

# DISAPPEARING GLASS RODS

## MAINTENANCE INSTRUCTIONS

### GENERAL INFORMATION:

Disappearing Glass Rods lets you see the effect created by the different properties of two kinds of glass. A pyrex lens and a bundle of glass rods containing one flint glass and six pyrex rods, can be lowered into a tank of immersion oil. Because the pyrex rods are the same optical density as the oil, they bend light passing through them the same amount, all of the pyrex glass seems to disappear in the oil. The soda glass has a different optical density and so can still be seen in the oil.

### General Cleaning:

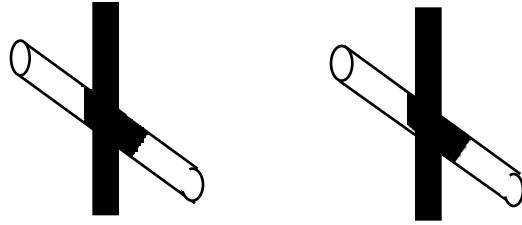
The finished or painted surfaces of the exhibit may be cleaned with a mild soap solution or general purpose cleaner. The Plexiglas panels should be cleaned with a plexi cleaner and a soft wipe that will not leave scratches, (we suggest Wype-All™).

### Bulb Replacement:

To change the light bulb, (F12T12), unlock the bottom panel. Replace the bulb through this opening.

### Oil Maintenance:

This exhibit uses "heavy" mineral oil. "Light" or "extra heavy" oil may be added to fine tune the oil for locations that may have different temperature environments. Start by adding "heavy" mineral oil until it is deep enough to immerse the rods. Leave enough room for more oil. Compare the tank with the diagram below to determine which oil to add. Keep track of the proportions by measuring the levels before and after adding oil. Maintaining this proportion, bring the oil level up to midway between the upper and lower excursions of the lens. It will take several hours for the oil to mix and for the temperature to stabilize. The temperature of the oil changes as the light fixture warms it. This affects the index of refraction. In the morning it may appear to be slightly high and by the end of the day it may be slightly low. After the oil mixes and the temperature stabilizes, perform the final oil filling.



Match to Pyrex:

Index low  
Add heavy oil

Index high  
Add light oil

Mechanism maintenance:

To change the rods or lens, open the top of the tank by removing the button head Allen screws. The glass rods push into the center armature and O-rings hold them in place. To remove the knob reduction unit loosen the two set screws and remove the knob, then remove the screws holding the drive to the rear part of the tank and the screws holding the front bushing to the front of the tank. Tilt the unit upward at the back and bring it out. The O-rings can be changed at this time, as can the lens or the rods.