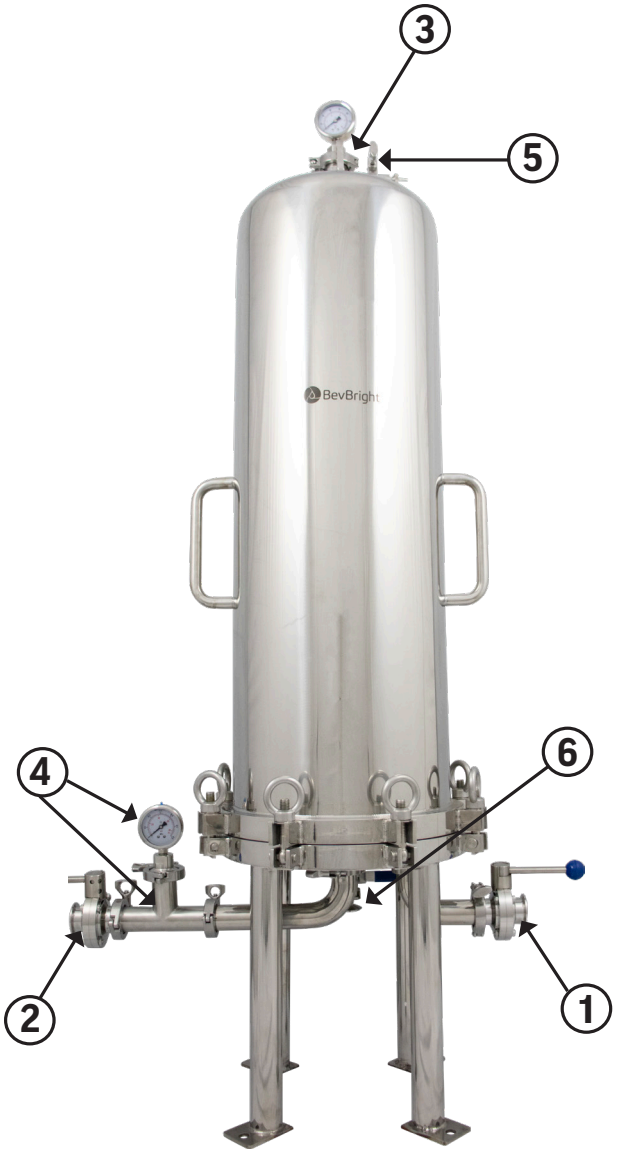
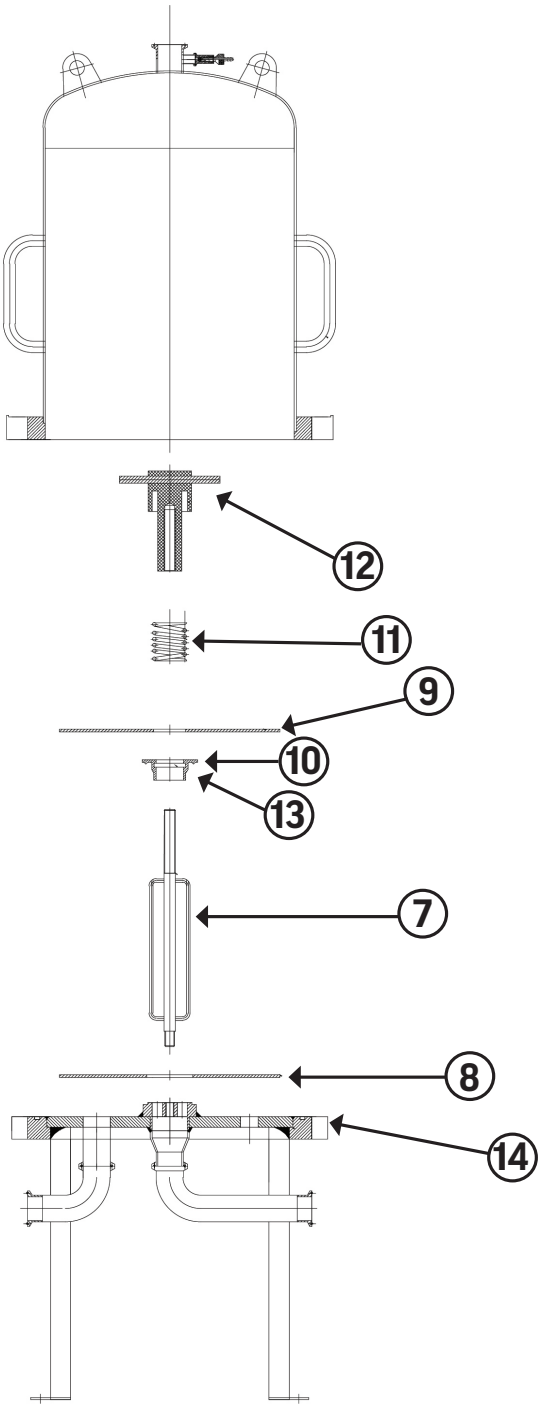
BevBright

LENTICULAR FILTER MANUAL

REV1.1





Item #	Description
1	Inlet
2	Outlet
3	Pressure Gauge
4	Tee & Gauge
5	Vent Valve
6	Drain
7	Center Post
8	Base Plate
9	Top Plate
10	Seal Fitting
11	Spring
12	Lock Assembly
13	Seal O-ring
14	Base O-ring

TOPICS

- Filter Specifications and Ratings
- Warnings
- Cleaning
- Assembly
- Installing a Filter Module
- Sanitizing
- Use
- Filter Module Regeneration
- Storage and Maintenance

FILTER SPECIFICATIONS & RATINGS

- Maximum operating temperature: 275˚F (140˚C)
- Maximum operating pressure: 159 psi (10 bar) (Liquid only)
- All parts in contact with product are in 304L stainless steel
- Standard gasket material is silicone

WARNINGS

⚠WARNING Never exceed the pressure rating of your BevBright Lenticular Filter Housing Dome. Exceeding the pressure rating could result in injury or death.

INSTALLATION (HOUSING AND MODULE)

CLEANING

Before use, remove machining oils by cleaning with a very light amount of dish soap and a non-abrasive scrub pad, such as the white non-abrasive scotch brite style pads. Be sure to rinse thoroughly with water before proceeding.

FILTER HOUSING INSTALLATION

1. Housing inlet and outlet elbows are located on the bottom of the unit. The fluid inlet (1) is the short elbow while the fluid outlet is the long elbow (2).
2. Connect the sanitary pressure gauge to the top of the housing (3) using a 1.5” clamp and gasket. This will read the incoming pressure into your filter.
3. Connect a 1.5” tri-clamp tee with a sanitary pressure gauge to the fluid outlet (4). This will read the outgoing pressure of your filter.
4. Connect Tri-Clamp butterfly valves on the inlet (1) and outlet (2) using tri-clamps and gaskets.
5. The vent valve (5) on top of the dome should be open halfway to allow gas to escape as the dome fills.
6. Connect valve to drain (6) using tri-clamps & gaskets. The drain valve on the bottom of the housing should be closed and is only used to drain any remaining fluid after the filtration process is complete

FILTER MODULE INSTALLATION

7. Thread center post (7) into the filter housing based. The center posts positions the filter cartridge in the center of the housing. Optional center posts are available and allow you to use fewer filter cartridges on a 2, 3 or 4 cartridge housing.
8. Check the integrity of your gaskets. Any damaged gaskets should be replaced as they may allow air ingress during filtration.
9. Place the stainless steel base plate (8) on the base of the housing.
10. Install the filter module(s) over the center post.
11. Install the top plate (9) and seal fitting (10).
12. Install the spring and lock-down assembly (11). Take care to thread slowly and carefully to avoid stripping out the threads. Tighten lock-down assembly by hand until the lenticular module is firmly compressed.

SANITIZING

Steam, hot water, or chemical sanitizer are the three most common ways to sanitize your BevBright lenticular filter before use with your final product. Steam and hot water are very similar and utilize the same preparation and cool-down practice.

SANITIZING WITH STEAM OR HOT WATER

NOTE: When using heat to sanitize your lenticular housing, you will need to be able to read the temperature at the housing outlet to determine

completion. Use a thermal gun or replace the outlet tri-clamp pressure gauge with a tri-clamp thermometer during the sanitizing process.

WETTING THE CARTRIDGE

1. Before using heat (steam or hot water), you will need to wet the fibers in the filter cartridge to allow them to expand. Hook up water to your inlet valve and allow to run through your filter for 10-20 minutes. You can create a loop to utilize the same water. Release air in the housing by opening the top valve until water comes out.
2. Disconnect the water and open a bottom butterfly valve(s) to drain the water. Open the top vent to allow air to enter and the water to drain. After the housing is empty leave the butterfly valves and top vent partially open. Now you are ready to sanitize with steam or hot water.

STEAM SANITIZATION

3. Connect your steam source and allow steam to push through the housing for 20 minutes. When the outlet temperature measures 180˚F the housing is sanitized.

HOT WATER SANITIZATION

4. Connect hot water to the inlet valve and turn on. Partially open the vent and drain valve and open the outlet valve all the way. Air should completely exit the vent valve and water should exit out of both the drain valve and the outlet valve.
5. Flush for 20 minutes or until the temperature at the outlet measures 180˚F.

COOL DOWN AFTER STEAM OR HOT WATER.

6. Whether using steam or hot water, be sure to cool your housing down slowly to avoid warping or cracking the filter cartridge.

SANITIZING WITH CHEMICALS

Make sure your chemical sanitizer is safe for use with lenticular cartridges and does not damage cellulose. Follow the manufacturer's directions for contact time. Processes vary greatly when sanitizing with chemicals, but in the below example we will assume you are using a pump, a bucket of no-rinse sanitizer, and tubing to create a loop through your filter housing. If possible, it is ideal to connect the same tubing you will later use to transfer wine to and from the filter housing.

1. Sanitize your fittings separately in a bucket of sanitizer and then assemble filter housing.
2. Connect pump and tubing loop to your filter housing. Open the inlet valve and close the outlet valve. Partially open the vent valve. Turn on pump. When sanitizer begins to exit the vent valve, close the vent valve and open the exit butterfly valve to allow sanitizer to flow through the housing.
3. Refer to your sanitizer directions for appropriate contact time.
4. Turn off the pump and close the inlet and outlet valve.
5. Connect a regulated gas (3-5 PSI) to the inlet butterfly valve. While compressed air is sufficient to remove the water from the housing, flushing the filter with Inert gas such as nitrogen or argon reduces oxidation to your product during the filtering process. CO2 is not preferred because it can be absorbed into the cartridges. Always use a regulator to control the pressure at 3-5 psi.
6. ⚠WARNING Using an unregulated gas pressure can cause over pressurization of the housing resulting in serious injury or death.
7. Turn on gas and open outlet butterfly valve.
8. Flush with gas until water stops coming out.
9. To flush more of the sanitizer out of the filter material, shut the outlet butterfly valve and allow gas pressure to build up to 5 psi. Open the drain valve on the bottom and allow any sanitizer that has been forced out of the cartridge to drain. Repeat this step until no more liquid drains out.

FILTRATION PROCEDURE

1. Before starting filtration, ensure that the tubing sets and hardware used to transfer your liquid to and from the filter are sanitized. For oxygen-sensitive liquids, consider flushing the tubing with inert gas to minimize oxidation.
2. Close the butterfly valve on the outlet side.
3. Open the vent valve on top of the dome. Slowly open the inlet valve and allow liquid to fill the housing.
4. **Non-carbonated Liquids:** When the liquid starts to exit the vent valve, close the vent valve and slowly open the outlet valve to allow the filtered liquid to exit.
5. **Carbonated liquids:** In case of beer or carbonated products allow pressure in the housing to build to the same carbonation level as your liquid and then slowly release pressure by slightly opening the relief valve. This helps avoid foam formation during filling
6. We recommend to start filtration at a differential pressure of 5-8 dpsi. Differential PSI (DPSI) is calculated by subtracting your outlet pressure

(outlet pressure gauge) from your inlet pressure (top gauge). Starting at a pressure above 8 dpsi will lead to overall lower filtration efficiency.

7. If you see bubbles exiting the outlet side it means you still have excess gas that may be trapped inside the filter cartridge. If this happens close the outlet valve while the pump is running so that back-pressure is at 3 psi. Remaining internal gas will rise to the top of the housing. Slightly open the relief valve on top to release the excess gas. If bubbles persist make sure all your connections are tight so that air is not entering the filtering housing.
8. Periodically bleed the vent valve to release gas, most likely dissolved CO2 that gets released from your product through the agitation of the filtering process.
9. Stop filtering when the terminal differential pressure (dpsi) is at 30 psi. At this point it is time to replace the cartridge(s).

MAINTENANCE

The eye bolts on the housing for tightening the dome to the base.

- The eye bolts used for tightening the dome to the base should be lubricated with food-grade grease. This prevents pitting and helps avoid premature stripping of the threads during tightening or loosening.

SPARE PARTS

Spring & Lock down assembly (11)

- The plastic threading can become stripped over time, potentially causing bypass issues that allows particulate to bypass the filter.

Lockdown Assembly O-Ring (13)

- The O-ring in this stainless fitting creates a seal at the top of filter cartridge and you turn the lock down assembly. It can crack over time and should be replaced before this occurs to maintain the integrity of the seal.

The Base O-ring (13)

- It's advisable to keep spare base O-rings on hand. They can become damaged if they slip out of position before the dome is fully tightened, which may cause the dome to cut through the O-ring.