

## AutoPulse Script for new Deployment Training

(Hospital Version)

**General overview** - The AutoPulse gives automatic circumferential compressions to:

- Non-traumatic cardiac arrest patients
  - (may be used on pregnant women, but depends on position of fundus)
- For Adults 18 yrs of age or older
- Maximum patient weight = 300 lbs. / Patient Chest Circumference=29.9 to 51.2 inches

**Battery System:** Multi chemical charger (can take NICAM and Lithium Ion batteries)

- Lights on the charger
  - Top light / half gas can (amber light)=normal charging (takes 3 hrs to complete)
  - Top light / half gas can + battery with the Orange “?”= 10<sup>th</sup> Rotation or q30 days Test Cycle. If on, make sure to leave the battery in charger until it is finished.

- If the battery gets pulled out or power is interrupted in the Test Cycle, once the power is back on or the battery is reinserted in the charger, it will restart the Test Cycle.

- A Test Cycle can take up to 12 hours to complete.

- Middle light (green)/ Full gas can = Battery is ready for use (Fully charged battery allows for 30 minutes operating time)

- Lower battery with red “X”= bad battery or battery failure

- If the light on the battery charger is **FLASHING RED**, the battery is out of service = call ZOLL technical support.
- If it is **steady RED** (not flashing), you have one attempt to reinsert it and let it try to charge; if it comes up steady red again, the battery needs to be taken out of service and ZOLL tech support needs to be contacted.

- Rotate battery every 24hrs or after each patient use.





- Remember to turn on the AP after inserting the battery so it can time stamp the info from the battery and the board.

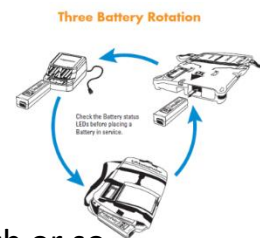
- Fan on the back of the charger needs to be cleaned off once a month or so.

- Just use a rag and wipe off the fan or use a vacuum (call Biomed to clean)
- IMPORTANT - do not use air to blow off fan, you don't want the dust going in to the charger. \*Be sure charger is not plugged in when cleaning fan.

- Should get 30 minutes of battery run time on the average patient. (see below)

- Could be longer, could be shorter - remember that the harder the AutoPulse needs to work, the shorter the run time you will get. The stiffer bigger chest =

	Caution: Charging
	Ready
	Fail
	Test Cycle



shorter run time; just like manual CPR... with stiffer/bigger chested patients, you're going to work harder to deliver high quality CPR. So will your AutoPulse.

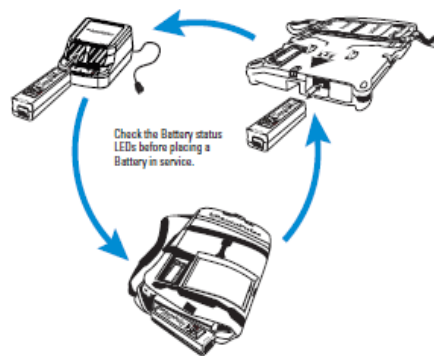
- Battery can be changed in under 10 seconds when AutoPulse is in use:
  - Turn AutoPulse off, Open LifeBand, perform manual CPR, change battery, turn AutoPulse back on, close LifeBand, push the Green button to restart.
- If you drop and damage a battery:
  - Take dropped battery out of service right away until inspected by BioMed.
    - If it's not inspected and the connector is damaged, if you insert the battery into the board or the charger you can damage the connector pins
- When inserting battery into charger or the board, **insert it firmly, but do not slam it in!**
  - Slamming it in can damage the connector. ***Lift the latch to insert it more gently.***



#### Recommended Daily Battery Routine:

- Every shift and
- Immediately after every use

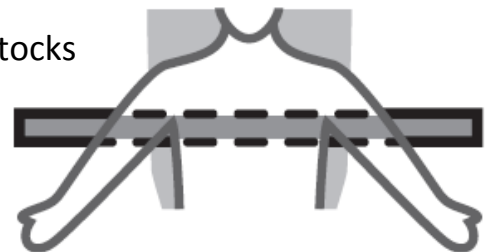
#### Three Battery Rotation



1. Remove the battery from the AutoPulse® and place into the charger.
2. Check the spare battery for green LED's, and then place it in the AutoPulse, (If the spare battery is not fully charged, place it in the charger and use one that is fully charged).
3. Remove the fully charged battery from the charger and use it as a spare battery.
4. Power on the AutoPulse and ensure no faults are displayed.

### AutoPulse- positioning the patient

- Which direction is the head?
  - Round side of board goes to the patient's buttocks
- Black shoulder marks?
  - Used to tell you that the head is above them.
  - DO NOT USE FOR PATIENT ALIGNMENT!
- **Yellow line most important line on the board.**
  - **The yellow line needs to be under the bottom of the arm pits.** If the yellow line on the board is hard to see, the same yellow line is on the band. Make sure the band is properly aligned. Lift band straight up, No twist, 90 degree to the board, Yellow line is where your hands would be for CPR.



Educator to give quick demo of how board works



- Take board from rolling stand and
  - open Velcro LifeBand
  - turn ON the board (observe for no red lights or advisory codes)
- 2 people grab patient's arms and pull patient forward, lifting patient's back
- Place round side of board to patient's butt
- Lay patient on board, positioning **patient's arm pits above yellow line on the board**
- Place band 1 with yellow fin center mass, matching yellow line on band with yellow line on board (*band girth recommended for patients 29.9 to 51.2 inches*)
- Place band 2 on top of band 1, lining up yellow fin into slot, using all the Velcro
- Lift band fully up 90 degrees, ensuring band is not twisted on either side
- Place band back on patient (yellow fin center mass) lining up yellow line of band to yellow line on board (*Yellow line is where your hands would be for CPR*)
- Push the **Green** START button
  - Band will automatically size to patient's chest, and will start circumferential compressions at a 30:2 ratio (*beeps at 28th, 29th, and 30th compression, and pauses so you can give 2 ventilations*)
  - If patient is intubated, can switch to "CONTINUOUS" compressions by pushing the **Grey** button *and then immediately confirming with Grey button (AutoPulse beeps periodically in Continuous Mode, GIVE 1 BREATH EVERY 6 SECONDS for intubated patients per 2015 AHA Guidelines)*
- Attach securing straps to stabilize patient
  - **Yellow** straps first near yellow line on small bars
  - **Black** straps next, onto Teflon wires near head
  - Tighten **yellow** straps first
  - Then tighten **black** straps
- Use Head Immobilizer if needed
- If user Advisory Code stops AutoPulse:
  - follow prompts on display to fix Advisory Code
    - Can also refer to "Advisor Code Description and Action" Quick Reference Card >>>>>>
  - If no quick fix, remove LifeBand from patient and immediately start Manual Chest Compressions!

ADVISORY CODES DESCRIPTION AND ACTION		
ADVISORY #	CAUSES	IMMEDIATE ACTIONS
2	The AutoPulse® has detected a change in LifeBand® tension. This advisory can happen when the patient or LifeBand is out of position, or if the LifeBand is opened during active operation.	Ensure that the LifeBand is properly closed. Pull up COMPLETELY on the LifeBand, ensure that both the patient and the band are properly aligned, and press RESTART.
3	Battery may be loose or not fully inserted.	Remove battery. Check the connector on the battery for damage. If the connector on the battery is not damaged, reinsert the battery so that the connector is FULLY seated, perform startup, pull up COMPLETELY on the LifeBand, ensure that the patient and the band are properly aligned, and press RESTART. If the connector is damaged, open LifeBand, start manual CPR, take out of service and contact Technical Service.
4 or 44	Uncharged or faulty battery.	Open LifeBand, start manual CPR, replace battery, perform startup, pull up COMPLETELY on the LifeBand, ensure that the patient and the band are properly aligned, and press RESTART.
7	Patient out of position, the patient is not properly centered.	Pull up COMPLETELY on the LifeBand, ensure that the patient and the band are properly aligned, and press RESTART. Note: utilizing the shoulder restainers may help prevent changes in patient alignment.
11	Air vents blocked; environment may be too warm.	Open LifeBand, start manual CPR, turn off AutoPulse, check air vents for obstruction, turn on AutoPulse, pull up COMPLETELY on the LifeBand, ensure that the patient and the band are properly aligned, and press RESTART.
12	The AutoPulse has detected that the LifeBand is not properly installed.	Ensure that the band clip (underneath the device) is properly seated in the drive shaft and the drive shaft can freely rotate after insertion.
16 or 26	Obstruction between the LifeBand and patient, or a twisted LifeBand.	Open LifeBand, clear obstruction or twist, pull up COMPLETELY on the LifeBand, ensure that the patient and the band are properly aligned, and press RESTART.
17	Twisted LifeBand or battery voltage is low.	Open LifeBand, start manual CPR, check battery and LifeBand, pull up COMPLETELY on the LifeBand, ensure that the patient and the band are properly aligned, and press RESTART.
18	The AutoPulse has detected that either the patient's chest is too small while sizing the patient (look-up) or that there is no patient on the platform.	Pull up COMPLETELY on the LifeBand, ensure that the patient and the band are properly aligned, and press RESTART. If the User Advisory does not clear, the patient may be too small. In this case, revert to manual CPR.
27	LifeBand pulled up too rapidly.	Pull up COMPLETELY on the LifeBand, ensure that the patient and the band are properly aligned, and press RESTART.

*For all other advisories and fault codes immediately open the LifeBand and perform manual CPR. After the event please call Technical Service at 1-800-348-9011 or 978-421-9655 for assistance.*

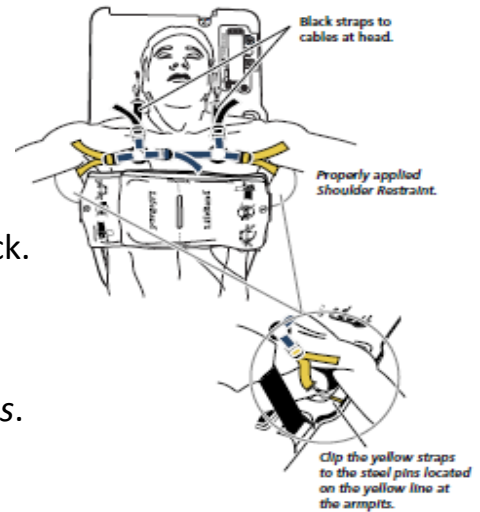


**Shoulder straps...** make sure you are using them any time the patient will be moved or **to stabilize patient** on the platform; apply them sooner rather than later.

- Apply **YELLOW** straps first, then the **BLACK** straps

Once connected, tighten the yellow straps first then the black.  
Remember: no straps over the LifeBand.

- Shoulder straps are reusable.
- *Clean the straps like you would clean long board straps.*

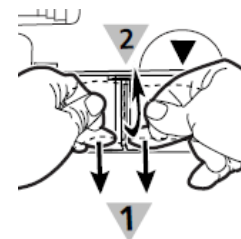


## BUTTONOLOGY

- **ON/OFF button** is the on the top edge of the board; grey in color; note the yellow sticker on the face of the board.
- **Green** button is the start button, once the LifeBand sizes the patient it's going to pause for 3 seconds, then start compressing. *If you know the band is in the right spot press the green button again and it will start up right away.*
- **Grey** menu button does two things:
  - Menu button when just powered on
  - Press it while compressing switches from 30:2 to Continuous and back. First time you press it, it's going to ask you to CONFIRM, it gives you two seconds to confirm! Otherwise, it stays in the mode you were in.
- **Orange / Red** button is the STOP/QUIT button.
  - First time you Push STOP, it will stop the compressions and
    - at 10 seconds it going to beep once
    - at 20 seconds it's going to beep 3 times, and
    - at 30 seconds it's going to beep continuously; **Remember... someone or something needs to be doing compressions on your patient.**

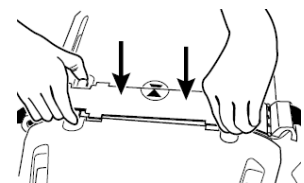
## Removing LifeBand after use: (see next page as a reference)

1. Flip up the LifeBand's hinged skirts
2. Pinch the LifeBand locking tabs
3. Remove the LifeBand from the AutoPulse Platform and discard
  - a. Remember to clean board with approved cleaning wipes



## Installing a NEW LifeBand: (see next page as reference)

1. Slide the Band Clip into the Drive Shaft Slot
2. Seat the Band Clip
3. Snap the LifeBand cover plate into place (*line up yellow symbol*)
4. Flip down the LifeBand skirts and check installation



## Making your AutoPulse “Code Ready”:

1. Remove used battery and dispose of used LifeBand and clean the AutoPulse
2. New battery installed and used battery in charger (*rotate q24hrs or after every pt*)
3. Once new LifeBand properly installed, connect Velcro straps of the new LifeBand
4. Fully extend LifeBand by lifting up band 90 degrees, ensure NO twists in band, place center on the platform
5. Turn ON AutoPulse, Push Green START button, LifeBand will shrink/size to the board, and the battery will be time stamped to the board – then Turn OFF the AutoPulse
6. Place clean/prepped AutoPulse on Rolling Stand, ensure battery charger is plugged in

## PRACTICE TIME:

- Have groups of 3 individuals practice placing the AutoPulse onto a manikin
- Each individual will rotate through each of the 3 assigned roles (as stated on Pit Crew Card) and also practice installing/removing LifeBand and new Battery.

### ZOLL.

#### LifeBand® Load-distributing Band

##### Product Insert

The LifeBand Load-distributing Band (LDB) consists of a cover plate and band integral with a compression pad. Attached to the AutoPulse® Platform, the LifeBand is automatically adjusted to the patient by the Platform and provides compression to the patient's chest in the region of the heart.

##### Preparing the AutoPulse System for Use

The AutoPulse System requires a new LifeBand to be installed after each patient use. This insert summarizes the steps for removal and installation of the LifeBand. Before operating the AutoPulse System, read the User Guide, AutoPulse Resuscitation System Model 100 and User Guide, AutoPulse Battery Charger.

**Caution:** the LifeBand is a single-use item.

##### Inquiries to:

ZOLL Circulation  
249 Humboldt Court  
Sunnyvale, CA 94089  
U.S.A.  
t: +1.800.321.4CPR (4277)  
t: +1.408.541.2140  
t: +1.408.541.0330

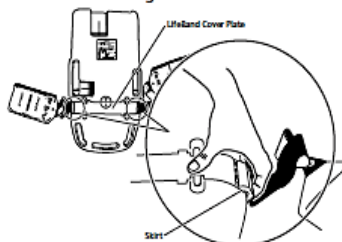
EU Authorized Representative  
ZOLL International Holding B.V.  
Edisonring 3a  
6669 NA Odooswaard  
The Netherlands  
t: +31 488 411 183

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### Removing the LifeBand

#### 1

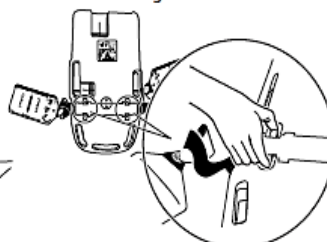
##### Flip up the LifeBand Hinged Skirts



1. Place the AutoPulse Platform with Patient Surface side down, on a flat surface.
2. Flip up the hinged skirts of the LifeBand Cover Plate to disengage the LifeBand chest bands from the rollers. You will hear the skirts “snap” into retracted position; this is normal.

#### 2

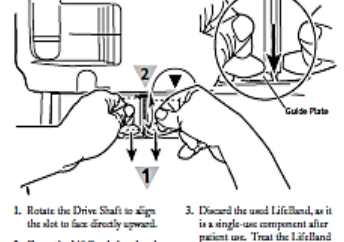
##### Pinch the LifeBand Locking Tabs



1. 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.

#### 3

##### Remove the LifeBand from the AutoPulse Platform

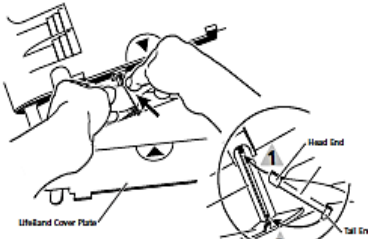


1. Rotate the Drive Shaft to align the slot to face directly upward.
2. Grasp the LifeBand chest bands with the thumb and index finger of both hands, on either side of the LifeBand Band Clip. Push in the Guide Plate, using both middle fingers. Keeping the Guide Plate pushed in, pull up the Band to remove the clip from the shaft.
3. Discard the used LifeBand, as it is a single-use component after patient use. Treat the LifeBand as a contaminated medical waste and dispose of it accordingly. There are no user-serviceable parts.
4. Replace the LifeBand as described in the procedure below: *Installing the LifeBand.*

### Installing the LifeBand

#### 1

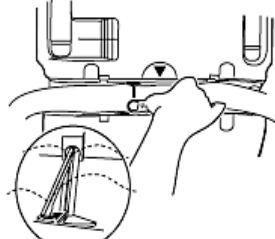
##### Slide the Band Clip into the Drive Shaft Slot



1. Place the AutoPulse Platform with Patient Surface side down, on a flat surface.
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.

#### 2

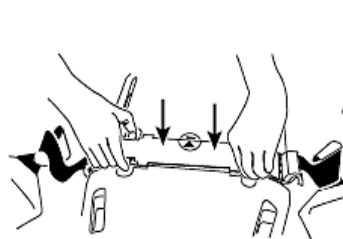
##### Seat the Band Clip



1. Press the Tail End of the LifeBand Band Clip into the slot of the Guide Plate until the Band Clip is fully seated in the Drive Shaft. You should feel the Band Clip lock into place.
2. To check that the LifeBand Band Clip is properly seated, slightly rotate the Drive Shaft in either direction by hand.

#### 3

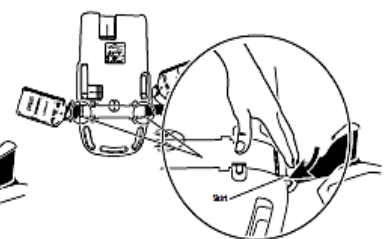
##### Snap the LifeBand Cover Plate into Place



1. Ensure both free ends of the LifeBand chest bands are oriented flat (not twisted) and away from the AutoPulse Platform.
2. Line up the arrow on the LifeBand Cover Plate with the matching arrow on the Platform.
3. Snap the LifeBand Cover Plate in place by fully inserting the locking tabs into the slots on the AutoPulse platform.

#### 4

##### Flip Down the LifeBand Skirts and check Installation



1. Flip down and snap into place the hinged skirts of the LifeBand Cover Plate to engage the LifeBand chest bands to the rollers.
2. Turn the AutoPulse Platform over and press the ON/OFF button to power it up. If the User Control Panel reports a fault, check the installation of the LifeBand Band Clip into the slot in the Drive Shaft. See 2.

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