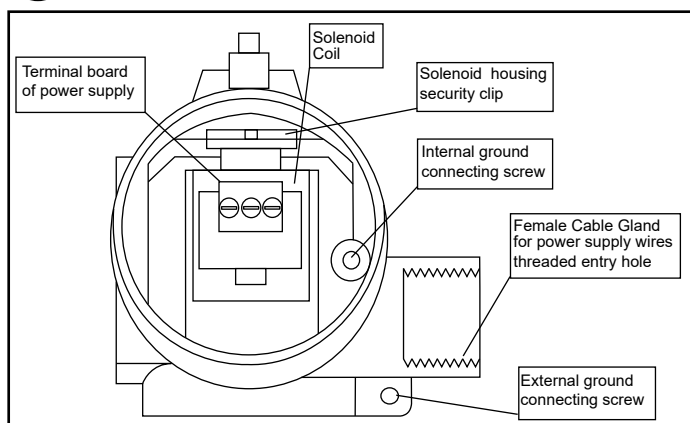
**A**



**B**

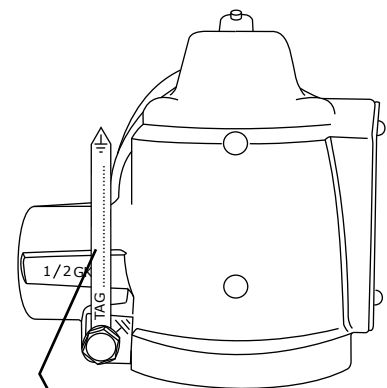
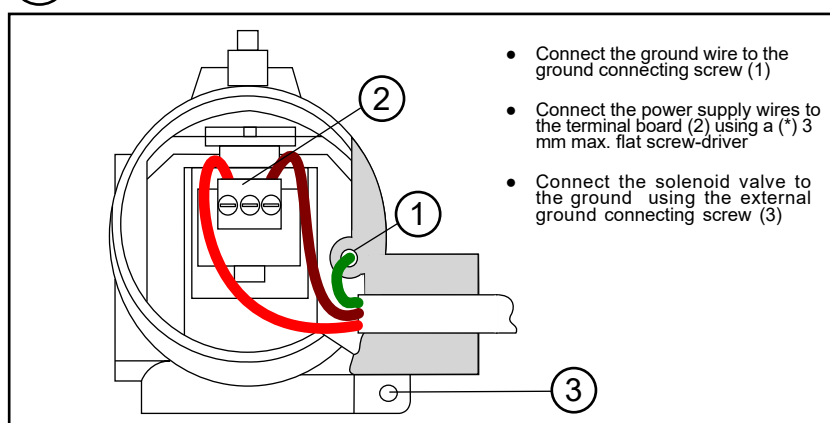


**C**



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**



Earth Tag. Can be customised with Tag number, part number etc.



## 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



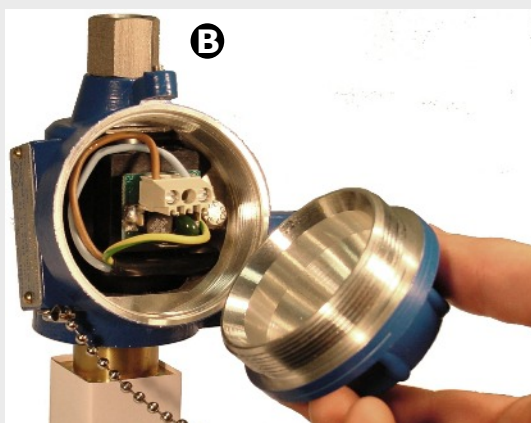
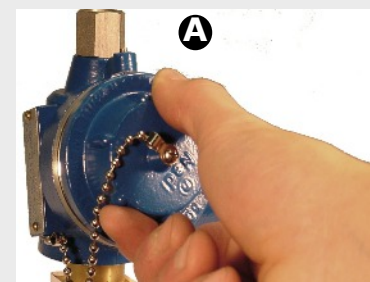
**Ensure that the power supply is switched off before commencing the following procedures**

#### Operation 1



Loosen the security dowel using the setscrew wrench 5

#### Operation 2



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



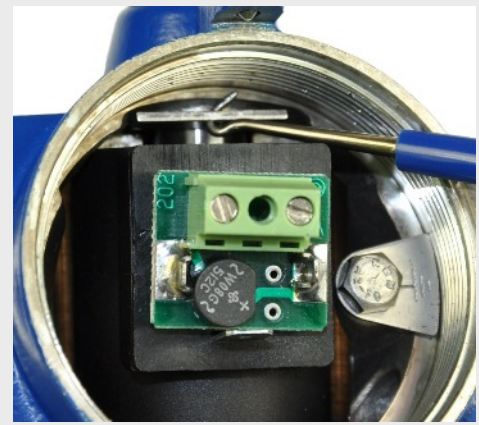
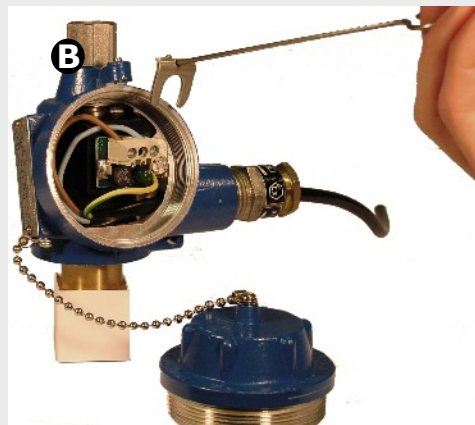
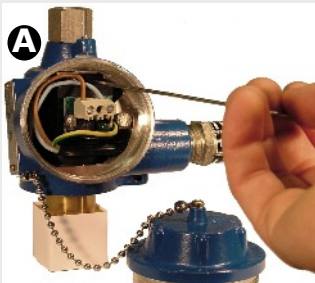


## Solenoid Valve Maintenance - IP67 Housing

### Solenoid Coil Removal - Operations 3-5

#### Operation 3

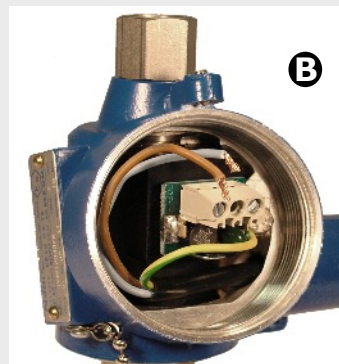
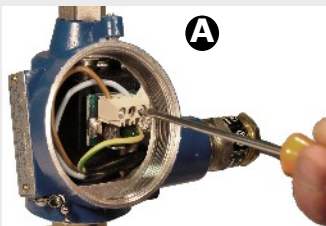
Insert the clip extraction tool in the solenoid housing security clip. Gently pull the clip away from the housing until it is extracted.



#### Operation 4

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

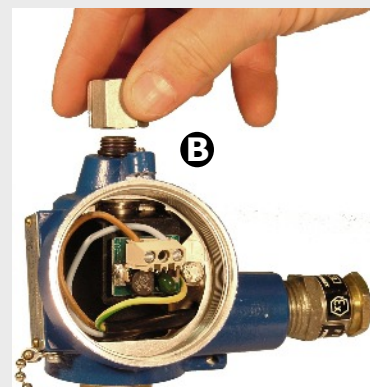
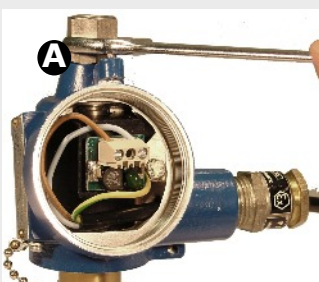
It is not necessary to unscrew the internal earth connecting wire.



#### 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)

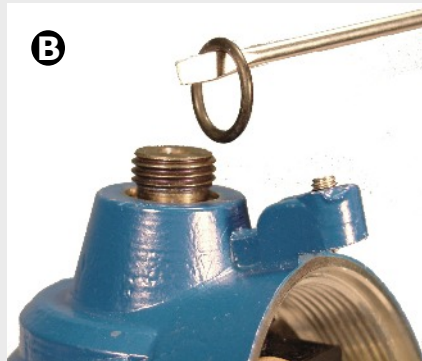
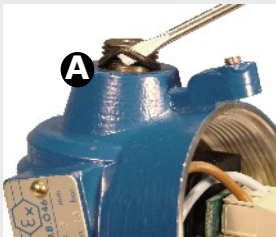




## Solenoid Valve Maintenance - IP67 Housing

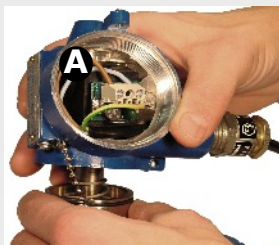
### Solenoid Coil Removal - Operations 6-8

#### 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.