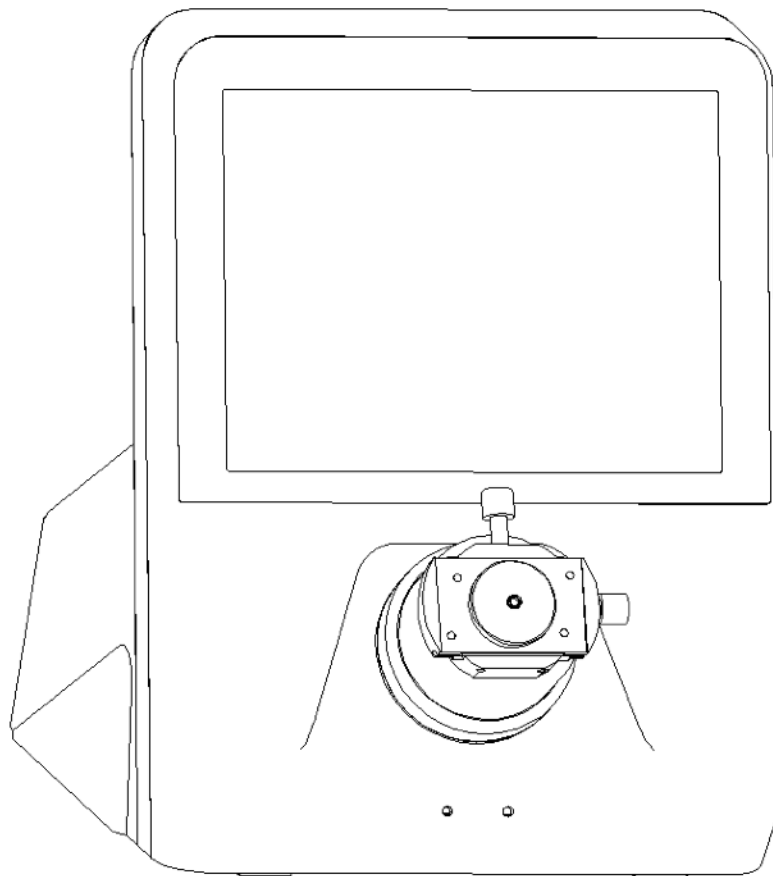




FSCO500

Bench Fiber Microscope

Quick Start Guide

Bench Fiber Microscope

User Manual

Thank you for choosing Eternal Science, please kindly read this manual before use.

This manual describes how to use the Microscope (FSCO-500 Series) concise information.

PRODUCT OVERVIEW



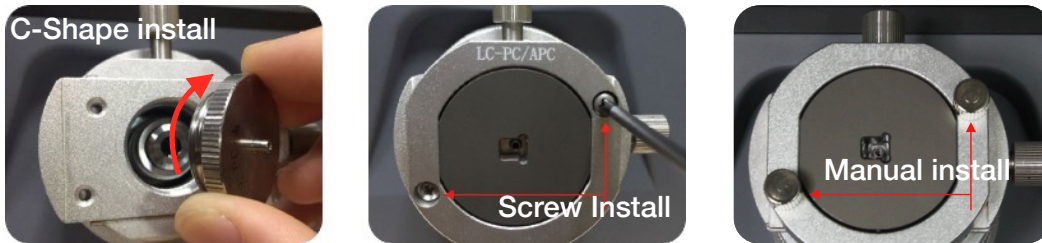
Note: Please note that above picture is just the product sketch map, if it doesn't conform with the real device, please refer the real one.

I. USER GUIDE

Before using the product, please make sure test connector is matched with the selected adaptor.

I.1 ADAPTOR INSTALLATION

There're three ways for adaptor installation, please select the corresponding method. For any MF type



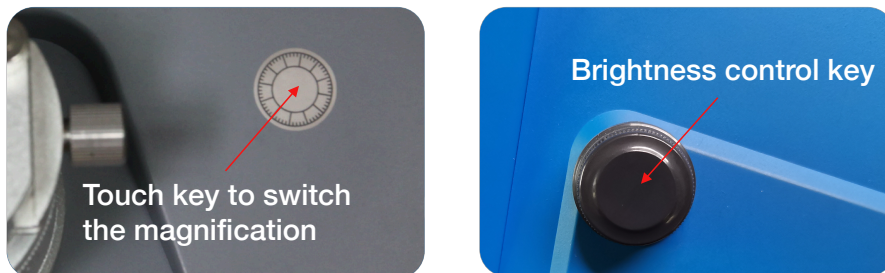
microscope, please install the MF-L adaptor or MF Cushion block to use firstly. Detail image please refer to adaptors selection.

I.2 QUICK START

- ① Connect power port;
- ② Turn on the device and make sure a blue light can be seen from adaptor center;
- ③ Insert the connector and end face can be seen after device adjusts focal length automatically.

I.3 TWO IMAGE SWITCH CHECK

One time focus and touch key to switch to check two images (show as below left image), large rate checks the detail scratch and small rate checks the whole fiber edge.



I.4 BRIGHTNESS CONTROL

The knob on the right side of the scope can adjust the brightness of the light source, which is convenient to observe the details of the end face. It's only suit for Model A.

I.5 CONNECT SECONDARY DISPLAY

Connect the scope with secondary display with the BNC cable, detail refer to the end of user manual.

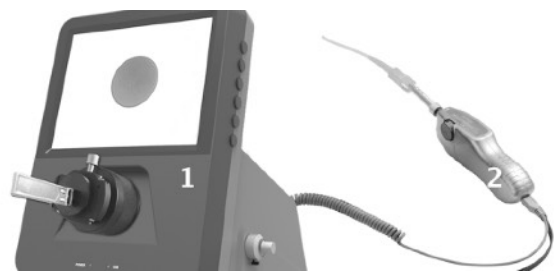
I.6 TWO IMAGE SYNCHRONIZATION CHECK

One time focus to check two images same time, the primary display checks the large magnification and secondary display shows the small magnification.



> I.7 EXTENSION CONNECTION (OPTIONAL)

Insert the probe into the Probe in port, press JW1/JW2 same time for 3s to switch the probe view mode, and press again to return.It's only suit for Model A.



> I.8 USB TO CONNECT PC (OPTIONAL)

End face can be analyzed by company special pass/fail software with USB port⑯ connection to PC. The software can set IEC/IPC criteria or customize by user.



> I.9 DISPLAY CONTROL

Adjustment key(Primary Display)	Adjustment key(Display with SD slot)	Adjustment key(Secondary Display)
Brightness Control ： Press JW5 key to enter brightness control,JW3 to reduce brightness, JW4 to increase brightness.	Brightness Control ： Press one time JW3 key to enter brightness control,JW4 to reduce and JW5 to increase the value.	Brightness Control ： Press twice Menu key to enter brightness control,VOL- to reduce and VOL+ to increase the value.
Contrast Control ： Press JW5 key to enter contrast control,JW3 to reduce contrast, JW4 to increase contrast.	Contrast Control ： Press twice JW3 key to enter contrast control,JW4 to reduce and JW5 to increase the value.	Contrast Control ： Press one time Menu key to enter contrast control,VOL- to reduce and VOL+ to increase the value.
Sharpness Control ： Press JW5 key to enter sharpness control,JW3 to reduce sharpness, JW4 to increase sharpness.	Sharpness Control ： Press three times JW3 key to enter sharpness control,JW4 to reduce and JW5 to increase the value.	Sharpness Control ： Press four times Menu key to enter sharpness control,VOL- to reduce and VOL+ to increase the value.
Reset ： Press JW5 key 4 times to select reset, then press JW4 to confirm reset. The above three parameters are all 50 by default	Capture : Press JW6 key to save image data to SD card. View :Press JW4/JW5 key to view the image forward or backward. Delete : Press JW6 to delete the current image and JW3 to back.	

Note: the function keys are referenced as table, please note that if it doesn't conform with the real device, please refer to the real one.

2. PACKAGE DETAILS

FSCO500 Bench Microscope	1 pcs
User Manual	1 pcs
Power Adaptor	1 pcs

3. PACKAGE,TRANSPORT& STORAGE

☒ Package

Special foam and carton

☒ Transport & Storage

Avoid collision, rain and snow during transportation, do not store with chemical and wet articles.

☒ Environmental Certification

Products components have all been approved by most stringent international RoHS Certification.

4. OTHER OPERATION NOTICE

☒ When adaptor can not position the fiber firmly, replacement is needed. For a long use of adaptor can cause certain amount of wearing.

☒ Please pay attention to the cleaning and sanitation of lens, reduce the pollution of dust and fiber residue, and prolong the service life.

5.AFETER-SALES SERVICE AND PROTECTION

☒ In the guarantee of product quality, a free maintenance service will be provided for any damage caused by the manufacturing process or original components within one year from the date of purchase.

☒ Any man-made damage will not be covered by the free warranty and replacement of materials and accessories will be charged. But the company provide long-life maintenance service for any problem of the product.

☒ For any problem please send us sales@photonwares.com for more information.

APPENDIX I. SECONDARY DISPLAY INSTALLATION GUIDE



Note: Please note that above picture is just the product sketch map, if it doesn't conform with the real device, please refer the real one.

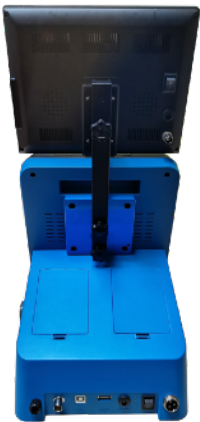
1. Horizontal installation

- Put the connecting rod ⑦ horizontally and screw the side mount base ① corresponding to the left hole of connecting rod 7 with the hand screw 6.
- Stand up the secondary display card seat ⑤ and screw the right side corresponding to the right hole of connecting rod ⑦ with the hand screw 6.
- Align the back slot of secondary display ④ to the card seat ⑤ and position it from top to bottom to complete the installation.



2. Vertical Installation

- Stand up the connecting rod ⑦ and screw the middle of side mount base ① with left hole of connecting rod ⑦ with the hand screw 6.
- Stand up the secondary display card seat ⑤ and screw the right side corresponding to the right hole of connecting rod ⑦ with the hand screw 6.
- Align the back slot of secondary display ④ to the card seat ⑤ and position it from top to bottom to complete the installation.



3. Connection

- Connect the secondary display with BNC cable ②
- Connect the secondary display with the power patch cord.

APPENDIX 2.AUTO FOCUS USE GUIDE

1. Connect foot pedal

As shown in the figure on the right, connect the foot pedal to the interface on the back of the microscope and tighten the nut, insert the fiber and step on the foot pedal to complete focusing.



2. Adaptor calibration

When checking different kinds of fiber end face, we need to change different positioning adaptor. At this time, make sure the blue light is emitted from the center of the fixture, insert the connector, and press the JW2 button to automatically find the focus. Then you can see a clear picture.

3. Single/Multiple fiber mode switch

The system only remembers the last calibration in both modes. If a single-fiber adaptor and a multi-fiber adaptor needs to be switched frequently, then conversion can be completed only in steps 1 and step 2.

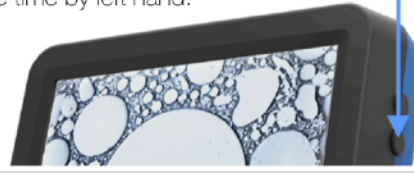
Single Core Mode Calibration, like LC/SC

- 1 Turn off the device, right hand long press the first (JW1) key for 5 seconds or more and reboot the device same time by left hand.



Multiple Core Mode Calibration, like MPO/MTP

- 1 Turn off the device, right hand long press the second (JW2) key for 5 seconds or more and reboot the device same time by left hand.



- 2 Turn off and on again, enter the corresponding mode, insert the fiber, step on the foot pedal to complete the focus

4. Other operations

- ① Step on the foot pedal to do focus in small adjustments or short click JW1 to same job;
Short click JW2 to refocus for large adjustments..
- ② Long press JW1 as manual positive forward focus; long press JW2 for manual reverse backward focus.
- ③ Click JW1 and JW2 same time together to switch the brightness.

APPENDIX 3. COMMON TROUBLE SHOOTING

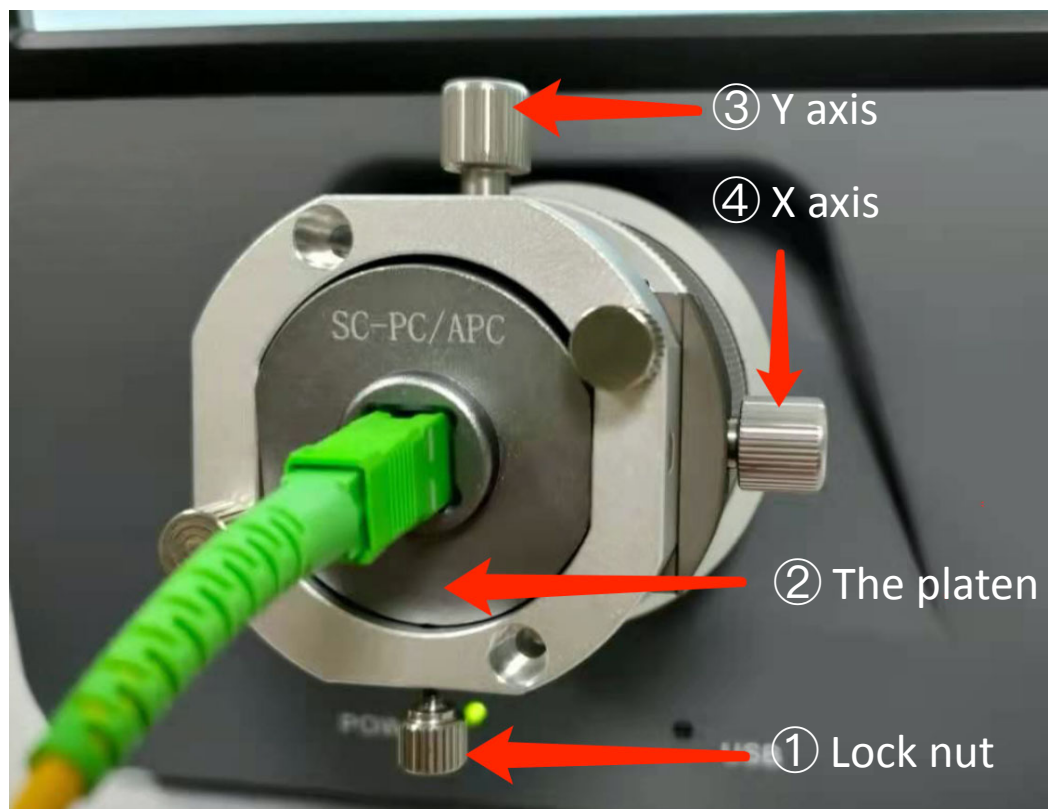
Exception	Causes—>Solutions
Black screen after insertion	Without aligning adaptor center hole to the lens inside device—> Adjust X/Y axis to make sure blue light shoots out of center of adaptor.
Black screen after insertion_two	Mis-operate to close the display—>Press Key 6 in the product image to restart the display or re-start the device.
No end face after focus	Clamp can not position fiber connector due to long wear—> Replace clamp.
Blurred image after the fiber insertion(Model B)	Step on the foot predal to do focus in small adjustments or short click JW1 to same job; Short click JW2 to refocus for large adjustments.
Continuous long focus time or unclear focus(Model B)	Adaptor replacement or check different fibers—> Follow adaptor calibration steps.

APPENDIX 4. OPTIONAL ADAPTERS

1 Universal 1.25PC-M adaptor  Test: 1.25mm ferrule or LC/MU patch cord connectors Feature: Simple and Durable	2 Universal 2.5PC-M adaptor  Test: 2.5mm ferrule or SC/FC/ST/E2000 patch cord connectors Feature: Simple and Durable	17 MT-PC adaptor  Test: MT/MPO unfinished PC connectors Feature: stainless steel to snap and clamp	18 MT-APC adaptor  Test: MT/MPO unfinished APC connectors Feature: stainless steel to snap and clamp
3 LC adaptor  Test: LC PC connectors Feature: can snap and clamp securely	4 LC APC adaptor  Test: LC APC connectors Feature: can snap and clamp securely	19 MPO-PC/APC adaptor  Test: MPO PC/APC connectors Feature: Quick PC/APC switch	20 MPO-PC/APC-2 adaptor  Test: MPO PC/APC connectors Feature: Quick PC/APC switch
5 OM-04 adaptor  Test: 1.25mm and 2.5mm PC/APC connectors Feature: four functions in one adaptor	6 FC APC adaptor  Test: FC APC connector Feature: easy plug	21 OM-08 adaptor  Test: 2-48 cores FA array/ MPO finished/unfinished connectors Feature: Multiple functions and quick PC/APC switch	22 LC-PC-90 adaptor  Test: Long ring LC module/transceiver, 90° test Feature: Two-port quick positioning to solve the pull ring length occlusion problem
7 3.0PC-M adaptor  Test: LC TOSA/ROSA/BOSA Assembly Feature: stainless steel and easy for use	8 4.7PC-M adaptor  Test: SC TOSA/ROSA/BOSA Assembly Feature: stainless steel and easy for use	23 MF-LC-PC Adaptor  Test: LC TOSA/ROSA Assembly LC module/transceiver Feature: multiple functions	24 MF-SC-PC Adaptor  Test: SC TOSA/ROSA Assembly SC module/transceiver Feature: multiple functions
9 LC-PC/APC+ adaptor  Test: LC PC/APC connectors Feature: Easy PC/APC switch 360° rotation for tiny scratch test	10 LC-PC/APC adaptor  Test: LC PC/APC connectors Feature: Easy plug and two-in-one PC/APC switch	25 MF-SFP-1 Adaptor  Test: SFP/SFP + packaged single port module/transceiver Feature: Quick position	26 MF-SFP-2 adaptor  Test: SFP/SFP + packaged dual port module/transceiver Feature: two-port quick positioning, left and right sliding
11 SC-PC/APC+ adaptor  Test: SC PC/APC connectors Feature: Easy PC/APC switch 360° rotation for tiny scratch test	12 SC-PC/APC adaptor  Test: SC PC/APC connectors Feature: Easy plug and two-in-one PC/APC switch	27 MPO-PC-90 adaptor  Test: Pull ring MPO module/transceiver Feature: Quick positioning to solve the pull ring length occlusion problem	28 MPO-APC-90 adaptor  Test: Pull ring MPO APC module/transceiver Feature: Quick positioning to solve the pull ring length occlusion problem
13 FC-PC/APC+ adaptor  Test: FC PC/APC connectors Feature: Easy PC/APC switch 360° rotation for tiny scratch test	14 FC-PC/APC adaptor  Test: FC PC/APC connectors Feature: Easy plug and two-in-one PC/APC switch	29 FA adaptor  Test: FA arrays Feature: Customized by need	30 MF-L Adaptor  Use: For any work model with mark of MF, the MF-L adaptor needs to be installed firstly on MF bench microscope
15 E2000-PC/APC adaptor  Test: E2000 PC/APC connectors Feature: Easy plug and two-in-one PC/APC switch	16 LC2-PC adaptor  Test: LC DUPLEX PC connectors Feature: Simple and Durable	31 MF-CB Adaptor  Use: For any work model with mark of MF, the MF Cushion block Adaptor needs to be installed firstly on MF bench microscope	

Version: 1.2.0
Update: 2020-06-03

APPENDIX 5. PC/APC TWO-IN-ONE ADAPTER USE GUIDE



1. Convert from PC to APC

① Loosen the lock nut counterclockwise, ② press down the bottom of the platen, insert the APC jumper, the core should not be seen, clockwise twist ③ Y axis, the core will move up in the screen until the black core totally shows. ④ Finally tighten the lock nut to complete the switch.

2. Convert from APC to PC

① Loosen the lock nut counterclockwise, ② press down the bottom of the platen, insert the PC jumper, the core should not be seen, counterclockwise twist ③ Y axis, the core will move down in the screen until the black core totally shows. ④ Finally tighten the lock nut to complete the switch.