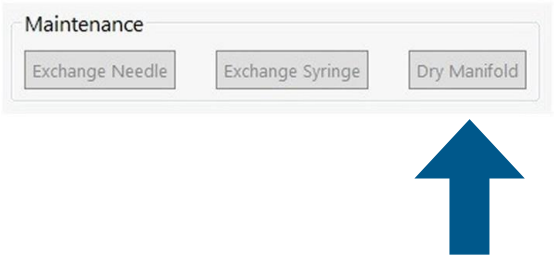
PATsmart™ ZipChip®

System Shutdown and Storage

The following recommended procedures should be used when shutting down the PATsmart™ ZipChip® microfluidic zone electrophoresis (MZE) system for both short-term (2 weeks or less) or long-term (longer than 2 weeks) periods at the end of a day's experiments or after running an overnight sequence. Additionally, there are instructions which address restarting use of the ZipChip system after a period of storage.

End-of-Day System Shutdown

1. Perform the 'BGE Refresh' and 'Rinse Sample Well' functions with autosampler to ensure all sample is removed from the HS or HR chip. If using a manual interface rinse the wells manually.
2. Remove the HS or HR chip from the ZipChip Interface. Use the DryDock, following the ***DryDock Accessory Instructions*** document, to dry the chip and store it for future use.
3. Load the Manifold Dryer chip into the ZipChip Interface. Select the 'Dry Manifold' function found on the Setup Panel of the ZipChip software application and follow the on-screen instructions.



4. Remove the Manifold Dryer chip from the ZipChip Interface. Dry out any remaining liquid from the Manifold Dryer chip and place in the original bag or plastic box for storage.
5. Load the Blank chip into the ZipChip Interface and close the system door. Close the ZipChip software application.
6. Place the MS system into Standby. Leave the ZipChip Interface attached to the MS. **Special considerations when running in Native Antibodies BGE conditions:**

Native Antibodies BGE is relatively mild compared to other ZipChip BGE formulations. In order to prevent microbial growth within the ZipChip fluidics it is recommended that the ZipChip interface and autosampler be flushed periodically with a mixture of high purity grade methanol, water, and formic acid in the ratio of 50:48:2. The system can be flushed simply by connecting the ZipChip interface to the autosampler as with normal operation, placing a bottle of the above mixture in the autosampler and running the standard 'Prime Autosampler' function from the ZipChip software application. It is recommended that the system be flushed **once weekly** when running in Native Antibodies BGE conditions or **any time before storage** of the ZipChip interface and autosampler after running in Native Antibodies BGE.

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ZipChip System Shutdown and Storage

End-of-Day – Removing the ZipChip Interface

1. If the ZipChip Interface needs to be removed from the MS system, follow instructions 1 through 5 of the ***End-of-Day System Shutdown***.
2. Disconnect the grounding cable, power cable, USB Cable, and MS Trigger from ZipChip interface.
3. For autosampler integrated systems: If possible, leave the BGE, Sample transfer lines, and waste lines connected, ensure proper drainage of waste lines, and place the unit on top of the Autosampler

Note: Use caution when handling the transfer tubing to ensure it is not damaged. Transfer tubing length and volume is critical for proper operation. If transfer tubing is damaged, do not change the length of the lines by cutting. Contact TechSupport@repligen.com for information regarding replacement part numbers and instructions.

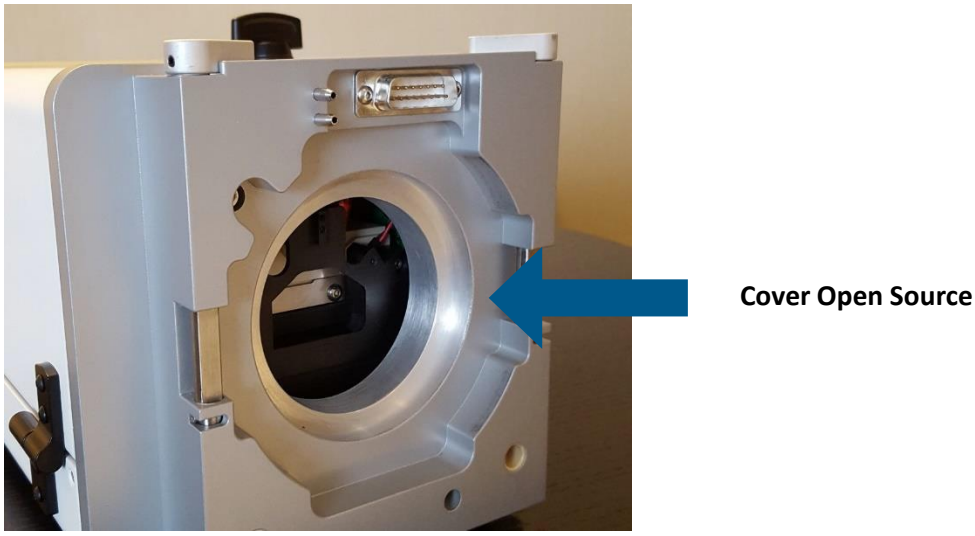
Overnight Sequences

For sequences setup to run overnight use the following best practices when returning the following day.

1. At the end of the sequence include a 'BGE Refresh' function.
2. In the morning perform the 'BGE Refresh' and 'Rinse Sample Well' functions. If using a BGE which does not have an expiration after a certain time period proceed to continue with analyses after confirming electrospray stability. If a new preparation of BGE is required proceed to step 3.
3. Remove the HS or HR chip from the ZipChip Interface. Use the DryDock, following the ***DryDock Accessory Instructions*** document, to dry the chip.
4. Store the dry chip for later use or prepare the system and re-prime the dried chip for additional analyses if desired.

Short-Term Storage (2 Weeks or Less)

If the ZipChip system needs to be removed from the MS and stored for a period of two weeks or less, follow the instructions in the ***End-of-Day - Removing the ZipChip Interface***. Once the ZipChip Interface has been removed from the MS cover to protect the open source side of the system.



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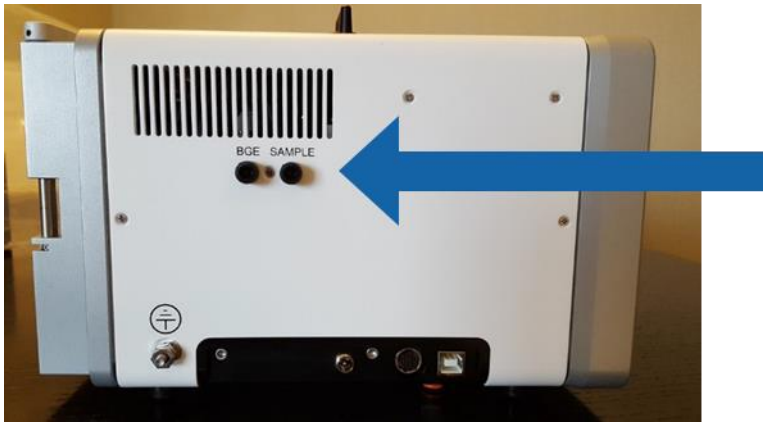
ZipChip System Shutdown and Storage

Long-Term Storage (Greater than 2 Weeks) and Shipping

If the ZipChip system needs to be removed from the MS and stored for a period of greater than two weeks or prior to shipping, perform the following steps if an Autosampler is present. For Manual ZipChip Interfaces follow instructions the ***End-of- Day System Shutdown*** then proceed to step 5.

1. Insert a bottle containing at least 20 mL of deionized water into the autosampler. Perform a 'Prime Autosampler' function in the Setup panel of the ZipChip software application.
2. Remove the bottle of deionized water and insert a bottle containing at least 20 mL of LC/MS grade 2-propanol. Perform a 'Prime Autosampler' function.
3. Disconnect the transfer lines from the side of the ZipChip Interface.
4. Using the System Dry Loop perform the 'Dry System' function in the Setup panel of the ZC app and follow the prompts. Remove the system Dry Loop.
5. Insert the black plugs in their place. Remove the waste lines from the underside of the ZipChip Interface.



Back plugs

6. Place the ZipChip Interface back in the Pelican case or original box for storage or shipment.

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ZipChip System Shutdown and Storage

Using the System After Long-Term Storage

1. Attach the ZipChip Interface to the MS system.
2. If an Autosampler is present, remove the black plugs and attach the Autosampler transfer lines to the ZipChip Interface. Ensure the transfer line ends are clean and free of debris or dust prior to attaching.

Note: Use caution when handling the transfer tubing to ensure it is not damaged. When making transfer line connections gently tighten the fitting until cone just touches, ensure the transfer line is inserted fully to touch bottom of port, and then tighten an additional ¼ to ½ turn. Do not overtighten! . If transfer tubing is damaged, do not change the length of the lines by cutting. Contact **TechSupport@repligen.com** for information regarding replacement part numbers and instructions.

3. Connect the grounding cable, power cord, USB cable, MS trigger cable, and waste lines. Open the ZipChip software application.
4. Insert a bottle containing at least 20 mL of LC/MS grade 2-propanol. Perform a 'Prime Autosampler' function.
5. Remove the bottle of 2-propanol and insert a bottle of the desired BGE type in the autosampler. Perform the 'Prime Autosampler' function **two times** with the BGE.
6. System is now ready to prime a ZipChip HS or HR as desired.

For 24/7/365 Customer Support
1-888-927-3035 | TechSupport@repligen.com

ZIPCHIP IS FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.

Zip Chip is subject to export controls including those of the Export Administration Regulations of the U.S. Department of Commerce, which may restrict or require licenses for the export of product from the United States and their re-export to and from other countries.

V1.1.0

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