

## 2.2 Priming and Charging the Turbopump with Oil

A bottle of special vacuum oil is shipped with the turbopump. Using this oil, prime the turbopump and fill its oil cup as follows:

**CAUTION:** Don't tilt the TMP450 pump more than 5° from vertical while the oil cup is installed. Tilting it more than 5° could result in oil contaminating its high-vacuum section.

1. Remove the two screws to remove the oil cup from the bottom of the turbopump.
2. Fill a one-way syringe with HE-500 oil for the TMP450 model; you must use HE-1200 for the TMP450C model. Cut a piece of tubing so that its one end fits tightly over the tip of the syringe and its other end fits tightly over the small center hole in the Turbopump's shaft. If a syringe isn't available, you can use a **clean** squeeze bottle or oil can.
3. Tilt the turbopump so that one of the two oil-return holes is at the lowest position. Inject the oil from a syringe or squeeze bottle up into the motor shaft's center hole until you see oil draining down from the lower oil-return hole. It's OK to tilt the turbopump greater than 5° when the oil cup is removed; however, don't tilt it so that its high-vacuum flange is facing down.
4. Fill the oil cup with the vacuum oil supplied with the pump until the oil level is at the oil cup's "min" mark. It should take about 100 milliliters. Then, lower the turbopump onto the oil cup and reinstall the oil cup by tightening the screws; as you lift the oil cup up against the turbopump, the oil level rises to the "max" mark because it is displaced by the turbopump's shaft.

**For the TMP450C model,** the upper and lower radial grooves in the oil cup are the "max" and "min" marks.