The CS1201 Code Simulator is an easy to use training tool for practicing defibrillation, external pacing, and arrhythmia recognition. Connect directly to defibrillator for safe simulation of cardioversion and electrical capture. The CS1201 generates fibrillations, tachycardias, and bradycardias, as well as ST segment and T wave abnormalities.

**Rhythms for Defibrillator Training**

- **VF** Ventricular fibrillation.
- **VT-HI** Ventricular tachycardia. Wide QRS. Rate: 180. If simulator has CodeMaster or Heartstream pads connector, rate is 220.
- **VT-LO** Ventricular tachycardia. Wide QRS. Rate: 140.
- **T de P** Torsades de Pointes. Fluctuating QRS axis.
- **AFIB** Atrial fibrillation with rapid, varying ventricular response. Ventricular rate: 150.
- **AFLTR** Atrial flutter with 2:1 AV block. Ventricular rate: 150.
- **PSVT** SVT alternates with NSR, then remains in SVT. Rate: 213. PAC falls on T wave. Symmetric T wave inversion.
- **S TACH** Sinus tachycardia with anterior ST depression.
- **S ST** Rate: 120.
- **NSR** Normal sinus rhythm. Rate: 72.
- **ASYS** Asystole.

**ST segment and T wave Abnormalities**

- **SINUS** Sinus rhythm with Acute AMI. Q waves in anterior leads. ST elevation. Rate: 72.
- **AMIS** Sinus rhythm with Acute AMI and PVCs. Q waves in anterior leads. ST elevation. Rate: 72.
- **SINUS** Sinus rhythm with antero-septal ST elevation. Rate: 72.
- **2nd I LAT** Mobitz type I second degree AV block (4:3) with lateral ST elevation. Rate varies from 40 to 50.
- **S BRDY** Sinus bradycardia with inferior ST elevation. Rate: 40.
- **S BRDY** Sinus bradycardia with Q waves and ST elevation in II, III, and aVF. Rate: 40.

**Rhythms for External Pacer Training**

- **1st** Sinus rhythm with first degree AV block and right bundle branch block. Wide QRS. Rate: 60.
- **2nd I** Mobitz type II second degree AV block (4:3) with left bundle branch block and PVCs. Wide QRS.
- **PVC** Rate varies from 32 to 65.
- **2nd II** Mobitz type II second degree AV block (4:3) with right bundle branch block. Wide QRS. Rate varies from 37 to 50.

**Defibrillator Exercise**

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

**Exercise:** Convert VF to NSR.

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 flashes on and off. VF indicator glows steadily again.

**at defibrillator:**

6. Press Discharge button(s) (3).
7. After discharge observe that:
   - On monitor, NSR is displayed. At simulator, NSR indicator glows steadily, and VF indicator is off.

**External Pacer Exercise**

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

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

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

1. Press 3rd key. Confirm 3rd degree AV block is displayed on monitor.
2. Press capture key once to select capture level II (75 to 80mA capture level).
3. Select Pacer On. Verify sense markers are displayed with each R wave. (If not, press ECG Size button until R wave markers are observed.)

Continued on next page.
The CS1201 Code Simulator is warranted 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, or your authorized dealer.

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WARNING!
Be sure defibrillation cable is securely attached to simulator. Keep battery cover on during operation.

IBP Waveform Option
The IBP waveform option allows viewing of invasive blood pressure waveforms on an IBP monitor. CS1201s with this option have a blood pressure cable and connector attached to the end panel. When NSR is selected, blood pressure is approximately 120/80 mmHg. When either VF or Asystole are selected, blood pressure is zero. The remaining 17 rhythms have associated blood pressures that can be classified as hypertensive, hypotensive, or normotensive.

To zero your IBP monitor:
1. Connect monitor’s IBP cable to the CS1201’s IBP cable.
3. Select ASYS.
4. Power-on the IBP monitor.
5. Complete zeroing procedure as described in your monitor’s operating instructions.

Specifications
- sensitivity: 5 microV/V/mmHg
- input impedance: 301 ohms
- output impedance: 1 ohm

Battery Saver Feature
The CS1201 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 will power-on.
3. Observe the NSR indicator. When it flashes on and off, release convert key. NSR indicator continues to flash for about one second. The battery saver feature is now disabled. When the simulator is powered-off, it will return to normal battery saver operation.

Getting Started
1. Install batteries.

- Uses four AA alkaline batteries.

2. Connect defib/pacer cable to simulator.

- Panel-mounted connector.
- Free-hanging connector.

3. Attach ECG cable to ECG snaps.

- Limb Lead ECG snaps.
- Chest Lead ECG snaps.

4. Press ON-OFF key to power-on simulator.

- 3rd degree AV block
- Paced beats at 70 ppm

IBP Waveform Option (continued)

14. Select rate of 70 ppm using Rate control.
15. Press Start/Stop button to start pacing.
16. Using Output control, increase pacer current until you observe paced beats on monitor. Pacer current setting should be 75 to 80mA.

The IBP waveform option can be turned on and off using the IBP/Rate switch. The IBP waveform option is only available for rhythms other than 3rd degree AV block.

This page should appear on the back of the operator's manual and should not be bound into the manual.