



Medtronic

BATTERY SUPPORT SYSTEM 2



Operating Instructions



OPERATING INSTRUCTIONS

BATTERY SUPPORT SYSTEM 2

IMPORTANT

!USA RX only

This instrument is to be used by authorized personnel only.

!USA Device Tracking

The U.S. Food and Drug Administration requires defibrillator manufacturers and distributors to track the location of their defibrillators and many defibrillator accessories. The address to which this particular equipment was shipped is now listed as the current tracking location. If the equipment is located somewhere other than the shipping address or the equipment has been sold, donated, lost, stolen, exported, or destroyed, or if the equipment was not obtained directly from Medtronic, please either call the device tracking coordinator at 1.800.426.4448 or use one of the postage-paid address change cards located in the back of this manual to update this vital tracking information.

Responsibility for Information

It is the responsibility of our customers to ensure that the appropriate person(s) within their organization have access to this information, including general safety information provided in Section 1.



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MIN 3010515-003 / CAT 26500-000168

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SAFETY INFORMATION

This section provides important information to help you safely operate the Battery Support System 2. Familiarize yourself with all of these terms, warnings, and symbols.

Terms	page 1-2
General Warnings and Cautions	1-2
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TERMS

The following terms are used either in these operating instructions or on the Battery Support System 2:

Danger: Immediate hazards that will result in serious personal injury or death.

Warning: Hazards or unsafe practices that could result in serious personal injury or death.

Caution: Hazards or unsafe practices that could result in minor personal injury, product damage, or property damage.

GENERAL WARNINGS AND CAUTIONS

The following are general warning and caution statements. Other specific warnings and cautions are provided as needed in other sections of these operating instructions.

WARNINGS!

Shock or fire hazard.

Do not immerse any portion of this device in water or other fluids. Avoid spilling any fluids on the device or accessories. Do not clean with alcohol, ketones, or other flammable agents. Do not autoclave or sterilize this device unless otherwise specified.

Possible fire or explosion.

Do not use this device in the presence of flammable gases or anesthetics. Place the Battery Support System 2 in the proper location as specified in these operating instructions.

Possible fire or explosion.

The Battery Support System 2 is designed to be used with Medtronic batteries only. Other manufacturers' batteries may overheat in this battery support system. Do not use with remanufactured or alternate source batteries.

Possible loss of power during patient care.

Medtronic has no information regarding the performance or effectiveness of its LIFEPAK® defibrillator/monitors if they are used with other manufacturers' batteries or battery chargers. Using other manufacturers' batteries or battery chargers may result in device failure and may void warranty. Use only Medtronic batteries and the appropriate Battery Support System.

Possible electrical interference with device performance

Equipment operating in close proximity may emit strong electromagnetic or radio frequency interference (RFI) which could affect the performance of this device. RFI may result in improper device operation, distorted ECG, failure to detect a shockable rhythm, or cessation of pacing. Avoid operating the device near cauterizers, diathermy equipment, cellular phones, or other portable and mobile RF communications equipment. Maintain equipment separation of at least four feet and do not rapidly key EMS radios on and off. Contact a technical support representative if assistance is required.

Possible electrical interference

Using cables, electrodes, or accessories not specified for use with this device may result in increased emissions or decreased resistance to electromagnetic interference which could affect the performance of this device or of equipment in close proximity. Use only parts and accessories specified in these operating instructions.

CAUTIONS!

Possible equipment damage.

This device may be damaged by mechanical or physical abuse such as immersion in water or dropping. If the device has been abused, remove it from use and contact a qualified service technician.

CAUTIONS!

Possible or potential inaccurate battery charge level indicator.

Using the Battery Support System (MIN 801807) or the two-well Battery Charger (MINs 9-00284, 9-00288, and 801530) to charge and maintain a FASTPAK® 2 battery will eventually result in an inaccurate battery charge level indicator. Use only the Battery Support System 2 (MIN 3010035) to charge and maintain FASTPAK 2 batteries.




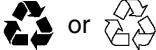







Possible equipment damage.

The supplied power cord is used to connect the battery support system to ac line voltage. Excessive voltage may cause fuses in the Battery Support System 2 to blow. Before connecting the battery support system, ensure that you are using a grounded outlet of the correct voltage.

Note: The Battery Support System 2 has no ON/OFF switch. When connecting the system to ac line voltage, ensure that the power cord is easily accessible and is not obstructed in any way. If the system malfunctions or overheats, disconnect the system from the ac line voltage by removing the power cord.

SYMBOLS AND ABBREVIATIONS

The symbols and abbreviations below may be found in these operating instructions, on the Battery Support System 2, or on FASTPAK and LIFEPAK® batteries:

	Attention, consult accompanying documents
	Recycle NiCd battery
	Recycle PB battery
 or 	See instructions for recycling procedures, 4-6
	See instructions for disposal procedure, 3-5
	Direct Current (DC)
	Alternating Current (AC)
	Positive terminal
	Negative terminal
	Fuse

Safety Information



Type B equipment



Indoor use only

LOT YYWW

Lot code



Date of manufacture



Canadian Standards Association certification for Canada and the United States



Marking of conformity according to the Medical Device Directive 93/42/EEC

Hz

Hertz (frequency)

V

Volts

A

Amperes

W

Watts

T

Time lag fuse conforming to IEC 127

LED

Light Emitting Diode

NiCd

Nickel Cadmium chemistry battery

SLA

Sealed Lead Acid chemistry battery

MIN

Manufacturer's Item Number

CAT

Catalog number used for placing orders

!USA

For USA audiences only.

DOCUMENT CONVENTIONS

Text references to system buttons and labels are indicated in capital letters, for example: CHARGE.

BASIC ORIENTATION

This section provides a basic orientation to the Battery Support System 2.

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Unpacking and Inspecting	2-3
Controls, Indicators, and Connectors	2-3
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BATTERY SUPPORT SYSTEM 2

The Battery Support System 2 provides charging, conditioning, and shelf-life testing for the LIFEPAK and FASTPAK batteries.

The Battery Support System 2:

- Provides a clear indication that a battery is charging, ready for use, or needs to be discarded.
- Can charge, condition, or shelf-life test up to three LIFEPAK and FASTPAK batteries at one time.
- Is provided with a detachable power cord that connects to a grounded ac outlet.
- Has a wall mount bracket (optional) that permits horizontal or vertical mounting.

THE LIFEPAK AND FASTPAK FAMILY OF BATTERIES

WARNING!

Possible explosion.

Attempting to charge a LIFEPAK 5 battery in the Battery Support System 2 may cause the battery to explode. Do not charge LIFEPAK 5 batteries in the Battery Support System 2.

All the batteries shown in Figure 2-1 can be used in the LIFEPAK 12 defibrillator/monitor series, but only the FASTPAK batteries can be used in other LIFEPAK defibrillator/monitors. The LIFEPAK batteries can only be used in the LIFEPAK 12 defibrillator/monitor.

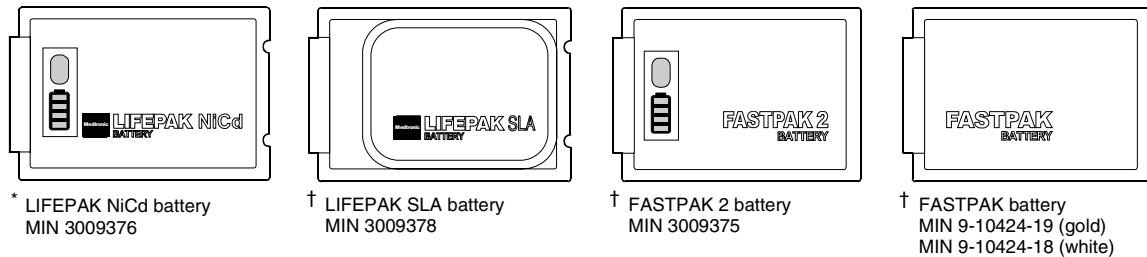


Figure 2-1 LIFEPAK and FASTPAK Batteries

LIFEPAK NiCd, FASTPAK, and FASTPAK 2 batteries have a nickel cadmium (NiCd) chemistry and LIFEPAK SLA batteries have a sealed lead acid (SLA) chemistry. In addition, the LIFEPAK NiCd and FASTPAK 2 batteries have a charge level indicator (fuel gauge).

Charge FASTPAK batteries in either the Battery Support System (MIN 801807), the Battery Support System 2 (MIN 3010035), or the LIFEPAK 12 defibrillator when it is powered by the AC or DC Power Adapter. FASTPAK batteries require periodic conditioning and shelf-life testing to optimize performance. Condition and shelf-life test FASTPAK batteries in the Battery Support System or Battery Support System 2.

Charge the FASTPAK 2 battery in the Battery Support System 2 or in the LIFEPAK 12 defibrillator when it is powered by the AC or DC Power Adapter. Using the Battery Support System (MIN 801807) or the two-well Battery Charger (MINs 9-00284, 9-00288, and 801530) to charge and maintain a FASTPAK 2 battery will eventually result in an inaccurate battery charge level indicator. FASTPAK 2 batteries require periodic conditioning and shelf-life testing to optimize performance. Condition and shelf-life test FASTPAK 2 batteries only in the Battery Support System 2.

* Approved for military use

† Not approved for military use

Charge LIFEPAK NiCd and SLA batteries either in the Battery Support System 2 or in the LIFEPAK 12 defibrillator when it is powered by the AC or DC Power Adapter. LIFEPAK NiCd batteries require periodic conditioning and shelf-life testing to optimize performance. Periodic conditioning and shelf-life testing may optimize SLA battery performance. Condition and shelf-life test LIFEPAK NiCd and SLA batteries in the Battery Support System 2.

UNPACKING AND INSPECTING

Remove the Battery Support System 2, ac power cord, and product literature from the shipping container. Carefully inspect the system and the power cord for any signs of damage during shipping. Verify the receipt of everything noted in the packing list. Save the shipping container and the foam inserts in case the system needs to be returned.

CONTROLS, INDICATORS, AND CONNECTORS

Figure 2-2, Figure 2-3, and Table 2-1 provide an overview of the controls, indicators, and connectors for the Battery Support System 2 and FASTPAK 2 batteries.

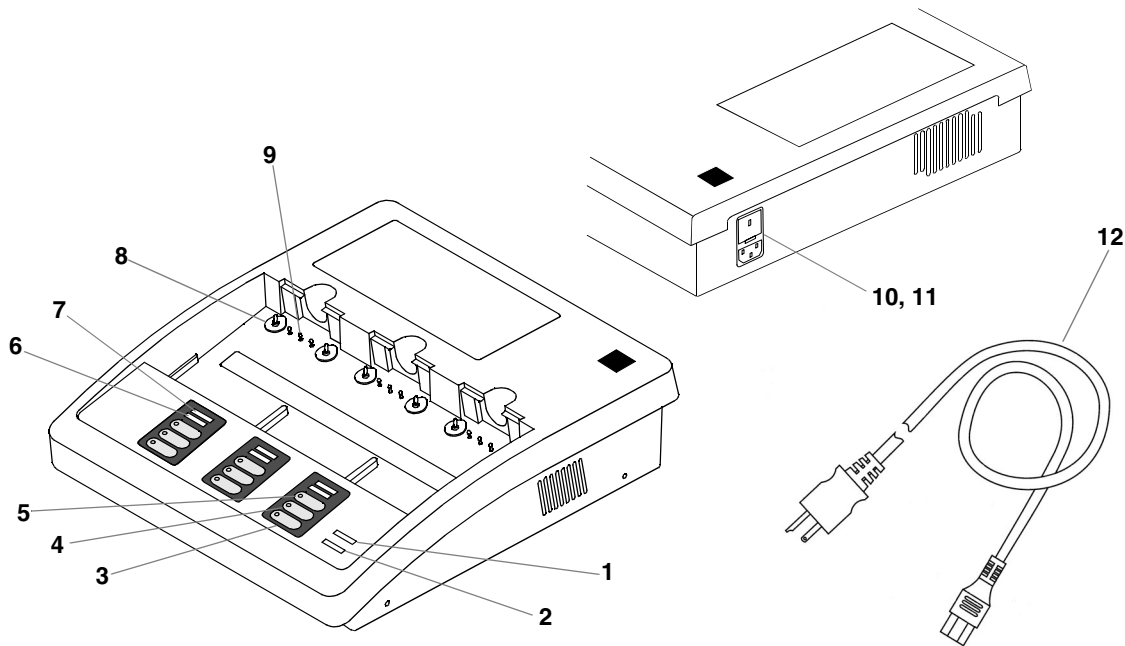


Figure 2-2 Controls, Indicators, and Connectors

Table 2-1 Controls, Indicators, and Connectors

Callout	Item	Description
1	SERVICE	Indicates Battery Support System 2 needs service.
2	POWER	Indicates power is on.
3	SHELF LIFE	Amber LED indicates battery is undergoing a shelf-life test.
4	CONDITION	Amber LED indicates battery is conditioning.

INSERTING BATTERIES

CAUTION!**Failure to charge batteries.**

Battery pins in the battery support system may be damaged if the batteries are dropped or forced into the battery wells. Inspect the battery pins routinely for signs of damage.

Routinely inspect batteries for damage or leakage. Discard/recycle damaged or leaking batteries.

To insert a battery into a battery well:

- 1 Inspect the +/- terminals (pins) in the battery well for signs of damage.
- 2 Inspect the battery well for signs of damage or distortion.
- 3 Align the battery so that the battery clip is over the pins in the battery well.
- 4 Insert the end of the battery opposite the battery clip into the battery well.
- 5 Firmly press the other end into the battery well until it clicks into place.

To remove the battery, press the battery clip in and lift the battery out of the battery well.

BATTERY MAINTENANCE

This section describes how to use the Battery Support System 2 to maintain LIFEPAK and FASTPAK batteries.

Battery Maintenance Warning	page 3-2
Battery Maintenance Guidelines and Procedures	3-2
Receiving New Batteries	3-4
Storing Batteries	3-4
Discarding/Recycling Batteries	3-5

BATTERY MAINTENANCE WARNING

WARNING!**Possible loss of power and delay of therapy during patient care.**

Using an improperly maintained battery to power the defibrillator may cause power failure without warning. Use the appropriate Medtronic Battery Support System to charge and condition batteries.

BATTERY MAINTENANCE GUIDELINES AND PROCEDURES

To maximize Battery Support System 2 operation and battery performance and life, observe these guidelines:

- Place the system in the proper location.
- Charge batteries at room temperature.
- Rotate batteries.
- Condition batteries every three months.
- Perform shelf-life tests every six months (optional for LIFEPAK SLA).

Place the Battery Support System 2 in the Proper Location

To help ensure proper system functioning:

- Place the system in a dry, well-ventilated area.
- Keep at room temperature.
- Keep batteries in wells.
- Do not place in direct sunlight.
- Do not place near a heat source or an air conditioner.
- Keep fan vent on back panel unobstructed.

Charge Batteries at Room Temperature

Charging batteries at room temperature, 20° to 25°C (68° to 78°F), is preferred to maximize battery performance and life. The extreme temperature range for charging batteries is 5° to 35°C (41° to 95°F). Batteries charged outside this temperature range may not reach a full charge (even if charging time is increased) and irreversible cell damage could occur.

CAUTION!**Possible battery damage.**

Charging a battery at temperatures below 5°C (41°F) or above 35°C (95°F) prevents the battery from reaching full capacity and may cause irreversible cell damage.

Note: Fully charge SLA batteries between uses. If SLA batteries are not 100% recharged between uses, sulfation (lead sulfate buildup on electrode surfaces inside the battery) can occur. Sulfation reduces battery capacity and may result in premature battery failure.

To charge a battery:

- 1 Insert a battery into a Battery Support System 2 battery well. CHARGE LED lights and charging begins automatically.
- 2 READY lights when a battery reaches full charge. The battery may remain in the battery well until needed. The system supplies a trickle charge that prevents overcharging and maintains the battery at peak capacity.

Note: Withdrawing the battery from the charger before a READY indication may result in an inadequate charge.

Note: If DISCARD lights, remove the battery from use and discard/recycle (refer to page 3-5).

Rotate Batteries

Rotate all batteries in active use so that they are used with equal frequency.

Condition Batteries Every Three Months

Note: LIFEPAK SLA batteries do not require periodic conditioning. However, the Condition mode may be used to test SLA battery capacity, or to determine whether an SLA battery is usable.

Voltage depression is a condition that reduces battery performance. When NiCd batteries repeatedly receive a shallow discharge (that is, not allowed to drain completely between charging cycles), voltage depression occurs. This condition is often mistakenly called “memory.” Voltage depression can usually be reversed by conditioning the battery every three months.

Conditioning is a series of charge/deep discharge cycles performed in the Battery Support System 2 to measure and optimize battery capacity.

Note: If a LIFEPAK NiCd or a FASTPAK 2 battery requires conditioning, the **CONDITION LED** lights and the conditioning procedure begins automatically. If the **CONDITION LED** lights for a LIFEPAK SLA battery, the battery is near the end of its useful life and replacement will soon be required.

To condition a battery:

- 1 Insert the battery into any battery well. Allow the LIFEPAK or FASTPAK 2 batteries to complete the condition cycle.
- 2 Press **CONDITION** for other FASTPAK batteries.
- 3 **READY** lights when a battery is fully recharged. The Battery Support System 2 automatically recharges a battery that passes the conditioning process.

Note: If **DISCARD** lights, remove the battery from use and discard/recycle.

Note: If a power failure occurs during battery conditioning, the Battery Support System 2 interrupts conditioning and reverts to Charge mode once power is restored. Battery conditioning may not have been completed. Repeat conditioning process.

Perform Shelf-Life Testing Every Six Months

Batteries self-discharge when not in use. A new NiCd battery self-discharges approximately 10% of its capacity in the first day and 1% of its capacity every day thereafter when stored at room temperature. In 10 days, a new NiCd battery loses approximately 20% of its capacity.

SLA batteries have a low self-discharge rate. A new SLA battery self-discharges approximately 0.1% of its capacity each day when stored at room temperature. In 10 days, a new SLA battery loses approximately 1.0% of its capacity.

The actual rate of battery self-discharge depends on:

- Battery age
- Temperature
- Frequency of use
- Length of time in storage
- Physical condition

These factors can combine to significantly increase the battery discharge rate. For example, an older NiCd battery stored at higher temperatures may have an accelerated self-discharge rate much greater than 1% a day. The self-discharge rate increases as the battery ages.

Battery Maintenance

NiCd batteries (LIFEPAK NiCd, FASTPAK, and FASTPAK 2) may exhibit an increased self-discharge rate during the first 24 hours after charging. At room temperature 20°C (68°F), their capacity may be reduced by as much as 5%, during this time period. It is therefore important to charge and maintain batteries in a room-temperature environment.

LIFEPAK NiCd and FASTPAK 2 batteries may communicate this charge reduction by extinguishing one or two bars (lights) on their fuel gauge display after 24 to 48 hours. It is important to remember that the fuel gauge on these batteries provides a conservative indication of battery capacity. Normally, there will be more battery capacity available than the fuel gauge indicates.

The shelf-life test evaluates the self-discharge rate of a battery. Any battery that fails the shelf-life test (DISCARD lights) should be removed from use and discarded/recycled.

To perform a shelf-life test:

- 1 Complete the conditioning procedure.
- 2 Remove the battery from the Battery Support System 2 and store for 7 days at room temperature.
- 3 After storage, insert the battery into a battery well and press SHELF LIFE within 3 seconds.
- 4 Verify that the SHELF LIFE LED lights.
- 5 READY lights when the battery passes the shelf-life test and is fully recharged. The battery may then be returned to use.

Note: If a power failure occurs during shelf-life test, the Battery Support System 2 interrupts the shelf-life test and reverts to CHARGE mode once power is restored. shelf-life test may not have been completed. Repeat the shelf-life test.

Note: If DISCARD lights, remove the battery from use and discard/recycle.

RECEIVING NEW BATTERIES

When newly-purchased batteries are received, charge each new battery. Because batteries self-discharge during storage, a new battery may not be fully charged when it is received.

STORING BATTERIES

WARNING!

Possible loss of power during patient care.

Stored batteries lose charge. Failure to charge a stored battery before use may cause device power failure without warning. Always charge a stored battery before placing it in active use.

Store batteries in or out of the Battery Support System 2 except when performing the shelf-life test. During storage, batteries still require routine maintenance (refer to the conditioning procedure, page 3-3, and the shelf-life test, page 3-3).

Storing an SLA battery that is less than 100% charged can result in permanent damage.

When storing batteries:

- Fully charge LIFEPAK SLA batteries before storing.
- Store batteries between 4.4° and 26.7°C (40° to 80°F). Lower temperatures reduce the battery self-discharge rate. Higher temperatures increase the self-discharge rate.
- Do not freeze batteries. Damage to the battery may result.
- Charge stored batteries before placing in use.

DISCARDING/RECYCLING BATTERIES

Properly maintained FASTPAK batteries have a useful life of approximately two years. Properly maintained LIFEPAK NiCd and FASTPAK 2 batteries have a useful life up to five years. Properly maintained LIFEPAK SLA batteries have a useful life of up to three years. A LIFEPAK NiCd, LIFEPAK SLA, FASTPAK, or FASTPAK 2 battery has reached the end of useful life if *one or more* of the following circumstances occur:

- Battery fails conditioning or shelf-life test.
- There is physical damage to the battery case.
- The battery is leaking.
- The Battery Support System 2 indicates DISCARD during any battery maintenance procedure.

Note: The LIFEPAK NiCd, LIFEPAK SLA, and FASTPAK 2 batteries have internal parameters that establish limits for useful life. If these parameters are exceeded, the Battery Support System 2 will indicate DISCARD when battery is inserted into the battery well.

To promote awareness of battery recycling, Medtronic LIFEPAK and FASTPAK batteries are marked with one of these symbols:



When a LIFEPAK or FASTPAK battery reaches the end of its useful life, recycle the battery as follows:

Battery Recycling in the USA

Recycle batteries by participating with Medtronic in a national battery recycling program. Contact your local Medtronic representative to obtain shipping instructions and shipping containers. Do not return your batteries to the Medtronic offices in Redmond, Washington, unless instructed to do so by your Medtronic representative.

Battery Recycling Outside the USA

Recycle batteries according to national and local regulations. Contact your local Medtronic representative for assistance.

BATTERY SUPPORT SYSTEM 2 MAINTENANCE

This section describes the Battery Support System 2 maintenance.

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THE BATTERY SUPPORT SYSTEM 2 SERVICE INDICATOR

WARNING!

Shock hazard.

Do not disassemble the battery support system. It contains no operator-serviceable components and dangerous high voltages may be present. Contact a qualified service technician for repair.

When the Battery Support System 2 ac power cord is inserted into an ac power receptacle, the system performs a series of self-diagnostic tests. Power-up testing is indicated by all the system indicator lights briefly illuminating. If self-testing is successful all the indicators (except **POWER**) extinguish. If the Battery Support System 2 fails any power-up self-test, **SERVICE** lights. Remove the system from use and contact a qualified service representative for repair.

Periodically inspect the system for damage or cracks. Check that it is completely closed. Inspect the power cord for damage, cracks, or bent pins.

The system does not contain any operator-serviceable components. If the system requires service, contact a qualified service representative. When calling Medtronic to request service, have the following information available: model number, serial number, and a description of the problem. If the system must be sent to a service center or factory, repack it in the original shipping container to prevent shipping damage.

Test modes, service protocols, fault codes, and other maintenance procedures are described in the *Battery Support System 2 Service Manual*. In the USA, call 1.800.442.1142 for technical consultation, manuals, or parts. Outside the USA, contact your local Medtronic service office.

CLEANING

Clean the Battery Support System 2 case, battery contacts, batteries, and ac power cord with a damp sponge or towel. The following agents may be used:

- Mild soap and water
- Quaternary ammonium compounds
- Isopropyl alcohol
- Peracetic (peroxide) acid solutions

CAUTION!

Possible equipment damage.

Do not clean any part of the battery support system or ac power cord with bleach, bleach dilution, ketones, solvents, flammable agents, phenolic compounds, or abrasive agents. Do not steam, autoclave, or gas-sterilize the battery support system.

FUSE REPLACEMENT

The Battery Support System 2 has two fuses that help provide protection against over current. To replace the fuses, open the fuse carrier door (located in the power input module) with a flat-bladed screw driver. Verify that the replacement fuses are the same type and rating as listed in the specifications in Table 4-3.

When replacing fuses in the system, use only 5 x 20 mm T 250V fuses approved to IEC 127-2, sheet 1 or 2, such as:

- Schurter FST
- Bussman GDC
- Littelfuse 218

Note: Use of other fuses may cause premature failure of the mains fuse.

TROUBLESHOOTING

Refer to the troubleshooting tips in Table 4-1. If these troubleshooting tips do not resolve your question, remove the Battery Support System 2 from active use and contact a qualified service representative. To contact Medtronic in the USA, call 1.800.442.1142. Outside the USA, contact your local Medtronic sales or service office.

Table 4-1 Troubleshooting Tips

Observation	Possible Cause	Corrective Action
POWER does not light when the ac power cord is inserted into an ac power receptacle.	Power cord not properly connected.	Make sure that the power cord is securely connected at both ends.
	Blown fuses.	Replace fuses using the procedure described on page 4-2 with the type of fuses specified in Table 4-3.
	Inoperative ac outlet or tripped circuit breaker in building.	Remove from use and contact a qualified service representative.
CHARGE/CONDITION does not light when a FASTPAK battery is installed.	Battery malfunction.	Install a different battery in the same battery well. If CHARGE/CONDITION lights, discard/recycle the original battery.
	Battery Support System 2 malfunction.	Remove from use and contact a qualified service representative.
READY does not light after hours of charging.	Battery does not charge to full capacity (battery requires conditioning).	Perform the conditioning procedure (page 3-3).
	Battery charged at excessively high or low temperatures.	Perform the conditioning procedure (page 3-3) at the correct temperature.
DISCARD illuminates.	Battery is at end of useful life.	Remove from use and discard/recycle.
Battery powers system for less than the expected time.	Battery needs conditioning.	Perform the conditioning procedure (page 3-3). If the battery is still not performing to expectations, perform a shelf-life test (page 3-3).
SHELF LIFE LED does not light.	Conditioned battery was not removed and stored prior to shelf-life test.	Condition, remove, and store battery for 7 days prior to shelf-life testing.

REPLACEMENT PARTS AND ACCESSORIES

In the USA, call 1.800.442.1142 to order parts and accessories. Outside the USA, contact your local Medtronic sales or service office.

Table 4-2 Replacement Parts and Accessories

Description	Part Number
Battery Support System 2 Operating Instructions	3010515
Battery Support System 2 Service Manual	3011409
LIFEPAK NiCd Battery	3009376
LIFEPAK SLA Battery	3009378
FASTPAK 2 Battery	3009375
FASTPAK Battery (white)	9-10424-18
FASTPAK Battery (gold)	9-10424-19
AC Input Power Cord	803650
Battery Support System 2 Wall Mount Bracket	3010932

SPECIFICATIONS

Table 4-3 lists the specifications for the Battery Support System 2.

Table 4-3 Battery Support System 2 Specifications*

Function	Description
General Specifications:	
Dimensions	31.5 cm x 37.6 cm x 9.7 cm (12.4 inches x 14.8 inches x 3.8 inches)
Weight	8.2 kg (< 18 pounds) (excluding batteries)
Number of battery wells	3. Charging, conditioning, and shelf-life test capability in all battery wells.
Power requirements:	100/120/220/240 ± 10%, 50/60 Hz ± 3 Hz
Fuses	Two fuses in the power input module (5 x 20 mm T 250V, Low or High break capacity) per IEC 127-2, sheet 1 or 2, such as Bussman GDC, Littelfuse 218, or Schurter FST. 100/120 Volt Input: 1.6 Amp (T, or Time-Lag) 220/240 Volt Input: 0.8 Amp (T, or Time-Lag)
Environmental Specifications:	
Liquid Ingress	IPX0 per IEC529. Not protected against ingress of fluids. Indoor use only.
Altitude, operating	To 4,572m (15,000 feet)
Altitude, non-operating	To 5,500m (18,045 feet)
Humidity	0 to 95%
Temperature, operating	5° to 45°C (41° to 113°F) (commercial) 0° to 50°C (32° to 122°F) (military configuration)**
Temperature, storage	-40° to 70°C (-40° to 158°F) (commercial) -46° to 71°C (-51° to 160°F) (military configuration)**
Vibration	IEC 68-2-6 (commercial) Military Configuration: ** USAF: MIL-STD-810F Method 514.5, Jet Aircraft (Figure 514.5C-6 and Table 514.5C-VIII (General Exposure), 3.54 Grms, 30 min/axis) and Turboprop (C130 curve, 4.87 Grms, 60 min/axis) USAARL: MIL-STD-810E Method 514.4 (1.58 Grms, 60 min/axis)

* All specifications are at 20°C unless otherwise stated.

** Catalog Number 99407-000018

Table 4-4 LIFEPAK and FASTPAK Battery Specifications*

LIFEPAK NiCd	
Battery Type	Nickel cadmium
Weight	0.77 kg (1.7 lbs)
Voltage	12Vdc
Capacity	1.7 amp hours (3009376-00) 2.4 amp hours (3009376-01)
Charge Time (fully depleted battery)	2.25 hours (3009376-00) 3 hours (3009376-01)
Conditioning Time	8 hours typical, 10 hours maximum (3009376-00) 9 hours typical, 11 hours maximum (3009376-01)
Charging Temperature Range	5° to 35°C (41° to 95°F)
Operating Temperature Range	0° to 50°C (32° to 122°F)
Long Term (>1 day) Storage Temperature Range	0° to 35°C (32° to 95°F)
LIFEPAK SLA	
Battery Type	Sealed lead acid
Weight	1.4 kg (3.0 lbs)
Voltage	12Vdc
Capacity	2.5 amp hours
Charge Time (fully depleted battery)	6 hours typical, 12 hours maximum
Conditioning Time	28 hours typical, 56 hours maximum
Charging Temperature Range	5° to 35°C (41° to 95°F)
Operating Temperature Range	0° to 50°C (32° to 122°F)
Long Term (>1 day) Storage Temperature Range	0° to 35°C (32° to 95°F)
FASTPAK and FASTPAK 2	
Battery Type	Nickel cadmium
Weight	0.7 kg (1.5 lbs)
Voltage	12Vdc
Capacity	1.2 amp hours
Charge Time (with fully depleted battery)	1.5 hours
Conditioning Time	7 hours typical, 8 hours maximum
Charging Temperature Range	5° to 35°C (41° to 95°F)
Operating Temperature Range	0° to 50°C (32° to 122°F)
Long Term (>1 day) Storage Temperature Range	0° to 35°C (32° to 95°F)

* All specifications are at 20°C unless otherwise stated

WARRANTY POLICY

The Battery Support System 2 is warranted against all defects in materials and workmanship for a period of one year from the date of delivery.

All batteries supplied by Medtronic for LIFEPAK defibrillator/monitor products are warranted for a period of one year. If Medtronic receives notice of a battery defect during the warranty period, we will replace the battery upon verification of the defect.

Use of other manufacturers' batteries and accessories with Medtronic defibrillator/monitor products may void Safety Agency Certifications and warranty.

RECYCLING INFORMATION

Recycle the system at the end of its useful life.

Recycling Assistance

The system should be recycled according to national and local regulations. Contact your local Medtronic representative for assistance.

Preparation

The system should be clean and contaminant-free prior to being recycled.

Recycling of Disposable Electrodes

After using disposable electrodes, follow your local clinical procedures for recycling.

Packaging

Packaging should be recycled according to national and local regulations.

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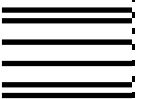
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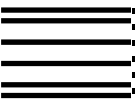
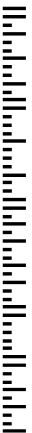
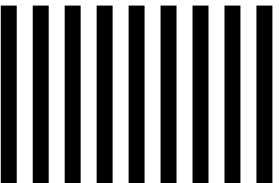
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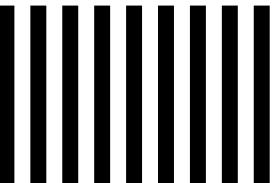
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