



Series 26

**Standard Single Round
Sanitary Cartridge Housings**

Operation and Maintenance Manual

For more information or literature, contact:

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Part Number: 2601222
Rev. A

Specifications

Materials

Housing	316L Stainless Steel
Clamp	304 Stainless Steel
Gasket	Silicone, USP Class VI
Plunger Valve O-Rings	Silicone, USP Class VI
Plunger Valve Tip	PTFE

Surface Finish

Wetted Surfaces	20Ra μm . Max. (0.51 μm) Mech. Polished and Passivated; or 20Ra μm . Max. (0.51 μm) Mech. Polished and Electropolished; or 15Ra μm . Max. (0.38 μm) & EP for Final Fill Applications (Recess Base Only)
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Exterior Surfaces

32Ra μm . (0.8 μm)
Mechanically Polished

Maximum Operating Conditions

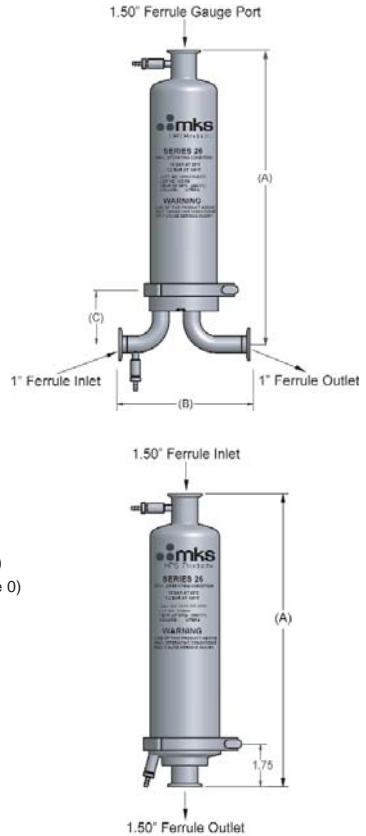
10 Bar (145 psi) at 25°C (77°F)
3.2 Bar (46.4 psi) at 145°C (293°F)

Cartridges Used

2-226 O-Rings w/ Locking Tabs (Code 7)
2-222 O-Rings w/ Spring Retainer (Code 0)

Sterilization

In-line Steam
Autoclave
Hot Water



		T-Line					In-Line		
Cartridge Size	Connection Type	Height (A)	Width (B)	Base (C)	Housing Weight (Dry)	Internal Volume	Height (A)	Housing Weight (Dry)	Internal Volume
5.00"	2-222 O-Ring, Spring	12.72	7.95	3.27	9.5 lbs.	1.44 liters	11.19	7.8 lbs.	1.44 liters
	2-226 O-Ring, Wire	12.72	7.88	3.02	9.1 lbs.	1.44 liters	11.19	7.3 lbs.	1.44 liters
	2-226 O-Ring, Recess	12.72	7.95	3.27	8.5 lbs.	1.44 liters	11.19	6.7 lbs.	1.44 liters
10.00"	2-222 O-Ring, Spring	17.72	7.95	3.27	11.0 lbs.	2.54 liters	16.19	8.3 lbs.	2.54 liters
	2-226 O-Ring, Wire	17.72	7.88	3.02	10.6 lbs.	2.54 liters	16.19	8.9 lbs.	2.54 liters
	2-226 O-Ring, Recess	17.72	7.95	3.27	10.2 lbs.	2.54 liters	16.19	8.3 lbs.	2.54 liters
20.00"	2-222 O-Ring, Spring	27.72	7.95	3.27	14.0 lbs.	4.43 liters	26.19	12.1 lbs.	4.43 liters
	2-226 O-Ring, Wire	27.72	7.88	3.02	13.6 lbs.	4.43 liters	26.19	11.7 lbs.	4.43 liters
	2-226 O-Ring, Recess	27.72	7.95	3.27	13.0 lbs.	4.43 liters	26.19	11.2 lbs.	4.43 liters
30.00"	2-222 O-Ring, Spring	37.21	7.95	3.27	16.8 lbs.	6.33 liters	35.68	15.0 lbs.	6.24 liters
	2-226 O-Ring, Wire	37.21	7.88	3.02	16.3 lbs.	6.33 liters	35.68	14.6 lbs.	6.24 liters
	2-226 O-Ring, Recess	37.21	7.95	3.27	16.0 lbs.	6.33 liters	35.68	14.0 lbs.	6.24 liters

Cleaning Procedures Housing Installation

Prior to installing the housing, and after each filtration cycle, it is necessary to clean the housing to ensure proper performance, and eliminate product contamination. MKS recommends the following procedure for cleaning:

1. Ensure that the housing is in a neutral pressure condition by slowly opening any vents or drains. DO NOT loosen any of the clamps before you confirm a neutral pressure condition, as the unit may still be under pressure. If a vent or drain is not present you must ensure a neutral pressure condition by another method prior moving forward with cleaning.
2. Once pressure is relieved, disassemble the unit by removing the clamp connection between the dome and the base. If vent valves or drains are present, disassemble those prior to cleaning.
3. Clean the components using a soft brush and an approved detergent intended to clean metal parts.
4. Rinse the parts with hot water followed by an additional rinse with purified water to prevent spots.
5. Dry the parts using filtered compressed air or let them air dry. Avoid orienting the parts in such a way that water is allowed to puddle.
6. Once dry, re-install the housing by following the suggested installation procedures in this manual, or put the unit into dry storage.

Housing installation is an important consideration for your system. The overall design of your system, including the design for drainability and sterility, should be considered.

1. If housings are to be installed horizontally, it is recommended that they are removed from the system and cleaned out-of-place (COP). Vertically installed units can be cleaned in place and steam sterilized.
2. Whether installed vertically or horizontally the housing must be accessible for replacing the filter cartridge. For this purpose when installing the housing ensure that there is ample space around the housing to enable the shell to be removed.
3. Proper support must be designed into the housing inlet and outlet piping to ensure that the housing is supported properly. It is recommended that the housing is supported close to the inlet and outlet connections to ensure the piping system does not sag from the additional load of the housing plus the fluid inside.
4. Install the gaskets.
5. Secure the closure properly with the sanitary clamp. Hand tighten clamp closures. For ASME models only, use a wrench to tighten the bolts.

Warning

Use of this product above recommended maximum operating conditions may cause serious personal injury and/or damage to equipment.

Maximum Operating Conditions

145 PSI @ 293°F

Cartridge Installation

2-226 O-Rings with Locking Tabs (code 7)

MKS suggests to follow the filter manufacturers' instructions for installing the filter cartridge, however, the instructions below are typical for most installations, and can be followed as an alternative.

1. Open Series 26 filter housing by removing the 4.00" sanitary clamp and lifting the housing shell from the base.
2. Remove the minimum amount of plastic from the bottom of the cartridge to allow the bayonet and o-rings to be accessed. Leave the remaining plastic on the cartridge, and ensure that the plastic barrier is between the operators hands and the cartridge at all times.
3. Wet the o-rings with purified water or other approved substance.
4. Ensure that the bayonet is aligned with the base properly, for recessed base models the tabs should be aligned with the cutouts in the base; or wire-form bases the tabs must be aligned flush with the base, not on top of the wire-forms
5. Center the bottom o-ring over the cavity in the base, ensure that the filter is upright and perpendicular to the base, then push firmly to seat both o-rings within the cavity.
6. Turn the cartridge approx $\frac{1}{4}$ turn until the bayonets are "locked" under the wire-forms, or fully engaged in the recessed base.
7. Remove the plastic wrapper from the cartridge.
8. Replace the housing shell and gasket.
9. Secure the closure properly with the sanitary clamp. Hand tighten clamp closures. For ASME models only, use a wrench to tighten the bolts.

2-222 O-Rings with Spring Retainer (code 0)

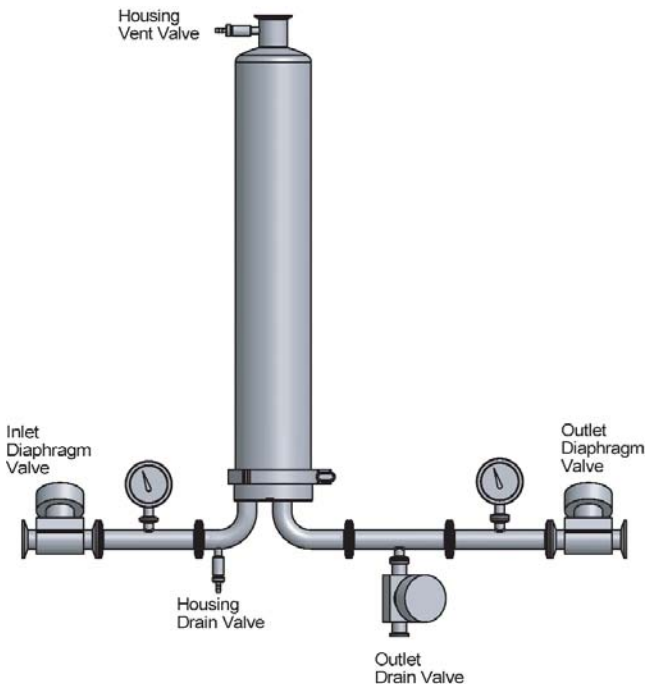
1. Open Series 26 filter housing by removing the 4.00" sanitary clamp and lifting the housing shell from the base.
2. Remove the minimum amount of plastic from the bottom of the cartridge to allow the bayonet and o-rings to be accessed. Leave the remaining plastic on the cartridge, and ensure that the plastic barrier is between the operators hands and the cartridge at all times.
3. Wet the o-rings with either purified water or with the medium to be filtered.
4. Center the bottom o-ring over the cavity in the base, ensure that the filter is upright and perpendicular to the base, then push firmly to seat both o-rings within the cavity.
5. Remove the plastic wrapper from the cartridge.
6. Insert the spring on top of the cartridge assuring that the spring assembly is centered on the housing.
7. Replace the housing shell and gasket.
8. Secure the closure properly with the sanitary clamp. Hand tighten clamp closures. For ASME models only, use a wrench to tighten the bolts.

Sterilization

Steam-In-Place (SIP)

Steam in place sterilization cycles must be validated by the user. MKS recommends the owner of the housings to work with the filter cartridge manufacturer for the optimum process to sterilize their products. Below is an alternative procedure to Sterilize the housing assembly.

1. Ensure the inlet valve is closed. On the inlet supply side, connect incoming steam
2. Check that the steam pressure is set within range
3. Open vent valve
4. Open drain valve
5. Close outlet valve
6. With the steam valve partially open, open the inlet valve slowly until 5psi is reached
7. Close both the drain and vent valves until steam barely escapes from the valve
8. Ensure that the remaining condensate is drained from the system
9. Slowly increase the steam pressure by opening the inlet valve
10. Be sure that the pressure differential is within the cartridge manufacturers recommendations
11. Hold this pressure until both inlet and outlet gauges read the same pressure.
12. The assembly should be sterilized
13. Close both the vent and drain
14. Close the steam valve
15. Introduce sterile air or nitrogen to help cool the assembly
16. Once cooled ensure that housing is in a positive pressure condition, then close both the inlet and outlet valves
17. Release the gas pressure just before use.



Autoclaving

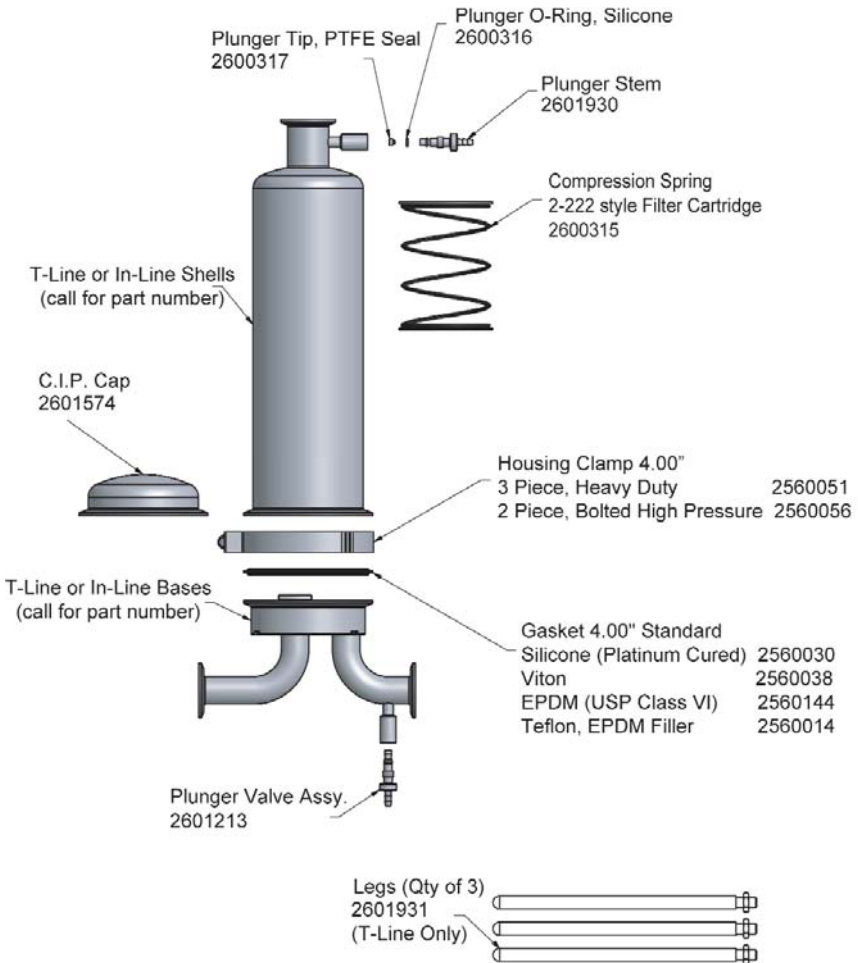
MKS recommends that the owner follow approved procedures to perform autoclaving. As an alternative the following procedure may be used:

1. Using an approved autoclave material ensure that both the inlet and outlet connections are covered as well as the vent and drain valves (loosen the valves first).
2. Insert the housing assembly into the autoclave. It is recommended that the housing is positioned to allow the condensate to drain properly.

3. Run the approved autoclave cycle
4. Cool the assembly and then close all valves.
5. Install the assembly into the process lines using approved techniques.

Spare Parts

See below diagram for typical spare parts. For spare shells or bases please call Customer Service at 1-800-345-1967.





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