



# AQUATECH™

## D.E. FILTERS

### INSTALLATION, OPERATION & SERVICE MANUAL



FILTER IS DESIGNED AND INTENDED FOR USE TO FILTER WATER  
IN SWIMMING POOLS AND SPAS.



**aquatech** CORPORATION

HUNTINGTON BEACH, CALIFORNIA

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## Installation Instructions

1. Check carton for any evidence of damage due to rough handling in shipment. If carton or any filter components are damaged, notify freight carrier immediately.
2. After inspection, carefully remove filter components from carton — filter tank, gauge, air bleeder.
3. Place the filter in its permanent location on a level slab, preferably concrete poured in a form or on a platform constructed of concrete block or brick. **DO NOT** use sand to level the filter and pump mounting as it may wash away, leaving the unit out of level. During operation this condition will cause vibration and inefficient performance.
4. Assemble valve to tank. Be sure O-rings on valve fittings are in place and are clean. Use a lubricant, applied lightly, such as petroleum jelly or silicone on O-rings and O-ring grooves prior to assembly.
5. Align valve with tank so that the handle is toward the top of the tank, push valve into ports and turn the bulkhead nuts snugly on tank fittings. It is not necessary to cinch valve nuts to tank fitting beyond hand tightness.
6. Assemble piping and pipe fittings to pump and valve. A check valve is recommended between the heater and filter to eliminate the possibility of hot water "back-up" which may cause deformed grid elements and to prevent D.E. from migrating to pool when system is off.

## Filter Operation

### HOW TO START FILTERING

1. Check clamp assembly for tightness. See instructions below.
2. Position valve handle to **FILTER** position. **OPEN BLEEDER VALVE ON THE FILTER TOP.** Check pump strainer pot to be sure it is full of water. Replace pump lid.
3. Start pump and tank will fill. Close air bleeder valve when water begins to come out. At this point tank and all piping are filled with water.
4. Remove the skimmer lid, put the recommended amount of diatomaceous earth (D.E.) into the skimmer. The D.E. will be drawn into the filter and deposited evenly upon the grid elements. Now, filter is providing the pool with bright, clean water. **NOTE: DO NOT OPERATE FILTER WITHOUT D.E. CHARGE FOR MORE THAN TWO MINUTES.**

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#### CAUTION:

**NEVER VACUUM POOL WITH FILTER HANDLE IN BACKWASH POSITION.**

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This filter operates under pressure. When closed properly and operated without air in the water system, this filter will operate in a safe manner.

**AIR ENTERING FILTER AND THE UNIT NOT CLOSED CORRECTLY CAN CAUSE THE TANK TOP TO BLOW OFF AND COULD CAUSE SEVERE BODILY INJURY AND/OR PROPERTY DAMAGE.**

Never attempt to open clamp while there is pressure in the filter. Before opening, turn pump off and open air relief valve.

### ASSEMBLY OF TANK HALVES

1. Be sure O-ring is in proper position. Install tank top. Locate filter clamp over both flanges, tank top and tank bottom.
2. Alternate tightening the T-Bolts from one side of tank to the other, a little each time. **DO NOT** tighten one T-Bolt completely and then tighten the other T-Bolt. This will result in uneven loading on the clamp and flanges. *(NOTE: Some filter models have only one (1) T-Bolt.)*
3. While tightening T-Bolts you must tap clamp all around the diameter with a mallet or similar tool to insure uniform loading.
4. T-Bolt nut must be tightened to 60 inch lbs. torque. *(NOTE: A torque wrench must be used to achieve the proper torque.)*
5. The bleeder valve on filter tank must be open before starting pump.
6. Start pump.
7. Close air bleeder valve when a steady stream of water flows from the valve -- this indicates that all air is bled from tank.

### WHEN TO CLEAN FILTER

As dirt is collected in the filter the pressure gauge will gradually rise and the flow to the pool will be lowered. When the flow has been reduced by about 1/3, note the pressure gauge reading. In the future the higher gauge reading can be used as a guide to tell when backwashing is needed. The increase in pressure will be in the general area of 10 pounds, but will vary depending on the pump being used with the filter.

### CLEANING FILTER WITH MULTIPOINT VALVE:

To perform the backwash operation, first shut off the pump. Shift the valve handle to **BACKWASH** position. Start pump. The unit should backwash until the water appears clean thru the sight glass. The backwash operation takes about two or three minutes. Stop the pump, and shift valve handle to **RINSE** position. Start pump and run for approximately

30 seconds. Stop the pump and turn valve handle to **FILTER** position. Start pump, the filter has now started a new filtering cycle. Perform the steps required for coating of grids described earlier in this manual.

### CLEANING FILTER WITH PUSH-PULL VALVE

First shut off pump. Pull handle up to **BACKWASH** position. Start pump. The unit should backwash until water appears clean thru an inline sight glass in the waste line. This operation takes two or three minutes. Stop pump and push valve handle down to **FILTER** position. Wait 30 seconds and start pump. The filter has started a new cycle. Perform the steps required for coating of grids described earlier in this manual.

## Filter Care

1. To clean the filter exterior of dust, dirt, etc., wash with a mild detergent and water, then hose off. Do not use solvents. They may damage the fittings, valve and pump mounting.
2. If for any reason internal maintenance is required, grid assembly can be lifted off the to piping so internal parts can be reached.

### WINTERIZING THE FILTER

In areas that have freezing winter temperatures, protect pool equipment by backwashing filter. Open vent or air bleeder on top of tank, remove drain plug, open all valves. Allow filter, pump and piping to drain completely. Do not be concerned if tank drains slowly, but be certain it is empty of all water.

## Pump Care

Refer to pump instruction manual.

### MANUAL CLEANING

At least once a year or when the pressure is 4 to 6 pounds higher than normal after backwashing, the filter grid should be removed and cleaned. This operation may easily be performed before winterizing the system (in those climates where this is necessary) and should be done regardless of pressure readings. Backwash filter before doing the following:

1. Turn pump off and open air bleeder valve. **IMPORTANT:** Be sure that all pressure is relieved from the filter tank and pump is turned off before removing the clamp assembly.
2. Loosen each clamp nut alternately until the clamp can be removed. Remove the tank top.
3. Lift the entire grid assembly straight up off the upper piping assembly. **Notice:** Do not keep grid assembly in the sunlight more than two hours. This will shorten life of grid cloth.

4. Hose the grid elements thoroughly.

5. Visually inspect the grid cloth for tears and check both the small upper pipe O-ring and the large tank seal for any nicks. Lubricate with petroleum jelly or silicone and clean O-ring and tank seal seat areas. Any damaged components should be replaced.

6. If grid cloth is dirty and appears clogged with oil, calcium, rust or suntan lotions, it is recommended that one of the following cleaners be used:

FILTER-CLEANSE — Great Lakes Biochemical  
 FILTER-FREE — Hydrotech Chemical Corporation  
 KLEEN-IT — Bio Lab, Inc.

Mix a solution following the manufacturer's instructions on the label. Place the entire grid assembly in a plastic container and add the solution so the entire grid assembly is submerged. Allow to stand overnight (12 hours).

The following day wash with a hose and remove all of the solution from the grids so it does not return to the pool.

This will remove oils, scale and rust in one cleaning operation. This procedure should be done at the end of the swimming season and before the filter is stored for the winter.

7. Replace the grid-assembly by setting the manifold opening directly over the connector pipe. Push down on the grid assembly and check to see that it is seated properly.

8. Follow the procedure for assembly of tank halves as described on the previous page.

### IF THE FILTER SYSTEM DOES NOT OPERATE PROPERLY

Cloudy water continually flowing back into the pool may indicate damaged grid or O-ring. Remove grid assembly and replace any damaged grid elements and/or upper piping assembly O-ring. Re-assemble filter as described in steps 6 thru 9 under MANUAL CLEANING. Exceedingly high filter pressure may indicate filter requires manual cleaning.

### D.E. RECOMMENDATION

The amount of D.E. is not critical but should be between 1 and 1½ pounds for each 10 square feet of filter area or:

MODEL	POUNDS OF D.E.
FNS 24	2.5 — 3.5
FNS 36	3.5 — 5.5
FNS 48	5 — 7
FNS 60	6 — 9

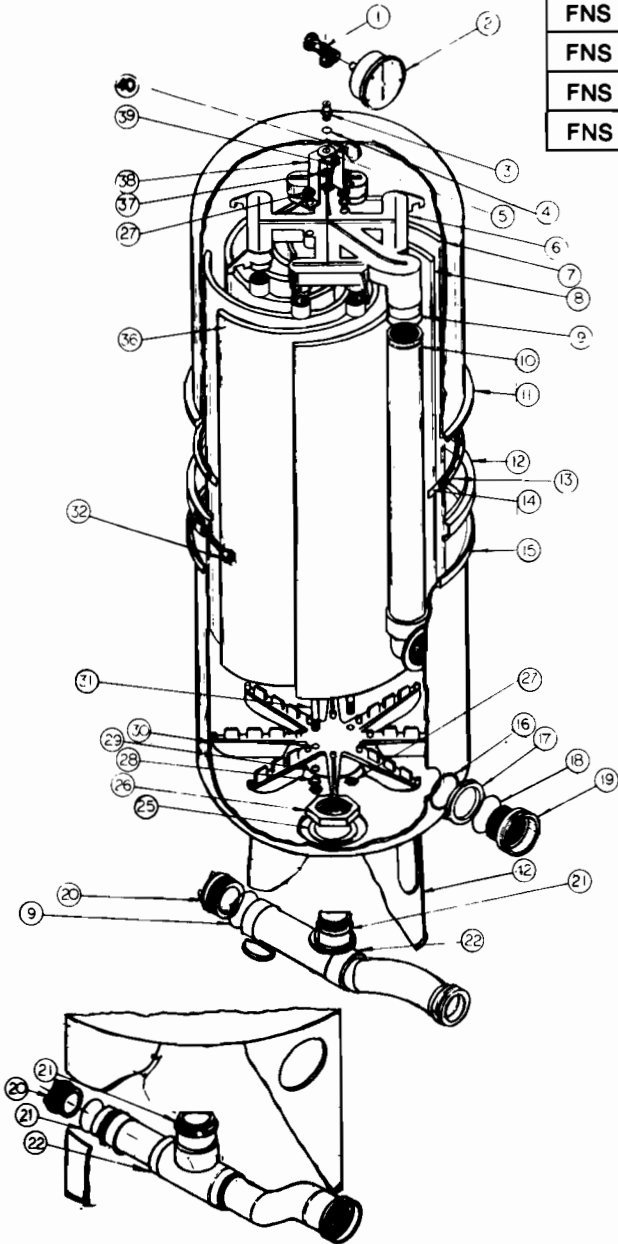
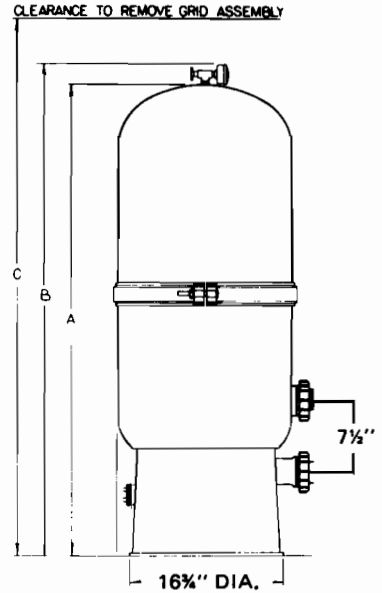
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## D.E. FILTERS

### REPLACEMENT PARTS

### DIMENSIONAL TABLE

MODEL	A DIM.	B DIM.	C DIM.
FNS 60	49%	51%	73
FNS 48	43%	45%	61
FNS 36	37%	39%	54
FNS 24	31%	33%	43



NOTE 1: COMPLETE GRID ASSEMBLY CONSISTS OF ONE EACH OF ITEMS 6, 30, 29 AND 8; TWO EACH OF ITEMS 27 AND 31; SEVEN EACH OF ITEM 7.

LOWER PIPING ASSEMBLY P/N 19-5107 INCLUDES ITEMS 9, 20, 21, 22.

• REPLACEMENT PARTS FOR FILTERS BUILT AFTER NOV. 1988.

FORM 366 D

ITEM	PART NO.	DESCRIPTION	QTY.
42	19-5153	FOOT	1
40	15-4577	STRAINER-AIR RELIEF	1
39	19-1801	TUBE-AIR RELIEF	1
38	17-4755	BRACKET-SUPPORT	1
37	15-4884	NUT-1/4"-18 SS	2
36	19-5070	GRID ASSEMBLY-COMPLETE FNS 60 (Note 1)	1
36	19-5086	GRID ASSEMBLY-COMPLETE FNS 48 (Note 1)	1
36	19-5163	GRID ASSEMBLY-COMPLETE FNS 36 (Note 1)	1
36	19-5182	GRID ASSEMBLY-COMPLETE FNS 24 (Note 1)	1
32	19-5199	NUT-5/16"-18 BRASS HEX	2
32	19-5152	NUT-5/16"-24 BRASS	1
31	19-2185	ROD-5/16"x33 1/2" MANIFOLD RETNR. FNS 60	2
31	19-2184	ROD-5/16"x27 1/2" MANIFOLD RETNR. FNS 48	2
31	19-2183	ROD-5/16"x21 1/2" MANIFOLD RETNR. FNS 36	2
31	19-2182	ROD-5/16"x15 1/2" MANIFOLD RETNR. FNS 24	2
30	19-2194	RETAINER-GRID	1
29	19-4938	PLATE-DEFLECTOR	1
28	17-4955	WASHER 5/16" SS LOCK	2
27	19-2013	NUT-5/16"-18 SS	4
28	15-4412	LOCKNUT-2" INTERNAL	1
25	19-5004	WASHER-POLYETHYLENE	1
24	15-4493	O-RING ADAPTOR 8" FNS	1
23	19-5210	CLOSURE - 8"	1
23	19-5156	CLOSURE - 8"	1
22	19-5107	PIPING ASSEMBLY-LOWER	1
22	19-5308	PIPING ASSEMBLY-LOWER	1
21	27-4494	O-RING	1
20	19-5829	PLUG-2" NPSM	1
19	19-4801	BULKHEAD - 2" W/GROOVE	1
18	19-2320	O-RING-BULKHEAD	1
17	19-4893	SPACER-2" EXTERNAL	1
18	15-4492	O-RING-2" BULKHEAD	1
15	19-5815	TANK BOTTOM MACH-36, 48, 60	1
15	19-5814	TANK BOTTOM MACH 24	1
15	19-5179	TANK AND FOOT ASSY. FNS 36, 48, 60	1
15	19-5178	TANK AND FOOT ASSY. FNS 24	1
14	19-5073	RETAINER - 19 17/84" DIA. O-RING	1
13	19-5310	O-RING-TANK	1
12	19-5038	BAND ASSEMBLY-COMPLETE	1
11	19-5818	TOP-TANK FNS 60	1
11	19-5817	TOP-TANK FNS 48	1
11	19-5816	TOP-TANK FNS 24 38	1
10	19-5218	PIPING ASSEMBLY-UPPER FNS 60	1
10	19-5215	PIPING ASSEMBLY-UPPER FNS 48	1
10	19-5214	PIPING ASSEMBLY-UPPER FNS 36	1
10	19-5213	PIPING ASSEMBLY-UPPER FNS 24	1
9	19-2323	O-RING	2
8	19-2334	GRID-PARTIAL FNS 60	1
8	19-2332	GRID-PARTIAL FNS 48	1
8	19-2330	GRID-PARTIAL FNS 36	1
8	19-2328	GRID-PARTIAL FNS 24	1
7	19-2189	GRID FNS 60	7
7	19-2188	GRID FNS 48	7
7	19-2187	GRID-FULL FNS 36	7
7	19-2186	GRID-FULL FNS 24	7
6	19-2193	MANIFOLD GRID	1
5	27-3061	WASHER-1/2" SS	1
4	15-4881	O-RING-AIR BLEEDER ADAPTOR	1
3	15-4700	ADAPTOR-BRASS AIR BLEEDER	1
2	15-5050	GAUGE-BACKMOUNT PRESSURE	1
1	15-4889	AIR BLEEDER/TEE ASSEMBLY	1

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