

Regardless of the vacuum line you have – here are a list of things to consider for safe and efficient operation.

- Over time, Tygon and rubber hose tends to become permanently sealed onto glassware. To avoid injury, always use scissors to cut the tubing close to the glass connection and then use a razor blade to cut away the remaining hose on the glass itself. Consider hose adapters that allow you to attach a hose to removable glass components.
- When clamping your Schlenk line, traps, and glassware – attach the clamps to the vertical bars of your monkeybar lattice structure – not the horizontal bars.
- Use a hydrocarbon-based grease such as Apiezon grease. Use Apiezon M grease for joints and O-rings and use Apiezon N for glass stopcocks. Both have longer lasting properties than silicone grease.
- Restrict the use of silicone greases to traps only. Silicone grease has a very short life and tends to creep and polymerize throughout a vacuum system - making cleaning very difficult. Silicone grease has a product shelf-life (in the tube) of about 18 months. When exposed to light or vacuum the grease can degrade in about 2 weeks. If you frequently empty traps, silicone grease is an economic alternative to Apiezon. However, you should remove old grease and apply a new coating as often as possible. This will help you avoid having your glass joints permanently seize together.
- When starting up a new vacuum line – initially fill the cold trap Dewar(s) to less than half of their capacity with liquid nitrogen (LN2) for the first hour of operation. Then, fill them all the way to the top. This traps/freezes any of the absorbed water in the glassware walls down low in the trap as they are released during the initial start-up, and keeps it there. This prevents it from outgassing as it would if it had been trapped higher up and the LN2 level goes down over time.

- Hi-vacuum glass stopcocks typically have indexed numbers that identify which plug connects to which barrel. These parts should not be interchanged.
- Vent your cold trap(s) before turning off your mechanical pump when shutting down your vacuum line. This will avoid the back-streaming of pump oil into your system, and allows volatiles in your trap to boil-off without building up pressure.
- When cleaning glassware in a base-bath, never soak joints that are frozen together without unsticking them first, as this can chemically fuse the two pieces into one permanent piece. Bring frozen glassware to the glass shop for help.