5 Troubleshooting Procedures

In the event of a user advisory, fault or system error, the User Control Panel Alert light-emitting diode (LED) illuminates (refer to Section 1.4, "User Controls and Indicators"). Consider the information in this chapter.

> **Warning:** If a persistent fault or system error occurs during active operation, immediately revert to manual CPR.

5.1 Troubleshooting Batteries

If a Battery's charge falls too low, a Low Battery warning will appear on the Control Panel Display. The Low Battery warning display will be accompanied with an audio warning of four rapid beeps which will be followed by two beeps every 30 seconds until the battery is replaced or depleted. If operation continues without changing the Battery, a Replace Battery screen will appear (see Figure 5-1 and Figure 5-2). If this is the case:

• Press the On/Off button to power down the AutoPulse.

• Replace the AutoPulse Battery with a new, fully-charged Battery. Press the On/Off button followed by the Start/Continue button again.
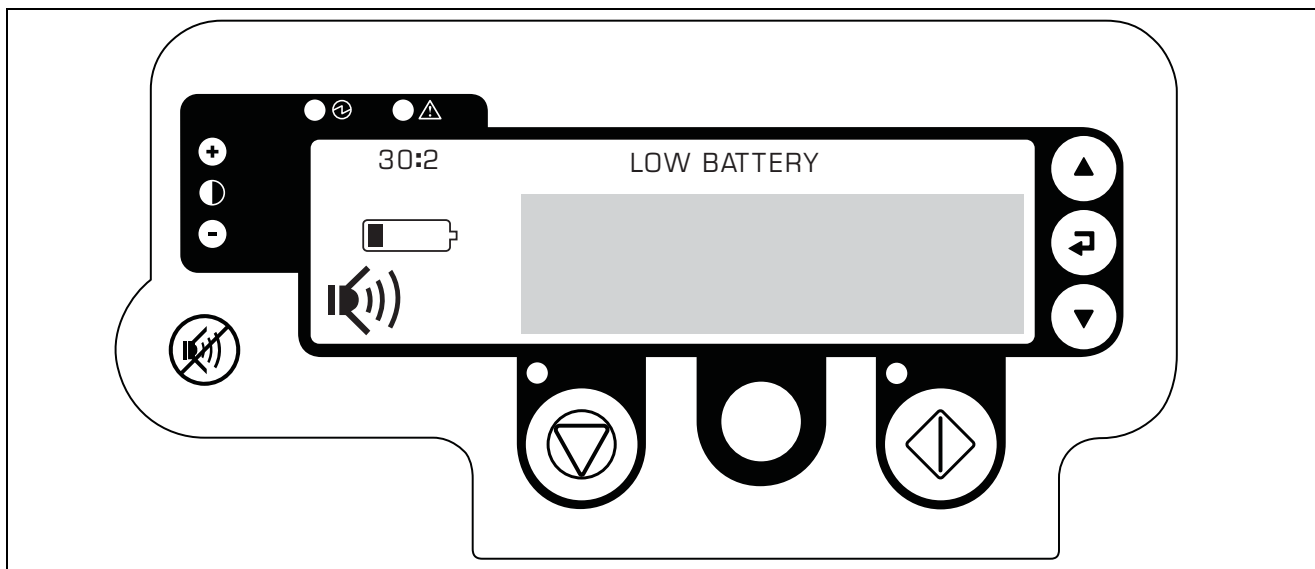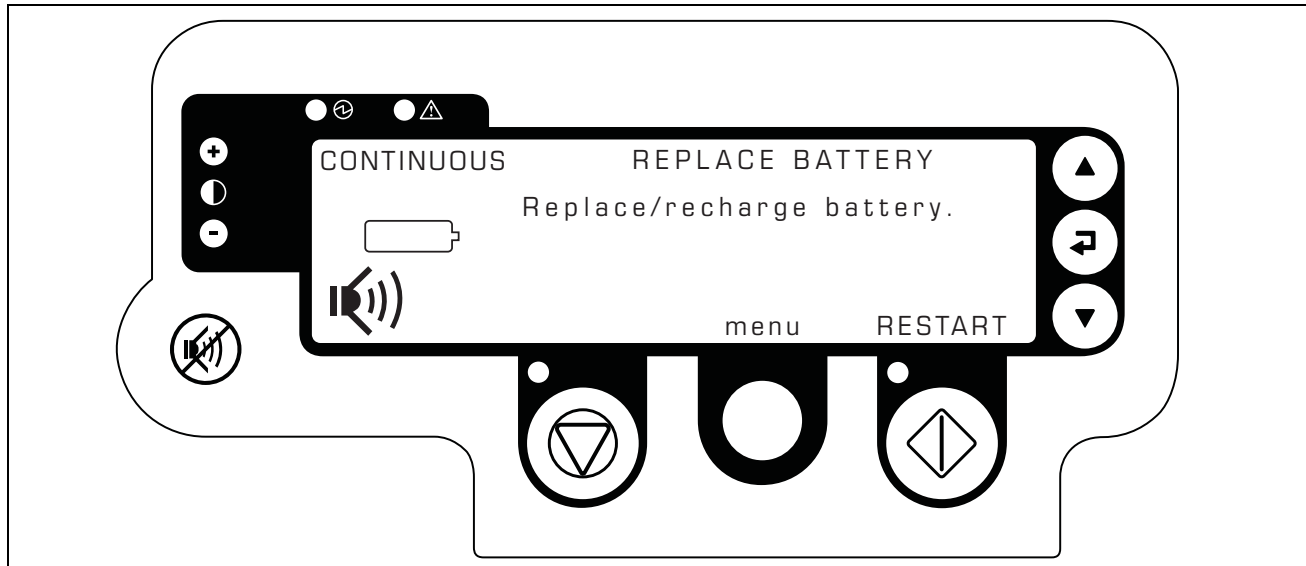

Figure 5-1   Low Battery Warning

Figure 5-2   *Replace Battery Screen*

5.2   Troubleshooting User Advisories and Faults

The AutoPulse enters a User Advisory state (see Figure 5-3) or the Fault State (see Figure 5-4) when one of several conditions is detected. A User Advisory generally indicates that a misalignment or inappropriate movement of the patient or the LifeBand has occurred. A Fault generally indicates that the AutoPulse has detected an inappropriate internal condition. Both conditions are typically correctable by the operator. Follow the instructions on the screen and then attempt to RESTART active operation by pressing the Start/Continue button. If that does not work you should follow these general steps to troubleshoot Advisories and Faults:

1.   Check for correct patient alignment (refer to Section 3.1, "Deploying the AutoPulse System" for more information), fully extend LifeBand and attempt to RESTART active operation by pressing the Start/Continue button.

2.   If the user advisory or fault persists:

    a)   Remove the LifeBand from, and fully re-insert into, the AutoPulse (refer to Section 2.1, "LifeBand Load-distributing Band") and then press the Start/Continue button again.

    b)   Remove and replace the LifeBand with a new LifeBand and then press the Start/Continue button again.

    c)   Check the AutoPulse Platform for blocked vents.

3.   If a User Advisory or Fault indicator cannot be cleared, record the User Advisory or Fault number and contact ZOLL at +1.800.348.9011 or +1.978.421.9655.

In either User Advisory state or the Fault State, pressing the gray Menu/Mode Switch button, under the word "menu" allows you to access the AutoPulse Platform information menu (refer to section Section 3.7, "Viewing AutoPulse Platform Information," on page 3-19).
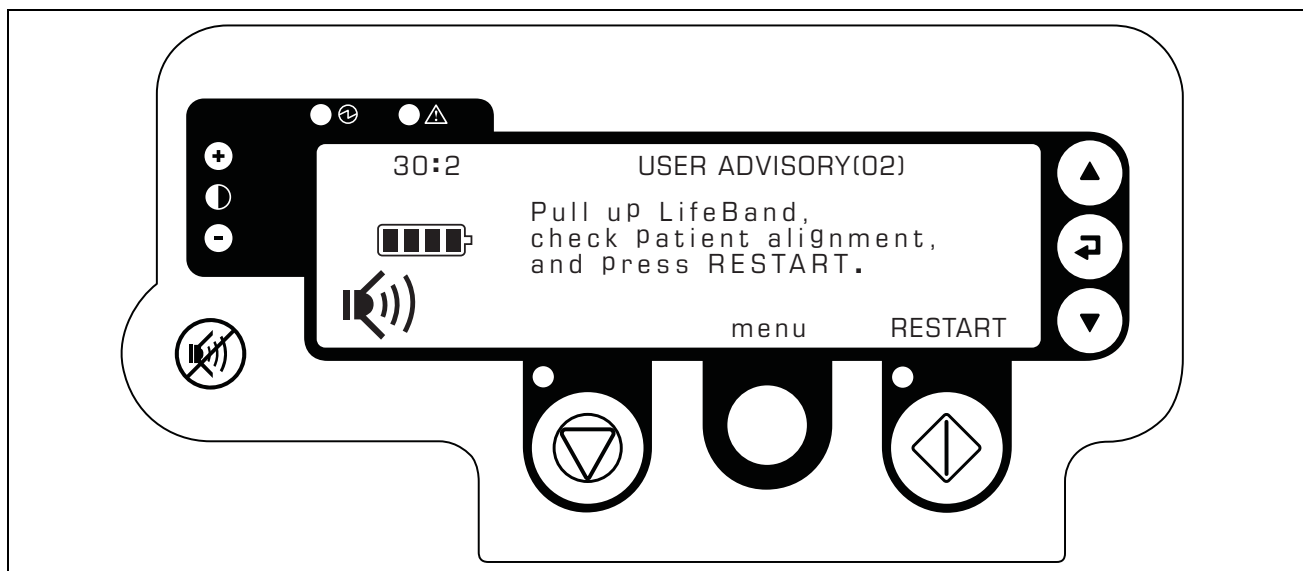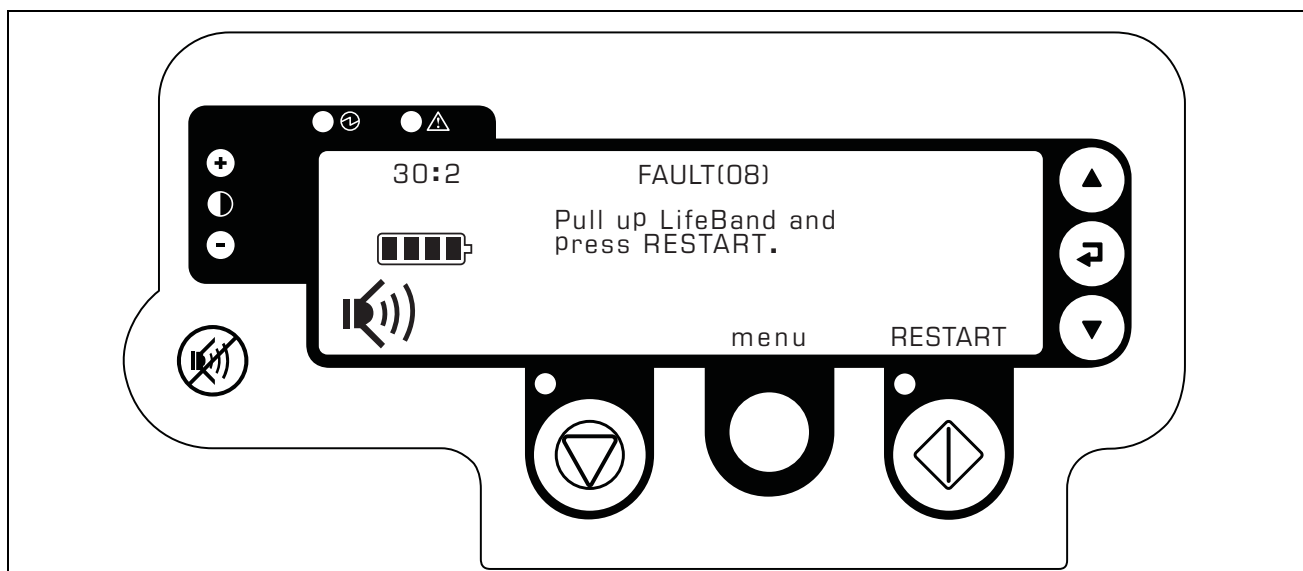

Figure 5-3   A User Advisory Screen

Figure 5-4   A Fault Screen
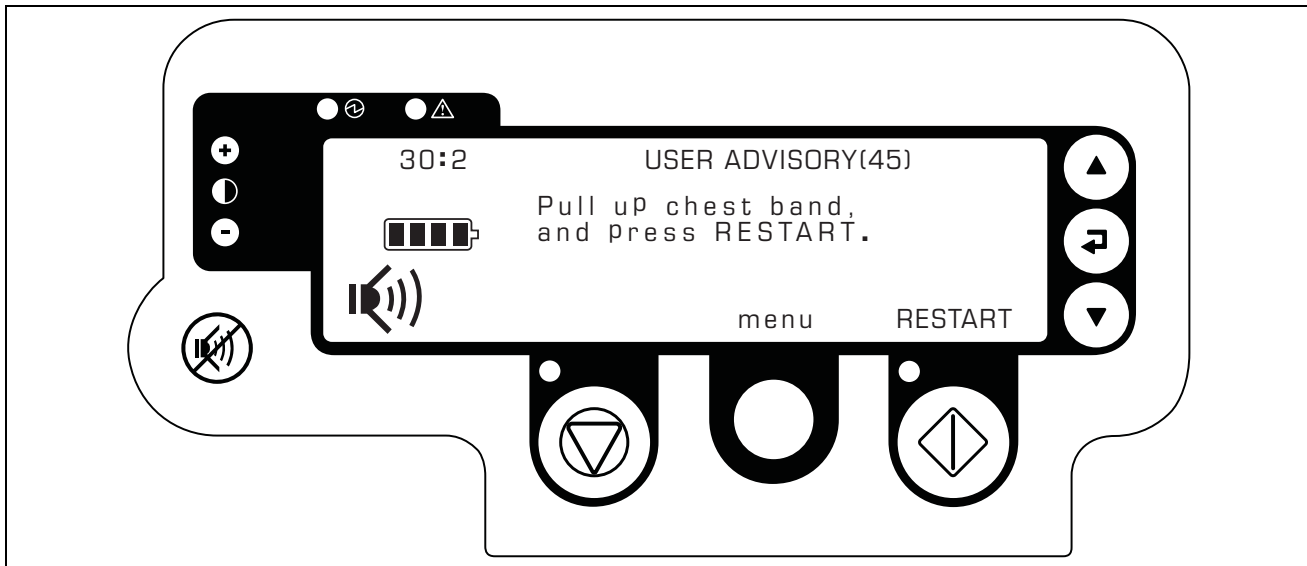
5.2.1   User Advisory (45)

Figure 5-5   User Advisory (45)

The AutoPulse driveshaft has a "home" position that is a point of reference for AutoPulse operation. If the driveshaft is not at its home position when the AutoPulse is powered on, a User Advisory (45) will occur. This User Advisory will persist until the driveshaft is returned to its home position.

To clear a User Advisory (45) pull up on the LifeBand until the chest bands are fully extended (thereby moving the driveshaft back to its home position), and then RESTART.

Warning: Removing the band clip when the driveshaft is not at its home position (see Figure 2-8 on page 2-7) will result in a permanent User Advisory (45) that the user will not be able to clear. To avoid this situation, the following guidelines should be adhered to:

1. The LifeBand should be removed from the driveshaft ONLY from its home position.

2. The LifeBand must be completely unwound with the seam visible (see Figure 2-10 on page 2-8).

3. If the LifeBand is cut, care should be taken to ensure that the bands are fully extended before the cover plate is opened and the band clip is removed.

4. Do not attempt to defeat the shaft lock mechanism, which keeps the driveshaft at its home position when a LifeBand is not installed.

If a User Advisory (45) can't be cleared, Power off the AutoPulse and contact ZOLL at +1.800.348.9011 or +1.978.421.9655.

5.3   Troubleshooting Errors

In the event of a System Error (see Figure 5-6), **you can take no steps** to return the AutoPulse to normal operation. The AutoPulse has detected an unrecoverable problem and cannot be restarted. Therefore, you must:

1.   Begin manual CPR immediately.

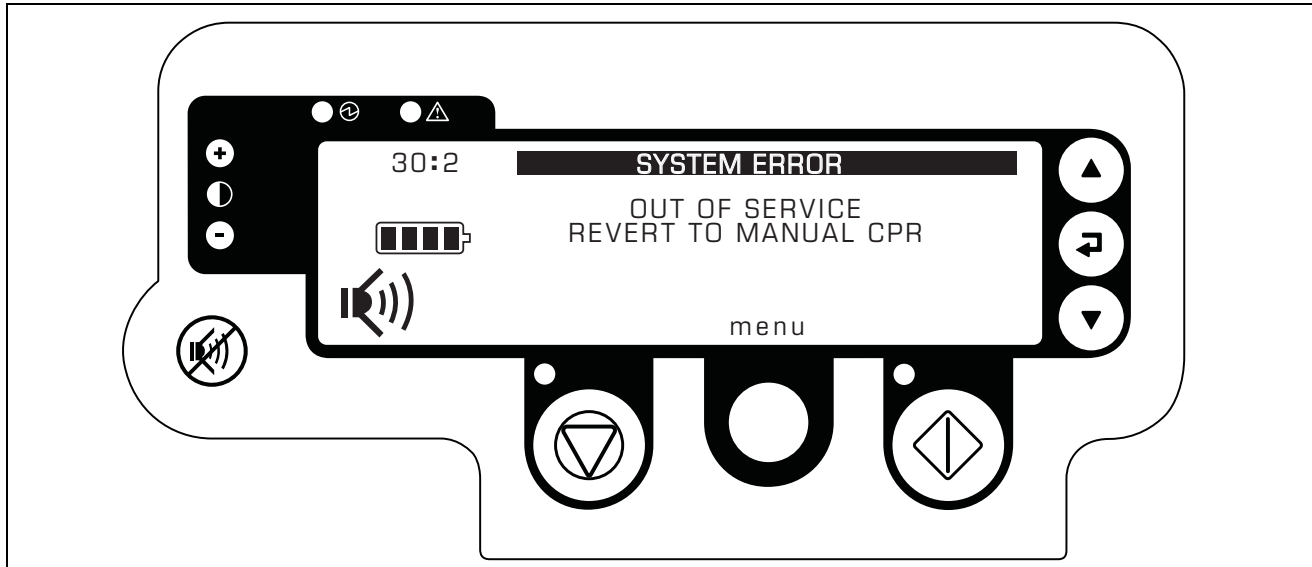2.   Contact ZOLL at +1.800.348.9011 or +1.978.421.9655.

Figure 5-6   System Error Screen