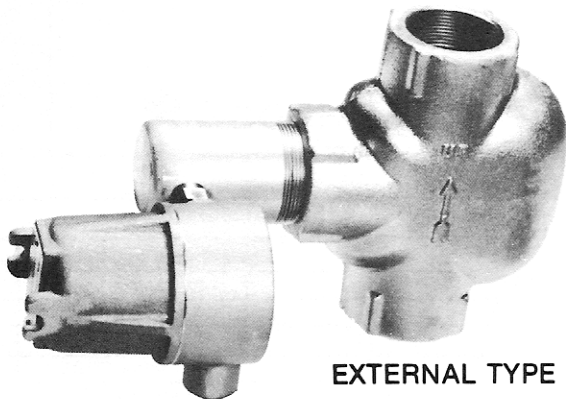


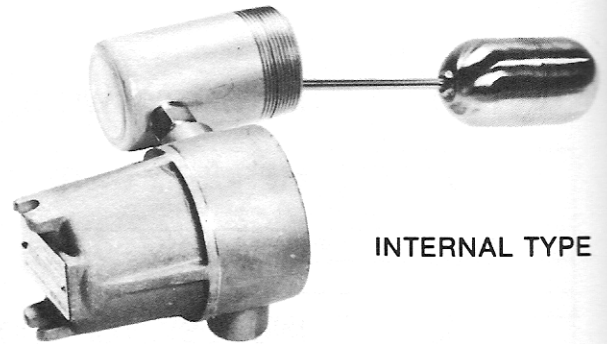
major CONTROLS, INC.

LIQUID LEVEL INDICATION & CONTROL

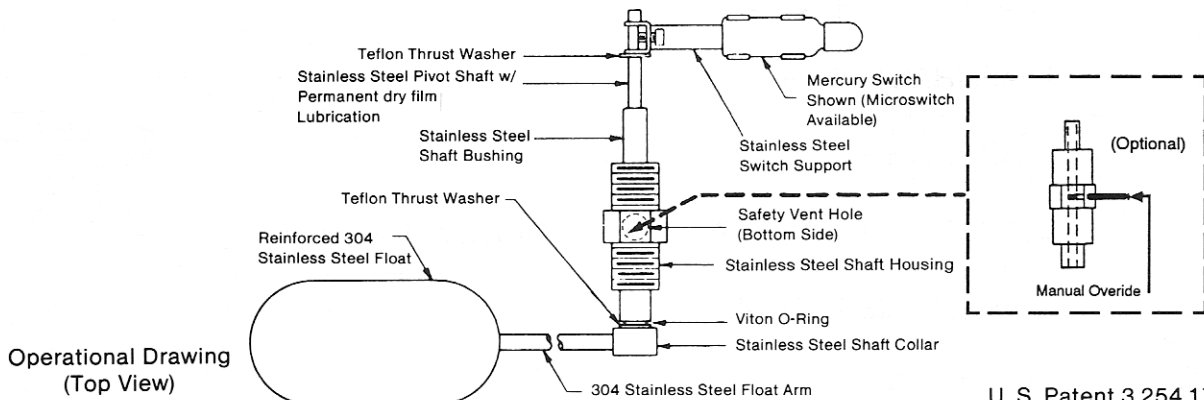
686S FLOATSWITCH FOR PRESSURE VESSELS UP TO 200 PSIG



EXTERNAL TYPE



INTERNAL TYPE



U. S. Patent 3,254,170



FUNCTION:

The Model 686S Floatswitch is a float type liquid level control which completes an electrical circuit to a pump, valve, alarm or other device. when the liquid level in a pressure vessel rises (or falls) to a predetermined point. By using a small Viton O-Ring

seal against a dry-film lubricated shaft and a teflon thrust washer, the torque requirement is small enough to permit the use of a smaller float and other components. Thus the highest quality floatswitch can be offered at far less cost.

FEATURES:

- **SAFE:** If pressure seal ever fails, liquid in the vessel cannot enter the switch housing, because of the safety vent hole (see diagram above).
- **CORROSION PROOF:** All 304 S.S. float and arm. Cad plated steel vessel connection. Other materials available for more corrosive liquids.
- **EXPLOSION PROOF:** CSA Approved For Class I Group D, Class II Group E, F and G Hazardous Locations.
- **SIMPLE INSTALLATION:** Float passes through a 2" nipple.

- **LONG LIFE:** Permanently dry-film lubricated 304 S.S. shaft and teflon bearing comprise the only pivot point. Due to large bearing surface area, wear is negligible.
- **VARIETY OF SWITCH OUTPUTS:** The 686S Floatswitch can be obtained with mercury or microswitch outputs and in various combinations ie; SPST, SPDT, DPDT, etc.
- **ADJUSTMENTS:** Nothing to adjust or get out of calibration on units with mercury switches. Microswitch units can be adjusted from the outside after the floatswitch has been installed on the vessel.
- **LOWER PRICE:** Half the price of XP and 304 S.S. floatswitches in common use today.

OPERATION:

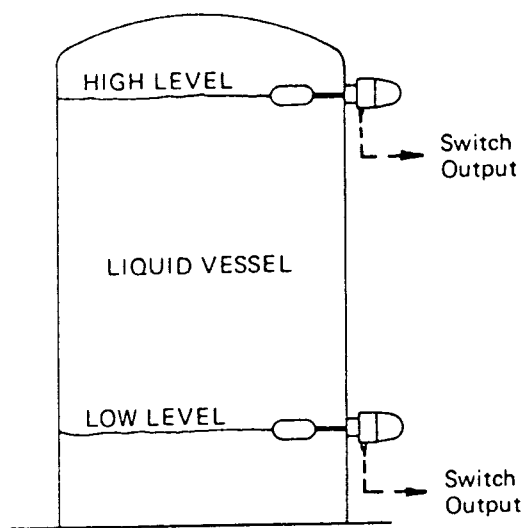
The 304 S.S. Float and Arm are rigidly attached to the 304 S.S. dry-film lubricated shaft which rotates in the 304 S.S. shaft housing. A 304 S.S. switch bracket at the other end of the shaft actuates the switch. A Viton O-Ring seals against pressure and leakage along the shaft. A teflon thrust washer separates the metal parts and provides lubricity. If leakage ever occurs, the liquid in the vessel, seeps out of the safety vent hole. Thus it is

impossible for liquid to enter the switch housing making this feature unique with the Model 686S Floatswitch. The maximum travel of the float between switch "make" and "break" is 1" for mercury switches and 1/4" for microswitches.

INSTALLATION:

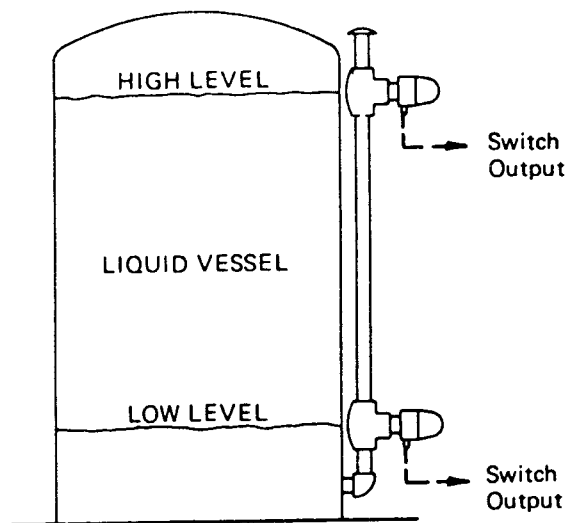
There are two methods of installing the floatswitch: one by mounting it directly on the vessel (Internal Type) and the second

by mounting the unit in an external float housing (External Type). Both methods are illustrated below.



INTERNAL TYPE

Install in 2" flange or half coupling. Float will pass through standard line pipe nipple only - do not use XH or XXH fitting. Special float available for XH or XXH fitting (consult factory).



EXTERNAL TYPE

Install on 2" external pipe riser connected to the pressure vessel above the high level control point, and below the low level control point.

SPECIFICATIONS:

MECHANICAL:

- Vessel Connection: 2" NPT, 2" - 150 # ASA R. F. FLANGE or 2" GROOVED, Cad Plated Steel (Internal Type). 2" NPT only on External Type. (See price sheet for variations of materials).
- Float and Float Arm: 304 S. S. Standard (See price sheet for variations of materials).
- Manual Override, 304 S. S.
- External Float Housing: Cast Meehanite (Ductile).
- Proof Pressure: 400 PSIG
- Pressure Seal Proof Pressure: 4200 PSIG
- Operating Pressure: 0 to 200 PSIG
- Operating Temperature: -60°F to +400°F

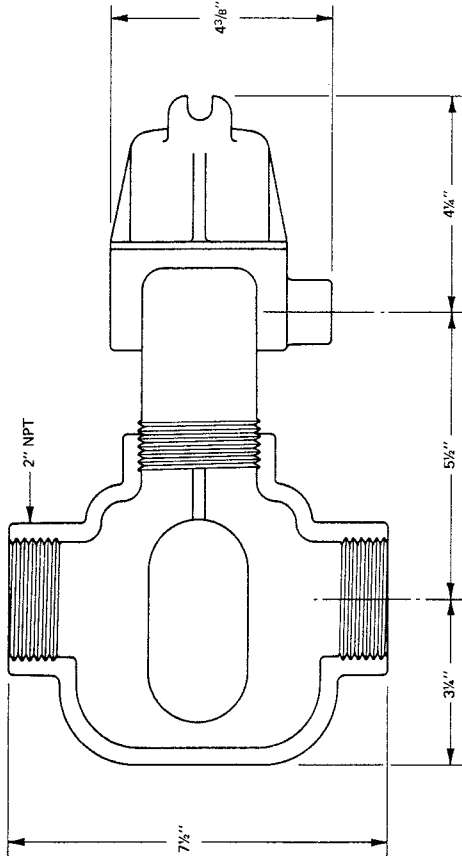
ELECTRICAL:

- Switch Ratings: See Engineering Section
- Contacts: SPST (N.O.) Mercury Switch standard, unless N.C. is specified. (See price sheet or switch variations).
- Electrical Connection: 1/2" Female Pipe Thread.
- Switch Housing: Explosion proof, Aluminum.

major CONTROLS, INC.
 LIQUID LEVEL INDICATION & CONTROL

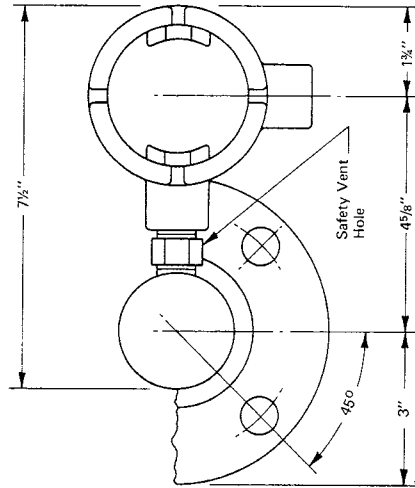
**686S FLOATSWITCH FOR PRESSURE VESSELS
 UP TO 200 PSIG**

DIMENSIONAL DRAWING

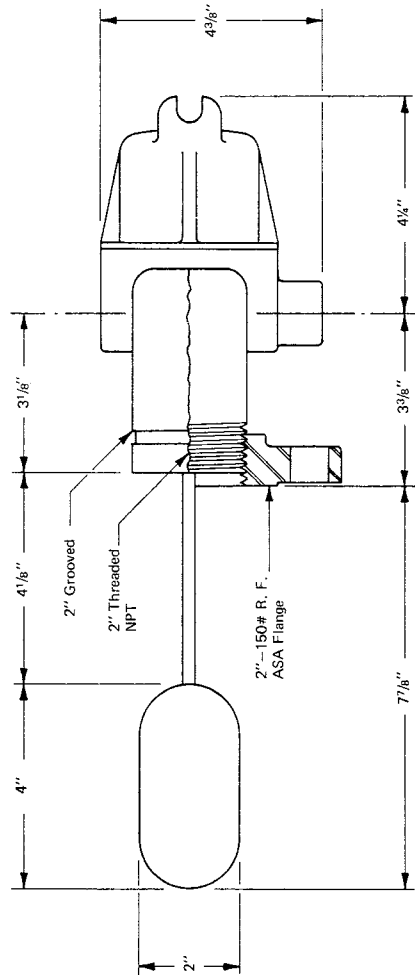


Weight = 18 lbs.

EXTERNAL TYPE



Weight = 10 lbs.



INTERNAL TYPE