



# A1100EVR GUARDIAN

## OVERFILL PREVENTION VALVE

### WITH THREADED BOTTOM

## INSTALLATION INSTRUCTIONS

### Packing List:

- |  |                                    |
|--|------------------------------------|
| (1) Collar #566679                     | (1) Tube, Seal-All Sealant #566726 |
| (or #566679A or #566679XL) with:       | (1) Counter Sink Indenter #564416  |
| (1) O-ring #480049 installed           | (4) Rivets #564412                 |
| (1) Drop Tube O-ring #569461 installed | (1) Extension Spring #572786       |
| (1) Warning Plate #564420              | (1) Drill Fixture #572719          |

### Permanent Identification:



### Service Tool Required:

- |                                 |                           |                                |
|---------------------------------|---------------------------|--------------------------------|
| • 13/64" Drill Bit              | • Hacksaw w/ fine tooth   | • Pipe Thread Sealant Compound |
| • Rivet Gun                     | • Hand file w/ fine blade | • 150 Grit Size Emery Cloth    |
| • Power Drill                   | • Marker                  | • De-burring Tool w/ #10 Blade |
| • Tape Measure                  | • Hammer                  | • Fabric Strap Wrench (2)      |
| • EMC0 Drill Fixture p/n 566675 |                           |                                |
- Disposable drill fixture included in collar kit*

### CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMC0 phase I EVR system.
2. If the underground storage tank is equipped with a ball float valve, it must be removed to allow for the proper operation of the A1100EVR overfill prevention drop tube.
3. Never disconnect the delivery elbow from the fill adapter when the A1100EVR overfill prevention valve has reached the positive shut-off point of 95% total capacity. Note the tank delivery hose is full and must not be disconnected until enough fuel has been evacuated from the underground storage tank. This will allow the tank delivery hose to drain and to safely disconnect from the fill adapter. Premature disconnection will result in a hazardous spill and/or a potential for personal injury and property damage.
4. Once the A1100EVR overfill prevention valve is completely assembled, **the Seal-All Sealant must cure for a minimum of 24 hours before installing into the underground storage tank.**

# A1100 Modular Assembly

If installing an A1100 Modular valve follow steps 1 & 2 on this page. If installing a non-modular valve assembly skip to step 3.



A1100EVR-055M



Dual Base 24"  
BOTTOM TUBE



Single Base 60"  
TOP TUBE



Single Base 60"  
BOTTOM TUBE



A1100EVR-056M



Dual Base 36"  
TOP TUBE



Dual Base 36"  
BOTTOM TUBE



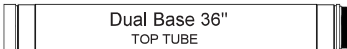
Single Base 60"  
TOP TUBE



Single Base 60"  
BOTTOM TUBE



A1100EVR-057M



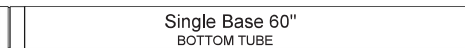
Dual Base 36"  
TOP TUBE



Dual Base 60"  
BOTTOM TUBE



Single Base 60"  
TOP TUBE



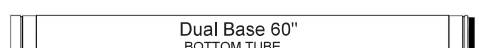
Single Base 60"  
BOTTOM TUBE



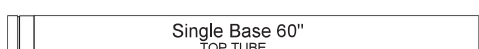
A1100EVR-058M



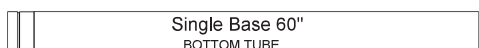
Dual Base 60"  
TOP TUBE



Dual Base 60"  
BOTTOM TUBE



Single Base 60"  
TOP TUBE



Single Base 60"  
BOTTOM TUBE

1. Assemble the top and bottom drop tubes by threading each of the single base tubes onto the male threads of the dual base tubes. Hand tighten first to prevent cross threading, then use two fabric strap wrenches to permanently tighten the assembly to 75ft-lbs.
2. Attach each drop tube assembly to the top and bottom of the valve. Hand tighten first to prevent cross threading, then use two fabric strap wrenches to permanently tighten the assembly to 75ft-lbs.

## Final Assembly:



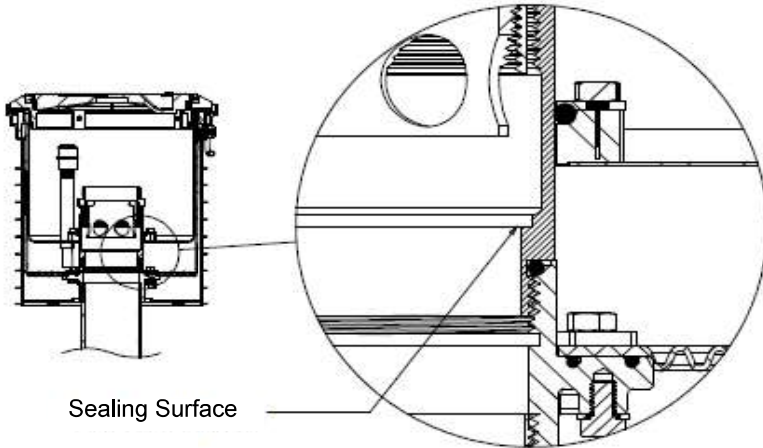
The A1100 modular assembly must be assembled and tightened before performing any cut-to-length operations.

### A1100EVR Overfill Prevention Valve Top Drop Tube Cut Length

- Find measurement A, the distance from the top sealing surface to the bottom of the tank (see Figure 1).

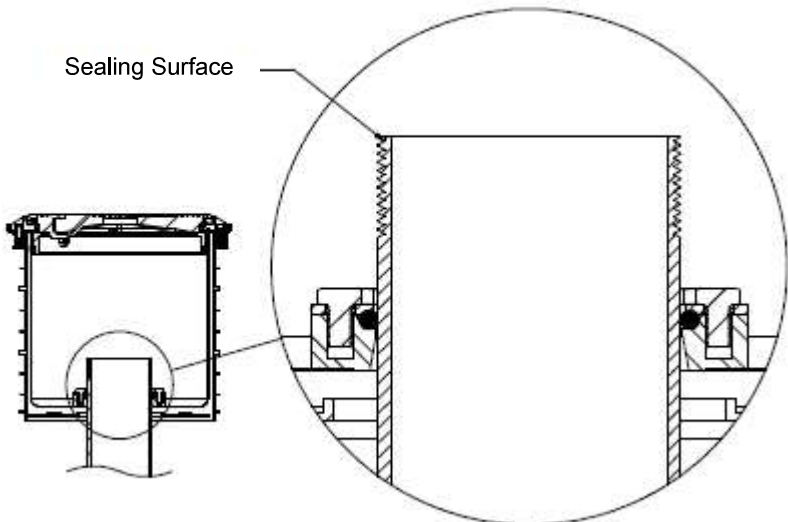
#### For EVR applications:

Sealing surface is located on the horizontal surface just below the riser seal.



#### For Non-EVR applications:

Sealing surface is located at the top of the spill containment nipple for screw-on applications and at the top of the riser for slip-on.



- Find measurement B from the manufacturer's tank chart. It is the distance from the bottom of the inside of the tank to 95% of the tank's capacity. Use the actual capacity of the tank for calculations. NFPA30 guidelines state the maximum tank fill must be at or below 95% of the tanks actual capacity.

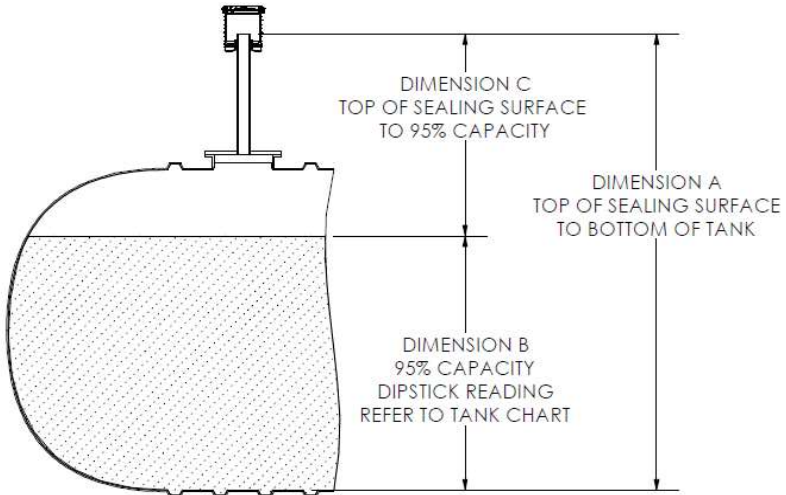


Figure 1

**IMPORTANT: The A1100EVR overfill prevention valve is not recommended for tanks under 6.5 feet in diameter.**

- Top tube cut length, measurement C, is calculated as follows:  
 $C = A - B + 1"$  (This formula factors in an additional inch of length to compensate for any measurement discrepancies and ensure the shutoff level remains below the maximum 95%). Place the tape measure at the 95% mark on the valve and measure up the top tube as shown. Mark the tube at measurement C length.



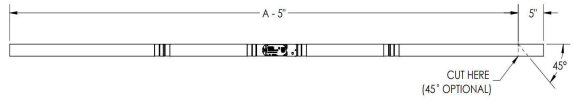
Measurement C,  
cut length

Place tape  
measure in slot



6. Carefully cut the top drop tube to the required length. Use a hacksaw equipped with a fine tooth blade to ensure a straight 90-degree cut.

**IMPORTANT: Do not use a power saw, pipe or tubing cutter as this may result in damage to the top drop tube, voiding warranty.**



7. Total tube cut length, is calculated as follows:

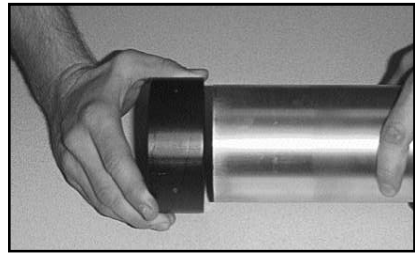
$$\text{Total length} = A - 5''$$

Place the tape on the cut end of the top tube and measure down to your calculated total tube cut length and mark the bottom tube

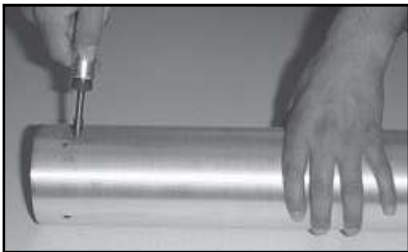


8. Repeat step 6 to cut the bottom tube to length. Use a hacksaw equipped with a fine tooth blade to ensure a straight 90-degree cut.

**IMPORTANT: Do not use a power saw, pipe or tubing cutter as this may result in damage to the drop tube, voiding warranty.**



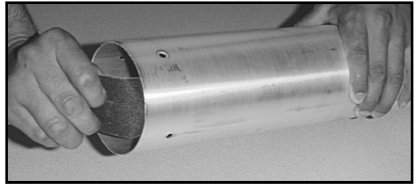
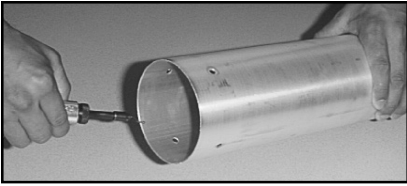
9. Slide the EMCO Drill Fixture onto the end of the top drop tube until the edge bottoms out against the inside ridge.



10. Drill four  $\frac{13}{64}$  diameter holes through the top drop tube. Remove the drill fixture from the top drop tube. Using a de-burring tool equipped with a #10 blade, remove any sharp burrs around the inside area of the mounting holes.



11. Using a fine hand file, remove all burrs from the inside and outside edge of the top drop tube. File the edge of the top drop tube square. File the inside surface of the holes. Remove all rough edges.



12. Using a de-burring tool equipped with a #10 blade, remove the sharp cutting ring from the inside edge of the top drop tube. Lightly sand the inside area of the top drop tube and mounting holes using 150-grit size emery cloth. Clean and remove any sanding debris.

**IMPORTANT: Failure to perform this procedure will damage the o-ring seal during the installation of the A1100EVR collar, voiding warranty.**

### A1100EVR Collar to Top Drop Tube



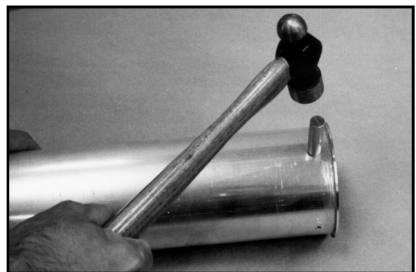
13. Remove the o-ring (p/n 480049) from the A1100EVR collar groove. Lightly sand the outside area using 150-grit emery cloth. Clean and remove any sanding debris. Re-install o-ring.



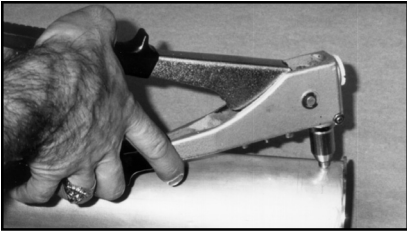
14. Apply a 1/2 inch bead of Seal-All Sealant around the 480049 o-ring and outside area of the A1100EVR collar. Verify the o-ring is properly secured inside the machined groove. Do not apply sealant to the 569461 drop tube o-ring.



15. Slide the A1100EVR collar inside the top end of the drop tube and align the four holes.



16. Using the indenter tool and a hammer, apply a sharp blow to counter sink each individual hole before attempting to install the mounting rivets.



17. Using only the factory supplied rivets, apply a good amount of the Seal-All Sealant around the base of each rivet before installing into each of the four holes. Using the rivet gun, permanently fasten the A1100EVR collar to the top of the drop tube.

18. Once finished with steps 13 through 17, clean and remove all excess sealant around the top of the A1100EVR collar and rivets.

**IMPORTANT: The Seal-All sealant must cure for a minimum of 24 hours before installing into the underground storage tank.**

### **A1100EVR Overfill Prevention Valve Testing**

19. Test the A1100EVR overfill prevention valve by sealing both ends with inflatable plumber's plugs. Apply a maximum pressure of 2 inches of water column. Should the leak rate exceed the allowable limit of 0.17 CFH, locate the leak point by spraying soap solution along the outside of the A1100EVR overfill prevention valve.

**IMPORTANT: Do not exceed the maximum pressure of 2 inches of water column. This will damage the A1100EVR overfill prevention valve and result in voiding the warranty.**

### **A1100EVR Overfill Prevention Valve to Tank Fill Riser**

20. Remove all metal chips or debris left from cutting or drilling. Shake the A1100EVR overfill prevention valve in a vertical position. Verify that the A1100EVR drop tube o-ring is installed properly. Locate the A1100EVR overfill prevention valve over the tank fill riser opening with the A1100EVR collar pointing upward. Carefully lower the A1100EVR overfill prevention valve into the tank until the A1100EVR collar is resting on the riser pipe.

21. Install warning plate on the riser using the extension spring provided.

## PREVENTIVE MAINTENANCE

1. Annually, conduct a visual inspection of the flapper valve located inside the A1100EVR overfill prevention valve. Begin by removing the spill containment lid and fill adapter cap. Looking down over the tank fill riser opening, verify that the flapper valve is open and free of any foreign objects that can block or restrict the flow of gasoline into the underground storage tank during a fuel delivery.
2. Annually, verify leak tightness integrity of the A1100EVR overfill prevention valve by performing ARB test procedure TP-201.1D.
3. If the A1100EVR overfill prevention valve fails to pass the leak tightness integrity test, replace the drop tube o-ring with the EMCO o-ring kit p/n 569461.

## PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1D - Meets or exceeds the allowable maximum leakrate of 0.17 CFH @ 2.00 inches of water.

**IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.**

### Emco Wheaton Retail Corp.

2300 Industrial Park Dr. • Wilson, NC 27893  
252-243-0150 • 252-243-4759 (fax)