

Train-the-Trainer Program - Home Therapies

Liberty[®] Cyclor

CLINICAL SUPPORT GUIDE



Liberty[®]
united with stay-safe[™]
Fresenius Medical Care

Liberty Cyclor

Clinical Support Guide

This guide is intended to support clinicians and clinical support personnel in their efforts to help patients respond to various issues, warnings, or alarms that may arise during Liberty cyclor therapy. Patient instructions offered within this guide are specific to various messages that may appear during Liberty cyclor set-up or treatment. Technical support services remain available to patients and clinicians 24/7 at 1-800-227-2572 for any Liberty cyclor issue that may arise.

General Notes

1. If a true red alarm (red status bar) occurs at any time during treatment, Liberty cyclor patients must be trained to make note of all alarm messages, turn off the Liberty cyclor, and call technical support.
2. Technical support should be called;
 - a. if instructions provided within this guide fail to resolve the problem
 - b. if the PD RN or MD feel the cyclor needs to be replaced
 - c. any time the patient, PD RN, or MD wish to access Liberty cyclor technical support.
3. The PD RN should provide Liberty cyclor patients with general guidelines as to how to proceed should it become necessary to replace the original Liberty cyclor set and/or solution bag(s) to continue an interrupted treatment.
4. If the patient is advised NOT to use a second set or additional solution bags to continue an interrupted treatment, the PD RN should advise the patient how to proceed (i.e., note issue and therapy results; call PD clinic in the morning).
5. If it becomes necessary to restart during set-up, the solution bag and Liberty cyclor set (if attached) may be used to continue set-up provided the cones within solution bags have NOT been broken and the Liberty cyclor set is not detached from solution bags.

Liberty Cyclor Clinical Support Guide

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Support Screens

Support messages are displayed when a resolvable issue is detected before or during Liberty cyclor set-up or during Liberty cyclor treatment. If a Support Screen appears, the status bar will continue to display the phase in progress and will not change color.

If the Support Screen appears after powering on but before starting set-up (**Ready** and **USB Upload** Screens);

- ❑ The screen displays the issue and any applicable instructions
- ❑ **Press OK** (key) **to continue** appears across the bottom of the screen (no audible alarm).

If the Support Screen appears during set-up;

- ❑ The main screen continues to display step-specific icons and text
- ❑ The problem is identified in **red** text added to the usual set-up screen
- ❑ **Press next to continue** appears across the bottom of the screen (no audible alarm).

If the Support Screen appears during treatment;


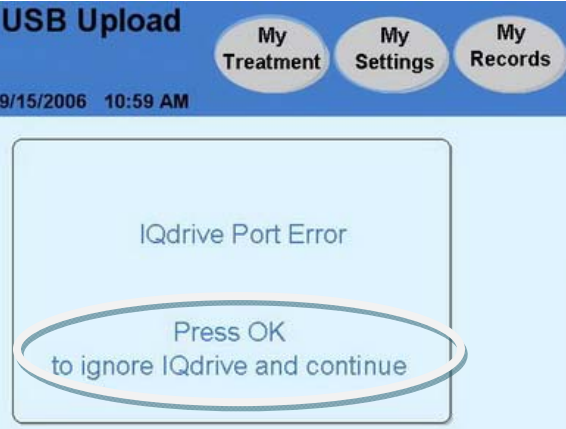

- ❑ An audible alarm alerts the patient
- ❑ The screen displays the issue and brief instructions in blue text (no icons)
- ❑ **Press STOP to mute** appears across the bottom of the first screen
- ❑ **Press OK key to continue** appears across the bottom of the second screen.


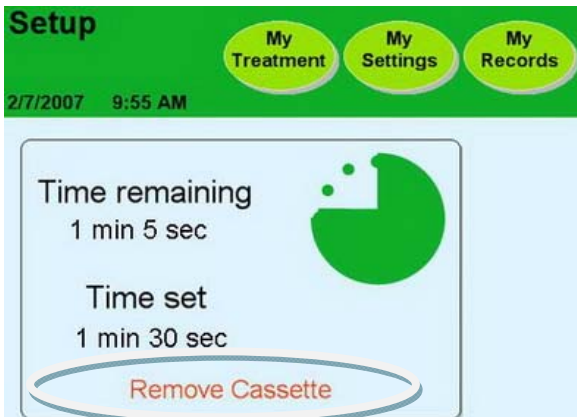
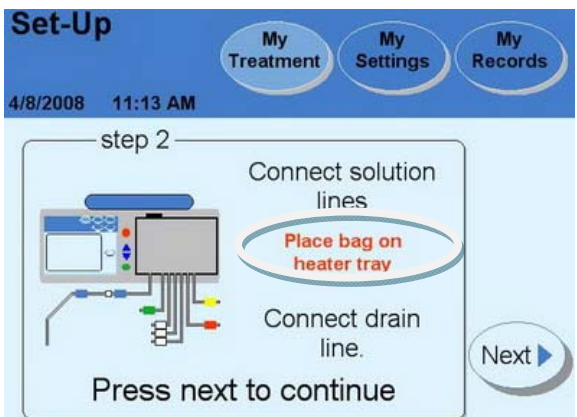
Provide the following patient instructions for responding to Support Screen message:

1. Follow the specific on-screen instructions to resolve Support Screen messages (see Support Screen Table below). If the steps taken successfully resolved the issue, therapy will move on.
2. If the Support Screen message re-appears and therapy cannot move on;
 - a. Turn the cyclor off and wait 10 seconds
 - b. Turn cyclor back on and;
 - a. Restart set-up from the **Ready** screen (before or during set-up)-or-
 - b. Press **Resume Treatment** if **Power Fail Recovery** is successful.
3. Call technical support if the Support Screen does not clear after three attempts.

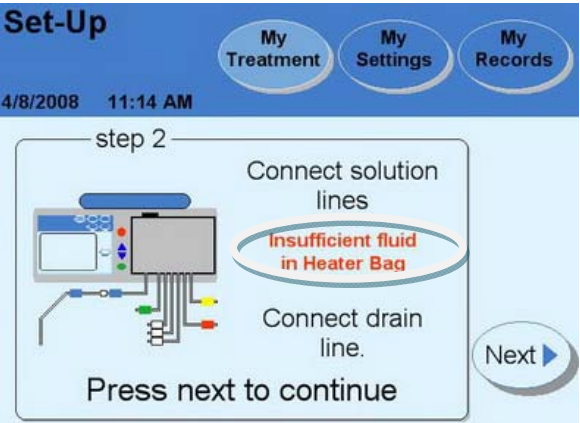
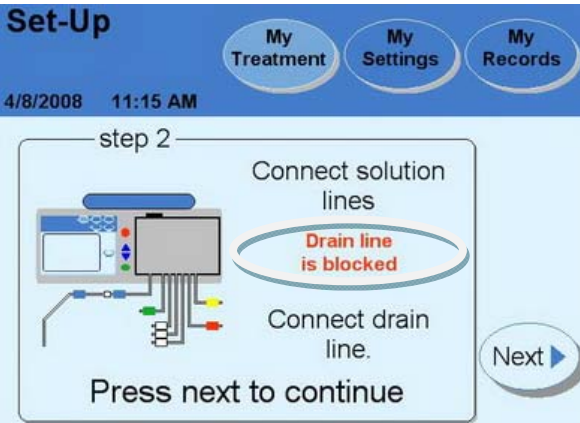
The following table displays Liberty Cyclor Support Screens, causes, and additional instructions for the patient (not displayed on-screen).

Liberty Cyclor Support Screens

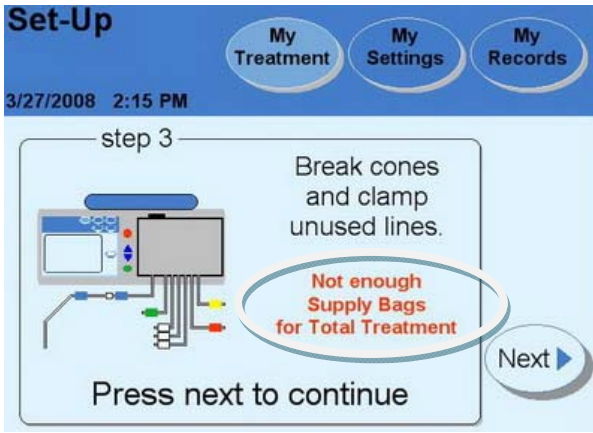
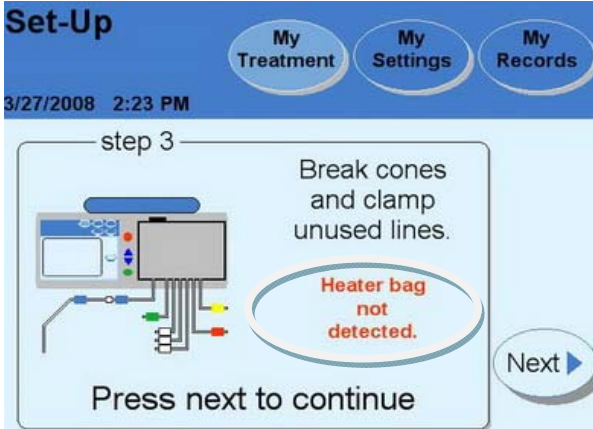
Liberty Cyclor Support Screens		
Pre Set-up Screens	Cause	Additional Instructions
	<p>The door was opened before set-up began (Ready Screen).</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure the door is securely closed <input type="checkbox"/> Remove the cassette if present.
	<p>The cyclor was unable to access the IQdrive port.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> If an IQdrive is in place, remove and re-insert <input type="checkbox"/> Verify that a light appears at the tip of the IQdrive <input type="checkbox"/> If it is necessary to press the OK key in order to move on; <ul style="list-style-type: none"> o Contact your PD RN o Record treatment details as directed.
	<p>The cyclor was unable to read the IQdrive. IQdrive may be corrupted.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> If an IQdrive is in place, remove and re-insert <input type="checkbox"/> Verify that a light appears at the tip of the IQdrive <input type="checkbox"/> If it is necessary to press the OK key in order to move on; <ul style="list-style-type: none"> o Contact your PD RN o Record treatment details as directed.

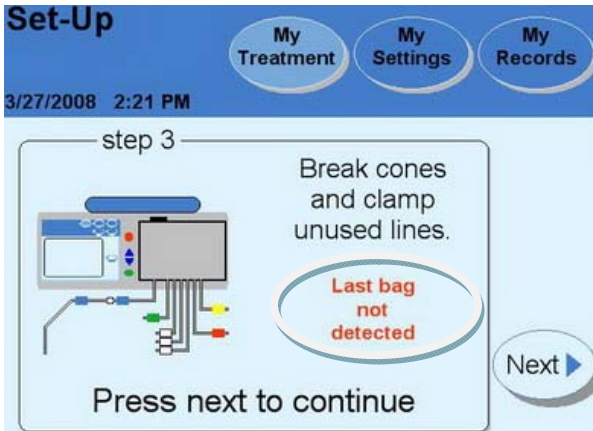
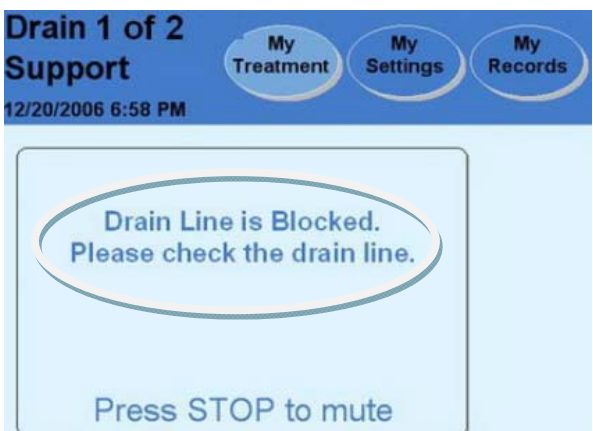
Set-up Support Screens	Cause	Additional Instructions
 <p>The screenshot shows the 'Setup' screen with a green header. It includes three menu items: 'My Treatment', 'My Settings', and 'My Records'. The date and time are '2/7/2007 9:56 AM'. The main display area shows 'Time remaining 1 min 5 sec' and 'Time set 1 min 30 sec' next to a green progress indicator. A red oval highlights the 'Close Cassette Door' button at the bottom.</p>	<p>The cassette door was not securely closed when the OK key was pressed before step 1 (Ready screen step 0).</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Close the door <input type="checkbox"/> Do not press the OK key a second time. Set-up will continue within a few seconds after the door is closed.
 <p>The screenshot shows the 'Setup' screen with a green header. It includes three menu items: 'My Treatment', 'My Settings', and 'My Records'. The date and time are '2/7/2007 9:55 AM'. The main display area shows 'Time remaining 1 min 5 sec' and 'Time set 1 min 30 sec' next to a green progress indicator. A red oval highlights the 'Remove Cassette' button at the bottom.</p>	<p>A cassette was detected when the OK key was pressed before step 1 (Ready screen step 0).</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Remove the cassette <input type="checkbox"/> Do not press the OK key a second time. Set-up will continue within a few seconds after the cassette is removed.
 <p>The screenshot shows the 'Set-Up' screen with a blue header. It includes three menu items: 'My Treatment', 'My Settings', and 'My Records'. The date and time are '4/8/2008 11:13 AM'. The main display area shows 'step 2' with instructions: 'Connect solution lines', 'Place bag on heater tray' (highlighted with a red oval), and 'Connect drain line.'. A 'Next' button is visible at the bottom right.</p>	<p>The heater scale does not detect a solution bag with <u>at least</u> 2000 mL after;</p> <ul style="list-style-type: none"> <input type="checkbox"/> The Next button on set-up step 2 screen was pressed –or– <input type="checkbox"/> Set-up has advanced to step 3. 	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure the heater solution bag contains <u>at least</u> 2000 mL. <input type="checkbox"/> Make sure the solution bag is evenly placed on the heater tray (see page 94 in Liberty Cyclor User Guide, P/N 480038).

Liberty Cyclor Support Screens

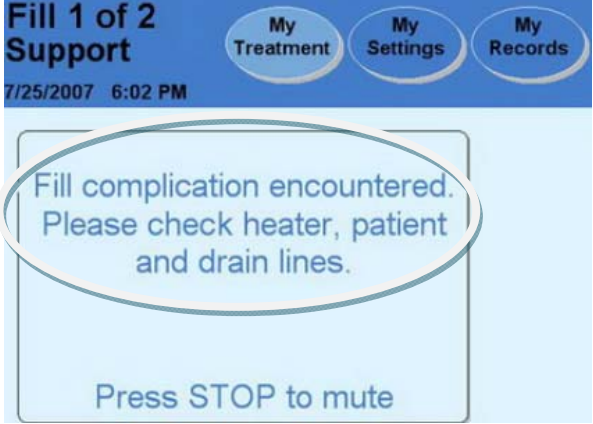
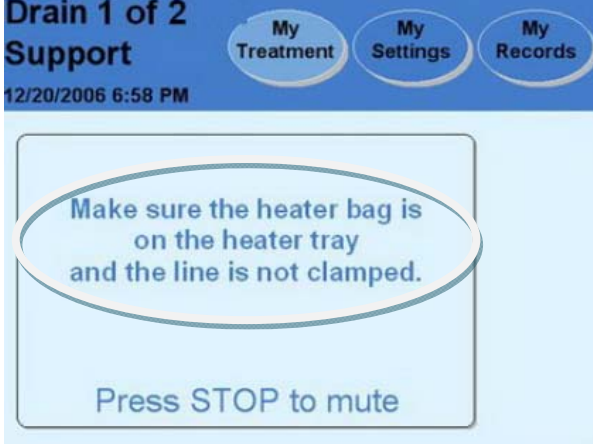

Set-up Support Screens	Cause	Additional Instructions
 <p>The screenshot shows the 'Set-Up' screen at 'step 2'. At the top, there are three buttons: 'My Treatment', 'My Settings', and 'My Records'. Below them is the date and time '4/8/2008 11:14 AM'. The main area shows a diagram of the device with lines connected. Text instructions include 'Connect solution lines', 'Connect drain line.', and 'Press next to continue'. A red oval highlights the error message 'Insufficient fluid in Heater Bag'. A 'Next' button is at the bottom right.</p>	<p>The heater scale does not detect a solution bag with <u>at least</u> 1000 mL more than the programmed initial Fill volume after;</p> <ul style="list-style-type: none"> <input type="checkbox"/> The Next button on set-up step 2 screen was pressed –or– <input type="checkbox"/> Set-up has advanced to step 3. 	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure the heater solution bag contains <u>at least</u> 1000 mL more than the programmed Fill volume <input type="checkbox"/> Make sure solution bag is evenly placed on the heater tray (see page 94 in Liberty Cyclor User Guide, P/N 480038) <input type="checkbox"/> Lift bag off of heater tray; return bag to tray ensuring even placement <input type="checkbox"/> Verify the Fill volume on the My Settings screen.
 <p>The screenshot shows the 'Set-Up' screen at 'step 2'. At the top, there are three buttons: 'My Treatment', 'My Settings', and 'My Records'. Below them is the date and time '4/8/2008 11:15 AM'. The main area shows a diagram of the device with lines connected. Text instructions include 'Connect solution lines', 'Connect drain line.', and 'Press next to continue'. A red oval highlights the error message 'Drain line is blocked'. A 'Next' button is at the bottom right.</p>	<p>The cyclor cannot pump solution to the drain after;</p> <ul style="list-style-type: none"> <input type="checkbox"/> The Next button on set-up step 2 screen was pressed –or– <input type="checkbox"/> Set-up has advanced to step 3. 	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure drain line is properly connected <input type="checkbox"/> Check drain line for kinks or closed clamps.

Liberty Cycler Support Screens

Set-up Support Screens	Cause	Additional Instructions
	<p>The cycler cannot pull solution from the expected number of supply bags after;</p> <ul style="list-style-type: none"> ❑ The Next button on set-up step 2 screen was pressed –or– ❑ Set-up has advanced to step 3. <p>To determine the expected number of bags, the Liberty cycler assumes that all bags hold 5000 mL. Therefore;</p> <ul style="list-style-type: none"> ❑ Total number of bags connected must \geq Total volume \div 5000 ❑ Number of <u>supply bags</u> (excludes heater bag) connected must $>$ Total Volume - 5000 (heater bag) \div 5000. ❑ If the Last bag option is set to YES, the number of supply bags connected must \geq Total volume - 5000 (heater bag) - Last Fill volume \div 5000. 	<ul style="list-style-type: none"> ❑ Make sure clamps are open on all solution lines ❑ Make sure cones are broken and not obstructing bag outlets ❑ Verify programmed or calculated Total volume ❑ Make sure enough <u>supply bags</u> are connected <p>Ex: Last bag option = NO Total volume = 15000 # of supply bags expected (<u>white and green clamped lines</u>): $15000 - 5000$ (heater) = 10000 \div 5000 \geq 2</p> <p>Last Bag Option = YES Ex: Total volume = 12000 Last Fill = 2000 # of supply bags expected (<u>white clamped lines only</u>): $12000 - 5000$ (heater) - 2000 (last fill) = 5000 \div 5000 \geq 1</p>
	<p>The cycler cannot pull solution from the heater bag after the Next button has been pressed on set-up step 3 screen.</p>	<ul style="list-style-type: none"> ❑ Make sure red clamp is open on heater bag line ❑ Make sure heater bag cone is broken and not obstructing bag outlet.

Set-up Support Screens	Cause	Additional Instructions
	<p>The cyclor cannot pull solution from the last bag (Last bag option = YES) after the Next button has been pressed on set-up step 3 screen.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure green clamp is open on last bag line <input type="checkbox"/> Make sure last bag cone is broken and not obstructing bag outlet. <p>* Change the Last bag option to NO if a different solution is not needed for the Last Fill.</p>
	<p>The drain line clamped or blocked. The cyclor was unable to pump solution during the drain phase.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure drain line is properly connected <input type="checkbox"/> Make sure the wheel of the Liberty cyclor cart is not on the drain line <input type="checkbox"/> Check drain line for kinks or closed clamps.

Liberty Cyclor Support Screens		
Set-up Support Screens	Cause	Additional Instructions
	<p>Insufficient volume has drained within allotted drain time*</p> <p>Mid-drain volume by software version (v.);</p> <ul style="list-style-type: none"> <input type="checkbox"/> v. < 2.8.2: 42.5 % of previous Fill volume regardless of drain flow rate <input type="checkbox"/> v. ≥ 2.8.2: 35% of previous Fill volume and drain flow rate < 30 mL/min <p>End of drain volume;</p> <ul style="list-style-type: none"> <input type="checkbox"/> v. < 2.8.2: 85 % of previous Fill volume regardless of drain flow rate <input type="checkbox"/> v. ≥ 2.8.2: 70% of previous Fill volume and drain flow rate < 30 mL/min <p>* Treatment Based drain time calculations;</p> <ul style="list-style-type: none"> <input type="checkbox"/> v. < 2.8.2: previous Fill volume ÷ 75 <input type="checkbox"/> v. ≥ 2.8.2: previous Fill volume ÷ 30 <p>Cycle Based drain time is a programmed setting.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Check patient line for fibrin, kinks, or closed clamps <input type="checkbox"/> Change body position to facilitate drain flow rate <input type="checkbox"/> Make sure center of cyclor is within 12 inches of bed height <input type="checkbox"/> Treat constipation <input type="checkbox"/> Increase Cycle Based drain time.
	<p>The patient line is clamped or blocked. The cyclor was unable to pump solution during the Fill phase.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Check patient line for fibrin, kinks, or closed clamps <input type="checkbox"/> Change body position <input type="checkbox"/> Make sure center of cyclor is within 12 inches of bed height <input type="checkbox"/> Treat constipation.

Set-up Support Screens	Cause	Additional Instructions
	<p>The programmed Fill volume was not delivered within the allotted Fill time.</p> <p>Cycle Based Fill time programmed; calculated in Treatment Based ($v \geq 2.7.3$ programmed Fill volume/75 = Fill time in minutes).</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure blue patient line and stay safe extension set clamps are open <input type="checkbox"/> Make sure red clamp on heater bag is open <input type="checkbox"/> Change body position <input type="checkbox"/> Make sure center of cyclor is within 12 inches of bed height <input type="checkbox"/> Increase Cycle Based Fill time.
	<p>The cyclor does not detect a bag on the heater tray or cannot pull solution from the heater bag.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure a heater bag is in place on the heater tray <input type="checkbox"/> Make sure the heater bag is centered on tray <input type="checkbox"/> Make sure heater bag is properly connected <input type="checkbox"/> Check heater line for kinks or closed clamp <input type="checkbox"/> Make sure heater bag cone is broken and not obstructing bag outlet.
	<p>The cyclor cannot pull solution from supply bag(s).</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure supply bags are properly connected <input type="checkbox"/> Check supply lines (white clamps) for kinks or closed clamps <input type="checkbox"/> Make sure supply bag cones are broken and not obstructing bag outlet

Warnings

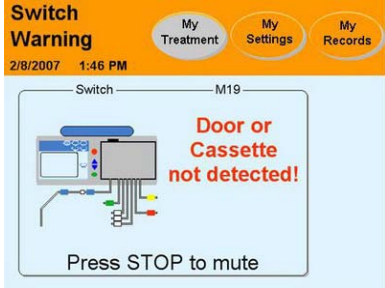
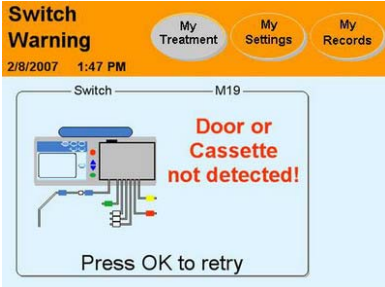
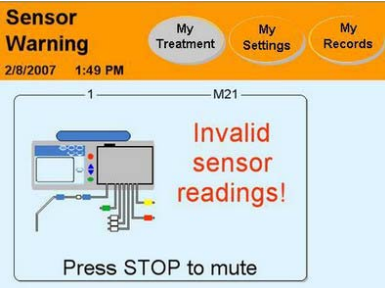
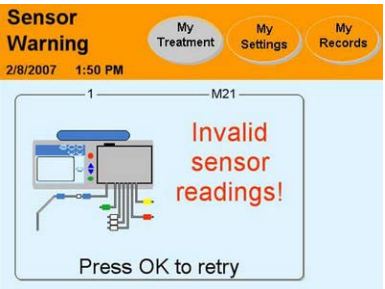
Warnings: Various warning messages may occur during Liberty cyclor therapy. If a recoverable error is detected, the warning screen will display a specific warning message as well as a numeric error code. An audible alarm will also sound. The status bar will turn **orange** and identify the warning as one of the following types of error codes:

1. **Heater:** Heater tray error
2. **Patient Sensor Warning:** Patient pressure warning
3. **Pneumatic (Air Pump):** Pneumatic pump pressure error
4. **Scale Warning:** Scale reading incorrectly
5. **Self Test:** Cyclor self-test error message
6. **Sensor Warning:** Cyclor sensor reading incorrectly
7. **Switch Warning:** Door or cassette switch reading incorrectly
8. **System:** Critical error
9. **Treatment:** Treatment-related error message.

Troubleshooting Warning Messages

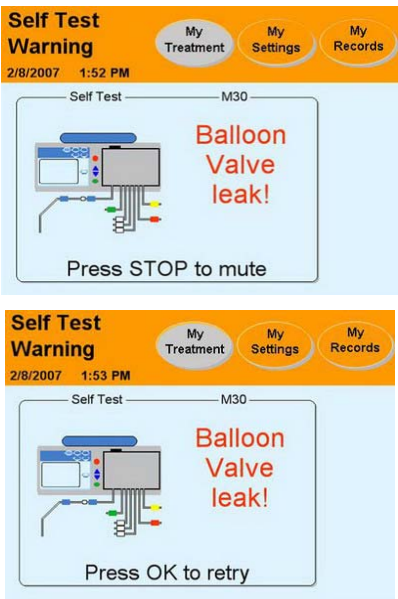
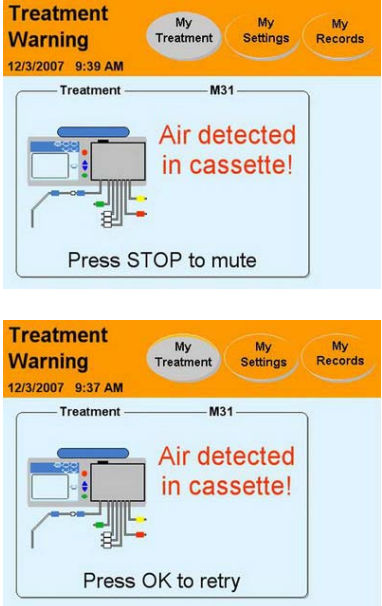
If a warning message is displayed the patient should be instructed to follow the steps below.

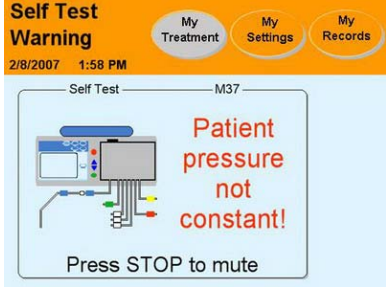
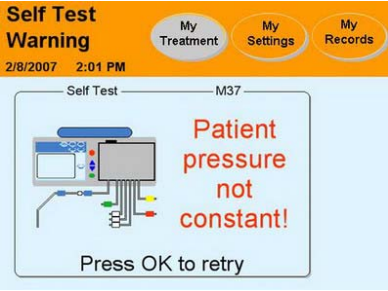
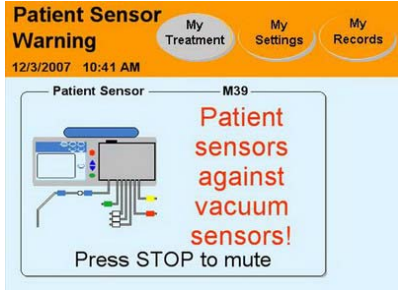
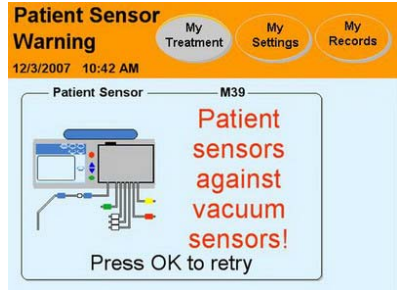
1. Press the **STOP** key to mute the audible alarm.
2. Make note of the error code. If it becomes necessary to call technical support, they will need this code to help trouble shoot the issue.
3. Follow any instructions provided to resolve the warning (not all warnings require user action to resolve):
 - a. Some warning screens may present a **Help** button, which, when pressed will display additional trouble shooting instructions
 - b. Additional instructions are also provided in the following table for several of the warning messages.
4. Press the **OK** key to continue. If the issue has been resolved therapy will move on. If not, the warning screen will re-appear. Make sure that the interventions outlined in the table below have been implemented before proceeding with the following steps.
5. If the warning recurs during set-up;
 - a. clamp all lines
 - b. turn off cyclor and wait for 10 seconds
 - c. turn cyclor back on
 - d. When the **Ready** screen appears, press the **My Treatment** status bar button and follow on-screen instructions to restart set-up (if consistent with PD program policy).
6. If the warning recurs during treatment;
 - a. turn the cyclor off and wait 10 seconds
 - b. turn cyclor back on
 - c. if **Power Fail Recovery** is successful, press **Resume Treatment** button
 - d. if **Power Fail Recovery** fails, press **Cancel Treatment** button and follow on-screen instructions to end treatment and disconnect
7. Call technical support if the warning is not cleared after three attempts.

Liberty Cyclor Warnings			
Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
M19		The door is open at an inappropriate time	<input type="checkbox"/> Set-up step 5 & step 6 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8 <input type="checkbox"/> Power Fail Recovery
			
<p>Additional Instructions: Make sure that cassette is in place and pump plate door is securely closed.</p>			
M21		An out of range reading has been detected by one of the cyclor's 17 sensors.	<input type="checkbox"/> Any time from Power Up to Power Down
			
<p>Additional Instructions: If M21 <u>sub-error code 7</u> is displayed remove anything other than the heater bag from the heater tray (no additional instructions for other sub-error codes).</p>			

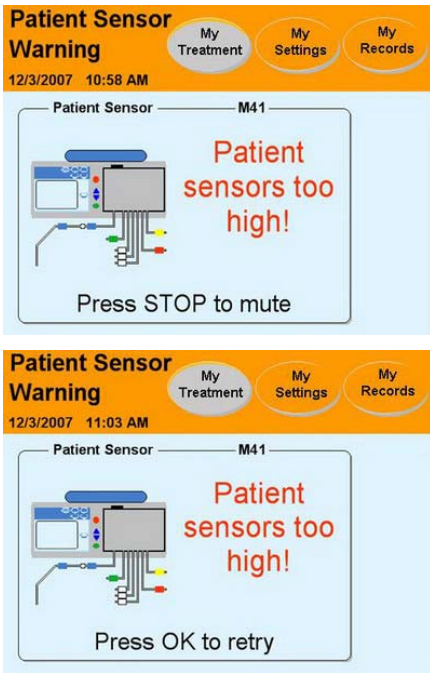
Liberty Cyclor Warnings

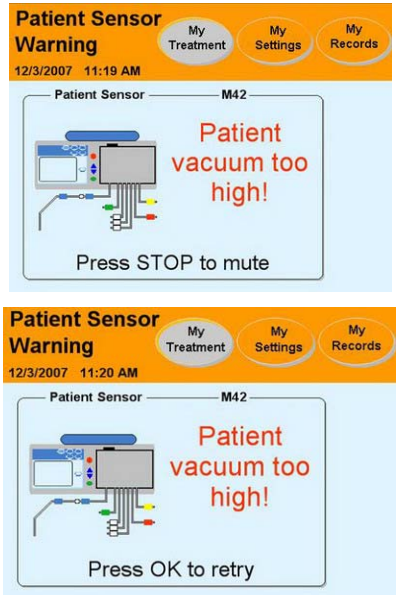
Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
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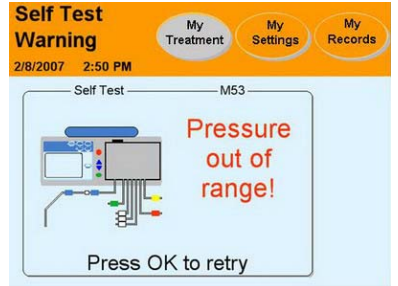
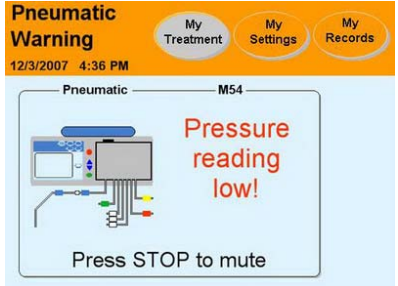
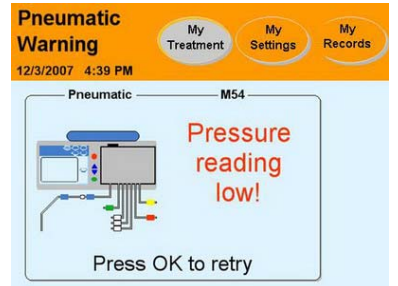
<p>M30</p>		<p>Self test failure due to balloon valve leak during set-up</p>	<p><input type="checkbox"/> Set-up step 2 & step 5</p>
<p>M31</p>		<p>Air detected in patient line, solution bag, or cassette</p>	<p><input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause)</p>
<p>Additional Instructions:</p> <p>Remove paper tabs and uncoil lines before pressing Next on set-up screen step 4</p> <p>Make sure that the heater bag, supply bags, and blue patient line are properly connected</p> <p>If air is seen in patient line or if an integrated set is used (20-foot patient line), press Back button on set-up screen step 6 to ensure the patient line is fully primed.</p>			

Liberty Cyclor Warnings			
Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
M37	 <p>Self Test Warning 2/8/2007 1:58 PM My Treatment My Settings My Records Self Test M37 Patient pressure not constant! Press STOP to mute</p>	<p>Changing patient pressure due to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pressure sensors out of calibration <input type="checkbox"/> Open door <input type="checkbox"/> Cassette detected prior to set-up <input type="checkbox"/> High pneumatic pressure 	<ul style="list-style-type: none"> <input type="checkbox"/> Before set-up step 1
	 <p>Self Test Warning 2/8/2007 2:01 PM My Treatment My Settings My Records Self Test M37 Patient pressure not constant! Press OK to retry</p>		
M39	 <p>Patient Sensor Warning 12/3/2007 10:41 AM My Treatment My Settings My Records Patient Sensor M39 Patient sensors against vacuum sensors! Press STOP to mute</p>	<p>Cassette not close enough to patient pressure sensor to provide an accurate reading</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Connect step 7 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8 <input type="checkbox"/> Power Fail Recovery
	 <p>Patient Sensor Warning 12/3/2007 10:42 AM My Treatment My Settings My Records Patient Sensor M39 Patient sensors against vacuum sensors! Press OK to retry</p>		

Liberty Cyclor Warnings

Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
<p>M41</p>	 <p>Patient Sensor Warning 12/3/2007 10:58 AM</p> <p>Patient Sensor M41</p> <p>Patient sensors too high!</p> <p>Press STOP to mute</p> <p>Patient Sensor Warning 12/3/2007 11:03 AM</p> <p>Patient Sensor M41</p> <p>Patient sensors too high!</p> <p>Press OK to retry</p> <p>Additional Instructions: Make sure that blue patient line clamp is open and cyclor \leq 12 inches above patient.</p>	<p>Fill pressure too high due to;</p> <ul style="list-style-type: none"> <input type="checkbox"/> Clamped patient line <input type="checkbox"/> Patient is lower than cyclor 	<ul style="list-style-type: none"> <input type="checkbox"/> Fill phase

<p>M42</p>	 <p>Patient Sensor Warning 12/3/2007 11:19 AM</p> <p>Patient Sensor M42</p> <p>Patient vacuum too high!</p> <p>Press STOP to mute</p> <p>Patient Sensor Warning 12/3/2007 11:20 AM</p> <p>Patient Sensor M42</p> <p>Patient vacuum too high!</p> <p>Press OK to retry</p> <p>Additional Instructions: Make sure that blue patient line clamp is open and cyclor \leq 12 inches below patient.</p>	<p>Negative pressure too high due to;</p> <ul style="list-style-type: none"> <input type="checkbox"/> Clamped patient line <input type="checkbox"/> Patient is higher than cyclor 	<ul style="list-style-type: none"> <input type="checkbox"/> Drain phase
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Liberty Cyclor Warnings			
Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
M53		Self test failure due to; <ul style="list-style-type: none"> <input type="checkbox"/> Pneumatic pressure sensor out of calibration <input type="checkbox"/> Pressure vent valve malfunction 	<input type="checkbox"/> Set-up step 1
			
M54		Pneumatic pressure too low	<input type="checkbox"/> Set-up step 3 <input type="checkbox"/> Connect step 7 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8 <input type="checkbox"/> Power Fail Recovery
			

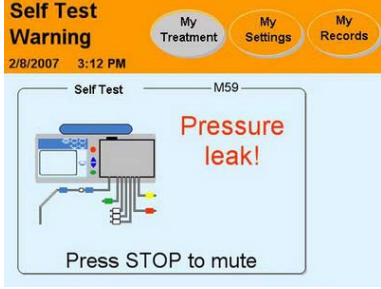
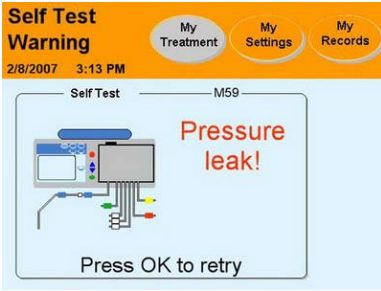
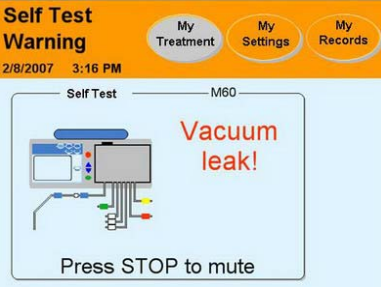
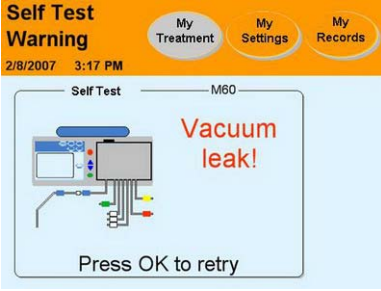
NOTE: High altitude can cause this warning.

Liberty Cyclor Warnings			
Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
M55		Pneumatic pressure too high	<input type="checkbox"/> Any time from Power Up to Power Down
M56		Pneumatic vacuum reading too low	<input type="checkbox"/> Set-up step 3 <input type="checkbox"/> Connect step 7 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8 <input type="checkbox"/> Power Fail Recovery

NOTE: High altitude can cause this warning.

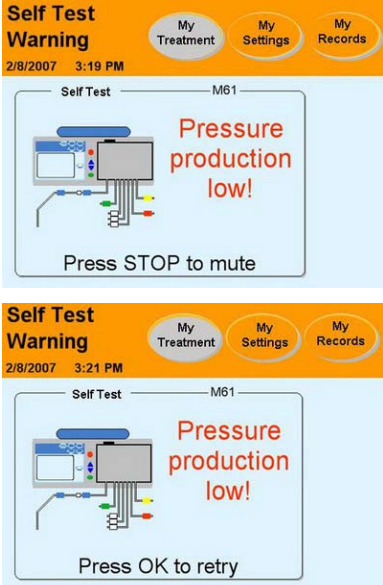
Liberty Cyclor Warnings			
Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
M57	<p>Pneumatic Warning 12/4/2007 10:10 AM</p> <p>Pneumatic M57</p> <p>Vacuum reading high!</p> <p>Press STOP to mute</p>	Pneumatic vacuum reading too high	<input type="checkbox"/> Any time from Power Up to Power Down
	<p>Pneumatic Warning 12/4/2007 10:12 AM</p> <p>Pneumatic M57</p> <p>Vacuum reading high!</p> <p>Press OK to retry</p>		
M58	<p>Self Test Warning 2/8/2007 3:10 PM</p> <p>Self Test M58</p> <p>Vacuum out of range!</p> <p>Press STOP to mute</p>	Self test failure due to; <ul style="list-style-type: none"> <input type="checkbox"/> Pneumatic sensor or chamber sensor out of calibration <input type="checkbox"/> Vacuum vent valve malfunction <input type="checkbox"/> Vacuum isolation valve out of calibration 	<input type="checkbox"/> Set-up step 1
	<p>Self Test Warning 2/8/2007 3:13 PM</p> <p>Self Test M58</p> <p>Vacuum out of range!</p> <p>Press OK to retry</p>		

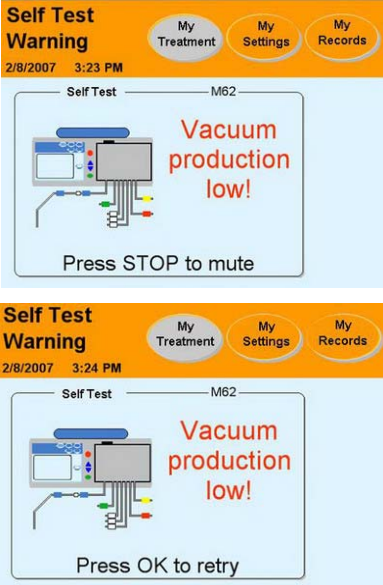
Liberty Cyclor Warnings

Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
M59	 	Self test failure due to; <ul style="list-style-type: none"> <input type="checkbox"/> Pneumatic pressure valve malfunction <input type="checkbox"/> Pneumatic pressure too low 	<ul style="list-style-type: none"> <input type="checkbox"/> Set-up step 2
M60	 	Self test failure due to; <ul style="list-style-type: none"> <input type="checkbox"/> Pneumatic vacuum valve malfunction <input type="checkbox"/> Pneumatic vacuum too low 	<ul style="list-style-type: none"> <input type="checkbox"/> Set-up step 2

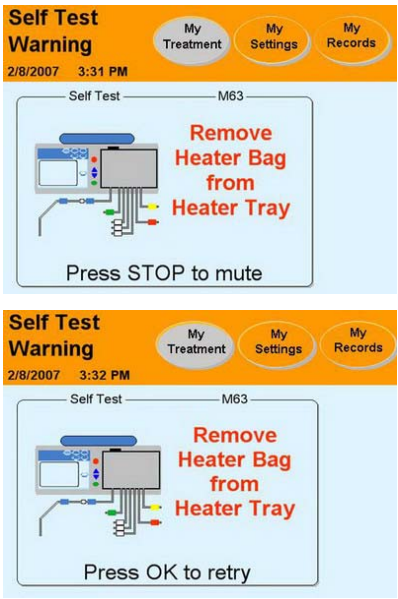
Liberty Cyclor Warnings

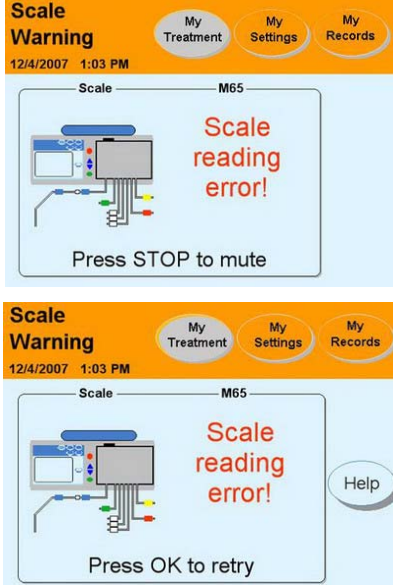
Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
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M61		Self test failure due to; <ul style="list-style-type: none"> <input type="checkbox"/> Pneumatic pressure valve malfunction <input type="checkbox"/> Pressure vent valve malfunction <input type="checkbox"/> Pressure at start of self test too high <input type="checkbox"/> Pressure at end of self test too low 	<ul style="list-style-type: none"> <input type="checkbox"/> Set-up step 1
NOTE: High altitude can cause this warning			

M62		Self test failure due to; <ul style="list-style-type: none"> <input type="checkbox"/> Pneumatic pressure valve malfunction <input type="checkbox"/> Pneumatic vacuum valve malfunction <input type="checkbox"/> Vacuum at start of self test too high <input type="checkbox"/> Vacuum at end of self test too low 	<ul style="list-style-type: none"> <input type="checkbox"/> Set-up step 2
NOTE: High altitude can cause this warning			

Liberty Cyclor Warnings

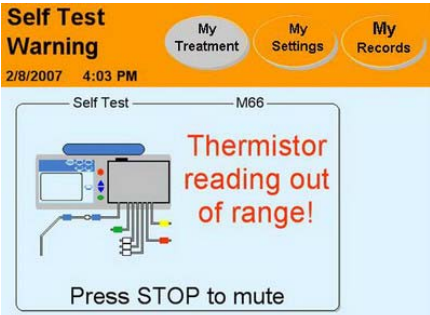
Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
<p>M63</p>	 <p>Self Test Warning 2/8/2007 3:31 PM</p> <p>Self Test M63</p> <p>Remove Heater Bag from Heater Tray</p> <p>Press STOP to mute</p> <p>Self Test Warning 2/8/2007 3:32 PM</p> <p>Self Test M63</p> <p>Remove Heater Bag from Heater Tray</p> <p>Press OK to retry</p> <p>Additional Instructions: Remove anything that may be on heater tray, including sets, solution bags, or other supplies Do not lean on heater tray while completing other tasks.</p>	<p>Self test failure due to;</p> <ul style="list-style-type: none"> <input type="checkbox"/> <u>Anything</u> on scale <input type="checkbox"/> Scale out of range 	<ul style="list-style-type: none"> <input type="checkbox"/> Set-up step 2

Liberty Cyclor Warnings			
Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
M65	 <p>Scale Warning 12/4/2007 1:03 PM</p> <p>Scale M65</p> <p>Scale reading error!</p> <p>Press STOP to mute</p> <p>Scale Warning 12/4/2007 1:03 PM</p> <p>Scale M65</p> <p>Scale reading error!</p> <p>Press OK to retry</p> <p>Help</p>	Unexpected scale change during treatment	<input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause)
<p>Additional Instructions:</p> <p>Make sure that heater bag is evenly placed on heater tray/ scale and covering bag sensor (see page 94 in Liberty Cyclor User Guide, P/N 480038)</p> <p>Press Help button</p> <p>Remove any other material on heater tray</p> <p>Press Back button</p>			

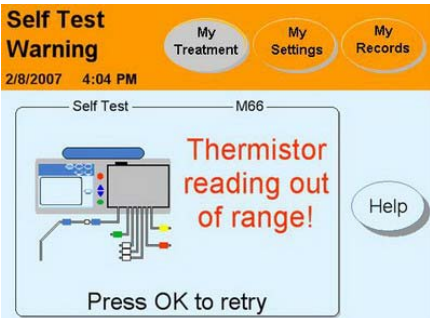
Liberty Cyclor Warnings

Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
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M66



- Self test failure due to;
- Set-up **step 1**
 - Heater bag or tray <math>< 1^{\circ}\text{C}</math>
 - Thermistor readings differ by >math>5^{\circ}\text{C}</math>



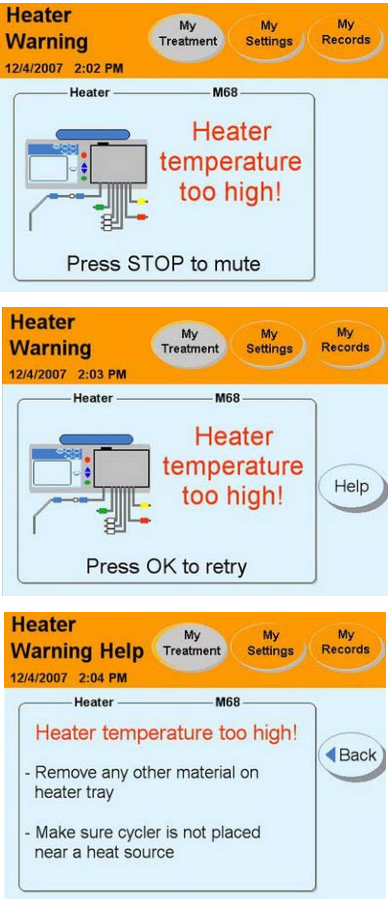
Additional Instructions:

- Press **Help** button
- Make sure nothing is on top of heater tray**
- Make sure cyclor has cooled down**
- Make sure cyclor is not placed near a heat source**
- Press **Back** button

Liberty Cyclor Warnings

Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
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M68



Heater tray >54° C

Anytime from Power Up to Power Down

Additional Instructions:

- Make sure that;
 - Cyclor is away from heating source
 - Bag placed on heater is room temperature
 - Nothing but heater bag is on heater tray
- Press **Help** button
 - Make sure nothing is on top of heater tray**
 - Make sure cyclor has cooled down**
 - Make sure cyclor is not placed near a heat source**
- Press **Back** button

Liberty Cyclor Warnings

Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
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<p>M70</p>		<p>Heater bag <20° C</p>	<p>☐ Fill phase</p>
<p>Additional Instructions:</p> <p>Make sure that;</p> <ul style="list-style-type: none"> Cyclor is away from cooling source Bag placed on heater is room temperature Nothing but heater bag is on heater tray <p>Press Help button</p> <ul style="list-style-type: none"> Cold bags will increase warming times Check if heater tray is warm to touch Check for external cooling sources - air conditioning - fan <p>Press Back button</p>			

Liberty Cyclor Warnings			
Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
M75	<p>Treatment Warning 12/7/2007 11:07 AM M75 Volume error! Press STOP to mute</p>	Solution is not being moved although pumps are moving.	<input type="checkbox"/> Fill <input type="checkbox"/> Dwell <input type="checkbox"/> Pause
	<p>Treatment Warning 12/7/2007 11:08 AM M75 Volume error! Press OK to retry</p>		
M77	<p>Treatment Warning 2/8/2007 4:33 PM M77 Encoder flag error! Press STOP to mute</p>	The motor pump head is not moving as expected.	<input type="checkbox"/> Set-up from step 3 onward <input type="checkbox"/> Connect step 7 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8 <input type="checkbox"/> Power Fail Recovery
	<p>Treatment Warning 2/8/2007 4:53 PM M77 Encoder flag error! Press OK to retry</p>		

Liberty Cyclor Warnings			
Error Code	Warning Message (recoverable error)	Reason for Warning	May Occur During
S_006 (21-M01)	<p>The screenshot shows a 'System Warning' dialog box with a blue header containing 'System Warning' and three buttons: 'My Treatment', 'My Settings', and 'My Records'. Below the header, the date and time '8/29/2007 3:37 PM' are displayed. The main area features a diagram of a medical device with a red 'System Warning' text overlay. At the bottom, it says 'Press STOP to mute'.</p>	Unusual system reading or action	<input type="checkbox"/> Anytime from Power Up to Power Down
	<p>The screenshot shows a 'System Warning' dialog box with a blue header containing 'System Warning' and three buttons: 'My Treatment', 'My Settings', and 'My Records'. Below the header, the date and time '8/29/2007 3:40 PM' are displayed. The main area features a diagram of a medical device with a red 'System Warning' text overlay. At the bottom, it says 'Press OK to retry'.</p>		

Alarms

Alarms: If a non-recoverable error is detected during Liberty cyclor treatment, an alarm message will be displayed. An audible alarm will also sound. The screen will display the specific alarm as well as the alarm-specific error code. The status bar will turn **red** and display the type of alarm:

1. **Computer-related alarms**
 - a. Battery RAM
 - b. CRC
 - c. EEPROM
 - d. Watchdog
2. **Heater:** Heater tray error
3. **Pneumatic** (Air Pump): Pneumatic pump pressure error
4. **Self Test:** Cyclor self-test error
5. **System:** Critical error
6. **Treatment:** Treatment-related error.

Troubleshooting Alarm Messages

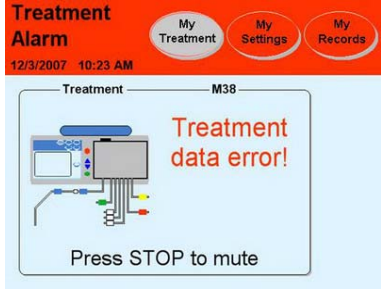
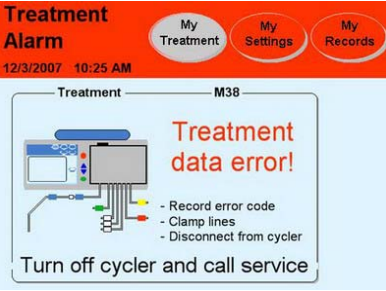
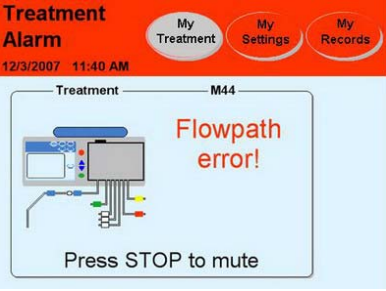
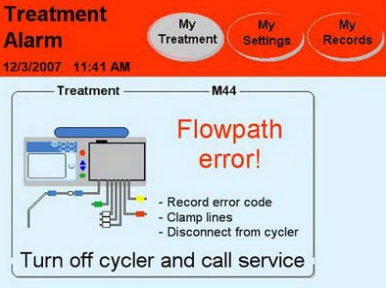
Alarms typically require that treatment be terminated. However, the patient should be instructed to follow the steps below before disconnecting just in case technical support can resolve the issue.

1. Press the **STOP** key to mute the audible alarm.
2. Clamp all lines.
3. Make note of the following to provide to technical support;
 - a. Alarm error code (displayed on screen)
 - b. Cyclor software version (displayed on sticker on top of cyclor above door)
 - c. Cyclor serial number (displayed on sticker on top of cyclor above door)
4. Turn off the cyclor (back of cyclor).
5. Call Technical Support (1800-227-2572).

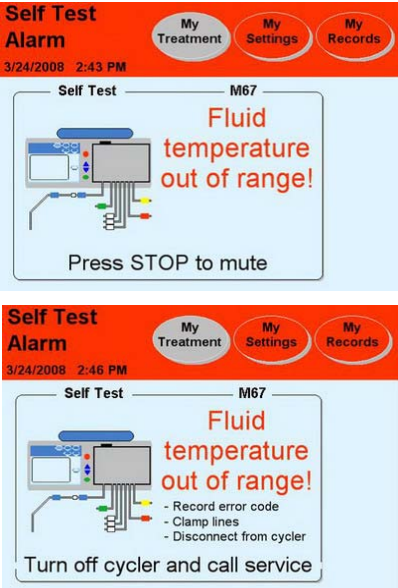
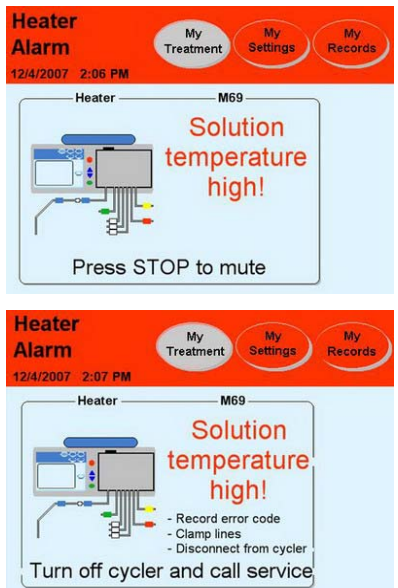
Warning: All warning and alarms require immediate attention. Failure to do so may result in complications that may be severe.

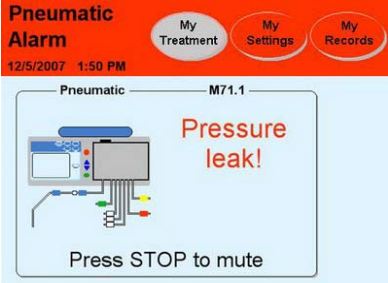
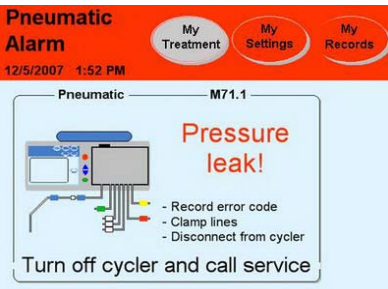
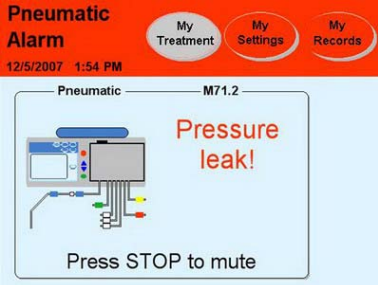
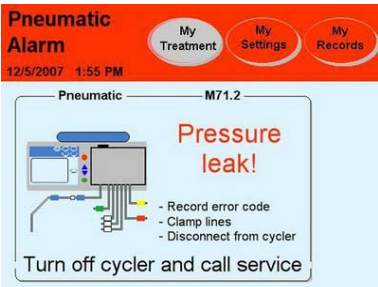
Liberty Cyclor Alarms			
Error Code	Alarm Message (unrecoverable error)	Reason for Alarm	May Occur During
M22		Safety clamp test failed three times.	<input type="checkbox"/> Set-up step 4
M30.1		Self-test failed due to possible balloon valve leak during treatment.	<input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause)

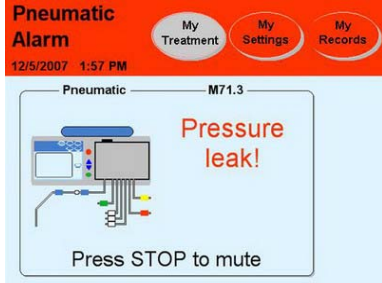
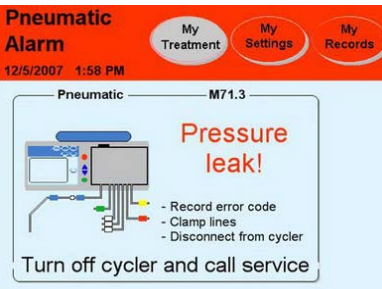
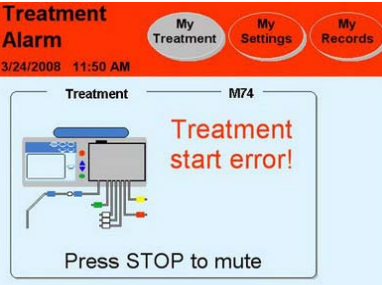

Liberty Cyclor Alarms

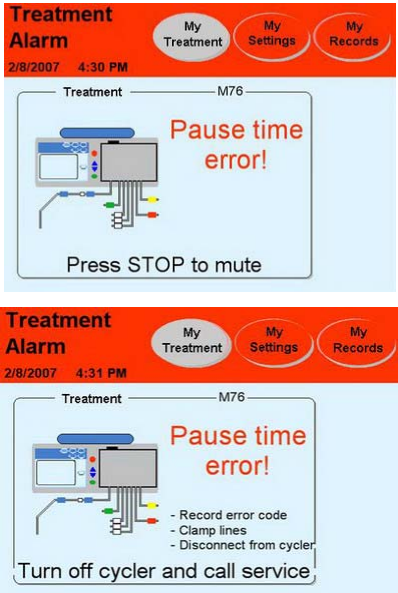

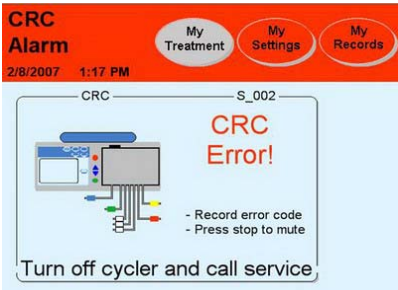
Error Code	Alarm Message (unrecoverable error)	Reason for Alarm	May Occur During
M38	 	<p>Due to;</p> <ul style="list-style-type: none"> <input type="checkbox"/> pending warnings or alarms when moving between phases <input type="checkbox"/> corrupted therapy settings 	<ul style="list-style-type: none"> <input type="checkbox"/> Connect step 7 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8 <input type="checkbox"/> Power Fail Recovery
M44	 	<p>Free flow of fluid detected in the cassette</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Connect step 7 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8 <input type="checkbox"/> Power Fail Recovery

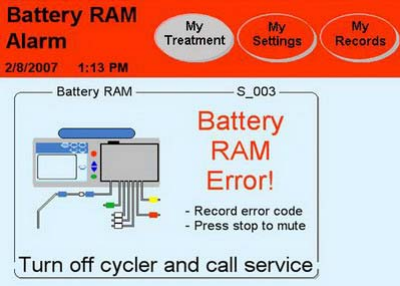

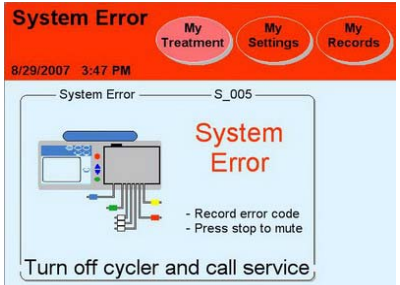
Liberty Cyclor Alarms			
Error Code	Alarm Message (unrecoverable error)	Reason for Alarm	May Occur During
M44.1		Fluid flowing in wrong direction	<input type="checkbox"/> Connect step 7 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8 <input type="checkbox"/> Power Fail Recovery
M44.2		Increased or decreased (vacuum) pressure in fluid path	<input type="checkbox"/> Connect step 7 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8 <input type="checkbox"/> Power Fail Recovery

Error Code	Alarm Message (unrecoverable error)	Reason for Alarm	May Occur During
<p>M67</p>		<p>Solution temperature test failed because;</p> <ul style="list-style-type: none"> <input type="checkbox"/> heater bag too cold (<33° C) <input type="checkbox"/> heater tray too cold (<30° C) <input type="checkbox"/> heater bag or heater tray temperature not warming up. 	<ul style="list-style-type: none"> <input type="checkbox"/> Set-up step 5
<p>M69</p>		<p>Solution temperature test failed three times because heater bag >40° C</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Any time from Power Up to Power Down

Liberty Cyclor Alarms			
Error Code	Alarm Message (unrecoverable error)	Reason for Alarm	May Occur During
M71.1		Air pump on for extended period due to possible pressure leak	<input type="checkbox"/> Set-up step 3 <input type="checkbox"/> Connect step 7 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8
			
M71.2		Air pump on for extended period due to possible balloon valve sub-system leaking	<input type="checkbox"/> Set-up step 3 <input type="checkbox"/> Connect step 7 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8
			

Liberty Cyclor Alarms			
Error Code	Alarm Message (unrecoverable error)	Reason for Alarm	May Occur During
M71.3		Air pump on for extended period due to possible vacuum leak	<input type="checkbox"/> Set-up step 3 <input type="checkbox"/> Connect step 7 <input type="checkbox"/> Any treatment phase (Drain, Dwell, Fill, or Pause) <input type="checkbox"/> Disconnect step 8
			
M74		Treatment starts or ends without pressing the Next button	<input type="checkbox"/> Connect step 7 <input type="checkbox"/> Disconnect step 8
			

Liberty Cyclor Alarms			
Error Code	Alarm Message (unrecoverable error)	Reason for Alarm	May Occur During
M76		PAUSE time exceeds 24 hours	<input type="checkbox"/> PAUSE exchange hours
MWD		Critical error in software	<input type="checkbox"/> Any time from Power Up to Power Down
S_002		Critical error in firmware	<input type="checkbox"/> Any time from Power Up to Power Down

Liberty Cyclor Alarms			
Error Code	Alarm Message (unrecoverable error)	Reason for Alarm	May Occur During
S_003	 <p>The screenshot shows a red header with 'Battery RAM Alarm' and the date/time '2/8/2007 1:13 PM'. Below the header are three buttons: 'My Treatment', 'My Settings', and 'My Records'. The main message area has a light blue background with a diagram of a cyclor unit. The text reads: 'Battery RAM Error!', '- Record error code', '- Press stop to mute', and 'Turn off cyclor and call service'.</p>	Critical error in battery RAM	<input type="checkbox"/> Any time from Power Up to Power Down
S_004	 <p>The screenshot shows a red header with 'EEPROM Alarm' and the date/time '2/8/2007 1:18 PM'. Below the header are three buttons: 'My Treatment', 'My Settings', and 'My Records'. The main message area has a light blue background with a diagram of a cyclor unit. The text reads: 'EEPROM Error!', '- Record error code', '- Press stop to mute', and 'Turn off cyclor and call service'.</p>	Critical error in circuit board	<input type="checkbox"/> Any time from Power Up to Power Down
S_005	 <p>The screenshot shows a red header with 'System Error' and the date/time '8/29/2007 3:47 PM'. Below the header are three buttons: 'My Treatment', 'My Settings', and 'My Records'. The main message area has a light blue background with a diagram of a cyclor unit. The text reads: 'System Error', '- Record error code', '- Press stop to mute', and 'Turn off cyclor and call service'.</p>	Critical system error	<input type="checkbox"/> Any time from Power Up to Power Down

Frequently Asked Questions

1. Why does the display read **Press OK to fill**?
Drain has finished but the heater bag solution is still too cool (between 25° C and 33° C). The patient may either wait for the heater bag to warm up or press the **OK** key to begin filling with the cooler solution. If the **OK** key is NOT pressed, solution will continue to warm until it reaches 33° C. Fill will automatically begin when this temperature is reached.
2. Why does the display read **Please wait for solution to warm up or cool down**?
Drain has finished and the temperature of the heater bag solution temperature is <25° or >38° C. The cyclor will not allow Fill to begin until the heater bag solution temperature is >33° C and <38° C.
3. Why am I unable to insert the cassette?
The cassette can only be inserted during set-up **step 1**. Attempting to insert the cassette at any other time will prompt a support message.
4. Why am I unable to remove the cassette?
The cassette can only be removed at the end of treatment (**step 9**). Attempting to remove the cassette at any other time will prompt a support message. If treatment is completed and the cassette cannot be removed, turn the cyclor off and wait 10 seconds before turning it back on. When the **Power Fail Recovery** screen is displayed, press the **Cancel Treatment** button. Follow on-screen instructions to end treatment and remove the cassette.
5. Why do the letters '**P**', '**B**', '**F**', or '**S**' appear on the **Treatment Details** screen?
The letter **P** identifies a PAUSE exchange. The letters **B**, **S**, and **F** identify treatment phases that were interrupted: **B** = bypass, **S** = STAT drain, and **F** = power failure.
6. How can I bypass a phase of treatment?
Press and hold the **OK** key for four seconds. If it safe to do so, the screen will display the **bypass current phase** button. Press this button to bypass. If <50% of the previous Fill volume has drained or if the heater bag has not finished emptying or refilling, the **bypass current phase** button will be inactive (gray) and **bypass not allowed at this time** will be displayed. Please refer to the Liberty Cyclor User Guide page 159 for more in-depth information related to bypassing during Liberty Cyclor therapy.
7. How can I initiate a STAT (immediate) drain?
Press the **STOP** key on a Fill, Dwell, or PAUSE screen. A **Stopped** screen will appear and a **STAT drain** button will appear on the right side of the screen. Pressing this button will open the **STAT drain option screen** which will display **Are you sure you want to do STAT drain?** above two screen buttons: **STAT drain** and **Cancel**. Press the **STAT drain** button to initiate an immediate drain. Please refer to the Liberty Cyclor User Guide page 157 for more in-depth information related to doing a **STAT drain**.

Liberty Cyclor Frequently Asked Questions

8. How can I enter Daytime Manual Exchange information?

The Daytime Manual Exchange screen is displayed during Set-up just after **step 6**. Press the **daytime manual exch** button on this screen to activate the option. Change the default setting from **NO** to **YES**. This action will allow the entry of the Manual **Fill Volume** using the **UP/DOWN arrow** keys. After the **Next** button is pressed, you can review and confirm or correct the settings entered.
9. How can I enter blood pressure readings?

The blood pressure is entered at the end of therapy when the Patient Data Screen is displayed. This screen will only be displayed if the Personal Data option = **YES**. Touch the **blood pressure** button to select it, and then use the **Up/Down Arrow** keys to change the first number (systolic). Press the **OK** key to confirm the selection. Use the **Up/Down Arrow** keys to set the Next number (diastolic) and press the **OK** key again to confirm the selection.
10. Why am I unable to program a drain time?

Liberty Cyclor software v. $\geq 2.8.2$ prevents the programming of Cycle Based drains time shorter than 20 minutes or less than the previous Fill volume / 100, whichever is greater. This is intended to prevent unnecessary drain alarms due to insufficient drain time.

success@home™

Fresenius Medical Care
920 Winter Street
Waltham, MA 02451



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