

SKILLS

Chest Compression System (S11)

FR/EMR

EMT

PARAMEDIC

The LUCAS is the only chest compression system approved for use by the Tuolumne County EMS Agency. LUCAS Chest Compression System is to be used for performing external cardiac compressions on patients who have acute cardiac arrest.

1. When you have confirmed a cardiac arrest, immediately start manual CPR. Continue with minimal interruptions.
2. Put your left hand on the black strap on the left side and pull the red handle so that the bag unfolds.
3. Push ON/OFF on the User Control Panel for 1 sec to power up LUCAS in the bag & start the self-test. The green LED adjacent to the ADJUST key illuminates when LUCAS is ready for use.
4. Remove the back plate from the bag.
5. Stop manual CPR.
6. Make sure to support the pt's head. Carefully put the back plate under the pt, immediately below the arm pits. Use one of these procedures:
 - a. Hold the pt's shoulder and lift the pt's upper body a small distance,
 - b. Roll the pt from side to side.
7. Start manual CPR again.
8. Hold the handles on the support legs to remove the LUCAS upper unit from the bag. Pull the release rings once to make sure that the claw locks are open.
9. Attach the support leg nearest to you to the back plate.
10. Stop manual CPR.
11. Attach the other support leg to the back plate, so that the two support legs lock against the back plate. Listen for click.
12. Pull up once to make sure that the parts are correctly attached.

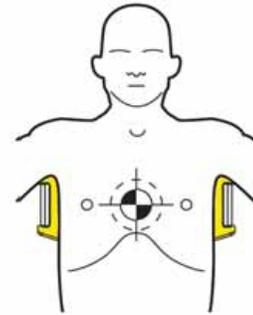
WARNING - TOO LARGE PATIENT

If the patient is too large, the upper unit of LUCAS cannot lock to the back plate without compressing the patient's chest. Continue the manual compressions.

Step #3.



Step #6.



Note: An accurate position of the back plate makes it easier & faster to position the suction cup correctly.

Step #9



Step #11



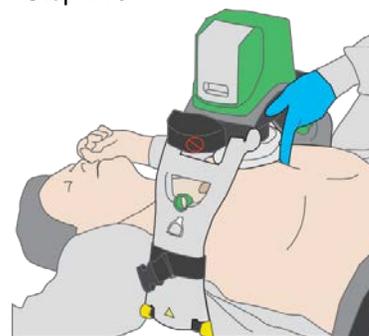
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13. Use your finger to make sure that the lower edge of the suction cup is immediately above the end of the sternum.

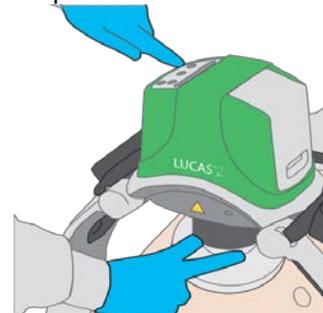
14. Adjust suction cup height to set the start position.

- a. Make sure that LUCAS is in the ADJUST mode.
- b. Push the suction cup down with 2 fingers until the pressure pad touches the pt's chest without compressing the chest.
- c. Push PAUSE to lock the Start Position - then remove your fingers from the suction cup.
- d. Check for proper position. If not, push ADJUST, pull up the suction cup to readjust the central and/or height position for a new Start Position. Push PAUSE.
- e. If a BLS airway is being used, Push ACTIVE (30:2) OR if an advanced airway is being used push, ACTIVE (continuous) to start the compressions.

Step #13



Step #14



WARNING – UNSATISFACTORY POSITION

Start manual CPR again if it is not possible to position LUCAS safely and correctly on the patient's chest.

WARNING - TOO SMALL PATIENT

If LUCAS alerts with 3 fast signals when lowering the Suction Cup and you cannot enter the PAUSE mode or ACTIVE mode. Start manual compressions again.

CAUTION - GEL ON CHEST

If there is gel on the patient's chest, the position of the Suction Cup can change during operation. Remove all gel before you apply the suction cup.

CAUTION - KEEP YOUR FINGERS AWAY

Do not put your hands or other body parts on or below the suction cup when LUCAS operates. Do not touch the claw locks, especially when you lift the patient.

WARNING - CHANGED POSITION DURING OPERATION

If the position of the suction cup changes during operation or during defibrillation, immediately pushes ADJUST and adjust the position. Always use the LUCAS Stabilization Strap to help secure the correct position.

WARNING - MALFUNCTION

If there are interruptions, or the compressions are not sufficient, or something unusual occurs during operation: Push ON/OFF for 1 second to stop LUCAS and remove the device. Start manual chest compressions.

WARNING - LOW BATTERY

When the orange Battery LED shows an intermittent light, do one of these:

- Replace the Battery with one that is charged.
- Connect the external LUCAS Power Supply.

CAUTION - DO NOT BLOCK THE VENT HOLES

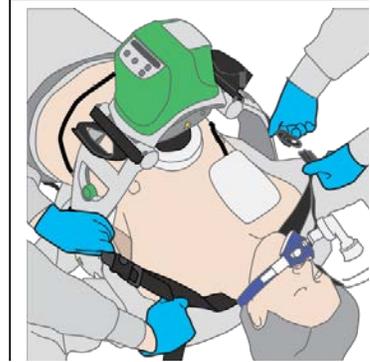
Do not allow a blockage of the vent holes under the hood since this can cause the device to become too hot.

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15. Apply the Stabilization Strap

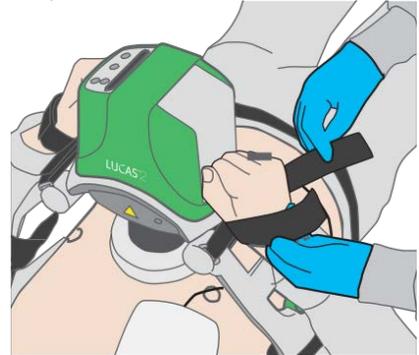
- Carefully lift the pt's head and put the cushion behind the pt's neck. Position the cushion as near the pt's shoulders as possible.
- Connect the buckles on the support leg straps with the buckles on the cushion strap. Make sure that the straps are not twisted.
- Hold the LUCAS support legs stable and tighten the cushion strap tightly.
- Make sure that the position of the suction cup is correct on the pt's chest, if not reposition.

Step #15



- Secure the patient's arms when you move the patient, you can secure the patient's arms with the Patient Straps on the LUCAS.

Step #16



Caution - Do not lift by the straps

Caution - IV access

Make sure that IV access is not obstructed.

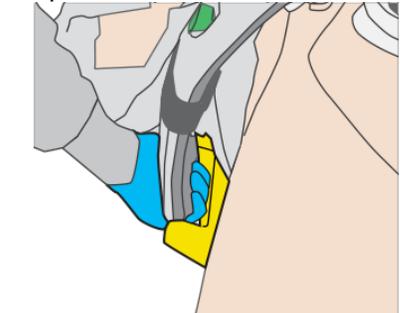
Caution - Skin burns

The temperatures of the hood may rise above 118 °F. If hot, avoid prolonged contact to prevent skin burns.

17. Moving the pt;

- Put one hand below the claw locks under the support leg
- With the other hand, hold the patient's belt, trousers or under the thigh.
- Make sure that the patient's head is stable.
- Push PAUSE to temporarily stop the compressions.
- Lift and move the patient to a backboard or other similar device.
- Make sure that the suction cup is in the correct position on the patient's chest.
- Push ACTIVE (continuous) or (30:2) to restart compressions.

Step #17

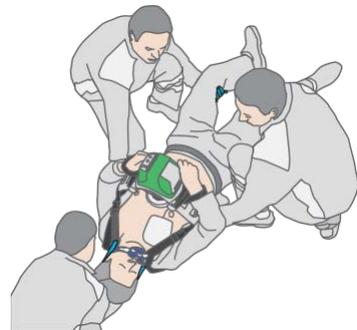


LUCAS can be active while you move the patient if:

- LUCAS and the patient are safely positioned on the transportation device
- LUCAS stays in the correct position & angle on the patient's chest

WARNING - CHANGED POSITION DURING OPERATION

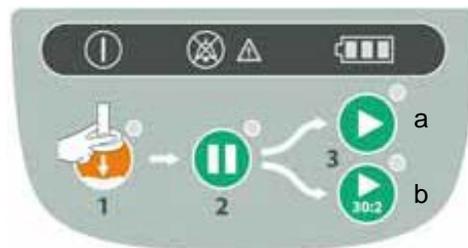
If the position of the suction cup changes during operation or during defibrillation, immediately push ADJUST and adjust the position. Always use the LUCAS stabilization strap to help secure the correct position.



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Caution - Defibrillation electrodes

Position the defibrillation electrodes and wires so that they are not under the suction cup. If there are already electrodes on the patient, make sure that they are not under the Suction Cup. If they are, you must reposition electrodes or apply new electrodes.



18. Defibrillation can be performed while LUCAS operates. Chest compressions interfere with ECG analysis.

- a. Push PAUSE before you start the ECG analysis.

Make the interruption as short as possible.

- b. Push ACTIVE (continuous) or (30:2) to restart compressions.
- c. Charge defibrillator and defibrillate.
- d. After defibrillation, make sure that the position of the Suction Cup is correct. If necessary, adjust the position.

1. ADJUST button
2. PAUSE button
3. ACTIVE buttons
 - a. continuous
 - b. 30:2

19. Selecting LUCAS Compression Mode. LUCAS can operate in two different modes:

- a. ACTIVE (continuous) When you push this key LUCAS performs continuous compressions. The green LED signal will blink 8 times per minute to alert for ventilation during ongoing compressions. **ACTIVE (continuous) mode should only be used if an ALS airway is in place.**
- b. ACTIVE (30:2) When you push this key, LUCAS performs 30 chest compressions and then temporarily stops for 3 seconds. During the stop, the operator can perform 2 ventilations. After the stop the cycle starts again. An intermittent LED in combination with an audible signal sequence will alert the operator before each ventilation pause. **ACTIVE (30:2) mode should only be used if a BLS airway is in place or the airway is unprotected.**

20. Change the Battery-Keep interruptions to a minimum while changing the battery, to minimize interruptions, an additional charged spare battery shall be kept in the carrying bag.

- a. Push PAUSE to temporarily stop the compressions.
- b. Pull the battery out and then upwards to remove it.
- c. Install a fully-charged battery. Put it in from above.
- d. Wait until the green PAUSE mode LED illuminates.
- e. Push ACTIVE (continuous) or (30:2) to restart chest compressions. The LUCAS Smart Restart feature remembers the settings and Start Position for 60 seconds. If the battery change takes more than 60 seconds, LUCAS does a self-test and you must adjust the Start Position again.

21. You can connect the LUCAS power supply or Car Power Cable in all operating modes.

Caution - Keep battery installed. The battery must always be installed for LUCAS to be able to operate, also when powered by the external power supply. To use the Power Supply cable, connect the cable to LUCAS.

