

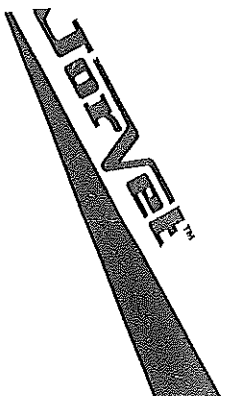
## PRECAUTIONS

1. Hold the hand refractometer between the thumb and four fingers of one hand and use the other hand for adjusting the eye piece and manipulating the sample. Do not hold the refractometer by enveloping the entire tube with the palm of the hand.
2. When the sample is severely turbid or colored, the field of vision darkens and the borderline may become unclear or completely disappear. In this case, it may be advantageous to use direct sunlight or other bright light.
3. The refractometer is an optical instrument; do not drop or abuse.
4. The prism has a relatively soft surface; care must be taken to avoid scratches.
5. After use, clean the prism surface and cover with a moist, soft cloth. Remove excess moisture with a dry cloth.

### DO NOT SUBMERGE OR HOLD UNDER RUNNING WATER

#### Return of items

Authorization must be obtained from our Customer Service Department before returning items for any reason. When applying for authorization, please include data regarding the reason the items are to be returned. For your protection, items must be *carefully packed* to prevent damage in shipment and *insured* against possible damage or loss. Jorgensen Laboratories, Inc. will not be responsible for damage resulting from careless or insufficient packing.



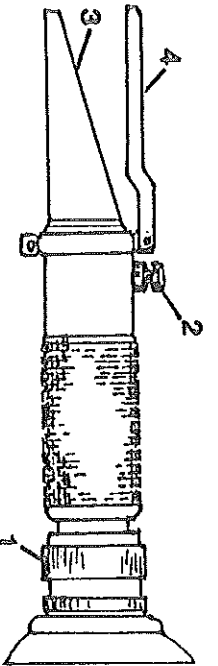
## Instruction Manual

### J-351

# Clinical Refractometer



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**REFER TO DIAGRAM**  
**DESCRIPTION**

1. **Eye-piece** - used to focus scale.
2. **Calibration Adjustment** - used to calibrate the instrument to distilled water, a known test liquid, or a glass test piece.
3. **Prism** - is the main prism on which the sample is placed.
4. **Cover (Secondary Prism)** - closes against the main prism insuring proper wetting on the prism and sample thickness.

**INTRODUCTION**

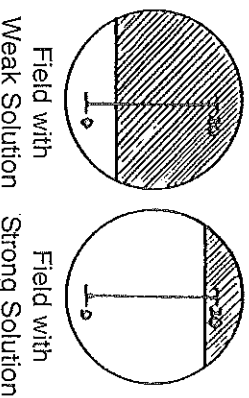
Clinical examinations, especially physiochemical examinations, have become indispensable for routine medical treatment. The results of such medical examinations should be obtained easily and quickly to keep up with the timing of medical treatment. Moreover, results should be reproducible irrespective of difference among individuals. Refractometric analysis is the method which best meets these requirements.

The concentration of a solution is related to its refractive index. Hence, a measurement of refractive index can be used to measure concentration. Jorgensen's Lab's clinical refractometers have been designed to use the index of refraction method for determining the total serum protein scale and/or the urine specific gravity scale.

**OPERATION**

**DO NOT SUBMERGE OR HOLD UNDER RUNNING WATER**

1. Make sure main prism (3) and cover (4) are clean. Clean with a soft, moist cloth; then dry thoroughly.
2. Lift cover (4) and place 1 or 2 drops of sample on the prism (3).
3. Gently close cover - avoid air bubbles between prism and cover.
4. While looking through the eyepiece (1) point the refractometer toward any convenient light source (lamp, skylight, etc.).
5. The scale(s) and borderline (see figure 1 below) should be visible.



6. Adjust the eyepiece (1) for the sharpest image possible.
7. Read the value at the point where the borderline crosses the desired scale.
8. Clean prism and cover immediately after use.

**CALIBRATION**

This instrument has been precalibrated at the factory. Place 1 or 2 drops of distilled water at room temperature on the prism. If the borderline does not coincide with 1,000 in urine s.g. scale, make the correction by rotating the scale adjusting screw/knob (2).