FZ12 Microscope User's Manual

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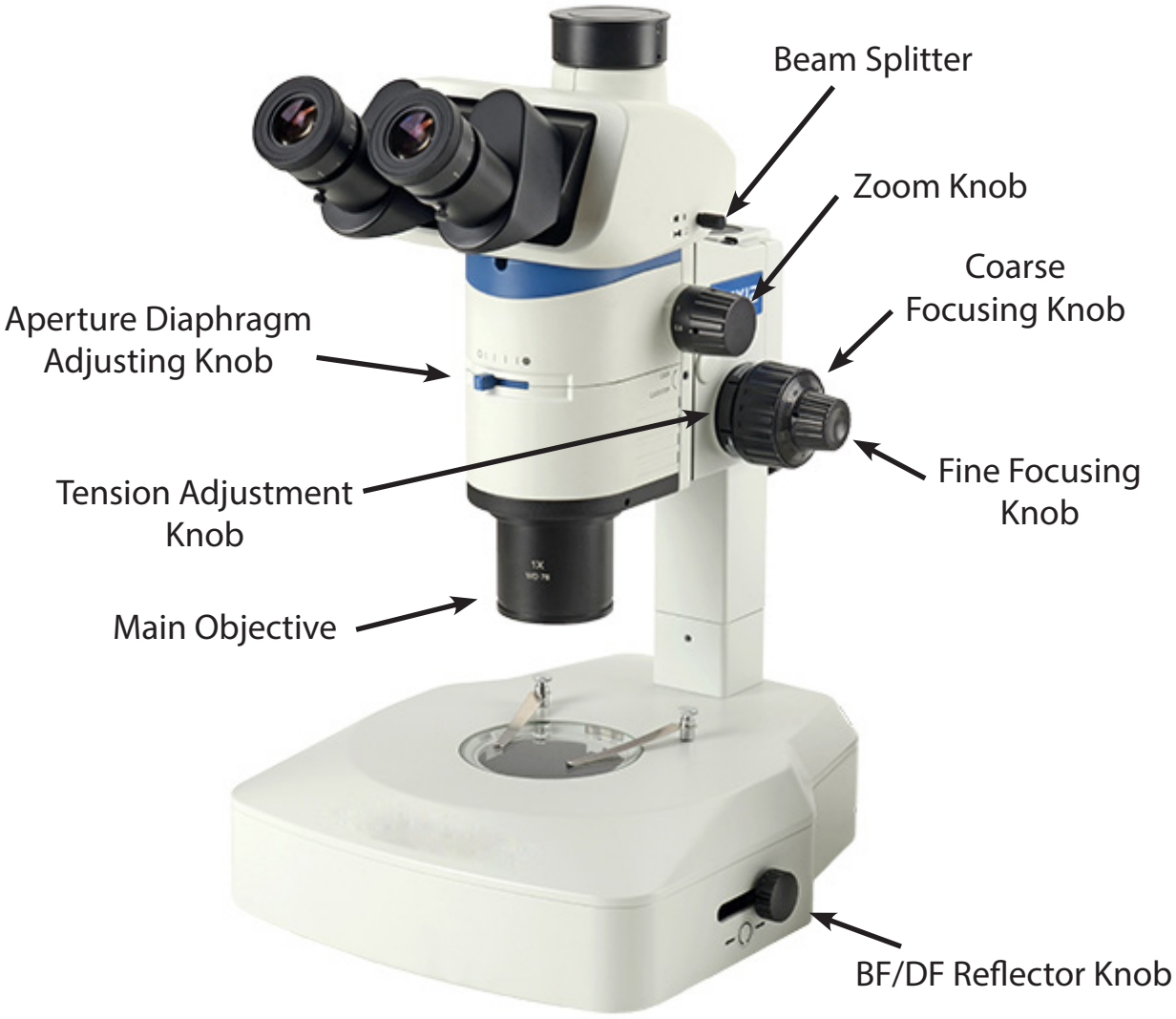
FZ12 Microscope Components

FZ12-BFDF



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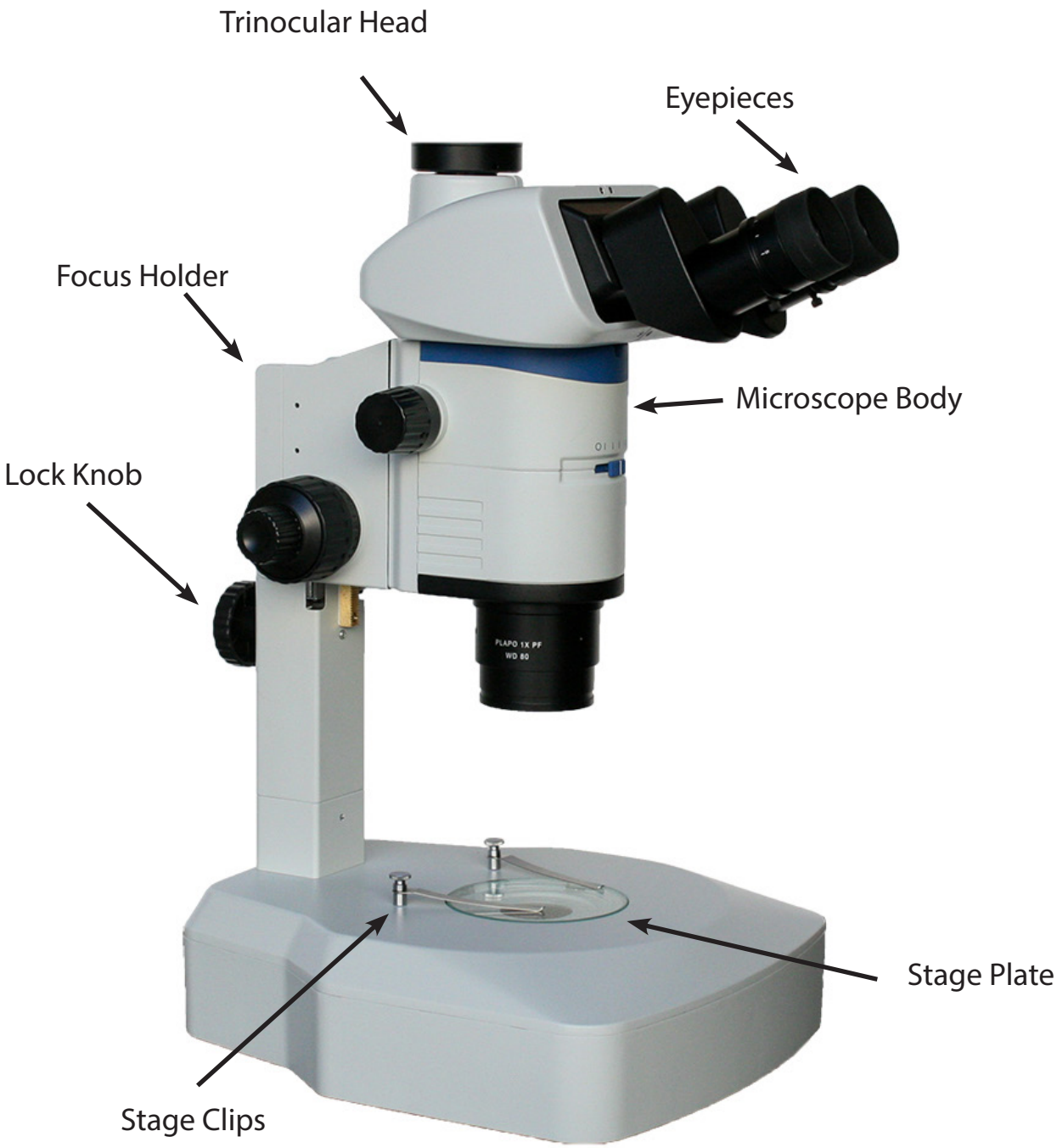

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FZ12-ILB

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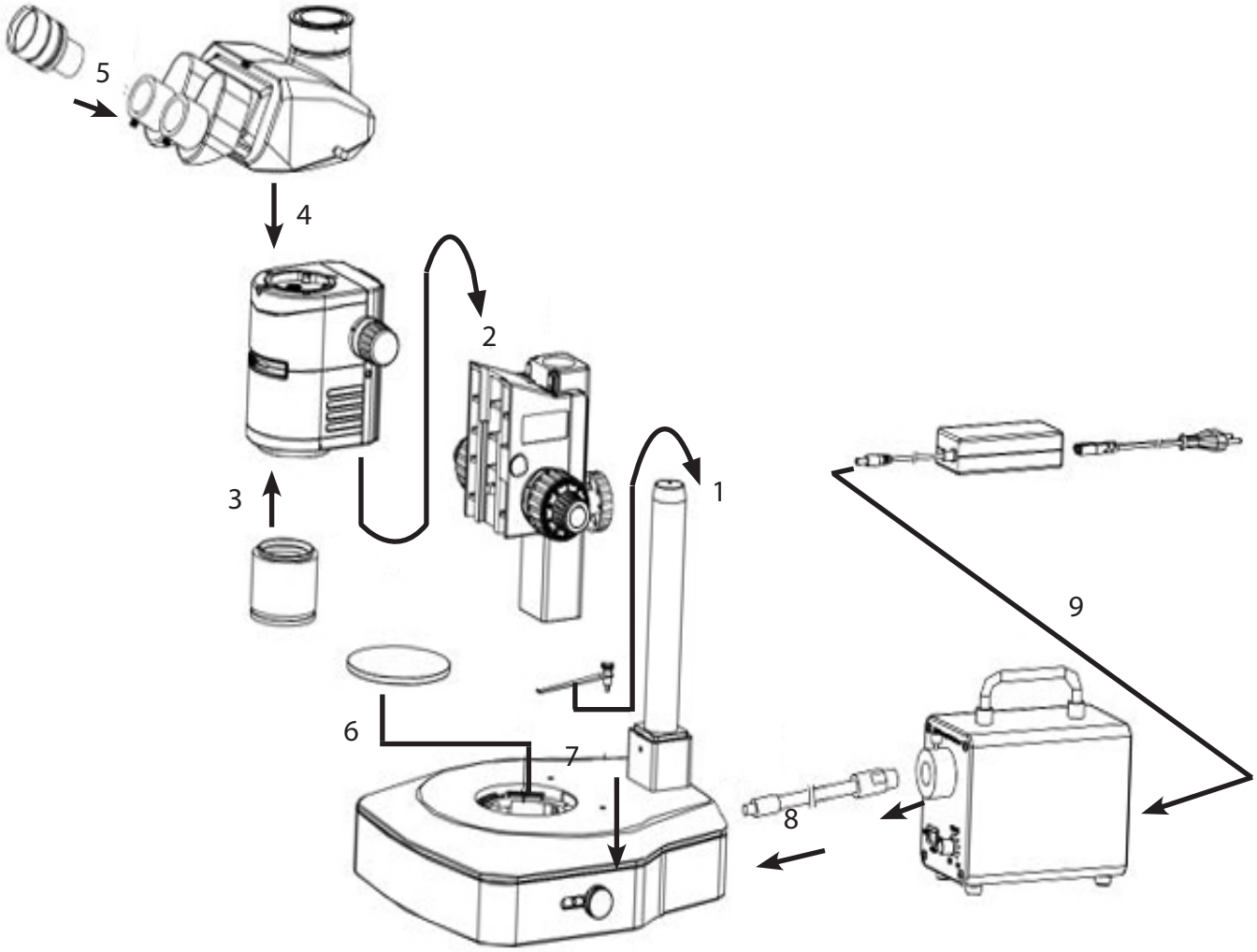
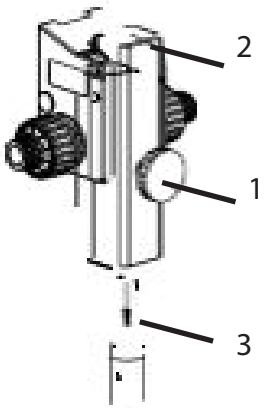
FZ12 Microscope Assembly

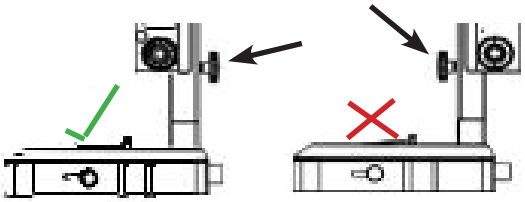




Assemble the Focusing Bracket

Loosen the lock knob (1) of the focusing bracket group. Insert the hole (2) of focusing bracket group into the column (3), until the focusing bracket group is in the lowest position. Then tighten the lock knob (1) to prevent the microscope from turning.

Ensure the focusing bracket is assembled correctly to prevent the microscope from tipping over.



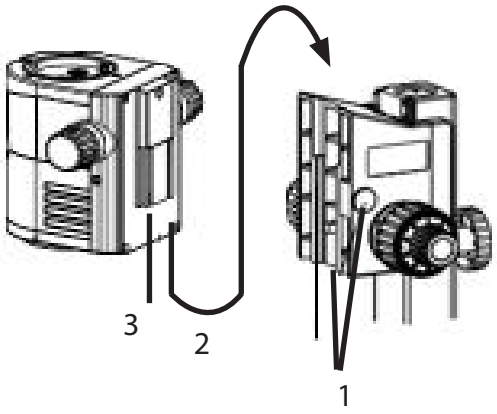
Assemble the Microscope Body

Remove the decorative cover (1) of the focus bracket. Loosen the M4 inner hexagon screw with a M4 inner hexagon Allen key.

Match the dovetail interface (3) of the microscope body with the dovetail groove (2) of the focus bracket group, and insert it from top to bottom in the direction as shown in the figure.

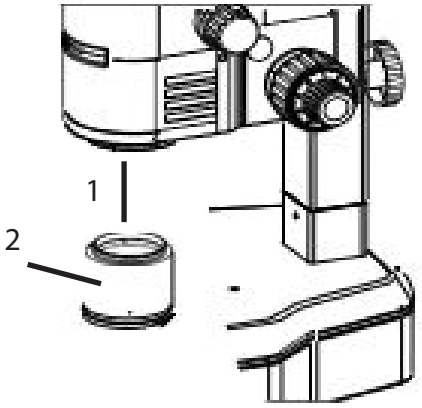
Tighten the M4 inner hexagon screw on the focus bracket group with a M4 inner hexagon Allen key.

Replace the decorative cover (1).



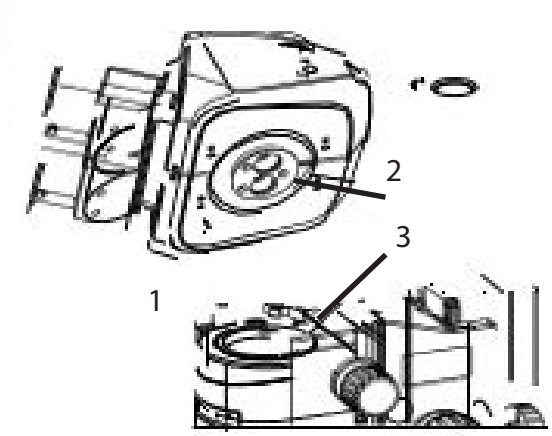
Assemble the Objective

Attach the objective (2) into the bottom of the microscope body (1) by rotating the objective until objective is fully installed.



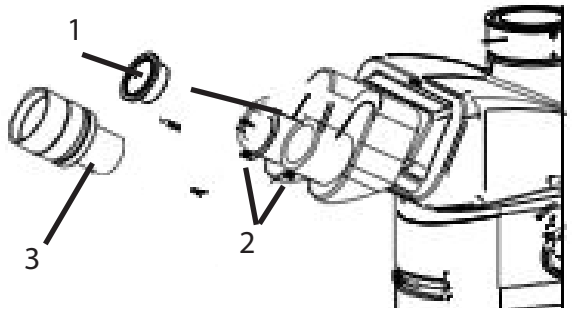
Assemble the Microscope Head

Loosen the head set screw (1) fully with a M4 inner hexagon Allen key.
With the microscope head facing forward, insert the bottom of the microscope head into the top hole of the microscope body matching the orientation groove (2) with the orientation pin (3) of the body.
Secure the microscope head to the microscope body with the set screw.



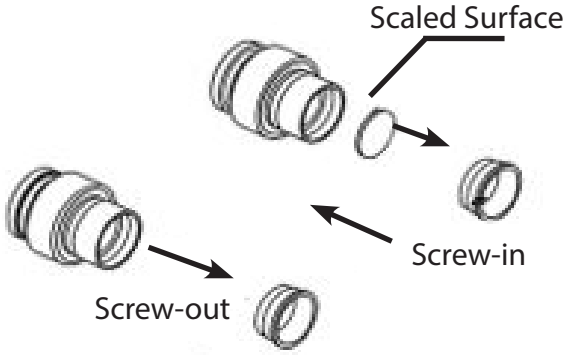
Assemble the Eyepieces

Remove the eyepiece tube covers (1).
Insert the eyepieces (3) into the eyepiece tube until the bottom of the eyepieces touches the bottom of the eyepiece tube.
Secure the eyepieces with the set screws (2).



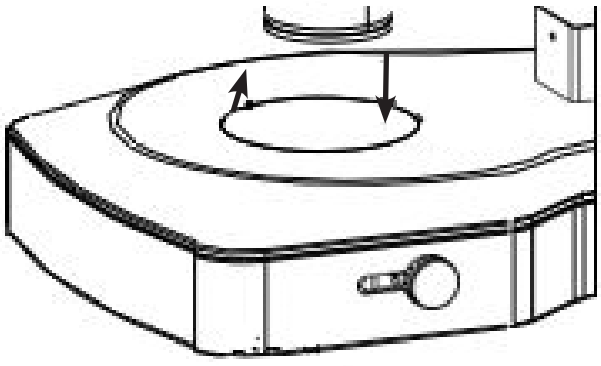
Assemble the Reticle

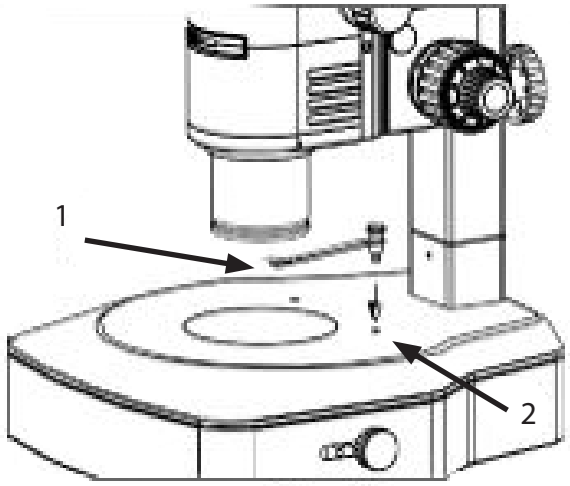
Unscrew the pressure ring from the eyepiece.
Clean the reticle, then install it into the pressure ring with the scaled surface upward.
Screw the pressure ring with reticle into the eyepiece until tight.
To remove the reticle, first unscrew the pressure ring from eyepiece, then remove the reticle.



Assemble the Stage Plate

Place the stage plate into the well space on the microscope stand.
To remove the stage plate, press down with fingertips on one edge of the stage plate. This will result in the other side of the stage plate lifting, allowing it to be removed.



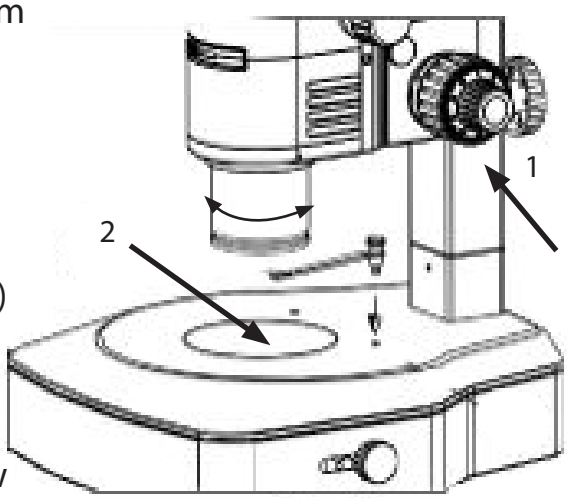


Assemble the Stage Clips

Insert the stage clips (1) into the two holes on the base of the microscope (2).

Adjust the Microscope Body Position

Loosen the lock knob (1) and rotate the microscope body and the focusing bracket left and right. Match the center of the zoom body with the center of the stage plate. Secure in place with the lock knob.



Assembling the LED Light Source

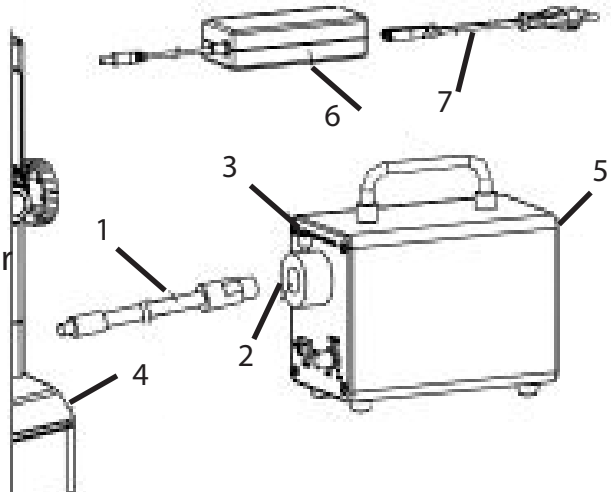
Make sure the main switch is at the "O" (off) position.

Insert one end of the optical fiber (1) into the inner hole (2) of the power supply box aligning the flat surface with the lock screw (3). Secure the optical fiber in place with the lock screw (3).

Insert the other end of the optical fiber (1) into the hole of the base (4), then secure in place with the lock screw.

Insert one end of the power adapter (6) into the inner hole (5) of the power supply box.

Insert one end of the power cable (7) into the corresponding hole of the power adapter (6), and the other end into the power supply socket.



Before Use:

Do no shake or drop the microscope

Do not expose the microscope to direct sun, high temperatures, dust, or damp environments. Use a flat work surface. Indoor operating temp 32°- 104°F (0°- 40°C), max relative humidity of 85%.

When moving the microscope use both hands, holding by the base and the back of the microscope.

For a clear image, ensure you do not leave fingerprints on the eyepieces or auxiliary lenses.

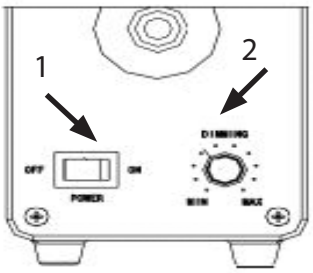
Do not adjust the right and left focusing knob in opposite directions simultaneously.

Wipe lenses gently with a soft tissue. Wipe off fingerprints from lens surfaces with lens paper using a small amount of microscope cleaning solution or a 3:7 mixture of alcohol and ether or dimethyl benzene. (Alcohol and ether are flammable, do not place these chemicals near fire and clean in a ventilated area.)

When cleaning other surfaces of the microscope use water only. A basic detergent can be used to clean the surface if necessary, but ensure that all the detergent is removed from the frame with a clean, damp cloth prior to drying the surface.

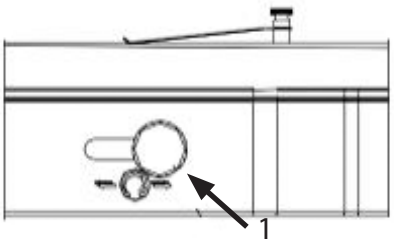
After use, cover the microscope with a dust cover and power off the light.

FZ12 Microscope Operation:



Set Illumination:

Plug in the LED light source and turn on the main power switch to "ON".
Adjust the illumination intensity knob (2) until the illumination is comfortable for observation. Rotate the knob clockwise to increase the brightness and rotate counterclockwise to reduce the brightness.

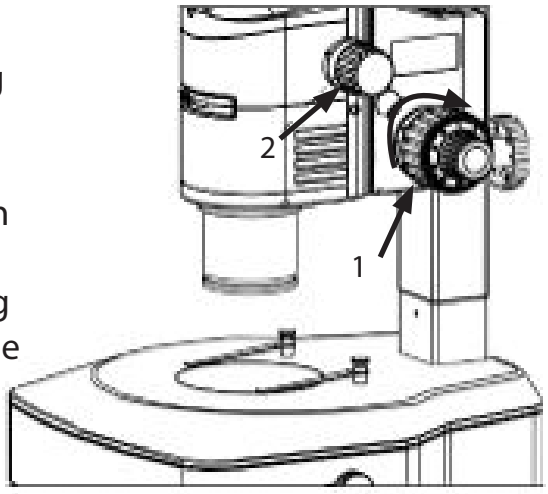


Adjust the Reflector on BFDF Stand:

The reflector has two surfaces, a mirrored surface and a sandblasted aluminum surface. Both surfaces are reflective with the mirrored surface being more reflective.
Adjusting the reflector knob changes which reflective surface is in the light path. The reflector knob moves forward and backward to achieve different lighting effects.

Adjust Rheostat / Color Temperature on ILB Stand

The illumination intensity can be controlled by turning the Rheostat dial.
Adjust the color temperature by inserting the color temperature control tool and rotating to desired setting. LCD display will provide a read out of color temperature and illumination intensity.



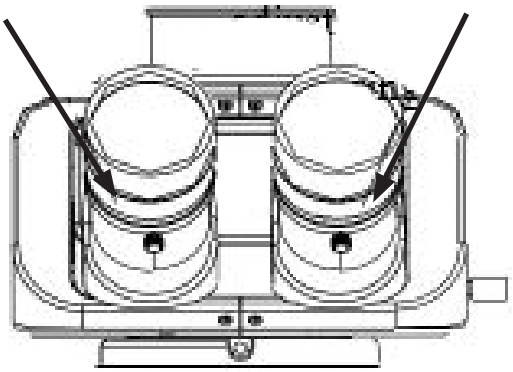
Adjust the Focusing Tension:

If the handle is very heavy when coarse focusing or the specimen leaves the focus plane soon after focusing, or the stage declines itself, these problems can be solved by adjusting the tension adjustment ring (1).
Rotate the tension adjustment ring (1) according to the arrow direction in the figure, to tighten the focusing system; rotate the tension adjustment ring (1) in the opposite direction to loosen the focusing system.

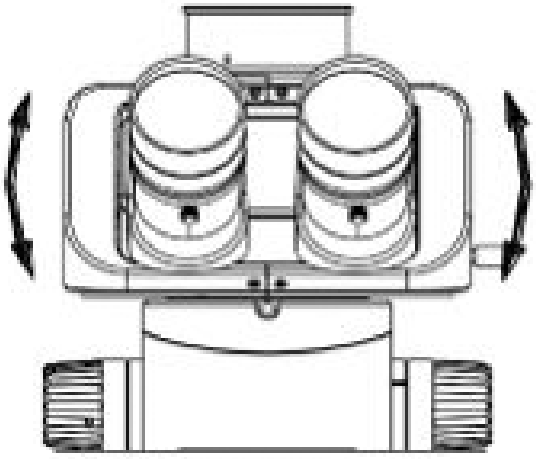
FZ12 Microscope Operation:

Left diopter adjusting ring

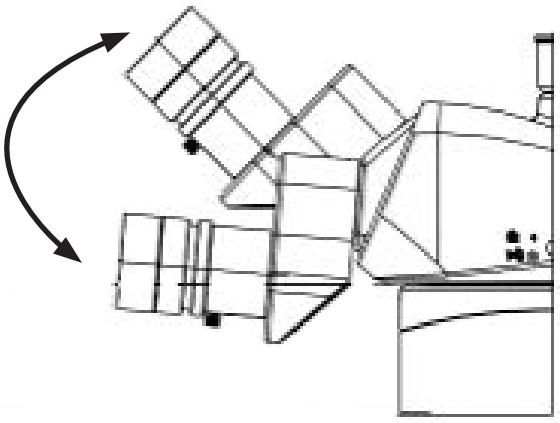
Right diopter adjusting ring



Adjusting Diopters:
Turn the zoom knob to maximum magnification. Adjust both diopter adjustment rings to zero. Look through the right eyepiece. If the image is not clear, turn the focusing knob until it is clear. Turn the zoom knob to minimum magnification. Look through the right eyepiece. If the image is not clear, turn the eyepiece diopter adjustment until it is clear. Look through the left eyepiece. If the image is not clear adjust the left diopter adjustment to get a clear image.



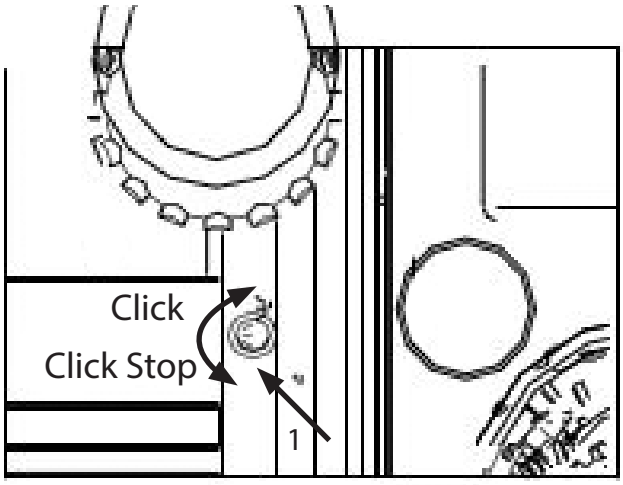
Adjusting the Interpupillary Distance:
Hold the left and right prism boxes and rotate them according to the arrowhead pointed as shown in the figure to the right. Rotate until viewing is comfortable. Adjustment rage: 50 - 76mm.



Adjusting the Angel of Observation Head:
Using both hands to move the binocular components up or down to position the eyepieces for comfortable viewing.

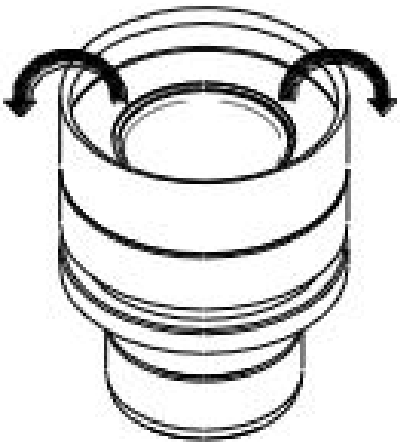
Engage Detents:

Detents are stop positions at every zoom magnification value. When the detents are engaged, there will be a "click" when the zoom has been positioned in a zoom magnification. Detents are ideal when the application requires accurate repeatability. Insert the Allen wrench into the positioning screw (1). Rotate the positioning screw clockwise to engage the detent function. Rotate the positioning screw counter-clockwise to disengage the detent function.
* Do not over rotate the positioning screw as it will damage the hosing and internal mechanisms of the microscope.



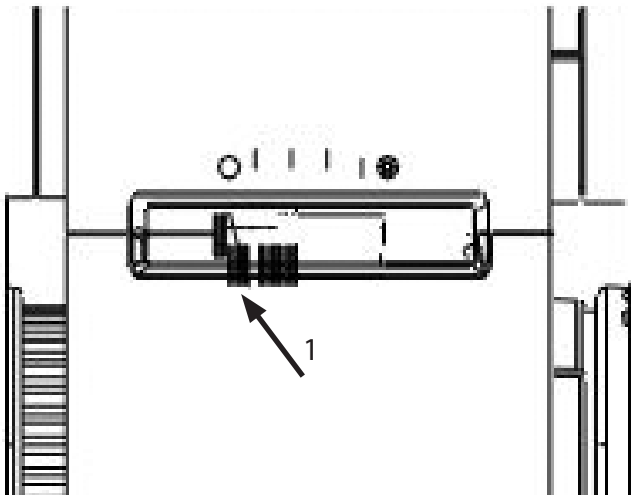
Using the Eye-cups:

The eyepieces feature rubber eye cups that can be used if desired during observation. To use the eye cups, roll the edges of the rubber eye cup up. Fold the edges downward as the arrows indicate if not in use.



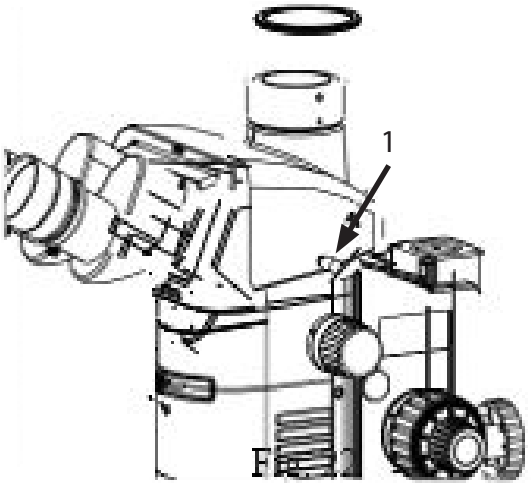
Adjust the Aperture Diaphragm:

Use the aperture diaphragm adjustment pole to adjust the aperture diaphragm. Position the adjustment pole to the left to enlarge the aperture diaphragm and position the adjustment pole to the right to decrease the aperture diaphragm.



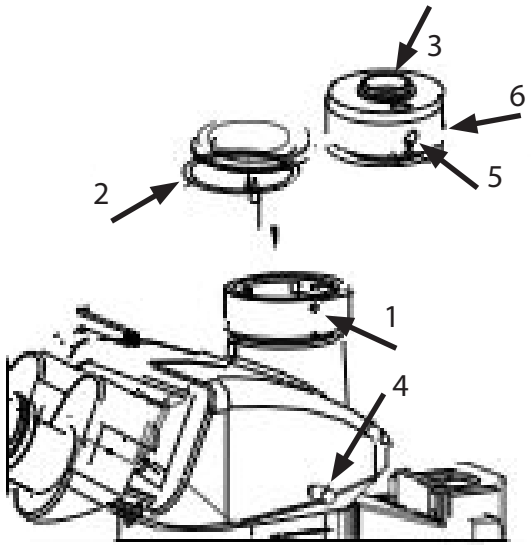
Selecting the Light Path:

When the beam splitter pole (1) is in the innermost position, the light is directed to the binocular head for observation through the eyepieces. When the beam splitter pole is in the outermost position, the light is directed to the trinocular tube which is used for observation using a camera.



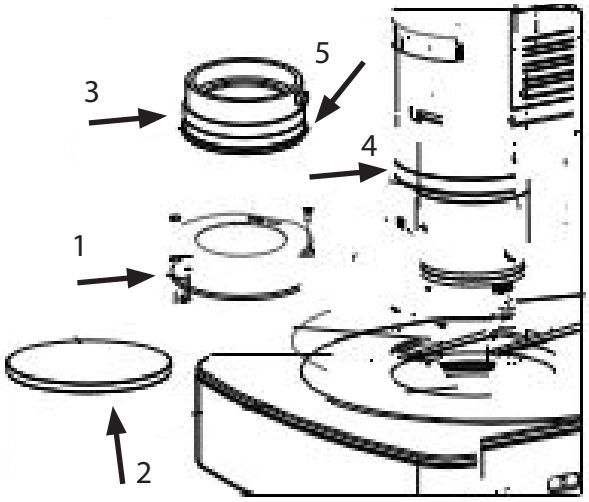
Assembling the C-Mount Adapter:

Loosen the lock screw (1) on the trinocular tube and remove the dust cap (2). Remove the two dust caps (3) on the c-mount adapter. Insert the c-mount adapter into the trinocular tube and secure in place with the lock screw (1). Connect the camera to the c-mount adapter. Ensure the beam splitter pole (4) is in the outermost position for observation using the trinocular tube. If the image is not clear, loosen the lock screw (5) on the c-mount adapter and rotate the focusing portion of the c-mount (6) until the image is clear. Once the image is clear, tighten the lock screw (5).



Assemble and Use the Polarizer Device:

Remove the stage plate (2) from the base and insert the polarizer (1) onto the base. Attach the analyzer (3) to the outside diameter of the main objective (4) and secure it in place with the lock screw. The analyzer (5) is adjustable by 360°. Rotate the analyzer for adjustment.



FZ12 Microscope Trouble Shooting

TROUBLE	POSSIBLE CAUSE	SOLUTION
Bulb does not turn on.	Power cord is not plugged in.	Plug in power cord.
	Power switch is not turned on.	Turn on power switch.
Bulb turns on, but field of view is dark.	Rheostat is too low.	Increase light intensity by rotating rheostat control.
Dust or dirt is visible in the field of view.	Dirt or dust is on the specimen.	Clean the sample.
	Dirt or dust on the eyepieces.	Clean the eyepieces.
	Dirt or dust on the stage.	Clean the stage.
Image has glare (hot spots).	Aperture diaphragm is closed down too much.	Open the aperture diaphragm more.
Image is not sharp, contrast is poor and details are poorly visible.	Objective lens is dirty.	Clean objective lens.
	Dirt or dust on eyepieces.	Clean eyepieces.
Field of view in one eye does not match that of the other.	Interpupillary distance has not been set.	Adjust interpupillary distance.
	Incorrect diopter adjustment setting.	Adjust the diopter.
Coarse / fine adjustment knobs will not rotate easily or at all.	Tension adjustment ring is set too tight.	Adjust tension adjustment.
Image is not appearing through eyepieces or camera	Beam splitter is not in the proper position.	Check the position of the beam splitter.
Image is not clear on monitor when focusing microscope.	C-Mount adapter is not focused.	Focus the C-Mount adapter.
Microscope body falls once focused and image falls out of focus.	Focusing knobs are too loose.	Tighten focusing knob.

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