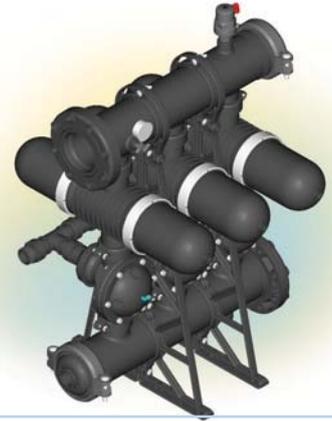


# 3" Poly Battery

## Filtration Batteries

### Features

- Precise filtration with Spin Klin technology
- Automatic filtration for medium flow rates
- Continuous flow during backwash
- Plastic parts - corrosion free
- Highly durable filter element
- Easy installation and operation
- Lightweight, compact design
- Simple and reliable operation



### Technical Data

	METRIC		US	
Max. pressure	bar	10	psi	145
Min. backwash pressure	bar	2.8	psi	40.6
Filtration surface area per unit	cm <sup>2</sup>	1,760	in <sup>2</sup>	272.8
Filtration volume per unit	cm <sup>3</sup>	2,640	in <sup>3</sup>	161
Backwash water volume per unit	lit	66	gal	17.4

### Maximum Filtration Flow Rate / Water Quality

No. of units		3	4	5	6	7	8	3	4	5	6	7	8
Filtration Grade	Water Quality	m <sup>3</sup> /h						gpm					
400-130 μ	Good	110	148	185	222	259	296	484	652	814	977	1140	1302
	Average	90	120	150	180	210	240	396	528	660	792	924	1056
	Poor	66	88	110	132	154	176	290	387	484	581	678	774
	Very Poor	45*	60	75	90	105	120	198*	264	330	396	462	528
100-70 μ	Good	90	120	150	180	210	240	396	528	660	792	924	1056
	Average	66	88	110	132	154	176	290	387	484	581	678	774
	Poor	48*	64	80	96	112	128	211*	282	352	422	493	563
	Very Poor	33*	44*	55	66	77	88	145*	194*	242	290	339	387
55-40 μ	Good	60	80	100	120	140	160	264	352	440	528	616	704
	Average	48*	64	80	96	112	128	211*	282	352	422	493	563
	Poor	36*	48*	60	72	84	96	158*	211*	264	317	370	422
	Very Poor	27***	36**	45*	54	63	72	119***	158**	198*	238	277	317
20 μ	Good	30***	40**	50	60	70	80	132***	176**	220	264	308	352
	Average	24***	32***	40**	48*	56	64	106***	141***	176**	211*	246	282
	Poor	18***	24***	30***	36***	42*	48*	79***	106***	132***	158***	185*	211*
	Very Poor	12***	16***	20***	24***	28***	32***	53***	70***	88***	106***	123***	141***

\* External source for backwash is necessary

\*\* When pressure is low, it is necessary to close downstream valve during backwash

\*\*\* The 2" Spin Klin Battery is recommended



Disk



Screen



Hydrocyclone



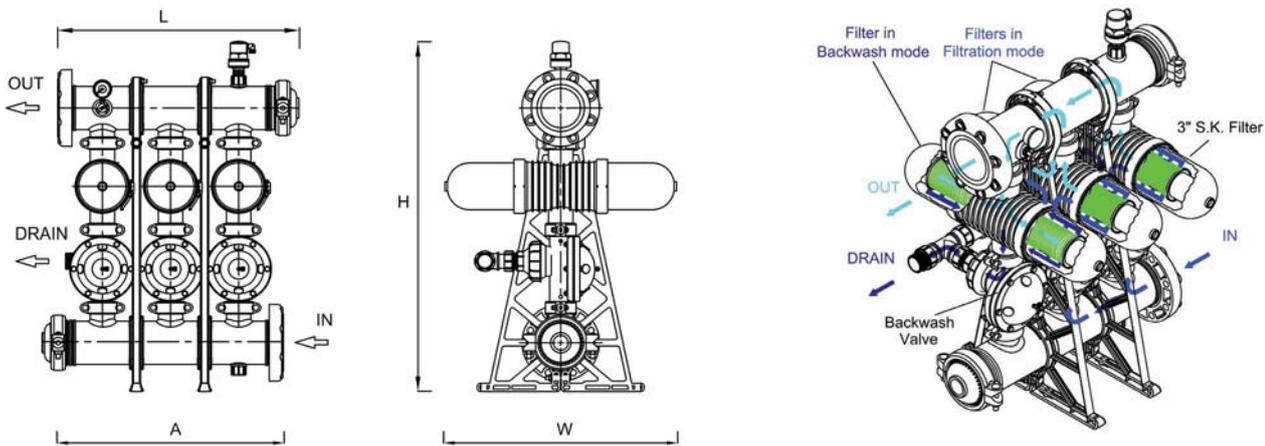
Media

# 3" Poly Battery

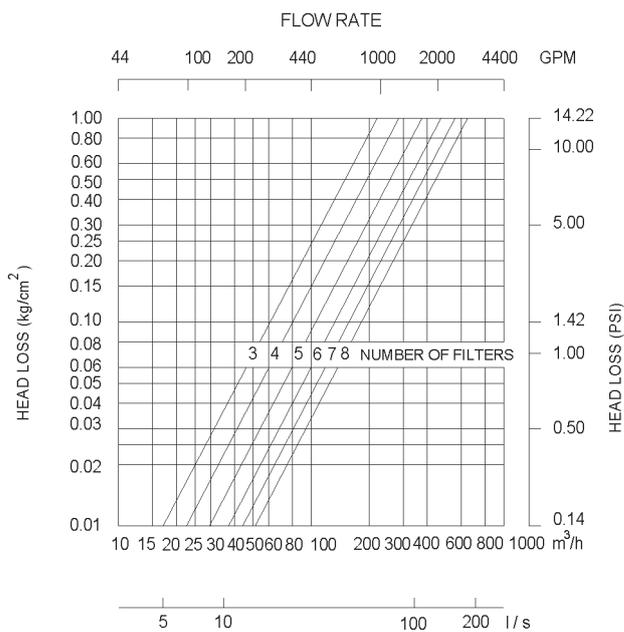
F I L T R A T I O N B A T T E R I E S

## Dimensions and Weights

		3	4	5	6	7	8		3	4	5	6	7	8
D Inlet/Outlet diameter	mm	160	160	160	160	200	200	inch	6	6	6	6	8	8
L Length	mm	902	1152	1402	1652	2200	2500	inch	35 1/2	45 11/32	55 3/16	65 1/32	86 5/8	98 7/16
H Height	mm	1291	1291	1291	1291	1510	1510	inch	50 13/16	50 13/16	50 13/16	50 13/16	59 7/16	59 7/16
W Width	mm	865	865	865	865	865	865	inch	34 1/16	34 1/16	34 1/16	34 1/16	34 1/16	34 1/16
A Flange to flange distance	mm	820	1070	1320	1570	2200	2500	inch	32 9/32	42 1/8	51 31/32	61 13/16	86 5/8	98 7/16
Shipping weight (approx.)	kg	120	150	180	210	250	290	lbs	264	330	396	492	550	638



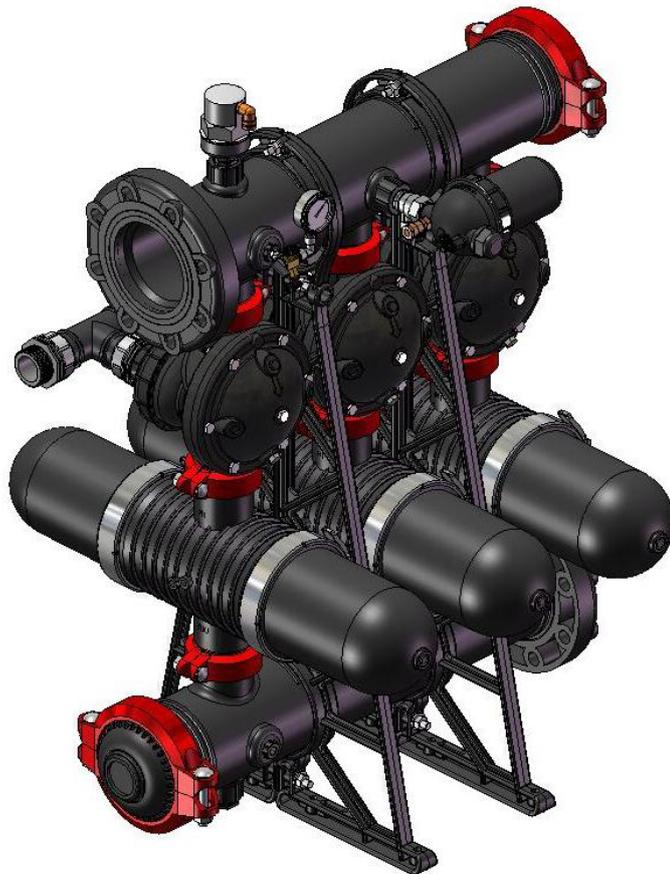
## Head Loss Chart, Clean State



**3" Spin Klin Poly batteries are available with:**  
Non Corrosive material valves

# Arkal Spin Klin<sup>®</sup> 3” Battery

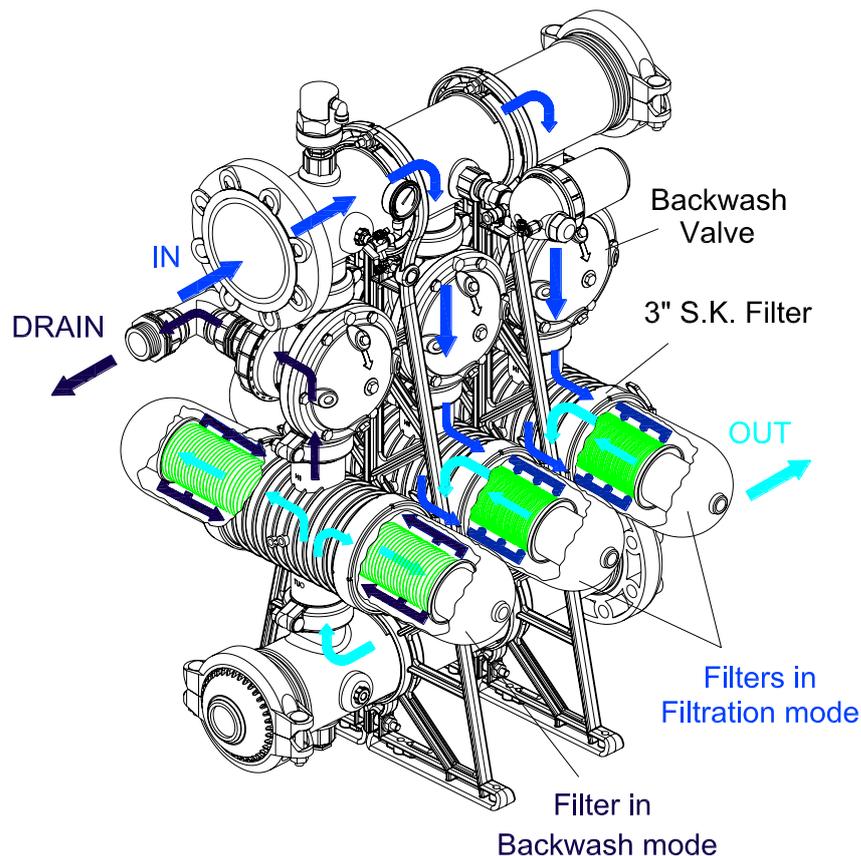
## Service & Maintenance Manual



## Operation

During the filtration stage, water flows through the INLET manifold and is distributed through the 3" x 2" backwash valves into the Spin Klin filters.

The water then passes through the filter elements to the outlet manifold for consumer use.



## Description of the Backwashing Process

1. The controller transmits an electrical command to the first solenoid according to either differential pressure or time.
2. The solenoid then sends a pressure command to the backwash valve, moving it from the filtration mode to the backwash mode.
3. Filter #1 is then backwashed with water from the outlet manifold that has been filtered by the other filters in the system. Contaminated water and impurities flow out through the drain manifold.
4. On completion of the allotted backwashing time, the controller releases the backwash command, and filter #1 returns to the filtration mode.
5. Filter #2 then enters the backwash mode, and the process is repeated until all the filters in the system have been backwashed.
6. After all the filters have been backwashed the system returns to the filtration mode, until the next backwash cycle.

## Spin Klin Technology - Spin Klin Spine

### General:

The Spin Klin discs are stacked on the Spin Klin spine.

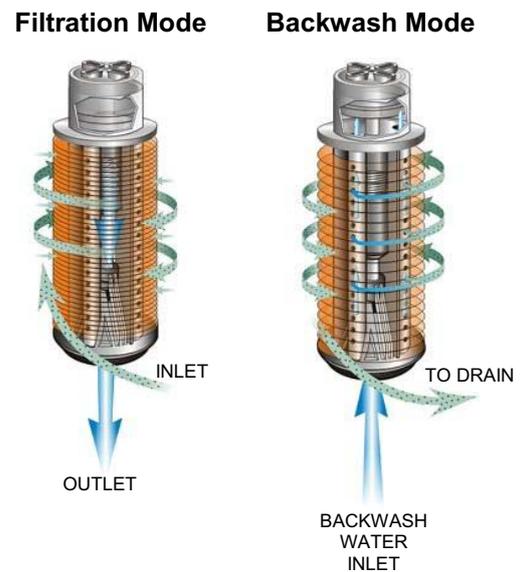
The discs are color-coded by micron size, and are assembled according to your water filtration requirements. The spine assembly has a spring compression unit and an internal piston which are used to alternately compress and release the discs during filtration and backwash cycles.

### Filtration Mode:

During the filtration process the filter discs are tightly compressed together by the spring and the differential pressure, forcing the water to flow through the grooves and traps of the discs.

### Backwash Mode:

During backwash the discs are released by releasing the inlet hydraulic pressure. Multi-jet nozzles provide tangential spray on the loosened discs, causing them to spin, and release the retained solids, which are flushed out to the drain.



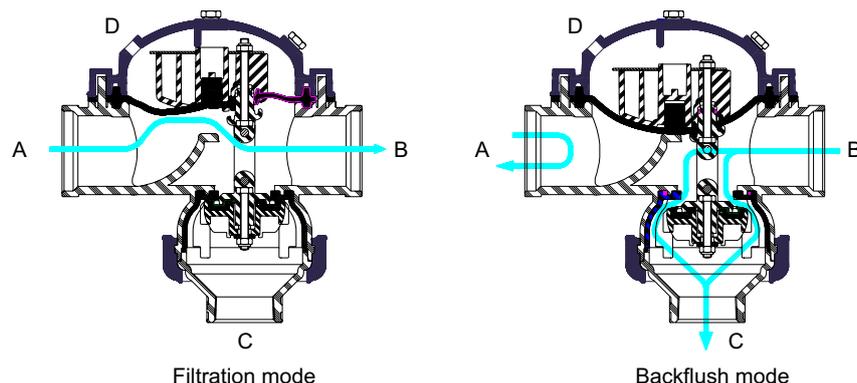
## 3" x 2" Backwash Valve

### Filtration Position:

Water flows from port A (main supply) to port B (filter connection). Port C (drain water outlet) is closed by the seal.

### Backwash Position:

Command pressure is applied to the top side of the diaphragm through port D. The diaphragm moves down, pushing the sealed body by the shaft. Port A is closed by the seal, preventing flow to the filter. Port C is now open allowing flushing water to flow from port B (filter connection) to the drain.

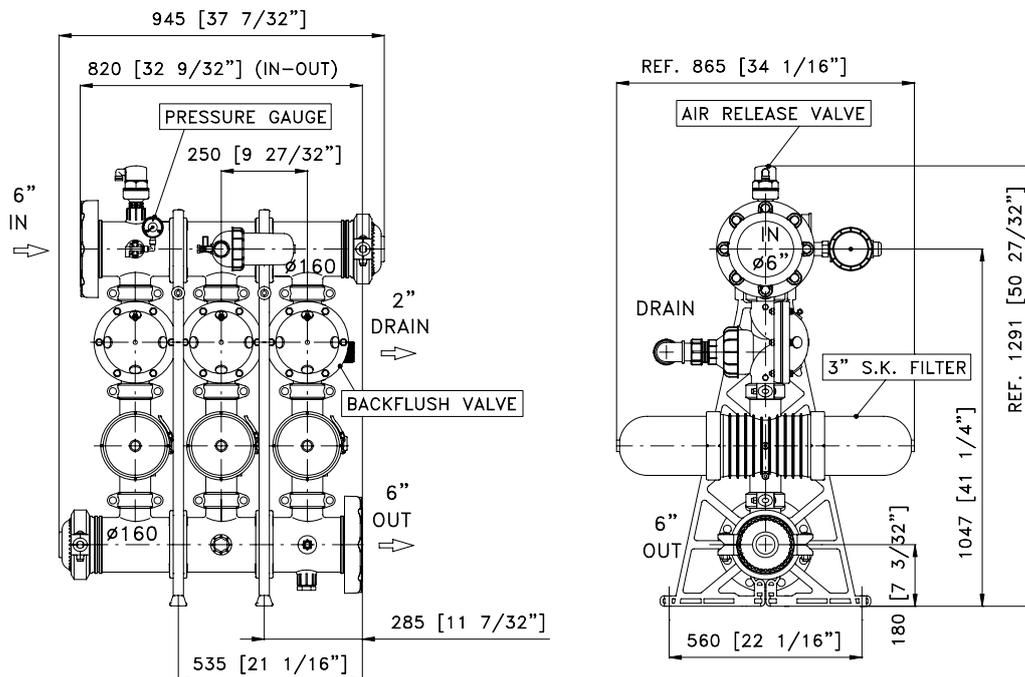


## System Installation and Startup

### Technical Data

Maximum Pressure	10 bar	140 psi
Minimum Pressure	2.8 bar	38 psi
Backwash Flow Rate per unit	16 m <sup>3</sup> /hr	70 gpm
Maximum Temperature	70°C	158°F
pH	4-11	4-11

### 3" Spin Klin Battery with Plaslite Valves



### Installation

- Make sure that the inlet and outlet orientation is correct (shown by arrows on filter).
- Prior to start-up check for any transport damage to the unit (system operates under pressure!).
- Connect backwash drainage line.
- Cover clamps need to be properly closed.

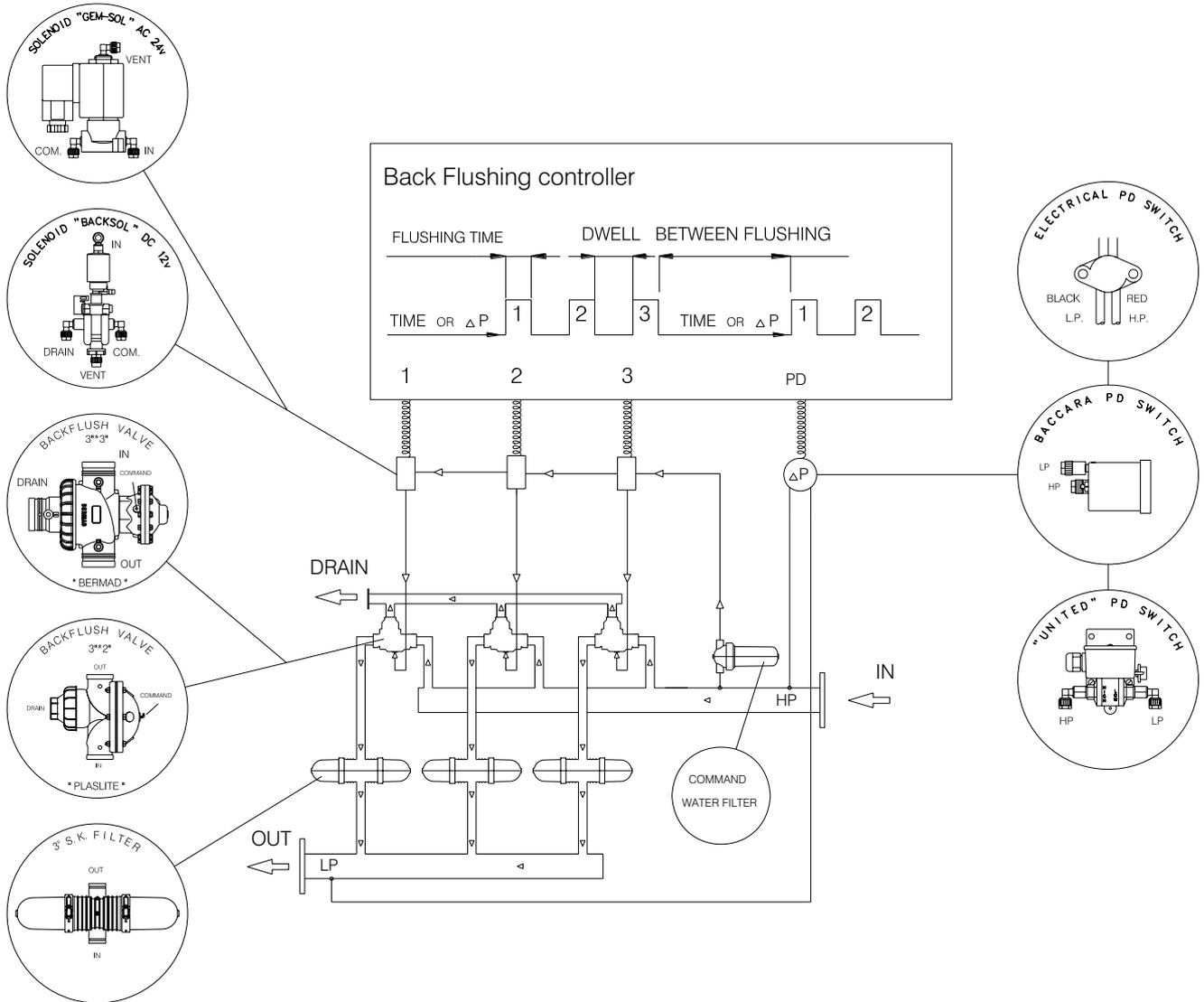
### Start-up Operation

Start the backwash cycle, making sure that all system components function correctly.

### Filter Load-up during Start-up

- Close the downstream (flow control) valve (if available).
- Flush until clean with repeated cycles.
- Slowly reopen the downstream valve.
- If the pressure difference remains high, check and see if the flow rate is too high.

An excessive flow rate through the filter causes excessive pressure loss.



**Control**

- ❑ Refer to the manufacturer’s handbook before installing the controller.
- ❑ Make sure that the voltage of both the solenoid unit and controller are correct.
- ❑ Set the manual operation button to automatic.
- ❑ Check that the ΔP hydraulic switch HIGH and LOW pressure lines are correctly connected to the appropriate ports.
- ❑ Set the starting backwash switch to ΔP 5-7 meters (6 - 8p.s.i.).
- ❑ Set the controller to a flush time of 30 seconds and a dwell time of 10 seconds. These settings may require adjustment to conform to local water conditions. Typically, a 1 to 3 hour interval between backwashes is recommended.

## **Spin Klin – System Maintenance**

### **Monthly Maintenance**

#### **Check inlet /outlet pressures:**

In case the pressure differential is above 5 m / 7 PSI.

Activate automatic backwash of the Spin Klin filter battery.

In the event that the pressure differential remains high check for possible failures.

#### **Check for leakages from the drain manifold:**

In case there is a leakage of water during the filtration stage, check for possible failure at the backwash valve seals.

#### **Backwash controller performance:**

Check that the controller timing parameters are correctly adjusted and activate automatic backwash cycle. In the event of possible failure at the backwash controller, check for possible failures.

#### **Cleaning of the Command Filter:**

Close the command filter inlet valve, release the pressure trapped at the command filter, remove the cover. Thoroughly clean the filtration element and then reinstall the command filter element and cover, then open the inlet valve.

#### **Winterization:**

In order to prevent the filter battery becoming damaged during water freezing - drain all the water from the filter battery and the command filter and leave the drain valve open.

## Seasonal Maintenance – Cleaning the Discs

When manual cleaning of the discs is required, please follow the steps described below:

Make sure that system is not under pressure! Release the clamp and remove the cover (Figures 1, 2)

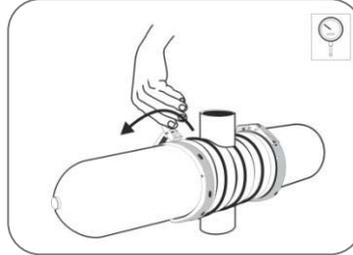


Figure 1

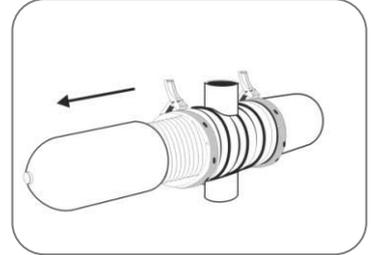


Figure 2

Unscrew the butterfly-nut on the filtration element (Figure 3)

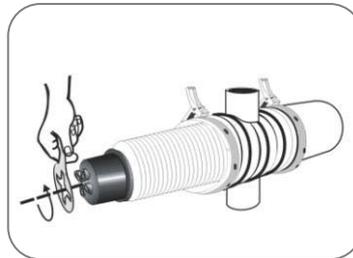


Figure 3

Remove the tightening cylinder (Figure 4)

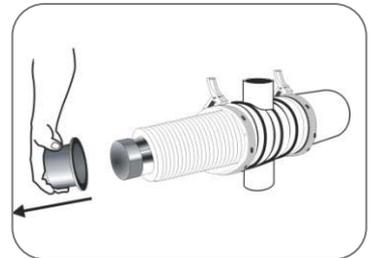


Figure 4

Remove the discs (for convenience we recommend using a plastic bag) (Figures 5, 6)

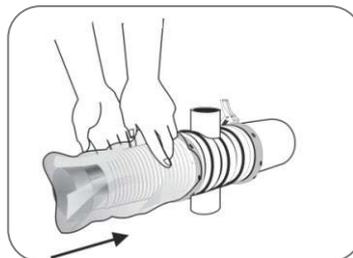


Figure 5

Tie each set on a string and place them in a cleaning solutions (HCL, Chlorine, or other) refer to “Cleaning Recommendations Clogged Filtration Discs”.

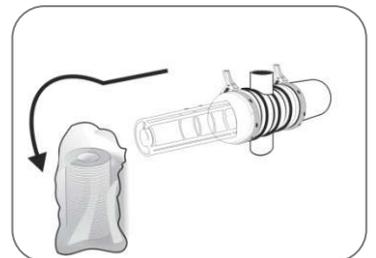


Figure 6

Thoroughly wash the discs with fresh water (Figure 7)

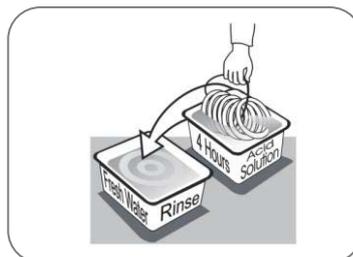


Figure 7

Reassemble the discs on the spines, check that the correct quantities of discs are assembled on the spine: when the discs are pressed with two hands, the top disc should be level with the imprinted circle on the outside of the spine (Figure 8)

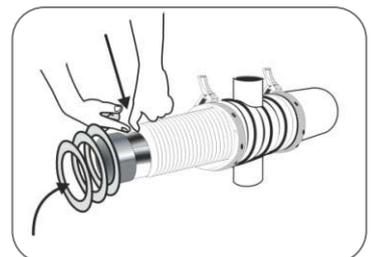


Figure 8

Put on the tightening cylinder and tighten the butterfly-nut, then reassemble the filter cover and tighten the clamp (Figures 9, 10)

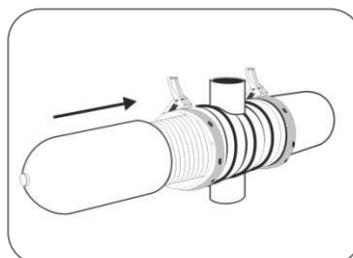


Figure 9

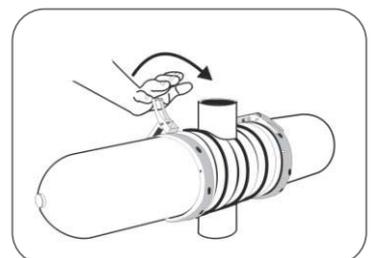


Figure 10

## **Cleaning Recommendations for Clogged Filtration Discs**

Water-formed deposits may cause clogging of the filter discs. The formation of these deposits depends on the quality of the filtered water and environmental conditions like temperature, pH, light, duration of filtration and more.

### **Common water-formed deposits are:**

- Biological or organic deposits (mostly mucous or oily to the touch, beige, brown or green in color)
- Iron oxide (rust) or other metal oxides
- Carbonates (white or gray deposit)
- Combinations of the above

If these deposits cannot be eliminated by pretreatment of the water, we recommend the following cleaning procedure:

### **Material and Equipment**

- A well ventilated working place.
- 2 small containers (1 liter), 2 large containers (15 liter) and a stirring stick, all resistant to chemicals, preferably of polypropylene.
- Plastic rope to tie up the disc.
- Sodium Hypochlorite NaOCl -  
Strong oxidizing liquid, commercial concentration: 10%.  
Oxidizes and removes organic and biological deposits.
- Hydrochloric Acid HCl -  
Very corrosive liquid, commercial concentration: 30%.  
Dissolves and removes carbonates, iron oxide, and other deposits.
- Safety equipment: safety glasses, gloves, long pants, long sleeved shirt and shoes.

### **ATTENTION!**

While working with chemicals protect yourself with the necessary safety equipment:

- Safety glasses, gloves, protective clothing
- Work in a well ventilated area
- Follow the manufacturer's instructions

### **Cleaning Organic and Biological Deposits**

- Open the filter and remove dirty discs.  
**Attention** – Never open the filter before the pressure has been released.
- Arrange the discs loosely on the plastic rope
- Prepare a 5% Sodium Hypochlorite solution:
  - 1) Pour 5 liters of water into one of the large containers.
  - 2) Add 5 liters of Sodium Hypochlorite (10%) into the water.
- Soak the discs in the solution so that both sides are covered. To achieve maximum cleaning, agitate the discs several times with a stirring stick.
- Contact time with cleaning solution: up to 8 hours
- Remove the discs carefully from the solution, put them in the second large container and rinse them very well with clean water before placing them back in the filter.
- We recommend flushing the cleaned discs again in the filter to ensure that all chemical residues are removed.

The cleaning solution can be used for several sets of discs. As the cleaning activity of the solution deteriorates, it may be necessary to soak the discs for a longer time.

### **Cleaning Carbonates and Iron Deposits**

- Open the filter and remove the dirty discs.
- Arrange the discs loosely on the plastic rope.
- Prepare a 5% Solution of Hydrochloric Acid:
  - 1) Pour 10 liters of water into one of the large containers.
  - 2) Carefully add 2 liters of Hydrochloric Acid (30%) into the water.Soak the discs in the solution so that both sides will be covered.  
**PLEASE NOTE: Carbonates react violently with hydrochloric acid (foaming, gas evolution).**  
To achieve maximum cleaning, agitate the discs several times with a stirring stick.
- Contact time with cleaning solution: 1 - 8 hours.
- Remove the discs carefully from the solution and rinse them well with clean water before placing them back in the filter.
- We recommend flushing the cleaned discs again in the filter to ensure that all chemical residues are removed.

The cleaning solution can be used for several sets of discs. It may be necessary to soak the discs for a longer period of time as the cleaning activity of the solution deteriorates.

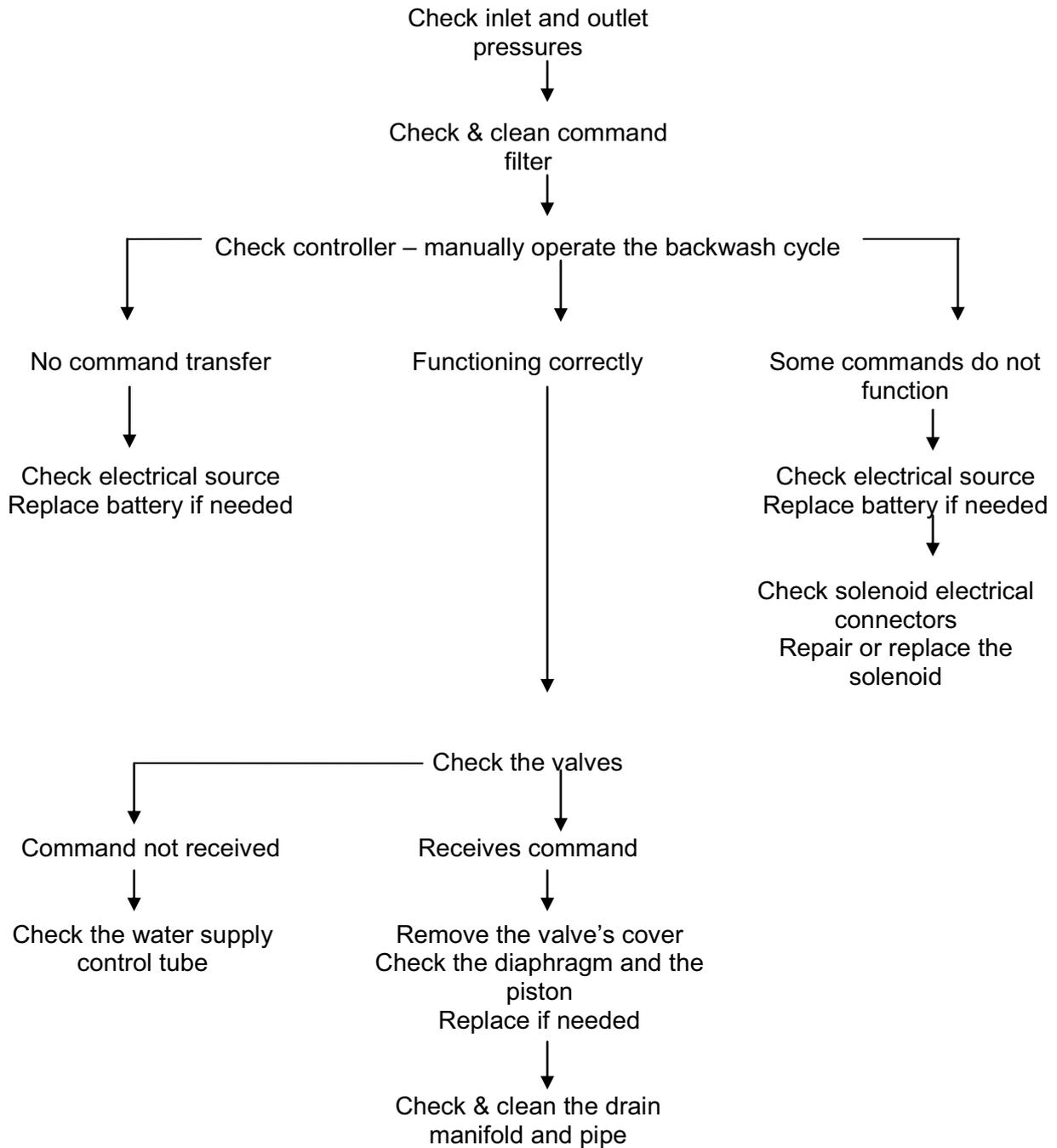
## **Cleaning Complex Deposits**

**If the composition of the deposit is not known, perform the following test:**

- Take 5 discs for the test.
- Soak 2 discs in a 5% Sodium Hypochlorite Solution.  
Preparation of the solution:  
Pour 1 cup of water into a small container, then add 1 cup of Sodium Hypochlorite (10% NaOCl).
- Soak 2 discs in a 5% Hydrochloric Acid Solution.  
Preparation of the solution:  
Pour 2½ cups (= 500ml) of water into a small container, then add carefully ½ cup (= 100ml) of Hydrochloric Acid (30% HCl).
- Keep one disc as a control.
- Observe the cleaning process:
  - If one of the solutions removes all of the deposit, clean the discs in that solution according to the instructions above.
  - If neither solution removes the deposit completely, continue with the test procedure.
- Remove the discs from both solutions, rinse them well with water and soak them in the second solution: put the two discs, which have been in the Sodium Hypochlorite Solution, in the Hydrochloric Acid Solution, and the other way round.
- Check the cleaning process:
  - If one of the treatments removes all of the deposit, clean all of the discs following the same two-step procedure in the exact same order. Rinse the discs well between the two cleaning processes.
  - If the deposit hasn't been completely removed, send a set of untreated discs to the laboratory for further examination.

## Identifying Malfunctions in the 3" Spin Klin system

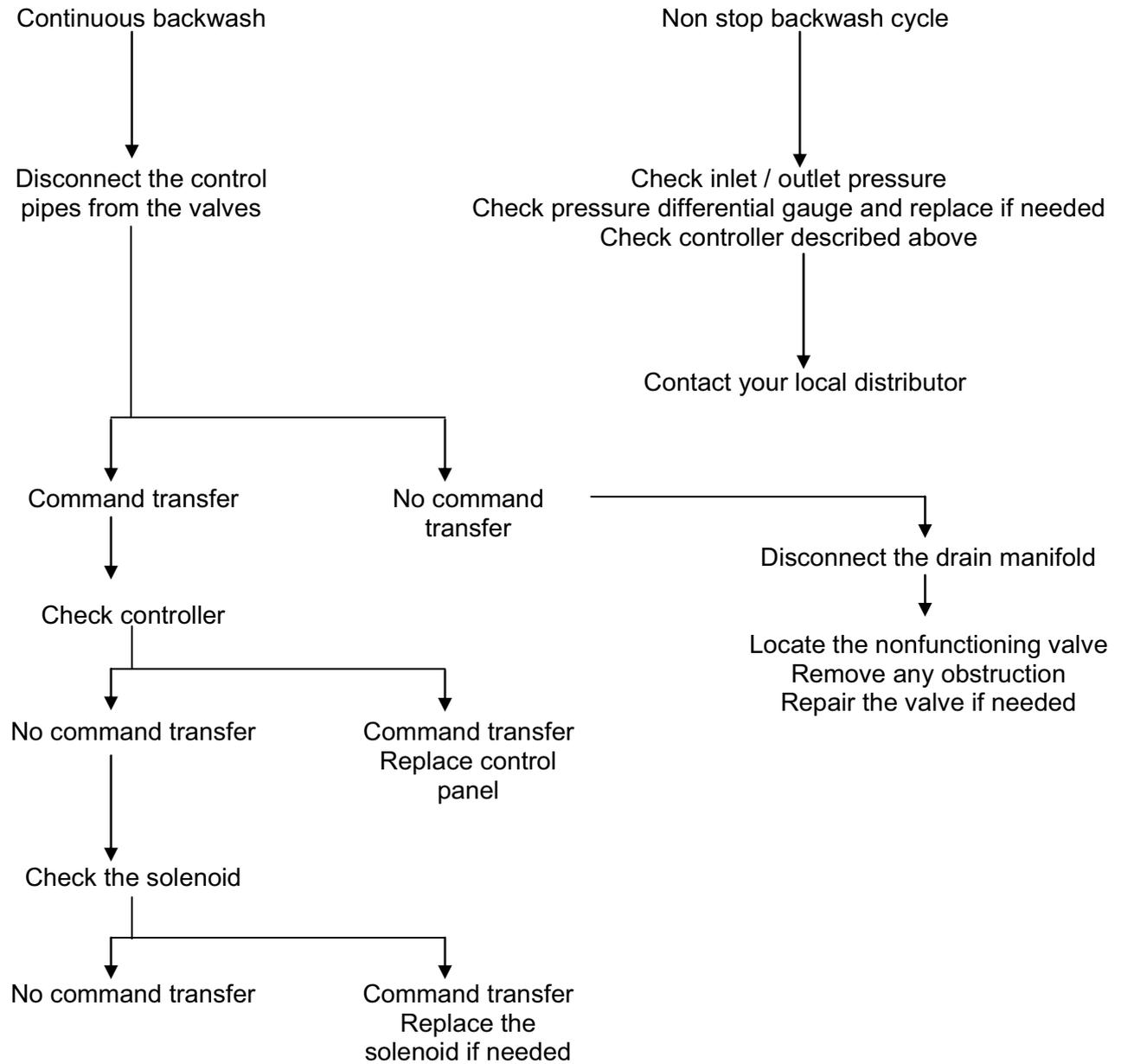
### No Backwash Operation



**Contact your local distributor**

## Identifying Malfunctions in the 3" Spin Klin system

### Continuous or Non-stop Backwashing



**Contact your local distributor**

## **Limited Warranty**

ARKAL FILTRATION SYSTEMS (“ARKAL FILTRATION SYSTEMS”) warrants to the original end user (“CUSTOMER”) who purchased ARKAL FILTRATION SYSTEMS products directly from Arkal or through one of its authorized distributors, that such products will be free from defect in material and/or workmanship for the term set forth below, provide that such products are properly installed, used and maintained in accordance with ARKAL FILTRATION SYSTEMS instructions, written or verbal.

Should such products prove defective within one year from the original purchase date by the customer, and subject to receipt by ARKAL FILTRATION SYSTEMS or its authorized representative, of written notice thereof from the customer within 30 days of discovery of such defect or failure - ARKAL FILTRATION SYSTEMS will repair or replace, at its sole discretion, any item proven to be defective.

ARKAL FILTRATION SYSTEMS shall not be liable, nor does this warranty extend to any consequential or incidental damages or expenses of any kind or nature, regardless of the nature thereof, including without limitation, injury to persons or property, loss of use of the products, loss of goodwill, loss of profits or any other contingent liabilities of any kind or character alleged to be the cause of loss or damage to the purchaser.

This warranty does not cover damage or failure caused by misuse, abuse or negligence, nor shall it apply to such products upon which repairs or alterations have been made by other than an authorized ARKAL FILTRATION SYSTEMS representative.

This warranty does not extend to components, parts or raw materials used by ARKAL FILTRATION SYSTEMS but manufactured by others, which shall be only to the extent warranted by the manufacturer's warranty.

No agents or representatives shall have the authority to alter the terms of this warranty nor to add any provisions to it not contained herein or to extend this warranty to anyone other than ARKAL FILTRATION SYSTEMS customers.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, EXCEPT THIS WARRANTY WHICH IS GIVEN IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

# Drawings

## Spin Klin

### 3" All Plastic

# Batteries

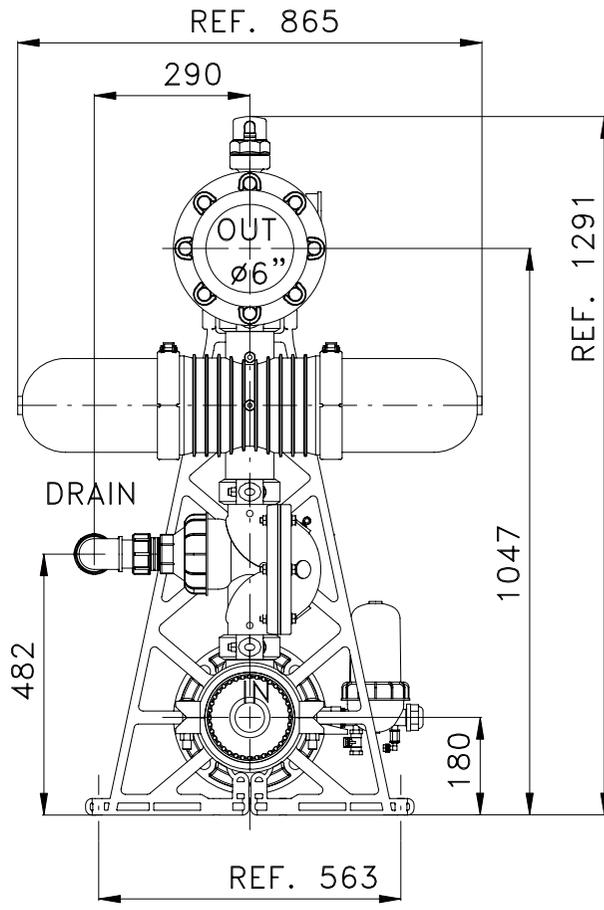
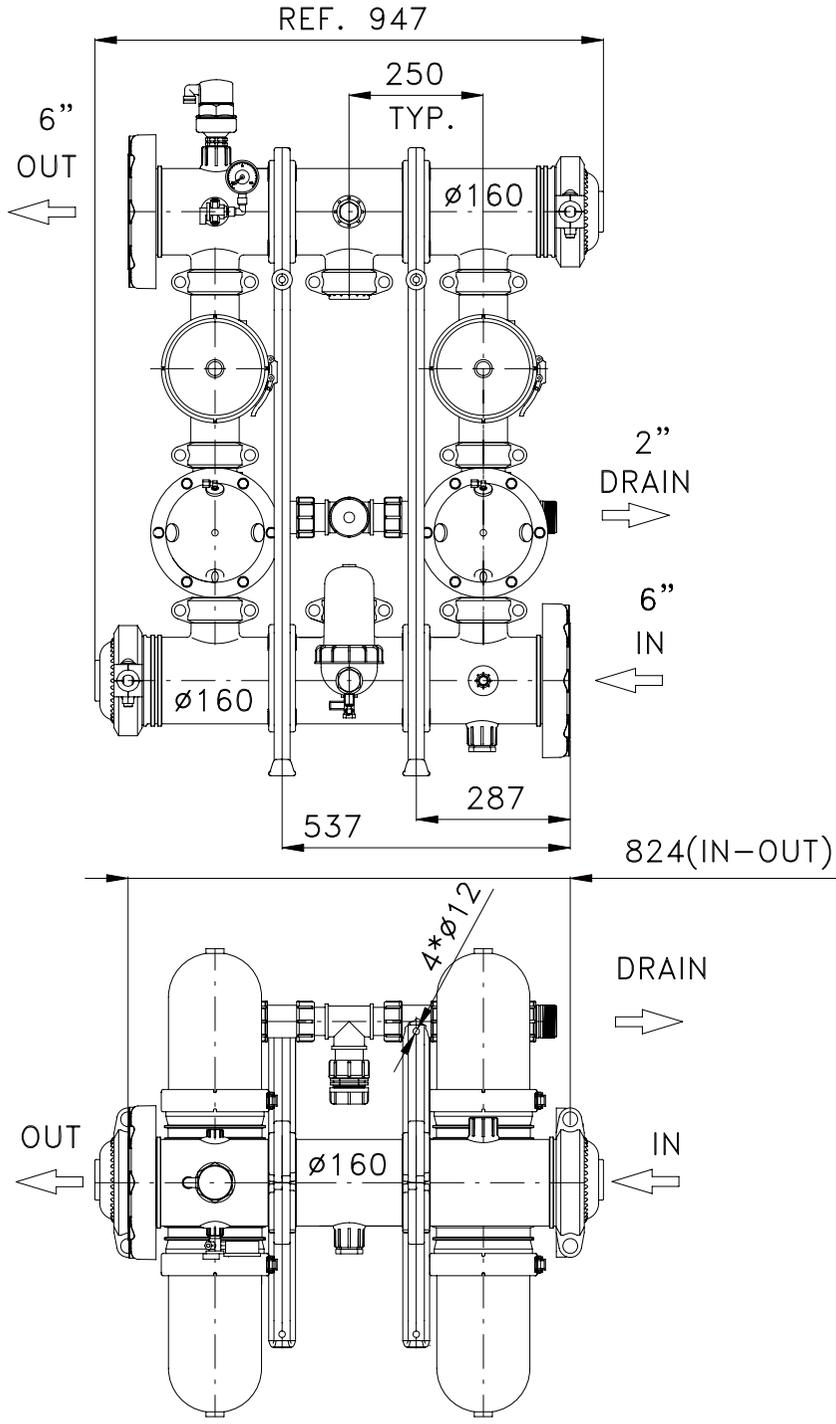
# Drawings

## Spin Klin

### 3" All Plastic

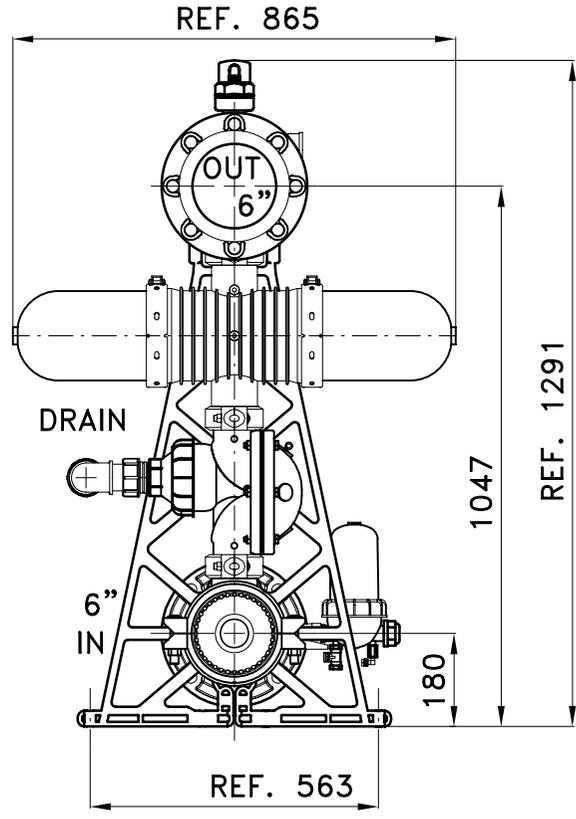
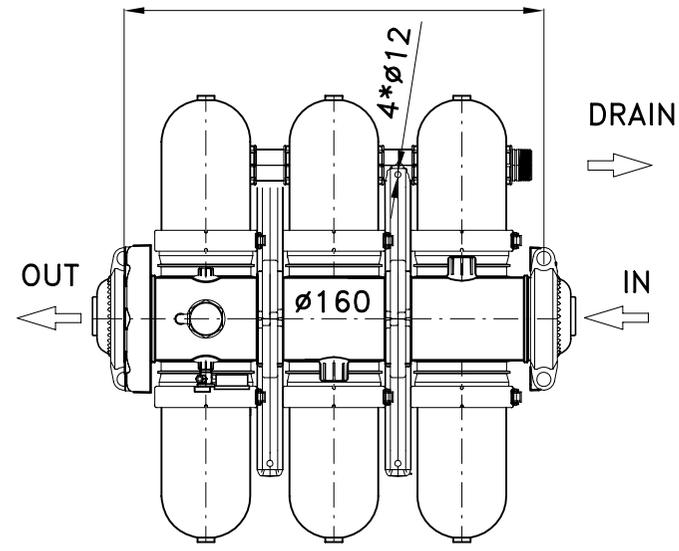
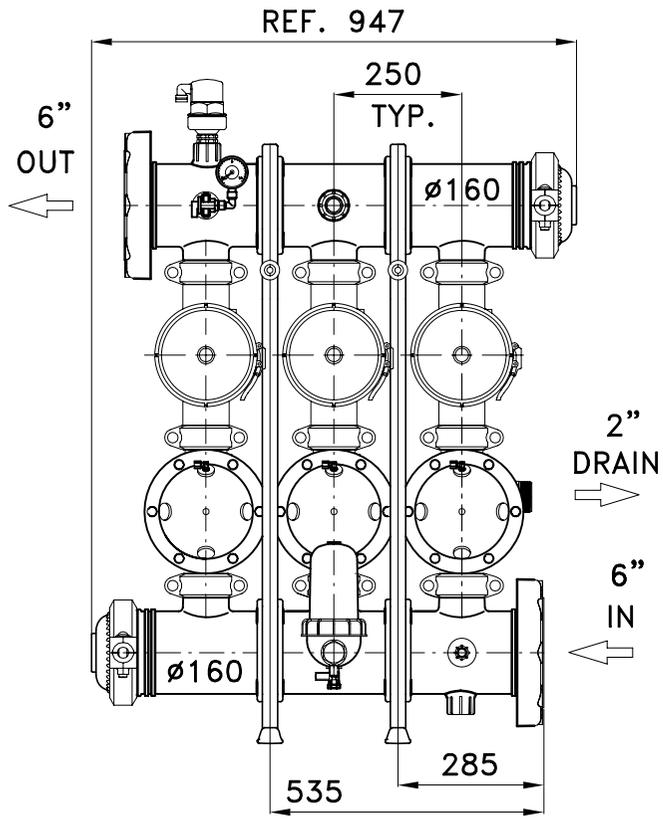
## Batteries

Crystal With Plaslite Valves

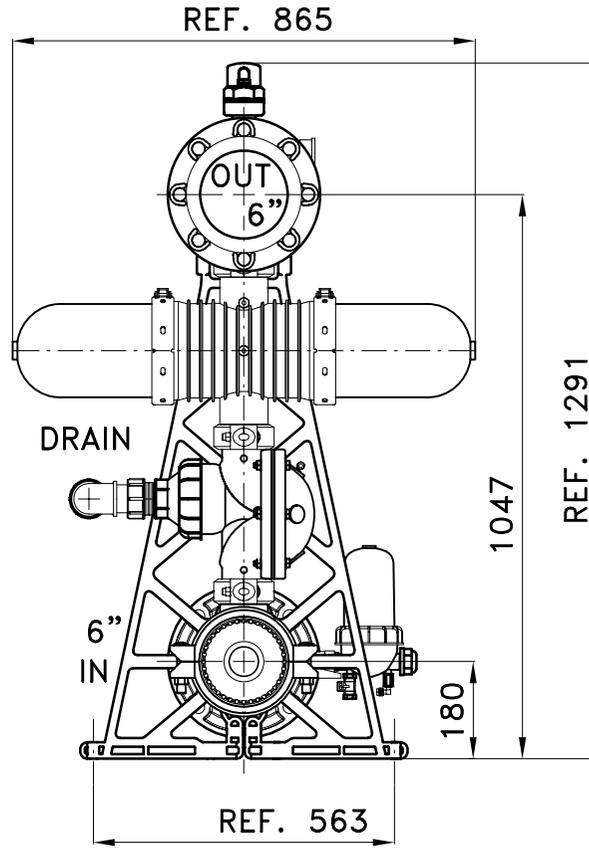
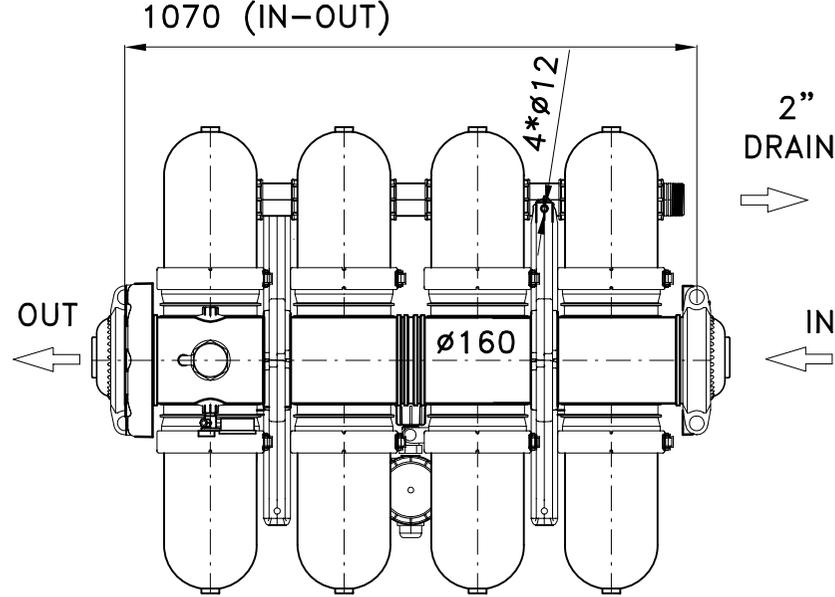
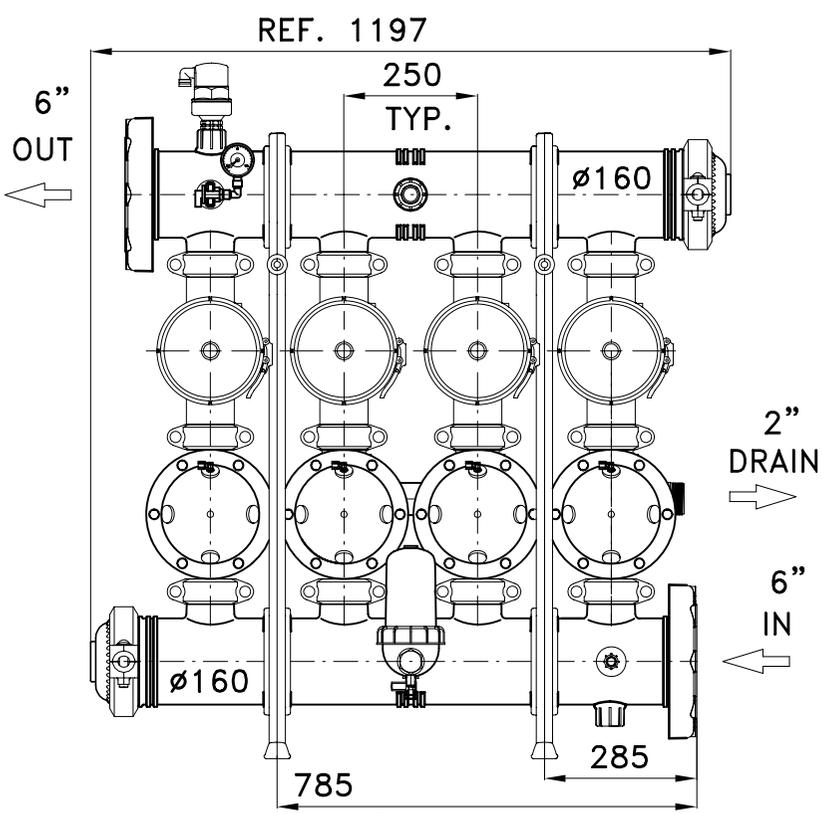


MODIFIC.	DATE	DESCRIPTION	SIGN.
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2*3" S.K. FILTERS SYNTHETIC BATTERY		CATALOGUE No: 4636M0603VU9S1	
TITLE		ASSEMBLY DRAWING	
PATH BATERIES\3INCH\TWIN	FILE CODE	NAME	DATE
\PLASTIC\STANDARD\PLASLITE	4636M0603VU9S1	IRINA	24.12.08
	DATE	FILE CODE DRAWING OF MANFOLD:	BACKUP:
DRAWN	NIKOLAY	6635 0603V0,2253 0601	DISK - 34
CHECKED	NIKOLAY	PALET 26 (5201 5403),	DRAWER N:
APPROVED	24.12.08	TRIWAL-14 (5200 5302)	3140

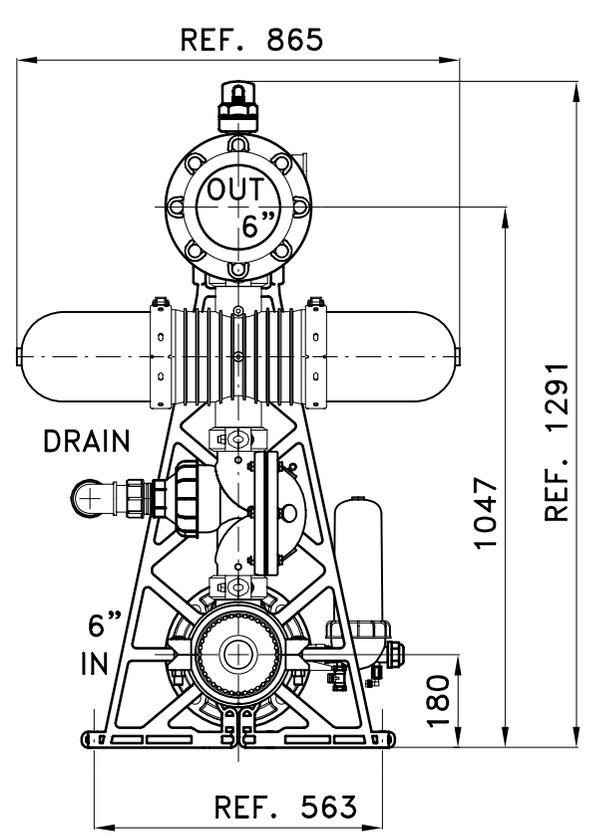
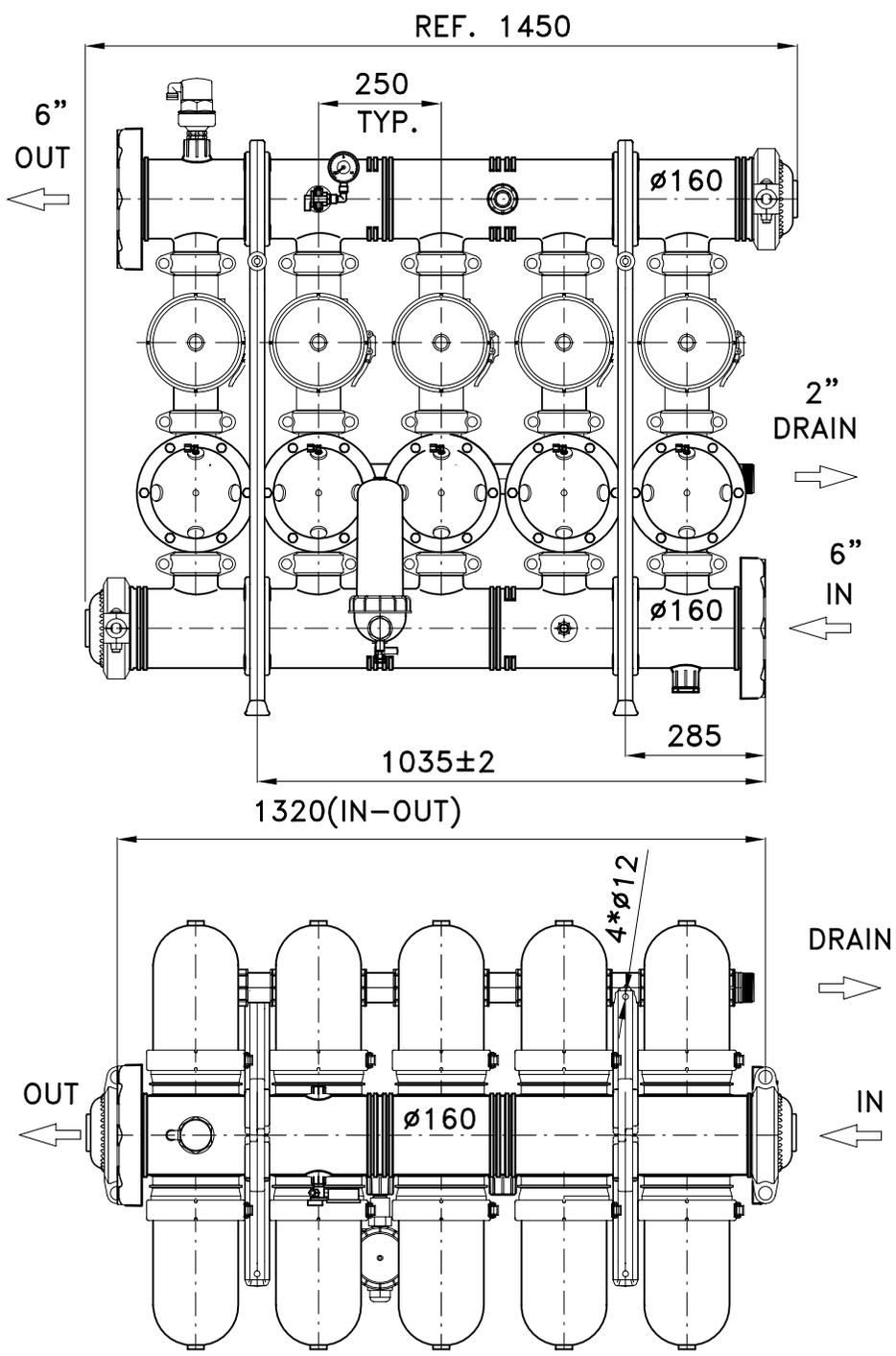
ISRAEL



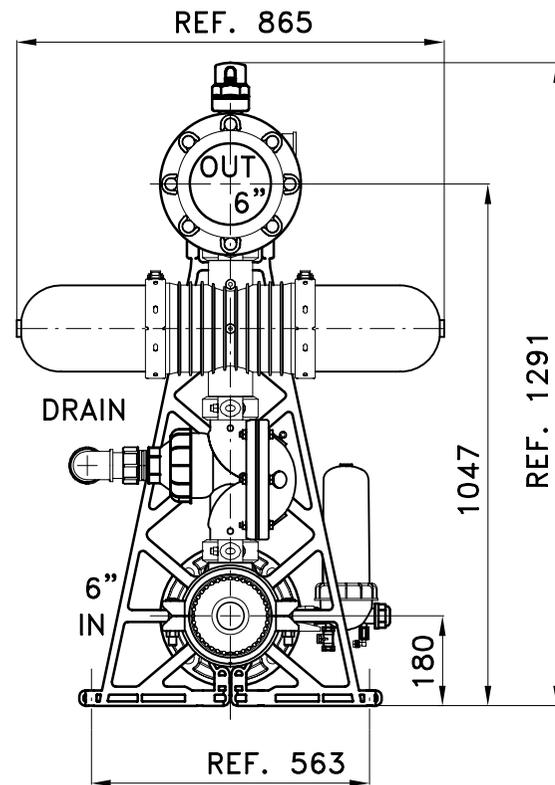
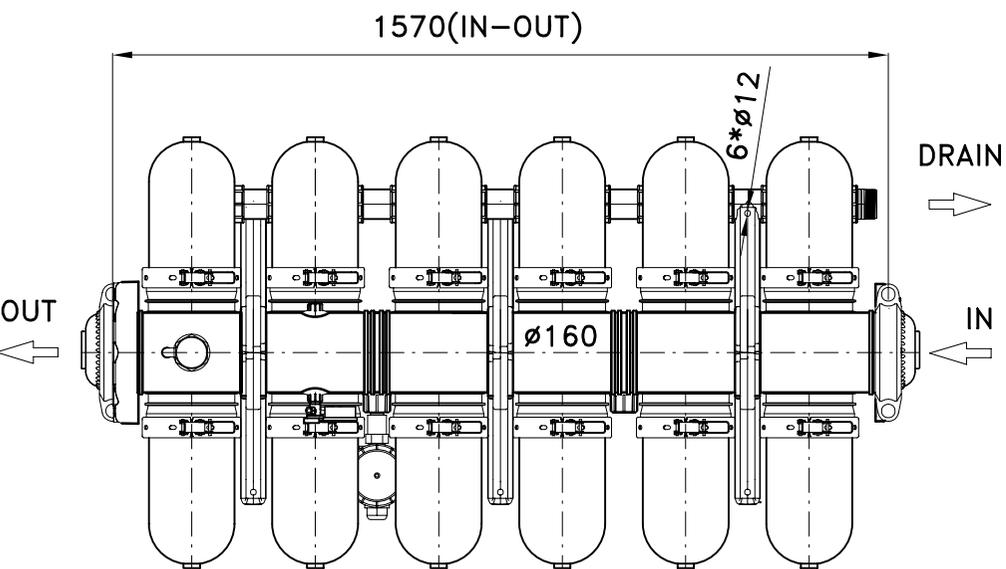
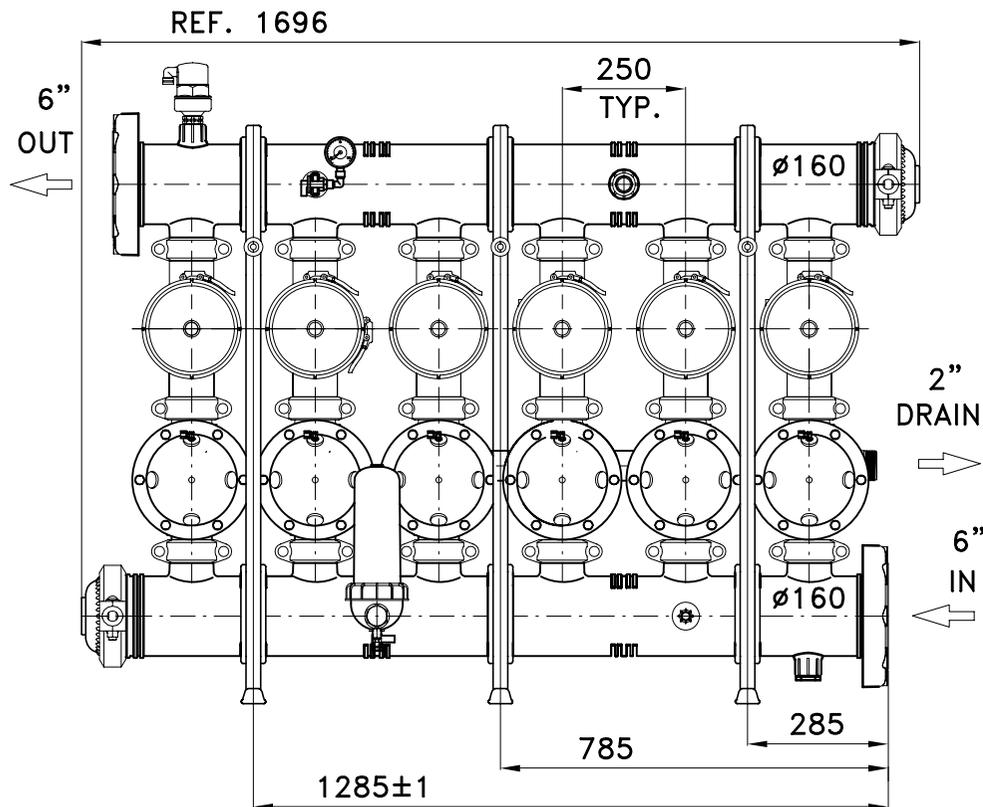
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		PATH BATTERIES\3INCH\TWIN \PLASTIC\STANDARD\PLASLITE	FILE CODE 4636M0603VU9
		NAME MAYA	NAME IRINA
		DATE 09.01.05	DATE 09.01.05
		FILE CODE DRAWING OF MATERIAL: 6635 0603V0,2253 0601	BACKUP: DISK - 25
		CHECKED NISIM	PALET 26 (5201 5403), DRAWER N: 31 40
		APPROVED	TRIWAL - 14 (5200 5302)



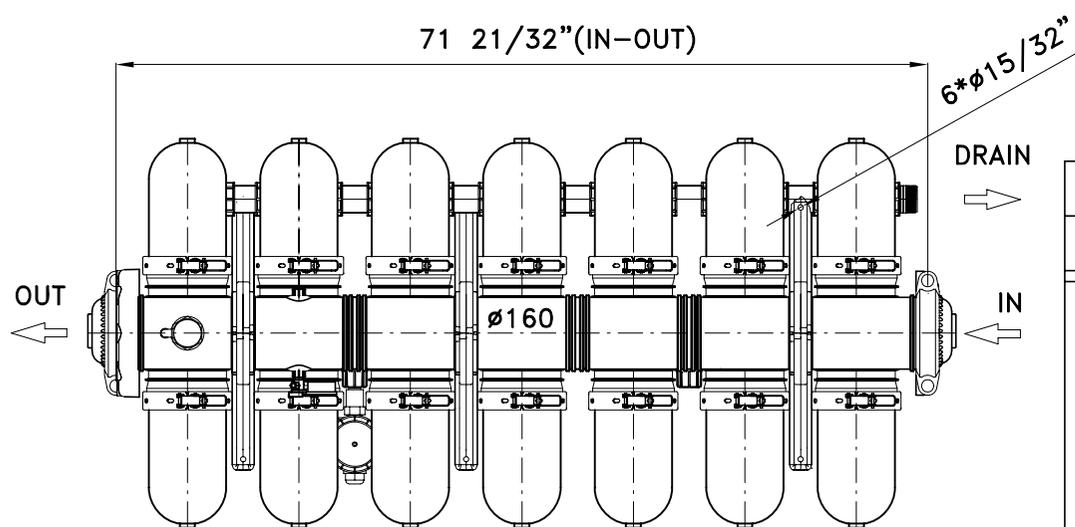
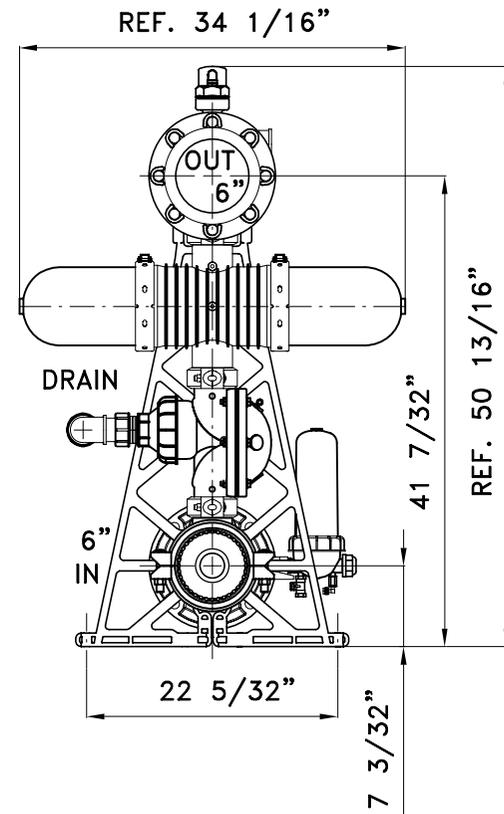
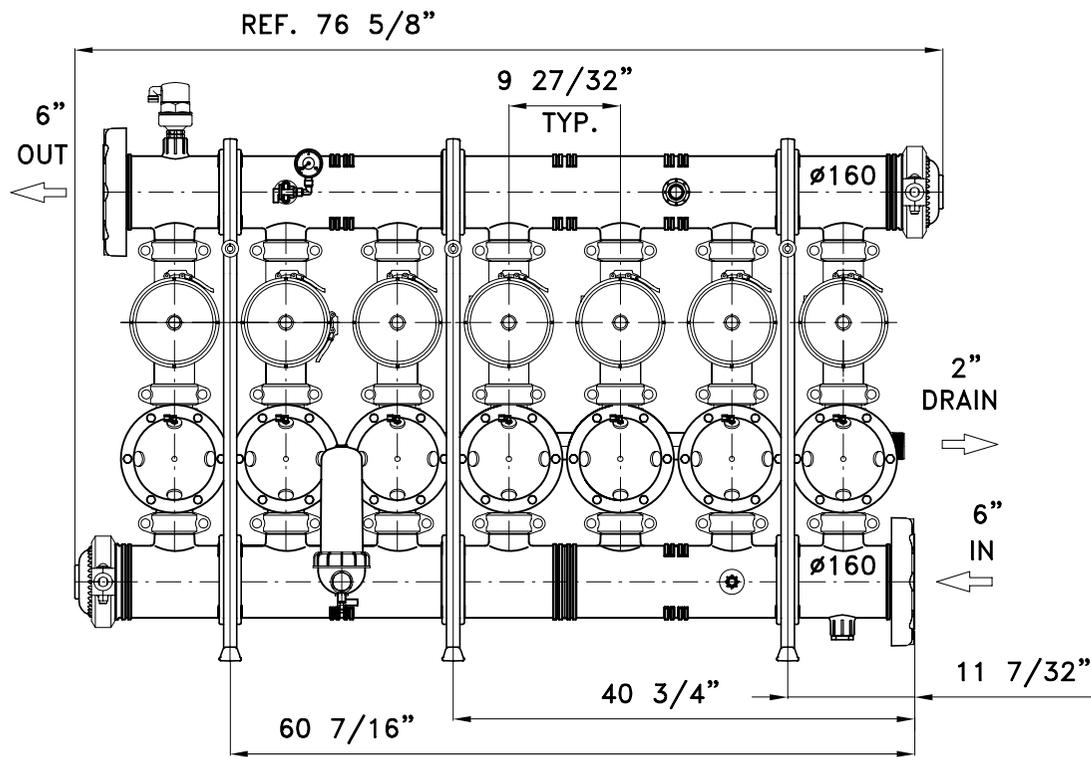
MODIFIC.	DATE	DESCRIPTION	SIGN.
		PROJECT 4*3" S.K. FILTERS SYNTHETIC BATTERY	PAGE 1 OF 5
		TITLE ASSEMBLY DRAWING	CATALOGUE No: 4636M0604VU9
		PATH BATTERIES\3INCH\TWIN \PLASTIC\STANDARD\PLASLITE	FILE CODE 4636M0604VU9
		NAME MAYA	NAME IRINA
		DATE 09.01.05	DATE 09.01.05
		FILE CODE DRAWING OF NUMBER: 6635 0604V0.2253 0601	SIGNATURE 9922/36
		CHECKED OMRY	BACKUP: DISK - 25
		APPROVED	DRAWER N: 3140
			TRIWAL-112 (5200 5322)



CANCEL DRAWING FROM 05.05.04		SIGN.	
MODIFIC.	DATE	DESCRIPTION	
PROJECT 5*3" S.K. FILTERS SYNTHETIC BATTERY		PAGE 1 OF 5	
TITLE ASSEMBLY DRAWING		CATALOGUE No: 4636M0605VU9	
PATH BATTERIES\3INCH\TWIN	FILE CODE	NAME	DATE
\PLASTIC\STANDARD\PLASTLITE	4636M0605VU9	IRINA	09.01.05
DRAWN	DATE	FILE CODE DRAWING OF MANUFOLD:	BACKUP:
MAYA	09.01.05	6635 0605V0.2253 0601	DISK-25
CHECKED	DATE	PALET 25 (5201 5405),	DRAWER N:
NISIM	09.01.05	TRIWAL-112 (5200 5322)	31 40
APPROVED			



		CANCEL DRAWING FROM 05.05.04			
MODIFIC.	DATE	DESCRIPTION	SIGN.		
		PROJECT 6*3" S.K. FILTERS SYNTHETIC BATTERY	PAGE 1 OF 5		
		TITLE ASSEMBLY DRAWING	CATALOGUE No: 4636M0606VU9		
PATH BATERIES\3INCH\TWIN \PLASTIC\STANDARD\PLASTLITE		FILE CODE 4636M0606VU9	NAME IRINA	DATE 09.01.05	SIGNATURE <i>IRINA</i>
	NAME	DATE	FILE CODE DRAWING OF MANFOLD:	BACKUP:	
DRAWN	MAYA	09.01.05	6635 0606V0,2253 0601,	DISK-25	
CHECKED	NISIM	09.01.05	PALET 27 (5201 5404),	DRAWER N:	
APPROVED			TRIWAL-115 (5200 5305)	3140	



MODIFIC.	DATE	DESCRIPTION	SIGN.
		PROJECT 7*3" S.K. FILTERS SYNTHETIC BATTERY	PAGE <u>1</u> OF <u>5</u>
		TITLE ASSEMBLY DRAWING	CATALOGUE No: 4636M0607VU9
		PATH BATERIES\3INCH\TWIN \PLASTIC\STANDARD\PLASTLITE	FILE CODE 4636M0607VU9A
		NAME IRINA	DATE 31.05.05
		SIGNATURE <i>IRINA</i>	
		NAME DRAWN NIKOLAY	DATE 31.05.05
		DATE 31.05.05	FILE CODE DRAWING OF MANIFOLD: 6635 0607V0,2253 0601,
		CHECKED ROY	PALET 166 (5201 5680),
		APPROVED	TRIWAL-123 (5200 5456),
			BACKUP: DISK-27 DRAWER N: 3140

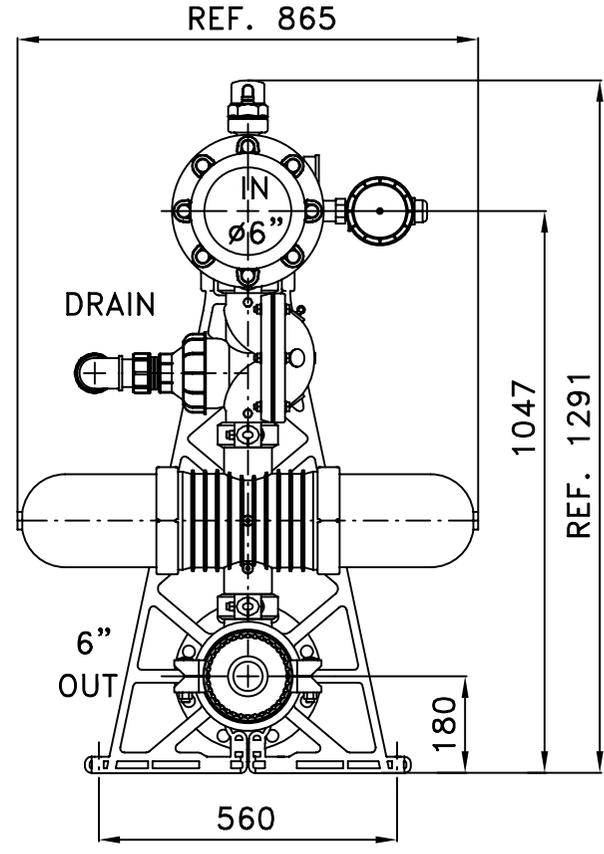
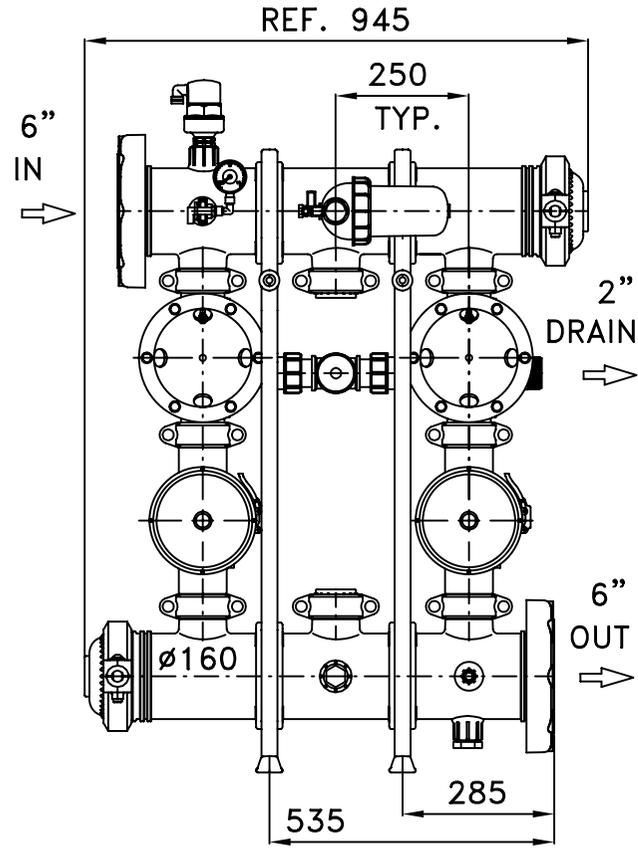
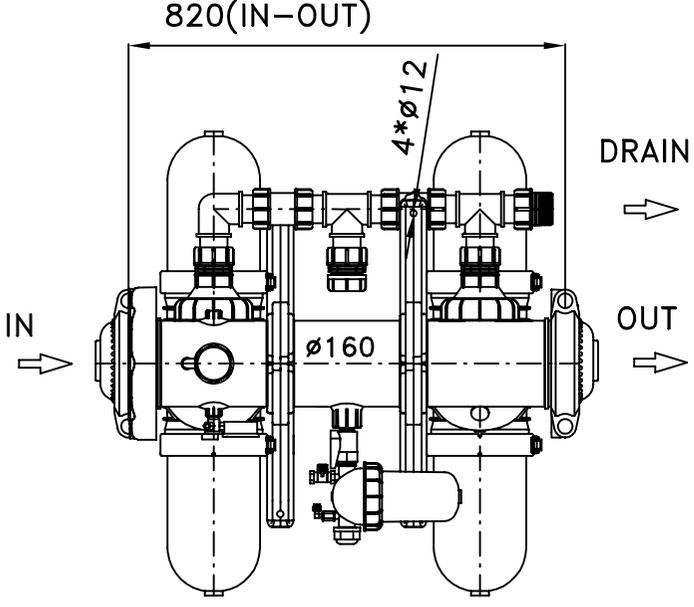
# Drawings

## Spin Klin

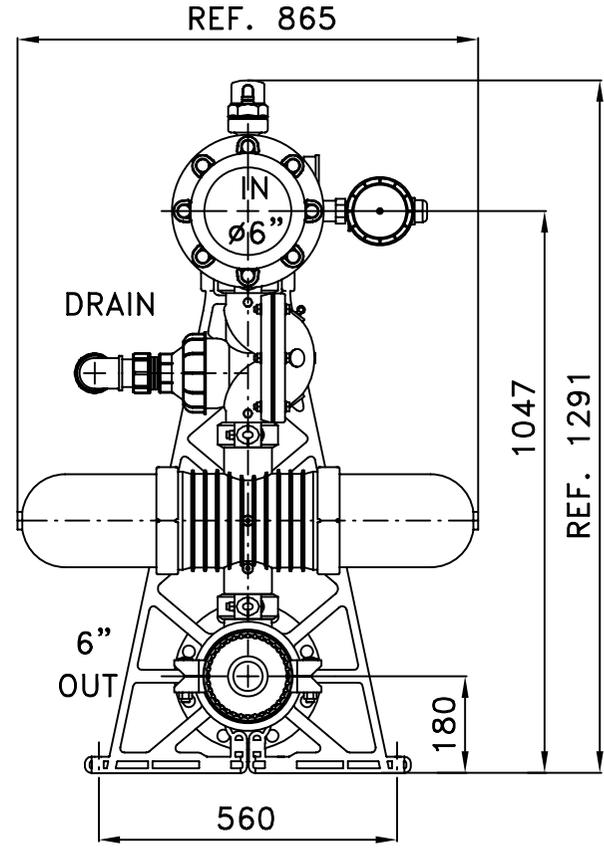
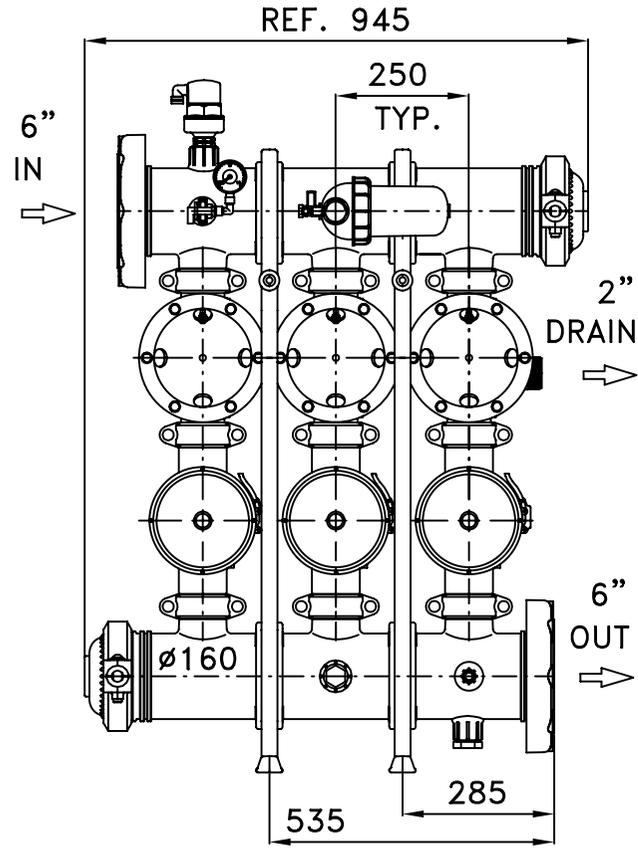
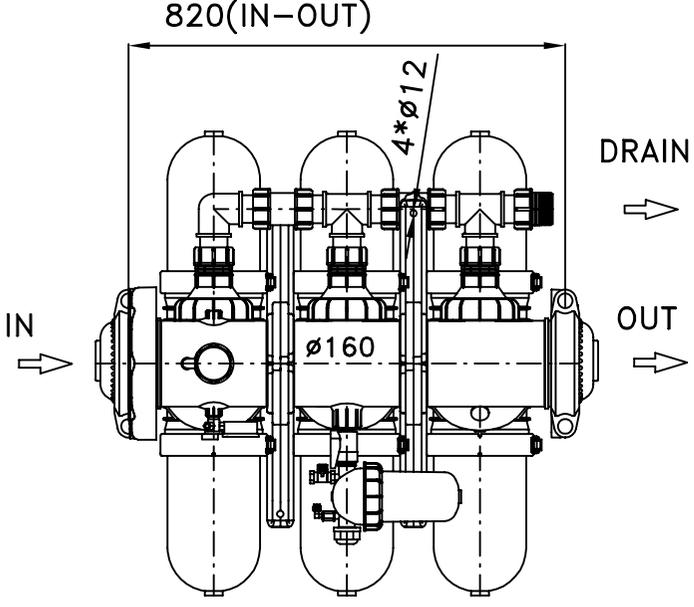
### 3" All Plastic

## Batteries

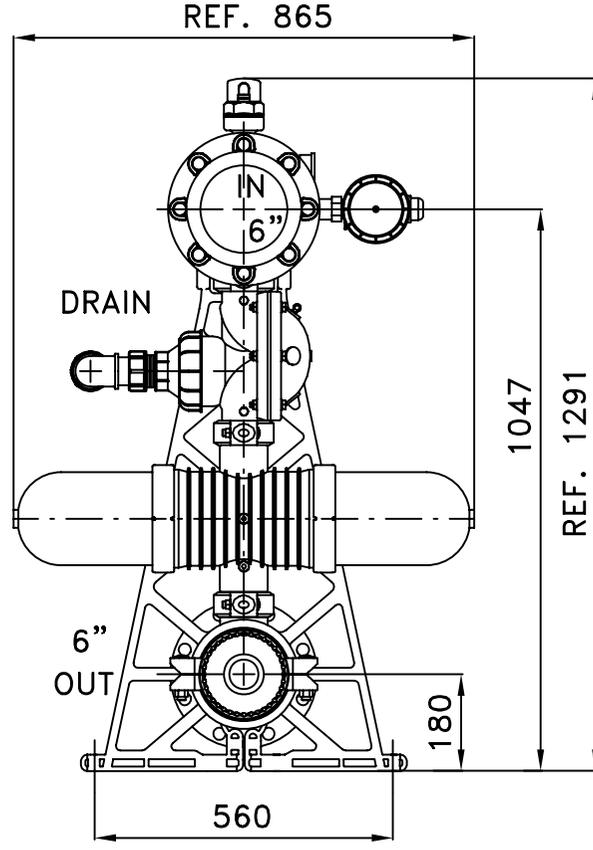
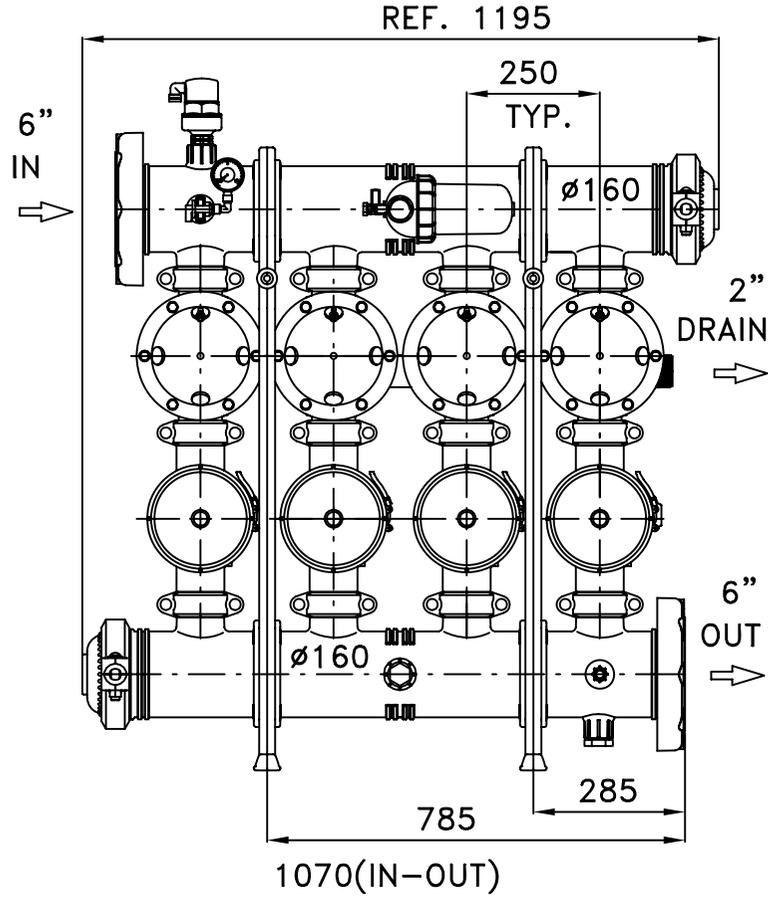
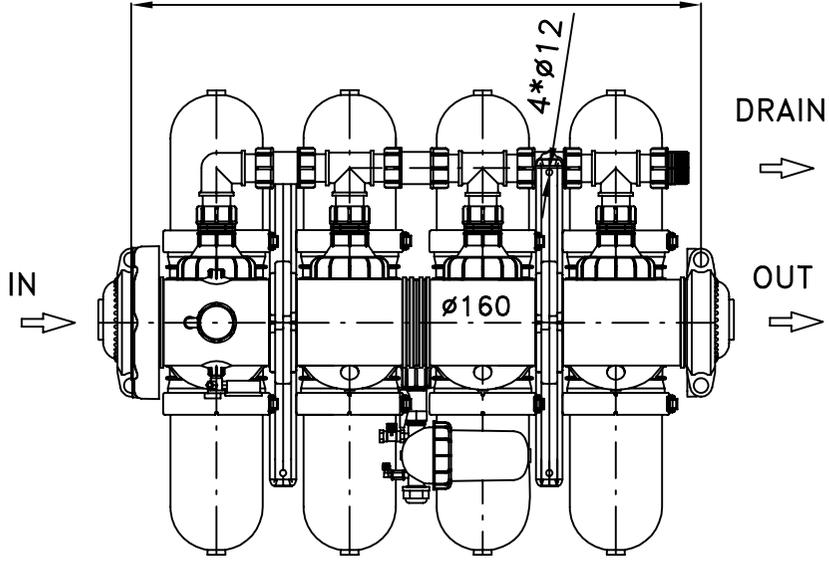
Sapphire With Plaslite Valves



MODIFIC.	DATE	DESCRIPTION	SIGN.
PROJECT		2*3"S.K. FILTERS "SAPPHIRE" SYNTHETIC BATTERY	PAGE 1 OF 4
TITLE		ASSEMBLY DRAWING	CATALOGUE No: 4636H0603VU9S1
PATH BATERIES\3INCH\TWIN	FILE CODE	NAME	DATE
\PLASTIC\SAPPHIRE\PLASLITE	4636H0603VU9S1	IRINA	15.05.07
NAME	DATE	FILE CODE DRAWING OF MANIFOLD:	BACKUP:
NIKOLAY	15.05.07	6635 0603V0,2253 0601	DISK-32
CHECKED	NIKOLAY	PALET-26 (5201 5403)	DRAWER N:
APPROVED	ZACA	TRIWAL-14 (5200 5302)	3140



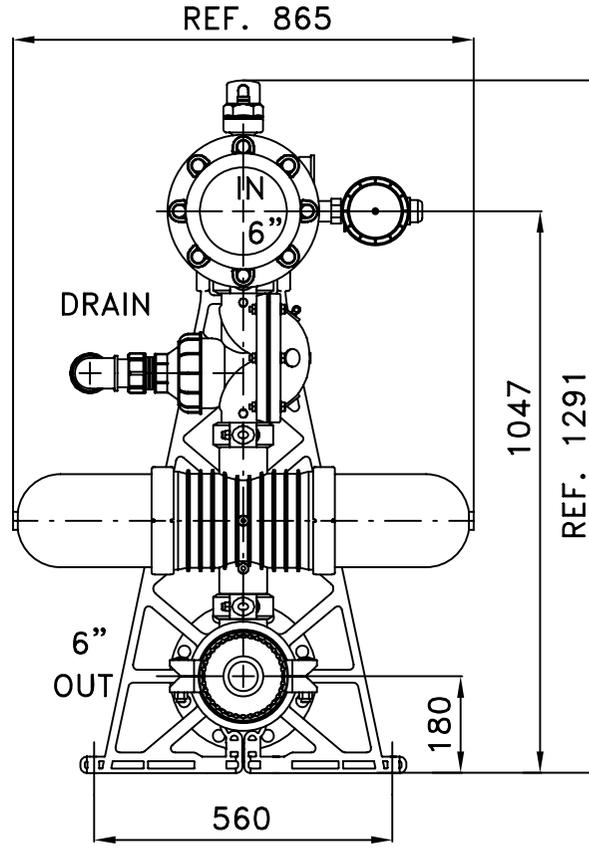
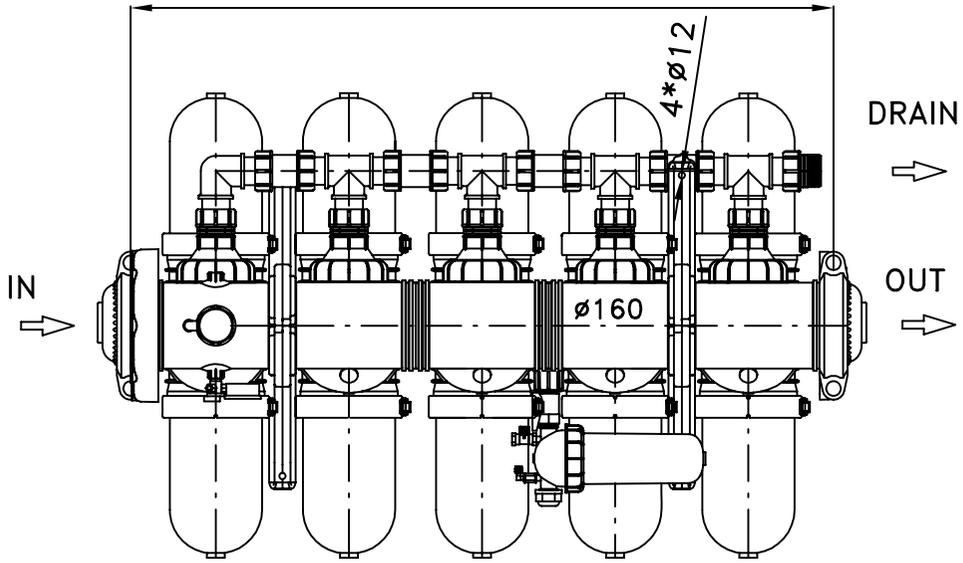
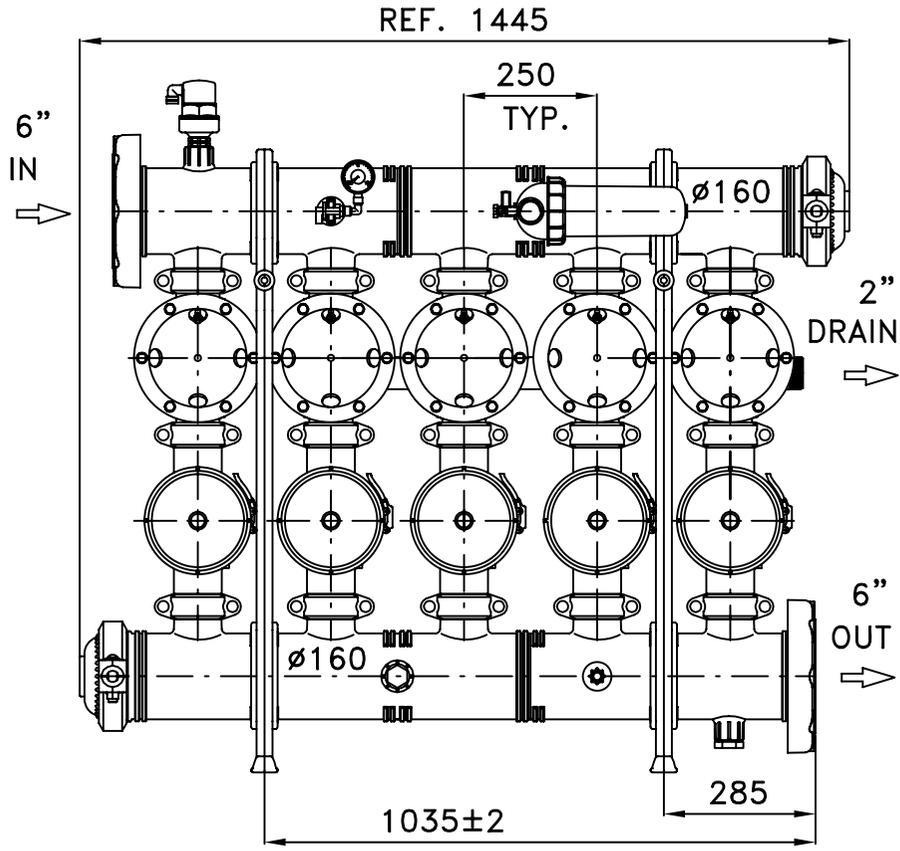
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MODIFIC.	DATE	DESCRIPTION	
PROJECT		3*3"S.K. FILTERS "SAPPHIRE" SYNTHETIC BATTERY	PAGE 1 OF 4
TITLE		ASSEMBLY DRAWING	CATALOGUE No: 4636H0603VU9
PATH BATERIES\3INCH\TWIN	FILE CODE	NAME	DATE
\PLASTIC\SAPPHIRE\PLASLITE	4636H0603VU9	IRINA	15.05.07
	NAME	DATE	DATE
	NIKOLAY	15.05.07	15.05.07
DRAWN	FILE CODE DRAWING OF MANIFOLD:	6635	0603V0,2253
CHECKED	PALET-26 (5201 5403)	DISK-32	
APPROVED	TRIWAL-14 (5200 5302)	DRAWER N:	3140



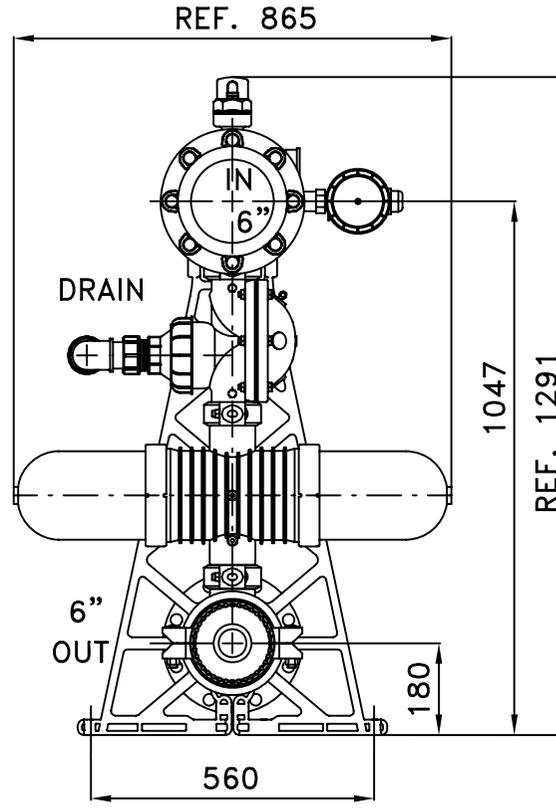
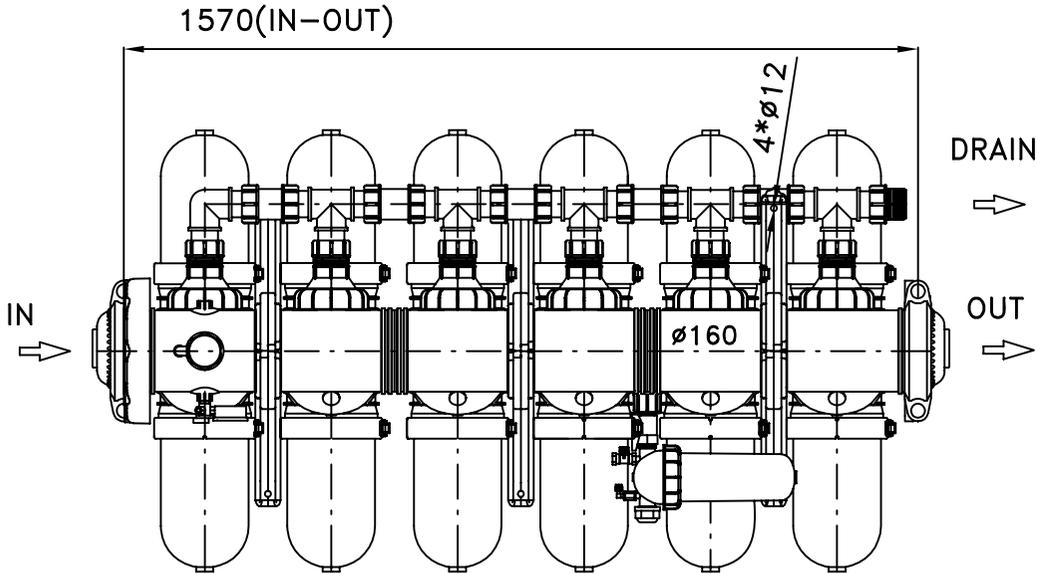
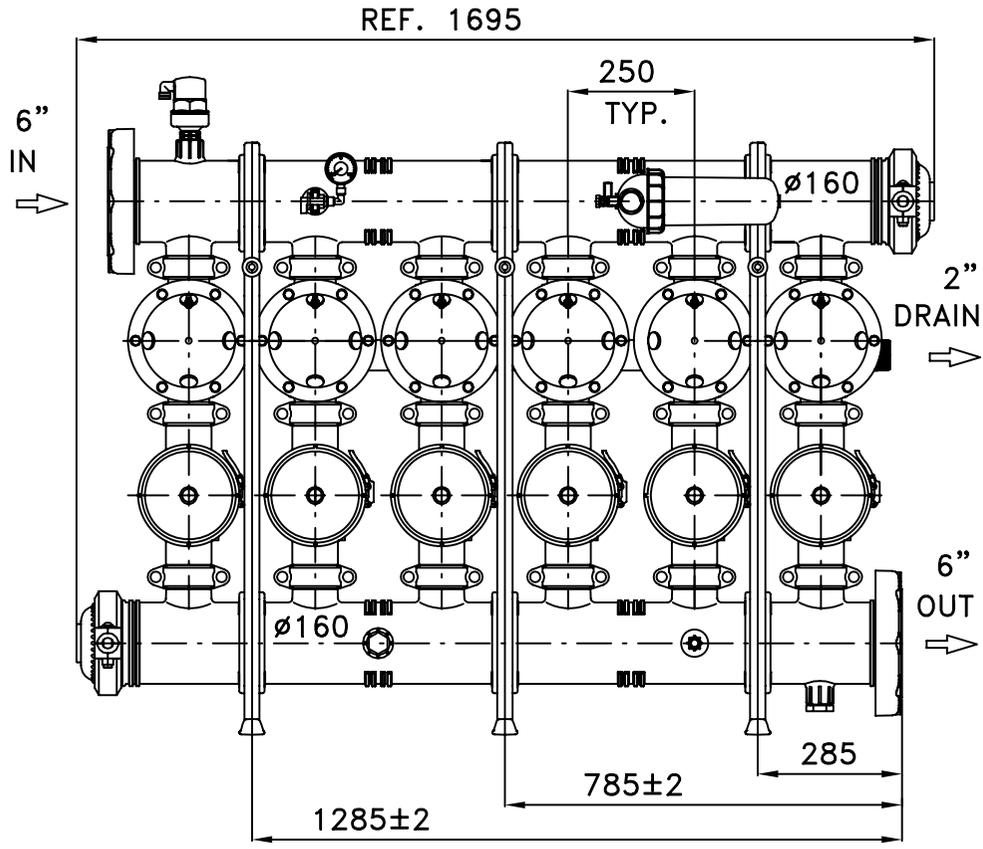
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REF. 865

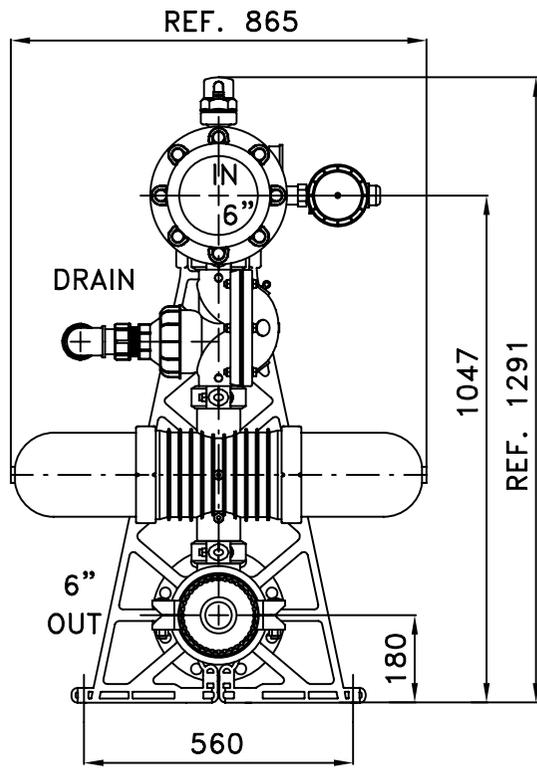
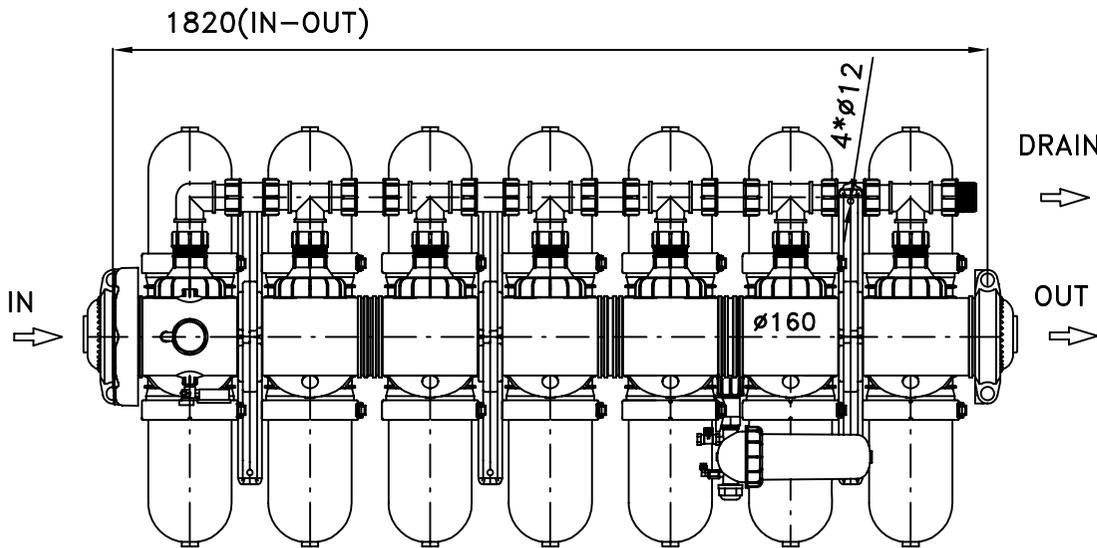
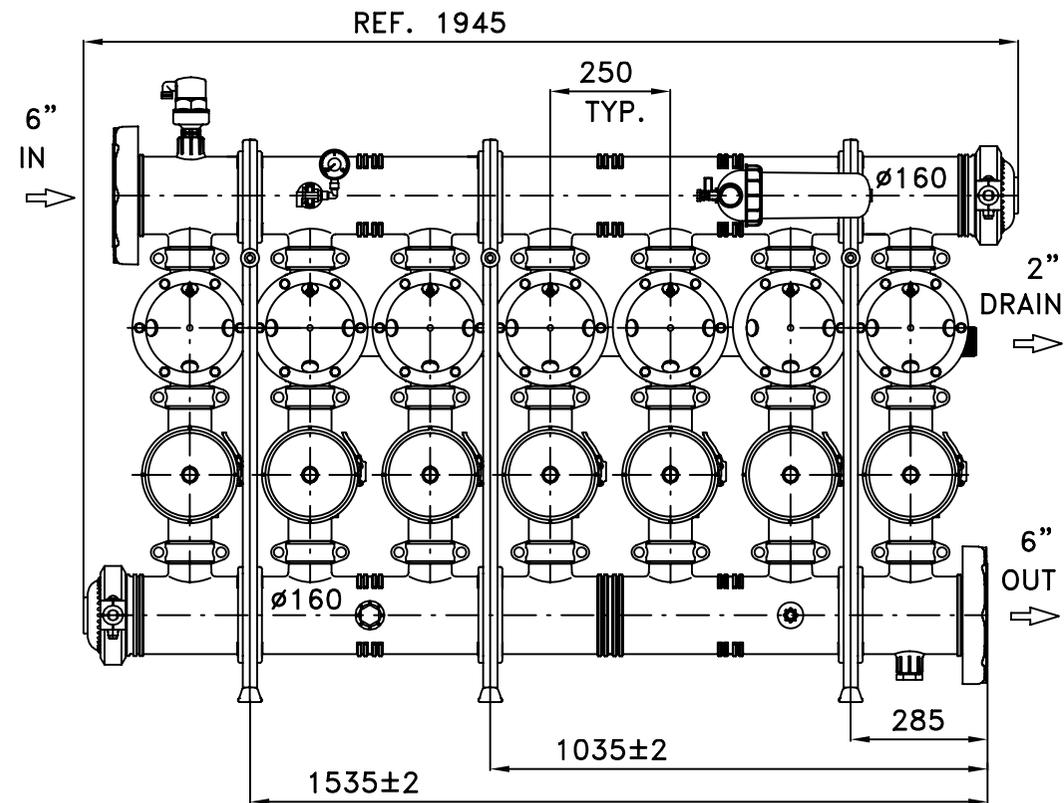
THIS DRAWING CANCEL DRAWING FROM 09.03.06		SIGN.	
MODIFIC.	DATE	DESCRIPTION	
PROJECT		PAGE 1 OF 4	
4*3"S.K. FILTERS "SAPPHIRE" SYNTHETIC BATTERY		CATALOGUE No: 4636H0604VU9	
TITLE		ASSEMBLY DRAWING	
PATH BATERIES\3INCH\TWIN	FILE CODE	NAME	DATE
\PLASTIC\SAPPHIRE\PLASLITE	4636H0604VU9	IRINA	15.05.07
NAME	DATE	SIGNATURE	
NIKOLAY	15.05.07	09222	
DRAWN		FILE CODE DRAWING OF MANIFOLD:	
NIKOLAY	15.05.07	6635 0604V0,2253 0601	
CHECKED		PALET-25 (5201 5405)	
NIKOLAY	15.05.07	DRAWER N: 3140	
APPROVED		TRIWAL-112 (5200 5322)	
ZACA	15.05.07		



MODIFIC.	DATE	DESCRIPTION	SIGN.
PROJECT		5*3"S.K. FILTERS "SAPPHIRE" SYNTHETIC BATTERY	PAGE 1 OF 4
TITLE		ASSEMBLY DRAWING	CATALOGUE No: 4636H0605VU9
PATH BATERIES\3INCH\TWIN		FILE CODE	NAME
\PLASTIC\SAPPHIRE\PLASLITE		4636H0605VU9	IRINA
DATE		DATE	SIGNATURE
DRAWN NIKOLAY		15.05.07	0823
CHECKED NIKOLAY		15.05.07	BACKUP: DISK-32
APPROVED ZACA		15.05.07	DRAWER N: 3140
		TRIWAL-112 (5200 5322)	



MODIFIC.	DATE	DESCRIPTION	SIGN.
PROJECT		6*3"S.K. FILTERS "SAPPHIRE" SYNTHETIC BATTERY	PAGE 1 OF 4
TITLE		ASSEMBLY DRAWING	CATALOGUE No: 4636H0606VU9
PATH BATERIES\3INCH\TWIN		FILE CODE	NAME
\PLASTIC\SAPPHIRE\PLASLITE		4636H0606VU9	IRINA
DRAWN		DATE	DATE
NIKOLAY		15.05.07	15.05.07
CHECKED		DATE	DATE
NIKOLAY		15.05.07	15.05.07
APPROVED		DATE	DATE
ZACA		15.05.07	15.05.07
		FILE CODE DRAWING OF MANFOLD:	BACKUP:
		6635_0606V0,2253_0601	DISK-32
		PALET-27 (5201_5404)	DRAWER N:
		TRIWAL-115 (5200_5305)	3140



MODIFIC.	DATE	DESCRIPTION	SIGN.
PROJECT		7*3" S.K. FILTERS "SAPPHIRE" SYNTHETIC BATTERY	PAGE 1 OF 4
TITLE		ASSEMBLY DRAWING	CATALOGUE No: 4636H0607VU9
PATH BATERIES\3INCH\TWIN		FILE CODE	NAME
\PLASTIC\SAPPHIRE\PLASLITE		4636H0607VU9	IRINA
DRAWN		DATE	DATE
NIKOLAY		15.05.07	15.05.07
CHECKED		FILE CODE DRAWING OF MANIFOLD:	BACKUP:
NIKOLAY		6635_0607V0,2253_0601	DISK-32
APPROVED		PALET-166 (5201 5680)	DRAWER N:
ZACA		TRIWAL-123 (5200 5456)	31 40

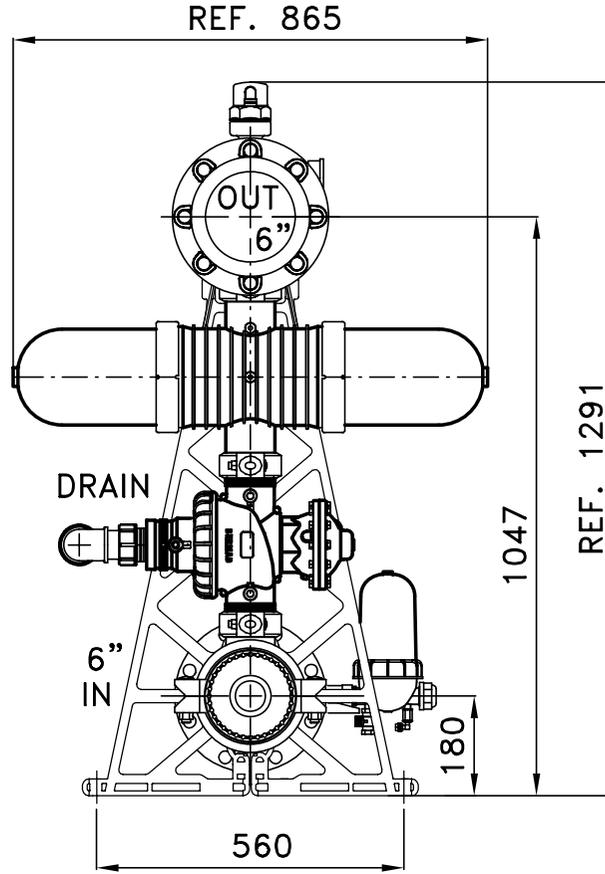
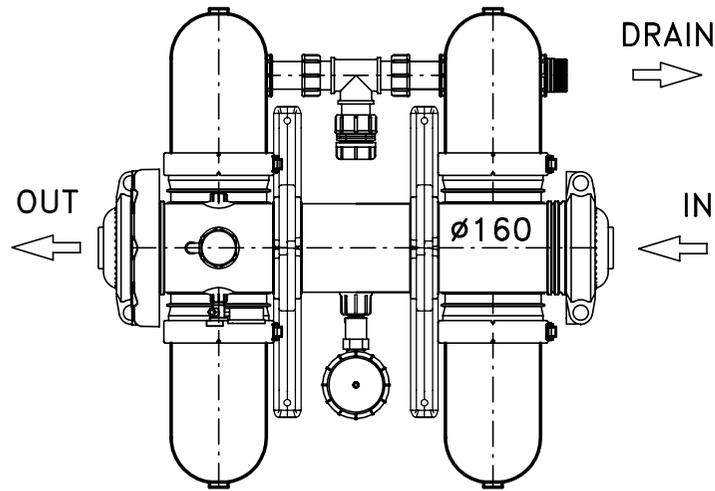
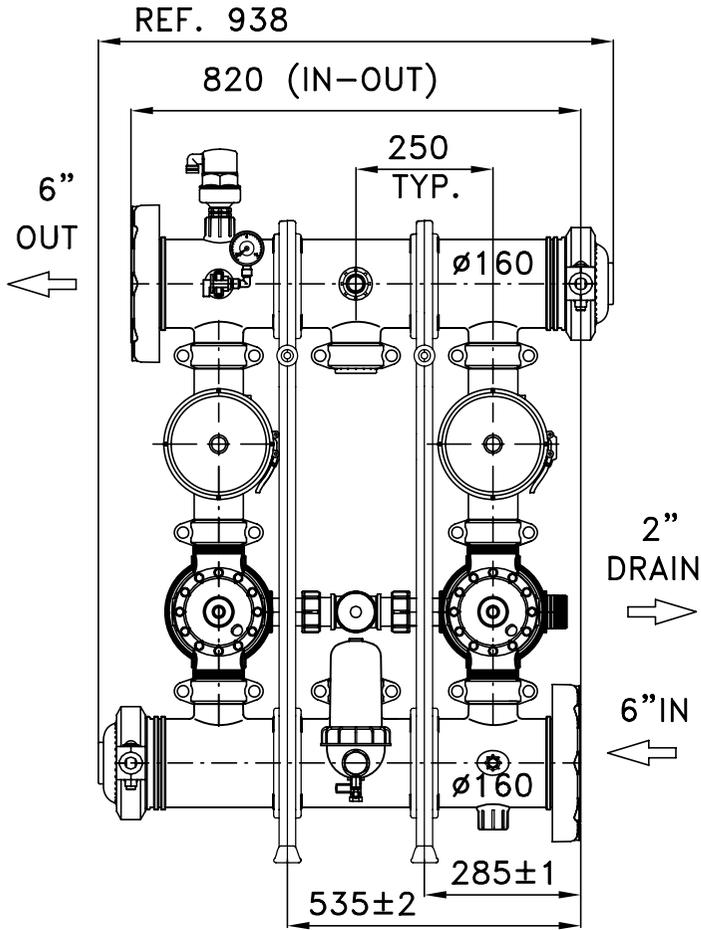
# Drawings

Spin Klin

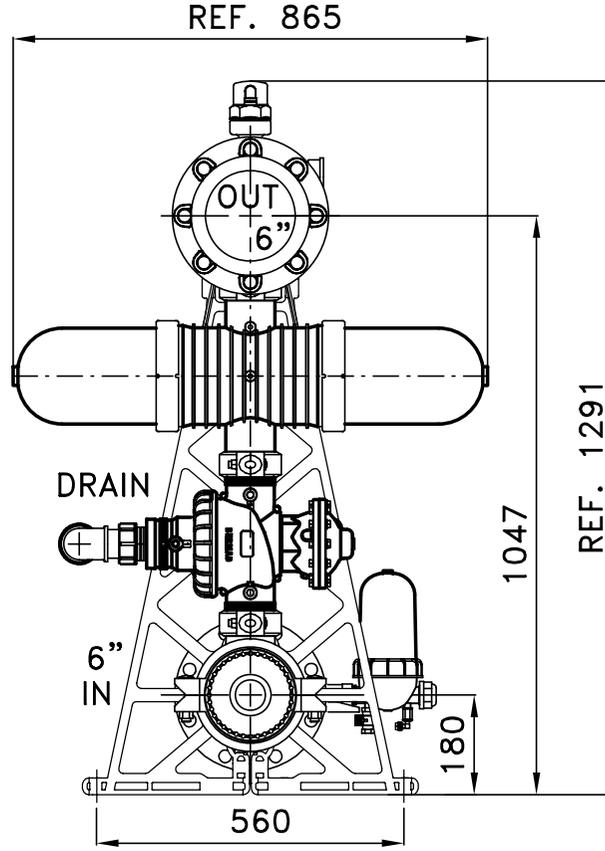
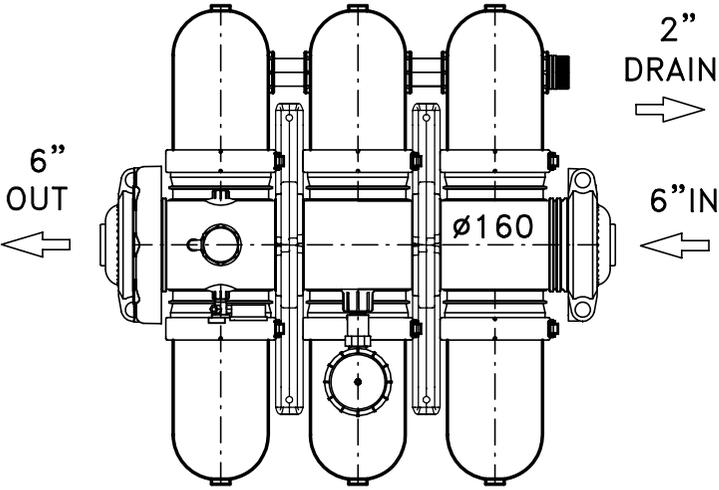
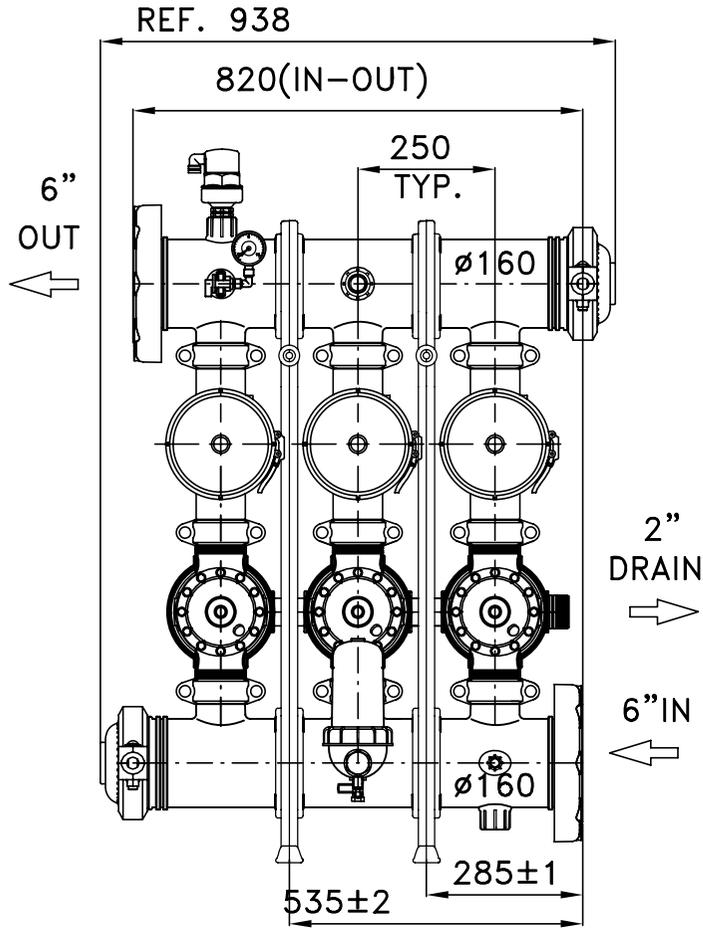
3" All Plastic

Batteries

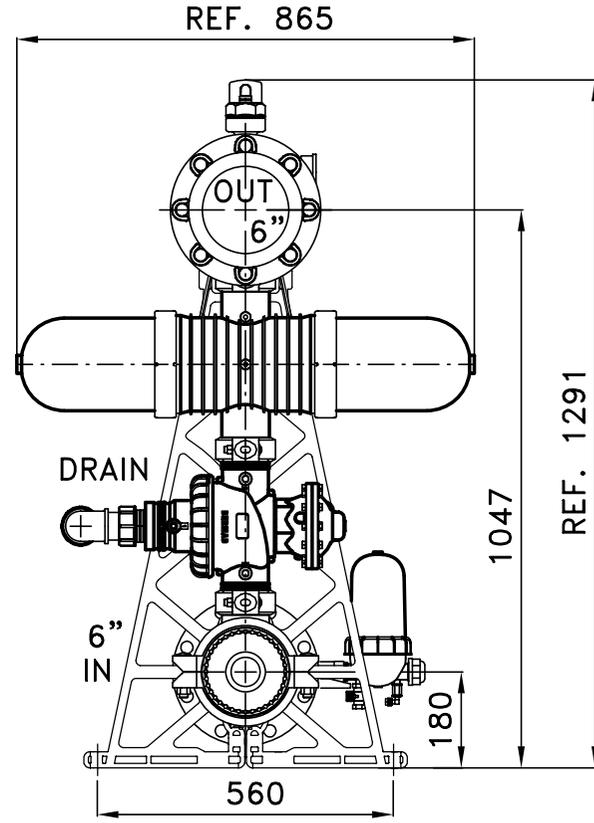
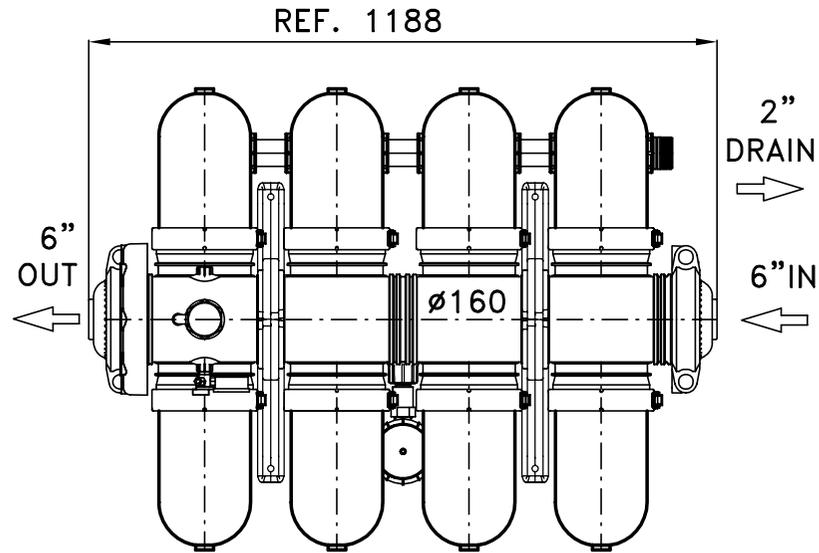
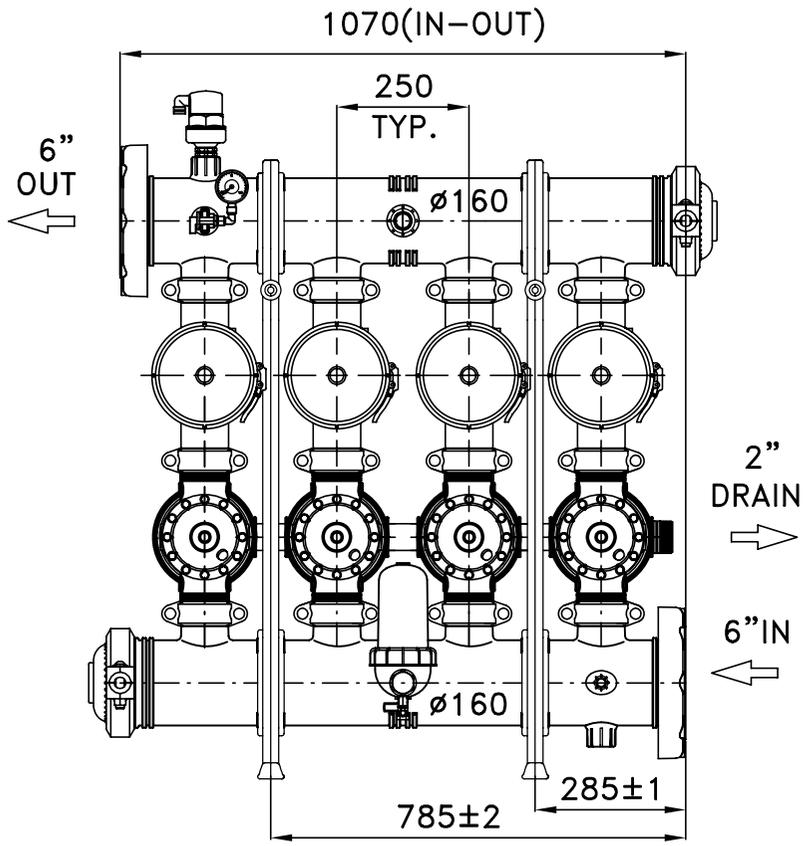
Gavish With Bermad Plastic  
Valves



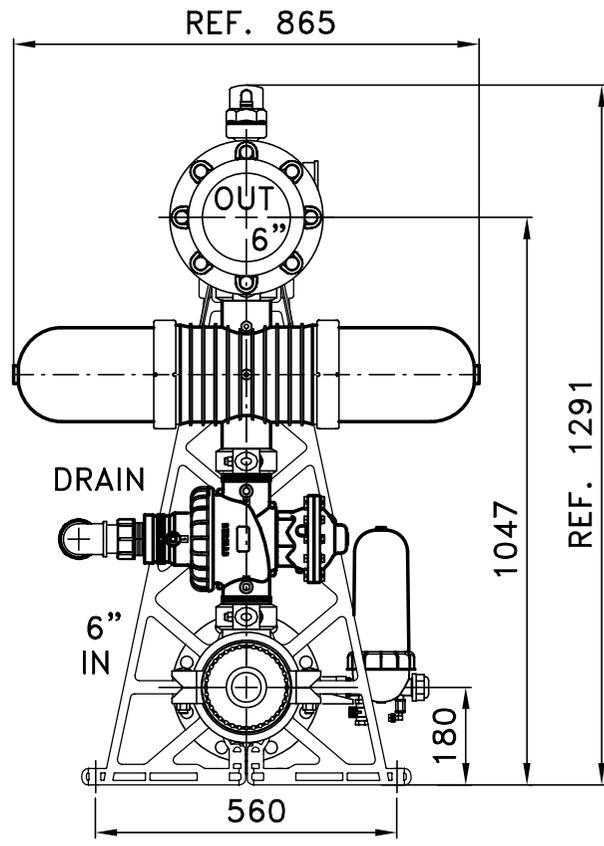
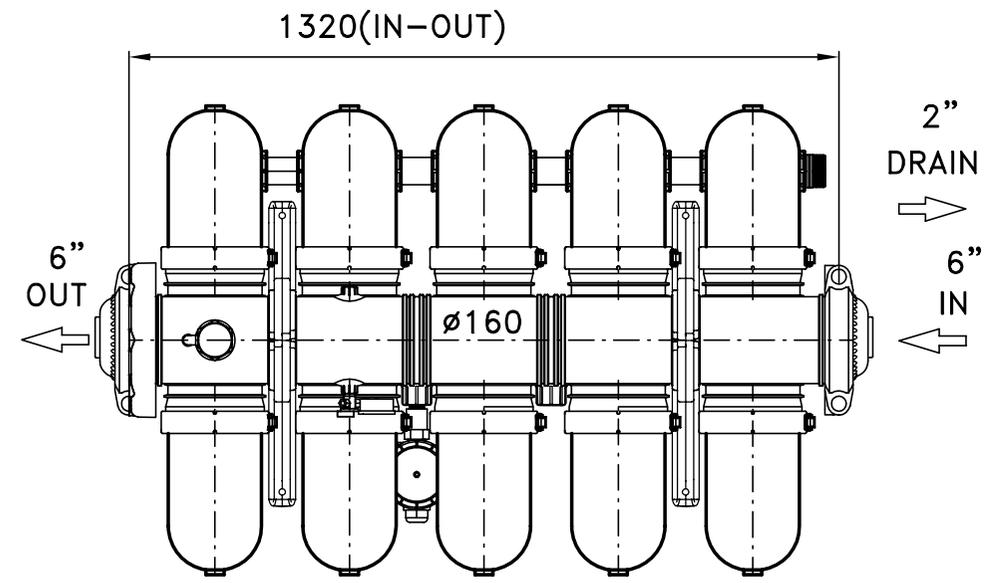
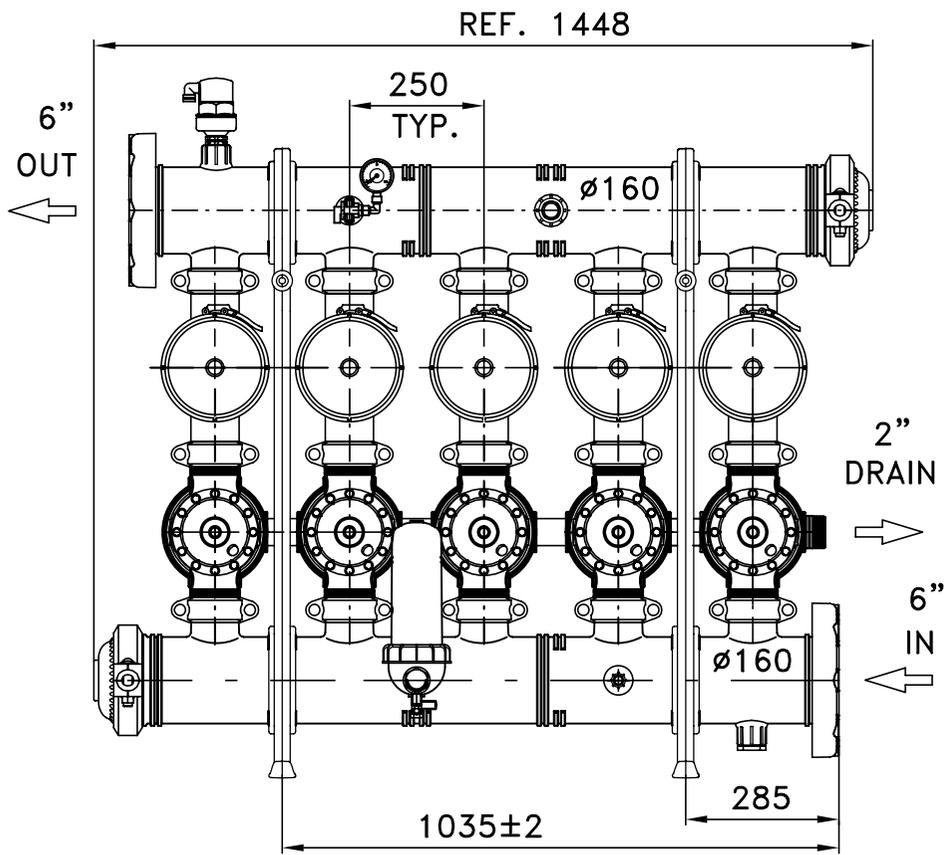
MODIFIC.	DATE	DESCRIPTION	SIGN.
PROJECT		2*3" S.K. FILTERS SYNTHETIC BATTERY	PAGE 1 OF 5
TITLE		ASSEMBLY DRAWING	CATALOGUE No: 1635M0603VU9S1
PATHBATERIES\3INCH\TWIN\GAVISH-PL		FILE CODE	NAME
\PLASTIC\PLASTIC VALVE		1635M0603VU9S1	IRINA
DATE		DATE	DATE
25.04.07		25.04.07	25.04.07
DRAWN		FILE CODE DRAWING OF MANIFOLD:	BACKUP:
NIKOLAY		6635 0603V0, 2253 0601	DISK - 32
CHECKED		PALET - 26 (5201 5403)	DRAWER N:
NIKOLAY		TRIWAL - 14 (5200 5302)	3130
APPROVED			
Z A L I			



MODIFIC.	DATE	DESCRIPTION	SIGN.
PROJECT		3*3" S.K. FILTERS SYNTHETIC BATTERY	PAGE 1 OF 5
TITLE		ASSEMBLY DRAWING	CATALOGUE No: 1635M0603VU9
PATHBATERIES\3INCH\TWIN GAVISH-PL	FILE CODE	NAME	DATE
\PLASTIC\PLASTIC VALVE	1635M0603VU9	IRINA	05.09.06
DRAWN	DATE	FILE CODE DRAWING OF MANIFOLD:	BACKUP:
LEAH	05.09.06	6635 0603V0, 2253 0601	DISK - 31
CHECKED	DATE	APPROVED	DRAWER No: 3130
EYAL	05.09.06		

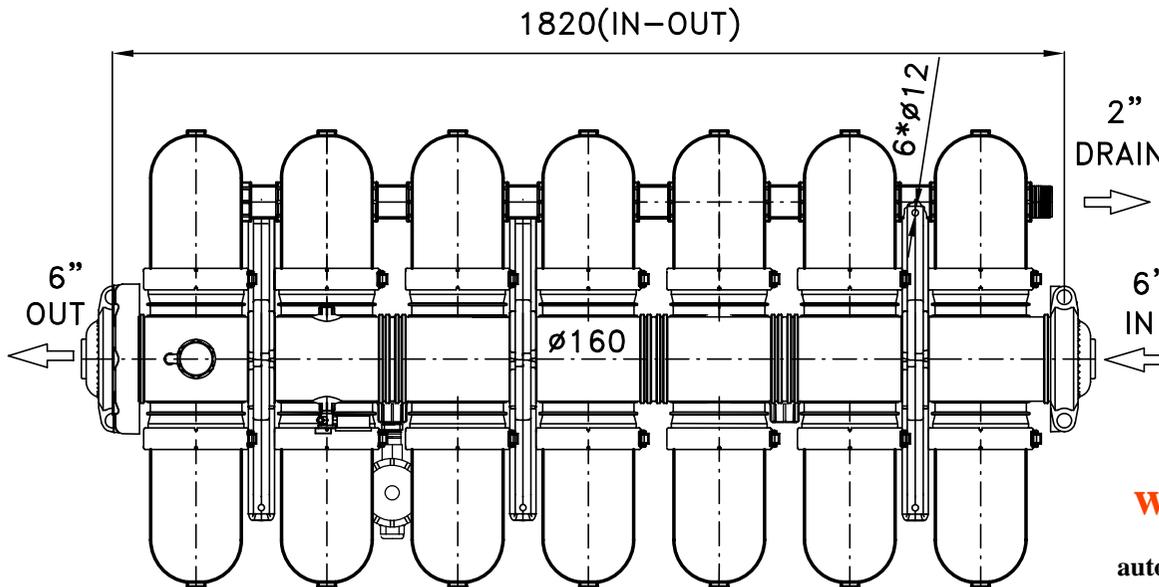
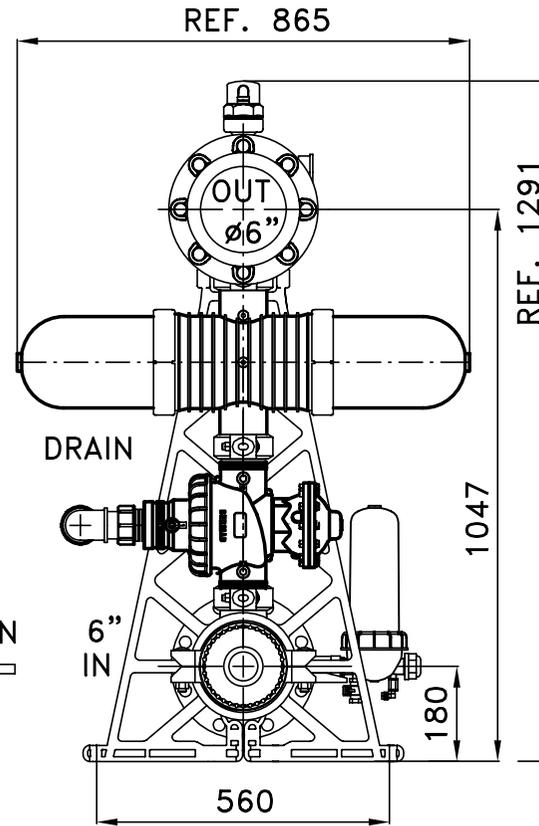
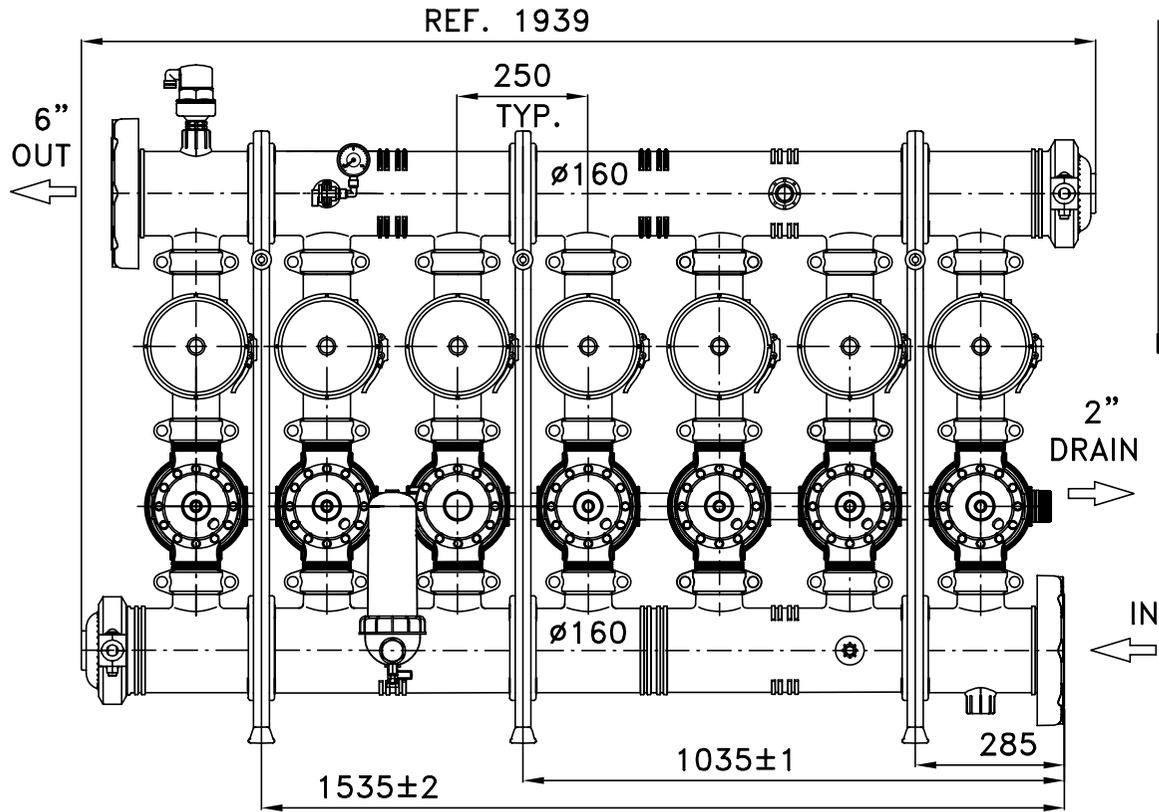


MODIFIC.	DATE	DESCRIPTION	SIGN.
PROJECT		4*3" S.K. FILTERS SYNTHETIC BATTERY	PAGE 1 of 5
TITLE		ASSEMBLY DRAWING	CATALOGUE No: 1635M0604VU9
PATHBATERIES\3INCH\TWIN\GAVISH-PL		FILE CODE	NAME
\PLASTIC\PLASTIC VALVE		1635M0604VU9EX	IRINA 12.11.06
DRAWN		DATE	DATE
NIKOLAY		12.11.06	12.11.06
CHECKED		FILE CODE DRAWING OF MANFOLD:	BACKUP:
EYAL		6635 0604V0, 2253 0601,	DISK-32
APPROVED		PALET-25(5201 5405),	DRAWER N:
		TRIAL-112(5200 5322)	3130



MODIFIC.	DATE	DESCRIPTION	SIGN.
PROJECT		PAGE 1 OF 5	
5*3" S.K. FILTERS SYNTHETIC BATTERY		CATALOGUE No: 1635M0605VU9	
TITLE		ASSEMBLY DRAWING	
PATH BATERIES\3INCH\TWIN	FILE CODE	NAME	DATE
GAVISH-PL\PLASTIC\PLASTIC VALVE	1635M0605VU9	IRINA	16.08.06
	DATE	FILE CODE DRAWING OF MANIFOLD:	BACKUP:
DRAWN	NIKOALY	16.08.06	6635_0605V0,2253_0601
CHECKED	EYAL	16.08.06	PALET-25(5201_5405),
APPROVED			TRIVAL-112(5200_5322),
			DRAWER N: 3130





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MODIFIC.	DATE	DESCRIPTION	SIGN.
		PROJECT 7*3" S.K. FILTERS SYNTHETIC BATTERY	PAGE 1 OF 5
		TITLE ASSEMBLY DRAWING	CATALOGUE No: 1635M0607VU9
		PATH BATERIES 3 INCH TWIN GAVISH-PL PLASTIC PL. - VALVE	FILE CODE 1635M0607VU9
		NAME IRINA	DATE 31.12.06
		NAME OLEG	DATE 31.12.06
		NAME NIKOLAY	DATE 31.12.06
		NAME OMIRY	DATE 31.12.06
		FILE CODE DRAWING OF MANIFOLD: 6635 0607V0,2253 0601,	BACKUP: DISK - 32
			DRAWER N: 3040