The simulator powers-off automatically about 30 minutes after a key was last pressed, or after defib or pacer energy was last detected. This is normal operation.

To allow simulator to remain powered-on after 30 minutes, follow these instructions:
1. Power-off simulator.
2. Press and hold down **convert** key, then press and release **ON·OFF** key. The simulator powers-on.
3. Observe NSR indicator. When indicator blinks on and off, release **convert** key. NSR indicator continues to blink for about one second.

   The battery saver feature is now disabled. When you power-off the simulator, it will return to normal battery saver operation.

The simulator is powered by one 9 volt alkaline battery. To replace the battery, turn over simulator, then slide open battery compartment door.

Service

The CS301 Code Simulator is warranted to be free of defects in material or workmanship for three years from date of purchase.

If the simulator needs service, or if you have questions about its operation, please contact Symbio customer service, or your authorized dealer.

1. Connect monitor's ECG cable to simulator's ECG snaps. **See Figure 1**.
2. Connect defibrillation cable to simulator's defib cable receptacle. **See Figure 2**.
3. Press **ON·OFF** key to power-on simulator. Observe that **NSR** indicator is illuminated.
4. Power-on monitor/defibrillator. Observe that NSR at 72 bpm is displayed.

Figure 1
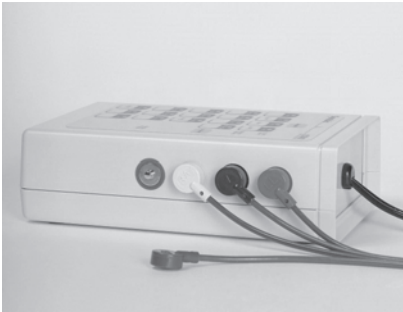
Press ECG cable connectors onto simulator snaps.
Left to right: RL, RA, LA, LL.

ECG signal is obtained with either 3- or 4-lead ECG cable.

Figure 2

Connect defibrillation cable to simulator. (The connector on your simulator may be different from the one shown here.)
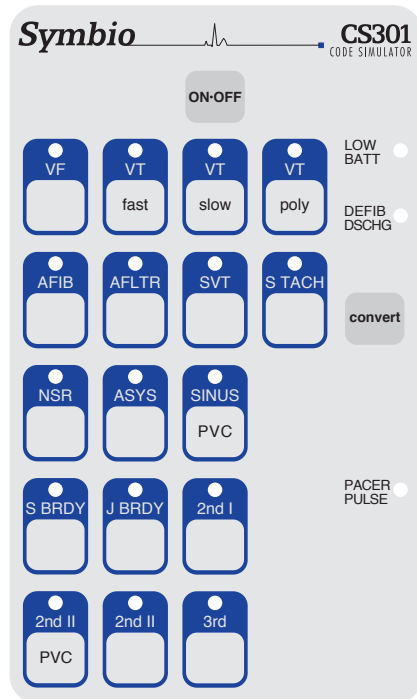
WARNING: SHOCK HAZARD!
Be sure defibrillation cable is securely attached to simulator.

Symbio   **CS301** CODE SIMULATOR

OPERATING INSTRUCTIONS

CE

The CS301Code Simulator is an easy to use training tool that allows you to practice defibrillation procedures, external pacing procedures, and arrhythmia recognition. Connect your defibrillator and external pacer directly to the CS301 for safe, interactive training. For arrhythmia recognition, select from 17 rhythms, including fibrillations, tachycardias, and bradycardias.

Symbio ⟍ᴧ⟋ **CS301** CODE SIMULATOR

ON·OFF

VF	VT fast	VT slow	VT poly	LOW BATT
AFIB	AFLTR	SVT	S TACH	DEFIB DSCHG
NSR	ASYS	SINUS PVC		convert
S BRDY	J BRDY	2nd I		PACER PULSE
2nd II PVC	2nd II	3rd		

LOW BATT
Red indicator illuminates when battery needs to be replaced.

DEFIB DISCHG
Green indicator illuminates for two seconds when defib discharge is sensed.

convert
Simulate cardioversion by activating convert feature. CS301 responds to defib discharge.

PACER PULSE
Green indicator flashes when external pacer pulse is sensed. (Captured beat is simulated, too.) Sensing occurs when external pacer current set to 60mA - 70mA or more.

convert
The convert feature allows you to convert automatically from one rhythm (running rhythm) to another rhythm (waiting rhythm) when a discharge is delivered from a defibrillator set to 50J or more.
To perform convert operation:
1. Press **convert** key. Indicator of running rhythm pulses brighter.
2. Press key of rhythm to be simulated immediately after defib discharge. Indicator of this (waiting) rhythm blinks on and off.
3. Discharge defibrillator. The waiting rhythm becomes the running rhythm.
To cancel convert operation before it's completed, either press **convert** key again or press key of running rhythm. If convert operation is started, but a discharge is not sensed within two minutes, the convert operation cancels automatically.

VF	*Ventricular Fibrillation.*
VT fast	*Ventricular Tachycardia. Wide QRS. Rate: 185.*
VT slow	*Ventricular Tachycardia. Wide QRS. Rate: 140.*
VT poly	*Ventricular Tachycardia. Fluctuating QRS axis.*
AFIB	*Atrial Fibrillation. Ventricular rate: 120 to 160.*
AFLTR	*Atrial Flutter (2:1). Ventricular rate: 150.*
SVT	*SVT alternates with NSR, then remains in SVT. SVT rate: 216.*
S TACH	*Sinus Tachycardia. Rate: 120.*
NSR	*Normal Sinus Rhythm. Rate: 72.*
ASYS	*Asystole.*
SINUS PVC	*Sinus Rhythm with PVCs. Sinus rate: 72.*

Rhythms for External Pacer Training

S BRDY	*Sinus Bradycardia. Rate: 40.*
J BRDY	*Junctional Bradycardia. Rate: 42.*
2nd I	*2nd deg. type I AV Block (4:3). Atrial rate: 60.*
2nd II PVC	*2nd deg. type II AV Block (4:3). PVCs. Wide QRS. Atrial rate: 60.*
2nd II	*2nd deg. type II AV Block (4:3). Wide QRS. Atrial rate: 60.*
3rd	*3rd deg. AV Block. Wide QRS. Ventricular rate: 37.*

Medical Device Depot Inc.
www.medicaldevicedepot.com
Toll Free 1-877-646-3300

Connect simulator to defibrillator. For help, see **Getting Started**, page 5.

Exercise: Convert VF to NSR using manual defibrillator.

at simulator:
1. Press **VF** key. VF indicator glows steadily. Confirm VF is displayed on monitor.
2. Press **convert** key. VF indicator pulses brighter.
3. Press **NSR** key. NSR indicator blinks on and off. VF indicator glows steadily again.

at defibrillator:
4. Select 360J using **Energy Select** switch (1).
5. Press **Charge** button (2). Listen for charge ready tone.
6. Press both **Discharge** buttons (3) simultaneously.
7. After discharge observe that:
　　On monitor, NSR is displayed.
　　At simulator, NSR indicator glows steadily, and VF indicator is off.

Deliver defibrillation discharge to convert automatically.

VF　　　　　　　　　　　NSR

External Pacer Exercise

Connect simulator to external pacer. For help, see **Getting Started**, page 5.

To simulate paced beats, pacer **Rate** must be greater than rate of selected rhythm, and pacer **Current** must be greater than simulator capture level.

**Exercise:** Pace 3rd degree AV block at rate of 70 ppm.

at simulator:
1. Press **3rd** key. Confirm 3rd degree AV block is displayed on monitor.

at pacer:
2. Select **Pacer On**. Verify sense markers are displayed with each R wave. (If not, press **ECG Size** button until R wave markers are observed.)
3. Select rate of 70 ppm using **Rate** control.
4. Press **Start/Stop** button to start pacing.
5. Increase pacer current, using **Output** control, until you observe paced beats on monitor. Pacer current setting should read 60mA - 70mA.

Initiate pacing to simulate paced beats.

Adult 3rd degree AV Block.　　Paced beats at 70 ppm.
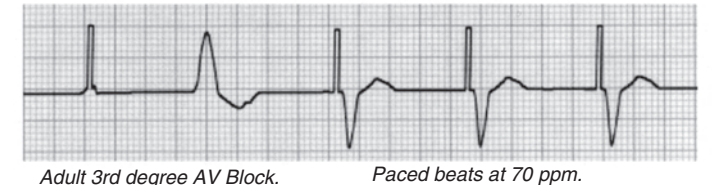
Note: If VF is selected rhythm, simulator won't generate paced beats.