



## PETOL™ Enclosed Tank Safety Gauge Installation Procedures

### Tools and materials required for typical installation:

OSHA approved breathing apparatus and H<sub>2</sub>S monitor  
Ladder  
Air powered drill  
Source of compressed air – Nitrogen is preferred at 60 lbs. pressure  
Air Hose (approx. 100' or more)  
Tape measure  
Plumb bob  
Level  
Chalk line  
Rubbing alcohol  
Rags  
Wire brush  
Sandpaper (80 or 100 grit)  
Duct tape  
Mixing container and stir stick  
Fiberglass resin (approx. 1 qt.) with catalyst  
Fiberglass Cloth  
Small paint brush to apply resin  
5/16" nut driver or straight slot screw driver  
Hacksaw  
IPS Weld-On #16 clear, medium bodied Solvent Cement for joining acrylic or an equivalent  
Pencil  
Plumber's putty  
Cutting oil  
7/32" drill bit (have more than one on hand)  
3/8" drill bit (have more than one on hand)  
Rubber mallet  
Silicone sealant  
3/8" socket with extension  
Hook to retrieve cable from inside of tank – about 3' long (Soft copper tubing works well for this as it will not spark if contacting other metal surfaces)  
Crimping pliers / wire cutters

### Installation Procedure

#### 1) Safety first

Prior to installing the gauge, test for the presence of H<sub>2</sub>S gas using an OSHA approved breathing apparatus and H<sub>2</sub>S detector. Observe all necessary safety precautions regarding H<sub>2</sub>S. Refrain from smoking or creating any other possible source of ignition during installation.

#### 2) Gauge installation location

From the catwalk, determine where to place the gauge. It should be installed between 18 to 36 inches from the hatch on the side opposite the oil inlet line.

#### 3) Chalk a plumb line

Using a plumb bob or level and a chalk line, mark a vertical line the entire length of the tank wall where the gauge is to be installed. (See photo #1 on reverse side)

#### 4) Attach brackets

Your tank gauge shipment will include the appropriate number of strap brackets based on the length of the gauge. Attach one bracket at 1 foot from the top and bottom of the tank. Evenly space any other brackets provided.

To attach brackets, cleanliness is very important. Using rubbing alcohol and a rag, clean the brackets and the areas of the tank along the chalk line where the brackets will be attached. Remove any rust or heavy dirt with a wire brush and sandpaper. (See photo #2) Wipe again with alcohol and rag as necessary. Brackets must lay flat on the tank. Slight bending may be necessary to make the brackets lay flat.

Using a level, align brackets at prepared areas along the chalk line and temporarily hold in place with duct tape. (See photo #3) Mix fiberglass resin with hardener and brush onto the tank around flats of the bracket and over the duct taped bracket wetting the surface thoroughly with the resin mixture. Apply a piece of fiberglass cloth completely covering each of the flat portions of the bracket and generously coat the cloth pieces with resin mixture. (See photos #4 and #5)

Repeat this process for each bracket. Allow resin to cure thoroughly per directions from manufacturer.

While the resin cures temporarily slip the preassembled bushing with end cap onto the bottom of the tube. This will be glued in a later step.

#### 5) Attach gauge body and Glue Reducer Bushing w/End Cap

After the resin has cured, using a 5/16" nut driver or straight slot screw driver, loosely attach the gauge body to the tank brackets using the hose clamps. Clamps will be tightened down at a later step.

The gauge body should be even with the top edge of the tank. Soil or gravel removal may be required to do so. If it is not possible to dig out below the tube end cap to align the top of the gauge with the edge of the tank, the tube body will need to be cut off approximately 1-7/8 inches at the bottom using a hacksaw.

Once the tube body with bushing and end cap is properly fitted to align with top of tank, slide the tube up to temporarily remove the bushing with end cap. Using IPS Weld-On #16 or an equivalent glue, permanently attach the bushing with end cap as indicated below. Return tube body to correct position and tighten all the hose clamps along the tank.



#### 6) Install nylon tank cable plug and flange

Using the enclosed assembly, place the green hose coupling over the end of the tube (loosen clamp as needed) and twist the enclosed assembly to line up with the approximate center of the tank. Mark this location by tracing around the black flexible reducer. (See photo #6) Remove enclosed assembly from tube and lay close by on the tank. Mark a center point in the traced circle to drill hole for the cable plug. Use cutting oil for lubrication and to prevent sparking. Place a ring of plumbers putty around the point to drill and fill with cutting oil to prepare for drilling. Add oil as needed until hole is completed. Drill a 7/32" pilot hole, then use a 3/8" drill bit to drill the final hole for the cable plug, again using cutting oil to prevent sparking. Remove putty ring, absorb excess oil and wipe area with alcohol to remove any residue. Insert nylon tank cable plug into hole and tap into hole until about 1/8" remains exposed. (See photo #7) Apply silicone sealant to back of flange and place in position centered over tank cable plug. Using drill with 3/8" socket and extension attach the flange to the tank with the 4 self-tapping hex head screws. (See photo #8)

#### 7) Install Cable, Float, Indicator and Enclosed Assembly

Thread steel nipple onto adaptor bushing. Run float end of cable from black flexible reducer through the adaptor bushing with nipple, top of flange and thru tank plug. Insert about 3 to 4 feet of cable into the tank. Install adaptor with nipple into flange. (See photo #9)

Gain access to the cable through the top hatch. Using a long hook, retrieve the cable and pull through the hatch. Run the cable end through the eye-bolt on the float and attach by crimping 2 cable sleeves. (See photo #10) Gently lower the float into the tank.

With the enclosed assembly laying on the tank, run the other end of the cable through the eye-bolt of the indicator and attach using 1 cable sleeve. DO NOT CRIMP this sleeve, but use tape for a temporary hold. (this cable sleeve will be crimped after final adjustment is made to the cable length) Place the indicator in gauge body.

Place enclosed assembly on adaptor bushing and green hose coupling over gauge body end. Tighten the hose clamp to secure the black flexible reducer to the adaptor bushing, but leave the green hose coupling clamp loose so that cable length adjustments can be made to the indicator.

Remove cleanout plugs on each end of the enclosed assembly and check to make sure cable is properly seated in the pulleys.

#### 8) Adjust indicator

Manually measure the fluid level of the tank with a tape and plumb-bob. Indicator will be adjusted to match this measurement. The tank must have at least 6 inches of fluid to precisely calibrate the gauge. Check the reading on the indicator. NOTE: Reading should be taken from the bottom edge of the indicator.

If the tank is empty, set the indicator at 3 inches.

Adjust the indicator by lengthening or shortening the cable, or for precise increments by moving the indicator up or down the threaded eyebolt. Throughout the adjustment, continue to check the cable for seating in the pulleys. When indicator is adjusted to match the tape measurement, crimp the cable sleeve to secure the cable. Cut off any excess cable to avoid rubbing on inside of tube.

#### 9) Finish up

Replace cleanout plugs on enclosed assembly. Replace the green hose coupling over the gauge tube body and tighten the hose clamp to secure.

The enclosed assembly should be horizontally level. To adjust, loosen the top hose clamp on the green hose coupling and with a level held on top, slide the coupling up or down the clear tube inside it until top of assembly is level. Tighten the clamp back in place. (See photo #11)



▲1



▲2



▲3



▲4



▲5



▲6



▲8



▲9

◀7



10 ▶



◀11