

User Manual

Phase Contrast Kit

Model A1PHB1



[MicroscopeNet.com](http://MicroscopeNet.com)

## i Caution

1. Keep the phase contrast kit out of direct sunlight, high temperature or humidity, and dusty environments. Ensure that the microscope is located on a smooth, level and firm surface.
2. Do not attempt to disassemble any components, such as telescope, objectives or condenser.
3. Keep the components clean; remove dirt and debris regularly. Accumulated dirt on metal surfaces should be cleaned with a damp cloth. More persistent dirt should be removed using a mild soap solution. **Do not use organic solvents for cleansing.**
4. The outer surface of the optics should be inspected and cleaned periodically using an air stream from an air bulb. If dirt remains on the optical surface, use a soft cloth or cotton swab dampened with a lens cleaning solution (available at most of the camera stores). All optical lenses should be swabbed using a circular motion. A small amount of absorbent cotton wound on the end of a tapered stick makes a useful tool for cleaning recessed optical surfaces. Avoid using an excessive amount of solvents as this may cause problems with optical coatings or cemented optics or the flowing solvent may pick up grease making cleaning more difficult.
5. Store the instrument in a cool, dry environment. Put the kit back to the storage box when not in use.

## 1 Parts Illustration



Fig. 1

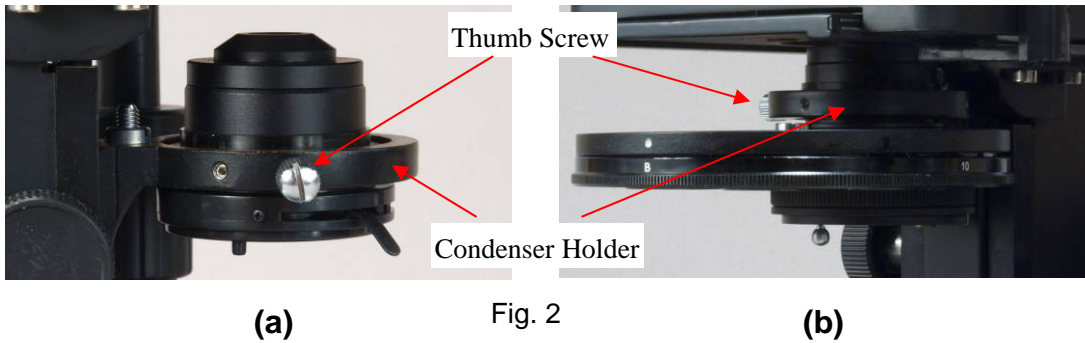
- |                             |                         |                      |
|-----------------------------|-------------------------|----------------------|
| 1. Green Filter             | 3. Centering Telescope* | 5. Annular Ring Disk |
| 2. Phase Contrast Objective | 4. Condenser            |                      |

\* The centering telescope may be in a different color from the one shown in the picture

## 2 Installation & Operation

### 2.1 Install the Phase Contrast Kit

- 1) Replace the bright field objective(s) on nosepiece with the phase contrast objective(s) (1).



- 2) Loosen the thumb screw in Fig.2 (a); take off the conventional condenser from the holder.
- 3) Insert the phase contrast condenser into the condenser holder as shown in Fig.2 (b) and tighten the thumb screw.

**Note:** there are 4 phase contrast objectives: 10X, 20X, 40X and 100X, and there are 5 positions on the annular ring disk (5): 10, 20, 40, 100 and B. The 10, 20, 40 and 100 mean the annular ring which has to work with corresponding objective, i.e., **10X** phase contrast objective must work with **10** condenser annular ring, and so on.

### 2.2 Centering the condenser ring plate

- 1) Connect the power cord to the microscope and insert the plug into a power outlet.
- 2) Turn the desired phase contrast objective into light path. Turn the annular ring disk to the required annular ring corresponding to the phase contrast objective in the light path.
- 3) Remove one eyepiece from the microscope eyepiece tube and insert the centering telescope (3) as shown in Fig. 3.
- 4) Observe from the telescope. The bright ring and dark ring should be coincided with each other as shown in Fig.4 (d).
- 5) If the ring images are not clear, turn the top of telescope until both ring images are in focus.
- 6) If the bright ring is still obscure as in Fig.4 (b),



Fig 3

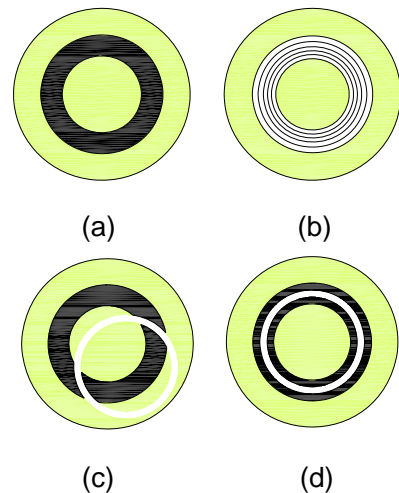


Fig. 4

adjust the condenser focusing knob.

- 7) If the two ring images are not coincided as shown in Fig.4 (c), hold the ring plate from the bottom of the annular ring disk and adjust its position till two ring images are coincided.
- 8) Remove the centering telescope (3) and replace the eyepiece.

**2.3 Perform the phase contrast observation**

After centering the condenser ring plate, perform the phase contrast observation the same way as a normal bright field microscope.

**Note:** when change to another phase contrast objective and corresponding condenser ring plate, the focusing and centering of bright ring and dark ring should be repeated following the procedures from 2.2-2) to 2.2-8).

**Tips:**

- 1. Make the illumination as bright as possible.
- 2. The thinner the specimen, the better the image.
- 3. Turn the annular ring disk to the “B” position, the phase contrast condenser will work as a conventional bright field condenser.

**3 Specifications**

Model	A1PHB1
Phase Contrast Objective	Plan phase contrast 10X/0.25, 160/0.17 Plan phase contrast 20X/0.40, 160/0.17 Plan phase contrast 40X/0.65, 160/0.17 Plan phase contrast 100X/1.25, 160/0.17, Oil
Condenser with annular ring plates	NA1.25, five positions: 10 for 10X phase contrast objective 20 for 20X phase contrast objective 40 for 40X phase contrast objective 100 for 100X phase contrast objective B for bright field observation, with iris diaphragm
Centering Telescope	Focusing adjustable