A Stable Slit Lamp Mounting Device for 90 D Lens Use in Non-Contact Ophthalmoscopy

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Funduscopy examination has been augmented in several ways since the introduction of the slit lamp by Gullstrand in 1911. Development of 58.6 diopter concave and convex lenses for non-contact ophthalmoscopy was pioneered by Hruby and El Bayadi respectively. Recently, with the introduction of the Volk 90 diopter BIO Lens, indirect ophthalmoscopy at the slit lamp has become further simplified. This lens was introduced as a hand-held lens, but can also be mounted on a variety of slit lamps using the device shown in Figure 1. A 1" long piece of ¼" O.D. brass tubing (available in most hardware and hobby stores) is affixed to the lens flange with adhesive (hot glue or epoxy). A "T" shaped cut is placed in the tubing using a jeweler's or hobby saw, to allow crimping of the tubing end. By removing the masking devices from the fixation lights of Haag-Streit or Zeiss type slit lamps, one can mount the lens by friction fit over the fixation bulb's metal base.

Use of the lens is shown in Figure 2. The lens is brought approximately 1 cm from the cornea. The light source is aimed the way that it would be in Hruby lens examination. Upon examination one sees an inverted real image at a magnification which depends on that chosen on the slit lamp. The double aspheric lens allows an exceptional view of the posterior vitreous, and an arcade-to-arcade view of the posterior pole, even through a poorly dilated pupil (3 mm). The method described does not require contact with the cornea, thereby leaving the surface undisturbed for later observers or photography. Use of the mounting device frees one of the examiner's hands to hold the lids or position a fixation target. This mount also allows the lens to be used for wide field fundus photography with slit lamp cameras.

FIGURE 1: Tubing attached to lens flange via glue joint.

FIGURE 2: Lens in use on fixation light arm.

*Available from the Volk Optical Co., Mentor, Ohio.

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REFERENCE