# SENKO®
Advanced Components

# Network Maintenance

**CLEANING**

**INSPECTION**

**CONNECT**

**TESTING**

## Smart Solutions
## for the Fiber Optic Industry

**SENKO**®
Advanced Components

# Smart Solutions for the Fiber Optic Industry

## Smart Probe™ for Fiber Inspection

The Smart Probe allows technicians to inspect the fiber endfaces, providing a high-definition image with a resolution up to 720px.

Images are captured digitally and streamed on the monitor of any Android Tablet or Smartphone.

**WIRELESS DEVICE**
Wi-Fi Transmitter on board

**INSPECT**

**CLEAN**

## Smart Cleaner™ for Fiber Cleaning

Introducing the new cleaners for MPO, SC, LC optical connectors. Expanding its lineup of optical cleaners, Senko is able to respond to an even wider range of its customers needs.

for SC, FC, ST, E-2000

for LC, MU

**CONNECT**

## XP Fit Plus™
### Field Installable Connector

The XP Fit Plus is a pre-polished, pre-assembled connector that uses index matching gel. An internal mechanical grip, gently but effectively holds the fiber in place and can be installed in under 2 minutes. Without polishing or adhesives the XP Fit Plus makes on site installations quick and easy, diminishing the need for epoxy curing and hand polishing at the work site.

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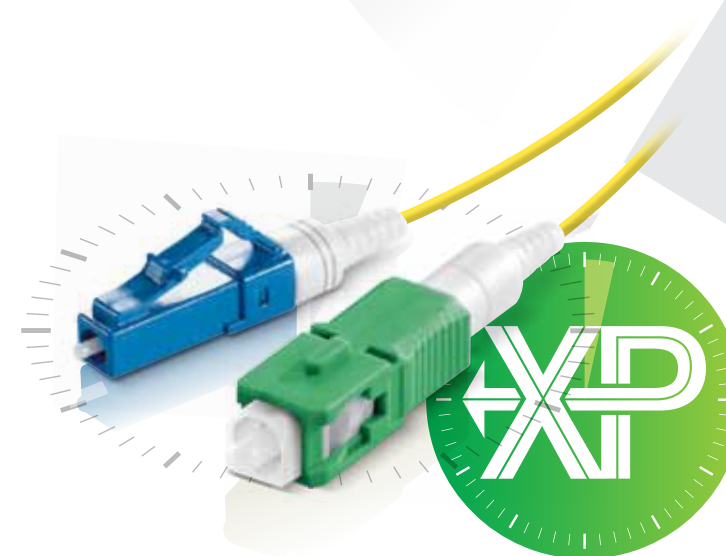
Over 50 percent of all network failures are caused by contamination.

It is imperative that connectors be inspected and cleaned prior to mating.

## 👍 CLEAN

### When to clean?

Whenever you make a fiber optic connection in any network

**Smart Cleaner**™

## 👁 INSPECT

### What to inspect?

Old jumpers, New jumpers, OTDR Launch, Test Leads, Fiber Trunk, MPO Connectors
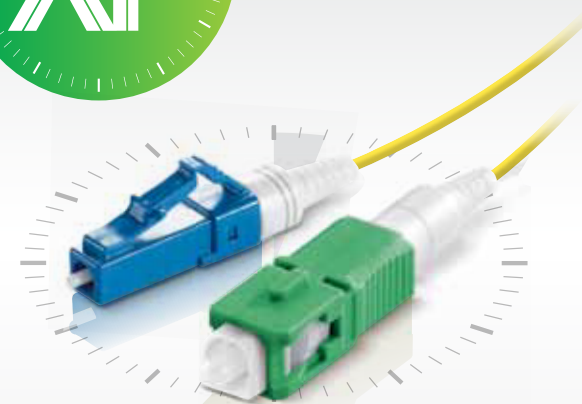
**Smart Probe**™

**WIRELESS DEVICE**
Wi-Fi Transmitter on board

## 🌐 CONNECT

### Easy installation in under 2 minutes

**XP Fit Plus**™
**Field Installable**

No Epoxy, No polish field termination in 2 minutes

## 〰 TEST

### Quick and easy solutions to trouble shoot and test your fiber optic network

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## What do the standards say?

The test procedures specified by 568-C require tools and procedures for **ensuring connector quality.**

- **End faces on cords and trunks shall be in accordance to IEC 6100-3-35.**
- **Use a microscope that is compatible with IEC 61300-3-35**
- **The microscope must use adapters that are compatible with connectors.**
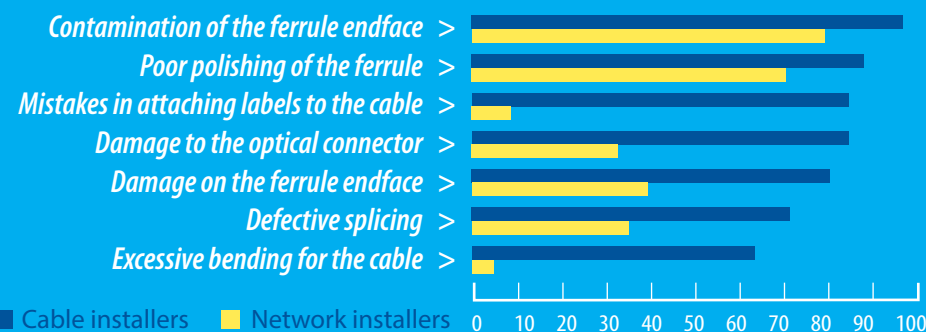
## What is IEC 61300-3-35?

- **A set of requirements for Fiber Optic connector quality.**
- **Designed to guarantee insertion loss and return loss performance**
- **Used as reference between supplier & customer**
- **Used as condition for accurate testing of components and links.**

## General Acceptance Criteria

**Separate criteria for different connector types, and performance.**

- **SM-UPC IL <= 0.30dB/RL>55dB**
- **SM-APC IL <=0.35dB/RL>65dB**
- **MM-PC IL <0.35dB**
- **Multi Fiber SM IL <0.50dB/RL> 60dB**
- **Multi Fiber MM IL <0.50dB**

Contamination of the ferrule endface >
Poor polishing of the ferrule >
Mistakes in attaching labels to the cable >
Damage to the optical connector >
Damage on the ferrule endface >
Defective splicing >
Excessive bending for the cable >

0  10  20  30  40  50  60  70  80  90  100

■ Cable installers  ■ Network installers

In a recent study, 98% of installers (blue) and 80% of network owners (yellow) reported that issues with connector contamination was the greatest cause of network failure.

Source of data NTT

## Example of fiber end faces and respective zones

A
B
C
D
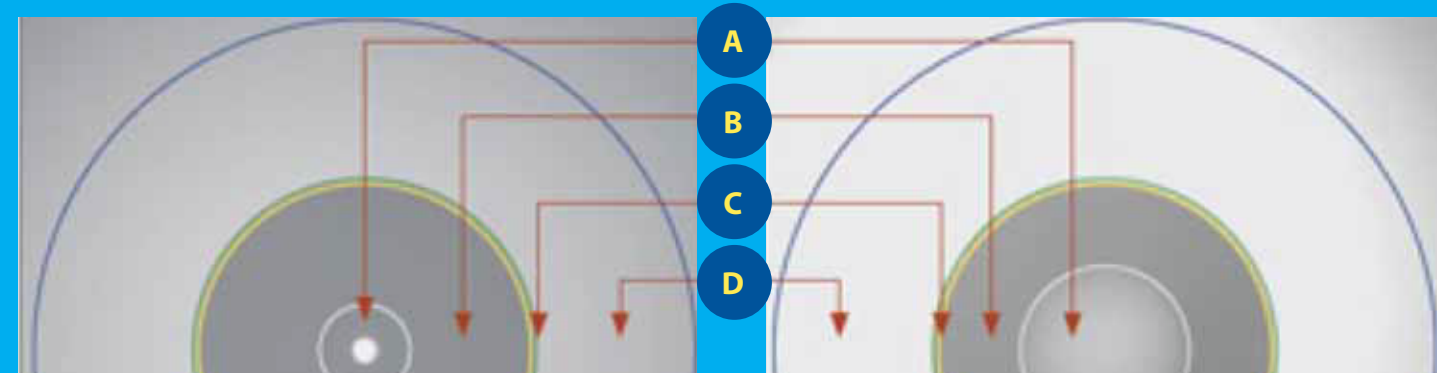
### Single mode UPC

| Zone Name | | SCRATCHES | DEFECTS |
|---|---|---|---|
| A | CORE (0-25µm) | None | None |
| B | CLADDING (25-120µm) | No Limit<=3µm None> 3µm | No limit< 2µm 5 from 2-5µm None > 5µm |
| C | ADHESIVE (120-130µm) | No Limit | No Limit |
| D | CONTACT (130-250µm) | No Limit | None => 10µm |

### MM Connector

| Zone Name | | SCRATCHES | DEFECTS |
|---|---|---|---|
| A | CORE (0-65µm) | None | 4<= 5µm None > 5µm |
| B | CLADDING (65-120µm) | No Limit<=3µm None> 5µm | No limit< 2µm 5 from 2-5µm None > 5µm |
| C | ADHESIVE (120-130µm) | No Limit | No Limit |
| D | CONTACT (130-250µm) | No Limit | None => 10µm |

## What happens if the optical connector end face becomes contaminated?

Examples of common contaminants adhering to end face:
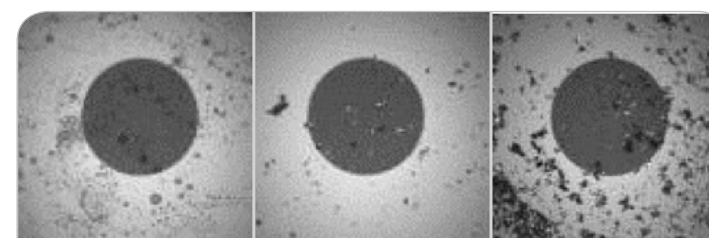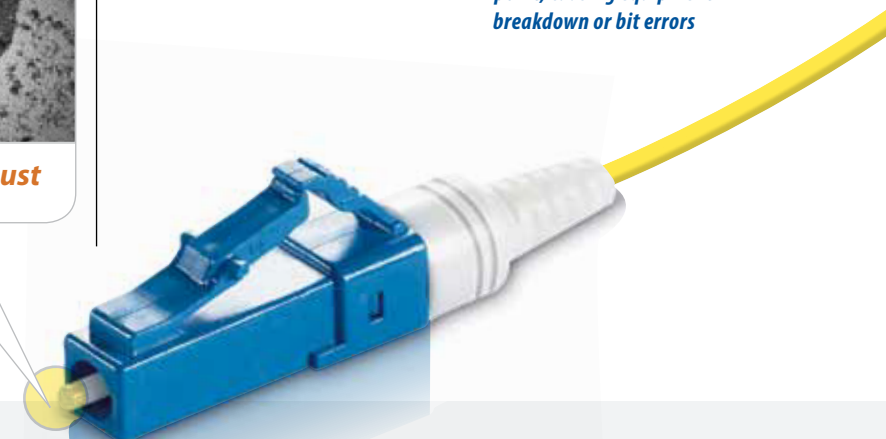
**Hand Lotion**     **Fiber Residue**     **Dirt and Dust**

## Troubles caused by connector end face contamination

**Light is transmitted poorly or not at all**

**Light is reflected back to connection point***

*returning to the transmission point, causing equipment breakdown or bit errors*

## Optical connector must have no contamination prior to mating

What can happen when the optical end face is dirty?
The beam of light may not be able to travel through the core. Optical connectors become contaminated from a variety of reasons. Usually 2-15 micron sized contaminants will have an impact on the signal transmission and could cause damage to the optical end face. The majority of network down time is caused by optical connector contamination.
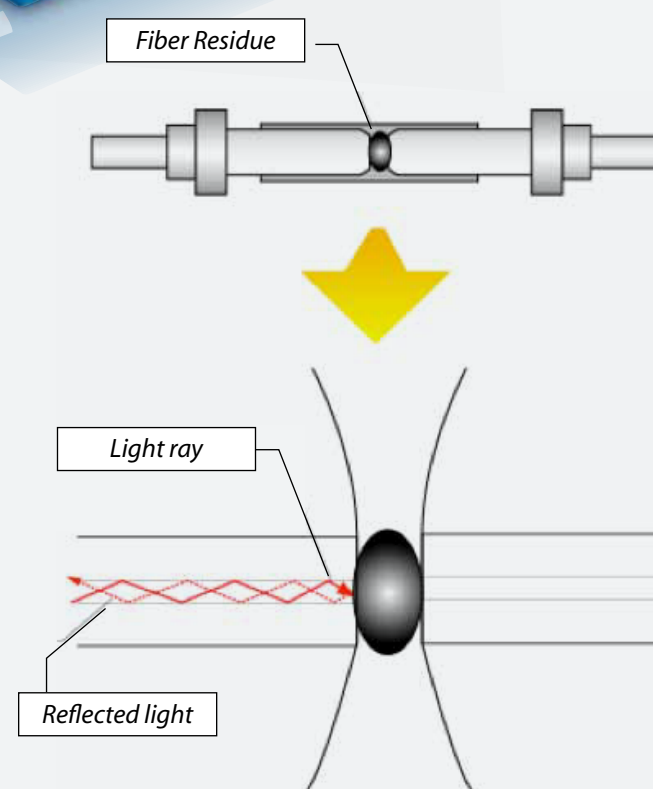
**Light beam is prevented from passing through due to contaminants on the end face, resulting in light reflection.**

Fiber Residue

Light ray

Reflected light

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# What can happen when contaminants adhere to the core?
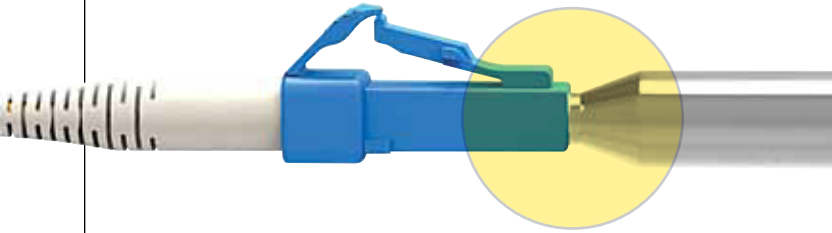
**Mating a clean connector to a dirty connector**

When the unclean optical connector is mated, the contaminant is forced into the ferrule and may become permanently damaged. In this situation, the damage cannot be removed with an optical cleaner.
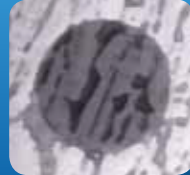
**Clean connector** + **Dirty connector** = **Dirty or Damaged connector**

When contaminants adhere to the core, they will cause increase in signal interruption and increase amount of insertion loss and degradation of return loss. Also, these kinds of contaminants can cause chips, pits, and scratches in the connector end face under the pressure of the physical connection. Large contaminants can result in gaps in the physical connection, resulting in increased loss. These kinds of contaminants can actually spread and migrate by the physical connection.

**Contaminants at the side of the ferrule prevent light from properly passing through due to poor alignment.**

Contaminant

Light ray

---

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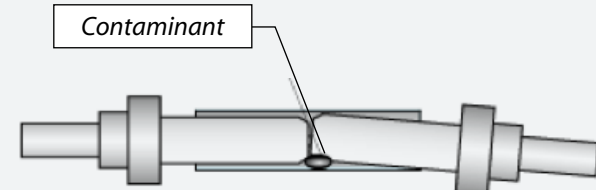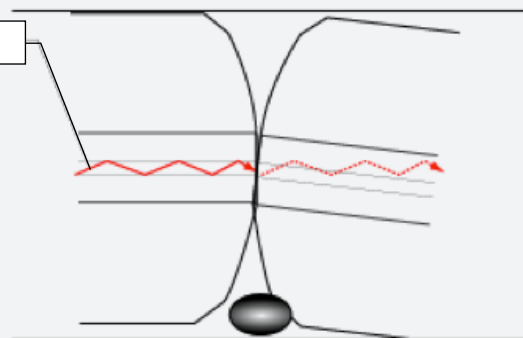
# Where High Power Lasers are used

When residue or contaminants adhere to the optical connector, it will produce heat. This not only could melt the optical fiber, but could also destroy devices and equipment.
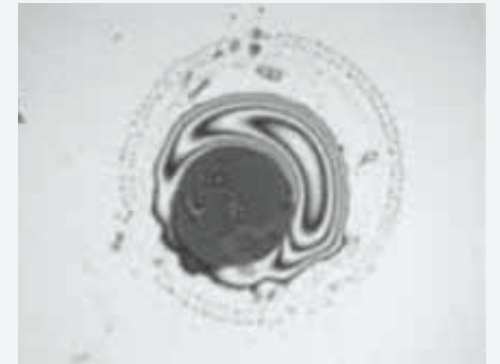
Core damage caused by high power laser in contact with end face contaminants

# Why not IPA?

- Infinitely hydroscopic-self contaminating
- Slow drying (hangs in slit of alignment sleeve, and guide pin holes in MPO)
- Bottled IPA is easily contaminated during handling
- Leaves Residue

Residue remains after cleaning with IPA

The Smart Probe allows technicians to inspect the fiber endfaces, providing a high-definition image with a resolution up to 720px.

# Smart Probe™
## for Fiber Inspection

# Wi-Fi STREAMING

**Images are captured digitally and streamed on the monitor of any Android Tablet**
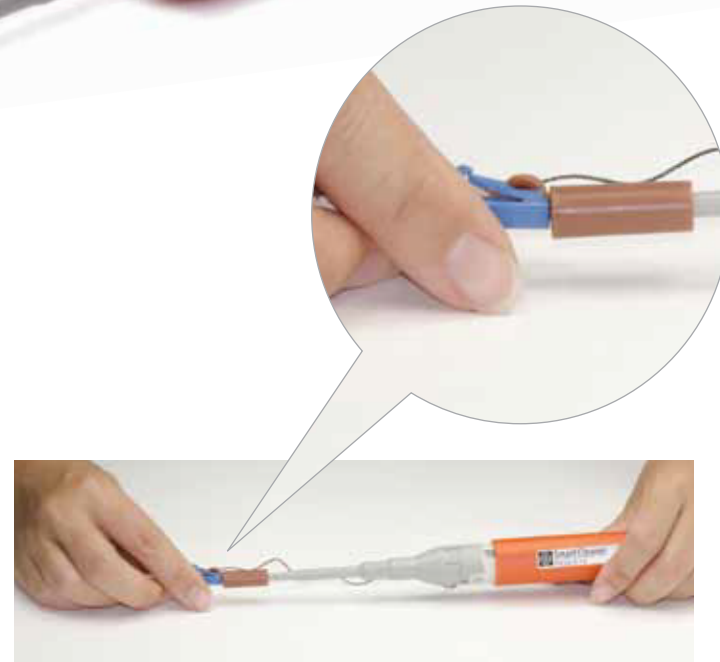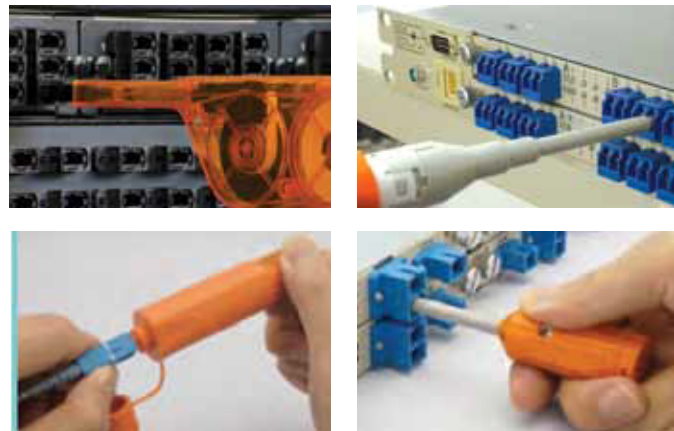
# Smart Cleaner™

## make the switch Orange is better

### FEATURES

· Designed for all types connectors
· Compact size for easy hand-held operations
· Dry-clean without the use of harmful substances
· Cleaning micro fibers are densely stranded and debris free
· Replaceable cartridge
· Constructed with anti-static material.
· 750+ cleanings per unit
· Easy pushing motion engages connector and initiates cleaner
· Extendable tip reaches recessed connectors
· Cleaning system rotates 180 for a full sweep

for **MPO**

for **SC, FC, ST, E-2000**

for **LC, MU**

Smart Cleaner **Mini**

The Smart Cleaner is a dry cloth cleaner specifically designed to clean connections of patch cords, in adapter, faceplates and bulkheads.

# Smart Cleaner
## REPLACEMENT CARTRIDGE TYPE

**Smart Cleaner**

for **LC, MU**

for **SC, FC, ST, E-2000**

**750+** CLEANINGS **FOR EACH CARTRIDGE**

| ORDER CODE | DESCRIPTION |
|---|---|
| SCK-SS-125 | Smart Cleaner 1.25 for LC, MU |
| SCK-SS-250 | Smart Cleaner 2.50 for SC, FC, ST, E-2000 |

### SPECIFICATIONS

| Product Name | Smart Cleaner 1.25 | Smart Cleaner 2.50 |
|---|---|---|
| Compatible Connectors | MU, LC PC and APC | SC, FC, ST, E-2000 PC and APC |
| Attachment Color | Brown | White |

Designed to specially work well with the LC/MU and SC/FC/ST/E-2000 connectors, this instrument cleans the ferrule end faces removing dust, oil, and other debris without nicking or scratching the end face. The SENKO Fiber Optic Cleaner for simplex connections is a dry cloth cleaner specially designed to clean single fiber connectors. Designed as an adapter, the dust cap of the cleaner acts as an adapter for cleaning unmated connectors.

# Replacement Cartridges
## SMART CLEANER 1.25 AND 2.50

**750+** CLEANINGS **FOR EACH CARTRIDGE**

| ORDER CODE | DESCRIPTION |
|---|---|
| SCK-SS-125-R | Replacement Cartridge for 1.25 (LC, MU) |
| SCK-SS-250-R | Replacement Cartridge for 2.50 (SC, FC, ST, E-2000) |

### SPECIFICATIONS

| Product Name | Smart Cleaner 1.25 | Smart Cleaner 2.50 |
|---|---|---|
| Compatible Connectors | MU, LC PC and APC | SC, FC, ST, E-2000 PC and APC |
| Attachment Color | Brown | White |

Senko's Smart Cleaner is composed of a replaceable cartridge containing the cleaning string and the retaining handle which holds it. The handle unit and the cartridge are sold as one unit, while replacement cartridges may also be purchased separately. Each pack contains 3 replacement cartridges (750+ Cleanings for each cartridge).

# Smart Cleaner MINI

for **LC, MU**

for **SC, FC, ST, E-2000**

Designed to specially work well with the LC/MU and SC/FC/ST/E-2000 connectors, this instrument cleans the ferrule end faces removing dust, oil, and other debris without nicking or scratching the end face. The SENKO Fiber Optic Cleaner for simplex connections is a dry cloth cleaner specially designed to clean single fiber connectors. Designed as an adapter, the dust cap of the cleaner acts as an adapter for cleaning unmated connectors.

Smart **Cleaner**

**400+** CLEANINGS **FOR EACH CLEANER**

| ORDER CODE | DESCRIPTION |
|---|---|
| SSCK-SS-M-125 | Smart Cleaner Mini 1.25 for LC, MU |
| SCK-SS-M-250 | Smart Cleaner Mini 2.50 for SC, FC, ST |

SPECIFICATIONS

| Product Name | Smart Cleaner Mini 1.25 | Smart Cleaner Mini 2.50 |
|---|---|---|
| Compatible Connectors | MU, LC PC and APC | SC, FC, ST, E-2000 PC and APC |
| Attachment Color | Brown | White |

- Designed for all types of simplex connectors
- Compact size for easy hand-held operations
- Dry-clean without the use of harmful substances
- Cleaning micro fibers are densely stranded and debris free
- Constructed with anti-static material
- 400+ cleanings per unit
- Easy pushing motion engages connector and initiates cleaner
- Extendable tip reaches recessed connectors
- Cleaning system rotates 180 for a full sweep

# Smart Cleaner for MPO

Designed to work with MPO connectors, this instrument cleans the ferrule end faces removing dust, oil, and other debris without nicking or scratching the end face. The SENKO Smart Cleaner for MPO is a dry cloth cleaner to clean MPO connector with "push and click" mechanism. Like the other Smart Cleaner series, the cleaner the dust cap of the cleaner acts as an adapter for cleaning unmated connectors.

Smart **Cleaner**

**600+** CLEANINGS **FOR EACH CLEANER**

| ORDER CODE | DESCRIPTION |
|---|---|
| SCK-SS-MPO | Smart Cleaner MPO |

SPECIFICATIONS

| Product Name | Smart Cleaner MPO |
|---|---|
| Compatible Connectors | MPO, MTP |
| Compatible End Face | Compatible with flat and 8 degree angled endface with or without guide pins |

- Designed for all types of multifiber connectors
- Cleans jumper end face both male and female
- Compact size for easy hand-held operations
- Dry-clean without the use of harmful substances
- Cleaning micro fibers are densely stranded and debris free
- Constructed with anti-static material
- 600+ cleanings per unit
- Easy pushing motion engages connector and initiates cleaner

# Cassette Cleaner

The Cassette Cleaner wipes away contaminants from optical connector end face with ease. Just as with our previous products, the cleaning tape does not produce dust, and provides special cleaning strength while resisting foreign particles to mix into the tape. The main body also is made from antistatic material. The tape advance mechanism has been simplified, reducing the number of assembly parts to a minimum resulting in cost reductions for both manufacturing and assembly.

Smart **Cleaner**

**400+** CLEANINGS **FOR EACH CLEANER**

| ORDER CODE | DESCRIPTION |
|---|---|
| SCK-CC-100 | Cassette Cleaner |

SPECIFICATIONS

| Product Name | Cassette Cleaner |
|---|---|
| Compatible Connectors | SC, FC, ST, E-2000, LC, MU PC and APC |
| Cleanings | 400+ (tape cannot be replaced) |
| Dimensions | W 115mm × H 55mm × D 25mm |

- Designed for all types of connectors
- Compact size for easy hand-held operations
- Dry-clean without the use of harmful substances
- Cleaning micro fibers are densely stranded and debris free
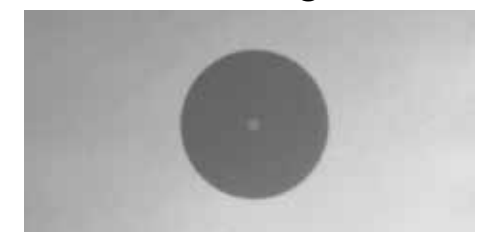- Constructed with anti-static material
- 400+ cleanings per unit

## Before Cleaning
Oil Contamination
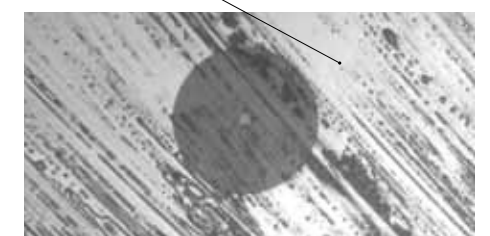
## After Cleaning

# Smart Probe™
## for Fiber Inspection

**WIRELESS DEVICE**

**Wi-Fi** Transmitter on board

The Smart Probe allows technicians to inspect the fibre endfaces, providing a high-definition image

*Tablet/phone not included

ANDROID APP ON **Google play**

**Images are captured digitally and streamed on the monitor of any compatible device**

The FTTA Smart Probe allows technicians to inspect the fiber endfaces. Images are captured digitally and streamed on the monitor of any Android Tablet or Smartphone. The FTTX Smart Probe is an ergonomically designed, compact, Wi-Fi probe for smart phones and tablets. Featuring integrated Wi-Fi module and left/right handed thumb or finger operation for greater ease of use and convenience. Incorporating high resolution sensor outputting 960 x 544 pixel resolution images at 16:9 aspect ratio, the Smart Probe can easily view two MT/MPO fibers rather than just a single fiber. The App, available from Google Play, includes digital zoom and still capture capabilities.

**FEATURES**

· WiFi streaming: easily connect with Smartphones and Tablets
· Replaceable and rechargeable battery
· Available adapter tips (LC, SC, FC, ST, DIN, MPO)
· High-Definition image
· True completely wireless probe.
· Integrated Wi-Fi module
· Highly compact easy to use design
· Left or right handed thumb/finger operation
· Free Smart Phone/Tablet app with digital zoom and still capture functions
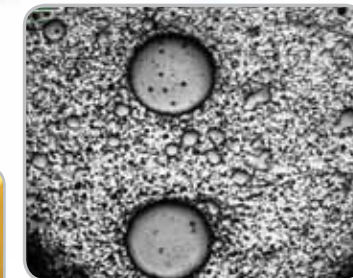· Tips for all common connector types for both patchcord and patch panel inspection

# Smart Probe™

# Smart Probe Wi-Fi
## FOR FIBER INSPECTION

### MPO Tip Up to 24F Available

· For SM & MM MPO (up to 24F)
· High precision alignment
· Available in APC and PC version

Visualization of MT 12 fiber connector end face (two fibers of MT 12 fiber connector)

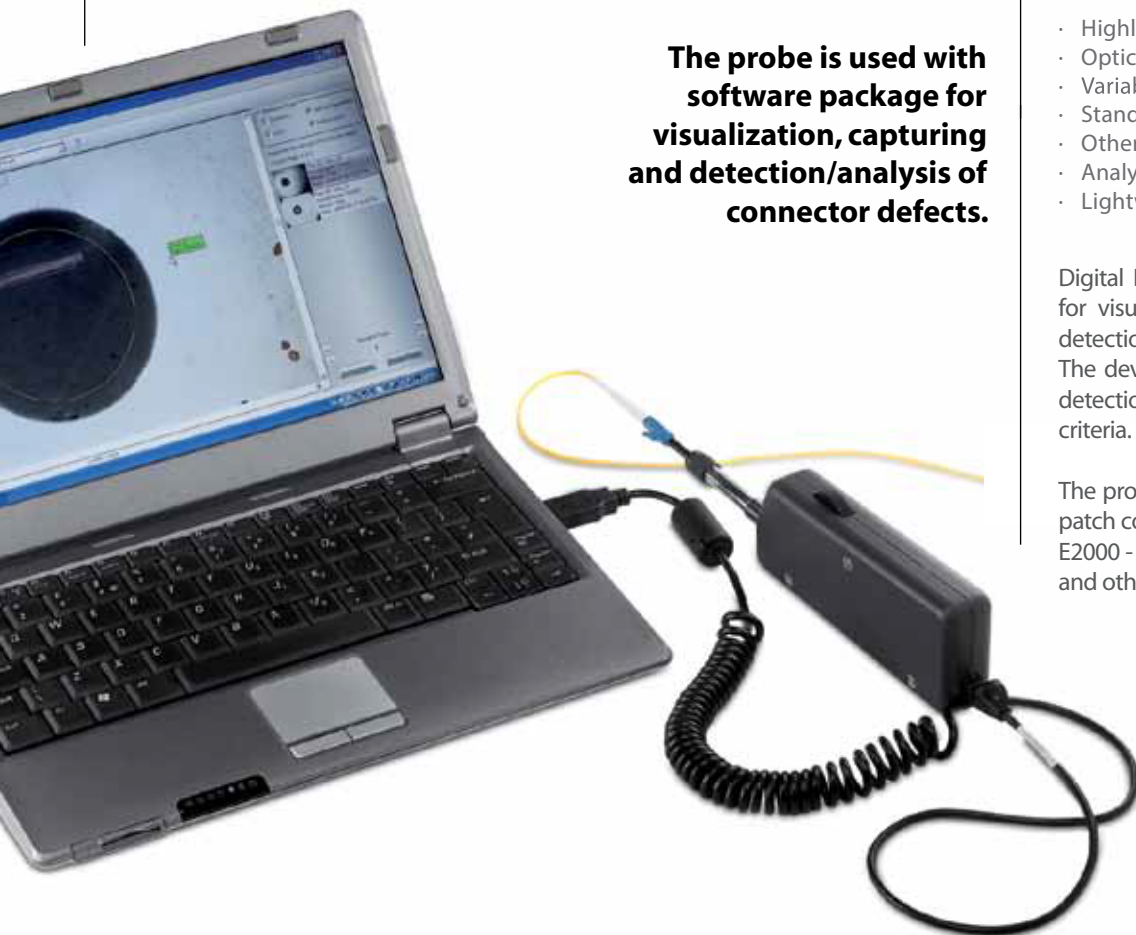| ORDER CODE | DESCRIPTION |
|---|---|
| SCK-VM2000-01 | Smart Probe Wi-Fi |

| SPECIFICATIONS | |
|---|---|
| Field of View | 457μm x 259μm |
| Image Resolution | 960 x 544 |
| Magnification | 328 (based on 7" tablet screen) |
| Frame Rate | 15 fps |
| Video Format | MJPG |
| Still Format | JPEG |
| Sensor Type | CMOS Monochrome |
| Zoom Magnification | Digital x1.25; x1.5; x2: |
| Illumination Method | Coaxial |
| LED | Blue LED (470nm) |
| Connectivity | Wi-Fi 802.11 b/g/n |
| Wireless Signal Rates | 11n: up to 150Mbps (dynamic) 11g: up to 54 Mbps (dynamic) 11b: up to 11 Mbps (dynamic) |
| Frequency Range | 2.412Ghz (channel 1) |
| Power | 2 x Removable BL-5C Batteries |
| Operating Time | 3 hours Continuous Operation |
| Operating Temperature | -10℃ ~ +50℃ |
| Storage Temperature | -30℃ ~ +100℃ |
| Weight | 147g including 2 x BL-5C batteries 138g including 2 x BL-4C batteries |
| Dimension Without Tips | 137.7mm (L) x 40.0mm (H) x 37.4mm (W) |
| Relative Humidity | 10% - 90%, Non-Condensing |
| Storage Humidity | 5% - 90%, Non-Condensing |
| Software | Live image (inspection) and still capture viewing. Zoom (live image) and stills capture functions |
| OS Compatibility | Android 4.0.1 (API level 14) and above |

| DISPOSABLE TIPS | | | | | |
|---|---|---|---|---|---|
| PICTURE | PART NUMBER | DESCRIPTION | PICTURE | PART NUMBER | DESCRIPTION |
| | SCK-FTV-LC/MU | LC and MU In Adapter Tip | | SCK-FTV-SC/FC | SC and FC In Adapter Tip |
| | SCK-FTV-SCAPC | SC APC In Adapter Tip | | SCK-FTV-ST | ST In Adapter Tip |
| | SCK-FTV-PC250 | 2.5mm Universal Tip For Digital FTTX Fiber View | | SCK-FTV-APC250 | 2.5mm APC Universal Tip |

# SENKO®
Advanced Components

## Digital Fiber View



The probe is used with
software package for
visualization, capturing
and detection/analysis of
connector defects.

| ORDER CODE | DESCRIPTION |
|---|---|
| SCK-VM1000-3 | Digital Fiber View |

### SPECIFICATIONS

| | |
|---|---|
| Field of View | d = 0.4 mm |
| Defect SizeDetection | 0.5 µm |
| Optical Resolution | 2 µm |
| Magnification | 560× (variable) |
| Light Source | Blue LED, wave length 470nm |
| Camera Type | Digital |
| Sensor Type | 1280 x 1024 Monochrome 1/2" CMOS |
| Live Image | 800 x 800, 28 fps default 1280 x 1024, 14 fps full resolution |
| Power Source | USB 2.0 Port of PC |
| Cable Connector | USB 2.0 |
| Dimensions (H x W x L) | 56.3 x 25 x 201 mm (2.22 x 0.98 x 7.91 inches) |
| Weight | 330 g (0.73 lbs) |
| Housing Material | Aluminum |
| Barrel Material | Stainless Steel |

### FEATURES

· Highly Portable
· Optical Resolution to 0.5um
· Variable Magnification
· Standard 2.5mm PC Tip
· Other Tips Available
· Analytical Software
· Lightweight Rugged Carry Case

Digital Fiberview is a digital inspection probe for visualization of connector end faces and detection/analysis of connector defects.
The device features high resolution, fiber auto detection/centering and user defined Pass/Fail criteria.

The probes can be used for either bulkhead or patch cord inspection, such as SC, FC, ST, LC, MU, E2000 - PC & APC as well as MT, MTP/MPO, SMA and other military connectors.



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# SENKO®
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Report in MS Excel

## Visual inspection
## single port fiber

| | |
|---|---|
| Test name: | 25 |
| Test ID: | 25 |
| Preset: | IEC PC SM RL 45 dB |
| Device: | SMX-Scopio |
| Hardware ID: | 4022 |
| SMX-Scopio inspection: | 2.1.55.1977 |
| Operator: | Operator 1 |

**FAIL**

## Inspection summary

| ZONE | Diameter (um) | | Anomalies | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Inner | Outer | Type | Criterion | Size range | Result | Count | Allowed |
| A | 0 | 25 | Scratch | Width | >0 | PASS | 0 | 0 |
| | | | Defect | Encompassing circle diameter | >0 | PASS | 0 | 0 |
| B | 25 | 120 | Scratch | Width | >3 | PASS | 0 | 5 |
| | | | Defect | Encompassing circle diameter | 2-5 | PASS | 2 | 5 |
| | | | Defect | Encompassing circle diameter | >5 | PASS | 0 | 5 |
| C | 120 | 130 | | | | | | |
| D | 130 | 250 | Defect | Encompassing circle diameter | >10 | FAIL | 3 | 5 |

### Fiber View
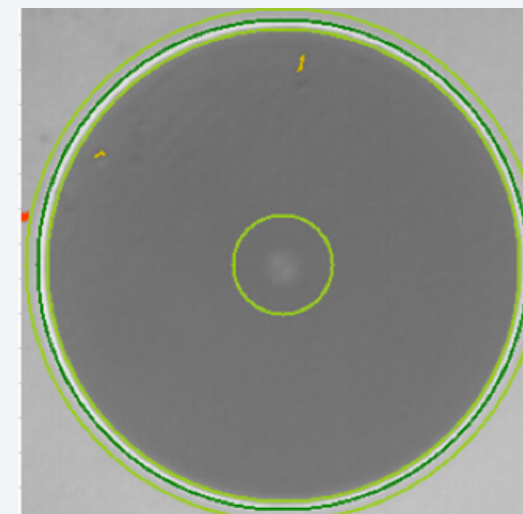


### Full View
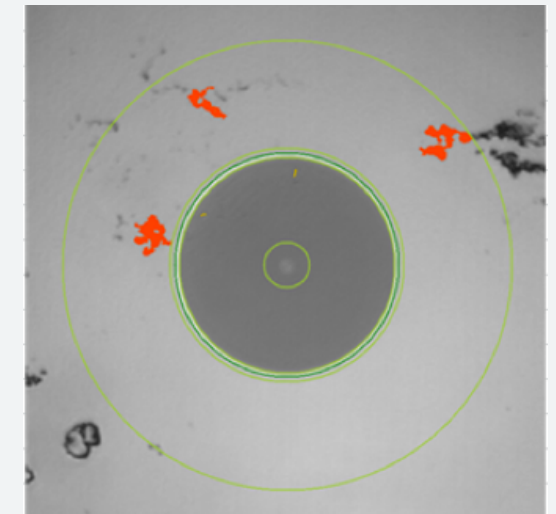
# Smart Source

Smart Source is ideal for field or laboratory testing of optical communication systems at 850 nm / 1300 nm for datacom testing, 1310 nm / 1550 nm / CWDM 1270 nm ~ 1625 nm ( 20 nm spans ) for all WDM testing, as well as 1490 nm for FTTX testing by using interchangeable SFP transceiver modules. Smart Source features zero warm up time, superb productivity and has an easy to use, pocket-sized, rugged design. The smart source can be changed to accommodate either SM or MM by simply switching out the SFP's. The lightweight hand held design eliminates the need to carry big and bulky test equipment.

| ORDER CODE | DESCRIPTION |
|---|---|
| AFT-G-MF-LS | Smart Source Mainframe |

### SPECIFICATIONS

| | |
|---|---|
| Laser Class | Class 1 |
| Wavelength (nm) | Select required wavelength Smart Source SFP Plug-In module and order separately |
| Output Power | 1mW @ 25ºC into singlemode fiber |
| Mode | CW/2 kHz Pulse |
| Battery Type | AAA 1.5Vx2 |
| Output Power Accuracy | +/-0.2 dB |
| Stability (8 Hours) | +/-0.05 dB |
| Operating Temperature | 0~ 50℃ |
| Storage Temperature | 0~ 70℃ |

### FEATURES

- No pre-warm up time
- Interchangeable SFP module design for wavelength flexibility
- Excellent output wavelength stability
- Excellent re-connection repeatability
- Low Voltage Battery warning
- Compatible to LC Connectors

# Interchangeable Modules for Smart Source

### FEATURES

- Lightweight and portable
- Excellent wavelength stability
- Excellent output power stability
- Also available in other wavelengths*

| ORDER CODE | DESCRIPTION |
|---|---|
| AFT-G-LS-S-1550 | SM SMART SOURCE SFP Module 1550 |
| AFT-G-LS-S-1310 | SM SMART SOURCE FP SFP Module 1310 |
| AFT-G-LS-M-1300 | MM SMART SOURCE SFP Module 1300 |
| AFT-G-LS-M-850 | MM SMART SOURCE SFP Module 850 VCSEL |

### SPECIFICATIONS

| | |
|---|---|
| Laser Class | Class 1 |
| Wavelength (nm) | Select the required wavelength Smart Source SFP Plug-In module and order separately |
| Output Power | 1mW @ 25℃ into singlemode fiber |
| Mode | CW/2 kHz Pulse |
| Battery Type | AAA 1.5Vx2 |
| Output Power Accuracy | +/-0.2 dB |
| Stability (8 Hours) | +/-0.05 dB |
| Operating Temperature | 0~ 50℃ |
| Storage Temperature | 0~ 70℃ |

Note:* Other Wavelength options such as 850, 1300, 1310, 1550 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1625 available upon request.

# Smart Meter

The Smart Meter measures power in both 850 nm / 1300 nm (Multimode) and 1310nm ~ 1625nm (Singlemode) respectively. The SENKO smart meter, in conjunction with the SENKO smart source is an effective, quick way to test and certify a fiber optic link. The meter comes in multimode and single mode with respective wavelengths at 850/1300 MM and 1310/1550 SM.

| ORDER CODE | DESCRIPTION |
|---|---|
| AFT-G-FM-3DG-S | SM Smart Meter 1310/1550nm 3 digits |
| AFT-G-FM-2DG-M | MM Smart Meter 850/1300nm 2 digits |
| AFT-G-CAM | 2.5 mm to 1.25 mm Adapter |

### SPECIFICATIONS

| | |
|---|---|
| Wavelength (Multimode) | 850 nm/ 1300 nm |
| Optical Power Range (Multimode) | -30 dBm ~ -15 dBm |
| Wavelength (Singlemode) | 1310nm ~ 1625nm |
| Optical Power Range (Singlemode) | -40dBm ~ +5dBm |
| Battery | AAA 1.5VX2 |
| Resolution | 1 dBm/ 0.1dBm |
| Fiber Connector | Universal Type |
| Display | 2 Digit (MM) / 3 Digit (SM) |
| Operating Temperature | 0~ 50℃ |
| Storage Temperature | 0~ 70℃ |

### FEATURES

Smart Meter
2.5 (SC, FC, ST) to LC (1.25) Conversion Adapter

# Smart Checker

## VISIBLE FAULT LOCATOR

Refraction of the 650nm red light caused by any breaks and or cracks in the fiber will glow red, thus giving an exact visual location of the fault in the fiber.

Smart Checker
2.5 (SC, FC, ST) to LC (1.25) Conversion Adapter

| ORDER CODE | DESCRIPTION |
|---|---|
| AFT-G-FC | SM Smart Checker 1310/1550nm 2 digits |
| AFT-G-CAC | 2.5mm to 1.25mm Adapter |

### SPECIFICATIONS

| | |
|---|---|
| Laser Class | Class 2M |
| Wavelength | 650 nm +/-10 nm@ 25 |
| Spectral Width | <10nm |
| Output Power | >0.5 mW@ 25 into singlemode fiber |
| Mode | CW/ Pulse |
| Battery Type | AAA 1.5Vx2 |
| Output Power Reliable | +/-0.2 mW |
| Transmitting Range | Visibility to 3 Km |
| Operating Temperature | 0~ 50℃ |
| Storage Temperature | 0~ 70℃ |

### FEATURES

- Continuous / Pulse Mode options
- Auto Power Control circuit design to provide a stable LD output power
- Low Voltage Battery warning signal in LED
- Compatible to SC / ST / FC / LC Connectors
- Visibility to 3 Km

# MPO 12 Smart Checker

## VISIBLE FAULT LOCATOR

### OVERVIEW

The MPO Visible light source is a useful tool designed for checking the Fiber ports in both MM and SM assemblies, or checking for defects in a MPO arrayed fiber cable. It emits a visible 650nm wavelength visible red laser light through fiber optic cables; if there are breaks or defects in the fiber then the light will refract, creating a bright glow around the faulty area. The Laser Diode output signal can be switched from all fibers at the same time or sequentially through each individual fiber in either Continuous Wave Mode or Flashing Mode to obtain different visual effects.

| ORDER CODE | DESCRIPTION |
|---|---|
| AFT-G-FC-MPO | MPO 12 Smart Checker |

SPECIFICATIONS

| | |
|---|---|
| **Cable Compatibility** | 4, 8 and 12 channel MPO Single Mode and Multi-Mode |
| **Measurement** | Fibre continuity by Visible Fault Location |
| **Functions** | Individual fibre channels selected using rotary switch and two digit LED display Select mode for all channels: continuous wave or pulsed |
| **Light Source and Detector** | Red laser on each output channel |
| **Power** | Internal lithium battery, re-chargeable via USB port Capacity: 1400mAh, min. battery life: 5 hours |
| **Laser Class** | Class 2B |
| **Wavelength** | 650 nm ± 10 nm @ 25 degC |
| **Spectral Width** | < 10 nm |
| **Optical Output Power** | > 0.4 mW @ 25 degC into 9 µm fibre |
| **Light Emitting Range** | > 3 km |
| **Operating Temperature** | 0~ 50℃ |
| **Storage Temperature** | 0~ 70℃ |
| **Weight** | 0.65 kg |
| **Dimensions** | 168mm (W), 128mm (D), 35mm (H) |

# INSPECT CLEAN CONNECT KITS

# 👍 CLEANING

## Smart Cleaner 1.25 or 2.50

Designed to specially work well with the LC/MU and SC/FC/ST/E-2000 connectors, this instrument cleans the ferrule end faces removing dust, oil, and other debris without scratching the end face.

## Smart Cleaner Mini 1.25 or 2.50

Designed to specially work well with the LC/MU and SC/FC/ST/E-2000 connectors, this instrument cleans the ferrule end faces removing dust, oil, and other debris without scratching the end face.

## Smart Cleaner MPO

Designed to work with MPO connectors, this instrument cleans the ferrule end faces removing dust, oil, and other debris without nicking or scratching the end face.

## Cassette Cleaner

The Cassette Cleaner wipes away contaminants from optical connector end face with ease. The cleaning tape does not produce dust, and provides special cleaning strength.

## Fiber Optic Cleaning Pen

This precision cleaner quickly cleans the end faces of fiber optic connectors, while eliminating electrostatic charge which can attract airborne contaminants to the end face.

## Lint Free Wipes

These inexpensive tissues can be used dry or with several cleaning solvents to clean off ferrule endfaces or prepare fibers for termination and/or splicing.

## Cleaning Solvent

This fast-acting cleaner can be used with dry fiber wipes or tissues to remove dirt and soils from optical fibers prior to termination and fiber optic splicing or to clean the end of connector ferrules.

## 4x4 NON-Woven Wipes

Non-Woven cloth wipes can be used alone or with alcohol or solvents. Provides superior cleaning of fiber optic connector ferrules without risk of scratching or lint residue.

## Cleaning Stick 1.25 or 2.50

## Broadcast Cleaning Sticks

# 👁 INSPECTION

## Smart Probe WiFi for fiber inspection

**WIRELESS DEVICE**
Wi-Fi Transmitter on board

ANDROID APP ON Google play

## Digital FiberView with Inspection Software

# 🌀 TESTING

## Smart Testers for network troubleshooting

*Smart Checker*

*Smart Meter*

*Smart Source*

## Make your own kit 🛒

**Choose the right product you want and need for your work, and create your own custom kit**

| Make Your Own Kit | PART NUMBER |
|---|---|
| Cassette Cleaner Disposable | SCK-CC-100 |
| Smart Cleaner 1.25 | SCK-SS-125 |
| Smart Cleaner 2.50 | SCK-SS-250 |
| Smart Cleaner Mini 1.25 | SCK-SS-M-125 |
| Smart Cleaner Mini 2.50 | SCK-SS-M-250 |
| Smart Cleaner MPO | SCK-SS-MPO |
| Lint Free Wipes | AFT-A-KW |
| Fiber Optic Cleaning Pen | AFT-A-EWP |
| 4x4 NON-WOVEN WIPES | AFT-A-NW |
| 1.25 MM Stick 250 pcs. | CSK-01 |
| 2.5 MM Stick 250 pcs. | CSK-02 |
| Broadcast Stick 200 pcs. | CSK-03 |
| Cleaning Solvent (Not Available in Europe) | AFT-A-FS |
| Smart Probe Wi-Fi | SCK-VM2000-01 |
| Digital FiberView | SCK-VM1000-01 |
| Smart Source | AFT-G-MF-LS |
| Smart Meter | AFT-G-FM-3DG-S |
| Smart Checker | AFT-G-FC |
| Soft Case | AFT-A-CS-XP |

**We put everything in a Soft Case and we deliver it to you**

⊗SENKO

## CLEANING

Cartridge Type for use in Plugs

Pen Type Convertible for Plugs and Adaptors
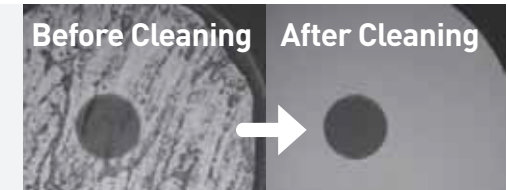
Stick Type for Adaptors

### Senko's Optical Connector Lineup creates reliability in telecommunications service

The cause of numerous problems in optical communication equipment is contamination of the end face of optical connectors. Senko has developed optical fiber cleaners with fiber specifically for optical connectors to help create a reliable telecommunications service. Senko's optical connector cleaners eliminate even the smallest contaminants that are visible only through magnification.

Ferrule End Face Cleaners

| LC Adapter / MU Adapter | | Cleaning Sticks 1.25 | Smart Cleaner Reusable 1.25 | Smart Cleaner Mini 1.25 |

| SC Adapter / E-2000 Adapter | | Cleaning Sticks 2.50 | Smart Cleaner Reusable 2.50 | Smart Cleaner Mini 2.50 |

| ST Adapter / FC Adapter | | Cleaning Sticks 2.50 | Smart Cleaner Reusable 2.50 | Smart Cleaner Mini 2.50 |

**Multi-Core Connectors**

MPO-PLUS™        MPO-PLUS™

Ferrule End Face Cleaners

MPO Plug        MPO Adapter        Smart Cleaner Cassette        Smart Cleaner MPO

## Connector and Cleaner Compatibility

Before Cleaning | After Cleaning

### Why is cleaning optical connectors so important?

Contamination of the optical connector end face can easily occur. The transmission quality will be affected once the contaminants adhere to the 10μm diameter optical fiber core, and there is increased danger that the fiber end face will be damaged by any high powered light. Cleaning the optical connector end face is extremely important before making a connection.

Ferrule End Face Cleaners

| LC Plugs / MU Plugs | | Smart Cleaner Cassette | Smart Cleaner Reusable 1.25 | Smart Cleaner Mini 1.25 |

| SC Plugs / E-2000 Plugs | | Smart Cleaner Cassette | Smart Cleaner Reusable 2.50 | Smart Cleaner Mini 2.50 |

| FC Plugs / ST Plugs | | Smart Cleaner Cassette | Smart Cleaner Reusable 2.50 | Smart Cleaner Mini 2.50 |

**For Video Equipment**

### Cleaners for Video Equipment

CLETOP Stick 2.0/2.5mm Double Ended

CLETOP Stick 2.0mm Type

LEMO Connector
*Optimal compound connectors*

*Optimal cleaning for various video equipment (LEMO, Tajimi brand, etc.)*

# CLEANING YOUR CONNECTORS

## Dry Cleaning
### How to Dry Clean

Remember, always use the dry cleaning method first before attempting wet-dry cleaning.

**KITS**

Insert the jumper and push the outer shell to begin cleaning. A click sound will indicate that the cleaning is complete. Some mechanical cleaners are compatible with male and female jumpers as well as the MPO and other connectors.



**Smart Cleaner**
*Single-fiber mechanical cleaner (male/female)*

**Smart Cleaner MPO**
*Multifiber mechanical cleaner (MTP/MPO, male/female)*

**Cassette Cleaner**
*Patch-cord mechanical cleaner (female only)*

Dry cleaning using a mechanical cleaner is recommended as the first step. If, after two dry cleaning attempts, soil is still present on the connector, try Wet-Dry cleaning.

## Wet-Dry cleaning
### How to Wet-Dry clean

Wet-Dry cleaning is a mix of wet and dry cleaning methods and involves using a solvent. The first step is to clean the connector endface with a solvent and then dry any remaining residue with either a wipe or a swab. If, after using the Wet-Dry cleaning method, the connector still fails to meet the acceptance criteria, consider replacing the connector.

**Fiber Optic Cleaning Pen**
*Used to dispense optical grade solvent to clean connectors*

**Cleaning Stick**
*Used to clean the inside of female connectors and adaptors*

**4x4 NON-Woven Wipes**
*Used in dry cleaning procedures and also used to dry off any solvent*

### How to Clean Using the Wet-Dry Method

**1** Wet a corner of the wipe with solvent.

**2** In a smooth linear motion, trace the endface of the jumper twice over the wet area.

**3** In a smooth linear motion, trace the endface of the jumper three times over the dry area.

## CLEANING & INSPECTION

### Pre-packaged kits

# FiberView Kit

| CONTENT FOR FIELD INSTALLATION KIT | SENKO PN |
|---|---|
| Smart Probe Wi-Fi | SCK-VM2000-01 |
| Smart Cleaner 1.25 | SCK-SS-125 |
| Smart Cleaner 2.50 | SCK-SS-250 |
| 1 4x4 Non Woven Wipes | AFT-A-NW |
| 1 Solvent | AFT-A-FS |
| Soft Case | AFT-A-CS-XP |

**Smart Probe WiFi for fiber inspection**

ANDROID APP ON Google play

*Tablet not included

**Smart Cleaner 1.25 or 2.50**

**Lint Free Wipes**

**Cassette Cleaner**

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## CLEANING & INSPECTION

### Pre-packaged kits

# FTTX Kit

| CONTENT FOR FTTX KIT | SENKO PN |
|---|---|
| Smart Source Mainframe | AFT-G-MF-LS |
| SM Smart Meter 1310/1550nm 3 digits | AFT-G-FM-3DG-S |
| MM Smart Meter 850/1300nm 2 digits | AFT-G-FM-2DG-M |
| 2.5 mm to 1.25 mm Adapter | AFT-G-CAM |
| SM Smart Checker 1310/1550nm 2 digits | AFT-G-FC |
| 2.5mm to 1.25mm Adapter | AFT-G-CAC |
| Smart Cleaner 1.25 | SCK-SS-125 |
| Smart Cleaner 2.50 | SCK-SS-250 |
| 1 4x4 Non Woven Wipes | AFT-A-NW |
| 1 Solvent | AFT-A-FS |
| Soft Case | AFT-A-CS-XP |

**Smart Testers for network troubleshooting**

*Smart Checker*

*Smart Meter*

*Smart Source*

**Smart Cleaner 1.25 or 2.50**

**Lint Free Wipes**

**Cassette Cleaner**

# FIELD INSTALLATION

## Pre-packaged kits



The XP-Fit Installation Kit contains everything needed for installation of the SC and LC XP FIT PLUS connectors. No epoxy, polishing film, or other consumables are required, and there is no need for electrical power, allowing installers to get in and out of installation sites quickly.

### FEATURES

· Fast installation to minimize onsite labour costs
· Compatible with conventional LC & SC connectors and adaptors
· Easy operation
· Quick assembly in under 2 minutes
· No adhesive or polishing required
· Compact tool without electric power

Easy installation in under 2 minutes

# XP Fit Installation KIT

| ORDER CODE | DESCRIPTION |
|---|---|
| XPF-P-F | XP Fit Field Installation Kit with Flat Cleaver - PREMIUM |
| XPF-S-F | XP Fit Field Installation Kit with Flat Cleaver - STANDARD |
| XPF-P-A | XP Fit Field Installation Kit with Angled Cleaver |

| DESCRIPTION | SENKO PN |
|---|---|
| XP Fit Field Installation Kit with Flat Cleaver - PREMIUM | XPF-P-F |
| Jacket and 250μm Fiber Stripper + 125μm Buffer Remover | AFT-T-223-S |
| Thermal Buffer Removal Tool | AFT-T-TBR |
| Replacement Blade Set | AFT-T-TBR-R |
| Precision Cleave Tool (Flat) - Premium | AFT-T-CL-SMT |
| Lint Free Dry Wipes | AFT-A-KW |
| Fiber Optic Cleaning Pen | AFT-A-EWP |
| Kevlar Scissors | AFT-T-KS |
| Fibre Disposal Unit | AFT-A-FU |
| Fine Permanent Marker Pen | AFT-A-PMB |
| Fibre Checker | AFT-G-FC |
| 2.5mm to 1.25mm Adapter | AFT-G-CAC |
| Launch Cables | XPF-TEST-KIT |
| Soft Case | AFT-A-CS-XP |

| DESCRIPTION | SENKO PN |
|---|---|
| XP Fit Field Installation Kit with Flat Cleaver- Standard | XPF-S-F |
| Precision Cleave Tool (Flat) - Standard | AFT-T-CL-01 |

*Note: The contents of this Kit are the same as the XPFP- F, but alternatively, includes a Premium Flat Cleaver.*

| DESCRIPTION | SENKO PN |
|---|---|
| Content for XP Fit Field Installation Kit with Angled Cleaver | XPF-P-A |
| Precision Cleave Tool (Angled) | AFT-SE-AFC-08 |

*Note: The contents of this Kit are the same as the XPFP- F, but alternatively, includes a Angled Cleaver.*
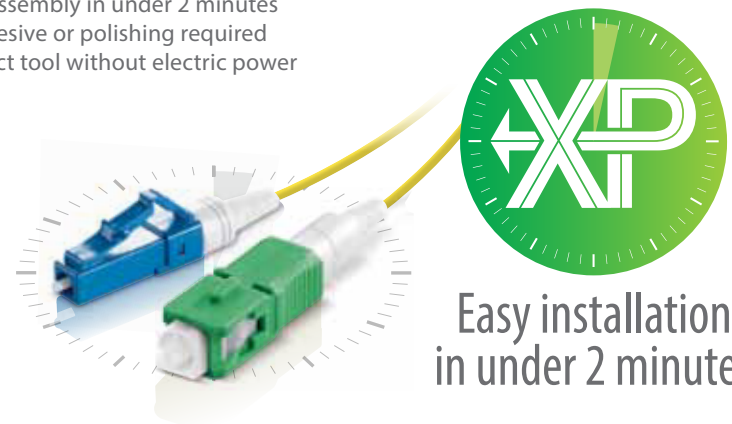
Contents may vary according to region

# FIELD INSTALLATION

## Pre-packaged kits

1. Soft Case
2. Fibre Disposal Unit
3. Lint Free Wipes
4. Standard Cleaver
5. Smart Checker
6. Buffer Remover
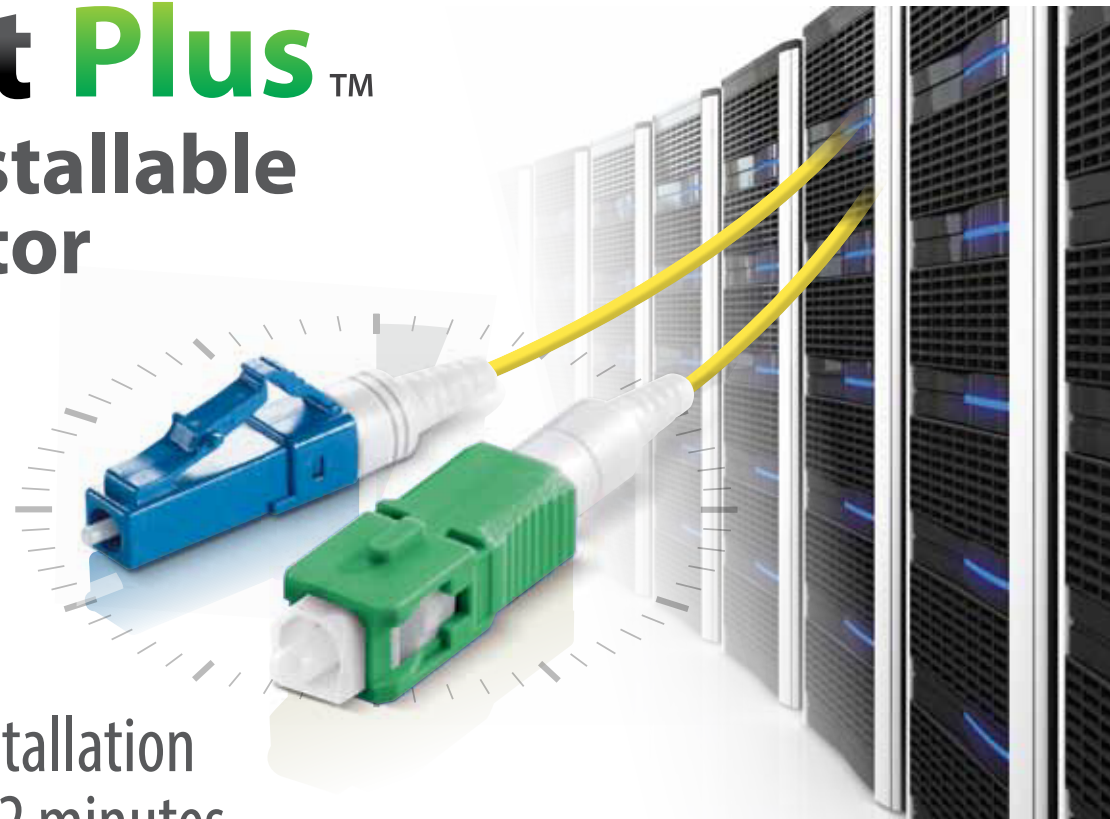7. Launch cables
8. Fiber Stripper
9. Kevlar scissors

XP Fit Installation KIT content detail



**Premium Cleaver Flat**



**Standard Cleaver Flat**



**Precision Cleaver Angled**

# XP Fit **Plus** ™
## Field Installable Connector
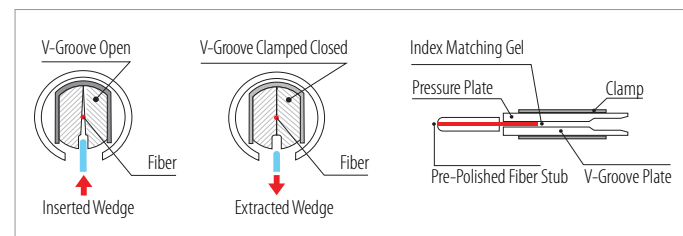
### Easy installation in under 2 minutes

The SENKO XP Fit Plus is a pre-polished, pre-assembled connector compatible with standard SC and LC connectors. No epoxy is required as an internal mechanical grip effectively holds the fiber in place and can be installed in under two minutes. Without polishing or adhesives, the XP Fit Plus makes on site installations quick and easy, diminishing the need for epoxy curing and hand polishing at the work site. The XP Fit Plus comes with an assembly jig and fiber holder for 250µm and 900µm tight buffered fiber, ensuring accurate alignment and fiber cleave when terminating.

▶ **1** Cutting Fiber     ▶ **2** Inserting Fiber     ▶ **3** Take Out Connector

FEATURES

· Mechanical Splice (index matching gel)
· Highly Stable & Reliable
· Perfect Performance
· Compact Package
· RoHS Compliant
· Finished Connector meets UL94-V0 Flammability Rated
· TIA/EIA 568-C.3 Compliant

V-Groove Open        V-Groove Clamped Closed        Index Matching Gel

Fiber                 Fiber        Pressure Plate        Clamp

Inserted Wedge       Extracted Wedge      Pre-Polished Fiber Stub    V-Groove Plate

## XP Fit Plus SC
### FIELD INSTALLABLE CONNECTOR

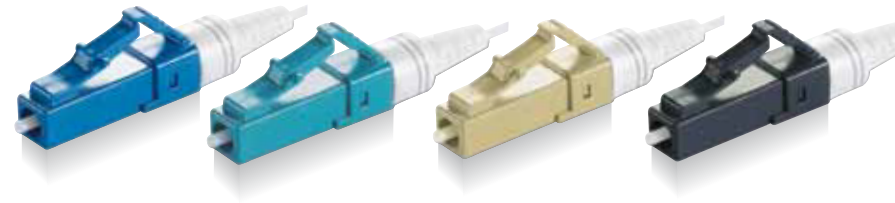| PART NUMBER | DESCRIPTION | HOUSING | BOOT COLOR |
|---|---|---|---|
| 318-191-627 | XPFit Plus SC Connector SM: PC 900µm/250µm (120 pack) | Blue | White |
| 318-091-427 | XPFit Plus SC Connector SC: APC 900µm/250µm (120 pack) | Green | White |
| 318-291-727 | XPFit Plus SC Connector MM: 50/125 900µm/250µm (120 pack) | Black | White |
| 318-391-927 | XPFit Plus SC Connector MM: 62.5/125 900µm/250µm (120 pack) | Beige | White |
| 318-491-527 | XPFit Plus SC Connector MM: 50/125 10G OM3 900µm/250µm (120 pack) | Aqua | White |
| 318-091-457 | XPFit Plus SC Connector SC: APC Drop Cable | Green | Black |

**Note:** 12 pack available Add -12 to existing part number

| SPECIFICATIONS | SINGLEMODE | MULTIMODE |
|---|---|---|
| For XP Fit Plus SC | Typical | |
| Insertion Loss | 0.2dB (PC) 0.3dB (APC) | 0.1dB |
| Return Loss | 55dB (PC) 60dB (APC) | 35dB |
| Durability | <0.1dB change, 500 matings | |
| Operating Temperature | –40ºC to +75ºC | |
| Tensile | TIA/EIA 568-C.3 | |
| Intermateability | IEC 61754-4 | |

**Note:** *Specifications shown above were obtained using SENKO recommended products and procedures.

**Note:** The connector performance specifications include an internal mechanical splice

## XP Fit Plus LC
### FIELD INSTALLABLE CONNECTOR

| PART NUMBER | DESCRIPTION | HOUSING | BOOT COLOR |
|---|---|---|---|
| 951-191-111 | XPFit Plus LC Connector SM: PC 900µm/250µm (120pack) | Blue | White |
| 951-291-411 | XPFit Plus LC Connector MM: 50/125 900µm/250µm (120pack) | Black | White |
| 951-391-211 | XPFit Plus LC Connector MM: 62.5/125 900µm/250µm (120pack) | Beige | White |
| 951-491-511 | XPFit Plus LC Connector MM: 50/125 10G OM3 900µm/250µm (120pack) | Aqua | White |

**Note:** 12 pack available Add -12 to existing part number

| SPECIFICATIONS | SINGLEMODE | MULTIMODE |
|---|---|---|
| For XP Fit Plus SC | Typical | |
| Insertion Loss | 0.2dB (PC) 0.3dB (APC) | 0.1dB |
| Return Loss | 55dB (PC) 60dB (APC) | 35dB |
| Durability | <0.1dB change, 500 matings | |
| Operating Temperature | –40ºC to +75ºC | |
| Tensile | TIA/EIA 568-C.3 | |
| Intermateability | IEC 61754-4 | |

**Note:** *Specifications shown above were obtained using SENKO recommended products and procedures.

## XP Fit KIT

No epoxy, polishing film, or other consumables are required for installation.

The XP Fit Installation Kit contains everything needed for installation of the SC and LC XP FIT PLUS connectors.

No epoxy, polishing film, or other consumables are required, and there is no need for electrical power, allowing installers to get in and out of installation sites quickly.

# SENKO
## Advanced Components



## SENKO ADVANCED COMPONENTS, INC.

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