FOT-SCPD

FIBER OPTIC CLEANING SCOPE KIT

User Guide

Fiber Microscope Operation Manual

Foreword

Thank you for purchasing Clark Wire & Cable's fiber optic video scope cleaning kit. Before assembling and using, please make sure that all the products and parts you have ordered are in place. Check the package carefully to avoid missing parts.

Follow the instructions in this manual when using the product to avoid personal injury. Be sure to understand and follow the instructions carefully.

Precautions for use

Failure to follow instructions may affect product performance. Please do not disassemble the components, otherwise the parts may be damaged voiding the warranty.

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The hand-held fiber optic microscope is portable, and the image is easy to observe with output to the display as a video signal, so that the condition of the fiber end face is clear. The product is used for fiber inspection and cleaning. It can directly check the fiber end face (male) on the optical jumper or tail ferrule or check the fiber end face (female) in the deep hole of the optical adaptor. This important function allows the fiber end face of many optical device ports or the fiber end face of the back of the rack to be easily and directly inspected.

In addition, since the fiber end face is observed on the display instead of directly, even if there is a laser signal in the fiber, the eye is not damaged, and safety is ensured.

Engineering Applications

Patch panel inspection
Many patch panels are designed to facilitate the detection of the connector at the front end, while the connector at the rear end is difficult to detect. The traditional fiber end detector can only conveniently detect the front-end connector of the patch panel. If the back end is to be detected, it takes time and effort. This product provides a fast and efficient solution to this problem for the installation, inspection, and maintenance of patch panels.

Cable assembly inspection
This product also detects jumpers, pigtails and other fiber optic cable assemblies when fitted with a suitable test probe.

Main features

1. Longer life and better image quality

The internal structure has been redesigned to provide a longer life. No matter how bad the environment is, the internal optics will not deteriorate, and the imaging will always be the same.

2. Use aviation electrical interface for more stable connection

According to customer feedback, the aviation electrical interface was used to provide a more stable connection and a longer service life. Whether in the factory environment or on the engineering site, our fiber end face detectors always guarantee a stable and clear image.

3. New image capture card with higher definition

A new type of image capture card is used to more clearly determine the condition of the fiber end face, such as scratches and dirt.

4. Image Photo / Storage / Play / 4x Zoom / Function

Support C4 and above TF memory card, you can access the computer for storage and editing without any software support.

5. Stretchable and shock protection sleeve design

Increase the shockproof cover for the harsh environment, without worrying about damage caused by falling from a height.

6. Auxiliary lighting design

Add LED auxiliary lighting to facilitate operation in dimly lit environments.

General description

Handheld fiber optic microscope consists of three parts.
A. Detection host (handle part)
B. Display section
C. Test probe section

A. Inspection Probe

The fiber optic microscope handle has a built-in analog signal CCD that outputs NTSC or PAL signals via a 5-pin aeronautical connector. The connector also provides power for the fiber optic microscope inspection probe (handle), and the signal can be output through a handheld LCD monitor.

a 1. Test probe kit.
Test probes are used to mount different fiber adapters to detect FC, SC, ST, LC, E2000 and other custom-made PC, UPC or APC fiber connectors.

a 2. Focus dial.
The fiber microscope magnification is set to 250 times by default. When an image appears on the 3.5-inch LCD monitor, turn the focus control knob to make the image sharpest.

Note:
The handle part contains a microscope lens, which is composed of several sets of lenses and is mounted in a sealed cavity to form a complete lens assembly, also called an objective lens, which cannot be disassembled, otherwise the lens will be damaged. This will void the warranty.

B. Main unit display
The handheld LCD monitor is light and easy to carry, and the panel is a 3.5-inch high-definition image. It can be powered by an external power supply of 110V to 240V or a built-in rechargeable lithium battery. The video signal can be either NTSC or PAL.

1. Connection From Probe
2. On / Off LED
3. Charging Indicator
4. Preview / Playback
5. Enter
6. Settings
7. Up / Down
8. On / Off
9. Flashlight
10. Image Freeze
11. Image Magnification
12. LED Light
13. Image Capture
14. Video
15. Micro SD Card
16. TV Out
17. USB Port
18. Reset
19. Stand Connection (back)
20. Battery Compartment (back)
21. Cord
22. Wrist Strap
23. Probe
24. Focus Dial
25. Inspection Tip

C. Test probe section

The tip is connected to the front end of the microscope as a test transducer and is also a test probe. The thread of the test probe is connected to the front of the lens. Before testing, be sure to select and install the test probe.

Microscope test probe tips

2.5-U-M

（2.5mm PC male adapter）

1.25-U-M

（1.25mm PC male adapter）

SC-U-F

SC/PC female adapter

LC-U-F

LC/PC female adapter

When measuring the fiber end faces of different adapters, the corresponding tips need to be replaced. The tip and the adaptor work in conjunction with each other. Altering or misaligning them will affect the video image. When in use, be sure to insert the adapter being tested tightly and securely. After adjusting the position, leave in place for proper viewing.

1. Component installation

Mount the test probe to the proper tip.

Standard component installation

Do not try to rotate the test probe away from the test port. This will damage the entire fiber microscope lens.

2. Display viewing and control

Used in conjunction with a fiber optic microscope handle.

step 1

Connect the fiber microscope display to the handle.

step 2

If necessary, connect an external power adapter.

3. SD Card

Please insert the TF card before using the device. Tip: To ensure the normal operation of the equipment, please use C4 and above with the nameplate.

4. Switch control

Tap the “Power On/Off” button to turn the switch on and off.

5. Photo and video

Photo: Press the photo button to take a photo. The photo file is saved in the DICM folder of the TF card.

Video: Press the video button to start and end the video. The video file is saved in the DICM folder of the TF card.

6. Special feature buttons

LED: Press the LED button to manually adjust the brightness inside the host.

Zoom: Press zoom to zoom in, double, triple, and quadruple. (X2 / X3 / X4)

Flashlight: Press the flashlight button to adjust the brightness. There are three levels of light. (off / Level 1 / Level 2 / Level 3)

7. Settings

Press the setting key to perform the language/time/auto power off setting/formatting card.

8. Document management

Press the playback button, then press the SET button to enter the file management interface. This can be locked/deleted.

9. Charging

Please use the adapter or mobile power to connect to the Micro USB cable for charging. The charging voltage and current are 5V / 1A.

Technical Parameters

amplification	400X (9" display) 200X (3.5" display)
Resolution	0.5μm
screen size	3.5" LCD
Focus mode	Manual mode
Video resolution	AVI (640x480)
Photo resolution	JPEG (640x480)
Image flip	180°
Image enlargement	4x zoom magnification
Menu language	Simplified Chinese, English, French, German, Spanish, Japanese, Russian

Support fiber test probe type (standard

configuration)

Item model	description
2.5-U-M （2.5mm PC male connector）	Test: PC connector for FC/SC / ST / E2000 fiber patch cord
1.25-U-M （1.25mm PC male connector）	Test: PC connector for LC/MU fiber patch cord
2.0-U-M SMPTE male pin	Test: 2.0mm male pin
SC-U-F SC/PC female adapter	Test: Fiber jumper connector inside SC/PC adapter
LC-U-F LC/PC female adapter	Test: Fiber jumper connector inside LC/PC adapter
2.0-U-F SMPTE female socket	Test: 2.0mm female pin

Support fiber test probe type (optional)

Item model	description
2.5-A-M （2.5mm APC male connector）	Test: APC connector for FC/SC / ST / E2000 fiber patch cord
1.25-A-M （1.25mm APC male connector）	Test: APC connector for LC/MU fiber patch cord
FC-A-F （FC/APC female adapter）	Test: Fiber jumper connector inside FC/APC adapter
SC-A-F (SC/APC female adapter)	Test: Fiber jumper connector inside SC/APC adapter
LC-A-F (LC/APC female adapter)	Test: Fiber jumper connector inside LC/APC adapter

other parts

interface：	USB 2.0/ TV out/ TF
Storage medium：	TF
Battery/power supply：	Rechargeable lithium battery 2600 mAh, 5V / 1A charger
usage time：	4 hours
Working/storage temp	-20℃~+50℃、-30℃~+60℃
weight and volume	1.5kg、

Accessories and configuration

Item model	Function Description
Fiber Microscope Operation	Standard configuration: One test handle, one host, one 2.5-U-M adapter, one 2.0-U-M, one 1.25-U-M adapter, one SC-U-F adapter, one 2.0-U-F, and one LC-U-F adapter
Other options list	Adapter head option: 2.5mm APC male adapter 1.25mm APC male adapter FC/ APC Female Adapter SC / APC Female Adapter LC/ APC female adapter.
Accessory configuration	Charger, manual, carrying case, lithium battery, TF memory card, outer sheath, bracket, factory certificate

Warranty service

We guarantee that the user will enjoy the one-year warranty from the date of sale, and we guarantee that the device will work properly if it meets the applicable specifications. During this time, we will repair or replace the returned product for free.

Important: The following conditions are not covered by the warranty

• The equipment was removed or repaired by a non-designated person.
• The warranty label is moved or torn.
• The nut on the case is removed privately.
• The case is opened in violation of regulations.
• The machine serial number has been tampered with, wiped or torn.
• The device is improperly used or damaged.

Fiber optic cleaning series

FC/SC/ST/E2000 Fiber Cleaning Pen

Dirt on the fiber adapter head can be removed with a single touch.
“One button clear” is a new high performance, high efficiency fiber adapter head cleaning tool.
Please read the operating instructions carefully before using this product. Please also save this how-to guide for future needs.

Precautions

Please do not disassemble to prevent damage to the product.

Do not reuse the cleaning line to prevent cleaning.
Please do not touch the cleaning line to prevent contamination.

Please do not pull the cleaning line, only use the product body.

When the cleaning line is used up, please do not use the cleaner again to prevent damage to the connector.

Save instructions

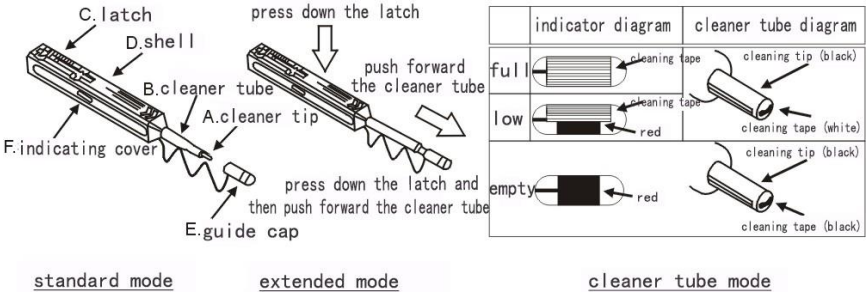
Do not expose this product to direct sunlight, high temperatures or humidity. When not making

When using this product, fasten the cap on the guide cover.

Features

Cleanable APC and UPC connectors; comfortable design, easy to operate; precise cleaning, long-term maintenance; low cost, service life greater than 800 times.

Product structure



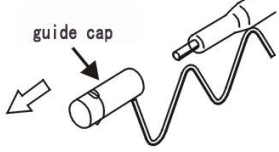
Product specifications

Cleaning range: 17.5X17.5mm Length: 172 mm

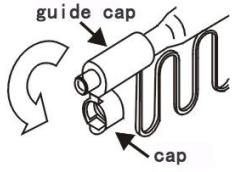
Extended length: 252 mm, adjustable top from 40 mm to 80 mm to clean deep position.

Application

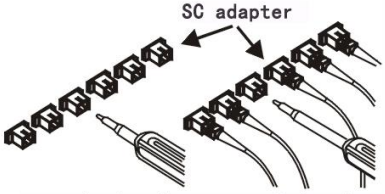
1、Move down the guide cap from the cleaner



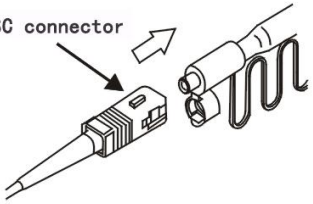
1、Open the guide cap



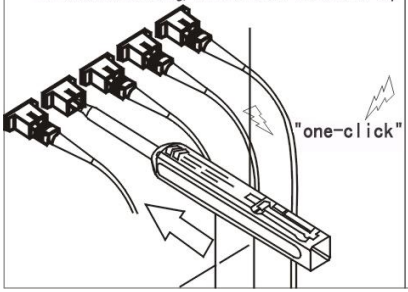
2、Insert the cleaning tip into the SC adapter



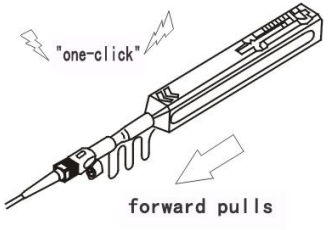
2、Insert the SC connector into the cleaner guide cap



3、push forward the cleaner shell to clean the connector endface behind the adapter, after "one-click" sound it finish the cleaning, and then cover the cleaner cap



3、push forward the cleaner shell to clean the connector after "one-click" sound it finish the cleaning, and then cover the cleaner cap



When inserting the adapter, be careful not to tilt the “one-click” cleaning rod.
When inserting, do not use excessive force, otherwise it will damage the adapter head and the "one press clear" cleaning rod.
If the push case is blocked, remove the adapter on the “one press” and make sure that no large debris affects the cleaning process.
When inserting the guide cover, be careful not to tilt the “one-click” cleaning bar.

MU/LC fiber cleaning pen

The dirt on the fiber adapter head can be removed with a single touch.
“One button clear” is a new high performance, high efficiency new fiber adapter head cleaning tool.
Please read the operating instructions carefully before using this product. Please also save the operation guide to prepare for the future.

Precautions
Please do not disassemble to prevent damage to the product.
Do not touch the cleaning line to prevent contamination.
Please do not pull the cleaning line, only use the product body.
When the cleaning line is used up, do not use the cleaner again to prevent damage to the connector.

Save instructions

Do not expose this product to direct sunlight, high temperatures, or moisture. When not making

When using this product, fasten the cap on the guide cover.

Features

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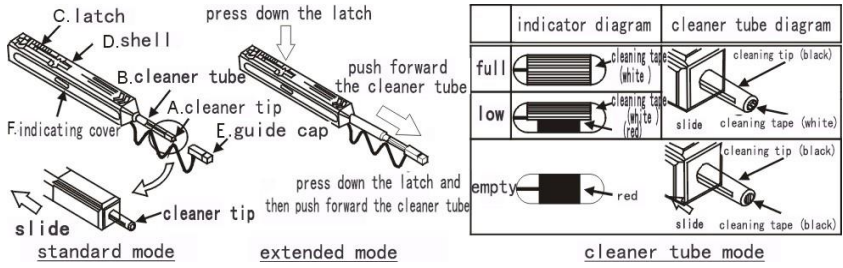

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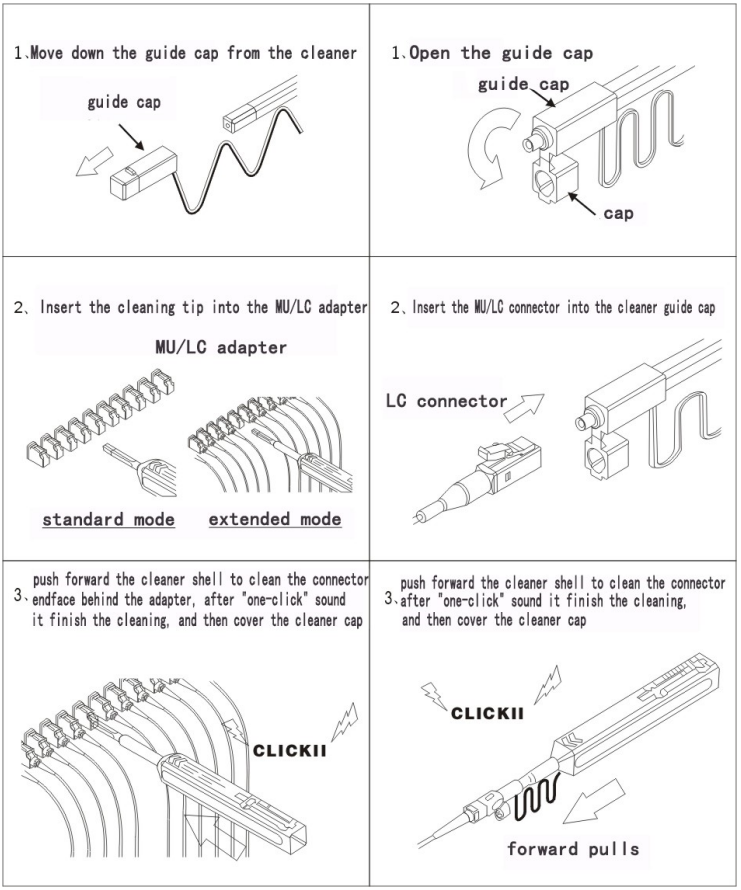
Application



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Fiber Optic Connector Cleaner

Scope of application

The cassette type optical fiber cleaner is composed of a casing, a rotating mechanism, a thrust mechanism, and a cleaning belt. The cleaning belt is woven with special fiber, and has good water absorption, dust removal effect and antistatic function.

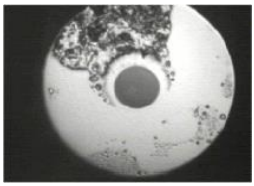
Applicable to any instrument and equipment with fiber optic connectors: SDH / SONET optical transmission equipment, PDH transmission equipment, wavelength division multiplexing equipment, cable television optical transmission equipment, digital multiplexing and transmission equipment, relay switches, program-controlled user switches / Digital program-controlled switching systems, Gigabit Ethernet and other suitable connector models are SC, FC, MU, LC, ST, D4, DIN and other types of fiber。

Operation guide

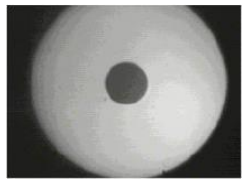
Single-handle box, rub the fiber port up, thumb on the spin-back button → push the thumb down to push the button, the cleaning port appears two cleaning slots → the right hand-held fiber, put the fiber head at the beginning of one of the cleaning slots Slide in one direction in the slot until the end of the slot → right hand holding the fiber. Place the fiber head at the beginning of the other cleaning slot and slide it in the slot until the tail of the slot → the thumb of the left hand releases the knob, the cleaning port closes, and the pigtails are cleaned.

Effect test

The cleaning effect of the product can be evaluated by the fiber end face detector. The enlarged photo before cleaning, as shown in Figure 1, can be seen that the obvious dirt adheres to the surface of the connector; the photo after using the cleaning cleaner, as shown in Figure 2, and the photo before cleaning in sharp contrast.



Before cleaning



After cleaning

Technical Parameters

Housing material: ABS engineering plastics
Cleaning material: special microfiber
Cleaning times: > 500 times
Cleaning effect: -20 to -50dB (return loss)
Operating temperature: -20 to +50 degrees
Storage temperature: -40 to +60 degrees
Product weight: <300g
Applicable dust-free grade: > CLASS10000