

Dan's corner: Pump roller maintenance

Cleaning Pump Rollers and Platen

It is extremely important that the parts that come into contact with the pump tubes are clean and free from oil: otherwise, the pump tubes will wear out rapidly.

The pump rollers and platen should be cleaned when the pump tubes are replaced (usually every **200 hours**):

- After removing the worn pump tubes, remove the two side rails.
- Clean each of the 8 pump rollers (not the chains) and the bottom of the pump platen thoroughly, using a clean lint-free cloth or paper towel moistened with isopropyl alcohol or ethanol.

To rotate the pump, make sure that the red switch is in position 'RUN'. Then take the pump platen and hold the corner with the magnet in front of the safety reed switch.

As long as the magnet is there, the pump will rotate.

Cleaning and Lubricating the Side Rails

The two side rails should be cleaned and lubricated when the pump tubes are replaced (usually every 200 hours).

- After removing the worn pump tubes, remove the tube holders and the two side rails.
- Wipe the side rails clean, using a clean lint-free cloth.
- Lightly lubricate the bottom of the side rails with a **thin film** of semi-fluid lubricant (P/N 590-0161-01).
- Position the side rails on the holding pins. The side with the slot must be at the exit side of the pump. Number the tube holders. Remember to check reagent absorbance and sensitivity after changing pump tubes.

Lubricating the Oil Pads

There are two oil pads that are used to lubricate the chain rollers. They should be lubricated when the pump tubes are replaced.

Add **2 drops** of all-purpose oil (P/N 538+9000-01) to each pad.

The oil pads should be replaced every two years (or earlier if they show visual signs of wear).

Lubricating Roller and Chain Bearings

The pump roller and chain bearings should be lubricated when the pump tubes are replaced.

- After removing the worn pump tubes, put **1 drop** of all-purpose oil into each of the two oil holes between the chain rollers, near the oil pads.
- Put **1 drop** of the same oil on each end of each pump roller and chain interface.

Rotate rollers and wipe off excess oil with a lint-free cloth. Make sure that there is no oil on the pump rollers and the bottom on the pump platen.

Checking the Platen Pressure

If the pump tubes wear out too quickly for if the platen does not unlatch when you turn it backwards, the platen pressure may need adjustment.

To check the platen pressure:

- Lift the cover plate until it forms a 45-degree angle with the top of the platen. Do not unlatch the platen.
- Take a spare side rail and try to slide it under each of the four sealed screws on top of the pump platen. These screws are spring-loaded and regulate the platen pressure. Note that the side rails must be installed for this test. If you do not have a spare side rail, take another object that has a height of approximately 1 mm (e.g.: a dime).

If the side rail does not fit under a screw, or if there is space between the top of the side rail and the bottom of the screw, the screw needs to be re-adjusted.

Warning: Re-adjustment of the platen pressure should be performed by trained service personnel only. Do not loosen the sealed screws on the pump platen, as they are spring-loaded.