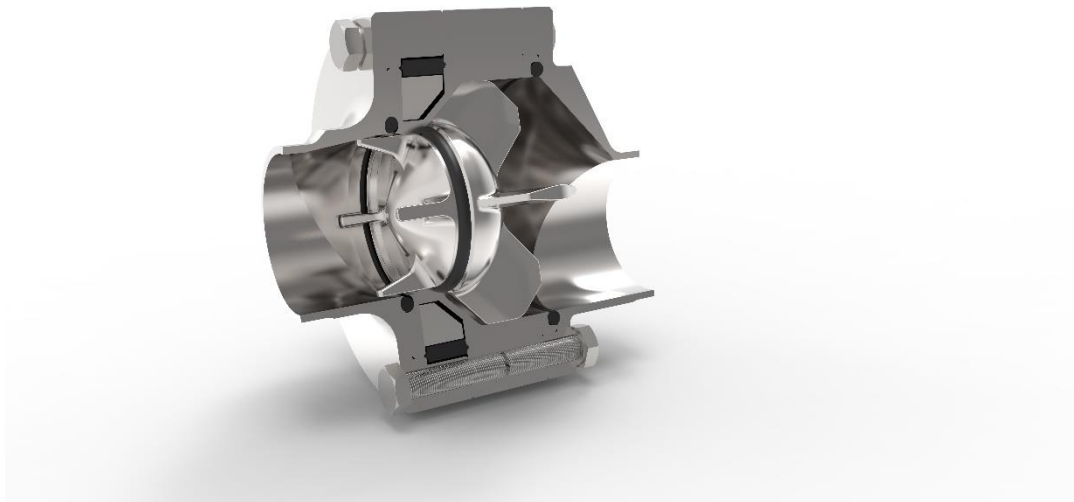


USER AND MAINTENANCE GUIDE

NON RETURN / UNIDIRECTIONAL VALVE

EDF VALVE DN06-DN200



Carollo srl Unipersonale

**Via Pettinà, 24
36010 Zanè
Italy**

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0. Introduction

This instruction manual is an integral part of the delivery of the valve. You must:

- ALWAYS read carefully before using the valve;
- ALWAYS store it for future reference.

All rights reserved. You may not reproduce or transfer any portion of this instruction manual by any means, electronic and mechanical - including photocopying, recording, or any other storage system or re-use for other purposes than exclusively personal use - without the prior written accord with the manufacturer.

This manual's handbook is specifically intended for use by technical staff. For this reason some information are easily deducible from the examination of the text and illustrations and drawings have not been specified. The publisher is not responsible for any consequences resulting from incorrect operations by the user.

The data and information contained in this manual are subjected to change or to updates without further notice or obligation by the manufacturer.

N.B. If the valve has the ATEX marking, make sure to have the additional technical material which is specific for ATEX (M 7.5.14). Otherwise contact Carollo Srl.

1. Valve Description

YGROS valve is a non return/unidirectional valve with magnetic technology. Inside Ygros valve there is not a spring, but the functioning takes place through the presence of a magnetic field.

Ygros non return valve consists of:

- Valve Body
- Shutter
- Front Flange
- Rear Flange
- Magnet (usually in 2 parts)
- Seals

Flanges can be chosen among:

- Welding ASME BPE
- Welding DIN 11850
- Tri-clamp ASME BPE

2. Working Principle

The magnets built into the valve body keep the shutter in a closed position preventing backflow.
The YGROS check valve opens when the inflow pressure exceeds the magnetic force.

In the open position the shutter moves away from the magnet, which means lower attraction to the seat and therefore lower resistance to flow, so pressure drop is minimal.

When the forward flow in the pipe stops, the magnet will attract the shutter back to its seat, stopping any backwards flow.

3. Declaration of Conformity CE

CAROLLO srl

Via Pettinà Luigi, 24 - 36010 ZANÈ (VI) ITALY
Telef. 0445-314158/315214 Fax 0445-319538/319221
E-Mail: info@carollomacchine.com
Web: www.carollomacchine.com
Cod. Fisc. e P. IVA IT 00270990245
Reg. Impr. Vicenza 10467//VI116 R.E.A. 140951/VI
Sede Legale: Via Pordenone, 8 - 36010 Zanè (VI)



DICHIARAZIONE DI CONFORMITA' DECLARATION OF CONFORMITY

Nome del fabbricante: Carollo S.r.l.
Name of manufacturer:
Indirizzo del fabbricante: Via Luigi Pettinà, 24
Address of manufacturer: 36010 Zanè (VI)

Dichiara
Declare

Che la valvola di non ritorno /unidirezionale ad azionamento magnetico individuate nel presente documento è conforme alla direttiva 97/23/CE + 2014/68/EU art. 13.
The unidirectional magnetic valve identified in the document complies with Directive 97/23/CE + 2014/68/EU art. 13.

COD. ARTICOLO
Matricola

Procedura di valutazione di conformità utilizzata / Procedure for Conformity Assessment :

- Art. 3 par. 3 per : EDF (DN25)
- Cat. I Modulo A : EDF (DN32 ÷ DN50)
- Cat. II Modulo A1 : EDF (DN63 ÷ DN100)

Organismo notificato che ha effettuato il Controllo / Notified body which carried out the inspection : TUV Italia Via Carducci, 125, Pal.23, 20099 Sesto San Giovanni (MI) – ITALIA – www.tuv.it.




- Norme armonizzate applicate / Standard applied :**
- Directive 97/23/CE concerning pressure equipment + 2014/68/EU art. 13
 - Regolamento CE 1935/2004 "Statement of conformity according to materials in contact with Food"
 - UNI EN ISO 13445

Certificato / Certification nr : TIS-PED –VI-14-01-064437-7101

Zanè,

Carollo Srl Unipersonale
Legale rappresentante
Carollo Martino

4. Safety Symbols

	<p>WARNING signal indicating that the general special instructions SHOULD BE followed to avoid serious injury.</p>
	<p>CAUTION generic signal indicating that you MUST follow special instructions to avoid damage to equipment and environment.</p>
<p>NOTE!</p>	<p>Identify IMPORTANT information to improve the understanding of the instructions.</p>
	<p>If the valve has the ATEX MARKING, make sure to have the additional technical material which is specific for ATEX (M 7.5.14). Otherwise contact Carollo Srl.</p>

5. Safety Instructions



ALWAYS read the technical data before the installation, operation and maintenance. ALWAYS use authorized personnel for the installation, operation and maintenance of the valve. The staff must know perfectly the valve and the manual.

Use the valve ONLY for the purpose intended.

ALWAYS apply the valve carefully.

Make sure there are no damages on the valve while removing the packaging.

Try to avoid all physical contacts with an overheated check valve.



Install the valve at a safe distance from components that can lead the fluid to turbulent motions through the valve. Turbulent flows can cause noise, vibrations and cavitations with consequent wear of valve components. In this case, the installation position of the valve has to be modified.

Before mounting the valve, check the fluid chemical compatibility with materials from which the valve (see par.technical data) and the seals are composed of.

In case of difficult job's conditions and with aggressive fluids, check the possible wear of the components that make up the valve periodically (see par. Planned Maintenance).

Install the valve to a due distance from any external heat sources.

Be careful with detergents.

Never remove the valve from piping or disassemble the valve, while under pressure.

These valves contain permanent magnets.



Please note that that since these magnets are located inside a stainless steel housing, the magnetic field is significantly reduced and DOES NOT present a known health or safety risk to electrical and electronic equipment including some medical devices such as implanted pacemakers and defibrillators.

However, please note that when the magnets are removed from the valve, the higher magnetic field may affect some electrical and electronic equipment including medical devices such as implanted pacemakers and defibrillators. As with all permanent magnets, it is recommended that people using medical devices do not have direct contact with magnets.

Pay attention handling the magnets mounted on the valve, a breakage of the magnet itself can generate sharp and very small parts dangerous to handle.

We decline all responsibility for inappropriate installation, use and maintenance of the valve!

6. Technical Data

Valve Use

Application: Non-return Valve
 For use in: Chemical, Pharmaceutical, Food, Vacuum system, Compressed air, Water treatment, Oil & Gas, Special applications

MAX operating pressure: **16 bar** (standard)

MAX temperature use:

- Standard Version **150°C**
- High Temp Version **220°C**

MIN temperature use: **-10°C**

Nominal conditions:

Environmental temp. From -10° to +40° C
 Max humidity 10% - 90%

Max altitude 1500 a.s.l.

Materials

Valve Body:	1.4404
Shutter:	1.4462
Magnet:	
Standard Version	Neodymium
High Temp Version	Samarium Cobalt
External Seals:	EPDM

Product contact seals:

→ **EPDM:**

Chemical name : Ethylene propylene diene rubber.

Resistance to hot water, steam, diluted acids, very good resistance to ozone.

Temperature range: from -40°C to 160°C

→ **FKM (Viton):**

Chemical name : Fluorocarbon rubber.

Resistance to ozone ,oxygen, natural gas, fuels, mineral oils, hydraulic oil, organic solvents.

Temperature range: from -20°C to 200°C



The parameters of application are considered in relation to a standard and proper use of the equipment. For the disposal of the components and where the valve has to be dismantled, refer to the National legislation.

Finishing surfaces

Surfaces in contact with product: 0.4 µm < Ra < 0.8 µm

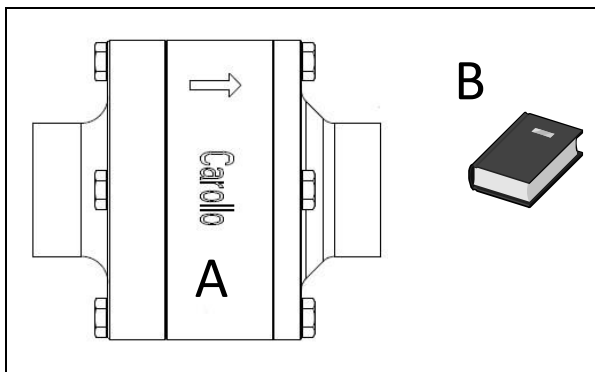
Surfaces not in contact with product: 0.4 µm < Ra < 3.2 µm

Installation position

All installation positions are possible.

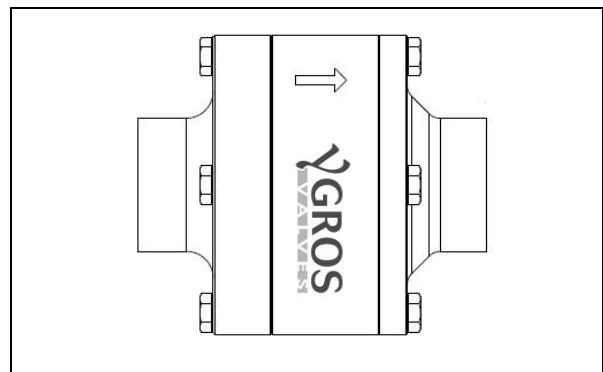
Check the flow direction (see the mark on the valve).

7. Unpacking / Storage



1. Unpacking and checking the delivery valve:

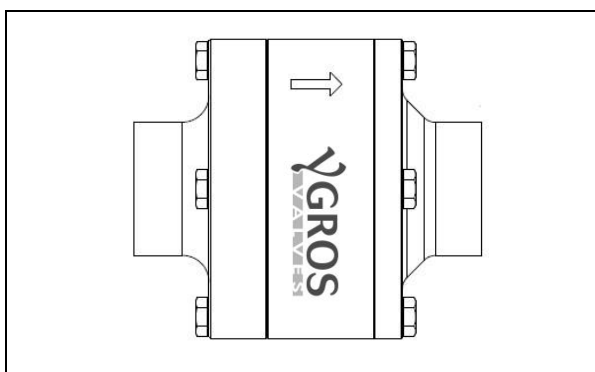
- A. Complete valve.
- B. Instruction Manual.¹



2. Handling split parts:

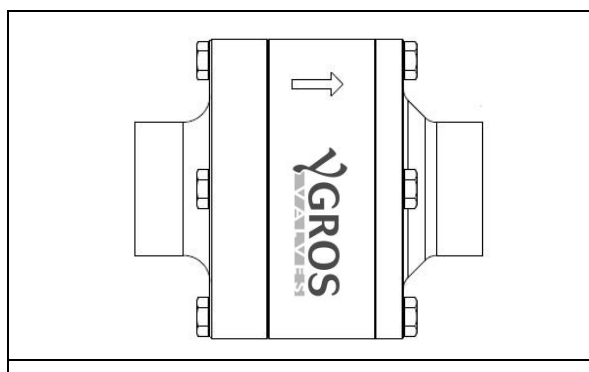


- Avoid dropping the product.
- Check the valve inside.
- Unpack and take the instructions for assembly / disassembly.



3. Control / complaints:

- Verify damages, missing or wrong parts.
- Contact Ygros srl, if necessary.



4. Storage / protection:



- Avoid dust, humidity, wet and with direct heat source.
- Avoid vibration.
- Temp Min: -10°C
- Temp Max: +50°C

8. Installation Instructions



The valve must be installed at a safe distance from components that can lead to turbulent motions fluid through it. Turbulent flows can cause noise, vibrations and cavitations with consequent wear of valve is components. In this case, the installation position of the valve is to be modified.

Always check the fluid chemical compatibility with materials from which the valve (see

¹ Downloadable from www.ygros.com

par.technical data) and the seals are composed of before mounting the valve.

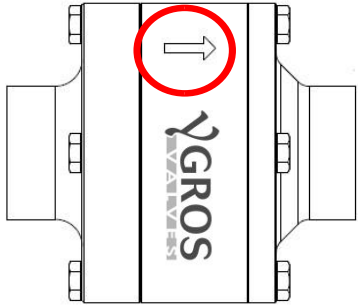
In case of difficult and aggressive job check the possible wear of the components that make up the valve (see par. Planned Maintenance).


Install the valve at a safe distance from any external heat sources.

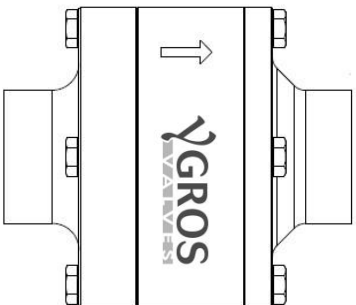
Preferably, install the valve easily accessible and suitable for maintenance activities..




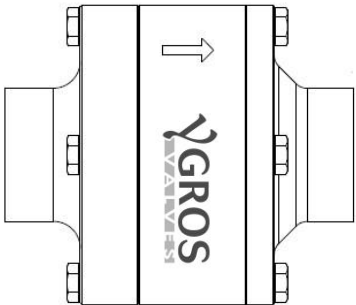
 We **strongly recommend** that the fittings should be installed by specially trained, qualified personnel.




 **Correct direction of flow:**
Check the correct flow direction before installing the non-return valve.



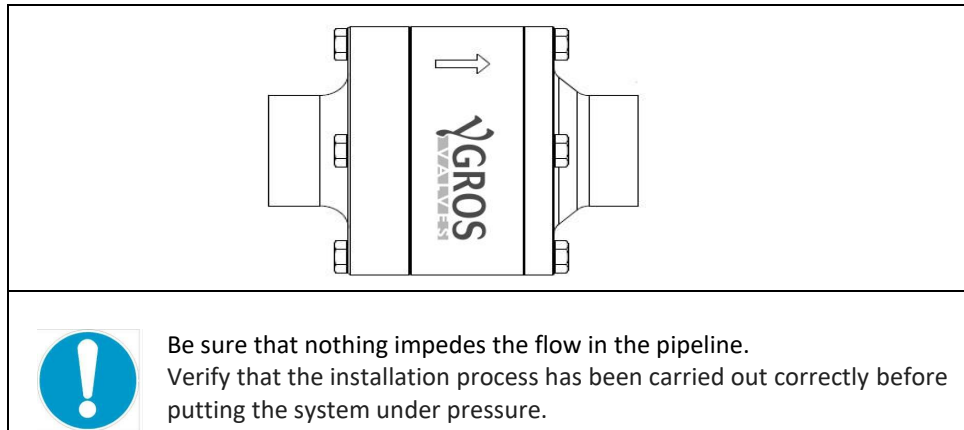
 If the valve is welding type, to perform welding, the valve must be disassembled to prevent damage to seals and to the magnets. To disassemble the valve see par. Disassembly/Assembly.



 **ALWAYS** drain and bleed the system before installing the valve. The installation must be equipped with grounding.

9. Start-up

After installing the valve and before starting the plant make sure which the valve is installed correctly and the arrow marked on the valve indicates the direction of flow.



10. Troubleshooting



TROUBLESHOOTING VALVE

Please study the maintenance manual before searching.



WEAR VALVE REPLACEMENT PARTS

See par. Disassembly/Assembly.

Problem	Possible cause	Possible remedy
External leakage	Body seals worn	Replace seals.
	Excessive Pressure	Check the pressure of the installation (see par. Technical data usable) maximum pressure.
	Excessive Temperature	Replace seal of different kinds of materials.
Internal leakage	Shutter seal worn	Replace seal.
Closed valve has an internal loss incurred prematurely	Aggressive media	Replace seal of different kinds of materials.
Valve sticks in an opened/closed position.	Uncorrect Type elastomers seal	Replace with seal of different kinds of elastomers
	Wrong installation	Correct the installation
Valve noise during an operation	Cavitation or fluid turbulence	Change the valve's position

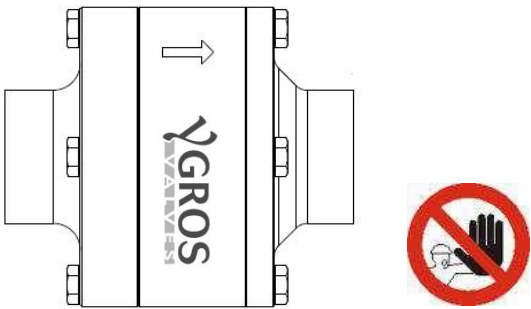
11. Cleanliness


To clean the valve is necessary to disassemble it by following the instructions of par. Disassembly / Assembly, contained in this manual.



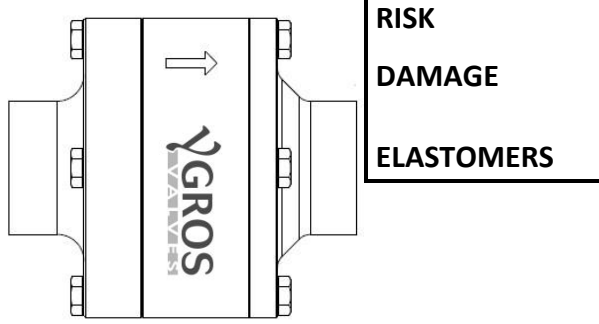
 **CLEANING VALVE:**


- Only authorized personnel is allowed to clean the valve.
- Follow the specified concentrations in detergents
- Follow the instructions of the detergents suppliers
- Always wear gloves and safety glasses.



 **WARM VALVE/PIPE:**

Do not touch an overheated valve or piping. As an alternative, wear protective gloves.



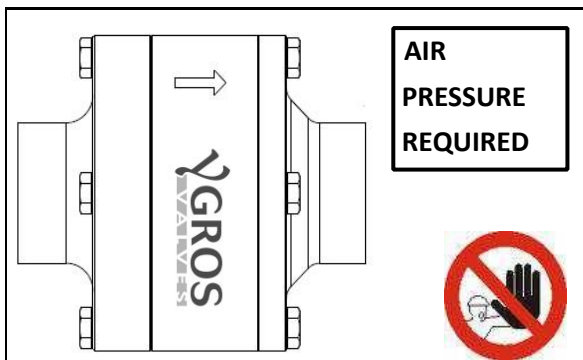
 **HANDLING DETERGENTS:**

- Measure out the detergent to avoid excessive concentrations
- Rinse thoroughly with clean water after cleaning
- Check the detergent compatibility with the valve's material.

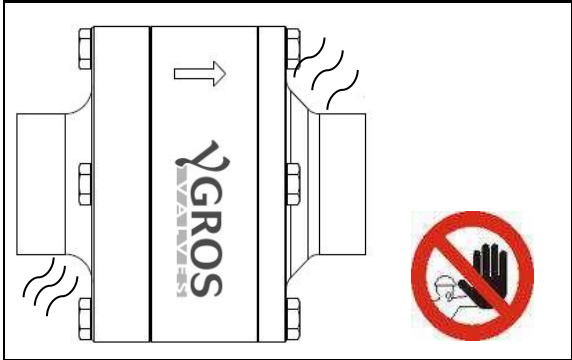
12. Maintenance

Before starting maintenance make sure that:

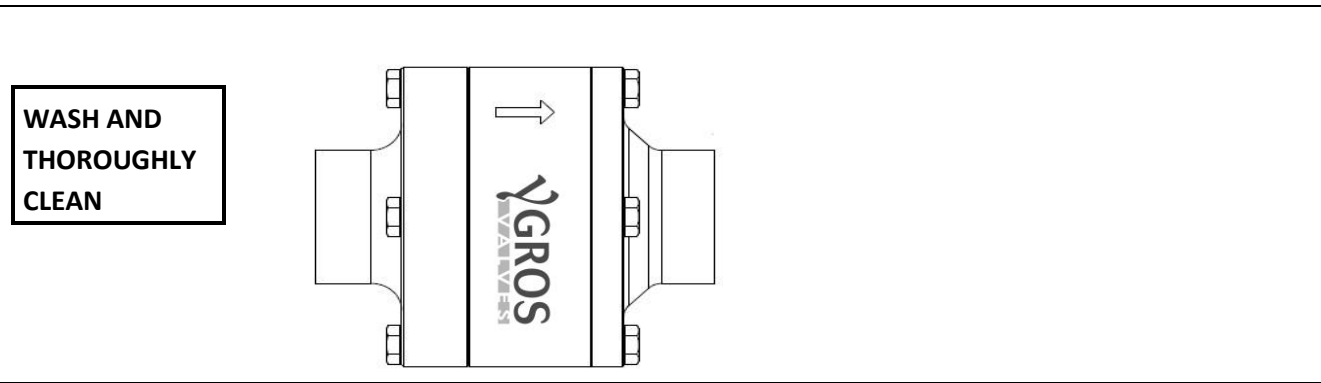
- the pipeline must be empty of liquids or residual pressure;
- Maintenance work ONLY if the piping system is NOT in pressure and free ;
- The staff must be informed about the possible risks that may occur and take the necessary security measures;
- Assemble the valve following assembly instructions (see par. Disassembly / Assembly)



VALVE / PIPE UNDER PRESSURE:
Before removing the valve always discharge fluid pressure from the valve and the pipe



WARM VALVE / PIPE:
Do not touch an overheated valve or piping. As an alternative, wear protective gloves.



CLEANING:

- Before disassembling, wash and thoroughly clean all parts of the valve.
- Pay attention on detergents' deposit and other aggressive residues within the valve;
- Always use goggles and gloves.

WEAR VALVE REPLACEMENT PARTS

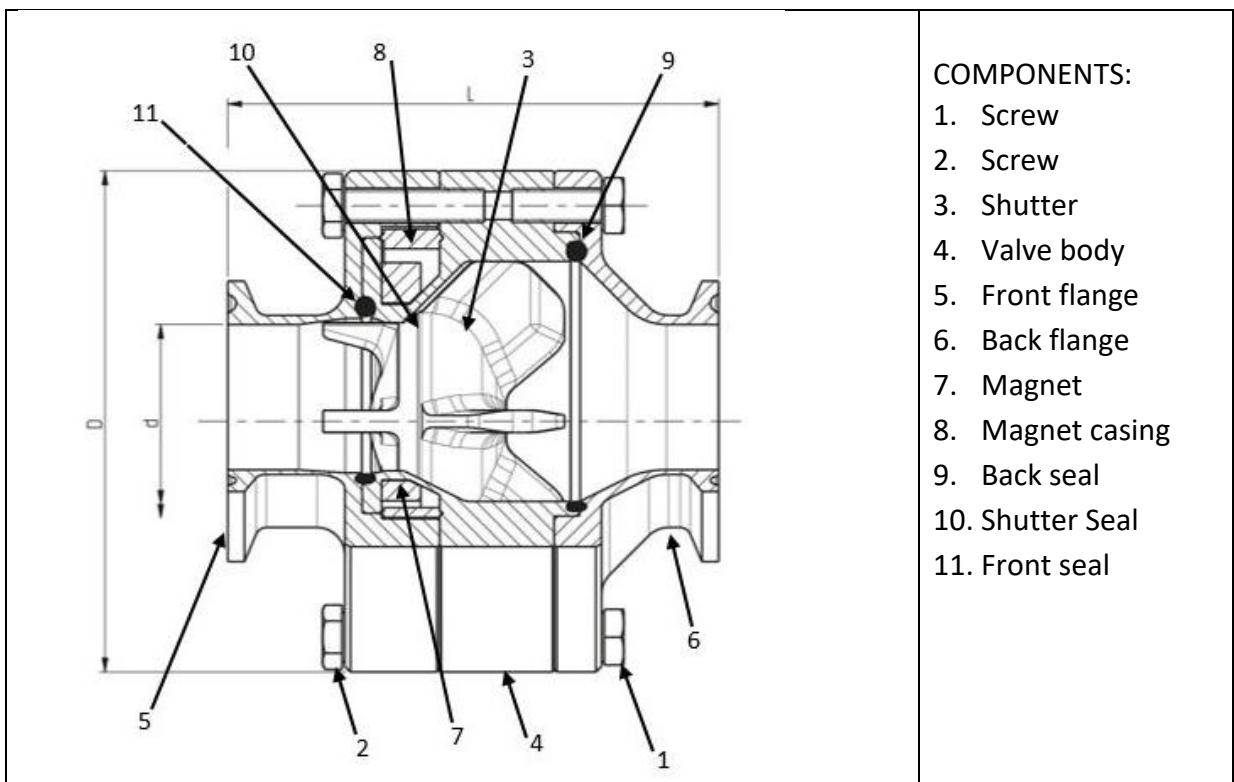
- Always use original spare parts.
- To order spare parts contact Ygros Inc. or retailers with reference to the code marked on the valve.

13. *Planned Maintenance*

Planned Maintenance	Valve	Seal
Preventive	For the turbulent fluid motion and consequent noise valve, check daily (see possible remedy on par. Troubleshooting)	Replace after 12 months
	In case of use of particularly aggressive fluids, control it monthly.	
In case of internal leakage	Check at the end of the day any unusual wear	Replace at the end of the day
Periodic	Check correct operation and the absence of leakage.	Check correct operation and leakage
	Register all actions.	Register all actions.

14. *Disassembly / Assembly*

View in section of the valve:





WARNING PRESENCE OF PERMANENT MAGNET:

To disassembly the valve pay attention to the presence of a permanent magnet and follow the instructions carefully.



The permanent magnets assembled on the valve have a high magnetic field. You must keep a safe distance between the magnets and all electrical and electronic equipment and objects that can be damaged by a magnetic field such as monitors, credit cards and ATMs, computers, diskettes and other data, mechanical clocks, hearing aids and speakers.

To avoid any risk, make sure that the staff who arranges for the assembly /disassembly of the valve do not have the Pacemaker.

We must pay close attention when handling the magnets mounted on the valve, a breakage of the magnet itself can generate sharp and very small parts dangerous to handle.

Valve disassembly



1. REMOVING THE FRONT FLANGE

Remove the screws (1), remove the front flange (2) and subsequently the front seal (10) from valve body (4).

2. REMOVING THE BACK FLANGE

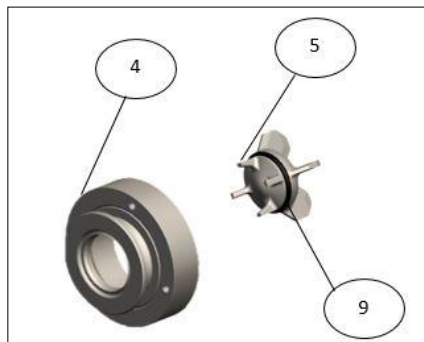
Remove the screws (8), remove the back flange (6) and later the back seal (8) from the valve body (4).

3. REMOVAL OF MAGNET

Remove the magnet casing (11) and then the two magnets (3).

4. SHUTTER DISASSEMBLY

Remove the shutter (5) from the valve body (4), remove the shutter seal (9).



THE MAGNET MAY BE REMOVED FROM THE VALVE ONLY WHEN ABSOLUTELY NECESSARY AND ONLY BY QUALIFIED PERSONNEL.



WARNING PRESENCE OF PERMANENT MAGNET

Valve Assembly

1. INSERT SHUTTER IN THE VALVE BODY

Insert the shutter (5-) complete with shutter seal (9) into the valve body (4).



2. ASSEMBLY MAGNET

Place the two magnets (3) on the valve body (4) following the instructions prescribed in this manual and place the outer magnet casing (11).

3. ASSEMBLY THE BACK FLANGE

Ensure that the shutter (5-9) is inside the valve body (4). Place the back seal (9) on the valve body (4) and push the back flange (6) on the valve body (4) taking care not to pinch the back seal (8), secure the back flange (6) on valve body (4) through screws (7).

4. ASSEMBLY THE FRONT FLANGE

Place the front seal (10) on the valve body (4) and push the front flange (2) on the valve body (4) taking care not to pinch the front seal (10), attach the front flange (2) through the screws (1).

Tighten the screws with a torque wrench as defined in Table for screws in A2 stainless material, which is given also below:

M4 = 2.6 Nm , M5 = 5.1 Nm , M6 = 8.8 Nm , M8 = 21.4 Nm

15. Warranty / Guarantee

1. CONVENTIONAL WARRANTY

- 1.1. YGROS srl guarantee its products against possible defects in construction and operation and for 12 (twelve) months from the date of delivery.
- 1.2. The defects and / or product defects must be reported accurately in writing to YGROS srl within 8 (eight) days of discovery, with proper documentation proving the allegation of their existence.

2. EXCLUSION OF WARRANTIES

- 2.1. Seals are always excluded from the provided guarantee.
- 2.2. It is also excluded the application of the guarantee:
 - To defects and/or damages attributable to Buyer and due to the same mode of use/maintenance/storage of products not complying the requirements of "Instruction manual use and maintenance";
 - To defects and/or damages due to normal wear and tear of the product or of parts thereof and / or components;
 - To defects and/or damages of the product if there were caused by repairs and/or intervention by anyone not authorized by YGROS srl or not professionally qualified;
 - To defects due to falls, collisions, abuse, accidents caused by negligence of Buyer.

3. CONTENT OF THE WARRANTY:

- 3.1. This warranty is only in the repair and/or replacement of the product or part of the defect's product at YGROS srl discretion.
- 3.2. In the case of repair and/or replace of the product or of one of its component, the parties become the property of YGROS srl and fees will be paid by YGROS srl.
- 3.3. The services performed under warranty does not entail an extension of the warranty period beyond the period of 12 (twelve) months, a term which will be deemed exhaustive.
- 3.4. No dealer, agent or employee of YGROS srl, is authorized to make any modification, extension or addition to this guarantee.

16. Recommendations

All statements, directions, and the technical information given here in are based on test data which are deemed reliable, but not referable to any possible use of the product.

Since conditions of use and application are beyond our control, the Buyer must first establish the suitability of the product for the use it wants to make, assuming all risk and liability arising from the use itself.

YGROS srl assumes no responsibility for any accident, loss or damage, direct or consequential loss arising from the use or inability to use the product.

No one is authorized to grant guarantees different from those shown here:

1. We recommend our customers to always consult our technical and commercial staff to request specific information about the technical characteristics of our products.
2. Representations, all of general value and not binding, may not correspond to the real conditions of the products.
3. This manual only refers to our standard version of the product (mentioned in the header).
4. YGROS srl is not responsible for flaws or defects arising from the installation of the product not in according to what is stated in the "Use and Maintenance Instruction Manual" or otherwise arising from improper installation or improper or incorrect use of the product.
5. YGROS srl is not responsible for product defects resulting from incorrect transport and/or arising from improper and/or unsuitable storage and/or maintenance of the same.
6. YGROS srl is not responsible for defects in the product caused by tampering and/or interventions conducted by unqualified professional personnel and it is not responsible for damage caused by bumps, darts, carelessness, negligence, and defects attributable to construction, manufacturing and material.