applied biosystems

Polymer Delivery Pump Cleaning Kit

Catalog Numbers 4414007

Pub. No. 4414004 **Rev.** D

Kit components

- Array port cleaning tool
- Lint-free swabs
- Syringe assembly (syringe, fitting, and tubing)

When to use

The Wash Pump Chamber and Channels Wizard in the Maintenance workflow effectively cleans the polymer delivery pump. In the following situations, use this kit in addition to the Wash Pump Chamber and Channels Wizard to thoroughly clean the polymer delivery pump:

- Polymer has dried in the channels of the lower polymer block.

  Mechanical malfunctions may cause dried polymer to appear in the polymer delivery pump. Washing with either the Wash Pump Chamber and Channels wizard or this kit may not remove dried polymer – the lower polymer block may need replacement.

- A contaminant in the polymer delivery pump is suspected of causing problems. The check valve fitting might be clogged or contaminated.

Note: Problems such as electrical arcing may require servicing.

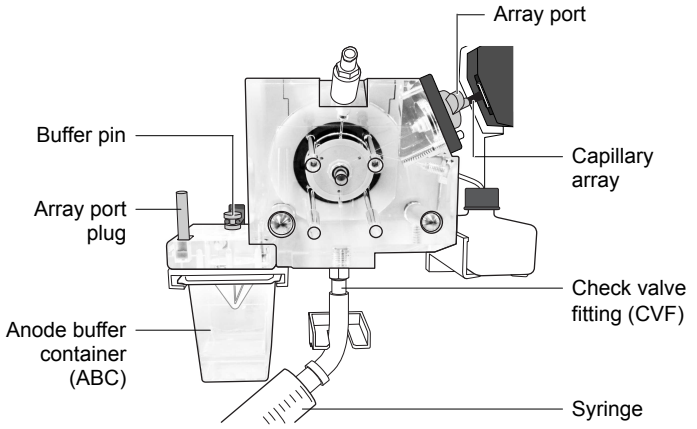
Pump assembly care

Avoiding damage to the pump assembly

The polymer delivery pump can be irreversibly damaged if:

- Polymer dries in the polymer channels of the pump assembly, which can scratch the channels in the pump, and can cause blockage.
- The pump assembly is exposed to organic solvent, which can cause cracking and clouding of the acrylic pump material.
- The pump assembly is exposed to temperatures greater than 40°C, which can damage the pump components.
- There is arcing in the pump assembly, which can damage the acrylic pump material.

Cleaning the pump assembly through the check valve fitting (CVF)



This procedures cleans the following paths in the pump assembly:

- The CVF inlet
- Through the pump chamber
- Past the array port
- Through the pump upper channel
- Through the lower block
- Past the buffer pin
- Into the ABC

To clean the pump assembly:

1. Run the Install Capillary Array Wizard, select store. Remove the capillary array.
2. Power off the instrument and unplug the power cord.
3. Install the array port plug (where the array was installed) into the array port of the pump assembly and turn the array port lever clockwise (¼ turn) to lock the plug into place.
4. Install an empty Anode Buffer Container (ABC).

   IMPORTANT! Do not use deionized water warmer than 40°C to rinse the polymer delivery pump. Water above 40°C will damage internal components of the pump.

   IMPORTANT! Do not disassemble the polymer delivery pump.

5. Remove the polymer pouch.

6. Fill the 20-mL silicone-free plastic syringe (provided) with deionized water (40°C or colder).
7. Fit the plastic tubing onto the CVF.
8. Dispense several syringe volumes of deionized water (40°C or colder) through the pump channel.
9. Inspect the channels for dried polymer, which appears as white residue. Wash partially obstructed channels with water (40°C or colder) until the dried polymer is removed. Verify that all polymer is removed before proceeding.

IMPORTANT! Some time may be required for the deionized water to clear the obstruction. Do not use any pointed or sharp objects to clear the channel, even if the channel is completely obstructed with dried polymer.

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10. Remove the syringe assembly from the CVF.
11. Use deionized (40°C or colder) water and the supplied lint-free swabs to clean out any dried residue around the buffer pin and array port.
12. Wipe the CVF and exterior surfaces of the polymer delivery pump with lint-free lab wipes.

IMPORTANT! Do not use compressed gas to blow water from the channels, valve, or any part of the pump assembly.

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13. Reinstall the polymer pouch or, if the instrument is not to be used immediately, install the conditioning pouch to prevent the CVF from drying out.
14. After reinstalling the polymer pouch, run the Bubble Remove Wizard before proceeding (do not run if you installed a conditioning pouch):
    a. From the Maintenance Wizards screen, click **Remove Bubbles**.

       Note: The Remove Bubbles Wizard takes 5 to 15 minutes to complete.

    b. Follow the prompts in the Remove Bubbles Wizard.
    c. Look at the Quick View section of the Dashboard for the updated status of the polymer pouch after removing bubbles from the polymer pump fluid path.
15. Rinse and dry the syringe assembly.

Cleaning the pump assembly through the array port

Clean the pumps upper channel from the array port to the ABC.

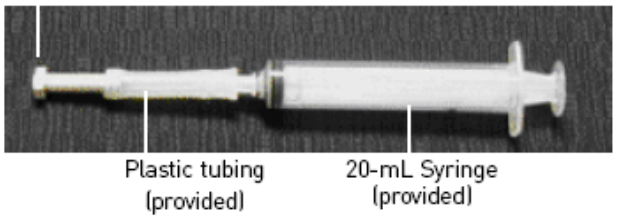
IMPORTANT! Do not use deionized water warmer than 40°C to rinse the pump assembly. Water above 40°C damages the internal components of the pump.

IMPORTANT! Do not disassemble the pump assembly.

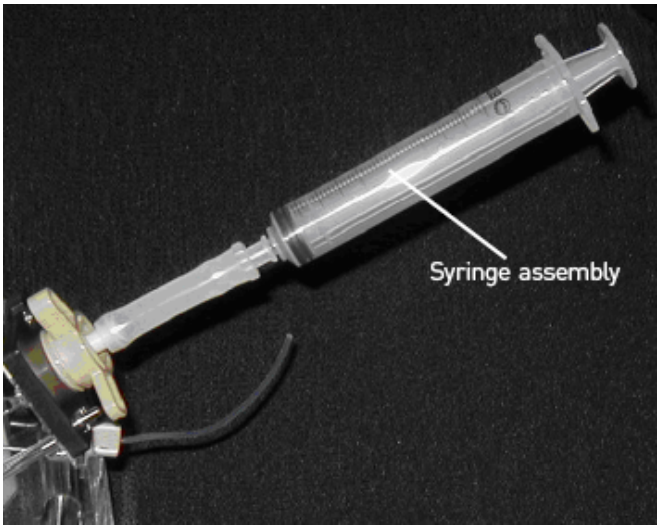
To clean the pump assembly through the array port:

1. Run the Install Capillary Array Wizard and remove and store the capillary array.
2. Power off the instrument by unplugging the power cord.
3. Install an empty ABC.
4. Fill the 20-mL silicone-free plastic syringe (provided) with deionized water (40°C or colder).
5. Install the array port cleaning tool (provided) into the plastic tubing as shown:

   Array port cleaning tool, Part No. 4445057 (provided)

6. Insert the array port cleaning tool into the array port of the pump assembly as shown:

7. Tighten the array port ¼ turn.
8. Dispense several syringe volumes of deionized water (40°C or colder) through the pump channel.
9. Inspect the channels for dried polymer, which appears as white residue, and/or bubbles, which may be stuck to the wall of the channels. Partially wash obstructed channels with water (40°C or colder) until dried polymer and/or bubbles are removed.
10. Remove the syringe assembly from the array port.
11. Immediately reinstall the array:
    a. From the Maintenance Wizards screen, click **Install Capillary Array.**

       Note: The Install Capillary Array Wizard takes 15 to 45 minutes to complete.

b. Follow the prompts in the Install Capillary Array Wizard window.

c. Check the Quick View section of the Dashboard for the updated status of the capillary array.

12. Empty the ABC.

13. Use deionized water (40°C or colder) and the supplied lint-free swabs to clean out any dried residue around the buffer pin and array port.

14. Remove the polymer pouch and install the conditioning pouch.

15. Run the Wash Pump Chamber and Channels Wizard.

16. Rinse and dry the syringe assembly. If the instrument is not to be used immediately, leave the conditioning pouch on to prevent the CVF from drying out.

Limited product warranty

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