BD BACTEC™ FX40 Instrument

Quick Reference Guide

Before using this Guide, it is important that all users review the *BD BACTEC™ FX40 Instrument User's Manual* for comprehensive operating instructions, including important warnings relating to operator safety.

Note that the BD BACTEC™ FX40 instrument can be connected to the BD EpiCenter™ system when available.

CE IVD Rx Only

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General Icons/Buttons		Status Display		Status Display (cont.)		ID Anonymous Display	
	Save button		Remove Positives button/Positive Vial indicator		View Stations button		Discard button
	Exit button		Remove Negatives button/Negative Vial indicator		BD EpiCenter Enabled/healthy indicator		Return button
	Undo button		Identify Anonymous button/Anonymous Vial indicator		BD EpiCenter Enabled/unhealthy indicator		Rescan button
	Clear button		Vial Entry button/ Available Stations indicator		LIS enabled/healthy indicator		Save button
	Print button		Testing In Progress indicator		LIS enabled/ unhealthy indicator		
			Not Testing indicator		LIS enabled/status unknown indicator	System Alerts Display	
			System Alerts button				Info button
			Culture button				Remove/Remove All button

View Stations Display		Station Indicators		Culture – Patient Display		Culture – Vial Display	
	Positive Station		Positive Vial		Search Mode indicator		Plot button
	Negative Station		Negative Vial		Add Mode indicator		Disassoc(iate) (vial) button
	Ongoing Station		Anonymous Vial		Disassoc(iate) (accession) button		In Instrument indicator
	Available Station		Positive Anonymous Vial			**Reports**	
	Anonymous Ongoing Vial		Ongoing Vial / Unusable Station	**Culture – Specimen Display**			Cancel button
	Anonymous Positive Vial		Available Station		Add button		Print button
	Blocked Station				Disassoc(iate) (vial) button		Current state indicator (vial in instrument)
	Unusable Station (cracked circle superimposed)						

Maintenance – Test Display		Maintenance – Utilities Display		Configuration – Lab Display (cont.)		Configuration – Time Display	
	Red button		Upgrade Software button		Show Related Vials		Date indicator
	Green button		Save DB and Log button		Language		Time indicator
	Alarm button		Save Log button		Country		Daylight Saving Time indicator
	Status button		Reboot button	**Configuration – Instrument Display**			Timezone GMT Offset indicator
	LIS Host Query button		Change Password button		Instrument No. button	**System Indicators**	
	Q.C. Report button	**Configuration – Lab Display**			Volume button		System Alert
	Block/Unblock button		Accession Barcoding		Network Port Not In Use indicator		Out of Protocol Negative Vial
			Batch Negative Removal		Network Port In Use indicator		Positive Vial

Vial Entry

Vial Entry can be initiated in one of two ways:

Method 1 (Vial Activated)

- Select an instrument that has available stations and open the door.
- The barcode scanner turns on.
- Scan a vial sequence barcode label.
- The Vial Entry display appears and the Sequence, Media, and default Protocol are automatically entered.
- If you did not scan the Accession, scan or enter it now (sequence and accession can be scanned in any order).
- To change the protocol select **Modify**, then select the **Up Arrow** to increase or **Down Arrow** to decrease the protocol length.
- Place the vial into an available station (solid green indicator).

Method 2 (Icon Activated)

- Select an instrument that has available stations and open the door.
- Select **Vial Entry** on the Status display.
- The Vial Entry display appears and the barcode scanner turns on.
- Scan the vial sequence barcode label.
- The Sequence, Media, and default Protocol are automatically entered.
- If you did not scan the Accession, scan or enter it now.
- To change the protocol select **Modify**, then select the **Up Arrow** to increase or **Down Arrow** to decrease the protocol length.
- Place the vial into an available station (solid green indicator).

ID Anonymous Vials

To identify anonymous vials:

- Select an instrument that has anonymous stations and open the door.
- Remove a vial from a FLASHING YELLOW or FLASHING YELLOW/FLASHING RED (alternating) station, or select **Identify Anonymous** on the Status display.
- The ID Anonymous display appears and the barcode scanner turns on; Station and Status information for the vial are shown.
- Scan the vial sequence barcode label.
- The Sequence, Medium, default Protocol, and TIP (Time in Protocol) or TTD (Time to Detection) are automatically entered.
- Scan or enter the Accession (if accession barcoding is enabled).
- To change the protocol, select **Modify**, then select the **Up Arrow** to increase or **Down Arrow** to decrease the protocol length.
- If you are returning the vial to the instrument, place it in the FLASHING GREEN station (station from which the vial was pulled). If you are not returning the vial to the instrument, select **Save**. You must do one or the other to retain the vial information.
- Add the desired demographic information in the Culture display(s).

Changing Workflow Modes

To change the mode of operation without closing the door, select the button for the new workflow.

Removing Positive Vials

To remove positive vials:

- Select an instrument that has positive stations and open the door.
- The barcode scanner turns on.
- All positive, final negative, available, and anonymous (all variations) are indicated by the appropriate lit or flashing station indicators.
- Remove a vial from a FLASHING RED (positive) or FLASHING YELLOW / FLASHING RED (Anonymous Positive) station, OR

  Select **Remove Positives** on the Status display.
- The Positive Removal display appears. (If an anonymous positive vial was removed, the ID Anonymous display appears. Scan the sequence and accession for the anonymous positive vial and select **Save**. Then select **Exit** to return to the Positive Removal display.)
- Scan the vial sequence barcode (note that only positive stations remain illuminated after this). You must scan each positive vial you pull in order for the instrument to re-illuminate remaining positive station indicators.

  If that vial sequence number was entered manually, the system asks you to verify that the sequence number is correct. You must manually confirm that the sequence number on the vial is the same as the one shown on the screen, and select **Verified**. If the sequence numbers do not match, select **Wrong**.
- If the Show Related Vials function is enabled in configuration, the LEDs of vials with the same accession number illuminate GREEN (in the current instrument), and the Culture – Specimen display shows the related vials in the Vial Window (not applicable to Positive / Anonymous vials).
- In a BD EpiCenter™ configuration, the instrument cannot Show Related Vials when it is in degraded mode.
- Remove any related vials if desired, and either confirm or scan the sequence number (depending on the system prompt). When you have finished removing related vials, select **Exit** to return to the Positive Removal display.
- Counters on the display are updated dynamically as vials are removed.
- When all positives are removed from the instrument, the activity complete tone sounds (or when the Culture – Specimen display is exited, if related vials are shown).

Removing Negative Vials

To remove negative vials:

- Select an instrument that has negative stations and open the door.
- The barcode scanner turns on.
- All positive, final negative, and anonymous (all variations) are indicated by the appropriate flashing station indicators.
    - **For Single Vial Removal**
        - o Select **Remove Negatives** on the Status display, OR
        - o Remove a vial from a FLASHING GREEN (negative) station and scan it.
        - o The Negative Removal display appears.
        - o Remove and scan all the negative vials. (If any vial sequence numbers were entered manually, the system asks you to verify that the sequence number is correct. You must manually confirm that the sequence number on the vial is the same as the one shown on the screen, and select **Verified**. If the sequence numbers do not match, select **Wrong**.)

          You must scan each negative vial you pull in order for the instrument to show the vial as Removed and to re-illuminate remaining negative station indicators.
    - **For Batch Vial Removal**
        - o Remove the negative vials from the FLASHING GREEN stations. These vials do not have to be scanned (and the scanner does not turn on). Any vials left in the instrument remain in the database as negatives.
    - Counters on the display are updated dynamically as vials are removed.
    - When all negatives are removed from the instrument, the activity complete tone sounds.

Daily Maintenance

1. Check the paper supply to the printer. If the paper supply is low or exhausted, replace the paper as explained in the operating manual furnished separately.
2. Select the **Maintenance** tab. The Test display appears.
3. Select **Q.C.** to print the Maintenance QC Report.
4. Open instrument A's door. Then select the Red button to illuminate the red station indicators. Record and block any station that does not illuminate red.
5. Next select the Green button to illuminate the green station indicators. Record and block any station that does not illuminate green.
6. Check and record the temperature on the QC thermometer.
7. Repeat Steps 3–6 for each of the instruments in the system.
8. Close the door.
9. Select **Alarm** to verify that the audible alarm is functioning.
10. Finally, select **Status** to illuminate the system status indicators. All the indicators (amber, red, and green) should illuminate. If any indicator does not light, contact your local BD representative for service.
11. Information can be recorded on the Maintenance QC Report.

Report Summary

The following instrument reports can be printed:

- **Affected Vials** – vials that have experienced either a failure in the instrument's incubation subsystem or an extended gap in test readings within the last 30 days
- **Alert List** – latest 100 instrument alerts
- **Contaminant Vials** – all the vials in the database that have been marked as "contaminant"
- **Culture Summary** – total counts for contaminant, positive, and negative cultures; percent of total cultures for each of these counts
- **Current Inventory** – all the vials in all the instrument's stations
- **Current Negatives** – all the negative vials (out-of-protocol and manual negatives) in all the instrument's stations
- **Current Positives** –all the positive vials (instrument positive, manual positive, and anonymous positive) in all the instrument's stations
- **Loaded Vials** – all the vials (sequenced and anonymous) that have been loaded in the instrument during a selected time period
- **Maintenance QC Report** – provides instrument temperatures and blocked stations, as well as spaces for logging user verification and maintenance activities
- **No Growth Accession** – all the accessions with related vials showing no growth in the selected time interval
- **Orphan Vials** – all the vials in the instrument's database that have no accession number
- **Partially Seated Stations** – all the vials that the instrument has identified as not fully inserted in their stations
- **Pending** – all the vials that have been logged in at the Culture display or downloaded from the LIS but have not been placed in the instrument yet (vials and orphan accessions)
- **Unloaded Negative Vials** / **Unloaded Positive Vials** – all the sequenced negative vials / positive vials that have been removed from the instrument in a specified time period and have not been reentered
- **Unloaded Vials** – all the sequenced vials that have been removed from the instrument in a specified time period and have not been reentered

Additional reports can be printed at the BD EpiCenter™ system (when available).

To print a report:

1. Select the **Reports** tab.
2. Highlight the desired report by tapping it in the menu.
3. Select the desired criteria (Time Range, Sort By, Report By).
4. Select **Print**.

Isolation Mode Summary

- ❒ Indicated by pulsing amber system indicator
- ❒ Enables instrument to continue to collect vial readings when communication to tablet PC is lost
- ❒ Possible causes include a tablet malfunction, power or communication (USB) cable disconnected, or the FX40 user interface has stopped working. Check USB and power cables and reconnect if needed. If needed, try rebooting the tablet. If these actions do not correct the problem, contact your local BD representative.
- ❒ In Isolation mode, station indicators do not illuminate when door is opened
- ❒ Not intended to enable routine workflow such as entering vials through Vial Entry, removing positive and negative vials, identifying anonymous vials, etc.
- ❒ Only supported operations are:
  - Vial Examination (vial is removed and returned to flashing green station without closing door or removing a second vial; vial readings are retained)
  - Vial Removal (vial is removed and door is closed or second vial is removed; original vial readings are discarded)
  - Vial Entry (anonymous)
- ❒ Positivity analysis occurs at the tablet PC, so no vials transition to Positive status while the system is in Isolation mode

Refer to manual for complete information.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
SYSTEM ALERTS		
00	Instrument incubation is over 40 °C for more than 60 continuous seconds.	Reboot instrument. Stations are marked as Unusable. Refer to manual for additional information on dealing with Unusable stations. Any vials in the affected row(s) are marked as Affected Vials. Refer to manual for instructions on Affected Vials. Contact BD.
02	Instrument incubation is more than 1.5 °C under setpoint temperature for more than 180 continuous minutes from power up, or 60 continuous minutes after power up. Room may be too cold.	Alert clears if temperature returns within range for 5 continuous minutes or if instrument is rebooted. Stations are marked as Unusable. Refer to manual for additional information on dealing with Unusable stations. Any vials in the affected row(s) are marked as Affected Vials. Refer to manual for instructions on Affected Vials. Verify that room temperature is within specification (manual Section 2).
03	Instrument incubation is more than 1.5 °C over setpoint temperature (but less than 40 °C) for more than 60 continuous minutes. Room too warm. Air filters dirty.	Alert clears if temperature returns within range for 5 continuous minutes or if instrument is rebooted. Verify that room temperature is within specification (manual Section 2). Check/clean air filters. Stations are marked as Unusable. Refer to manual for additional information on dealing with Unusable stations. Any vials in the affected row(s) are marked as Affected Vials. Refer to manual for instructions on Affected Vials.
04	Instrument sensor temperature has deviated from QC temp sensor by more than 1.0 °C for more than 5 minutes.	Alert clears if temperature returns within range for 5 continuous minutes or if instrument is rebooted.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
05	A blower motor failure is detected if it fails to start after three consecutive retries. When a blower motor failure is detected the heater for the affected instrument is turned off.	Alert clears if instrument is rebooted. Stations are marked as Unusable. Refer to manual for additional information on dealing with Unusable stations. Any vials in the affected row(s) are marked as Affected Vials. Refer to manual for instructions on Affected Vials.
06	The instrument has booted and is using default values for the system parameters. System parameters are set (and/or reset to the defaults) on the Startup-Configuration display (accessed by BD representatives only).	Message is informational. Check all system parameters to insure that they meet your laboratory's requirements.
07	Set during startup when the instrument detects corruption in the event log.	Alert clears when instrument creates new event log.
08	Set during startup when the instrument detects corruption in the alert list.	Alert clears when instrument creates new alert list.
09	Instrument has detected a condition that could represent a measurement failure or partially seated vial.	Alert clears when the instrument detects that the failure no longer exists. Make sure all vials are fully seated in the stations. If alert does not clear, block the station and contact BD. Stations are marked as Unusable. Refer to manual for additional information on dealing with Unusable stations. Move vials in the indicated stations within 40 minutes of the set time of this alert to prevent them from becoming Affected Vials.
13	Set during startup when the instrument detects corruption in the database.	Alert clears when the instrument reinitializes the database and eliminates the corruption.
14	A time mismatch has occurred between multiple instruments.	This error is set and cleared automatically. Contact your local BD representative if error persists/recurs.

Error Codes 05 – 14

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
15	Most likely cause is that a vial was moved between instruments with mismatched time offsets.	Any vials with reading gaps are marked as Affected Vials. Refer to manual for instructions on Affected Vials.
16	This alert is detected when BD EpiCenter™ is configured and cannot be reached.	Alert clears itself when communication with BD EpiCenter™ is reestablished.
17	This alert is detected when LIS is configured and cannot be reached.	Alert clears itself when communication with LIS is reestablished.
18	Alert is set when LIS library returns any of errors below to the Fx application. LIS_SYSTEM_ERROR: UNSUPPORTED_CONFIG: LIS_ASSERT_ERROR: DEBUG_PROBLEM:	Communications problem between instrument and LIS system. Refer to the BD LIS Interface specification.
19	An instrument that is not part of the system configuration was detected.	Contact your local BD representative to have the instrument added to the current system configuration.
20	The tablet PC has been without AC power for more than 60 seconds.	If power is not restored within 60 seconds of the tablet PC detecting power loss, the tablet PC performs an orderly shutdown of the user interface.
21	There was a problem with a software upgrade.	Reboot the instrument with the software upgrade flash media in the USB flash drive. If error recurs, contact your local BD representative.
23	Occurs when the instrument is unable to communicate with the tablet PC.	Reboot instrument. Stations are marked as Unusable. Refer to manual for additional information on dealing with Unusable stations. Move vials in the indicated stations within 40 minutes of the set time of this alert to prevent them from becoming Affected Vials.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
25	Agitation failure has set the measurement system to offline after three consecutive failures to stop at the read position.	Reboot instrument. Stations are marked as Unusable. Refer to manual for additional information on dealing with Unusable stations. Move vials in the indicated stations within 10 minutes of the set time of this alert to prevent them from becoming Affected Vials.
26	The door has been open for longer than 4 minutes.	Close the door. Allow it to remain closed for at least 30 minutes. NOTE: If door is not closed within 40 minutes of the time that it is opened, all vials in instrument are marked as Affected Vials. Refer to manual for instructions on Affected Vials.
30	The instrument has lost communications with the BD EpiCenter™ master database.	Instrument enters a degraded mode of operation. See manual for information on degraded operations.
31	An individual reading or a reading collection is corrupted.	A sector on the flash drive is corrupted or a bad checksum is encountered on a reading object or collection. One or more readings have been lost. Message is informational. If four consecutive readings become corrupted, then a reading gap will occur and the vial will automatically become affected.
32	Instrument cannot communicate with barcode reader to determine the barcode reader's type.	Communication attempt continues every two minutes until successful communication with the barcode reader is established.
33	Set when a microprocessor download fails to complete successfully.	Reboot instrument.
34	An error occurred in the tablet PC software.	Reboot the tablet using the Maintenance > Utilities > Reboot function.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
36	Message sent to System Alert display only (Info detail window). Instrument has rebooted for one of the following causes: 1. Unknown Cause 2. Software Upgrade Initiated 3. Software Upgrade Completed 4. Power fail 5. Database Reinitialized 6. Software Assert 7. Watchdog Timeout 8. Startup Config ScreenReboot 9. Invalid WD Count 10. Syscall Fault 11. Pure Virtual Call in CRT 12. Structured exception handling event error 13. Program termination called by CRT 14. Invalid Reason Code 15. Stack Fault 16. Allocation Fault 17. Reboot button pressed 18. Application is restarting to complete the software upgrade	If error recurs, contact BD. For Reasons 4 and 5, if power is lost for more than 40 minutes, all vials in the instrument are marked as "Affected Vials." Refer to manual for instructions on Affected Vials.
37	Agitation outside of normal range. Agitation has been re-started four consecutive times. (Preceded by four occurrences of Alert 47.)	Alert is cleared when the instrument determines that the agitation speed is within range. Stations are marked as Unusable. Refer to manual for additional information on dealing with Unusable stations. Move vials in the indicated stations within 40 minutes of the set time of this alert to prevent them from becoming Affected Vials.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
38	The reading gap evaluator determines when a vial has a reading gap greater than 40 minutes or the algorithms have not processed readings for 40 minutes. This alert is reported each time a different vial with a reading gap is detected in that instrument.	Any vials in the affected row(s) are marked as Affected Vials. Refer to manual for instructions on Affected Vials.
40	Caused when the door is still open every 2 minutes after Alert 26 has been reported and acknowledged.	Close the door. NOTE: If door is not closed within 40 minutes of the time that it is opened, all vials in instrument are marked as Affected Vials. Refer to manual for instructions on Affected Vials.
41	Set when the network client cannot get a response to a time synchronization request.	Make sure all network cables are plugged in.
44	The instrument has determined that its time is not synchronized with the BD EpiCenter™ Time Service.	Make sure all network cables are plugged in.
46	This will only cause (potentially) the last transaction before the power failure to be rolled back. A new recovery file will be created.	Message is informational only. No action necessary.
47	Agitation speed is outside of normal range, or failed to stop at a sensor or see a sensor for 10 continuous seconds. A Drawer Open, Measurement scan or Power failure resets four times consecutively.	Alert is reported on System Alerts display and report only. Alert is cleared when agitation speed returns within range. If this message recurs frequently, contact BD for service.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
49	When the BD BACTEC™ FX40 Control Board fails to communicate with the Row Board that controls rows A and B, the Row Board is marked offline.	Reboot instrument. Stations are marked as Unusable. Refer to manual for additional information on dealing with Unusable stations. Move vials in the indicated stations within 40 minutes of the set time of this alert to prevent them from becoming Affected Vials.
50	When the BD BACTECFX40 Control Board fails to communicate with the Row Board that controls rows C and D, the Row Board is marked offline.	Reboot instrument. Stations are marked as Unusable. Refer to manual for additional information on dealing with Unusable stations. Move vials in the indicated stations within 40 minutes of the set time of this alert to prevent them from becoming Affected Vials.
Barcode Messages		
BC01	A vial sequence number was scanned or entered and the media type is not defined in the instrument.	Make sure the correct vial barcode or replacement vial barcode is scanned; only original BD vial sequence or BD-supplied replacement barcodes can be used for sequence numbers. If vial sequence number is entered manually, be careful to enter it correctly. Select **OK** to remove the message box.
BC03	The vial sequence number was entered or scanned that does not meet the defined parameters (e.g., it is too long, too short, has incorrect digits).	Make sure the correct vial barcode or replacement vial barcode is scanned; only original BD vial sequence or BD-supplied replacement barcodes can be used for sequence numbers. If vial sequence number is entered manually, be careful to enter it correctly. Select **OK** to remove the message box.
BC05	An accession number was entered that does not meet the defined parameters. It could contain illegal characters such as: * ? [ ] ! # | or it could have too many digits. You could also have scanned a sequence already, and then scan another sequence when the instrument is expecting an accession barcode scan.	Enter a valid accession number, up to 20 characters that does not contain the following characters: * ? [ ] ! # | Select **OK** to remove the message box.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
Culture Screen Messages		
CS01	You entered a patient ID that is not in the database. The value you entered is shown at the top of the message box.	Make sure Patient ID is entered correctly and completely. You cannot enter a partial ID to recall patient information.
CS02	You entered a patient name or portion of a patient name that is not in the database. The value you entered is shown at the top of the message box.	Try entering only the first portion of the name if you tried entering the whole name.
CS03	A Patient Name search matched more than 50 entries in the database.	Try to enter more characters to narrow the search results.
CS15	You have pressed the Disassoc(iate) button on the Culture – Vial display. The sequence and accession are shown at the top of the message box.	Select **Yes** to confirm the disassociation. Select **No** to cancel the disassociation.
CS23	You have pressed the Disassoc(iate) button on the Culture – Patient display. The sequence and accession is shown at the top of the message box.	Select **Yes** to confirm the disassociation. Select **No** to cancel the disassociation.
CS24	Message occurs if you scan any non-sequence barcode (other than one matching the displayed accession) or a sequence that is already associated to a different accession number.	A vial can only be attached to one accession number.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
ID Anonymous Messages		
ID01	A positive anonymous vial was pulled from a station. The station is shown at the top of the message box.	Scan the vial sequence barcode. Select **Save** to save the identification if you are keeping the vial out of the instrument. If you are returning the vial, place it in the FLASHING GREEN station and do not Select **Save**.
ID02	An anonymous vial was pulled from a station in an instrument that is in degraded mode.	Place the vial back into the same station to continue testing the vial anonymously. Or select **Cancel** or close the door to discard all readings.
ID05	This is displayed when <Discard> is selected on the Identify Anonymous Screen.	Select **OK** to discard the vial's readings. Select **Cancel** cancel the Discard operation.
ID09	An anonymous vial is pulled when a display other than ID Anonymous is displayed.	Select **Yes** to identify the anonymous vial. The ID Anonymous display appears. Select **No** if you do not want to identify the anonymous vial. Additional message(s) provide further instructions.
ID10	The vial barcode sequence scanned belonged to a known vial which was removed from the instrument more than 5 hours (reentry window) ago.	If the vial is placed back in the instrument, it is treated as a new vial. If this occurs during ID Anonymous activity, the vial maintains all the test readings and information associated to the anonymous vial, but the previous sequence information is discarded.
ID12	Occurs if you respond No to message ID09, or if you select Return on the ID Anonymous display.	Vial continues as anonymous if you place it back in the station. Previous test readings are retained and testing continues. If you select **Cancel** in response to the message, the vial becomes a newly entered anonymous vial.
ID13	Occurs if you select **Exit** on the ID Anonymous display, with information related to a pulled vial on the screen.	Select **Yes** to exit the ID Anonymous display. All readings to date for the vial are discarded. Select **No** to cancel the Exit operation and continue identifying anonymous vials.
ID14	The instrument has determined that the sequence number you just scanned belongs to a different vial.	A vial swap has occurred. For optimal recovery, both vials should be subcultured. To reenter vials, use the Vial Entry activity.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
Maintenance Utilities Messages		
UTIL01	A save operation was completed successfully (Maintenance – Utilities – Save DB).	Message is informational.
UTIL02	A save operation was not completed successfully. Flash drive could be full, or the file system on the drive could be corrupted.	Retry the save operation. If error recurs, retry the operation with a new flash drive.
UTIL03	A save operation was completed successfully (Maintenance – Utilities – Save Log).	Message is informational.
UTIL04	A save operation was not completed successfully. Flash drive could be full, or the file system on the drive could be corrupted.	Retry the save operation. If error recurs, retry the operation with a new flash drive.
UTIL07	You have entered a valid password to upgrade the instrument software.	Insert the software update flash drive into the USB port and select **Yes** to continue.
UTIL10	The flash drive in the USB port does not contain updated BD BACTEC™ FX40 instrument software.	Locate the correct flash drive for the instrument software update and insert it in the USB port. If the flash drive is labeled correctly (indicates correct software update version), contact BD for a new software update flash drive.
UTIL11	The current password was entered incorrectly.	Enter the correct current password.
UTIL12	A different password was entered in the New password and Confirm password fields.	Enter the same password in both New password and Confirm password fields.
UTIL13	The new password entered was accepted.	Message is informational.
UTIL14	You attempted to install an older version of software than what is currently on the instrument.	Installing an older version of instrument software is not permitted.
UTIL15	Upgrade of system software completed successfully.	Message is informational. Remove the flash drive from the USB port.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
Vial Entry Messages		
VE01	You attempted to reenter a vial that has been out of the instrument for more than 5 hours (Ongoing, Positive, or Negative). The sequence and status are shown at the top of the message box.	Vial should be subcultured. Vial may be reentered into instrument, but is treated as a new vial. Existing readings are discarded.
VE06	Accession barcoding is enabled and you only scanned a vial sequence number prior to placing the vial in the station. The sequence and station are shown at the top of the message box.	Message is informational. The accession number can be entered at any time in the Culture – Vial display. Select **OK** to continue.
VE13	A vial was placed in a station and only the accession barcode was scanned.	If an accession barcode is scanned, a vial sequence number must be scanned also. To enter an anonymous vial, do not scan any barcodes. Select **OK** to remove the message box.
VE16	One or more vials were placed in the instrument during a power failure or when an instrument was offline.	Message is Informational. Select **OK** to remove the message box.
VE17	During Vial Entry or ID Anonymous, a sequence number for a positive vial is scanned.	Message is informational. Vial becomes Ongoing if reentered after the 20 minute peek window (but within 5 hours of removal), otherwise the vial remains Positive. Positivity analysis restarts at time of reentry although original Start of Protocol is retained.
VE18	A positive vial is being reentered into the instrument within 20 minutes of its removal.	Select **Yes** to return the vial as Ongoing. Select **No** to return the vial as Positive.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
Vial Removal Messages		
VR01	Appears if a related vial with a manually entered sequence is removed during Positive Removal activity. The sequence, station, and status are shown at the top of the message box.	Compare the actual vial sequence number to the one shown at the top of the message box. If the two numbers are identical, select **Yes**. If the numbers are not identical, select **No**.
VR02	Appears when a related vial is removed during Positive Removal activity.	Scan the sequence number and place the vial in the instrument.
VR04	You removed one or more vials while the instrument is offline or power was off. When the instrument is back online, message appears.	Message is informational. Select **OK** to remove the message box.
VR07	You blocked a station with a positive, negative, or ongoing vial. When a station is blocked, no more tests are performed on a vial in that station, so if there is a vial in the station, it must be moved for testing to continue.	Use Vial Entry to move the vial to a new station. Plug the blocked station to prevent use.
Workflow Exception Messages		
WE02	You have pulled a vial that doesn't correspond to the current activity (e.g., pulling a vial that is not positive during Positive Removal, pulling any vial during Vial Entry, etc.). The sequence, station, and status are shown at the top of the message box.	Select **Yes** to remove the scanned vial named in the message box. Select **No** to place the vial back in the instrument. WE03: Scan sequence to return or touch Cancel to accept removal message then appears.

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WE03	Appears if you respond No to WE02: Unexpected vial pulled. Remove?	To return the vial to the instrument, scan the vial sequence number and place the vial in an available station. To remove the vial, select **Cancel**.
WE04	Appears if you scan an unexpected vial after a WE03: Scan sequence to return or touch cancel to accept removal (e.g., you remove a positive vial then inadvertently scan another vial's sequence number). Appears if you scan an unexpected sequence during an activity; the sequence scanned does not match the sequence in the database for the station/vial.	If you select **Yes**, then the WE03 : Scan sequence to return or touch cancel to accept removal message reappears. If you select **Cancel**, then a WE06: Unverified sequence. Return through Vial Entry workflow message appears. To return the unexpected vial, select the **Yes** button in this message.
WE05	The vial sequence number of the vial being removed and/or entered was entered manually via the onscreen keyboard. The sequence is shown at the top of the message box.	Compare the actual vial sequence number to the one shown at the top of the message box. If the two numbers are identical, select **Yes**. If the numbers are not identical, select **No**.
WE06	Appears if you respond No to WE04 or Cancel to VR02. Also occurs if you respond Wrong when verifying a manually entered sequence number.	When the current activity is complete, use the Vial Entry activity to enter the vial into the instrument. Note any additional messages that appear at that time about vial status.
WE07	An ongoing vial was pulled from an instrument in degraded mode in a BD EpiCenter configuration.	Return the vial to the station from which it was removed to continue to test the vial anonymously. Identify the vial when communications with BD EpiCenter™ are reestablished.

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WE14	Message appears if you select **Exit** without saving data on Vial Entry, or if you exit Positive or Negative Removal display without scanning a pulled vial or confirming the sequence number of a manually entered vial.	Select **Yes** to exit without saving the data. Select **No** to return to the display with data retained on the display. Then select **Save** to save the data.
WE16	You opened a second instrument door.	Only one instrument can be open for vial entry /removal or maintenance activities.
WE17	A known vial sequence number is scanned for a vial currently in the instrument. Vial may have been removed when instrument was offline. Vials may have been swapped. The sequence and station are shown at the top of the message box.	For optimal recovery, subculture both vials (the scanned vial and the one in the station named in the message). You may also apply a replacement barcode to either or both vials and reenter them with Vial Entry to continue testing.
WE20	During Vial Entry or ID Anonymous, you scan or enter an accession and vial sequence number, but the sequence belongs to a different accession.	To change the accession, go to Culture – Vial display and disassociate the vial from the accession number. Then enter the correct accession number. Select **OK** to remove the message box.
WE21	Replacement vial barcode labels have a generic medium type of 99. The system performs optimally when the correct medium type is known for a given vial.	Select the medium type by tapping the Media field and tapping the correct medium type in the dropdown box. Select **OK** to remove the message box.
WE24	Appears when an empty station is blocked using Block/Unblock utility.	Insert a station plug to prevent inserting a vial in the blocked station. Select **OK** to remove the message box.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
WE28	The system lights all negative stations when batch removal is enabled and the Remove Negative vials activity is initiated. If a sequenced vial is removed from a station that is not illuminated, this message appears. The vial sequence number, accession, station, and status are shown in the message box.	Select **OK** to remove the message box. Use the Vial Entry activity to return the vial if you did not intend to remove it.
WE29	The system lights all negative stations when batch removal is enabled and the Remove Negative vials activity is initiated. If an anonymous vial is removed from a station that is not illuminated, this message appears. The station and status are shown in the message box.	Accumulated test readings are discarded. Select **OK** to remove the message box. Note the location and status of the vial that is displayed at the top of the message box. Continue removing negative vials. Vial should be subcultured and reentered with the Vial Entry activity.
WE30	Positive vial has been detected; message appears when instrument detects first positive vial in an instrument, when offline instrument goes online again, or after power is cycled. The instrument is shown at the top of the message box. Message is displayed for each instrument where the first positive detection occurs.	Select **OK** to remove the message box and silence the Positive Alarm tone. Remove positive vials.
WE31	An instrument that contains sequenced vials in unusable stations was opened.	Refer to manual for additional information.

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WE34	Appears if an instrument that is offline is selected in View Stations or Block/Unblock Stations display. The instrument, a station, or a row board could be what is offline.	Message is informational only. Vial or station statuses may be different from what is shown on the display because the instrument cannot communicate with the offline instrument.
WE35	The instrument has calculated the approximate size of the report to be more than 50 pages.	To accept the message, select **Yes**. Select **OK** to cancel the print request.
WE36	An instrument that contains anonymous vials in unusable stations was opened.	Use the ID Anonymous activity to identify any vials in the instrument. When identifying anonymous vials in this scenario, be sure to either select **Save** after identification to move them to another instrument, or place the vials in another station in the instrument that is lit steady green.
WE53	The instrument has determined that a vial may be partially seated in the station. Message is displayed when the door is first opened and each time it is subsequently opened, until a measurement occurs that clears the partial insertion condition.	Refer to manual for additional information.
WE56	The door sensor has detected that the door is not fully closed.	Push door fully closed.
WE57	While you were attempting to enter a new vial, identify an anonymous vial, or change vial or specimen information, another process changed information for that vial or specimen.	Your current modifications are not saved. On the Culture display, recall the vial/accession and modify the desired information again.

Code	Possible Cause	Corrective Action (If the recommended actions do not correct the situation, refer to the User's Manual or contact BD)
WE58	This will be displayed if the user has attempted to modify a vial that has been deleted by BD EpiCenter™ since the time it was recalled on the Culture screen.	Message is informational. No activity is possible since the vial is no longer resident in the database.
WE59	Sequence vial is removed from a degraded mode instrument or offline row and inserted via Vial Entry into an online instrument.	Select **Yes** to remove the vial from the old (offline) location. Place the vial into the online instrument to continue testing the vial in its current protocol. Select **No** to reenter the vial sequence number (in case sequence was entered incorrectly).
WE60	In a BD EpiCenter™ configuration, you tried to modify a vial in the Culture display (e.g., disassociate or associate accession, change protocol length, select media type (if replacement vial), change status) if the vial resides in an instrument which is currently offline.	You cannot modify information for a vial that is in an offline instrument.
WE61	Message occurs when a removed vial is called Positive. This will likely be the result of an anonymous vial being identified and saved (i.e. not returned to the instrument). Algorithms are re-run on the vial with the newly identified media type, and if more sensitive than the general algorithm, could cause a positive result.	Message is informational. Vial is already removed from the instrument.
WE62	The instrument and BD EpiCenter™ systems are reconciling their databases.	Message is displayed while the reconciliation process is in progress. Message is removed when the reconciliation process is complete.