

INSTALLATION INSTRUCTIONS

FOR PROTECTOSEAL® Liquid Level Indicators

40000 SERIES
41000 SERIES



THE PROTECTOSEAL COMPANY

ISO 9001 CERTIFIED

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SAFETY WITHOUT COMPROMISE

BOARD TYPE LIQUID LEVEL INDICATORS INSTALLATION INSTRUCTIONS

Read instructions carefully before proceeding with installation.

CAUTION: Tank must be empty and out of service before any welding, cutting and assembly.

40000 SERIES – 1. REFER TO DRAWING 40000 ON OPPOSITE PAGE.

2. Locate position of hole for 1½" coupling as shown on drawing. (If a roof manhole or other large opening is located within the dimensions shown on the drawing it is advisable to locate the 1½" coupling within arm reach of the opening. This will make future inspection and servicing of the various components inside the tank easier.) Cut hole and weld coupling.
3. Install 1½" piping on the 1½" coupling and sheave assemblies (4) as shown. If liquid seal is used, refer to detail drawings (A) or (B) on page 4. All piping must be straight and plumb. Galvanized piping is recommended to reduce corrosion.
4. Remove covers from sheave assemblies (and liquid seal if included).
5. Keeping float cable (2) free of kinks, sharp bends or twists, thread cable through sheave wheel fittings and piping, leading one end to the float (3) and the other end temporarily to the target assembly (7).
6. Assemble end of cable to float (with float resting on tank bottom) using fastener provided (see detail drawing (E) on page 4).
7. Assemble top bracket (5) to sheave assembly with an intermediate 1½" nipple. The nipple should be long enough to bring board (1) above ground level as shown in the drawing.
8. Assemble gage boards (1) to total length required and bolt bottom board to bottom bracket (9).
9. Bolt top board to top bracket (5). Bottom of gage board should be about 1" (3 cm.) minimum above ground.
10. Position board plumb and weld tank brackets (6) to tank.
11. Assemble guide wires (8) to top and bottom brackets (5) and (9) through end holes in target (7), and tighten cable eye bolts on each end to proper tension.
12. With float (3) resting on tank bottom, slip copper sleeve (10) over target end of float cable (2). With target (7) at zero mark on board, pull cable taut and fasten to target. Crimp copper sleeve over cable loop at target. If tank is in service, gage liquid level and attach target to corresponding reading on gage board.
13. Check operation of gage by pulling down on target slowly, lifting float to tank top. Float should travel smoothly. Slowly lower float to tank bottom again.
14. If the tank is already in service, an alternate method of fastening the gage board is shown in detail drawing (G) on page 4.

41000 SERIES – 1. REFER TO DRAWING 41000 ON OPPOSITE PAGE.

2. Locate position of holes for top anchor assemblies (12) and 1½" coupling as shown on drawing. (If a roof manhole or other large opening is located within the dimensions shown on the drawing it is advisable to locate the 1½" coupling and top anchor assemblies within arm reach of the opening. This will make future inspection and servicing of the various components inside the tank easier.) Cut holes and weld parts as shown.
3. Using plumb lines from each 1½" nipple, weld bottom anchor (13) to tank bottom – 17" centers. See detail drawing (D) on page 4.
4. Through top anchor bolts, insert float guide wires (11) down into tank and fasten lower end to bottom anchor as shown. Pull wires by hand through center hole of top anchor bolt, making as taut as possible and lock in place with nut. Tighten nut until guide wire becomes spring loaded. Install nipple and cap using proper thread seal if necessary. Wires must be straight, taut, and parallel. Do not kink or bend wires during installation. For liquid seal installation, welded seams as well as threaded connections must be tight. Run leakage test.
5. Install float (3) on guide wires by tilting on edge and inserting loops through guide wires. Cable connection on float must be on top side. Set float at tank bottom.
6. Install 1½" piping on the 1½" coupling and sheave assemblies (4) as shown. If liquid seal is used, refer to detail drawings (A) or (B) on page 4. All piping must be straight and plumb. Galvanized piping is recommended to reduce corrosion.
7. Remove covers from sheave assemblies (and liquid seal if included).
8. Keeping float cable (2) free of kinks, sharp bends or twists, thread cable through sheave wheel fittings and piping leading one end to the float (3) and the other end temporarily to the target assembly (7).
9. Assemble end of cable to float (with float resting on tank bottom) using fastener provided (see detail drawing (E) on page 4).
10. Assemble top bracket (5) to sheave assembly with an intermediate 1½" nipple. The nipple should be long enough to bring board (1) above ground level as shown in the drawing.
11. Assemble gage boards (1) to total length required and bolt bottom board to bottom bracket (9).
12. Bolt top board to top bracket (5). Bottom of gage board should be about 1" (3 cm.) minimum above ground.
13. Position board plumb and weld tank brackets (6) to tank.
14. Assemble guide wires (8) to top and bottom brackets (5) and (9) through end holes in target (7), and tighten cable eye bolts on each end to proper tension.
15. With float (3) resting on tank bottom, slip copper sleeve (10) over target end of float cable (2). With target (7) at zero mark on board, pull cable taut and fasten to target. Crimp copper sleeve over cable loop at target. If tank is in service, gage liquid level and attach target to corresponding reading on gage board.
16. Check operation of gage by pulling down on target slowly, lifting float to tank top. Float should travel smoothly. Slowly lower float to tank bottom again.
17. For tanks in service, float guide wires can be placed in tank as shown in detail drawing (F) on page 4, attaching top anchors and couplings to a portion of a manhole cover.
18. If the tank is already in service, an alternate method of fastening the gage board is shown in detail drawing (G) on page 4.

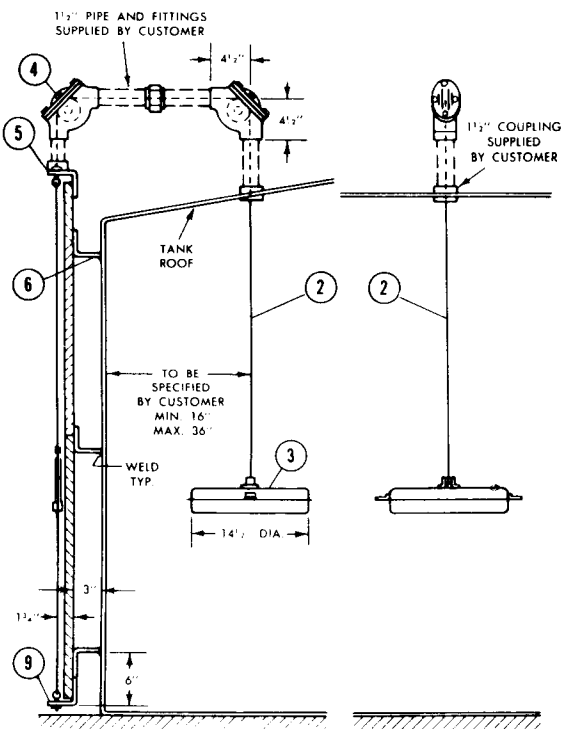
1. Where solvents are required to be stored under slight pressures, a liquid seal can be installed as shown in detail drawings (A) and (B) on page 4. Use of a liquid seal will also retain flammable or toxic vapors within the tank. Standard liquid seals are made of aluminum with 316 stainless steel sheaves and are designed for 8½" W.C. pressure or vacuum.
2. If the fill pipe on the tank is located close to the float (and can not be relocated), it is recommended that a deflector plate be positioned

in a suitable location with respect to the fill opening in order to direct the impinging liquid stream away from the float.

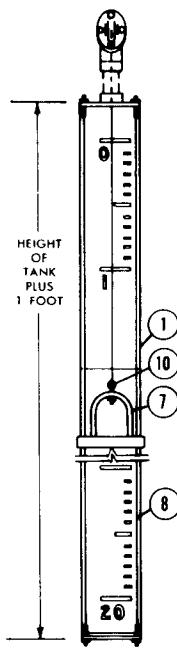
3. If a tank is empty or nearly empty with the float at the bottom, the starting pumping rate of filling should be slowed up in order to prevent possible damage to the float by bouncing. When the float is several feet off the tank bottom, the rate of filling can be increased to its normal rate.

INSTALLATION DRAWINGS – 40000 SERIES/41000 SERIES

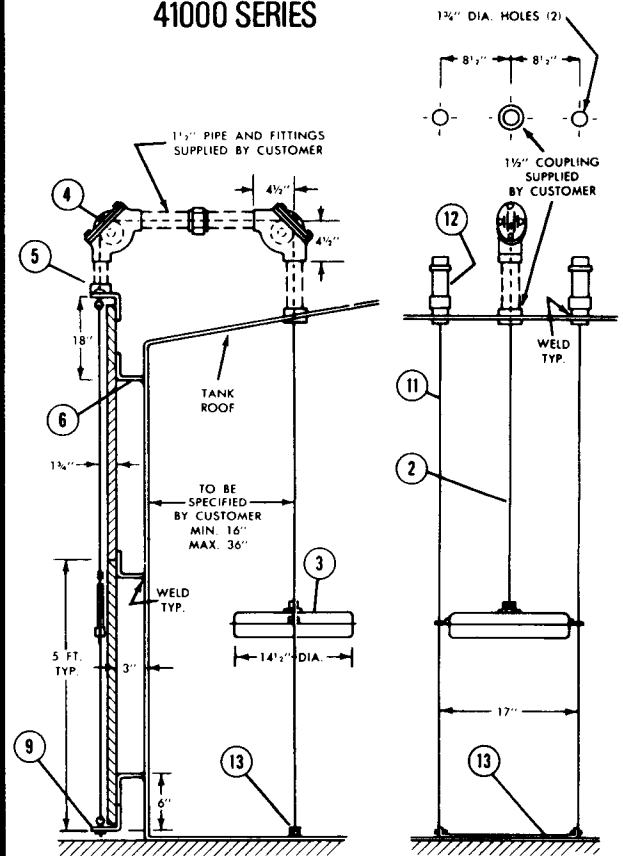
40000 SERIES



FRONT VIEW OF BOARD 40000 SERIES AND 41000 SERIES



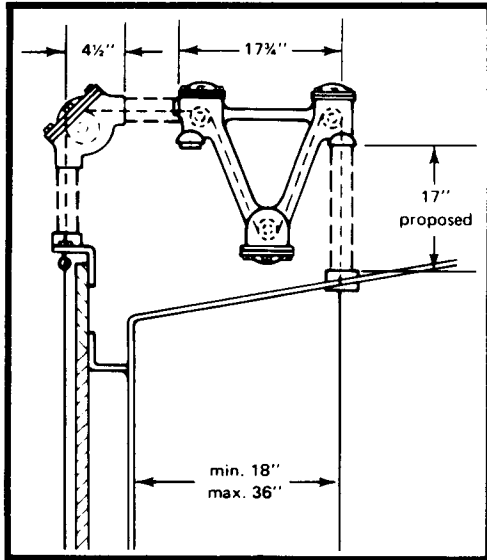
41000 SERIES



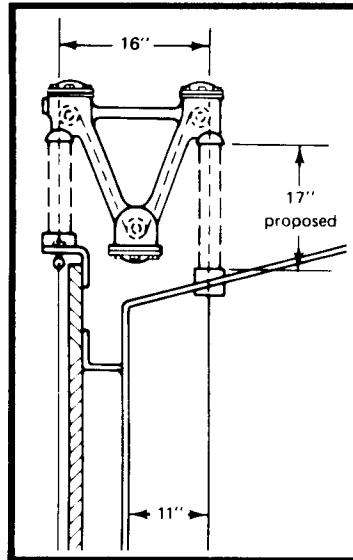
PARTS LIST – 40000 SERIES/41000 SERIES

KEY NO.	QUANTITY		PART NO.	DESCRIPTION	DIMENSIONS	MATERIAL
	40000	41000				
①	1+	1+	41000-320-13	Board	Each 5 Ft. Long	Aluminum
②	1	1	41000-190-69	Float Cable	As Required	316 St. St.
③	1	1	41000-225-69	Float Assembly	14½" Dia.	316 St. St.
④	2	2	42000-275-13	Sheave Assembly	1½" NPT	Housing - Aluminum Wheel - 316 St. St.
⑤	1	1	41000-155-61	Top Bracket Assembly	1½" NPT	Steel
⑥	1+	1+	41000-135-61	Board Bracket Assembly	1 Extra for every Additional 5-ft. Board or Less	Steel
⑦	1	1	41000-185-61	Target Assembly w/Chain	Chain Length = Tank Height Less (6) Feet	Steel
⑧	1	1	41000-120-361	Guide Wire, Target	As Required	Steel - Galvanized
⑨	1	1	41000-145-61	Bottom Bracket Assembly	—	Steel
⑩	1	1	41000-124	Sleeve	—	Copper
⑪	—	2	41000-125-69	Guide Wires, Float	3/32" Diam.	316 St. St.
⑫	—	2	41000-100-60	Top Anchor Assemblies	1½" NPT	Steel
⑬	—	1	41000-130-60	Bottom Anchor Assembly	17" Center to Center	Steel
—	1	1	VM40000/41000	Installation Instructions	—	—

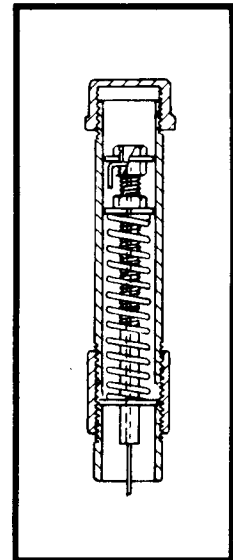
INSTALLATION DETAILS



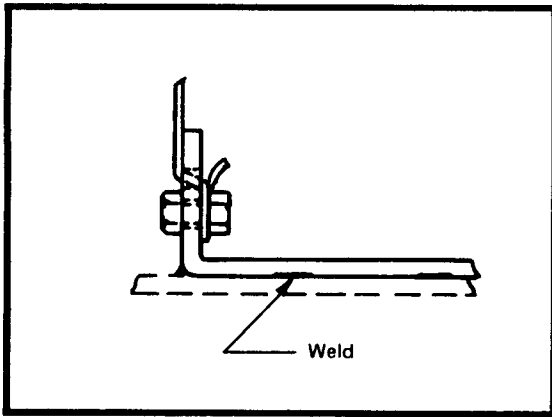
A LIQUID SEAL INSTALLATION



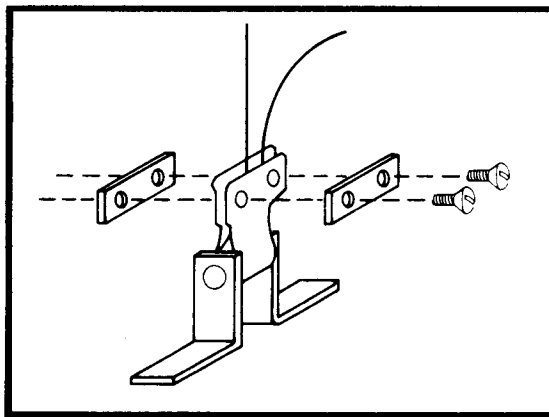
B OPTIONAL LIQUID SEAL INSTALLATION



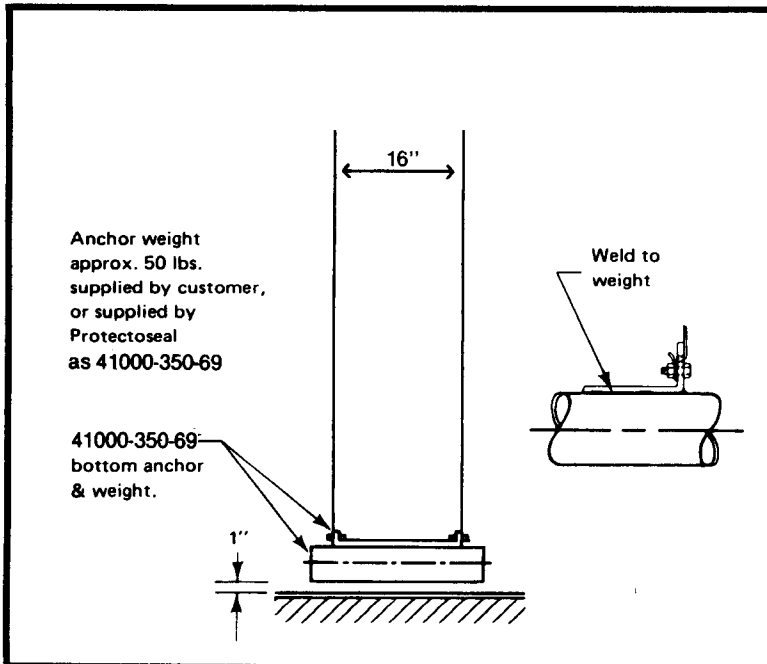
C TOP ANCHOR ASSEMBLY



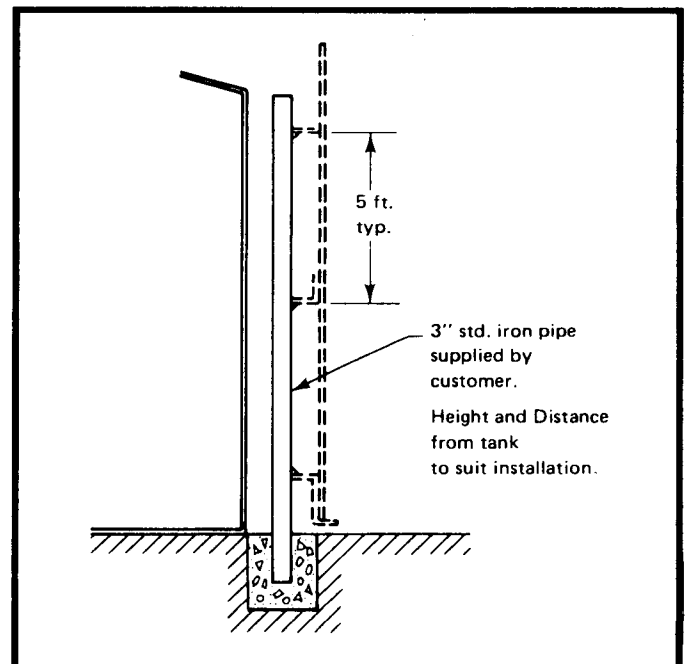
D BOTTOM BRACKET ASSEMBLY



E CABLE - FLOAT ATTACHMENT



F ALTERNATE METHOD OF ANCHORING FLOAT GUIDE WIRES TO TANK BOTTOM - FOR TANKS IN SERVICE



G ALTERNATE METHOD OF MOUNTING BOARD BRACKETS - FOR TANKS IN SERVICE