



BASIC OPERATING GUIDE:

3,000 – 50,000 GALLON
COLLAPSIBLE FABRIC BLADDER (FUEL)



Standard Components*:

*The following is a list of parts that may or may not be included with your kit:

Item Number	Description
	Berm Liner Kit
1	Berm Liner
2	2" I.D. Non-collapsible Drain Hose Assembly (with Male coupling half, other end interfaces with berm liner drain assembly)
3	2" I.D. Non-collapsible drain hose assembly (Male x Female coupling half end)
4	2" Valve Assembly with Male x Female coupling halves
	Bladder & Accessory Kit
5	Collapsible Fabric Bladder
6	4" Filler/Discharge Elbow (Female x Female)
7	4" Filler/Discharge Elbow (Female x Male)
8	2" Drain Valve Assembly with Male x Female coupling half ends (Ball Valve)
9	4" Filler/Discharge Valve Assembly with Male x Female coupling half ends (Gate Valve)
10	2" I.D. Non-collapsible Drain Hose Assembly (MxF Q/D)
10A	2" I.D. Non-collapsible Drain Hose Assembly (Bolted Flange x 2" M-QP)
11	4" I.D. Non-collapsible Filler/Discharge Hose Assembly (with Male x Female coupling half ends)
12	Vent Assembly Fitting (Single Vent)
13	Emergency Repair Kit *
14	Consumable Items Over-pack Kit *
15	Hose Support Pads *
* not pictured below	

Berm Liner

①



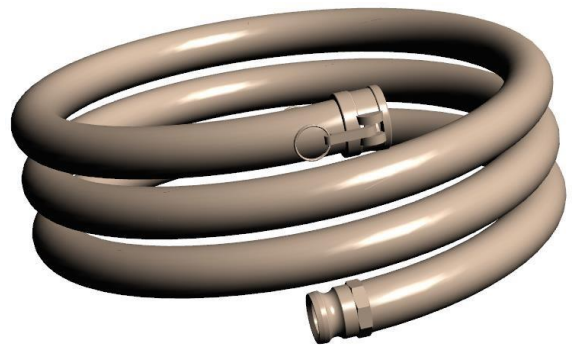
**2 in. I.D. Non-collapsible Drain
Hose Assembly with Bolted Flange**

**2 in. I.D. Non-collapsible Drain
Hose with M-F Ends**

②

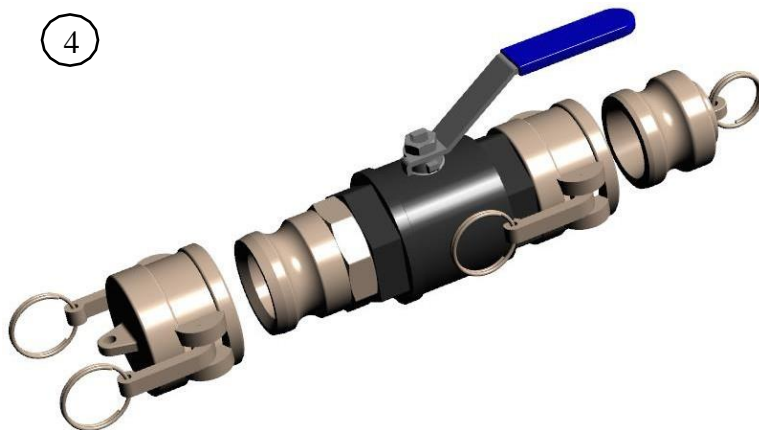


③



2 in. Drain Valve Assembly with Male-Female Coupling Half Ends

④



Collapsible Fabric Bladder

5



4 in. Female-Female Elbow

6



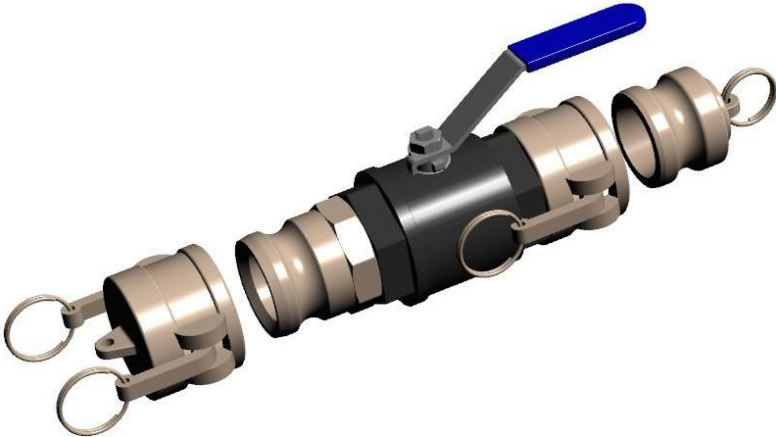
4 in. Male-Female Elbow

7



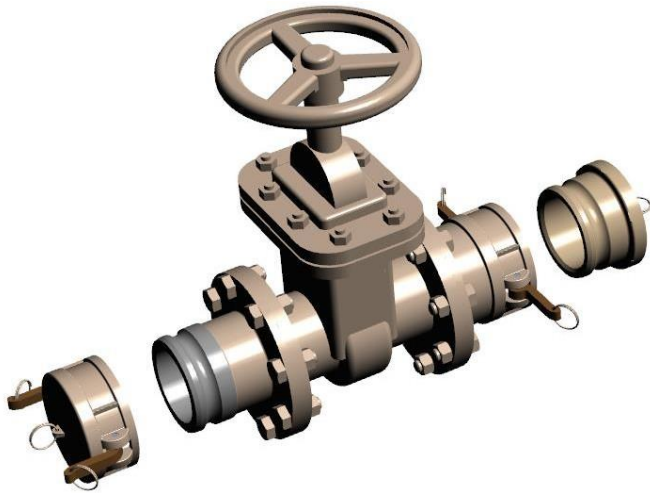
2 in. Drain Valve Assembly with Male-Female Coupling Half Ends

8



**4 in. Filler/Discharge Valve Assembly
with Male-Female Coupling Half Ends**

9



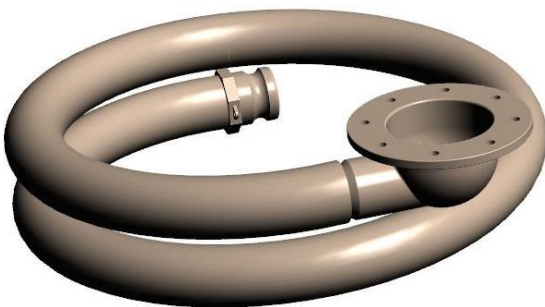
Vent Assembly Fitting

12



**2in I.D. Non-collapsible Drain
Hose Assembly with Bolted Flange**

10A



**4in I.D. Non-collapsible
Filler/Discharge Hose Assembly**

11



IMPORTANT:

This guide is intended for use with AEF's product line of flexible bladders. The steps outlined below in no way reflect exact procedures and are meant as an informational accompaniment to the product. Your exact procedures may differ from the ones listed in this document.

WARNING

- AEF's line of flexible fuel bladder's intended uses is for the storage of Diesel, Jet Fuel, and other Kerosene-based fuels. They are NOT for the storage of GASOLINE.
- Be sure to follow your local codes and guidelines for installation and use of petroleum storage bladders prior to dispensing any fuel into the bladder.
- Do not allow smoking, sparks, or flames within 100 feet of the storage area as death or serious injury may result.
- Always protect the bladder system from static sparks by grounding the bladder during fill and discharge activities.
- The bladder must be deployed for use inside a prepared area known as a berm with a sufficient berm liner, which is designed as a method of secondary containment in the event of a spill.
- NEVER walk or climb on the bladder during, or after filling.
- NEVER enter the berm area while product is in the bladder.

1. Site Preparation:

The flexible bladder must be positioned on level solid ground free from any sharp objects such as rocks, sticks, glass, etc. Ideally, the underlayment would be a bed of sand approximately 2” thick. The bladder location should never be on a slope with a grade greater than 2 percent or 1.2 degrees.



⚠ WARNING The bladder could roll down any incline greater than 1.2 degrees and cause serious bodily injury.

⚠ CAUTION Damage can occur to the bladder if the site is not level or free from sharp objects.

A berm shall be constructed to contain liquid in the event of a spill or bladder failure. The berm shall be constructed so the capacity is at a minimum of 1.5 times greater than the bladder(s) volumetric capacity. Observe local codes or governing laws when selecting a location and constructing the berm.

2. Unpacking:

Remove the lag screws which fasten the crate top and sidewalls. Remove the top and sidewalls. When opening the lid of the container be careful not to insert tooling/forklift tines/etc. into the crate as damage of the contents could occur. Remove the berm liner and bladder by carefully cutting the foil bags and exposing the lifting ropes (berm liner) and slings (bladder). Remove the berm liner first by lifting from the berm liner lifting rope. Remove the bladder by lifting from the bladder lifting slings.

⚠ CAUTION Use care when unpacking the bladder as to not damage the flexible fabric on any sharp edges of the crating material. Always lift using both lifting ropes/slings

⚠ CAUTION Completely lift the bladder off any rough surfaces before trying to reposition as dragging the bladder can damage the flexible fabric.

3. Setup:

Berm Liner

Determine the best location for the drain (lowest possible point) and make certain to unfold the bladder in the proper orientation (Drain flanges are in the 2 opposite corners). Now, completely open the berm liner on your prepared site.

Once the berm liner is completely unfolded with the at least 1 drain flange in the correct location, fold back the corner of the berm liner with the drain flange intended for use. Next, unbolt the blind flange from the drain flange that is intended for use on the berm liner. Now attach the 2 in. I.D. non-collapsible drain hose assembly to the drain flange on the berm liner. All $\frac{1}{4}$ inch bolts should be torqued to 16 foot-pounds. The end of the 2 in. I.D. non-collapsible drain hose assembly attaches to the 2 in. I.D. non-collapsible drain hose with M-F ends. Next, attach the 2" valve assembly to the valve. Please see figure 1 below. Now place the folded back corner of the berm liner back and be sure to attach the end of to the drain in the actual berm.

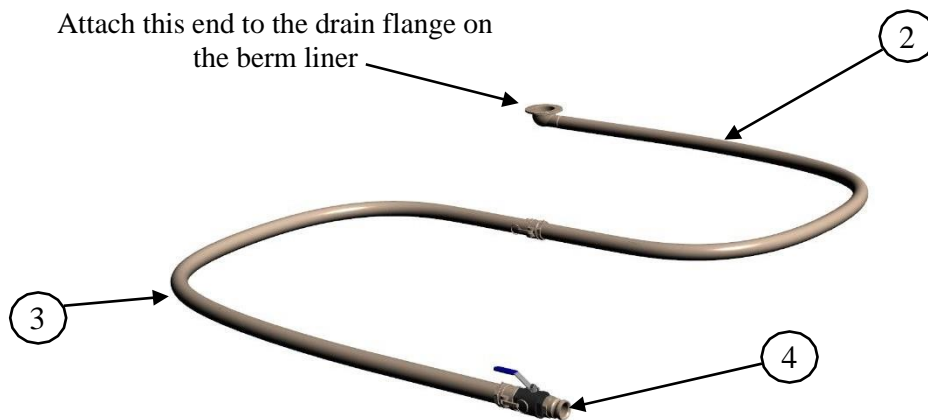


Figure 1. Berm drain connection and setup.

For optimal performance, set the top of the 2-inch drain hose running from the berm liner to be flush with the bottom surface of the liner by digging a trench 4-inches wide by 4-inches deep.

CAUTION All $\frac{1}{4}$ bolts on the berm liner assembly should be re-torqued to 14 foot-pounds before use.

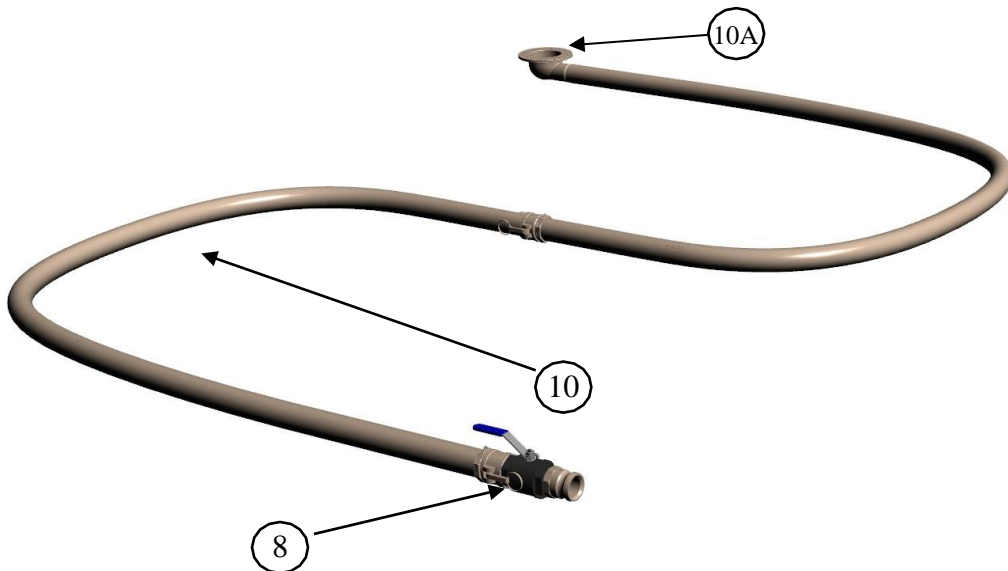
Collapsible Fabric Bladder:

After uncrating, unfold the bladder centered about the berm. For optimal performance, position the bladder so that the drain is located at the lowest possible point. Remove any dunnage or cushioning material from the fill, discharge, and drain fittings on the bladder. Install the vent assembly fitting to the center fitting location on top of the bladder. All $\frac{1}{4}$ bolts on the vent fitting should be re-torqued to 14 foot-pounds before use.

⚠ WARNING Venting of the bladder is critical as to not allow pressure to build within the bladder. Not venting the bladder could cause the bladder to rupture causing serious bodily injury and damage to the bladder.

Next, fold back the corner of the bladder closest to the drain and remove the blind flange from the drain flange on the underside of the bladder. Now, connect the flanged end of the 2-inch I.D. non-collapsible drain hose assembly to the discharge fitting on the bottom of the bladder. All $\frac{1}{4}$ inch bolts should be torqued to 14 foot-pounds. Next, connect the other end of the 2-inch I.D. hose assembly and the 2" gate valve drain valve.

Attach this end to the drain flange on the underside of the bladder



For optimal performance, fold back the bladder and berm liner where the bladder drain hose will be positioned. Trench approximately 4 inches of the soil out from under the berm liner to create a void where the bladder drain hose will lay. Place the berm liner back in place. Lay the bladder drain hose on top of the berm liner in the voided area as the bladder is unfolded back into place.

Now, from the top side of the bladder, connect the 4-inch male-female elbow (7) to the manway on the bladder that will be used as the outlet for the bladder. Next, connect the 4-inch I.D. non-collapsible filler/discharge hose assembly to the 4-inch (8) male-female elbow. Then, attach the 4-inch filler/discharge valve assembly with male-female coupling half ends (9) to the 4-inch filler/discharge hose assembly. Please see figure 3 below.

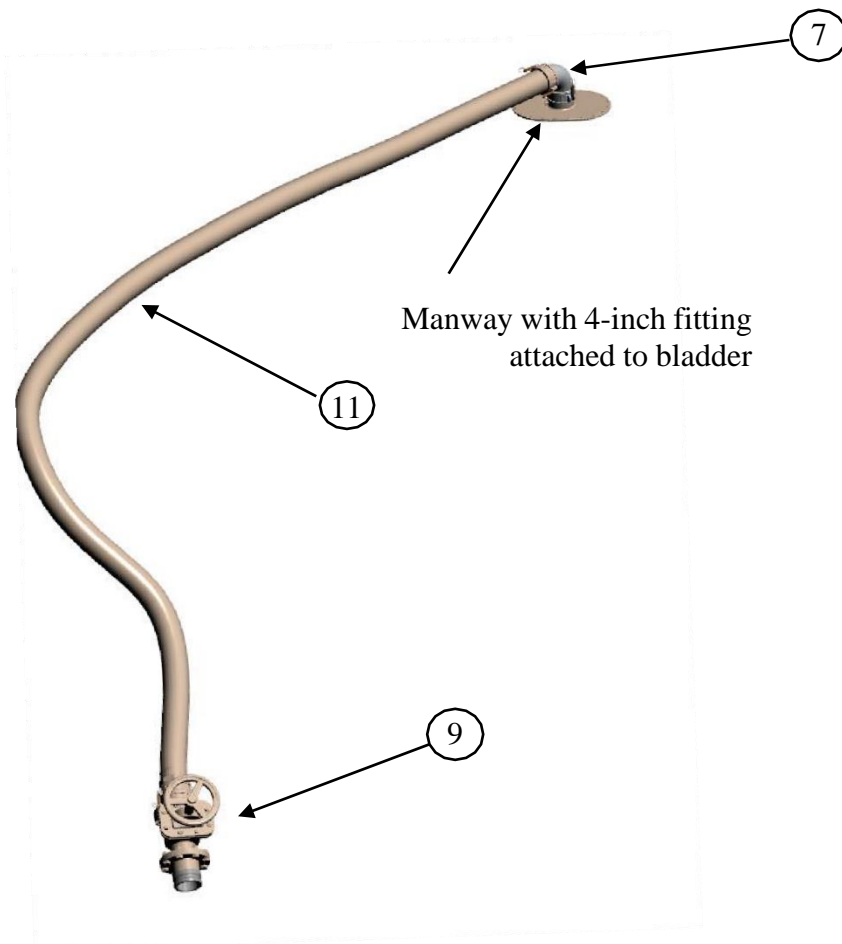


Figure 3. Connection on the outlet side of the bladder.

Be sure to close the discharge valve and lock all fittings by pushing the cam lever arms outward against hose.

On the other end of the collapsible fabric bladder, for inlet, attach the 4-inch female-female elbow to the manway. Now attach the 4-inch I.D. non-collapsible filler/discharge hose assembly to the 4-inch female-female elbow. Next attach the 4-inch filler/discharge valve assembly with male-female coupling half ends to the 4-inch filler/discharge hose assembly. Please see figure 4 below.

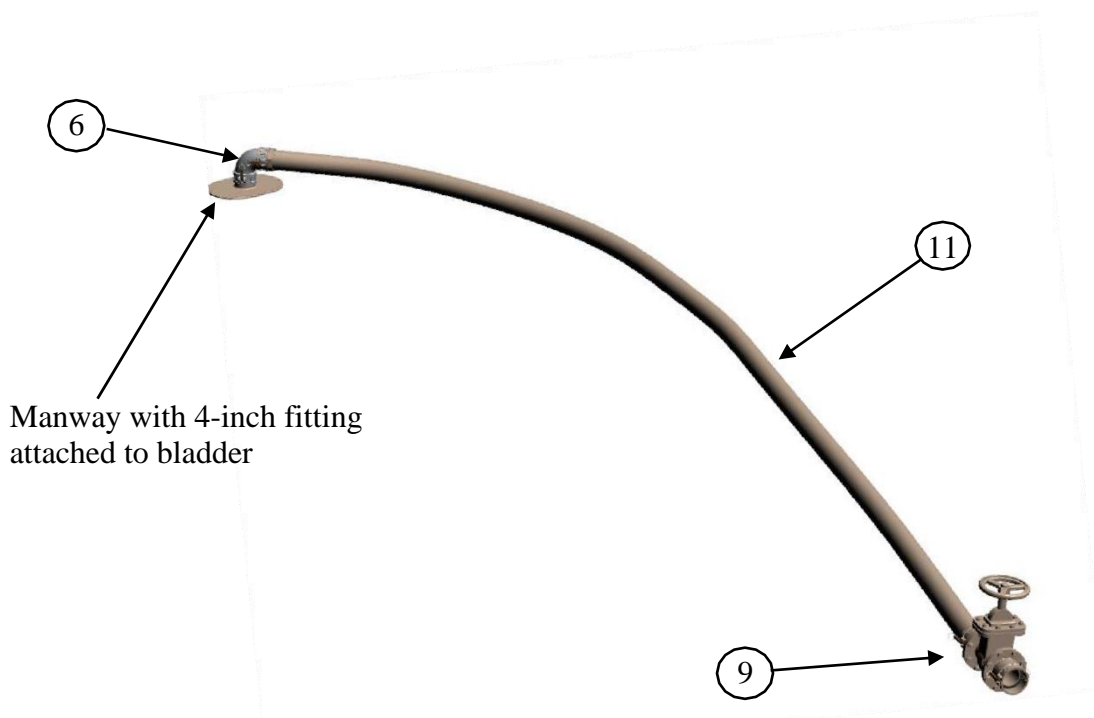


Figure 4. Connection on the inlet side of the bladder.

CAUTION Check the bolts on both the inlet and outlet valves to assure all $\frac{3}{8}$ inch bolts are torqued to 32 foot-pounds.

CAUTION Check the bolts on both the inlet and outlet man ways to assure all $\frac{1}{4}$ inch bolts are torqued to 14 foot-pounds.

Bladder should now be ready for operation.

CAUTION

If fuel begins to flow out of the vent, immediately stop filling and drain the excess fuel from the bladder.

WARNING

Always meter the amount of product flowing into the flexible bladder. Never fill the bladder above the fill height marked on the bladder. Overfilling the bladder could cause serious bodily injury and damage to the bladder.

4. Draining:

When the bladder is ready to be drained, the product should be drained from either the fill/discharge fittings or drain. Some residual product will be present inside the bladder and final draining can be achieved by utilizing the bottom drain assembly.

CAUTION

Do not attempt to move the bladder by its positioning handles if any standing product is in the bladder as the handles and/or bladder may be damaged.

5. Use-life:

The average use-life of your AEF collapsible bladder is highly dependent on the storage contents, environmental conditions, and the amount set ups the bladder experiences. Typical use-life is listed below.

MATERIAL TYPE	YEARS
Polyurethane	3
Nitrile	10

6. Repairs:

If a repair kit was supplied, a detailed repair guide is provided with each repair kit. The kit can be used to repair the following types of faults:

- Areas of local abrasion up to 2-inch long, not involving damage to the nylon reinforcement fabric
- Punctures or tears up to a length of 1-inch
- Small areas of delamination up to ½ inch wide

Should you need information, have concerns or suggestions concerning this product, please contact:

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