

*Advancing Resuscitation. Today.™*



**ZOLL.**

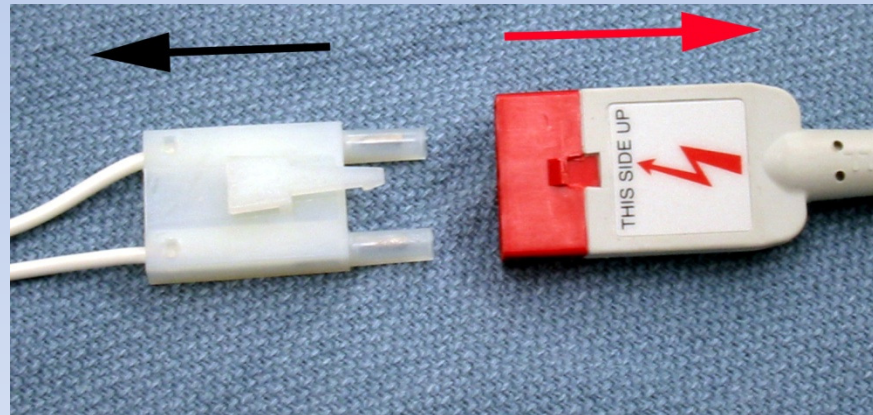
# ZOLL Medical Corporation

**M-Series**

# ZOLL M-Series

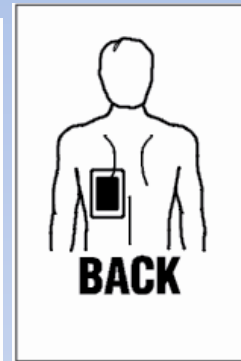
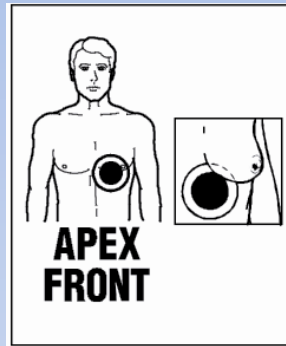


# Electrode Connection

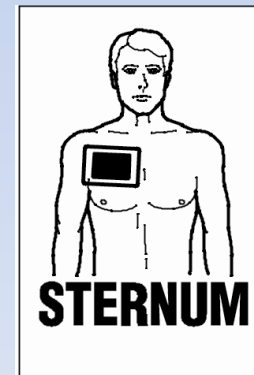
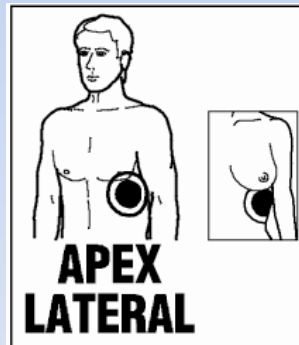


# Electrode Placement

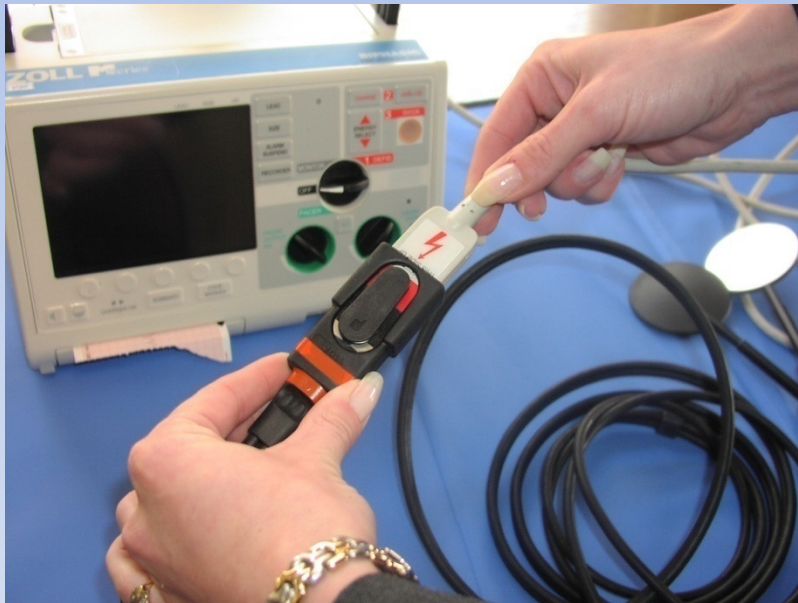
## Preferred Placement



## Alternate Placement



# Internal Spoons



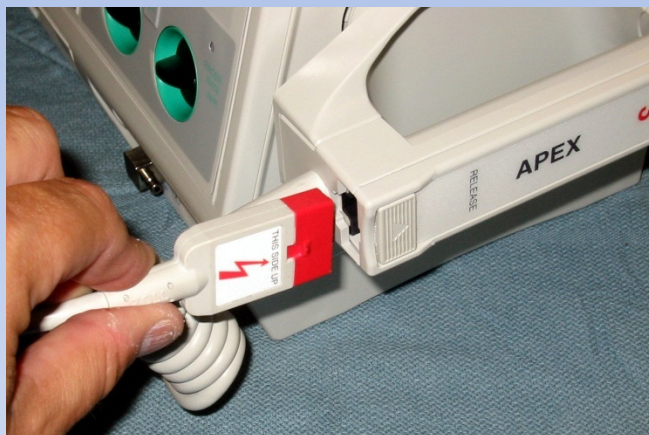
Used by MD for Internal Defibrillation for Open Heart Surgery Patients **ONLY**



# External Paddles

1

Turn Unit to Defib



Energy Select if needed



2

Press Charge



3

Press Shock Buttons Simultaneously



# Joule Settings

Recommended ACLS Defibrillation Protocols *With the ZOLL Rectilinear Biphasic Waveform*

ZOLL Biphasic		
Defibrillation	1 <sup>st</sup> Shock	120 Joules
	2 <sup>nd</sup> Shock	150 Joules
	3 <sup>rd</sup> and Subsequent	200 Joules
Pedi Defib	1 <sup>st</sup> Shock	2 Joules/kg
	Subsequent	4 Joules/kg
Internal Defib	1 <sup>st</sup> Shock	5 Joules
	2 <sup>nd</sup> Shock	10 Joules
	3 <sup>rd</sup> Shock	20 Joules
	4 <sup>th</sup> Shock	30 Joules
	5 <sup>th</sup> Shock	50 Joules

The settings are the “appropriate biphasic equivalent” of monophasic equipment and are to be used as a guide for direct physician orders deviating from hospital protocol.

# All ZOLL User Interfaces are the Same!



Red Area = Stop  
Defibrillation  
Cardioversion

Green Area = Go  
Pacing



# **Red Area = Stop**

**When you defibrillate or cardiovert a patient,  
you are attempting to  
“stop” and “restart” the electrical conductivity  
of the heart.**

**(similar to a hard boot of a computer)**

**The desired end result is a perfusing rhythm.**

# Defibrillation

## Advanced and Basic Providers

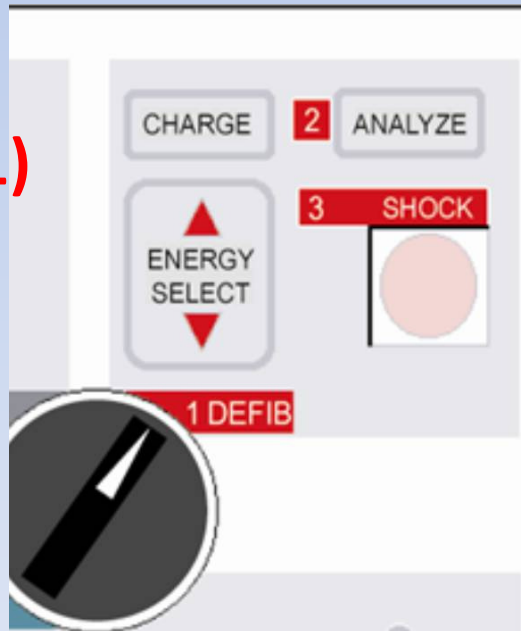
Place the pads on the patient .

Preferred placement is anterior/posterior.

(Heart Sandwich)

### Basic Providers

1. Turn the Unit On (1)
2. Press Analyze (2)
3. Follow verbal and visible prompts (3)



### Advanced Providers

1. Turn the Unit On (1)
2. If Shockable rhythm, press charge (2)
3. Press Shock Button when lit (3)

# AED for BLS Users

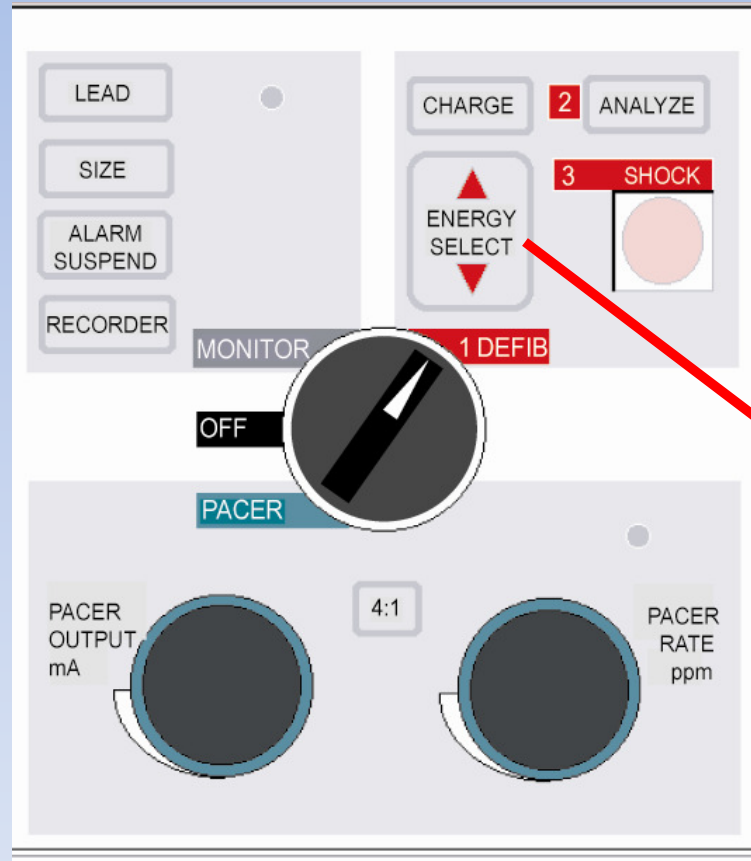
When you press “Analyze” unit will tell you to “Stand Clear” and interpret the ECG Rhythm



If unit interprets a “Shockable” Rhythm, the unit will charge itself and tell you to “Press Shock”

If unit interprets a “Non-Shockable” Rhythm, the unit will tell you “No Shock Advised” and remind you to “Perform CPR”

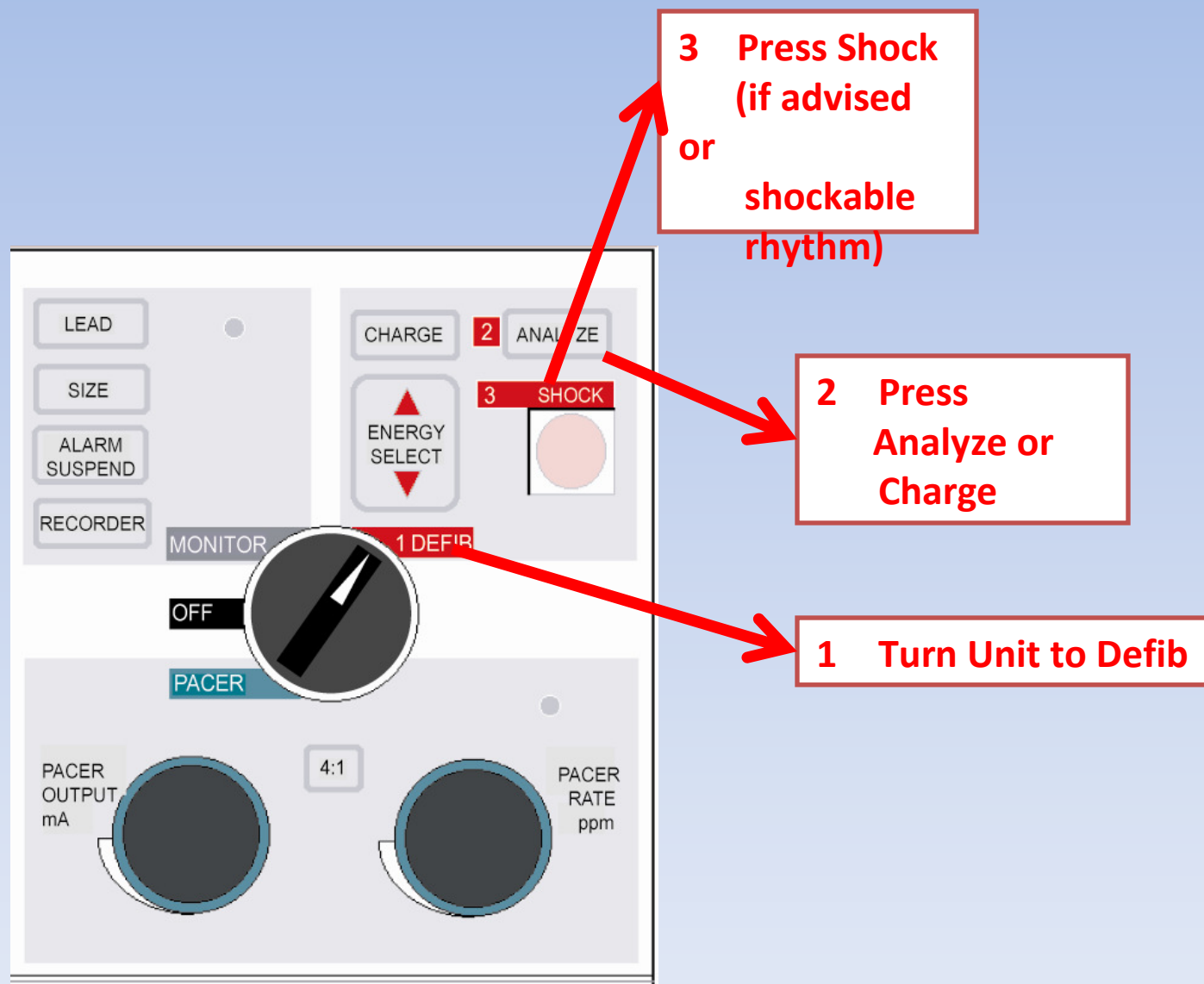
# Energy Settings



After each administered defibrillation, the ZOLL M Series will automatically increase the energy setting according to your hospital protocol.

**PEDIATRIC PATIENTS:**  
You may manually adjust energy settings requested by the MD by pushing Energy Select up or down.

# Defibrillation Step by Step

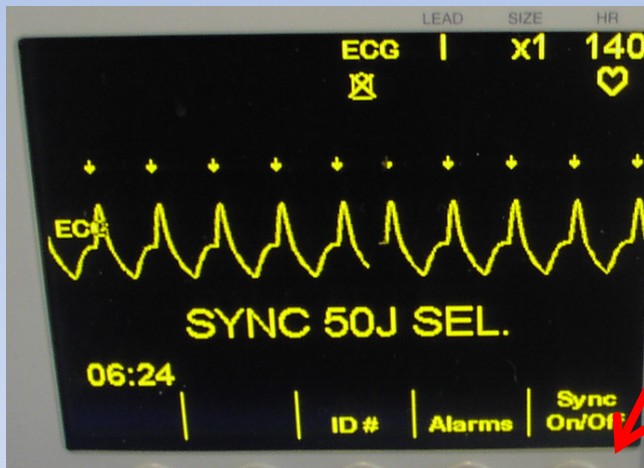




# Cardioversion

## Advanced Providers

Place the pads on the patient .  
Preferred placement is anterior/posterior.  
(Heart Sandwich)



1. Turn Unit to Defib (1)
2. Press "Sync"  
(Unit will read "SYNC" next to Joules and markers will appear above QRS Complexes.)
3. Select Desired Joules
4. Press Charge (2)
5. Press lit "Shock" button (3)

### IMPORTANT:

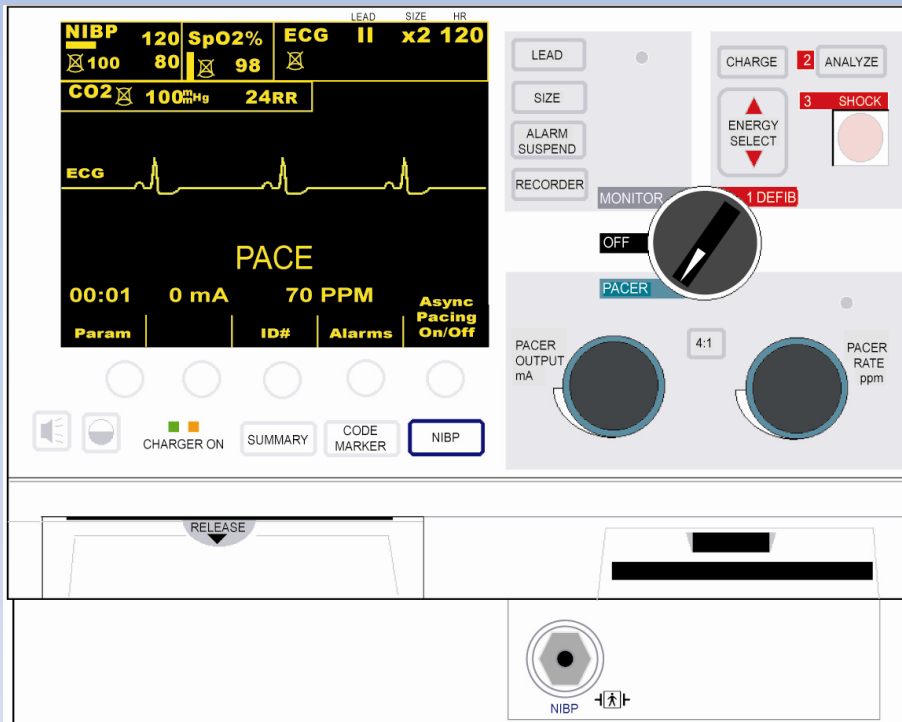
The M Series will default back to "Defib" (Rescue Mode) after the Synchronized shock. If you desire a 2<sup>nd</sup> synchronized shock, be sure to push "Sync" again and look for markers.

# Important

The M Series will default back to “Defib” mode after sync shock administered.

If you choose to administer subsequent cardioversion shocks, be sure to remember to push the “Sync” button each and every time.

# Pacing



1. Turn to Pacing (Green Area)  
A downward deflection will appear with pt rhythm.
2. Increase mA until you receive capture of the heart.  
(One downward deflection for every QRS complex)
3. Increase mA approximately 10% after capture.
4. Adjust rate as requested by MD.
5. Pacer automatically defaults to a demand pacer.
6. To view intrinsic rhythm during pacing, press and hold 4:1 button.
7. Should you want to change to Async Pacing, press Async on/off along bottom prompt.

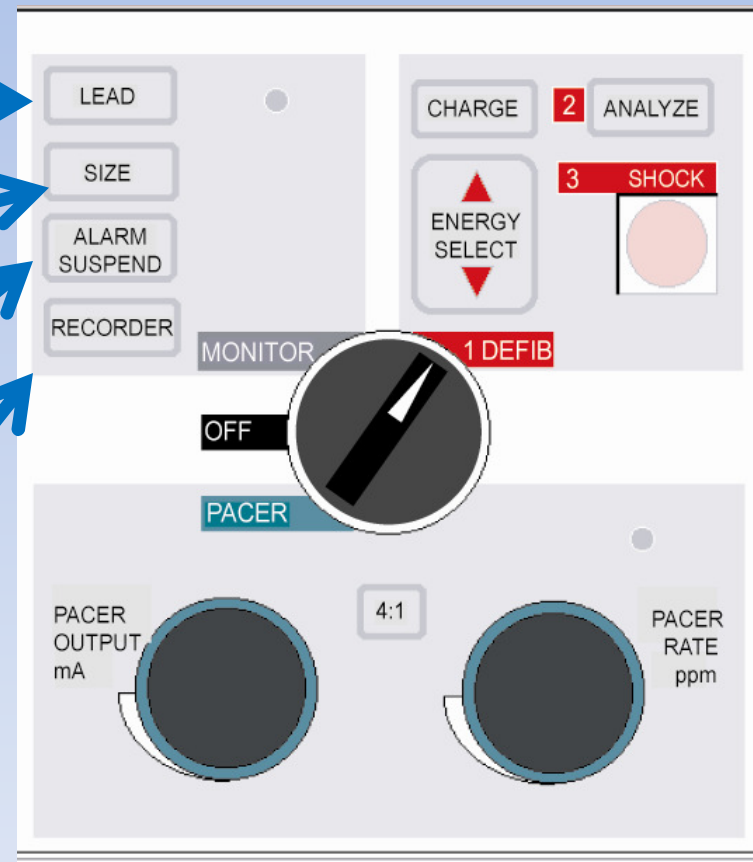
# Monitor Mode

“Lead” Changes lead selection

“Size” changes display size of ECG

“Alarm Suspend” suspends alarms (deactivated on crash cart equipment)

“Recorder” turns print on/off



# Testing

## UNPLUG UNIT FROM THE ELECTRICAL OUTLET PRIOR TO TESTING

1. Unplug MFC from pads and plug into test port.  
(Black port attached to Cable)
2. Turn unit on. (1)
3. Energy select 30 joules.
4. Press Charge. (2)
5. Press Shock. (3)
6. Printer will print result.
7. Plug MFC back into pads to be “Code Ready”.



# Battery

- The most common cause of defibrillation failures are battery related
- A new, fully charged battery pack has enough energy to do 1 of the following
  - a.) 35 Defibrillator shocks at maximum energy
  - b.) 1.5 hours of continuous ECG monitoring
  - c.) 1.0 hour of continuous ECG monitoring and pacing
- Recharge (plug in unit to wall) or replace battery when LOW BATTERY or REPLACE BATTERY are displayed on the screen

# Paper



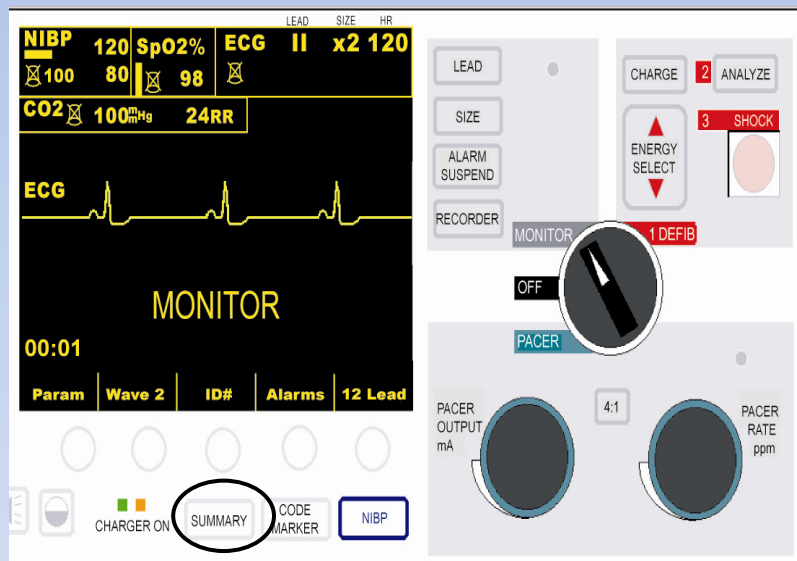
If ***Check recorder*** is displayed, evaluate the paper tray at the bottom of the M-series

- Locate the **RELEASE** label and press the ridge down located below the label
- Slide tray out
- Replace paper with one square dangling outside of tray.
- Red grid up, black arrows out

Press **RECORDER** button to confirm proper placement

# Summary button

printing a partial summary



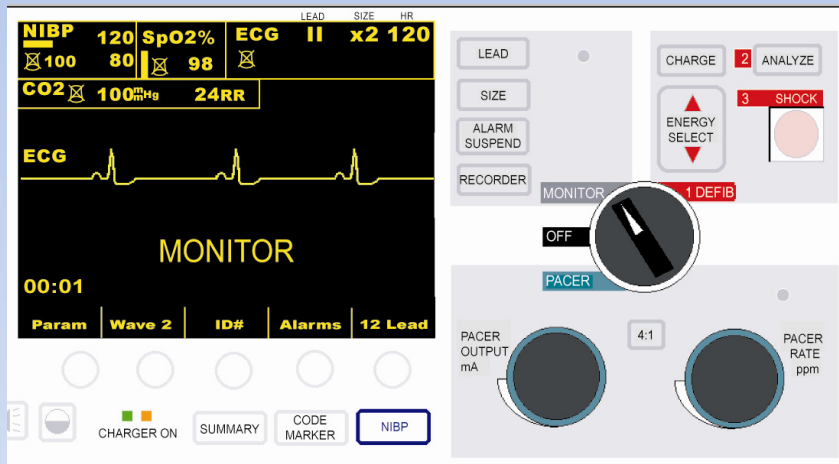
Press **Summary** button

Summary Menu

- Press the **Print Chart** softkey
- Press the **Print Range** softkey
- Press **Prev Event** or **Next Event** softkey to select the first event for Printing
- Press the **Print** softkey

# Summary Button:

## Printing a Full Summary



Press the Summary button  
Summary Menu

Press the Print Chart softkey

Press the Print All softkey

Press the Recorder button to stop  
printing the report

# *Printing an Incident Log*

*An abbreviated list of all events recorded in the summary report  
which includes the time of occurrence.*

## Events such as the following:

- M-Series turned on
- Defibrillation advisory messages
- Defibrillation shocks (including energy levels)
- Pacer mode activated
- Alarms triggered / Code markers

Press and release the Summary button

Press the Print Log softkey