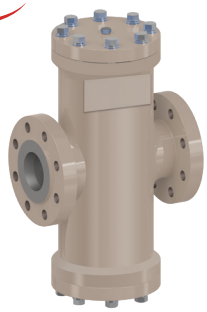
PECO Series 30

Installation and Operating Instructions

INLINE DRY GAS FILTER



A. GENERAL DATA

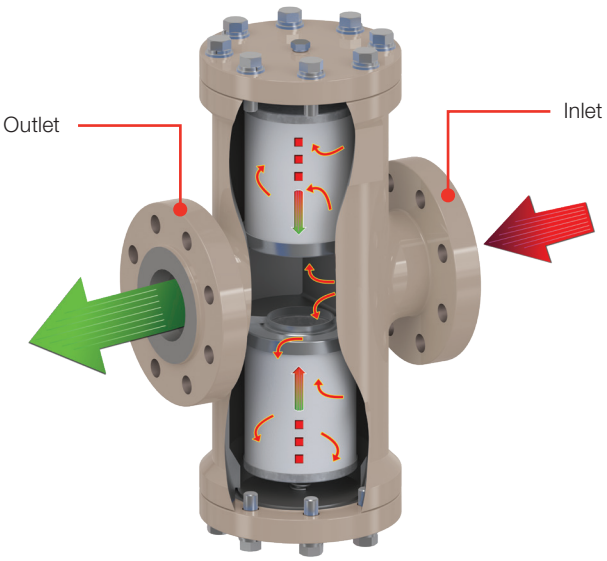
The Model 30 Inline dry gas filter is designed for separation of solid contaminants from a natural gas stream. It is available in all major design codes and certifications.

The vessel is a single stage design that contains replaceable filter cartridges. blind flange closures are provided on the vessel to changeout cartridges.

This design is not recommended for liquids and does not have an area for liquids to accumulate. No liquid level devices will be needed on this design.

The cartridges in the vessel will become dirty or “spent” as solids collect on the cartridges. As this happens the differential pressure across the inlet and outlet flange connections of the vessel will begin to increase. The vessel should be serviced once the cartridges have reached the recommended change-out differential pressure. At that point the vessel should be taken off-line and the spent cartridges should be replaced with clean cartridges according to the procedure below. Installation and operation should be undertaken in accordance with all plant safety procedures and standard operating procedures of the end user by authorized personnel only. If any difficulties are experienced during installation or in operation, consult Parker directly at (940) 325-2575 or your authorized, local Parker representative/distributor for assistance.

B. GENERAL ARRANGEMENT / FLOW



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C. INSTALLATION INSTRUCTIONS

1. This vessel design is typically bolted in line and supported by the vessel piping. Ensure adequate space above and around the closure to allow room to install/remove cartridges and for venting.

2. Connect inlet and outlet connections of filter vessel to piping of equal diameter. Check the filter vessel drawing to identify the location of each. It is recommended that the filter vessel be installed with by-pass and block valves to permit continued operation during cartridge changes.

   Check to ensure that all blind flange bolting is properly torqued. Flange bolting is torqued at the factory, however may relax or loosen during shipment to the installation site.

3. Close inlet and outlet connection valves.

4. Open the vent valve.

5. Two pressure taps are furnished on the vessel. It is extremely important that an accurate differential pressure gauge be installed on the vessel. Pressure drop is the only indicator that the operator has to tell him/ her when the filter vessel should be blown-down or by-passed to change the filter cartridges.

6. Open the filter vessel and inspect the inside of the vessel. Verify the internals have not been damaged and that the O-ring for the closure is in place. Verify the cartridges are seated properly and that each cartridge is fully engaged.

7. Inspect the closure gasket to make sure it is new and in good condition. Make sure it is seated in the closure groove correctly.

8. Close the filter vessel.

9. Prior to filling the filter vessel with gas, verify that the operating pressure and temperature are within the design limits of the filter vessel. The design conditions can be found on the filter vessel nameplate.

10. Review and follow all operating company safety procedures for filter operation.
11. Follow all operating company safety and lockout/tag-out procedures.

12. Verify that inlet and outlet connection valves are closed and that vent valve is open.

13. **Slowly and partially** open the inlet connection valve and introduce the gas stream into the filter vessel. Allow gas to purge air from the filter vessel through the vent valve. Purging should only take a few seconds.

14. Close vent valve.

15. Check for leaks. Should a leak occur, close inlet valve immediately and determine cause of leak.

    Make sure to fully depressurize the vessel prior to attempting to fix leak.

16. Once no leaks are found, check to be sure that all auxiliary equipment is ready for operation.

D. OPERATING INSTRUCTIONS

1. Once the filter vessel is full of gas and no leaks are found, open the inlet valve all the way.

2. **Slowly** open the outlet connection valve and begin flow through vessel. Flow should be set based on recommended flow rate provided during sizing.

3. Monitor differential pressure across the inlet/outlet. The filter is typically designed for 2 psid (0.14 bar) or less differential pressure at start-up at normal operating conditions.

4. As the cartridge loads with solids, the differential pressure across the filter vessel is expected to increase. The cartridge should be replaced when the differential pressure reaches 15 psid (1.0 bar) at normal operating pressure or every year, whichever comes first.
   - Do not backflow the filter vessel. A high velocity flow inside the cartridges could cause damage or cause the cartridge seal to become disengaged.
   - Do not clean the filter vessel with steam injected into the vessel with the cartridges still installed. Make sure cartridges are removed prior to any steaming performed.
   - If the solids being removed from the gas are susceptible to causing combustion with air (i.e. iron sulfides/black powder), the filter vessel may be flooded with water and then drained before the closure is opened and spent cartridges are removed. This will reduce the risk of cartridges combusting.

E. MAINTENANCE INSTRUCTIONS – CHANGING SPENT CARTRIDGES

1. Review all operating company safety procedures prior to cartridge replacement operations.

2. Follow all operating company safety and lockout/tag-out procedures.

3. Open filter bypass valve (if available) and then isolate the filter vessel by closing the inlet and outlet connection valves.

4. Open the blow-down connection or closure vent valve to relieve any pressure on the vessel.
   Ensure that the filter vessel pressure is at atmospheric pressure prior to proceeding.

5. Open the filter vessel.

6. Remove dirty (spent) cartridges.
   Dispose of spent cartridges in accordance with plant procedures and applicable laws and regulations for disposal in your area.

7. Inspect and clean the filter vessel as needed. Make sure all debris is cleaned from the cartridge sealing surfaces. Make sure no cartridge gasket seals have been left in vessel during cartridge removal. If any vessel damage is found notify Parker immediately. Do not operate vessel until damage is fixed.

8. Install new cartridges and ensure proper sealing.
   The use of original OEM cartridges is highly recommended to ensure the best overall performance of the filter. Replacement cartridges can be ordered through your local Parker distributor. The cartridge Item Number and Model Description can be found in the Manufacturer's Data Book supplied with your vessel.

9. Install a new closure gasket. The use of original closure manufacturer's gasket is highly recommended to ensure the best overall performance of the filter. Replacement gaskets can be ordered through your local Parker distributor. The closure gasket Item Number and Model Description can be found in the Manufacturer's Data Book supplied with your vessel and also on the vessel nameplate.
   Installation of a new closure gasket during each cartridge change is highly recommended.

10. Close the vessel.

11. Make sure vent valve is open.

12. Make sure inlet and outlet valve are closed.

13. **Slowly and partially** open the inlet connection valve and introduce the gas stream into the filter vessel. Allow gas to purge air from the filter vessel through the vent valve. Purging should only take a few seconds.

14. Close vent valve.

15. Check for leaks. Should leak occur, close inlet valve immediately and determine cause of leak.
    Make sure to fully depressurize the vessel prior to attempting to fix leak.

16. Once no leaks are found, check to be sure that all auxiliary equipment is ready for operation.

17. Repeat operating instructions in section B.

F. SUMMARY DATA

Recommended Cartridge Change-out
Differential Pressure..... 15 psid (1.0 bar)

Maximum Cartridge Differential Pressure
at Collapse ..... 35 psid (2.4 bar)

Note: The following pressure information is provided as a minimum guideline. Due to the variety of cartridge models that can be used in vessel, it is strongly suggested to refer to the specific cartridge data sheet for further detailed pressure information. To prevent damage, never exceed the maximum allowable differential pressure of the cartridge support plate in the vessel.

Cartridge Series PEPP Available in micron ratings of 0.3, 1, 2, 5 and 10.

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