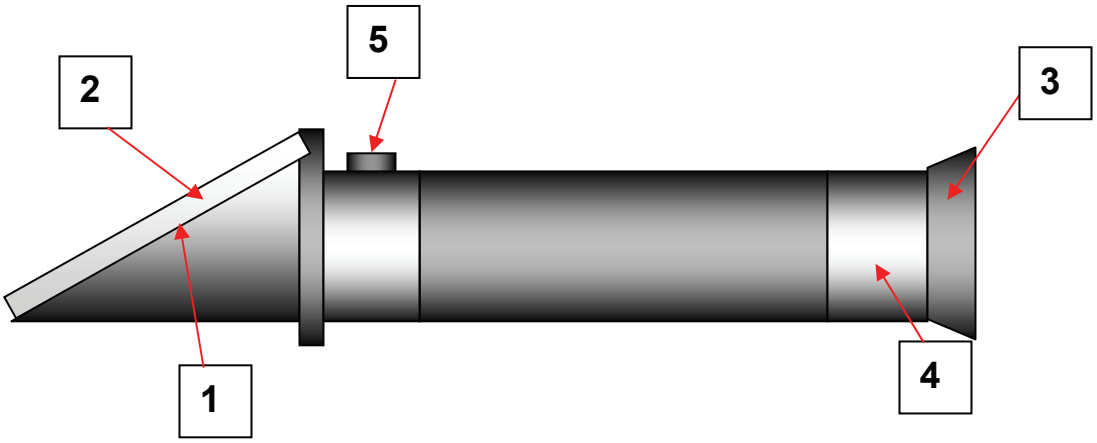
satisloh

# Calibrating and Using the Brix Refractometer

In optical processing, the Brix Refractometer (part no. 98-003-662) measures the concentration of generator coolant to water. Maintaining proper coolant level is essential for successfully generating quality surface lenses.




## Calibrating

1. Open the daylight plate (2) and place 2-3 drops of distilled water on the main prism (1).
2. Close the daylight plate so the water spreads across the entire surface of the prism without bubbles or dry spots.
3. Allow the sample to rest on the prism for approximately 30 seconds. This allows the sample to adjust to the ambient temperature of the refractometer.
4. Hold the refractometer with the daylight plate up in the direction of a bright light source and look into the eyepiece (3). Use the focus adjustment (4) until the graduations on the circular scale inside are sharp and clear.
5. The upper portion of the field should be blue, while the lower portion should be white. Remove the rubber cover on the calibration screw (5). Turn the calibration screw until the boundary between the upper blue field and the lower white field meet exactly on the zero line of the scale.
6. Open the daylight plate and carefully wipe the sample off the prism and plate with a soft, clean cloth.
7. For best results, the refractometer should be recalibrated before each use. (Calibration is affected by changes in room temperature.)

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## Using

1. Calibrate the refractometer with room temperature distilled water as previously discussed. A test sample of coolant dilution from your system must also be allowed to come to room temperature.
2. Open the daylight plate (2) and place 2-3 drops of clean coolant sample on the main prism (1).
3. Close the daylight plate so the sample spreads across the entire surface of the prism without bubbles or dry spots.
4. Allow the sample to rest on the prism for approximately 30 seconds. This allows sample to adjust to the ambient temperature of the refractometer.
5. Hold the refractometer with the daylight plate up in the direction of a bright light source and look into the eyepiece (3). Use the focus adjustment (4) until the graduations on the circular scale inside are sharp and clear.
6. The upper portion of the field should be blue, while the lower portion should be white. Find the value on the Brix scale where the boundary between the upper blue field and the lower white field meet.

*Use graph to determine amount of coolant needed for a given application.*

- Use the "30 to 1" scale (3%) for organics and the "15 to 1" scale (6%) for glass.
- LH305 uses the same values as shown in the graph for LH205.

K40 should read 2.4 (3%) for organics and 4.8 (6%) for glass on the Brix scale. The amount per gallon isn't calculated and will need to be determined on-site with some testing on one gallon of water. Add K40 to gallon of water until the desired reading on the Brix scale is reached. You can then use the factor for one gallon to determine the amount for the entire tank volume.

LH-205

*All numbers reflect gallons of concentrated coolant required.*

***To charge tank***

| Tank Size (in gallons) | 10 to 1 | 15 to 1 | 20 to 1 | 25 to 1 | 30 to 1 |
|---|---|---|---|---|---|
| 200 | 20 | 13.3 | 10 | 8 | 6.6 |
| 175 | 17.5 | 11.6 | 8.75 | 7 | 5.8 |
| 150 | 15 | 10 | 7.5 | 6 | 5 |
| 125 | 12.5 | 8.3 | 6.25 | 5 | 4.2 |
| 100 | 10 | 6.6 | 5 | 4 | 3.3 |
| 75 | 7.5 | 5 | 3.75 | 3 | 2.5 |
| 50 | 5 | 3.3 | 2.5 | 2 | 1.6 |
| 25 | 2.5 | 1.6 | 1.25 | 1 | 0.8 |

***To raise tank by 0.1%***

| Tank Size (in gallons) | |
|---|---|
| 200 | 0.69 |
| 175 | 0.6 |
| 150 | 0.5 |
| 125 | 0.4 |
| 100 | 0.33 |
| 75 | 0.25 |
| 50 | 0.2 |
| 25 | 0.1 |

*All numbers reflect gallons of concentrated coolant required to raise a tank by ..... 0.1%.....*