Can engine instructions

You should have:

- Displacer Cylinder
- Flywheel
- Top Can
- Heatshrink
- M4 Bolts
- Small Washers
- M4 Nuts
- Crankshaft
- Diaphragm Holder
- Diaphragm Con Rod
- Angle Bracket
- Diaphragm

Warning! Engine contains sharp edges, handle with care!
Step 1: Drop the displacer into the displacer cylinder. The nylon wire should be facing up. Check that it can move up and down freely.

Step 2: Thread the fine nylon wire through the tiny hole in the top can. It's quite a small hole, and it may seem that it's not big enough.

!! DO NOT ATTEMPT TO MAKE THE HOLE BIGGER! IT IS THE RIGHT SIZE !!

Step 3: Pull the nylon wire all of the way through. Rest the top can on top of the displacer cylinder, so that it is tipped forward slightly. Push down on the back edge to fit the top can in place. It should only be pushed down a small amount, 3 or 4 mm. Do not push above the cut out in the can, this will crush the can!
Step 4: Seal around where the two cans meet using general purpose silicone sealant.

Step 5: Bolt on the 40mm angle bracket using the M4 x 12 machine screws.

Step 6: Push the silicone tube into the hole nearest the edge of the bottle cap

Step 7: Bolt the diaphragm holder to the angle bracket using the M4 x 12 machine screw and small washers.

Step 8: Seal around the tube and bolt using silicone sealant.

Step 9: Prepare one of the M4 x 12 machine screws with a large washer, ready for the diaphragm
Step 10: Punch a hole through the diaphragm using a bradawl.

Step 11: Thread the bolt and washer through the hole, add the other large washer onto the other side and tighten the nut. It should be tight to seal the joint.

Step 12: Thread the crankshaft through the bearing holes. You'll need to squeeze the can to fit it into place.
**Step 13:** The nylon wire must be fixed into the brass connector on the crankshaft. It must be fixed so that it pulls the displacer to the top of its cylinder. If this doesn't happen, the engine will not work.

**Step 14:** Fix the flywheel in place, tighten the small locking screw to prevent it slipping on the crankshaft.

Slide a piece of heat-shrink onto the diaphragm side of the crankshaft.
Step 15: Fit the diaphragm over the diaphragm holder.

Step 16: Measure the distance between the diaphragm and crankshaft. Bend the diaphragm con rod as shown, so that it will connect between the diaphragm and crankshaft. The bend in the crankshaft allows for easy to adjustment.

Step 16: Fit the diaphragm con rod into place as shown.
Step 17: To stop the con rod sliding off the crankshaft, slide on another piece of heat-shrink. Heat the heat-shrink up using a small flame, it will shrink, securing it to the crankshaft.

Running the engine:

Oil all of the points using a light machine oil.

Heat the bottom of the can using a candle flame, or by placing it in a cup of boiling water.

Fill the cooling jacket with cold water.

Turn the flywheel to start the engine. The direction of rotation may vary, so try both ways.

The engine must turn freely

The engine must be sealed properly. The only air leak should be around the nylon wire.

Warning! Engine contains sharp edges, handle with care!