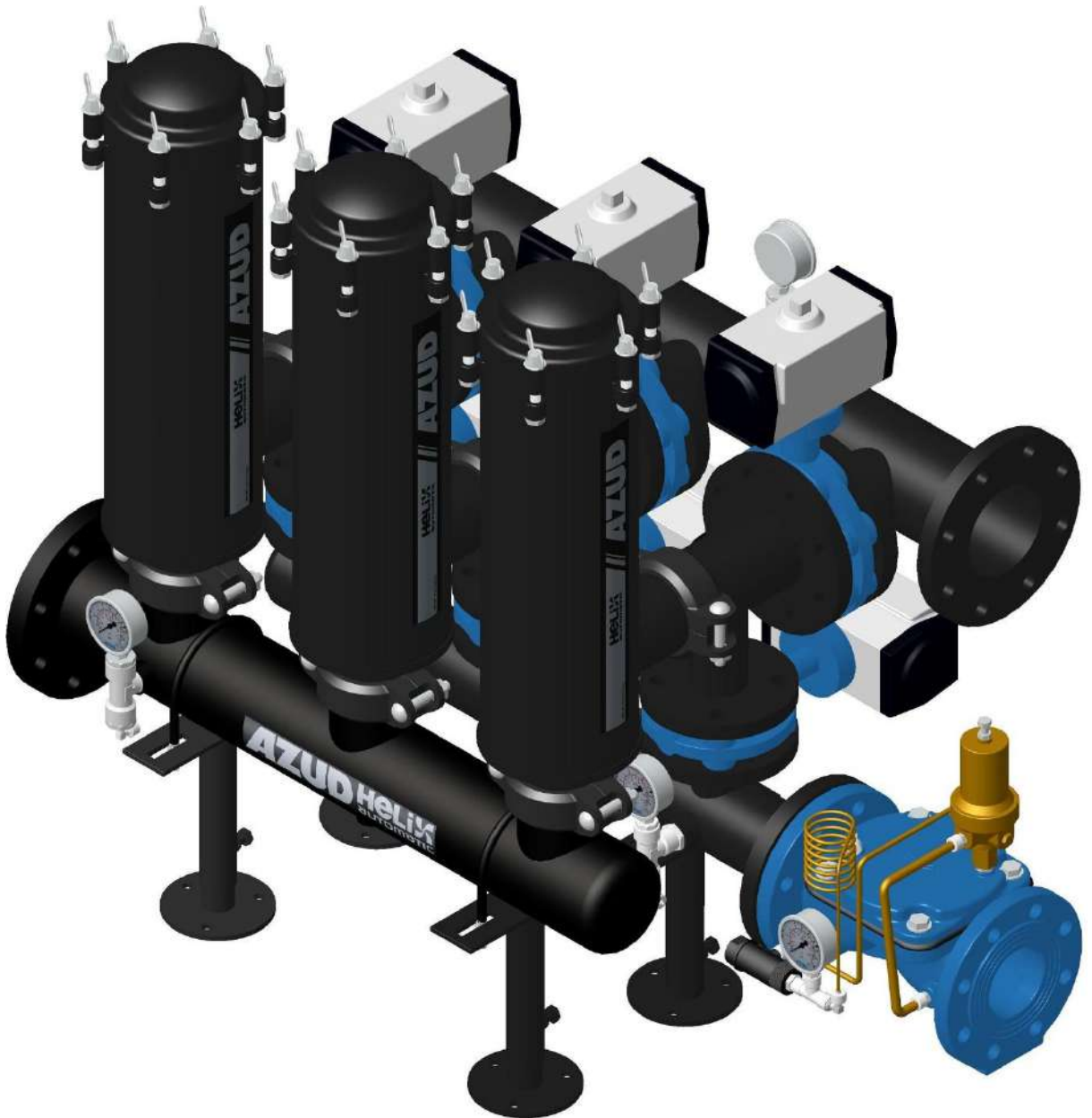


## AZUD HELIX AUTOMATIC FT303/4FE HP DLP + AZUD FBC 112/3 HP 220 V AC



Serial number:  
**20006966**

## 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.*

## 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 ADDITIONAL 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



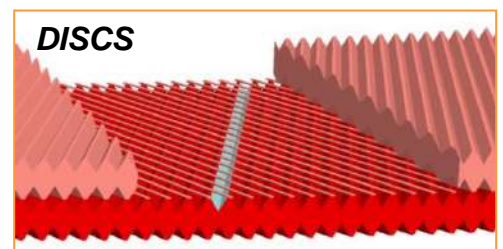
The filters of the equipment, are identified with a label in which is indicated the model, year of manufacturing, serial number and max pressure.

## 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.



## TECNOLOGY

The system carries out two independent phases in each filtering unit but simultaneous in the filtration system in precise moments. This is called **FILTRATION PHASE** and **BACKFLUSHING PHASE**

### FILTRATION STAGE

In the filtration process, water is carried from the inlet manifold through the backflushing valves, to the interior of the totality of the filters which form the filtration system

Once the water comes in the filter, the only way to follow are the channel of discs.

The outlet manifold is the responsible to collect the filtered water and carry it out to the exterior of the same.

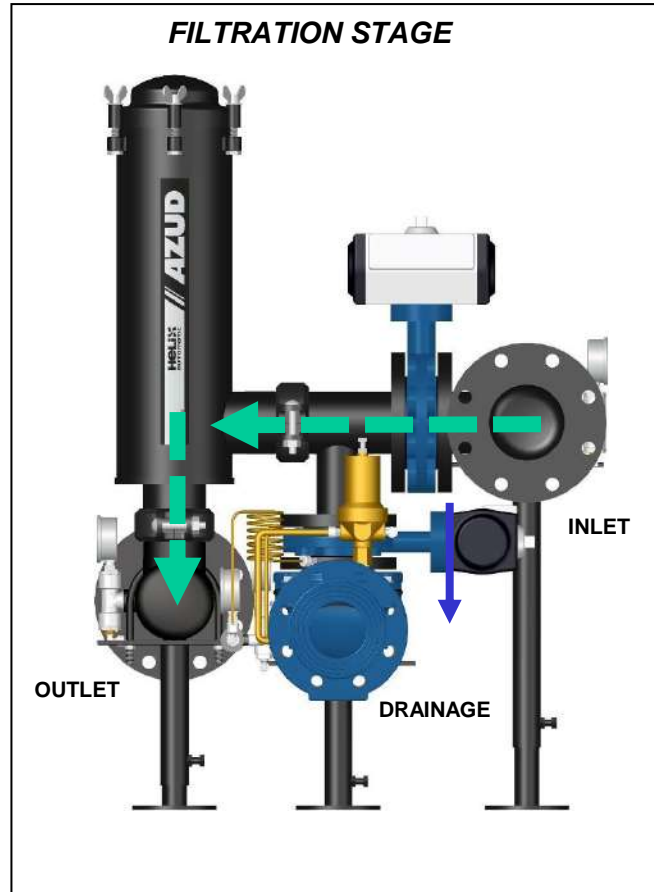
### BACKFLUSHING PHASE

The start of the backflushing process takes place when the Control Unit activates the backflushing cycle under one of the four possible orders: **Differential of pressure, time frequency between backflushings** or **manually on the keyboard** or by **external signal**.

Backflushing takes place in a sequential form.

The programmer of the Control Unit, closes the contact which supplies solenoid charge and which is responsible for the activation of the first station that will carry out the backflushing. The solenoid converts the electric signal in a pneumatic signal.

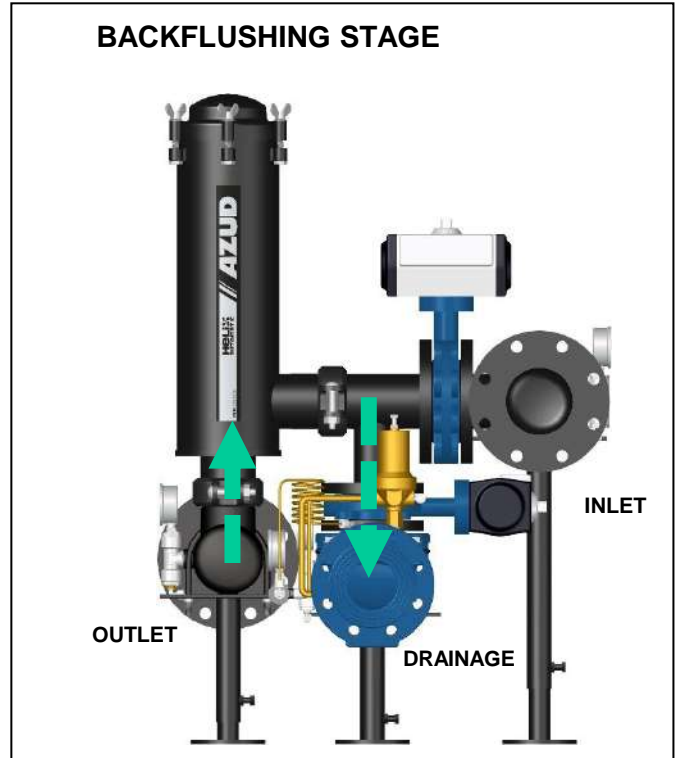
Through the feeding of the valve, the inlet of water to the filter is closed, communicating the interior of the filter with the drainage manifold and the pressure manifold, starting a backflush.



**THE SUSTAINING VALVE IS NOT ASSEMBLED IN THE EQUIPMENT.**

All that 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).

The release of discs makes possible these can freely spin due to the tangential projection of the water coming from the feeder bars which at the same time are used as structural support of the stack of discs.



The correct distribution of the holes in the bars, together with the studied design of the same, project water under pressure which tangentially falls into the discs, generating its rotation and vibration of the same and consequentially the complete elimination of the retained solids through the backflushing valve. These are carried to the outside by the drainage manifold.

Once the station has completed the backflushing process, it is repeated sequentially until it completes the totality of stations which form the filtration equipment.

The end of the backflushing coincides with the closure of the drainage outlet and the opening of the inlet manifold on the last station which forms the filtration equipment. In this way the filtration initial conditions are re-established and also the availability of the totality of filters to carry out the filtration function.



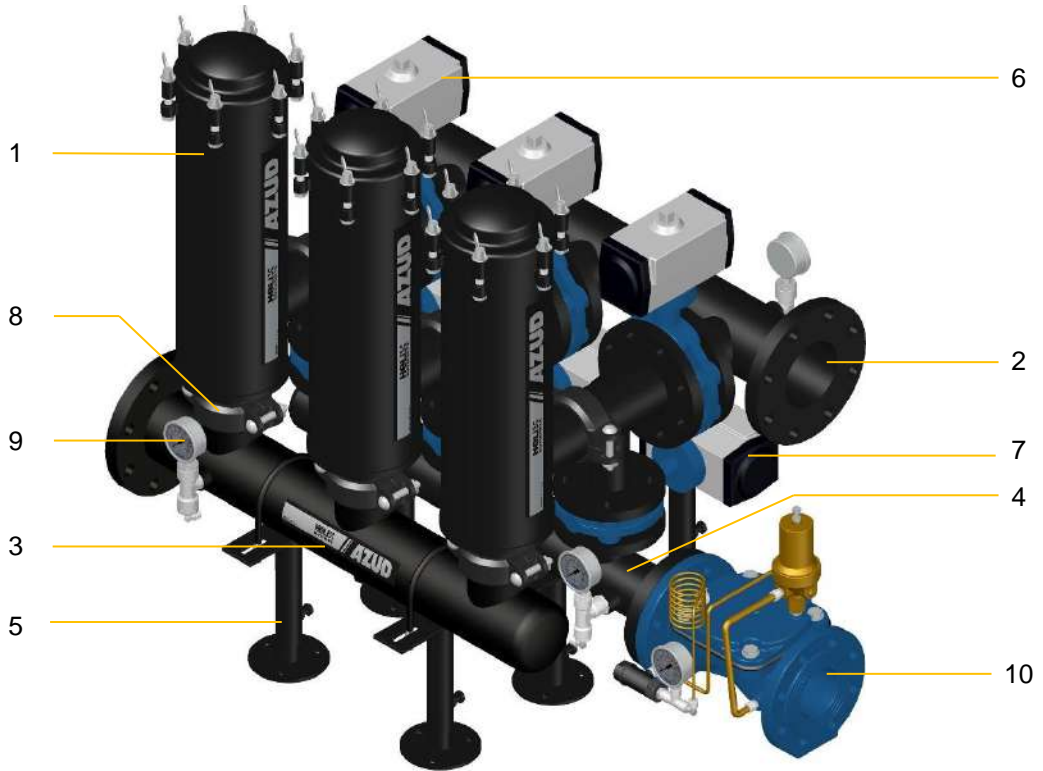
**PISTON**



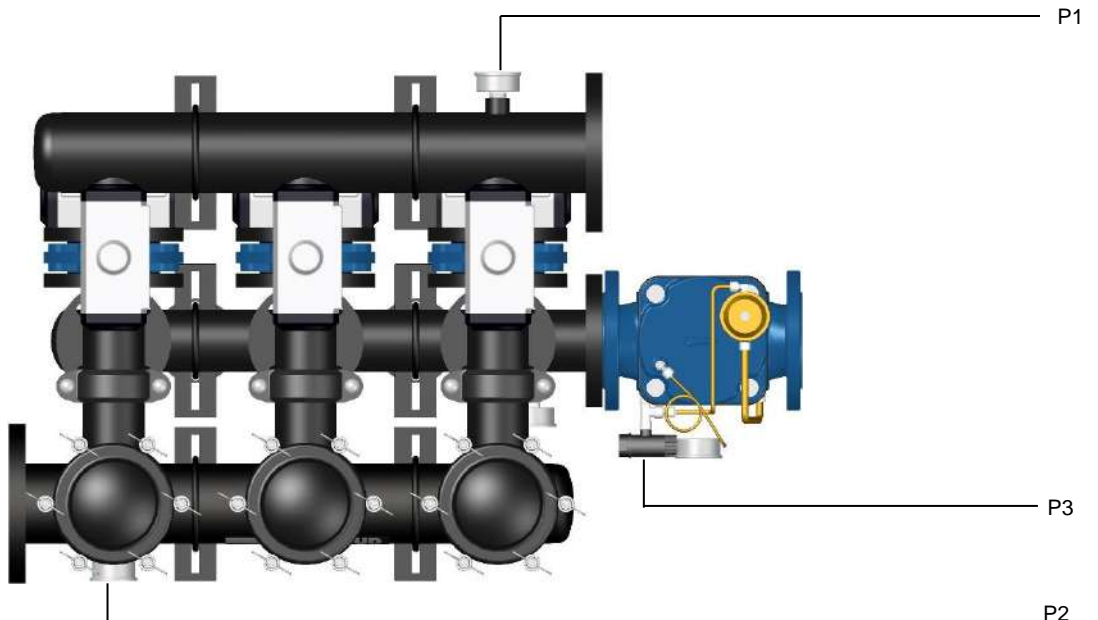
**LOWER SIDE OF THE FILTERING ELEMENT  
(IT COMES WITHOUT THE HELIX)**

## 2.4. AZUD HELIX AUTOMATIC FT303 HP Components and Spares.

### 2.4.1 AZUD HELIX AUTOMATIC FT303 HP equipment components.

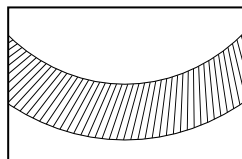


### AUTOMATITATION SCHEME

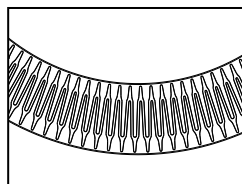


**THE SUSTAINING VALVE IS NOT ASSEMBLED IN THE EQUIPMENT.**

COMPONENTS AZUD HELIX AUTOMATIC EQUIPMENT SUSTAINING VALVE		
NUMBER	CODE	DESCRIPTION
1	81203040	AZUD HELIX AUTOMATIC 3" METAL HP FILTER
2	81203040	INLET MANIFOLD
3	81203040	OUTLET MANIFOLD
4	81203040	DRAINAGE MANIFOLD
5	81203040	MANIFOLD SUPPORTS
6	81203040	3" BUTTERFLY VALVE DOUBLE ACTING
7	81203040	2" BUTTERFLY VALVE SPRING RETURN NC
8	81203040	GROOVED COUPLING 3"
9	81203040	MANOMETER
10	81203040	SUSTAINING VALVE



**MG  
DISC**

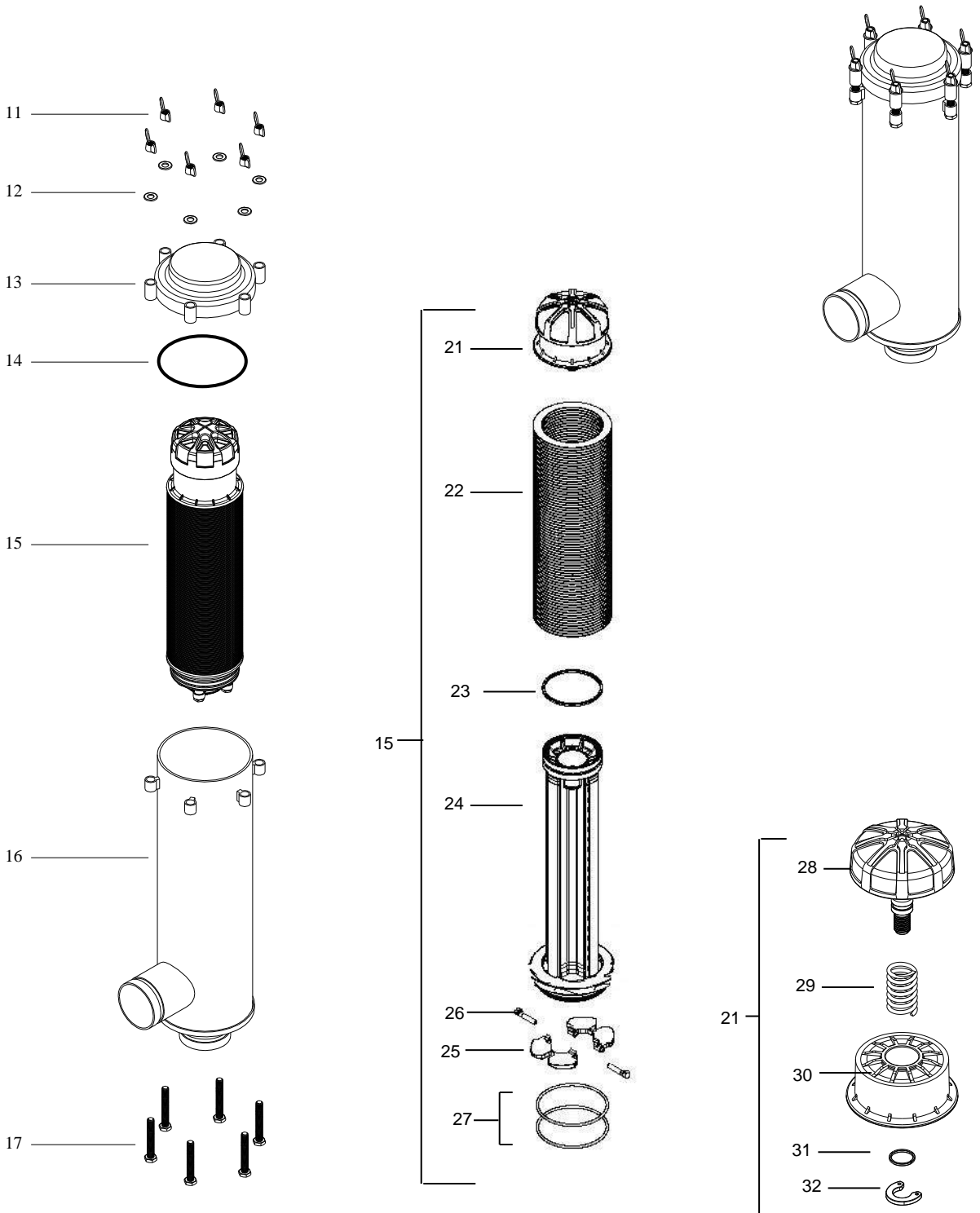


**WS  
DISC**

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

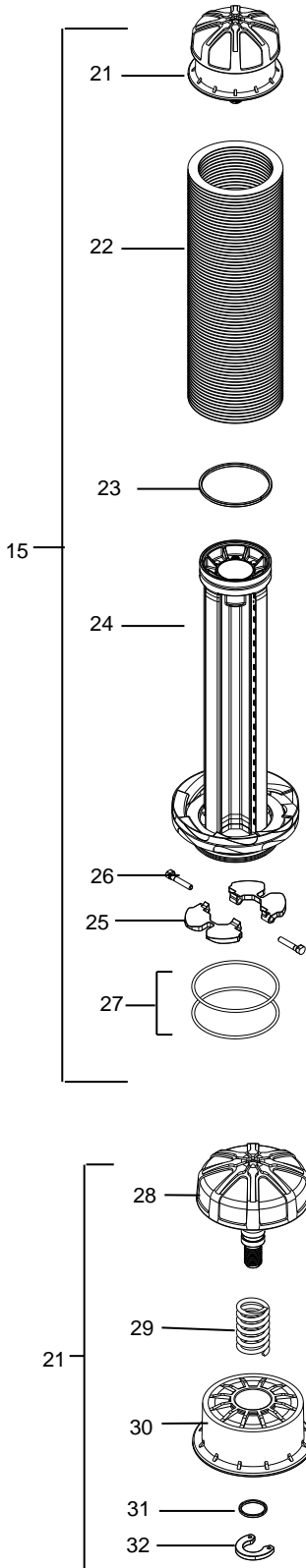


## 2.4.2 AZUD HELIX AUTOMATIC HP Filter.



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

## 2.4.3 AZUD HELIX AUTOMATIC Filtering element



SPARE AND COMPONENTS AZUD HELIX AUTOMATIC FILTER		
NUMBER	CODE	DESCRIPTION
21	-----	FRAME PISTON AZUD HELIX AUTOMATIC
22		DISCS KIT AZUD HELIX AUTOMATIC
23	-----	PISTON GASKET 92,6 x 100 x 4 mm
24	-----	FILTERING ELEMENT FRAME WITHOUT CHECK VALVE
25	-----	G - CHECK VALVE
26	-----	CHECK VALVE STEM
27	-----	O-RING 103X4 (2 UNITS)
28	-----	A PISTON COMPONENT
29	-----	SPRING
30	-----	B PISTON COMPONENT
31	-----	O-RING 13X2
32	-----	CLIP

RPA: POLYAMIDE REINFORCED WITH GLASS FIBER

PP: POLYPROPYLENE

NBR: NITRIL RUBBER

RPP: REINFORCED POLYPROPYLENE WITH GLASS FIBER

PE: POLYETHYLENE

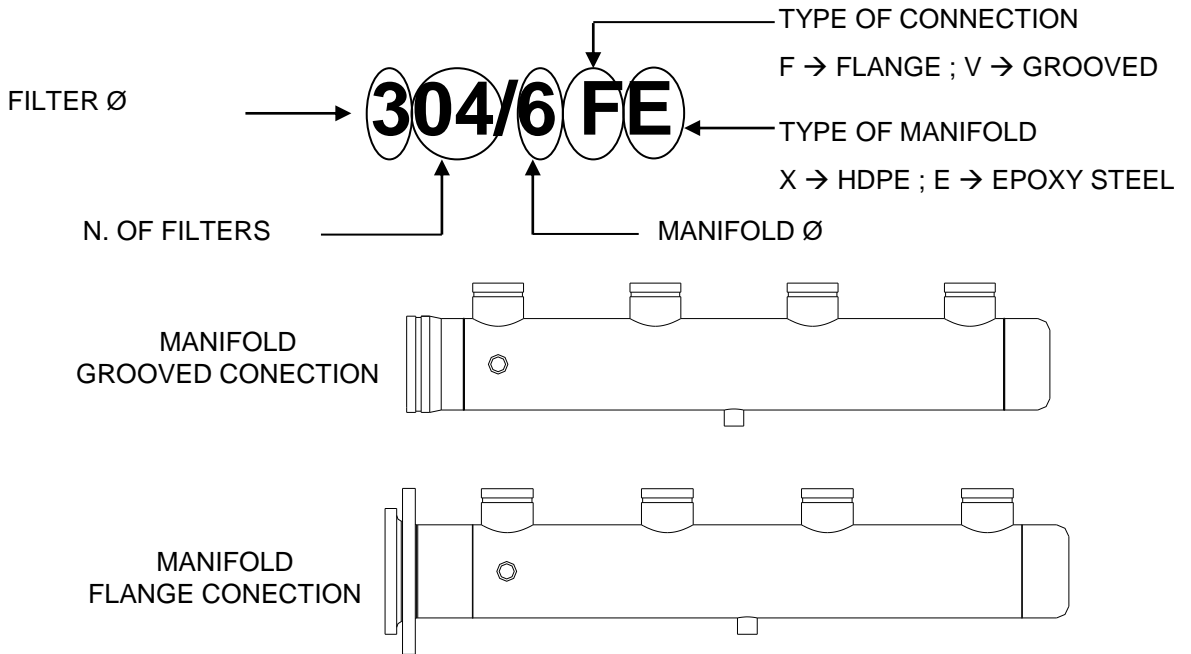
A, INOX.: STAINLESS STEEL

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	18R60037	CHECK VALVE AUTOMATIC FILTER 3.0	1
26	-----	CHECK VALVE STEM	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

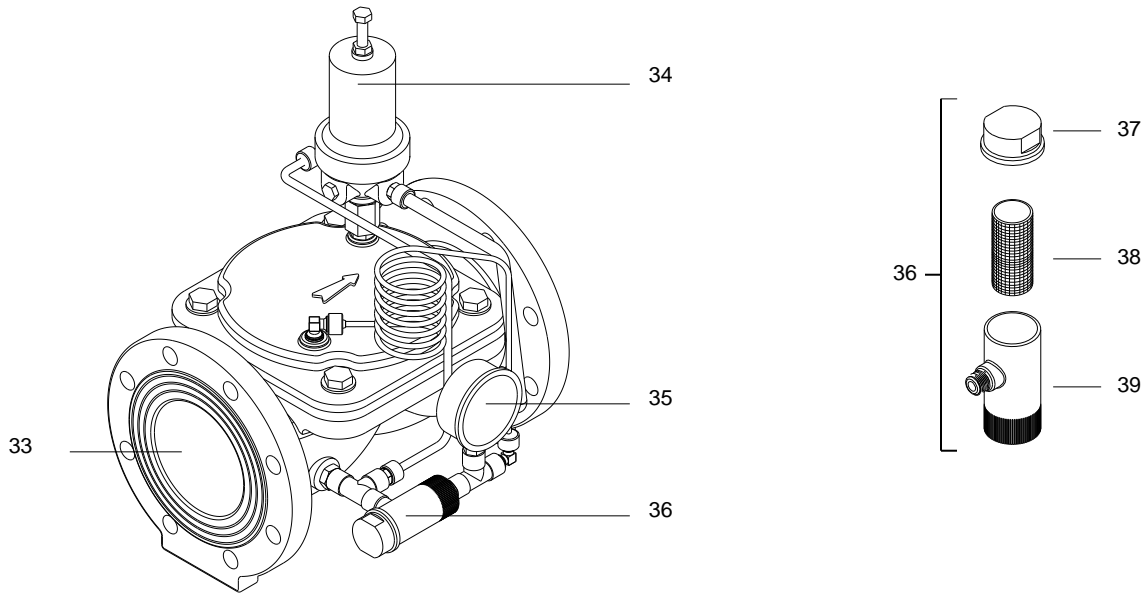
Please indicate the serial number of the equipment when requesting spares.

## 2.4.4 Main inlet and outlet manifolds.

The manifold model of your filtration equipment follows the reference logic described below:



## 2.4.5 Pressure sustaining valve components.



PRESSURE SUSTAINING VALVE SPARE PARTS			
NUMBER	CODE	DESCRIPTION	un
33	81203040	HYDRAULIC VALVE	1
34	81203040	PRESSURE REGULATING PILOT	1
35	81203040	PRESSURE INDICATOR 0 – 16 BAR	1
36	81203040	IN-LINE FILTER	1
37	81203040	IN-LINE FILTER CAP	1
38	81203040	IN-LINE FILTER FILTERING ELEMENT	1
39	81203040	IN-LINE FILTER HOUSING	1

## 3. Technical Data

### 3.1 AZUD HELIX AUTOMATIC SERIE 300 HP General features and requirements.

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

	MG DISCS	WS DISCS
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

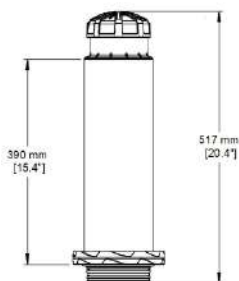
**THE FLOW RATE GIVEN BY FILTER CONDITIONS THE FREQUENCY OF THE BACKFLUSHING ACTIVATION**

\*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

Maximum working pressure	16 bar 232 psi
Minimum working pressure	0.8 bar 11.6 psi
Maximum Temperature	60°C 140°F
pH	4-11

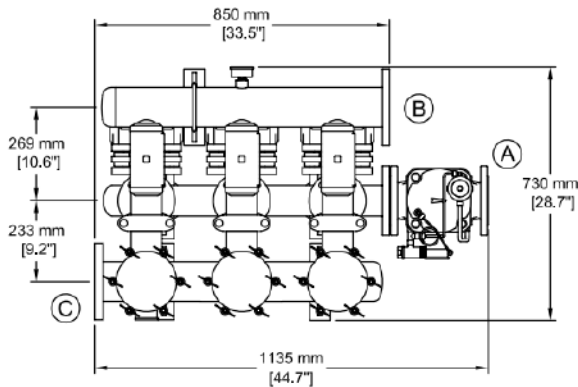
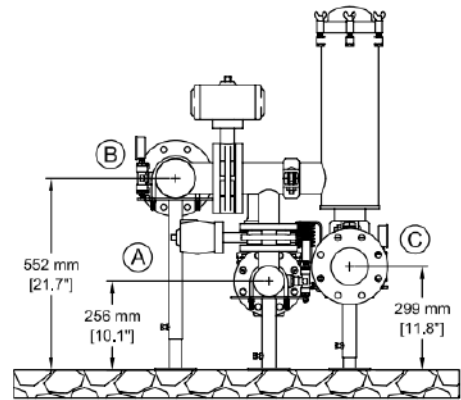
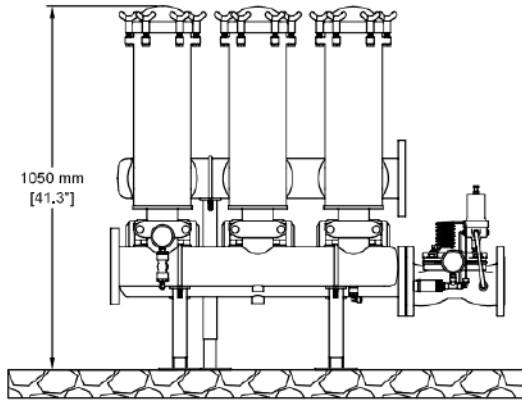
### 3.2.- General Characteristic AZUD HELIX AUTOMATIC Filter.



**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**

## 3.3 DIMENSIONS EQUIPEMENT AZUD HELIX AUTOMATIC



- Ⓐ 3" Drainage manifold · DIN 2576 Flange  
Colector drenaje 3" · Brida DIN 2576
- Ⓑ 4" Inlet manifold · DIN 2576 Flange  
Colector entrada 4" · Brida DIN 2576
- Ⓒ 4" Outlet manifold · DIN 2576 Flange  
Colector salida 4" · Brida DIN 2576

**THE SUSTAINING VALVE IS NOT ASSEMBLED IN THE EQUIPMENT**

**AZUD**

SCALE  
S/E  
A4 FORMAT

AZUD HELIX AUTOMATIC FT303/4FE HP

RESPONS.: M. Martínez

REVISION: 00

UNITS: mm [in]

DATE: 03/09/2018

THE PRESENT REVISION CANCELS THE PREVIOUS ONES, THE PERSON RESPONSABLE OF THIS DRAWING IS UNCONNECTED WITH THE HARMS PRODUCED FOR AN IMPROPER USE OF THE CANCELLED REVISIONS.  
LA PRESENTE REVISIÓN ANULA LAS ANTERIORES. EL RESPONSABLE DE ESTE PLANO ES AJENO A LOS PERJUICIOS OCASIONADOS POR EL USO INDEBIDO DE REVISIONES ANULADAS

## 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.*

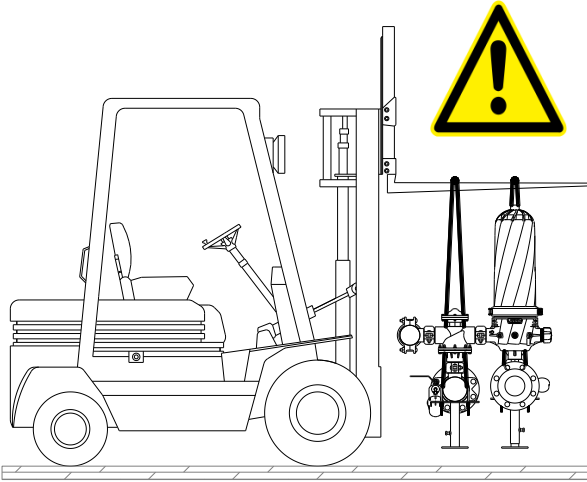


- *Follow the instructions described in this manual.*
- *Do not open the filter clamp when the Equipment is pressurized, it could cause a deep damage on people, the Equipment and the surrounding area.*
- *Do use the adequate personal protection (adequate clothes, protective glasses and other elements 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



- *Installation should be made by QUALIFIED STAFF.*
- *The location of the Equipment should be made on solid ground.*
- *You should take into account the weight of the Equipment when you choose the ribbons or synthetic slings.*
- *Make sure that the measures of the ribbons of the raising system are correct so that the equipment is in an horizontal position when raised.*
- *Secure the Equipment to the raising system to avoid accidents.*
- *Follow the operation and safety instructions of the raising and movement system Manual used*

- 1- Transport the filtration equipment with the pallet with a lift truck or similar until its final emplacement.
- 2- Unpack the equipment carefully and check there are not damages in the same.
- 3- Confirm all the specified parameters are agreed with the ones of the equipment.
- 4- Raising of the equipment:

A “movement and raising system” should be used as a overhead travelling crane adequated according to the weigh of the Equipment. Place 4 belts or synthetic belts, two in the inlet manifold and other two in the outlet manifold. The belts should be placed next to the u-bolts of the supports of the manifolds. Place the belts, so when the equipment is raised, remains in horizontal position.

**If you have any doubt please contact us.**



## 5.1 Separation of the equipment from the pallet.

To the separation of the Equipment from the pallet, it is necessary a raising system or adequated elevation of the Equipment. The equipment is fixed to the pallet by lag screws or similar. The steps to follow:

- A- Unthread the lag screws with a spanner or similar.
- B- Raise the Equipment with a raising system following indications of 4.
- C- Move away the pallet.
- D- Place the equipment of its definitive emplacement.
- E- Check the correct levelling of the Equipment.

## 5.2 Regulation of the supports of the equipment.



***Verify the Equipment is supported by the raising system before unthread the M10 screws of the supports.***

You can modify the height of the equipment with the adjustable supports. For that, it is important to be sure previously the Equipment is supported with the raising system. Once this is checked, unthread the screws of the supports and adjust the height with the help of the raising system so the equipment is always in horizontal position.

## 5.3 Fixation of the equipment to the ground.

Before the fixing to the ground, you must check the level of the Equipment. The fixing of the Equipment to the ground should be made with lag screws appropriate to the type of ground. The screws should be placed in the 10 mm diameter manifold holes.

## 5.4 Connection of the main manifolds, inlet, outlet and drainage.

The main manifolds connections (inlet and outlet manifolds) can be of two types: Grooved or Flanged (DIN 2576). You should use the necessary and standard elements to connect the Equipment with the rest of the installation.

The drainage manifold has a flange coupling from pipe. Connect the inlet, outlet and drainage manifolds with its corresponding connections.

## 5.4 Connection of the Equipment to the Control Unit.

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

COMMAND	DESCRIPTION: Use and connection
P1	Pressure tap in inlet manifold, to be connected to the pressure transducer P1.
P2	Pressure tap in outlet manifold, to be connected to the pressure transducer P2.
P3	Pressure intake of the drainage manifold, to be connected to the pressure transducer P3.
E1	<b>Backwash stage signal for Station 1.</b> Inlet valve of Station 1 is closed and drainage valve of Station 1 is opened.
S1	<b>Filtration stage signal for Station 1.</b> Inlet valve of Station 1 is opened.
En	<b>Backwash stage signal for Station n.</b> Inlet valve of Station n is closed and drainage valve of Station n is opened.
Sn	<b>Filtration stage signal for Station n.</b> Inlet valve of Station n is opened.



### \* 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.

### PNEUMATIC PRESSURE REQUIRED FOR THE OPERATION OF THE VALVES 6 bar

#### ***Adjust the air income to the circuit of the pneumatic command***

***To adjust the inlet pressure of the air intake it should be taken into account the inlet pressure of water in the filtration equipment.***

***It is not necessary the use of lubrication in the air treatment of the pneumatic command. It can even damage some components.***

***The instructions and warnings should be taken into account in order to obtain a correct installation, working and post-working of the Equipment. Not obeying the instructions or warning can cause damages or failure in the working of the equipment.***



## 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.

To the opening of the filter follow the next steps:



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



- 1.- Unscrew the 6 screws carefully
- 2.- Take away the lid



- *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.

### 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 <b>Operation Conditions</b> (pressure, temperature, flow rate, pH).
4. Vigilance of the Equipment head loss (P1*- P2*-P3*)
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.
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.


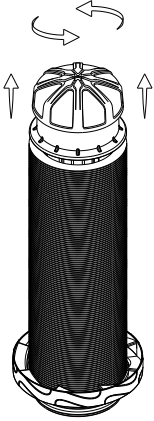
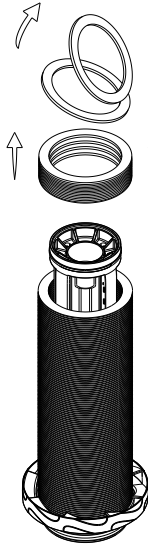
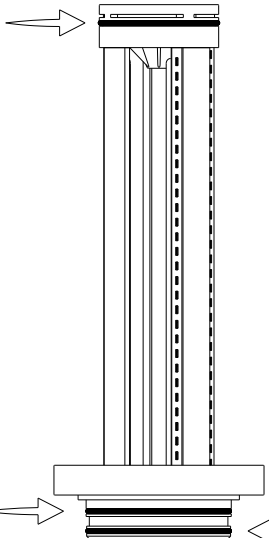
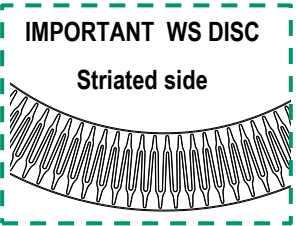
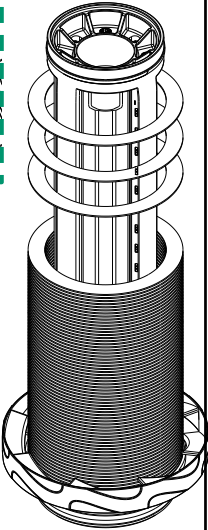
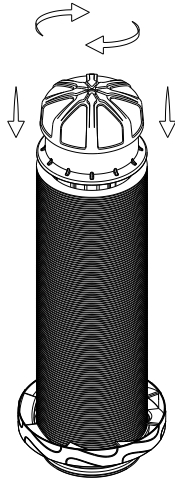


- *The checking period should be determined by the user according to the particular characteristics of its installation*

# AZUD Water Filtration Solutions

## 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:

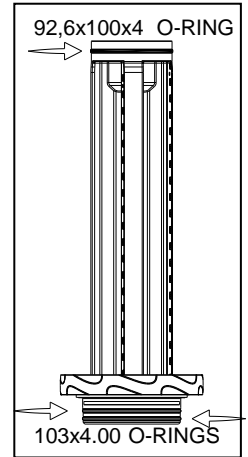
<p>1. Unscrew 6 screws carefully and take away the lid</p> <p>2. Remove the filtering element carefully.</p> 	 <p>3. Turn the piston until it is released; take it away.</p>	 <p>4. Clean only the discs using clean water or an acid dissolution <b>Do not mixture discs from different filters.</b></p> <p>5. Take away the discs.</p>
<p>6. Lubricate the filtering element's o-rings, with neutral Vaseline if possible.</p> <p>O-RINGS 92,6x100x4.0</p>  <p>O-RINGS 103x4.0 mm</p>	<p>7. Place <b>ALL</b> the discs.</p> <p><b>IMPORTANT WS DISC</b> Striated side</p>  <p>8. It is recommended to introduce the WSL Discs in the cartridge with the striated side faced up.</p> <p><b>The same side of two WS DISC can never be together.</b></p> 	<p>9. Thread the piston making a soft pressure at the same time it is turned to its adjustment.</p>  <p>10. Insert the filtering element safety, push down</p>

# AZUD Water Filtration Solutions

## 7.3. Maintenance filtration element

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

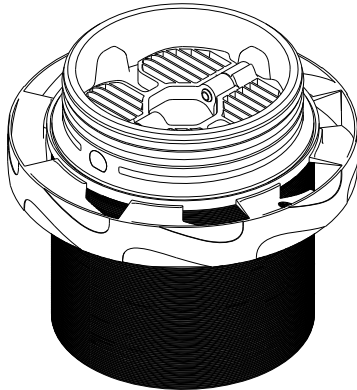
1. Open the clamp and take away the lid of the filter carefully; take out the filtering element; turn the piston until it is released and take it away. (see section **Cleaning of discs** section).
2. Check the estate of the filtering element O-rings.
3. Thread the piston of the filtering element making 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**).



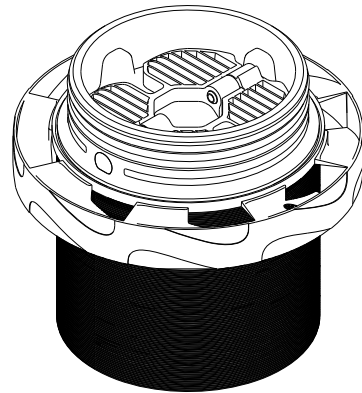
### 7.3.2.- Checking of the movable elements of filtering element base (cap of discs, spring and spring holder).

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 clapper.

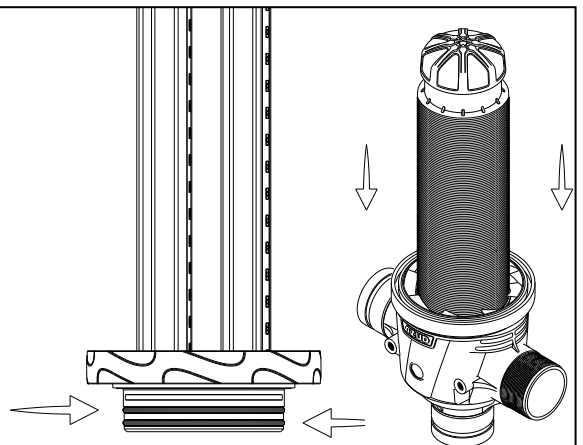


3. Clean carefully with water



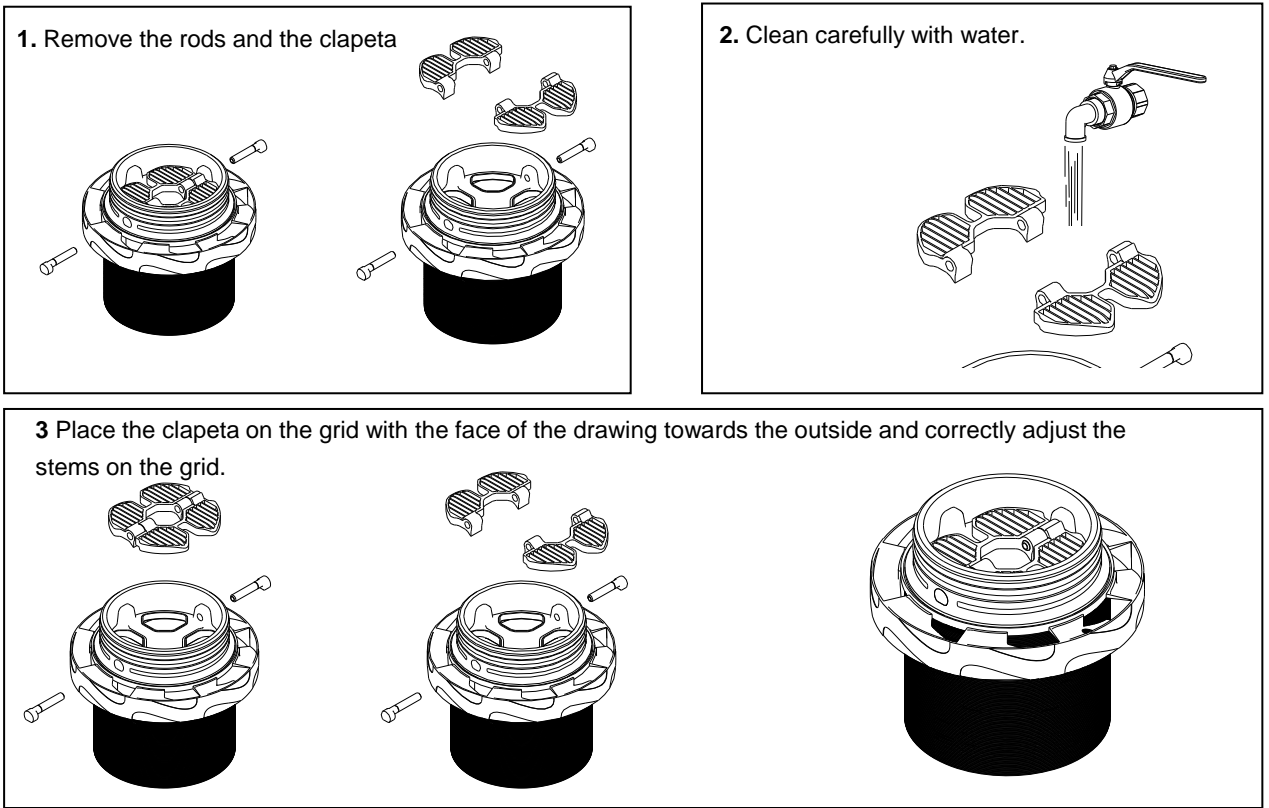
4. Lubricate the gasket of the base of the filter element, with a product chemically compatible with the filter material. Insert the filter element by pushing it gently. (See sections 6.3 and 6.4 of the section Cleaning discs).

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



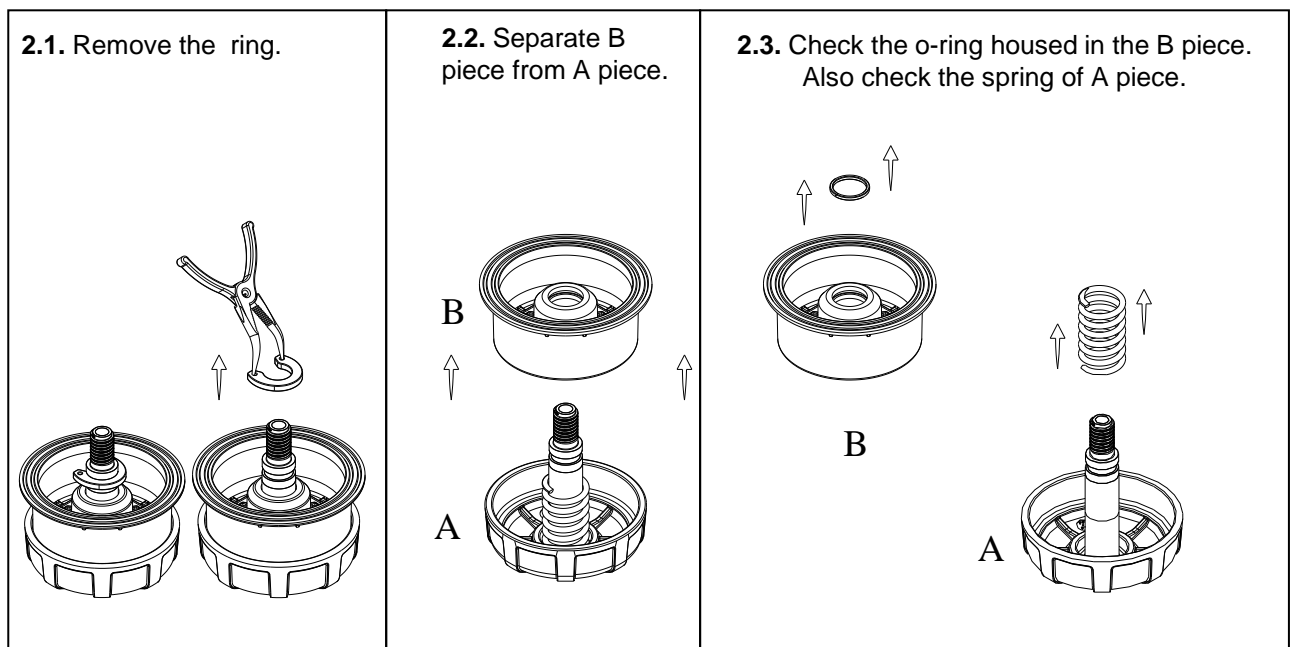
**If you have any doubt please contact us.**

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



## 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:

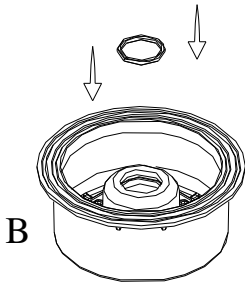


### 3. Assembly:

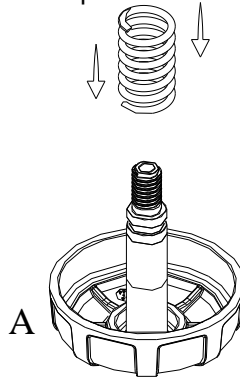


- Apply lubricant in the piston components for its assembly. Sistema AZUD recommends the use of neutral Vaseline.
- Check the chemical compatibility between the lubricant and the filter material

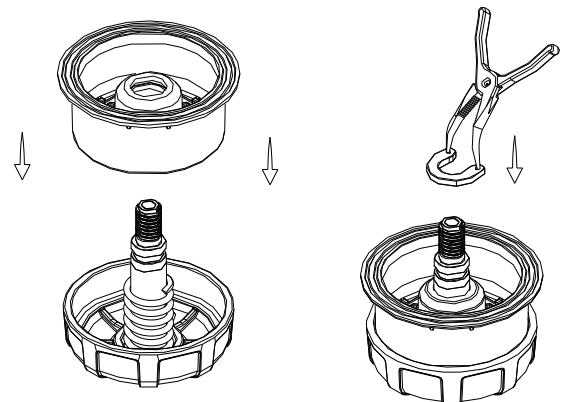
**3.1** Introduce one washer in the spring and the other in the rod of A piece



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

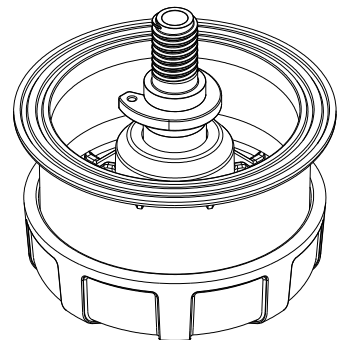


**3.3.** Introduce the B Piece on the axis of A piece. Fit the ring on the axis of B piece using the pliers until it fix in the groove of the rod.



**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.

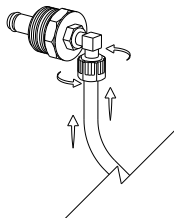
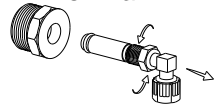
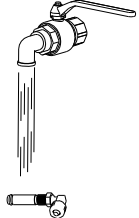
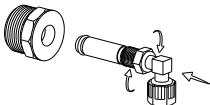
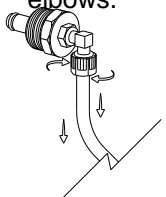


*Make sure that the Equipment is depressurized before carrying out any maintenance operation in which the interior of the Equipment is put into contact with the atmosphere.*

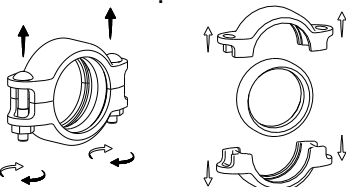
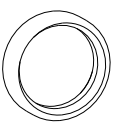
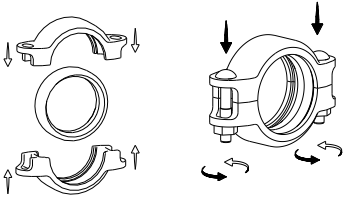
### 7.4.1.- Checking the 1/4" intake filters.



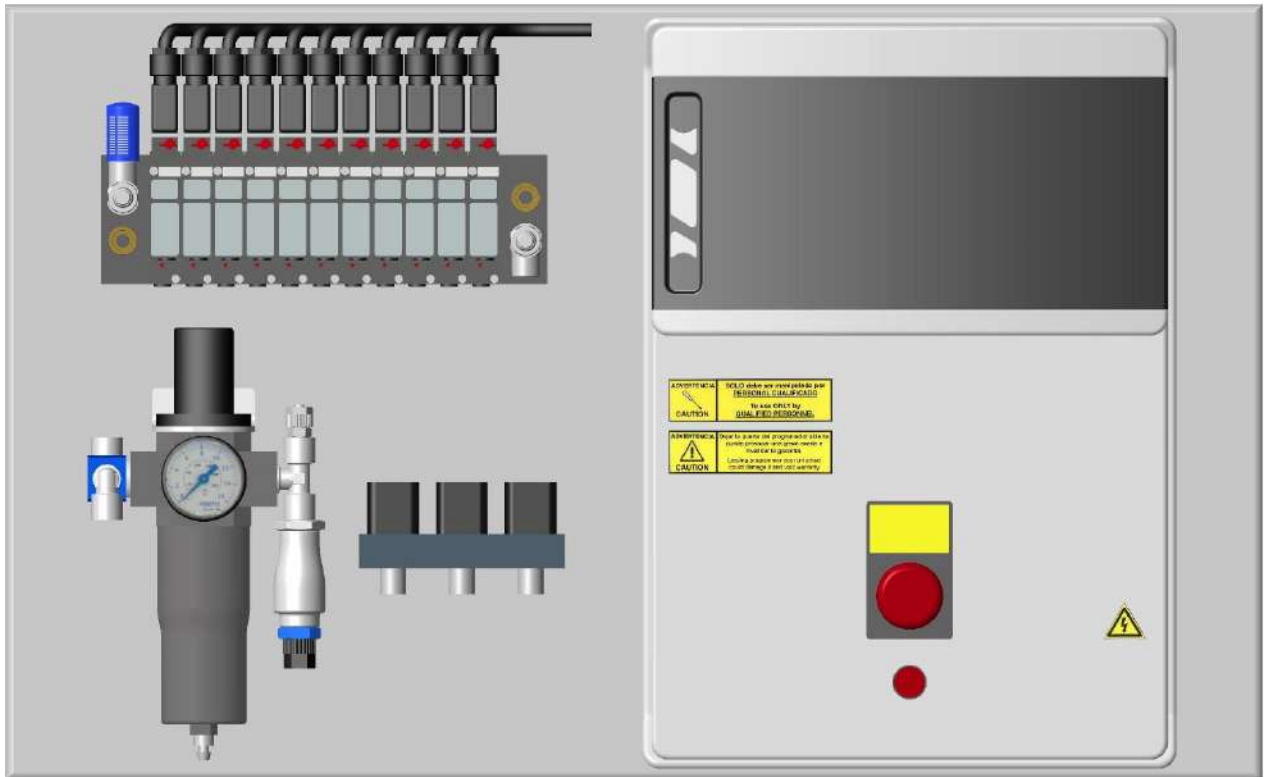
*Applying too much sealer or forcing the threads may damage them*

<p><b>1. Disconnect P1 and P2 microtubes</b></p> 	<p><b>2. Extract the 1/4" filters of each intake in the inlet and outlet manifolds and in the sustaining valve with a N.13 spanner or similar</b></p> 	<p><b>3. Clean them.</b></p> 	<p><b>4. Place the 1/4" filters in manifolds with a spanner N.13 or similar previously applying sealer in the thread</b></p> 	<p><b>5. Connect the command microtubes P1 &amp; P2 to the 8x1/8" male elbows.</b></p> 
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### 7.4.2.- Maintenance of the Grooved couplings.

<p><b>1. Disassemble the grooved coupling with a spanner or similar</b></p> 	<p><b>2. Apply grease to the coupling joint</b></p> 	<p><b>3. Assemble the coupling</b></p> 
---	---	---

# AZUD FBC 112/3 HP 220 V AC



Serial number:  
**20006966**

## 8. Introduction

Thank you very much for your confidence in AZUD FBC control units to solve your Filtration Equipments Automation needs. Please, read carefully this manual and you will find the answer to most of your questions.

However, **IF YOU HAVE ANY DOUBT OR NEED ADDITIONAL INFORMATION, PLEASE CONTACT US IN THE FOLLOWING NUMBER +34 968808402 OR IN THE E-MAIL [azud@azud.com](mailto:azud@azud.com)**

All the control units manufactured in SISTEMA AZUD, S.A are subject to strict quality control tests and are manufactured under a productive process which meets 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 contains some instructions and warnings which should be observed to obtain a correct installation, operation and subsequent maintenance of the Control Unit.***

## 9. Characteristics of the Control Unit.

### 9.1 Presentation.

**AZUD FBC Control Unit** is able to control the automatic backflushing of the filtration equipments with different possibilities of start and actuation. AZUD FBC Control Unit integrates **the detection, control and activation systems** of the backflushing cycle of the filtration systems.

**Electronic control system.** Integrated controller to control all the detection and activation functions. It is assembled on an electric cabinet with degree of protection IP 55.

**Detection system.** Easy reading Pressure transmitter 0-16 bar.

**Activation system.** 24 V DC, 4/2 ways pneumatic electrovalves.

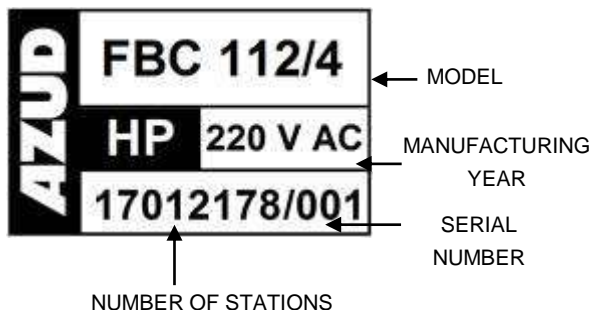
All the component are completely assembled and contains the auxiliary elements which complete the electric and pneumatic system turning the Control Unit into an independent and automatic system.

### 9.2. Identification of the product.

In AZUD we identify each Control Unit with an **industrial label** with a unique serial number. The factory identifies the different control units with these labels.

The industrial label indicates: the model of the equipment, the number of stations, the year of manufacture and the serial number.

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



## 9.3 Technical Data AZUD FBC Control Unit.

VOLTAGE	220 V AC
CONSUMPTION	1 A
OUTPUT FUSE	2 A 24 V 5 x 20 mm
FEEDING FUSE	1A A 220 V 5 x 20 mm
SOLENOIDS	LOW CONSUMPTION
OUTPUT CONSUMPTION	MAXIMUM 1 A
ADMISSIBLE TEMP.	5 – 50°C

	OUTPUTS	INPUTS
NUMBER	13	4
TYPE	VOLTAGE	CONTACT FREE OF VOLTAGE



**Do not connect AZUD FBC Control Unit in installations fed by a power generator. The variations in voltage could damage it.**

## 9.4 Types of activation and backflushing cycles.

### 1- By interval of working time of the installation.

A backflushing cycle will be activated each time the programming time passes.

### 2- By differential of pressure.

A backflushing cycle will be activated each time there is a differential of pressure in the equipment equal or higher than the regulated in the Control Unit, and after the confirmation time of the pressure gauge programmed in the **FBC**.

### 3- By external or remote signal.

A backflush will be activated when sending a contact free of tension to the corresponding input of the FBC trough an external or remote signal.

### 4- Manually.

You can activate a backflushing cycle manually, through the keyboard of your Control Unit. The backflush will be activated when you keep pressed the button.

Press "OK" for a while to activate the backflushing process



**AZUD FBC** Control Unit will allow to keep all this options at the same time, or select just some of them.

## 9.5.- Working Description.

AZUD FBC Control Unit integrates all the control, detection and operation elements that allow AZUD HELIX AUTOMATIC filtration equipment to have a complete autonomy. All the components are supplied already assembled, with the auxiliary elements that complete the electric and pneumatic system, turning the Control Unit into an autonomous and automatic system.

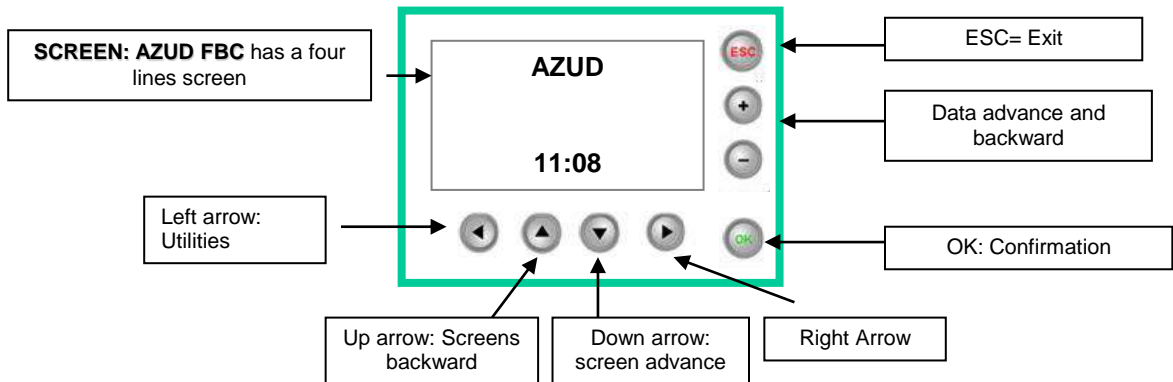
The electronic control system and the auxiliary electrical elements are placed in a water-tightness housing, completely isolated from the hydraulic components.

### ***Working Description:***

- The start of the sequential self-cleaning process is made when the Control Unit activates the backflushing cycle under one of the four possible orders: existing differential of pressure, attending to the frequency of irrigation, by direct actuation on the keyboard or by external signal.
- The programmer which integrates the Control Unit, activates the electric contact which supplies voltage to the solenoid, in charge of activating the first station that makes the self-cleaning process; transforming the electric signal into a pneumatic signal in charge of activating the valve.
- Through the activation of the inlet valve, the entrance of water to the filter closes and the interior of the filter is connected to the drainage manifold. This allows the filtered water from the rest of the filters to be introduced in the opposite way from the filtration direction, activating the self-cleaning mechanism of filtration discs.
- The deactivation of the solenoid from station n.1 allows the valve to come back to its resting position so the filter goes back to the filtration process.
- Once the station n.1 finishes the backflushing process, this is sequentially repeated until finishing all the stations in the filtration equipment.
- The end of the self-cleaning process corresponds to the closure of the drainage and the opening of the inlet into the filter, re-establishing the filtration conditions.

### 10. Programming of AZUD FBC Control Unit.

#### 10.1. Control Unit Site Map



The key allows the access from any screen to the main screen.  
Press the key before making consult or modification in the programming values.  
Press to stop the backflushing process.



Keep pressed to activated manually a whole backflushing cycle.

The numeric values in red are can be changed by the user.

To modify the numeric value in the screen

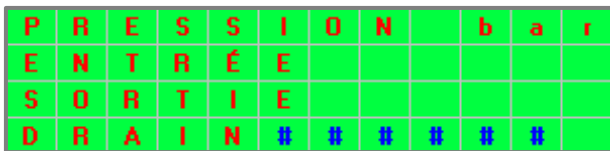
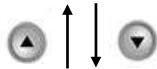
- Press the key
- Increase / decrease the numeric value
- Validation of the new value

If the screen has more than a numeric value to modify we can select it with the direction keys



## 10.2. Main screens

The main screens indicate the version of the software and all the pressure data such as the inlet/outlet pressure and the differential pressure.



### AZUD FBC HP V01:

This is the main screen, that indicates the version of the software, hour and date.

### COUNTER:

- **TOTAL:** Total number of backflushing cycles recorded since the filter's start-up. Non-resettable parameter.
- **PARTIAL:** This resettable parameter indicates the number of backflushing cycles that has been done since its last reset. Press "ok" from the keyboard to reset it.

**PRESSURE:** This screen indicates the different pressures of the system, expressed in BAR:

- **INLET:** Pressure at the inlet of the filter
- **OUTLET:** Pressure at the outlet of the filter
- **DRAIN:** Pressure at the drainage manifold

This screen indicates the differential pressure between the inlet and the outlet of the filter, expressed in BAR.

## 3.3. Adjustable parameters

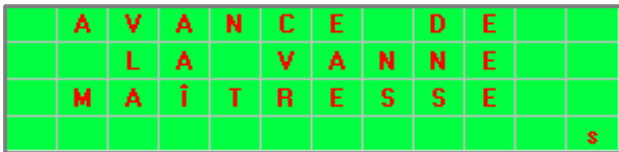
The different parameters to be programmed of your Control Unit are presented below. **AZUD FBC HP** incorporates a standard programming which allows the user to start-up the filtration equipment for the first time and being familiar with the programming to be adapted to the particular conditions of his installation.





## 10.4. Status displays

The following screens appear when the backflushing cycle begins.



### BACKFLUSH MASTER VALVE:

This screen appears when the filter actuate the sustaining valve to generate counter pressure before initiating the backflushing cycle.

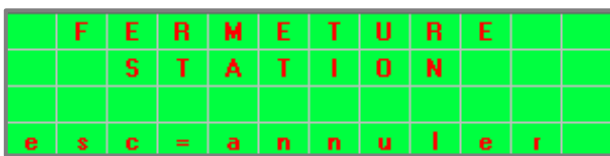
Press "esc" to cancel the operation.



### BACKFLUSH FILTER 1:

This screen appears when the filter initiate its backflushing cycle.

Press "esc" to cancel the operation.



### CLOSING FILTER 1:

When the backflushing of a station is over, the control unit awaits a defined amount of time before initiating the backflushing of the next station.

Press "esc" to cancel the operation.

## 10.5. Alarms displays

Hereafter are listed and detailed the different types of alarms available.



			A	R	R	É	T				
	D	'	U	R	G	E	N	C	E		
			e	s	c	=	r	e	s	e	t

### STOP OF EMERGENCY:

This screen appears when the emergency stop push button is activated. Once the button is unlocked, press “esc” from the keyboard to remove this screen



A	L	A	R	M	E		H	A	U	T	E
	P	R	E	S	S	I	O	N			
	D	'	E	N	T	R	É	E			
			e	s	c	=	r	e	s	e	t

### ALARM HIGH INLET PRESSURE:

Alarm that indicates a high inlet pressure of the filter. This alarm appears when the inlet pressure reaches 15.5 bar.

Press “esc” to reset this alarm.



A	L	A	R	M	E		H	A	U	T	E	
	P	R	E	S	S	I	O	N				
	D	I	F	F	É	R	E	N	T	I	E	L
			e	s	c	=	r	e	s	e	t	

### ALARM HIGH DIFFERENTIAL PRESSURE:

Alarm that indicates a high differential pressure between the inlet and outlet of the filter. This alarm appears when the differential pressure reaches 2 bar.

Press “esc” to reset this alarm.



A	L	A	R	M		B	A	I	S	S	E
			P	R	E	S	S	I	O	N	
			e	s	c	=	r	e	s	e	t

### ALARM LOW BACKFLUSH PRESSURE:

Alarm that indicates when there is not enough pressure for backflushing. This alarm appears when the outlet pressure is lower than 1.5 bar.

Press “esc” to reset this alarm.

## 11. Auxiliary Elements

**PSV:** This output is under tension during the whole backflushing phase. The use of this dry contact is various in function of the type of installation the AZUD equipment is installed in.

For example it can be used to disable the washing phase of other equipment within the installation.



**TRC:** Time real counter

**DP:** Differential pressure

An external differential pressure gauge can be connected to this input

**ExA:** external backwash activation

This dry contact can be used to activate the backwash using an external signal

**ExS:** external stop

This dry contact can be used to stop the backwash in process by using an external signal

## 11.4 How to activate the backflushings by real filtration time?

### Option 1: Activation of the backflush once time counter has passed.

If you want FBC Azud Control Unit to time, it must exist a free-tension contact in the electrical connections, common and input TRC (See electrical connections or picture p9 )

AZUD supplies the control unit with an electric jumper joining the electrical connections. In this way, if backflushes are selected by time, the backflush cycle is activated once the programmed time is finished.

The time counted is time of equipment electrically feeding.

### Option 2: Activation of the backflush once the real operation time has passed.

If you want to count the real time of filtering water you can use the contact of the auxiliary relay of the pump or any other device that detects the flow of water. This would be the option recommended by AZUD.

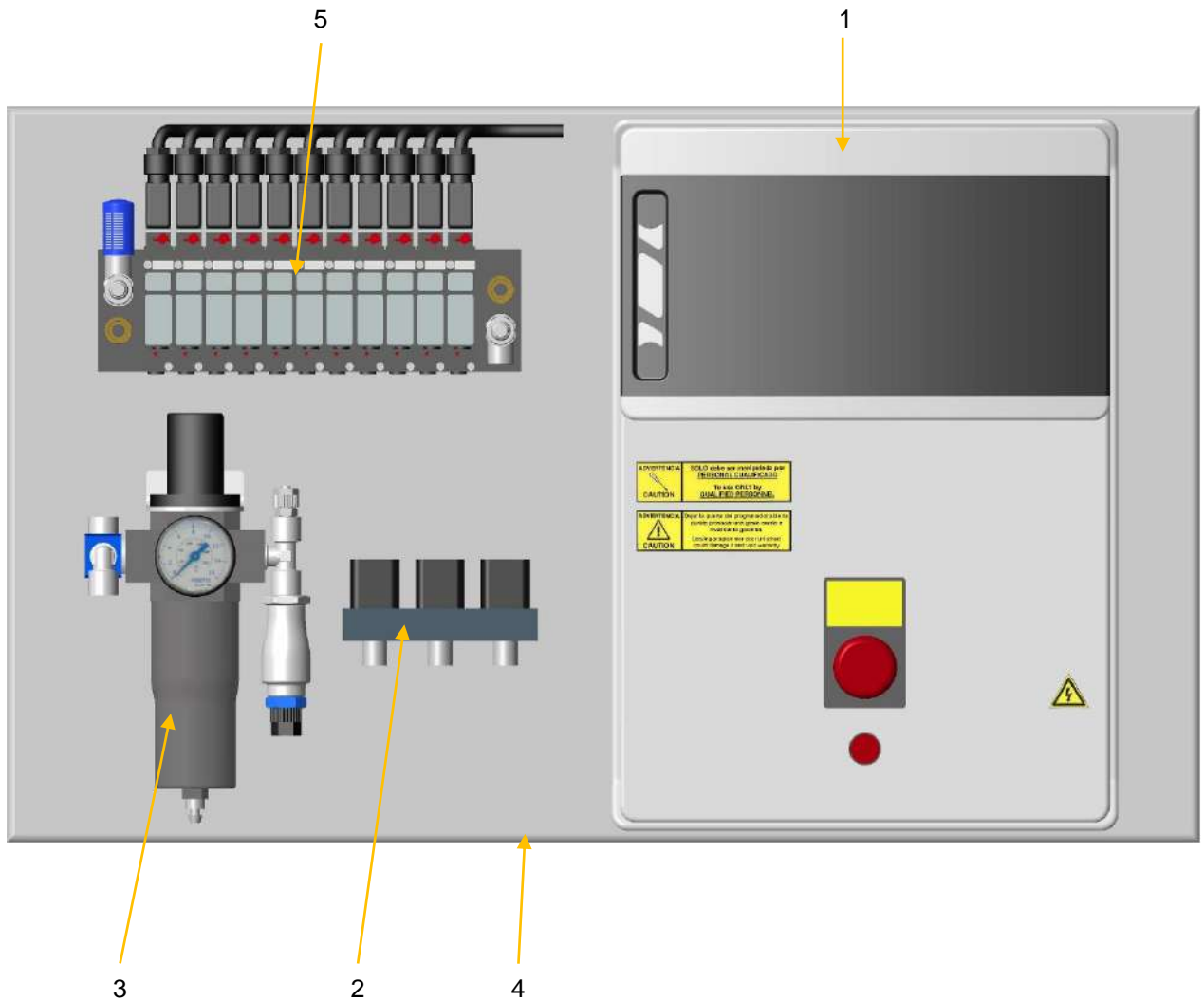
Such contact will be connected to input TRC after removing the jumper so the control unit will count the real operating time of the equipment. (See electrical connections or picture p9 )

**AZUD RECOMMENDS TO HAVE ALWAYS ACTIVATED THE BACKFLUSHING BY TIME**

Electrical jumper for the time counter



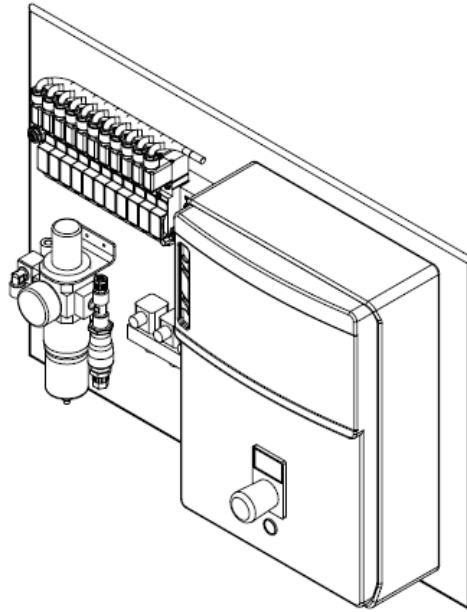
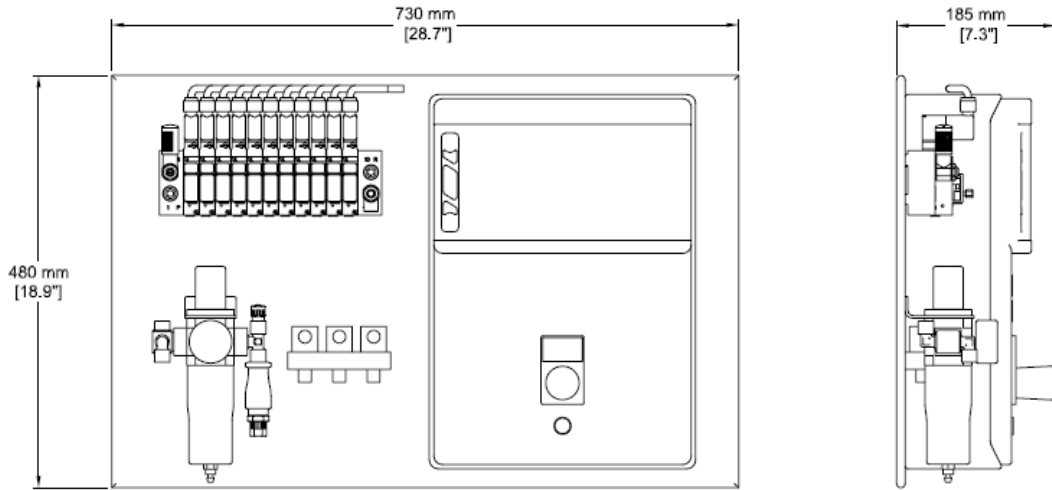
## 12. Components and spare parts.



COMPONENTS OF AZUD FBC CONTROL UNIT			
NUMBER	CODE	DESCRIPTION	MATERIAL
1	-----	PROGRAMMER	-----
2	-----	PRESSURE TRANSMITTER	-----
3	-----	REGULATOR FILTER	-----
4	-----	CONTROL UNIT SUPPORT	-----
5	-----	PNEUMATIC ELECTROVALVES	-----

Please indicate the serial number of the Control Unit to the request of spare parts.

## 13. DIMENTIONS AZUD FBC 111 HP WITH PP PANEL



**AZUD**

SCALE  
S/E  
A4 FORMAT

AZUD FBC 111 HP

RESPONS.: M. Martínez

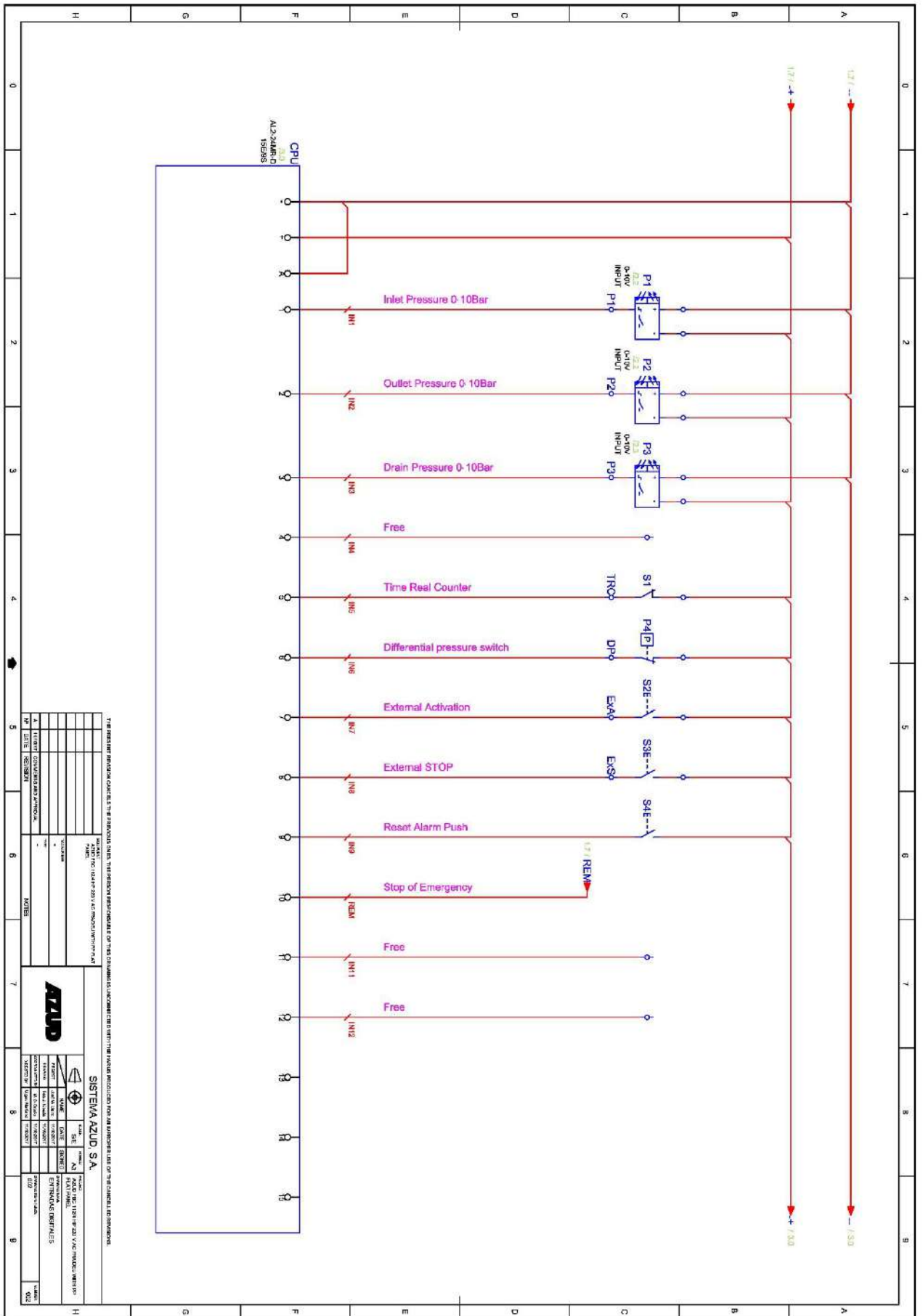
REVISION: 00

UNITS: mm [in]

DATE: 03/10/2017

THE PRESENT REVISION CANCELS THE PREVIOUS ONES. THE PERSON RESPONSABLE OF THIS DRAWING IS UNCONNECTED WITH THE HARMS PRODUCED FOR AN IMPROPER USE OF THE CANCELLED REVISIONS.  
LA PRESENTE REVISIÓN ANULA LAS ANTERIORES. EL RESPONSABLE DE ESTE PLANO ES AJENO A LOS PERJUICIOS OCASIONADOS POR EL USO INDEBIDO DE REVISIONES ANULADAS





THE PRODUCT INFORMATION CONTAINED IN THIS MANUAL IS SUBJECT TO CHANGE WITHOUT NOTICE. THE COMPANY ASSUMES NO RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS THAT MAY APPEAR IN THIS MANUAL.

NO.	DATE	REVISION	NOTES

**AZUD**

**SISTEMA AZUD, S.A.**

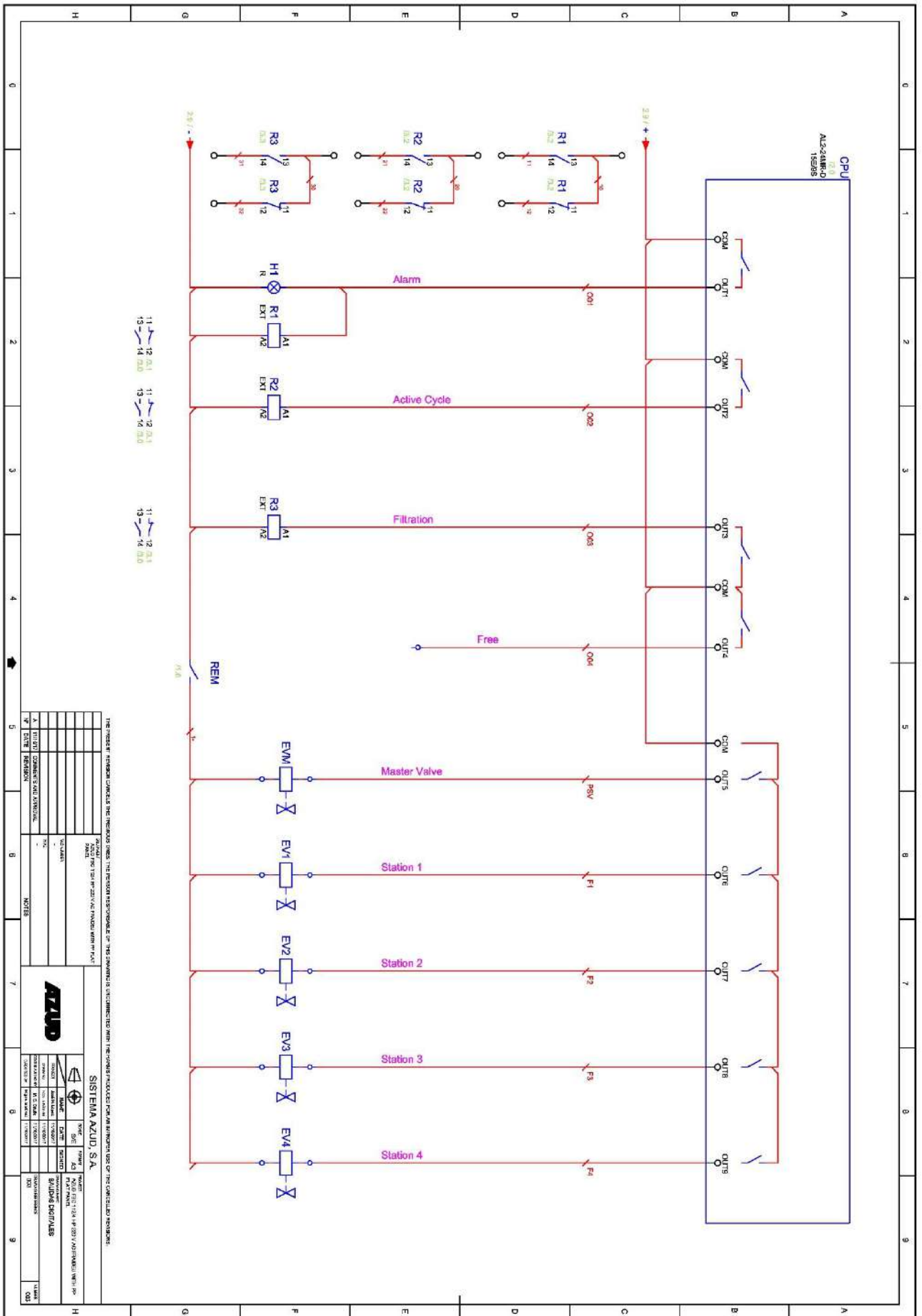
AVDA. DE LA UNIV. DE VAL. 22, 46100 BURJASSOT, VAL. (SPAIN)

TEL: +34 91 488 11 00 FAX: +34 91 488 11 01

WWW.AZUD.COM

EMAIL: SALES@AZUD.COM





THE USER ASSUMES LIABILITY FOR THE INCORRECT USE OF THIS DOCUMENT. THE USER IS RESPONSIBLE FOR THE CORRECT USE OF THE INFORMATION PROVIDED IN THIS DOCUMENT.

GENERAL INFORMATION		PROJECT INFORMATION		CLIENT INFORMATION		DATE	
PROJECT NAME	PROJECT NUMBER	CLIENT NAME	CLIENT ADDRESS	DATE	DATE	DATE	DATE
PROJECT LOCATION	PROJECT DESCRIPTION	CLIENT CONTACT	CLIENT PHONE	DATE	DATE	DATE	DATE
PROJECT STATUS	PROJECT PHASE	CLIENT EMAIL	CLIENT FAX	DATE	DATE	DATE	DATE
PROJECT TYPE	PROJECT VALUE	CLIENT WEBSITE	CLIENT LOGO	DATE	DATE	DATE	DATE

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
3. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
4. ALL DIMENSIONS ARE TO EDGE UNLESS OTHERWISE SPECIFIED.
5. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
6. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
7. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
8. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
9. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.



## 15. Safety Information

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.

**Any additional requirement or change in its use could cause damages not covered by the warranty.**



- The transmission of electric current to the human body could cause serious burns and even death.
- Take all the necessary precautions to avoid electric discharges and damages on people, goods and the equipment.
- The electrical installation should be carried out by a qualified electrician.
- Do use insulating clothing, authorized safety equipments and tools which insulate the electrical current.
- Do never take away the electrical protection.
- Do not touch the Control Unit with wet hands
- Do not put your hands in the electric boards, circuits ... There is a risk of electrocution.
- An independent earth connection for the equipment should be provided.
- The equipment´s installation should be carried out only by qualified staff.



- A 6A magneto-thermal switch and a 16 A differential should be installed as a cut-out switch, close and accessible to the user.
- The equipment should have its own supply.
- The equipment´s feeding should be directly taken from the main switch, avoiding the connection of any other electric device in/to the same feed-line of the equipment. It is recommended the 1.5 mm<sup>2</sup> H05VV-F3G cable for its connection to the mains.
- As far as possible, set the power circuits away from the electrical machines.
- If the inductive circuits, as well as the contactor ones, electrovalves, etc, are installed next to the system, it is essential not to parasite your bobbin with RC filters.
- The fluctuations of the net are acceptable just up to the indicated tolerances ( $\pm 5\%$ ).
- Do not connect control circuits (relays, contactors) to the connection terminals of the system to the net.
- Avoid electromagnetic interferences. This kind of interferences are due mainly to: electric engines, transformation centres, cables of electric energy transmission, power contactors and any other electrical power mechanism without the proper electromagnetic insulation.

## 16. Installation Instructions.

### 16.1 Connection of the BAP with the Filtration Equipment.

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

COMMAND	DESCRIPTION: Use and connection
P1	Pressure tap in inlet manifold, to be connected to the pressure transducer P1.
P2	Pressure tap in outlet manifold, to be connected to the pressure transducer P2.
P3	Pressure intake of the drainage manifold, to be connected to the pressure transducer P3.
E1	Backwash stage signal for Station 1. Inlet valve of Station 1 is closed and drainage valve of Station 1 is opened.
S1	Filtration stage signal for Station 1. Inlet valve of Station 1 is opened.
En	Backwash stage signal for Station n. Inlet valve of Station n is closed and drainage valve of Station n is opened.
Sn	Filtration stage signal for Station n. Inlet valve of Station n is opened.



#### \* 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.

#### PNEUMATIC PRESSURE REQUIRED FOR THE OPERATION OF THE VALVES 6 bar

#### ***Adjust the air income to the circuit of the pneumatic command***

*To adjust the inlet pressure of the air intake it should be taken into account the inlet pressure of water in the filtration equipment.*

*It is not necessary the use of lubrication in the air treatment of the pneumatic command. It can even damage some components.*

*The instructions and warnings should be taken into account in order to obtain a correct installation, working and post-working of the Equipment. Not obeying the instructions or warning can cause damages or failure in the working of the equipment.*



## 16. Installation Instructions.

### 16.1 Connection of the BAP with the Filtration Equipment.

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

COMMAND	DESCRIPTION: Use and connection
P1	Pressure tap in inlet manifold, to be connected to the differential pressure gauge*.
P2	Pressure tap in outlet manifold, to be connected to the pressure differential gauge*.
P3	Pressure intake of the drainage manifold, connection of low pressure of the pressure transducer*.
E1	Backwash stage signal for Station 1. Inlet valve of Station 1 is closed and drainage valve of Station 1 is opened.
S1	Filtration stage signal for Station 1. Inlet valve of Station 1 is opened.
En	Backwash stage signal for Station n. Inlet valve of Station n is closed and drainage valve of Station n is opened.
Sn	Filtration stage signal for Station n. Inlet valve of Station n is opened.



#### \* GLOSSARY

<b>STATION</b>	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.
<b>PRESSURE DIFFERENTIAL GAUGE</b>	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.

**PNEUMATIC PRESSURE REQUIRED FOR THE OPERATION OF THE VALVES 6 bar**

#### ***Adjust the air income to the circuit of the pneumatic command***

***To adjust the inlet pressure of the air intake it should be taken into account the inlet pressure of water in the filtration equipment.***

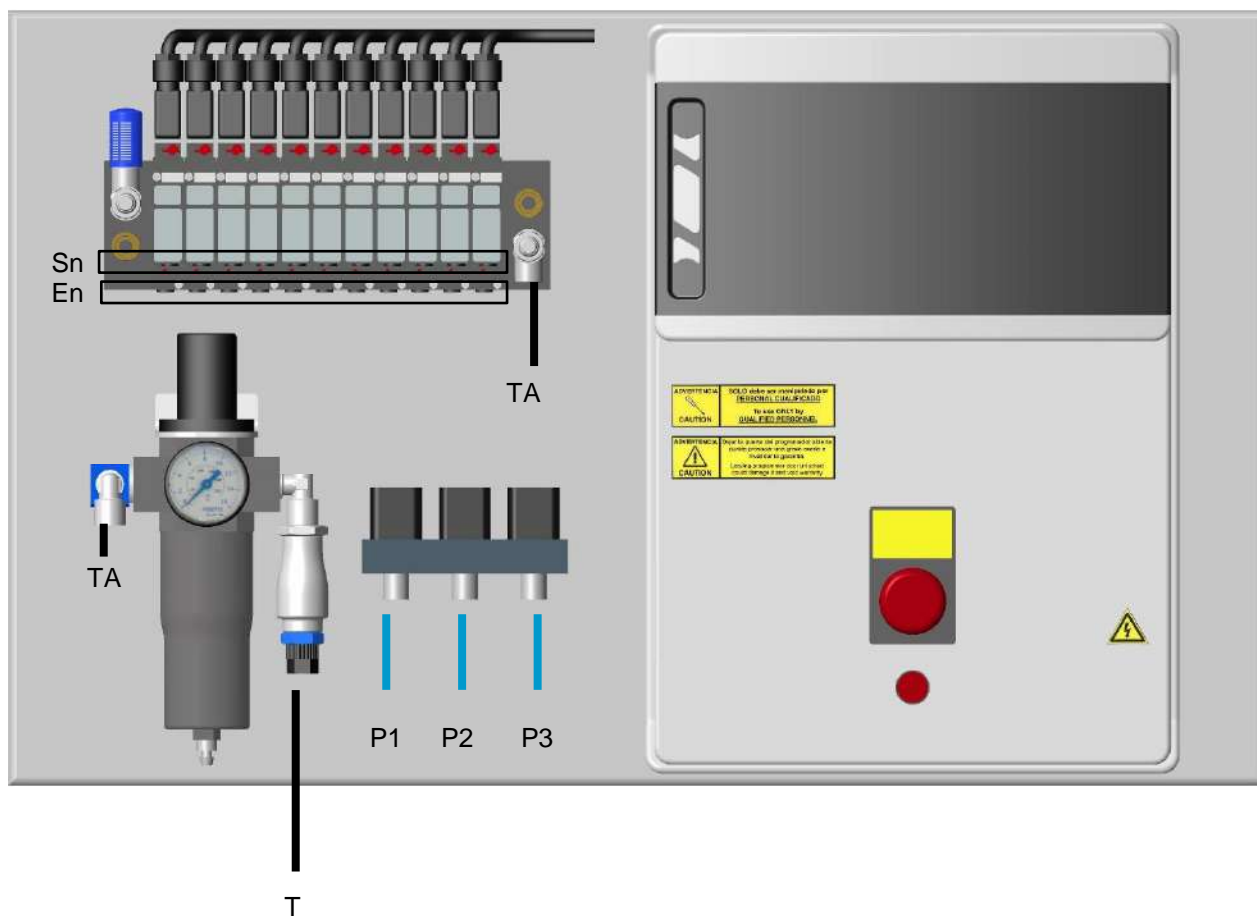
***It is not necessary the use of lubrication in the air treatment of the pneumatic command. It can even damage some components.***

***The instructions and warnings should be taken into account in order to obtain a correct installation, working and post-working of the Equipment. Not obeying the instructions or warning can cause damages or failure in the working of the equipment.***



## 16.2 Pneumatic and hydraulic connections between the BAP and the pressurized air equipment

Connect the intake source of air to the control Unit. To make this connection we leave in the pressure regulator a 12mm elbow of quick coupling.



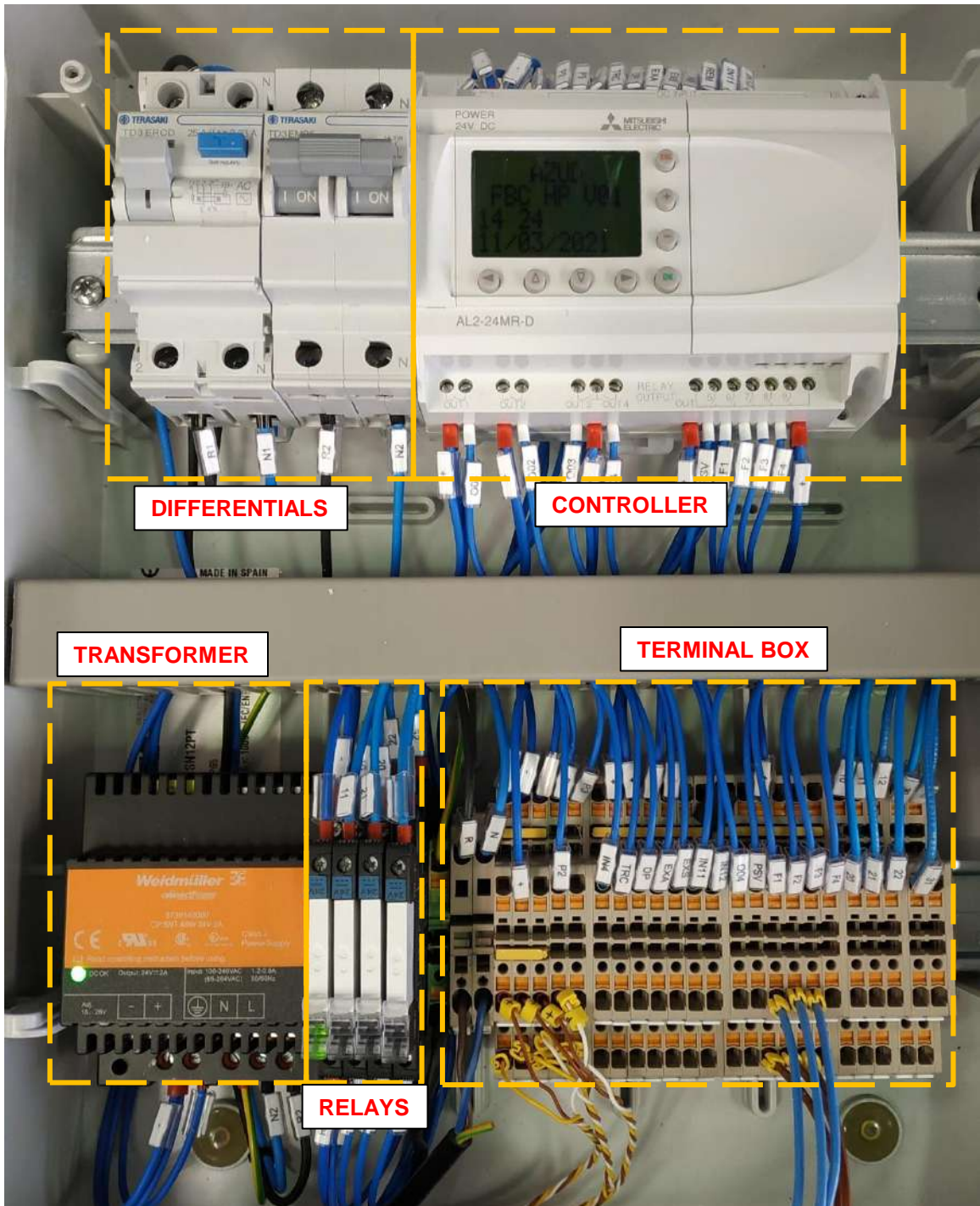
### INTAKE OF AIR "T" TO THE CONTROL UNIT

The solenoid block has a needle valve to adjust the inlet pressure of the pneumatic electrovalves. This device is adjusted from the factory.

— : Pneumatic connections

— : Hydraulic connections

## 17. AZUD FBC 112 HP 220 V AC CONTROLLER GRAPHIC FRAME



**DIFFERENTIALS**

**CONTROLLER**

**TRANSFORMER**

**TERMINAL BOX**

**RELAYS**

**PROGRAMMER COMPONENTS**

CODE	DESCRIPTION	UNITS
ID-CSN12PT	PVC BOX 1X12MOD	1
WE-8739140000	POWER SUPPLY PRO MAX 48W 24V 2A	1
ME-A9R60225	DIFFERENTIAL 2P 25A 30mA ACTI-9	1
ME-A9K17606	CIRCUIT BREAKER K60N 1P+N C-6A ACTI-9	1
MC-AL2-24MRD	PLC ALPHA XL 15DI 9DO RELE 24VDC	1
WE-1122770000	RELAY 1C 24V DC	4
WE-1010100000	PE TERMINAL, SCREW CONNECTION 4mm <sup>2</sup> , GREEN/YELLOW	2
WE-1020100000	FEED-THROUGH TERMINAL, SCREW CONNECTION 4 mm <sup>2</sup>	2
WE-1021500000	FEED-THROUGH TERMINAL, DOUBLE-TIER TERMINAL, 2.5 mm <sup>2</sup>	23
WE-1059100000	END PLATE	1
WE-0383560000	END BRACKET EW 35 TS 35	1
WE-1608940000	CROSS CONNECTOR 24 A 2,5mm	1
SCH-MM263467	STOP OF EMERGENCY	1
SCH-MM216925	ILLUMINATED PUSH-BUTTON RED	1
SCH-MM216374	ADAPTER FRONT MOUNTING	2
SCH-MM216376	NO CONTACT BLOCK FRONT MOUNTING	1
SCH-MM216378	NC CONTACT BLOCK FRONT MOUNTING	1
SCH-MM216558	RED LED UNIT 18-30V AC/DC FRONT MOUNTING	1



## 18. Maintenance Instructions.



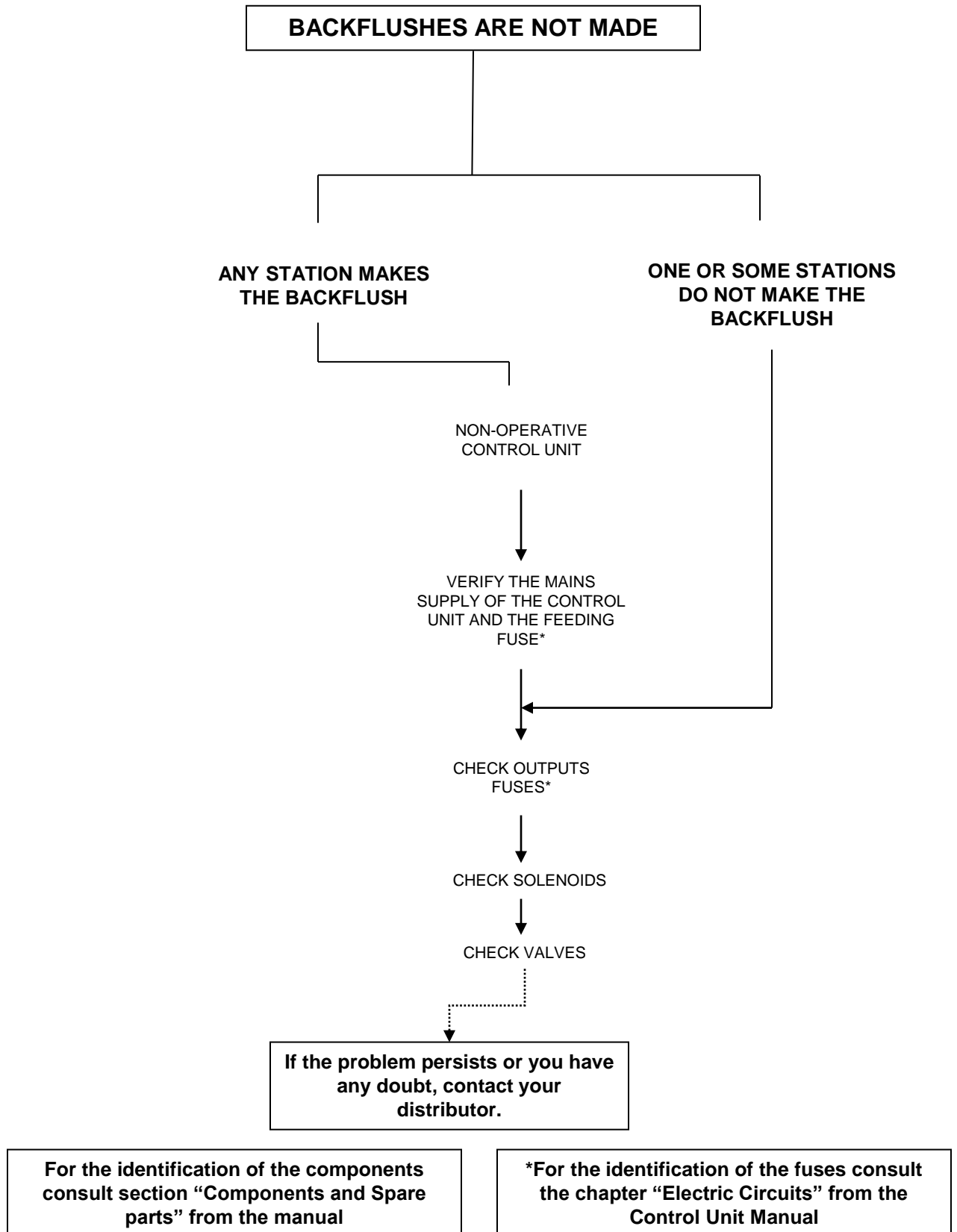
*Maintenance operations should be made by qualified staff*

In this section are described some very useful actions for the preparation of the Equipment 's Maintenance Plan. The checking period depends on the operation conditions, characteristics of the water to be filtered, operation hours, ...

AZUD recommends a three months period between the different reviews of the components which involve the disassembly of each element. However, **this period should be determined by the user** according to the unique characteristics of its installation.

<b>DAILY ACTIONS</b>
General visual inspection of the Unit Control
<b>PERIODICALLY ACTIONS</b>
1. Checking of the Pneumatic circuit of the Control Unit
2. Backflush manual activation to check the correct operation of all the solenoids.
4. ¼" In- line filter checking (the ones of the Equipment and the Sustaining)(See Filtration Equipment Manual)
5. Checking of the electrovalves conditions
6. Checking of backflush activation by pressure differential.
<b>YEARLY ACTIONS OR WHEN NEEDED</b>
Checking of the programming for its adaptation according to changes in the process conditions.

## 19. Possible problems-causes-solutions

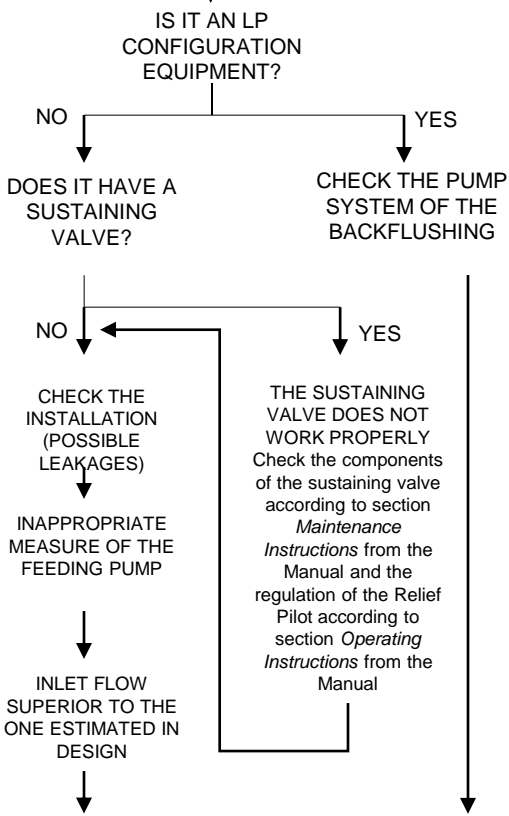


**CONTINUOUS OR TOO FREQUENT BACKFLUSHES**

**ACTIVATE A BACKFLUSH AND CHECK THE PRESSURE IN THE OUTLET MANIFOLD**

**PRESSURE INFERIOR TO THE MINIMUM REQUIRED.** See section "Technical Data" from the Filtration Equipment Manual

**PRESSURE EQUAL OR SUPERIOR TO THE MINIMUM REQUIRED.** See section "Technical Data" from the Filtration Equipment Manual



INCORRECT PROGRAMMING OF THE CONTROL UNIT

PROBLEM IN THE pressure transducer

INFLUENT WATER QUALITY LOWER TO THE ONE ESTIMATED IN DESIGN

RUNNING FLOW SUPERIOR TO THE ONE ESTIMATED IN DESIGN

TOO SHORT BACKFLUSHES TIME. Rise the value. See section "Backflushing time of each station" from the Control Unit Manual.

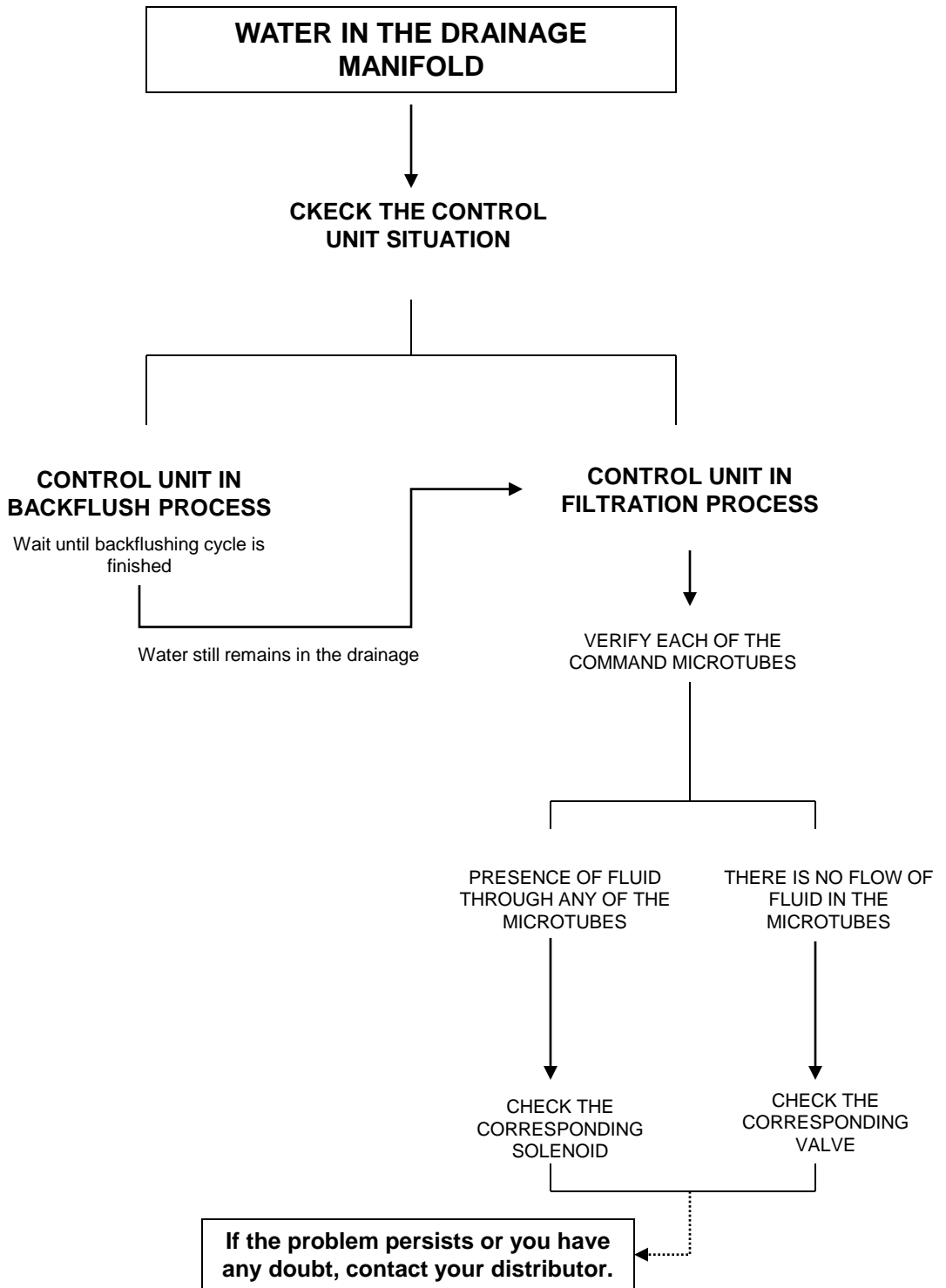
CHECK THE REGULATED VALUE IN THE pressure transducer. See section "pressure transducer Delay" from the Control Unit Manual

TOO SHORT TIME BETWEEN BACKFLUSHES. Rise the value. See section "Time between backflushes phases" from the Control Unit Manual

CHECK CONNECTIONS OF THE pressure transducer

**If the problem persists or you have any doubt, contact your distributor.**

**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

## **20. Warranty**

1. Sistema Azud, S.A. agrees formally either to replace any defective component or to repair any manufacturing or assembly defect if those of exclusively responsibility of Sistema Azud, S.A. the buyer must inform Sistema Azud, S.A. about the defects in a maximum period of one year from the delivery date. Once the period has expired, either refunds or claims due to those reasons will not be accepted. The warranty will cover no cost of displacement, neither of materials freight, nor the expenses of assembly or disassembling of products.
2. The express warranty provided herein is effective only if claim is made by written notice within the applicable warranty period and sent within thirty days after the notice of the defect on which the claim is based.
3. This warranty will not cover any defects or damages that result either from a wrong installation of the products and materials or a lack of maintenance or inadequate maintenance of the products and materials, to the wearing of the same, to the use of consumable materials not recommended by Sistema Azud, SA, and in general any other type of irregularities not involved with the operation of the same.
4. This warranty will not cover the damage or harm caused by operating the products in places, installations, environments or aims, without suitable conditions and characteristics to obtain an optimal output of the product.
5. Repairs made during the warranty period will not extend the time of the warranty.
6. This warranty will not cover the products and materials; components or accessories which have not been manufactured by Sistema Azud, S.A. or have not been directly bought from Sistema Azud, S.A. This warranty is not a consumer or final users warranty and does not extend to anyone other than those trade costumers who directly purchase from Sistema Azud, S.A.
7. It is excluded from this warranty damages and failures in the sold materials that result from fortuitous facts and force majeure, such as those caused by inadequate working conditions within the recommended intervals made by Sistema Azud, S.A, so much of working pressure, water quality, voltage and exposure conditions to aggressive environments (saline, acid, basic and others).
8. Sistema Azud, S.A. will be allowed to check the defects caused by the buyer by the means that may be considered to be appropriate, in any case and previously. The purchaser is not allowed to obstruct the proceedings of the people authorized by Sistema Azud, S.A. for verifying the facts.
9. This warranty will not cover those defects which can be attributable to alterations, modifications, or handling made by non-authorized personnel without the previous knowledge or without following the instructions given by Sistema Azud, S.A.
10. Sistema Azud, S.A. is not liable for direct, indirect, incidental, or consequential damages, including but not limited to possible damages in the system where the filtration equipment is integrated during defective working periods. Neither Sistema Azud, S.A. is liable for any loss of damage and property damage resulting from the inadequate installation and /or maintenance operations.
11. No person or organization is authorized to introduce any modification, nor verbal or written, 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, damages or compromises.

Note down the Equipment's serial number to request any spare part or to consult about your Equipment

SERIAL NUMBER \_\_\_\_\_

MODEL \_\_\_\_\_

YEAR OF MANUFACTURE \_\_\_\_\_

Request your spare parts to:

**SISTEMA AZUD, S.A.**

Polígono Industrial Oeste • Avda. de las  
Américas P. 6/6  
30820 ALCANTARILLA – MURCIA- SPAIN  
Tel. + 34 968 80 84 02  
Fax: +34 968 80 83 02  
E-mail: [azud@azud.com](mailto:azud@azud.com)  
[http:// www.azud.com](http://www.azud.com)