

**Model 49 Overfill Protection Valve**  
**FOR PRESSURE FILL APPLICATIONS**  
*Patent Pending*

**INSTALLATION INSTRUCTIONS**

UNIVERSAL VALVE COMPANY, INC. 478 SCHILLER ST. ELIZABETH, NJ 07206

*Rev A*

## Installation Instructions

The Model 49 Overfill Protection Valve is designed to prevent the overfill of fuel storage tanks during pressurized product drops. (Can also effectively operate on gravity assisted product drops). The valve operates automatically when product reaches a predetermined level and gradually slows flow down to allow the operator time to shut the product drop off. After the product drop has been shut off, the remaining fluid in the line is drained automatically into the tank by means of a bleed hole. For safety, it is recommended that the valve be used in conjunction with a Spill Containment Manhole. *Tight Fill adapters are included with this system and are to be used in conjunction with tight fill nozzles only. Do not remove pin in adapter or remove adapter to nozzle fill without tight seal or overspill will occur.*

**Important Note** *Prior to installation read these instructions completely. Check to make sure all parts are included. Do not substitute parts for those provided, unless specified. Failure to properly follow these instructions may result in improper operation of the valve.*

Parts List	
Model 49-02	Model 49-04
Overfill Prevention Valve Assembly	Overfill Prevention Valve Assembly
Adjustable 4" x 2" Reducing Adapter	Adjustable 6" x 4" Reducing Adapter
2" Tight Fill Adapter	4" Tight Fill Adapter
12" long 2" Dia. Pipe Nipple	12" long 4" Dia. Pipe Nipple
	Drop Tube Retaining Ring w/ Bolts

## **Warranty Statement**

*All UNIVERSAL products are guaranteed to be free from defects in materials and workmanship. All products are thoroughly tested before shipment and guaranteed to the extent of replacing only products found to be defective in manufacture. We cannot, however, allow claims for labor or consequential damage resulting from purchase, installation or misapplication of our products.*

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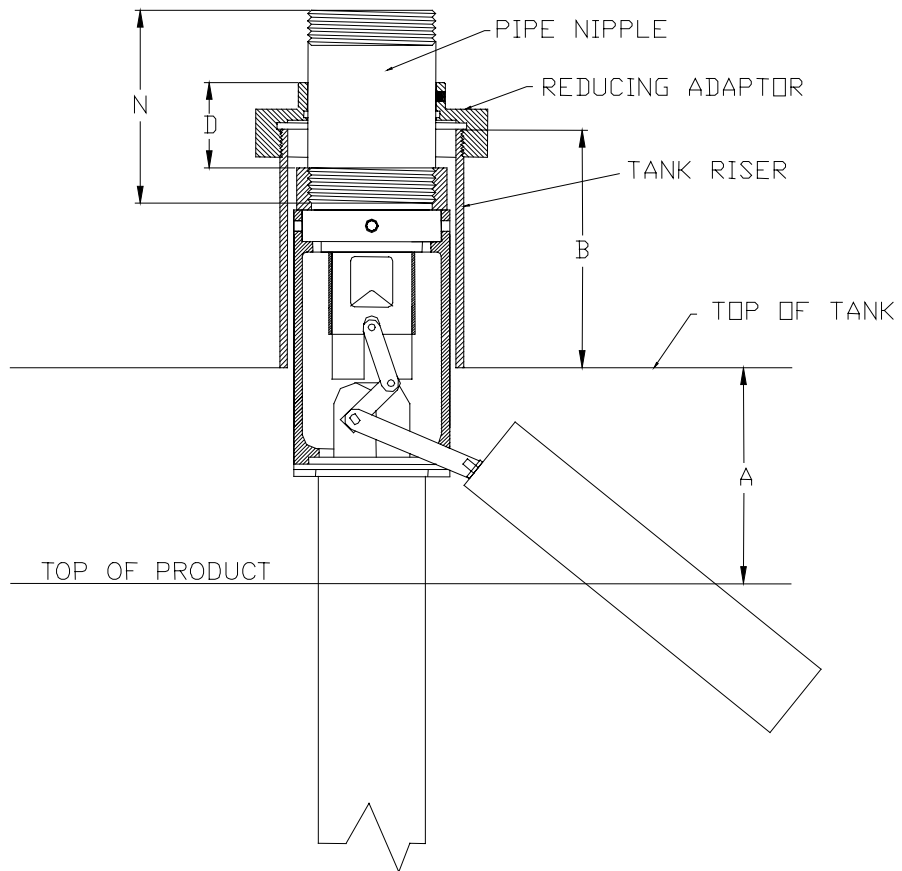
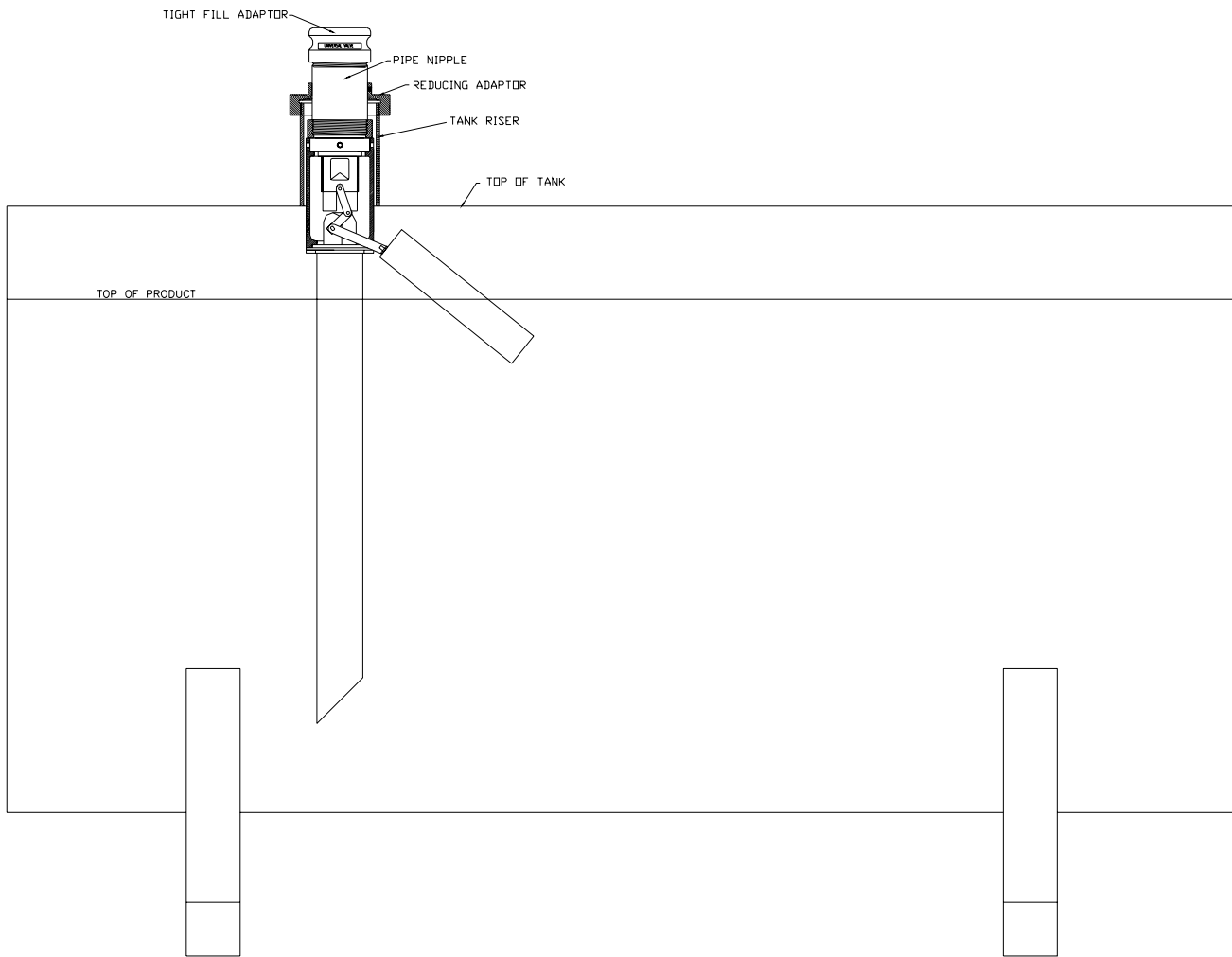


FIGURE 1 – MODEL 49 AST OVERFILL PREVENTION VALVE  
 (4" VERSION SHOWN IN FULLY CLOSED POSITION)

**Figure 1**



**Fig. 2 Typical Fuel Storage Tank with Model 49**

## Model 49 Installation Instructions

1. You must first determine the minimum length for the pipe nipple included with the kit to see if it is adequate for your application (a 2" pipe is included for the 49-02 and a 4" for the 49-04). To find the minimum pipe nipple length for the installation of the Model 49 overflow valve determine the following.
2. Determine the riser height, which is the vertical distance from riser pipe lip to top of tank. This will be dimension B as shown in Figure 1.
3. If valve is to be installed in cylindrical tank, determine distance, "A" for shut off point from chart below. If tank is rectangular, then shut off point, A is 10% of the height of the tank. (Minimum allowable is 3 ¼")

Tank Diameter [ft]	"A" Dimension for 95% Shut Off	"A" Dimension for 90% Shut Off
4	4 ¾"	7 ½"
5	6"	9 ½"
6	7"	11 ¼"
7	8 ¼"	13 ¼"
8	9 ½"	15"
9	10 ½"	17"
10	11 ¾"	18 ¾"
11	13"	20 ¾"
12	14"	22 ½"

*Values given are approximate. Exact values can be calculated from the following equations:  
 For 95% shut off, Distance from top (in inches) = 1.1677 \* Diameter of Tank (in feet)  
 For 90% shut off, Distance from top (in inches) = 1.8777 \* Diameter of Tank (in feet)*

The minimum pipe nipple length equals (N):

$$N = A + B - 5\text{-}5/8" \quad \textit{The 5-5/8" allows for the body and adaptor offset}$$

This calculation provides for approximately 1" of the nipple to be above the top of the reducing adaptor and 1" of the nipple to be threaded into the Model 49.

### **Standard length 2" pipe nipple adjustment calculations**

- 1) The distance from the top of the 49 to the top of the reducing adaptor can be calculated (from Figure 1. length D):  $D = N - 2"$   
This distance can be used to adjust the 2" pipe nipple so the Model 49 is at the correct level in the tank.
- 2) Screw and tighten the included pipe nipple into the top of the Model 49 and make a mark (D inches) from the top of the Model 49 on the pipe (Figure 1.). This mark will be used to align the pipe until the mark is level with the top of the adaptor.
- 3) Install the proper length fill pipe (or drop tube, for the 49-04 version. Place drop tube in groove on bottom and tighten retaining ring with four bolts.) into the bottom of the Model 49 and tighten. *The #49 will not operate if the fill pipe is not installed*
- 4) Slide the reducing adaptor (2 x 4 adapter for the 49-02 and 4 x 6 for the 49-04) over the end of the pipe nipple using grease to lubricate the o-ring.
- 5) Install the fill adaptor onto the top end of the pipe nipple.
- 6) Place the Model 49 assembly with the fill pipe (or drop tube) attached to the bottom of the Model 49 into the tank through the riser. (Figure 2.)  
*Care must be taken to be sure that the float is aligned with the centerline of the tank and away from the wall(s) or other obstructions. If the float is not installed so it has free motion the Model 49 will fail to operate and an overflow condition may result. (Figure 2.)*
- 7) Install the reducing adapter onto the riser on the top of the tank. The adapter should be tightened until the gasket seats properly on the top of the riser. *Caution: hold the pipe nipple to prevent the #49 assembly from rotating or falling into the tank.*
- 8) Adjust the height of the Model 49 to the correct level in the tank as determined from the pipe nipple length calculations, by aligning the mark created in step # 2.
- 9) To lock the pipe in the reducing adaptor, the 3 set screws must be tightened equally. This positions the pipe in the center of the reducing adaptor for a secure seal between the pipe and the o-ring.

## Model Numbers

Model Number	Description
Model 49-02	Standard Model for 4" Riser(2" fill pipe)
Model 49-04	Standard Model for 6" Riser (4" fill pipe)

## Material

Part	Material
Body and Inset	Cast Aluminum
Flow Shut Off Sleeve	Machined Brass
Shaft	Steel
Bleed Bushing	Brass
Shaft Guide Bushing	Brass
Float	Closed Cell Buna-Based Foam
Float links	Plated Steel
Internal Slider Links	Plated Steel
Gasket for bottom seal (49-04 only)	Buna
Bottom Retaining Ring (49-04 only)	Cast Aluminum

## Miscellaneous Info.

- No Minimum flow Rate for Operation.
- Minimal Line Shock to prevent component failure.