

### Assembly Technical Data

Minimum Water Pressure	12 psi / 0.8 bar Lower customer water pressures require an auxiliary booster pump to maintain an adequate water pressure
Maximum Water Pressure	145 psi / 10 bar
pH	4-11
Maximum Temperature	158°F / 70°C
Minimum Temperature	35°F / 2°C - Must be protected from freezing
Water Flush Volume	Single spine units: 8.7 gallons / 33 liters Two spine units: 17.4 gallons / 66 liters
Air Pressure	Equal or higher pressure of water used for backwashing
Flange Connection Options	NPT/ANSI flange, BSP or DIN
Operation	Water is filtered continuously through each pad in parallel until either a timed backflush cycle time is met and/or a set differential pressure rate is achieved
Drain Disposal	Sent to standard drain since filtration consists of particulate rather than chemicals



## Automatic Water Filtration Assembly



# Automatic Water Filtration Assembly



Ingersoll Rand's Automatic Water Filtration Assembly removes particulate from the inlet water supply to any water cooled equipment. The water filter assembly consists of various numbers of filter pods (depending on the volume of water to be filtered), inlet and outlet manifold piping, valves and a control panel. The manifold and customer connections are offered in NPT/flanges, BSP or DIN connectors. The control panel can be either 120 VAC or 110 VAC.

## Standard Capacities and "typical foot print"

Capacity		Footprint		
GPM	LPM	H	W	D
50	190	38	27	33
100	380	50	37	33
150	560	73	27	33
200	750	67	48	48
300	1135	79	28	48
400	1515	109	54	38
500	1890	122	54	38
750	2840	170	54	54



## Filtration Process

1. Inlet water flows through the system inlet manifold, distributing through the inlet valves to the filter pods.
2. The water passes through the filter pods and flows out clean through the outlet valve and outlet manifold to the customer.
3. Discharge waste (particulate) is piped to the customer's drainage system.

## Controller / Electrical

### Component Technical Data

- Controller physical size: Either 26"h X 14"w X 8"d OR 20"h X 16"w X 10"d
- Controller enclosure electrical rating: UL NEMA 4X
- Controller certification(s): CE is available
- Voltage options: 120/60 OR 110/50-60

## Backwashing Process

1. During this step, the water continues to flow through the inlet manifolds.
2. Initiated either by differential pressure and/or programmed time (depending on customer's needs), the controller transmits an electrical signal (delta pressure and/or time) to change the mode of operation. Differential pressure is set at 7-8 pounds and can be changed by a 1/2 turn of the adjustment screw. Time can be selected for 6, 12 or 24 hours.
3. The valve to the pod that is to be backwashed reroutes the water for backwash mode. It shuts off the inlet flow into the pod but opens the pod to the drain manifold. Then, the water from the outlet manifold flows through the filter pod and backwashes the filter pod and the new wastewater flows through the drain manifold.
4. The first pod backwashes while the remaining pod(s) continue to filter.
5. On completion of the backwash cycle, the first pod returns to filtration mode. Then, the second pod begins backwash mode. The process repeats until all pods in the system have backwashed. Water flow is never interrupted to the customer's equipment.

color	micron	mesh
green	55	200
black	100	140
red	130	120
yellow	200	80

Other filtration rates can be evaluated.

## Filtration Rating and Discs

Standard filtration rate is 100 micron (140 mesh) and is achieved by using 100 micron discs. Other filtration rates are available upon request. Color-coded discs are stacked on a spring compression spine and covered with a plastic dome. The color-coded discs represent the desired micron filtration rates. During filtration, the discs are tightly compressed together by a spring and differential pressure, forcing the water to flow through the grooves and traps of the discs. When either the back-flushing time and/or differential pressure rates are achieved, the discs are "separated" by releasing the inlet hydraulic pressure. Multi-jet nozzles provide tangential spray on the loosened discs and causes them to spin and release the retained solids that are flushed out to drain.

## Frequency of Disc Change-Outs

Water source (quality, source, temperature, pH, light season, duration of filtration) influences the frequency of back flushes and the life of the discs. Each site will have a varied rate of needs, depending on their individual site conditions. Faster cycling of the differential pressure will consume the disc more rapidly.

## Sizing a Water Filter

First, an assessment is required for the required water flow needed for the water-cooled piece of equipment (GPM or LPM). Next, a determination must be made for an appropriate safety factor of water flow. Adding these two numbers will yield the proper GPM/LPM for the system size. After the flow is selected, then the connection types must be selected (NPT/flanges, DIN, BSP). The standard filtration rate is 100 micron but this can be altered, if necessary. The control voltage needs to be selected (120/60 or 110/60-50) to complete the package needs. The site water pressure must be above 40 psig to permit the filtration and backwashing of water. When water pressure is below the desired pressure, an auxiliary water pump should be included.