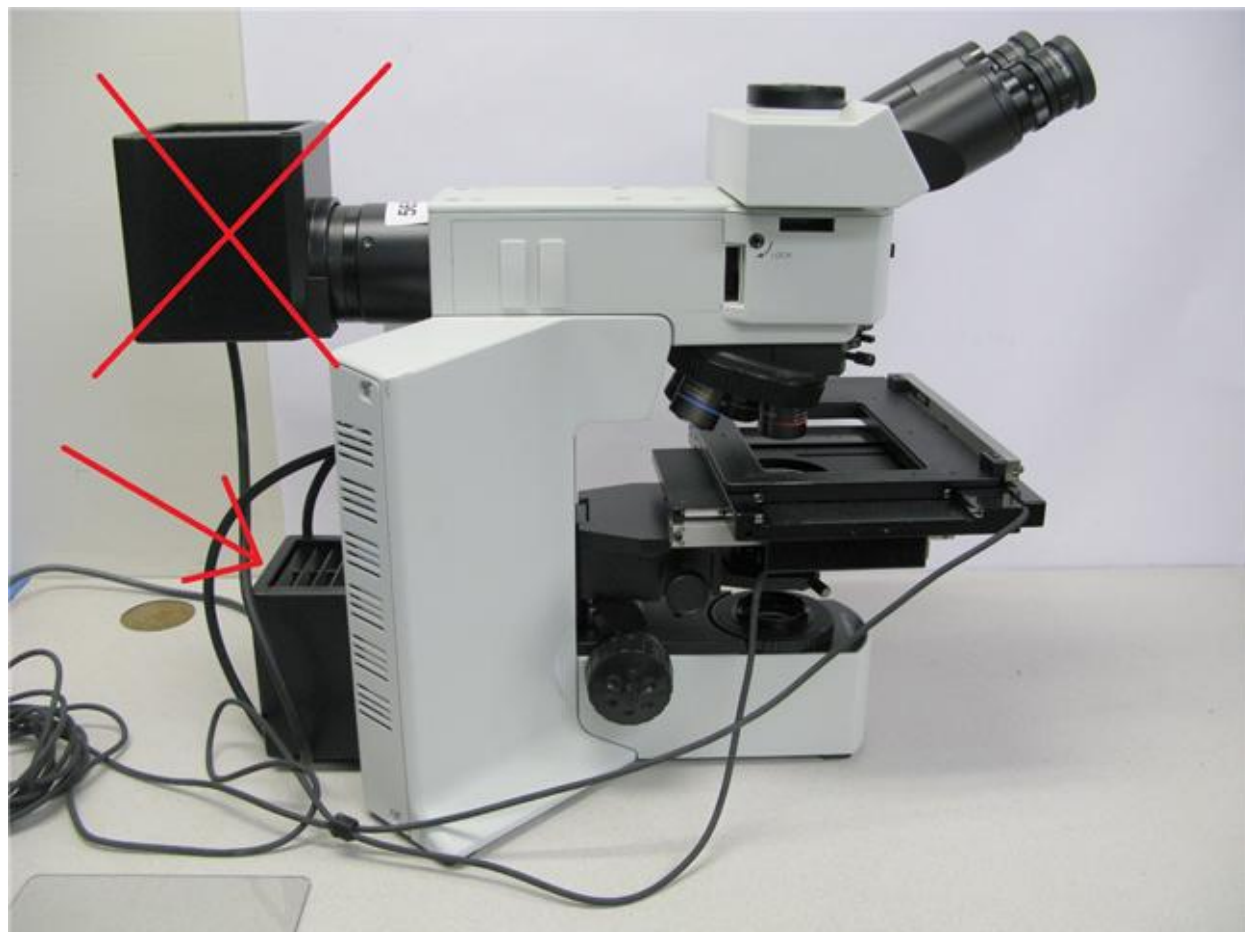


# Nanodyne Replacement for Olympus BX51-61 Bottom Illuminator Installation Instructions

Refer to the photos below to verify that you need the Olympus BX51-61 Bottom Illuminator. If you need the top illuminator you need to purchase PN 10401 Olympus BX50-51-60-61 Top Illuminator Full System.



PN 10413 described in this document is for replacing the lower illuminator identified by arrows in the above pictures.

The power switch, photo pre-set and intensity bar graph of the original unit are left in place, but are obsolete and not used. (BX51 shown, also for BX61)

**Important Note 1:** This illuminator is intended to replace halogen (white light) illuminators. It is NOT intended as a replacement for mercury vapor (UV) lamps used for fluorescence.

**Important Note 2:** The photos shown on the following pages were taken using stripped down boneyard microscopes. Parts missing from the photos do not necessarily indicate that they should be removed.

**READ THE INSTRUCTIONS.**

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# Nanodyne Replacement for Olympus BX51-61 Bottom Illuminator Installation Instructions: Included Items

## Additional Items Included But Not Shown:

PN 10456 Hex Key 1.5mm (for microscope knob)  
 PN 10697 Cable Ties.

PN 10407 BX50-51 Bottom illuminator Assy

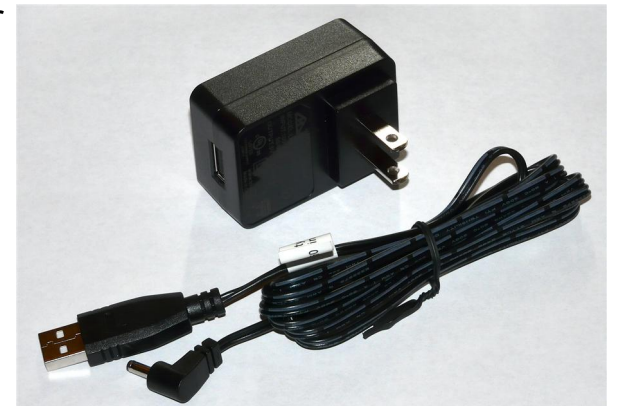


PN 11170 Pot-Cable Assy  
 (detabbed & shaft cut 5mm, 15 inch long)



3M VHB tape to secure pot cable

The illuminator may be powered by plugging the cable into the power supply provided, or into a suitable USB port on a computer or other device.



PN 11163 Power Supply 5V 2.1A and  
 PN 10734 Power Cable 1.35mm ID  
 3.5mm OD x USB A 6 ft.



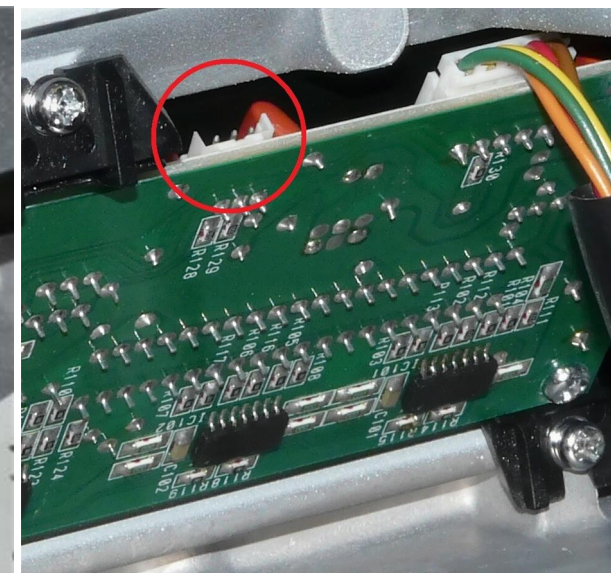
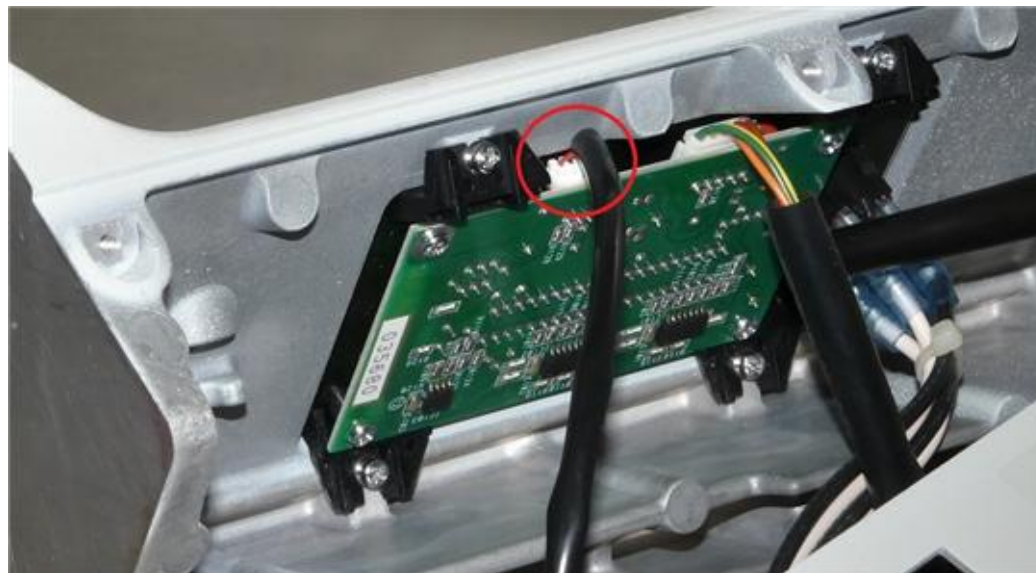
PN 10736 Rubber plug to block unused  
 AC power receptacle.

Power supplies are subject to change  
 due to availability and regulations.

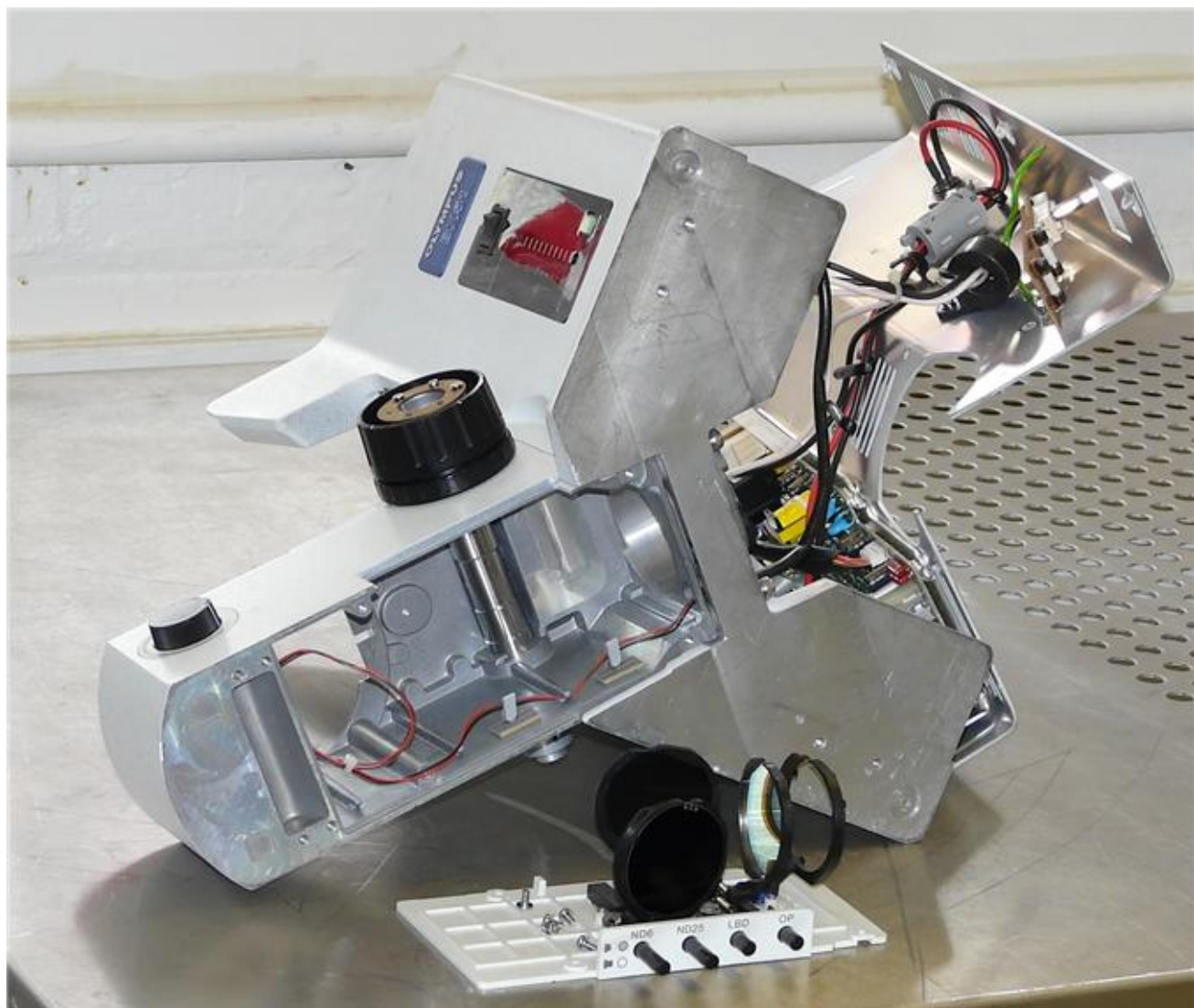
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Nanodyne Replacement for Olympus BX51-61 Bottom Illuminator Installation Instructions: Step 1. Remove OEM Lamp, Covers, Disconnect OEM Intensity Control Pot.

(1) Remove the original illuminator from the microscope.  
  
(an older version of our system used the original collector lens from the microscope, but we now use our own collector lens. This makes the installation much simpler)



(3) Remove the intensity adjust cable from the PCB as shown above.



(4) Remove the knob from the adjustment pot using the 1.5mm hex key. Then remove the nut holding the pot with an 11mm socket. Remove the pot and the attached cable. (It is not necessary to remove the cable from the pot.)

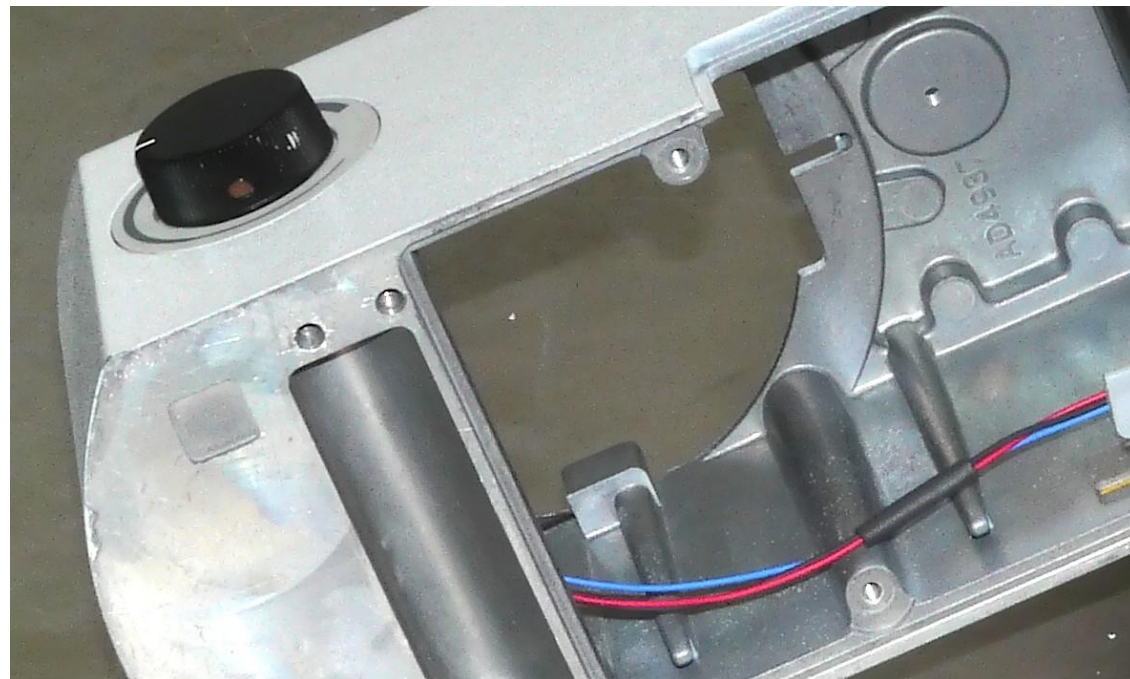
(2) Remove the back and bottom cover of the microscope.

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Nanodyne Replacement for Olympus BX51-61 Bottom Illuminator Installation Instructions: Step 2. Install New Intensity Control Pot and Route Pot Cable.



**(1)** Install the new pot using a 10mm socket to secure the nut. Do not use a washer (there will not be enough thread to properly secure the nut). Route the cable out through the hole in the back of the microscope and secure with the restraint tabs of the microscope as shown above.



**(2)** Install the knob from the old pot on the new one. Be sure the knob is lifted up slightly so the set screw clamps on the flat of the shaft, to ensure a secure connection.

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Nanodyne Replacement for Olympus BX51-61 Bottom Illuminator Installation Instructions: Step 3. Remove Obsolete AC Wiring For Electrical Safety.

**NOTE - If you have an original halogen top illuminator you are not replacing, be sure you are not removing its power source. The instructions below may need to be modified. Contact us if in doubt.**

The original 120/220VAC powered illuminator circuitry is completely obsoleted by the Nanodyne equipment which is powered by a universal input wall plug power supply with low voltage DC output.

We recommend completely removing the original power supply circuitry to eliminate any possibility of an electrical or fire hazard in case someone mistakenly connects AC power to the microscope in the future.

For the BX51-61, the AC power can be disconnected by unplugging the connector from the small printed circuit board attached to the AC input receptacle (which was removed before we got the microscope) See photo at right.

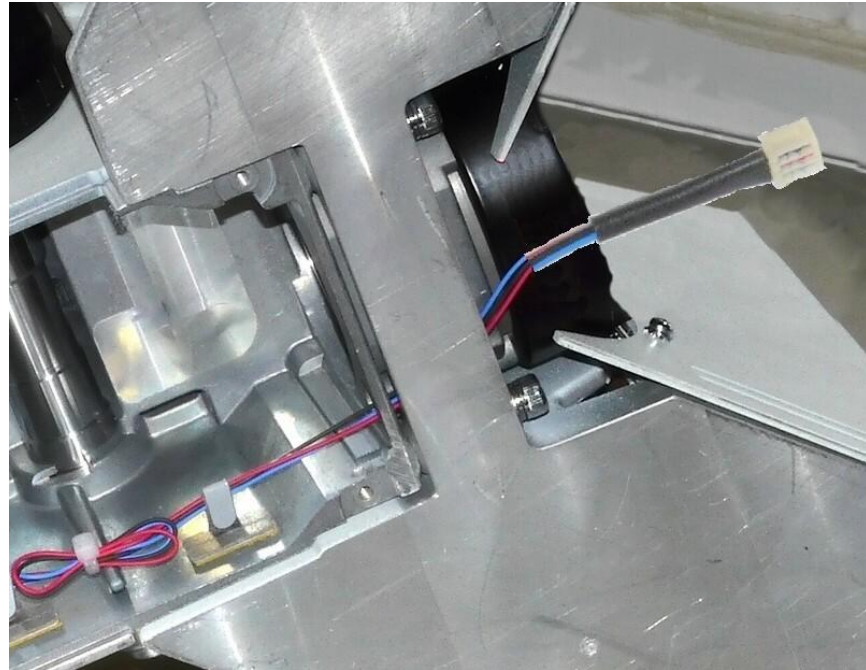


(1) Inside view of obsolete AC power input for BX51-61. (The AC input receptacle which would be mounted in the empty circled hole had been removed before we received the microscope) Remove AC power lead connection by disconnecting the socket indicated by the arrow above.



(2) Installing PN 10736 rubber plug in AC receptacle to deter connection of obsolete AC power.

Nanodyne Replacement for Olympus BX51-61 Bottom Illuminator Installation Instructions: Step 4. Replace Back Cover, Install Illuminator, Connect Pot Cable.



(1) Replace the back cover. Then route the pot cable out the back as shown. (The cable tie shown in the bottom left corner of photo is used later.)

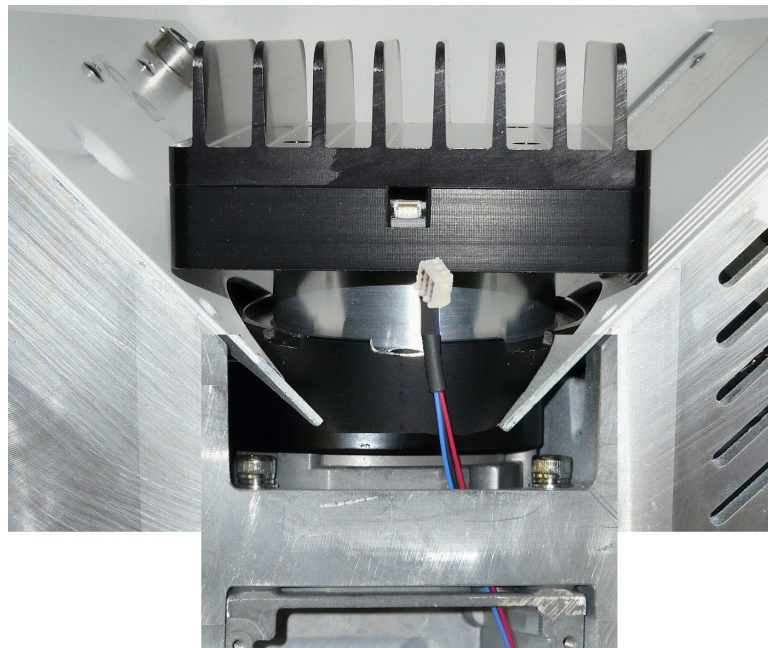


(2) Place the spacer in the port. To keep it in place, either tilt the microscope or the spacer so it doesn't fall out. The spacer shown here is aluminum but yours may be a different material. (photos are a BX50)

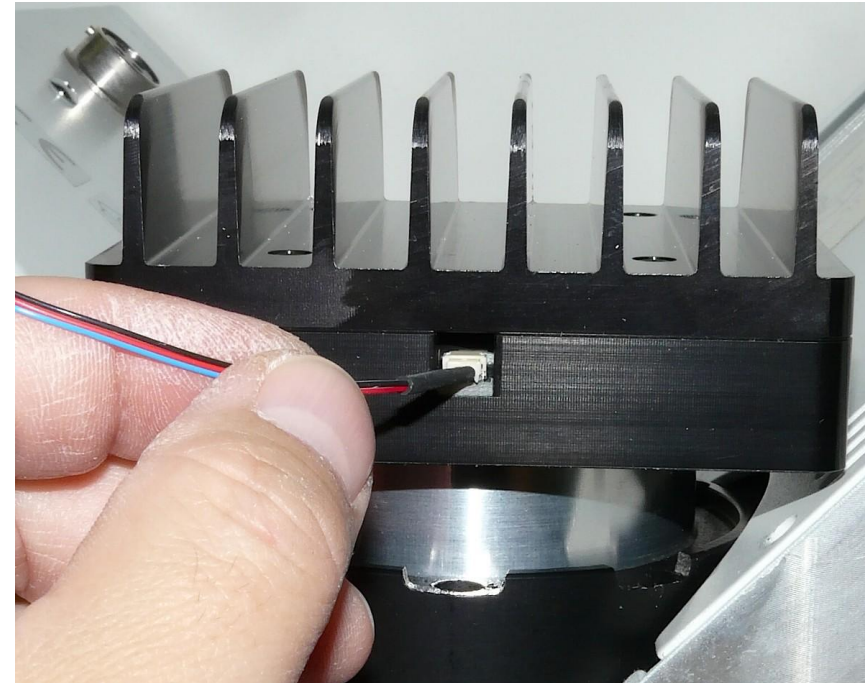


(3) Insert the illuminator into the microscope port and secure it the same way as the original. Keep it pressed firmly in place until the microscope screw has secured it, to ensure good alignment. (The photo is a BX50. For the BX51-61 the pot cable should be coming out under the illuminator.)

**NOTE - The power cable must be plugged into the illuminator before it is mounted. It will not fit after.**



(4) The adjustment pot cable plugs into the connector at the bottom of the illuminator.



(5) The connector is keyed to only fit one way. See the next sheet for detailed instructions to be sure it is properly engaged.

(6) (No photo) Secure the cable to the bottom of the illuminator with the red tape provided (shown on sheet 2). Loop the cable as shown in the first photo and secure with a cable tie to take up any extra slack.

If you ever need to remove the cable, just firmly grab all 3 wires and pull it straight out. the connector is tougher than it looks.

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Nanodyne Replacement for Olympus BX51-61 Bottom Illuminator Installation Instructions: Step 6 (continued). Connect Pot Cable (detail).

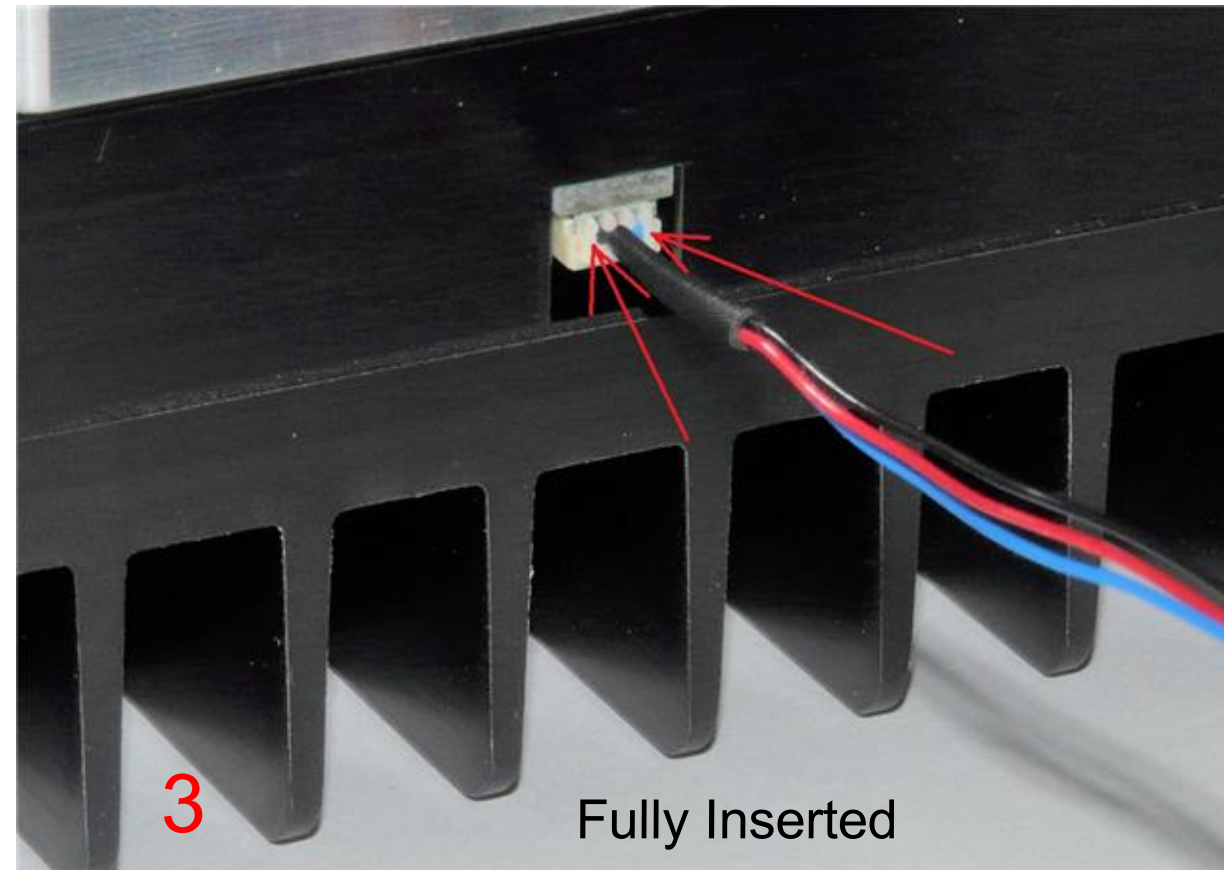
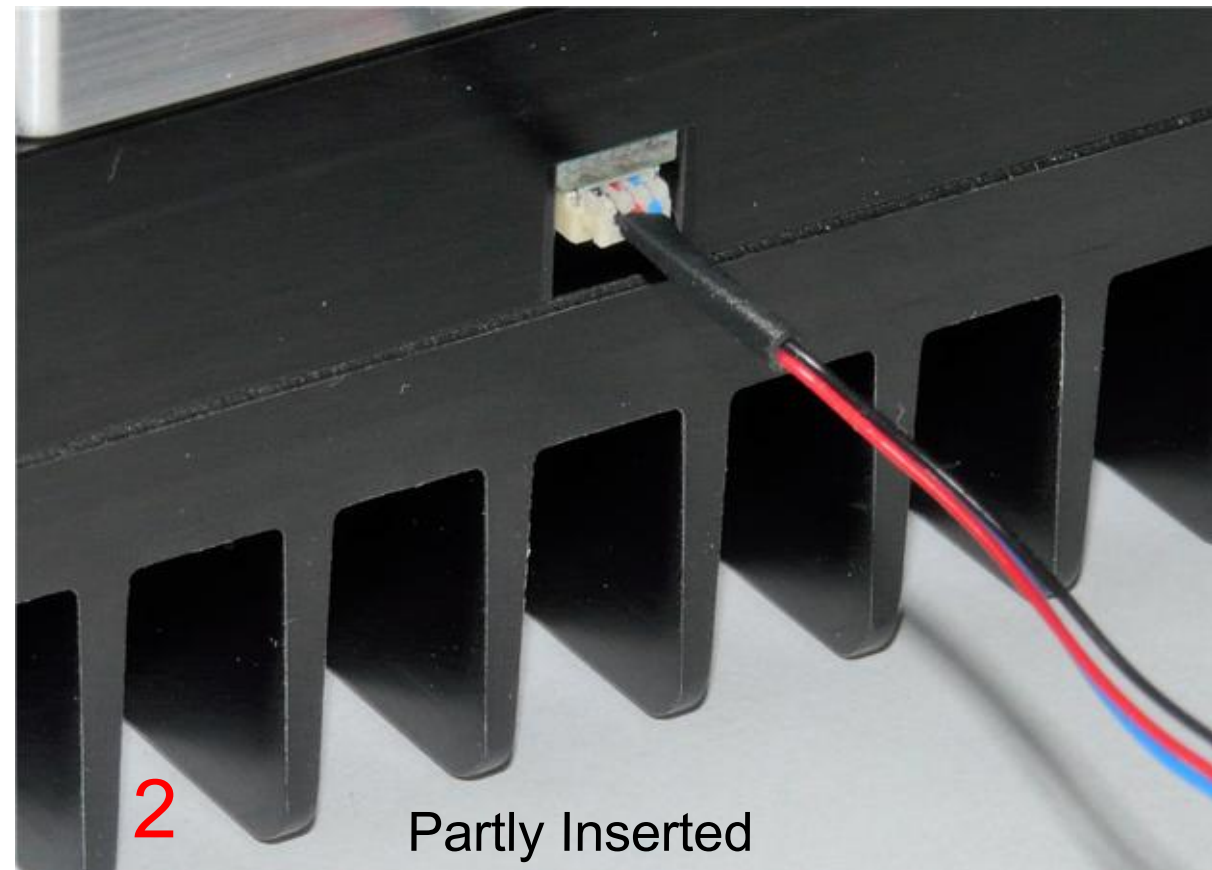
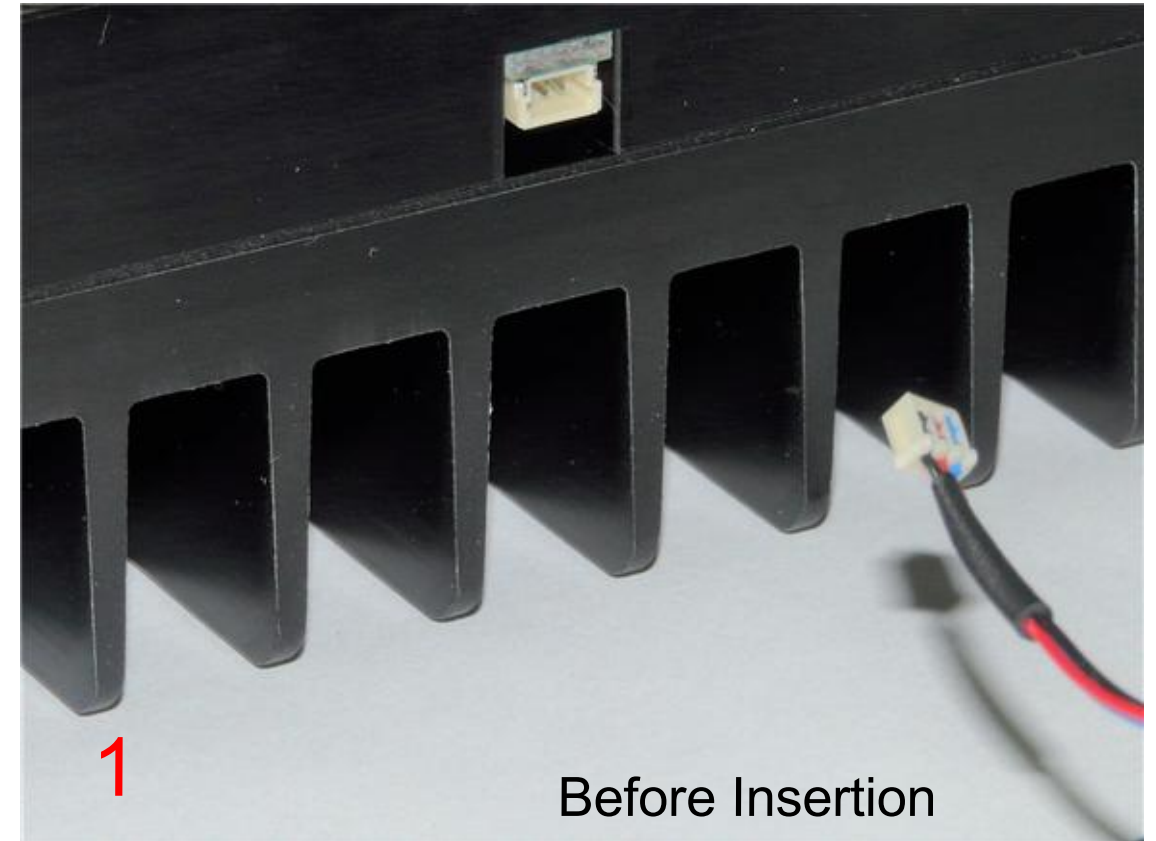
Connect the plug at the end of the Pot Cable Assembly to the mating socket of the illuminator, as shown in the pictures on this page. NOTE THAT THE PLUG IS KEYED TO ONLY GO INTO THE SOCKET ONE WAY, AS SHOWN.

Partially insert the plug into the mating socket of the illuminator by holding the wire next to the plug with your finger (photo 2).

Use your fingernails, if you have them, or tools like a tiny screwdriver or tweezers pushing on the side of the plug to fully insert it (photo 3).

The socket cannot be fully engaged by pushing on the wires, as the wires would just collapse.

To disconnect it if needed, pull the wire straight out by firmly gripping the black heat shrink tubing.



Nanodyne Replacement for Olympus BX51-61 Bottom Illuminator Installation Instructions: Step 5. Replace Bottom Cover, Connect Power Supply - Installation Complete.



NOTE - This photo shows an older version of the illuminator. From October 2019 your illuminator will mount closer to the microscope.

(1) Replace the bottom cover of the microscope.

(2) Connect the USB end of the power cable to the power supply. Connect the power supply to an AC outlet. The unit is now ready to operate.

(You should have already connected the power cable to the illuminator as described on sheet 6)

All control is done by the potentiometer. The unit is fully off when the knob is turned counter clock wise. There is no on/off switch.

This is done to increase reliability, as on/off switches often fail sooner than potentiometers. Many of our units provide a tactile click detent in the off position to re-assure the operator that it is off, but the detent has no electrical function.

Note that the microscope in the photo is missing its standoff feet (as well as many other parts). With a complete microscope the illuminator will not be in contact with the table.

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