AZUD **USER'S MANUAL**
Water Filtration Solutions

MASF0044-02

AZUD HELIX AUTOMATIC 201 DLP

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System of symbols used in this manual:

In the reading of this manual you will find some signs used as information points to warn and to identify risks. This is the format and content of these messages:

It Indicates instructions and warnings which failure to follow could cause damages to people, the Equipment and its surroundings.

This manual is subject to modifications without prior warning.

INDEX

1. Introduction.

Thank you for trusting in **AZUD HELIX AUTOMATIC** equipments to solve your filtration requirements. Please read carefully this manual and you will find answer to most of your questions.

IF YOU HAVE ANY QUESTION OR NEED ADITIONAL INFORMATION; PLEASE CONTACT US IN +34 968808402 OR cliente@azud.com

All the equipments manufactured in Sistema AZUD are subject to strict quality control tests and are manufactured under a productive process which complies with the requirements of the standard **ISO 9001/2000**.

Sistema AZUD is also committed with the environment, and is certified under the Environmental Management System of the standard **ISO 14001**.

This manual includes instructions and warnings to a correct installation, operation and maintenance of the Equipment.

2. Features of the Filtration System.

2.1. Exclusive Use of the filtration Equipment.

Sistema AZUD filtration equipments have been designed to exclusively filter water, according to the Operational Conditions indicated in the Technical data and the Industrial label of the Equipment. In any case to the filtration of dangerous liquids (understood as such the specific in the charter 2 of article 2 of Directive 67/548/CEE, of 27th of June of 1967), or liquids for food use.

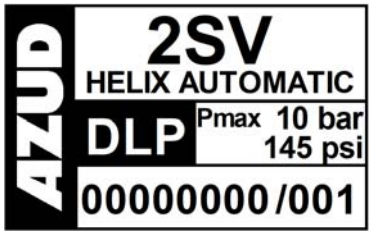
CLASSIFICATION ACCORDING TO THE DIRECTIVE OF PRESSURE EQUIPMENTS.
PED 97/23/CEE: Art. 3.3 – Fluid Group 2

2.2. Identification of the product.

In AZUD each filtration equipment is identified by an industrial label, placed in one of the main manifolds, with the serial number. With this number the factory can always identify the equipment.

The modification or elimination of this label cancels any warranty; and impedes the identification of the Equipment.

The industrial label indicates: manufacturer, address, model, year of manufacturing, serial number, max. Pressure, max. Temperature and conformity with the Directive of Pressure Equipments 97/23/CEE



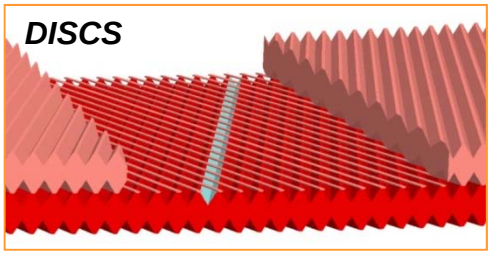
The filters of the equipment, are identified with a label in which is indicated the model, year of manufacturing, serial number and max pressure.

2.3. Operation Description.

AZUD HELIX AUTOMATIC consists of a filtering element which comprises grooved discs, that allow the retention of particles of a size bigger than the required filtration grade. The Equipment combines the advantages of the disc filters with those of the helicocentrifugal effects of the helix.

AZUD grooved discs **combine on-surface filtration and in-depth filtration** to achieve the **maximum precision and safety in the filtration**.

The particles are retained through the channel of the discs.



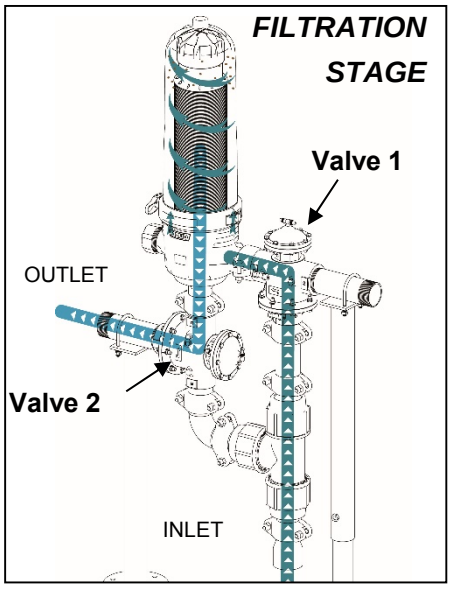
TECHNOLOGY

The system carries out two independent phases called FILTRATION PHASE and BACKFLUSHING PHASE.

In the filtration process, water is carried from the feeder manifold (inlet manifold), through the backflushing three-way valve (valve 1), to the interior of the filter through its inlet.

Once the water come in the filter, the only track the water of its interior can follow, are the discs channels whose discs form a stack. This stack is compressed by the spring action and the hydraulic power itself.

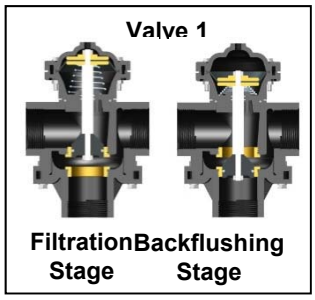
The filtered water goes through the 2" hydraulic valve and goes to the rest of the installation.

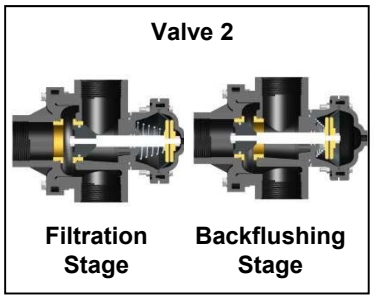


BACKFLUSHING STAGE

Through the feeding of the three-ways valves chambers, the inlet of water to the filter closes, communicating the inner of the filter with the drainage manifold, starting the backflushing cleaning.

The filtered water given by the Special backflushing T, is introduced in the filter.



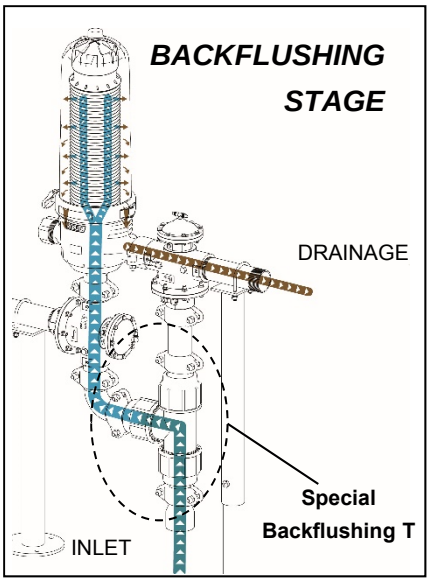


The available hydraulic power is used to overcome the pressure exerted by the spring on the discs stack generating in this way its own decompression due to the piston displacement (raising).

PISTON CAP WITH SPRING

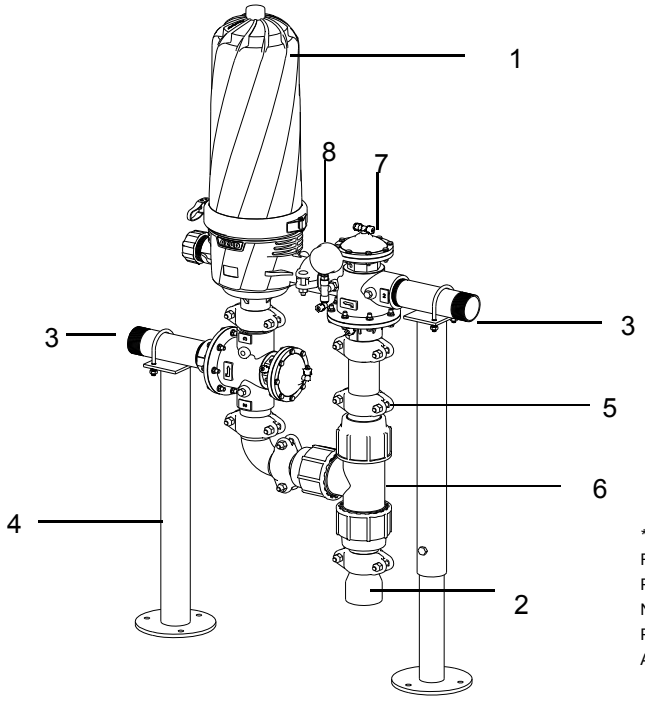
The discs release makes possible its rotation due to the tangential projection of the water coming from the feeder bars which at the same time are used as structural shoulder of the discs stack.

LOWER SIDE OF THE FILTERING ELEMENT



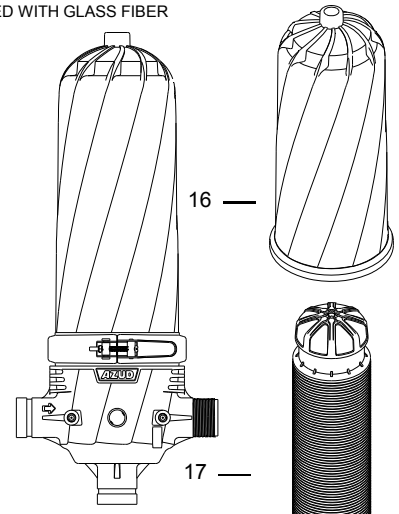
The end of the backflushing coincides with the closure of the drainage outlet and the opening of the outlet manifold, allowing water coming from the feeder manifold to come into the interior of the filter and in this way, to re-establish the filtration phase conditions.

2.4. AZUD HELIX AUTOMATIC SERIE 201 DLP Components and Spares.

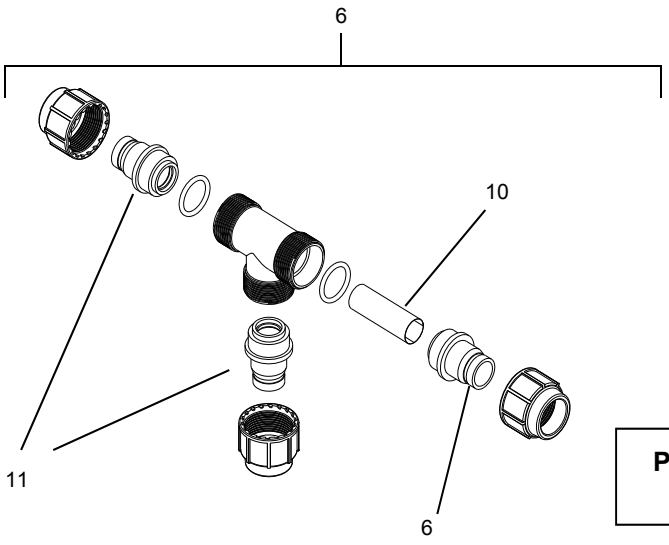


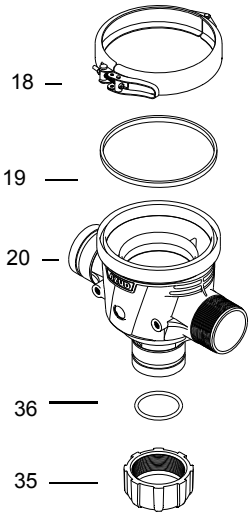
COMPONENTS AZUD HELIX AUTOMATIC EQUIPMENT		
Nº	DESCRIPCTION	MATERIAL
1	AZUD HELIX AUTOMATIC 2"S DLP FILTER	--
2	GROOVED COUPLING PVC 2"	
3	STAINLESS STEEL THREADED CONNECTORS	-
4	SUPPORTS	-
5	GROOVED COUPLING 2"	-
6	TE 90 63 2"AUXILAIRY FILTER	-
7	3 WAYS HYDRAULIC VALVE 2"	-
8	MANOMETER	-
9	COMMAND 8x6 mm – 12 mm	PE
10	FILTERING ELEMENT AUXILIARY FILTER	--
11	GROOVED ADAPTER TUBE AUXILIARY FILTER 2"	PE

*: OPTION
RPA: POLYAMIDE REINFORCED WITH GLASS FIBER
PP: POLYPROPYLENE
NBR: NITRIL RUBBER
PE: POLYETHYLENE
A, INOX.: STAINLESS STEEL



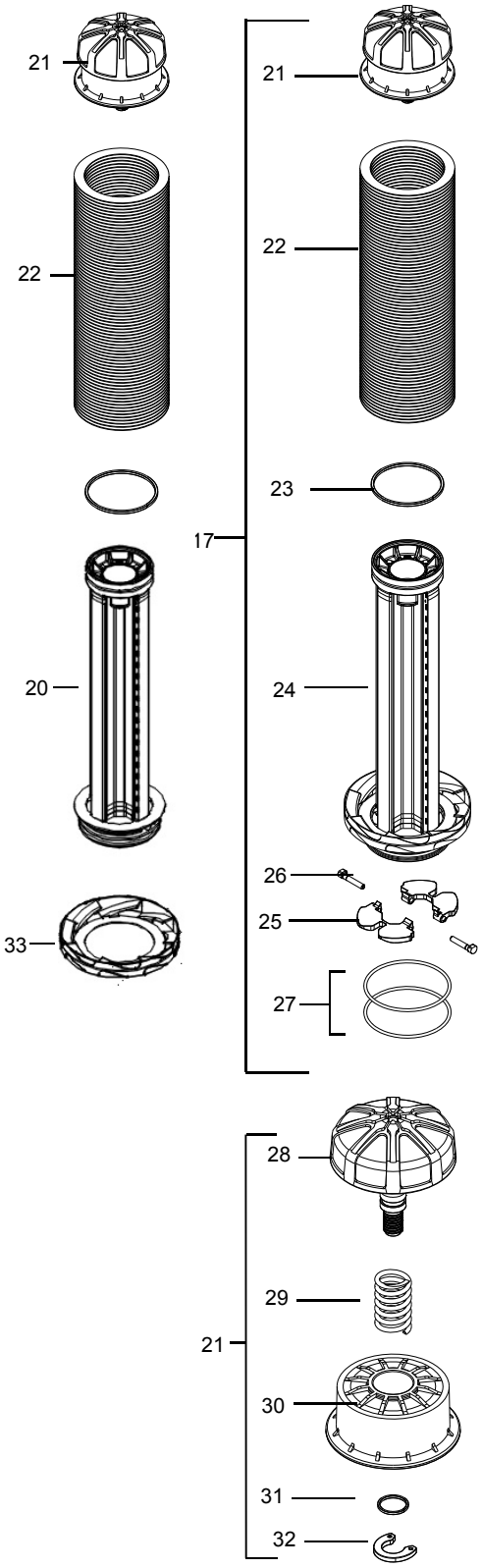
SPARE AZUD HELIX AUTOMATIC FILTER				
Nº	CODE	DESCRIPCTION	MATERIAL	un
16	17RXP010	PLASTIC LID 3"	RPA	1
17		FILTERING ELEMENT AZUD HELIX AUTOMATIC	-	1
18	70RX0001	CLAMP SAFETY AZUD HELIX AUTOMATIC	A. INOX.	1
19	17RXP012	SEALING GASKET BASE	NBR	1
20	18R60003	BASE 2NV	RPA	1
35	17RXP013	BASE CAP		
36		O-RING CAP		1





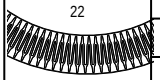
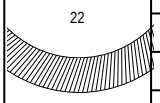
Please indicate the serial number of the equipment when requesting spares.

AZUD HELIX AUTOMATIC FILTERING ELEMENT



FILTERING ELEMENT SPARE PARTS			
NUMBER	CODE	DESCRIPTION	un
21	18R60115	PISTON FRAME AZUD HELIX AUTOMATIC	1
22	---	DISCS KIT AZUD HELIX AUTOMATIC	1
23	18R60037	PISTON OGASKET92,6 x 100 x 4 mm	1
24	----------	FRAME WIITHOUT CHECK VALVE	1
25	----------	CHECK VALVE	1
26	----------	STEM Check Valve	1
27	18R60026	O-RING 103X4	2
28	----------	A PISTON COMPONENT	1
29	----------	SPRING	1
30	----------	B PISTON COMPONENT	1
31	----------	O-RING 13X2	2
32	----------	CLIP	1

SPARE PARTS KITS			
NUMBER	CODE	DESCRIPTION	un
23-27x2-31-32	18R60116	O-RINGS KIT AUTOMATIC FILTER 3.0	1
23-31-32	18R60117	PISTON SET OF O-RINGS AUTOMATIC FILTER 3.0	1
23-27x2-29-31-32	18R60118	MAINTENANCE KIT AUTOMATIC FILTER 3.0	1
20	18R60119	FRAME AUTOMATIC FILTER DEP 3.0	1
25x2-26x2	18R60120	CHECK VALVE AUTOMATIC FILTER 3.0	1
26	----------	STEM Check Valve	1
27	18R60026	O RING 103X4	2
28	----------	A PISTON COMPONENT	1
29	----------	SPRING	1
30	----------	B PISTON COMPONENT	1
31	----------	O RING 13X2	2
32	----------	CLIP	1
33	17RXP020	HELICAL ELEMENT	1

AZUD HELIX AUTOMATIC DISCS KIT			
NUMBER	CODE	DESCRIPTION	un
 22	18R60033	S-DISC KIT AUTOMATIC FILTER 130 MICRON	1
	18R60039	S-DISC KIT AUTOMATIC FILTER 100 MICRON	1
	18R60034	S-DISC KIT AUTOMATIC FILTER 50 MICRON	1
	18R60035	S-DISC KIT AUTOMATIC FILTER 20 MICRON	1
	18R60038	S-DISC KIT AUTOMATIC FILTER 10 MICRON	1
	18R60036	S-DISC KIT AUTOMATIC FILTER 5 MICRON	1
 22	18R60040	DISC KIT AUTOMATIC FILTER 400 MICRON	1
	18R60012	DISC KIT AUTOMATIC FILTER 200 MICRON	1
	18R60011	DISC KIT AUTOMATIC FILTER 130 MICRON	1
	18R60010	DISC KIT AUTOMATIC FILTER 100 MICRON	1

2.5.2 Backflushing Grooved valve 2”x2”x2”.

Technical Plastic Valve

Bermad

Cod: 18CE1008

The reference of the backflushing valve will be different according the manufacturer AZUD supplied in your filtration equipment.

The start of the backflushing process takes place in two ways:

1.When the ¼” three-way valve (minipilot) is put on OPEN position **by hand.** In this position, the minipilot valve allows water to flow from the inlet manifold to the chambers of the two three-way hydraulic valves . In this way, water is not allowed to come into the filter through the feeder manifold and it allows water to flow through the outlet. At the same time, the interior of the filter communicates with the drainage manifold.

2. With the **Control Unit**, when the minipilot valve is un AUTO position. Said Control Unit activates the backflushing cycle under one of the four possible orders: **pressure differential** existing in the equipment, following a preestablished **frequency of time between backflushes**, by direct **action on the keyboard** or by **external signal**. The programmer, which incorporates the Control Unit, closes the contact which supplies tension to the NC solenoid, converting the electric signal in an hydraulic signal which is in charge of the feeding of the three-way valves chambers. In this way, is achieved the same addressing of the flow of water that the one explained in the control manual.

3. Technical Data

3.1 AZUD HELIX AUTOMATIC SERIE 201 DLP General features and requirements.

FILTRACION	2"SUPER							
	400 micron	200 micron	130 micron	100 micron	50 micron	20 micron	10 micron	5 micron
GOOD WATER	28 m³/h *123,27 gpm*	27 m³/h *118,87 gpm*	26 m³/h *114,47 gpm*	24 m³/h *105,66 gpm*	14 m³/h *61,63 gpm*	8 m³/h *35,22 gpm*	6 m³/h *26,41 gpm*	5 m³/h *22,01 gpm*
AVERAGE WATER	26 m³/h *114,47 gpm*	25 m³/h *110,07 gpm*	24 m³/h *105,66 gpm*	22 m³/h *96,86 gpm*	13 m³/h *57,23 gpm*	7 m³/h *30,81 gpm*	5 m³/h *22,01 gpm*	4 m³/h *17,61 gpm*
POOR WATER	24 m³/h *105,66 gpm*	23 m³/h *101,26 gpm*	22 m³/h *96,86 gpm*	20 m³/h *88,05 gpm*	12 m³/h *52,83 gpm*	6 m³/h *26,41 gpm*	4 m³/h *17,61 gpm*	3 m³/h *13,20 gpm*
VERY POOR WATER	22 m³/h *96,86 gpm*	21 m³/h *92,45 gpm*	20 m³/h *88,05 gpm*	18 m³/h *79,25 gpm*	11 m³/h *48,43 gpm*	5 m³/h *22,01 gpm*	3 m³/h *13,20 gpm*	2 m³/h *8,80 gpm*

BACKFLUSHING	MG DISC	WS DISC
Mini. Backflushing Pressure	1.5 bar *21 psi*	1.3 bar *19 psi*
Backflushing Flow	2.5 l/s *40 gpm*	2 l/s *32 gpm*

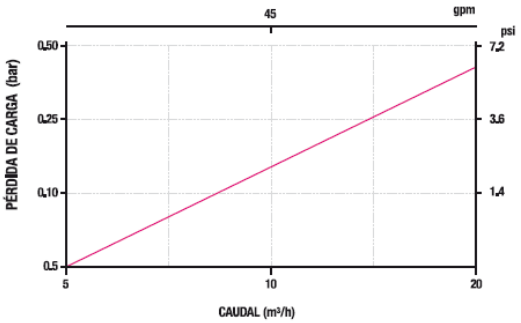
THE FLOW RATE GIVEN BY FILTER CONDITIONS THE FREQUENCY OF THE BACKFLUSHING ACTIVATION

*Data with 0 bar pressure in the drainage manifold.

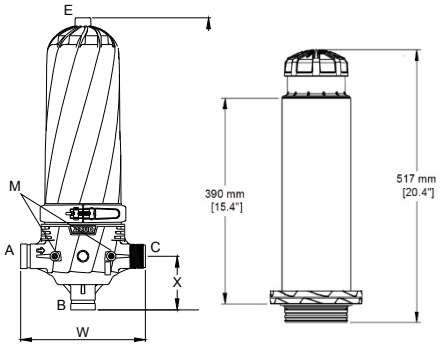
The differential pressure of the filter never must be higher than 0.2-0.3 bar

over the value of the filter has when it is clean

MAX. PRESSURE	10 bar *145 psi*
MIINIMUM PRESSURE	1.2 bar *17 psi*
MAX. TEMPERATURE	60ºC *140ºF*
pH	4-11

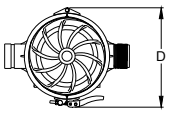


3.2.- General Characteristic AZUD HELIX AUTOMATIC Filter.



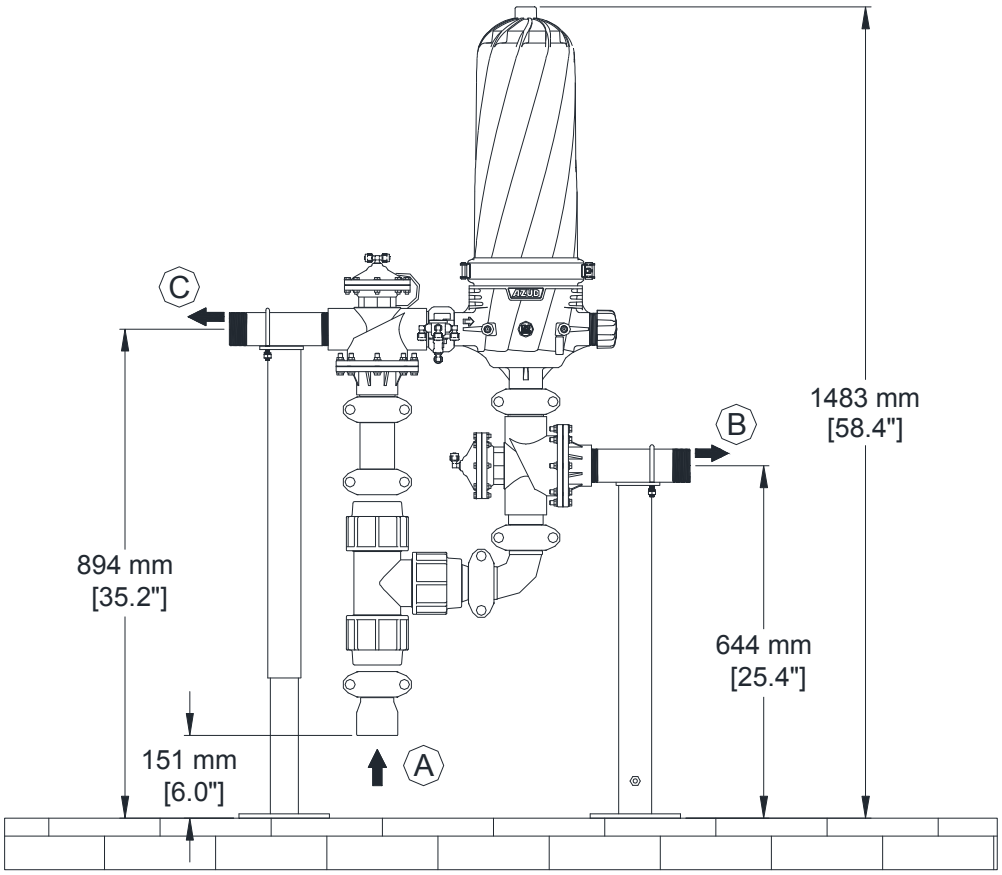
The failure to obey the instructions and warnings could cause damage to people, the equipment and the surrounding area.

CLASSIFICATION ACCORDING TO THE DIRECTIVE OF PRESSURIZED EQUIPMENTS PED 97/23/CE: Art. 3.3 – Fluid Group 2

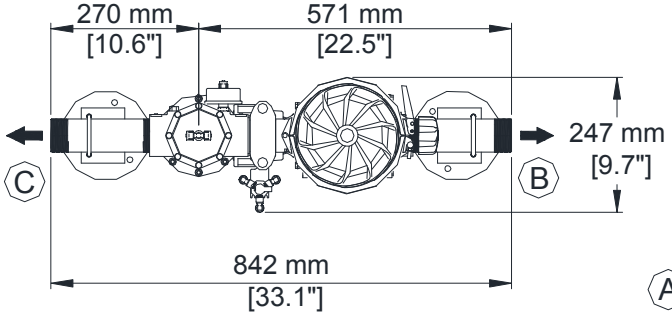


Connections			Dimensions (mm)					
A	B	C	E	M	H	W	X	D
2" VIC	2" VIC	2" BSP	¾" BSP	¼" BSP	721	309	133	245

3.3 DIMENSIONS EQUIPEMENT AZUD HELIX AUTOMATIC 201 DLP



Connections					
AZUD HELIX AUTOMATIC 201 DLP			AZUD HELIX AUTOMATIC 201 DLP NPT		
A	B	C	A	B	C
2"	2"BSP	2"BSP	2"	2"NPT	2"NPT



A Colector entrada 2"
2" Inlet manifold

B Colector salida 2"
2" Outlet manifold

C Colector drenaje 2"
2" Drainage manifold

4. Security Information

Sistema AZUD filtration systems have been designed for the filtration of water following the Operation Conditions indicated in the Technical Data and in the industrial label of the Equipment.

Sistema AZUD filtration systems are NOT designed for the filtration of hazardous liquids (such as those specified in section 2 of article 2 of the Executive Committee 67/548/CEE, 27th June 1967) or liquids for food use.

This is not an standard Equipment. It has been designed and manufactured to satisfy the requirements communicated to the manufacturer by the customer. Any additional requirement or change in its use could cause damages not covered by the warranty.

Preserve this manual so that the user of the Equipment could familiarize with it. Below there are some general instructions for a safe operation of the Equipment. These instructions are not a close list, the user must adopt as many security measures as necessary to guarantee his security. In this way, this safety information does not substitute the accident emergency measures which should be adopted.

- ***Follow the instructions described in this manual.***
- ***Do not open the filter clamp when the Equipment is pressurized, it could cause a deep damage on people, the Equipment and the surrounding area.***
- ***Do use the adequate personal protection (adequate clothes, protective glasses and other elements of personal protection...).***
- ***Determine the chemical compatibility between the Equipment materials and the characteristics of the water to be filtered.***
- ***Before starting the Equipment, make sure that all the covers are closed properly and the connections are in good conditions.***
- ***Make sure that the Equipment is depressurized (through the reading of the gauges of the filters inlets and the outlet manifold gauge) before coming into contact the interior of the Equipment with the atmosphere (before opening any filter, removing any coupling, etc)***
- ***Do not forget to lock the safety lock of the clamp. It will avoid its accidental opening.***
- ***Do not exceed the maximum and operation intervals (pressure, temperature, pH, and flow rate) indicated in the Technical Data.***
- ***In freezing risks areas, do empty the filtration system to avoid damages.***

The Warnings and Safety Information are for guidance only, just carry them out taking as many security measures and prevention of accidents as possible to guarantee your security.

The inappropriate use of the Equipment may cause damages on people, the property and the environment. A bad use or modification in the Equipment cancels its warranty

5. Installation Instructions.

AZUD HELIX AUTOMATIC Equipment is presented semiassembled on a box, so the steps to follow in the installation are the following:

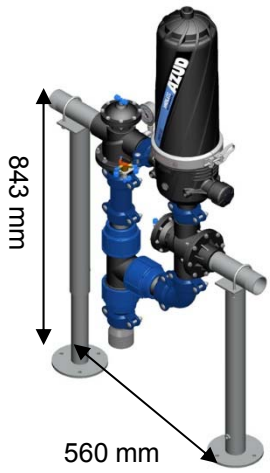
1- Unpack the Equipment carefully and check that no damages are made.

2 - Check that all the installation parameters where the equipment will be incorporated agree with the equipment itself (specified in chapter 3).

3 –Place the shoulders and graduate their height according to the installation necessities.Due to the equipment dimensions, the shoulders height should be adjusted in a way that, at least, the upper part of the shoulder of the drainage manifold is placed at a distance of 843 mm from the ground (this height corresponds to the minimum adjustable in the outlet manifold shoulder). The separation between the shoulders should be 560 mm.

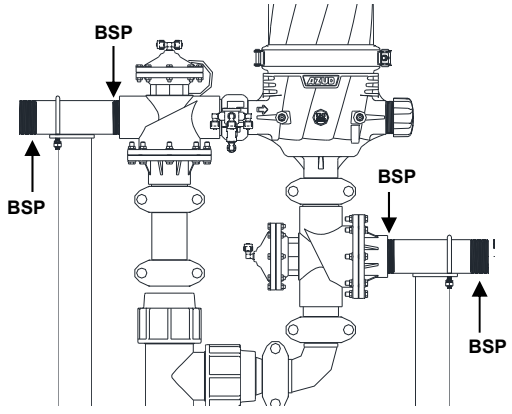
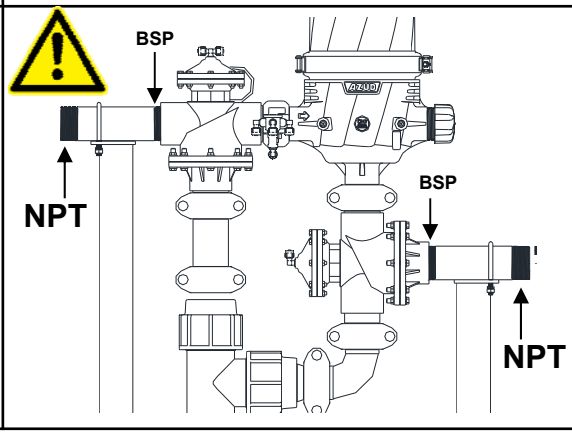
- Installation should be made by QUALIFIED STAFF.

-The location of the Equipment should be made on solid ground.



The fixing of the Equipment to the ground should be made with sleeper screws adequated to the type of ground.

4 –Screw the stainless steel bushing to the free outlets of the three-way hydraulic valves. It is very important to use sealing in the threads of both bushings.

AZUD HELIX AUTOMATIC 201	AZUD HELIX AUTOMATIC 201 NPT
BSP CONNECTION 	NPT CONNECTION 
	

5 –Assemble the equipment in the installation, connecting the inlet, outlet and drainage manifolds using their corresponding connections.

6 – Install a glycerin pressure gauge (0-10) bar to measure the pressure coming into the valve. It is recommended to use liquid sealing or LOCTITE 5331, but not in excess.

7 –Place the 2" BSP Cap in the free outlet of the filter base. Said cap does not need sealing because it is provided with an o-ring.

8 –Place the cartridge in the filter base. After this, place the lid on it and close it with the clamp.

9 –Check the correct connection of the equipment and fix the shoulders to the ground in order to avoid vibrations.

To CLOSE the filters, check there are not strange elements in the area of the O-ring of the base and the state of the same. Place carefully the lid and close the filter with the clamp. To close the clamp, place the bolt in its emplacement and adjust the lever, place the anti-opening device and thread the safety screw without force it.

- Pressure equipment: Make sure that the filter is depressurized before opening it.

- For the Equipment's operation, use the adequate personal protection (adequate clothes, protective glasses, gloves and other elements of personal protection ...).

- Do not forget to adjust the safety lock of the clamp. It will avoid its accidental opening.

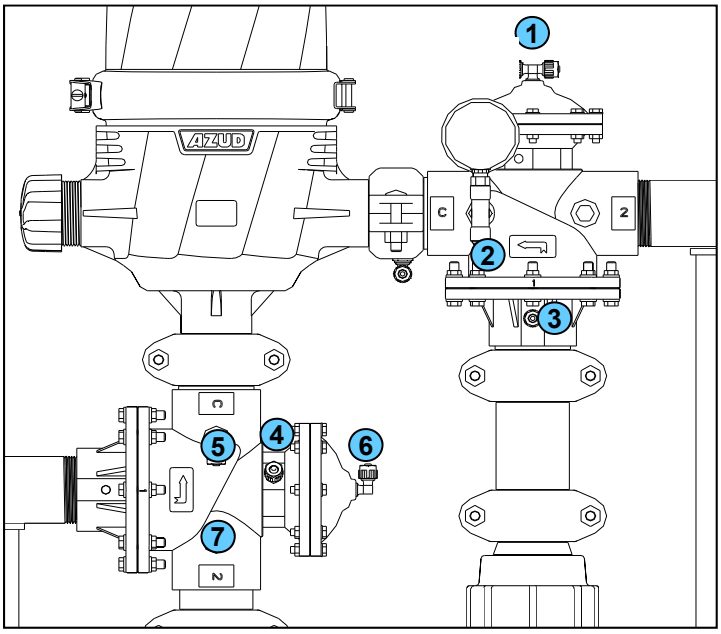
- It is recommended the installation of an upstream and downstream valve to isolate the system during maintenance operations.

5.5 Connection of the Equipment to the Control Unit through the union of the homologous microtubes.

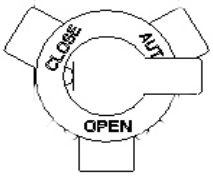
The homologous union microtubes are labelled according to the following nomenclature:

MANDO Hidr.	DESCRIPCIÓN: Uso y conexión
T	For the feeding of all the command circuit. Connect the pressure intake circuit with a pneumatic pressure line which has a pressure greater that the one at the inlet of the filters.
D	**DRAINAGE:** Command for the water of the electrovalves chambers. It drains the air/water housed in the valve chamber in the moment in which the corresponding filter or station activation stops. It should ALWAYS have an exit to the atmosphere
P1	**Pressure intake of the inlet manifold**, connection of high pressure of the differential pressure gauge*. There is an intake in the inlet manifold with a ¼" filter to connect this hydraulic command.
P2	**Pressure intake of the outlet manifold**, connection of low pressure of the differential pressure gauge*. There is an intake in the outlet manifold with a ¼" filter to connect this hydraulic command.
E1	Hydraulic command in charge of the communication between the three-ways valve minipilot through the electrovalve.

* GLOSSARY	
STATION	We understand by station each of the groups of filters which backflush altogether in the same signal of the Control Unit. An station can be formed by one or several filters.
PRESSURE DIFFERENTIAL GAUGE	It indicates in the graduated sphere the differential pressure value between intake P1 and P2 as well as the stipulated value through which it is established the contact for the activation of a backflushing.



Hydraulic command	Points of connection
E1	1 – D in minipilot valve
E1	6– D in minipilot valve
L1	2 - 4
P1	7– H (HIGHT PRESSURE in differential pressure gauge)
P2	5 – L (LOW PRESSURE in differential pressure gauge)
T	3 – ”OPEN” in minipilot valve
T	”OPEN” in minipilot valve– Feeding electrovalve
E1	Electrovalve – “AUTO” in minipilot valve.
D	“CLOSE “ in minipilot valve – Free end



6. Operation Instructions

6.1- Start-up AZUD HELIX AUTOMATIC.

- Do not operate out of the working Conditions.
-Be sure the auxiliary Filter key is open before starting-up the Equipment.

Instructions to the operation of the equipment:

BEFORE THE STARTING-UP

•Make sure that the flow rate, pressure, temperature and pH will be covered by the Equipment specifications (indicated in the Equipment technical data) when starting it.

• Make sure that all the filters are properly closed and there are no leakages.

• Make sure that the auxiliary filter key is opened.

•START-UP

• Connect the pumping system for the water inlet

• Make sure that the **Operation Conditions** (pressure, temperature, flow rate and pH) are on the specifications.

• Watch the Equipment head loss

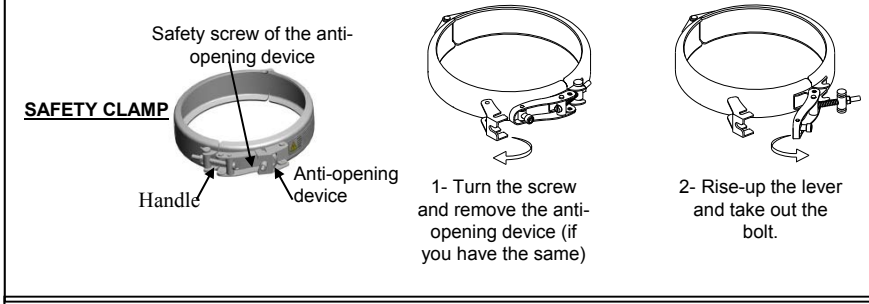
•.Follow the instructions of the Equipment's Control Unit Manual.

6.2- Opening and closure of the filters.

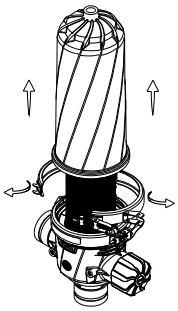
Pressure Equipment: Be sure the filter is depressurized before opening it.

To the opening of the filter follow the next steps:

1. Take away the clamp.



2. Take away the lid of the filter



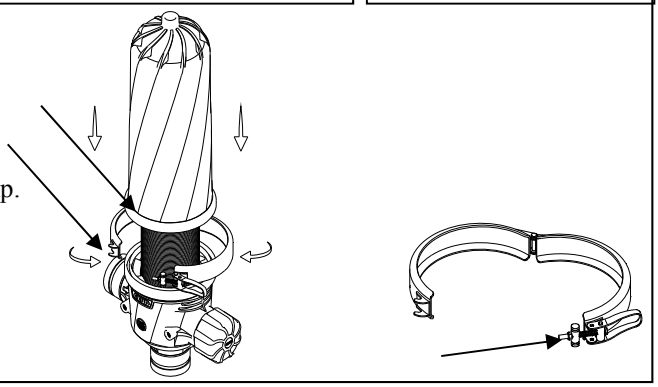
1. Check the O-ring is clean.

2. Correctly close the filter

If leakages, adjust the closure of the clamp.

3. Adjust the closure with the screw

.



- Pressure equipment: Make sure that the filter is depressurized before opening it.
- For the Equipment's operation, use the adequate personal protection (adequate clothes, protective glasses, gloves and other elements of personal protection ...).
- Do not forget to adjust the safety lock of the clamp. It will avoid its accidental opening.
- It is recommended the installation of an upstream and downstream valve to isolate the system during maintenance operations.

7. Maintenance Instructions.

-Be sure the Equipment is depressurized before making any operation which expose in contact the interior of the equipment with the atmosphere.
-The maintenance labours should be made by qualified staff.

Maintenance Plan of the Equipment. The period between revisions depends on the operation conditions, characteristics of water to be filtered, operation hours, number of backflushings, recuperation of the differential pressure after the backflushings…. AZUD recommends three months between the different revisions of components which imply the disassembly of the filtering element. **This period should be determined by the user** according to the particular characteristics of his installation.

For the identification of the components check section components of the manual

7.1 Maintenance Summary Box.

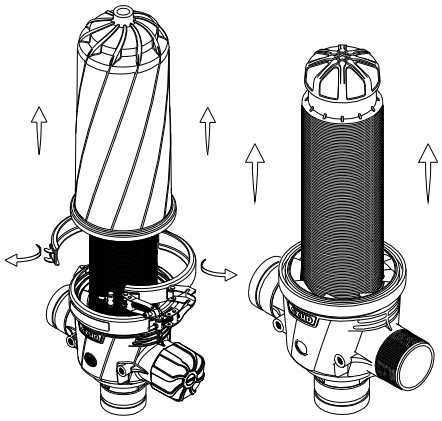
DAILY ACTIONS
1. Visual inspection of the Equipment
2. Checking there are not leakages in the Equipment
3. Checking of the **Operation Conditions** (pressure, temperature, flow rate, pH).
4. Vigilance of the Equipment head loss (P1* - P2*)
PERIODICAL ACTIONS
1. Checking of the base o-ring
2. Checking of the filters cleaning state. If they are too dirty, clean the discs manually.
3. Manual activation of a backflush to check that the backflushing phases of all the stations are carried out correctly.
4. Gaskets checking
5. Checking the elements of the piston.
6. Checking of auxiliary Filter
7. Checking ¼" intake filters.
8. Maintenance of grooved couplings.

* : P1 and P2 are the pressure in the inlet and outlet manifold. Their difference is the head loss of the Equipment.

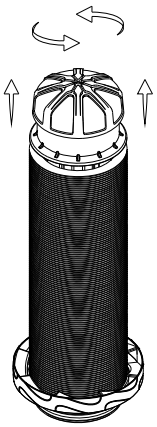
7.2. General Revision of the Equipment.

The **maintenance plan of the filter** depends on the working conditions of each installation which should be determined by each user. The steps of the maintenance plan are:

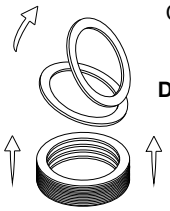
1. Open the clamp and take away the lid. Remove the filtering element carefully.



2. *Turn the piston until it is released; take it away.*



3. *T*ake away the discs



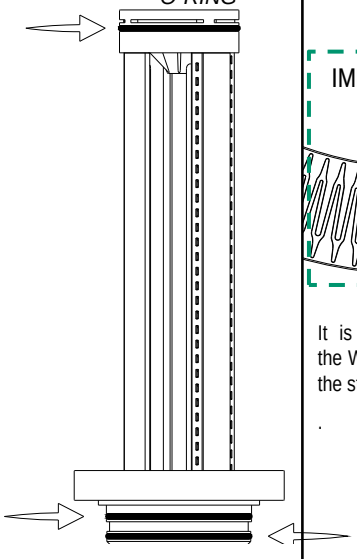
Clean only the discs using clean water or an acid dissolution

Do not mixture discs from different filters.

4. Lubricate the filtering element's o-rings, with neutral Vaseline if possible.

92,6x100x4.0

O-RING



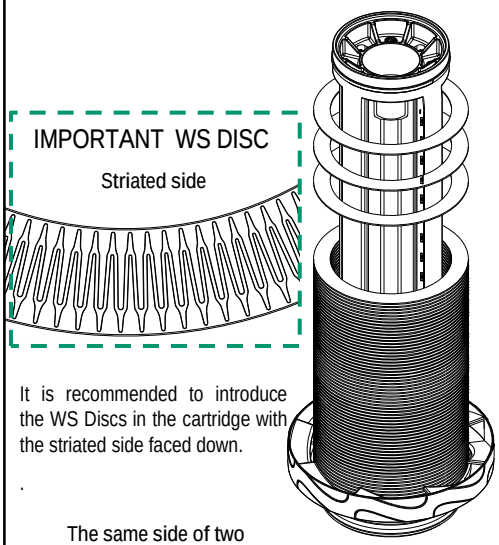
103x4.0

O-RINGS

5. *Place **ALL** the discs*.

IMPORTANT WS DISC

Striated side

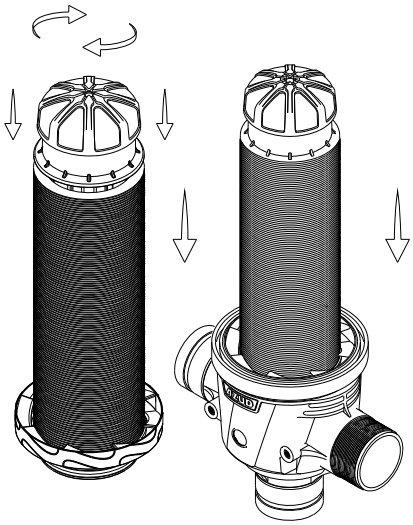


It is recommended to introduce the WS Discs in the cartridge with the striated side faced down.

.

The same side of two WS DISC can never be together.

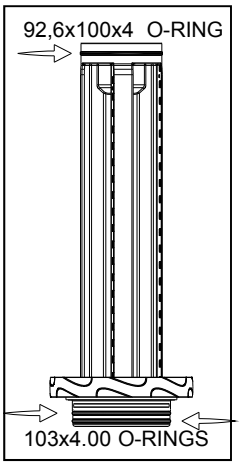
6. Thread the GREY piston making a soft pressure at the same time it is turned to its adjustment.



7. Place the filtering element pushing carefully downwards.

7.3. Maintenance filtration element

7.3.1.- Checking of the filtering element 92,6x100x4 and 103 x 4 O-rings



1. Open the clamp and take away the lid of the filter carefully; take out the filtering element; turn the piston until it is released and take it away. (see section **Cleaning of discs section**).

2. Check the estate of the filtering element O-rings.

3. Thread the piston of the filtering element making a slight pressure and turn to its adjustment. (see **Cleaning of discs**)

4. Lubricate the area of the O-rings (see picture in the right).

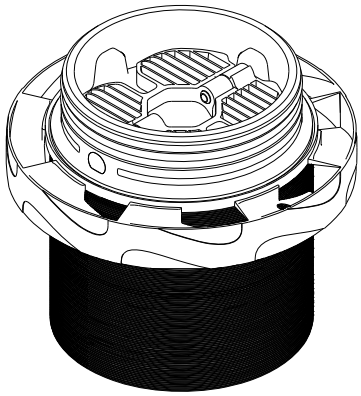
5. Introduce the filtering element pushing carefully in the base of the filter. (See **Cleaning of Discs section**).

6. Place again the lid and close the clamp (See chapter **Opening and closure of the filters**).

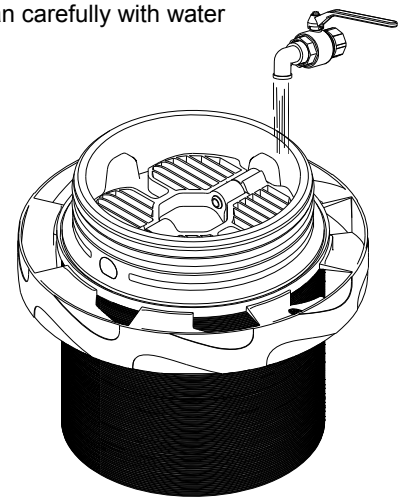
7.3.2.- Checking of the movable elements of filtering element base (cap of discs, spring and spring holder.

1. Open the clamp and take away the lid carefully: take away the filtering element. (see **Cleaning of discs section**).

2. Check opening and closing of the two parts of the check valve.

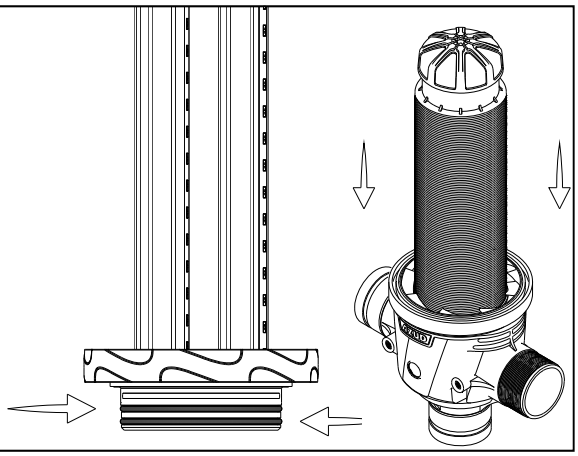


3. Clean carefully with water



4. Lubricate the gasket of the base of the filter element, with a product chemically compatible with the filter material. Insert the filter element by pushing it gently. (See sections 6.3 and 6.4 of the section Cleaning discs).

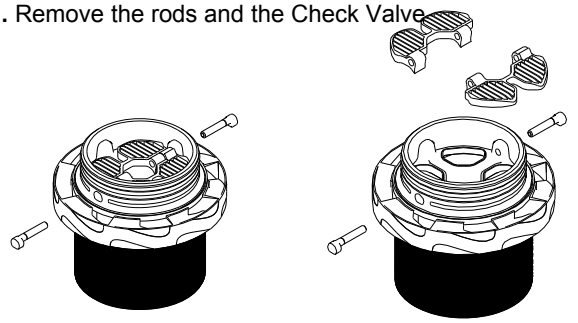
5. Fit the lid and close the clamp (See section Opening and closing the filters).



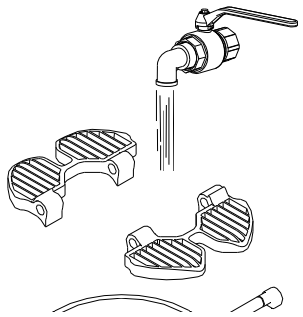
If you have any doubt please contact us.

7.3.3. Removal of the moving element from the base of the filter element **()**

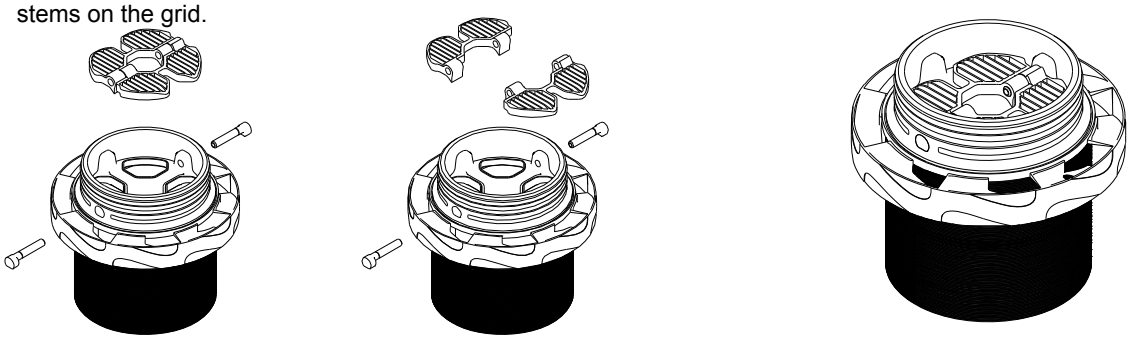
1. Remove the rods and the Check Valve.



2. Clean carefully with water.



3 Place the check valve on the grid with the face of the drawing towards the outside and correctly adjust the stems on the grid.

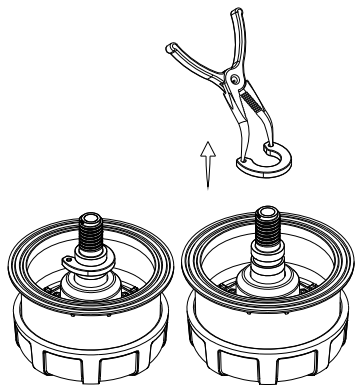


7.3.4.- Checking of the piston elements.

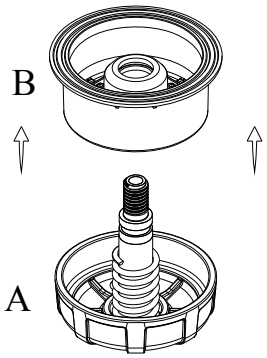
1. Open the clamp and take away carefully the lid of the filter; take out the filtering element. Turn the piston until it get released and take away the piston. (See **Cleaning of Discs section**).

2. Disassemble and check the components of the piston. Disassembly:

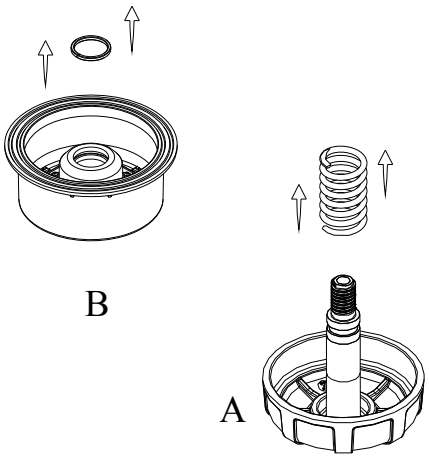
2.1. Remove the ring.



2.2. Separate B piece from A piece.



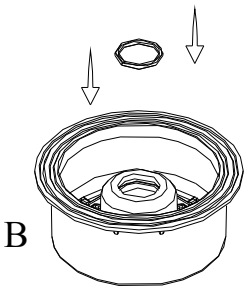
2.3. Check the o-ring housed in the B piece. Also check the spring of A piece.



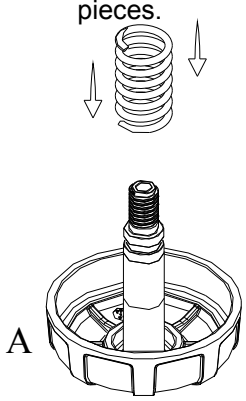
3. Assembly:

- Apply lubricant in the piston components for its assembly. Sistema AZUD recommends the use of neutral Vaseline.
- Check the chemical compatibility between the lubricant and the filter material

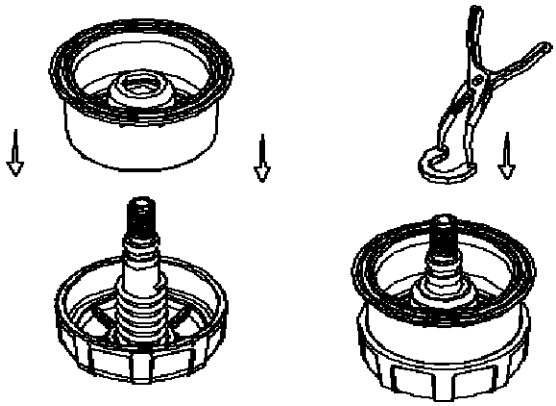
3.1 Introduce one washer in the spring and the other in the rod of A piece



3.2. the o-ring in the interior housings of the B-pieces.

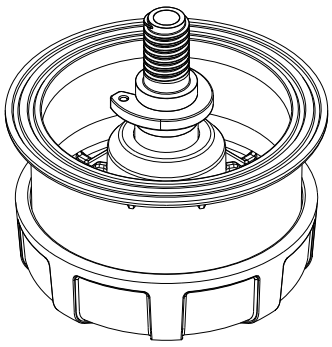


3.3. Introduce the B Piece on the axis of A piece. Fit the ring on the axis of B piece using the pliers until it fix in the groove of the rod.



3. Place the piston in the filtering element, lubricate the base of the filtering element with a product chemically compatible with the material of the filter and introduce the filtering element pushing it carefully in the base of the filter. (see sections **Cleaning of discs**).

4. Place the lid and close the clamp (see chapter **Opening and closure of the filters**).



To the identification of the components check chapter 2.4. of the manual

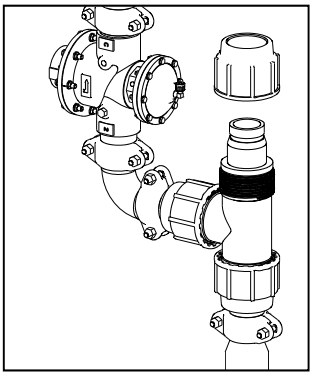
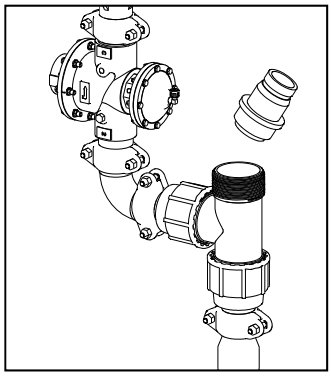
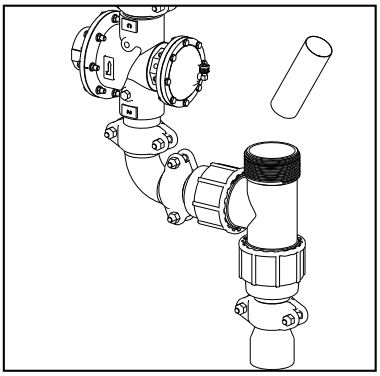
If you have any doubt, please contact us.

7.4 Checking of components.

Make sure that the Equipment is depressurized before carrying out any maintenance operation in which the interior of the Equipment is put into contact with the atmosphere.

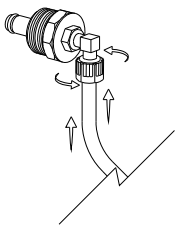
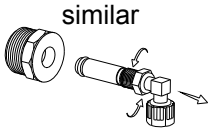
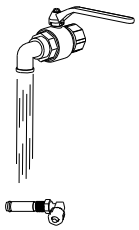
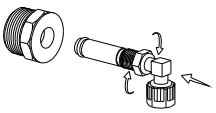
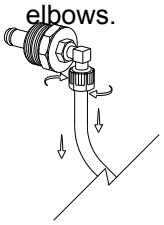
7.4.1.- Checking of auxiliary Filter.

1. Drainage the equipment.
2. Disassemble the upper grooved coupling and continue with the lower grooved coupling 2”.
3. Take the cartridge drilled by hand out of the tee. Clean it with water.
4. Plaace the cartridge claned in its place checking that the tee’s interior joint in its right place.
5. Place the grooved coupling, the thread of the tee, and the grooved adapter tube and adjust all the victaulic couplings handled.

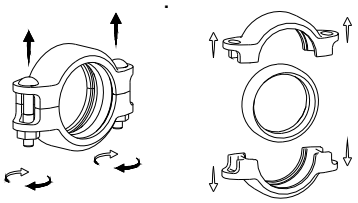
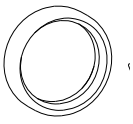
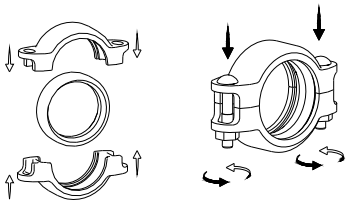




7.4.2.- Checking the ¼” intake filters.

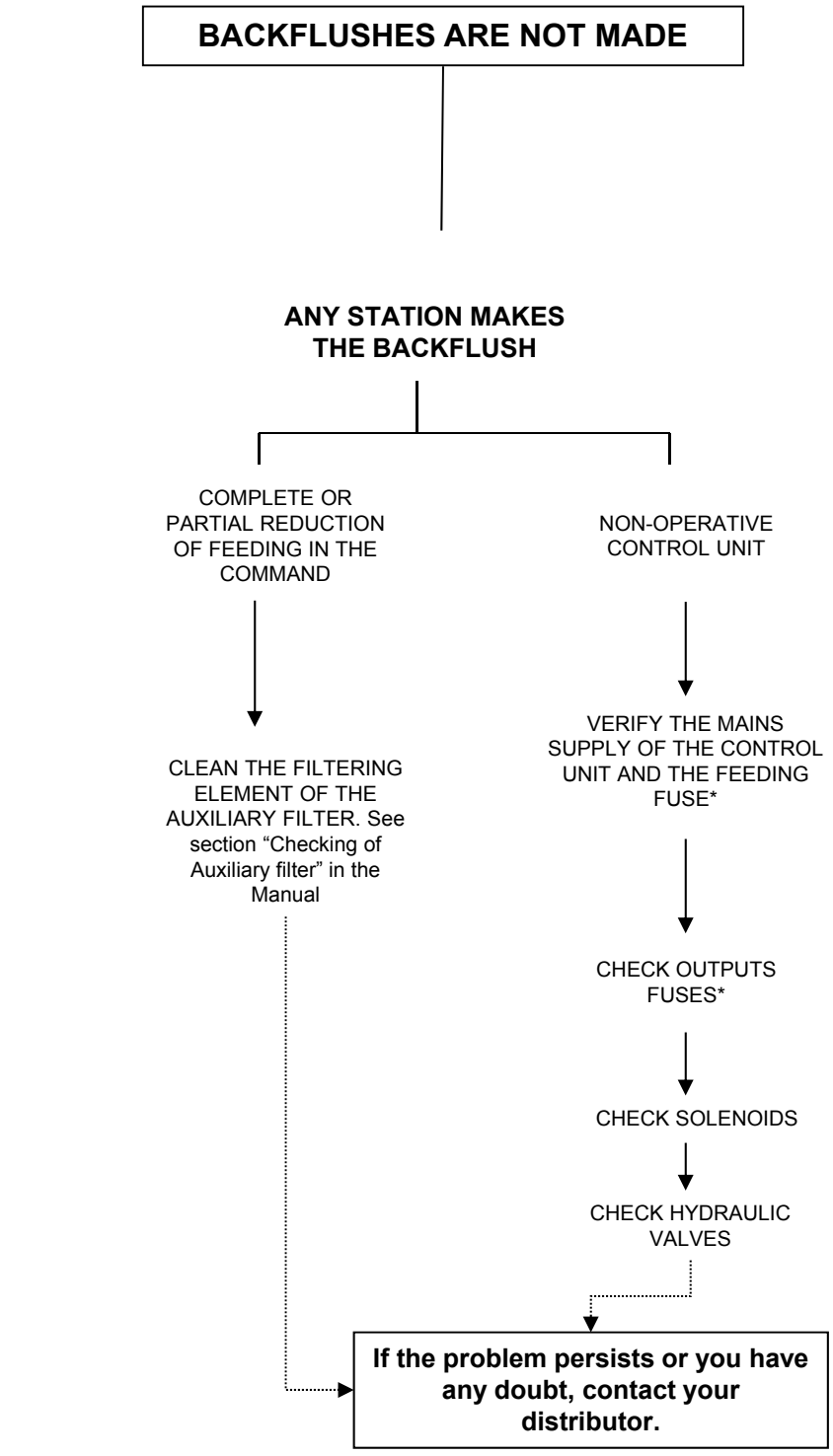
Applying too much sealer or forcing the threads may damage them

1. Disconnect P1 and P2 microtubes 	**2.** Extract the ¼” filters of each intake in the inlet and outlet manifolds and in the sustaining valve with a N.13 spanner or similar 	**3.** Clean them. 	**4.** Place the ¼” filters in manifolds with a spanner N.13 or similar previously applying sealer in the thread 	5. Connect the command microtubes P1 & P2 to the 8x1/8” male elbows. 

7.4.3.- Maintenance of the Grooved couplings.

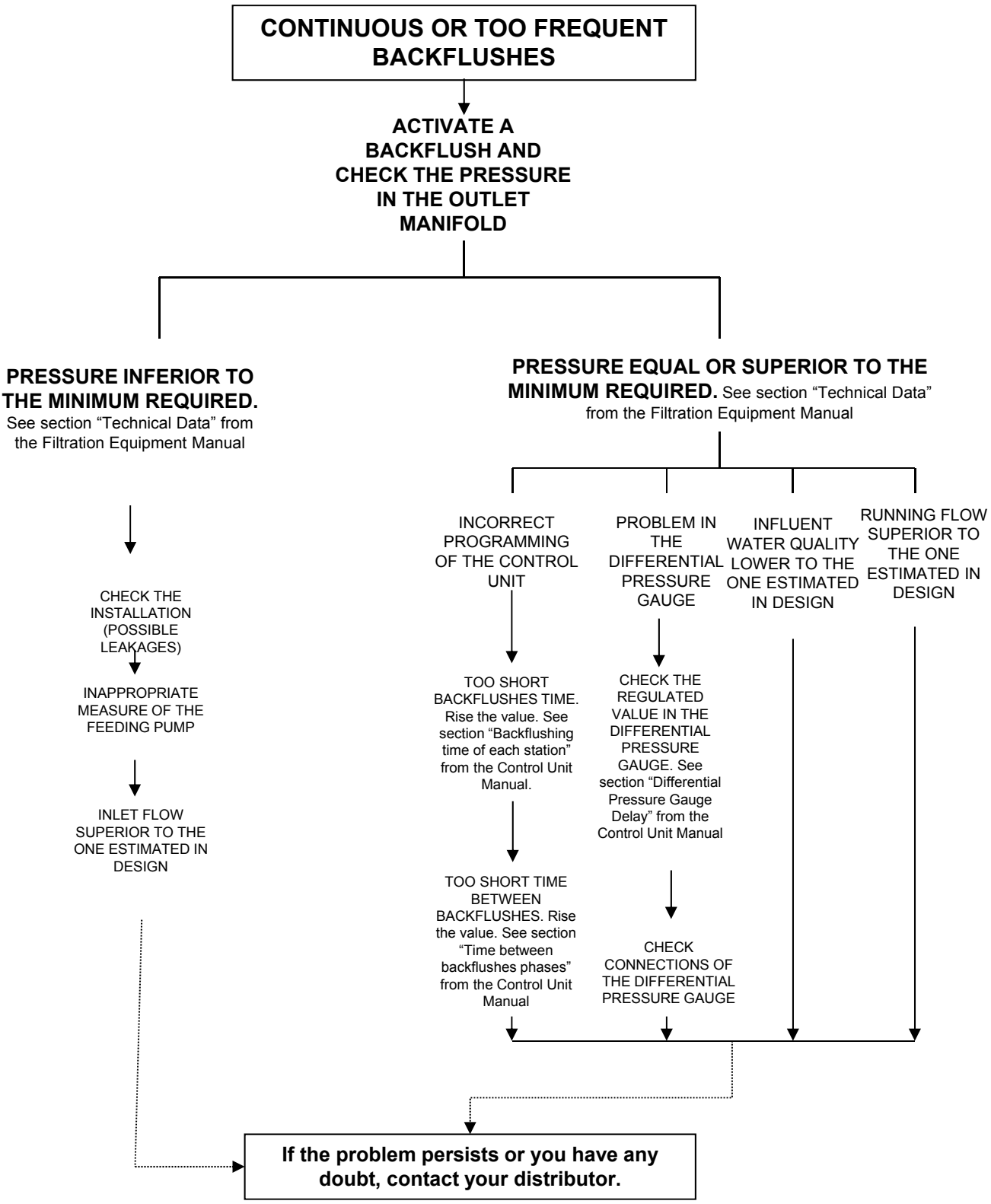
1. Disassemble the grooved coupling with a spanner or similar 	**2.** Apply grease to the coupling joint 	**3.** Assemble the coupling 

8. Possible problems-causes-solutions

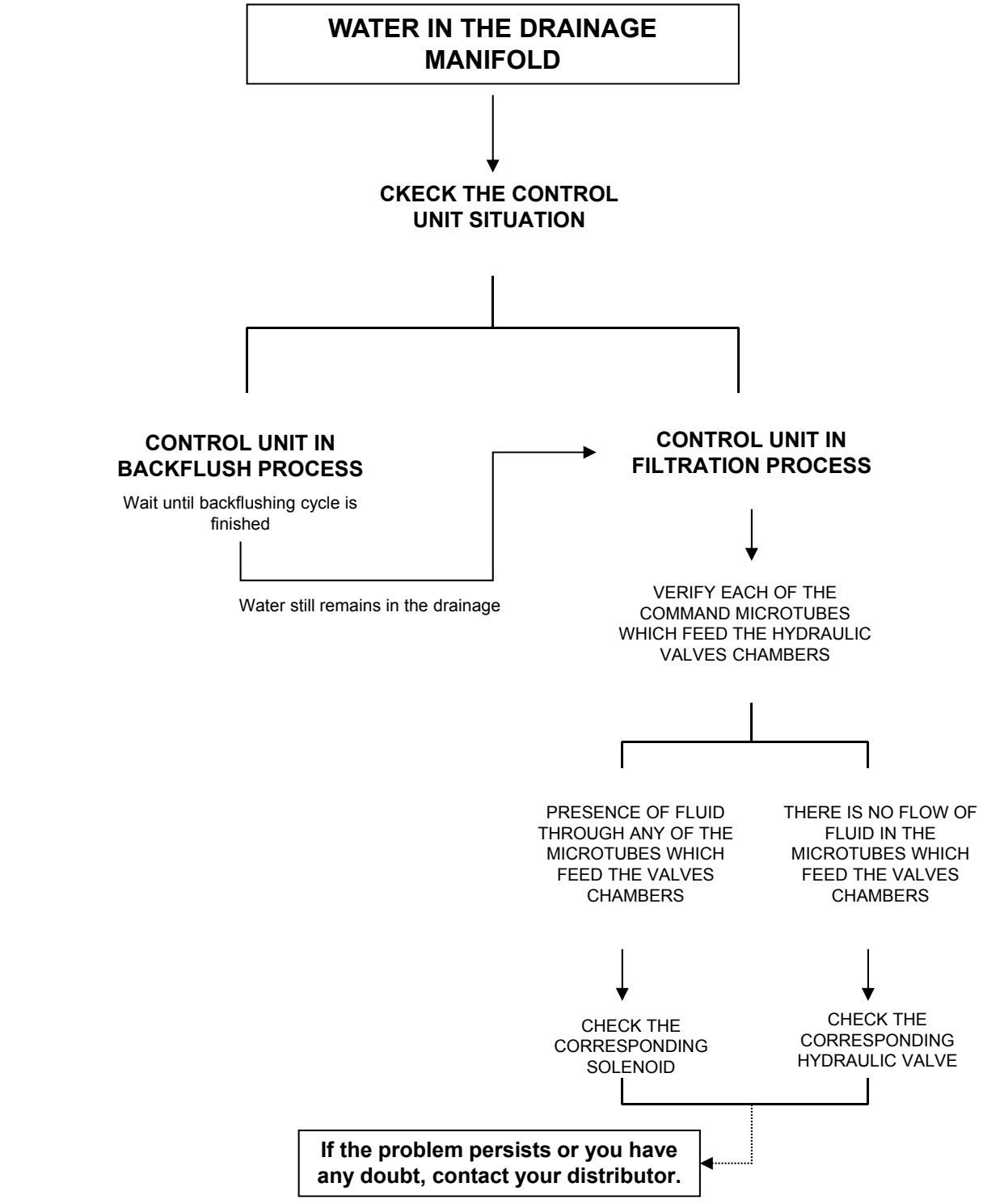


For the identification of the components consult section "Components and Spare parts" from the manual

***For the identification of the fuses consult the chapter "Electric Circuits" from the Control Unit Manual**



For the identification of the components consult section "Components and Spares" from the manual



For the identification of the components consult section "Components and Spares" from the manual

9. Warranty.

1. Sistema Azud, S.A. agrees formally either to replace any defective component or to repair any defect that is exclusive responsibility of Sistema Azud, S.A., provided that the buyer informs Sistema Azud, S.A. about the defects in a maximum period of one year from the delivery date. Once that the period has expired, either refunds or claims due to this reason will not be accepted. The warranty will cover no cost of displacement, neither the shipment of pieces and/or materials, nor the expenses of assembly or disassembling of the products.
2. The express warranty provided herein is effective only if claim is made by written notice within the applicable warranty period and postmarked within thirty days after the discovery of the defect on which the claim is based.
3. This warranty will not cover any defects that result either from a wrong installation of the products and materials, an incorrect use of them or the non-observance of the User´s Manual content. And in general, this warranty will not cover any other kind of irregularity beyond the operation of the product.
4. This warranty will not cover the damage caused by operating the products in places, installations, natural environments or aims, without suitable conditions and characteristics to obtain an optimal output.
5. Repairs made during the warranty period will not prolong the duration of the warranty.
6. This warranty will cover only the products and materials or components which have been manufactured by Sistema Azud, S.A. and have been directly bought from Sistema Azud, S.A. This warranty is not a consumer or end user warranty and does not extend to anyone other than those trade costumers who purchase directly in Sistema Azud, S.A.
7. In particular, it is excluded from this warranty damages and failures in the sold materials that result from fortuitous facts or force majeure; and specifically and without limit, those caused by insects or rodents; higher pressure than recommended; those caused by inadequate electrical tensions; by operations made in different conditions to the specific rank of the product management; by qualities of water, by acid environments, decantations, precipitations, bacteria or algae agglutinations. It will be excluded either the breaking caused by the lack of a pre-filter in the installation, or not protected installations against water hammer, or other hydraulic or electrical incidents.
8. This warranty will not cover materials which have been either repaired or modified by an unauthorised person, or have been used, installed or modified without following the instructions given by Sistema Azud, S.A.
9. Sistema Azud, S.A. will be allowed to check the defects reported by the purchaser using the means that may be considered appropriate. The purchaser is not allowed to obstruct the proceedings of the people authorised by Sistema Azud, S.A. to verify the facts.
10. Sistema Azud, S.A. is not liable for direct, indirect, incidental, or consequential damages during periods of malfunction. Neither Sistema Azud, S.A is liable for any loss or damage in the property, resulting from installer´s negligence.
11. No person or organisation is authorised to introduce any modification in the present warranty. Except for the obligations specifically set forth in this warranty statement, in no event shall Sistema Azud, S.A. be liable for other incidental o damages.