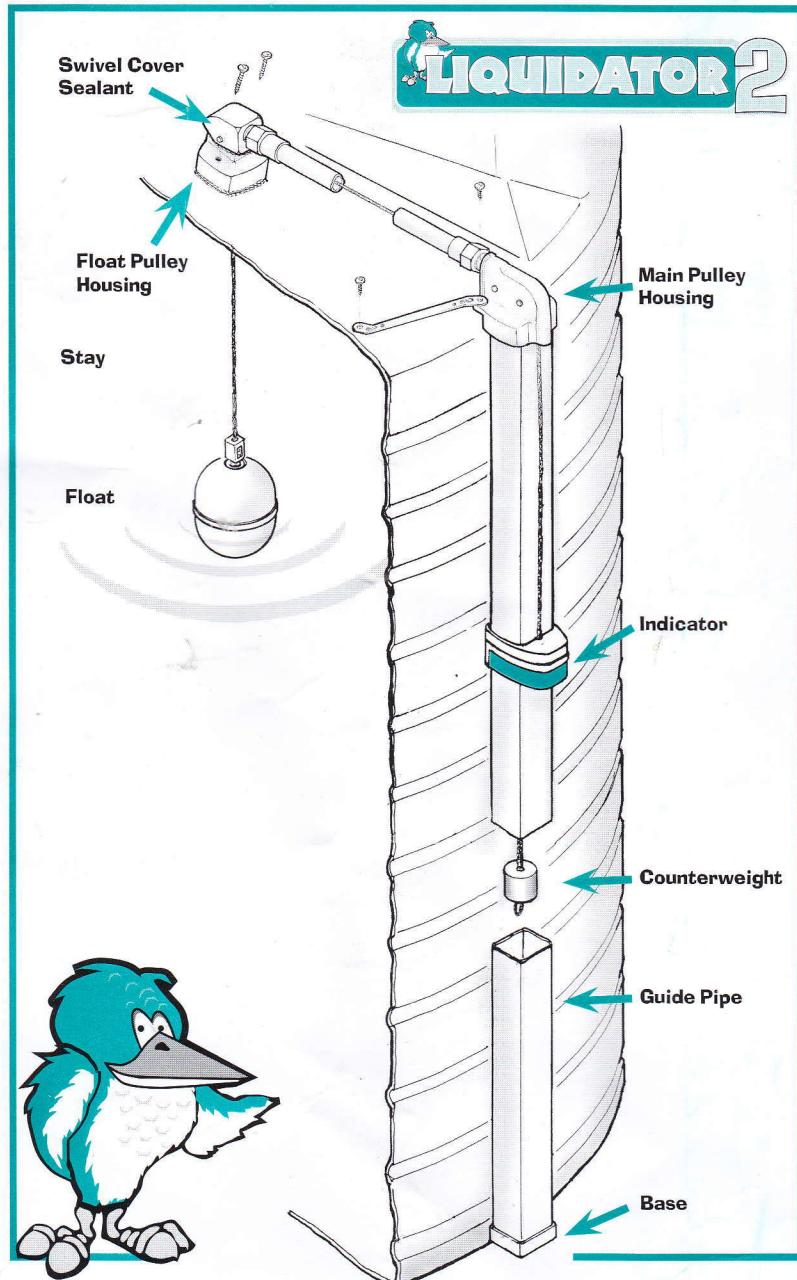


Installation Instructions

Liquidator 2 is supplied fully assembled, ready to be installed on top of your tank, near the edge except for the Guide Pipe, which must be purchased separately and cut to length. Installation is straightforward, regardless of whether the tank is full or empty.



What you will need

Pipe: 2" round (plastic or galvanised steel). Actual OD = 60.3mm (2 3/8"), OR,

2" square galv. Steel or aluminium tube. 50mm sq. tube will also fit.

Wall thickness up to 2mm (0.10")

Pipe length = tank height approximately.

Drills: 4mm (11/64"), 5mm (3/16"), 12mm (1/2")

Tools: Phillips head screwdriver, knife, hacksaw, file, silicone sealant

For Extended Mounting (see below): 1/2" pipe and sockets will also be needed.

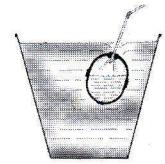


1 Choose position

The best place is where the indicator can readily be seen from your preferred direction. Close to the tank access hole is easiest for installation.

2 Fill Float with water

The float needs the weight of the water to provide the driving force for the system. Unscrew the cord Attachment Fitting, insert the drinking straw provided just inside the hole (about 20mm (3/4") only), submerge the Float under water, and suck the air out. Water will rush in around the straw until only a small bubble remains inside.

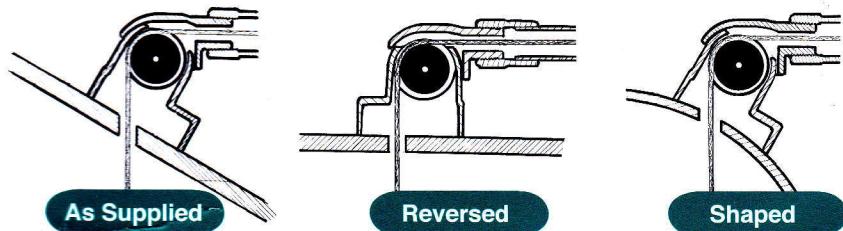


Screw the Fitting back in so that it seals.

3 Mount Float Pulley Housing

The Float Pulley Housing can swivel up to 45° to adapt to steep roofs. It can also be reversed inside the Swivel Cover - better for shallow slopes as it gives more clearance for the Float Cord. Decide which is best for your situation. Be careful not to lose the circlip.

If the roof is curved or ribbed the base can be shaped to suit – file or grind as necessary.



Adjust location if necessary to avoid any obstacles on the tank such as pipework, bulges, overflow outlet, etc., and trace its outline on the tank roof. Check that the Guide Pipe, when fitted into the Main Pulley Housing, will be at least 10mm (3/8") clear of the tank wall.

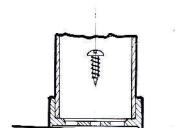
Drill Float Cord hole (12mm (1/2") dia.) vertically, through the roof, offset 17mm (0.67") horizontally from the axle centre.

Untie the cord from the float, pass it through the hole, and re-tie it to the float inside the tank. If the cord is beyond reach from the tank access hole, use a stick with a nail in the end as a "crook" to capture it. Check that the cord won't rub on the edge of the hole. If so, enlarge it or drill another hole.

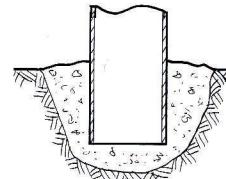
Place the Float Pulley Housing back on its marked position on the tank roof and fasten it to the roof with the two long stainless steel self tapping screws provided. Drill right through with a 4mm (11/64") dia. drill, then enlarge the holes in the housing with a 5mm (3/16") dia. drill.

4 Prepare Guide Pipe Base

This should be vertically below the Main Pulley Housing. It can be screwed to the floor, with a central screw. For sloping or uneven floors, the thin rim on the underside of the Base can be filed away to compensate.



No floor? No need for the Base – just bury the end of the Pipe in the ground, or concrete it in.



5 Fit Guide Pipe

Insert the Guide Pipe fully into the Guide Pipe Base (or hole in the ground), rest it against the Main Pulley Housing (held horizontally), and mark where the top of the pipe has to be cut. Cut the pipe to length, remove burrs.

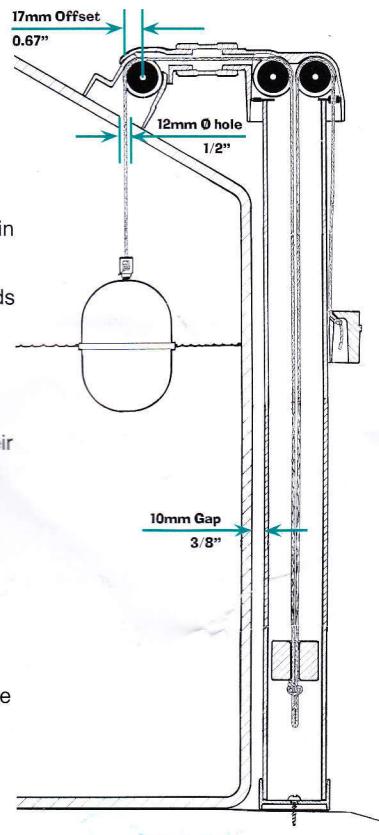
Note. 50mm square tube is slightly smaller than 2" (50.8mm) so it will be slightly loose inside the aluminium castings. Tape wrapped around the tube ends, silicone sealant, or adhesive will take up the gap.

6 Adjust Cord lengths

Before fitting the Guide Pipe into the Main Pulley Housing, adjust the Counterweight cords by pulling them through, taking up the excess and tie a new knot underneath.

The Counterweight should hang just clear of the bottom, with the Indicator hard up against the underside of the Main Pulley Housing and the Float fully up inside the tank.

Cut off the excess cord below the knot. Make sure the cords are parallel, separate, and not twisted.



7 Final Assembly

Gently lower the Counterweight inside, and the Indicator outside, down the Guide Pipe and let them hang under their own weight. Push the Main Pulley Housing onto the top of the Guide Pipe (it can swivel on the Float Pulley Housing)

8 Check Accuracy

Make sure the reflective red band on the Indicator is level with the centre of the float. This is true liquid level. (The float, hanging from its cord, is always half-immersed.)

Minor adjustments can be made by undoing and retying the stop knots in the cord, for both Float and Indicator.

9 Attach Stay

Ensure the Pulley Housings are in their correct positions and the Guide Tube is vertical.

Fix one end of the aluminium Stay to one of the lugs on the Main Pulley Housing and the other end to the tank roof, with the two short stainless steel self-tapping screws supplied.

Bend and/or twist the Stay such that it lays flat on the tank roof. Drill size for the screw holes is 4mm (11/64").

10 Seal Gaps

Silicon sealant can be used to seal/secure the Main Pulley Housing and Guide Pipe Base to the Guide Pipe. Then, seal around the base of the Float Pulley Housing/Tank roof with silicone sealant. Likewise, seal the gap between the Swivel Cover and the Float Pulley Housing. Screw heads and pipe socket threads may also be sealed.

After sealing, the only point of entry for insects, dust etc., is where the indicator cord emerges. However, it is virtually impossible for insects, dust, etc., to enter the tank as the cord passes through the close fitting self-aligning grommet tucked up inside the Main Pulley Housing.

Extended Mounting

The Float Pulley Housing can be located much further from the edge, high up on the roof, as in the diagram. The 1/2" black polypropylene threaded socket with can be replaced with standard 1/2" pipe and fittings, readily available from hardware stores in either plastic or metal. When rethreading the cord tie a bulky knot at the end to make sure it doesn't accidentally disappear into the Main Pulley Housing.

Liquidator 2 is supplied with enough cord for a 1.5m (5 feet) horizontal extension on a 3m (10 feet) high tank. The extra length is gained from the underside of the counterweight. Instead of cutting off the excess cord after retying the knot below the Counterweight as in Step 6, reposition the knot so that the excess cord is added to the float cord.

Quite likely, a longer stay will be needed. This can be made from metal strip, angle, or tube.

Pipe Stub Mounting

The Float Pulley Housing fits neatly on either 2" round pipe and 2" square tube which may be a more convenient place for mounting.



Maintenance

Liquidator 2 should keep working well for many years. It is weatherproof but not perfectly sealed. Like any mechanical device exposed to the outdoors, Liquidator 2 should be checked periodically for correct operation, accidental damage, wear, cobwebs, ingress of dust, etc.

Chemicals

Liquidator 2 can be used on chemical tanks, but the onus is on the installer to make sure there are no adverse effects on the parts exposed to the chemical.

The only part in direct contact with the liquid is the polypropylene float. However splashing, fumes or vapours may affect the polyethylene cord attachment fitting and polyester cord inside the tank. Other parts outside the tank may also be affected by chemical fumes.

For some chemicals it may not be advisable for the float to be filled with water. Other liquids could be used, or alternatively, granular material such as sand. The gross weight of the float and contents should be 550 grams approximately for use in water and other liquids with a similar density. If the specific gravity is significantly less than 1.0, the buoyancy will be less and the float should be lighter. For example if the SG is 0.8 then the float should be about 10% lighter, about 500gm. Likewise for denser liquids, the weight may need to be increased.

Examples of Liquids: water, acids, oils, fertiliser, waste water, molasses, wine, chemicals, etc., almost any liquid that is compatible with the polypropylene float.

Options

Liquidator 2 can be customised with these optional extras:

- Longer cords – for tall tanks, up to 9 metres high (30 feet)
- Polyethylene cord
- Stainless steel wire (nylon coated)
- Brass pulleys
- Mounting bracket for open top tanks



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