



Dimension[®] EXL[™] Systems

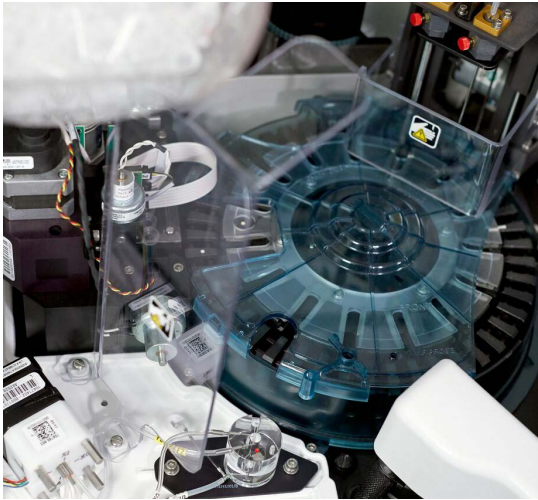
Resource Guide

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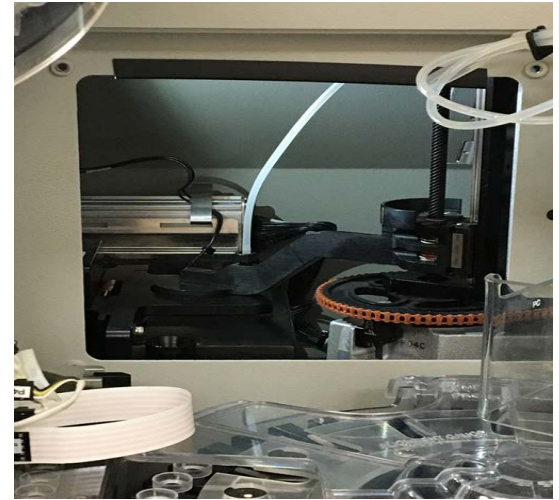
Hardware Overview



Heterogeneous Module (HM)



**Integrated Multisensor
Technology (IMT)**

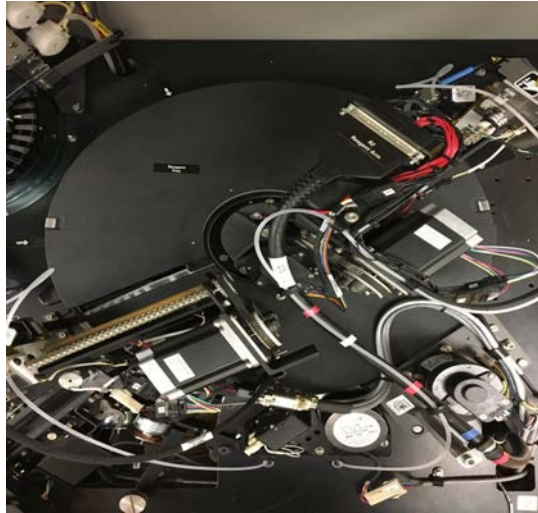


LOCI® Module

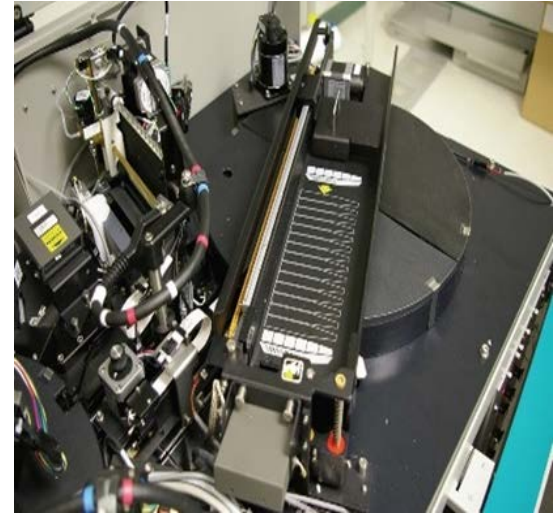
Hardware Overview



Sample Area



Reagent Area



Reagent Management System (RMS)

Hardware Overview



Electrical Cabinet



Pump Panel



Cuvette Waste Area

Software Overview

Keystroke Combinations

Alt-Exit	Display the Change Operator window to change to a different User Account or shut down the instrument.
Alt-I	View reagent inventory.
Alt-L	View the short sample load list.
Alt-M	View help information for the current error message.
Alt-N	View system needs.
Alt-O	Advance the printer paper.
Alt-P	Print the current screen.
Alt-R	View reagent status and stop the reagent cartridge icon from blinking.
Alt-S	View segment status or delete segments.
Backslash or Shift-Delete	Delete all characters in a field.
Shift-Exit	Return to the Operating Menu screen.

Software Overview

Action Keys

Control-Stop	The Control key and Stop key must be used together. This key combination stops all instrument operations in progress.
Pause	The Pause key turns off the photometric sample arm. Press the Pause key again to restart the sampler system.
Reset	The Reset key is used to clear error messages on the screen. It initializes any modules that are not being used and causes the instrument to resume processing.
Run	The Run key instructs the instrument to look for and process new samples.

Help Routine

Help	Information on how to use the currently-displayed screen and its function keys.
Shift-Help	If the cursor is in a data entry field, information about acceptable entries for the field is displayed.
Alt-Help	Explains how help key works and a list of Alt-Key combinations.
Control-Help	Creates a list of information for all operating condition icons. Scroll down on this page to get information on a particular icon.

Software Overview




The five Alert keys are normally gray, but change color to alert you if a situation needs your attention. If an Alert key changes to yellow or red, press the key to find out the reason for the alert.

This table explains more about each Alert key.




STAT Status	Press to display the STAT Samples screen. Shows the STAT requests that are in process and the time until the result will be available as well as completed STATs and STATs requested but not yet run.
Sample Alert	Press to display the Sample Alert screen. Shows rerun status of sample requests that encountered exceptions while processing.
Supplies	Press to display the Reagent Cartridge Alerts screen. Shows Flex® reagent cartridge lots that are nearing depletion threshold as defined by your lab. Warns you to load cartridges for specific methods.
QC Alert	Press to display the QC Test Out of Range screen. Shows method, result, reagent lot, QC level and needs triggered by configurable QC Alert criteria.
Calib Alert	Press to display the Calibration Alert screen. This screen shows onboard methods/lots and the time until calibration expiration. Shows onboard lots which have triggered configurable Calibration Alert criteria.

Software Overview

Quick Link Area Icons

Search		Selecting this icon while viewing any screen navigates directly to the Sample Status screen and activates the Search feature.
Help		Selecting this icon displays information on how to use the screen and the function keys that are currently on the display.
Sign Out		Selecting this icon while viewing any screen opens the Change Operator window. From there, you can change to a different User Account or shut down the instrument.

Dimension Remote Services (DRS)

Gray DRS Icon		Instrument is connected to the Atellica® Connectivity Manager (ACM) or syngo® Lab Connectivity Manager (LCM).
Green DRS Icon		Instrument connected remotely for screen sharing.
Yellow DRS Icon		Instrument is not connected to ACM or syngo LCM.

Software Overview

Selecting Methods

Selecting Methods using the Keyboard

- Press the **Test Key** to select the method displayed in black.
- Press **Shift** and **Test Key** to select the method displayed in blue.
- Press **Control** and the **Test Key** to select the method displayed in red.
- Press **Alt** and the **Test Key** to select the method displayed above or below the overlay.
- Panel keys are labeled P1 through P10.

Note:

Ctrl-Alt-P10 manually displays the Method Selection pop-up window when a method needs to be selected.

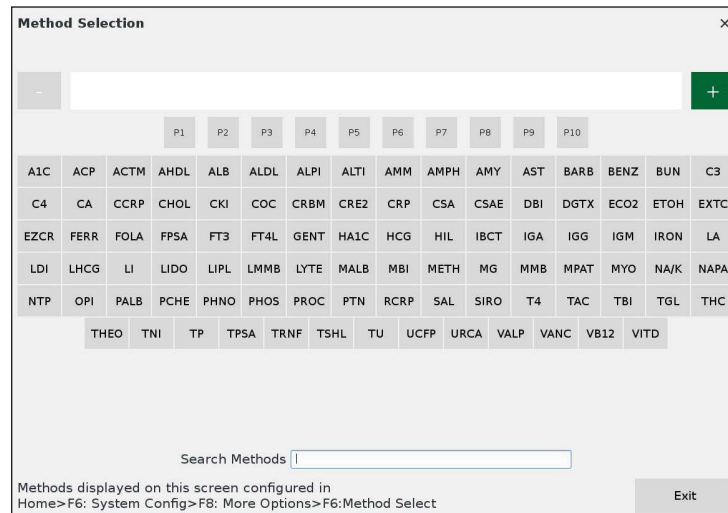
Selecting Methods using the Touchscreen and Text Entry

Adding Methods

1. Select the plus sign (+).
2. Select desired methods.
3. Exit the pop-up menu to apply selected methods.


Deleting selected methods

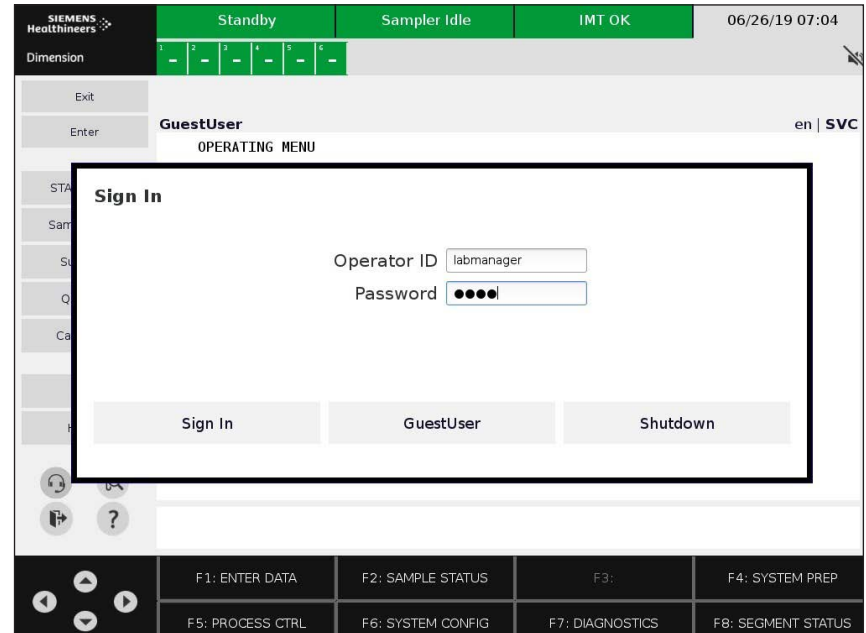
1. Select the minus sign (-).
2. Select methods for removal.
3. Exit the pop-up menu to apply deleted methods.



Software Overview

Signing In

1. Select the Sign Out icon 
2. Select **Change Operator**.
3. Type in Operator ID (case sensitive) in the Operator ID field. Type in the Password (case sensitive) in the Password field. Select **Sign In**.



Daily Maintenance

Review the System Check Printout

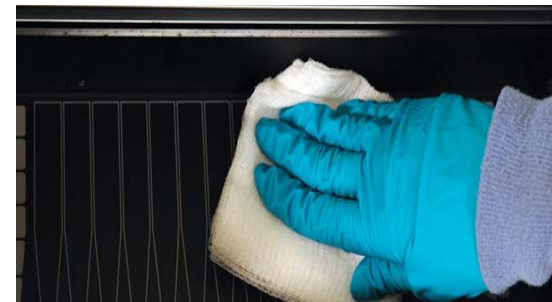
1. Review system check printout to ensure it has a status of **PASS**.
2. System checks are stored in the Daily Maintenance log. To document completion refer to page 15.

Clean the Sample and Reagent Areas

1. Press **Pause**.
2. Remove all segments.
3. Clean sample area with a damp cloth.
4. For **RMS only if installed**: Clean bulk loader with damp cloth.
5. Press **Pause**.



Sample Area

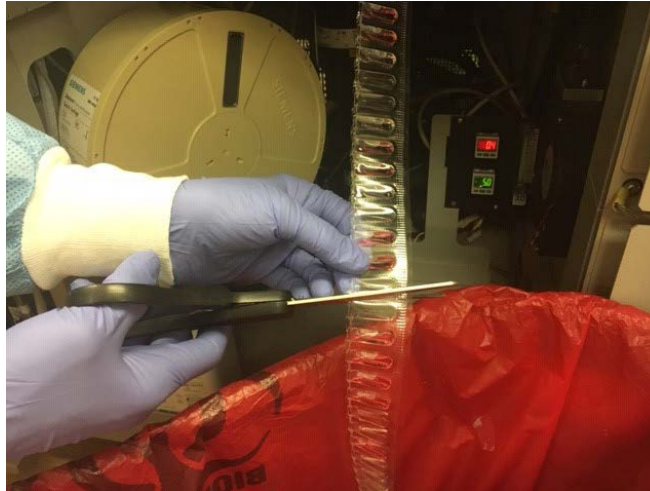


Bulk Loader

Daily Maintenance

Empty Cuvette Waste

1. Access the cuvette waste area.
2. Cut between two formed cuvettes approximately 12 inches down from instrument.



Daily Maintenance

Check for Other Maintenance Items

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F8: Daily Maint.**
3. If other maintenance is due the key will display:

- **F2: CHK Counts**
- **F3: CHK HM Counts**
- ***F4: CHK RMS CNTS**

*Dimension® EXL™ with LM System only

3a. Press the key and perform maintenance.

3b. Document completed maintenance in
F6: Instrument Log.

The screenshot shows the Siemens Healthineers Dimension EXL™ instrument interface. The top status bar indicates 'System Prep', 'Sampler Idle', 'IMT OK', and the date/time '09/17/19 17:49'. The main display area shows 'DAILY MAINTENANCE ROUTINES' with the following details:

- TEMPERATURE CHECK: Cuvette: 37.0 C, Reagent: 4.0 C, HM: 38.0 C
- Hydration: 4.0 C, Reagent (RMS): 4.0 C
- PUMP PRIME (3 Cycles)
- SYSTEM CHECK (Cuvettes: 11826 Failed QC: 0)
- EMPTY CUVETTE WASTE

Additional information includes:

- CHK Lot: GB9248 ---- GF9346
- Carton Values: 390.0 395.0

The bottom of the screen features a function key grid:

F1: START	F2:	F3: CHK HM COUNTS	F4:
F5: OFFBOARD LOTS	F6: INSTRUMENT LOG	F7: MAINT LOGS	F8: AUTO SETUP

Documenting Daily Maintenance

Document Cuvette Waste Emptied

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F8: Daily Maint.**
3. Press **F7: Maint Log.**
4. With Cursor in **Cuvette Waste Emptied** field, press Enter to change status to YES.
5. Press **F1: Store Maint.**
6. Type initials and press **Enter.**

Note:

If temperatures are out of range (displayed in red) resolve temperature issue, then press **F3: UPDATE TEMP** on stored Daily Maintenance Log.

Processing Barcoded QC

1. Place QC sample in SSC.
2. Place the SSC in barcoded tube.
3. Place the tubes in correct adapters of segment.
4. Place segment on sample wheel.
5. Press **Run**.

Segment Adapters:

Teal = 5 ml tubes

Beige = 7 ml tubes

None = 10 ml tubes



**Position
barcode in
opening**

Processing Manual QC

From the Operating Menu

1. Press **F1: Enter Data**.
2. **Position** field- Enter Segment letter and position being used.
3. **Patient Name** field- Enter name of QC being processed.
4. Press **F4: Next Priority** to change priority type to QC.
5. Press **F7: Next Mode** to change container type.
6. Press **F8: Next Fluid** to change fluid type.
7. Select desired test(s) or panel using keyboard or touchscreen.
8. Press **F1: New Sample** to enter additional QC samples.

After all samples are entered

9. Press **F3: Load List**.
10. Place QC samples in assigned segment position(s).
11. Place segment(s) on sample wheel.
12. Press **Run**.

Note: QC Recall-

If the letters QC precede any other letters/numbers, the system will remember that QC request and will automatically recall all entered data next time that QC name is entered.

Entering Quality Control Ranges

Defining or Updating QC Ranges

From the Operating Menu

1. Press **F5: Process Ctrl.**
2. Press **F4: QC Ranges.**
3. Select a method using keyboard or touchscreen.
4. Enter the QC ranges.
5. Use the arrow keys to navigate from field to field.
6. Press **F2: Store Changes.**

Range Entry Modes

1. Press **F8: Next Mode** to select desired range entry mode (1, 1.5, 2 or 3 SD).
2. Enter Mean and 1 SD value.
3. Press **F2: Store Changes**

Note:

A minimum of two QC levels is required for the Auto Accept feature of calibration.

Reviewing Quality Control Data

From the Operating Menu

1. Press **F5: Process Ctrl.**
2. Press **F7: Meth Review.**
3. Select desired method using keyboard or touchscreen.
4. Press **F3:** Select desired viewing format (Histogram, Levy Jennings or Data).
5. Press **F6: Next Fluid** to change QC fluid level.

Configuring QC Alerts

1. Press **QC Alert**.
2. Press **F4: Configure Alerts**.
3. Use the **Enter** key to turn On/Off each alert.
4. Set Alerts for any of the following:
 - Alert when method calibrated and in inventory but no QC has been run.
 - Alert when QC result is HIGH or LOW.
 - Alert when result is greater than 2 Standard Deviations.
 - Alert when QC result has a process error.
 - Alert when QC expires or is about to expire.

Defining QC Products and Panels

Defining QC Products

1. Press **F5: PROCESS CTRL.**
2. Press **F3: QC STATUS.**
3. Press **F1: DEF QC PRODUCT.**
4. Enter product name, level, QC lot number, QC fluid level, fluid type and methods.
5. Press **F5: Set QC Active** (connects this product to daily QC).
6. Press **F6: Set Cal Active** (automatically orders this QC product with a calibration).
7. Press **F7: STORE.**

Defining QC Panels

1. Select **YES** at the prompt.
2. Remove methods as needed (If more than 36 methods are in the QC product, select up to 36 methods to add to the QC panel).
3. Select **STORE.**
4. Press **F5: ASSIGN SAMP ID** (ensure CAPS lock is off).
5. Scan QC barcoded tube with handheld barcode scanner.
6. Press **Enter.**
7. Press **F7: STORE.**
8. To set up additional QC levels for this product Change PROD LEV and QC LOT, and QC FLUID LEVEL.
9. Press **F7: STORE.**

To set up additional QC products

10. Press **F1: NEW PRODUCT.**

Editing QC Products and Panels

Edit QC Products

From the Operating Menu

1. Press **F5: Process Ctrl.**
2. Press **F3: QC Status.**
3. Press **F2: Edit QC Product** (brings up a list of all defined QC products).
4. Select the QC Product you want to edit.
5. Press **F1: Edit Product.**
6. Make the required edits.
7. Press **F7: Store.**

Edit QC Panels

From the Operating Menu

1. Press **F5: Process Ctrl.**
2. Press **F3: QC Status.**
3. Press **F7: Edit QC Panel.**
4. Select the QC Panel you want to edit.
5. Press **F1: Edit Panel.**
6. Make the required edits.
7. Press **F7: Store.**

Note:

If adding test to a panel it must be in the product. If adding tests to a panel you must select **F6: Load from Product.**

Processing Barcoded Samples

1. Evaluate sample tube height using the tube fill guide.
2. Place tubes in correct adapters in segment.
3. Position barcode so it is visible in opening.
4. Place segment on the sample wheel.
5. Press **Run**.

Segment Adapters:

Teal = 5 ml tubes

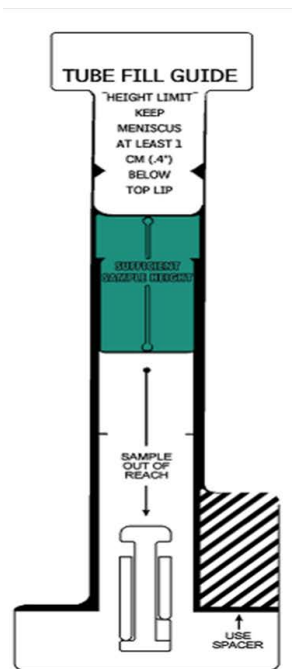
Beige = 7 ml tubes

None = 10 ml tubes

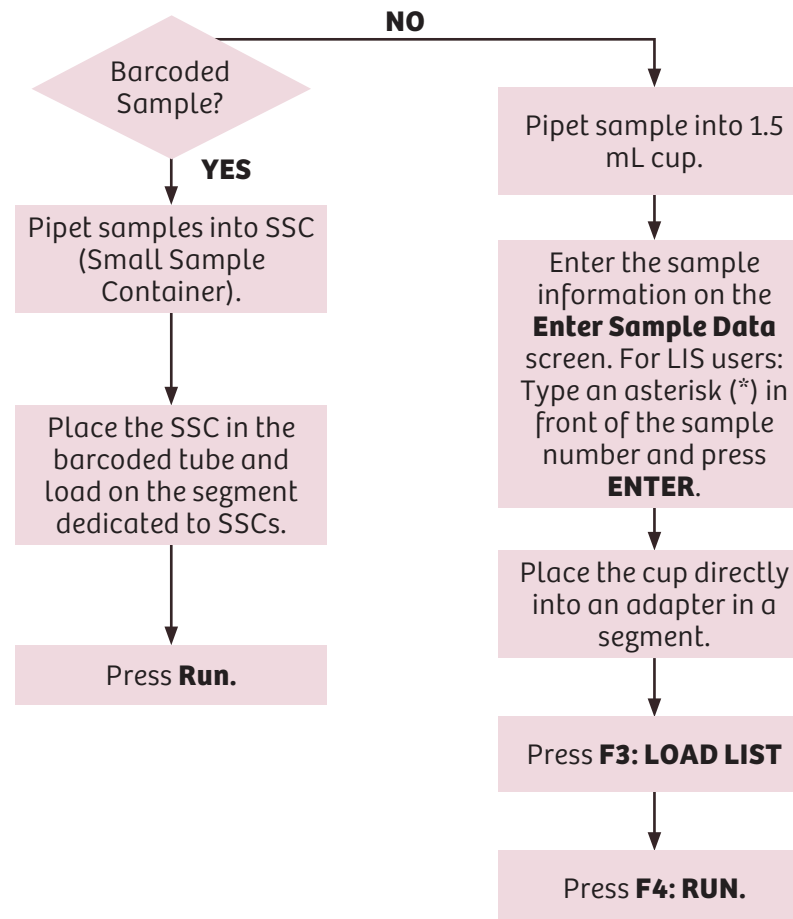


**Position
barcode in
opening**

Processing Short Samples



USE TUBE FILL GUIDE TO DETERMINE ADEQUATE SAMPLE VOLUME.



Reviewing Sample Completion Time and Results

View Sample Completion Time


From the Operating Menu

1. Press **F2: SAMPLE STATUS**.
2. Press **F2: NEXT STATUS** to display **ALL**.
3. Press **F7: Completn Time**.

View Sample Results

Option 1

From the Operating Menu

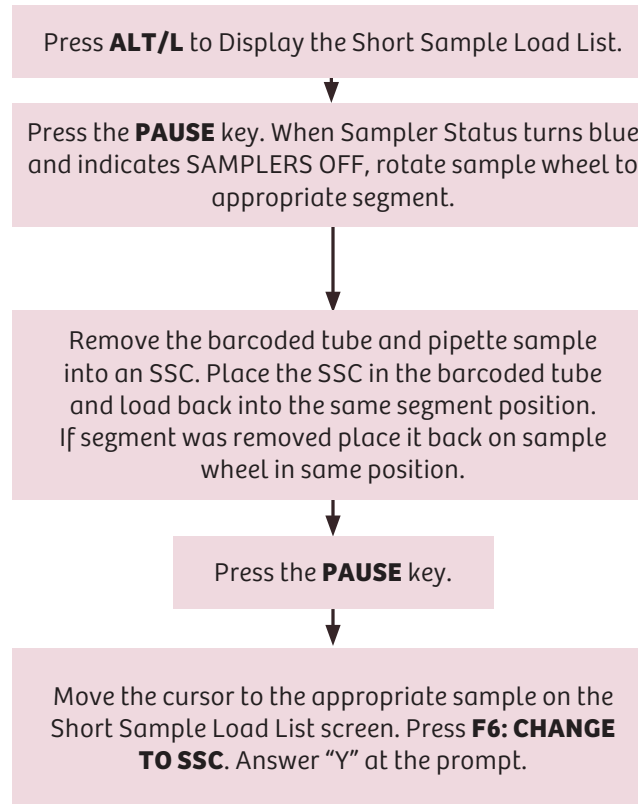
1. Press Search icon 
2. Enter patient name or sample number.
3. Press **F8: TEST RESULTS**.

Option 2

From the Operating Menu

1. Press **F3: Test Results**.
2. Type in a sample name or number.
3. Press **Enter**.

Resolving “No Sample Found During Level Sense”



Manual Sample Processing

Entering Sample Data

From the Operating Menu

1. Press **F1: Enter Data**.
2. **Position** field- Enter segment letter and position being used.
3. **Patient Name** field- Enter the sample name.
4. **Sample Number** field- Enter the sample number.
5. Select desired test(s) or panel using keyboard or touchscreen.
6. Press **F7: Next Mode** to change sample container.
7. Press **F8: Next Fluid** to change fluid type.
8. Press **F1: New Sample** to enter additional samples, or **F2: Process Single** to process a single sample.

After all samples entered

9. Press **F3: Load List**.
10. Place samples in assigned segment positions with appropriate adapters.
11. Place segment(s) on sample wheel.
12. Press **Run**.

Deleting Segments

From the Operating Menu

1. Press **F8: Segment Status** or **Alt/S**.
2. Press **F3: Delete Segs**.
3. Type **!** to delete all segments or
Type ***** to delete onboard segments.
To delete a segment enter its letter.

Segment Adapters:

Teal = 5 ml tubes


Beige = 7 ml tubes

None = 10 ml tubes

Sample cup = any
adapter

Adding Tests to Samples

From the Operating Menu

1. Press Search icon 
2. Enter patient name or sample number.
3. Press **F4: EDIT/RERUN.**
4. Determine if the sample is still processing.

If the sample is still processing

1. Select desired test(s) or panel using keyboard or touchscreen.
2. Press **F2: Process Single.**

If the sample has finished processing

1. Select the previously run test(s).
2. Press **F5: Delete Test.**
3. Select desired test(s) or panel using keyboard or touchscreen.
4. Press **F2: Process Single.**

Test Report Messages

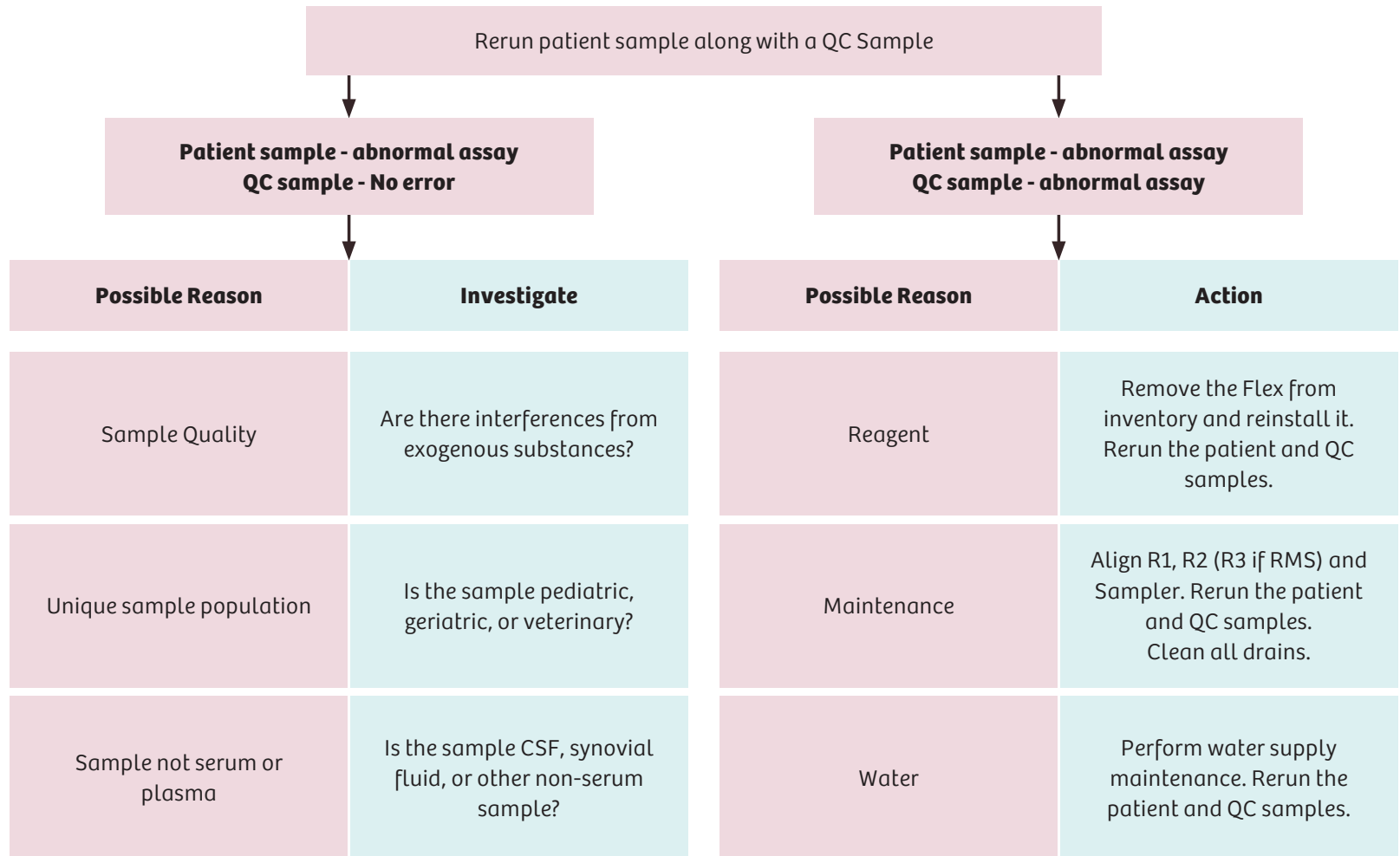
Test Report Message	Description	Resolution
HI	Result is higher than the reference interval.	Result may be reported.
hp	Result is higher than the panic interval.	Follow your laboratory's procedure for panic values that are out of range.
LO	Result is lower than the reference interval.	Result may be reported.
lp	Result is lower than the panic interval.	Follow your laboratory's procedure for panic values that are out of range.
HIL Interf	One or more of the HIL indexes for the method is equal to or greater than the HIL Alert Index entered during HIL Setup.	Follow your laboratory's procedures for reporting results when the sample is hemolyzed, icteric, and/or lipemic.
Diluted	The test has been autodiluted.	If test result is printed, the result may be reported.
assy rang/dilu	The test result exceeded the assay range, the sample was then auto diluted and reran. The result of the rerun still exceeded the assay range.	Check the method IFU to determine if the sample can be diluted. If yes, manually dilute the sample and rerun the test.

See the Dimension EXL 200 / Dimension EXL with LM Operator's Guide for additional test report messages and steps to resolve them.

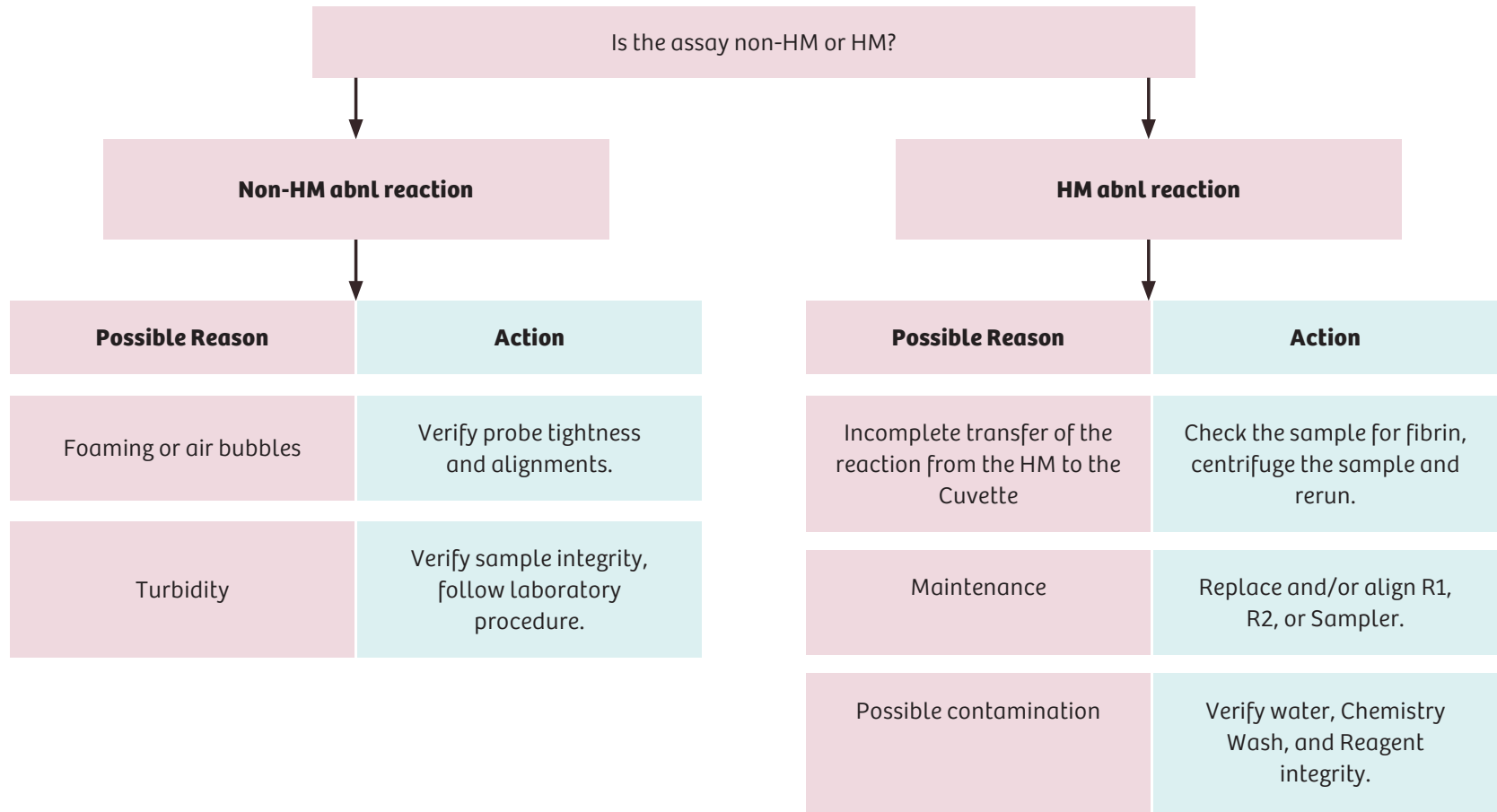
NOTE:

A test report message is printed in the Reference Range column of the Printout.

Troubleshooting Abnormal Assay



Troubleshooting Abnormal Reaction

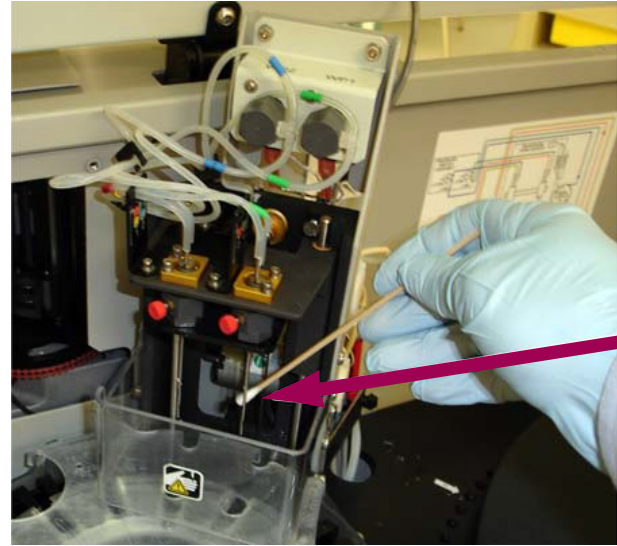


HM Weekly Maintenance

Clean HM Wash Probes

From the Operating Menu

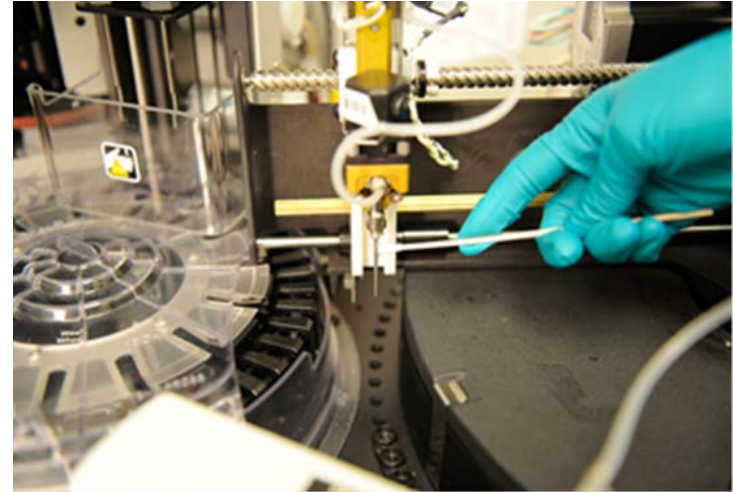
1. Press **F4: System Prep.**
2. Press **F7: Pump Prime.**
3. Press **F6: HM.**
4. Dampen a cotton swab with water and wipe in a downward motion starting at top of probe. Complete process for both probes.
5. Continue on next page.



HM Weekly Maintenance

Clean R2 Reagent Probe

1. Turn the brass colored splined shaft to move the R2 probe up and out of the R2 drain.
2. Move R2 arm counter clockwise until R2 is within reach.
3. Dampen a cotton swab with reagent probe cleaner.
4. Clean nut located above R2 probe.
5. Clean R2 probe in a downward motion starting at top of probe.
6. Press **F1: HM Wash Pump**.
7. Document all weekly maintenance in Instrument Log.

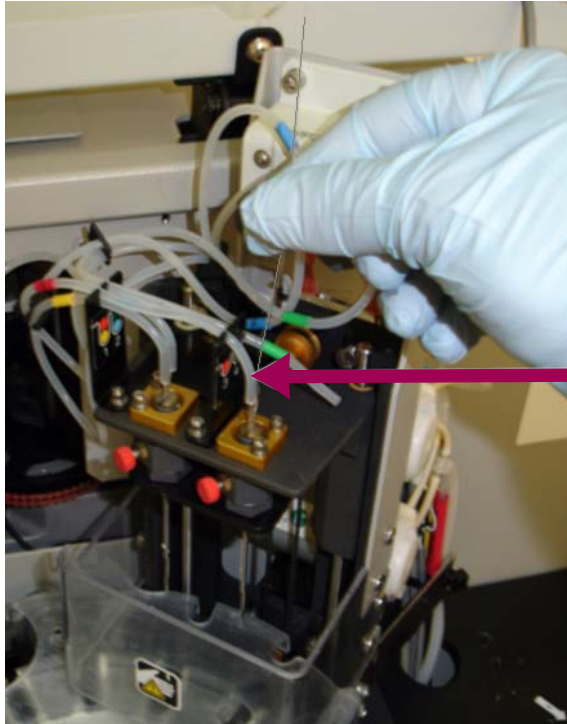


HM Monthly Maintenance

Stylet HM Wash Probes

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F7: Pump Prime.**
3. Press **F6: HM.**
4. Disconnect the green and blue labeled aspirate tubing from the wash probes.
5. Remove the plastic guard.
6. Pass a stylet completely through a wash probe starting from the top of probe. Discard stylet.
7. Repeat step 6 on other HM wash probe using new stylet.
8. Reconnect tubing and install the plastic guard.
9. Continue on next page.

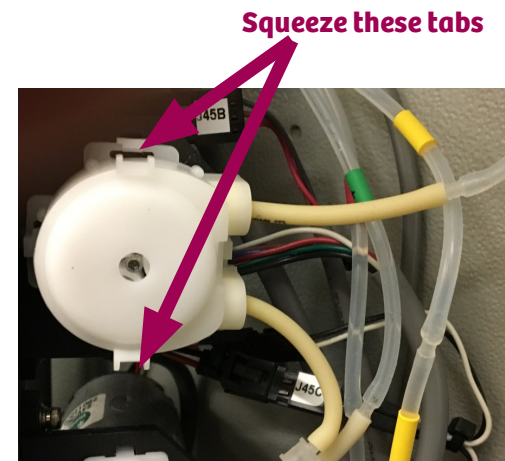
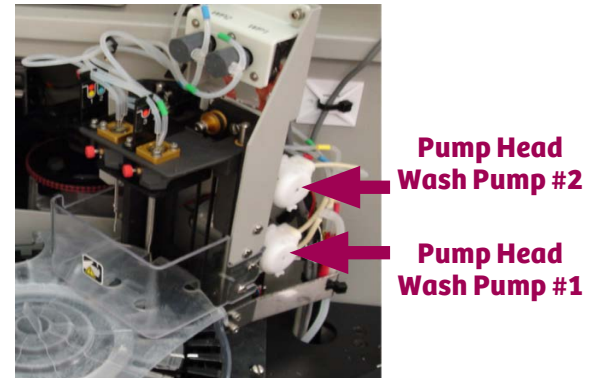


**Insert Stylet
completely
through the
Wash Probe**

HM Monthly Maintenance

Replace HM Pump Heads

1. Access the pump heads on the HM wash station.
2. Disconnect the tubing from the pump head.
3. Use your fingers to squeeze the two pump head tabs.
4. Pull the pump head off the base and discard.
5. Insert the shipping plug into front of new pump head.
6. Slide the pump head onto the motor shaft allowing the shipping plug to fall out as pump head is installed.
7. Attach the tubing to the connectors.
8. Press **F1: HM Wash Pump** to prime the HM wash pump.
9. Run a system check.
10. Document all HM monthly maintenance in Instrument Log.

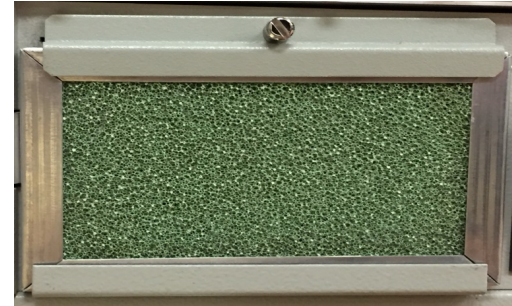


Dimension[®] EXL[™] 200

Air Filter Monthly Maintenance

1. Power Supply

- With the instrument in Standby, open the left cabinet door. Locate the filter below the card cage, left of power switch.
- Loosen the thumbscrew above the filter and remove holding bracket.
- Pull filter out of holder and insert clean filter. Air flow arrows should point in toward instrument. Insert holding bracket and tighten thumbscrew.



2. Thermal Chamber Filter

- Remove right instrument cabinet panel by pulling on it.
- Pull the filter cover and filter off of their plastic frame. Dispose of filter, and replace with new filter.



Note:

Remove dust from all reusable filters by washing with water and air drying or by using a vacuum cleaner.

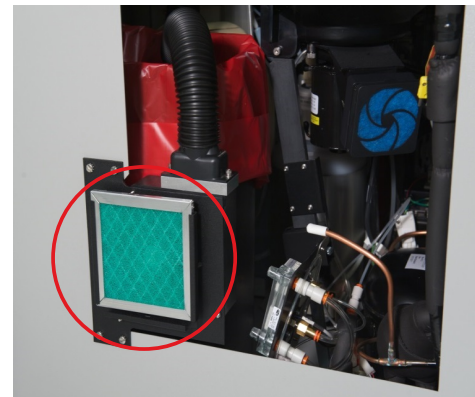
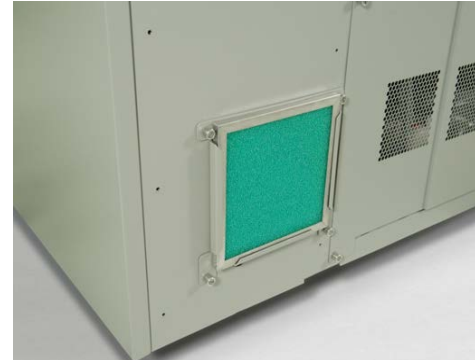
Dimension® EXL™ 200

Air Filter Monthly Maintenance

3. Cabinet
 - This filter is located on the rear of the instrument. Slide the filter up out of its holder. The air flow arrows on the new filter should point in toward the instrument.
4. Cuvette Ring
 - Open the right instrument cabinet panel and slide the filter out of its holder. The air flow arrows on the new filter should point in toward the instrument.
5. Document in Instrument Log.

Note:

Remove dust from all reusable filters by washing with water and air drying or by using a vacuum cleaner.

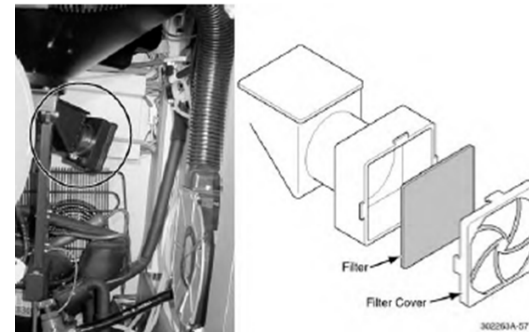


Dimension® EXL™ with LM Air Filter Monthly Maintenance

1. Power Supply
 - With the instrument in Standby, open the left cabinet door. Locate the filter below the card cage, left of power switch.
 - Loosen the thumbscrew above the filter and remove holding bracket.
 - Pull filter out of holder and insert clean filter. Air flow arrows should point in toward instrument. Insert holding bracket and tighten thumbscrew.
2. Thermal Chamber Filter (disposable)
 - Pull the filter cover and filter off of their plastic frame. Dispose of filter, and replace with new filter.

Note:

Remove dust from all reusable filters by washing with water and air drying or by using a vacuum cleaner.

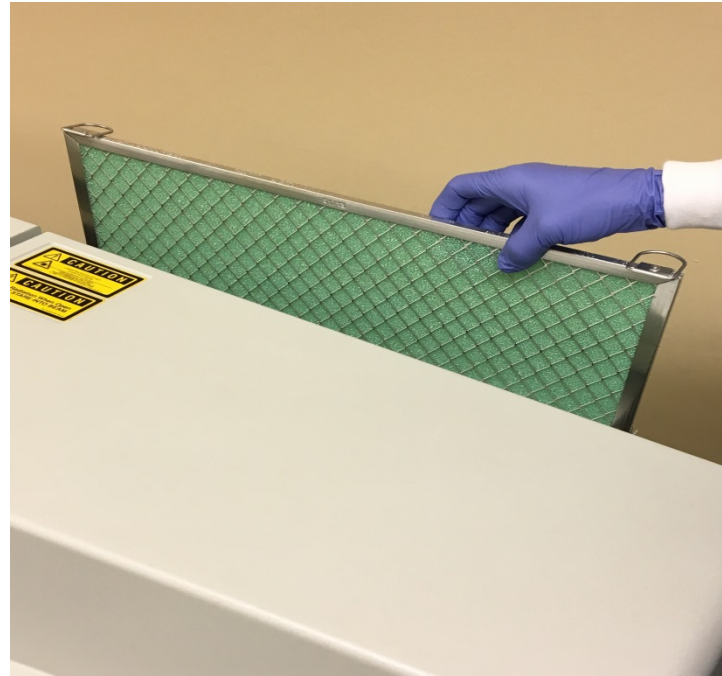


Dimension® EXL™ with LM Air Filter Monthly Maintenance

3. Cabinet/Cuvette Ring
 - This filter is located on the rear of the instrument. Slide the filter up out of its holder. Replace with clean filter. Slide clean filter in place with air flow arrows pointing in toward instrument
4. Document in Instrument Log.

Note:

Remove dust from all reusable filters by washing with water and air drying or by using a vacuum cleaner.



Reagent Drain Cleaning Monthly Maintenance

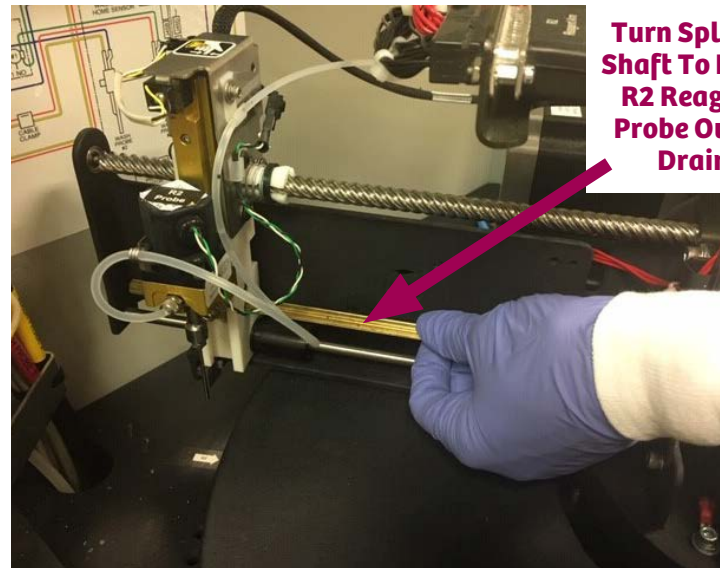
Reagent Drain Cleaning

1. With the instrument in Standby, press **Pause**.
2. Raise the IMT and reagent lids.
3. Remove R1 and R2 probes from drain by turning the brass splined shafts on the R1 and R2 arms.
4. Move the R2 arm counterclockwise to access drain.
5. For RMS only: Turn the brass splined shaft of R3 probe to remove the probe from its drain.

Once drains are accessible

From the Operating Menu

6. Press **F7: Diagnostics**.
7. Press **F1: Electro/Mech**.
8. Press **F6: Water Works**.
9. Press **F4: Vacuum On/Off** twice.



**Turn Splined
Shaft To Raise
R2 Reagent
Probe Out of
Drain**

Reagent Drain Cleaning Monthly Maintenance

10. Clamp off the non-labeled drain line directly at R1, R2 and R3 drains (RMS only) using hemostats.
11. Place paper towel around drains to catch overflow.
12. Fill drains with undiluted bleach until they start to overflow.
13. Let sit in drain for 5 minutes.
14. Unclamp drain lines.
15. Press **F4: Vacuum On/Off**.
16. Close lid.
17. Return to Operating Menu.
18. Press **Pause**.
19. Press **F4: System Prep**.
20. Press **F7: Pump Prime**.
21. Change cycle count to 10.
22. Press **F1: Prime Water**.
23. Change cycle count back to original setting.
24. Document in Instrument Log.

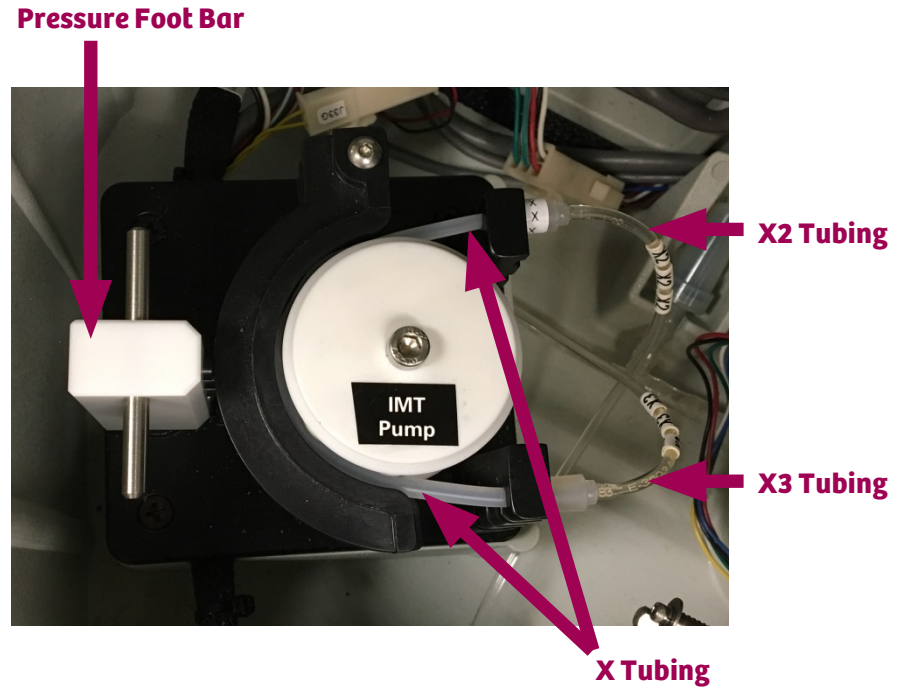


IMT Monthly Maintenance

Replace IMT Pump Tubing

From the Operating Menu

1. Press **Pause**.
2. Press **F4: System Prep**.
3. Press **F3: IMT**.
4. Press **F3: Align/Prime**.
5. Locate X tubing around the peristaltic pump.
6. Remove pressure foot bar and open pressure plates.
7. Remove the X tubing.
8. Replace with new X tubing.
9. Close pressure plates and reinstall pressure foot bar.
10. Press **Pause**.
11. Press **F1: Prime Salt**.

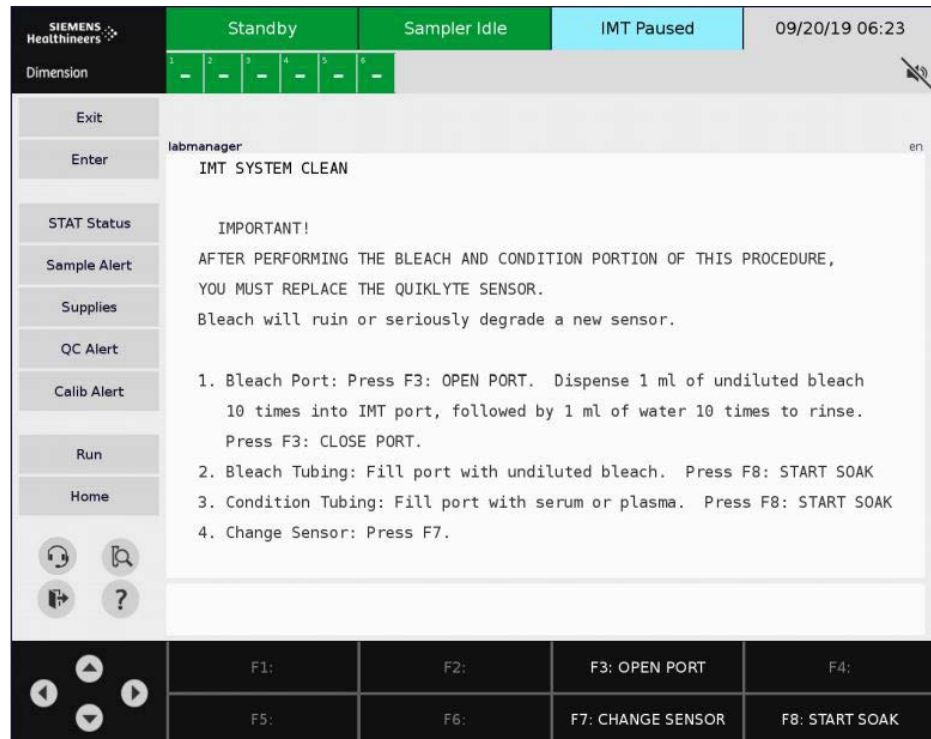


IMT Monthly Maintenance

Clean the IMT System

From the Operating Menu

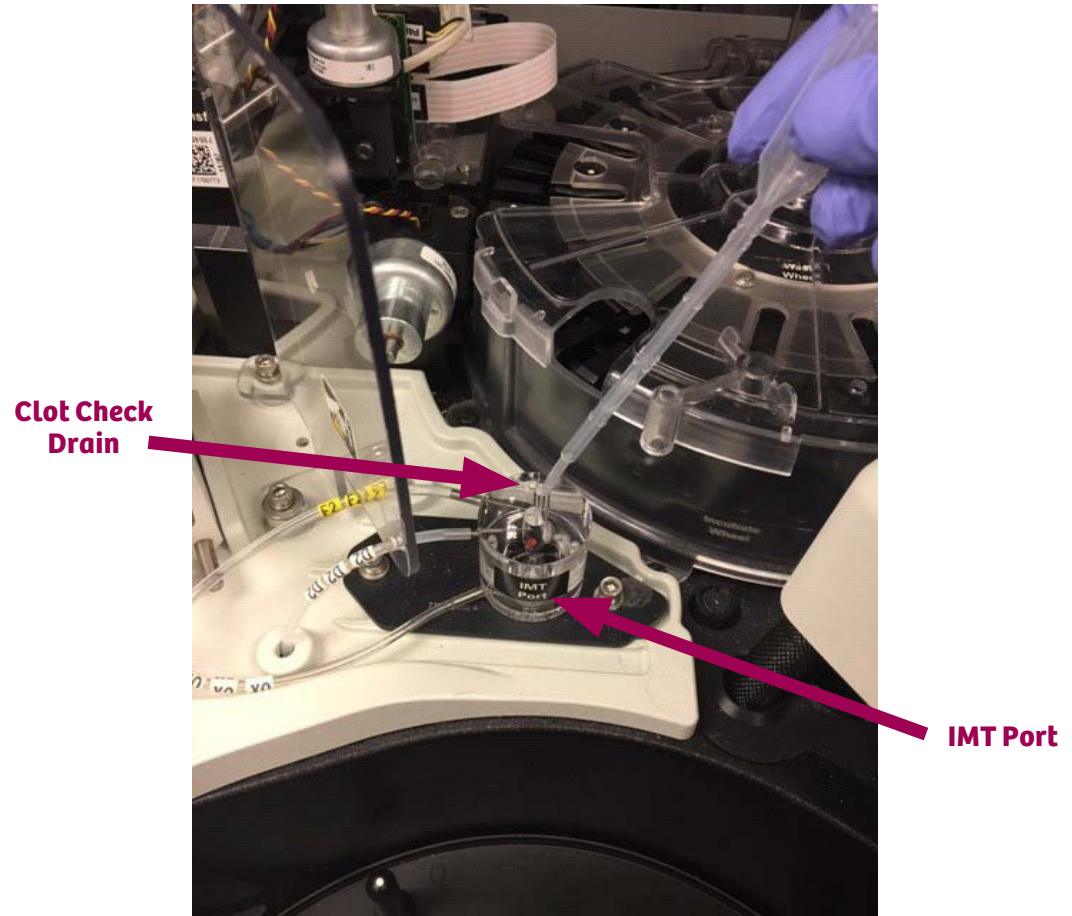
1. Press **F4: System Prep.**
2. Press **F3: IMT.**
3. Press **F8: IMT SYS Clean.**
4. Follow the instructions on the screen.
5. Document all IMT monthly maintenance in Instrument Log.



Clot Check Monthly Maintenance

Clean the Clot Check Drain on the IMT Port

1. Press **Pause**.
2. Dispense approximately 1 mL of undiluted bleach in the clot check drain 10 times.
3. Dispense approximately 1 mL of water into clot check drain 10 times.
4. Press **Pause**.
5. Document in Instrument Log.



Replacing IMT Sensor as last step of cleaning IMT

From the IMT System Clean Screen

1. Press **F7: Change Sensor**.
2. Open the sensor holder by pushing down on arrow while pulling forward.
3. Slide the used sensor out.
4. Insert new sensor.
5. Press **F7: Change Sensor** and enter new lot number.
6. Press **F8: Store Changes**.
7. Wait for the IMT Condition and Dilution Check screen to appear.
8. Enter a segment letter and position.
9. Press **F4: Cond & DilChk**.
10. Fill sample cup with conditioning sample.
11. Load the cup into the position shown on the screen.
12. Pour Dilution Check into a sample cup.
13. Load the cup into the position shown on the screen.
14. Press **F5: Start**.

Only - Run a DilChk on a new sensor

Always - Refrigerate DilChk solution

Always - Use same DilChk bottle on multiple instruments

Always - Pour the DilChk out of the bottle

Never - Run a DilChk on a used sensor

Never - Use DilChk solution if less than an inch of fluid remains

Never - Rerun a DilChk using the same sample cup

Review Dilution Check

1. Review the DilChk printout.
2. If the status is PASS ensure calibration and DilChk results are documented.
3. Run QC for Na, K and CL.

Resolving a Dilution Check that failed for Bias only

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F3: IMT.**
3. Press **F6: Review Dilchk.**
4. Press **F1: Correct Bias.**
5. At the prompt type **Y** for yes.
6. If the Bias corrects to 0% ensure the failed and passed results are documented.
7. Run QC for Na, K and CL.

Troubleshooting a Dilution Check

Resolving a Dilution Check when bias cannot be corrected

1. Verify the condition and Dilution Check sample cups are loaded in the correct order.
2. Use a new bottle of Dilution Check solution to rerun the dilution check.
3. Replace the QuikLYTE Sample Diluent.

Resolving a Dilution check that failed for SD Only

1. Replace X tubing.
2. Perform Sample Probe alignments.
3. Pour a fresh cup of Dilution Check solution to rerun DilChk.

Resolving a Dilution check that failed for SD and Mean

1. Troubleshoot SD first.

Processing a System Check

Running a System Check using CHK

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F8: Daily Maint.**
3. Enter operator initials.
4. Press **F1: Start.**

NOTE:

If System Check fails,
refer to the *Dimension
EXL 200 / Dimension EXL
with LM Operator's Guide*
to troubleshoot.

Configuring System Check (CHK) to Run Automatically

Configuring Supplies Alert for CHK

From the Operating Menu

1. Press **Supplies** alert key.
2. Press **F1: Config Alerts**.
3. Arrow over to CHK reagent.
4. Enter **10**.
5. Press **F1: Store Alerts**.

Set up CHK to run automatically

From the Operating Menu

1. Press **F4: System Prep**.
2. Press **F8: Daily Maint**.
3. Press **F8: Auto Setup**.
4. Arrow over to the Day fields. Use **Enter** key to toggle through the days.
5. Arrow over to enter a time using the 24 hour clock.
6. Arrow over to the Activated field and use **Enter** to toggle On/Off.
7. Press **F1: Save Changes**.

Defining Calibrator Products

Scan Calibrator Products

1. Press **Calib Alert** using the touchscreen or **ALT/C**.
2. Press **F5: Def Cal Product**.
3. Scan new calibrator product IFU with handheld barcode scanner. Calibrator information will populate screen.
4. Press **F7: Store**.

Deleting Calibrator Products

From the Operating Menu

1. Press **F5: Process Ctrl**.
2. Press **F1: Calibration**.
3. Enter password.
4. Press **F6: Edt Cal Prodct**.
5. Select the product from the list of defined calibrator products.
6. Press **F2: Delete Product**.
7. Type **Y** at prompt "This will permanently delete this entry from the database. Continue? (y/n)."

NOTE:

Expired calibrator products will automatically be deleted if configured.

Group Calibration

Request a Calibration using Group Calibration

1. Press **Calib Alert** using the touch screen or **ALT/C**.
2. Press **F3: Group Cals**.
3. Select the calibrator group to be calibrated if more than one.
4. Press **F2: Setup Group**.
5. Select the appropriate calibrator lot if more than one.
6. Press **F1: Select Product**.
7. At prompt press **Y** to confirm correct calibrator lot.
8. Type initials and press **Enter**.
9. Type the start position of the segment you will use and press **Enter**.
10. Press **F8: QC YES/NO**. Not required if QC product = Cal active **YES**.
11. Press **F4: Assign Cups**.
12. Press **F7: Load Run**.
13. Load calibrators according to printed pick list.
14. Place segment on the sample wheel.
15. Press **F4: Run** or **RUN** key.

Calibration Review with Auto Accept On

Calibrations will auto accept if specified criteria are met and no action is required.

To review a Calibration that did not auto accept

1. Press **Calib Alert** (the alert will be yellow).
2. Select the method indicated by "REVIEW REQUIRED."
3. Press **F2: Cal Review**.
4. Locate any values in red.
If Statistics are unacceptable press **F8: Reject Data**.
If the SD or Mean are red, follow your laboratory procedure.

Manual Calibration

Request a Calibration Manually

1. Press **ALT/I** then **F5: Print** (used to verify onboard reagent lots).

From the Operating Menu

2. Press **F5: Process Control**.
3. Press **F1: Calibration**.
4. Press **F2: Setup and Run**.
5. Select desired test using keyboard or touchscreen.
6. Verify the reagent lot indicated is the one onboard.
7. Press **F1: Other Lot** to change.
 - Enter the operator ID.
 - Enter the segment position.
8. Press **F8: QC Yes/No**.
9. Press **F4: Assign Cups**.
10. Repeat step 5 through 9 to set up more methods for calibration.
11. Press **F7: Load/Run**.
12. Load the calibrators in assigned positions.
13. Place segment on sample wheel.
14. Press **Run**.

Calibration Review with Auto Accept Off

From the Operating Menu

1. Press **F5: Process Ctrl.**
2. Press **F1: Calibration.**
3. Press **F3: Review Data.**
4. Select method to be reviewed.
5. Never press Calculate (option may not be available).
6. Review precision for obvious outliers.
7. Determine if calibration is Verified, Linear or Logit.
8. Evaluate m, b, and r (refer to Acceptance Criteria box).
9. Review QC values.
10. Accept or Reject calibration.

Acceptance Criteria

Precision: No obvious outliers
Slope (m): Verified: 0.90 - 1.10
Calibrated: Linear: 0.97 - 1.03
Logit: 0.95 - 1.05
Intercept (b): close to zero or clinically insignificant
Correlation Coefficient (r): 0.990 - 1.000
Quality control (QC): within acceptable range

NOTE:

If only the QC value is out press **F2: ACCEPT DATA.**
Rerun QC, then follow laboratory procedure to further troubleshoot QC if needed.

If Statistics are unacceptable press **F8: Reject Data.** If the SD or Mean are red, follow your laboratory procedure.

Troubleshooting Failed Calibrations

Troubleshooting Precision

1. Review calibration preparation, storage conditions, and expiration date. For lyophilized products, the preparation steps must be followed precisely.
2. Review instrument maintenance logs and System counters screens for needed maintenance.
3. Check that all temperatures are within range.
4. Precision Study: Run five replicates of the same assay on a sample to check precision.

Troubleshooting Calibration Statistics

1. Ensure you used the correct calibrator information, lot, bottle values.
2. Check that the sample cups were loaded into segment in the correct order.

Troubleshooting Quality Control

1. Make sure there is enough QC material in sample cup.
2. Make sure the correct control product/lot number is being processed.
3. Compare established QC ranges to peer group and adjust if necessary.

Configuring Calibration Alerts

Configure Calibration Alerts

1. Press **Cal Alert**.
2. Press **F4: Config Alerts**.
3. Use the **Enter** key to turn On/Off each alert.
4. Set Alerts for any of the following:
 - Alert Flex in inventory but not calibrated.
 - Alert Calibration is expired.
 - Alert Calibration is about to expire in a specified time.
 - Override 48 hour removal of expired calibration alerts.

Delete Off Board Lots

From the Operating Menu

1. Press **F4: System Prep**.
2. Press **F8: Daily Maint**.
3. Press **F5: Offboard lots**.
4. Place cursor beside of desired method.
5. Press **F3: Delete**.

NOTE:

Dimension EXL holds two calibrated reagent lots. If one lot is off board and needs calibration, then the alert will turn yellow.

Configuring Calibration Auto Acceptance

From the Operating Menu

1. Press **F5: Process Ctrl.**
2. Press **F1: Calibration.**
3. Press **F4: Auto Accept.**
4. Select desired test using keyboard or touchscreen.
5. Press **F4: CAAP On.**
6. Press **F7: Store.**

To view a list of methods that are currently turned on

Press **F8: Show Active.**

NOTE:

You must have at least two levels of QC ranges entered to turn on Calibration Auto Acceptance.

Replacing Cuvette Diaphragm

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F6: Sys Counters.**
3. Press **F2: Diaph Change.**
4. Flip the barcode scanner over.
5. Loosen alignment bar thumb screw.
6. Rotate alignment bar over.
7. Pull out the curved locking bar.
8. Move cuvette formation bar back.
9. Remove the used diaphragm.
10. Install the new diaphragm.
11. Place all components back into place.
12. Press any key on keyboard.
13. Press **Y** when prompted to update system counters.
14. Document in Instrument Log.



Curved Locking Bar

Alignment Bar

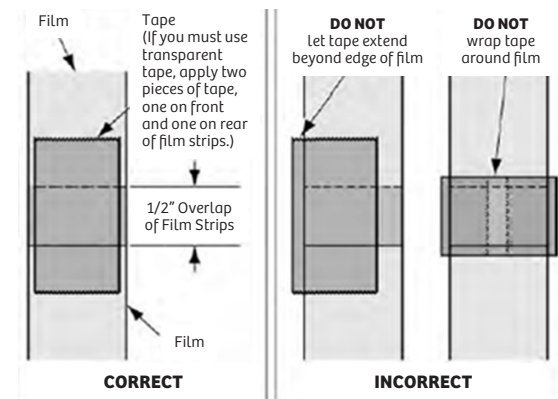
Thumb Screw

Barcode Scanner

Changing Cuvette Film

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F6: System Counters.**
3. Press **F3: Film Load.**
4. Cut the right and left film strips on the used cuvette cartridge. Leave at least 6 inches hanging from the instrument.
5. Slide the used cartridge off the holder and discard it.
6. Remove the red plastic key from the center of the new cartridge.
7. Slide the new cartridge on to the holder.
8. Use the red tape to tape the new film to the old film, overlapping about one-half inch.
9. Press **F1: Load Film.** Wait for the counter to reset to 12000 cuvette film count.
10. After film loading is complete, if there is any slack, press **F2: Tension.**
11. Document in Instrument Log.



Replacing HM Fluids

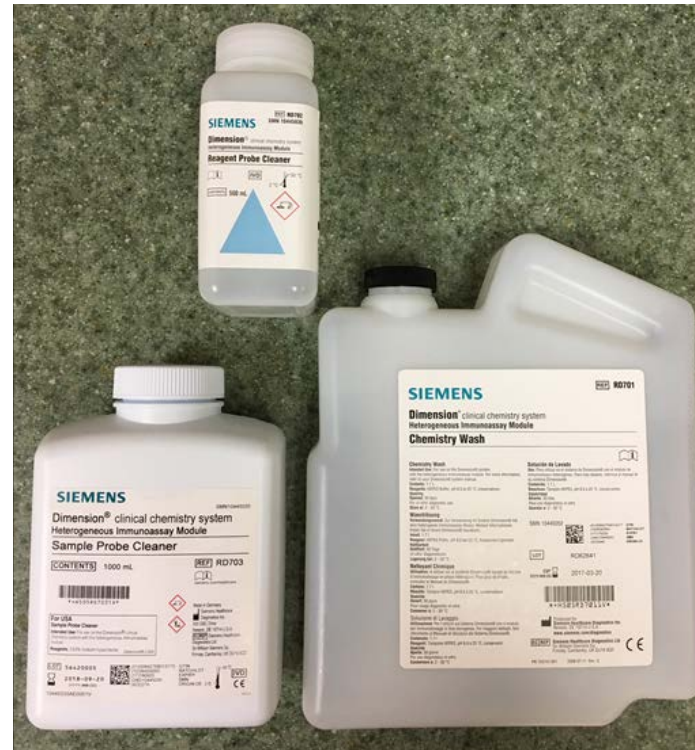
From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F6: Sys Counters.**
3. Press **F6: HM Counters.**
4. Locate the item to be replaced.
5. Replace the consumable.
6. Move cursor to the replaced item.
7. Press **Enter.**
8. Press **F1: Store Changes.**
9. Press **Y** for yes.

NOTE:

Replace Chemistry Wash when it has been opened for 30 days.

Run HM method QC when Chemistry Wash lot changes.



Replacing IMT Consumables

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F3: IMT.**
3. Press **F1: Change Consum.**
4. Locate the consumable to be replaced and replace it.
5. Press the function key associated with consumable.
6. Enter lot number.
7. Press **F8: Store Changes.**

NOTE:

Pressing the enter key without updating the lot will retain the current lot ID.

SIEMENS Healthineers

Standby Sampler Idle IMT Paused 09/20/19 06:27

Dimension 1 2 3 4 5 6

Exit

Enter labmanager en

CHANGE IMT CONSUMABLES

	Std A	Std B	Flush	Salt Soln.	Diluent	Sensor
Assays Remaining:	1994	655	2984	650	1395	1000
LOT:	8MV601	9FV689	8FV682	8LD696	8CV615	9CV616
QuikLYTE(tm) Integrated Multisensor Time Left:	5 days					
Standard A Time Left:	21 days					
Standard B Time Left:	21 days					
Diluent Time Left:	21 days					
IMT bleach/conditioning soak due in	0 days					

Replace consumable, press the appropriate function key to update the count, and then store changes.

F1: CHANGE STD A F2: CHANGE STD B F3: CHANGE FLUSH F4:

F5: CHANGE SALT F6: CHANGE DILUENT F7: CHANGE SENSOR F8: STORE CHANGES

Replacing IMT Sensor

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F3: IMT.**
3. Press **F1: Change Consum.**
4. Open the sensor holder by pushing down on arrow while pulling forward.
5. Slide the used sensor out.
6. Insert new sensor.
7. Press **F7: Change Sensor** and enter new lot number.
8. Press **F8: Store Changes.**
9. Wait for the IMT Condition and Dilution Check screen to appear.
10. Enter a segment letter and start position.
11. Press **F4: Cond & DilChk.**
12. Fill sample cup with conditioning sample.
13. Load the cup into the position shown on the screen.
14. Pour Dilution Check into a sample cup.
15. Load the cup into the position shown on the screen.
16. Press **F5: Start.**

Only - Run a DilChk on a new sensor

Always - Refrigerate DilChk solution

Always - Use same DilChk bottle on multiple instruments

Always - Pour the DilChk out of the bottle

Never - Run a DilChk on a used sensor

Never - Use DilChk solution if less than an inch of fluid remains

Never - Rerun a DilChk using the same sample cup

Review Dilution Check

1. Review the DilChk printout.
2. If the status is PASS ensure calibration and DilChk results are documented.
3. Run QC for Na, K and CL.

Resolving a Dilution Check that failed for Bias only

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F3: IMT.**
3. Press **F6: Review Dilchk.**
4. Press **F1: Correct Bias.**
5. At the prompt type **Y** for yes.
6. If the Bias corrects to 0% ensure the failed and passed results are documented.
7. Run QC for Na, K and CL.

Troubleshooting a Dilution Check

Resolving a Dilution Check when bias cannot be corrected

1. Verify the condition and Dilution Check sample cups are loaded in the correct order.
2. Use a new bottle of Dilution Check solution to rerun the dilution check.
3. Replace the QuikLYTE Sample Diluent.

Resolving a Dilution check that failed for SD Only

1. Replace X tubing.
2. Perform Sample Probe alignments.
3. Pour a fresh cup of Dilution Check solution to rerun DilChk.

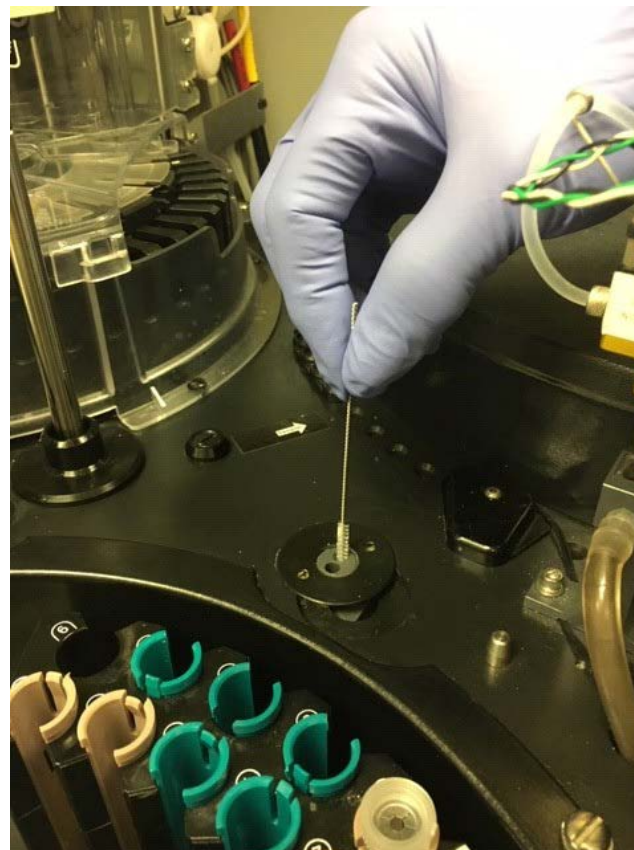
Resolving a Dilution check that failed for SD and Mean

1. Troubleshoot SD first.

Cleaning Sample Probe Drain

From the Operating Menu

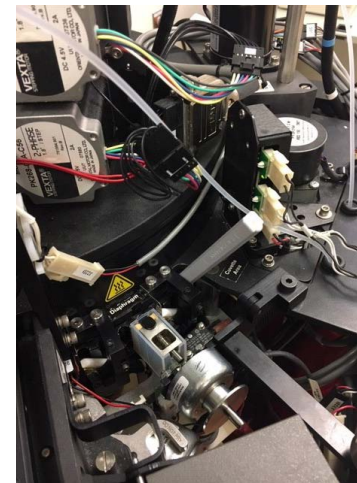
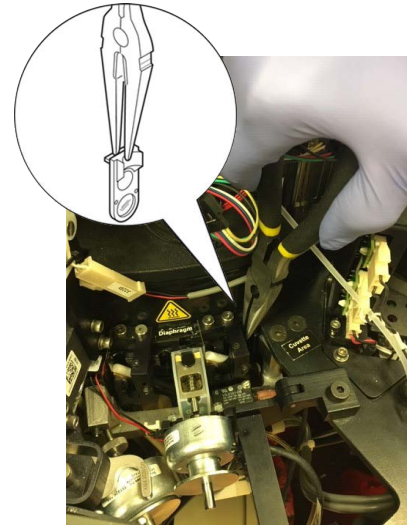
1. Press **F4: System Prep.**
2. Press **F6: Sys Counters.**
3. Press **F4: Clean Probe.**
4. Enter a segment position in the **Pos:** field.
5. Place a sample cup with 1.5 mL of undiluted bleach into the segment position.
6. Press **F4: Clean Probe.**
7. Follow the prompt: "Wait until the sample probe stops, then press **Enter.**"
8. Wait for the prompt "Manually clean sample probe drain."
9. Dip the drain brush into a 10% bleach solution.
10. Scrub down inside the drain hole closest to the reagent tray.
11. Repeat steps 9 and 10 three times.
12. Follow the prompt: "Remove cup from segment position then press any key."
13. Close lids and press **Reset.**
14. Document in Instrument Log.



Cleaning Cuvette Windows

From the Operating Menu


1. Press **F7: Diagnostics**.
2. Press **F5: Check Windows**.
3. Press **F2: Access Mode** to select access bad or access all.
4. Press **F1: Start Clean**.
5. When prompted, remove the window from the access position (use window extractor tool or needle nose pliers).
6. Clean the window with lens paper and use water if needed.
7. Reinstall the window in the access position.
8. Press any key to continue.
9. Wait for the prompt before removing any additional windows.
10. Repeat steps 5 to 9 until prompted with "All windows have successfully passed QC."
11. Return to the Operating Menu.
12. Select **Reset** to initialize the system.
13. Document in Instrument Log.



Replacing the Source Lamp

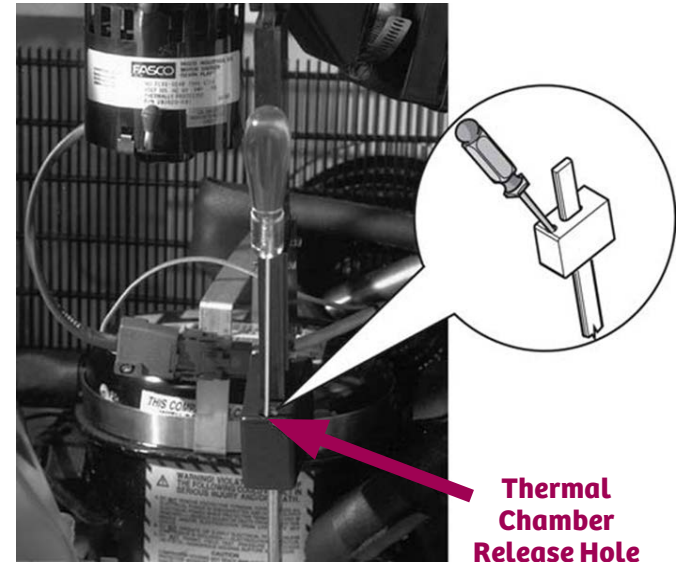
Power Down the Instrument

From the Operating Menu

1. Select the Sign Out icon  or **Alt + Exit** on keyboard.
2. Select **Shutdown**.
3. When prompted “If you really want to shut down the application...” Select **Yes**.
4. At the console menu select option **4. Shutdown**.
5. At the Shutdown Menu select option **2. Shutdown**.
6. When prompted: “Do you really want to shutdown the computer?”. Select option **1. OK**.
7. When screen turns black, turn off the instrument power switch.
8. **Warning:** Wait at least five minutes after turning off the instrument power for the source lamp assembly to cool before continuing this procedure.

Lower the Thermal Chamber

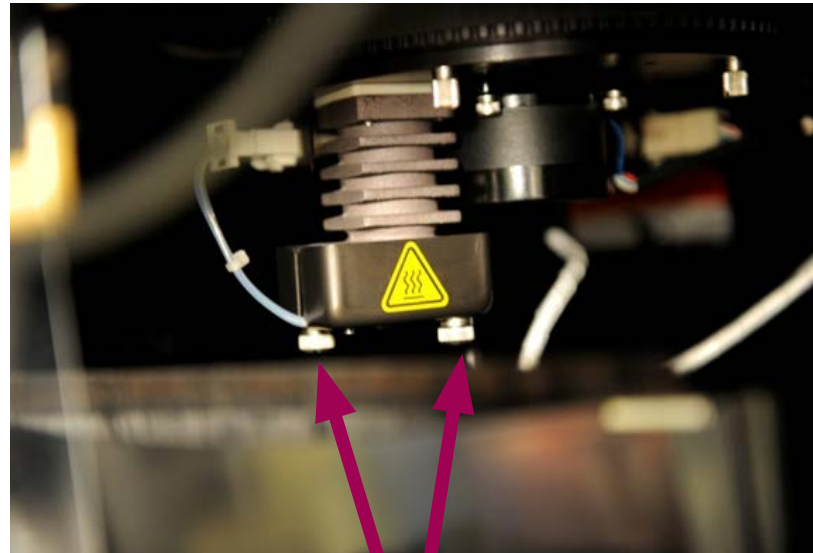
1. Open the instrument door and remove the cuvette waste container.
2. Place a screwdriver into the thermal chamber release hole. Push the screwdriver down to release and continue pushing until the thermal chamber drops down completely.



Replacing the Source Lamp

Remove/Replace the Source Lamp

1. Reach inside thermal chamber and loosen the two thumb screws.
2. Unplug the source lamp connector P/J 72 B.
3. Remove the source lamp.
4. Plug in the new source lamp.
5. Align guide pins and tighten thumb screws.



Thumb Screws

Replacing the Source Lamp

6. Raise the thermal chamber.
7. Check yellow tape to ensure proper closure.
8. Turn instrument power switch on.
9. At the console menu, select option **1. Dimension**.
10. Sign in with appropriate Operator ID and password.
11. Perform a photometer alignment (see alignment procedure on next page).
12. Perform a system check and daily QC.
13. Recalibrate the following methods: A1C, C3, C4, CCRP, CRBM, CRP, GENT, HB1C, IGA, IGG, IGM, LIDO, MALB, MPAT, NAPA, PALB, PHNO, PROC, PTN, RCRP, THEO, TOBR, TRNF, VALP, VANC
14. Document in Instrument Log.



Not Closed



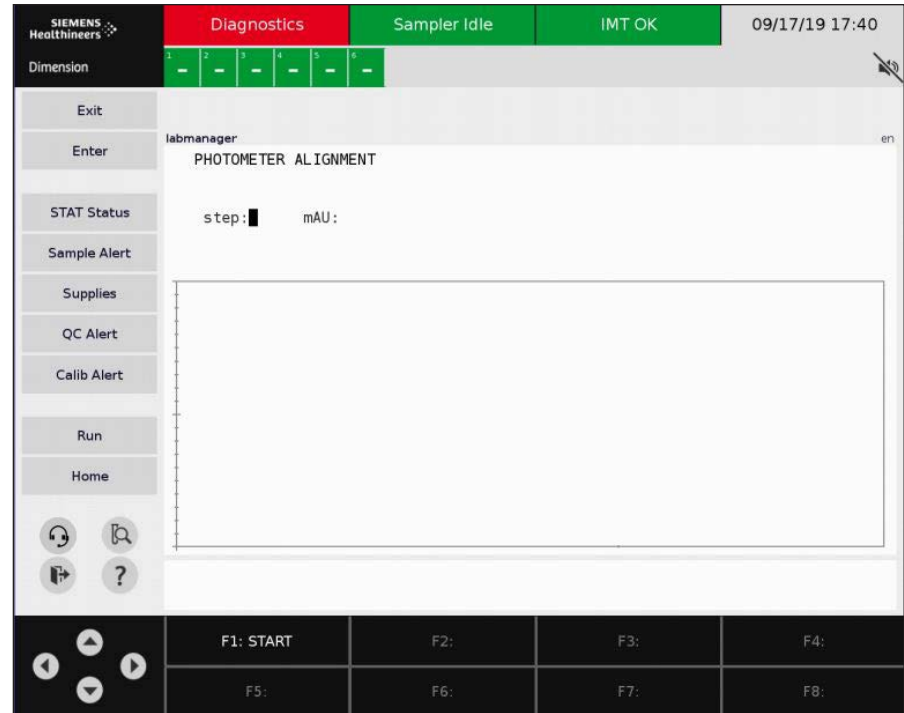
Closed

Replacing the Source Lamp

Photometer Arm Alignment

From the Operating Menu

1. Press **F7: Diagnostics**.
2. Press **F3: Alignments**.
3. Press **F4: Photometer**.
4. Press **F3: Arm Align**.
5. Press **F1: Start**.
6. When prompted to store (new and old values will be shown), ensure graph appears like a U-shape and the value is between -2 and -10.
7. Type **Y** or **N**.
8. Only with a new lamp, press **F4: mAU Offset Cal**.



NOTE:

Allow lamp to burn in for 30 minutes prior to performing the mAU offset.

Document in Instrument Log

Entering a New Task

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F8: Daily Maint.**
3. Press **F6: Instrument Log.**
4. Press **F1: New Task.**
Enter operator initials.
Enter the task performed.
Enter any comments.

Deleting a Log Entry

From the Instrument Log screen

1. Move cursor to entry.
2. Press **F2: Delete Entry.**
Enter operator initials.
Enter any comments.
3. Press **F3: See DEL INFO/SEE ORG INFO** (toggles between options to view original entry and deleted entry).

STAT Status	DATE	INITIALS	MAINTENANCE ACTIVITY
Sample Alert	09/17/19	CB	Cleaned Outside of HM Wash Probes
Supplies	09/17/19	CB	Cleaned R2 Probe
QC Alert	09/17/19	RD	Stylettred HM Wash Probes
Calib Alert	09/17/19	RD	Replaced HM Pump Heads
	09/17/19	RT	Cleaned Air Filters
Run	09/17/19	BW	Cleaned R1/R2 Drains
Home	09/17/19	BB	Replaced IMT Pump Tubing
	09/17/19	BB	Performed IMT System Clean
	09/17/19	BW	Cleaned Clot Check Drain
	09/17/19	DR	Cleaned Cuvette Windows

NOTE:
Log holds last 100 entries.

Viewing Daily Maintenance Logs

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F8: Daily Maint.**
3. Press **F7: Maint Log.**
4. Press **F6: PREV LOG** to view previous logs or **F7: NEXT LOG** to move to the next log. Press **F5: SEARCH BY DATE**. Enter specific date of log.
5. Press **F8: Print** to print out displayed log.



NOTE:

Daily
Maintenance Log
stores 60 logs.

Reviewing IMT Log

From the Operating Menu

1. Press **F4: System Prep.**
2. Press **F3: IMT.**
3. Press **F5: IMT Overview.**
4. Press **F1: IMT Logs.**
5. Press **F2: SEARCH BY DATE** to search by date.
6. Press **F6: PREV LOG** to view previous logs.
7. Press **F7: NEXT LOG** to view next available log.
8. Press **F8: SRCH LST DILCHK** to search for last dilution check processed.

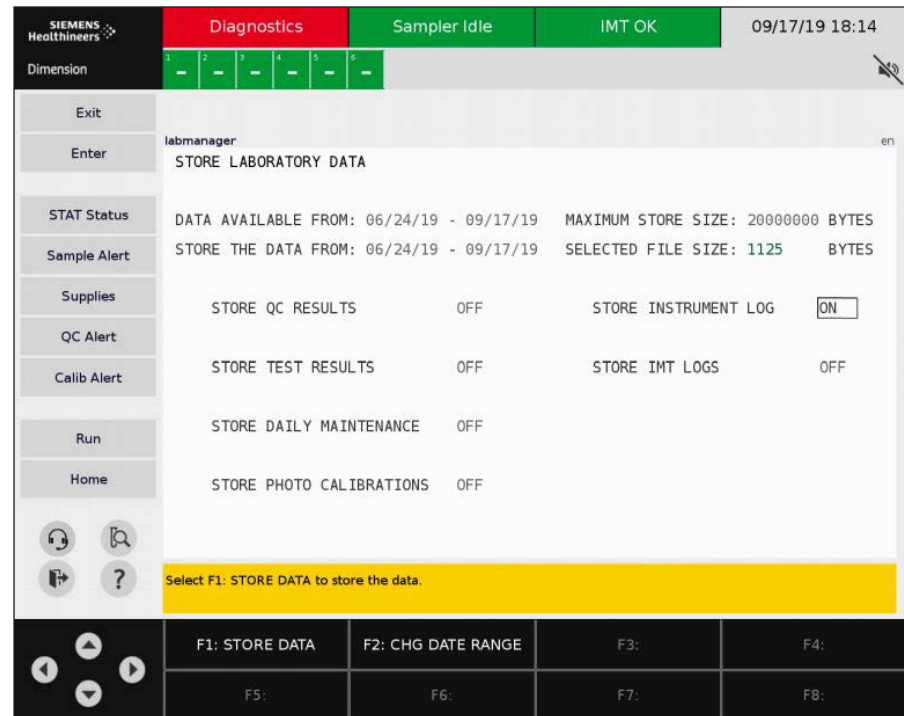
NOTE:

Operators can view up to 500 saved logs. A log will display the current DilChk and Calibration. A log is created with every calibration and IMT sensor replacement.

Storing Lab Data

From the Operating Menu

1. Press **F5: Process Ctrl.**
2. Press **F8: More Options.**
3. Press **F7: Store Lab Data.**
4. Move cursor to desired option and select enter key to toggle from OFF to ON.
 - STORE QC RESULTS
 - STORE TEST RESULTS
 - STORE DAILY MAINTENANCE
 - STORE PHOTO CALIBRATIONS
 - STORE INSTRUMENT LOG
 - STORE IMT LOGS
5. Press **F2: Chg Date Range.**
6. Press **F1: Store Data.**



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