

# ASSEMBLY INSTRUCTION

## FIBER OPTIC CONNECTORS INSPECTION AND CLEANING PROCEDURES FOR DIALINK CONNECTORS



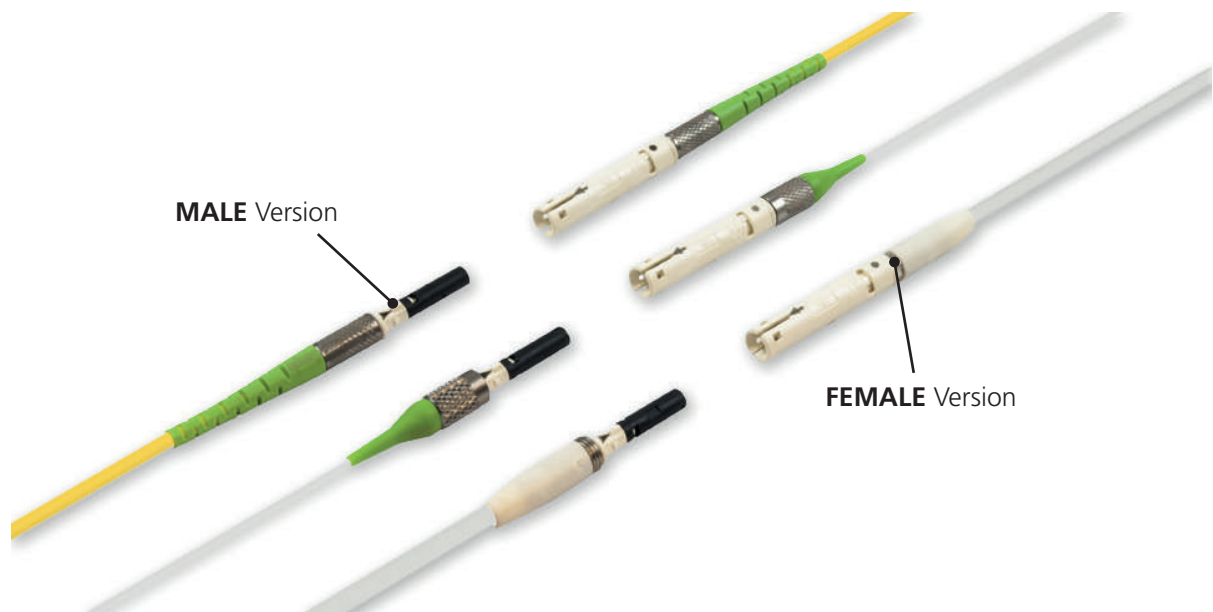
## INDEX

<b>1</b>	<b>INTRODUCTION</b>	<b>2</b>
1.1	Overview of DiaLink connectors	2
<b>2</b>	<b>DIALINK INSPECTION TECHNIQUE</b>	<b>3</b>
2.1	Fibre optic cleaning and troubleshooting process flow	3
<b>3.</b>	<b>LIST OF EQUIPMENT FOR INSPECTION &amp; CLEANING DIALINK CONNECTORS</b>	<b>4</b>
<b>4.</b>	<b>P5000I MICROSCOPE PROBE</b>	<b>5</b>
<b>5.</b>	<b>DIALINK INSPECTION TECHNIQUE</b>	<b>6</b>
5.1	Inspection of the Dialink APC end face - Male version	6
5.2	Inspection of the Dialink PC end face - Male version	6
5.3	Cleaning the Dialink PC/APC end face - Male version	7
5.4	Male version method 2. cleaning	7
<b>6.</b>	<b>INSPECTION &amp; CLEANING PROCEDURE FOR DIALINK APC &amp; PC MALE VERSION</b>	<b>8</b>
6.1	Inspection of the Dialink APC end face - Female version	9
6.2	Inspection of the Dialink PC end face - Female version	9
6.3	Dialink PC/APC free ferrule end face dry cleaning procedure with the cleptop	10
6.4	If the criteria is met, the connector may be returned to service	11
<b>7.</b>	<b>ZONE DEFINITION</b>	<b>12</b>
<b>8.</b>	<b>EXAMPLES</b>	<b>13</b>
8.1	Visual inspection examples of PC SM 9 & MM 50/62 $\mu\text{m}$ fibre on OLP-82P VIAVI microscope	14
8.2	Viasual inspection examples of APC SM 9 $\mu\text{m}$ fibre on OLP-82P VIAVI microscope	15

## 1. INTRODUCTION

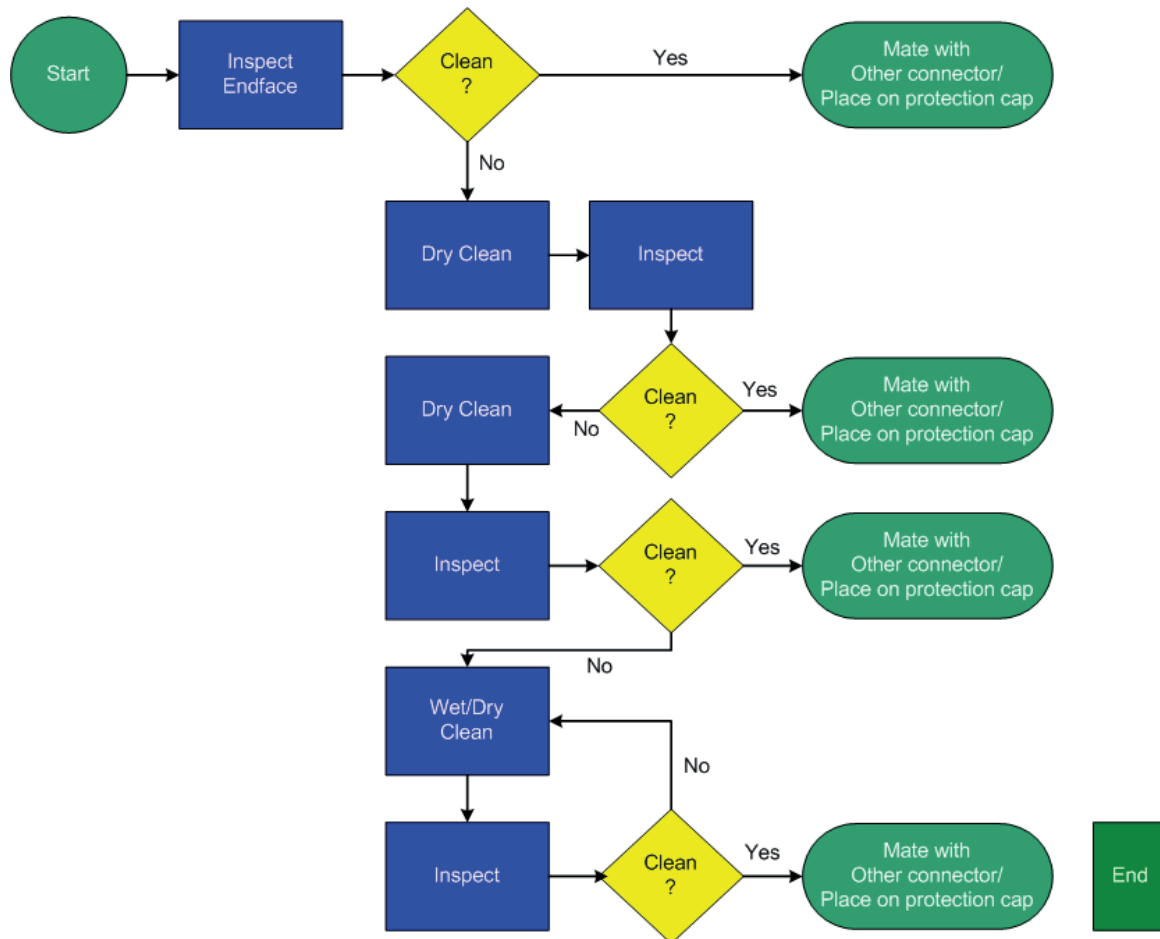
Proper performance of a fibre optic connection is strongly dependant on the cleanliness of the mated ferrules. DIAMOND connectors are thoroughly inspected and cleaned prior to shipment. Before placing a connector in service, it is however advisable to inspect it before. After repeated mating's, however, or when degraded performance is observed, it may become necessary to clean the individual ferrules and mating sleeve. The following instructions outline proper cleaning and inspection procedures to help ensure optimal connector performance.

### 1.1 OVERVIEW OF DIALINK CONNECTORS



## 2. DIALINK INSPECTION TECHNIQUE


### 2.1 FIBRE OPTIC CLEANING AND TROUBLESHOOTING PROCESS FLOW



If after repeated cleaning the connector still does not meet the acceptance criteria, the connector must be replaced or re-polishing.

Re-polishing should only be performed by trained personnel using Diamond polishing machines. Always keep the protective cap on the connector when not in use.

### 3. LIST OF EQUIPMENT FOR INSPECTING & CLEANING DIALINK CONNECTORS

Denomination	Part no.	Image
Video Inspection Microscope Viavi	1081582	
P5000i Digital inspection probe, including universal 2.5mm (PC) tip for free connector inspection. Further tips may be ordered. Laptop excluded.	1074601	
Cleptop Cassette Cleaner Type B	1038981	
IBC-1.25 for in adapter cleaning (1.25mm PC/APC)	1070131	
DiaLink APC male inspection adapter DLM8°- I	1089287	
DiaLink APC female inspection adapter DLF8°- I	1089290	
DiaLink PC male inspection adapter DLM0°- I	1089291	
DiaLink PC female inspection adapter DLF0°- I	1089292	
DiaLink APC/PC male cleaning adapter DLM- C	1089293	
DiaLink cleaner (Stopper + IBC cleaner 1.25 for DiaLink in-adapter cleaning)	1085130	

#### 4 P5000I MICROSCOPE PROBE

The p5000I Microscope Probe maybe connected to a PC/laptop or Microscope OLP-82P. The system is optically separated by a monitor. There is no direct contact with the eye, no eye danger. It can be used with active channels as well.



P5000I probe connected to OLP-82P microscope

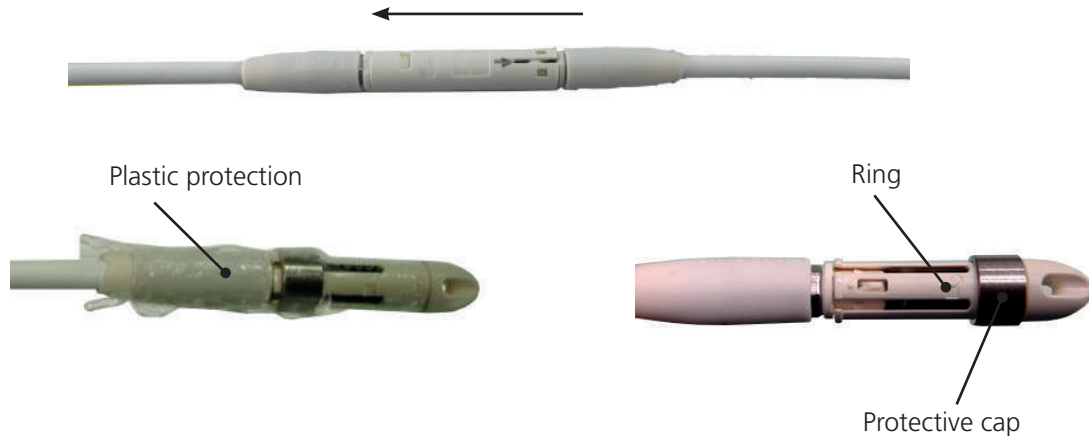


P5000I probe connected to to a PC/Laptop

## 5 INSPECTION & CLEANING PROCEDURE FOR DIALINK APC & PC MALE VERSION

Proceed as follows:

Disconnect Dialink or remove the protective cap.



### 5.1 INSPECTION OF THE DIALINK APC END FACE - MALE VERSION

Mount the adapter tip APC 1.25 (1074608) on the microscope probe.  
 Slide the inspection DiaLink tip DLM8°-I (1089287) over it.  
 Insert the male connector into the DiaLink tip.  
 Set the focus and rotate so that the end face can be clearly seen.



### 5.2 INSPECTION OF THE DIALINK PC END FACE - MALE VERSION

Mount the adapter tip PC 1.25 (1074602) on the microscope probe.  
 Slide the inspection DiaLink tip DLM0°-I (1089290) over it.  
 Insert the male connector into the DiaLink tip.  
 Set the focus so that the end face can be clearly seen.



### 5.3 CLEANING THE DIALINK PC/APC END FACE - MALE VERSION

Slide the cleaning DialLink tip DLM-C (1089290) over the IBC nozzle tip.

Insert the connector into the DiaLink tip.

Perform three movements (as long as you hear a "click") by pushing the tool in the direction of the front surface.

After performing the cleaning, check the status of the connector end face.

If necessary, repeat the cleaning procedure.

If again the connector end face still shows dirt. You can try method 2.

Method 2. requires more attention. If you are not familiar with small accurate jobs don't try this method.

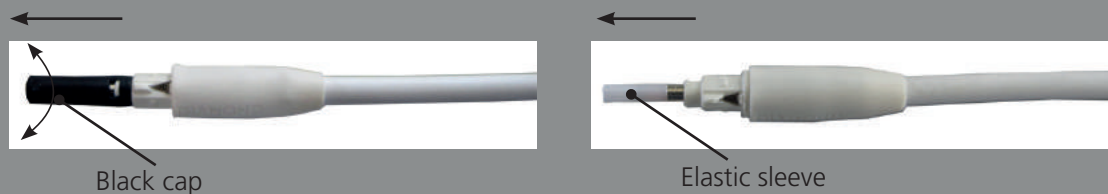
In severe cases, the connector needs to be exchanged or re-polished.



#### MALE VERSION METHOD 2. CLEANING

Method 2. Requires more attention. If you are not familiar with small accurate dismantling/assembly, don't try this method.

a)

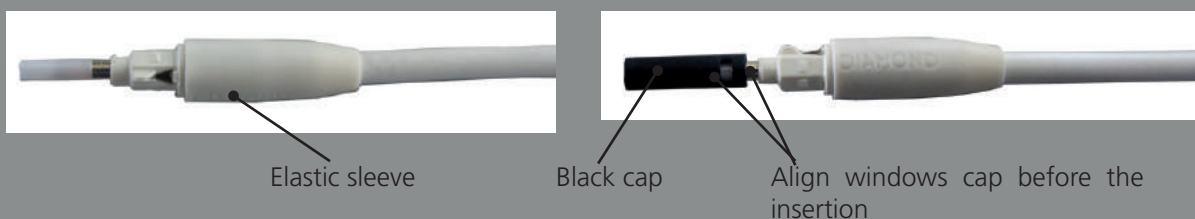


b) Clean the end face according to the instructions

"DiaLink PC/APC free ferrule end face dry cleaning procedure with the Cleptop" on page 10.

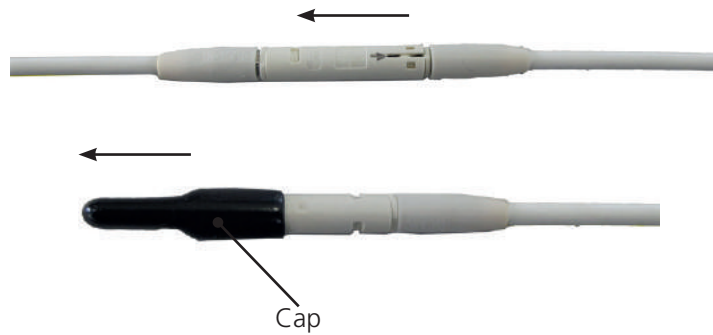
c) If the criteria is met, the connector may be returned to service.

Reassemble the elastic sleeve on the ferrule and remount the black cap as shown below.



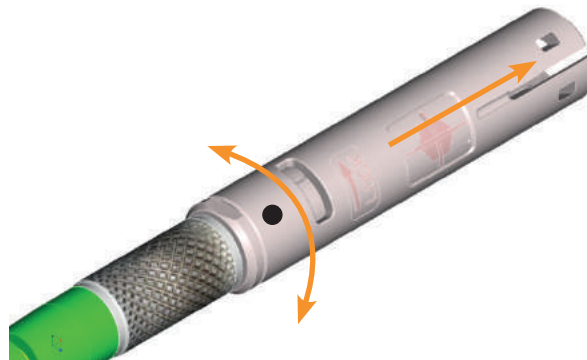


## 6 INSPECTION & CLEANING PROCEDURE FOR DIALINK APC & PC FEMALE VERSION



Proceed as follows:

- a) Disconnect Dialink or remove the protective cap.



- b) Slide off the bayonet body by following these steps: rotate the bayonet body in the opposite direction to the arrow showing the writing "LOCK" to unlock it from the Dialink body so to remove the female part.

### 6.1 INSPECTION OF THE DIALINK APC END FACE - FEMALE VERSION

Mount the adapter tip APC 1.25 (1074608) on the microscope probe.  
 Slide the inspection DiaLink tip DLF8°-I (1089291) over it.  
 Insert the female connector into the DiLink tip.  
 Set the focus and rotate so that the end face can be clearly seen.



### 6.2 INSPECTION OF THE DIALINK PC END FACE - FEMALE VERSION

Mount the adapter tip PC 1.25 (1074602) on the microscope probe.  
 Slide the inspection DiaLink tip DLM0°-I (1089290) over it.  
 Insert the male connector into the DiaLink tip.  
 Set the focus so that the end face can be clearly seen.



### 6.3 DIALINK PC/APC FREE FERRULE END FACE DRY CLEANING PROCEDURE WITH THE CLEPTOP



- A) When the lever is pushed down, the metal protection cover automatically slides back and a new section of tape appears, ready for use.
- B) Keep the lever down, hold the ferrule front face onto the tape and slide along the entire tape in the indicated direction .
- C) Attention: the same part of the tape may be used once.
- D) Close the metal protection cover by releasing the lever.
- E) Inspect the connector referring to the according "Acceptance Criteria" document. If the connector face is not clean repeat the procedure.

**6.4 IF THE CRITERIA IS MET, THE CONNECTOR MAY BE RETURNED TO SERVICE.  
REASSEMBLE THE BAYONET BODY ON THE DIALINK AS SHOWN BELOW.**

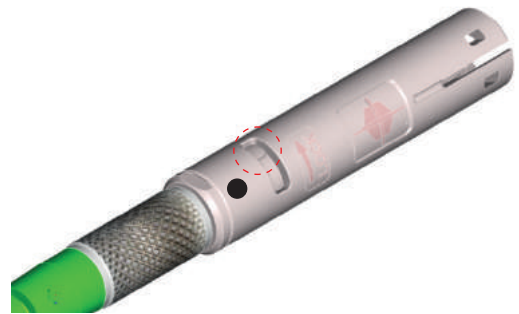
- align the black line of the DiaLink female body with the point (dot) of the bayonet body.



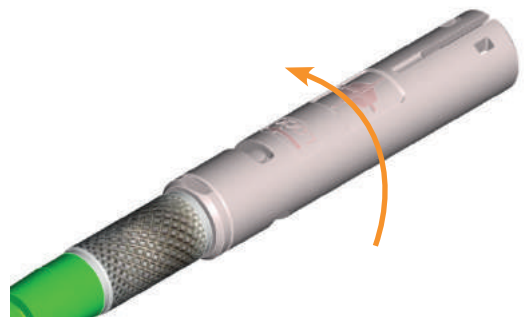
- insert the bayonet body on the DiaLink female body bringing it up to the complete stop.



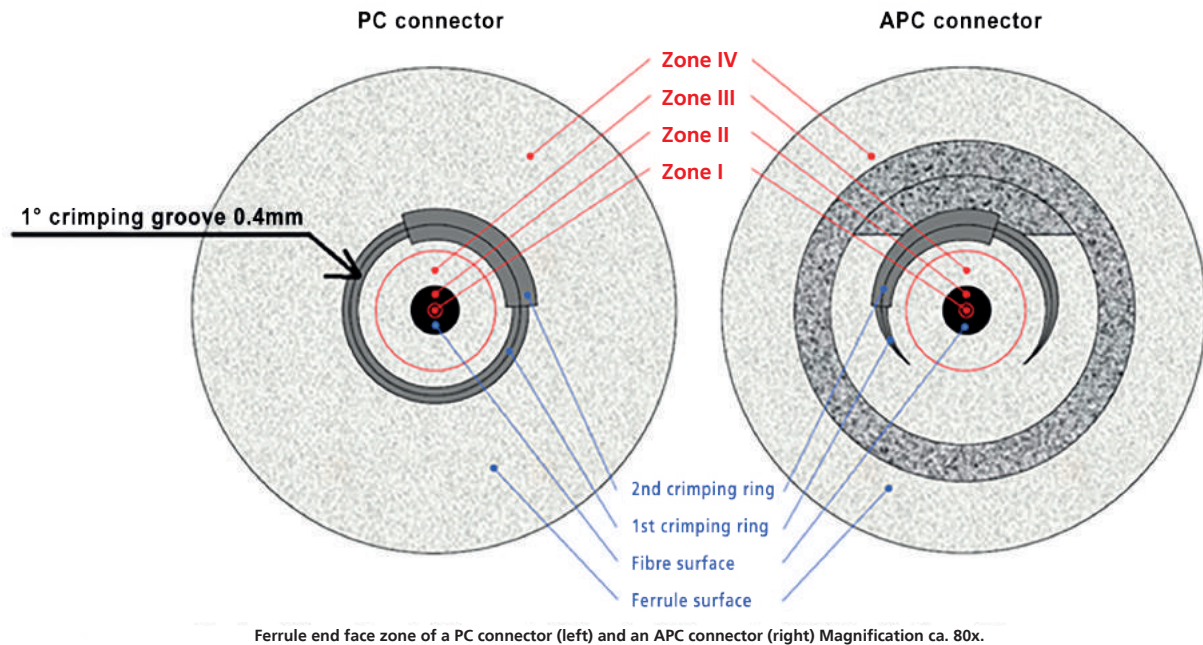
- if the bayonet body is properly set it can be observed that the box on the DiaLink female body is inside the slot of the bayonet body.



- to Secure the bayonet on the DiaLink female body, rotate the bayonet body in direction of the arrow with the writing "LOCK" up to the complete stop.



## 7. ZONE DEFINITION



### Region 1+2

Contamination is strictly prohibited from Fibre Core Area defined as 0um to 120um.

### Region 3

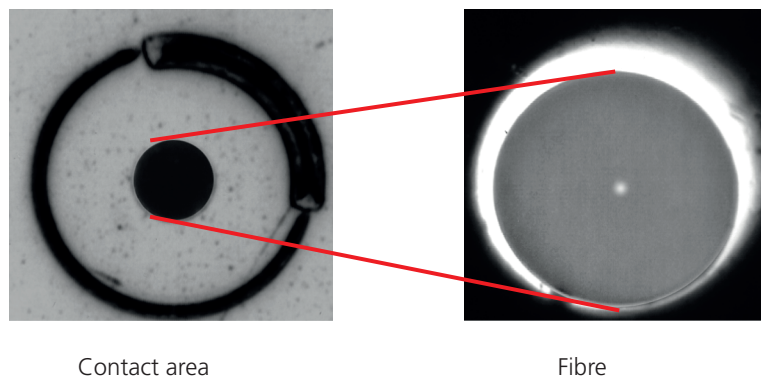
Contamination larger than 3um prohibited from Contact Area defined as 120um to 250um.

### Region 4

Contamination larger than 30um prohibited from Ferrule Area.

Two visual inspections are necessary

1. Contact area
2. Fibre



## 8. EXAMPLES

### VIAVI MICROSCOPE OLP-82P

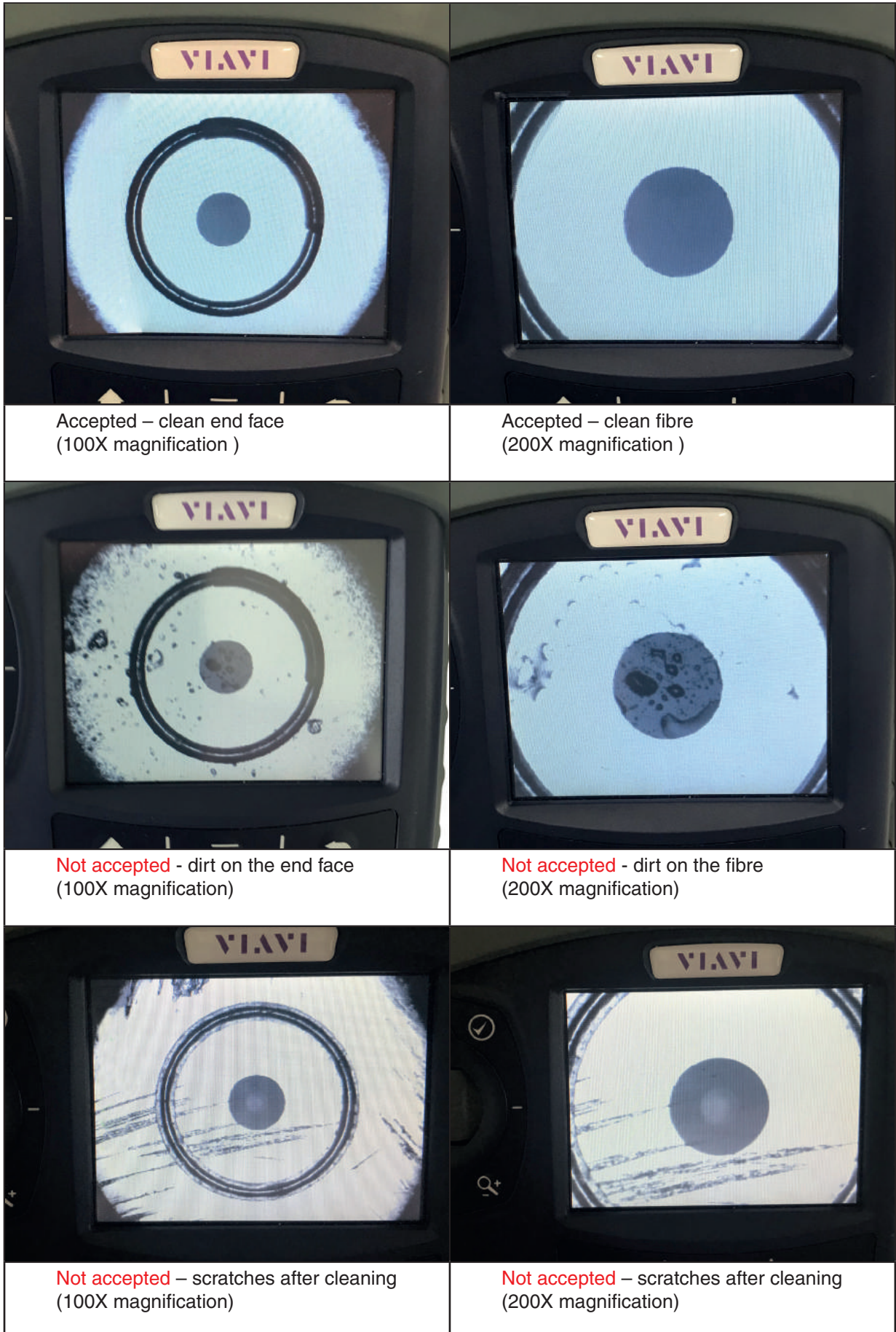


#### DISCLAIMER

Diamond provides connectors respecting the criteria below, but with mating and de-mating the optical surface will degrade visually while the optical performance (IL, RL) remain normally intact. Visual Inspection is NOT a valid return criteria.

The reliable assessment of the power transmission and/or the reflection performances in an optical link between two fibers should be performed through direct measurements of IL and RL since those are the values that the end user will actually observe once the system is deployed.

Visual inspection for surface imperfections is an acceptable back-up solution in case direct measurements cannot be performed. However, it can only indicate the suitability of a connection for use but cannot guarantee that IL and RL specifications are going to be met. In this context, visual inspection should be considered only as a qualitative assessment of the connector's performance.

8.1 VISUAL INSPECTION EXAMPLES OF PC SM 9 & MM 50/62.5  $\mu\text{m}$  FIBRE ON OLP-82P VIAVI MICROSCOPE

8.2 VISUAL INSPECTION EXAMPLES OF APC SM 9  $\mu\text{m}$  FIBRE ON OLP-82P VIAVI MICROSCOPE