



## ***Using a Vacuum Pump***

The vacuum pump is used to extract samples from a dipstick or non-pressurized system. When extracting the sample, it is important to use a new piece of tubing in order to avoid sample contamination. It is also important to have an appropriate container and follow all the directions thoroughly to ensure that the oil sample is representative of all the oil in the machine.

POLARIS has developed oil analysis kits in order to make oil analysis convenient, easy and simple. These kits include pump, tubing, jars and preaddressed mailers.

**Step 1-** Carefully unpack the POLARIS Sample Kit, place material on a clean surface and fill out sample jar label. Measure tube to the length of reservoir tank or dipstick, add 6 inches to the measurement and place a mark on the tube.

**Step 2-** Insert the tube through the head of the vacuum pump and tighten lock ring. The tube should extend about 1 inch beyond the base of the vacuum pump head.

**Step 3-** Screw in the white sample jar to the bottom of the vacuum pump and tighten securely. Place tube into the oil, retaining tube up to the mark on the tube.

**Step 4-** Push and pull the vacuum pump plunger a few times to start the suction. Continue pumping until sample jar is  $\frac{3}{4}$  full. Hold the pump upright in order to avoid contamination.

**Step 5-** Unscrew the sample jar from the vacuum pump and place the lid back on the sample jar and tighten securely. Drain remaining fluid out of tube into tank and remove tube from fill port. Unscrew locking ring on vacuum pump, remove and properly dispose used tube. Place the sample jar label on sample jar and the appropriate return-mailing label on black return mailer. Send the sample to the lab immediately.

## ***Using a KST Series Probing Valve***

The KST Series Probe Sampling Valve is a needle valve that is installed on a pressurized system. The valve should be installed on a pressurized line with a



minimum of 4 psi- maximum of 1000 psi. It requires the use of the KST Series Cap to insert into the valve to retrieve sample. It consists of a jar cap, 4" tube with a needle and a vent opening to allow flow.

POLARIS has developed oil analysis kits in order to make oil sampling convenient, easy and simple. These kits include cap, tubing, jars and preaddressed mailers.

**Step 1-** Make sure the unit is at or close to normal operating temperature. Take the KST Series cap and needle assembly up to the sample valve. Hold a separate waste container under the KST Series cap and insert the needle probe into the valve. Flush at least 3 times the fluid into the container. Remove the needle probe to stop the flow and set the separate container in a safe place.

**Step 2-** Remove the cap from the sample container. Place the KST Series cap onto the sample container and secure it firmly. Take the sample container with the KST Series cap and insert the needle probe into the valve. Fill the sample container to approximately  $\frac{3}{4}$  full.

**Step 3-** Remove the needle probe to stop the flow. Place the cap onto the sample container securing it firmly. Tighten the protective cap back onto the valve. Wipe the valve with a clean rag to remove any excess fluid. Discard the KST Series cap assembly in a safe manner.

**Step 4-** Place the sample jar label on sample jar and the appropriate return mailing label on black return mailer. Send the sample to the lab immediately.

### ***Using a KP Pushbutton Sampling Valve***

The KP Series is a push button sampling valve that is installed on a pressurized system. The valve should be installed on a pressurized line with a minimum of 4 psi – maximum of 100 psi.

**Step 1-** Make sure the unit is at or close to normal operating temperature. Remove the protective cap from the valve. Place a separate waste under the valve opening. Press the KP Series button and flush at least 3 times the fluid into the separate container. Dispose the waste oil properly.

**Step 2-** Remove the from the sample container. Place the sample container



under the valve opening. Press the KP Series button to dispense fluid into the sample container filling it to approximately  $\frac{3}{4}$  full.

**Step 3-** Release the KP Series button to close the valve. Place the protective cap back onto the valve securing it firmly. Screw the cap onto the sample container closing it tightly.

**Step 4-** Place the sample jar label on sample jar and the appropriate return-mailing label on black return mailer. Send the sample to the lab immediately