# AU480 Job Aid Booklet



## For Training Purposes Only

These job aids are shortened versions of procedures found in the reference below. Information in the job aid is correct as of the date published. Verify you have the correct information.

#### References:

- AU480 Chemistry Analyzer Users Guide Volume 1 PN BM480V1AB (August 2010)
- AU480 Chemistry Analyzer Users Guide Volume 2 PN BM480V2AB (August 2010)
- AU480 Chemistry Analyzer Quick Response Guide PN B0480QRG (November 2009)

# **AU480<sup>®</sup> Chemistry Analyzer**

## WARNINGS AND PRECAUTIONS

Read all product manuals and consult with Beckman Coulter-trained personnel before attempting to operate the instrument.

Beckman Coulter, Inc. urges its customers and employees to comply with all national health and safety standards such as the use of barrier protection. This may include, but is not limited to, protective eyewear, gloves, suitable laboratory attire when operating or maintaining this or any other automated laboratory equipment.

## INTENTION FOR USE

This document is not intended to replace the information in your Users Guide or Quick Response Guide. Information in the Users Guide and Quick Response Guide supersedes information in any other manual.

## **REVISION STATUS**

Rev. A (December 2013)

Based on AU480 software version 1.71

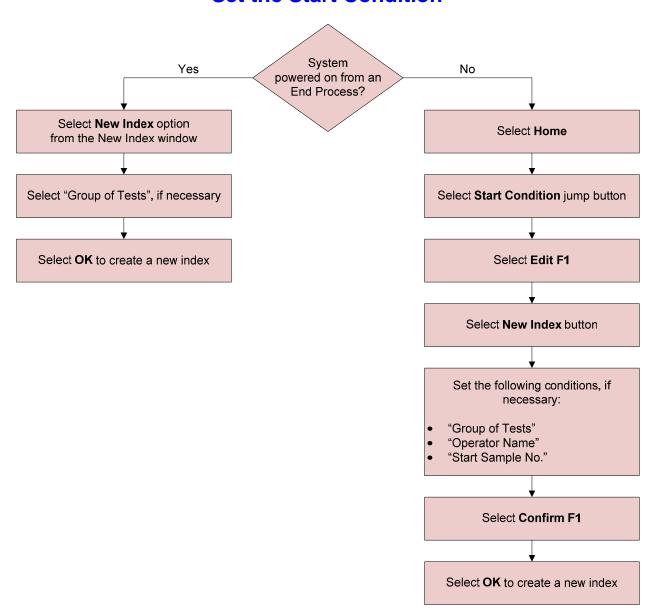
## **TRADEMARKS**

AU480<sup>®</sup> Chemistry Analyzer

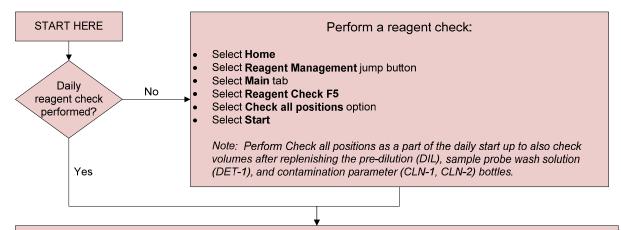
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## **Set the Start Condition**



# **Check and Load Reagents**



When the reagent check is complete (status in the **Main** tab displays "Checked"), select each tab to identify the following reagent quantity and status information:

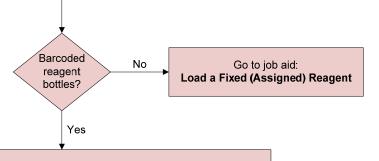
## Reagent Main tab

- · Reagents in Orange are missing, expired, or empty
- Reagents in Yellow are short (low)
- Reagents in Light Blue are onboard and sufficient in quantity
- · Reagents in Gray are used for a different sample type
- Select sample type from the "Type" drop-down list to view quantity and status of reagents for each sample type

## Reagent Details tab

Note: Missing reagents are not displayed in the **Details** tab.

- Verify "Shots" (number of tests) are sufficient for the run
- Verify "Onboard Remaining" time is sufficient for the run (H = Hours, D = Days)
- Verify "Expiration" of the reagent lot is within date
- Select sample type from the "Type" drop-down list to view quantity and status of reagents for each sample type



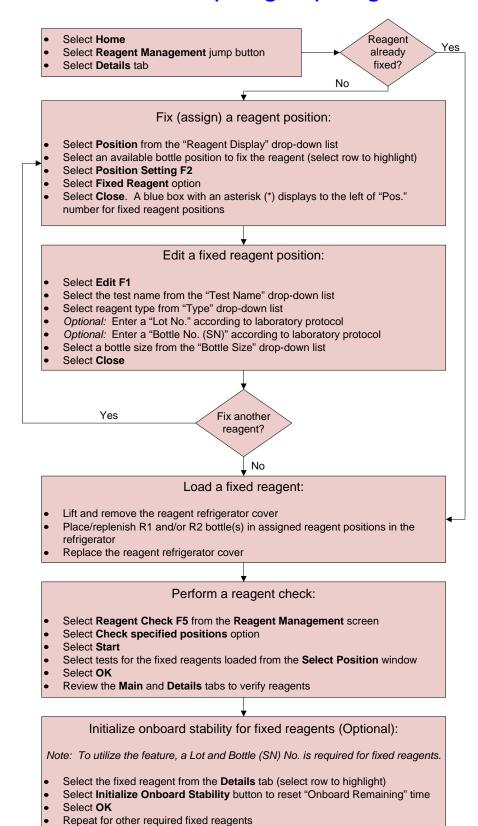
## Load reagents with barcodes:

- Lift and remove the reagent refrigerator cover
- Remove reagent bottles to be replaced (identified from the **Details** tab)
- Verify appropriate adapters are set in desired reagent tray positions
- Place R1 and R2 bottles in any available (not fixed) positions in the refrigerator
- Replace the reagent refrigerator cover

## Perform a reagent check:

- Select Reagent Check F5 from the Reagent Management screen
- Select Check changed positions option
- Select Start
- Review the Main and Details tabs to verify reagents

# Load a Fixed (Assigned) Reagent



# **Perform Analyzer Calibration**

- Select Home
- Select Rack Requisition Sample jump button
- Select Calibration button

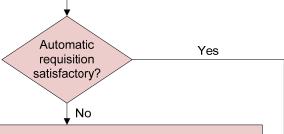
## Review automatic reagent blank and calibration requisition:

Select sample type from the "Type" drop-down list to view reagent blanks and calibrations requisitioned by the analyzer for each sample type

Notes: Automatic requisition occurs during a reagent check.

Tests with a blue box are requisitioned for reagent blank.

Tests with a yellow box are requisitioned for calibration.



## Manually requisition calibration:

- Select Start Entry F1
- Select the RB or CAL column to the right of the test name to requisition reagent blank and calibration
- Optional: Select Individual Requisition F3 to requisition sequenced bottles of the same test
- Select sample type from the "Type" drop-down list to requisition reagent blank and calibration for other sample types
- Select Entry F1 to save requisition

#### Select Display Cup Set F5

to view the reagent blank, calibrator(s), and racks required

Note: You may need to scroll down, or select **Print**, to view all required calibrator racks

Load the reagent blanks and calibrators according to the list in the correct racks and place the racks on the rack supply unit (blue rack first)

- Select Start from the main button bar
- Review errors on the Error List in the Start Window and perform any corrective actions, if necessary
- Select Start from the Start Window

# **Perform Quality Controls for All Tests**

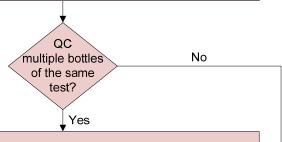
- Select Home
- Select Rack Requisition Sample jump button
- Select QC button

## Review default QC profile requisition:

Select sample type from the "Type" drop-down list to view tests requisitioned for QC by the analyzer for each sample type

Note: The analyzer will automatically requisition all tests in the default QC profile, if the default is defined on your system.

Tests highlighted in blue are requisitioned for QC.



## Requisition QC for multiple bottles:

- Select Start Entry F1
- Select Individual Requisition F3
- Select Select All to requisition all bottles for all tests
- Select Close
- Select sample type from the "Type" drop-down list to requisition controls for other sample types
- Select Entry F1 to save requisition

## Select Display QC Set F6

to view the controls and racks required

Note: You may need to scroll down, or select **Print**, to view all required controls.

Load the controls according to the list in the correct racks and place the racks on the rack supply unit

- Select Start from the main button bar
- Review errors on the Error List in the Start Window and perform any corrective actions, if necessary
- Select Start from the Start Window

# **Perform Quality Control for Selected Tests**

- Select Home
- Select Rack Requisition Sample jump button
- Select QC button

## Manually requisition QC:

- Select Start Entry F1
- Select test(s) to requisition (blue highlight) or deselect test(s) to remove (no blue highlight)
- Optional: Select Individual Requisition F3 to requisition QC for a specific bottle
- Select sample type from the "Type" drop-down list to requisition controls for other sample types
- Select Entry F1 to save requisition

## Select Display QC Set F6

to view the controls and racks required

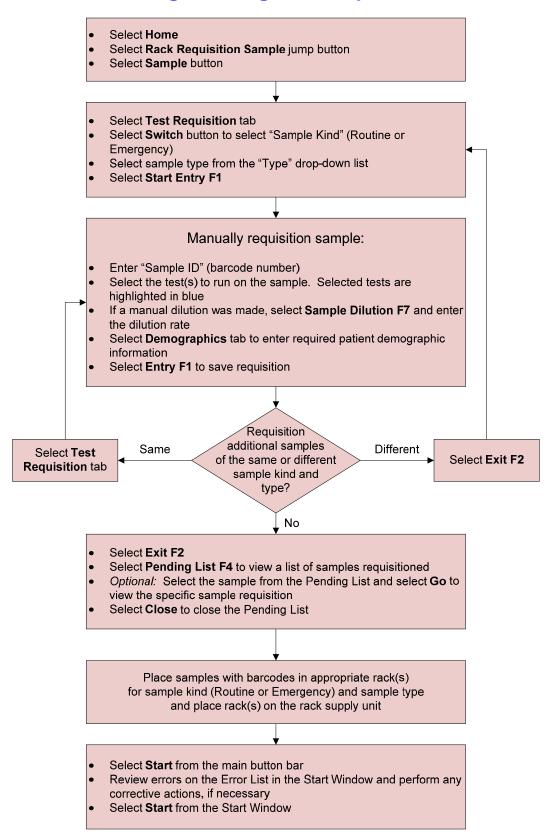
Note: You may need to scroll down, or select **Print**, to view all required controls. The analyzer will request QC for <u>all levels</u> for the selected test(s) for each sample type. If you do not need to run QC for a specific level, leave the position <u>empty</u> on the rack.

Load the controls according to the list in the correct racks and place the racks on the rack supply unit

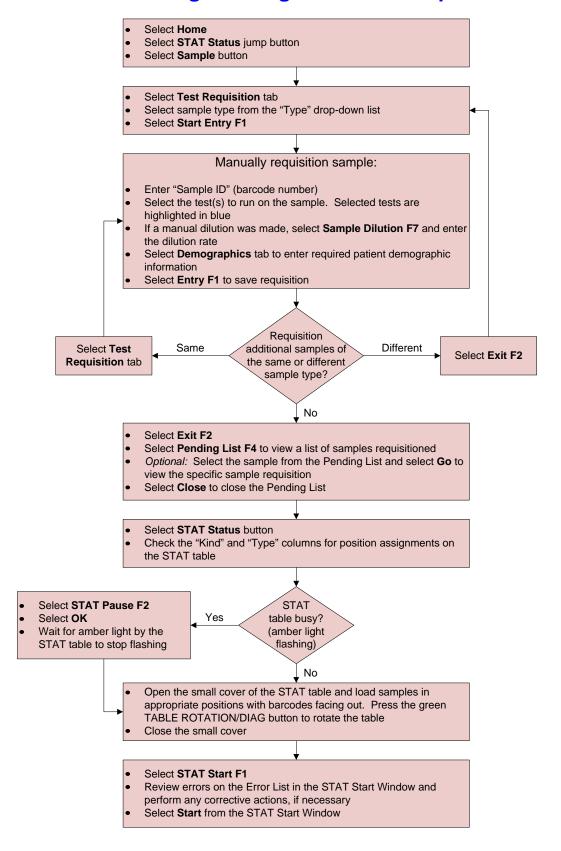
Note: The analyzer will generate a "QC INCOMPLETE" alarm if it does not see all levels of QC displayed on the list; no action is required if you did not need to process all levels.

- Select **Start** from the main button bar
- Review errors on the Error List in the Start Window and perform any corrective actions, if necessary
- Select Start from the Start Window

# **Manual Programming for Samples on Racks**



# **Manual Programming for STAT Samples**



## Perform Add On and Rerun Tests on Racks

Note: This procedure applies only for samples that require an add on or rerun test to be processed using the same sample ID, rack type, and index as the original sample.

The information listed below is required to order an add on or rerun. This information can be found on the **Sample Status** screen or on the printed report.

- Sample Number (e.g. S. No. 0003)
- Sample Kind (Routine or Emergency)
- Sample Type
- Select Home
- Select Rack Requisition Sample jump button
- Select Sample button
- Select Test Requisition tab

## Requisition an add on or rerun test:

- Select Add On F5
- Verify the correct "Sample Kind" rack (Routine or Emergency) in which the sample was initially processed is displayed. Select the Switch button if you need to change the sample kind
- Select sample type from the "Type" drop-down list
- Enter the sample number in both of the "Sample No." fields
   Note: Enter a range of sample numbers if an add on or rerun is
   required on multiple samples for the same tests.
- Select the Select Tests to be Repeated option
- Select the test(s) to add on or rerun
- Select OK
- Select Pending List F4 to view a list of samples requisitioned
- Optional: Select the sample from the Pending List and select Go to view the specific sample requisition. Tests with an asterisk (\*) are pending processing
- Select Close to close the Pending List

Place samples with barcodes in appropriate rack(s) for sample kind (Routine or Emergency) and sample type and place rack(s) on the rack supply unit

- Select Start from the main button bar
- Review errors on the Error List in the Start Window and perform any corrective actions, if necessary
- Select Start from the Start Window

The analyzer may generate a "MEASURE COMPLETED FOR THE READ SAMPLE ID" alarm when the sample barcode is read. Verify the sample is in process from the **Sample Status** screen

## Perform Add On and Rerun Tests on STAT Table

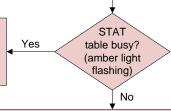
Note: This procedure applies only for STAT samples that require an add on or rerun test to be processed on the STAT table using the same sample ID and index as the original sample.

The information listed below is required to order an add on or rerun. This information can be found on the **Sample Status** screen or on the printed report.

- Sample Number (e.g. S. No. P0003)
- Sample Type
- Select Home
- Select STAT Status jump button
- Select Sample button
- Select Test Requisition tab

## Requisition an add on or rerun test:

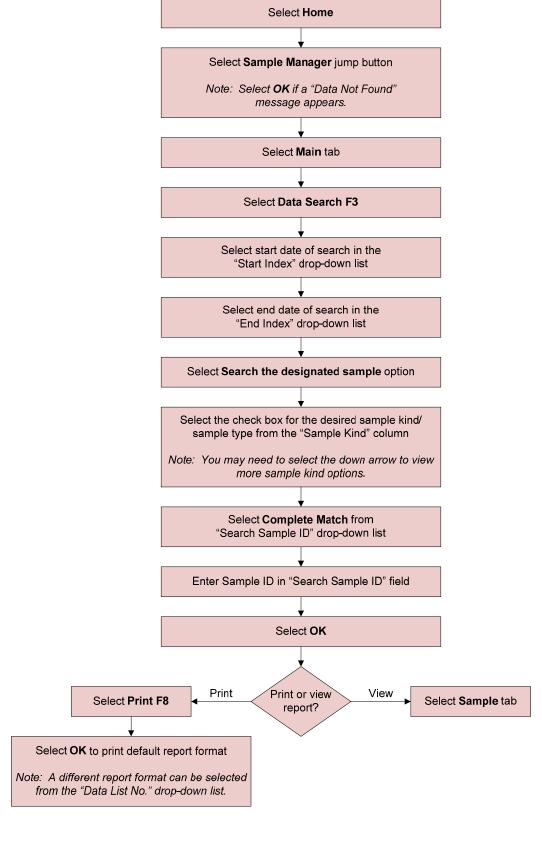
- Select Add On F5
- Select sample type from the "Type" drop-down list
- Enter the sample number in both of the "Sample No." fields
   Note: Enter a range of sample numbers if an add on or rerun is
   required on multiple samples for the same tests.
- Select the Select Tests to be Repeated option
- Select the test(s) to add on or rerun
- Select OK
- Select Pending List F4 to view a list of samples requisitioned
- Optional: Select the sample from the Pending List and select Go to view the specific sample requisition. Tests with an asterisk (\*) are pending processing
- Select Close to close the Pending List
- Select STAT Status button
- Check the "Kind" and "Type" columns for position assignments on the STAT table
- Select STAT Pause F2
- Select OK
- Wait for amber light by the STAT table to stop flashing



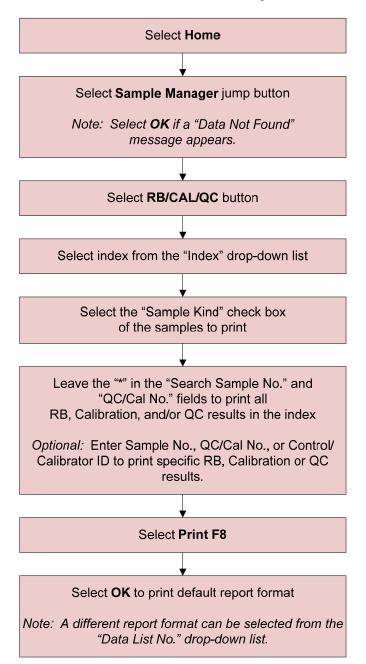
- Open the small cover of the STAT table and load samples in appropriate positions with barcodes facing out. Press the green TABLE ROTATION/DIAG button to rotate the table
- Close the small cover
- Select STAT Start F1
- Review errors on the Error List in the STAT Start Window and perform any corrective actions, if necessary
- Select Start from the STAT Start Window

The analyzer may generate a "MEASURE COMPLETED FOR THE READ SAMPLE ID" alarm when the sample barcode is read. Verify the sample is in process from the **Sample Status** screen

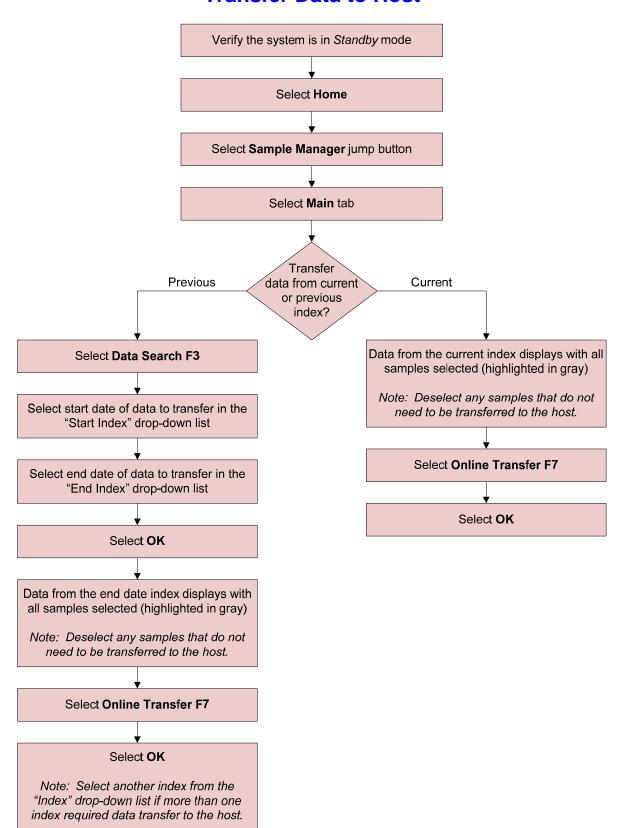
## **Recall Patient Results**



# **Print RB/CAL/QC Reports**



## **Transfer Data to Host**



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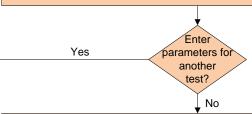
## **Calibration Verification**

Note: This procedure applies only for racks in barcode mode. You will need to use barcodes labels that increment by one digit.

- Select Menu List
- Select Calibration menu
- Select Calibration Verification sub-menu
- Select Material Parameter button
- · Select test from the "Test Name" drop-down list
- Select sample type from the "Type" drop-down list
- Select Edit F1

#### For each level of the calibration verification material:

- Enter the level name in the "Material Name" column
- Enter the sample ID (barcode number) in the "Material ID" column. Up to three sample IDs can be assigned to each level for three replicates
- Select the "Evaluate" check box to include the material level for the calibration verification
- Enter the "Expected Value" (from calibration verification material package insert)
- Enter the "Tolerance Value" (determined by laboratory)
- Select Confirm F1



## Requisition tests for calibration verification material:

- Select Home
- Select Rack Requisition Sample jump button
- Select Sample button
- Select Test Requisition tab
- Select **Switch** button to select "Sample Kind" (Routine or Emergency)
- Select sample type from the "Type" drop-down list
- Select Start Entry F1
- Enter "Sample ID" (barcode number)
- Select tests to be evaluated for the calibration verification
- Select Batch Entry F3
- Select the Number of Samples option and enter the number of samples to be processed
- Select **OK**

Note: The sample IDs will automatically increment by one for each sample in the batch.

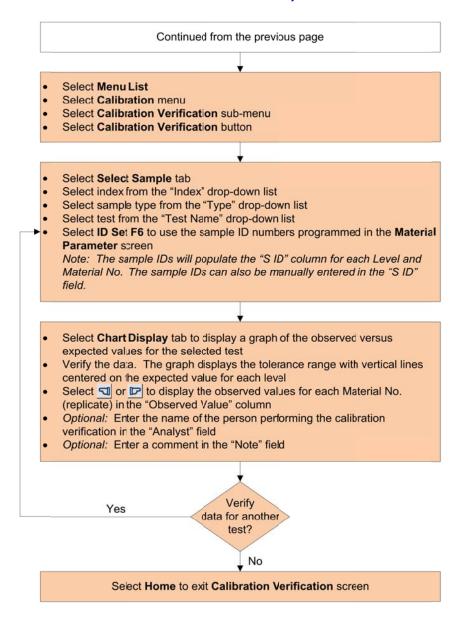
- Select Exit F2
- Select Pending List F4 to view a list of samples requisitioned

## Process calibration verification material:

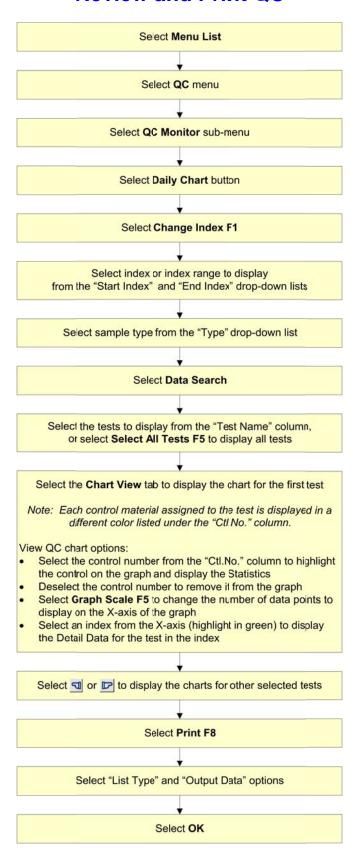
- Place samples with barcodes in appropriate rack(s) for sample kind (Routine or Emergency) and sample type and place rack(s) on the rack supply unit
- · Select Start from the main button bar
- Review errors on the Error List in the Start Window and perform any corrective actions, if necessary
- Select Start from the Start Window

After sample processing completes, continue to the next page to verify calibration

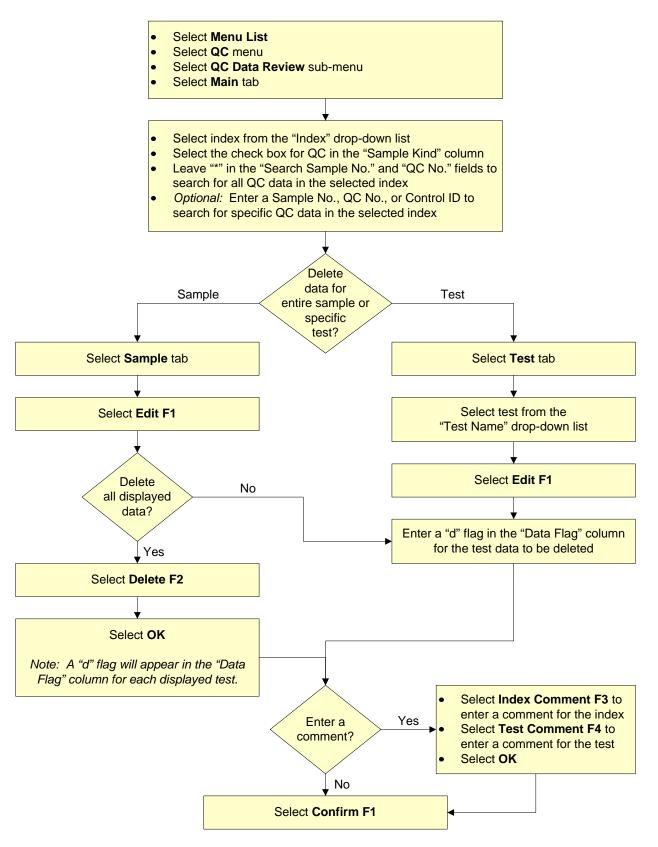
## **Calibration Verification, continued**



## **Review and Print QC**

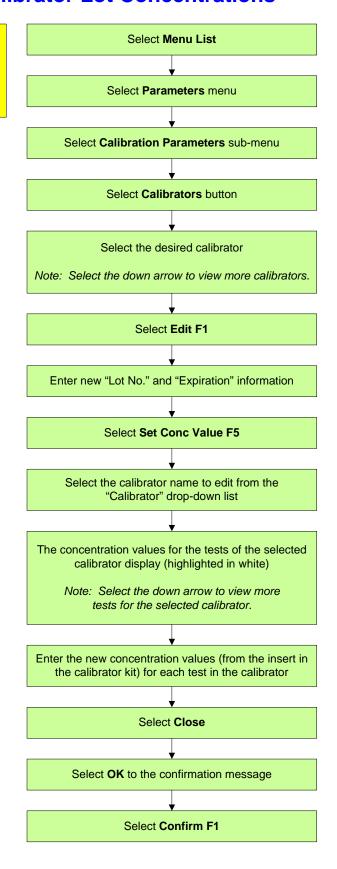


## **Delete QC Data and Enter Comments**



## **Set Calibrator Lot Concentrations**

Note:
This procedure
applies only for
calibrators that are
already defined on
the analyzer.



# **Configure New QC Lot Parameters**

- Select Menu List
- Select Parameters menu
- Select QC Parameters sub-menu
- Select Controls button

## Define new control lot:

Select Edit F1

For each level of QC:

- Enter "Control Name"
- Optional: Enter "Control ID" (barcode number)
- Enter "Lot No."
- Enter "Expiration" date

Note: The row ("QC No.") that the control is defined in represents the "Rack No." and "Cup Pos." the analyzer will require the QC to be placed in when set up in rack/position mode. Barcode operation allows for QC to be placed in any position in a green rack.

Select Confirm F1 after all levels are defined

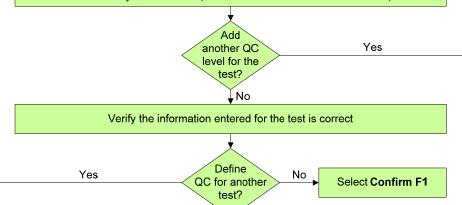
#### Select QC Specific button

Note: The **Check** tab displays the QC check rules (Single or Multi) selected for each test during the initial QC set up on the analyzer; these do not need be edited for each new lot of QC unless required by your lab.

- Select Preset tab
- Select the test from the "Test Name" drop-down list
- Select the sample type from the "Type" drop-down list
- Select Edit F1

## Define QC mean and range for a test:

- In the first available row displaying None, select the control name from the "Control" drop-down list
- Select Multi or Single from the "Multi/Single" drop-down list
- Enter the QC test mean in the "Mean" field
- Enter the 1 SD value in the "SD" field
- Enter the value of the range for acceptable QC in the "Range" field Note: Range represents the high range value minus the low range value for the test. This is usually a 4 SD value (2 SD above and 2 SD below the mean).



# **Daily Analyzer Maintenance**

## Inspect the Syringes for Leaks

- Verify the system is in Warm Up or Standby mode
- Open the front right door of the analyzer

#### For each syringe:

- Visually inspect the case head for any cracks or leaks/condensation
- Use a lint-free cloth to check the top and bottom connections of the syringe case head and the bottom fixing screw for leaks
- Verify the fixing nut and piston fixing screw are tight
- Close the front right door of the analyzer

## Inspect the Wash Solution Roller Pump for Leaks

- Verify the system is in Warm Up or Standby mode
- Open the front left door of the analyzer

#### For the wash solution roller pump tubing:

- Visually inspect for cracks; use a clean dry cloth to check for any leaks
- Verify the connectors are tight; turn connector clockwise to tighten

## Inspect the Wash Solution and Replenish As Needed

• Verify the system is in Warm Up or Standby mode

#### Inspect the wash solution level:

 Verify there is a sufficient quantity of wash solution for typical daily use; the system uses approximately 0.5 L per day for 2,000 tests per day

## To replenish the wash solution:

- Pull the wash solution tank forward and unscrew the cap to remove the cap and connector from the tank
- Replace the tank with a new wash solution tank
- Insert the level sensor in the tank, tighten the cap and place the wash solution tank in the analyzer
- · Close the front left door of the analyzer

## **Inspect the Printer and Paper**

- Verify the printer is on
- Verify that there is enough paper in the printer

## Inspect the Stability of the Upper Cover

• Verify that the cover is stable and remains in the upright position when raised

Daily Maintenance procedures continued on the next page

# **Daily Maintenance, continued**

Daily Maintenance procedures continued from the previous page

# Inspect, Clean, and Prime the Sample Probe, Reagent Probe, and Mix Bars

- Verify the system is in Warm Up or Standby mode
- Open the main cover of the analyzer

## For the sample and reagent probes:

- Visually inspect that they are not bent or damaged
- Inspect for contaminants or crystallization; wipe outside with 70% isopropyl alcohol, if needed

#### For each mix bar.

- Inspect for deformities (bent, scratches, or chips in the Teflon coating)
- Inspect for contaminants or crystallization; wipe outside with 70% isopropyl alcohol, if needed

## Verify proper operation of the probes and mix bars:

- Select Home
- Select Analyzer Maintenance jump button
- Place a check mark in the box next to the Analyzer Maintenance option
- Select Prime Washing-line
- Select **OK** in the Start Window
- Press the green TABLE ROTATION/DIAG button on the analyzer to start the prime cycle
- Verify a thin straight stream of water is dispensed from each probe and that water is present in the wash wells
- Verify proper operation of the mix unit and wash nozzle unit
- When priming is complete (green button lights up), deselect the check box next to the Analyzer Maintenance option to exit the Maintenance mode

## Replace the DI Water in the Pre-dilution Bottle

- Discard the water in the pre-dilution bottle (located between the reagent compartment and reagent probe)
- · Rinse the bottle twice with DI water
- Fill the bottle with DI water and replace it on the analyzer

#### **Prepare the Sample Probe Wash Solutions**

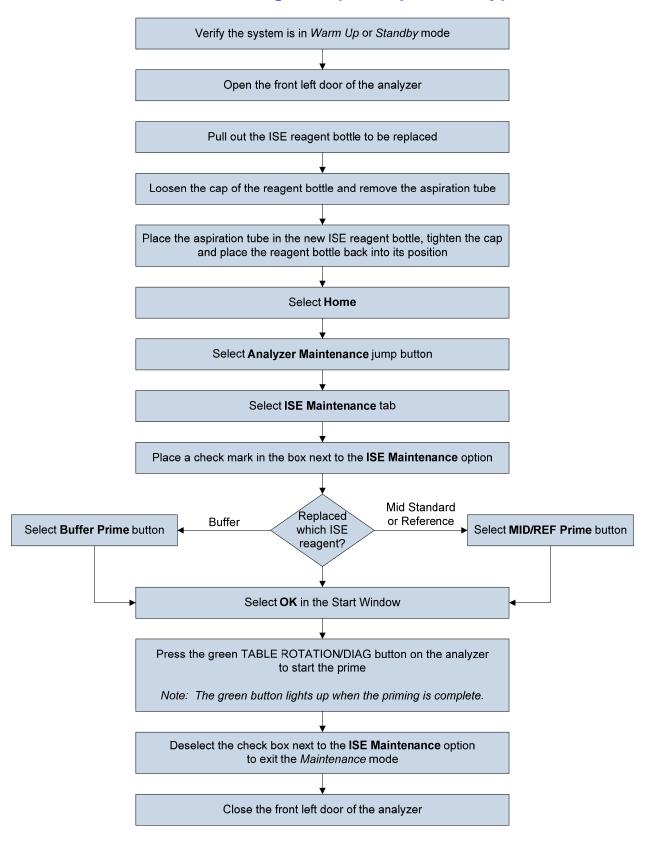
 Verify there is a sufficient amount of 2% wash in the Sample Probe Detergent tube, located in the W1 position of the STAT table

#### **Contamination Parameters**

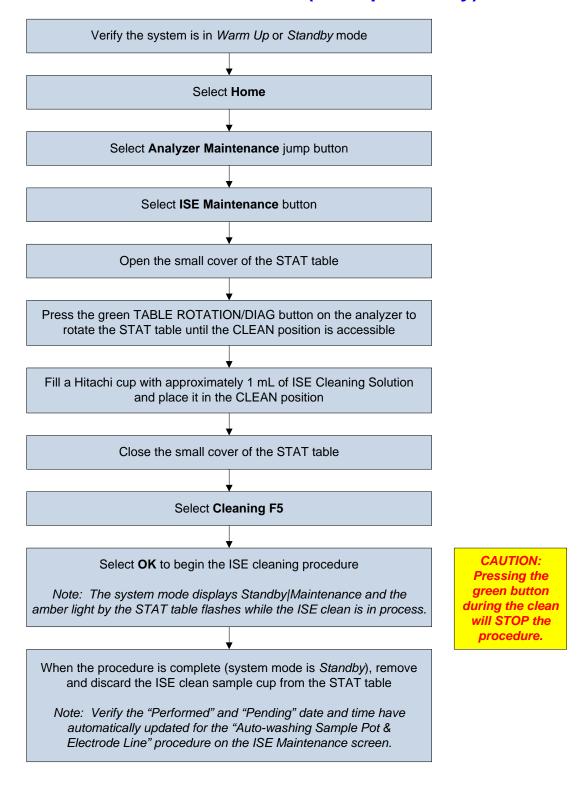
 If you have contamination parameters defined on your system, verify you have sufficient volume of the appropriate cleaning solution in each bottle (60 mL bottles located in the reagent compartment in fixed positions labeled CLN-1 and CLN-2)

Document completion of Daily Maintenance tasks on the paper Analyzer Maintenance Schedule List

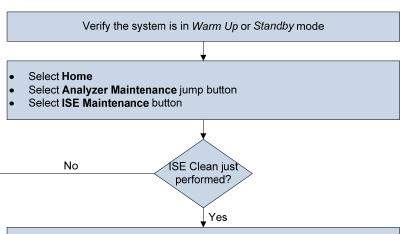
# **Load ISE Reagents (ISE Option only)**



# **Perform ISE Clean (ISE Option only)**



# **Perform ISE Calibration (ISE Option only)**



## Perform a total prime:

- Place a check mark in the box next to the ISE Maintenance option
- Select Total Prime button
- Select **OK** in the Start Window
- Press the green TABLE ROTATION/DIAG button on the analyzer to start the prime
  - Note: The green button lights up when the priming is complete.
- Deselect the check box next to the ISE Maintenance option to exit the Maintenance mode

## Prepare for ISE calibration:

- Select Calibration tab
- Open the small cover of the STAT table
- Press the green TABLE ROTATION/DIAG button on the analyzer to rotate the STAT table until the S-H (serum high), S-L (serum low), U-H (urine high), and U-L (urine low) positions are accessible
- Separately fill each Hitachi cup with approximately 500 µL of the required ISE Serum and/or Urine Low and High Standard Solutions
- Place the sample cups in the appropriate positions in the STAT table
- Close the small cover of the STAT table

## Perform ISE calibration:

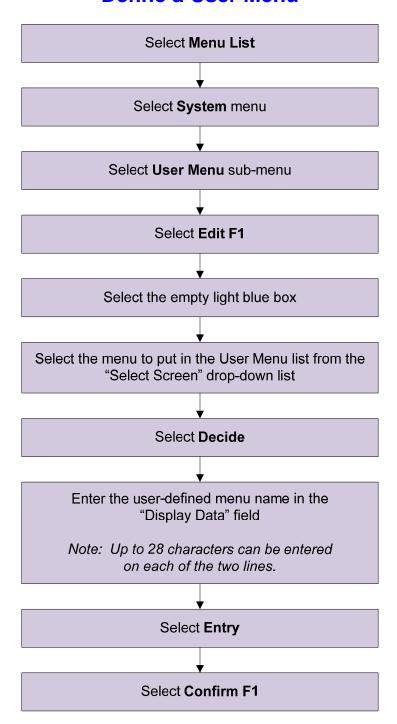
- Select Serum/Urine Start, Serum Start, or Urine Start, as appropriate
- Select **OK** to start the ISE calbration

Note: The system mode displays Standby|Maintenance and the amber light by the STAT table flashes while the ISE calibration is in process.

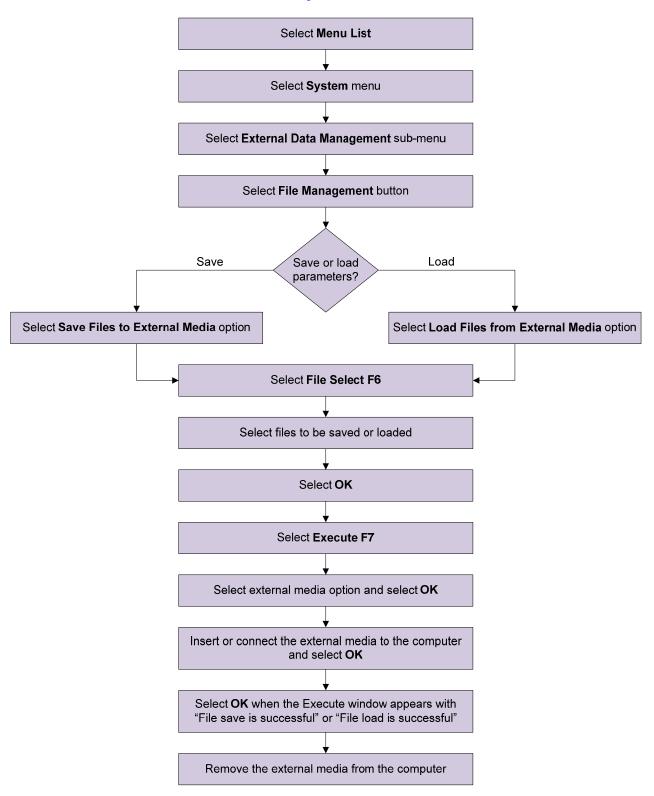
## Check ISE calibration results:

- Verify the calibration results appear in blue Note: Results exceeding the normal range for "Slope" and "Mid Solution Factor" are highlighted in yellow.
- Select sample type from the "Sample Type" drop-down list to view results for a different sample type, if necessary
- Remove and discard the ISE standard cups from the STAT table

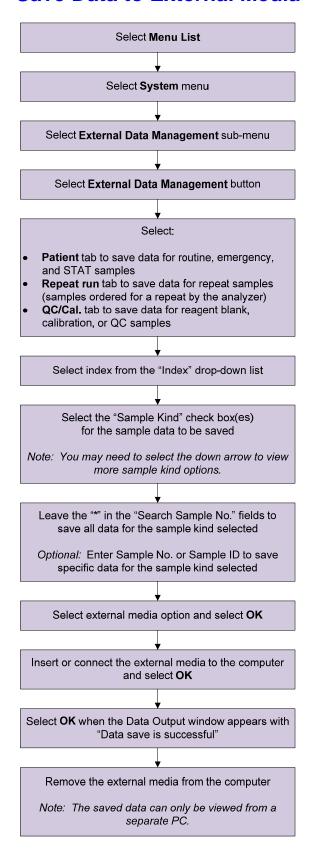
# **Define a User Menu**



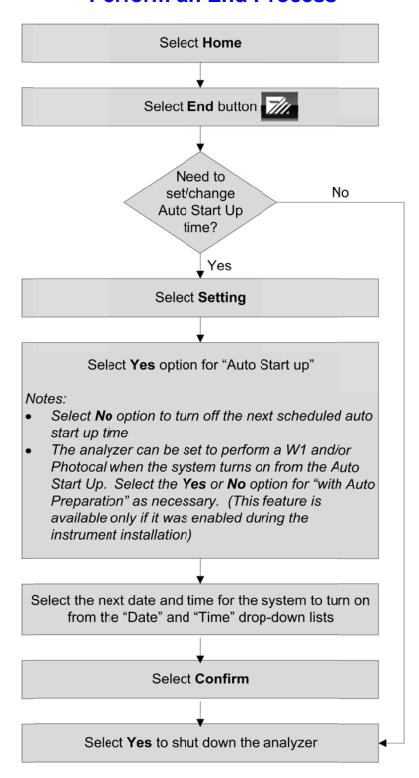
# **Save or Load System Parameters**



## Save Data to External Media



## **Perform an End Process**



# **Perform and Recover from an Emergency Stop**

