CHAPTER 9

FRAGMENT ANALYZER™ CAPILLARY ARRAY

In This Chapter

➢ Removal of Capillary Array
➢ Unpacking a new Capillary Array
➢ Capillary Array Installation
➢ Using the Capillary Array Wet Station for Storage

The Fragment Analyzer™ instrument Capillary Array allows for direct parallel injection and separation of 12 or 96 samples at once.

The Capillary Array Cartridge is located in the Upper Compartment of the instrument and accessed by opening the Reagent Side Compartment and then the Hood.

Figure 9-1. Capillary Array Parts, 12-Capillary Array shown.
Removal of the Capillary Array

This section will provide a pictorial guide of the steps required to physically remove a Capillary Array Cartridge from the Fragment Analyzer™ instrument.

Before proceeding with Capillary Array Removal select the [Park] icon from the Main screen to place the tray being help back into its drawer and move the Stage into a resting position.

Step 1

Open the Reagent Door and top Hood of the instrument.

Figure 9-2. Fragment Analyzer™ Instrument
Step 2

Unplug the white High Voltage Supply Cable for the Top Front Panel and place in the holder of the Capillary Array frame.

Figure 9-3. Instrument top compartment – High Voltage Supply Cable

Step 3

Use the provided Allen Wrench to remove the 2 white screws that secure the Light Guide to the Array Window.

Figure 9-4. Instrument Top Compartment – Unscrew Light Guide
Step 4

A. Remove the Light Guide
B. Place the Light Guide in the Reagent Door of the instrument.
C. Close the Reagent Door.

Avoid looking directly at the Light.

Figure 9-5. Instrument Top Compartment – Light Guide Removal
Step 5

Pull back on the Capillary Reservoir Connector Slide.

Figure 9-6. Instrument Top Compartment – Capillary Reservoir Connector Slide

Step 6

Use the Capillary Reservoir Connector tool to loosen the Capillary Array Bundle by prying up on the bundle.

Figure 9-7. Instrument Top Compartment – Capillary Reservoir Connector Tool
Step 7

Remove the Capillary Array Bundle by pulling up gently.

⚠️ Avoid pulling up hard as to not break any capillaries.

Figure 9-8. Instrument Top Compartment – Capillary Array Bundle Removal

Step 8

Carefully insert the Protective Cover over the Capillary Bundle.

Figure 9-9. Instrument Top Compartment – Installing Protective Cover
**Step 9**

Place the Capillary Array Bundle on the top holder of the Capillary Array Window.

![Figure 9-10. Instrument Top Compartment – Storing Covered Capillary Array Bundle](image)

**Step 10**

Remove the Capillary Array Window from the Window holder.

⚠️ Do not press on or touch the Capillaries.

Flip the Array Window after removal so that the Capillary Array Bundle goes from the right to the left side of the Array Frame.

![Figure 9-11. Instrument Top Compartment – Remove Capillary Array Window](image)
Step 11

Attach the Array Window to the Capillary Array Frame using the Attachment Screw.

Figure 9-12. Instrument Top Compartment – Attach Array Window to Capillary Array Frame.

Step 12

Use the provided Allen Wrench to remove the two white screws holding the Capillary Array in place.

Figure 9-13. Instrument Top Compartment – Array Attachment Screw Removal.
Step 13

Carefully lift the Array straight up to remove it from the Fragment Analyzer™ instrument.

Figure 9-13. Instrument Top Compartment – Capillary Array Removal

Once removed from the instrument, the Capillary Array Cartridge is ready for Disposal or Storage in the Fragment Analyzer™ Wet Station (refer to the Appendix J)

Unpacking a new Capillary Array

This section will provide a pictorial guide of the steps required to physically unpack a new Capillary Array from the Shipping Container and Packaging.

⚠️ IMPORTANT: Save the original packaging when receiving a new Capillary Array Cartridge. This packaging is necessary for proper shipment of a capillary array in the event of a return.
Step 1

Open the Capillary Array Shipping box and remove the Foam Cover.

Figure 9-14. Capillary Array Shipping Box – Open box and remove Foam Cover

Step 2

Remove packaged array from shipping box.

Figure 9-15. Capillary Array Shipping Box – Remove packaged Array
Step 3

Remove plastic shipping cover from the Capillary Array.

⚠️ Take care not to break Capillaries or touch the Array Window when removing packaging.

Figure 9-16. Capillary Array Shipping Box – Remove plastic shipping cover

Step 4

A. Unwind the Rubber Band securing the Capillary Array Bundle to the Capillary Array Window. Cut the Rubber band to remove completely.

B. Carefully remove the tape securing the Capillary Array Bundle to the protective cover.

Figure 9-17. Capillary Array Shipping Box – Rubber Band and Tape Removal
Step 5

Remove the Tape on the left and right side of the Array Shipment Frame securing the Array to the Shipment Frame.

Figure 9-18. Capillary Array Shipping Box –Remove tape from Shipment Frame
Step 6

Carefully lift the Array straight up to remove it from the Shipment Frame.

Figure 9-19. Capillary Array Shipping Box – Remove Array from Shipment Frame

Capillary Array Installation

This section will provide a pictorial guide of the steps required to physically install a Capillary Array Cartridge into the Fragment Analyzer™ instrument.

Before proceeding with Installation ensure the instrument is in the [Park] position. If it is not in the [Park] position, select the [Park] icon from the Main screen to place the tray being help back into its drawer and move the Stage into resting position.
Step 1

Open the Reagent Door and top Hood of the instrument.

**Figure 9-20.** Fragment Analyzer™ Instrument
Step 2

Carefully place the Capillary Array into the Top Compartment of the instrument with the Array window facing out.

The four Alignment Pins should align with the Alignment holes in the instrument.

Figure 9-21. Instrument Top Compartment – Capillary Array Installation

Step 3

Use the provided Allen Wrench to install the two white screws holding the Capillary Array in place.

Figure 9-22. Instrument Top Compartment – Array Attachment Screw installation
Step 4

Remove the Array Window Attachment Screw.

Figure 9-23. Instrument Top Compartment – Remove Array Window

Step 5

Carefully flip the Array Window so that the Capillary Array Bundle goes from the left to the right side of the instrument.

Position the Capillary Array Window into the holder and firmly press it into place.

⚠️ Do not press on or touch the Capillaries.

Figure 9-24. Instrument Top Compartment – Array Window Placement
**Step 6**

Remove the Capillary Array Bundle from the top holder of the Capillary Array Window.

*Figure 9-25. Instrument Top Compartment – Capillary Array Bundle Removal*

**Step 7**

Carefully remove the Protective Cover from the Capillary Bundle and place it back on the holder on top of the window.

*Figure 9-25. Instrument Top Compartment – Removing Protective Cover*
Step 8

Install the Capillary Array Bundle by firmly pushing the Capillary Array Bundle into the Reservoir opening until a distinct click is heard.

Figure 9-26. Instrument Top Compartment – Capillary Array Bundle Installation

Step 9

Push in the Capillary Reservoir Connector Slide to secure the Capillary Array Bundle.

⚠️ If this step is not followed the Capillary Array Bundle will be damaged upon pressurization.

Figure 9-27. Instrument Top Compartment – Capillary Reservoir Connector Slide
**Step 10**

Place the Light Guide over the Array Window using the two Alignment Pins.

The finger hold should be facing the right side of the instrument.

The steel optical cable should be on the left.

*Figure 9-27. Instrument Top Compartment – Light Guide Placement*

**Step 11**

Use the provided Allen Wrench to install the 2 white screws that secure the Light Guide to the Array Window.

*Figure 9-28. Instrument Top Compartment – Light Guide Installation*
**Step 12**

Remove the High Voltage Cable from the Array Frame Holder and firmly push it into the High Voltage Cable Connection.

**Figure 9-29.** Instrument top compartment – High Voltage Supply Cable

**Step 13**

Close the Reagent Door and top Hood of the instrument.

**Figure 9-30.** Fragment Analyzer™ Instrument
After Installation of an Array, the Fragment Analyzer™ will require a Capillary Alignment as described in Chapter 5 Main Menu – Utilities Functions.

Using the Capillary Array Wet Station for Storage

Refer to Appendix J