

# Solinst® Peristaltic Pump Operating Instructions

Model 410

## General

The Solinst Peristaltic Pump has an on/off toggle switch with a separate speed control. Standard use is with 5/8"OD medical grade silicone tubing which gives purge rates up to 2.75 L/min. The 3/8" tubing adapter kit (included) allows use of 3/8"OD medical grade silicone tubing, which gives sample rates as low as 10 ml/min. The 5/8"OD silicone tubing can be attached to 1/2"OD down-hole sample tubing and the 3/8" silicone tubing to 1/4"OD down-hole sample tubing.

## IMPORTANT

- Pump is water resistant but not waterproof. Do not submerge in water.
- The maximum pumping rate will decrease considerably when there is more than 20 ft of water lift.
- Replace the tubing regularly. The pump will be inefficient if the tubing is worn. This will show as a limited ability to lift water. If the tubing looks worn or cracked, replace the tubing.
- If used in cold weather, ensure that there is no ice in the tubing before starting the pump.

## Power

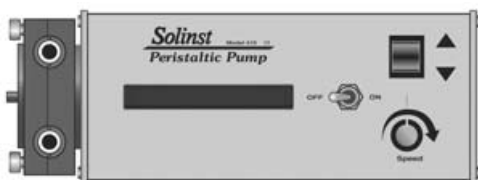
The pump operates from an external 12 VDC power supply such as a car, truck or marine 12 volt battery and has a 12 foot power cable with connector clips for direct battery connection. An externally accessible fuse holder is located on the side of the pump case. In the event of a blown fuse due to a stalled pump head, replace fuse with a 8 AMP, type 3AG (1/4" x 1 1/4") 'Slo-Blow' fuse. Do not use a larger amperage fuse.

If the pump is to be powered by a vehicle battery for extended periods (more than 3 hours continuous), start vehicle and run for 15 minutes to recharge the battery.

## Controls

- The ON/OFF switch has a reverse polarity protection feature. It works if the battery is connected in the correct polarity. A reversed polarity causes no harm, but the pump will not operate.
- The Direction switch shows the direction of flow. This switch can be changed at any time, even while the pump is running.
- The SPEED control allows flow rate adjustment. Always turn the speed control to minimum before applying power and after use.
- The power cable clips are oversized for use with automotive batteries. The red clip connects to the positive (+) battery terminal, black to negative (-) battery terminal.

## Changing or Installing 5/8" Silicone Tubing

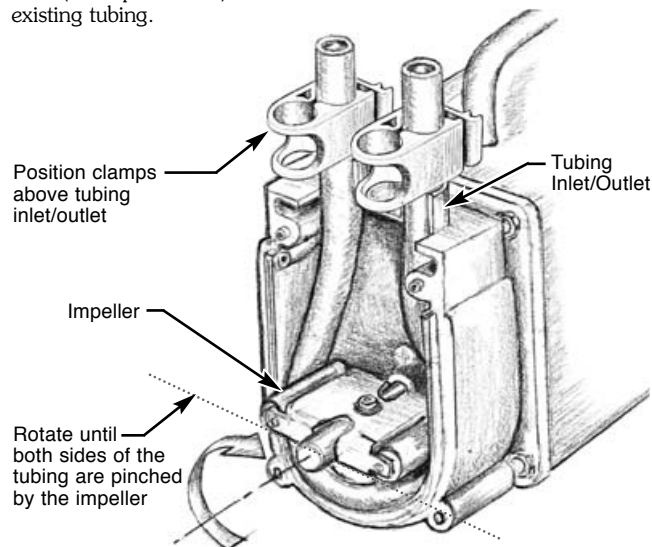


1. To install or replace the tubing, disconnect the pump from its power supply and then undo the four thumbscrews on the drive head (black plastic end). Remove the drive head cover.
2. Manually rotate the pump impeller in any direction, while pulling gently on the tubing to pull it away from the body.
3. Remove clamps from the old tubing.
4. Position the new tubing around the impeller in a "U" shape. Holding half of the tubing in place around the impeller, begin to manually rotate the impeller. Repeat for the remaining half of the tubing. Replace clamps onto the tubing close to the drive head. The clamps prevent the tubing from being pulled into the drive head.

5. Reposition the pump head cover and screw it firmly in place. Thumbscrews should be finger tight. Do not use a wrench or over tighten.

## To Install Adapter Kit for 3/8" Silicone Tubing

1. To install or replace the adapter kit, disconnect the pump from the power supply and then undo the four thumbscrews on the drive head (black plastic end). Remove the drive head cover. Remove the existing tubing.



2. Make a "U" shape with the white plastic drive head insert and place around the tubing race in the drive head.
3. Position the new tubing around the impeller in a "U" shape with equal lengths. Holding half of the tubing in place, begin to manually rotate the impeller, positioning the remaining tubing in place.
4. Place the bushings onto the tubing making sure they are placed INTO the drive head tubing inlet/outlet.
5. Replace the clamps onto the tubing making sure they are flush with the bushings. The clamps prevent the tubing from being pulled into the drive head.
6. Re-position the pump head cover and screw it firmly in place. Thumbscrews should be finger tight. Do not use a wrench or over tighten.

### Adapter Kit Includes:

- 3 ft of 3/8" OD Silicone Tubing
- 2 Tube Bushings
- 2 Tube Clamps
- 1 Drive Head Insert

## Operation

1. Ensure that the chosen silicone tubing has been properly installed in the pump head.
2. Connect one end of the silicone tubing to the down-hole sample line.
3. Either connect the other end of the silicone tubing to a discharge tube, or simply discharge out of this other end of the tubing.
4. Connect the negative (black) battery clip to the negative terminal post on a 12V DC battery.
5. Connect the positive (red) battery clip to the positive terminal on a 12V DC battery.

*Note: The arrows on the top of the Peristaltic Pump beside the black Direction Switch indicate the direction of water flow.*