



BLOOD PRESSURE MONITOR TROUBLESHOOTING & MAINTENANCE

TROUBLESHOOTING MONITOR ERROR MESSAGES

Why does the monitor display "Air leak"?

The monitor will give an "air leak" message when the blood pressure cuff is applied too loosely or when there is a leak in the cuff/monitor pneumatic system.

Check the following:

- Is the cuff applied snugly on the patient?
- Is the connection between the cuff and the monitor hose secure?
- Do you hear air leaking when you manipulate the cuff tubing?

Why does the monitor display "Flow Error"?

This error message means that the system cannot maintain a stable cuff pressure.

Check the following:

- Is the external hose kinked?
- Is there a cuff problem? Try another reading with a different cuff.
- Perform a pneumatic check.

Why does the "Appl Err" monitor message mean?

This message is used when the monitor detects the wrong size cuff for the application; that is, a neonatal cuff used when the monitor is in the Adult mode.

Check the following:

- Cuff size and monitor mode
- Replace the cuff or change the operating mode as appropriate

MONITOR CLEANING & PREVENTIVE MAINTENANCE

How do I clean the monitor?

Before cleaning, disconnect the AC power from the monitor. Clean the monitor casing and front panel with a soft cloth dampened with a mild soap and water solution. Use a soft cloth to dry the monitor.

To clean the pneumatic tubing, use a soft cloth dampened with a germicidal solution.

Do not immerse the monitor in the cleaning solution. Do not use either isopropyl alcohol or solvent to clean the monitor case, battery charger or front panel.

What preventive maintenance should I perform on the monitor?

Preventive maintenance is very important and should be performed routinely by the user to ensure safe and efficient operation. It is recommended that a Calibration Check be performed at least once a year or when there is doubt about the validity of the pressure readings. The Pneumatic system should be checked for air leakage every six months.

CALIBRATION CHECK

To perform a calibration check on the monitor:

1. Obtain a Calibration Kit (product #P9).

The kit contains a T-connector with male and a female Luer fitting (for calibration check) and a male Luer plug (to be used for pneumatic check).

2. Obtain a mercury manometer whose accuracy meets the AAMI/ANSI Standard for Non-Automated Sphygmomanometers, SP-9, April 14, 1996.

3. Assemble the Calibration Kit according to the diagram provided:

- Remove the manometer tubing from the inflation bulb.
- Connect the open-ended tubing of the T-connector to the inflation bulb.
- Connect the female Luer fitting to the inflation tube leading to the manometer.
- Connect the male Luer fitting to the manometer tubing

4. Place the monitor in TEST MODE

- Press and hold the START key while turning on the POWER; then release both keys. The message center will read "TestMode", then switch automatically into the calibration check. The message center will read "0mmHg".

5. Use the manometer bulb to slowly inflate the system to 200 mmHg. The monitor display should read 200 mmHg \pm 5 mmHg.

6. Hold the pressure at that point for 30 seconds.

- If the monitor does not display the test pressure for the 30-second period, deflate to zero and verify proper assembly of the calibration set-up. Re-inflate the system.
- If the monitor again fails to hold the pressure, refer the monitor to technical support/service personnel.

7. Inflate the system, pausing at the following points to verify calibration:

- 0mmHg \pm 1mmHg
- 50mmHg \pm 4mmHg
- 100mmHg \pm 4mmHg
- 150mmHg \pm 4mmHg
- 200mmHg \pm 5mmHg

8. Inflate slowly until 290mmHg \pm 10mmHg is reached. The message center should stop updating, display "Overpres" briefly and then the monitor should turn off.

9. If the monitor does not meet the above specifications, the calibration must be adjusted by a qualified service technician.

PNEUMATIC CHECK

1. Take the male Luer plug found in the Calibration Kit (product #P9) that comes with the monitor.
2. Place the plug into the cuff connector at the end of the monitor tubing and twist one quarter turn. The plug must fit securely into the connector to properly perform this test
3. Enter the test mode.
 - Press and hold the START key while turning on the POWER; then release both keys. The message center will briefly read "TestMode", then switch automatically into the calibration check. The message center will read "0mmHg".
4. Press the START key.
 - The monitor will inflate to approximately 180mmHg and attempt to hold this pressure.
 - At the completion of the test (about 15 seconds), the monitor will return to the calibration check function.
 - If the monitor fails the pneumatic test, the message center will display "Leak".
5. Should the monitor fail the pneumatic check, refer the unit to a qualified service technician.