Altitude on/off valve one way flow type E2127-01

Flanges in conformity with ISO 7005-2.

DN (mm)	PN	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Mass (kg)	References
50	10 - 16	230	148	246	165	85	20.00	*
65	10 16	290	148	246	185	95	28.00	RCA65DGBH
80	10 - 16	310	148	246	200	100	25.00	*
100	10 - 16	350	206	272	220	110	36.00	*
125	10 - 16	400	267	330	250	125	51.00	*
150	10 - 16	480	267	330	285	145	62.00	*
200	10 - 16	600	356	402	340	170	110.00	*
250	10 - 16	730	445	569	400	200	191.00	*
300	10 - 16	850	597	649	455	230	325.00	RCB30DGBH
350	10 - 16	980	597	649	520	255	382.00	*
400	10 - 16	1100	750	786	565	285	613.00	RCB40DGBH
500	10 - 16	1250	842	840	670	335	935.00	*
600	10 - 16	1450	905	956	780	390	1280.00	*
700	10 - 16	1650	1110	1080	910	460	2148.00	*

(*) consult us

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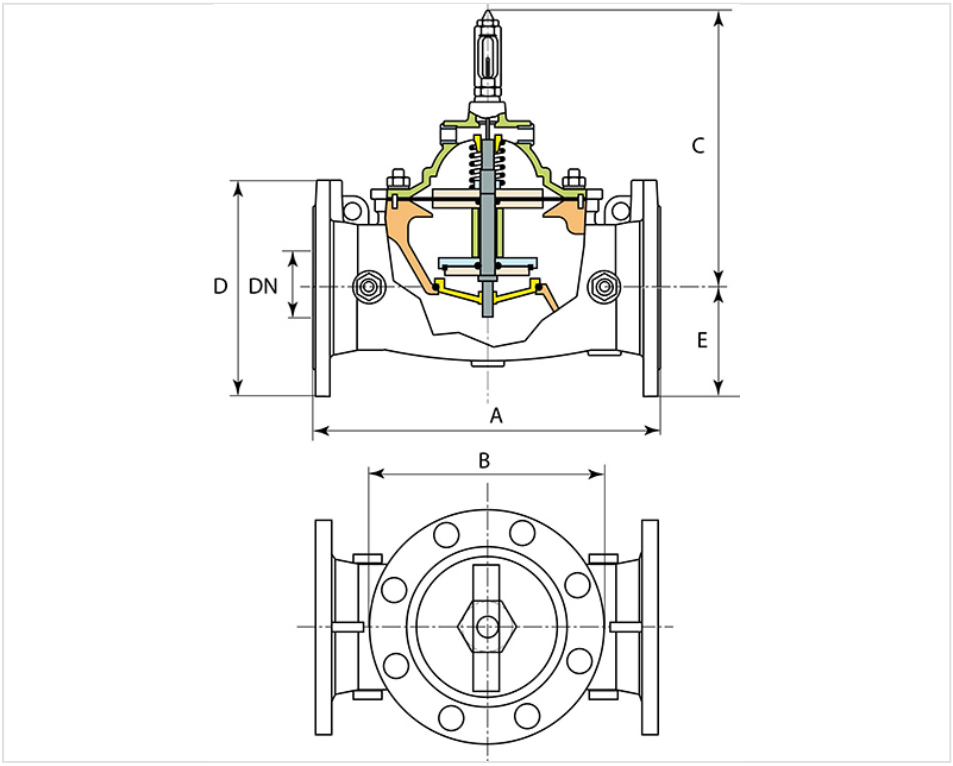

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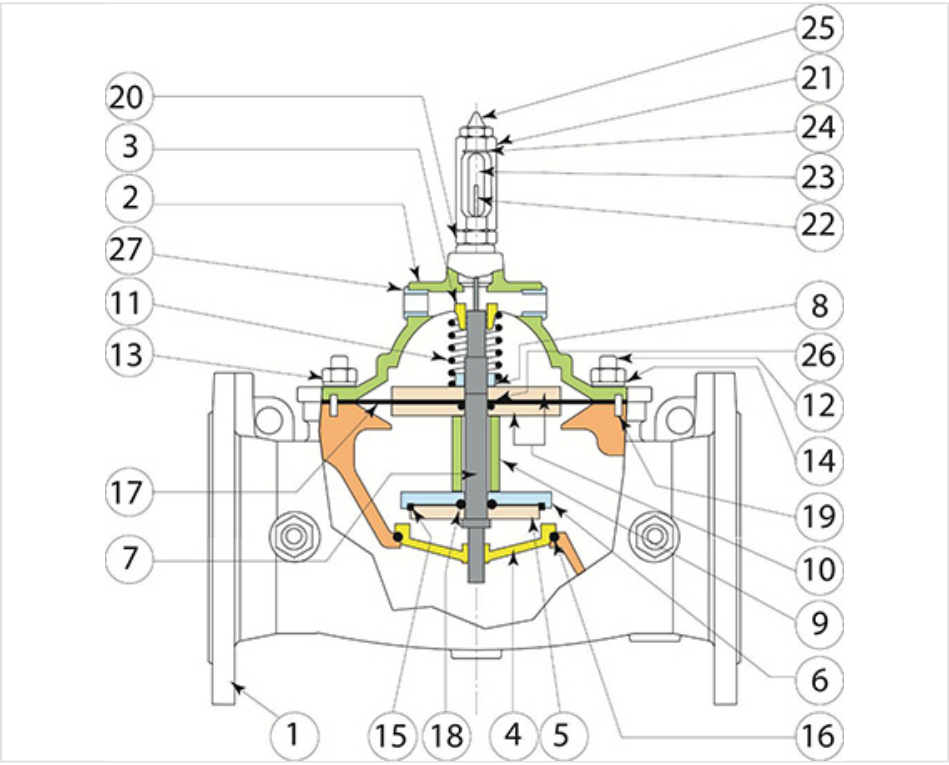
Material and coating



Item	Quantity	Description	Material
01	01	Body	FGS 400-15 (coating BFE epoxy 250µm mini)
02	01	Cover	FGS 400-15 (coating BFE epoxy 250µm mini)
03	01	Cover bearing	Bronze
04	01	Seat	AISI 316
05	01	Quad-ring retainer plate	AISI 316
06	01	Quad-ring retainer size 50-200	AISI 316
07	01	Stem	AISI 303
08	02	Stem nuts	AISI 303
09	01	Spacer	AISI 303
10	02	Diaphragm washers epoxy coated	Steel
11	01	Spring	AISI 302
12	*	Stud	AISI 303
13	*	Nut	AISI 303
14	*	Washer	AISI 303

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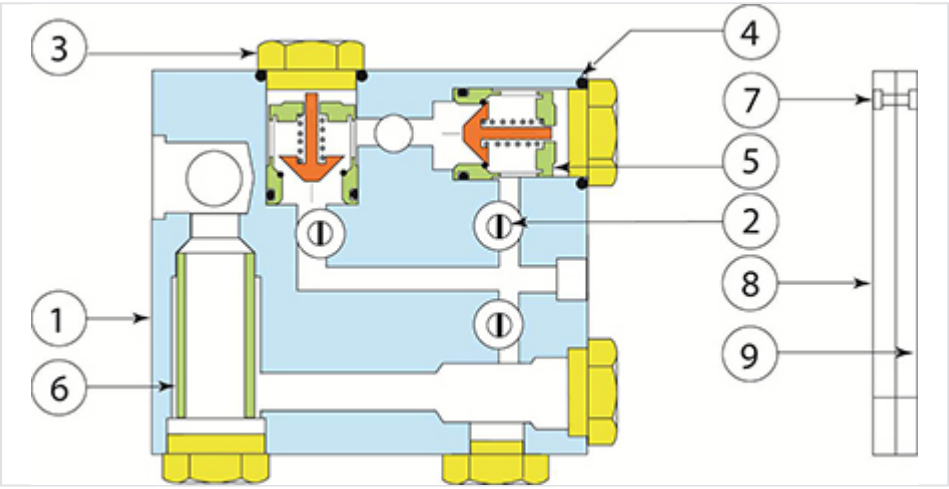
Item	Quantity	Description	Material
15	01	Quad-ring	NBR (KTW-WRC)
16	01	Seat O-ring	Viton
17	01	Diaphragm	NBR nylon reinforced (KTW-WRC)
18	01	O-ring	NBR
19	02	Centring taper pin	AISI 303
20	01	Base position indicator	Brass Ni-plated
21	01	Position indicator housing	Brass Ni-plated
22	01	Position indicator stem	AISI 303
23	01	Position indicator	Glass
24	02	O-ring	NBR
25	01	Brass Ni-plated	Brass Ni-plated
26	01	O-ring	NBR
27	01	Reduction	AISI 304

Central Control Unit TUP 93



Item	Quantity	Description	Material (type)
01	01	Body	AISI 303
02	03	Cock	AISI 303
03	03	Plug	AISI 303
04	03	O-ring	NBR
05	02	Non return valve (WRC)	
06	01	Screen	AISI 316

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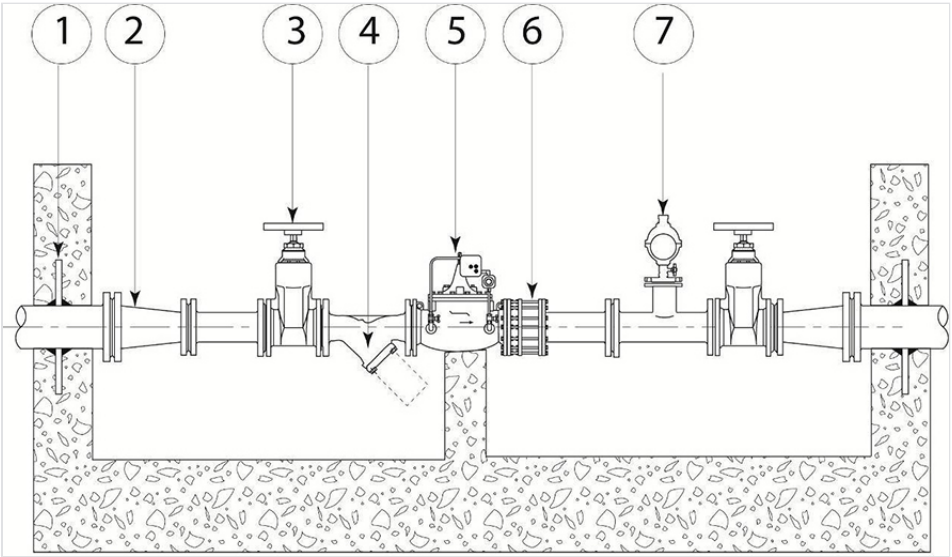
Item	Quantity	Description	Material (type)
07	01	Rivet	Brass
08	01	Bottom label	Polycarbonate makrolon
09	01	Top label	Polycarbonate makrolon

Mounting scheme (I)



Item	Quantity	Description
01	2	Attachment flange
02	2	Flanged taper
03	3	Isolating valve
04	1	Strainer with drain cock
05	1	Automatic control valve E2001
06	1	Dismantling joint
07	1	Air release / vacuum breaker valve

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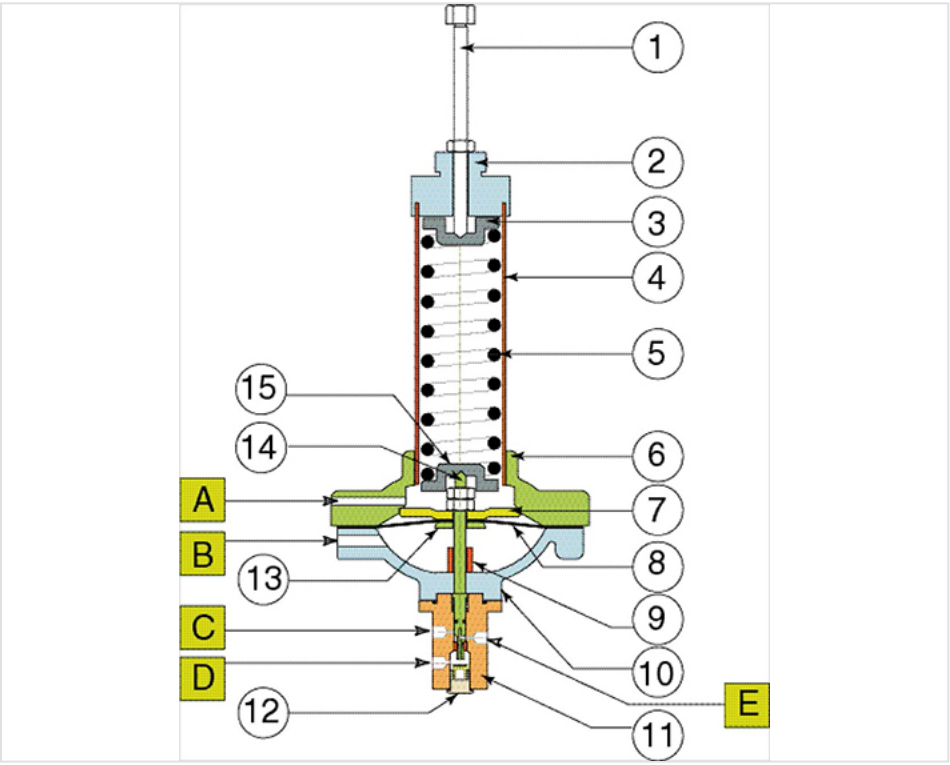
Altitude pilot F27



Item	Description
1	Adjusting screw
2	Adjusting screw cover thread
3	Spring guide top
4	Spring house
5	Spring
6	Body cover
7	Diaphragm washer
8	Diaphragm
9	Bearing
10	Body bottom
11	Body actuator
12	Plug
13	Diaphragm bottom washer
14	Stem actuator

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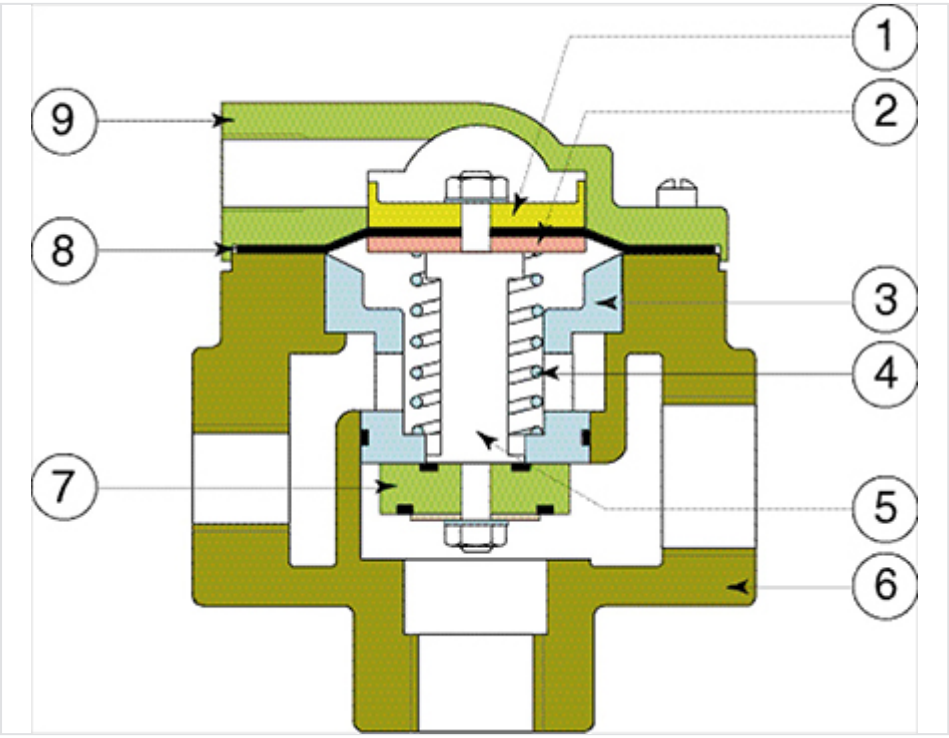
Item	Description
15	Spring guide bottom
A	Atmosphere connection
B	Water level connection (sensing)
C	Drain to the atmosphere
D	Supply (inlet pressure)
E	Connection to auxiliary valve ½"

Auxiliary valve F-22/1



Item	Description	Material
1	Diaphragm top washer	Bronze
2	Diaphragm top washer	Bronze
3	Spool	Bronze
4	Spring	AISI 302
5	Stem	AISI 316
6	Body	Bronze
7	Retainer O'ring	Bronze

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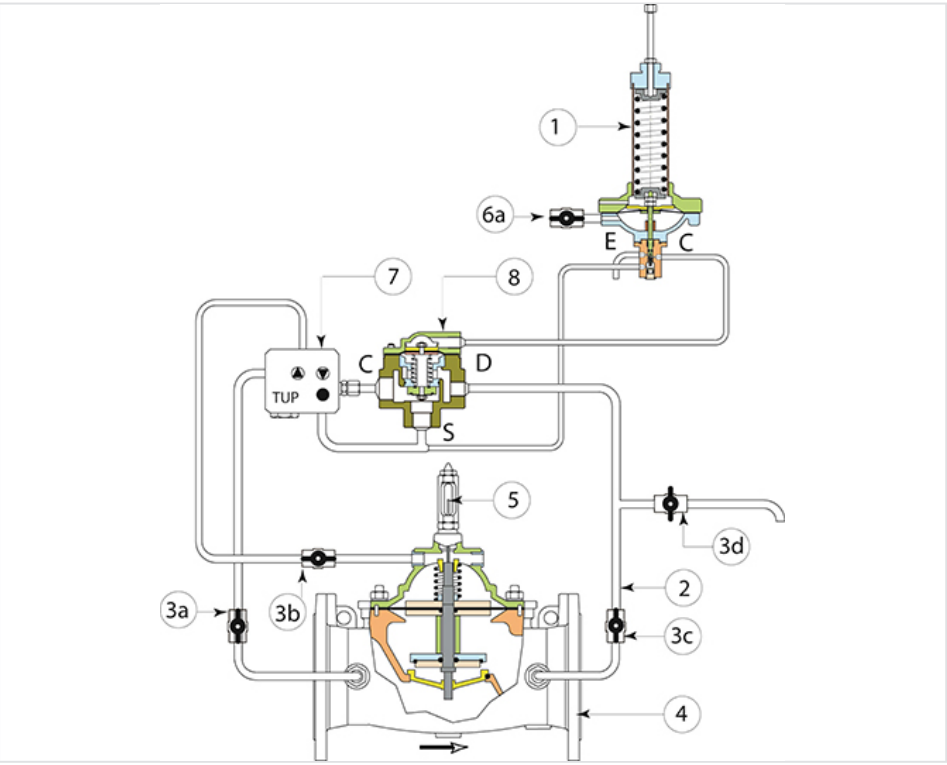
Item	Description	Material
8	Diaphragm	Nitrile NBR
9	Cover	Bronze

Hydraulic scheme



Item	Description	Material
1	Altitude pilot 3 ways valve F27	
2	Tube	Inox AISI 304 L
3a 3b 3c 3d	Ball valve	Brass Ni-plated
4	Main valve E2001	
5	Position indicator E50	
6a	Ball valve and sensing line connection ½"	
7	Centralized control unit TUP 93	
8	3 ways auxiliary valve F22-1	

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Installation

Packing and storage

The valves are packed in special cardboard boxes. Outside the carton are clearly pointed out:

- The arrow indicating the position of the valve
- The name of the customer
- The code of the valve
- The number of order confirmation

The valve is protected by two hardening foam cushions, carefully coated by a thermal plate.

This kind of packing if properly stored avoids all the damages originated from transport, unloading, and handling before installation. Avoid storing it under the rain for more than 24 hours!

Open the upper side of the carton and remove the upper cushion. Do not lift the valve by utilizing the pilot, the pilot circuit, or the position indicator.
For any kind of handling we recommend to utilize proper eyebolts.

Installation

The mounting scheme of the valve is shown on the drawing.

If the valve is working as pressure sustaining device in a transport line, it may be recommended to install a by-pass around it, which will allow to put it out of service during some hours for maintenance purpose, without generating problem for the exploitation of the system.

The choice of the proper "by-pass" alternative must be taken considering the following points:

1. Can the main transport/feeding line be put out of service during some hours (corresponding to the requested time for maintaining the MAIN VALVE), without generating problem for the exploitation of the system? In particular, it must be considered that an empty system may require several hours to be vented properly.
2. Pressure relief: Has the downstream or upstream zone of the system to be protected against any risk of pressure surge (quick closing of heavy demands, closing time) ?

Should installation require the main valve stem to be horizontal (cover pointed sideways), manufacturer should be consulted concerning valves of DN200 mm and larger.

Note: All sizes on request are available with an additional venting cover device (venting cock installed at the top of the cover) to permit a simple escaping of air during the first commissioning.

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- Before control valve assembly, make sure that pipeline it is free from foreign matters or any other obstacle. (note: pipeline must be cleaned, possibly, before assembly. For an ideal pipeline cleaning we suggest a 1.5 m/sec speed during several hours!).
- In presence of foreign matters into the fluid it is indispensable to adopt a strainer on valve upstream side.
- Keep free around the valve space enough for operations as maintenance and calibration.
- Set up the valve according to main valve cast arrow indicating flow sense.
- Install the valve so that the FLOW ARROW marked on the valve body matches flow through the line: UPSTREAM → DOWNSTREAM

Start up of an automatic control valve requires that proper procedures be followed. Time must be allowed for the valve to react to adjustments and the system to stabilize. The objective of the following procedure is to bring the valve into service in a controlled manner.

Functioning

Operation of tank filling:

The altitude valve E2127-01 (Q5 27 01 06e rep4) is controlled by a diaphragm actuated, three way, spring loaded, adjustable altitude pilot (1). The lower diaphragm chamber of the control, connected by a sensing line to the tank (6a), senses changes in the tank head (pressure created by the weight of the water column).

Opening of the valve:

The altitude pilot 1) spring is adjusted to the required tank level pressure, corresponding to the maximum level. Pressures at the set-point and below result in a shifting of the three-way internal distributor, which in its turn will drive accordingly the large ported, diaphragm actuated, three-way accelerator valve (8), which determines main valve action (4).

As water is drawn from the reservoir, head pressure is lowered below the spring set-point of the altitude pilot valve (1); the spring force shifts the internal distributor in the position (S- C), pressurizing the control chamber of the auxiliary valve (8), which is forced in the working position (C - D), connecting the chamber of the main valve with its downstream side.

The main valve (4) opens to fill the reservoir.

The opening speed can be adjusted on the tuning unit TUP – 93(rep7), from 1 (lowest opening speed) up to 6 (maximum opening speed). The opening speed setting MUST NEVER remains on position "0", otherwise the main valve will not open.

Note: inlet pressure (STATIC PRESSURE) MUST BE higher than the tank head pressure in order to open the main valve for filling the reservoir.

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Closing of the valve:
As the reservoir is filled and reaches its maximum prescribed level, head pressure is increased to the spring setting of the altitude pilot valve (1). Head pressure on the diaphragm overcomes spring tension, shifting the internal distributor in the position (C - E), connecting the control chamber of the auxiliary valve (8) with the atmosphere, which is forced in the working position (S - C). The inlet pressure is supplied into the main valve control chamber.

The main valve (4) closes.

The closing speed can be adjusted on the tuning unit TUP - 93, from 1 (lowest closing speed) up to 6 (maximum closing speed). The closing speed setting MUST NEVER remains on position "0", otherwise the main valve will not close.

Maintenance

Recommended spare parts:

- Full set of gaskets for E2001 main valve
- Full set of gaskets for auxiliary valve F22
- Full set of gaskets for altitude pilot F27

The quality of the material used in the manufacture of our valves should produce no wear of the internal components.

However we are recommending:

After 6 months of service:

- Control and clean eventually the TUP - 93 screen

Note: an obstructed screen due progressively the valve out of order.

After 12/18 months of service:

- Control and clean the TUP - 93screen.
- Take the main valve apart, by removing first the complete pilot circuit.
- Unscrew the stud nuts and remove the cover and internal diaphragm assembly.
- Check for any eventual damage of the QUAD-RING and the diaphragm.
- Clean thoroughly the internal part of the valve, grease slightly the stem at both guided locations (water grease, non-toxic!!).
- Assemble the main valve and the pilot circuit.
- Put the valve back into service.

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This control should then allow to determine the cycle of the requested maintenance, since it is taking into consideration the true service conditions of the valve.

For any further information contact our Customer Service, indicating all data as per plastic label on main valve body. Give full detailed information's about working conditions, the type of problem, and report the adjusting values (OS-CS-RS).

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