

ELETTROVALVOLA AUTOMATICA NORMALMENTE CHIUSA PER GAS AD APERTURA RAPIDA  
 AUTOMATIC NORMALLY CLOSED FAST OPENING SOLENOID VALVE FOR GAS  
 ÉLECTROVANNE AUTOMATIQUE NORMALEMENT FERMEES POUR GAZ À OUVERTURE RAPIDE  
 ELECTROÁLVULA AUTOMÁTICA NORMALMENTE CERRADA PARA GAS CON APERTURA RÁPIDA



## CE-51CR4682

**CE** 0051  
0497

**MADE IN ITALY**

|                                                                                                                                        | IT                                                                                                                                                 | EN                                                             | FR                                                            | ES                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------|
| Pressione massima di esercizio<br>Maximum operating pressure<br>Pression maximum de fonctionnement<br>Presión máxima de funcionamiento | <b>3 - 6 bar (DN 32 - DN 32 FL - DN 40 - DN 40 FL - DN 50 - DN 50 FL)</b><br><b>0,5 - 1 - 3 - 6 bar (DN 65 - DN 80 - DN 100 - DN 125 - DN 150)</b> |                                                                |                                                               |                                                                |
| Attacchi filettati / Threaded connections<br>Raccords filetés / Conexiones roscadas                                                    | <b>DN 32 - DN 40 - DN 50</b>                                                                                                                       |                                                                |                                                               |                                                                |
| Attacchi flangiati / Flanged connections<br>Raccords à brides / Conexiones embrizadas                                                  | <b>DN 32 - DN 40 - DN 50 - DN 65 - DN 80 - DN 100 - DN 125 - DN 150</b>                                                                            |                                                                |                                                               |                                                                |
| Norma di riferimento<br>Reference standard<br>Norme de référence<br>Patrón de referencia                                               | EN 161                                                                                                                                             |                                                                |                                                               |                                                                |
| In conformità a *<br>In conformity with *<br>Conforme a *<br>Conforme *                                                                | Regolamento (UE)<br>2016/426<br><br>Direttiva PED<br>2014/68/UE                                                                                    | Regulation (EU)<br>2016/426<br><br>PED Directive<br>2014/68/UE | Règlement (UE)<br>2016/426<br><br>Directive PED<br>2014/68/UE | Reglamento (UE)<br>2016/426<br><br>Directiva PED<br>2014/68/UE |

\* Vedere tabella conformità in 9.0 / See compliance table in 9.0 / Voir le tableau de conformité en 9.0 / Véase tabla de cumplimiento en 9.0

IT

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EN

FR

ES

## 1.0 - GENERAL INFORMATION

This manual shows you how to safely install, operate and use the device.

The instructions for use **ALWAYS** need to be available in the facility where the device is installed.

**ATTENTION: installation/wiring/maintenance need to be carried out by qualified staff (as explained in section 1.3) using appropriate personal protective equipment (PPE).**

For any information pertaining to installation/wiring/maintenance or in any case problems that cannot be resolved with the use of the instructions, it is possible to contact the manufacturer from the address and phone numbers provided on the last page.

### 1.1 - DESCRIPTION

Normally closed automatic fast opening solenoid valves for gas. They open the flow of gas when the coil is electrically powered and close them when power is disconnected. They can be controlled by pressure switches, thermostats, etc.

They can be equipped with CPI switches to control the valve's obturator position (closed) remotely. The CPI can also be installed at a later time **ONLY IF** the device is set-up properly (cap under the valve body). Further information regarding the CPI switch is available in 6.0.

Reference standards: EN 161 - EN 13611.

### 1.2 - KEY OF SYMBOLS



**DANGER:** In the event of inobservance, this may cause damage to tangible goods.



**DANGER:** In the event of inobservance, this may cause damage to tangible goods, to people and/or pets.



**ATTENTION:** Attention is drawn to the technical details intended for qualified staff.

### 1.3 - QUALIFIED STAFF

These are people who:

- Are familiar with product installation, assembly, start-up and maintenance;
- Know the regulations in force in the region or country pertaining to installation and safety;
- Are trained in first aid.



### 1.4 - USING NON-ORIGINAL SPARE PARTS

- To perform maintenance or change parts (ex. coil, connector, etc.) **ONLY** manufacturer-recommended parts can be used. Using different parts not only voids the product warranty, it could compromise correct device operation.
- The manufacturer is not liable for malfunctions caused by unauthorised tampering or use of non-original parts.



### 1.5 - IMPROPER USE

- The product must only be used for the purpose it was built for.
- It is not allowed to use different fluids than those expressly stated.
- The technical data set forth on the rating plate must not be exceeded whatsoever. The end user or installer is in charge of implementing proper systems to protect the device, which prevent exceeding the maximum pressure indicated on the rating plate.
- The manufacturer is not responsible for any damage caused by improper use of the device.

## 2.0 - TECHNICAL DATA

|                                                        |                                                                                                                                                                                                                              |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • Use                                                  | : non-aggressive gases of the three families (dry gases)                                                                                                                                                                     |
| • Ambient temperature (TS)                             | : -20 ÷ +60 °C                                                                                                                                                                                                               |
| • Supply voltages (see table 2)                        | : 24 Vdc - 24 V/50 Hz - 110 V/50-60 Hz - 230 V/50-60 Hz*                                                                                                                                                                     |
| • Supply voltage tolerance                             | : -15% ... +10%                                                                                                                                                                                                              |
| • Electric wiring                                      | : cable gland PG 11                                                                                                                                                                                                          |
| • No. cycles/hour**                                    | : ~90 (ON time 10s - OFF time 30s)                                                                                                                                                                                           |
| • Absorbed power                                       | : see table 2                                                                                                                                                                                                                |
| • Maximum operating pressure                           |                                                                                                                                                                                                                              |
| DN 32 - DN 40 - DN 50                                  | : 3 bar or 6 bar (see product label)                                                                                                                                                                                         |
| DN 65 - DN 80 - DN 100 - DN 125 - DN 150               | : 500 mbar, 1 bar, 3 bar or 6 bar (see product label)                                                                                                                                                                        |
| • Opening time                                         | : <1 s                                                                                                                                                                                                                       |
| • Closing time                                         | : <1 s                                                                                                                                                                                                                       |
| • Protection rating                                    | : IP65                                                                                                                                                                                                                       |
| • Class                                                | : A                                                                                                                                                                                                                          |
| • Mechanical resistance                                | : Group 2                                                                                                                                                                                                                    |
| • Rp Threaded connections                              | : (DN 32 - DN 40 - DN 50) according to EN 10226                                                                                                                                                                              |
| • Flanged connections to be coupled with PN 16 flanges | : (DN 32 - DN 40 - DN 50 - DN 65 - DN 80 - DN 100 - DN 125 - DN 150)<br>ISO 7005 / EN 1092-1                                                                                                                                 |
| • NPT threaded or ANSI 150 flanged connections         | : on request                                                                                                                                                                                                                 |
| • In compliance with (see also table on page 22)       | : Regulation (EU) 2016/426 (Appliances burning gaseous fuels)<br>PED Directive 2014/68/EU (versions with P <sub>max</sub> = 1-3-6 bar)<br>EMCDirective 2014/30/EU - LVD Directive 2014/35/EU<br>RoHS II Directive 2011/65/EU |

\* Only single-phase, the device does not work if powered with three-phase voltage.

\*\* For cycles/hours with ON/OFF times different from those indicated, contact our technical office

## 2.1 - MODEL IDENTIFICATION

|              |                                                                          |
|--------------|--------------------------------------------------------------------------|
| <b>EV-1</b>  | : Fast opening P. max 0.5 or 1 bar (see product label)                   |
| <b>EV-3</b>  | : Fast opening P. max 3 bar                                              |
| <b>EV-6</b>  | : Fast opening P. max 6 bar                                              |
| <b>EVF-1</b> | : Fast opening + flow adjustment P. max 0.5 or 1 bar (see product label) |
| <b>EVF-3</b> | : Fast opening + flow adjustment P. max 3 bar                            |
| <b>EVF-6</b> | : Fast opening + flow adjustment P. max 6 bar                            |

## 2.2 - SIL LEVEL

For models in compliance with Regulation (EU) 2016/426 (see table in 9.0), the SIL level of the stand-alone solenoid valve is SIL 2; when two solenoids are installed in series and the relative leak test (Valve Proving System), certified according to EN 1643, the achieved level is SIL 3, as set forth in EN 676:2008. The solenoid valve has PL d level. For further data refer to the SIL LEVEL table (table 2).

## 3.0 - COMMISSIONING THE DEVICE



### 3.1 - OPERATIONS PRIOR TO INSTALLATION

- It is necessary to close the gas upstream of the valve prior to installation;
- Make sure that the line pressure **DOES NOT EXCEED** the maximum pressure declared on the product label;
- Any protective caps (if any) must be removed prior to installation;
- Valve pipes and insides must be clear of any foreign bodies;

If the device is threaded:

- make sure that the pipe thread is not too long, to prevent damaging the body of the device when screwing it on;

### If the device is flanged:

- make sure the inlet and outlet counter-flanges are perfectly coaxial and parallel in order to prevent unnecessary mechanical stress to the body. Also calculate the space to insert the seal gasket;
- With regard to tightening operations, equip yourself with one or two calibrated torque wrenches or other controlled locking tools;
- The safety regulations on handling loads in force in the country of installation must be complied with. If the device to be installed exceeds the weight allowed, suitable mechanical equipment and adequate slings must be used. Necessary precautions must be taken during the handling phases so as not to damage/ruin the external surface of the device;
- In accordance with EN 161 a suitable filter must be installed upstream of a gas closing safety device;
- With outdoor installation, it is advisable to provide a protective roof to prevent rain from damaging the electrical parts of the device;
- Prior to carrying out any electrical wiring operations, make sure that the mains voltage matches the supply voltage indicated on the product label;
- Cut out power prior to proceeding with wiring;
- According to the plant geometry, check the risk of explosive mixture arising inside the piping;
- If the solenoid valve is installed near other devices or as part of an assembly, compatibility between the solenoid valve and this other device must be evaluated beforehand;
- Avoid installing the solenoid valve near surfaces that could be damaged by the coil temperature;
- Provide a protection against impacts or accidental contacts if the solenoid valve is accessible to unqualified personnel.



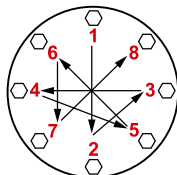
## 3.2 - INSTALLATION (see examples in 3.4)

### Threaded devices:

- Assemble the device by screwing it, with the due seals, onto the plant with pipes and/or fittings whose threads are consistent with the connection being attached.
- Do not use the coil **(4)** as a lever to help you screw it on, only use the specific tool;
- The arrow, shown on the body **(7)** of the device, needs to be pointing towards the application;

### Flanged devices:

- Assemble the device by flanging it, with the due seals, onto the plant with pipes whose flanges are consistent with the connection being attached. The gaskets must be free from defects and must be centred between the flanges;
- If, after installing the gaskets, there is still an excessive space in between, do not try to reduce the said gap by excessively tightening the bolts of the device;
- The arrow, shown on the body **(7)** of the device, needs to be pointing towards the application;
- Insert the relative washers inside the bolts in order to prevent damage to the flanges during tightening;
- When tightening, be careful not to "pinch" or damage the gasket;
- Tighten the nuts or bolts gradually, in a "cross" order (see the example below);
- Tighten them, first by 30%, then by 60%, and finally 100% of the maximum torque (see the table below according to EN 13611);



| Diameter          | DN 32 | DN 40 | DN 50 | DN 65 | DN 80 | DN 100 | DN 125 | DN 150 |
|-------------------|-------|-------|-------|-------|-------|--------|--------|--------|
| Max. torque (N.m) | 50    | 50    | 50    | 50    | 50    | 80     | 160    | 160    |

- Tighten each nut and bolt again clockwise at least once, until the maximum torque has been achieved uniformly;

### Common procedures (threaded and flanged devices):

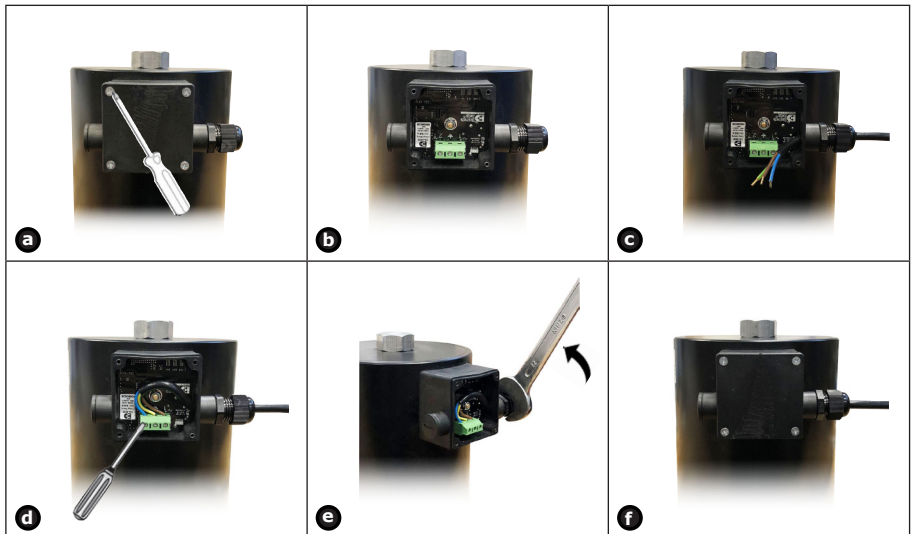
- **ONLY** install the device in the allowed positions (figure to the side);
- During installation, avoid debris or metal residues from getting into the device;
- To guarantee mechanical tension-free assembly, we recommend using compensating joints, which also adjust to the pipe's thermal expansion;
- If the device is to be installed in a ramp, it is the installer's responsibility to provide suitable supports or correctly sized supports, to properly hold and secure the assembly. Never, for any reason whatsoever, leave the weight of the ramp only on the connections (threaded or flanged) of the individual devices;
- In any case, following installation, check the tightness of the plant;
- Wiring cannot have cables connected directly to the coil. **ALWAYS and ONLY** use the connector/electronic board recommended by the manufacturer;
- Wire the terminal board (31) with a cable 3x1 mm<sup>2</sup>, outside Ø between 8.3 and 9.5 mm using the relative terminals for cables, as shown in the general figure on the side. The cable to use must have double sheathing, be suitable for use outdoors, with minimum voltage of 500V, and minimum temperature of 105°C;

| P.max       | Installation positions |  |  |  |  |
|-------------|------------------------|--|--|--|--|
| 0.5 - 1 bar |                        |  |  |  |  |
|             |                        |  |  |  |  |
| 3 - 6 bar   |                        |  |  |  |  |
|             |                        |  |  |  |  |



To wire the solenoid valve (see the images below):

- Loosen the 4 fastening screws (1);
  - Remove the cover (2) and loosen the cable gland (3);
  - Pass the cable through the cable gland (3), leaving a suitable length at the end to facilitate wiring to the terminal board without tensioning or forcing;
  - Secure the cables (duly crimped) to the terminal board (31), connecting terminals 1 and 2 to the power supply and the earthing cable to the terminal  $\Phi$ . **IMPORTANT:** respect the polarity with 24 Vdc power supply;
  - Use a 22mm commercial spanner to secure the cable gland (3), ensuring the product has a protection rating of IP65;
  - Secure the cover (2) with the 4 fastening screws (1). Make sure to place the rubber sealing gasket (33) correctly in order to ensure product rating of IP65;
- The valve needs to be earthed either through the pipe or through other means (ex. cable jumpers).



### 3.3 - INSTALLATION IN PLACES WHERE THERE IS THE RISK OF EXPLOSION (DIRECTIVE 2014/34/EU)

The solenoid valve is not suitable for use in potentially explosive areas.

3.4 - GENERAL EXAMPLES OF INSTALLATION

EXAMPLE 1

1. M16/RM N.C. Manual reset solenoid valve

2. SM jerk ON/OFF valve

3. FM gas filter

4. OPSO series MVB/1 MAX shut off valve

5. RG/2MC pressure regulator

6. **EV-1 fast opening automatic solenoid valve**
7. Solenoid valve control device

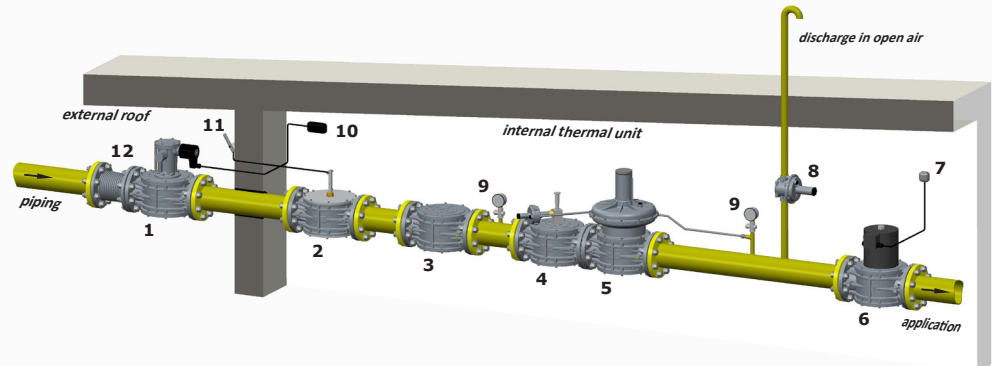
8. MVS/1 relief valve

9. Pressure gauge and relative button

10. Gas detector

11. SM remote jerk ON/OFF valve lever control

12. Expansion joint/anti-vibration mount



EXAMPLE 2 (Burner Gas Train)

1. FM gas filter

2. OPSO series MVB/1 MAX shut off valve

3. RG/2MC pressure regulator

4. Minimum pressure switch

5. **EV-1 fast opening automatic solenoid valve**

6. Maximum pressure switch
7. EVS-1 slow opening automatic solenoid valve

8. External reset

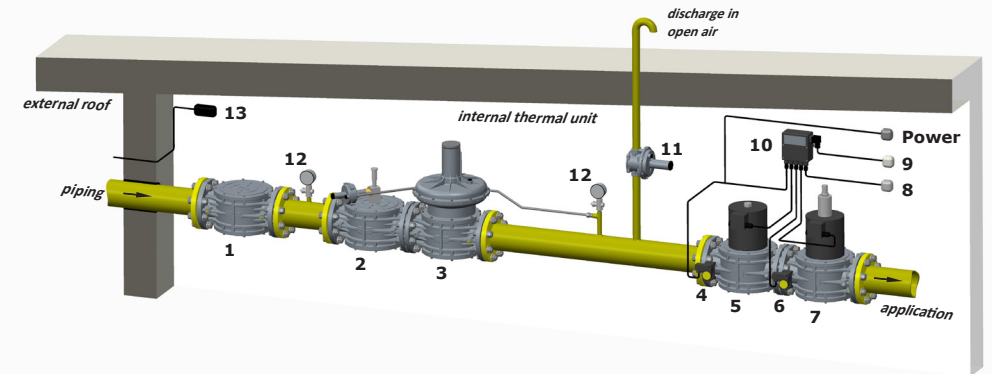
9. Burner control

10. MTC10 Valve proving system

11. MVS/1 relief valve

12. Pressure gauge and relative button

13. Gas detector





## 4.0 - FIRST START-UP



- Before start-up make sure that all of the instructions on the rating plate, including the direction of flow, are observed;
- After gradually pressurising the plant, check tightness and operation of the solenoid valve by supplying/cutting off the electricity.



## 4.1 - RECOMMENDED PERIODIC CHECKS

- Use a suitable calibration tool to ensure the bolts are tightened as indicated in 3.2;
- Check tightness of the flanged/threaded connections on the system;
- Check tightness and operation of the solenoid valve;

It is the responsibility of the final user or installer to define the frequency of these checks based on the severity of the service conditions.



## 4.2 - ADJUSTMENTS (Models EVF...)



- The flow adjustment (if present) can be done with the system stopped and the valve **NOT** electrically powered. It is recommended to wait for the coil to cool down (if previously powered) and/or, to use suitable thermal protections for hands;
- To adjust the flow, you must loosen and remove the coil fastening ring nut (**19**) and use the adjustment screw (**20**). On completion, tighten and secure the fastening ring nut (**19**) in its original position.



## 5.0 - MAINTENANCE

No maintenance operations need to be carried out inside the device.

If the coil and/or electronic board/connector need to be replaced:



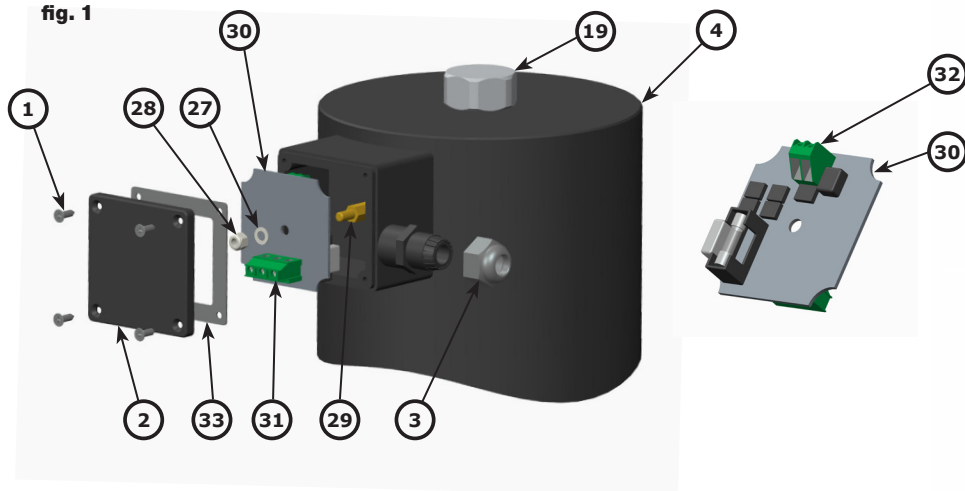
- Before performing any operation, make sure that the device is not electrically powered;
- Since the coil is also suitable to be permanently powered, coil heating in case of continuous operation is an entirely normal phenomenon. It is advisable to avoid touching the coil with bare hands after a continuous power supply lasting longer than 20 minutes. In case of maintenance, wait for the coil to cool down or, if necessary, use suitable protections;

**NOTE:** The coil and/or electronic board/connector replacement operations need to be carried out taking care to ensure the product's IP65 rating.



## 5.1 - CONNECTOR/ELECTRONIC BOARD REPLACEMENT

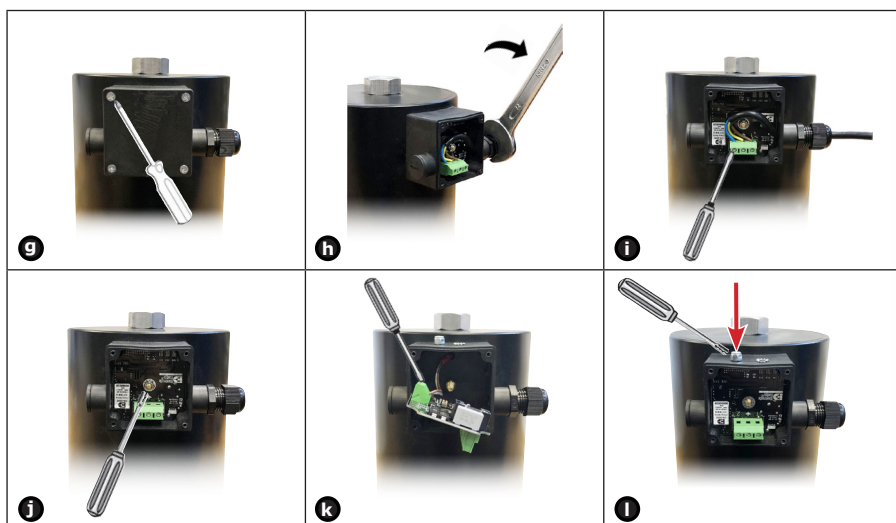
fig. 1



- g. Loosen the 4 fastening screws (**1**) of the cover (**2**);
- h. Remove the over (**2**) and loosen the cable gland (**3**) with a 22mm commercial spanner;
- i. Loosen the screws of the main terminal board (**31**) and remove the existing electric wiring by extracting the cables from the terminal board and cable gland (**3**);
- j. Using an 8 mm socket spanner, loosen the fastening nut (**28**) and remove it together with the toothed washer (**27**);
- k. Remove the connector/board (**30**) as shown in **k**. Loosen the screws from the rear terminal board (**32**) and remove the two wires that come out;
- l. Wire the two wires coming out from the rear terminal board (**32**) of the new connector/board.

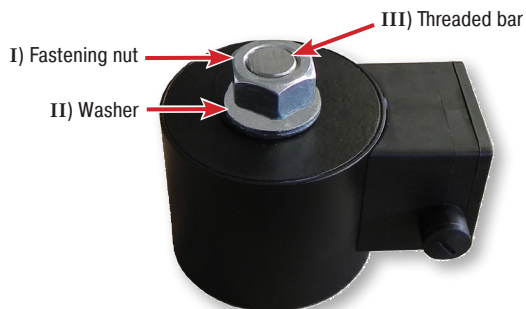
**IMPORTANT:** Being careful not to pinch the two cables, in the centre pin (**29**) insert: the new connector/board + toothed washer (**27**) + nut (**28**). With an 8mm socket spanner, tighten the nut (**28**);

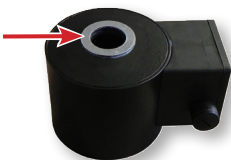
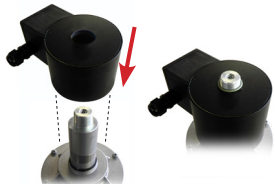
Proceed as specified in points c-f in section 3.2.





## 5.2 - REPLACING THE COIL



|                                                                                                                                                                                   |                                                                                                                                                             |                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Remove the fastening ring nut (<b>19</b>) with a 35mm commercial spanner</p>  <p><b>m</b></p> | <p>Remove the O-Ring (<b>18</b>)</p>  <p><b>n</b></p>                      | <p>Extract and remove the coil (<b>4</b>)</p>  <p><b>o</b></p>                                            |
| <p>Now proceed with replacing the coil</p>  <p><b>p</b></p>                                     | <p>Loosen the nut (I) with a 35mm commercial spanner</p>  <p><b>q</b></p> | <p>Remove the coil from the threaded bar (III)</p>  <p><b>r</b></p>                                       |
| <p>Remove the washer (II)</p>  <p><b>s</b></p>                                                 | <p>Insert the new coil and position the O-Ring</p>  <p><b>t</b></p>      | <p>Tighten and secure the fastening ring nut again with a 35 mm commercial spanner</p>  <p><b>u</b></p> |

· On completion of the above operations, proceed with wiring the coil just installed, as shown in 3.2

6.0 - CPI SWITCH

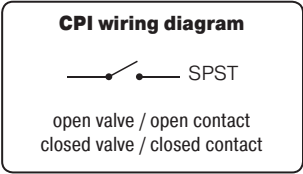
The microswitch that signals the closed position (CPI SWITCH) is a magnetic proximity sensor with a normally open contact. It provides a signal when the valve obturator closes.

If the solenoid valve comes with CPI, the position of the sensor is already calibrated and set, therefore, for operation you simply need to connect it to the power supply.

If it comes separately and is installed at a later time on a solenoid valve with CPI set-up, follow the instructions provided in paragraph 6.2

6.1 - CPI SWITCH TECHNICAL DATA

- Ambient temperature : -20 ÷ +60 °C
- Switchable voltage : max 1000 V (dc or ac peak)
- Switchable current : max 1 A (dc or ac peak)
- Switchable power : max 40W ohmic
- Resistance : 200 mΩ
- Protection rating : IP65
- Cable length : max 5m



 6.2 - CPI SWITCH INSTALLATION and CALIBRATION (fig. 6 and 7)

It is necessary to close the gas prior to installation.

- NOTE:** CPI connector (23) wiring must be do ensuring a product rating of IP65;
- Remove the cap (11) under the valve body (7) and remove the aluminium washer (found between the cap and body);
  - Instead of the cap (11), tighten the CPI ring nut kit (21). Make sure that between body (7) and kit (21) there is the new aluminium washer or an O-Ring (25);
  - Tighten the CPI ring nut kit (21) to the valve's body (7) with a special commercial spanner;
  - Before wiring the CPI connector (23), unscrew and remove the central screw (34);
  - Connect the CPI connector (23) terminals 1 and 2 in series to the signalling device. Use proper cable terminals (see the figures in 3.2);
  - Wire the CPI connector (23) with 2x1mm<sup>2</sup> cable with external Ø of 6.7 mm. The cable must be in double sheath, suitable for outdoor use, with a minimum voltage of 500V and a temperature of at least 90°C;
  - Secure the CPI connector (23), tightening (recommended tightening torque 0.4 N.m ± 10%) the centre screw (34);
  - To calibrate the microswitch, loosen the fastening nut (22) and position (by screwing on or off) the adjustment ring nut (24) so that, with the solenoid valve in a closed position, the CPI provides the signal;
  - Secure the adjustment ring nut (24) in that position by tightening the nut (22);
  - The kit is now installed. Open and close the solenoid valve (by supplying and cutting off power) 2-3 times to make sure the microswitch is signalling correctly.

7.0 - TRANSPORT, STORAGE AND DISPOSAL

- During transport the material needs to be handled with care, avoiding any impact or vibrations to the device;
- If the product has any surface treatments (ex. painting, cataphoresis, etc) it must not be damaged during transport;
- The transport and storage temperatures must observe the values provided on the rating plate;
- If the device is not installed immediately after delivery it must be correctly placed in storage in a dry and clean place;
- In humid facilities, it is necessary to use driers or heating to avoid condensation;
- At the end of its service life, the product is to be disposed of in compliance with the legislation in force in the country where this operation is performed.

## 8.0 - WARRANTY

The warranty conditions agreed with the manufacturer at the time of the supply apply.

For damage caused by:

- Improper use of the device;
- Failure to observe the requirements described herein;
- Failure to observe the regulations pertaining to installation;
- Tampering, modification and use of non-original spare parts;

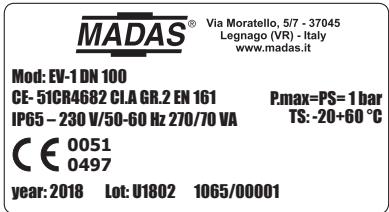
are not covered by the rights of the warranty or compensation for damage.

The warranty also excludes maintenance work, other manufacturers's assembling units, making changes to the device and natural wear.

## 9.0 - RATING PLATE DATA

The rating plate data (see example provided here) includes the following:

- Manufacturer's name/logo and address (possible distributor name/logo)
- Mod.: = device name/model followed by the connection diameter
- CE-51CR4682 (if it is present) = certification pin number
- Cl. A = Seal strength in counterflow at 150 mbar in accordance with EN 161
- Gr. 2 = Mechanical resistance group 2 in accordance with EN 161
- EN 161 = Product reference regulation
- P. max = Maximum pressure at which product operation is guaranteed
- PS = Allowable maximum pressure
- IP... = Protection rating
- 230V.... = Power supply voltage, frequency (if Vac), followed by electrical absorption
- Example of electrical absorption indication: 270/70 VA indicates 270 VA at start, 70 VA at steady state
- TS = Temperature range within which product operation is guaranteed
-  (if it is present) = Conformity with Regulation (EU) 2016/426 followed by Notified Body No.
-  (if it is present) = Conformity with PED Dir. followed by Notified Body No.
- year = Year of manufacture
- Lot = Product serial number (see explanation below)
  - U1802 = Lot issued in year 2018 in the 2nd week
  - 1065 = progressive job order number for the indicated year
  - 00001 = progressive number referring to the quantity of the lot

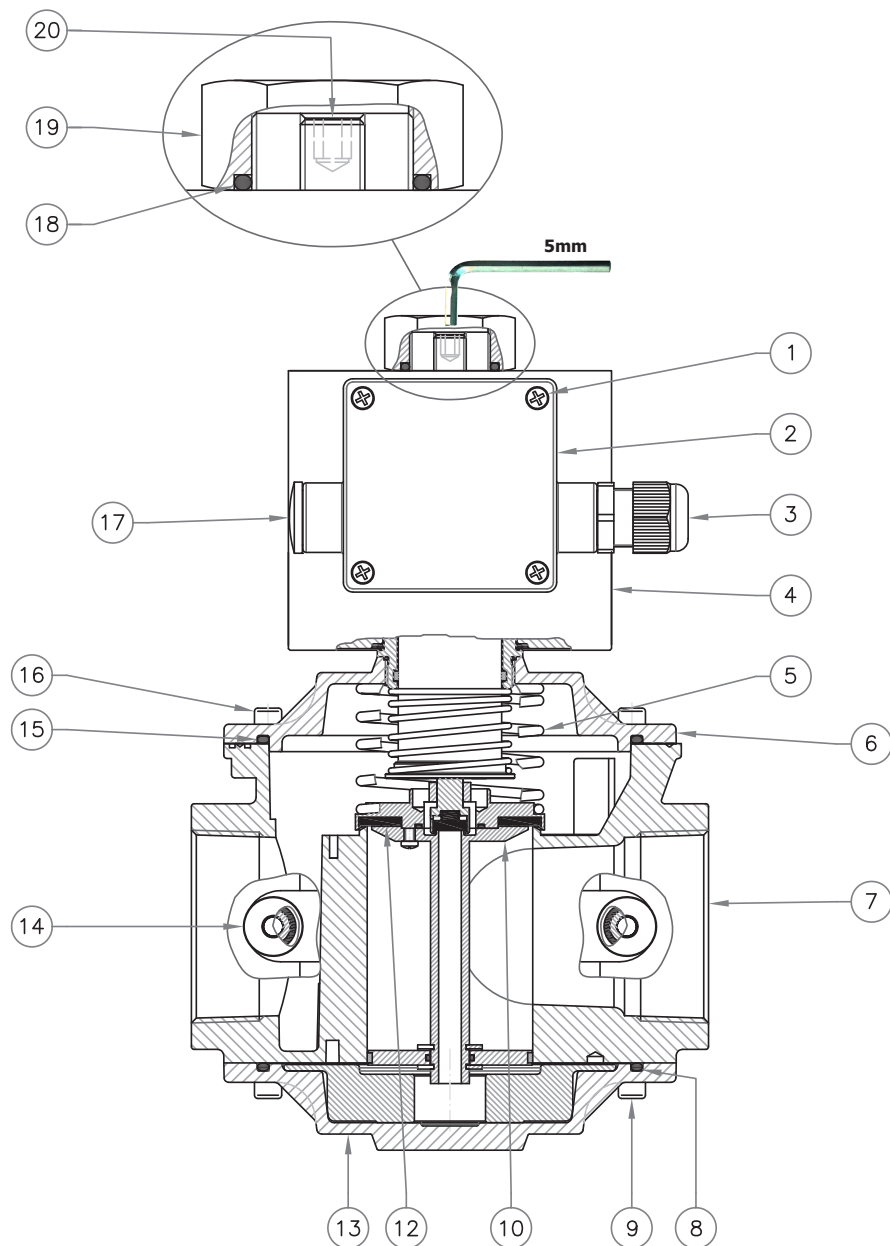


Compliance table

|                          | P. max 0.5 bar                                                                      |                                                                                     |                                                                                     | P. max 1 bar                                                                        |                                                                                     |                                                                                     | P. max 3 - 6 bar                                                                      |                                                                                       |                                                                                       |                                                                                     |
|--------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                          | DN 65 - DN 80                                                                       | DN 100                                                                              | DN 125 - DN 150                                                                     | DN 65 - DN 80                                                                       | DN 100                                                                              | DN 125 - DN 150                                                                     | DN 32 - DN 40 - DN 50<br>DN 32 FL - DN 40 FL - DN 50 FL                               | DN 65 - DN 80                                                                         | DN 100                                                                                | DN 125 - DN 150                                                                     |
| Regulation (EU) 2016/426 |  |  |  |  |  |  |  * |  * |  * |  |
| PED Directive 2014/68/EU | -                                                                                   | -                                                                                   | -                                                                                   |  |  |  |    |    |    |  |

\* Component designed for industrial use in industrial sites.

**fig. 2**  
 DN 32 - DN 40 - DN 50  
 P.max 3-6 bar



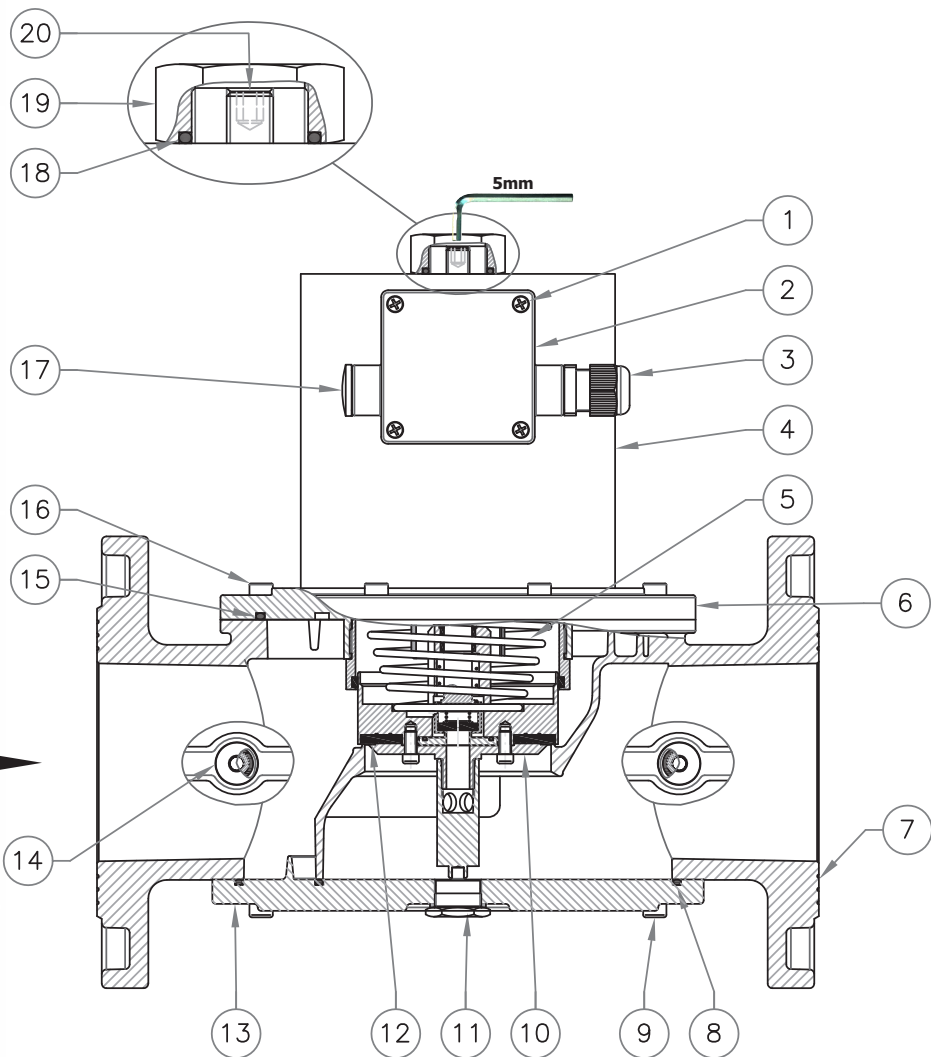
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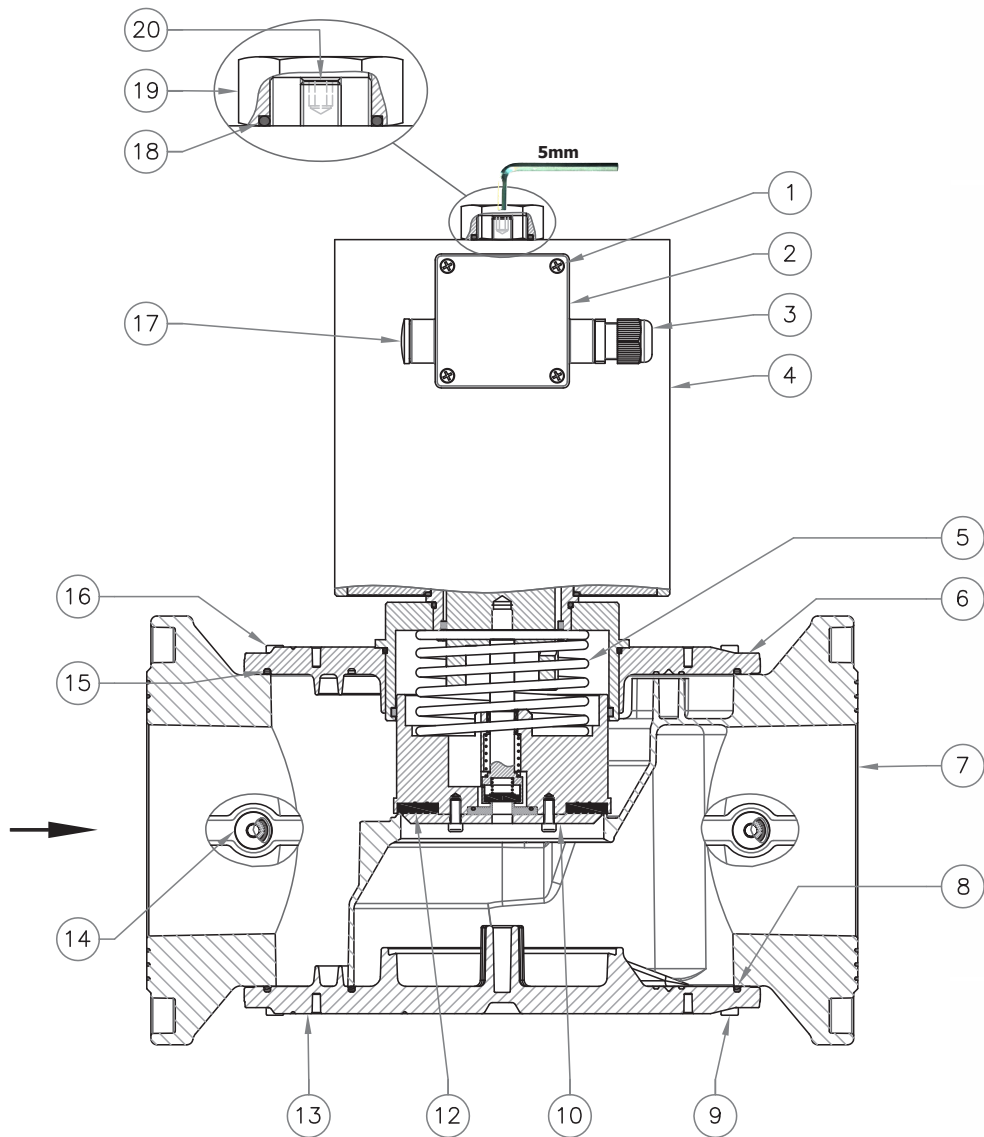
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**fig. 3**  
 DN 65 - DN 80  
 P.max 0,5 - 1 bar





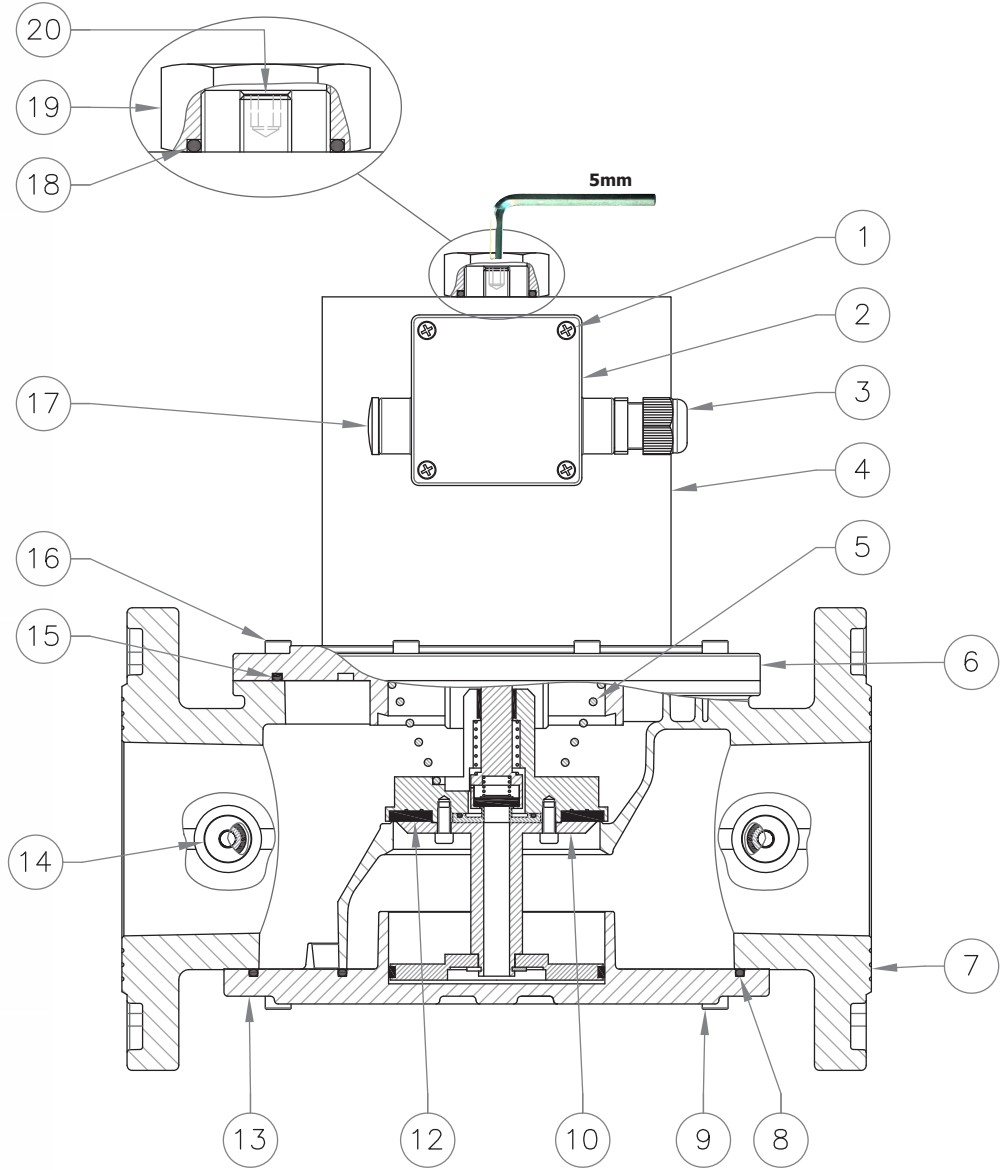
**fig. 5**  
DN 65 - DN 80 - DN 100  
P.max 3-6 bar

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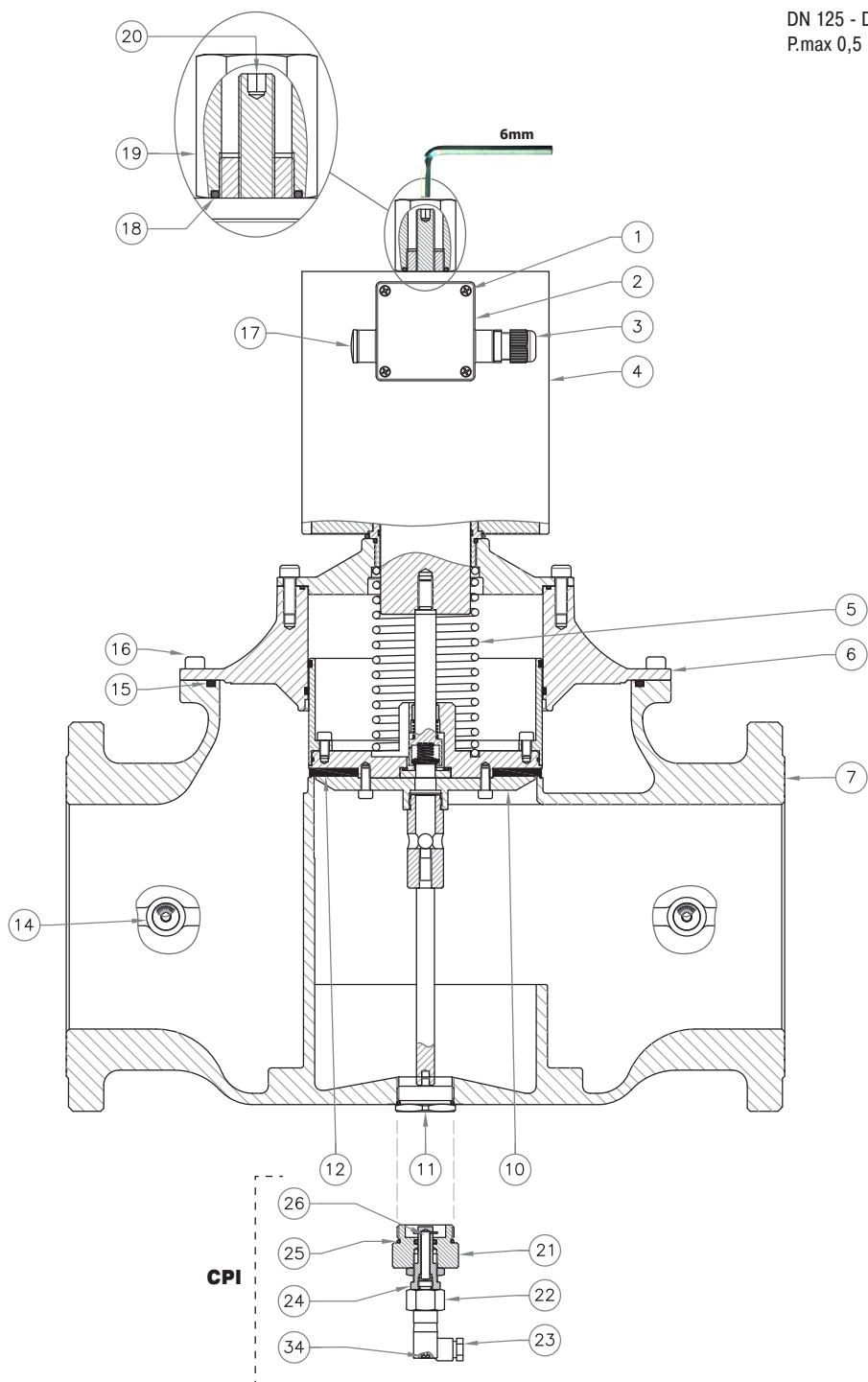
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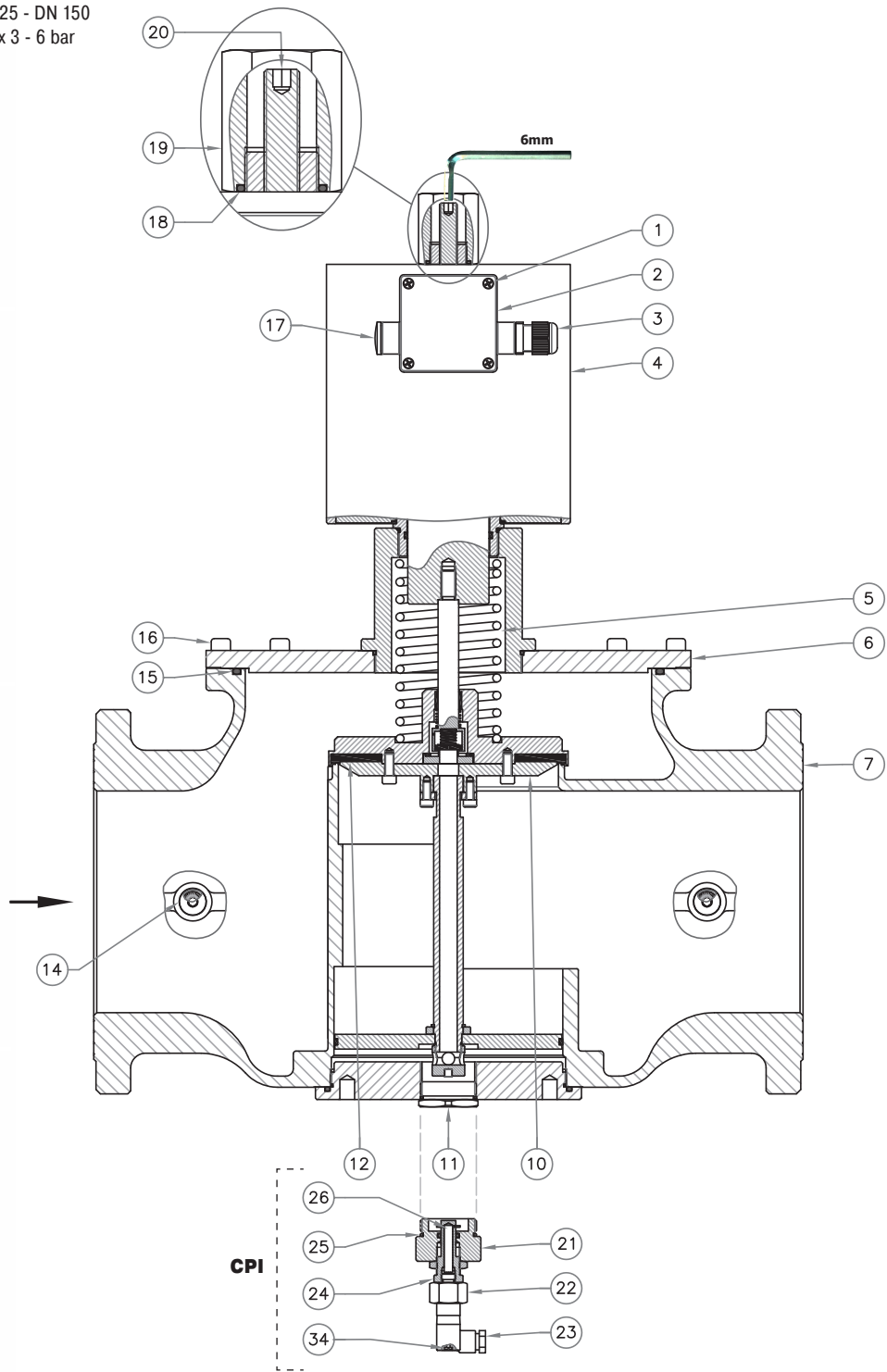
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**fig. 6**  
DN 125 - DN 150  
P.max 0,5 - 1 bar



**fig. 7**  
 DN 125 - DN 150  
 P.max 3 - 6 bar



**fig. 1, 2, 3, 4, 5, 6 e 7**

1. Viti fissaggio coperchietto
2. Coperchietto scatola elettrica
3. Pressacavo
4. Bobina
5. Molla di chiusura
6. Coperchio valvola
7. Corpo valvola
8. O-Ring di tenuta fondello  
(solo su DN 65-80-100)
9. Viti di fissaggio fondello  
(solo su DN 65-80-100)
10. Otturatore
11. Tappo inferiore (solo in versioni predisposte  
per installaz. CPI)
12. Rondella di tenuta
13. Fondello (solo su DN 65-80-100)
14. Tappo G 1/4"
15. O-Ring di tenuta coperchio valvola
16. Viti di fissaggio coperchio valvola
17. Tappo scatola elettrica
18. O-Ring bobina
19. Ghiera fissaggio bobina
20. Regolazione portata (solo su modelli EVF...)
21. Ghiera kit CPI
22. Dado fissaggio CPI
23. Connettore CPI
24. Ghiera di regolazione CPI
25. Rondella alluminio o O-Ring
26. Microswitch
27. Rondella dentata
28. Dado fissaggio connettore/scheda
29. Perno supporto connettore/scheda
30. Connettore/scheda (elettronica)
31. Morsettiera alimentazione principale
32. Morsettiera posteriore (bobina)
33. Guarnizione coperchietto
34. Vite centrale connettore CPI

**fig. 1, 2, 3, 4, 5, 6 and 7**

1. Cover fastening screws
2. Electrical box cover
3. Cable gland
4. Coil
5. Closing spring
6. Valve cover
7. Valve body
8. Bottom sealing O-Ring  
(on DN 65-80-100 only)
9. Bottom fastening screws  
(on DN 65-80-100 only)
10. Obturator
11. Lower cap (on versions set-up for CPI  
installation)
12. Sealing washer
13. Bottom (on DN 65-80-100 only)
14. Cap G 1/4"
15. Valve cover sealing O-Ring
16. Valve cover fastening screws
17. Electrical box cap
18. Coil O-Ring
19. Coil fastening ring nut
20. Flow adjustment (on EVF... models only)
21. CPI kit ring nut
22. CPI fastening nut
23. CPI connector
24. CPI adjustment ring nut
25. Aluminium washer or O-Ring
26. Microswitch
27. Toothed washer
28. Connector/board fastening nut
29. Connector/board support pin
30. Connector/board (electronic)
31. Main power supply terminal board
32. Rear terminal board (coil)
33. Cover gasket
34. CPI connector centre screw

fig. 1, 2, 3, 4, 5, 6 et 7

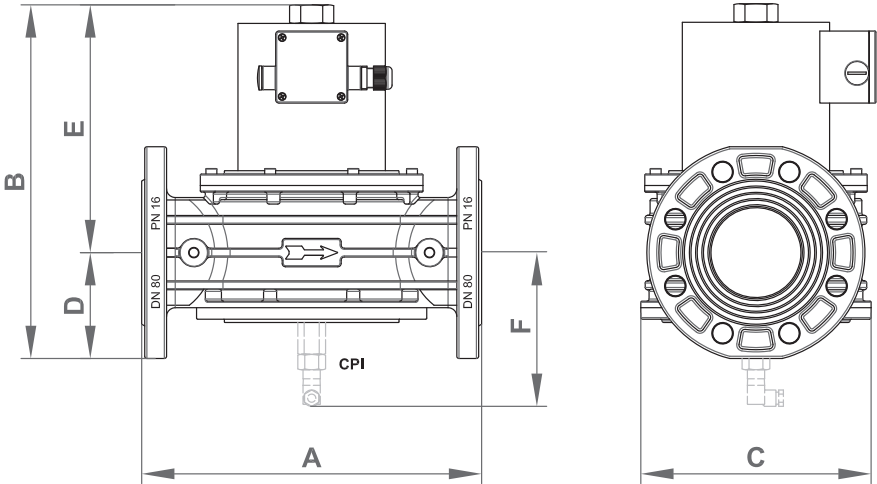
1. Vis de fixation du couvercle
2. Couvercle du boîtier électrique
3. Serre-câble
4. Bobine
5. Ressort de fermeture
6. Couvercle de vanne
7. Corps de vanne
8. Joint torique d'étanchéité fond  
(seulement sur DN 65-80-100)
9. Vis de fixation fond  
(seulement sur DN 65-80-100)
10. Obturateur
11. Bouchon inférieur (uniquement sur les versions  
prévues pour une installation CPI)
12. Rondelle d'étanchéité
13. Fond (uniquement sur DN 65-80-100)
14. Bouchon G 1/4"
15. Joint torique d'étanchéité du couvercle de vanne
16. Vis de fixation du couvercle de vanne
17. Bouchon du boîtier électrique
18. Joint torique de bobine
19. Bague de fixation de la bobine
20. Réglage du débit  
(uniquement sur les modèles EVF...)
21. Bague kit CPI
22. Écrou de fixation CPI
23. Connecteur CPI
24. Bague de réglage CPI
25. Rondelle aluminium ou joint torique
26. Micro-interrupteur
27. Rondelle dentée
28. Écrou de fixation du connecteur/carte
29. Pivot de support connecteur/carte
30. Connecteur/carte (électronique)
31. Bornier alimentation principale
32. Bornier arrière (bobine)
33. Joint petit couvercle
34. Vis centrale connecteur CPI

fig. 1, 2, 3, 4, 5, 6 y 7

1. Tornillos de fijación de la tapa
2. Tapa de la caja eléctrica
3. Prensaestopas
4. Bobina
5. Muelle de cierre
6. Tapa de la válvula
7. Cuerpo de la válvula
8. Junta tórica de estanqueidad de la tapa inferior  
(solo en DN 65-80-100)
9. Tornillos de fijación de la tapa inferior  
(solo en DN 65-80-100)
10. Obturador
11. Tapón inferior (solo en las versiones  
preparadas para la instalación del CPI)
12. Arandela de estanqueidad
13. Tapa inferior (solo en DN 65-80-100)
14. Tapón G 1/4"
15. Junta tórica de estanqueidad de la válvula
16. Tornillos de fijación de la tapa de la válvula
17. Tapón de la caja eléctrica
18. Junta tórica de la bobina
19. Anillo de fijación de la bobina
20. Regulación de la capacidad  
(solo en los modelos EVF...)
21. Anillo kit CPI
22. Tuerca de fijación CPI
23. Conector CPI
24. Anillo de regulación CPI
25. Arandela de aluminio o junta tórica
26. Microinterruptor
27. Arandela dentada
28. Tuerca de fijación del conector/tarjeta
29. Perno de soporte del conector/tarjeta
30. Conector/tarjeta (electrónica)
31. Regleta de bornes de la alimentación principal
32. Regleta de bornes posterior (bobina)
33. Junta de la tapa
34. Tornillo central del conector CPI

**Tabella 1 - Table 1 - Tableau 1 - Tabla 1**

| Dimensioni di ingombro in mm - Overall dimensions in mm - Dimensions d'encombrement en mm - Dimensiones totales en mm |                                                                                         |                 |                                     |     |         |     |     |     |     |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------|-------------------------------------|-----|---------|-----|-----|-----|-----|
| Attacchi filettati<br>Threaded connections<br>Raccords filetés<br>Conexiones roscadas                                 | Attacchi flangiati<br>Flanged connections<br>Raccords à brides<br>Conexiones embridadas | P. max (bar)    | fori<br>holes<br>trous<br>orificios | A   | B=(D+E) | C   | D   | E   | F   |
| DN 32 - DN 40 - DN 50                                                                                                 | -                                                                                       | 3 - 6           | -                                   | 160 | 260     | 140 | 70  | 190 | 148 |
| -                                                                                                                     | PN16 - ANSI 150<br>DN 32 - DN 40 - DN 50                                                | 3 - 6           | 4                                   | 230 | 271     | 165 | 76  | 195 | 155 |
| -                                                                                                                     | PN 16 - ANSI 150<br>DN 65                                                               | 0,5 - 1 - 3 - 6 | 4                                   | 290 | 317     | 211 | 89  | 228 | 141 |
| -                                                                                                                     | PN 16<br>DN 80                                                                          | 0,5 - 1 - 3 - 6 | 8                                   | 310 | 325     | 211 | 97  | 228 | 141 |
| -                                                                                                                     | ANSI 150<br>DN 80                                                                       | 0,5 - 1 - 3 - 6 | 4                                   | 290 | 317     | 211 | 89  | 228 | 141 |
| -                                                                                                                     | PN 16 - ANSI 150<br>DN 100                                                              | 0,5 - 1         | 8                                   | 350 | 413     | 260 | 105 | 308 | 167 |
| -                                                                                                                     | PN 16 - ANSI 150<br>DN 100                                                              | 3 - 6           | 8                                   | 350 | 388     | 260 | 105 | 283 | 167 |
| -                                                                                                                     | PN 16 - ANSI 150<br>DN 125                                                              | 0,5 - 1 - 3 - 6 | 8                                   | 480 | 575     | 328 | 127 | 448 | 204 |
| -                                                                                                                     | PN 16 - ANSI 150<br>DN 150                                                              | 0,5 - 1 - 3 - 6 | 8                                   | 480 | 579     | 328 | 131 | 448 | 204 |



Le dimensioni sono indicative, non vincolanti - The dimensions are provided as a guideline, they are not binding  
Les dimensions sont indicatives et non contractuelles - Las dimensiones son indicativas, no vinculante

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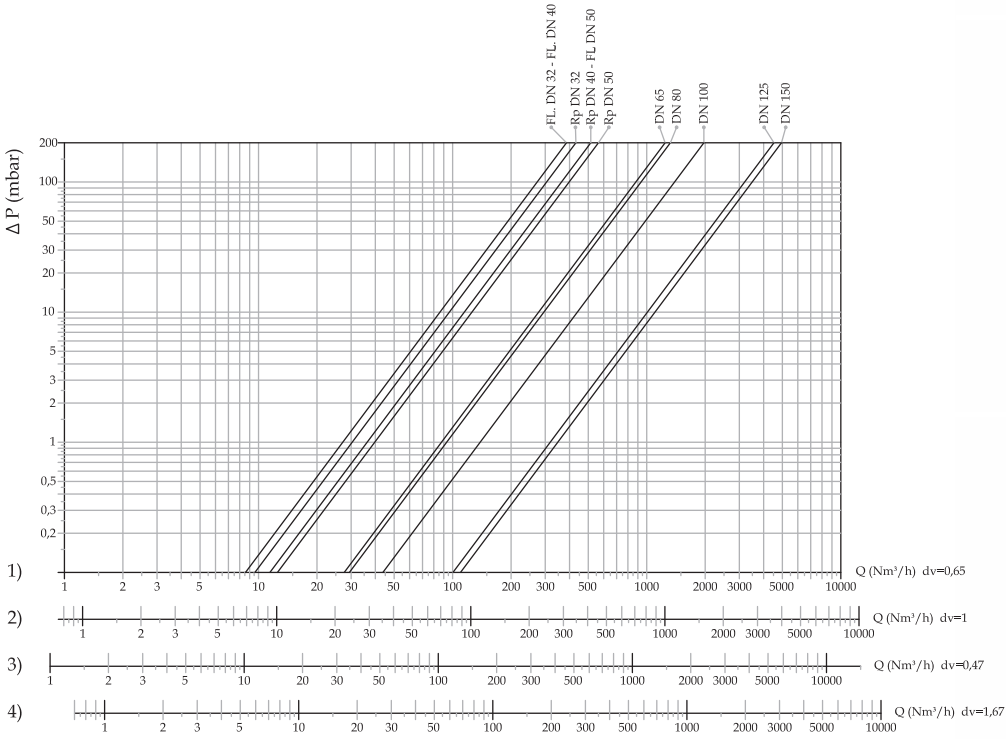
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| Tabella 2 - Table 2 - Tableau 2 - Tabla 2                  |              |
|------------------------------------------------------------|--------------|
| SIL LEVEL                                                  |              |
| Parameter                                                  | Value        |
| Hardware Failure Tolerance - HFT                           | 0            |
| Common Cause Failure - CCF in points                       | 75           |
| Safe Failure Fraction - SFF in %                           | 65%          |
| Expected Lifetime Cycles - B <sub>10d</sub>                | 251278       |
| Expected Lifetime - T <sub>10d</sub> [years]               | 87           |
| Probability of Dangerous Failures - PFH <sub>D</sub> [1/h] | 1.33E-07     |
| Performance Level - PL                                     | d            |
| Safety Integrity Level - SIL                               | 2            |
| Mean Time to Dangerous Failure - MTTF <sub>D</sub> [years] | 860          |
| DESIGNED LIFETIME                                          |              |
| Designed operating cycles<br>(According to EN 161)         | Time (years) |
| from 100.000 to 200.000<br>depends on diameter             | 10           |

| Calcolo portate usando il coefficiente K <sub>v</sub><br>Flow control calculation using the K <sub>v</sub> coefficient<br>Calcul des débits en utilisant le coefficient K <sub>v</sub><br>Cálculo de los caudales utilizando el coeficiente K <sub>v</sub> |                                                                                                                                                                 |                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Regime subcritico - Sub-critical speed<br>Régime subcritique - Régimen subcrítico                                                                                                                                                                          |                                                                                                                                                                 |                       |
| $Q_N = 514 \cdot K_v \sqrt{\frac{\Delta p \cdot p_2}{\rho_N \cdot T_1}}$ $\Delta p = - \frac{Q_N^2 \cdot \rho_N \cdot T_1}{K_v^2 \cdot 514^2 \cdot p_2}$                                                                                                   |                                                                                                                                                                 |                       |
| Regime critico - Critical speed - Régime critique - Régimen crítico                                                                                                                                                                                        |                                                                                                                                                                 |                       |
| $Q_N = 257 \cdot K_v \cdot p_1 \frac{1}{\sqrt{\rho_N \cdot T_1}}$                                                                                                                                                                                          |                                                                                                                                                                 |                       |
| Ø                                                                                                                                                                                                                                                          | P.max                                                                                                                                                           | K <sub>v</sub> (m³/h) |
| Rp DN 32                                                                                                                                                                                                                                                   | 3 - 6 bar                                                                                                                                                       | 27,1                  |
| Rp DN 40                                                                                                                                                                                                                                                   | 3 - 6 bar                                                                                                                                                       | 32,7                  |
| Rp DN 50                                                                                                                                                                                                                                                   | 3 - 6 bar                                                                                                                                                       | 35,8                  |
| FL DN 32 - FL DN 40                                                                                                                                                                                                                                        | 3 - 6 bar                                                                                                                                                       | 24,5                  |
| FL DN 50                                                                                                                                                                                                                                                   | 3 - 6 bar                                                                                                                                                       | 32,3                  |
| DN 65                                                                                                                                                                                                                                                      | 0,5 - 1 - 3 - 6 bar                                                                                                                                             | 79                    |
| DN 80                                                                                                                                                                                                                                                      | 0,5 - 1 - 3 - 6 bar                                                                                                                                             | 84                    |
| DN 100                                                                                                                                                                                                                                                     | 0,5 - 1 - 3 - 6 bar                                                                                                                                             | 125                   |
| DN 125                                                                                                                                                                                                                                                     | 0,5 - 1 bar                                                                                                                                                     | 315,4                 |
| DN 150                                                                                                                                                                                                                                                     | 0,5 - 1 bar                                                                                                                                                     | 332,3                 |
| DN 125                                                                                                                                                                                                                                                     | 3 - 6 bar                                                                                                                                                       | 287                   |
| DN 150                                                                                                                                                                                                                                                     | 3 - 6 bar                                                                                                                                                       | 314                   |
| $Q_N = \frac{Nm^3}{h}$<br>aria - air - air - aire                                                                                                                                                                                                          | $T_1 = K$<br>Temperatura all'ingresso della valvola<br>Valve inlet temperature<br>Température à l'entrée de la vanne<br>Temperatura en la entrada de la válvula |                       |
| $\rho_N = \frac{kg}{m^3}$<br>Densità a 0°C e P <sub>atm</sub><br>Density at 0 °C and P <sub>atm</sub><br>Densité à 0°C et P <sub>atm</sub><br>Densidad a 0 °C y P <sub>atm</sub>                                                                           | $p_1, p_2$<br>bar (pressione assoluta)<br>bar (absolute pressure)<br>bar (pression absolue)<br>bar (presión absoluta)                                           |                       |

**Diagramma perdite di carico (calcolato con P1 = 50 mbar)**  
**Pressure drop diagram (calculated with P1 = 50 mbar)**  
**Diagramme de perte de charge (calculé avec P1 = 50 mbar)**  
**Diagrama de pérdidas de carga (calculado con P1 = 50 mbar)**



- dv = densità relativa all'aria  
 dv = density relative to the air  
 dv = densité relative à l'air  
 dv = densidad relativa del aire
- 1) metano - methane - méthane - metano  
 2) aria - air - air - aire  
 3) gas di città - town gas - gaz de ville - gas ciudad  
 4) gpl - lpg - gpl - gpl

**Tabella 3 - Table 3 - Tableau 3 - Tabla 3**

Bobine e connettori - Coils and connectors - Bobines et connecteurs - Bobinas y conectores

| Ø                                                                                                                                                                                                                                                                                                                                                                                                                                                | Vollaggio<br>Voltage<br>Voltage<br>Voltaje | Codice bobina<br>Coil code<br>Code bobine<br>Código de la bobina | Timbratura bobina<br>Coil stamping<br>Timbrage bobine<br>Marcado de la bobina | Codice connettore<br>Connector code<br>Code connecteur<br>Código del conector | Potenza assorbita<br>Absorbed power<br>Puissance absorbée<br>Potencia absorbida |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                            |                                                                  |                                                                               |                                                                               | VA*                                                                             |
| EV -3-6<br>DN 32 - DN 40 - DN 50<br>DN 32 FL - DN 40 FL - DN 50 FL                                                                                                                                                                                                                                                                                                                                                                               | 24 Vdc                                     | BO-1010                                                          | BO-1010<br>24 Vdc<br>DN 32 - 40 - 50                                          | CN-2005                                                                       | 110 / 36                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 24 V/50 Hz                                 | BO-1015                                                          | BO-1015<br>24 Vac<br>DN 32 - 40 - 50                                          | CN-2010                                                                       | 97 / 41                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 110 V/50-60 Hz                             | BO-1020                                                          | BO-1020<br>110 Vac<br>DN 32 - 40 - 50                                         | CN-2020                                                                       | 132 / 60                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 230 V/50-60 Hz                             | BO-1030                                                          | BO-1030<br>230 Vac<br>DN 32 - 40 - 50                                         | CN-2030                                                                       | 82 / 32                                                                         |
| EV -1-3-6<br>DN 65 - DN 80                                                                                                                                                                                                                                                                                                                                                                                                                       | 24 Vdc                                     | BO-1110                                                          | BO-1110<br>24 Vdc<br>DN 65 - 80                                               | CN-2005                                                                       | 185 / 50                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 24 V/50 Hz                                 | BO-1115                                                          | BO-1115<br>24 Vac<br>DN 65 - 80                                               | CN-2010                                                                       | 185 / 50                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 110 V/50-60 Hz                             | BO-1120                                                          | BO-1120<br>110 Vac<br>DN 65 - 80                                              | CN-2020                                                                       | 260 / 70                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 230 V/50-60 Hz                             | BO-1130                                                          | BO-1130<br>230 Vac<br>DN 65 - 80                                              | CN-2030                                                                       | 290 / 75                                                                        |
| EV -1-3-6<br>DN 100                                                                                                                                                                                                                                                                                                                                                                                                                              | 24 Vdc                                     | BO-1210                                                          | BO-1210<br>24 Vdc<br>DN 100                                                   | CN-2005                                                                       | 130 / 40                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 24 V/50 Hz                                 | BO-1215                                                          | BO-1215<br>24 Vac<br>DN 100                                                   | CN-2010                                                                       | 120 / 35                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 110 V/50-60 Hz                             | BO-1220                                                          | BO-1220<br>110 Vac<br>DN 100                                                  | CN-2020                                                                       | 270 / 70                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 230 V/50-60 Hz                             | BO-1230                                                          | BO-1230<br>230 Vac<br>DN 100                                                  | CN-2030                                                                       | 270 / 70                                                                        |
| EV -1-3-6<br>DN 125 - DN 150                                                                                                                                                                                                                                                                                                                                                                                                                     | 24 Vdc                                     | BO-2210                                                          | BO-2210<br>24 Vdc<br>DN 100-125-150                                           | CN-2001                                                                       | 130 / 40                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 24 V/50 Hz                                 | BO-2215                                                          | BO-2215<br>24 Vac<br>DN 100-125-150                                           | CN-2011                                                                       | 120 / 35                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 110 V/50-60 Hz                             | BO-2220                                                          | BO-2220<br>110 Vac<br>DN 100-125-150                                          | CN-2021                                                                       | 270 / 70                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 230 V/50-60 Hz                             | BO-2230                                                          | BO-2230<br>230 Vac<br>DN 100-125-150                                          | CN-2031                                                                       | 270 / 70                                                                        |
| <b>Tipo connettore / Connector type / Type connecteur / Tipo de conector</b><br><b>CN-2005 - CN-2001</b> = Energy Saving 24 Vdc <b>CN-2020 - CN-2021</b> = Energy Saving 110 Vac<br><b>CN-2010 - CN-2011</b> = Energy Saving 24 Vac <b>CN-2030 - CN-2031</b> = Energy Saving 230 Vac                                                                                                                                                             |                                            |                                                                  |                                                                               |                                                                               |                                                                                 |
| * Esempio indicazione assorbimento elettrico: 270/70 VA indica 270 VA allo spunto, 70 VA a regime<br>* Example of electrical absorption indications: 270/70 VA indicates 270 VA on PTO, 70 VA at full speed<br>* Exemple d'une indication de l'absorption électrique : 270/70 VA indique 270 VA au démarrage, 70 VA à plein régime<br>* Ejemplo de indicación de la absorción eléctrica: 270/70 VA indica 270 VA en el arranque, 70 VA a régimen |                                            |                                                                  |                                                                               |                                                                               |                                                                                 |

**ATTACCHI FILETTATI NPT / NPT THREADED CONNECTIONS**  
**RACCORDS FILETÉS NPT / CONEXIONES ROSCADAS NPT**

richiedere fattibilità / request feasibility / demander la faisabilité / consulte la disponibilité

|                                                                       |                                                                 |                                                                          |                                                                                               |                                                  |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------|
| Aggiungere la lettera <b>"N"</b> dopo le cifre indicanti gli attacchi | Add the letter <b>"N"</b> after figures denoting the connection | Ajouter la lettre <b>"N"</b> après les chiffres indiquant les connexions | Añadir la letra <b>"N"</b> a continuación de las cifras que indican los diámetros de conexión | Es. / E.g. / Ex. / Ej.<br>EV07 <b>N</b> 0000 308 |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------|

**ATTACCHI FLANGIATI ANSI 150 / ANSI 150 FLANGED CONNECTIONS**  
**RACCORDS À BRIDES ANSI 150 / CONEXIONES EMBRIDADAS ANSI 150**

richiedere fattibilità / request feasibility / demander la faisabilité / consulte la disponibilité

|                                                                       |                                                                 |                                                                          |                                                                                               |                                             |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------|
| Aggiungere la lettera <b>"A"</b> dopo le cifre indicanti gli attacchi | Add the letter <b>"A"</b> after figures denoting the connection | Ajouter la lettre <b>"A"</b> après les chiffres indiquant les connexions | Añadir la letra <b>"A"</b> a continuación de las cifras que indican los diámetros de conexión | Es. / E.g. / Ex. / Ej.<br>EV12 <b>A</b> 108 |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------|

**BIOGAS**

richiedere fattibilità / request feasibility / demander la faisabilité / consulte la disponibilité

|                                                                       |                                                                 |                                                                          |                                                                                               |                                                  |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------|
| Aggiungere la lettera <b>"B"</b> dopo le cifre indicanti gli attacchi | Add the letter <b>"B"</b> after figures denoting the connection | Ajouter la lettre <b>"B"</b> après les chiffres indiquant les connexions | Añadir la letra <b>"B"</b> a continuación de las cifras que indican los diámetros de conexión | Es. / E.g. / Ex. / Ej.<br>EV07 <b>B</b> 0000 308 |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------|

**ELASTOMERI IN FKM (Viton) / ELASTOMERS IN FKM (Viton)**  
**ÉLASTOMÈRES EN FKM (Viton) / ELASTÓMEROS DE FKM (Viton)**

|                                                                       |                                                                 |                                                                          |                                                                                               |                                                  |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------|
| Aggiungere la lettera <b>"V"</b> dopo le cifre indicanti gli attacchi | Add the letter <b>"V"</b> after figures denoting the connection | Ajouter la lettre <b>"V"</b> après les chiffres indiquant les connexions | Añadir la letra <b>"V"</b> a continuación de las cifras que indican los diámetros de conexión | Es. / E.g. / Ex. / Ej.<br>EV07 <b>V</b> 0000 308 |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------|

**CATAFORESI / CATAPHORESIS**  
**CATAPHORÈSE / CATAFORESIS**

|                                                                       |                                                                 |                                                                          |                                                                                               |                                                  |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------|
| Aggiungere la lettera <b>"K"</b> dopo le cifre indicanti gli attacchi | Add the letter <b>"K"</b> after figures denoting the connection | Ajouter la lettre <b>"K"</b> après les chiffres indiquant les connexions | Añadir la letra <b>"K"</b> a continuación de las cifras que indican los diámetros de conexión | Es. / E.g. / Ex. / Ej.<br>EV07 <b>K</b> 0000 308 |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------|

**CONNETTORI CON LED / CONNECTORS WITH LED**  
**CONNECTEURS AVEC LED / CONECTOR CON LED**

|                                                                              |                                                               |                                                                      |                                                                                |                                                 |
|------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------|
| Aggiungere la lettera <b>"L"</b> prima delle cifre che indicano il voltaggio | Add the letter <b>"L"</b> before figures denoting the voltage | Ajouter la lettre <b>"L"</b> après les chiffres indiquant le voltage | Añadir la letra <b>"L"</b> a continuación de las cifras que indican el voltaje | Es. / E.g. / Ex. / Ej.<br>EV070000 <b>L</b> 308 |
|------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------|

**COMBINAZIONI POSSIBILI / POSSIBLE COMBINATIONS**  
**COMBINAISONS POSSIBLES / POSSIBLES COMBINACIONES**

|                                                                                                                       |                                                                                                                                                |                                                                                                                                    |                                                                                                                          |                                                   |
|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| È possibile combinare tra di loro le versioni. Non serve indicare <b>"BV"</b> in quanto <b>"B"</b> include <b>"V"</b> | It is possible to combine the above mentioned versions. It is not needed to state <b>"BV"</b> as the letter <b>"B"</b> includes <b>"V"</b> too | Les versions peuvent être combinées entre elles. Il n'est pas nécessaire d'indiquer <b>"BV"</b> car <b>"B"</b> comprend <b>"V"</b> | Es posible combinar las versiones entre sí. No es necesario indicar <b>"BV"</b> , dado que <b>"B"</b> incluye <b>"V"</b> | Es. / E.g. / Ex. / Ej.<br>EV07 <b>BK</b> 0000 308 |
|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|

**NOTA:** È possibile che alcuni modelli non siano disponibili nelle versioni suddette sia singole e/o combinate. È consigliato chiedere SEMPRE la fattibilità.

**NOTE:** It is possible certain models are not available on the above mentioned versions, both singles and/or combined too. We suggest to ask ALWAYS for the feasibility.

**NOTE:** Il est possible que certains modèles ne soient pas disponibles dans les versions uniques et / ou combinées susmentionnées. Il est recommandé de TOUJOURS demander la faisabilité.

**NOTA:** Puede suceder que algunos modelos no estén disponibles en las versiones citadas, ya sean individuales o combinadas. Se aconseja consultar SIEMPRE la viabilidad.

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| Attacchi filettati / Threaded connections / Raccords filetés / Conexiones roscadas |                                          |                               |     |                               |     |
|------------------------------------------------------------------------------------|------------------------------------------|-------------------------------|-----|-------------------------------|-----|
| Attacchi<br>Connections<br>Raccords<br>Conexiones                                  | Vtaggio<br>Voltage<br>Voltage<br>Voltaje | P. max 3 bar                  |     | P. max 6 bar                  |     |
|                                                                                    |                                          | Codice / Code / Code / Código |     | Codice / Code / Code / Código |     |
| DN 32                                                                              | 24 Vdc                                   | EV050000                      | 305 | EV050000                      | 605 |
|                                                                                    | 24 V/50 Hz                               | EV050000                      | 303 | EV050000                      | 603 |
|                                                                                    | 110 V/50-60 Hz                           | EV050000                      | 302 | EV050000                      | 602 |
|                                                                                    | 230 V/50-60 Hz                           | EV050000                      | 308 | EV050000                      | 608 |
| DN 40                                                                              | 24 Vdc                                   | EV060000                      | 305 | EV060000                      | 605 |
|                                                                                    | 24 V/50 Hz                               | EV060000                      | 303 | EV060000                      | 603 |
|                                                                                    | 110 V/50-60 Hz                           | EV060000                      | 302 | EV060000                      | 602 |
|                                                                                    | 230 V/50-60 Hz                           | EV060000                      | 308 | EV060000                      | 608 |
| DN 50                                                                              | 24 Vdc                                   | EV070000                      | 305 | EV070000                      | 605 |
|                                                                                    | 24 V/50 Hz                               | EV070000                      | 303 | EV070000                      | 603 |
|                                                                                    | 110 V/50-60 Hz                           | EV070000                      | 302 | EV070000                      | 602 |
|                                                                                    | 230 V/50-60 Hz                           | EV070000                      | 308 | EV070000                      | 608 |

| Attacchi flangiati / Flanged connections / Raccords à brides / Conexiones embreadadas |                                          |                               |     |                               |     |
|---------------------------------------------------------------------------------------|------------------------------------------|-------------------------------|-----|-------------------------------|-----|
| Attacchi<br>Connections<br>Raccords<br>Conexiones                                     | Vtaggio<br>Voltage<br>Voltage<br>Voltaje | P. max 3 bar                  |     | P. max 6 bar                  |     |
|                                                                                       |                                          | Codice / Code / Code / Código |     | Codice / Code / Code / Código |     |
| DN 32                                                                                 | 24 Vdc                                   | EV320000                      | 305 | EV320000                      | 605 |
|                                                                                       | 24 V/50 Hz                               | EV320000                      | 303 | EV320000                      | 603 |
|                                                                                       | 110 V/50-60 Hz                           | EV320000                      | 302 | EV320000                      | 602 |
|                                                                                       | 230 V/50-60 Hz                           | EV320000                      | 308 | EV320000                      | 608 |
| DN 40                                                                                 | 24 Vdc                                   | EV400000                      | 305 | EV400000                      | 605 |
|                                                                                       | 24 V/50 Hz                               | EV400000                      | 303 | EV400000                      | 603 |
|                                                                                       | 110 V/50-60 Hz                           | EV400000                      | 302 | EV400000                      | 602 |
|                                                                                       | 230 V/50-60 Hz                           | EV400000                      | 308 | EV400000                      | 608 |
| DN 50                                                                                 | 24 Vdc                                   | EV500000                      | 305 | EV500000                      | 605 |
|                                                                                       | 24 V/50 Hz                               | EV500000                      | 303 | EV500000                      | 603 |
|                                                                                       | 110 V/50-60 Hz                           | EV500000                      | 302 | EV500000                      | 602 |
|                                                                                       | 230 V/50-60 Hz                           | EV500000                      | 308 | EV500000                      | 608 |

| Attacchi flangiati / Flanged connections / Raccords à brides / Conexiones embridadas |                                             |                               |     |              |     |              |     |              |     |
|--------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------|-----|--------------|-----|--------------|-----|--------------|-----|
| Attacchi<br>Connections<br>Raccords<br>Conexiones                                    | Volltaggio<br>Voltage<br>Voltage<br>Voltaje | P. max 0,5 bar                |     | P. max 1 bar |     | P. max 3 bar |     | P. max 6 bar |     |
|                                                                                      |                                             | Codice / Code / Code / Código |     |              |     |              |     |              |     |
| DN 65                                                                                | 24 Vdc                                      | EV08                          | 005 | EV08         | 105 | EV080000     | 305 | EV080000     | 605 |
|                                                                                      | 24 V/50 Hz                                  | EV08                          | 003 | EV08         | 103 | EV080000     | 303 | EV080000     | 603 |
|                                                                                      | 110 V/50-60 Hz                              | EV08                          | 002 | EV08         | 102 | EV080000     | 302 | EV080000     | 602 |
|                                                                                      | 230 V/50-60 Hz                              | EV08                          | 008 | EV08         | 108 | EV080000     | 308 | EV080000     | 608 |
| DN 80                                                                                | 24 Vdc                                      | EV09                          | 005 | EV09         | 105 | EV090000     | 305 | EV090000     | 605 |
|                                                                                      | 24 V/50 Hz                                  | EV09                          | 003 | EV09         | 103 | EV090000     | 303 | EV090000     | 603 |
|                                                                                      | 110 V/50-60 Hz                              | EV09                          | 002 | EV09         | 102 | EV090000     | 302 | EV090000     | 602 |
|                                                                                      | 230 V/50-60 Hz                              | EV09                          | 008 | EV09         | 108 | EV090000     | 308 | EV090000     | 608 |
| DN 100                                                                               | 24 Vdc                                      | EV10                          | 005 | EV10         | 105 | EV100000     | 305 | EV100000     | 605 |
|                                                                                      | 24 V/50 Hz                                  | EV10                          | 003 | EV10         | 103 | EV100000     | 303 | EV100000     | 603 |
|                                                                                      | 110 V/50-60 Hz                              | EV10                          | 002 | EV10         | 102 | EV100000     | 302 | EV100000     | 602 |
|                                                                                      | 230 V/50-60 Hz                              | EV10                          | 008 | EV10         | 108 | EV100000     | 308 | EV100000     | 608 |
| DN 125                                                                               | 24 Vdc                                      | EV11                          | 005 | EV11         | 105 | EV110000     | 305 | EV110000     | 605 |
|                                                                                      | 24 V/50 Hz                                  | EV11                          | 003 | EV11         | 103 | EV110000     | 303 | EV110000     | 603 |
|                                                                                      | 110 V/50-60 Hz                              | EV11                          | 002 | EV11         | 102 | EV110000     | 302 | EV110000     | 602 |
|                                                                                      | 230 V/50-60 Hz                              | EV11                          | 008 | EV11         | 108 | EV110000     | 308 | EV110000     | 608 |
| DN 150                                                                               | 24 Vdc                                      | EV12                          | 005 | EV12         | 105 | EV120000     | 305 | EV120000     | 605 |
|                                                                                      | 24 V/50 Hz                                  | EV12                          | 003 | EV12         | 103 | EV120000     | 303 | EV120000     | 603 |
|                                                                                      | 110 V/50-60 Hz                              | EV12                          | 002 | EV12         | 102 | EV120000     | 302 | EV120000     | 602 |
|                                                                                      | 230 V/50-60 Hz                              | EV12                          | 008 | EV12         | 108 | EV120000     | 308 | EV120000     | 608 |

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| IT | Attacchi<br>Connections<br>Raccords<br>Conexiones | Vtaggio<br>Voltage<br>Voltage<br>Voltaje | P.max<br>(bar) | Con predisposizione per CPI switch<br>With set-up for CPI switch<br>Avec prédisposition pour CPI switch<br>Con predisposición para microinterruptor CPI | Con CPI switch<br>With CPI switch<br>Avec CPI switch<br>Con microinterruptor CPI |
|----|---------------------------------------------------|------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
|    |                                                   |                                          |                | Codice / Code / Code / Código                                                                                                                           | Codice / Code / Code / Código                                                    |
|    | DN 32                                             | Tutti / All                              | 3 - 6          | EV050067 ...                                                                                                                                            | EV050046 ...                                                                     |
|    |                                                   |                                          |                | EV320067 ...                                                                                                                                            | EV320046 ...                                                                     |
| EN | DN 40                                             | Tutti / All                              | 3 - 6          | EV060067 ...                                                                                                                                            | EV060046 ...                                                                     |
|    |                                                   |                                          |                | EV400067 ...                                                                                                                                            | EV400046 ...                                                                     |
|    | DN 50                                             | Tutti / All                              | 3 - 6          | EV070067 ...                                                                                                                                            | EV070046 ...                                                                     |
|    |                                                   |                                          |                | EV500067 ...                                                                                                                                            | EV500046 ...                                                                     |
|    | DN 65                                             | Tutti / All                              | 0,5 - 1        | EV080066...                                                                                                                                             | EV080036...                                                                      |
|    |                                                   |                                          | 3 - 6          | EV080067...                                                                                                                                             | EV080046...                                                                      |
| FR | DN 80                                             | Tutti / All                              | 0,5 - 1        | EV090066...                                                                                                                                             | EV090036...                                                                      |
|    |                                                   |                                          | 3 - 6          | EV090067...                                                                                                                                             | EV090046...                                                                      |
|    | DN 100                                            | Tutti / All                              | 0,5 - 1        | EV100066...                                                                                                                                             | EV100036 ...                                                                     |
|    |                                                   |                                          | 3 - 6          | EV100067...                                                                                                                                             | EV100046...                                                                      |
|    | DN 125                                            | Tutti / All                              | 0,5 - 1        | EV110066...                                                                                                                                             | EV110036...                                                                      |
|    |                                                   |                                          | 3 - 6          | EV110067...                                                                                                                                             | EV110046...                                                                      |
| ES | DN 150                                            | Tutti / All                              | 0,5 - 1        | EV120066...                                                                                                                                             | EV120036...                                                                      |
|    |                                                   |                                          | 3 - 6          | EV120067...                                                                                                                                             | EV120046...                                                                      |

**Con regolatore di portata (apertura rapida) - With flow adjustment (fast opening)**  
**Avec réglage débit (ouverture rapide) - Con regulación de caudal (apertura rápida)**

| Attacchi<br>Connections<br>Raccords<br>Conexiones | Voltaggio<br>Voltage<br>Voltage<br>Voltaje | Codice<br>Code<br>Code<br>Código |
|---------------------------------------------------|--------------------------------------------|----------------------------------|
| DN 32                                             | Tutti / All                                | EVF05 ...                        |
|                                                   |                                            | EVF32 ...                        |
| DN 40                                             | Tutti / All                                | EVF06 ...                        |
|                                                   |                                            | EVF40 ...                        |
| DN 50                                             | Tutti / All                                | EVF07 ...                        |
|                                                   |                                            | EVF50 ...                        |
| DN 65                                             | Tutti / All                                | EVF08 ...                        |
| DN 80                                             | Tutti / All                                | EVF09 ...                        |
| DN 100                                            | Tutti / All                                | EVF10 ...                        |
| DN 125                                            | Tutti / All                                | EVF11 ...                        |
| DN 150                                            | Tutti / All                                | EVF12 ...                        |

**Accessori / Accessories / Accessoires / Accesorios**

Kit CPI (installabile solo su elettrovalvole con predisposizione per CPI switch)

CPI kit (only for solenoid valve with set-up for CPI switch)

Kit CPI (peut être installé uniquement sur les électrovannes avec prédisposition pour interrupteur CPI)

Kit CPI (instalable únicamente en electroválvulas expresamente preparadas para poder conectar el micro-interruptor de final de carrera CPI)

| Modello<br>Model<br>Modèle<br>Modelo | P. max<br>(bar) | Attacchi<br>Connections<br>Raccords<br>Conexiones | Codice<br>Code<br>Code<br>Código |
|--------------------------------------|-----------------|---------------------------------------------------|----------------------------------|
| EV...3 - 6                           | 3 - 6           | DN 32 - DN 40 - DN 50                             | KIT-EV070067                     |
| EV...3 - 6                           | 3 - 6           | DN 32 FL - DN 40 FL - DN 50 FL                    | KIT-EV500067                     |
| EV...1                               | 0,5 - 1         | DN 65 - DN 80                                     | KIT-EV090066                     |
| EV...3 - 6                           | 3 - 6           | DN 65 - DN 80                                     | KIT-EV090067                     |
| EV...1                               | 0,5 - 1         | DN 100                                            | KIT-EV100066                     |
| EV...3 - 6                           | 3 - 6           | DN 100                                            | KIT-EV100067                     |
| EV...1                               | 0,5 - 1         | DN 125 - DN 150                                   | KIT-EV120066                     |
| EV...3 - 6                           | 3 - 6           | DN 125 - DN 150                                   | KIT-EV120067                     |

Ci riserviamo qualsiasi modifica tecnica e costruttiva.  
We reserve the right to any technical and construction changes.  
Nous nous réservons le droit de toute modification technique et constructive.  
Nos reservamos el derecho de realizar cualquier cambio técnico y estructural.

