

# Operation Manual

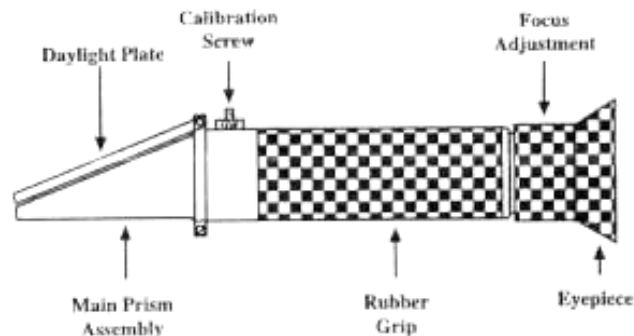
## For Hand Held Alcohol (Wine) Refractometer

The RHW series are developed for working with wines. It can be used to measure the concentration in wines and measure the sugar of the grapes, in order to determine the best time to manufacture the grape wine. Which model to chose is according to the concentration in the liquids and the parameter of refractometer.

### SERIES:

Style	Model	Range	Min. Div	Accuracy	Remarks
Alcohol (Wine)	RHW-25	0-40% Brix 0-25% Vol	0.2% Brix 0.2% Vol	±0.2% ±0.2%	Without ATC
	RHW-25ATC	0-40% Brix 0-25% Vol	0.2% Brix 0.2% Vol	±0.2% ±0.2%	ATC
	RHW-80	0-80% Vol	Varies	±1%	Without ATC
	RHW-80ATC	0-80% Vol	Varies	±1%	ATC

### Parts Diagram:



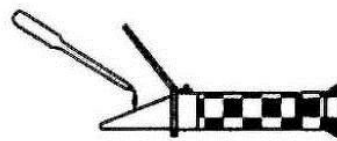
### Operation Steps:

#### Step 1.

Open daylight plate, and place 2-3 drops of distilled water on the main prism. Close the daylight plate so the water spreads across the entire surface of the prism without air bubbles or dry spots. Allow the sample to test on the prism for approximately 30 seconds before going to step #2. (THIS ALLOWS THE SAMPLE TO ADJUST TO THE AMBIENT TEMPERATURE OF THE REFRACTOMETER.)

#### Step 2.

Hold daylight plate in the direction of a light source and look into the eyepiece. You will see a circular field with graduations down the center (you may have to focus the eyepiece to clearly see the graduations). The upper portion of the field should be blue, while the lower portion should be white. (The picture showed here and showed in step 3 & 4 are only as reference, the



Poor Poor Good

right specific scale is listed in the product.)

### Step 3.

Using distilled water as a sample, look into the eyepiece and turn the Calibration Screw until the boundary between the upper blue field and the lower white field meet exactly on the zero scale, such as showed in the picture. That is the end of calibration. Make sure ambient room temperature is correct for the solution you are using (20°C for our solution that is 68°F). When working temperature of the room or environment (not the sample) changes by more than 5 °F, we recommend recalibrating to maintain accuracy and reproducibility.

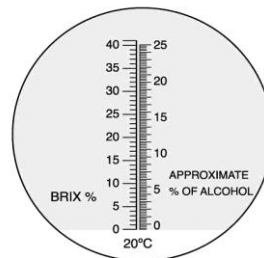
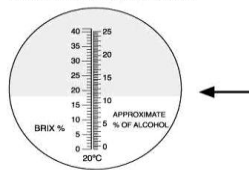
If the instrument is equipped with Automatic Temperature Compensation system (ATC), the ambient working temperature of the room must be 20 °C (68 °F) whenever the instrument is recalibrated. Once calibrated, shifts in ambient temperature within the acceptable range (10 °C -30 °C), should not effect accuracy.

### Step 4.

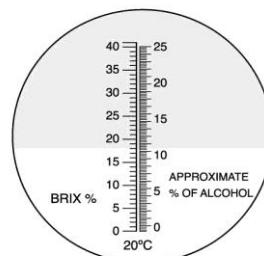
Do step 1. using the specimen of liquids which will be measured as the substitution of distilled water. Then do step 2 and step 3. When do step 3 again, you can take the reading where the boundary line of blue and white cross the graduated scale. The scale will provide a direct reading of the concentration.



As seen when looking into the instrument



Calibrate to "0"



Reading of Sample

## Warning-Maintenance

- 1 Accurate measurement depends on careful calibration. Follow the instructions above closely. Note:  
Shifts in ambient room temperature of the prism prior to measurement. The prism and sample must be at the same temperature for accurate results.
- 2 Do not expose the instrument to damp working conditions, and do not immerse the instrument in water.  
If the instrument becomes foggy, water has entered the body. Call a qualified service technician or contact your dealer.
- 3 Do not measure abrasive or corrosive chemicals with this instrument. They can damage the prism's coating.
- 4 Clean the instrument between each measurement using a soft, damp cloth. Failure to clean the prism on a regular basis will lead to inaccurate results and damage to the prism's coating.
- 5 This is an optical instrument. It requires careful handling and storage. Failure to do so can result in damage to the optical components and its basic structure. With care, this instrument will provide years of reliable service.