INSTALLATION MANUAL

MX FILTER

Efficient solutions
for **irrigation systems**

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1.

Description

The MX FILTER automatic heads are made up of 2″ and 3″ MX ring filters connected by PE manifolds. As a whole, these filters are able to perform the filtering and cleaning processes automatically due to the hydraulic valves located at the filter inlet and outlet. The automation of this equipment depends on the control unit, which opens and closes the valves, enabling the filtering and cleaning functions to occur simultaneously and with effective coordination. The range of equipment is configured to work according to the customer's needs, depending on the flow rate and water quality. The head comes fully assembled. Only the inlet, outlet and drain connections have to be installed, as well as the valve connections to the control unit (all connections are clearly marked).

1.1.

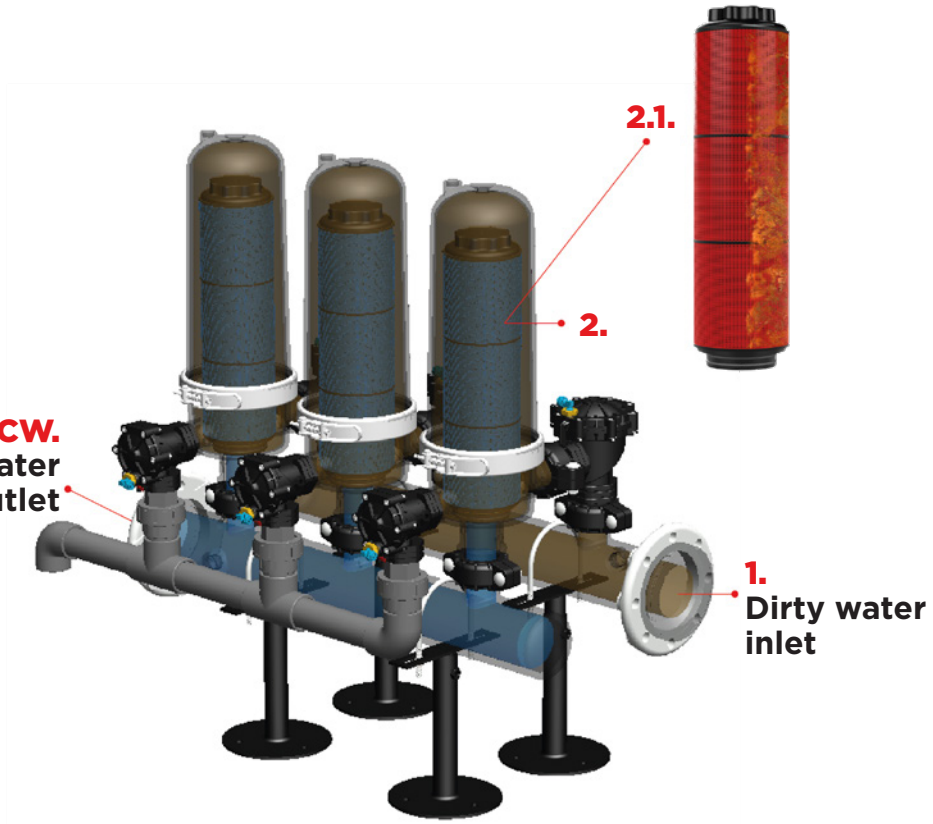
Operating principle

Water enters the header through the inlet manifold **1** , passing through the ring cartridge **2**. Dirt larger than that captured by the filtration degree is retained on the outer surface of the ring cartridges. The filtered water exits through the outlet manifold **3** into the system, so that the water is free of particles of a size that could cause damage to the system. As dirt accumulates on the walls of the cartridge, a pressure differential **PD** is generated between the head inlet and outlet, since as dirt accumulates, it obstructs the passage of water through the cartridge. Once the 0.5 bar preset pressure differential (**ΔP**) is reached between the inlet **DW** and the outlet **CW**, it is detected by the pressure sensor PS of the cleaning programmer **CP**, which starts cleaning the filters individually according to the set parameters. The programmer actuates the solenoids **NO1** and **NC1**, which allow the closing of the inlet valve as well as the opening of the first filter cleaning valve. At the moment of activation, a depression is caused, causing the water to change direction, flowing from the inside of the cartridge to the atmosphere, which causes the water to hit the dirt embedded in the ring cavities, causing the dirt to be expelled from the surface of the filter element. When the cleaning time set per filter has ended, the solenoids **NO1** and **NC1** return to their idle state and after some time the next filter cleaning is triggered. Once the cleaning cycle is finished and the pressure differential is recovered, the filter remains in the initial position, waiting for another cycle. Important: During the cleaning cycle, the filtering phase must not be interrupted. Otherwise, pressure loss may occur in the system during the washing process.

1.1.

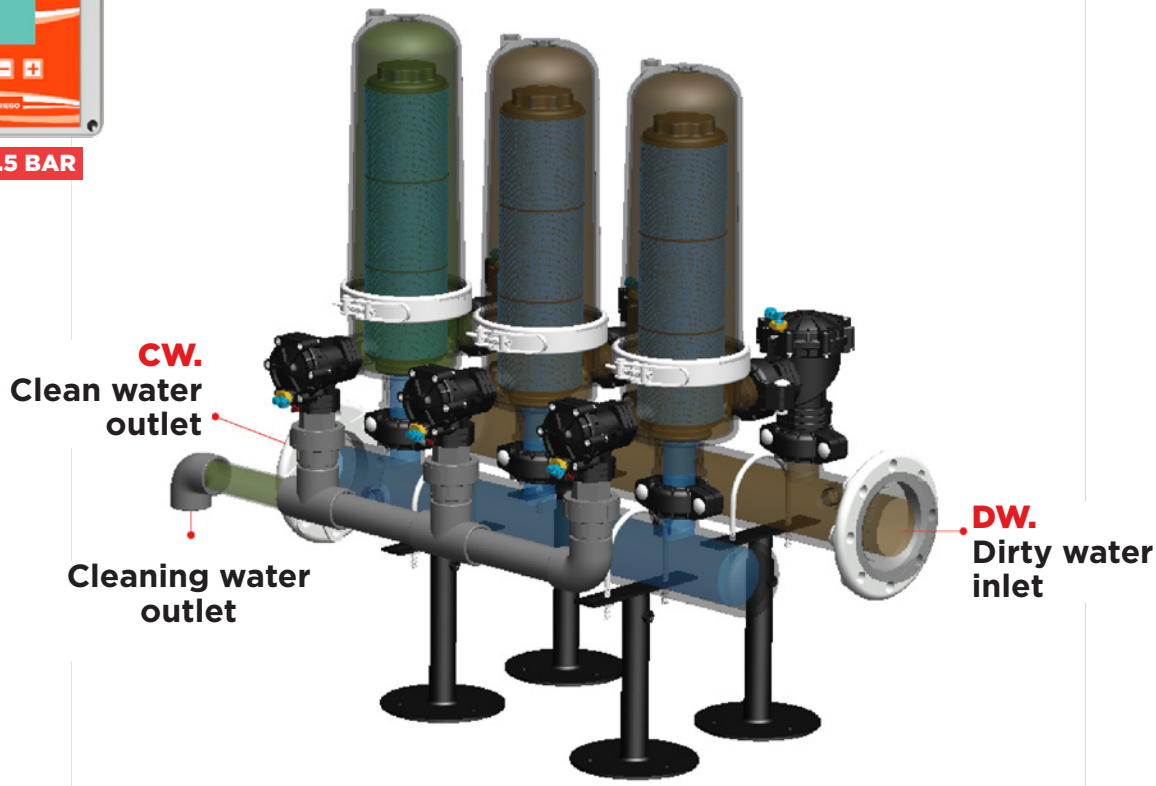
CP

PS: ΔP<0.5 BAR

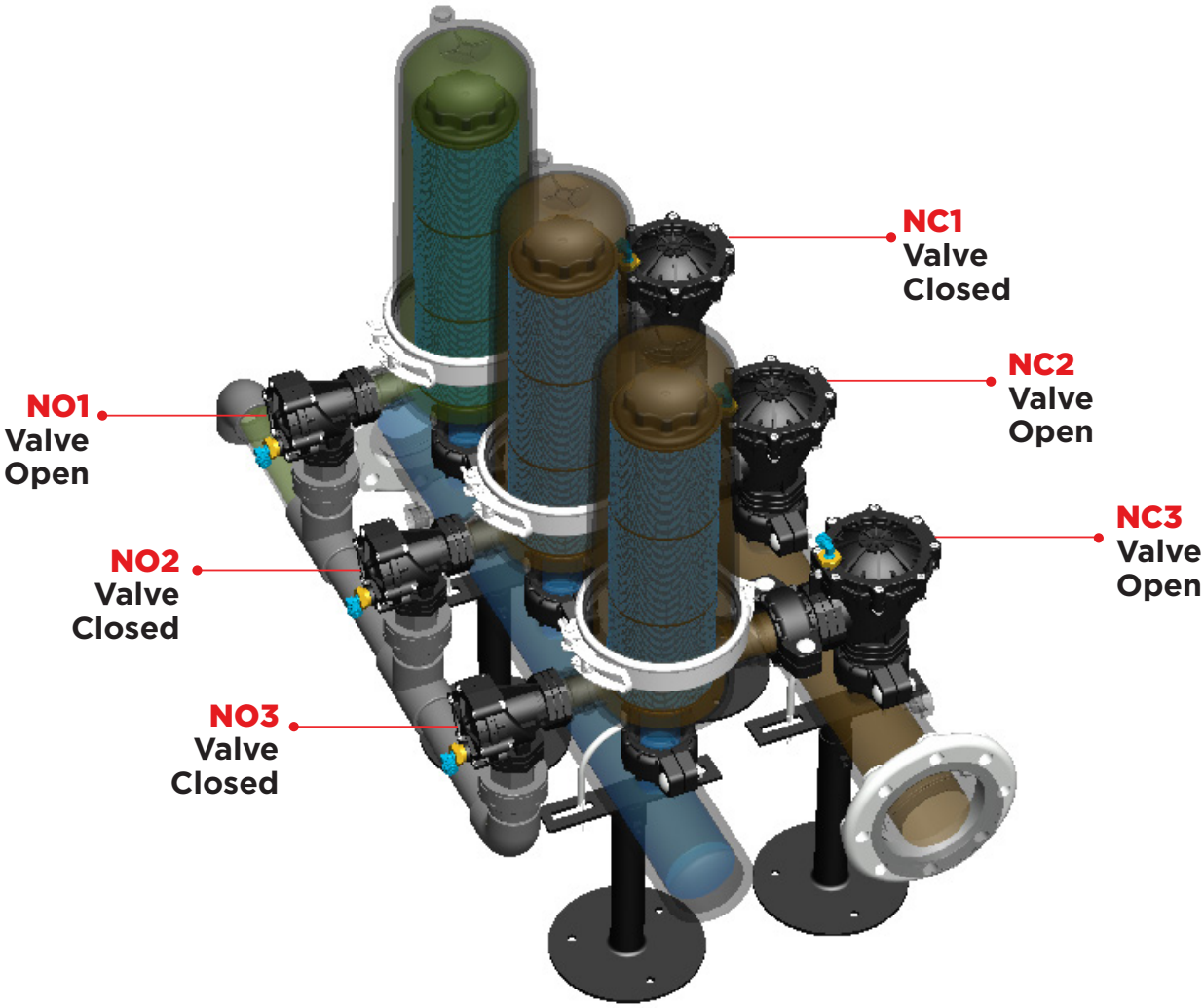


CP

PS: ΔP>0.5 BAR



1.1.


NC1
Valve
Closed
NC2
Valve
Open
NC3
Valve
Open
NO1
Valve
Open
NO2
Valve
Closed
NO3
Valve
Closed

2.

Technical details

2”

Recommended flow rates according to water quality		WATER QUALITY							
		120 mesh				150 mesh			
	PCS	HIGH (well)	MEDIUM (reservoir)	LOW (canal)	CODE	HIGH (well)	MEDIUM (reservoir)	LOW (canal)	CODE
2”	2 pcs	50m³	40m³	30m³	450842	45m³	36m³	27m³	450843
	3 pcs	75m³	60m³	45m³	450845	67.5m³	54m³	40.5m³	450846
	4 pcs	100m³	80m³	60m³	450847	90m³	72m³	54m³	458116
	5 pcs	125m³	100m³	75m³	458134	112.5m³	90m³	67.5m³	458133
	6 pcs	150m³	120m³	90m³	450849	135m³	108m³	81m³	458118

2.

Technical details

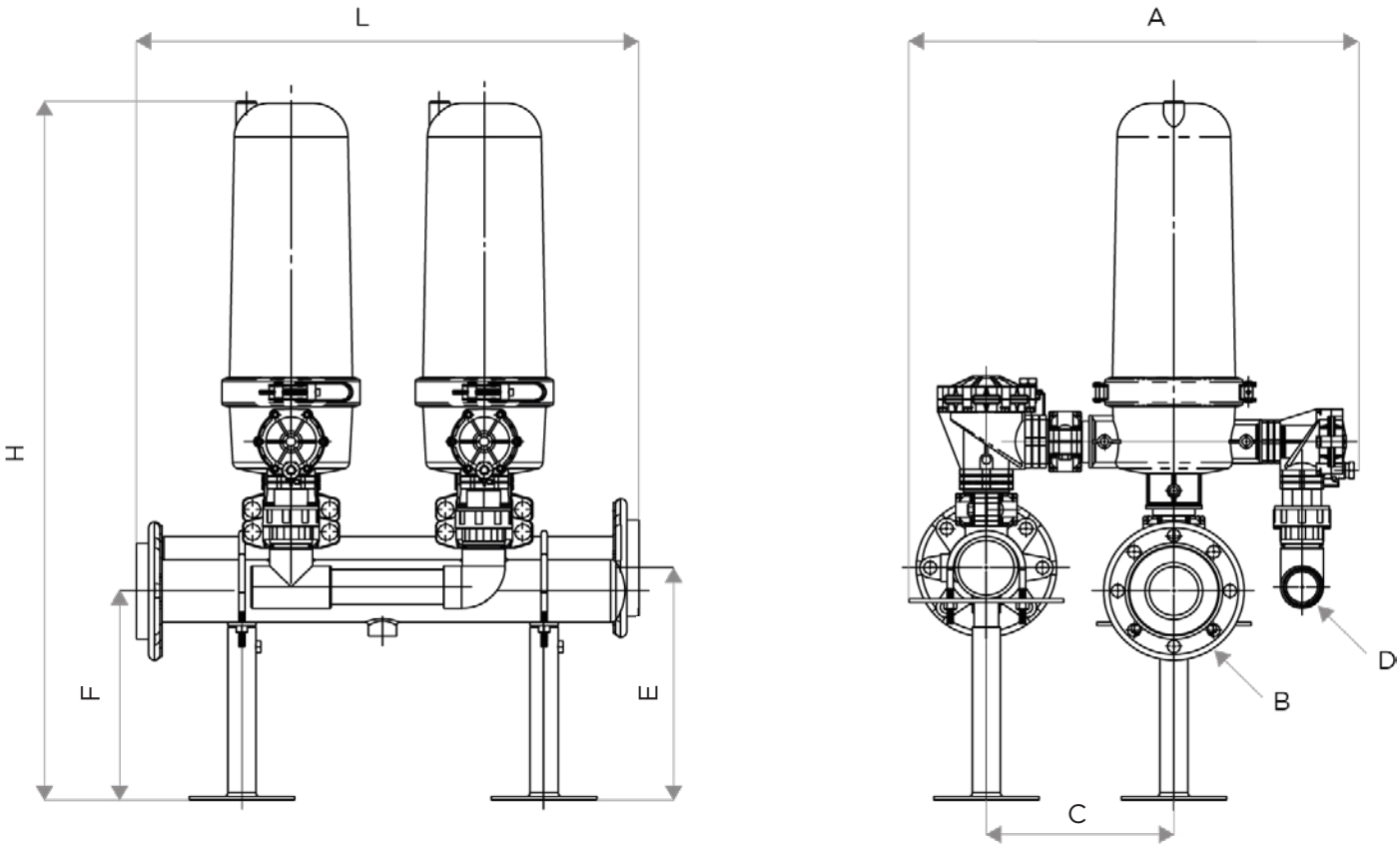
3

Recommended flow rates according to water quality		WATER QUALITY							
		120 mesh				150 mesh			
	PCS	HIGH (well)	MEDIUM (reservoir)	LOW (canal)	CODE	HIGH (well)	MEDIUM (reservoir)	LOW (canal)	CODE
3	2 pcs	70m³	50m³	36m³	461095	63m³	45m³	32.4m³	461121
	3 pcs	105m³	75m³	54m³	461114	94.5m³	67.5m³	48.6m³	461120
	4 pcs	140m³	100m³	72m³	460146	126m³	90m³	64.8m³	461021
	5 pcs	175m³	125m³	90m³	461022	157.5m³	112.5m³	81m³	461025
	6 pcs	210m³	150m³	108m³	461026	189m³	135m³	97.2m³	461027
	7 pcs	245m³	175m³	126m³	461023	220.5m³	157.5m³	113.4m³	461024
	8 pcs	280m³	200m³	144m³	459417	252m³	180m³	129.6m³	461020
	10 pcs	315m³	225m³	162m³	462453	283.5m³	202.5m³	145.8m³	462454

2.1.

Dimensions

Automatic Heads with 2" filters

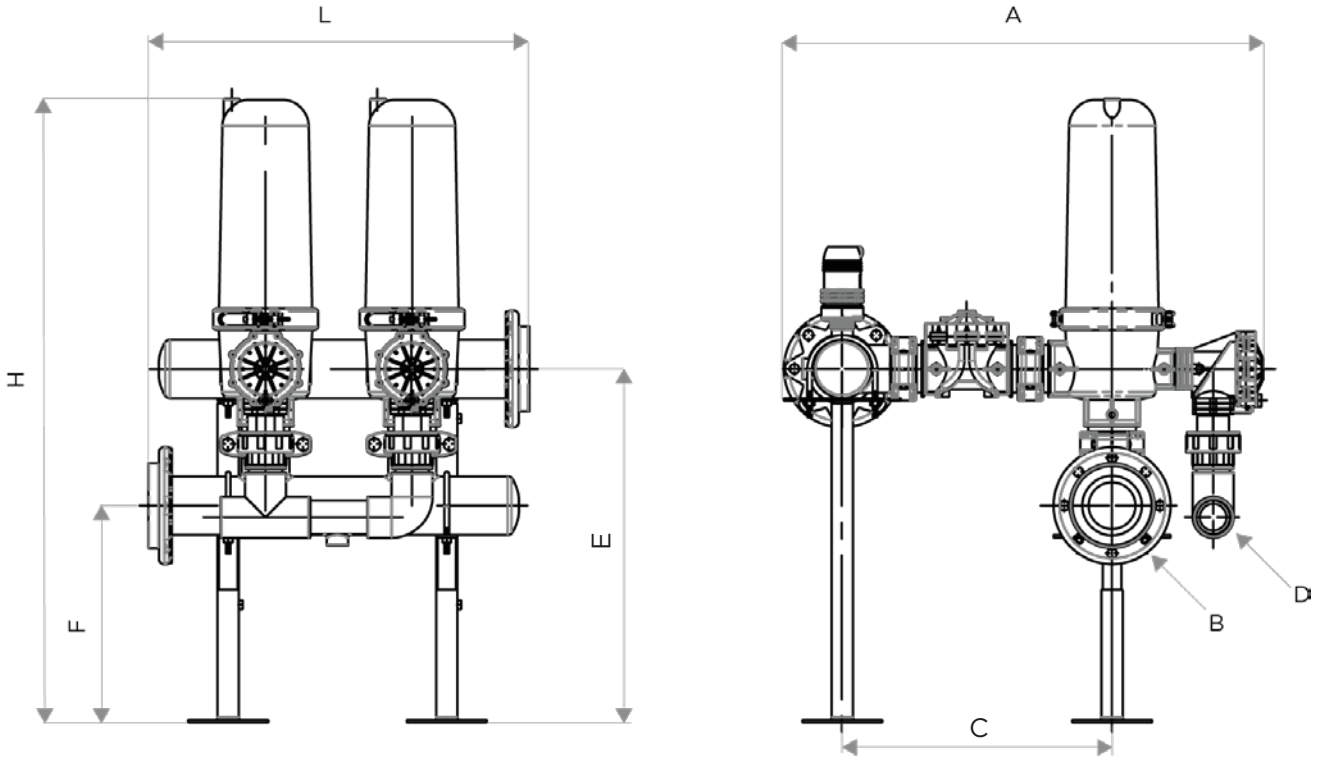


	Height (H)	Height (A)	Length (L)	Height 1 (E)	Height 2 (F)	Equidistance (C)	Dimensions of drainage outlet (D)	Flanges (B)
	mm	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*DN*
2 pcs	1010	635	715	336	302	267	Ø 50	DN 80 (PN10)
3 pcs	1035	635	929	315	315	267	Ø 50	DN 100 (PN10)
4 pcs	1035	635	1065	315	315	267	Ø 50	DN 100 (PN10)
5 pcs	1035	635	1480	315	315	267	Ø 50	DN 100 (PN10)
6 pcs	1060	635	1795	340	340	267	Ø 50	DN 150 (PN10)

2.1.

Dimensions

Automatic Heads with 3" filters

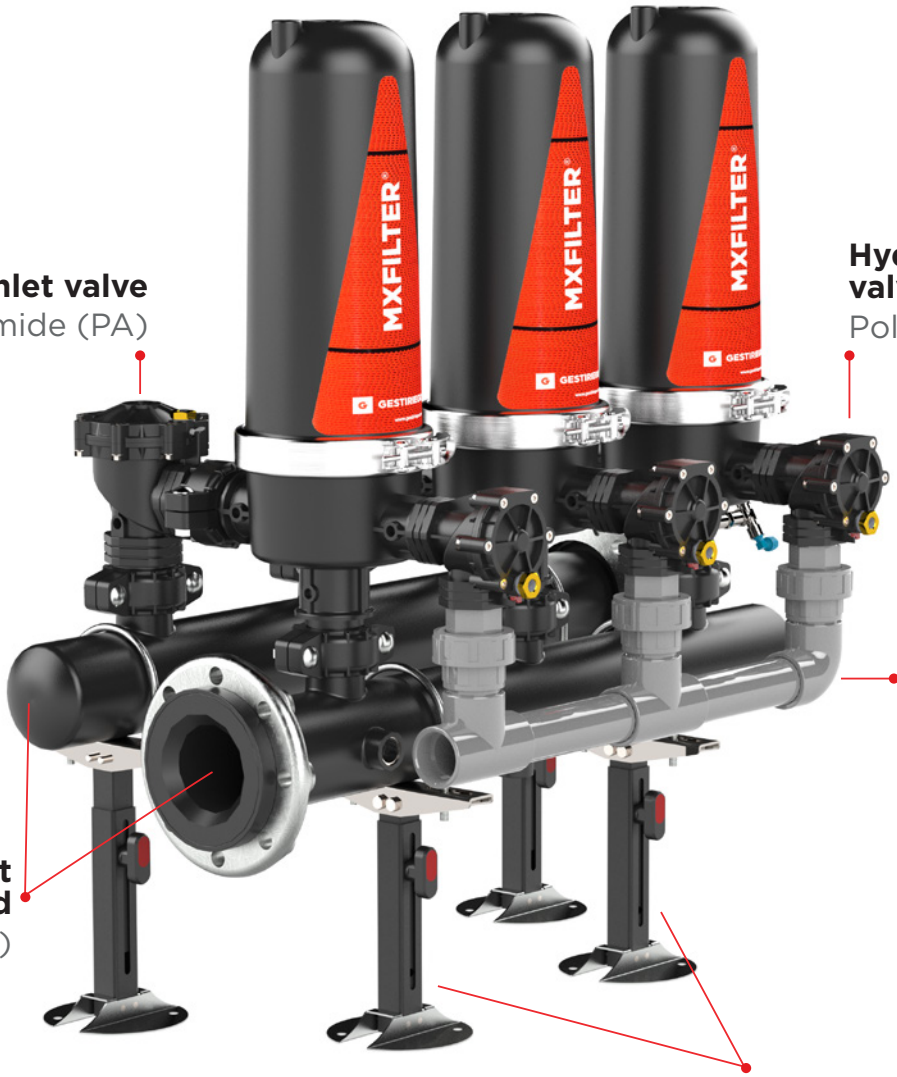


	Height (H)	Height (A)	Length (L)	Height 1 (E)	Height 2 (F)	Equidistance (C)	Dimensions of drainage outlet (D)	Flanges (B)
	mm	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*DN*
2 pcs	1175	905	715	665	408	507	Ø 63	DN 100 (PN10)
3 pcs	1175	905	930	665	408	507	Ø 63	DN 100 (PN10)
4 pcs	1200	945	1085	690	425	515	Ø 75	DN 150 (PN10)
5 pcs	1200	945	1480	690	425	515	Ø 75	DN 150 (PN10)
6 pcs	1200	945	1795	690	425	515	Ø 75	DN 150 (PN10)
7 pcs	1220	1006	2090	710	408	552	Ø 75	DN 200 (PN16)
8 pcs	1220	1006	2356	710	408	552	Ø 75	DN 200 (PN16)
10 pcs	1250	1060	2920	735	408	577	Ø 90	DN 250 (PN16)

2.1.

Parts and materials

Head



Hydraulic inlet valve
Polyamide (PA)

Hydraulic cleaning valve
Polyamide (PA)

Manifold leaning
PVC

Inlet and outlet manifold
Polyethylene (PE)

Adjustable supports
Steel

2.2.

Parts and materials

Filter

Body
Polyamide (PA)

Filter element:
High density polyethylene (HDPE) + Polyamide (PA)

O-ring seal:
NBR

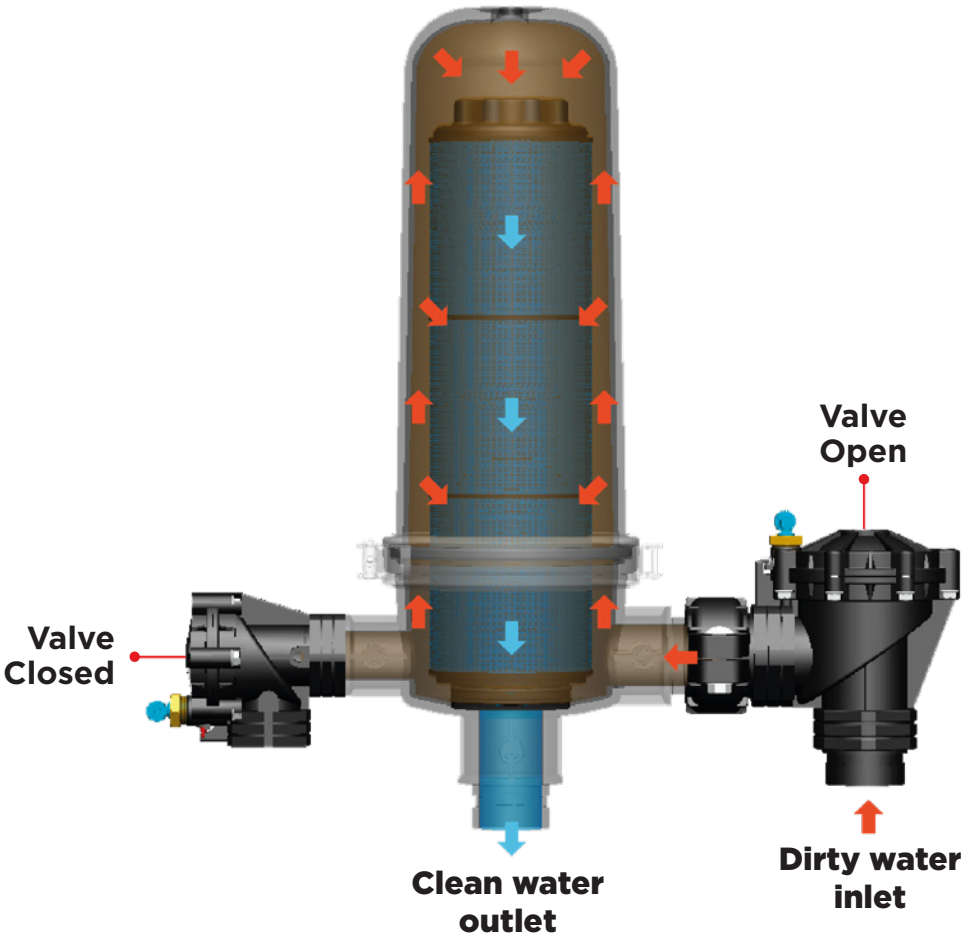
Clamp:
Stainless steel

Base:
Polyamide (PA)

3.

Operation

Water filtration

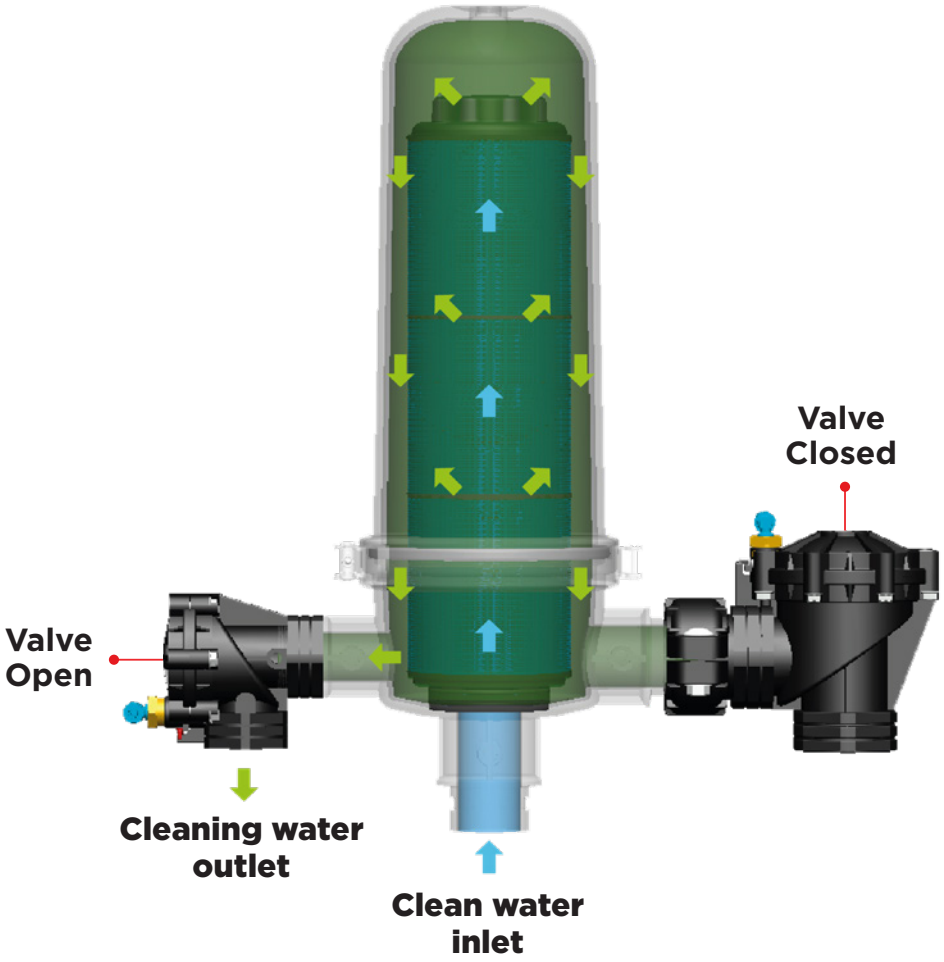


It is produced when the dirty water enters through the channels that the rings have on their "S"-shaped side (inlet channels) and passes to the adjacent channels (outlet channels), the dirt being retained by the concentric rings in the inlet channels and the clean water entering the interior of the filter element.

3.

Operation

Self-cleaning



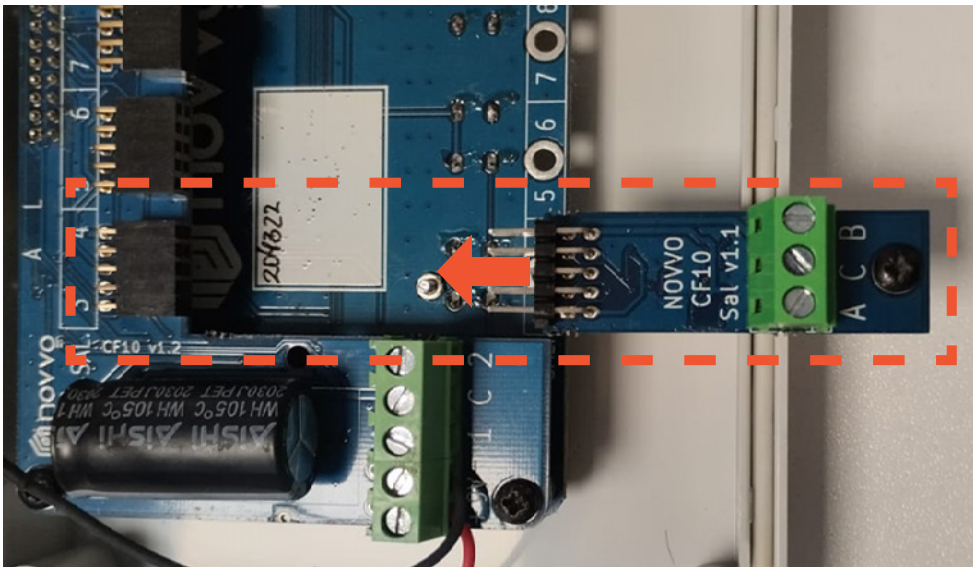
This occurs when a pressure difference is detected between the dirty water flow and the clean water flow, due to an obstruction in the filter element (ring cartridge). The direction of the clean water is then reversed, descaling the dirt accumulated in the unfiltered water channel and expelling it to the outside.

4.

Installation

Electrical connection

Our programmer starts with a connector with two outputs and a shared one. If desired, we can expand with 2-output expansion modules to complete a total of 10 outputs:

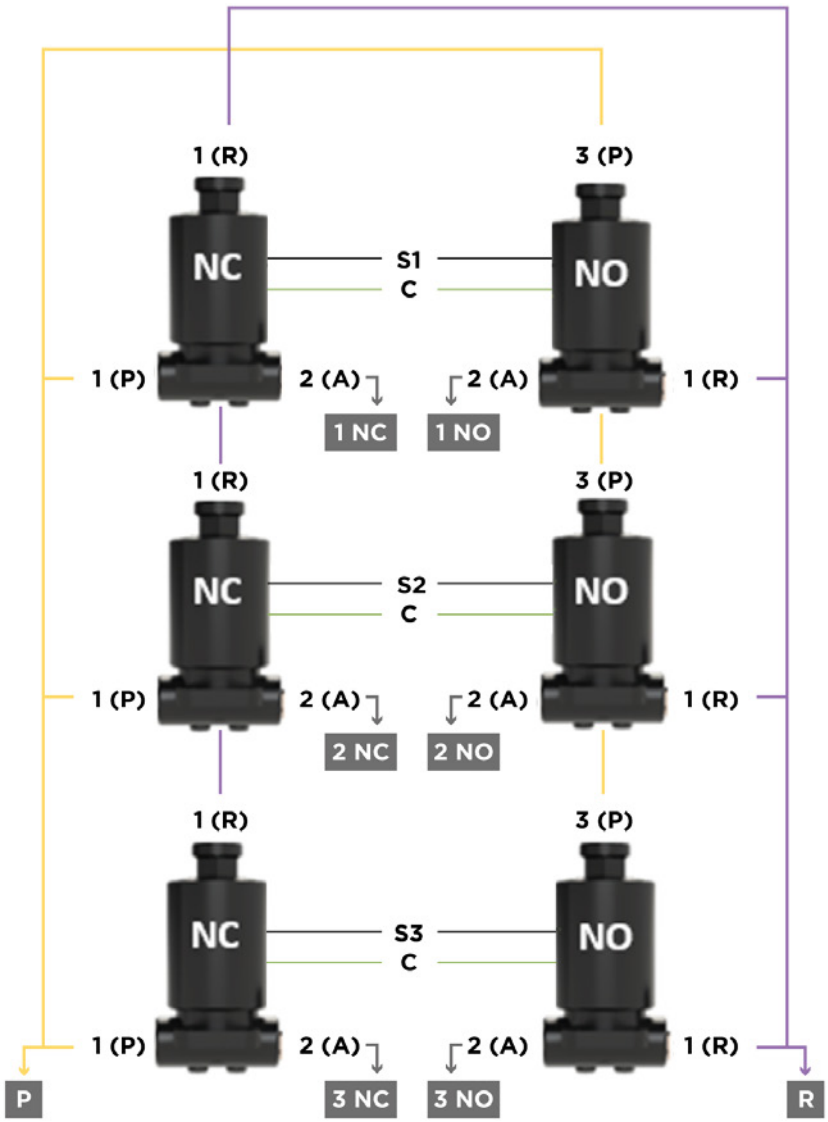


Once the necessary expansion modules have been inserted to obtain the number of outputs we need, we will connect the solenoids:

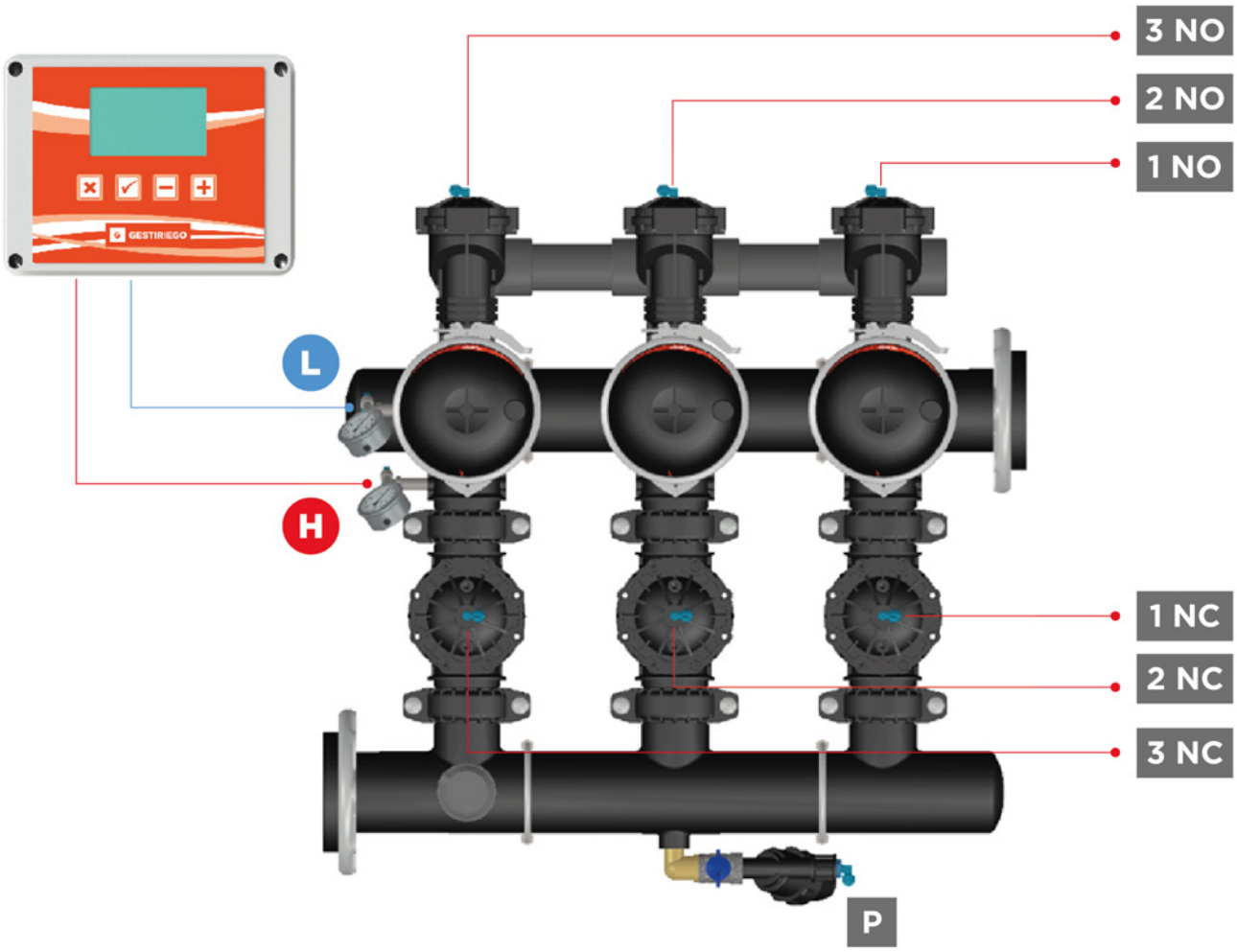
4.

Installation

Hydraulic connection



4.2.



Once all the electrical and hydraulic connections have been correctly made, we will start programming, using the CF10 cleaning programmer instruction manual.

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