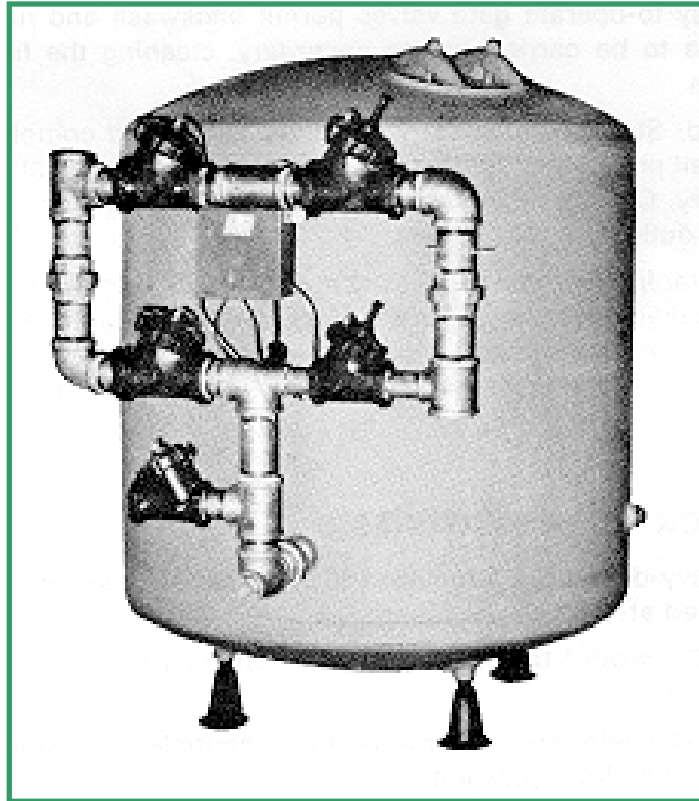


VN 24 to 72 Series Water Filters



The Water King VN Series Filters Feature:

- GALVANIZED OR LINED AND PRIMED MINERAL TANKS
- PVC/ABS INTERNALS
- AQUAMATIC 420 DIAPHRAM VALVES
- AQUAMATIC STAGER AND TIMER
- EXTERNAL BACKWASH RATE OF FLOW CONTROLLER
- WASHED GRAVEL UNDERBEDDING
- OPERATING CONDITIONS: WATER PRESSURE 25 TO 125 PSI
- COLD WATER OPERATION.

OPTIONS

TIMERS. Standard models include 12-day timers. Seven-day timers are available at no extra cost.

DIFFERENTIAL PRESSURE OR FLOW INITIATED backwash is available using the Model 7000 Controller.

SKID MOUNTED units on welded structural steel frames are pre-piped, pre-wired, and factory tested. Installation requires simple plumbing connections to the manifold inlet and outlet, a drain, electrical connection, and loading of the tanks.

PRESSURE GAUGES AND TEST TAPS can be installed on the inlet and outlet of the system by inserting appropriate fittings in the face piping. This allows the user to sample the inlet and outlet water quality and to monitor pressure losses through the system.

POWER. Standard electrical specifications of 120 VAC, 60 Hz. 220 VAC, 50 Hz. configurations are available.

ASME Code Tanks are available.

GENERAL SPECIFICATIONS APPLIES TO ALL TYPES OF MEDIA.

Model #	Dia. (in.)	Side Sheet (in.)	Bed Area (ft. ²)	Pipe Size		Gravel (ft. ³)	Media (ft. ³)	Dimensions W x D x H
				Inlet (in.)	Outlet (in.)			
VN 24	24	54	3.1	1 1/2	1	1	6	2'0" x 2'0" x 5'8"
VN 30	30	60	4.9	2	1 1/4	2.5	10	2'6" x 3'4" x 5'10"
VN 36	36	60	7.1	2	1 1/2	3.5	14	3'0" x 3'4" x 5'10"
VN 42	42	72	9.6	2 1/2	2	5	19	3'6" x 4'6" x 6'4"
VN 48	48	60	12.6	2 1/2	2	7.5	25	4'0" x 5'0" x 6'10"
VN 54	54	60	15.9	3	2 1/2	10	32	4'6" x 5'6" x 7'2"
VN 60	60	60	19.6	3	2 1/2	14	40	5'0" x 6'0" x 7'6"
VN 66	66	60	23.7	4	3	18	48	5'10" x 7'2" x 7'4"
VN 72	72	60	28.3	4	3	23	56	6'4" x 7'8" x 7'6"

CAT 510.2

THE MEDIA CHOICES FOR THIS SERIES OF FILTERS ARE:

- FINE SAND
- FILTER AG
- ACTIVATED CARBON
- MULTIMEDIA
- MANGANESE GREENSAND
- STABILIZATION MEDIA

BACKWASH RATE IN GPM						
Model	Fine Sand	Filter AG	Activated Carbon	Green Sand	Multimedia	
VN 24	35	25	25	35	50	
VN 30	60	40	40	60	75	
VN 36	90	60	60	90	100	
VN 42	115	90	90	115	140	
VN 48	160	110	110	160	200	
VN 54	200	140	140	200	240	
VN 60	250	170	170	250	300	
VN 66	300	200	200	300	350	
VN 72	350	250	250	350	425	

FLOW RATE IN GPM AT VARIOUS LOADING RATES									
Model	Diameter (in.)	Bed Area (ft ²)	Filter Loading in (gpm/ft ²)						
			2	3	4	5	7.5	10	15
VN 24	24	3.1	6	9	13	16	24	31	47
VN 30	30	4.9	10	15	20	25	37	49	74
VN 36	36	7.1	14	21	28	35	53	71	106
VN 42	42	9.6	19	29	38	48	72	96	144
VN 48	48	12.6	25	38	50	63	94	126	188
VN 54	54	15.9	32	48	64	79	119	159	238
VN 60	60	19.6	39	59	79	98	147	196	294
VN 66	66	23.7	47	71	95	119	178	237	356
VN 72	72	28.3	57	85	113	141	212	283	424

COMPONENTS FOR MULTIMEDIA FILTERS						
Model	Gravel (ft. ³)	Media (ft ³)	No. 1 Anthracite	.45-.55 mm Sand	30/40 Garnet	8/12 Garnet
VN 24	1.0	6.0	2.6	1.8	1.0	0.5
VN 30	2.5	10.0	4.3	3.0	1.7	0.9
VN 36	3.5	14.0	6.1	4.3	2.4	1.2
VN 42	5.0	19.0	8.3	5.8	3.3	1.7
VN 48	7.5	25.0	10.9	7.6	4.3	2.2
VN 54	10.0	32.0	13.9	9.7	5.6	2.8
VN 60	14.0	40.0	17.4	12.2	7.0	3.5
VN 66	18.0	48.0	20.9	14.6	8.3	4.2
VN 72	23.0	56.0	24.3	17.0	9.7	4.9

VN 78 TO 120 – 4F AND – 6F FILTER SPECIFICATIONS

MINERAL TANK (STANDARD NON CODE VESSELS).

The non-code vessel shall be A36 carbon steel or better rated at 100 psi working pressure designed to a factor of safety of 3.0.

MINERAL TANK (OPTIONAL CODE VESSELS).

ASME code stamped tanks shall be available. Tank shall be clearly specified as code or non-code with a specified working pressure. Tanks “built to ASME code but not stamped” shall not be acceptable as ASME code. An ASME U1 form shall be provided with each ASME code tank.

COATING AND LINING. Tanks shall be prepared for internal and external coating with a SPCC 11 near white sand blast. Internal and external coating shall be two 3 - 4 mill coats of white Series 20 Tnemec Epoxy. Paint shall be applied according to manufacturer’s recommendations.

INTERNALS. The bottom distributor shall be hub and lateral design with SCH 80 PVC hub and SCH 40 PVC slotted laterals. The slots shall be .012" - .016" wide to retain mineral and the total slot area shall be equal to or larger than the unit pipe size. A four point SCH 80 PVC upper distributor with an opening equal to or larger than the unit pipe size shall be installed in the mineral tank.

FACE PIPING. For models with a –4F or –6F designation the inlet and outlet connection shall be 4" or 6" flanges and the pipe shall be schedule 40 galvanized grooved fittings. Tanks shall have double drilled double tapped pad flanges on the side shell for inlet and outlet.

MEDIA. The filtration media shall be in quantities noted above. Underbedding shall be #20 graded washed flint gravel sieved between 1/8" and 1/16".

VALVES. The valves shall be Water King DMB Series cast iron body valves with grooved connections. The valve can be operated by air or water. The diaphragm shall be preformed, nylon fabric reinforced natural rubber. Internal parts shall be stainless steel and brass. Working pressure on the valve is 230 psi with maximum temperature of 175°F.

STAGER. Diaphragm valves shall be operated by a rotary pilot valve (stager) with multiple ports through which control fluid is directed, thereby operating the diaphragm valves installed in a process system. Standard units shall use staggers constructed of durable, non-corroding, self-lubricating material for long, maintenance free life. The stager shall function by opening and closing its ports, singly or in combination, in a sequence that accomplishes the five cycles of softening. The stager shall use either water or air for the operating fluid. Process fluid, if pressurized, and not damaging to the internal parts of the stager or diaphragm valve, may be drawn from the main line to the inlet of the stager. Otherwise, an independent source of control fluid is required. The pressure of the control fluid must be equal to or greater than the line pressure of the system. The stager enclosure shall be a 10" x 8" x 6" NEMA 4 fiberglass control box which houses both the stager and the timer. Maximum pressure shall be 100 psi with a maximum temperature rating of 150°F. Ports are 1/8" NPT. Power shall be either 120 VAC/60 Hz or 230 VAC/50 Hz. Flexible tubing (¼" O.D.) shall connect stager ports to diaphragm valves.

OPERATING CONDITIONS. Maximum temperature shall be 100°F. Pressure shall be 25 to 100 psi.

CONTROL. Standard filter control an electromechanical system using a 6-day timer and a stager. The timer shall be housed in the

CAT 510.4

NEMA 4 control box with the stager and initiates regeneration at certain, preset times. Manual regeneration shall be available at the stager.

MULTIPLE FILTERS. Filters shall sequentially backwash based on timer initiation. Timers shall be either an independent 6- or 7- day timer on each unit or a 6- or 7- day timer on the lead unit and an ARC cycle timer on the remaining units operating in a master slave relationship to cause sequential backwashing.

DIFFERENTIAL PRESSURE INITIATION (OPTIONAL).

A differential pressure gauge shall provide initiation of backwash when the pressure difference between the inlet and outlet header on the filter(s) exceeds a certain preset value (usually 10 psi).

OTHER ITEMS. A complete set of instructions, including installation, loading, start-up,

adjustments, servicing, and a parts list shall be provided with the equipment.

QUALIFICATIONS. A company that has continuously manufactured water softeners for at least 10 years shall construct the equipment.

PRESSURE GAUGE AND TEST TAP KIT. A kit containing two liquid filled, stainless steel pressure gauges with 2 ½" Ø face, two brass ball valve sample taps with hose barb connections and associated brass connection fittings shall be provided for mounting in the 1/4" FNPT predrilled and tapped ports in the inlet and outlet diaphragm valves.

Installation. Due to the size of these systems and freight cost of shipping tanks, tanks will be shipped to site directly from place of fabrication. All assembly including face piping, internals, tubing and electrical shall be performed on site by installing contractor.