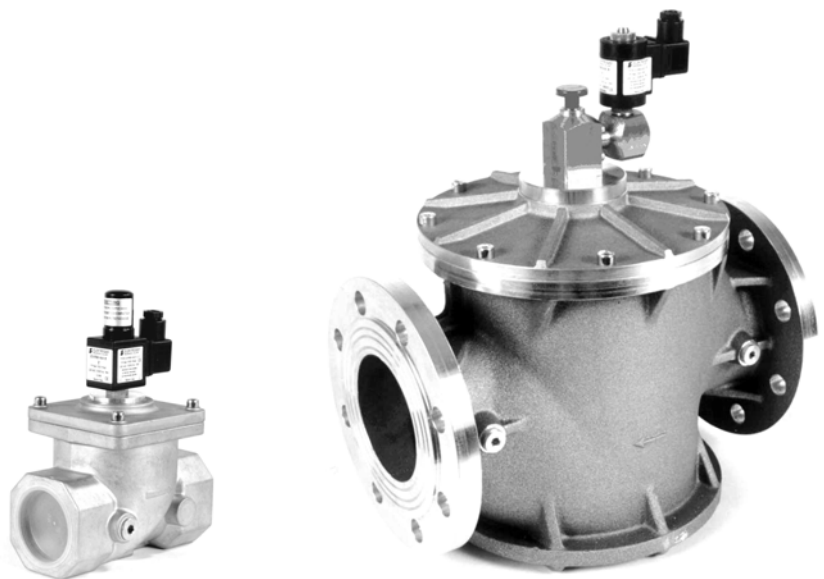


## EVRM-NA

**Safety solenoid valves for gas  
Manual reset - Normally open  
DN10 ... DN200**

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EVRM-NA6 / EVRM-NA9

# EVRM-NA

## Safety solenoid valves for gas Manual reset - Normally open

The EVRM-NA type valve is a manual reset safety valve that is normally open. This type of device, connected with one or more gas leakage detectors or alarm signals for the presence of carbon monoxide, is suitable for performing locking operations on the gas line.

The EVRM-NA type valves are made in accordance with EN161 standard (when applicable). All models are conforming with the European Directives 89/336 EEC and 73/23 EEC.

### 1- Features

- ❑ Wide range for inlet/outlet connections, from 3/8" to 8" pipes sizing.
- ❑ Provided with G1/4" pressure gauge on two sides in the inlet pressure chamber (except brass models). Others gauge points on request.
- ❑ Optional G1/8" connection for closed position indicator micro switch (on request from 3/4" to 8").
- ❑ Fine mesh filter incorporated to prevent dirty contamination of the seal seat (except brass models).
- ❑ Maximum operating pressure 500 mbar.
- ❑ Suitable for air and non-aggressive gases (EN 437, 1, 2 and 3 families).
- ❑ Coil insulation is class H (180°C).
- ❑ Terminals with DIN 43650 plug and PG connector.
- ❑ Valves are 100% tested by computerized testing machineries and are fully warranted.
- ❑ For valve identification see the following charts.

### WARNING

- This control must be installed in compliance with the laws in force.
- Read instructions before use.
- Elettromeccanica Delta S.p.a. reserves the right to update or make technical changes without prior notice.

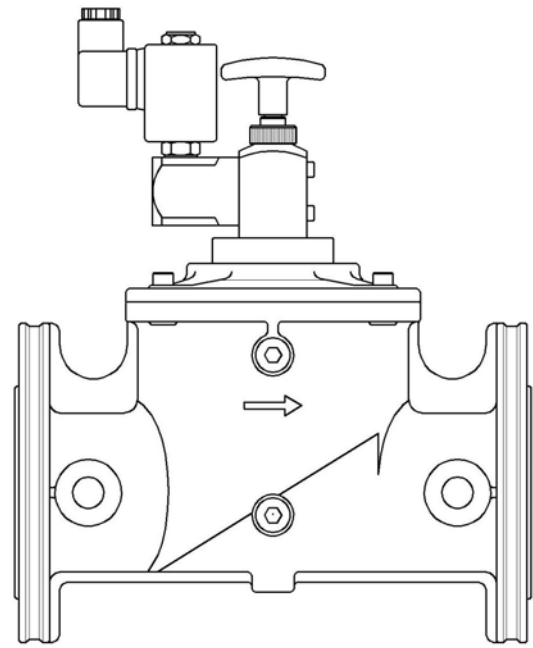


Fig. 1

### 2- Technical specifications

<i>Connections</i> .....	Gas threaded ISO 7/1 from Rp3/8 to Rp2 Flanged PN16 – ISO 7005 from DN40 to DN200
<i>Voltage rating</i> .....	230 VAC 50/60 Hz
<i>Voltages on request</i> .....	110 VAC 50/60 Hz 24 V AC/DC 12 VDC
<i>Voltage tolerance</i> .....	-15% / +10%
<i>Power consumption</i> .....	see charts
<i>Environment temperature</i> ...	-15°C / +60°C
<i>Max. working pressure</i> .....	500 mbar
<i>Flow capacity</i> .....	see charts
<i>Disc sealing</i> .....	NBR
<i>Closing time</i> .....	< 1 sec.
<i>Protection class</i> .....	IP 54 (EN60529)
<i>Cable gland</i> .....	PG09
<i>Overall dimensions</i> .....	see charts

### 3- Operation

The EVRM-NA type valve is a manual reset safety valve that is normally open. A manual operation is therefore necessary to open the valve and set the mechanism consenting to maintain this state. The powering by means of line current and/or condenser discharge, induced by the leakage detector, causes tripping of the mechanism and consequent closing of the gas passage. If energizing of the sensor persists due to the presence of gas, the valve remains under power and does not allow reset. When the causes for locking have been eliminated, valve must be opened manually.

### 4- Accessories

A fine mesh filter is provided, to prevent dirty contamination of the seal seat. However, an external strainer must be installed upstream of the valve. Brass models are available without internal filter only.

Inlet pressure chamber is provided with bilateral G1/4" gauges, to connect min/max adjustable pressure switches, leakage tester or other gas equipments. Flanged models are provided with gauges in the outlet chamber too. Brass models are available without gauges only.

On request, valves are supplied with a G1/8" connection on the bottom, to installed a closed position indicator micro switch (from 3/4" to 8"). An adapting rod is provided too.

### 5- Coil features

Coil and DIN plug are provided with suitable gaskets, to avoid water and dirty contamination (see the *Service Instruction Section*).

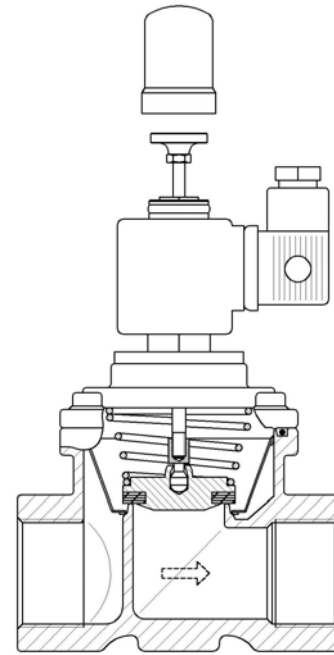


Fig. 2

### 6- General information

- ❑ Maximum testing pressure is 1500 mbar.
- ❑ All components are design to withstand any mechanical, chemical and thermal condition occurring during typical service.
- ❑ Effective impregnation and surface treatments has been used to improve mechanical sturdiness, sealing and resistance to corrosion of the components.
- ❑ Valves are suitable for use with air and non-aggressive gases included in the 1, 2 and 3 families (EN 437).
- ❑ Materials in contact with gas:
  - Aluminium
  - Brass
  - Stainless steel
  - Plated steel
  - Anaerobic adhesive
  - Nitrile rubber (NBR)
  - Polytetrafluoroethylene (PTFE)
  - Fluoroelastomer (FPM)

## 7- Valve identification

Connections type		230 VAC	110 VAC	24 V AC/DC <sup>(1)</sup>	24 VDC-22W	12 VDC	12 VDC-22W
Threaded	Flanged						
Rp 3/8 brass		EVRMNA0AO	EVRMNA0BO	EVRMNA0CO	EVRMNA0COW	EVRMNA0DO	EVRMNA0DOW
Rp 1/2 brass		EVRMNA1AO	EVRMNA1BO	EVRMNA1CO	EVRMNA1COW	EVRMNA1DO	EVRMNA1DOW
Rp 3/4 brass		EVRMNA2AO	EVRMNA2BO	EVRMNA2CO	EVRMNA2COW	EVRMNA2DO	EVRMNA2DOW
Rp 1 brass		EVRMNA3AO	EVRMNA3BO	EVRMNA3CO	EVRMNA3COW	EVRMNA3DO	EVRMNA3DOW
Rp 3/8		EVRMNA0A	EVRMNA0B	EVRMNA0C	EVRMNA0CW	EVRMNA0D	EVRMNA0DW
Rp 1/2		EVRMNA1A	EVRMNA1B	EVRMNA1C	EVRMNA1CW	EVRMNA1D	EVRMNA1DW
Rp 3/4		EVRMNA2A	EVRMNA2B	EVRMNA2C	EVRMNA2CW	EVRMNA2D	EVRMNA2DW
Rp 1		EVRMNA3A	EVRMNA3B	EVRMNA3C	EVRMNA3CW	EVRMNA3D	EVRMNA3DW
Rp 1¼		EVRMNA35A	EVRMNA35B	EVRMNA35C	EVRMNA35CW	EVRMNA35D	EVRMNA35DW
Rp 1½		EVRMNA4A	EVRMNA4B	EVRMNA4C	EVRMNA4CW	EVRMNA4D	EVRMNA4DW
Rp 2		EVRMNA6A	EVRMNA6B	EVRMNA6C	EVRMNA6CW	EVRMNA6D	EVRMNA6DW
	DN 40 <sup>(1)</sup>	EVRMNA4FA	EVRMNA4FB	EVRMNA4FC	EVRMNA4FCW	EVRMNA4FD	EVRMNA4FDW
	DN 50 <sup>(1)</sup>	EVRMNA6FA	EVRMNA6FB	EVRMNA6FC	EVRMNA6FCW	EVRMNA6FD	EVRMNA6FDW
		<b>230 VAC</b>	<b>110 VAC</b>	<b>24 VDC</b>		<b>12 VDC</b>	
	DN 65	EVRMNA7A	EVRMNA7B	EVRMNA7C		EVRMNA7D	
	DN 80	EVRMNA8A	EVRMNA8B	EVRMNA8C		EVRMNA8D	
	DN 100	EVRMNA9A	EVRMNA9B	EVRMNA9C		EVRMNA9D	
	DN 125	EVRMNA93A	EVRMNA93B	EVRMNA93C		EVRMNA93D	
	DN 150	EVRMNA95A	EVRMNA95B	EVRMNA95C		EVRMNA95D	
	DN 200	EVRMNA98A	EVRMNA98B	EVRMNA98C		EVRMNA98D	

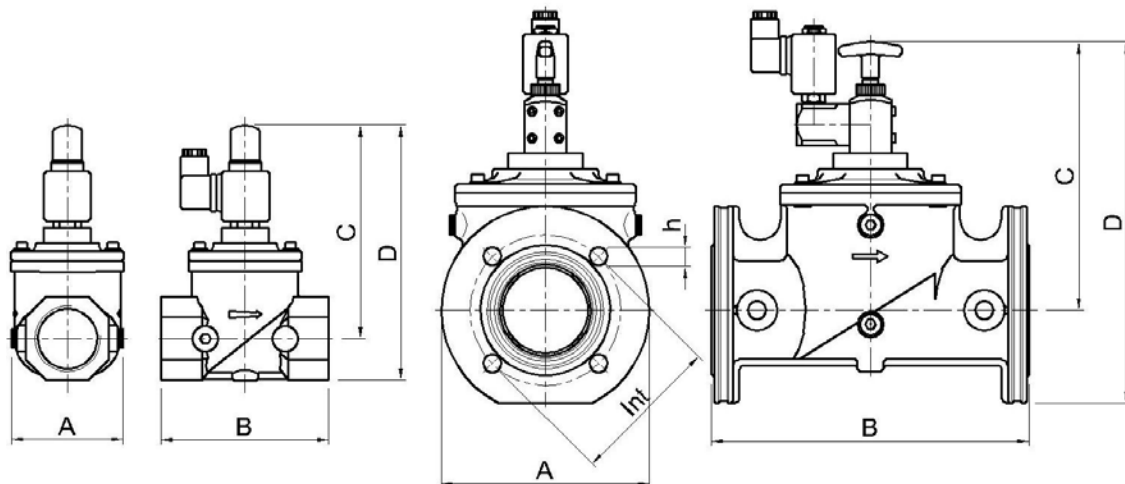
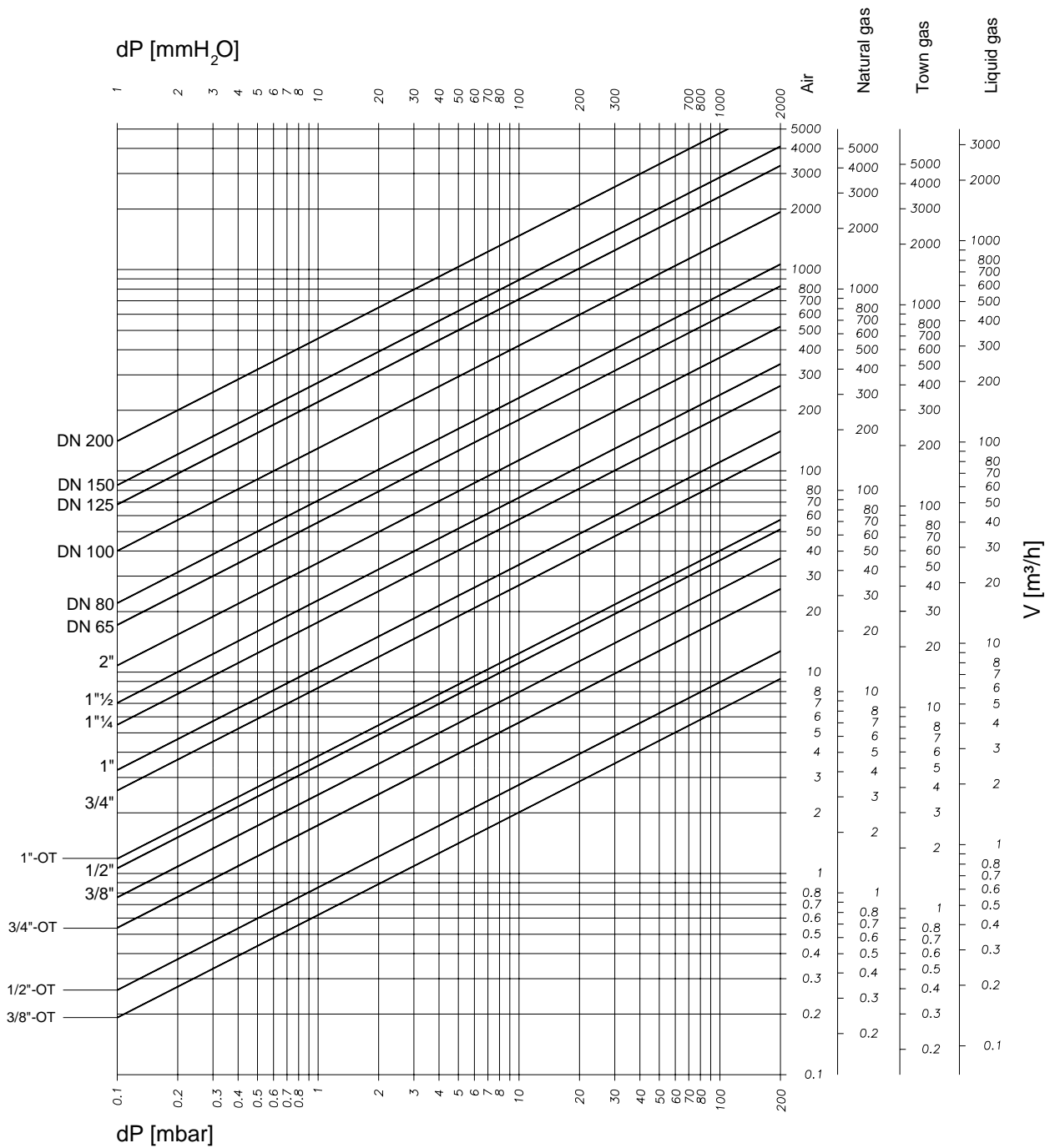


Fig. 3

Model	Connections		Max. Pressure (mbar)	Power Consump. @230VAC (W)	Overall dimensions (mm)						Weight (Kg)
	Threaded	Flanged			A	B	C	D	Int	h	
EVRMNA0/O	Rp 3/8		500	16	30	58	115	130	-	-	0,4
EVRMNA1/O	Rp 1/2		500	16	30	58	115	130	-	-	0,4
EVRMNA2/O	Rp 3/4		500	16	35	55	113	130	-	-	0,6
EVRMNA3/O	Rp 1		500	16	40	62	115	137	-	-	0,7
EVRMNA0	Rp 3/8		500	16	70	77	130	148	-	-	0,6
EVRMNA1	Rp 1/2		500	16	70	77	130	148	-	-	0,6
EVRMNA2	Rp 3/4		500	16	85	96	138	165	-	-	0,8
EVRMNA3	Rp 1		500	16	85	96	138	165	-	-	0,8
EVRMNA35	Rp 1¼		500	16	120	153	162	195	-	-	1,6
EVRMNA4	Rp 1½		500	16	120	153	162	195	-	-	1,6
EVRMNA6	Rp 2		500	16	106	156	167	205	-	-	1,9
EVRMNA4F		DN 40 <sup>(1)</sup>	500	16	150	193	170	245	110	4x18	3,3
EVRMNA6F		DN 50 <sup>(1)</sup>	500	16	165	196	175	257	125	4x18	3,9
EVRMNA7		DN 65	500	19	200	305	260 <sup>(2)</sup>	350 <sup>(2)</sup>	145	4x18	8,2
EVRMNA8		DN 80	500	19	200	305	260 <sup>(2)</sup>	350 <sup>(2)</sup>	160	8x18	8,2
EVRMNA9		DN 100	500	19	252	350	280 <sup>(2)</sup>	410 <sup>(2)</sup>	180	8x18	16
EVRMNA93		DN 125	500	19	310	460	330 <sup>(2)</sup>	500 <sup>(2)</sup>	210	8x18	28
EVRMNA95		DN 150	500	19	310	460	330 <sup>(2)</sup>	500 <sup>(2)</sup>	240	8x23	30
EVRMNA98		DN 200	500	19	370	546	380 <sup>(2)</sup>	590 <sup>(2)</sup>	295	12x23	45

<sup>(1)</sup> Impulsive operation only <sup>(1)</sup> Optional kit <sup>(2)</sup> Valve open

## 8- Loss of pressure



### Formula of conversion from air to other gases

Gas type	Specific gravity (Kg/m <sup>3</sup> )	K
Air	1,25	1,00
Natural Gas	0,80	1,25
Town Gas	0,57	1,48
Liquid Gas	2,08	0,77

+15°C, 1013 mbar, dry

$$V_{\text{AIR}} = \frac{V_{\text{GAS TO BE USED}}}{K}$$

$$K = \sqrt{\frac{\text{AIR SPECIFIC GRAVITY}}{\text{GAS SPECIFIC GRAVITY}}}$$

## 9- Valve installation

Verify the line pressure is lower of the maximum working pressure admitted to the valve.

Check correspondence of flow direction with arrow printed on valve body.

Check correct alignment of connecting pipes.

**Remove the end caps and make sure no foreign body is entered into the valve during handling.**

**Install in an area that is protected from rain and water splashes or drops.**

### Threaded models:

1. Put sealing agent onto the pipe thread (avoid excessive quantities of fittings glue which could enter in the valve and damage the seal seat).
2. Screw the pipes using proper tools only. Do not use unit as lever because damage to the valve stem could result.

### Flanged models:

1. Position the gasket and insert the bolts.
2. Screw the nuts tightening them crosswise and using proper tools only.

**Avoid overtightening and mount tension free.**

Following chart shows the maximum values of bending moment ( $F_{max}$ ), torque ( $T_{max}$ ) and screws driving torque ( $C_{max}$ ), according to EN161.

Connections	$F_{max}$ (Nm) $t < 10$ s	$T_{max}$ (Nm)	$C_{max}$ (Nm)
Rp3/8	70	35	-
Rp1/2	105	50	-
Rp3/4	225	85	-
Rp1	340	125	-
Rp1¼	475	160	-
Rp1½ DN40	610	200	50
Rp2 DN50	1100	250	50
DN65	1600	-	50
DN80	2400	-	50
DN100	5000	-	80
DN125	6000	-	160
DN150	7600	-	160
DN200	7600	-	160

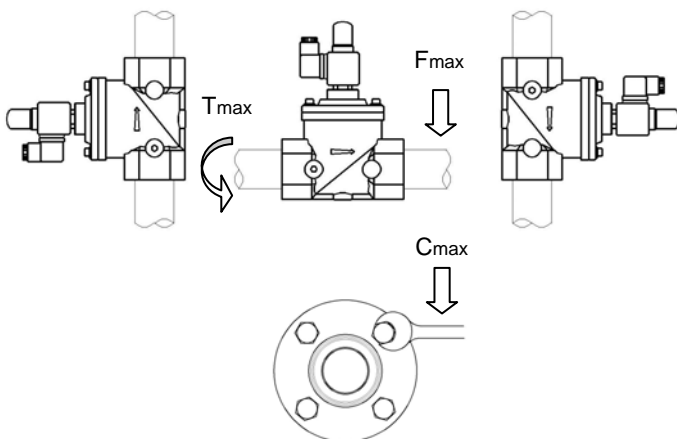


Fig. 4

Valve may be mounted with coil in horizontal or vertical position. Coil may be oriented 360 degrees in any direction.

## 10- Electrical connections (IEC 730-1)

Check correspondence between valve voltage rating and line power supply, before making any electrical connections.

1. Switch off power supply and remove protection cover.
2. Connect power cables to connector plug terminal board.
3. Screw back the plug cover, taking care to use all gaskets properly, because this could condition the valve life duration.

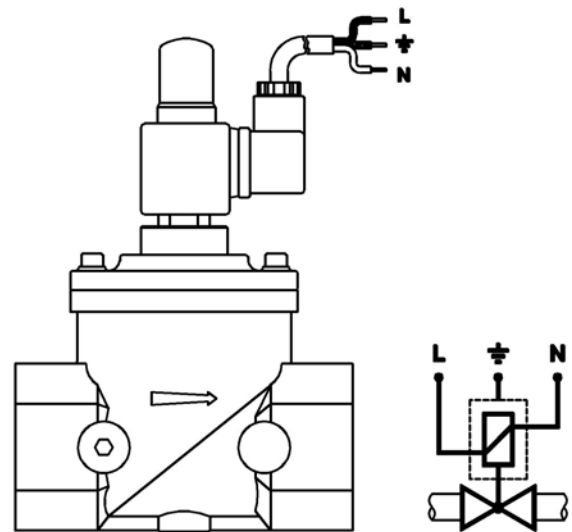


Fig. 5

### WARNING

- To prevent product damage and dangerous situations, read the Installation and Service Instructions carefully.
- Turn off all power before servicing any part of the system.
- Perform leak and functional tests after mounting. A gas leak detection spray may be used also.
- Coil and DIN plug must be replaced with identical spare parts only.
- If the coil is turned, make sure the cap is properly tightened and the coil is locked.
- Use all gaskets properly (void warranty).
- All wiring must be in compliance with local and national codes.
- Make sure all works are performed by qualified technicians only.

## 11- Maintenance

To maintain a good performance of the system, almost once a year, an inspection of the valve is recommended.

### External inspection

**Turn off all power before servicing any part of the system.**

Check the conditions of the DIN plug gasket. If gasket is deteriorated, replace it with a new one.

Check the electrical connections are clean, dry and correctly tightened.

Check the conditions of pipe connections: cover them with a soap solution and check for leakages.

Check the proper operation of the valve: power the coil and verify the valve closing.

### Internal inspection

**If the valve does not work properly, do not dismount the resetting mechanism, but replace it with a new one.**

#### Threaded models:

1. Close ball valve upstream the system.
2. Reset the valve (valve open).
3. Unscrew the knob, but do not remove the nut below. This to avoid the accidental dismounting of the resetting mechanism.
4. Remove the locking nut and the coil.
5. Using an Allen key, remove the screws on the upper flange, in cross way. The gas in the valve will come out during this step.
6. Check the main O-ring. If it's necessary, replace it.
7. Blow the spring with compressed air and check it is corrosion free.
8. Check the conditions of the sealing gasket. If gasket is deteriorated, replace it with a new one.
9. Clean the sealing lip with a clean cloth. Do not use tools, because a lip damage could result.
10. Remove the filter and blow it with compressed air.
11. Reassemble the valve following the inverse sequence.

#### Flanged models:

1. Close ball valve upstream the system.
2. Unscrew the knob.
3. Using an Allen key, remove the screws on the upper flange, in cross way. The gas in the valve will come out during this step.
4. Check the main O-ring and the rod O-ring. If it's necessary, replace them.
5. Remove the spring and blow it with compressed air. Check the spring is corrosion free.
6. Clean the disc assembly with a clean cloth and compressed air. Grease the rod O-ring.
7. Check the conditions of the sealing gasket. If gasket is deteriorated, replace it with a new one.
8. Clean the sealing lip with a clean cloth. Do not use tools, because a lip damage could result.
9. Remove the filter and blow it with compressed air.
10. Reassemble the valve following the inverse sequence.

To insert the rod inside the flange assembly, power the coil and, using a screw driver, move the pin to allow the rod inserting.

When the reassembly is finished, verify the correct sealing between the upper flange and the valve body:

1. Open ball valve to restore pressure into the valve.
2. Apply a soap solution between the upper flange and the valve body and check for leakages.
3. Remove the soap solution with a clean cloth and compressed air.

## WARNING

- **When reassemble, use all gaskets properly.**
- **Perform functional test after mounting.**
- **All works must be executed by qualified technicians only and in compliance with local and national codes.**