

Filter Instructions



Operation and Maintenance Manual



“PPEC” Regenerative Series Filter

TABLE OF CONTENT

SECTION 1

Filter Overview

General Information

Scope, Principle of Operations

Filter Tank

Element Assembly

Flexible Filter Elements

“Bump” Mechanism

Modular Systems

Application Data Charts

Specifications Data

Operating Data

Performance (Swimming Pool Service)

Flexible Filter Element & Chart Data

Regenerator™ “Bump” Mechanism

Operation, Mechanical & Operating Limits & **Caution**

Air Filter / Regulator & Operation

Air Lubricator & Operation

Panel Mount – Filter Controller & Diagram Figure 1

SECTION 2

Operating Data/Instructions

Pre-Operating checklist

Caution

Important Information

Filter Media Process – Dump &/or Recharge

Vacuum Transfer System

Cleaning, Operation & Instructions

SECTION 3

Filter Maintenance & Care

Service Recommendations & **Precautions**

FILTER OVERVIEW

“PPEC” Regenerative Series Filters

SCOPE

The filter in this manual is a Regenerative pressure diatomite or perlite design, manufactured by Paddock Pool Equipment Company, Inc. It is capable of sustaining the application now throughout the entire filter cycle without continuous body feed.

Each filter is a standard product of Paddock Pool Equipment Company, manufacturer of filtration equipment. Primary filter components include a tank, Flexible filter element assembly, and Regenerator™ "Bump" mechanism. All components and related subassemblies are factory assembled and tested prior to shipment.

PRINCIPLE OF OPERATION

Liquid travels through the filter in an up-flow direction. Unfiltered liquid typically enters a side connection in the tank, travels through a diffuser, then upward through the flexible filter element assembly leaving the filter via an outlet in the head.

When the system is initially started, the filter is pre-coated with diatomite or perlite filter media introduced through a vacuum transfer system. Pre-coat is pumped through filter where media is retained on the outer surface of elements forming the filter's "working surface." Similarly, particulates in the flow stream are held on the surface of the filter media while liquid passes through.

The filtration process is a mechanical straining of liquid through a porous layer of filter aid.

After a period of operation, accumulated solids gradually lessen the porosity of the "working surface" resulting in a decrease in effluent flow.

By activating the "Bump" mechanism, flow is restored and filter cycle is readily extended without backwashing or filter media change. This process, termed regeneration, repositions solids-laden pre-coat within the filter cake while randomly exposing new filter surface so the flow of liquid is no longer impeded. Following regeneration, filtration continues at full flow and at approximately original influent pressure. All "PPEC" series filters are capable of extended cycle operation and complete utilization of pre-coat. These automated filters provide programmed control of the regeneration cycle.

When solids-holding capacity of filter is finally reached (determined when regeneration no longer restores flow and pressure), the particulates and spent filter media are bumped from filter elements and drained from the tank. Reverse flow backwashing is neither necessary or recommended.

FILTER TANK

Filter tank is diametrically divided into head and body components. The two are bolted together and made watertight by an O-ring seal.

Both body and head are of welded construction, with all wetted surfaces and connections fabricated from low carbon stainless steel. External brackets and support legs are also fabricated from stainless steel.

Tanks are designed for a 50 PSI working pressure using a safety factor of 4 to 1. All tanks are hydrostatically tested to 1.5 times the design working pressure.

Standard tank construction incorporates connections for filter influent, effluent and drain, pre-coat inlet, pressure and vacuum relief, instrumentation, and inspection window and lift shaft gland.

Inspection window is made of Pyrex glass, and is covered by a clear plastic safety shield.

ELEMENT ASSEMBLY

Principal components include a tube sheet, flexible filter elements, seals and a lift shaft. These combine to diametrically separate filter tank into upper and lower sections. Seals prevent unfiltered water from bypassing to the upper section, clean side of the filter. All components in assembly are constructed from materials inherently passive to the application.

For servicing, assembly can be removed from filter tank as a unit, or, if desired, by dismantling individual parts.

In its operating format, the entire assembly moves down and up on a vertical axis. During filtration it is in an up or sealed position so unfiltered liquid must pass through flexible filter elements before it can leave the tank. When bumping, the entire assembly slowly moves to a down position, and then is rapidly raised.

FLEXIBLE FILTER ELEMENTS

Flexible filter elements are the porous support structures for diatomite or perlite filter media. Cylindrical in shape, each element is closed at bottom and open at top. The open end of a filter element is flanged and used for attaching each element to the tube sheet.

Outer wall of the filter element is made of filaments arranged so that external pressure causes a diminution of the tube diameter and pore size. Conversely, internal pressure results in an enlargement of diameter and pore size. Each element has an internal stainless steel spring to limit diameter diminution. During filtration the filter element is retentive. When bumped for regeneration or cleaning, it freely responds to internal pressure generated by a “Bump” stroke, propelling filter media and accumulated solids from its surface.

Filter elements have a maximum recommended operating differential of 20 psi and an ultimate of 75 psi.

“BUMP” MECHANISM

The “Bump” mechanism includes a pneumatically actuated Air-Stroke™ mounted on the head of the filter. It is connected to the flexible element assembly by a stainless steel shaft.

During bumping the Air-Stroke™ is alternately de-pressurized, then pressurized causing the flexible element assembly to move in a downward, then upward fashion. Total stroke travel is about 1-1/2 inches.

Bumping is operator-initiated on manual systems, and controller initiated on automated systems.

MODULAR SYSTEMS

System building through modular application of two or more filters is recommended. Dedicated pumps are used for each filter module. Pumps are sized for an equal portion of the total system flow rate. Thus, each filter module functions independently of each other.



APPLICATION DATA

SPECIFICATIONS

MODEL	TANK DIAMETER	WORKING PRESSURE	TANK MATERIAL	INLET OUTLET	DRAIN
PPEC 140	16 in.	50 psi	304L	3 x 8	3 x 7 ½
PPEC 145	18 in.	50 psi	304L	3 x 8	3 x 7 ½
PPEC 225	24 in.	50 psi	304L	4 x 9	3 x 7 1/2
PPEC 225S	24 in.	50 psi	304L	4 x 9	3 x 7 ½
PPEC 350	30 in.	50 psi	304L	6 x 11	4 x 9
PPEC 350S	30 in.	50 psi	304L	6 x 11	4 x 9
PPEC 500	36 in.	50 psi	304L	6 x 11	4 x 9
PPEC 500S	36 in.	50 psi	304L	6 x 11	4 x 9
PPEC 700	42 in.	50 psi	304L	8 x 13 ½	4 x 9
PPEC 700S	42 in.	50 psi	304L	8 x 13 ½	4 x 9
PPEC 900	46 in.	50 psi	304L	8 x 13 ½	4 x 9
PPEC 900S	46 in.	50 psi	304L	8 x 13 ½	4 x 9
PPEC 1000	48 in.	50 psi	304L	8 x 13 ½	4 x 9
PPEC 1275	48 in.	50 psi	304L	8 x 13 ½	4 x 9
PPEC 1400	56 in.	50 psi	304L	10 x 16	4 x 9
PPEC 1400S	56 in.	50 psi	304L	10 x 16	4 x 9
PPEC 1675	60 in.	50 psi	304L	10 x 16	4 x 9
PPEC 2100	60 in.	50 psi	304L	10 x 16	4 x 9

Standard tank construction is non-code, safety factor = 4

OPERATING DATA

MODEL	GPM RANGE	PRE-COAT LBS PERLITE	PRE-COAT LBS DE	* STATIC HEAD LOSS CLEAN	** STATIC HEAD LOSS	* TOTAL HEAD LOSS CLEAN	** TOTAL HEAD LOSS	"BUMP" SYSTEM	OPER. WEIGHT
PPEC 140	75-122	9	17	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	600
PPEC 145	105-171	12.5	24	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	800
PPEC 225	171-264	21	40	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	1200
PPEC 225S	212-335	26	50	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	1500
PPEC 350	300-444	33	63	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	2560
PPEC 350S	337-565	41	79	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	2600
PPEC 500	550-657	61	117	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	3200
PPEC 500S	528-835	65.5	126	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	3250
PPEC 700	750-895	76	146	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	4560
PPEC 700S	719-1138	82	158	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	4800
PPEC 900	647-1035	75	147	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	5860
PPEC 900S	819-1310	95	190	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	6000
PPEC 1000	730-1184	87.5	168	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	6160
PPEC 1275	950-1505	109	210	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	6500
PPEC 1400	901-1416	103	205	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	8910
PPEC 1400S	1141-1825	135	260	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	9900
PPEC 1675	1225-1670	141.5	272	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	10,400
PPEC 2100	1560-2490	182	350	1.5 ft.	23 ft.	3.02 ft.	26 ft.	Elec-Air	11,600

* Measured at gauge taps located on filter body and head

** Solids laden filter before regeneration

PERFORMANCE (SWIMMING POOL SERVICE)

MODEL	OPTIMUM GPM	TURNOVER – U.S. GALLONS		
		4 HRS.	6 HRS.	8 HRS.
PPEC 140	100	24,000	36,000	48,000
PPEC 145	140	33,600	50,400	67,200
PPEC 225	233	56,000	84,000	112,045
PPEC 225S	285	68,400	102,600	136,800
PPEC 350	393	94,241	141,362	188,483
PPEC 350S	475	114,000	171,000	228,000
PPEC 500	581	139,344	209,016	278,688
PPEC 500S	703	168,720	253,080	337,440
PPEC 700	791	189,768	284,652	379,536
PPEC 700S	958	229,920	344,880	459,840
PPEC 900	914	219,411	329,116	438,821
PPEC 900S	1157	277,739	416,609	555,479
PPEC 1000	1046	251,118	376,678	502,237
PPEC 1275	1268	304,320	456,480	608,640
PPEC 1400	1273	305,581	458,372	611,162
PPEC1400S	1612	386,936	580,404	773,872
PPEC 1675	1650	396,000	594,000	792,000
PPEC 2100	2085	500,400	750,600	1,000,800

FLEXIBLE FILTER ELEMENT DATA



The flexible element is a porous support structure for diatomite or perlite filter aid used in Paddock Pool Equipment Company Regenerator™ filters. Several elements are vertically installed within the filter to form a tube nest assembly.

The outer wall of an element is made of braided groups of filaments arranged at a specific angle. Thus, external pressure causes a diminishing of tube diameter and pore size. Each element has an internal stainless-steel spring to limit diameter diminution. Filament material varies with application.

During filtration the element is retentive. Conversely, when bumped for regeneration or cleaning the element responds to internal pressure generated by a “Bump” stroke, propelling filter media and accumulated solids from its surface.

Flexible elements have a recommended operating differential of 20 psi and an ultimate of 75 psi.

Model	FLEXIBLE ELEMENTS	BARE AREA	COATED AREA
PPEC 140	126	52.4	77.3
PPEC 145	168	69.9	103.2
PPEC 225	340	111.9	165.1
PPEC 225S	340	141.4	208.7
PPEC 350	572	188.3	277.7
PPEC 350S	572	237.9	351.2
PPEC 500	846	278.4	410.7
PPEC 500S	846	351.9	519.4
PPEC 700	1152	379.2	559.3
PPEC 700S	1152	479.2	707.3
PPEC 900	1342	441.7	651.5
PPEC 900S	1342	558.3	819.0
PPEC 1000	1524	501.6	739.9
PPEC 1275	1524	633.9	935.8
PPEC 1400	1871	616.1	908.8
PPEC 1400S	1871	778.8	1141.0
PPEC 1675	2506	824.8	1216.6
PPEC 2100	2506	1042.5	1538.8

REGENERATOR™ "BUMP" MECHANISM

DESCRIPTION

Paddock Pool Equipment Company's Regenerator™ filters utilize a DOWN-UP stroke of the flexible filter element assembly to cause a relative flow reversal through filter elements. This process, termed "Bump" cycle, enables periodic reorganization of filter media for maximum utilization of the media and extended filter cycles. It also assures resource efficient cleaning of the filter without resorting to conventional reverse-flow backwashing.

To transmit force needed for "Bump" stroke, internal filter parts are connected to an Air-Stroke™ actuator mounted on top of filter head. Stops are provided in both directions in order to achieve a specific stroke length.



OPERATION

Downstroke (compression stroke) allows gravity (weight of parts) to lower element assembly. Upstroke (extension stroke) is accomplished pneumatically by quickly filling actuator with compressed air.

Since actuator and element assemblies are mechanically connected, extension of Air-Stroke™ causes a rapid lifting of the element assembly to its upstroke position. This movement of the element cluster through an incompressible surrounding liquid propels filter media and accumulated particulates from the elements.

Regenerator™ "Bump" cycling is automatically initiated by the filter controller, while cleaning cycles are operator-initiated.

MECHANICAL

While Air-Stroke™ actuator can operate without damage through an arc of up to 30"; its application in Paddock Pool Equipment Company's "Bump" mechanism is along a single vertical axis, thus assuring a long service life. Compressed air used to fill and exhaust actuator is controlled by a 3-way solenoid valve triggered by control circuits in filter controller.

OPERATING LIMITS

- Pressure: 90 psi maximum
- Temperature: -35 F to +135 F
- Electrical Requirements: 1-60-120 VAC, 6.8 Watts
- Service Life: Exceeds 10 million cycles
- Maintenance: Maintain in an externally clean condition
- Air-Stroke™ Adjustment: None
- Compressed Air Requirements: **2 scfm @ 90 psig; 1" to 1-1/2" supply to regulator depending on length of pipe run**

CAUTION

Never inflate actuator when it is unrestricted; i.e., with compression and extension stops removed.

Do not inflate beyond specified pressure limit.

Improper use or over-inflation may cause a failure of the actuator with component damage or resulting in personal injury.

PPEC 225-350 AIR FILTER/ REGULATOR

Ref. Parker Hannifin "Piggyback"

Features:

- A. Space-saving "Piggyback" combines all filter and regulator features to yield optimal performance
- B. High water-removal efficiency
- C. Quick response and accurate pressure regulation regardless of changing flow or inlet pressure

OPERATION:

If no air is supplied to unit, piston and valve poppet are held in open position by regulator's adjusting spring. Pressurized air flows through louvered deflector and is directed into a swirling pattern. Liquids and large dirt particles are thrown against inside wall of bowl and fall into "quiet zone" below lower baffle. The baffle prevents liquids and solids from re-entering air stream. Clean air passes through element and open poppet valve to outlet port. Pressure increases in outlet line and below regulating piston, causing piston to move against the adjusting spring. The poppet, following this movement, closes and stops air flow as soon as preset pressure level is reached. This pressure level is determined by adjusting spring through T-handle. Pressure level is now controlled automatically. Valve opens for more flow if secondary pressure decreases. Excess pressure causes regulating piston to move away from relief tube. Air can exhaust through vent hole in the piston and bonnet. (This happens for standard relieving type only.)



AIR LUBRICATOR

Ref. Parker Hannifin Mist Lubricate

Features:

- A. Lubricates through broad air flow range
- B. Venturi By-Pass disc develops a linear oil delivery as air flow varies
- C. Precision needle valve results in repeatable oil delivery and minimum drip-rate change
- D. Bowl can be filled while air-line is under pressure
- E. Reverse flow capability

OPERATION:

Some of the air entering lubricator is passing through a nozzle at increased velocity. This creates a pressure differential which is used to inject oil into air stream. Higher pressure in the bowl forces oil through a pickup tube, adjustment needle, and sight dome into the low-pressure area above nozzle.

The By-Pass disc deflects at higher flow rates and governs amount of injected oil proportionally to the air flow. Rate of lubrication can be adjusted by the precision needle valve. Rotation of the needle counter-clockwise will increase drip rate. Drip rate can be observed in sight dome. After adjustment, drip rate is controlled automatically with changes in air flow. The bowl can be filled through the fill cap, while lubricator remains pressurized.



PANEL MOUNT FILTER CONTROLLER **(Refer to Fig. 1 on following page)**

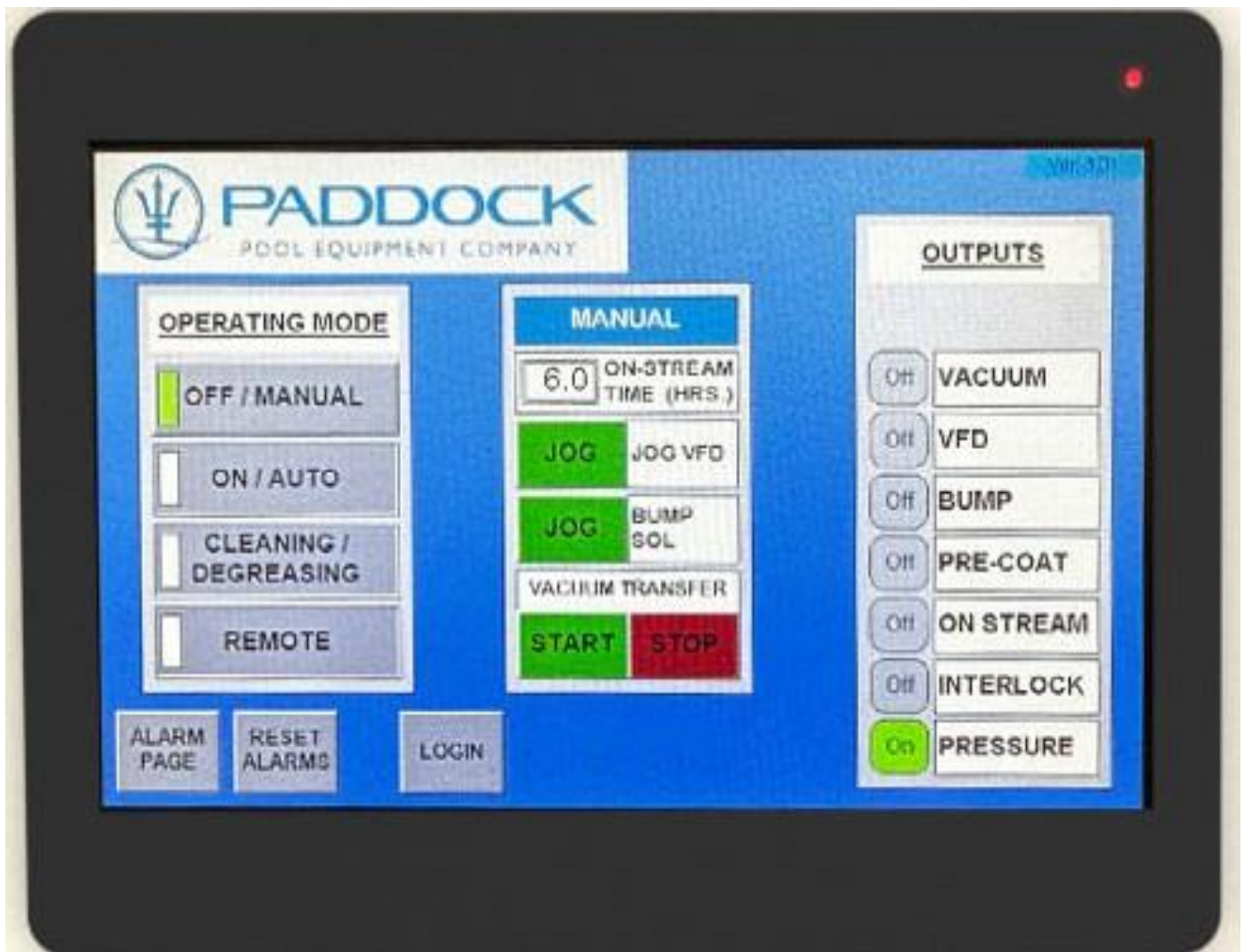
1. The filter controller is factory-programmed and will power up in OFF/MANUAL mode
2. There are multiple functions on the touchscreen and they are as follows:

OPERATING MODES - Toggles between the three modes:

1. **OFF/MANUAL MODE** – This mode turns the filtration system off and is used during recharging of the filter and to adjust the On-stream time. When selected, the motor will stop, On-stream valve will close, and interlocks will be turned off. It is also used to exit the CLEANING/DEGREASING mode.
 - 1A. Press the number in the box to adjust the On-stream time. A numerical pad will appear and any number between 1-12 can be selected. This will set the time interval (in hours) between bump cycles.
 - 1B. The green “JOG” button is a momentary switch that when pressed and released will turn the motor on and off. The motor will run as long as the button is pressed. This is used to controllably fill the filter with water.
 - 1C. The green “JOG” button is a momentary switch that when pressed and released will actuate the bump mechanism on top of the filter. This is used to manually bump the filter during the recharging process.
 - 1D. Controls the vacuum transfer system for when the filter is being charged.
2. **ON/AUTO** – This mode turns the filtration system on and automatically controls the motor and cycling of the filter.
3. **CLEANING/DEGREASING** – This mode is used for degreasing and demineralizing the filter. When placed in this mode, the filter will continuously bump at a predetermined interval until the OFF/MANUAL mode is selected.

FILTER CONTROLLER

Fig. 1



OPERATING INSTRUCTIONS

OPERATING DATA

Pre-Operating Checklist

- Power switches in panel – ON
- Enclosure door – SECURE
- Operating mode – OFF/MANUAL
- Vacuum Transfer – OFF
- On-Stream duration – SET
- Air supply to filter – ON
- Regulator set to proper setting – 90 PSI

CAUTION – TO PREVENT ELECTRIC SHOCK

DISCONNECT SUPPLY CIRCUIT(S) BEFORE ATTEMPTING SERVICE TO THE SYSTEM OR CONTROLLER; AND BEFORE OPENING ENCLOSURE DOOR

IMPORTANT INFORMATION

1. Automatic Program can be interrupted at any time. On repowering, the controller will automatically initiate a new filter cycle beginning with a “BUMP” cycle.
2. The PPEC filter controller incorporates a system air pressure sensing circuit. If the system air pressure falls below set point, and alarm will trip, the screen will turn red, and the controller will STOP filter cycle. Upon restoration of normal air pressure, controller will restart filter beginning with a “BUMP” cycle.
3. If power is interrupted to the filter controller, once it is restored, it will revert to the OFF/Manual mode. The operator will need to place it back into ON/AUTO mode
4. If a fault occurs on the filter controller while it is in its ON/AUTO mode, once the fault has been corrected, it will automatically restart beginning with a “BUMP” cycle.

Filter Media Dump/Recharge Process

The following steps should be taken to properly dump the media from the filter:

1. Manually turn off heaters and chemical control systems 5-10 minutes before shutting filter down
2. Push the OFF/MANUAL MODE button on filter controller. The box to the left should turn green.
3. Close pump discharge valve if below grade
4. Push and hold the green jog button for the Bump solenoid on the filter controller until actuator boot on top of filter is fully relieved of air. Release the button and repeat two more times
5. Open high air vent line valve
6. Open dump valve on bottom of filter and drain completely
7. Push the green jog button for the VFD on the filter controller for 5-8 seconds to jog the pump washing out any solids left in bottom of filter. If below grade, opening and closing pump discharge valve for the same duration should be sufficient.
8. Close dump valve on bottom of filter and use the VFD jog button or open pump discharge valve if below grade to slowly refill filter completely (water should come out of the air vent line). Close air vent line valve and repeat steps 3-7 one more time
9. After completing step 7 for the second time, close dump valve, close air vent line, and open Vacuum Transfer drain valve letting the line drain completely. (Illustration of Vacuum Transfer valve orientations found on following page of this manual) If below grade, pump discharge valve should still be closed.

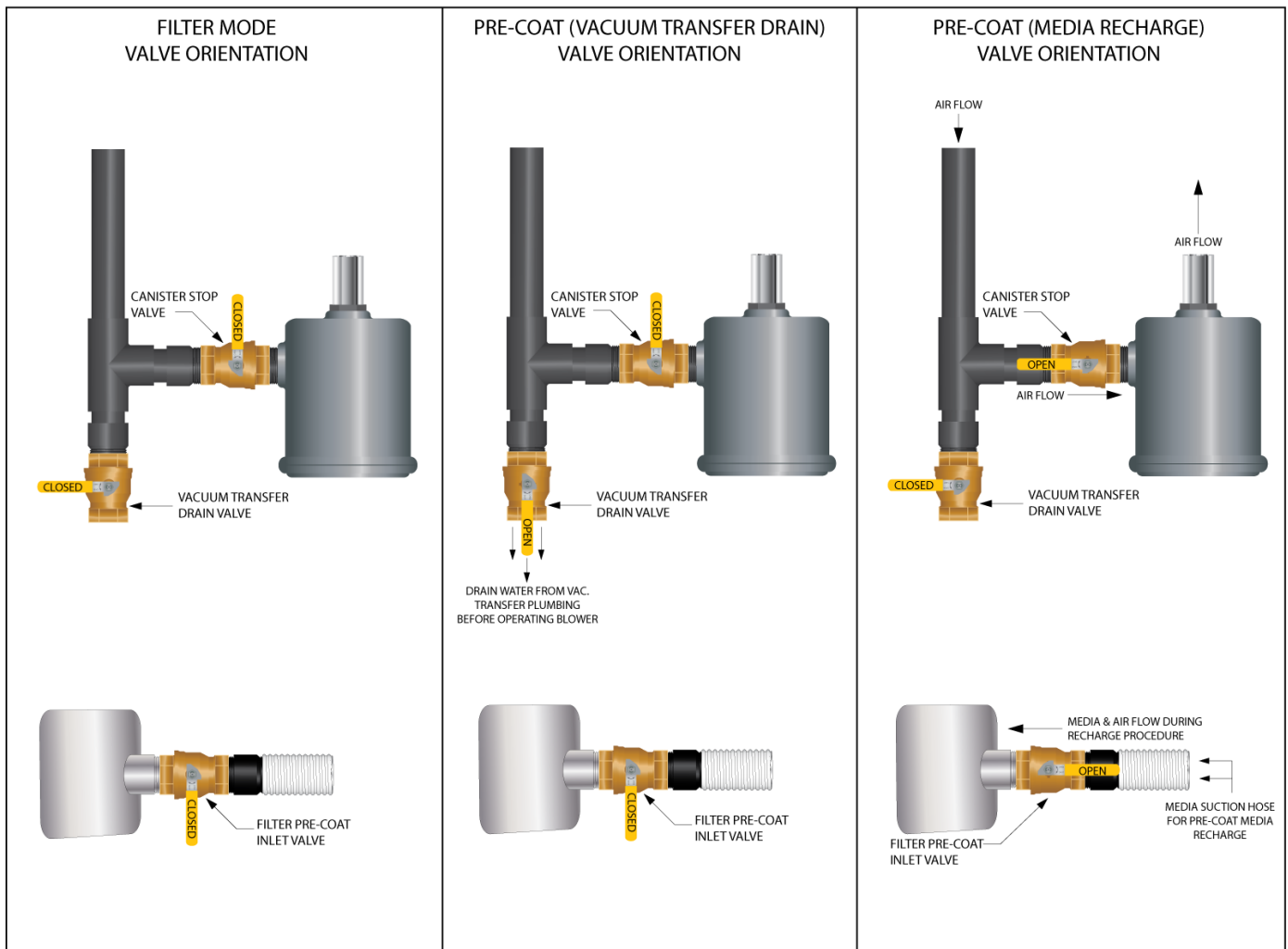
The following steps should be taken to properly charge the filter with media:

1. Close Vacuum Transfer drain valve and open Canister Stop valve and Filter Pre-Coat Inlet valve. Make sure the Vacuum Canister lid is securely fastened (illustration of valve orientation found on flowing page of this manual)
2. Press the green start button for the Vacuum Transfer on the filter panel and vacuum in proper quantity of media. Close Canister Stop and Filter Pre-Coat Inlet valves. Hang Vacuum Canister lid to allow any moisture to dry.
3. Open air vent line valve and use the VFD jog button or open pump discharge valve if below grade to slowly fill filter until a steady stream of water comes out of air vent line.
4. Close air vent line
5. Push the ON/AUTO button on filter controller. The box to the left should turn green and the sequence start
6. Monitor filter as it goes through pre-coat cycle and return to pool
7. Turn on heaters and chemical control systems

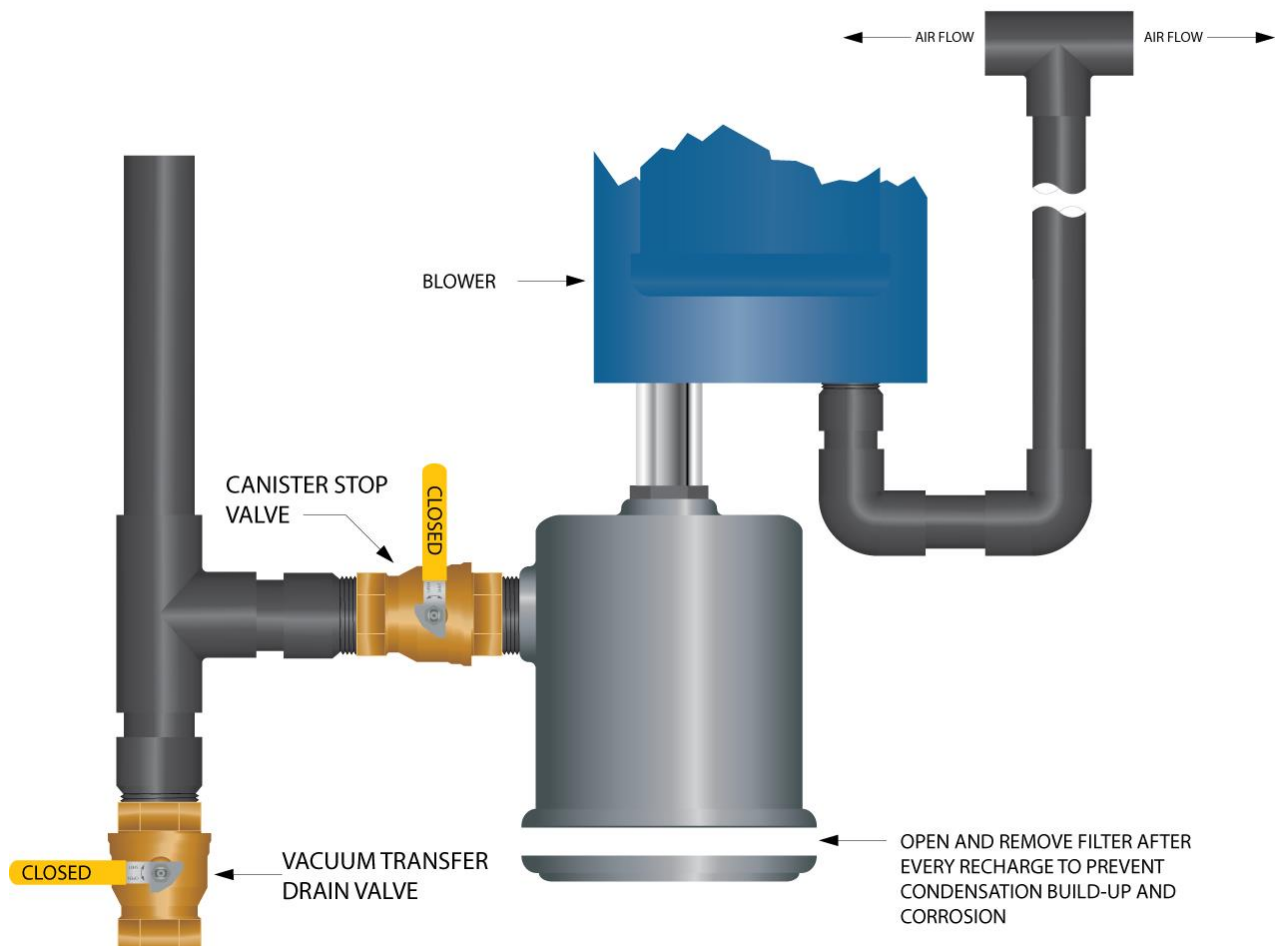
VACUUM TRANSFER SYSTEM

The Vacuum Transfer system is used to introduce media and cleaning agents into the filter. The following diagrams display the valve orientations on the Vacuum Transfer piping for proper operation.

VACUUM TRANSFER VALVE ORIENTATION

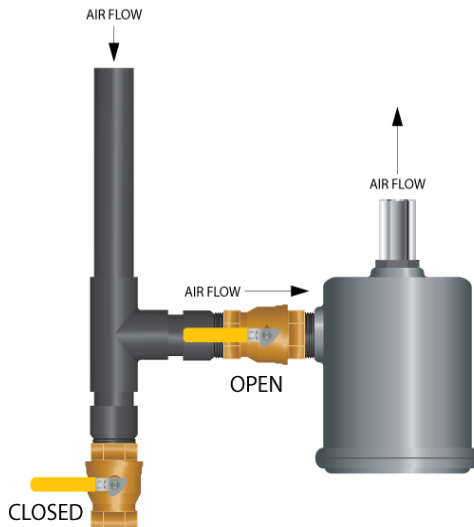


VACUUM TRANSFER FILTER CLEANING AND OPERATION



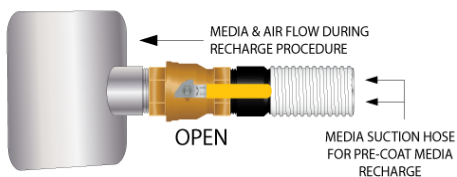
VACUUM TRANSFER INSTRUCTIONS

PRE-COAT (MEDIA RECHARGE) VALVE ORIENTATION



RECHARGING FILTER IS AN EASY PROCESS AND ONLY REQUIRES A FEW MINUTES. MAKE SURE SYSTEM IS OFF, ISOLATED, DRAINED AND RINSED PRIOR TO FOLLOWING STEPS.

1. DRAIN WATER FROM VACUUM TRANSFER PLUMBING (SEE VACUUM TRANSFER VALVE ORIENTATION DRAWING).
2. MAKE SURE HE PA FILTER IS IN FILTER CANISTER AND CLOSED
3. OPEN VALVES AS SHOWN
4. TURN VACUUM TRANSFER BLOWER ON (LOCATED ON FILTER CONTROLLER PANEL)
5. OPEN MEDIA BAGS AND BEGIN TRANSFERRING CORRECT AMOUNT OF MEDIA INTO FILTER BY USING VACUUM TRANSFER HOSE LOCATED ON FRONT OF FILTER. THE CORRECT AMOUNT OF MEDIA IS LOCATED ON FILTER LABEL AND IN OPERATORS MANUAL
6. ONCE ALL MEDIA HAS BEEN TRANSFERRED, TURN OFF VACUUM TRANSFER BLOWER, CLOSE ALL VALVES ON VACUUM TRANSFER AND FOLLOW VACUUM TRANSFER VALVE ORIENTATION DRAWING.



MAINTENANCE & CARE

FILTER MAINTENANCE

ESTABLISH A SCHEDULE

While Paddock Pool Equipment Company Regenerator™ filters are inherently resistant to effects of contaminants normally found in swimming pools, it is important to remember that body oils, sunscreen lotions, and cosmetics tend to form gummy residues inside filters. In addition, mineral content in a pool increases daily as a result of continuous chemical treatment and normal water evaporation process. Accordingly, if contaminant levels are allowed to get too high, deposits can form on filter elements that may eventually shorten filter cycles.

To guard against this, degreasing and chemical cleaning of the element assembly is suggested at approximately **six-month intervals**.

DEGREASING ELEMENT ASSEMBLY

The most effective means for removing gummy residues of body oils, sunscreen lotions, and cosmetics is through a soak cycle using a cold-water saponification, such as Paddock Pool Equipment Company Sodium Percarbonate (Degreasing Concentrate).

To initiate procedure:

- Perform normal filter media dump cycle and rinse as described earlier.
- Using the Vacuum Transfer system, add prescribed amount of Degreasing Concentrate (see table next page), then fill the filter tank slowly utilizing the green “Jog VFD” button.
- Press the “Cleaning/Degreasing” button (box to the left should turn green).
- Allow solution to remain in contact with elements for a minimum of 8 hours while in “Cleaning/Degreasing” mode.
- **High vent bleed valve must remain fully open during the degreasing cycle. Failure to do so will result in pressurization of the tank causing tank failure and/or injury!**

After completing soak cycle, drain solution from filter tank. Refill and drain filter at least twice with pool water to thoroughly flush all wetted parts.

CLEANING / REMOVING MINERAL DEPOSITS

To complete maintenance procedure, a chemical cleaner such as Paddock Pool Equipment Company Citric Acid (Demineralizer) Again, fill filter with pool water and allow solution to remain in contact with elements for a minimum of 8 hours in its "Cleaning/Degreasing" mode.

After completing soak cycle, drain solution from filter. Refill and drain filter at least twice with pool water to thoroughly flush all of the wetted parts. Filter is now ready to go back into service.

GUIDELINE CHART QUANTITY

The following table should be used to determine amount of Degreasing Concentrate and Chemical Cleaner needed for each model.

Filter Model	Tank Volume (gals.)	Note 1	Note 2
		Degreasing Concentrate (lbs.)	Demineralizer (lbs.)
PPEC140	89	6.4	4.0
PPEC145	98	8.0	6.0
PPEC225S	129	17.6	10.0
PPEC350S	244	31.7	17.0
PPEC500S	291	41.6	24.0
PPEC700S	396	59.2	34.0
PPEC900S	496	64.5	35.0
PPEC1275	595	77.0	42.0
PPEC1400S	721	93.7	50.0
PPEC1675	801	126.4	75.0
PPEC2100	890	149.0	90.0

Note 1: Suggested pounds of Paddock Pool Equipment Company Degreasing Concentrate (packaged in 50-lb bag)

Note 2: Suggested pounds of Paddock Pool Equipment Company Demineralizer (packaged in 50-lb bag)

SOME PRECAUTIONS

Take extreme care when handling cleaning agents for they can be harmful to the eyes, skin and clothing. [Read manufacturer's label instructions and Safety Data Sheet \(SDS\) before using.](#)

Isolate filter from the pool and recirculation system by closing valves, etc. before introducing cleaning solutions to filter.

Caution:

The use of muriatic acid as a cleaning chemical should be **AVOIDED**. Muriatic acid, even in weak concentration, will quickly corrode most metals including stainless steel tank. It will also destroy filter elements.

SPEED CLEANING PROCEDURE - DEGREASING ONLY

Following the procedure outlined in degreasing the element assembly:

1. Place filter in ON/AUTO mode
2. Let the filter bump and then precoat for 10-15 seconds
3. Press the OFF/MANUAL button, then the CLEANING/DEGREASING button
4. Repeat steps 1-3 at hourly intervals for 4 hours
5. Drain and rinse (2) times
6. Charge filter and operate normally

For further information or question(s), see below to contact Paddock Pool Equipment Company, Customer Service.



PADDOCK

Regenerator™ FILTER



Certified to
NSF/ANSI Standard 50

MODEL NO. **PPEC 700S**

SERIAL NO. **1123-PPEC700S-1147**

EFF. FILTER AREA **707.3 AREA/SQ. FT**

MAX. DESIGN FLOW **1138 GPM**

MAXIMUM TANK WORKING PRESSURE **50 PSI**

DIATOMACEOUS EARTH DE
OR

158 DE LBS

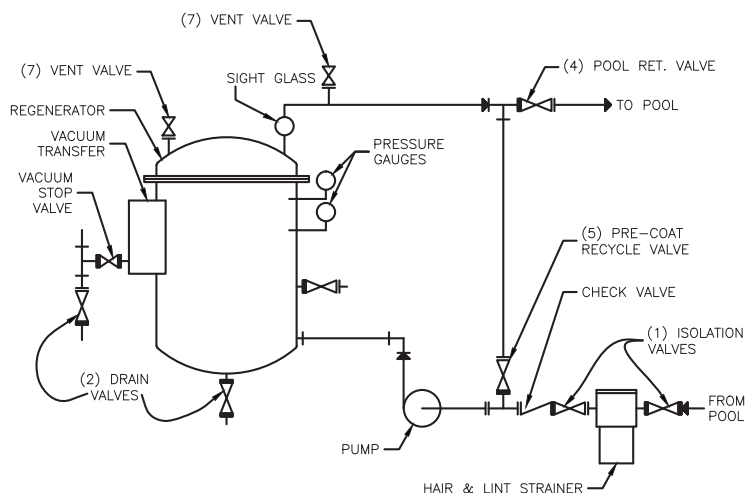
Perlite Material **82 LBS**

REQ'D CLEARANCE **13 INCHES -VERT.**

45.0 INCHES -HORIZ.

APPROVED FOR SWIMMING POOLS

SCHENECTADY CENTRAL PARK POOL NOBERTO POOLS, INC.



OPERATING INSTRUCTIONS

BEFORE STARTING

Fill the air lubricator to the mark with clean pneumatic lubricating oil - Mobil Almo 525 air-tool oil or equal is preferred, though non-detergent SAE 10 motor oil can be used temporarily. Turn on the air supply and regulate to 100 psi. Cycle-check the bump mechanism through one complete operation. Prime the recirculation pump following the manufacturer's instructions. Close all filter-related valves.

For systems equipped with an automatic filter controller, follow operating procedure specified for the controller.

PRECOATING

A. CHARGE (filter tank must be empty)

Open filter drain valve (6). Drain any water from vacuum transfer line. Close valve (6). Install canister filter. Open valves (9) and (8). Activate vacuum transfer system using the vacuum hose connected to valve (8). Vacuum in the prescribed amount of filter aid into the filter. Turn off vacuum transfer.

B. FILL

Close valves (9) and (8). Open valves (1) and (7). Start pump.

NOTE: If the filter is installed below the pool water line, open valve (1), and allow the tank to fill by gravity with the pump off. Completely fill the filter with water, venting air through valve (7). Close valve (7) after all air has been eliminated.

C. RECYCLE

Open valve (5). The water flow is now recycled around the filter until the sight glass shows clear. It may be necessary to occasionally open valve (7) to keep the system purged of air.

FILTERING

After the sight glass clears, open valve (4). Close valve (5).

Use valve (4) to adjust the system flow rate. Note the difference in the pressure gauge readings. This is the "starting" differential pressure.

As the filter accumulates dirt, the differential across the gauges will increase. When the differential reaches 15 psi, or the flow diminishes to 80% of the design rate, regenerate the filter. CAUTION: At no time should the differential be allowed to exceed 25 psi.

REGENERATION (Extending the Cycle)

Switch off pump. Close valve (4). Activate the Bump Controller. When bumping stops, start pump and proceed as in PRECOATING-RECYCLE and FILTERING.

After each regeneration, and until the filter is ready to be cleaned, a slight increase in the starting differential can be expected. This is the result of dirt accumulating in the filter and is completely normal.

CLEANING

The filter should be cleaned when it becomes necessary to regenerate more frequently than every six hours.

Close valve (4), switch off pump. Close valve (1). Activate the Bump Controller. When bumping stops, open valve (2), and allow water and dirt to drain completely. Do not vent filter during the draining process.

After the filter has drained and with the drain still open, open valve (1) and run pump for a few seconds to flush filter bottom. NOTE: If the filter is installed below the pool water line, opening valve (1) briefly with the pump off will adequately flush the filter.

The filter is now ready for a fresh precoat. Proceed as in PRECOATING & FILTERING.

VACUUMING

Vacuuming can be performed directly into the filter whenever needed. For faster results, regenerate the filter before and after each vacuuming operation.

PREVENTATIVE MAINTENANCE (Flex-Tube Elements)

While Paddock Regenerator filters are inherently resistant to fouling, it is important to remember the mineral content of the pool water increases everyday as a result of the chemicals used and the normal water evaporation process. If the concentration of minerals gets too high, deposits may form on the filter elements and eventually shorten filter cycles. Accordingly, a chemical and detergent cleaning of the element assembly is suggested at about six-month intervals. For specific instructions, please refer to Filtrix Service Recommendation IS 5545-A.

WINTERIZING

For outdoor installations exposed to freezing temperatures, cycle the filter as described under CLEANING. Perform PREVENTATIVE MAINTENANCE prior to any seasonal shutdown. Pressure gauges tend to hold water even after draining, and should be removed and stored in a heated location.

PLEASE REFER TO OPERATOR'S MANUAL.

Rev. 05/2021

PART NO. XXXXX



PADDOCK
POOL EQUIPMENT COMPANY

ROCK HILL, SC 29730