Measure Monitor Control

L66.d.p.s

Solenoid Valve - Model L66 - 3/8”-2” /2 Normally Open

Measure Monitor Control

L66.d.p.s

Solenoid Valve - 2/2 NO - Pilot Diaphragm

Benefits & Features

- Pilot operated diaphragm for high dependency applications
- Suitable for gaseous and liquid media
- Service kit available
- 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

Specification

Configuration	Pilot diaphragm
Port Sizes	3/8" to 2"
Orifice	see table below
Kv	see table below
Body	Brass or 316 Stainless Steel (1/2" and 3/4" only)
Media	Air, gases, liquids etc. Subject to material compatibility
Pressure ranges	See individual data tables below
Seals	NBR, VITON, EPDM, HNBR
Voltage	12, 24, 48, 110, 220, 230 AC/DC. Other voltages upon request

IP65 safe area version with brass body

Standard Model

	A		B	C	D	E	Port Size BSP or NPT	Orifice mm	Body Rating	Min . /Max. Operating Differential Pressures. BAR. Min.	Maximum AC	Maximum DC	KV Flow Factor L/min.
L66		12					⅜"	12.7	25	0.2	10	10	35
L66		12					½"	12.7	25	0.2	10	10	40
L66		18					¾"	18	25	0.2	10	10	87
L66		25					1"	25	25	0.2	10	10	170
L66		36					1 ¼"	36	20	0.3	10	10	300
L66		36					1 ½"	36	20	0.3	10	10	340
L66		50					2"	50	20	0.3	10	10	600

EExd hazardous area version with 316 Stainless Steel body (½" and 3/4" only)

High Pressure Model

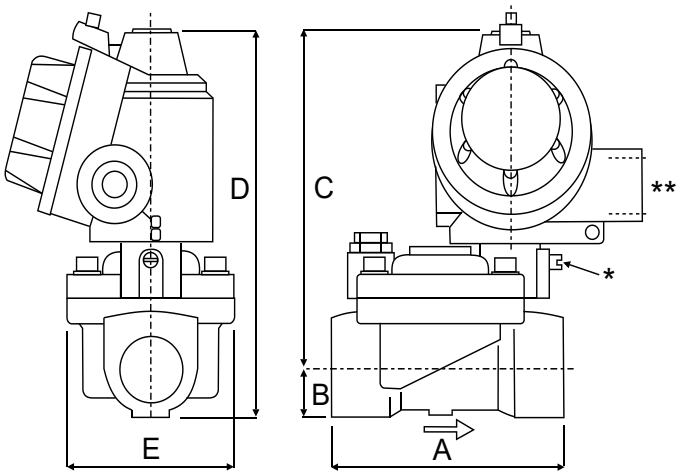
	A		B	C	D	E	Port Size BSP or NPT	Orifice mm	Body Rating	Min . /Max. Operating Differential Pressures. BAR. Min.	Normally Open Maximum AC	Normally Open Maximum DC	KV Flow Factor L/min.
L66		12					⅜"	12.7	25	0.2	22	22	35
L66		12					½"	12.7	25	0.2	22	22	40
L66		18					¾"	18	25	0.2	18	18	87
L66		25					1"	25	25	0.2	10	10	170
L66		36					1 ¼"	36	20	0.3	10	10	300
L66		36					1 ½"	36	20	0.3	10	10	340
L66		50					2"	50	20	0.3	10	10	600

IP67 safe area version with brass body

Solenoid Valve - 2/2 NO - Pilot Diaphragm
Weights & Dimensions

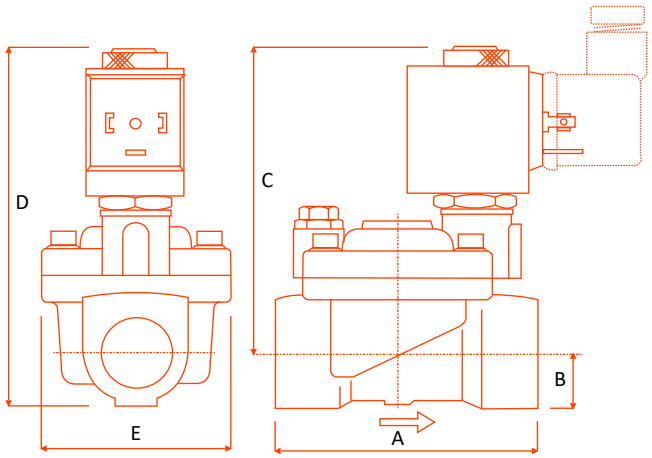
EExd & IP67 Safe Area

Port Size	Weight Kg	Dimensions mm					
		Brass Body	Stainless Steel Body				
		A	A	B	C	D	E
⅜"	1	64	/	14	119	133	45
½"	1	64	66	14	119	133	45
¾"	1.3	82	88	17	128	145	55
1"	1.8	100	/	20	135	155	70
1 ¼"	3.3	144	/	28	142	170	98
1 ½"	3.1	144	/	28	142	170	98
2"	4.9	152	/	35	153	188	120



IP65 Safe Area

Port Size	Weight Kg	Dimensions mm					
		Brass Body	Stainless Steel Body				
		A	A	B	C	D	E
⅜"	0.55	64	/	14	87	101	45
½"	0.55	64	66	14	87	101	45
¾"	0.85	82	88	17	96	113	55
1"	1.35	100	/	20	103	123	70
1 ¼"	2.85	144	/	28	110	138	98
1 ½"	2.65	144	/	28	110	138	98
2"	4.45	152	/	35	121	156	120



Order Codes

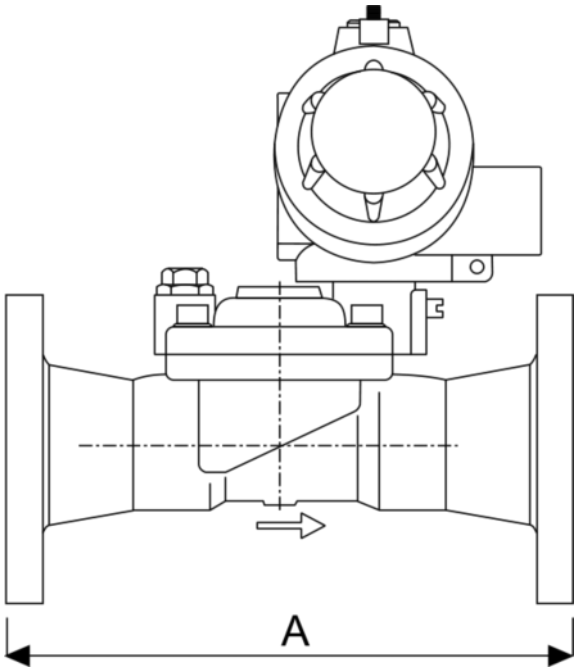
A	Body	B	Port			C	Seals (fluid temp. min / max)	D	Protection	E	Options
T	Brass	E	3/8" BSP	T	3/8" NPT	0	NBR (-10°C to + 70°C)	P	IP65 Safe Area	/SG	Degreased for oxygen
I	316 Stainless steel***	F	1/2" BSP	G	1/2" NPT	1	VITON (-10°C to + 90°C)	S	IP67 Safe Area	/AP	High pressure version
*** 1/2" & 3/4" only		H	3/4" BSP	I	3/4" NPT	6	EPDM (-10°C to + 90°C)	B	II 1/2 GD Ex-d IIB T6 (-20 to +40°C)		
		L	1" BSP	M	1" NPT	7	HNBR (-45°C to + 90°C)	C	II 1/2 GD Ex-d IIC T6 (-20 to +40°C)		
		N	1 1/4" BSP	O	1 1/2" BSP			/LT	II 1/2 GD Ex-d IIC T6 (-60 to +60°C)		
		V	1 1/2" NPT	P	2" BSP			H	Ex-d c IIB IP67 IECEX		
		W	2" NPT	X	ANSI 300			T	Ex-d c IIC IP67 IECEX		
		Y	ANSI 150					R	Ex-d IIC EAC Ex		

Solenoid Valve - 2/2 NO - Pilot Diaphragm

Weights & Dimensions

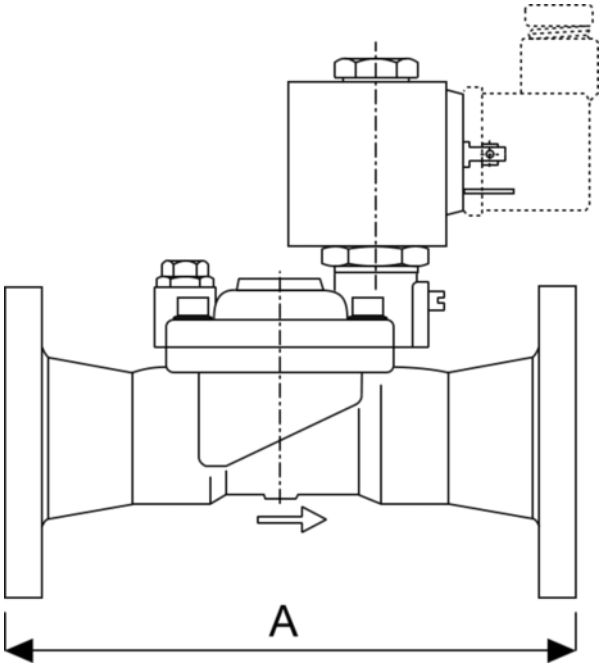
EExd & IP67 Safe Area

Port Size	Weight Kg	Dimensions mm
		A
½"	1.8	140
¾"	2.2	170



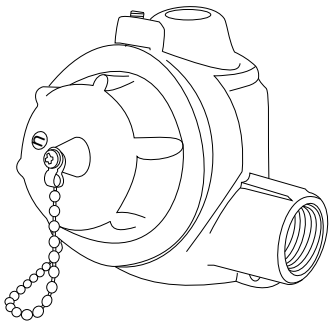
IP65 Safe Area

Port Size	Weight Kg	Dimensions mm
		A
½"	1.6	140
¾"	2	170



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

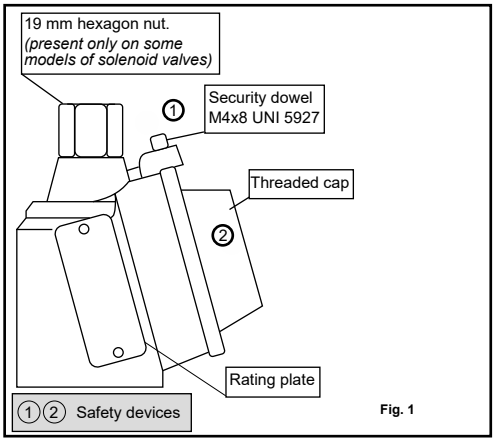
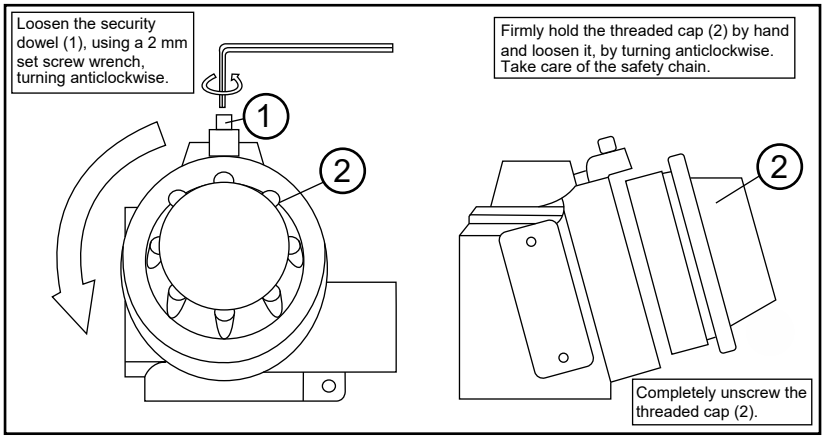
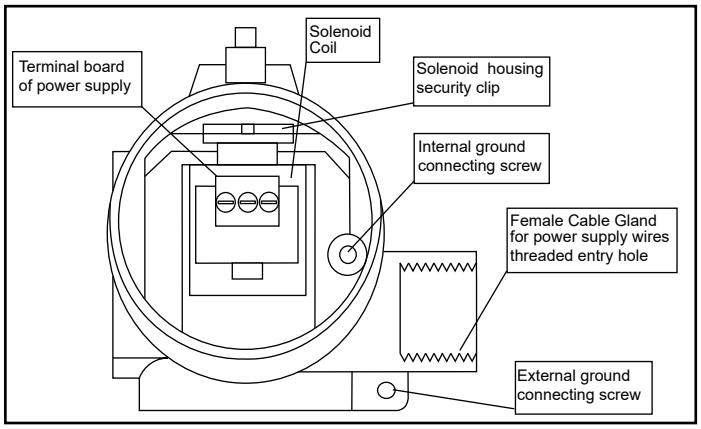


Fig. 1

B

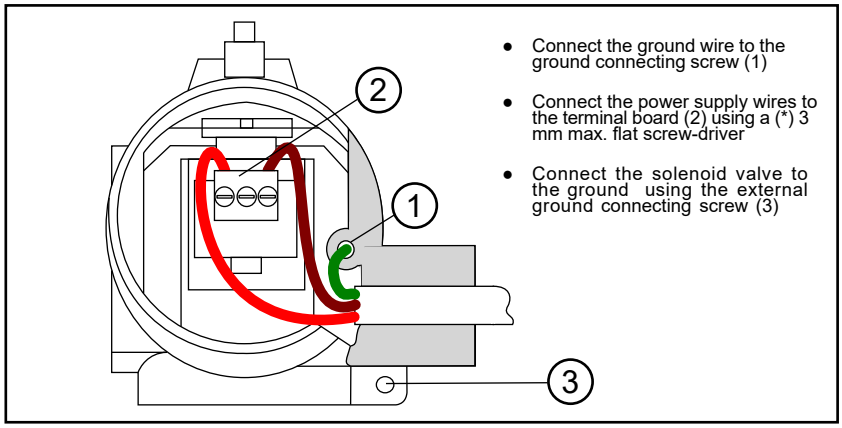


C

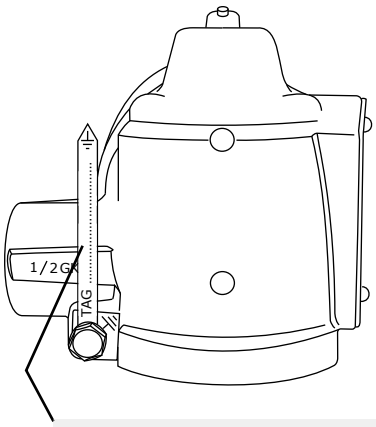


Pipe fittings used for cable entry (Cable, duct, conduit etc) are NOT supplied by the manufacturer.
Installation engineers should ensure that the use of fittings are of the correct diameter and suitable to secure the tightness of the cable used. Where site conditions indicate, cable duct, conduit etc. 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

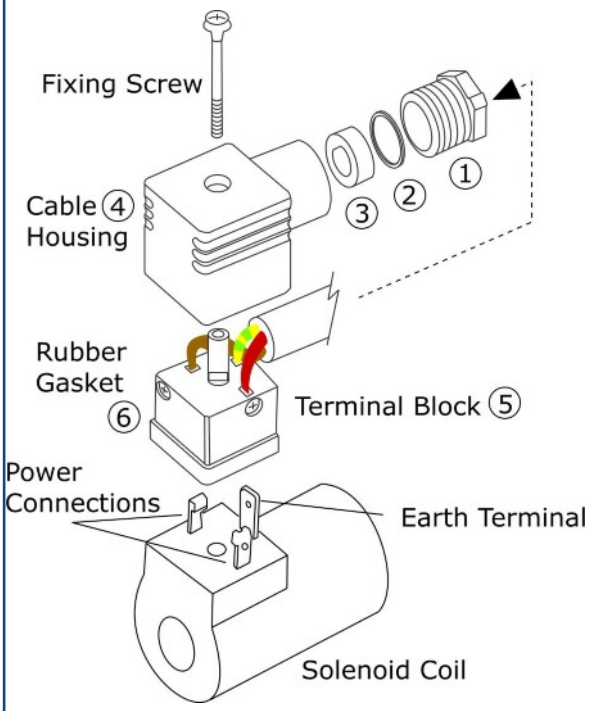


- Connect the ground wire to the ground connecting screw (1)
- Connect the power supply wires to the terminal board (2) using a (*) 3 mm max. flat screw-driver
- Connect the solenoid valve to the ground using the external ground connecting screw (3)



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

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

Section 2: 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 3: Maintenance Procedure for Solenoid Valves

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

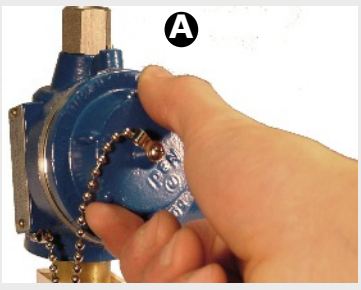
1	Solenoid housing security clip extraction tool (KM/3062)
2	Flat screwdriver (max. 3x1)
3	Special fixed core wrench (KM/2621)
4	Fixed core wrench lever pin 8mm
5	Setscrew wrench no.2
6	19mm spanner

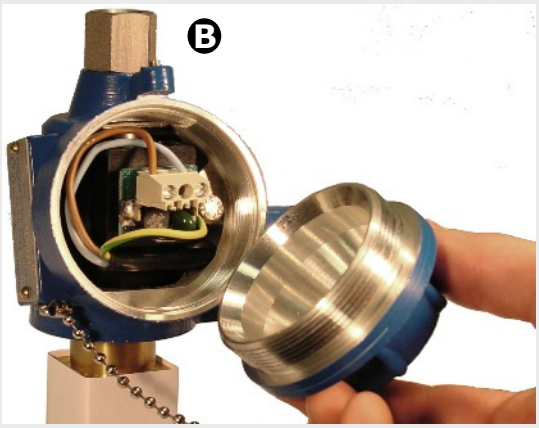
Ensure that the power supply is switched off before commencing the following procedures

Operation 1

Loosen the security dowel using the setscrew wrench 5

Operation 2





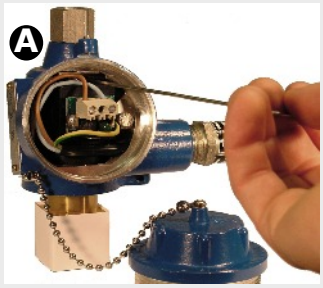
Unscrew the solenoid
Housing threaded cap,
By turning anti-clockwise

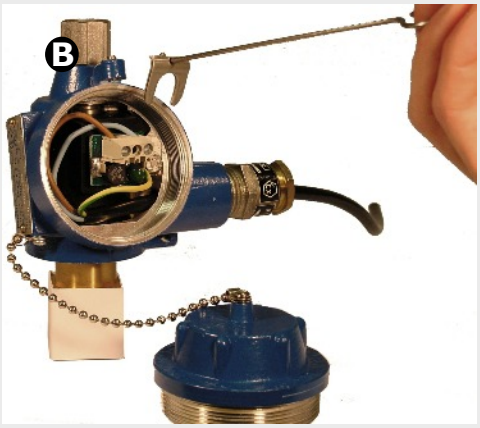
Solenoid Valve Maintenance - IP67 Housing

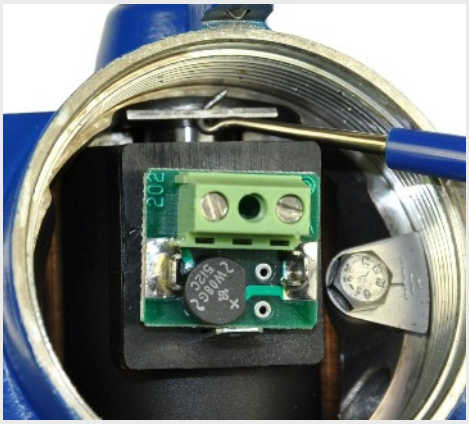
Solenoid Coil Removal - Operations 3-5

Operation 3

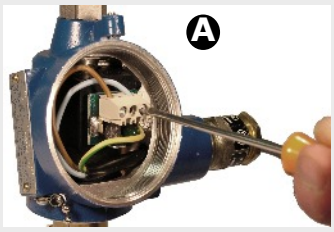
Insert the clip extraction tool in the solenoid housing security clip. Gently pull the clip away from the housing until it is extracted.

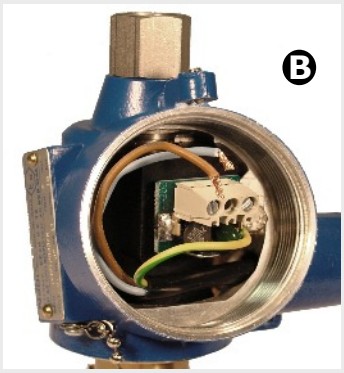






Operation 4

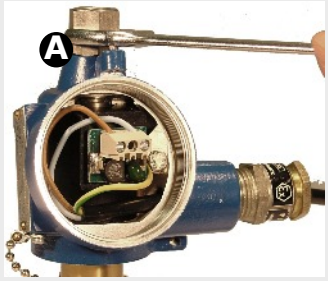


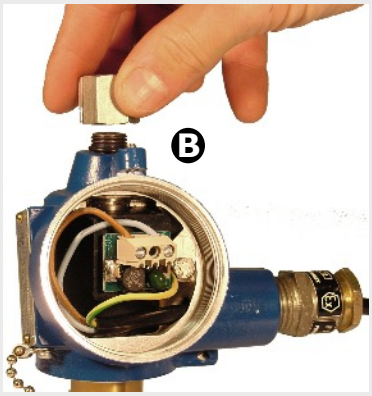


Loosen the terminal board screws and pull out the two power supply Wires (A)

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

Operation 5 (if fitted)





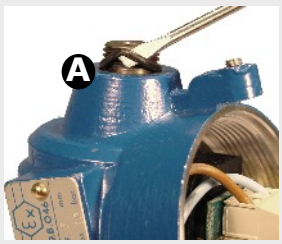
Depending on the model, loosen the hexagonal nut with a 19mm spanner, turning anti-clockwise (A)

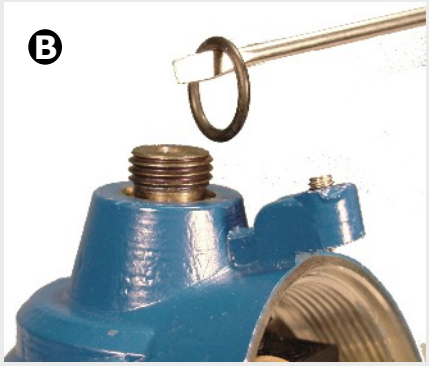
Once loose, unscrew the nut by Hand (B)

Solenoid Valve Maintenance - IP67 Housing

Contents

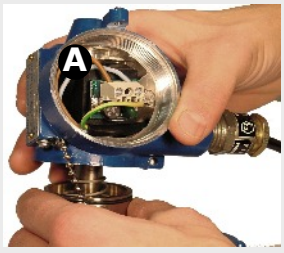
Operation 6





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.