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PETOL™ Enclosed Tank Safety Gauge Retrofit Installation Procedures

Tools and materials required for retrofit installation:

OSHA approved breathing apparatus and H2S monitor
Ladder
Air powered drill
Source of compressed air – Nitrogen is preferred at 60 lbs. pressure
Air Hose (approx. 100' or more)
Plumb bob or straight edge
Rubbing alcohol
Rags
Wire brush
Sandpaper (80 or 100 grit)
Duct tape
Mixing container and stir stick
Fiberglass boat resin with catalyst
Fiberglass Cloth
Small paint brush to apply resin
5/16" nut driver or straight slot screw driver
IPS Weld-On #16 clear, medium bodied Solvent Cement for joining acrylic or an equivalent
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
Tape measure

Installation Procedure

1)Safety first
Prior to converting the gauge, test for the presence of H2S gas using an OSHA approved breathing apparatus and H2S detector. Observe all necessary safety precautions regarding H2S. Refrain from smoking or creating any other possible source of ignition during installation.

2)Removing existing hut, float, indicator and cable
Gain access to the float and cable through the top hatch. Using a long hook, retrieve the cable and pull through the hatch. Cut and remove the existing float from the cable.
Retain the existing float.

Remove the wingnut and the existing hut. Pull the existing indicator from the gauge body and pull all of the cable from the tank. Cut and remove the indicator from the cable.
Retain existing indicator.

Remove A-frame with cable pulleys.
The hut, A-frame with pulleys and cable pieces can be discarded.

3)Check existing gauge body installation
For proper support of the enclosed assembly, there should be a bracket and clamp on the gauge body within 1 foot from the top edge of the tank. If there is no bracket currently in place within this area, remove the gauge body from the tank by removing the hose clamps and install the bracket included in the retrofit kit. *--- Skip to step 5 if there is a bracket already in place for adequate support ---*

To attach bracket, cleanliness is very important. Using rubbing alcohol and a rag, clean the bracket and the area of the tank where the bracket will be attached. Remove any rust or heavy dirt with a wire brush and sandpaper. Wipe again with alcohol and rag as necessary. The bracket must lay flat on the tank. Slight bending may be necessary to make the brackets lay flat.

Using a plumb bob or straight edge, align extra bracket with existing brackets on the tank and temporarily hold in place with duct tape. 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 #1 and #2 on reverse side)*

Allow resin to cure thoroughly per directions from manufacturer. While resin cures, remove the existing end cap from the tube (it can be discarded) and temporarily slip the preassembled bushing with end cap onto the bottom of the tube. This will be glued in a later step.

4)Attach gauge body and Glue Reducer Bushing w/New End Cap
***** Extra bracket used *****
After the resin has cured, using a 5/16" nut driver or slotted screwdriver loosely reattach 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 and positioned to align with the top edge of the tank, slide the tube up to remove the bushing with end cap and glue it onto the tube as indicated. *(See photo #3)* This must be done using only a clear, medium bodied Solvent Cement for joining acrylic such as IPS Weld-On #16 or an equivalent. Slide the tube body back into correct position and tighten all the hose clamps along the tank. *--- Skip to step 6 ---*

5)Install new Reducer Bushing w/New End Cap
***** Extra bracket not needed *****
Using a 5/16" nut driver or slotted screwdriver loosen hose clamps around tube to slide it up far enough to remove the existing end cap (it can be discarded) and temporarily slip the preassembled bushing with end cap onto the bottom of the tube. This will be glued in 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 1-7/8 inches at the bottom using a hacksaw.

Once the tube body with bushing and end cap is properly fitted and positioned to align with the top edge of the tank, slide the tube up to remove the bushing with end cap and glue it onto the tube as indicated. (See photo #3) This must be done using only a clear, medium bodied Solvent Cement for joining acrylic such as IPS Weld-On #16 or an equivalent. Slide the tube body back into correct position and tighten all the hose clamps along the tank.

6) Install nylon tank cable plug and flange
If the existing nylon tank plug shows any sign of wear, remove it by punching it all the way through. Insert the nylon tank cable plug included in the retrofit kit and tap into hole until about 1/8" remains exposed. 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 photos #4 & #5)*

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 #6)*

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 #7)* 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.

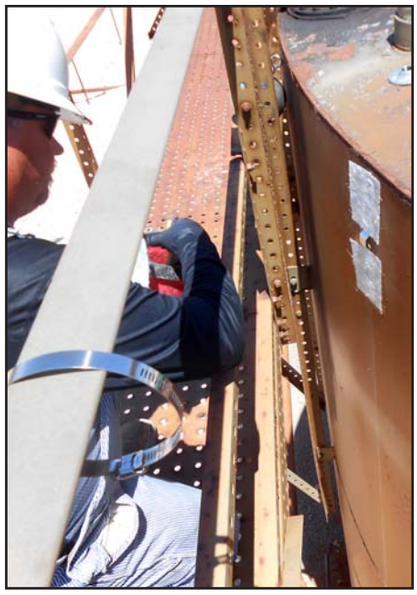
8) Adjust indicator
Manually measure the fluid level of the tank with a tape and plumb-bob. Indicator will be adjusted to match this measurement. The tank must have at least 6 inches of fluid to precisely calibrate the gauge. Check the reading on the indicator. NOTE: Reading should be taken from the 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 #8)*



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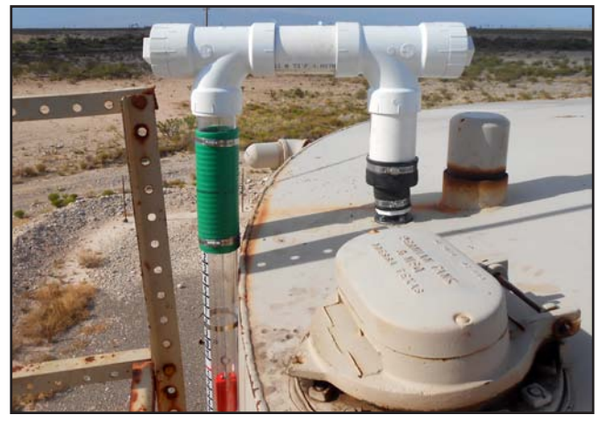

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