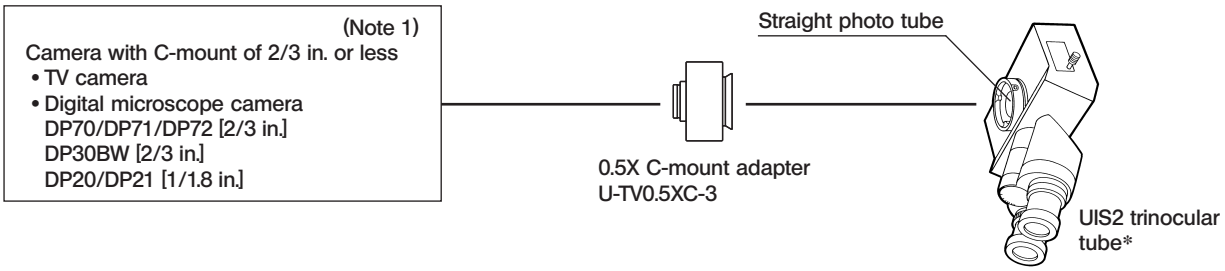
Instructions for the Low-Magnification C-Mount Adapter U-TV0.5XC-3

The U-TV0.5XC-3 is a low-magnification TV adapter with C-mount which allows a digital imaging device such as a digital TV camera to capture wide-angle images. Use of telecentric optics helps reduce the occurrence of light deficiency in the peripheral sections.
In addition, the transmittance at the infrared frequency band is increased to 1,000 nm.

1 System Diagram



*** This product can be mounted on the straight photo tube of a UIS2 (UIS) trinocular tube (U-TR30-2, U-TR30NIR, U-SWTR-3, etc.) or the side port of the IX81/71/51 microscope.**

Note 1) Restrictions on the camera

- A camera cannot be used if its C-mount surface is located below the camera body surface.
- A camera may get in the way of the microscope operation if its lateral size from the optical axis exceeds 68 mm.
- If the camera uses a larger CCD than specified, the image may lack brightness in the peripheral areas or a part of image may be cut off.
- If the camera has high sensitivity or is not provided with the auto light control, the monitored image may become whitish. Should this happen, lower the light intensity level of the microscope.

Note 2) When disposing of the adapter. Check the regulations and rules of your local government and be sure to observe them.

2 Assembly

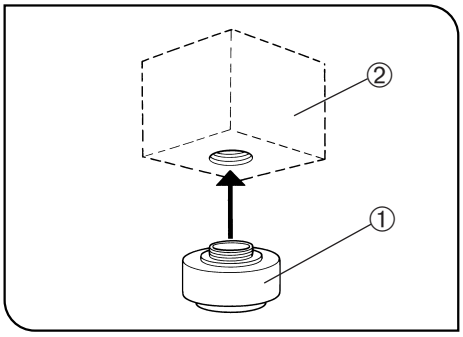


Fig. 1

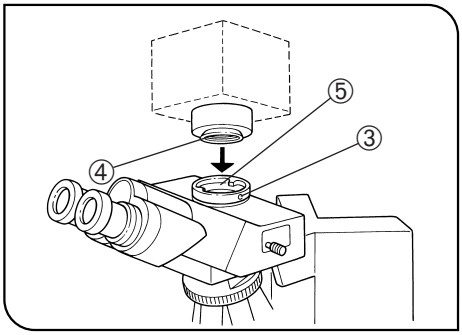


Fig. 2

1. Attach the C-mount adapter ① to the C-mount TV camera ② by screwing firmly. (Fig. 1)
2. Using the Allen screwdriver provided with the microscope, loosen the straight photo tube clamping screw ③, then fit the mount dovetail ④ of the C-mount adapter into the straight photo tube mount ⑤ of the trinocular tube. (Fig. 2)

★ For convenient confocality adjustment, set the C-mount adapter so that the LOCK and FOCUS screws face sideways.

3. Tighten the clamping screw ③ firmly. (Fig. 2)

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3 Operation

Adjusting the Microscope

1. Turn on the microscope light source and adjust the required points of the microscope to make it ready for observation.
2. Set the light path of the UIS trinocular tube to the TV light path.

Adjusting the TV Camera and Monitor

Perform the adjustments such as color adjustment by referring to the instruction manuals of your TV camera and monitor.

★**The center of eyepiece and that of the monitor may not coincide correctly. This is a function of the CCD adjustment mechanism of the TV camera, not a malfunction.**

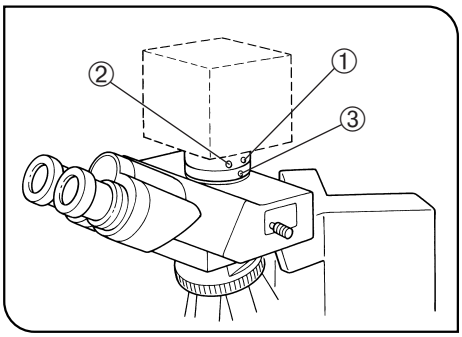


Fig. 3

Adjusting the Confocality Between the Observed Image and Monitored Image (Fig. 3)

◎The confocality adjustment requires the Allen screwdriver provided with the microscope.

★**The confocality adjustment range is ±0.8 mm. If the adjustment of the adapter is not enough, please also adjust the focusing feature of the TV camera.**
If the correct confocality cannot still be obtained, use another TV camera.

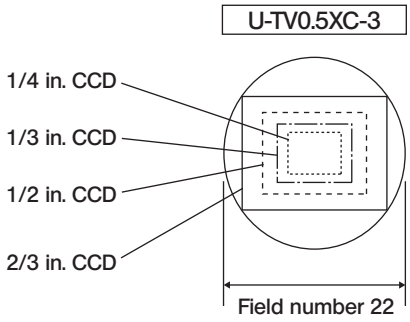
1. Look into the eyepiece and bring the specimen into focus.
2. Set the TV light path and switch to the monitor image.
3. Loosen the confocality adjustment screw (LOCK) ① using the Allen screwdriver.
4. While observing the monitor image, adjust focus by turning the confocality adjustment screw (FOCUS) ② slowly using the Allen screwdriver.
5. When correct focusing is obtained, tighten the LOCK screw ① using the Allen screwdriver.

Rotating the Camera (Fig. 3)

Loosen the straight photo tube clamping screw ③.
Rotate the TV camera and tighten the straight photo tube clamping screw ③ firmly.

4 Imaging Field Areas

◎The following diagrams show the imaging field areas, which are determined by the field of view of the eyepiece (field number 22) and the size of the CCD seen through the C-mount adapter.



$$\text{Magnification on monitor} = \text{Objective magnification} \times \text{C-mount adapter magnification (0.5X)} \times \frac{\text{Monitor diagonal length*}}{\text{CCD diagonal length*}}$$

* Differs depending on the manufacturer.
CCD reference: 1 in. TV camera → 16.16 mm, 2/3 in. → 11 mm, 1/2 in. → 8.08 mm, 1/3 in. → 6 mm, 1/4 in. → 4 mm

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