

Automatic Filter 6Matic **UDI**[®] filters

Automatic Self-Cleaning Screen Filter:

The **UDI 6Matic** is the latest development in automatic self-cleaning screen filters. The filter offers an efficient solution for filtering water with fluctuating levels of dirt and varying flow rates in the widest range of applications.

The suction system with S.A. Nozzles is pressed against the stainless steel filter screen during the backflushing process due to a hydraulic pressure differential, thus ensuring perfect cleaning. The filtration process is not interrupted while backflushing, and a minimum of flushing water is required.

An electric motor and an internal automatic reversing mechanism move the suction system along the entire filter element for perfect cleaning.

The filter can be applied for diverse applications due to the economical and efficient automatic self cleaning mechanism. This self cleaning mechanism includes the S.S. pressure compensation tube, differential pressure switch, S.S. filter screen and plastic flushing valve.

The **UDI 6Matic** is available in a wide range of sizes and filter perforations for a broad range of applications.

The filters are available in 2" to 20" (DN 50 mm - 500 mm) connections with flows up to 1600 m³/h. Filter perforations are available in 400 to 10 microns.

For high flow applications, numerous filters can be installed to form a filter unit of very high capacity.

Applications:

- Process water
- Cooling water processes
- Industrial wastewater
- Re-circulation systems
- Irrigation systems
- Pre-filtration of disinfection equipment

Technical specifications:

- Max pressure: 10 bar
- Min flushing pressure: 2 bar
- Ph 5 - 9 resistant



* Switchpanel is optional (additional costs and not shown)

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Advantages of the UDI Automatic Self-Cleaning Electric Screen Filter:

- Efficient and automatic self-cleaning system capable of processing high dirt loads
- Low pressure loss
- Continuous uninterrupted filtration during the flushing process
- Long life as a result of polyester-coated steel, stainless steel filterscreen and flushing mechanism
- High filtration efficiency resulting from the unique stainless steel Super Screen
- Low flushing capacity at minimal loss of flushing water
- pH 5-9 resistant
- Max. operating temperature 55 °C, up to 65°C on request
- Low pressure loss

Unique Super Screen Filter Element:

The Super Screen filter is a multi layer stainless steel 316L wire mesh sintered together. This creates a self-supporting structure with a very large effective filter surface to achieve excellent filtering results.

Coating:

In preparation for the coating, the filters are provided with a special layer of zinc phosphate. This treatment ensures proper adhesion of the coating, and protects against rusting-through from the inside. Subsequently, the polyester coating is applied electrostatically, both internally and externally, before being furnace-hardened. The entire process involves 7 steps, and results in a perfect coating with a thickness of approximately 120 microns.

Self-Adjusting flushing nozzle:

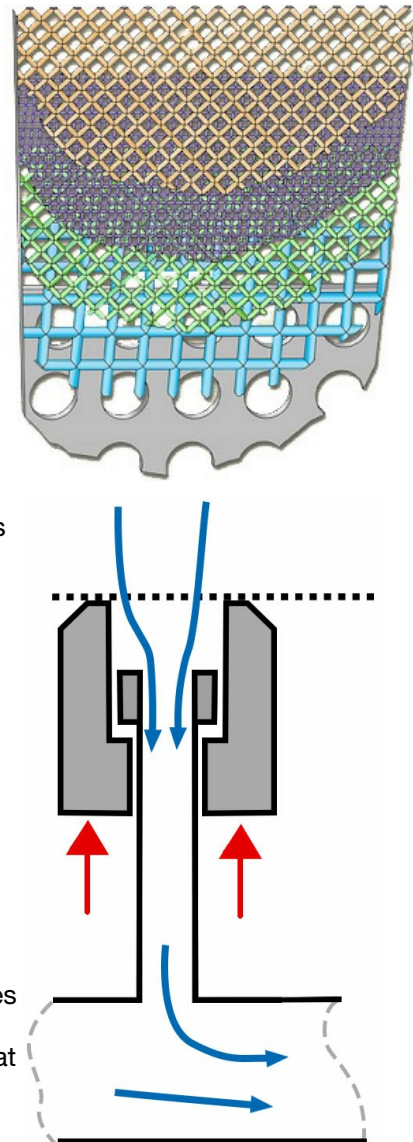
The 6Matic is fitted with patented self adjusting suction nozzles, that, during the flushing process, due to hydraulic differences, follow the filter surface as close as possible. This results in highly efficient cleaning with as little drain water as possible and reliable operation.

Automatic Reversing Mechanism:

The internal flushing mechanism automatically creates a linear movement (back and forth), eliminating the use of limit switches and the need for a 3-phase connection. This means a single-phase motor (230 V) can be used to rotate the dirt collector that scans the entire filter screen clean in 30 seconds.

Materials:

- Filter housing: Polyester-coated steel (option: stainless steel)
 - Filter element: coarse screen: Perforated PVC
fine screen: Multi layer sintered stainless steel wire mesh
 - Rubbers: Natural rubber (NR)
- Filter perforations: 400-300-200-130-100-80-50-40-30-25 microns (on request: 10 microns)



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Operation:

Filtration process in two stages:

first stage- coarse filtration: the raw water enters the filter through the inlet and passes through the coarse screen (1) to the inside of the filter. This prevents passage of large particles which may damage the filter internals.

second stage- fine filtration: after coarse filtration the water flows through the inside of the filter to the internal side of the fine screen (2). The water passes through the screen from inside out to the filtered water chamber (8) and flows out through the outlet. As the water passes through the fine screen, the solids accumulate creating a cake of dirt on the inner surface of the screen; as a result the pressure drop across the screen increases, and when it reaches a preset level (0.5 bar) the filter controller activates the self cleaning process.

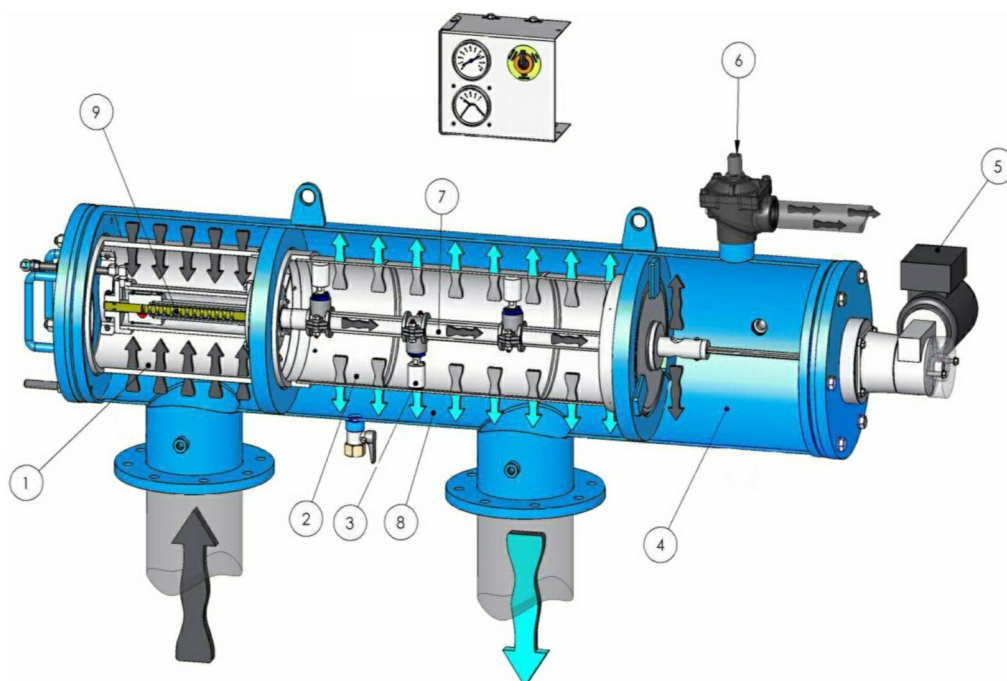
Flushing cycle:

On a flushing command, the flushing valve (6) opens to the atmosphere and pressure drop is created in the flushing chamber (4). As a result, water with dirt from the screen begins flowing through the suction nozzles (3) and collector pipe (7) to the drain via flushing chamber (4) and flushing valve (6). The pressure differential created at the suction nozzles provides a local back-flushing effect, drawing a portion of the water back through the screen and removing the accumulated solids. The nozzles are self-adjusting in accordance with the screen surface. The accurate contact point between the unique self-adjusting nozzle and the screen insures an increased suction ability and decreases significantly the water consumption during flushing. Simultaneously a unidirectional electric motor with the worm gear (5) starts moving the collector with the suction nozzles in helical movement to cover the entire screen's surface, enabling complete and effective cleaning of the screen. The electrical motor is connected through the collector to a reversing direction unit (9) which enables a continuous linear movement (back and forth) of the collector.

The filter is equipped with a pressure gauge and a differential pressure switch that activate the cleaning process, using a computer, PLC control or switch box, in the most efficient manner. Self-cleaning takes place by moving the suction system in a spiral movement across the entire filter surface, removing the dirt off the surface and subsequently draining it.

Customisation:

All 6Matic filters are designed with the option of fitting an airvalve on the filter housing. The control panel can be fitted to either side of the filter, increasing system design freedom. On request, the filter housing and element can be manufactured completely from stainless steel. Various motors to suite different electrical currents are available. A range of applications are possible; consult your supplier.



Application guideline

For selecting the right automatic filter it is important to take a number of variables into account. The origin of the water to be used, the degree of contamination and the application for the filtered water. A pre-filter can sometimes be necessary. For any additional questions contact your supplier.

All our recommendations are without obligation, and we cannot be held liable for any adverse consequences resulting from these recommendations.

Maximum flow in m ³ /h									
Filter element	Water quality	Micron							
		10*	25*	50*	80	100	130	200	≥ 300
2"-2500 cm ²	Good	10	25	25	25	25	25	25	25
	Fair	-	17	25	25	25	25	25	25
	Contaminated	-	15	20	25	25	25	25	25
3"-2500 cm ²	Good	10	25	40	40	40	40	40	40
	Fair	-	17	25	40	40	40	40	40
	Contaminated	-	15	20	33	40	40	40	40
4"-2500 cm ²	Good	10	25	42	58	75	80	80	80
	Fair	-	17	25	42	50	59	75	80
	Contaminated	-	15	20	33	42	50	68	75
4"-4000 cm ²	Good	16	40	67	80	80	80	80	80
	Fair	-	27	40	67	80	80	80	80
	Contaminated	-	21	32	53	67	80	80	80
6"-4000 cm ²	Good	16	40	67	94	120	133	150	150
	Fair	-	27	40	67	80	94	134	134
	Contaminated	-	21	32	53	67	80	120	120
6"-6000 cm ²	Good	24	60	100	140	150	150	150	150
	Fair	-	40	60	100	120	141	150	150
	Contaminated	-	32	50	80	100	120	150	150
8"-6000 cm ²	Good	24	60	100	140	180	200	240	240
	Fair	-	40	60	100	120	141	200	200
	Contaminated	-	32	50	80	100	120	160	180
8"-8000 cm ²	Good	32	80	133	160	250	270	300	300
	Fair	-	53	80	133	160	188	250	300
	Contaminated	-	43	64	106	133	160	220	250
12"-8000 cm ²	Good	32	80	133	185	250	270	500	600
	Fair	-	53	80	133	160	188	268	270
	Contaminated	-	43	64	106	133	160	240	250

Sizes 10", 14", 16", 18" and 20" are upon request.

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The assessment and use of the application guideline:

In the application guideline table the following water qualities are differentiated.:

- Good (Bassin-rainwater)
- Fair (Surfacewater)
- Contaminated (Re-circulationwater)

Above mentioned qualities are based on the following TSS values (Total Suspended Solids) in ppm:

- Good - TSS < 10ppm (mg/ltr)
- Fair - TSS < 30ppm (mg/ltr)
- Contaminated - TSS < 50ppm (mg/ltr)

Differentiation based on contamination type, organic and inorganic and partical size still needs to be preformed, also the fluctuations in water quality and the seasonal influences need to be taken into account.

An effective pre-filtration is recommended for a continuance filtration level.

* For a filter < 50 micron a pre-filtration of 200 micron or less is mendatory, this to ensure a reduction of 50% on the above mentioned quality level.



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Type		706M002	706M003	706M034	706M004	706M006	706M086	706M008	706M128	706M012
Connection - B	inch	2"	3"	4"	4"	6"	6"	8"	8"	12"
Diameter - D	inch	12"	12"	12"	12"	12"	16"	16"	16"	16"
Flange (ISO 7005 PN10)		50	80	100	100	150	150	200	200	300
Bolt circle dia.	mm	125	160	180	180	240	240	295	295	400
Bolt holes	mm	4x Ø18	8x Ø18	8x Ø18	8x Ø18	8x Ø22	8x Ø22	8x Ø22	8x Ø22	12x Ø22
Weight	kg	177	179	183	214	217	310	314	335	350
Length - L	mm	1480	1480	1480	1660	1660	1925	1925	2225	2225
Pitch in/out - A	mm	430	430	430	600	600	780	780	990	990
Drain valve	inch	1½"	1½"	1½"	2"	2"	2"	2"	2"	2"
Filtersurface	cm²	2500	2500	2500	4000	4000	6000	6000	8000	8000
Max. pressure	bar	10	10	10	10	10	10	10	10	10
Min. flush. pres.	bar	2	2	2	2	2	2	2	2	2
Min. flush. cap. *	m³/h	8	8	8	10	10	12	12	14	14
Flushing water **	ltr	67	67	67	83	83	100	100	117	117
Electric motor	1 phase 230V/50Hz (Other voltages on request)									
Size E	mm	540	540	540	540	540	575	575	575	575
Size H	mm	650	650	650	650	650	780	780	780	780
Size L1	mm	2480	2480	2480	2780	2780	3280	3280	3830	3830

Specifications for larger models on request

* The flushcapacity is based on a 2 Bar pressure difference

** The quantity flushingwater for each flushing cycle is based on a 2 Bar pressure difference

