



INSTRUCTIONS FOR MODEL 926 PHASE CONTRAST SET

INTRODUCTION

Phase contrast microscopy provides a means to observe transparent specimens which are very difficult to observe under bright field illumination. Another advantage of phase microscopy is that it allows the user to observe living specimens that are usually destroyed by staining or fixing reagents. The phase turret control has five positions; one for standard brightfield illumination and four different annuli positions for phase contrast illumination.

I. COMPONENTS

- Plan 10X Ph/0.25 phase din objective.
- Plan 20X Ph/0.40 phase din objective.
- Plan 40X Ph/0.65 phase din objective.
- Plan 100X Ph/1.25 phase din objective.
- Five position 1.25NA Phase turret condenser.
 - Sleeve 37mm height 24mm
- Centering telescoping eyepiece
- Green filter, 45mm diameter
- Blue filter, 45mm diameter

II. ASSEMBLY

(A) Phase turret condenser:

- (1) Rotate coarse focusing knob to move microscope stage platform to its highest position.
- (2) Loosen knurled locking screw located on the side of microscope condenser mounting ring.
- (3) Insert phase turret condenser sleeve into condenser mounting ring.
- (4) Tighten knurled locking screw to secure phase turret condenser.

(B) Filters:

Insert filter into filter recess located at top of illuminator light house condenser lens.

- (1) Blue filter is utilized for brightfield observation.
- (2) Green filter is utilized for phase observation.

(C) Phase objectives

- (1) Rotate coarse focusing knob to move microscope stage platform to its highest position.
- (2) Remove objective dust caps from the revolving nosepiece.
- (3) Screw objectives lenses into nosepiece, making certain to mount them in consecutive order, 10x, 20x, 40x, and 100x.

III. Operation

(A) Rotate condenser focusing control knob to move phase turret condenser to the top of its travel.

Continued page 2.....

INSTRUCTIONS FOR MODEL 926 PHASE CONTRAST SET

Page 2.

- (B) Rotate phase turret annuli control until the letters BF (brightfield) can be seen at front of phase turret condenser assembly. BF opening must click into locked position to insure proper centering.
- (C) Rotate revolving nosepiece to position 10X Ph/0.25 phase objective into optical path.
- (D) Place standard specimen slide (cover slip up) on top of stage surface.
- (E) Adjust microscope focus controls until specimen is in sharp focus.
- (F) Remove eyepiece from eyepiece tube, if binocular version remove one of the two eyepieces.
- (G) Install centering telescope eyepiece into eyepiece tube.
- (H) Loosen knurled locking screw located on side of centering telescope eyepiece.
- (I) Hold knurled locking screw with one hand, grasp very top of centering telescope eyepiece with other hand, peer through eyepiece while sliding sleeve up until the phase ring in the objective is in focus (sleeve is approximately 1" up from knurled locking screw).
- (J) Tighten eyepiece knurled locking screw.
- (K) Rotate the phase turret annuli control until the number 10 can be seen at front of phase turret condenser assembly. Annuli must click into position to assure proper centering.
- (L) Using condenser focusing control knob, focus the bright annuli ring located in phase turret annulus condenser.
- (M) Observe the two rings in the field of view.
 - (1) The dark larger annulus ring is located in the objective lens
 - (2) The bright smaller annulus is located in the phase turret condenser.
- (M) Centering of the annuli:
 - (1) Depress the two knurled head centering screws that extend out from each side of phase turret condenser assembly until they engage the hex socket screws of annuli centering mechanism.
 - (2) While keeping the two centering screws depressed, look through the centering telescope and observe rings located in objective and phase turret condenser. Rotate the centering screws in or out, moving image of the smaller bright annulus ring annuli located in phase turret condenser until it is centered to the larger dark annulus located in the objective. Both rings must be concentric to each other to achieve maximum performance. Make sure that the knurled head centering screws are disengaged from the hex socket screws of annuli centering mechanism and in the "out" position before rotating phase turret condenser.
 - (3) Repeat above steps with the 20x, 40x and 100x phase objectives, making sure to position the corresponding annuli of phase turret condenser to matching objective indexed in optical path. (Plan 10Ph/0.25 matched to the number 10 on rotating phase turret condenser.)

Continued page 3

INSTRUCTIONS FOR MODEL 926 PHASE CONTRAST SET

Page 3.

- (4) It will be necessary to focus the telescoping eyepiece and phase turret condenser with each objective lens.
 - (5) When you have adjusted all 4 annuli to their respective objective lenses remove centering telescope from eyepiece tube and install eyepiece.
 - (6) Microscope is now ready for use.
- (O) The phase objectives will work well as standard bright field objective lenses. To view in bright field, simply position the 0 position to the front of condenser turret and adjust condenser and iris diaphragm for standard use.

Copyright 2005, National Optical