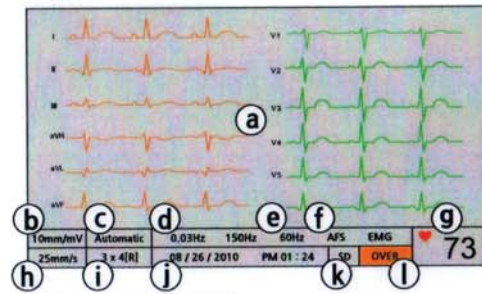


## Screen

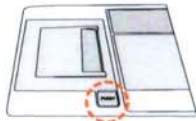


\*This screen is default setting.

- a** Display ECG waveforms. Press the **5 G mode** button to arrange grouped leads. Press the **5 C mode** button to change the lead channels.
- b** Display Gain. Press the **1 Gain** button to cycle through 5, 10 or 20mm/mV.
- c** Display selected mode. Press the **AUTO** button to select automatic mode and the **MANUAL** button to select manual mode.
- d** Display selected filters. Press the **3 Filter** button to enter filter set menu for high pass, low pass and EMG filter.

## Paper loading

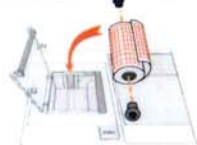
1. Press a PUSH button to open a paper cover.



2. Insert paper as grid-side meet a printer head.



Z-fold Type



Roll Type

Z-fold type: Page maker (black tab) should be located front side.

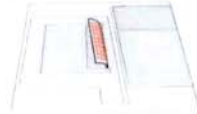
Roll type: Paper shafts should be used with roll paper.

### NOTE:

Keep the paper shafts for next use. It is not included with new paper packages.

- e** Display AC filter setting. Press the **MENU** button to enter configuration menu. This menu is located on System Setup>AC Line Filter. If the selected AC filter and supplied AC frequency are not matched, it may cause heavy noise.
- f** Anti-Floating System: It reduces ECG baseline wondering. Press the **MENU** button to enter configuration menu. This menu is located on System Setup>AFS.
- g** Display current HR rate from ECG waveform.
- h** Display writing speed. Press the **2 Speed** button to cycle through 5, 10, 25 or 50mm/s.
- i** Display report format and selected paper type. [Z] means Z-fold, [R] means Roll paper. Press the **MENU** button to enter configuration menu. Paper type select menu is located on Auto or Manual>Report Format.
- j** Display current Date and Time. Press the button to enter configuration menu. Date or Time set are located on System Setup>Date or Time.
- k** The 'SD' means a SD card is inserted. (Option)
- l** Display condition of input signals. OVER: Input signal is too big to control. When this symbol shown, check the electrode and wait until the signals become stable. Lead fail Detection: Bad connection(s) are indicated. Check the indicated lead cable(s) and electrode(s). When the cable is damaged, it may cause lead fail state.

3. Before close printer cover make sure the paper is pulled forward as about 5cm.



4. Set the paper type as loaded paper type.

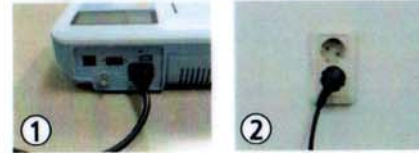
- MENU** Press to enter the Configuration menu. Set the paper type at System Setup>Paper Select as loaded paper type. \*Paper Select tab is located last page.

### Ordering information

Model	Type	Code	Unit
303i	Roll	A50001	10 Roll/Box
	Z-fold	A50002	10 EA/Box
406i	Roll	A50000	10 Roll/Box
	Z-fold	A50003	10 EA/Box

## Installing and Connecting

- 1-1. Connect AC power cord and device.
- 1-2. Plug the AC power cord to grounded AC outlet.



- Warning:**
  - For your safety use grounded AC power, or use earth connection.
  - Connect equivalent ground when use with other devices.
  - When connect the patient with several electrical device, it may increase electrical shock hazard by leakage current.

2. AC plugged-in indicator turns on.

LED	Name	Description / Function
	AC plugged-in	Off Disconnect AC power line Solid Green Connect AC power line.
	Power-On	Off The device is off Solid Green The device is on
	Battery Charging	Off Battery Operator(at device On) Blinking Orange The battery is charging Solid Orange The battery is fully charged

Note: It takes about 6 hours for full-charged.

3. Connect a patient cable with a device.



- Warning: Shock Hazard**  
Use only provided by MEDIGATE cable and accessories. Other product may cause safety problems.



- Operator shall not touch patient and device simultaneously.
- During use of device, avoid contact between the metal part of device and the patient.
- Remove all the metal accessories of patient wears before the perform measurement.
- Do not touch the patient, the patient cable, or the device while defibrillator is operating.

## Operating

1. Automatic mode

Automatic mode provides about 10 sec ECG signal and simple diagnosis report print.

- 1-1. Turn the device on and attach electrodes.
- 1-2. **AUTO** Press AUTO button to mode select.
- 1-3. Wait until the ECG signals on LCD are stabilized.
- 1-4. **ENTER RUN** Press RUN button to start record.

The report will be printed by the Acquisition, Analysis, Printing process. Please wait a while.

- Warning:** A qualified physician must overread all interpretation results and computer-generated tracings. Computerized interpretation is only significant when used in conjunction with clinical findings.

4. Press the power button to turn on.



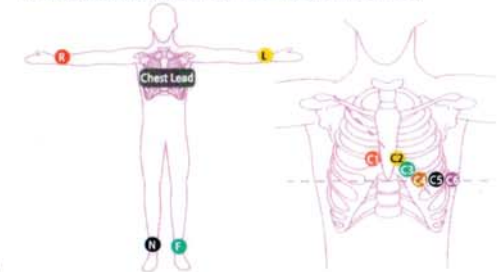
Short press to turn on,  
long press to turn off.

5. Connect electrodes with leads.



When electrodes connecting, please screw to clockwise the hold screw of electrode for tight. Loose contact may cause noise on the ECG signal.

6. Attach electrodes to the body of patient.



	Limb Lead				Chest Lead					
AHA	RA	LA	RL	LL	V1	V2	V3	V4	V5	V6
IEC	R	L	N	F	C1	C2	C3	C4	C5	C6

2. Manual mode

Manual mode provides continuous printing function.

- 2-1. Turn the device on and attach electrodes.
- 2-2. **MANUAL** Press MANUAL button to mode select.
- 2-3. Wait until the ECG signals on LCD are stabilized.
- 2-4. **ENTER RUN** Press RUN button to start record.
- 2-5. **ESC STOP** Press STOP button to stop record.



**Notice:** Don't print more than 10 minutes. If the printer is overheated, it may reduce device's life time.

## Symbols

Symbol	Description
	<b>High Voltage Caution:</b> This symbol means high voltage parts included.
	<b>EU-Warning or Caution:</b> This symbol indicates hazard. If not avoided, the hazard can result death or serious injury, minor personal injury or product damage.
	<b>CE Marking:</b> CE Marking means this device is conformity with provisions of the EU MDD(Medical device directive). It is certified by DNV(NB No. 0434).
	<b>Classification of electrical protection symbol:</b> This symbol means the device is CF type(cardiac floating) protection applied.
	<b>EU-Consult instructions for Use:</b> This symbol means read manuals or descriptions from manufacture.
	<b>IPX Level:</b> This symbol means waterproof level. (IPX0 = No waterproof)
	<b>EU-Electronics and Battery Disposal Information:</b> This symbol means that the product and battery should be recycled separately from household waste.
	<b>GND symbol:</b> This symbol means equivalent ground terminal.
	<b>Network symbol:</b> This symbol means TCP/IP terminal.
	<b>USB device symbol:</b> This symbol means Universal Serial Bus terminal.
	<b>SD card symbol:</b> This symbol indicates SD card slot.
	<b>Serial port symbol:</b> This symbol means Serial port (RS-232).

## Warnings and Cautions

### Warning: Indicates a hazard. If not avoided, the hazard can result death or serious injury.

- Avoid humidity, high temperature, dust in the air, salt or sulfuric material and avoid the unventilated place or the direct sunlight.
- Avoid vibration or mechanical shock.
- Avoid fire and explosion hazard. An explosion hazard may result from the use of flammable anesthetics, skin cleansing agents and disinfectants.
- Dispose of the packaging material, observing the applicable waste control regulations. Keep the packaging material out of children's reach.
- If in doubt the integrity of the AC power source, the device must be operated from its internal battery.
- Check the voltage rating before you connect the device to an electrical outlet to ensure that the required voltage and frequency.
- If use multi-tap inevitably, use the one provided with earth pin by all means.
- Unplug the AC power cord from AC outlet before the device cleaning or disinfecting its surface.
- Do not spray, pour, or spill any liquid directly to the device for cleaning or disinfection.
- When cleaning or disinfecting surface of the device or electrode, fully dry and use it.
- Due to the risk of electrical shock, do not open the cover of the equipment unless absolutely necessary and disassembly of the machine should be done only by a maintenance worker who has the license from MEDIGATE Inc.

### Caution: Indicates a potential hazard. If not avoided, this hazard may result in minor personal injury and/or product/property damage.

- Check the device before using for your safety.
- If put the electrodes too long time, they may cause skin problems. Therefore, use them for measurement only.

## Troubleshooting

Problem	Check or Possible Solutions
- Too small or too big ECG wave. 	<b>1 Gain</b> You can adjust the Gain value with the <b>Gain button</b> . Recommended: 10mm/mV
- ECG waves looks too tight or too loose. 	<b>2 Speed</b> You can adjust the Speed Value with Speed button. Recommended: 25mm/s
- High frequency noises are added. 	- Use stronger Low Pass filter. [weak 150Hz - 100Hz - 40Hz strong] <b>Note:</b> Stronger filter may make distortion.
- Too much ECG baseline wandering. 	- Enable the AFS. Refer to <b>Screen ①</b> . - Use stronger High Pass filter. [weak 0.04Hz-0.05Hz- 0.1Hz-0.16Hz-0.3Hz strong] <b>Note:</b> Stronger filter may make distortion.
- There is too much noise in ECG wave - I can't recognize the ECG signal. 	- Check the connection lead and electrode. - Make sure all electrodes puts right place and contacts well. - If electrode gel goes dry it may block the contacts. - Check the AC filter setting. - Electrical blanket or heavy energy consume electrical device may occur heavy noise.
- Printer crumples up paper.	- If roll paper is loaded, check the 'shaft'. - Check the printer cover, if it is opened.
- Printer does not work - Printer ejects blank paper continuously.	- Check the printer cover may open. - Check the paper type selection([Z], [R]) and actual loaded paper type it should match. See <b>Screen ①</b> .
- Paper comes out but not printed.	- Grid side of paper must contact with the printer header.
- Error message shows up after the operation stops.	- Device needs some checks. See the operator's manual Chapter5.

## Checklist before using

- Not physical damage on surface of device.
- A Device was not get wet .
- Rated power is supplied.
- No physical damages on the patient cable.
- No physical damages on the electrodes.

## Default setting

**Note: After the default setting, all custom setting value will be lost.**

- 1) Press the button to enter the Configuration menu.
- 2) Press Enter button on System>Default Setting.

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<b>User Guide for MeCA303i and MeCA406i</b>	
Part No-Rev. : L09415-00	
Date of Rev. : 2011-08-17	
Printed in Korea	
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# Resting ECG System User Guide

(MeCA303i, MeCA406i)

## Caution

- The electrocardiograph is intended to be used in a hospital and hospital facilities environment by trained medical personnel.
- For operator and patient's safety, before you use the device, read the Operator's manual in enclosed CD.  
This User Guide contains only minimum information of product.

