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Preparing the AutoPulse System for Use

The AutoPulse System is delivered fully assembled, except for the LifeBand® Chest Compression Assembly (CCA) and the AutoPulse Power System Battery.

LifeBand® Chest Compression Assembly (CCA) Installation and Removal

Installing the LifeBand® CCA

1. Place the AutoPulse Platform with the patient surface facing down on a smooth, flat surface.

Note: The drive shaft should be oriented so that the slot faces directly upward.

2. Insert the head end of the LifeBand® band clip into the drive shaft slot. The correct direction is towards the LifeBand® plate alignment arrow seen on the Platform (see Figure 2-1).

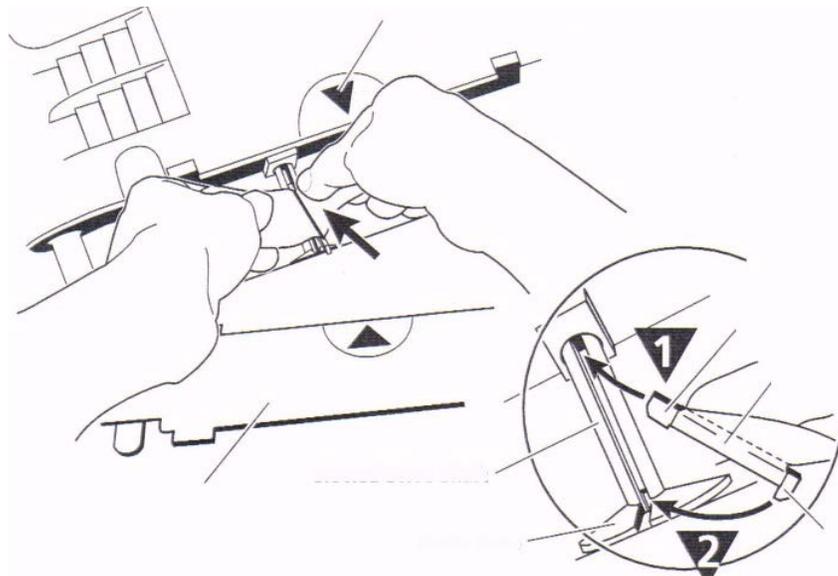


Figure 2-1 Sliding the LifeBand® Band Clip into the Drive Shaft Slot



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3. Once the head end of the LifeBand® band clip is positioned into the slot, press the tail end of the band clip into the slot of the guide plate until the band clip is fully seated in the drive shaft. You should feel it lock into place.
4. Make sure that the band clip is seated properly and fully into the slot on the drive shaft (see Figure 2-2).

Note: If the band clip is properly seated, you should be able to easily turn the drive shaft in each direction by hand.

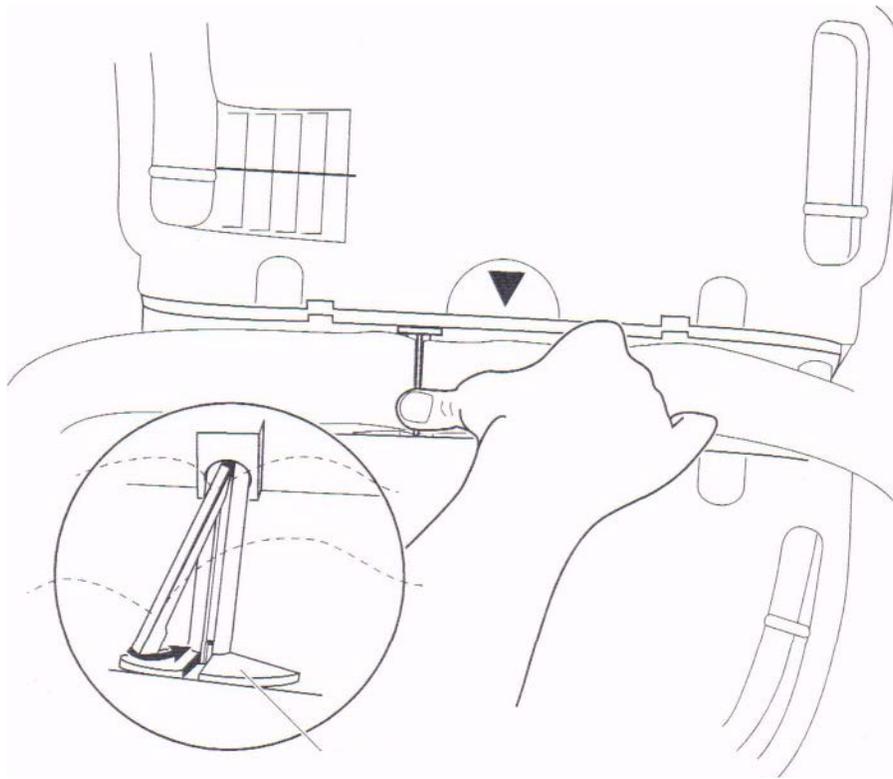


Figure 2-2 Seating the LifeBand® Band Clip Properly into the Drive Shaft Slot

5. Ensure that both free ends of the LifeBand chest band are oriented flat (not twisted) and away from the AutoPulse Platform. Inspect the LifeBand® CCA for any cuts or tears. Do not use the LifeBand CCA if cuts or tears are present.



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6. Line up the arrow on the LifeBand® cover plate with the matching arrow on the Platform.
7. Snap the LifeBand cover plate in place by fully inserting the locking tabs into the slots on the AutoPulse Platform (see Figure 2-3).

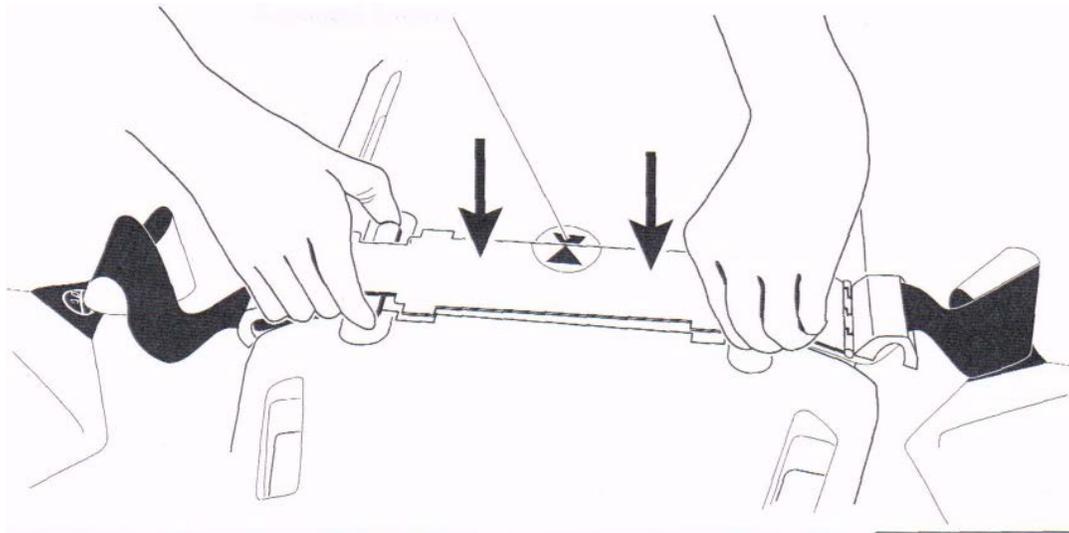


Figure 2-3 Snapping the LifeBand® Cover Plate into Place

8. Flip down and snap into place the hinged skirts of the LifeBand® cover plate to engage the LifeBand chest bands to the rollers (see Figure 2-4).



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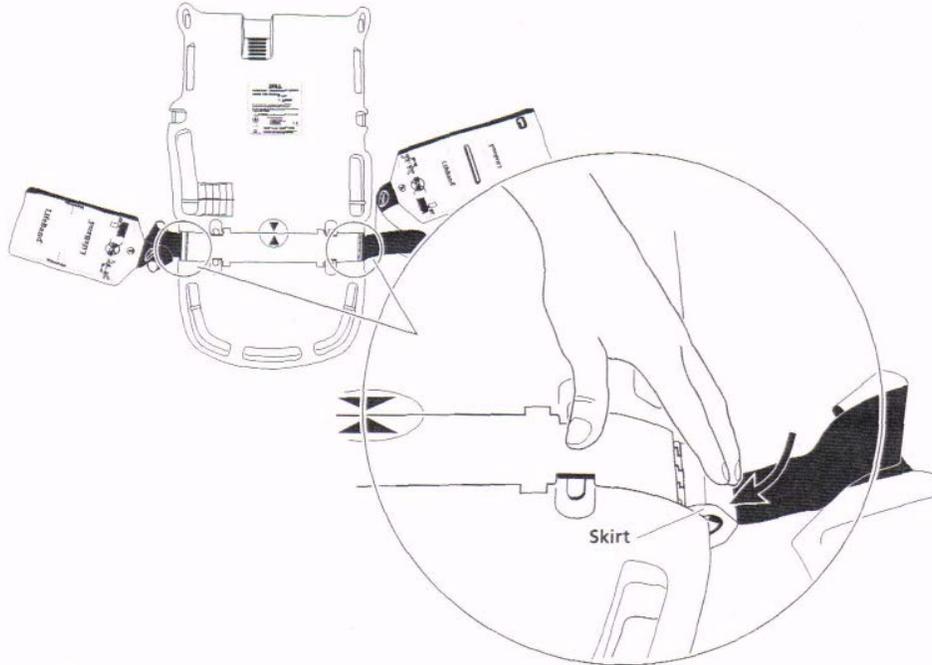


Figure 2-4 Flip Down the Hinged Skirts of the LifeBand® CCA

9. Turn the AutoPulse Platform over and press the ON/OFF button to power it up. If the User Control Panel reports a user advisory, check the installation of the LifeBand® band clip into the slot in the drive shaft.

Removing the LifeBand® CCA

1. Place the AutoPulse Platform with the patient surface facing down on a smooth, flat surface.
2. Flip up the hinged skirts of the LifeBand cover plate to disengage the LifeBand chest bands from the rollers (see Figure 2-5). You will hear the skirt "snap." This is normal.



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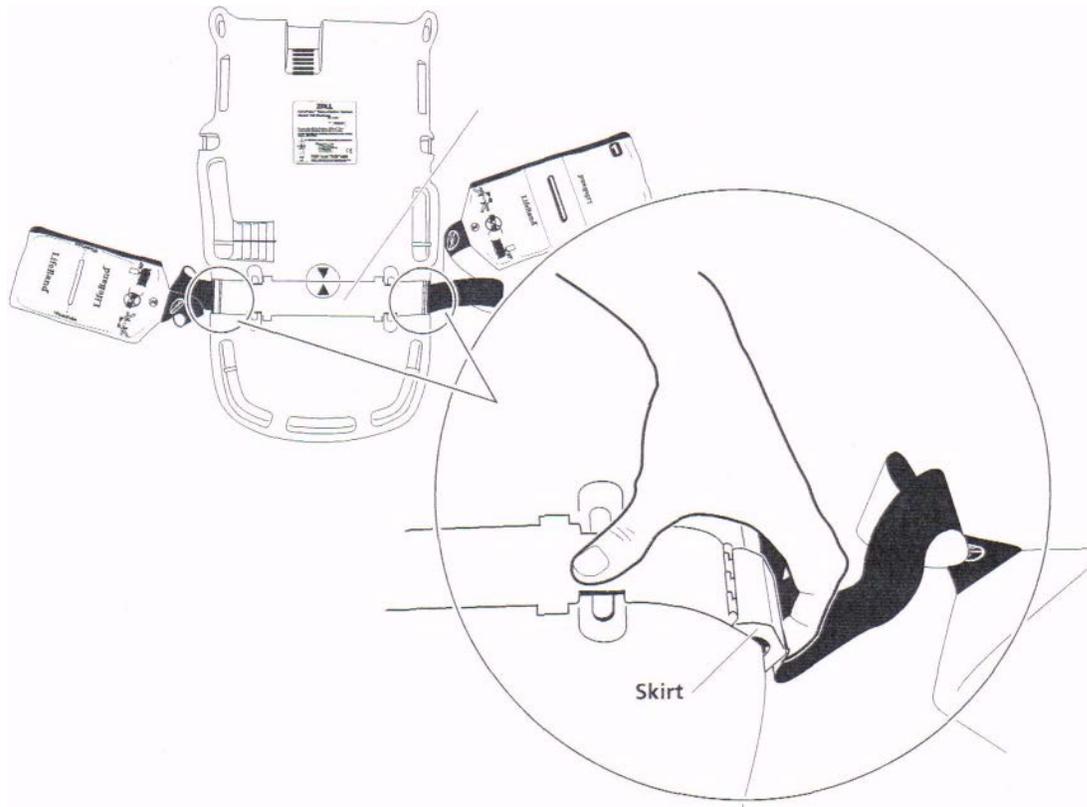


Figure 2-5 Flip Up the Hinged Skirts of the LifeBand® CCA



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- Using both hands, pinch together the locking tabs of the LifeBand cover plate and firmly pull the plate straight up and away from the AutoPulse Platform (see Figure 2-6).

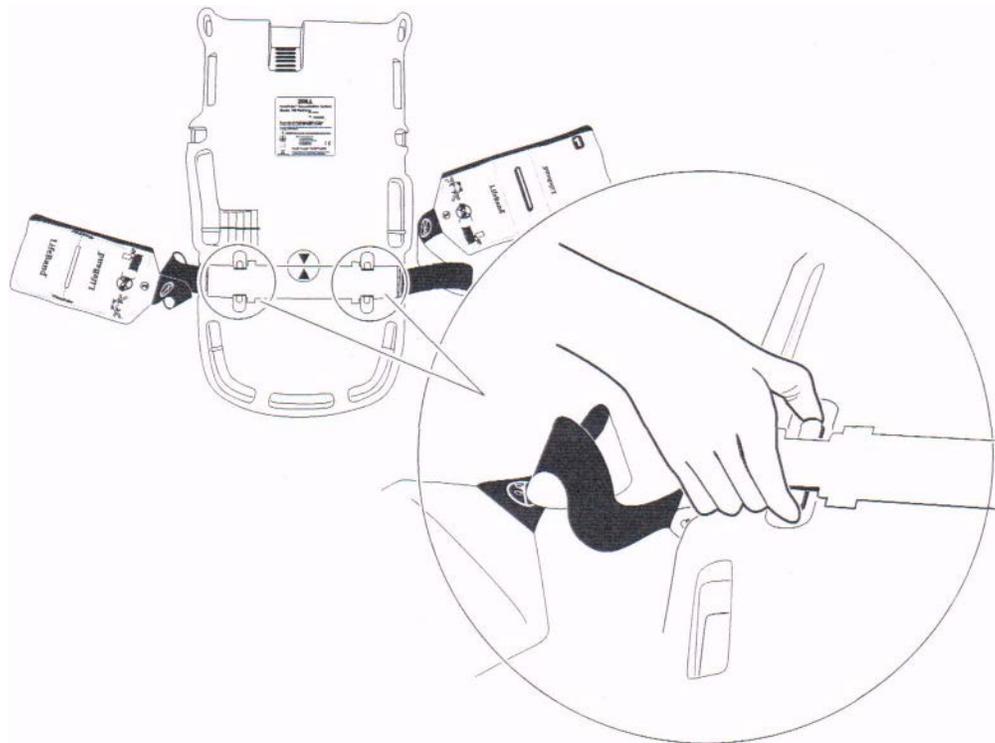


Figure 2-6 Pinching the Locking Tabs of the LifeBand® CCA



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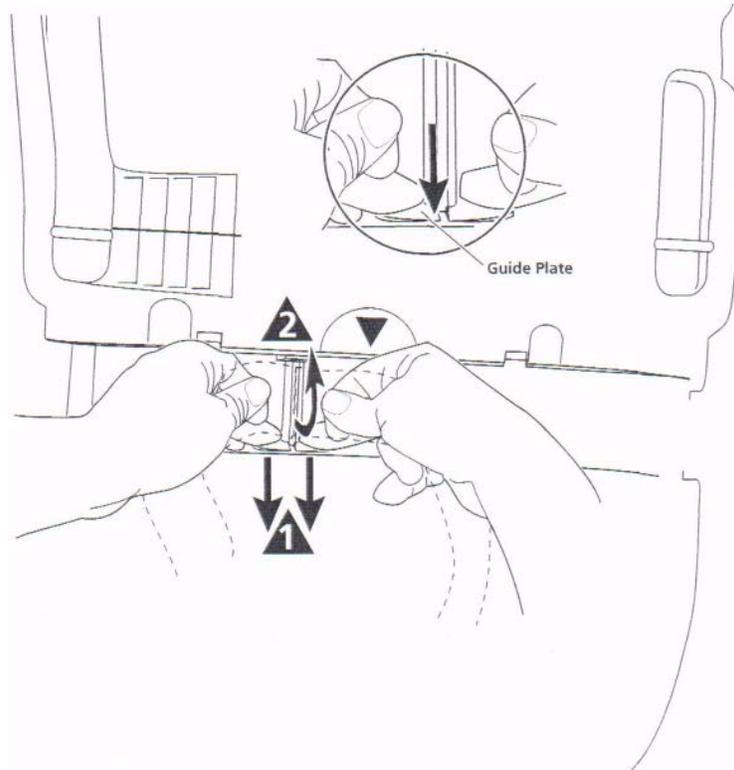


Figure 2-7 Removing the LifeBand® Chest Band from the AutoPulse Platform

3. Remove the LifeBand® chest bands from the AutoPulse Platform by grasping the LifeBand® chest band with the thumb and index finger of both hands, on either side of the LifeBand® band clip. Push in the guide plate, using both middle fingers. Keeping the guide plate pushed in, pull up the band to remove the clip from the shaft (see Figure 2-7).



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4. Discard the LifeBand® CCA as it is a single-use component after patient use. Treat the LifeBand® CCA as contaminated medical waste and dispose of it accordingly. There are no user-serviceable parts.
5. Inspect the new, replacement LifeBand CCA for cuts or tears.
6. Replace the LifeBand® CCA following the procedures in Section 2.1.1, "Installing the LifeBand® CCA".

Battery Installation and Removal

For more information on the AutoPulse Power System and its components, refer to the *AutoPulse Power System User Guide*.

Press the Status Check button on the Battery to ensure it is fully charged before insertion into the AutoPulse Platform and before patient use (refer to the "Performing a Battery Status Check" section in the *AutoPulse Power System User Guide* for more information). You should only use batteries that illuminate the green status light-emitting diode (LED).

Caution: Remove the protective plastic cap from the Battery before attempting to charge the Battery.

Batteries remaining in the AutoPulse Platform should be checked regularly for appropriate charge status. Low Batteries should be replaced with charged Batteries.

To install the Battery, slide the Battery into the Battery compartment in the AutoPulse Platform.

The Battery should snap into place and mount flush with the AutoPulse Platform.

The Battery is mechanically keyed so that it can only be inserted in one orientation. Do not force or slam the Battery into the Battery compartment. If resistance is met, check for appropriate orientation, and check to insure there are no obstructions to Battery insertion.

Ensure that the Battery is securely latched (snaps into place) before moving the AutoPulse Platform or initiating chest compression.



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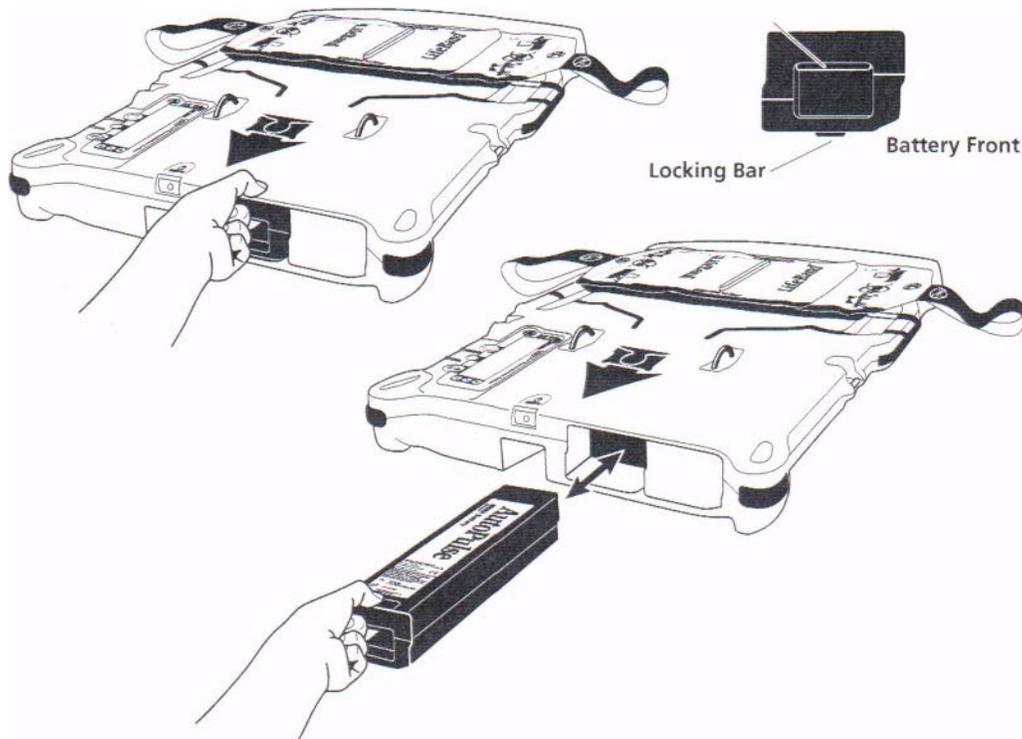


Figure 2-8 Battery Installation and Removal

To remove the Battery, hold the AutoPulse Platform firmly and grip the Battery while pressing the finger latch upwards to disengage the locking bar (see Figure 2-8), then pull the Battery straight out until it fully clears the Battery compartment.

Caution: Only use ZOLL Circulation Batteries specifically designed for use with the AutoPulse System. The use of other batteries may cause permanent damage to the AutoPulse

Platform and will void the warranty.



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Using the AutoPulse System

This chapter describes how to use the AutoPulse System in an emergency situation. The AutoPulse Platform User Control Panel automatically provides display prompts to guide you.

Before deploying the AutoPulse System, note the following warnings and precautions:

Warning:

The AutoPulse System is *not* intended for pediatric use. **Do not use in patients under 18 years old.**

The AutoPulse System is *not* intended for use **if patient is over 300 lbs.**

The AutoPulse System is *not* intended for patients with traumatic injury (wounds resulting from sudden physical injury or violence).

Manual cardiopulmonary resuscitation (CPR) should start immediately and should not be postponed by deployment of the AutoPulse System.

The AutoPulse System must be used *only* in cases that manual CPR would normally be initiated. Personnel certified in manual CPR must always be present during the AutoPulse System operation.

Caution: Use care while using sharp instruments around the LifeBand Chest Compression Assembly (CCA).

Caution: Do not block the vents of the AutoPulse Platform

Deploying the AutoPulse System

Once you have arrived upon the scene and determined that use of the AutoPulse System is appropriate, prepare the AutoPulse Platform for use.

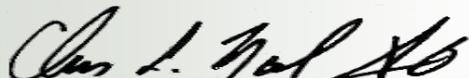
1. Power up the AutoPulse Platform. The ON/OFF button is located on the top ("head") edge of the AutoPulse Platform (see Figure 3-1).



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User Control Panel

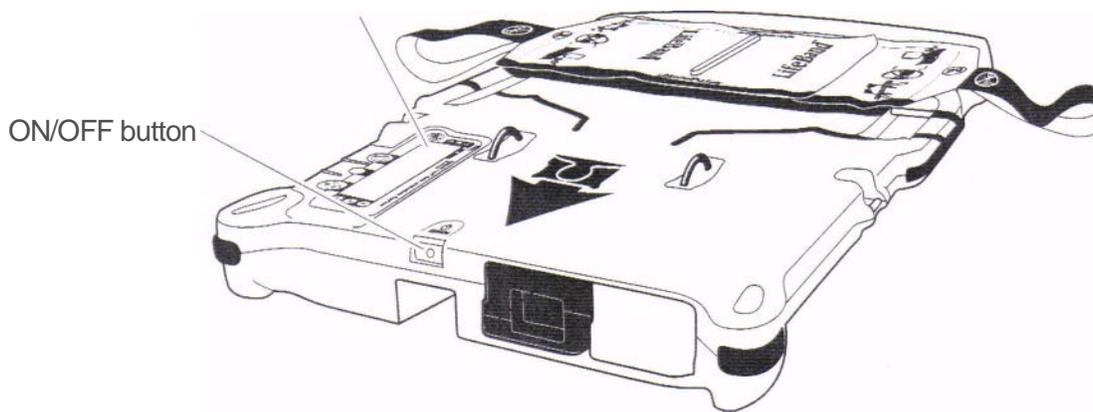


Figure 3-1 ON/OFF Button Location

2. The AutoPulse Platform illuminates the green Power light-emitting diode (LED) on the User Control Panel and performs its self-tests (see Figure 3-2). Refer to the User Control Panel and its display panel during the operation of the AutoPulse Platform. All operating information is available on the User Control Panel.

Note: Make sure that no user advisory, fault or system error messages display.



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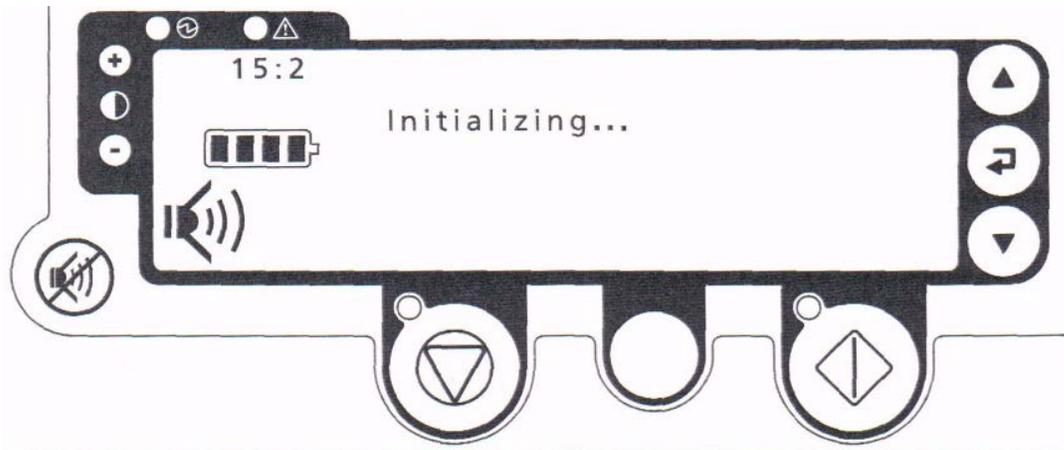


Figure 3-2 Self-Test Display Panel Screen

2. The AutoPulse Platform indicates that it is ready for use (see Figure 3-3).

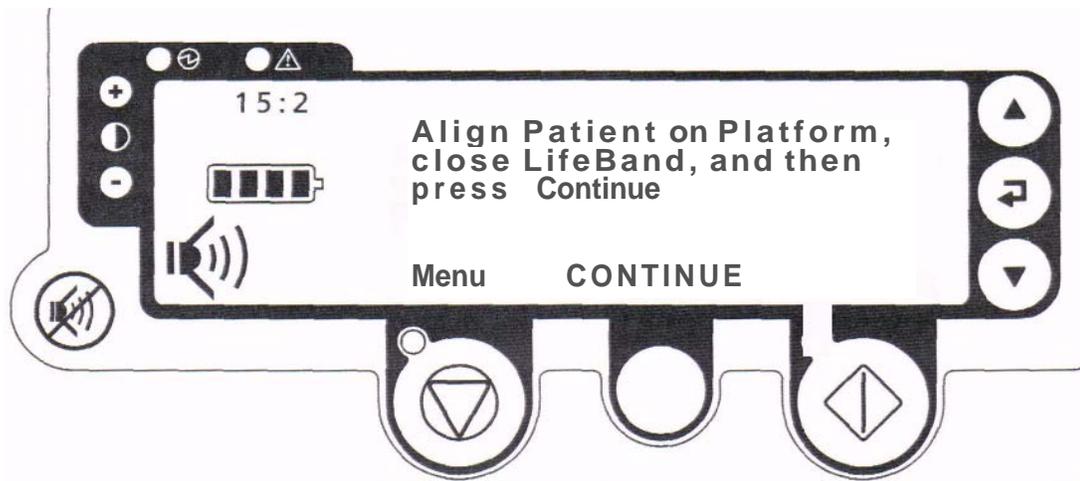


Figure 3-3 Patient-Readiness Display Panel Screen



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3. After assessing the patient's condition, sit the patient up and make a single cut down the back of the patient's clothing (see Figure 3-4).
4. Slide the AutoPulse Platform into position behind the sitting patient and lay the patient down onto the Platform.

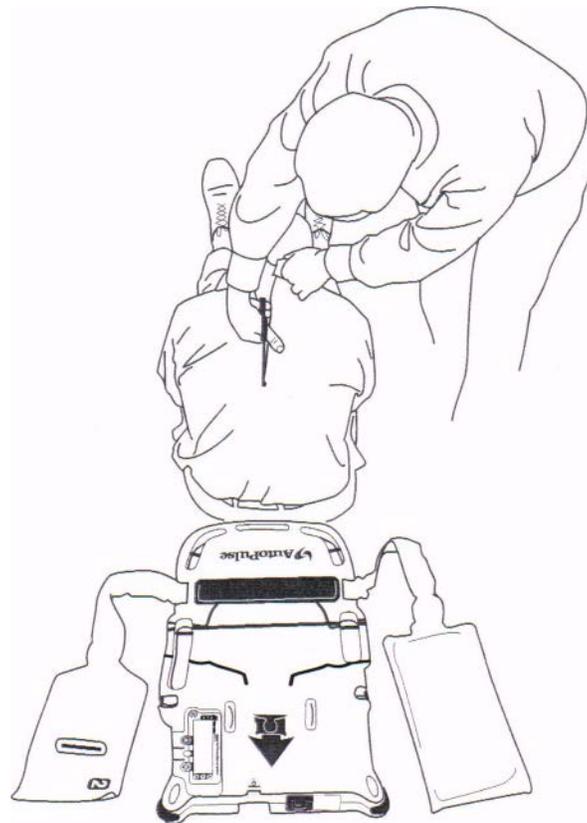


Figure 3-4 Cutting Patient Clothing and Positioning of AutoPulse Platform

5. Grasp the clothing by the sleeves and pull down toward the ankles to remove all of the clothing from both the front and back of the torso, (see Figure 3-5).



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Figure 3-5 Removal of all Clothing from the Torso

6. Position the patient so that the patient is centered laterally (from left to right) and that the patient's armpits are aligned with the AutoPulse Platform using the yellow line positioning guides on the AutoPulse Platform as shown in Figure 3-6.

Warning: Do not place or position the patient on the AutoPulse Platform in either a facedown orientation or on the patient's side.



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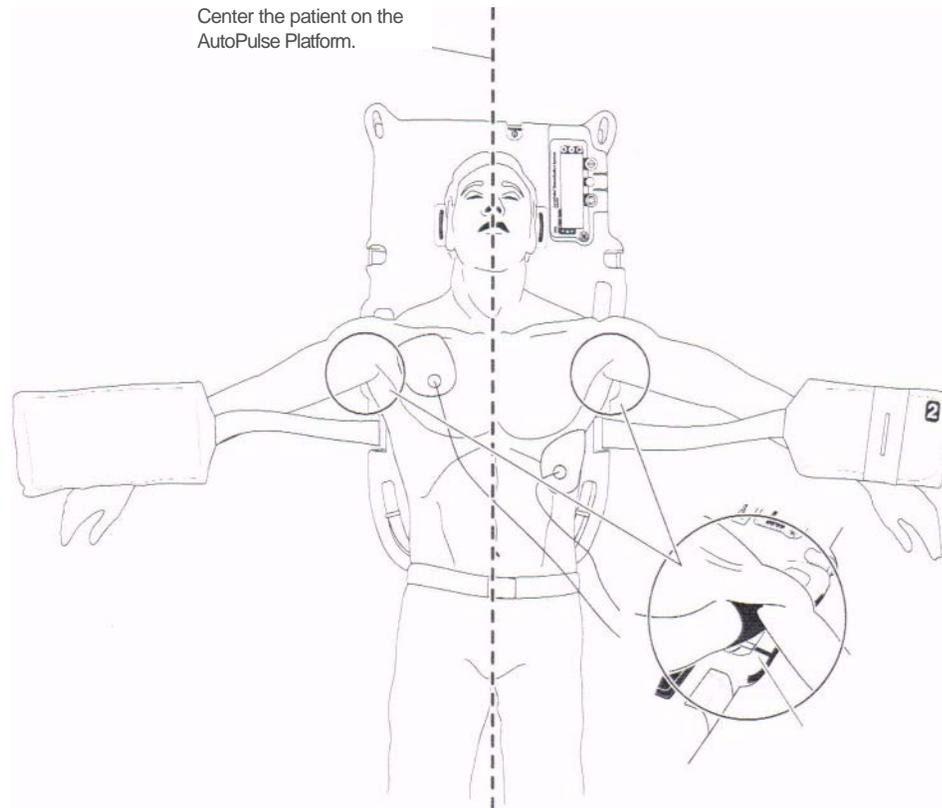


Figure 3-6 Patient Alignment



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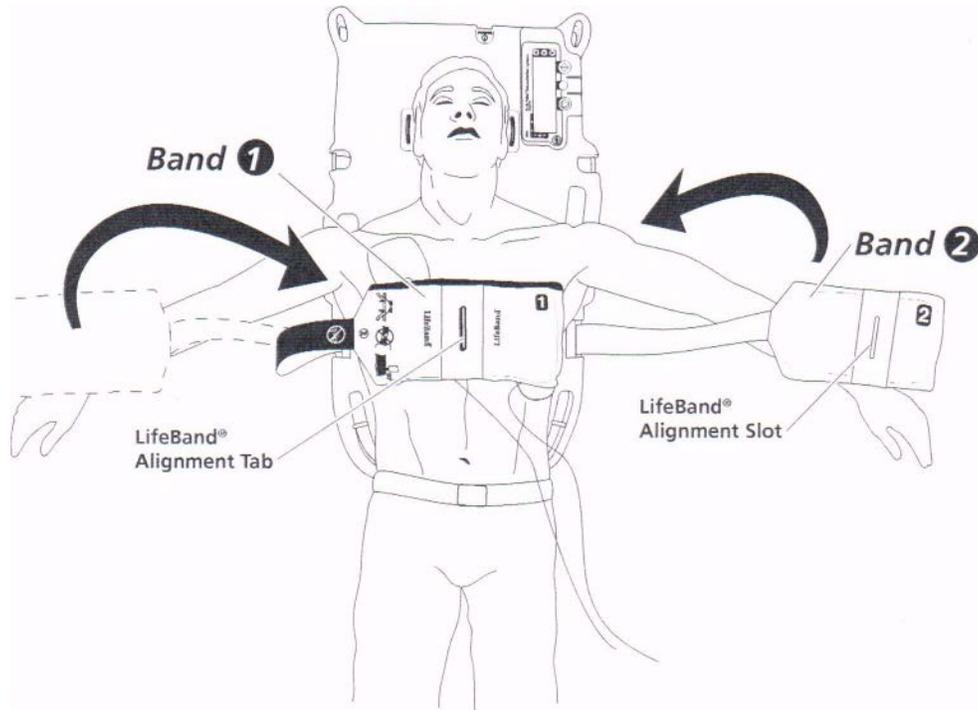


Figure 3-7 Aligning the LifeBand® Chest Bands

7. Close the LifeBand chest bands around the patient's chest.

Note: AED or defibrillation pads are *not* components of the AutoPulse

System. To properly align the bands:

- a) Place band O on top of patient's chest (see Figure 3-7).
- b) Locate mating slot of band @ over the alignment tab O (see Figure 3-7).
- c) Press the bands together to engage and secure the Velcro® fastener (see Figure 3-8). Caution: Make sure that the bands are *not* twisted before automatic compressions begin. Note: If the bands cannot be closed, use manual CPR.



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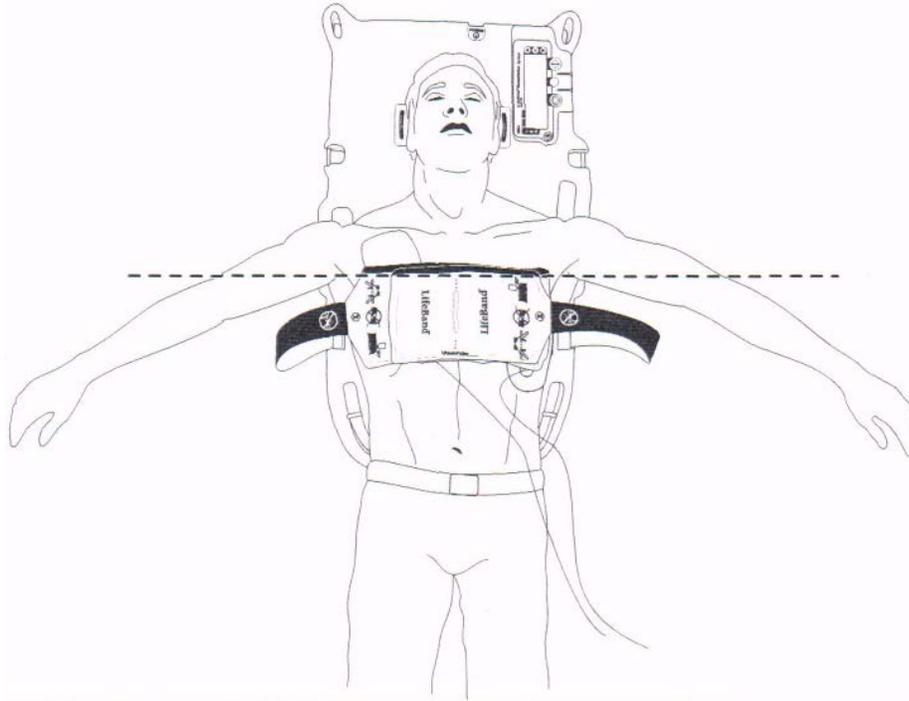


Figure 3-8 Fastening the LifeBand® Chest Bands

Starting Chest Compressions

- 1 Make sure that the yellow upper edge of the LifeBand® chest bands are aligned with the patient's armpits, and is directly over the yellow line on the AutoPulse Platform. Also make sure that there are no obstructions, such as clothing, straps or equipment, with the bands.

Warning:

Failure to properly position the LifeBand* Chest Compression Assembly (CCA) at the patient's armpit line may cause injury to the patient.

Failure to properly position a patient, both vertically and laterally with respect to the AutoPulse Platform, may cause injury to the patient.



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Do not strap across, or otherwise constrain, the LifeBand® chest bands. Constraining the movement of the bands can damage or break the LifeBand® CCA.

Operating the AutoPulse System on a patient for extended periods of time may result in minor skin irritation to the patient.

2. Press and release the Start/Continue button once. The AutoPulse Platform automatically adjusts the bands to the patient's chest (see Figure 3-9) and determines the appropriate compression.

Note: Do not touch the patient or the LifeBand® CCA while the AutoPulse Platform is analyzing the patient's size.

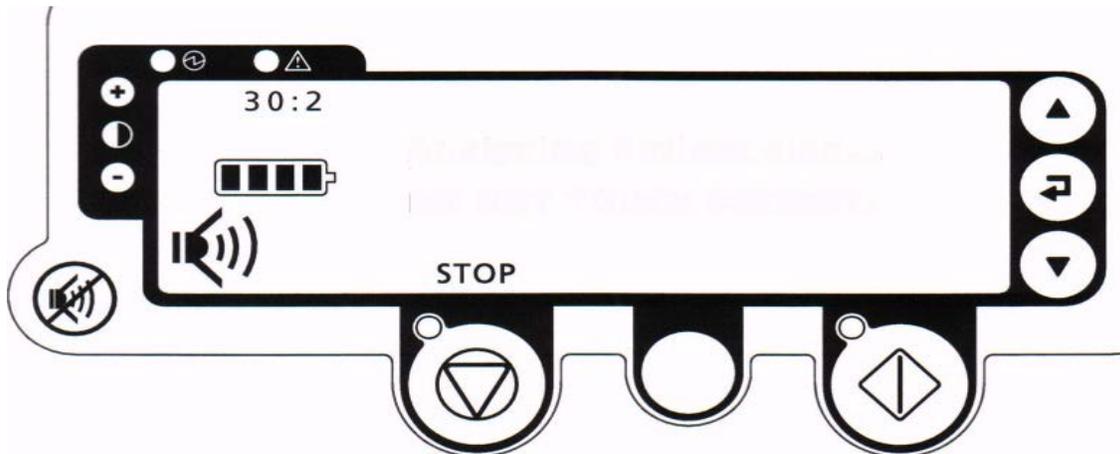


Figure 3-9 Analyzing Patient Size Display Panel Screen

3. The AutoPulse will pause for 3 seconds to allow you to verify that the patient is properly aligned and that the LifeBand® has taken up any slack in the bands (see Figure 3-10).
If the patient is not properly aligned, press the Stop/Cancel button, realign the patient, and begin compressions again with step 1 on page 3-7.



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Warning:

If the Stop/Cancel button is not pressed within 3 seconds compressions will automatically begin. Press the Stop/Cancel button to immediately stop the compressions.

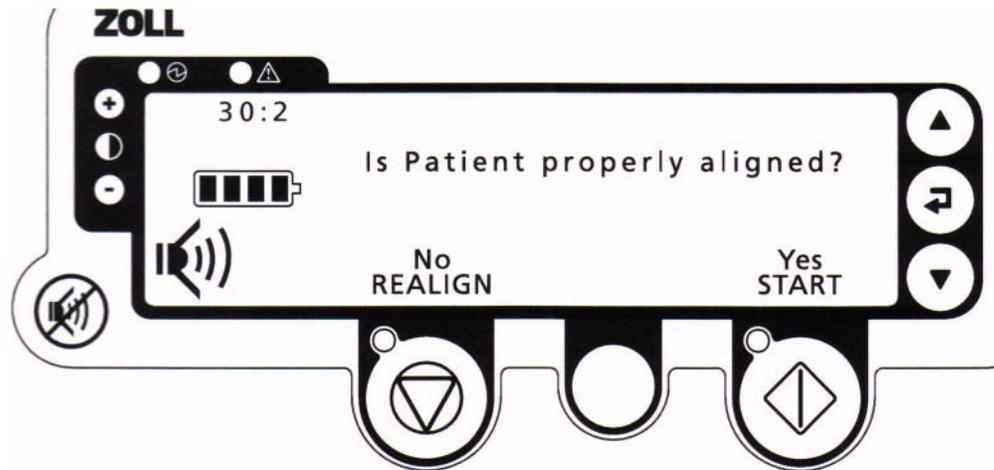


Figure 3-10 Verifying Patient Alignment Display Panel Screen

4. After the 3 second verify patient alignment pause is complete, compressions will automatically begin. You may press the Start/Continue button to immediately initiate compressions ahead of that time. The AutoPulse Platform begins chest compressions (see Figure 3-11).



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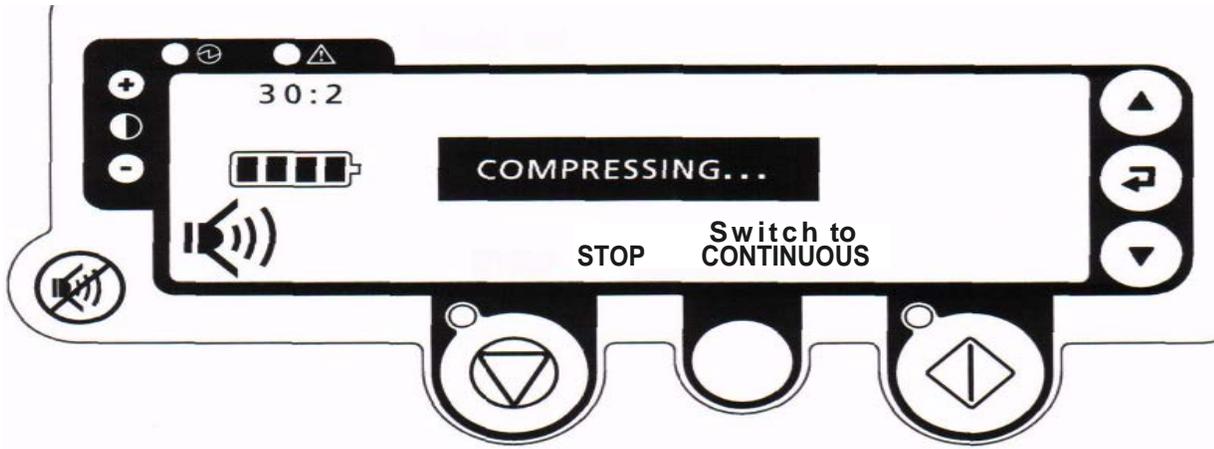


Figure 3-11 Chest Compression Display Panel Screen

- Depending on the Mode setting in Administrative Menu (refer to Section 2.3, "Administrative Menu: user pre-set options," on page 2-9), the AutoPulse Platform will perform 30:2, 15:2 or Continuous compressions. In 30:2 mode the Platform performs 30 compressions and then pauses for three seconds to permit the user to ventilate the patient before automatically resuming compressions (see Figure 3-12). In 15:2 mode the Platform performs 15 compressions and then pauses for three seconds to permit the user to ventilate the patient before automatically resuming compressions (see Figure 3-12). In Continuous mode the Platform performs continuous compressions. If 30:2 on-the-fly mode switching has been enabled (in the Mode setting within the Administrative Menu) then the AutoPulse Platform will perform in the mode (either 30:2 or Continuous) that was used last until powered down; on power up 30:2 will be the initial selection. If 15:2 on-the-fly mode switching has been enabled (in the Mode setting within the Administrative Menu) then the AutoPulse Platform will perform in the mode (either 15:2 or Continuous) that was used last until powered down; on power up 15:2 will be the initial selection.

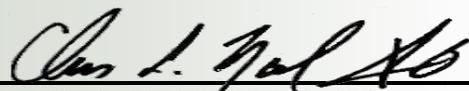
In 30:2 mode three audio cue tones will sound prior to the ventilation pause: one during each of the 28th, 29th, and 30th compressions. In 15:2 mode the three audio cue tones will sound prior to the ventilation pause during each of the 13th, 14th, and 15th compressions. In Continuous mode, an audio cue tone for ventilation will sound 8 times per minute. The tones can be temporarily disabled (and re-enabled) by pressing the Tone Mute Button (refer to Section 1.4.2.6, "Tone Mute Button," on page 1-7).



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DO NOT USE the Uni-Vent Automatic Resuscitator (700 series) to ventilate the patient.

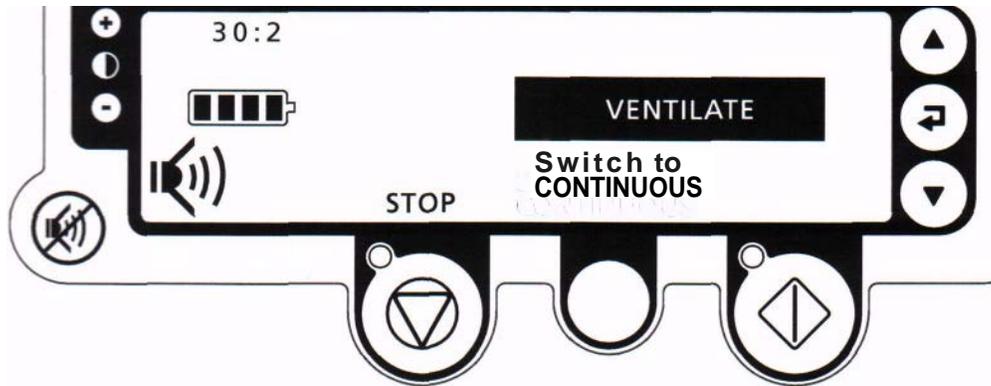


Figure 3-12 Ventilation Pause Display Panel Screen

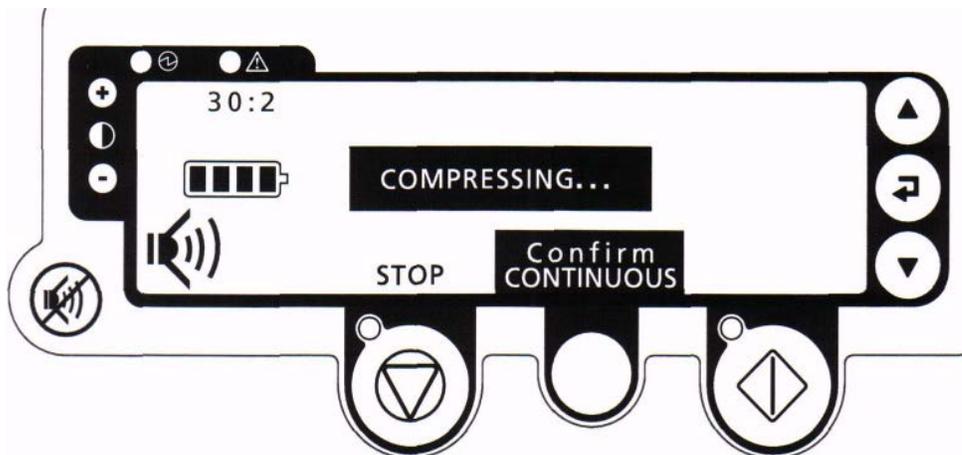


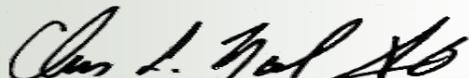
Figure 3-13 Mode Change Confirm Display Panel Screen



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6. If 30:2 on-the-fly mode switching has been enabled you may press the gray Menu/Mode switch button to switch between 30:2 and continuous compressions. If 15:2 on-the-fly mode switching has been enabled you may press the gray Menu/Mode switch button to switch between 15:2 and continuous compressions. The current mode is displayed in the upper left corner of the screen. The words above the gray Menu/Mode switch button indicate the alternate mode that the Platform will switch to. If there are no words above the gray button then on-the-fly mode switching is not enabled, and the Platform will only operate in the current mode and pressing the gray button will have no effect.

Once the gray Menu/Mode switch button has been pressed you will be asked to confirm the mode switch (.see Figure 3-13) by pressing the gray Menu/Mode switch button twice in rapid succession. A single tone will sound to confirm that the mode change has been accepted.

7. To access the patient or to pause the AutoPulse Platform for any reason, press the Stop/Cancel button. The AutoPulse Platform releases the tension on the LifeBand chest bands allowing the user to pull the bands to the maximum extended position. 10 seconds after the Stop/Cancel button has been pressed a single audio alert tone will sound. Three audio alert tones will sound 20 seconds after the pause was initiated. Audio alert tones will sound continuously after 30 seconds into the pause. The tones can be temporarily disabled (and re-enabled) by pressing the Tone Mute button (refer to Section 1.4.2.6, "Tone Mute Button," on page 1-7) if this function is allowed in the Administrative Menu. Pressing the Stop/Cancel button while paused will exit the paused state and the alert tone will be stopped.

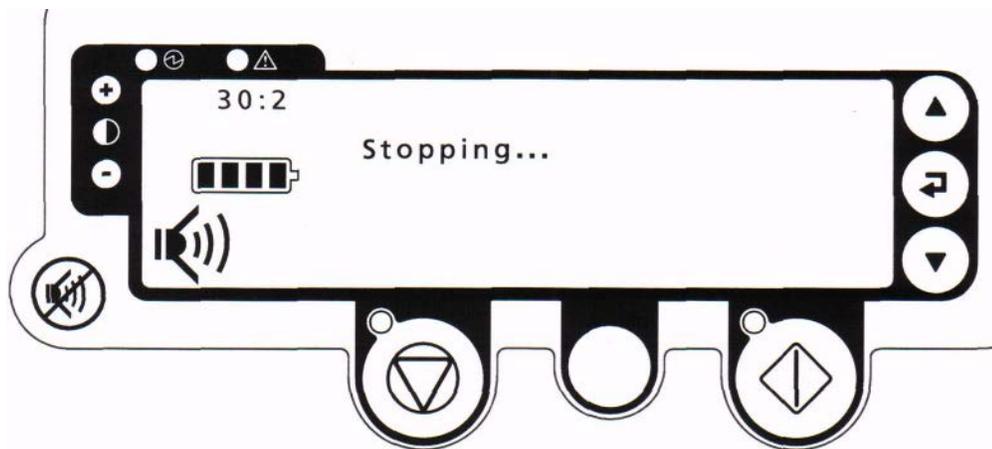


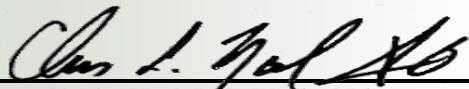
Figure 3-14 Stopping Compressions Display Panel Screen



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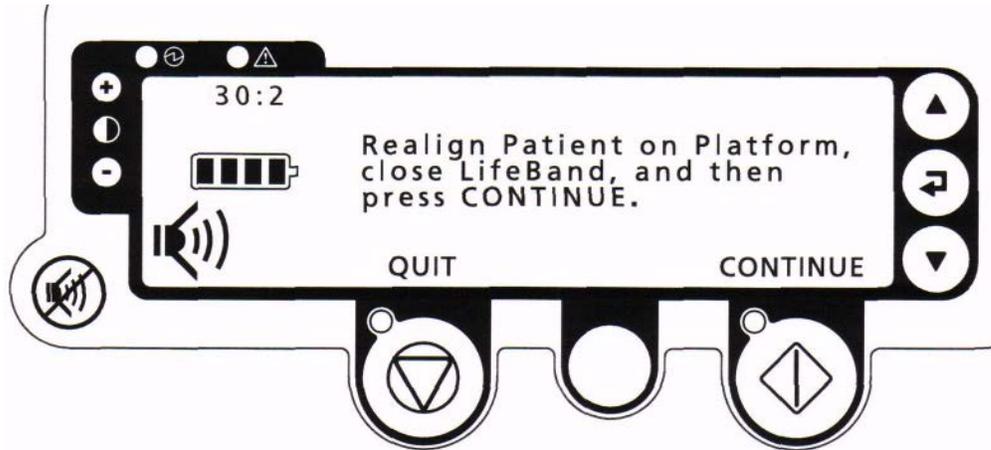


Figure 3-15 Restart/Continue Compressions Display Panel Screen

Ending Active Device Use

1. After either successful resuscitation or termination of activities, press the Stop/Cancel button followed by the ON/OFF button. The Stop/Cancel button action will cease the compression cycles and relax the LifeBand® CCA (see Figure 3-14). The ON/OFF button action will power down the AutoPulse Platform.
2. Open the Velcro® fastener and lift or log roll off the patient from the AutoPulse Platform, as necessary.

Preparing the AutoPulse System for Its Next Use

1. Remove the LifeBand® CCA from the AutoPulse Platform. Refer to Section 2.1.2, "Removing the LifeBand® CCA" for more information.



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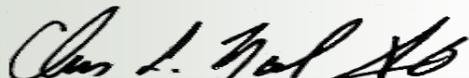
2. Discard the LifeBand® CCA as it is a single-use component. Treat the LifeBand CCA as contaminated medical waste and dispose of it accordingly since there are no user-serviceable parts.
3. Clean the AutoPulse Platform before its next use. Refer to Section 4.2, "Cleaning the AutoPulse Platform" for more information.
4. Replace the LifeBand® CCA before returning the AutoPulse System to service. Refer to Section 2.1.1, "Installing the LifeBand® CCA" for more information.
5. Remove the AutoPulse Power System Battery.
Note: Ensure that the AutoPulse Platform is powered down before removing and replacing the Battery.
6. Replace the Battery with a fully charged Battery before returning the AutoPulse System to service.
7. Recharge the used Battery as necessary for future use.



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