PADDOCK

EMPLOYEE OWNED SINCE 2019

PPEC REGENERATOR FILTER COMPONENTS

Inculded in Regenerator Pkg

Item	Name
R1	PPEC Regenerator Filter
R2	Pnuematic On-Stream Valve
R3	Pnuematic Precoat Valve
R4	Precoat Fill Valve
R5	Flow Meter
R6	Control Panel
R7	Bump Assembly
R8	Vacuum Transfer Pump
R9	Drain Valve

Optional Filter Accessories

F10	Check Valve
F11	Valve
F12	Strainer
F13	Reducing Precoat Tee
F14	Pump (not by PPEC)
F15	Reducer
F16	Air Compressor
F17	Auto Air Bleed
F18	Receiver Tank
F19	Air Dryer
F20	Air Line
F21	VFD
F22	Air Bleed (not by PPEC)

REGENERATOR FILTER SCHEMATIC

REV. 1

Drain Requirements:

- Gravity drainage of filter is needed to properly waste heavily laden media.
- Slop drainage pipe away from filter, terminating in an open sump/sewer connection. (Check local codes for air-break requirements and media discharge containment.)
- Filter drainage rate is controlled at approximately 50 GPM. Ideally, drainage plumbing should be designed for 500 GPM, providing adequate run-off capacity in case of operator error.
- If sewer is higher than the filter drain, a gravity sump with a sump pump to lift the waste the sewer is required. Match sump to filter volume notated on attached chart.

Electrical Requirements:

- The Control Panel requires a dedicated 120V 20-amp circuit.
- VFD – 2 pairs of 22/4 or 18/4 shielded wire for interface (single conduit)
- UV System, Chemical Controller, Heater, Dehumidification - 22/4 or 18/4 shielded wire for interface (single conduit per unit)
- Flow Meter - 22/4 or 18/4 shielded wire from meter to MOD1 control box(single conduit)
- All panel penetrations should be made on the sides or bottom of panel.
- The filter & all other equipment need to be bonded.

Filter Location:

- Side clearance of three feet should be provided around the filter to allow for operator access.
- Minimum clearance over the filter is 13", more clearance improves service access.
- Provide a mount point(one-ton minimum safe load) above the filter to facilitate head removal.
- Typical clearance underneath the filter (measured from face of drain flange to floor) is 14".

Flow Meter Installation Location:

- The flow meter should be installed on the straight run of pipe into the influent connection between the pump and the filter (allows flow to be monitored through the pre-coat & on-stream cycles).
- The flow meter requires a distance of 20x the pipe diameter before and 5x the pipe diameter after.

Air Supply:

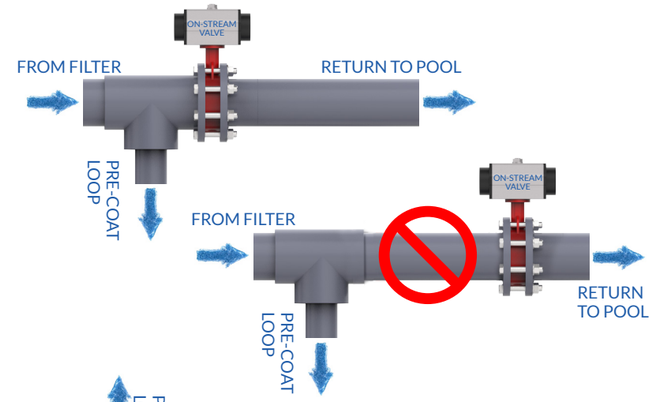
- The PPEC Regenerative filters require a continuous supply of dry 80 PSI air to operate 2 pneumatic valves & a pneumatic "bump" mechanism.
- Multiple filters may require multiple compressors/receivers.
- Air lines should be Ø3/4" braided 300 PSI hose or ¾" copper.
- Do not heat fittings within 2' of filter connection, direct heat can damage regulator components.
- An air dryer may be installed and plumbed between the air supply and the filter. This will help pull any remaining moisture out before it reaches the filter. By-Pass valve to be provided with dryer.

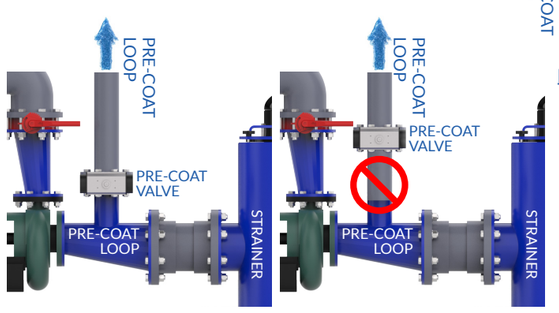
Plumbing Design Guidelines:

- The PPEC Regenerator filters will operate efficiently above or below pool level. A check valve is needed either in front of the pump strainer or between the pump strainer & pre-coat tee. If the pump is below water level a check valve is suggested above the pump discharge as well.
- Efficient filter operation requires a minimum 5' straight run of pipe going into the influent connection. Refer to flow meter location for more information.
- Reduce the number of fittings and plane changes between the pump discharge and the filter.
- Use sweeping 90's or two 45's to decrease turbulence if 5' straight run is not possible.
- Any increase or reduction in piping size should be done as close to the pump discharge as possible.

On-Stream Valve Location:

- Locate valve actuator to allow operator to view valve status, do not mount below pipe.
- Install On-Stream Valve with a spigot flange to decrease the area prior to the valve to prevent media build-up. This reduces media returning to the pool.





Pre-coat Valve Location:

- The pre-coat valve should be installed as close as possible to the pre-coat tee between the pump and strainer. If this is not done, the resulting entrained air can be pushed into the filter and cause media separation which will result in media getting into the pool.
- The pre-coat line and valve are one significant pipe size smaller than the filter connections.

Filter Media Selection:

- Regenerators are NSF approved for diatomaceous earth (DE)* or perlite filter media.
- PPEC provides PF-60 perlite media

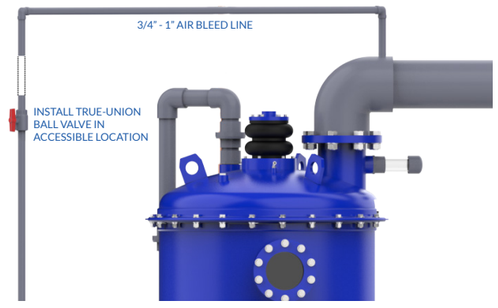
*PPEC's preferred media

Air Lines to Valves:

- Pneumatic valves should be connected to their respective control solenoid located on the right side of the filter control mounting bracket (top is on-stream, bottom of pre-coat) using ¼" x 0.04" wall nylon or poly tubing.
- Speed control set screws for valves are located on the front of the solenoid, adjust to a 3-5 sec open & closure rate.

High Vent Air Bleed:

- Must be installed at the highest point in the return line between filter effluent & the on-stream valve to prevent entrained air from re-circulation.
- If the air bleed is improperly installed it could result in decreased filter performance.



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Model #	Width (inches) "A"	Overall & Shipping Height (inches) "B"	Tank Influent Connection (inches) "C"	Max Design Filtration Rate (GPM/ft2)**	Effective Filtration (Area/sq. ft.)	Design Flow Range (gpm)	Tank Volume (gals)	PreCoat Perlite (lbs)	PreCoat (+) DE (lbs)	Operating Weight (lbs)	Shipping Weight (lbs)	Drain Connection (Nom. Pipe Size)	Tank Connection (Nom. Pipe Size)	Minimum Sump Size (gals)	Compressor / Receiver Tank Sizes (gals)
PPEC 225S	27.00	86.75	24.00	1.60	208.7	212-335	129	26	50	1500	1025	4	4	100	60 / N/A
PPEC 350S	33.00	88.25	24.44	1.60	351.2	337-565	244	41	79	2600	1300	4	6	165	60 / N/A
PPEC 500S	39.50	92.48	25.88	1.60	519.4	528-835	291	65.5	126	4250	1750	4	6	225	60 / N/A
PPEC 700S	45.00	96.69	28.25	1.60	707.3	719-1138	396	82	158	4800	2200	4	8	390	60 / N/A
PPEC 900S	50.63	104.19	30.13	1.60	819.0	819-1310	496	95	190	6000	2750	4	8	446	60 / N/A
PPEC 1275	51.00	103.63	30.81	1.60	935.8	950-1505	525	109	210	6500	3100	4	8	670	60 / 30
PPEC 1400S	58.63	107.69	32.63	1.60	1141.0	1141-1825	721	135	260	9900	4100	4	10	810	60 / 30
PPEC 2100	63.50	116.49	34.19	1.60	1538.8	1560-2490	890	182	350	11600	5800	4	10	960	60 / 30

**Contact manufacturer for assistance in proper plumbing layout.

(+) Preferred Media

REGENERATOR DESIGN BEST PRACTICES

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