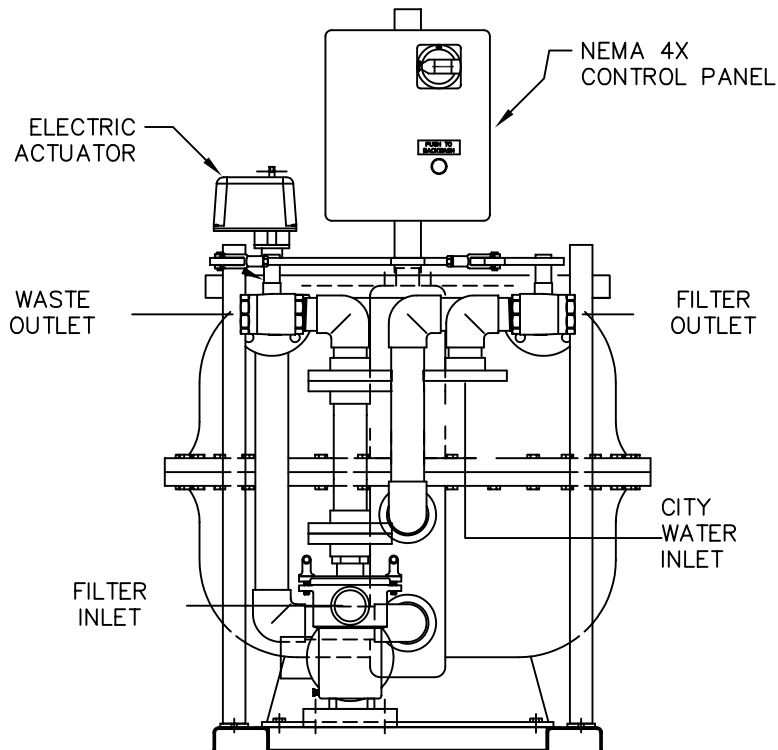




322 Rolling Hills Road
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SMF2-FG INSTALLATION,
 OPERATION &
 MAINTENANCE
 MANUAL



SMF2-FG Series Media Filter Operating & Maintenance Manual

Process Efficiency Products filtration equipment has been designed to give long, trouble-free service when properly installed, operated and maintained. This manual is a guide to establishing installation procedures and a maintenance program. IT IS IMPORTANT THAT MAINTENANCE PERSONNEL REVIEW THIS MANUAL CAREFULLY - INCLUDING THE SAFETY PRECAUTIONS AND WARNINGS LOCATED ON PAGE 11 PRIOR TO PERFORMING ANY REPAIRS OR MAINTENANCE ON THE INDUSTRIAL WATER FILTER.

Included in this manual are the recommended procedures for installation, start-up, operation and shutdown for the PEP Industrial Water Filters. Note that the recommendations on frequency of service are minimums, and where operating conditions are severe, the service should be performed more often. For each required service, follow the procedures outlined under the Maintenance Procedures section of this manual. The PEP Industrial Water Filter construction details are shown on the cover with the major points of inspection and service identified. If you need further information that is not covered in this manual, please contact your local PEP Representative or the PEP factory.

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SMF2-FG Series Media Filter

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GENERAL DESCRIPTION

The PEP SMF-FG Series Industrial Water Filters are permanent media type units specifically designed to clean industrial and process water. The PEP SMF-FG filters are designed for side-stream or in-line applications on non-pressurized systems. The SMF-FG filter vessel is constructed of fiberglass reinforced thermoplastic and has a pressure rating of 50 psig (350 kPa).

FILTER OPERATION

Water from the system is pumped through the over-drain assembly at the top of the filter tank and distributed evenly over the media. Suspended particles are trapped in the filter media. The filtered water then passes from the vessel through the under-drain assembly at the bottom of the filter and returns to the system.

When the trapped particles cause the pressure differential across the media bed to reach a pre-determined pressure of approximately 10 PSIG (69 kPa) over starting gauge pressure, the valves are automatically or manually repositioned and the media is backwashed. The media is backwashed with a rigorous scouring action and the trapped particles are released. The dirty water passes from the filter tank through the over-drain assembly at the top of the vessel and is flushed to the drain. When the media is cleaned after a preset time (2 minutes standard), the valves are again repositioned and the filtration cycle is continued.

INSTALLATION

UNPACKING

When the PEP Industrial Water Filter is delivered to the jobsite, it should be checked thoroughly to ensure that all required items have been received and the filter equipment is free of any shipping damage prior to signing the bill of lading.

The model number of the filter will appear on a nameplate located on the unit and should be checked against the invoice/packing list. Table 1 shows the parts that should be inspected when the unit is unpacked.

RIGGING

1. PEP SMF-FG units should be lifted with a forklift or overhead crane. If these units are lifted with an overhead crane, lifting straps must be located below the filter skid and should not come in contact with the filter components.

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2. All PEP Industrial Water Filters should be rigidly anchored to the floor or support steel by means of anchor bolts. The SMF-FG has holes suitable for 1/2" (13mm) anchor bolts.
3. After the unit is installed at a permanent location, the pressure gauge and air relief valves should be installed on the top of the filter tank (some units will have vents already installed). The sand media should be loaded into the filter at this time. Refer to loading media section on the following page and Table 6.

PIPING

Piping to and from the PEP SMF-FG filter should be installed in accordance with the drawing that was specifically furnished with the unit. In the event of a conflict between subject drawing and labels on the filter piping, the drawing dictates and takes precedence over the labels.

1. Connect the feed water line from the system sump or piping to the pump inlet. If the inlet connection is located above the operating water level of the system sump, install a foot/check valve to prevent loss of suction on the pump.
2. Connect the filtered water return line from the filter outlet to the system sump or piping.
3. A service valve should be installed on the inlet, outlet, and city water line (if city water is used) to allow servicing of the filter. For units using a backwash source other than the system sump, refer to Table 3 to determine required backwash flow. Connect this line to the "City Water" connection as shown in the drawing. The maximum city water backwash supply pressure on the SMF filters should never exceed the pressure rating of the filter vessel. If public or municipal water is used for backwash, a backflow prevention or check valve is required in the line on all units (check standard local codes).
4. Connect a backwash waste line to the waste connection as shown in the drawing. This line carries the backwash wastewater to the drain.

IMPORTANT: Do not put a valve in the waste line!

Refer to Table 3 for the minimum and maximum backwash flow rates. Note: If the drain is not large enough to handle the volume of water during backwash, it may be necessary to use a storage tank to collect the wastewater. A valve can be used to regulate the flow from tank at a suitable rate to the drain. NEVER REDUCE THE SIZE OF WASTE WATER LINE.

5. All interconnecting piping, fittings, valves, or other accessories connected to the filter system (whether supplied by PEP or others) must be independently supported to eliminate

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stress on piping.

Check with local, county, or other government authorities to ensure compliance with applicable government industry requirement codes.

NOTE: The filter vessel drain plug is located on the tank bottom for 20", 24" and 30" units, and on the side near the tank bottom for 36", 42" and 48" units.

ACTUATOR REQUIREMENTS

PEP SMF-FG filters utilize electric actuators to control the valve action between the filtration and backwash modes. The electric actuator is designed for 110 VAC control.

LOADING THE FILTER MEDIA

The special spherical silica sand media used in all PEP Industrial Water Filters is designed to remove over 95% (by volume/weight) of all suspended solids. The media will ship to the jobsite in 0.5 ft³ (14,160 cu. cm.) drums @ 50 lb./drum or in 1 ft³ (28,320 cu. cm.) bags @ 100 lbs./bag for easy handling during the media loading process.

1. NEVER LOAD MEDIA INTO A DRY FILTER TANK, fill tank one-third to one half full with water before loading. Always check filter internals before loading media. This procedure is the same for Unigran 55 and 85. Refer to Table 6 for appropriate media quantities for a specific filter size.

WIRING

PEP Industrial Water Filters supplied with a pump and automatic backwash controls are provided with the following as standard: UL Type 4X control cabinet containing an on/off disconnect switch, motor overload protection, transformer to provide 110v control voltage, backwash timer, 24 hour time clock, pressure differential switch to initiate backwash, valve actuator to reposition valves for backwash, and push button for manual backwash initiation. Units are provided with the customer requested voltage/phase (460 volt, three phase standard). Check the current draw upon initial start-up and make sure that it is equal to or less than the prescribed value shown in Table 4.

Units supplied with city or other source backwash are provided with a magnetic motor starter. Units supplied as manual are provided with no motor control of any kind.

THE FOLLOWING RECOMMENDATIONS CONFORM TO THE 1993 NATIONAL ELECTRIC

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CODE. CHECK WITH LOCAL, COUNTY, OR OTHER GOVERNMENT AUTHORITIES FOR PRESCRIBED REQUIREMENTS.

NOTE: CHECK FILTER PUMP NAMEPLATE FOR HORSEPOWER AND AMP DRAW

Single Phase Manual Units

1. Install a separate power supply line with circuit breaker protection between the closest branch distribution panel and the pump motor. The full load current for standard models is listed in Table 4.
2. Install an externally operated switch with fuse protection and door interlock in plain sight of the filter and not more than 50 feet (15m) away. The thermal overload protection, if required, must be sized for full load amp draw listed on the pump motor name plate.

Three Phase Manual Units

1. Install a separate power supply line with circuit breaker protection between the closest branch distribution panel and the pump motor. The full load current for standard models is listed in Table 5.
2. Install a service disconnect switch in plain sight of the filter and not more than 50ft/15m away.
3. Install an externally operated manual or magnetic starter with thermal overload and fuse protection. If the unit is to be controlled remotely with a time clock, switch, or other device, a magnetic starter must be used. The thermal overload protection, if required, must be sized for the full load amp draw listed on the pump motor nameplate.

Single and Three Phase Automatic Units

1. Install a separate power supply line with circuit breaker protection between the closest branch distribution panel and the control box. The full load current for standard single and three phase units is listed in Tables 4 & 5. The control box contents are pre-wired and include a service disconnect switch, thermal overload, a transformer to convert the power supply to single phase 110v for controls. Wire the power supply lines to the disconnect switch. ALL INCOMING POWER SUPPLY LINES MUST CONNECT TO DOOR INTERLOCK DISCONNECT.

24 HOUR/7-DAY TIME CLOCK

The 24-hour time clock (standard, unless equipped with a PLC) is used to initiate the 2 minute backwash timer relay at any specified time in the day. The 24 hour backwash clock

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comes preset from the factory to backwash once every 24 hours of running time. For every non-consecutive pin pull-out in a 24 hour cycle the filter will backwash. Each pin represents 15 minutes of a 24-hour period. The filter can only backwash once every 1/2 hour by time clock. For every pin pulled-out consecutively, the filter will backwash once and then lock itself out for 15 minutes multiplied by the number of pins pulled out. The 7-day time clock is used to initiate the 2 minute backwash timer relay on any hour at any specific time and day of the week. As an alternate, an optional 7-day timer is preset from the factory to backwash once a week. The 7-day timer works the same as the 24-hour clock except each pin represents 2 hours.

OPERATION AND MAINTENANCE

INITIAL AND SEASONAL START-UP

Before initial start-up or after a shut-down period, the PEP Industrial Water Filter should be thoroughly inspected and cleaned. CAUTION: Perform the first five of the following recommendations with the electric power off. Refer to the Safety Precautions regarding the safeguarding of maintenance personnel from biological contaminants, prior to Initial and Seasonal Start-Up.

1. Remove the bolts around the pump pre-strainer tank lid and remove the lid. Inspect the O-ring seal and lubricate. Remove debris from the pump pre-strainer basket. Replace the basket, lid and clamp (now is a good time to prime the pump suction line).
2. On manual systems only, rotate the valves manually by using the handle connecting the valve linkage to ensure the valves operate smoothly. Upon initial start-up, make sure the valves are in the backwash position and allow the filter to run for several minutes before re-positioning the valves to the filter mode.
3. Loosen the access bolts around the vessel circumference, remove lid and lubricate the bolts as necessary.
4. Inspect the over-drain assembly and media pack. If the media pack is contaminated, remove the foreign material or replace the media. Replace the filter vessel top.
5. Open manual air relief valve on top of the filter tank. Start the pump motor briefly and check the arrow on the pump volute for proper rotation. Turn the pump motor off. Do NOT operate the pump for an extended period of time with the pump rotating backwards. Have a qualified electrician change leads to correct rotation.
6. With the air relief valve open on top of the filter tank. Check the shut-off valves in the

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filter inlet and outlet water lines to verify they are open. Make sure the pump is primed. Start the pump and fill filter vessel. Wait for all the air in vessel to be released before closing manual air relief valve.

7. Check the voltage and current of all leads on the pump motor. The current amp draw should not exceed the nameplate rating.
8. Check the unit for any unusual noise or vibration and contact your local PEP Representative if noise or vibration occurs.
9. Check the unit for any air or water leaks. All air leaks must be found and repaired. **Failure to do so could result in poor performance and/or personal injury.**
10. Backwash the filter. After backwashing the filter, check the pressure gauge on top of the filter tank and record the clean media operating pressure gauge. The media should be backwashed whenever the pressure drop across the filter reaches 16 psi.

AFTER FIRST HOUR OF OPERATION

1. Open the air relief valve on top of the filter tank. Close the valve after the air has been purged from the system. Excessive air release usually indicates an air leak, which must be repaired. Air accumulation in the filter tank can result in an unsafe condition due to excessive pressure within the tank.
2. Check the unit for any unusual noise or vibration and contact your local PEP Representative if noise or vibration occurs.
3. Check unit for any air or water leaks.

OPERATION

During operation, the PEP Industrial Filters should be inspected, cleaned and lubricated on a regular basis. The required services and recommended frequency (minimum) for each are summarized in the table "Operation and Maintenance Schedule".

COLD WEATHER OPERATION

PEP Industrial Water Filters that will be exposed to below freezing ambient temperatures require protection to prevent freezing. Installation in a heated indoor space is the best means of preventing the water from freezing in a filter. Where indoor installation is impractical because of filter location or space limitation, supplementary heat must be supplied through the use of electrical heater tape and insulation. The parts of the filter that must be heat traced and insulated are: pre-strainer tank, pump, piping, valves,

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pressure switch tubing, and filter tank. The unit should be drained when it is to be shut down for any period of time. Refer to the Seasonal Shutdown section of the manual for recommendations.

SEASONAL SHUTDOWN

The following services should be performed when the unit is to be shut down for a prolonged time period.

1. Shut off all electrical power.
2. Close the shut-off valves in the filter inlet and outlet water lines. For units using a backwash source other than the system, close the shut-off valve in the line from that source also.
3. Drain all external piping to and from the filter.
4. Open the manual vent valves and open the drain line to the filter tank and piping. After the water has drained, close the drain and vent.
5. On manual units only, rotate the valves manually by moving the linkage up and down to ensure operation without obstruction.
6. Loosen the bolts around the circumference and remove the lid. Lubricate the bolt if necessary. Replace the O-ring if necessary.
7. Inspect the over-drain assembly and media pack. If the media is contaminated, remove the foreign material and replace the media if necessary. Replace the filter lid and secure the bolts.

MAINTENANCE PROCEDURES

PUMP PRE-STRAINER

Warning: Disconnect all electrical power prior to performing pump maintenance. The filter pre-strainer basket on the pump inlet must be kept clean and free of debris. Shut off the power, close the valves, open the air relief valve, remove bolts and lid. Remove the basket and remove any foreign material. Replace basket, lubricate O-ring, and tighten clamp.

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PUMP

Warning: Disconnect all electrical power prior to performing pump maintenance. Turn the pump shaft by hand. The impeller should spin freely. If not, remove the pre-strainer from the volute and check with a feeler gauge. The clearance between the impeller and volute face is 0.015" (0.38 mm). Adjust the clearance, if necessary, by loosening the set-screws. The impeller and motor shaft are spring-loaded and will slide forward/back. Adjust the impeller to proper clearance and tighten set-screws. If the impeller remains obstructed, remove the 4 bolts holding the volute to the motor bracket and impeller, and inspect the volute for foreign material. Reverse the above procedures for replacement.

BACKWASHING

The media pack must be backwashed whenever the debris build-up causes a 16 psi pressure drop across the filter media. Since the units with automatic controls perform this function as necessary, a detailed backwash procedure is only given for manual units. However, automatic units can be manually backwashed by pushing the button on the control panel until the valves change position. The valves will then be automatically repositioned after two minutes. The filter should be backwashed once a week minimum.

For manual control units using a back wash water source other than the system:

1. Shut off the electrical power to the pump motor.
2. Move the handle on the linkage to position the valves in backwash mode.
3. Allow the filter to backwash for approximately two minutes.
4. Move the handle on the linkage to position the valves in the filtration mode.
5. Re-start the pump motor.

For manual control units using the system water for backwash:

1. Shut off the electrical power to the pump motor.
2. Move the handle on the linkage to position the valves in the backwash mode.
3. Re-start the pump motor.
4. Allow the filter to backwash for approximately two minutes.
5. Shut off the electrical power to the pump motor.
6. Move the handle on the linkage to position the valves in filtration mode.
7. Re-start the pump motor.

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FILTER TANK

The filter tank internal components should be visually inspected annually or whenever backwashing does not reduce the pressure of the filter tank to the starting media gauge pressure. On the SMF-FG filters, remove the lid on the top of the tank to inspect the internal components. Note: Always use care and follow proper shutdown procedures. Inspect the over-drain assembly for any debris blockage or damage and clean or replace if necessary, and inspect the media. The SMF-FG filters have a 1.5" (40mm) drain plug located on the bottom of the tank for easy removal of the media and inspection of the under-drain assembly. Over a period of time, foreign matter may become imbedded in the media pack that cannot be backwashed out. Contaminated media should be discarded. Check the under-drain laterals and inspect for blockage or damage. Clean or replace if necessary. Refill tank with the proper amount of uncontaminated media, following media loading instructions (Table 6).

WATER TREATMENT

Filtration is an effective way of reducing the level of contamination in a system but is only one component of a water treatment program. Dissolved solids originally present in water remaining after evaporation cannot be eliminated by filtration. The concentration of these dissolved solids increases rapidly and can cause scale and corrosion. In addition, airborne impurities and biological contaminants including Legionella may be introduced into the recirculating water through the air and make-up water.

To control potential contaminants a water treatment program must be employed. In many cases a simple bleed-off in the system may be adequate for control of scale and corrosion.

The filter backwash can be used to constitute a portion of the bleed. However, biological contamination can be controlled through the use of biocides and such treatment should be initiated at system start-up and continued regularly thereafter.

For specific recommendations on water treatment contact a competent water treatment supplier.

FACTORY AUTHORIZED PARTS

PEP maintains a stock of replacement parts. Shipment of parts is normally within three days after receipt of an order (provided the item is in stock). In emergency situations, shipment can usually be made within 24 hours (if stock). Be sure to include the unit serial number and model when ordering parts.

To facilitate servicing the unit, it is suggested that the following parts be carried on hand:

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1. O-ring or gasket for filter tank access port, hand hole and manhole gaskets.
2. O-ring seal or gasket for pump pre-strainer lid (if applicable).
3. Seal kit for pump
4. Transformer fuse (automatic units only).

SAFETY PRECAUTIONS

All electrical, mechanical and rotating machinery constitute a potential hazard, particularly for those not familiar with its design, construction, and operation. Accordingly, adequate safeguards (including use of protective enclosures when necessary) should be taken with this equipment both to safeguard the public (including minors) from injury and to prevent damage to the equipment, its' associate system and the premises

Equipment operation, maintenance and repair should be undertaken by qualified personnel. All such personnel should be thoroughly familiar with the equipment, the associated system and controls, and the procedures set forth in this manual. Proper care, procedures, and tools must be used in handling, lifting, installing, operating, maintaining, and repairing this equipment, to prevent personal injury and/or property damage.

For the protection of authorized service and maintenance personnel, the pump motor associated with this equipment should be installed with a lockable disconnect switch located in close proximity and within sight if the Industrial Water Filter. No service work should be performed on or near the pump motors, without first ensuring that the pump motor has been electrically disconnected and locked out.

The re-circulating water system may contain chemicals or biological contaminants that could be harmful if inhaled or ingested. Accordingly, personnel who may be exposed directly to the mists produced by water jets or compressed air (should these be used to clean portions or components of the Industrial Water Filter) should wear half-face respirators with HEPA filter cartridges, NIOSH/MSHA approved number TC-21C-142/TC-21C-18.



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OPERATION AND MAINTENANCE SCHEDULE

TYPE OF SERVICE	START UP	MONTHLY	SEMI-ANNUALLY	SHUTDOWN	ANNUALLY
Inspect general condition of unit		X			
Check & lubricate clamp on strainer lid	X	X		X	X
Clean basket in pre-strainer tank	X	X		X	
Inspect O-ring gasket (SMF)	X			X	
Check pump shaft for free rotation	X	X	X		
Check operation of valves	X	X		X	
Check, lubricate filter tank access port	X			X	X
Inspect over-drain assembly & media pack	X			X	X
Check pump motor for proper rotation	X				
Check motor voltage & current	X	X	X		
Prime pump	X				
Check pressure gauge reading (top of filter); must be <50 psig	X	X			
Check unit for unusual noise or vibration	X	X			
Check unit for leaks	X	X			
Drain filter & piping				X	



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Table 1: Inspection Chart

Part	SMF-FG Model
Filter Tank	X
Valves & Linkage	X
Filter Inter-connecting Piping	X
Pump pre-strainer tank & basket	X
Pump	X
NEMA 4X Box (Automatic only)	X
Filter skid	X
Pressure gauge, air relief valves, & tees	X
Media (ship loose)	X

Table 2: Connection Sizes

Filter Model	System Water Backwash			City Water Backwash
	Pump Inlet	Filter Outlet	Waste Outlet	Inlet City Water
SMF2-FG	in / mm	in / mm	in / mm	in / mm
20	2 / 50	2 / 50	2 / 50	2 / 50
24	2 / 50	2 / 50	2 / 50	2 / 50
30	2 / 50	2 / 50	2 / 50	2 / 50
36	2.5 / 63.5	3 / 76.2	3 / 76.2	3 / 76.2
42	3 / 76.2	3 / 76.2	3 / 76.2	3 / 76.2
48	3 / 76.2	3 / 76.2	3 / 76.2	3 / 76.2



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Table 3: Filter Flow Rates @ 20 gpm/ft² (13.58 lps/m²)

Filter Model SMF2- FG	Forward Flow GPM / LPS	Minimum Backwash Flow GPM / LPS	Maximum Backwash Flow GPM / LPS
20	43 / 2.7	32 / 2	43 / 2.7
24	63 / 3.97	47 / 3	63 / 3.97
30	98 / 6.2	74 / 4.7	98 / 6.2
36	141 / 8.89	106 / 6.7	141 / 8.89
42	192 / 12.11	144 / 9	192 / 12.11
48	241 / 15.2	180 / 11.4	241 / 15.2

Table 4: Electrical Requirements - Single Phase

PUMP HP / KW	Voltage 1 ϕ 60HZ / 50HZ	Full Load Current (Amps)
0.5 / 0.38	110, 208, 220	9.8, 5.0, 4.9
1 / 0.75	110, 208, 220	16, 8.8, 8
1 / 0.75	110, 208, 220	16, 8.8, 8
2 / 1.5	110, 208, 220	24, 13.2, 12



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Table 5a. Electrical Requirements / Three Phase (60 Hz)

PUMP Motor HP / KW	Voltage 3ϕ 60 HZ	Full Load Current (Amps)
1 / 0.75	208, 230, 460, 575	4, 3.6, 1.8, 1.4
2 / 1.5	208, 230, 460, 575	7.5, 6.8, 3.4, 2.7
3 / 2.24	208, 230, 460, 575	10.6, 9.6, 4.8, 3.9
5 / 3.73	208, 230, 460, 575	16.7, 15.2, 7.6, 6.1

Table 5b: Electrical Requirements / Three Phase (50Hz)

HP / KW	Voltage 3ϕ 50 HZ	Full Load Current (Amps)
1 / 0.75	380, 415	1.7, 1.6
2 / 1.5	380, 415	3.4, 3.1
3 / 2.2	380, 415	5.2, 4.7

Table 6. Media Quantities: SMF-FG

Model SMF2-FG	Unigran 55 & 85 (50 lb. pails)	Unigran 475 – (for under-drain support, 50 lb. bags)
20	4	-0-
24	5	-0-
30	8	-0-
36	10	9
42	15	12
48	22	19

NOTES

1. MAXIMUM FILTER FLOW RATE:
20": 43 GPM
24": 63 GPM
30": 98 GPM
2. BACKWASH FLOW RATE RANGE:
20": 32-43 GPM
24": 47-63 GPM
30": 74-98 GPM
3. MAX. WORKING PRESSURE: 50 psi
4. TANK CONSTRUCTION: FIBERGLASS
5. MEDIA LOADING:
20": UNIGRAN 85: 2.0 CU. FT. (4 PAILS)
24": UNIGRAN 85: 2.5 CU. FT. (5 PAILS)
30": UNIGRAN 85: 4.0 CU. FT. (8 PAILS)

	"A"	"B"
20"	66"	29.75"
24"	69"	29.75"
30"	72"	35.00"

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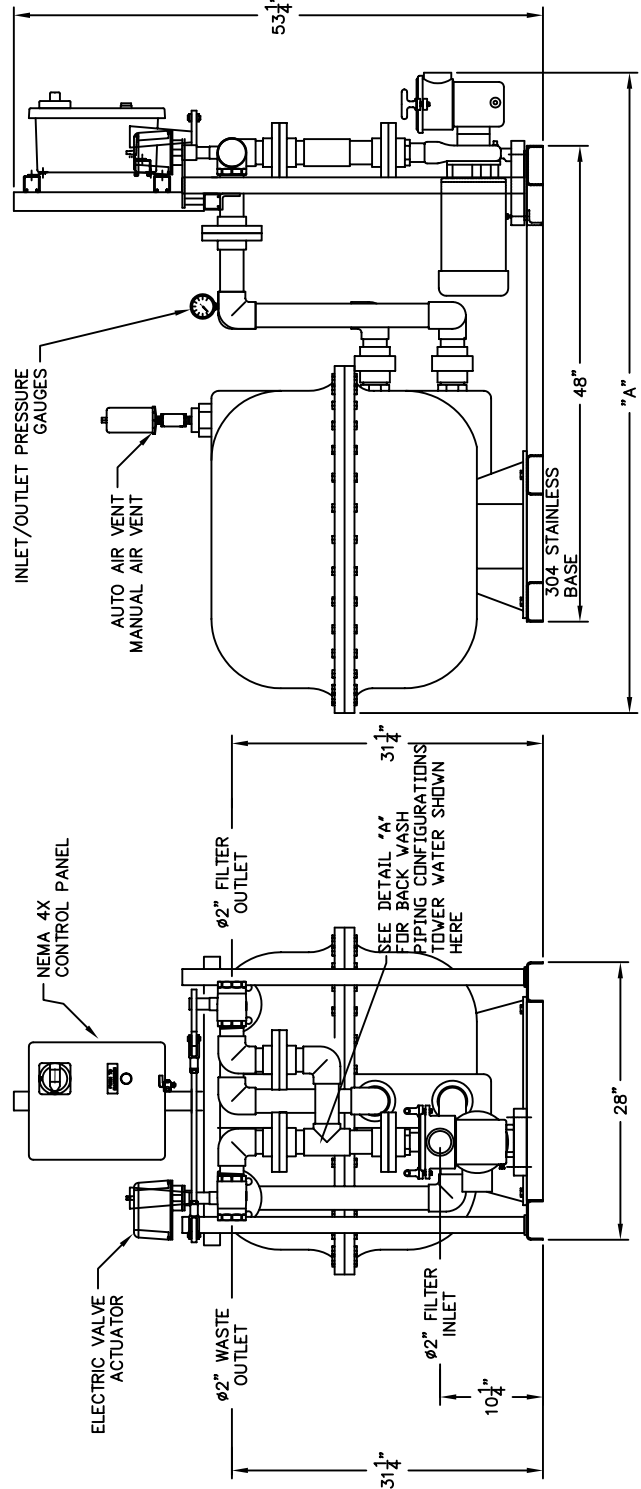
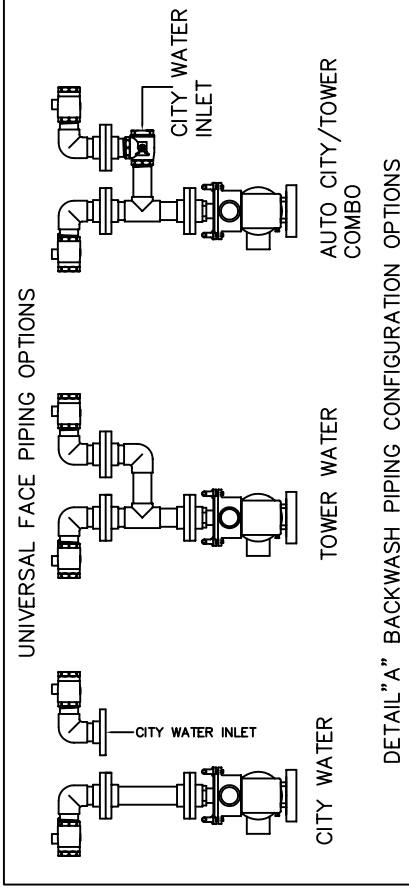
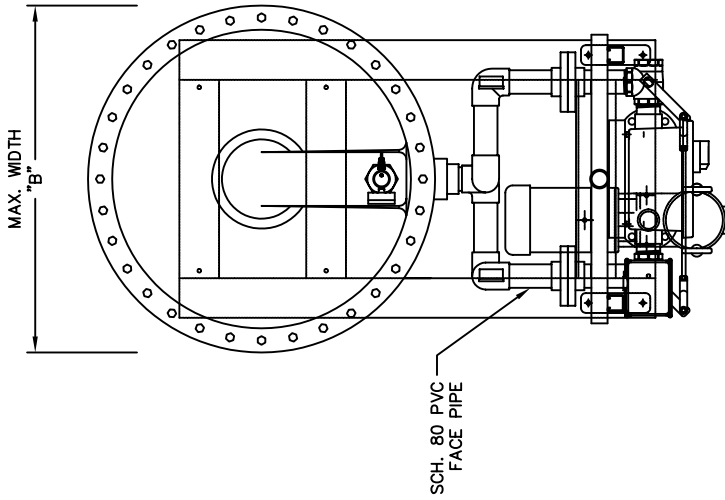
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SALES ORDER NO. _____ TITLE _____
DRAWN BY: GSC SCALE: None
CHECKED BY: _____ DATE: 11.26.02
PO NO.: _____ DWG NO.: SMF2-PVC80

SMF2 MASTER FAMILY DRAWING
20", 24" AND 30" FRP VESSELS
REV. NO. Δ
SHT. 1 of 1

DIMENSIONS SUBJECT TO CHANGE FOR GENERAL ARRANGEMENT DESIGN ONLY. NOT INTENDED FOR CONSTRUCTION



NOTES

1. MAXIMUM FILTER FLOW RATE:
 36": 142 GPM
 42": 192 GPM
 48": 250 GPM
2. BACKWASH FLOW RATE RANGE:
 36": 130-142 GPM
 42": 170-192 GPM
 48": 220-250 GPM
3. MAX. WORKING PRESSURE: 50 psig
 TANK MATERIAL: FIBERGLASS
4. MEDIA LOADING (10 MICRON):
 36": 1) UNIGRAN 475: 4.5 CU. FT. (9 PAILS)
 2) UNIGRAN 85: 4.5 CU. FT. (9 PAILS)
 42": 1) UNIGRAN 475: 7 CU. FT. (14PAILS)
 2) UNIGRAN 85: 6 CU. FT. (12 PAILS)
 48": 1) UNIGRAN 475: 10 CU. FT. (10 BAGS)
 2) UNIGRAN 85: 12 CU. FT. (8 BAGS)

"A"	"B"
36"	76"
42"	77"
48"	80"

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NO.	REVISION	DATE	BY
PROJECT	~		
ENGINEER	~		
PEP REP	~		

pep process efficiency products
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FILTERS

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 SALES ORDER NO. _____ TITLE _____
 SMF2-3 MASTER FAMILY DRAWING
 36", 42" AND 48" FG VESSELS
 DRAM BY: JLS/JAM SCALE: None REV. NO. **Δ**
 CHECKED BY: _____ DATE: 07/23/03
 PO NO.: _____ DWG NO.: SMF2-3-FAMILY SHT. 1 of 1

DIMENSIONS SUBJECT TO CHANGE FOR GENERAL ARRANGEMENT DESIGN ONLY. NOT INTENDED FOR CONSTRUCTION

