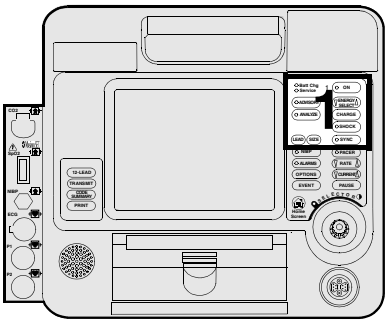# Defibrillator
Inservice Manual

For Internal Distribution ONLY

LIFEPAK 12 OPERATION

BASIC OVERVIEW

Area 1

BATT CHG
Indicates at least one
battery is installed and is
being charged by the AC
Power Adapter.

ON
Switches power
on or off.

SERVICE
Indicates internal
self-check failed.

ENERGY SELECT
Selects energy levels
in manual mode.
See page 4-15.

ADVISORY
Activates Continuous
Patient Surveillance
System (CPSS).
See page 4-4.

CHARGE
Charges the defibrillator
in manual mode.
See page 4-15.

ANALYZE
Activates
Shock Advisory
System (SAS).
See page 4-4.

SHOCK
Discharges the
defibrillator energy to
patient. See page 4-15.

SYNC
Activates
sychronized mode.
See page 4-16.

● Batt Chg
● Service

1 ● ON

2 ▼ENERGY▲ SELECT

● ADVISORY

● ANALYZE

3 CHARGE

● SHOCK

● SYNC
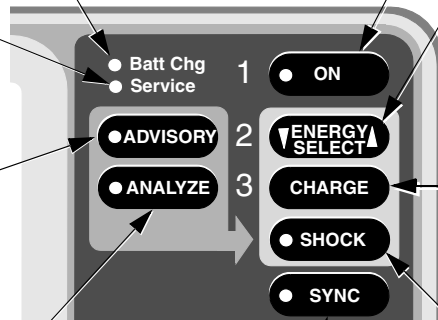
Area 2
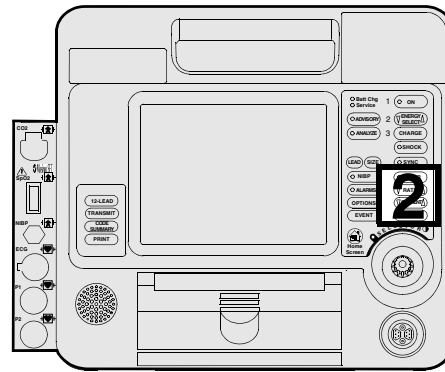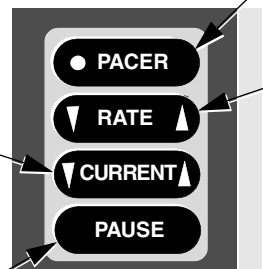
PACER
Activates the pacer function.
See page 4-19.

RATE
Selects pacing rate.
See page 4-19.

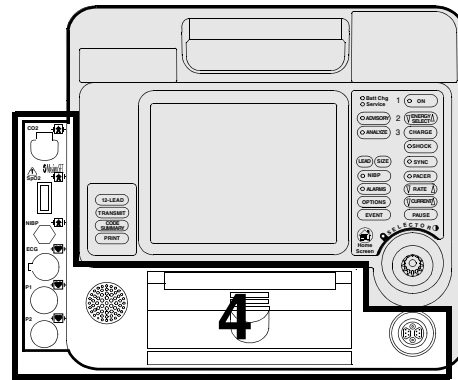**CURRENT**
Adjusts
pacing current.
See page 4-19.

PAUSE
Temporarily slows
pacing rate.
See page 4-19.

Area 3

SIZE
Changes ECG size.
See page 3-3.

LEAD
Changes ECG lead.
See page 3-2.

NIBP
Initiates blood
pressure
measurement.
See page 3-24.

ALARMS
Activates and
silences alarms.
See page 2-22.

OPTIONS
Accesses
optional
functions
See page 2-9.

EVENT
Activates user-
defined events.
See page 2-8.

HOME SCREEN
Returns
immediately to
Home Screen.

LED
Illuminates
when SELECTOR
is active.

CONTRAST
Adjusts screen
contrast.

SELECTOR
Scrolls through and
selects menu items.
See page 2-8.

LEAD   SIZE

● NIBP

● ALARMS

OPTIONS

EVENT

Home
Screen

S E L E C T O R

Area 4

CO2 TUBING CONNECTOR
See page 3-30.

See Warnings, page 1-2, and
supported sensors in Section 3
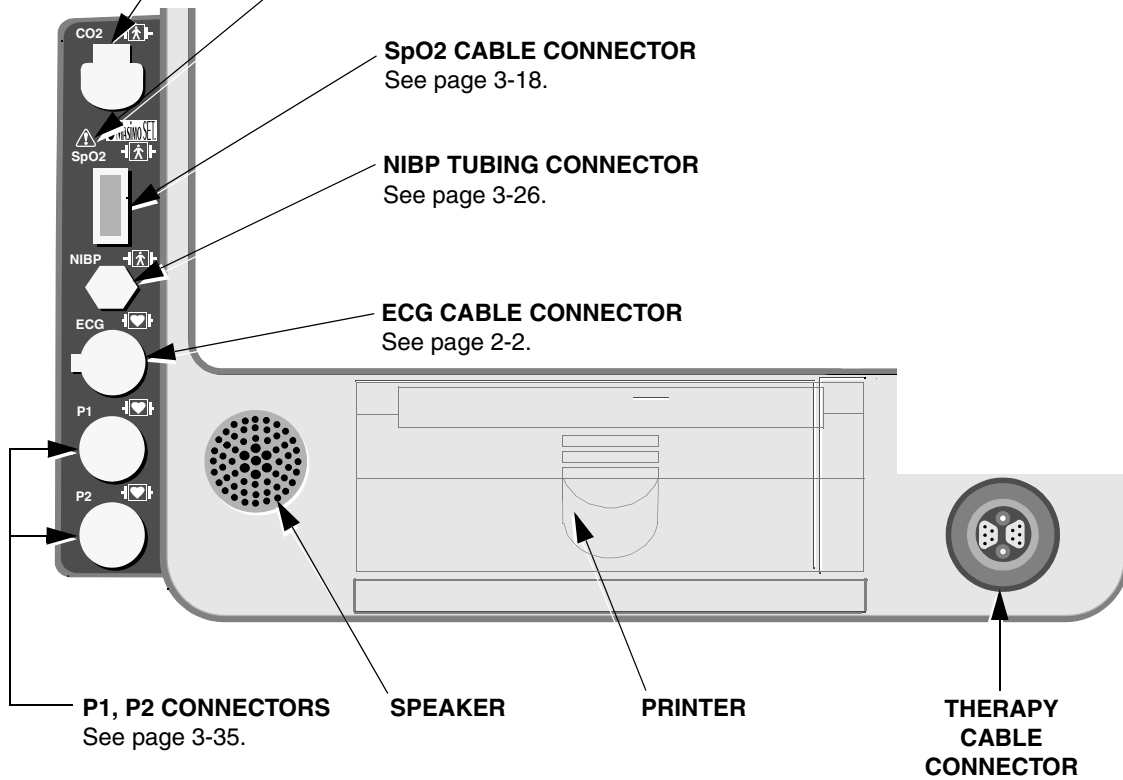and Section 8.

SpO2 CABLE CONNECTOR
See page 3-18.

NIBP TUBING CONNECTOR
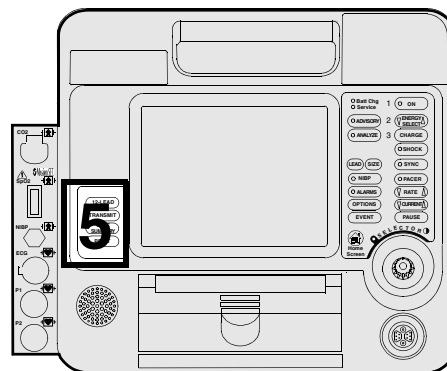See page 3-26.

ECG CABLE CONNECTOR
See page 2-2.

P1, P2 CONNECTORS
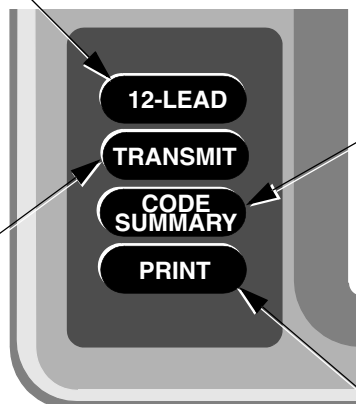See page 3-35.

SPEAKER

PRINTER

**THERAPY
CABLE
CONNECTOR**

Area 5

12-LEAD
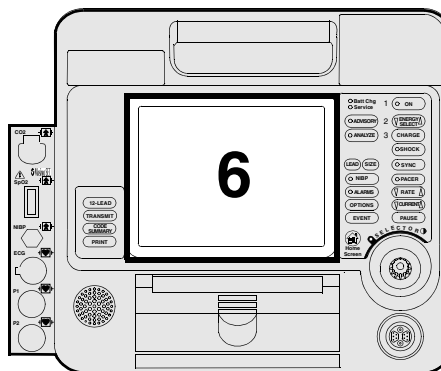Initiates acquisition
of a 12-lead ECG.
See page 3-9.

12-LEAD

TRANSMIT

CODE SUMMARY

PRINT

CODE SUMMARY
Prints a CODE
SUMMARY critical event
record.
See page 6-3.

TRANSMIT
Transmits current
patient data.
See page 6-7.

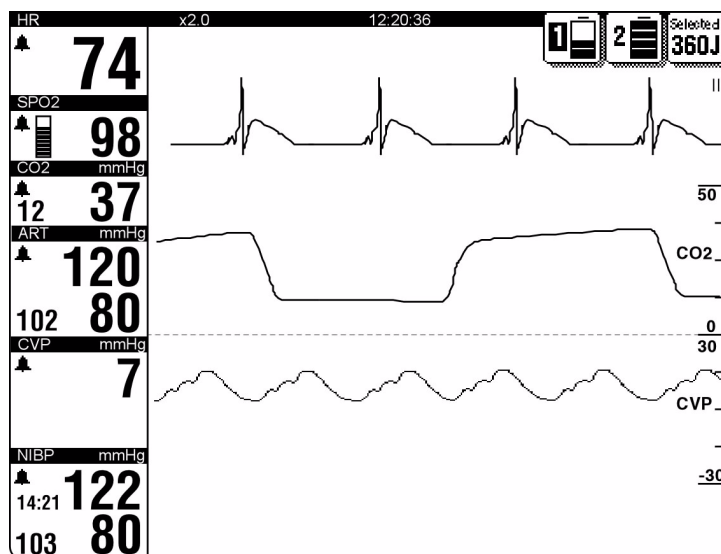**PRINT**
Starts or stops
the printer.

Area 6

6

TOP SCREEN AREA
Displays ECG size, time, indicators for
VF/VT alarm, battery charge, and
selected energy.

**MONITORING
AREA**
Displays
patient
monitoring
parameters
and alarm
indicators. See
page 2-15.

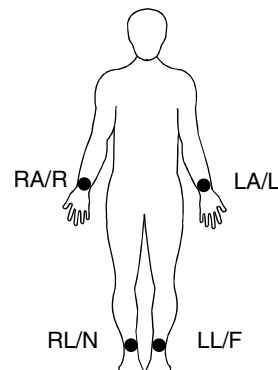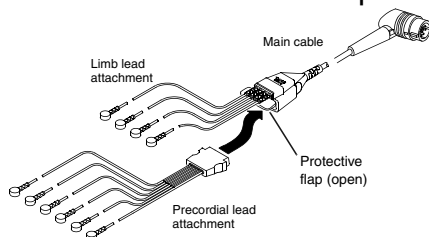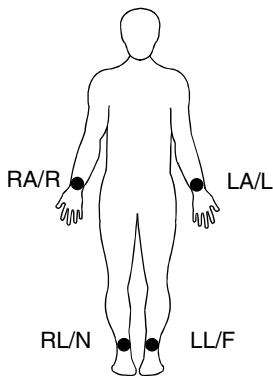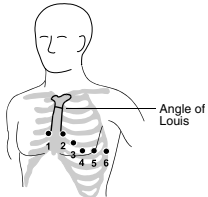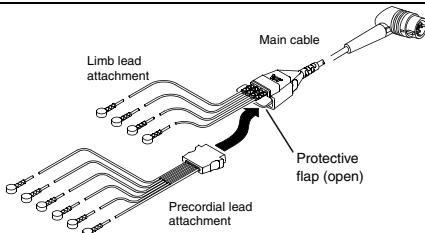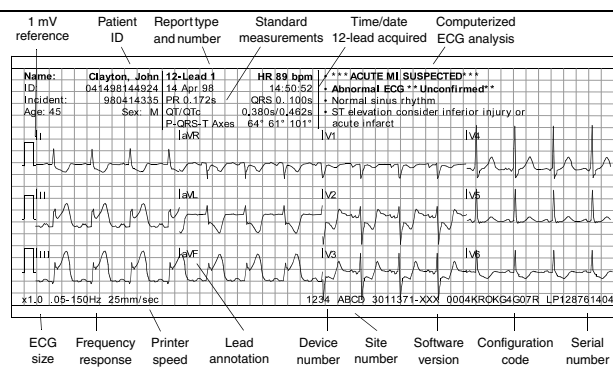| HR | x2.0 | 12:20:36 | 1 | 2 | Selected 360J |

**WAVEFORM
CHANNEL
AREA**
Displays up to
three
waveform
channels.
See page
2-16.

STATUS MESSAGE AREA
Displays messages and alarms.
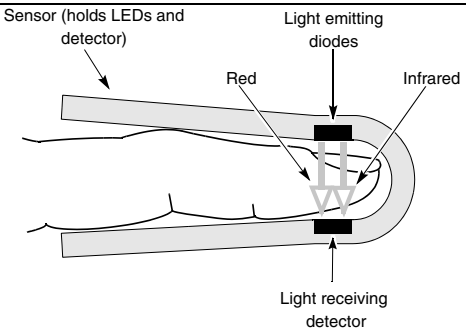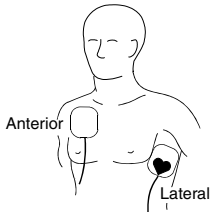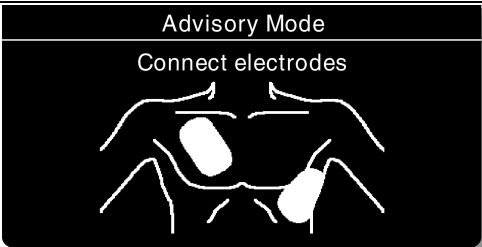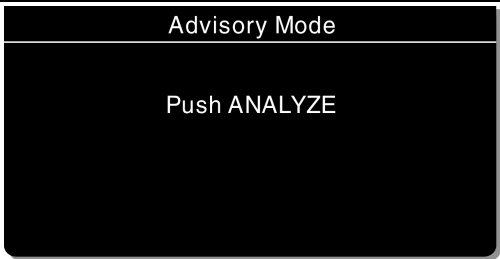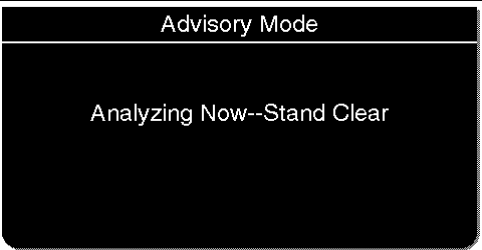
PATIENT MONITORING

1. Press the ON Button

2. Attach the Limb leads to the patient

Main cable

Limb lead
attachment

Protective
flap (open)

Precordial lead
attachment

RA/R   LA/L

RL/N   LL/F
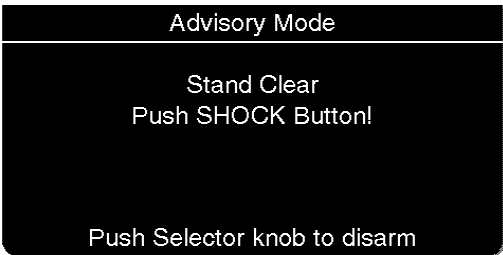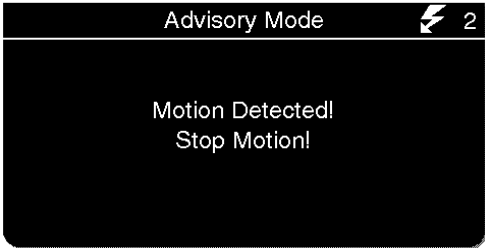
3. Press "PRINT" as needed to secure a strip for the chart (approx. 10 second strip)	
4. Discontinue monitoring PRN.	

ACQUIRING A 12 LEAD ECG

1. Press the "ON" Button	
2. Attach the limb leads to the patient	
3. Attach the chest leads to the patient	
4. Insert the chest leads into the main cable	
5. Press the "12-Lead" button	
6. Select the appropriate age by utilizing the "selector" and press in on the selector once the age is on the screen.	
7. Ensure the patient remains still as the ECG is acquired and prints out.	

Table 3-3 Precordial Lead Electrode Placement

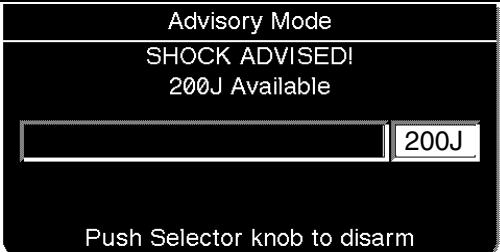| Lead		Location
V1	C1	Fourth intercostal space to the right of the sternum
V2	C2	Fourth intercostal space to the left of the sternum
V3	C3	Directly between leads V2/C2 and V4/C4
V4	C4	Fifth intercostal space at midclavicular line
V5	C5	Level with V4/C4 at left anterior auxiliary line
V6	C6	Level with V5/C5 at left midaxillary line

Figure 3-7 Example of Printed, Standard, 3-Channel, 12-Lead ECG Report

PULSE OXIMETERY

1. Press the "ON" button	

2. Apply the oximeter to the selected finger.	Sensor (holds LEDs and detector) Light emitting diodes Red Infrared Light receiving detector
3. The SPO2 will continually display on the monitoring area of the screen	SPO2 **98**

BLOOD PRESSURE MONITORING

1. Press the "ON" button	
2. Select the appropriate blood pressure cuff	
3. Ensure patient is in the correct position with the arm as straight as possible	
4. Press the "NIBP" button to initiate the BP assessment	

DEFIBRILLATION

1. Press the "ON" button		
2. Prepare the patient for electrode placement	Advisory Mode Connect electrodes	The CONNECT ELECTR voice prompt occur ur connected to the AED patient on a hard surfa water or conductive m
3. Press the "ADVISORY" button		
4. Connect the electrodes to the patient as instructed Anterior Lateral	Advisory Mode Connect electrodes Advisory Mode Push ANALYZE	The CONNECT ELEC voice prompt occur connected to the AE patient on a hard su water or conductive The PUSH ANALYZE m occur when the patien the AED. The PUSH A on the screen and the until ANALYZE is press
5. Press the "ANALYZE" button when instructed to do so by the Lifepak *ensure CPR is stopped at this time and no one is touching the patient.	Advisory Mode Push ANALYZE	The PUSH ANALYZE m occur when the patien the AED. The PUSH A on the screen and the until ANALYZE is press
6. Stand Clear of Patient as the machine analyzes. This analysis takes between 6-9 seconds.	Advisory Mode SHOCK ADVISED! Charging to 200J 9J Push Selector knob to disarm	If the AED detects you see and hear S begins charging to #1. A rising tone in charging.
7. If the machi c Anterior Posterior Anterior Posterior QUIK-COMBO Electrodes FAST-PATCH Electrodes *if you must abort the shock, press the selector knob	Advisory Mode SHOCK ADVISED! 200J Available 200J Push Selector knob to disarm Advisory Mode	You see and hear AM CLEAR. Do not touch therapy cable during You see and hear ANS CLEAR. Do not touch therapy cable during ECG analysis requires seconds. The SAS analyzes advises either SHOCK ADVISED. The SAS analyzes the advises either SHOCK ADVISED. You see and hear

8. Instruct all persons to stand clear, and press the "SHOCK" button when the button starts flashing.	Start CPR **1:59** Advisory Mode Push ANALYZE
9. The machine will then instruct the user to start CPR, and will display the 2 minute count down.	**1:59**
10. After 2 minutes, continue following the prompts	Advisory Mode
NOTE: if motion is detected at any time, a stop motion notice will prompt on the screen.	Advisory Mode Advisory Mode　⚡ 2 Motion Detected! Stop Motion!

Video Resources:

Advisory Mode

Advisory Mode　⚡ 2
Connect Electrodes

If therapy electrod
CONNECT ELECTR
prompt occur until
the AED.

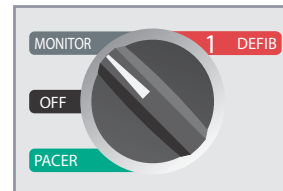https://www.youtube.com/watch?v=VhHyy3_o
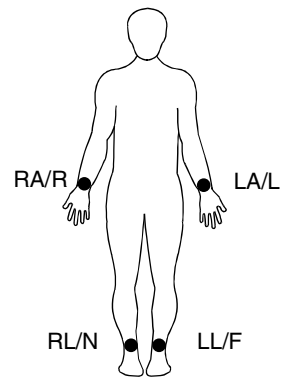
ZOLL E SERIES OPERATION
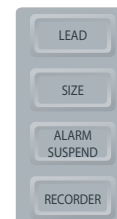
BASIC OVERVIEW
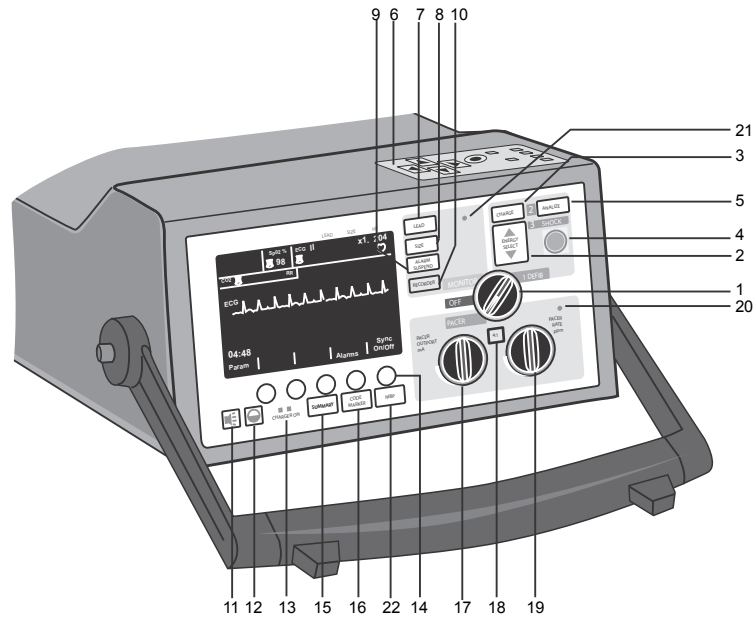
PATIENT MONITORING

1. Set selector switch to "MONITOR" position

2. Attach the Limb leads to the patient

   RA/R   LA/L

   RL/N   LL/F

3. Press "RECORDER" as needed to secure a strip for the chart (approx. 10 second strip)

   LEAD

   SIZE

   ALARM SUSPEND

   RECORDER

4. Discontinue monitoring PRN.

ACQUIRING A 12 LEAD ECG

Angle of Louis

Table 2-2 Precordial

Lead		Locat
V1	C1	Fourt
V2	C2	Fourt
V3	C3	Direc
V4	C4	Fifth

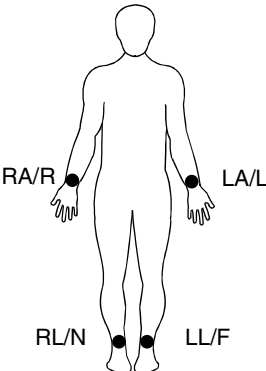|	
1. Set selector switch to "MONITOR" position	
2. Attach the Limb leads to the patient	
3. Attach the chest leads to the patient	

Table 3-3 Precordial Lead Electrode Placement

Lead		Location
V1	C1	Fourth intercostal space to the right of the sternum
V2	C2	Fourth intercostal space to the left of the sternum
V3	C3	Directly between leads V2/C2 and V4/C4
V4	C4	Fifth intercostal space at midclavicular line
V5	C5	Level with V4/C4 at left anterior auxiliary line
V6	C6	Level with V5/C5 at left midaxillary line

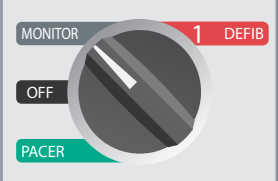|	
4. Press the "12 Lead" hot key on the monitor	
5. Press the "PT" info hot key to select age, and gender	
6. Press the "Acquire" hot key	
7. Ensure the patient remains still as the ECG is acquired and prints out.	

Table 3-3 Precordial

Lead		Locat
V1	C1	Fourt
V2	C2	Fourt
V3	C3	Direc
V4	C4	Fifth i
	C5	Level
	C6	Level

Angle of Louis

DEVICE ID:
RECORDED:10:58:14
PATIENT NAME :
PATIENT ID# :
PATIENT AGE: 19
PATIENT SEX: Male

Vent. rate   73
PR interval   152 ms
QRS Duration: 80 ms
QT/QTc   364/401 ms
P-R-T axes 54 58 64

Normal sinus rhythm with sinus arrhythmia
ST elevation consider inferior injury or acute infarct
** ** ** ** ** Acute MI * ** ** ** **
Abnormal ECG
*** Unconfirmed ***

ems12lead.com

PULSE OXIMETERY

1. Set selector switch to "MONITOR" position	

2. Apply the oximeter to the selected finger.	Sensor (holds LEDs and detector) Light emitting diodes Red Infrared Light receiving detector
3. The SPO2 will continually display on the monitoring area of the screen	

BLOOD PRESSURE MONITORING

1. Set selector switch to "MONITOR" position	MONITOR 1 DEFIB OFF PACER
2. Select the appropriate blood pressure cuff	
3. Ensure patient is in the correct position with the arm as straight as possible	
4. Press the "NIBP" button to initiate the BP assessment	

DEFIBRILLATION

1. Set selector switch to "DEFIB" position	MONITOR 1 DEFIB OFF PACER
2. Press "ANALY	MONITOR 1 DEFIB OFF PACER ECG ANALYZING ECG 00:01 Param Wave 2 ID# Alarms Sync On/Off
3. Press "SHOC	ECG DEFIB 200J SEL. 00:01 Param Wave 2 ID# Alarms Sync On/Off SHOCK ADVISED ECG DEFIB 200J SEL. 00:01 Param Wave 2 ID# Alarms Sync On/Off
4. Continue with audible instructions from the machine.	00:01 Param Wave 2 ID# Alarms Sync On/Off

ECG

00:

Par

NO SH

ECG

00:01

Param

SHOCK

ECG

Video Resources:

https://www.youtube.com/watch?v=mFZkfZh9njM
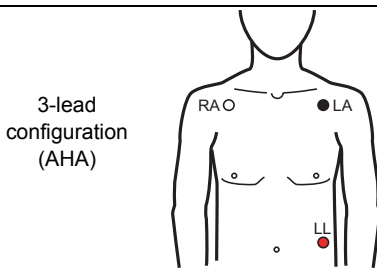
ZOLL AED PRO SERIES OPERATION

BASIC OVERVIEW

Patient cable connector

Display screen

Shock button

On/Off button

Microphone (optional)

Softkeys

Ready indicator

IrDA port

Speaker

Battery compartment latch

Battery compartment cover

PATIENT MONITORING

1. Plug in the 3 Lead cable to the patient cable connector

R ●   ○ L

F ●

2. Power on the Device

3. Apply the electrodes to the p

3-lead configuration (AHA)

USB co inside battery

RA ○   ● LA

LL ●

4. View the 3 Lead ECG on the screen

**Note: you are not able to print the strip form the device, however can be downloaded at the office.
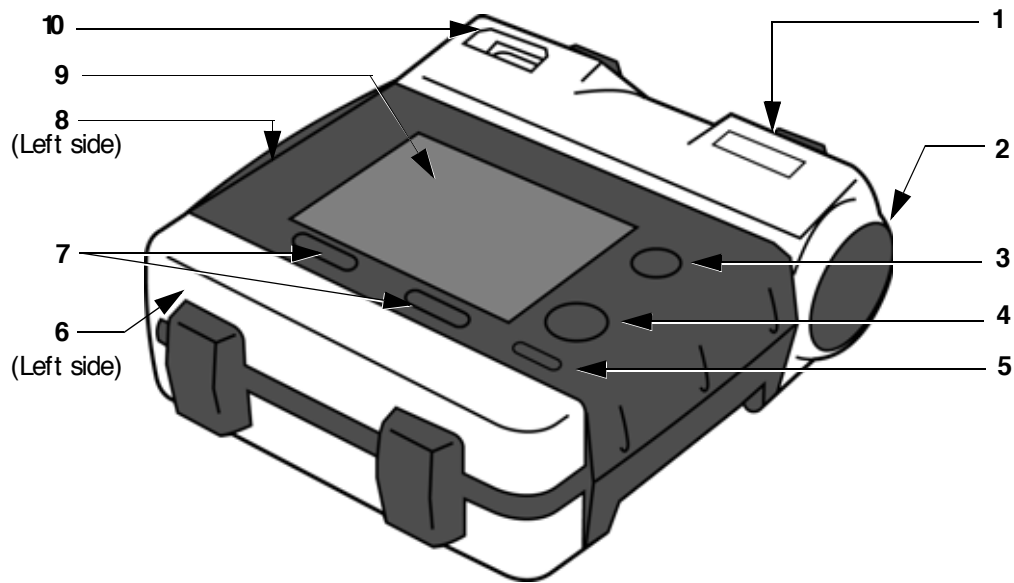
DEFIBRILLATION

|	
1. Ensure the electrodes plugged into the patient cable connector	
2. Power on the Device	
3. Apply the electrodes to the patients bare chest	
4. The machine will automatically start analyzing, stand clear	*DON'T TOUCH PATIENT, ANALYZING*
5. Prepare to shock if instructed, or begin CPR if no shock advised	*SHOCK ADVISED* or *NO SHOCK ADVISED*
6. If shock advised, deliver shock as instructed	*DON'T TOUCH PATIENT* *PRESS FLASHING SHOCK BUTTON*

Video Resources:

LIFEPAK 1000 SERIES OPERATION

10

9

8
(Left side)

7

6
(Left side)

1

2

3

4

5

Ẏ OK ▮

Ẏ

OK

▮

ON

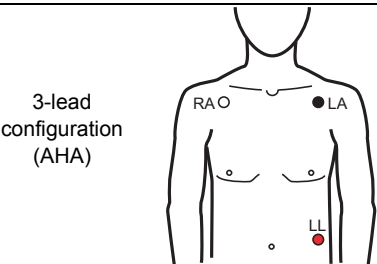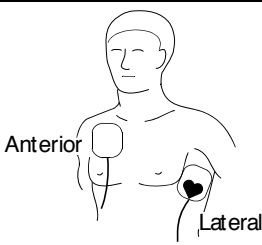|	Feature	Description
1	Readiness display	The readiness display alerts you to the defibrillator's readiness status.
		Three symbols (🔧, OK, 🔋) allow you to determine whether the defibrillator is ready for use or needs attention.
		The following defines what each symbol represents and when/where each appears.
	🔧	The wrench indicator appears on the readiness display when a condition exists that prevents or could prevent normal defibrillator operation.
	OK	The OK symbol indicates that the defibrillator is ready for use.
		This symbol is visible only when the defibrillator is off.
	🔋	The battery symbol appears on the readiness display when the defibrillator is off. When one bar is visible in the symbol, the battery is low. If the symbol is blank, the battery is extremely low and the OK symbol will not appear when the defibrillator is off.
2	Speaker	Provides audio voice prompts and tones.
3	**ON** (green button) **ON/OFF** button	Green **ON/OFF** button turns the power on or off. The button is lit whenever the defibrillator is on.

	Feature	Description
4	(shock icon) SHOCK button	Pressing the **SHOCK** button (when flashing) delivers a shock to the patient.
5	(menu icon) **MENU** button	Used to select operating modes (Manual or AED) and enter information in Setup mode.
6	Battery compartment	Accommodates a single battery pak.
7	(softkey icon) Soft keys	Two soft keys work in conjunction with the screen, providing a way for you to make selections while using the defibrillator.
		The soft key functions vary, depending on the task you are performing at the time. Their function is identified by the label above them on the screen.
8	IrDA port	Infrared Data Association. This port provides wireless communications for transferring data from the defibrillator to a PC.
9	Screen	Displays pertinent information for use during all modes of operation. Figure 2-2 defines the information displayed on the screen.
10	Cable receptacle	Allows direct connection to therapy electrodes (black), ECG cable (green), Infant/Child electrodes (pink), and QUIK-COMBO™ therapy electrodes (gray).

PATIENT MONITORING

1. Plug in the 3 Lead cable to the patient cable connector

2. Power on the Device	
3. Apply the electrodes to the patient	3-lead configura... (AHA) ●LA
5. View the 3 Lead ECG on the screen 4. **Note: you are not able to print the strip form the device, however can be downloaded at the office.	

DEFIBRILLATION	
1. Ensure the electrodes plugged into the patient cable connector	
2. Power on the Device	
3. Apply the electrodes to the patients bare chest	Anterior Lateral **WARNING!** **Excessive Energy Deli...** For children less than 8 ... Reduced Energy Defibri... QUIK-COMBO electrod... delivery by this defibrilla...
4. The machine will automatically start analyzing, stand clear	*STAND CLEAR, ANALYZING NOW, STAND CLEAR*
5. Prepare to shock if instructed, or begin CPR if no shock advised	*PREPARING TO SHOCK*
6. If shock advised, deliver shock as instructed	*STAND CLEAR, PUSH SHOCK BUTTON*

Video Resources:
https://www.youtube.com/watch?v=YeCHZ05sbPo