

# OPTICAL ALIGNMENT PROCEDURE

## for Phase Single Annulus Outfit, No. 1206PPL

### for use with Series One-Ten and One-Twenty

## MICROSTAR® Microscopes

The 1206PPL Phase Outfit (Figure 1) has been designed for routine laboratory platelet counting and is used in conjunction with AO Phase Platelet Counting Chamber 1475 (Figure 2). Since phase chambers are thicker than normal specimen slides, an intermediate working distance annulus is provided as a part of the outfit. The 1206PPL is installed and aligned as part of the Model H110BU-PPL PHASE STAR® Microscope.

When adding phase equipment to AO Series One-Ten or One-Twenty MICROSTAR Microscopes, this setup procedure should be followed in detail. These instructions will also be of value when changes are made in condenser, annuli or objectives, since the alignment procedure remains the same. Refer to Figures 1 and 9 for component identification.

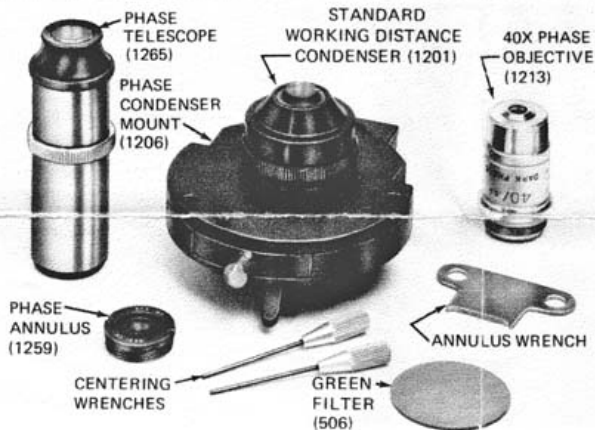


Figure 1. 1206 PPL Outfit

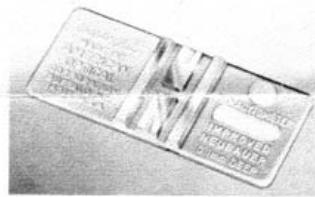


Figure 2. 1475 Phase Chamber  
(Not Included In Outfit)

1. Rack the condenser fork down by turning the condenser focusing knob. Remove brightfield condenser and mount. Screw the phase condenser on the single annulus mount and install on condenser fork. Make sure the screwhead on the rear of the mount snaps into the slot on the condenser fork (Figure 3). Tighten the knurled condenser centering screws enough to hold the condenser in place. Exact centering will be done later.
2. With the annulus out of the optical path (slide-way pulled out) focus on the chamber rulings with the phase objective. It may be necessary to reduce voltage and swing in the neutral density filter to see the specimen. Once the specimen is in focus, the coarse and fine adjustment should not be disturbed until the alignment procedure is completed.

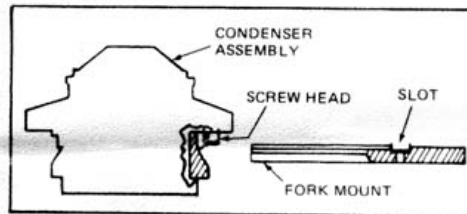


Figure 3

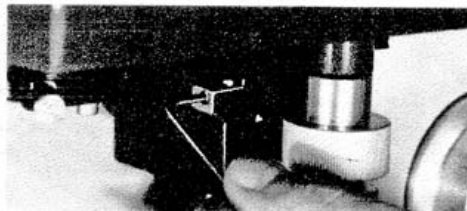


Figure 4. Condenser Stop Screw

- Using 5/64" Allen wrench, loosen condenser stop screw (Figure 4). Condenser stop will pop up.

Open the aperture diaphragm fully and close down the field diaphragm until iris leaves are in view. Since the field size of the 40X objective is comparatively small, a 10X or 20X brightfield objective is recommended for this condenser centering procedure.

- Focus the iris leaves with the substage condenser by turning the condenser focusing knob. This will set the condenser at the proper height.

Using the centering screws on the fork, center the field diaphragm in field of view. Open field diaphragm until leaves are just out of field of view. Tighten condenser stop screw.

- Make sure the 40X Phase Objective is returned into light path. Replace right eyepiece with the phase telescope (Figure 5). Focus the telescope so that the black diffraction ring of the objective is sharply defined (Figure 6).

- Push the condenser slideway in to place the annulus in the optical path. The black objective phase ring and the white ring of the annulus should be in view (Figure 7).

- Using the two centering wrenches provided, center the annulus so that the rings are concentric (Figure 8).

The entire optical system is now aligned. Remove the phase telescope and install the eyepiece. The specimen may now be viewed under phase contrast.



Figure 5. Focusing Telescope



Figure 6



Figure 7



Figure 8

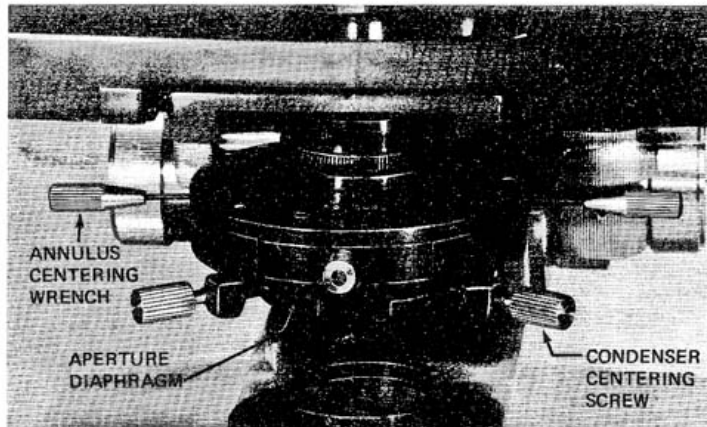


Figure 9