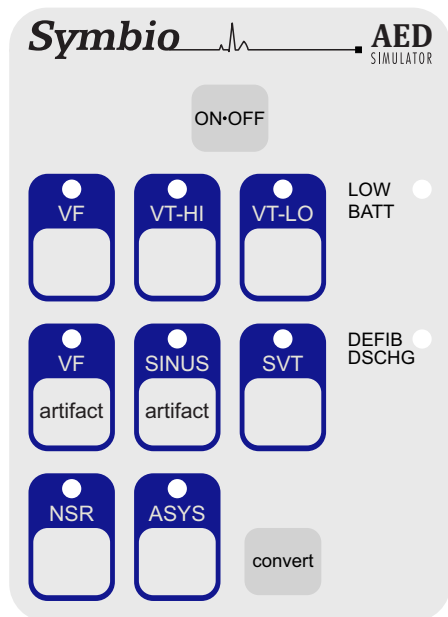


## OPERATING INSTRUCTIONS

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### Controls and Indicators



- ON-OFF**  
Press to power-on and to power-off.
- LOW BATT**  
Red indicator illuminates when battery should be replaced.
- DEFIB DSCHG**  
Green indicator illuminates for two seconds when discharge is delivered from defib set to 50J or more.
- convert**  
When enabled, a pre-selected rhythm becomes the running rhythm when a defib delivers 50J or more.

### waveforms

- VF** Ventricular Fibrillation
- VT-HI** Ventricular Tachycardia - fast. Rate: 220 bpm
- VT-LO** Ventricular Tachycardia - slow. Rate: 140 bpm
- VF artifact** Ventricular Fibrillation with pacer artifact
- SINUS artifact** Sinus rhythm with muscle artifact.
- SVT** Supraventricular Tachycardia Rate: 214 bpm.
- NSR** Normal Sinus Rhythm. Rate: 72 bpm.
- ASYS** Asystole.

### convert

The convert feature allows you to convert automatically from one shockable rhythm to any other rhythm when a defib discharge is delivered from the AED.

- To convert automatically:
  - Press the key of a shockable rhythm.
  - Press the **convert** key.
  - Press the key of the rhythm you want to convert to.
  - Follow AED prompts to deliver defib discharge.

To cancel a convert operation before it's completed, press the convert key again, or press the key of the running rhythm. If you begin a convert operation, but don't complete it within two minutes, the convert operation will cancel automatically.



## AED Training

### Exercises

The following exercises demonstrate how the AED Simulator is used for training.

- Convert VF (shockable) to NSR (non-shockable) on first rescue attempt.

At AED Simulator:

Press **ON-OFF** key to power on simulator.  
NSR is selected at power-on.

Press **VF** key. VF indicator glows steadily. VF is now being simulated.

Press **convert** key. VF indicator pulses brighter.

Press **NSR** key. NSR indicator flashes on and off.  
VF indicator glows steadily again.

At AED:

Connect simulator cable to the AED electrodes connector.

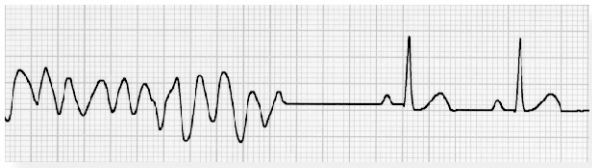
Power-on the AED. The AED will analyze the simulator's rhythm.

Listen for "shock advised" and "charging" messages.  
When prompted, push the flashing button to discharge the AED.

At AED Simulator

Observe that the NSR indicator glows steadily, and that the VF indicator is off. NSR is not being simulated.  
The AED will interpret NSR as a non-shockable rhythm. Therefore, the "shock advised" message will not be given.

Automatic conversion from VF to NSR using the VIVALink AED.



## Battery Saver Feature

The CS301 powers-off automatically 30 minutes after a key was last pressed, or after defib or pacer energy was last detected. This is normal battery saver operation. To enable the simulator to remain powered-on after 30 minutes of inactivity, follow these instructions:

1. With the simulator powered-off, press and hold down **convert** key, then press and release **ON OFF** key.
2. Watch the **NSR** indicator. When it flashes rapidly, release the **convert** key.

## WARNING: Shock Hazard Exists

When discharging the defibrillator, keep hands and all objects clear of the simulator. Be sure the simulator cable or ECG cable is securely plugged into the defibrillator. Be sure that the simulator housing is intact, and that the cable is free of nicks, cracks and cuts. Do not discharge the defibrillator into the simulator more than three times within one minute. Never discharge more than 360 joules into the simulator. Do not immerse or set the simulator in liquid. Using the device in standing water can present a shock hazard to the operator and anyone nearby.

- Convert VT-HI (shockable) to VT-LO (non-shockable) on second rescue attempt.

At AED Simulator:

Press **ON-OFF** key to power on simulator.  
NSR indicator is illuminated.

Press **VT-HI** key. VT-HI indicator glows steadily.  
VT-HI is now being simulated.

At AED:

Connect simulator cable to the AED electrodes connector.

Power-on the AED. The AED will analyze the simulator's rhythm.

Listen for "shock advised" and "charging" messages.  
When prompted, push the flashing button to discharge the AED.

At AED Simulator

Observe that the VT-HI indicator is still illuminated.

Press **convert** key.  
VT-HI indicator pulses brighter.

Press **VT-LO** key.  
VT-LO indicator flashes on and off.  
VT-HI indicator glows steadily

indicator is off. NSR is not being simulated.  
The AED will interpret NSR as a non-shockable rhythm. Therefore, the "shock advised" message will not be given.

## Maintenance and Calibration

Based on the product's design, and based on experience with units in the field, Symbio does not recommend regular calibration of our Simulators. From a design standpoint, the time base used to generate ECG waveforms and to measure the duration of defib and pacer pulses is crystal-controlled; therefore, ECG waveform rates and defib/pacer measurement criteria remain constant over time.

## Warranty and Service

The CS301 ECG Simulator is warrantied to be free of defects in material or workmanship for three years from date of purchase. If your simulator needs service, or if you have questions about its operation, please contact Symbio Corporation.

NOTE: Damaged caused by battery acid corrosion is not covered by the warranty. Removing the batteries between uses is recommended.

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