

Bag-In/Bag-Out (BIBO)

Filter Installation &

Start-Up Guide



Bulletin 183-11-16 (5 pages total)

STEP I:



HOUSING CHECKS:

- 1) Remove filter access door(s) and remove any bag, cinch strap or other accessory that may have been shipped inside the housing.
- 2) Check the collar inside and out for burrs, metal filings or anything that might damage the Bag-In/Bag-Out (BIBO) bag.
- 3) Visually check all welds, particularly those around the BIBO collar as these can be damaged in shipping and handling of the housing.
- 4) Inspect filter access door for welds and gasket alignment.
- 5) Inspect gages and pneumatic lines for kinks or other damage.
- 6) Inspect transitions (where provided) and DOP ports for damage.

STEP II:



CLAMPING MECHANISM OPERATION:

- 1) Final filter clamping mechanisms are located adjacent to the BIBO collar on the inlet side of the housing. (The final filter door must be removed in order to access the clamping mechanisms.)
- 2) There are two clamping mechanisms for each filter door, one at the top of the door and the other at the bottom of the door, each operating its mechanism independent of the other.
- 3) Using a 3/8" socket, check operation of the filter clamping mechanisms. Use CCW turns to move the clamping mechanism to its "fully open position. Do NOT exert excessive force.

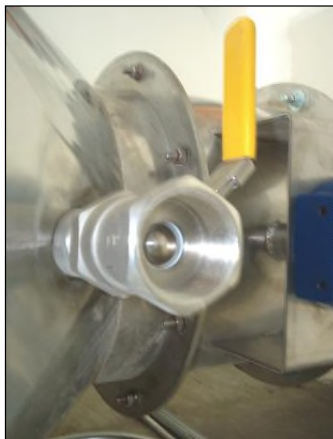
STEP III:



DAMPER CHECKS (IF PROVIDED):

- 1) Check damper operation via manual (pneumatic or electric) actuator to ensure free movement of the damper blade. Blade must open to 90° without obstruction. Check damper seal for cleanliness.
- 2) While shining a light from the inlet (outlet) duct toward the damper, close the damper and look at the damper blade from inside the housing. No light should pass thru the blade. If light passes between the blade and the wall of the damper then the blade shaft has shifted and must be realigned. Contact IAS for assistance.
- 3) Ensure actuator open/closed arrow indicator is correct. This can be confirmed visually or by checking the notch in the blade shaft.

STEP IV:



BALL VALVE CHECKS (IF PROVIDED):

- 1) Check ball valve for operation. Ball valve must move 90° freely, that is, from 100% open to 100% closed position.
- 2) Shine light into open ball valve checking for burrs, filings or other possible obstructions to the ball operation
- 3) **Safety Precaution:** A ball valve plug is recommended as a safety precaution, especially if the system is located outdoors where dirt, ice or water could build up inside the port.

STEP V:



PRE-FILTERS (WHEN SPECIFIED):

Check the tender documents and submittals to ensure the correct size and efficiency of pre-filter(s) are being installed.

Prior to installation inspect the pre-filters for damage; do NOT install any filters that appear damaged in any way.

When installing pleated panel filters, try to install the filters with the pleats in a vertical orientation. This provides for more even dust loading and longer service life.

Always check the filter indicator arrow and install the filter(s) with the arrow pointing in direction of airflow.

STEP VI:



PREFILTERS (FOR MULTI-WIDE FILTER HOUSINGS):

When multi-wide filter housings are being used with pre-filters installed then a method should be employed to join the filters at their joint. We recommend using duct tape for this purpose. Using tape at the joint has the following advantages:

1. It strengthens the frame of both adjacent filters, reducing the chance of frame failure.
2. It reduces the chance of air bypass between the pre-filters.
3. It facilitates removal of the pre-filters when change-out is performed.

STEP VII:



HEPA/HEGA (Carbon) FILTER INSPECTION AND PREPARATION:

- 1) Remove HEPA filter(s) from the factory packaging following the manufacturers' recommendations.
- 2) Carefully inspect the filters for damage to cell side, gasket or media. Any filters that are visibly damaged should NOT be installed in the system.
- 3) Carefully apply a thin coat of food grade silicone grease to the gasket face. This operation will facilitate removal of the HEPA or HEGA filter during change-out later. *See picture at left.*

STEP VIII:

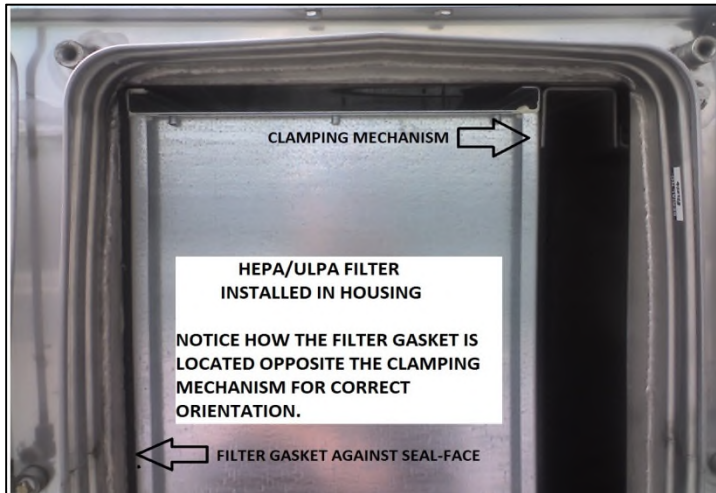


HEPA FILTER INSTALLATION (Part 1):

- 1) Carefully handle the HEPA filter(s) by the cell sides ONLY. HEPA/ULPA filter media is extremely fragile and any contact with the paper media can cause leaks!!
2. Gently lift the HEPA filter(s) into position ensuring that (whenever possible) the pleats are vertical (*see picture left*), and that the **gasket (or gel trough) is opposite to the U-channel clamping mechanisms.** *See pic below.*

IMPORTANT: The filter gasket (gel trough) is only found on one side of the filter(s) and must be mated to the housing gasket seal-face (knife-edge face) to ensure an airtight seal between the filter and the housing when the U-channel clamping mechanisms are activated.

STEP IX:



HEPA FILTER INSTALLATION (Part 2):

3) Once the filter orientation has been confirmed (gasket is against the flat seal-face), then push the HEPA filter(s) carefully into the housing using the cell sides ONLY. Never grab the filter in case contact is made with the fragile media.

See picture at left demonstrating HEPA filter correctly installed with gasket opposite the clamping mechanism. The clamping mechanisms are on the side with the metal U-Channels.

STEP X:



HEPA & HEGA FILTER CLAMPING MECHANISM OPERATION:

- 1) Once all of the HEPA/HEGA filters and pre-filters (if provided) are installed and it is confirmed that the filter gasket is mated to the housing seal-face, then the filter(s) are ready to be clamped into place.
- 2) Using your 3/8" socket, turn the top mechanism CW one complete turn. Now turn the bottom mechanism CW one complete turn. Continue tightening each mechanism while constantly alternating between each mechanism until the HEPA filter gasket is visibly compressed against the sealing face of the housing. **Do NOT over-torque the clamping mechanism as this might damage the mechanism – USE HAND TOOLS ONLY.**

STEP XI:



BIBO BAG INSTALLATION:

- 1) Pull bag over collar, making sure the shock cord is pushed over both ribs and nestled up next to the housing. The bag seam (heat set hem) should be located at the collar top so that the gloves are correctly oriented.
- 2) Place the cinch strap between the two ribs (as shown at left) and tighten securely.
- 3) Twist the bag or apply a cable-tie or rubber-strap before rolling up the bag. (This prevents the bag from being drawn into the housing during operation.) Push the bag into the collar cavity. Try to get the bag entirely inside the collar so that a nice tight seal is obtained when the filter door is secured.

STEP XII:



FILTER DOOR(S) MOUNTING:

- 1) After rolling up the bag and pushing it into the collar cavity carefully place the filter access door over the collar taking care not to pinch the bag on the edge of the collar.
 - 2) Tighten the star knobs by alternating from diagonal corners. Threading of the star knobs goes easier if you support the door weight with your other hand while threading.
- HAND TIGHTEN ONLY; NEVER WRENCH TIGHTEN THE KNOBS.**

STEP XIII:



DIFFERENTIAL PRESSURE GAGE:

- 1) Start fan.
- 2) Gage should be zero set (set screw is on the gage face plate). As fan ramps up gage should indicate increasing differential pressure. If gage does not move or moves less than expected check tubing and connections for crimps or other blockage.
- 3) Record initial (clean filters) differential pressure. Maintain a regular record (monthly is recommended) of filter differential pressure as part of the BIBO housing PM program.

STEP XIV: (WHEN SPECIFIED):



HOUSING CERTIFICATION (WHEN SPECIFIED):

If specified, any certification of the system should be scheduled after A) All filters are inspected, greased and installed, B) Fan and controls are checked and functional, and C) Air balancing and all related testing and start-ups are completed.

All housings and filters should be provided with all specified factory testing and supporting documentation.

Site certification and start-up testing must be performed by accredited contractor only. Test reports should be furnished to the customer along with supporting documents.