

**A Complete Line of Quality, Durable,
Pre-Engineered Systems**

RES-KEM UNI-TECH WATER FILTER SYSTEMS

WHY A PRESSURE FILTER?

RES-KEM *UNI-TECH* pressure filters clarify water by removing sediment, turbidity, iron, unpleasant tastes and odors, suspended particles, and unwanted color which is commonly found in surface water. They can be used in a variety of service conditions including, but not limited to: industrial, municipal, and institutional applications.

All filters require periodic backwashing to dispose of the accumulated debris. This is accomplished by backwashing clean water through the unit and then disposing of the effluent. During this phase, the different sizes of media separate into layers, preparing the filter bed for service. Because backwashing generally occurs at higher flowrates than those seen in service, oftentimes a proper backwash flowrate is not possible because the systems are designed for required service flowrates. However, by utilizing smaller double or triple unit systems, the optimum backwash flowrate is lower; therefore, these systems can operate at higher service flowrates.

These pre-engineered systems can be custom designed to meet most applications by utilizing the correct tank and valve sizes to satisfy service flow requirements and accurate media choice depending on removal needs. They can be equipped to operate manually, semi-automatically, or fully-automatically while requiring very limited technical knowledge.

FILTER BED

Several different types of filter beds are available:

Sand: The most common filter media, used in most standard systems. Generally a fine mesh sand is coupled with a coarse grain support bed to remove suspended solids and turbidity.

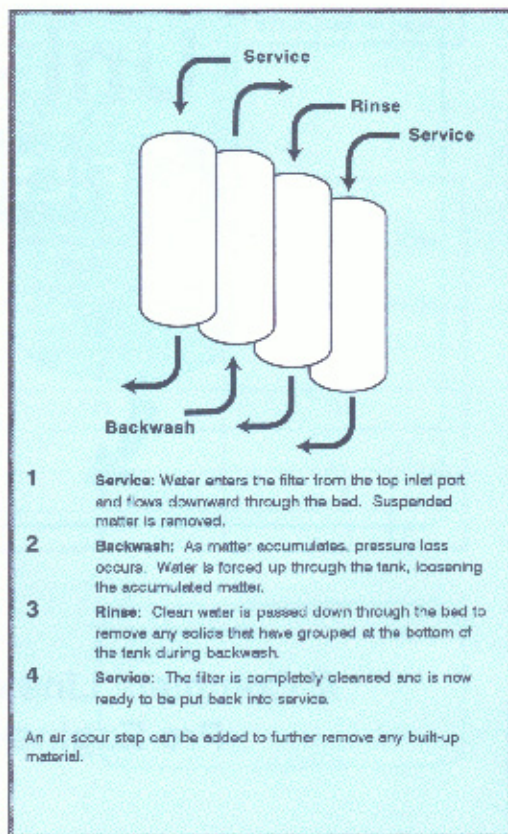
Anthracite: Performs nearly identical to a sand bed, but is used in applications where silica pick-up from the sand is objectionable.

In-Depth: These beds are composed of several layers of different media size. During backwash, they separate according to density, with the least dense type settling on top. Consequently, in-Depth filters allow higher loading rates and longer runs because of the depth and uniformity of the penetration of the particulate. A sand/anthracite bed is a typical configuration. In-Depth filters will remove sediment down to the 20-30 micron range.

Multi-Media: When top quality water is required and unwanted sediment is too small to be removed by an In-Depth filter, this type of bed is the preferred choice. Again, it consists of multiple layers of increasing grain size, but adds garnet to the combination of sand and anthracite. Multi-Media filters will remove sediment down to the 10 micron range.

Activated Carbon: For the removal of unpleasant tastes and odors, dechlorination, and organic contaminant adsorption, these filters are recommended. Depending upon the exact application, there are a variety of carbon types from which to choose.

Fluorite: Extremely light, low density media. This translates to lower pressure losses and reduced backwash rates. Typically removes particles down to the 25-35 micron range.



GENERAL INFORMATION

QUALITY TANK CONSTRUCTION

All filter tanks are constructed of high quality welded steel designed for 100 psi working pressure and tested for 150 psi. Standard tanks are equipped with inlet and outlet connections, top mounted loading port (either handhole or manhole), and a side media removal fitting. Due to the corrosive nature of certain media types, all tanks are epoxy lined.

UNDERDRAIN

The RES-KEM hub and lateral distribution system is designed to utilize the entire bed area during all flow rates. This minimizes channelling during periods of low flow. The entire system is constructed of PVC with schedule 80 laterals ensuring maximum corrosion protection and strength.

OPTIONS

While our systems are pre-engineered, they can be readily adapted to conform with customer requirements. By utilizing state of the art engineering systems, modifications can be made quickly and economically.

DIAPHRAGM VALVES

To answer a need for truly trouble-free, labor saving, automated equipment; RES-KEM engineers designed the ultimate water filter using a "Nest" of diaphragm valves. The angular design, high lift, and large seat opening of these hydraulically operated valves provide a minimum restriction to flow and reduction of turbulence. They are controlled by a "Stager" to backwash the filter and return it to service without any manual attention.

TIMER/CONTROLLER

The standard method of control for automatic units is accomplished through the use of a heavy duty stager with an integral clock timer. This control has a built in manual override feature should backwashing be required at times other than at its pre-determined time.

- Controls**
- Time Clock (std.)
- Manual
- Semi-automatic
- Fully-automatic

- Internal Piping**
- Schedule 80 PVC (std.)
- CPVC
- Polypropylene
- Steel
- Stainless Steel

- External Piping**
- Black Steel (std.)
- Galvanized
- Copper
- PVC
- Stainless Steel

- Tanks**
- Non-Code, Epoxy Lined (std.)
- ASME Code, 100 psig
- ASME Code, 125 psig
- High Temp Epoxy Lined
- Baked Phenolic Lined
- Hot Dip Galvanized
- Stainless Steel
- Other lining _____

- Other**
- Isolation Valves (inlet/outlet)
- Skid Assembly (pre-piped & wired)
- NEMA 12 or 4 Control Housings
- External Finish Paint
- Air Scour
- D/P Gauge or Switch
- Interconnecting Piping (between units)

RES-KEM PRESSURE FILTERS

Model Dia (in.)	Surface Area (ft. ²)	Inlet & Outlet Service Pipe Size		Capacity (gpm)						
		Type A (in.)	Type B (in.)	3 (gpm/ft. ²)	5	7	9	11	13	15
20	2.18	1	1-1/2	6.5	8.5	15.0	19.5	24.0	28.0	33.0
24	3.1	1-1/2	1-1/2	9.0	18.0	22.0	28.0	34.0	40.0	47.0
30	4.9	1-1/2	2	15.0	25.0	34.0	44.0	54.0	64.0	74.0
36	7.1	1-1/2	2	21.0	35.0	50.0	64.0	78.0	92.0	106.0
42	9.6	2	2-1/2	29.0	48.0	67.0	86.0	106.0	125.0	144.0
48	12.6	2	3	38.0	63.0	88.0	113.0	139.0	164.0	189.0
64	15.9	2-1/2	3	48.0	80.0	111.0	143.0	183.0	207.0	239.0
60	19.6	3	3	59.0	98.0	137.0	176.0	216.0	255.0	294.0
66	23.8	3	4	71.4	119.0	166.6	214.2	261.8	309.4	357.0
72	28.3	4	4	84.9	141.5	198.1	254.7	311.3	367.9	424.5

MAXIMUM FLOWRATES (gpm/ft.²)

Media	Type A		Type B
	Normal Continuous	Maximum During Backwash (Multiple Unit Systems)	Hi Rate At Any Time
Sand Filter	5	9	15
Anthracite Filter	5	9	15
In Depth	7	11	15
Activated Carbon	5	5	-
RK Lite	5	9	9
Multi-Media	5	9	15



Water Treatment Systems

