RESCUE LIFE

Professional biphasic defibrillator and monitor

Defibrillatore professionale bifasico con monitor

AED

BIphasic

American Heart Association®

GUIDELINES 2015 CPR & ECC

SunTech Medical®
Brilliant Blood Pressure Solutions™

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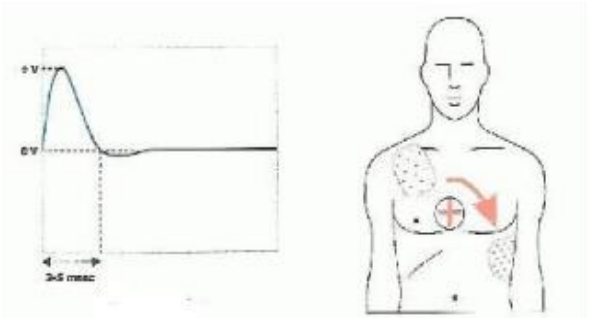
WHAT IS THE DEFIBRILLATION?

Sudden cardiac arrest (SCA) associated with ventricular fibrillation (VF) remains a leading cause of unexpected death in the Western world. It has been estimated that chances for survival from SCA decrease approximately 7% to 10% with each passing minute and that survival rates after 12 minutes are only 2% to 5%.

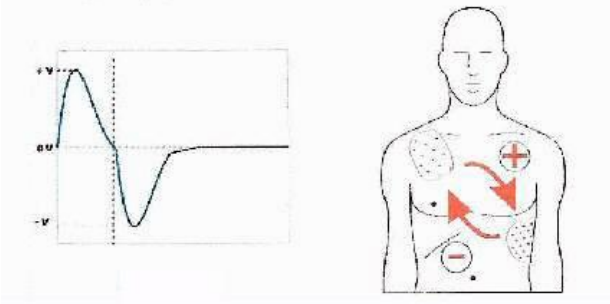
The most common cause of SCA is ventricular fibrillation (VF), a lethal heart rhythm, and survival depends on the rapid treatment called defibrillation, an electrical shock sent to the heart to resume normal and healthy rhythm.

So early defibrillation is the sole definitive determinant of survival and is the key factor in cardiopulmonary resuscitation. Currently, fewer than 5% of the 250,000 persons who experience out-of-hospital cardiac arrest each year survival to hospital discharge.

MONOPHASIC AND BIPHASIC WAVEFORM



Monophasic Waveform



Biphasic Waveform

One of the big differences between the two type of waveforms is the current flow.

1. The current flows in one direction only and the full energy of the capacitor is completely discharged.
2. The biphasic waveform is a waveform that starts from 0, reaches a positive value, back down to 0 and reaches a laue in the opposite direction than returns to zero. The currents flows in positive and negative sense. (in the first phase from the apex to the sternum, in the second phase from to the sternum to apex).

THE ADVANTAGES OF THE BIPHASIC WAVE-FORM :

A. In the Monophasic Defibrillation, the time can not be controlled, so the correct treatment for a specific patient can not 'be used.

B. The biphasic technology controls the length of pulse (time) and thanks to the measurement of the transthoracic impedance it is able to adjust the shock with the just right energy for different patients.

C The Biphasic Current is lower than monophasic and it makes less negative effects on hearth cells.

D The biphasic waveform is more effective than monophasic wave significantly. The demonstration is that the monophasic shock risks to fail in more occasions.

E Usually, the patient treated with CV Biphasic receives less shocks and that are exposed to less energy

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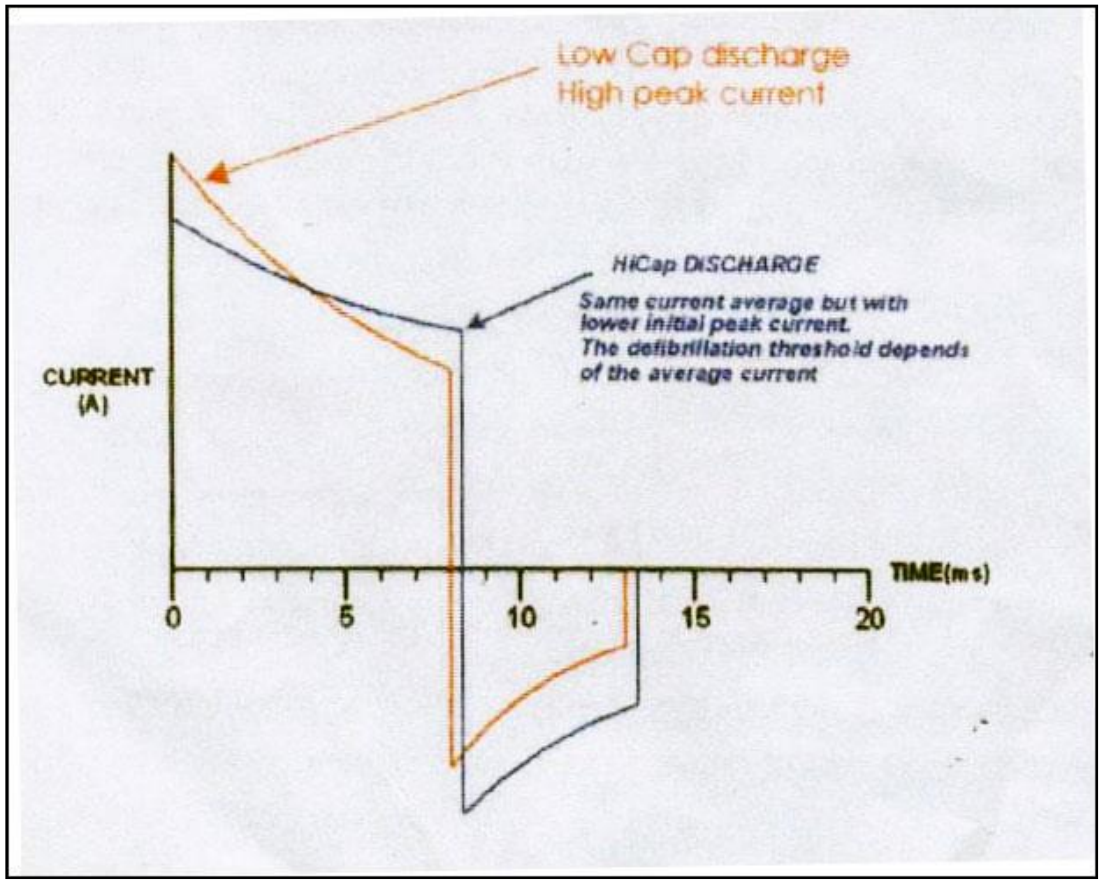
THE BIPHASIC WAVEFORM OF RESCUE LIFE

The **Rescue Life** defibrillator uses a BTE biphasic waveform with the HiCAP technology. Providing a higher capacitor value and controlling the waveform duration the Rescue Life is able to maintain the ideal duration, peak current and voltage of the defibrillation shock as can be seen on the figure below.



The maximum energy level delivered by a defibrillator is not the key issue. Increasing the energy level by increasing the duration will lower the efficacy of the shock. Most of the 360J biphasic defibrillator are actually in contrast with the *American Heart Association (AHA) Guidelines and ERC 2005*: " *The data indicates that biphasic waveform shocks of relatively low energy (200J) are safe and have equivalent or higher efficacy for termination of VF compared with higher-energy escalating monophasic waveform shocks (Class IIA)".*

Optimal biphasic waveform design (average current, peak current and duration) on a patient by patient bases adapted by Rescue Life defibrillator is providing the confidence of the first shock success without the need for escalating energy.

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A DIFFERENT POINT OF VIEW

Brilliant, **high-resolution TFT LCD color 7”** 800x480 dots display allows the simultaneous visualization in real time of 3,6 or 12 leads ECG, plethysmograph waveform with SpO2 sensor connected and NIBP value,

Ergonomic design. It's impact proof, compact and lightweight. The dedicated comfortable and washable carrying bag keep all the accessories at hand and protects Rescue Life during the emergency procedures.

Fast connections. User can choose between ergonomic reusable paddles or disposable pads for AED defibrillation. Both types are equipped with a single fast lock connection for reliable rescue operations

Data Management. Simple commands, extremely intuitive and easy to use. Immediate access to main setup parameters using only the trim knob and function keys

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PRODUCT DESCRIPTION

Rescue life is a new top product evolved from the improvements to the defibrillators **manufactured by Progetti.**

From more than **25 years experience**, Rescue Life is the advanced solution for emergency medicine. Ergonomic form, extremely robust, it is the first professional defibrillator totally made in Italy.

Innovation means more reliability. Rescue life uses a **BTE (Biphasic Truncated Exponential) waveform with HiCAP technology**, strictly studied and clinically tested, more efficient using lower current and shorter pulse length, the optimal biphasic waveform adopted by rescue life is able to adapt the shock and to deliver the correct energy dose, maintaining the ideal duration, peak current and voltage of the defibrillation shock without the need of escalating energy.

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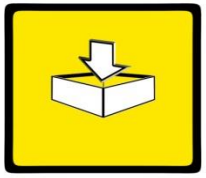
FRONT PANEL KEYS

	Power On-Off push button of RESCUE LIFE. At switch on, if the paddles are disconnected, the battery status and clock set-up screen will appear. In this case to start ECG monitoring press F1 key. To access the DATA BASE (only on the AED models) press F3 Key (MEM).
	When the red light inside this key is on it means that RESCUE LIFE is ready to defibrillate. Pressing this key will release the defibrillation shock.
	This key start the charge for the shock (this key is active only when disposable pads are used). To start the charge with the standard paddles press both push buttons on the handles.
Speed Dial ENERGY	Control the functional setting of the device. When pressed, on the screen the parameter to change will be displayed. By rotating the Speed Dial is possible to change the selected parameters. Energy is the first parameter.

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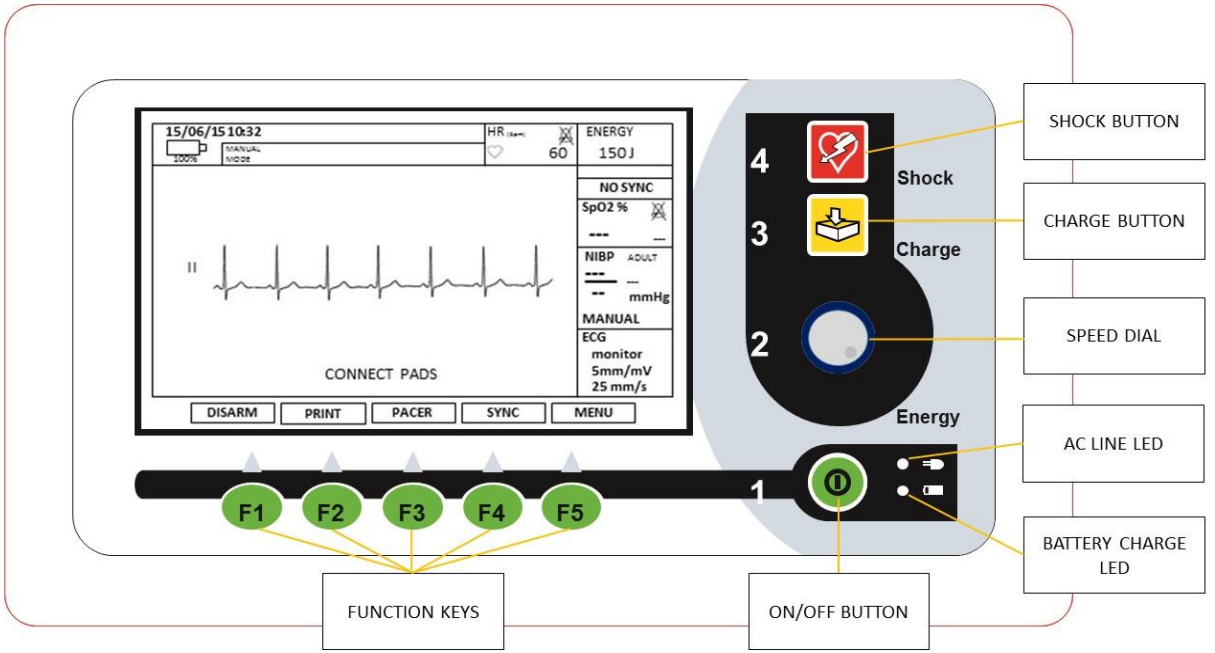
OPERATION SCREEN

Data/Time

Heart Rate

Alarm On/Off

Battery status



ECG trace

Message Area

Spo2 Data

Energy Selection

Operation Mode

Trace selection

ECG Trace Speed

ECG Trace Gain

Energy Charge Status

On/Off
Manual
Memory

→ F1
Internal
discharge

F2
Start/Stop
Printing

F3
Start
Pacer

F4
Sync / No
Sync Mode

F5
Enter
Set-Up

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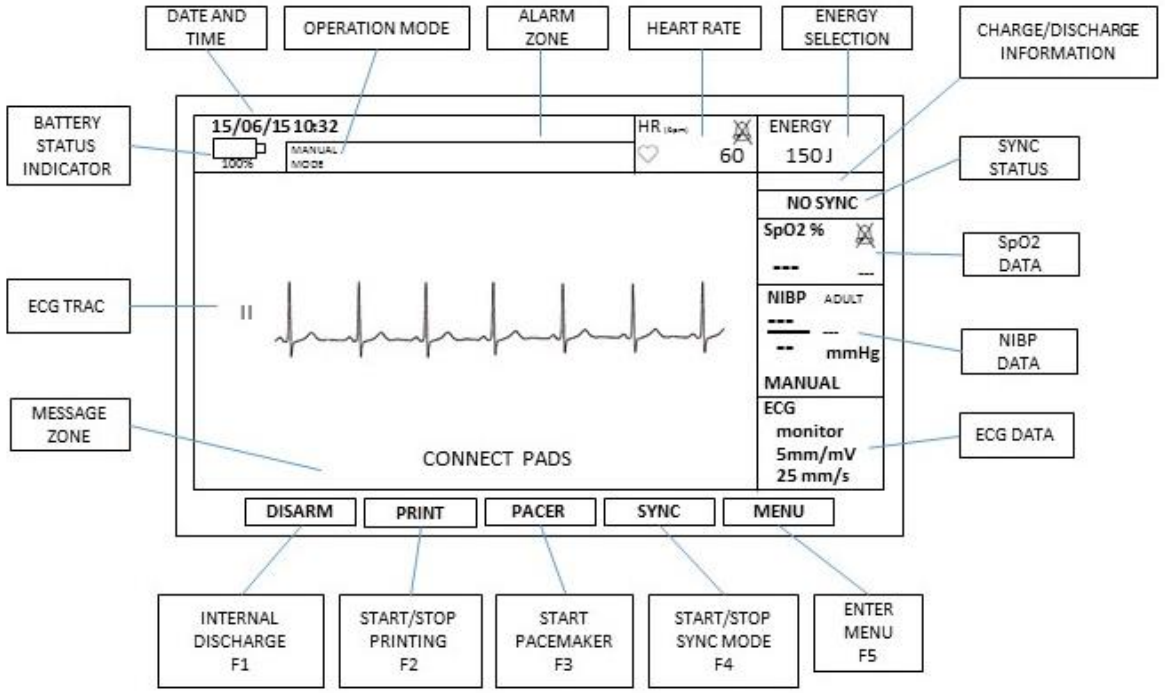
OPERATIONAL SCREEN

Switching on, if the paddles are connected, the RESCUE LIFE 7” starts the operation.
If the paddles are not connected, the start screen will be displayed.
Press START – F1 key to enter in operational screen.



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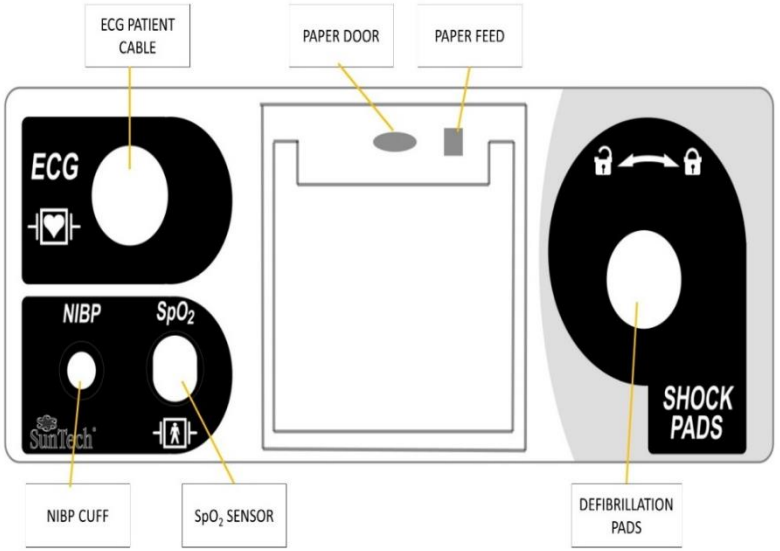
CONNECTIONS



DEFIBRILLATION PADS INPUT	It connects the defibrillation pads lead (APEX,STERNUM) to RESCUE LIFE 7". For connecting the lead, push in the connector and turn it right. For disconnecting the lead, pull the lead lever and turn left the connector.
ECG PATIENT CABLE	ECG patient cable input. RESCUE LIFE 7" displays 3, 6 or 12 traces
SpO_2 INPUT (optional)	When the SpO_2 sensor is connected, saturation values and heart rate are displayed.
NIBP CONNECTOR (optional)	When NIBP tube and cuff are connected the NIBP function can be used.
AC POWER SUPPLY INPUT (back side)	RESCUE LIFE 7" AC power supply and battery charger. USE ONLY THE ORIGINAL AC POWER CORD!

OPERATION MODES

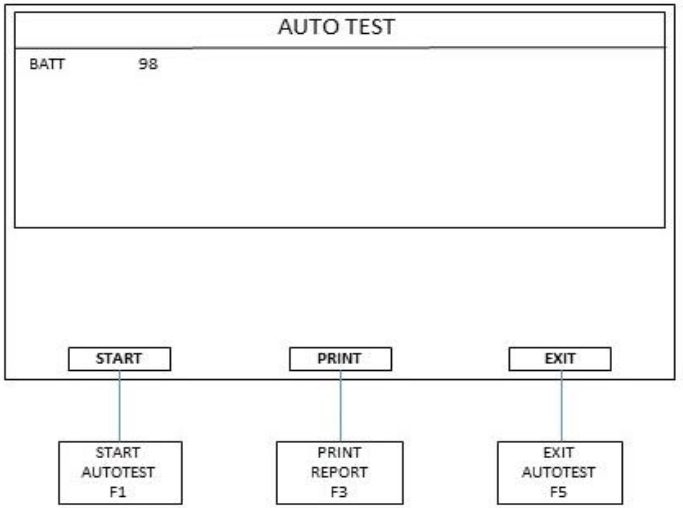
In *manual mode* the **Rescue Life** is intended for use by health care professionals and emergency rescue personnel who have been trained in advanced cardiac life support. Only 3 steps operations: energy selection, energy charge and shock.

In *AED mode*, the **Rescue Life** is intended for use by personnel who are authorized by a physician or medical doctor. The voice prompts and display messages are assisting the operator during CPR operations, charging automatically to 200J when a shockable ECG rhythm is detected.

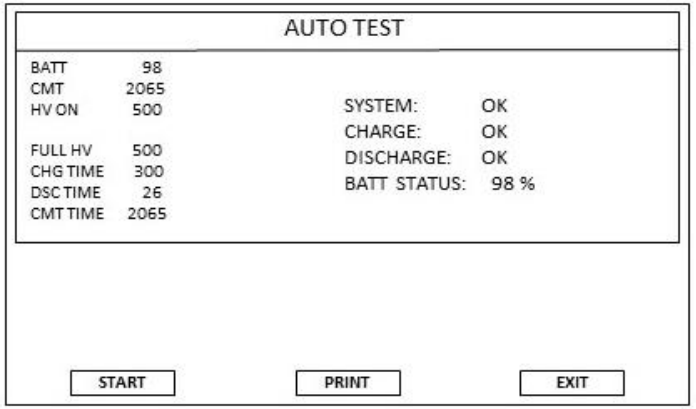
In *Advisory Mode*, the system alerts when the shock is necessary leaving the energy level and charging choice to the operator

AUTO TEST

RESCUE LIFE 7” is equipped with internal auto test that checks the correct functioning of the device.
It is advisable to do the test at least once a week. It’s also possible to print the report.
On the initial screen, press the function key TEST - F3 to access the test screen.



Press START – F1 key to start auto test.
RESCUE LIFE 7” will do internal tests and will show results.



If during the check the RESCUE LIFE 7” finds some fault, the system will indicate it.

Pressing the PRINT - F3 you can print the test report.

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HOW TO TEST THE DEFIBRILLATOR

It is possible to charge without attaching the part to the patient and discharge internally from the standard paddles only for the defibrillator testing and only selecting 1 joule.
If the defibrillator is charged using this mode, the standard impedance of 50 ohm is assumed.
Progetti S.r.l. recommended to make one functional check, preventive maintenance and electrical safety test at least once a year.

When the RESCUE LIFE 7” is charged with the paddles not attached to the patient and the energy is set to a value higher than 150J, the charged energy will be limited to 150 J. In this case the message “ENERGY LIMIT” will be displayed.

To obtain the best shock result it is strongly recommended to charge the energy with the paddles attached to the patient.

Do not charge the defibrillator with the paddles in contact between them.

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BATTERY OPERATION

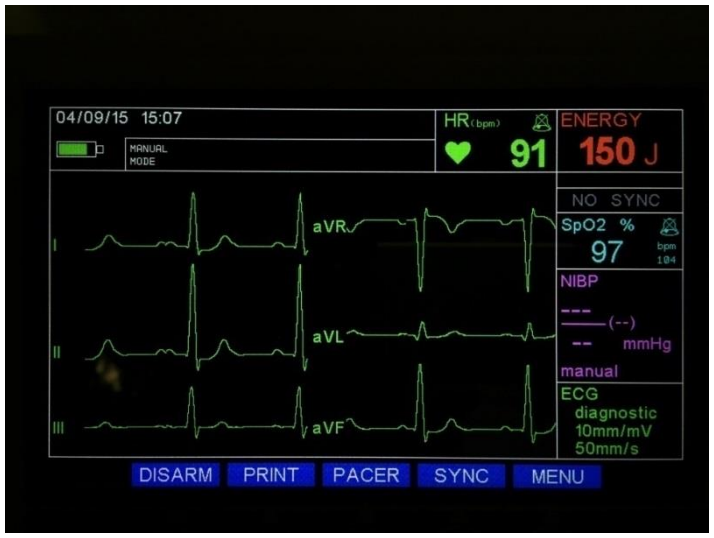
The defibrillator automatically switches to battery power when the power cord is disconnected from an AC outlet or from the defibrillator.

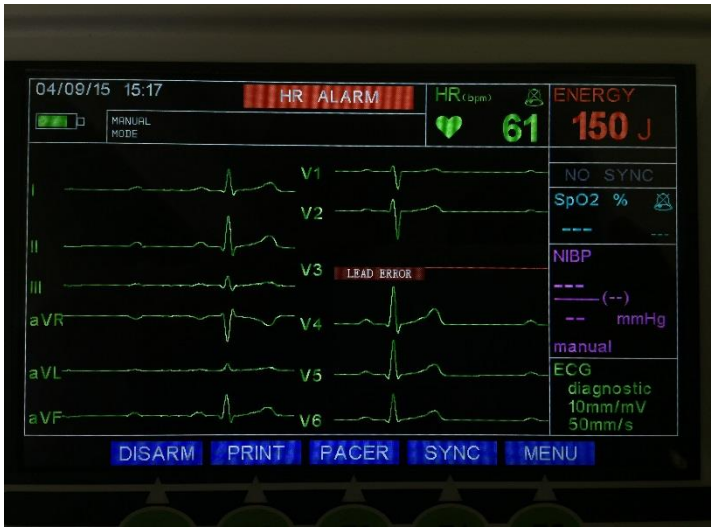
The internal Lithium-Ion battery is rechargeable in fast time.

A new, completely charged battery provides approximately 150 shocks at 230 J discharges, 250 minutes of pacing, or approximately 330 minutes of continuous monitoring before the defibrillator turns off.

Normally, new fully depleted batteries recharge for 3 hours to regain full capacity.

ECG VIEW MODES:





Rescue life can filter the ECG signal automatically thanks to two modes:

DIAGNOSTIC: ECG signal processing recommended for interpretation and diagnosis of ECG traces by the qualified personnel.

MONITORING: digital filtered ECG signal, rejects the most parts of noises and artefacts caused by patient motions or by other physiological process of the body.
These two modes may facilitate the ECG detection and help the qualified personnel to take important decisions for the diagnosis of the heart diseases.

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INTENDED USE:

INDICATIONS AND CONTRAINDICATIONS.

In *asynchronous* defibrillation, the Rescue is indicated for use on patients with the following symptoms: unconsciousness, absence of normal breathing and lack of detectable pulse.

In *synchronous* defibrillation, the Rescue Life is indicated for use on patients with ECG's that the presence of Atrial Fibrillation.

Contraindications: the Rescue Life should not be used on patients that are conscious, are breathing normally or have detectable pulse.

PACEMAKER (OPTIONAL)

On the operational screen, pressing the F3 Key (Pacer) the Rescue LIFE will open the pacemaker mode and will display the pacemaker menu.

Type: rectangular wave

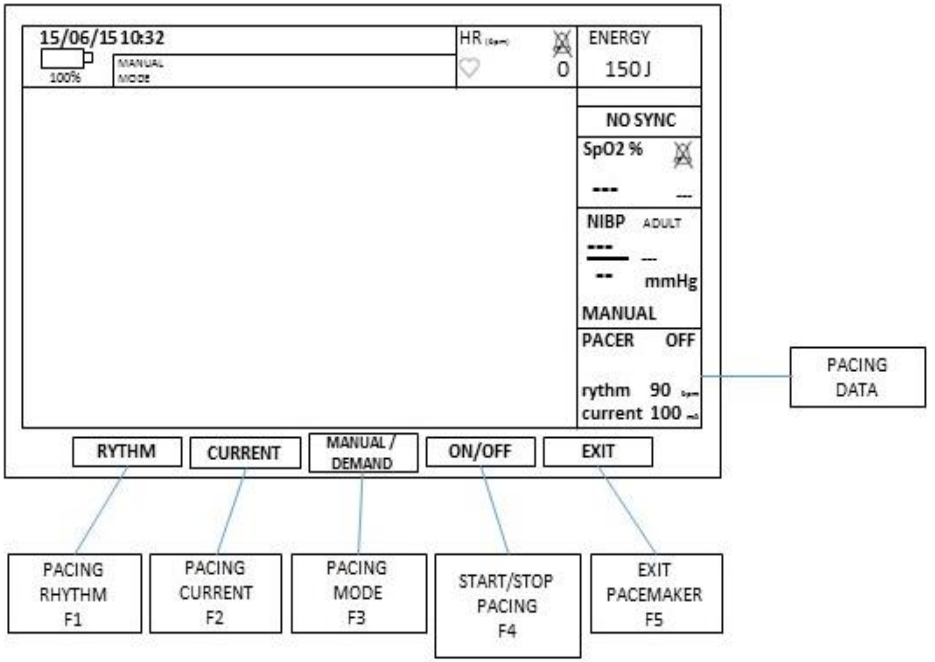
Operating Mode: fixed on demand

Pulse Rate: 30 ppm to 250 ppm, adjustable in steps of 5 ppm

Impulse duration: 22,5 ms

Pulse Current: 0 to 150 mA adjustable in steps of 5 mA

Amplitude: Max 150V



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SpO2 (OPTIONAL)

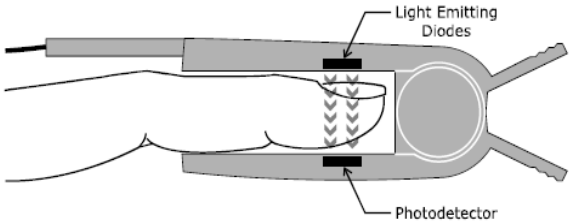
The optional SpO2 sensor is available for detecting blood oxygen saturation

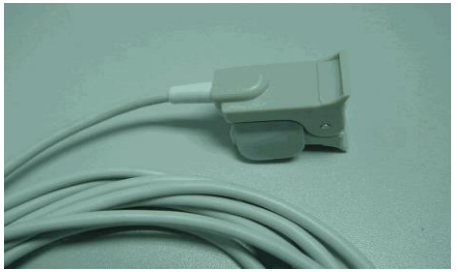
SpO2 Range: 0-100%

HR Range: 30-250 ppm

Accuracy: 70-100% ; ± 2%

Alarm: Adjustable min 50%





The adult and pediatric finger sensor are recommended for hospital use.

Spo2 Sensor Input

The soft adult and pediatric sensor (silicon) are recommended for emergency.

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NIBP (OPTIONAL)

It’s focused on Advantage + module of SunTech Medical that provides the highest Nibp performance in the smallest complete package available.

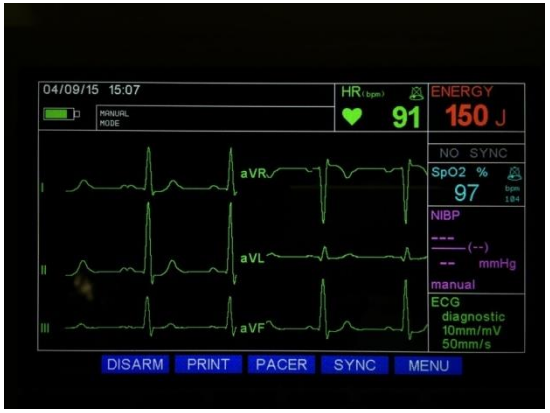
Technique: oscillometric

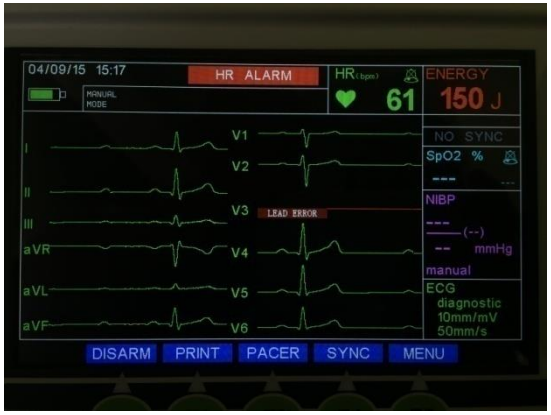
PR Range: 30-220 ppm

Systolic Range. Adult: 40-260 mmHG, Pediatric: 40-160 mmHG, Neonatal 40-130 mmHG

Range MAP. Adult, 26-220 mmHG, Pediatric 26-133 mmHG, Neonatal 20-110 mmHG

Range Diagnostic. Adult, 20-200 mmHG, Pediatric 20-120 mmHG, Neonatal 20-100 mmHG





Screen Nibp Module

Cuff in configuration adult/pediatric/neonatal

Nibp Port

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MEMORY AND DATA MANAGEMENT

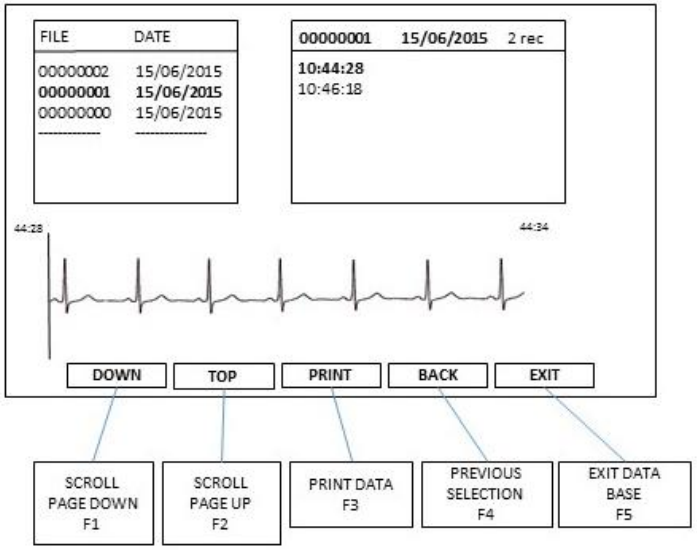
Simple commands, extremely intuitive and easy to use. Immediate access to main setup parameters using only the trim knob and function keys.

The internal memory is able to record more than 300 hours of ECG data and events.

The data are recallable and printable on the integrated thermal printer. Printing can be done in manual or in automatic mode. In the automatic mode the printing initiates when the energy charging starts (recording the ECG signal before the shock) and will continue 10 seconds after the shock was delivered.

DATA BASE SCREEN

The memory is based on a flash disk. The machine will register 30 events and after that it will replace the oldest events. The data base is composed of *Files* and *Records.*
Each time the machine is switched on, automatically a *File* with the current date will be created.
In each *File* RESCUE LIFE 7” can store up to 30 *Records* of 1 minute length.
Each *Record* holds the actual ECG trace data (acquired from lead II of pads or the ECG patient cable) and the initial recording time stamp.



KEY	FUNCTION
DOWN – F1	To scroll next 10 record.
TOP – F2	To scroll previous 10 record.
PRINT - F3	To print data.
BACK - F4	To move to previous selection.
EXIT – F5	To exit Data Base.

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Defibrillatore professionale bifasico con monitor

Thanks for choosing Progetti products

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