CodeMaster XL+ (M1722B) Defibrillator/Monitor Service Manual

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Notice

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This product complies with the requirements of the Medical Device Directive 93/42/EEC and carries the CE mark accordingly.

This product complies with the requirements of the EMC Directive 89/336/EEC and carries the CE mark accordingly.

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Hewlett-Packard makes no warranty of any kind with regard to this material, included, but not limited to, the implied warranties or merchantability and fitness for a particular purpose.

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WARNING

As with electronic equipment, **Radio Frequency** (RF) interference between the defibrillator and any existing RF transmitting or receiving equipment at the installation site, including electrosurgical equipment, should evaluated carefully and
any limitations noted before the equipment is placed in service

Monitoring during quiescent periods of electrosurgery is possible but electromagnetic interference generated by electrosurgical tools during operation is sufficient to mask cardiac signals. A momentary recovery period is required for the monitor to return to normal operation and will be longer if the diagnostic monitoring mode is used. Pads or electrodes should be placed as far from the surgical area as reasonable while still performing normal function to minimize the possibility of burns. Radio frequency generation from electrosurgical equipment and close proximity transmitters may seriously degrade performance of the CodeMaster XL+ defibrillator/monitor.

Hewlett-Packard assumes no liability for failures resulting from RF interference between HP medical electronics and any radio frequency generating equipment at levels exceeding those established by applicable standards.

Classified by Underwriters Laboratories, Inc. with respect to electrical shock, fire, and mechanical hazards only in accordance with UL 2601-1.

CAUTION

The manufacturer, importer and seller are responsible for the effects on safety, reliability and performance only if: assembly operations, extensions, re-adjustments, modifications or repair are carried out by persons authorized by them, and the electrical installation of the relevant room complies with all local regulations and the equipment is used in accordance with the instructions for use. Use of accessories other than those recommended by Hewlett-Packard may compromise product performance.

THIS PRODUCT IS NOT INTENDED FOR HOME USE.

Responsibility of Manufacturer

Hewlett-Packard only considers itself responsible for any effects on safety, reliability and performance of the CodeMaster XL+ defibrillator/monitor and the battery support system if:

assembly operations, extensions, re-adjustments, modifications or repairs are done by persons authorized by Hewlett-Packard, and

the electrical installation of the relevant room or vehicle complies with the IEC or national requirements, and

the instrument is used according to the instructions for use presented in this manual.

Safety Summary

Safety Symbols Marked on the Defibrillator

The following symbols are used on the defibrillator.

On (Do not confuse with 1 Joule)


Off (Standby)


On/Off


Ground


Shock hazard


Caution - See operating instructions


Meets IEC type BF leakage current requirements and is defibrillator protected.

Meets IEC type CF leakage current requirements and is defibrillator protected.


Equipotential (rear of unit, adjacent to AC input)


Protective earth (ground)

Please see Chapter 3, **Performance Verification and Maintenance**, for safety requirements that apply to the defibrillator.

Conventions Used in This Manual

WARNING

Warning statements describe conditions or actions that can result in personal injury or loss of life.

CAUTION

Caution statements describe conditions or actions that can result in damage to the equipment or software.

NOTE

Notes contain additional information on defibrillator usage.

TEXT represents the messages that appear on the display.

key represents keys on the front panel.

LIGHT represents lighted indicators on the key panel.

Preface

This manual contains service information for the HP M1722B CodeMaster XL+ Defibrillator/Monitor. If you are servicing one of the following defibrillators:

- the M1722B (manufactured before June of 2000)
- the M1722A
- the M1723A/B

then you may use this guide with the understanding that:

- The model M1723A/B is equivalent to the M1722B (without option A01).
- The model M1722A/B is equivalent to the M1722B (with option A01).

This manual is organized as follows:

Chapter 1—Introduction. Contains a general description of the defibrillators, lists of technical specifications, and lists of options and accessories.

Chapter 2—Setup and Configuration. Summarizes the defibrillator installation and explains how to configure the defibrillator for specific customer requirements.

Chapter 3—Performance Verification and Maintenance. Explains how to inspect, test, and verify the defibrillator's performance using built-in tests, and lists maintenance procedures and safety requirements that apply to the defibrillator.

Chapter 4—Troubleshooting. Contains procedures and error codes to aid the service person in localizing faults to a replaceable subassembly.

Chapter 5—Removal and Replacement. Contains procedures for removing and replacing each of the defibrillator's major subassemblies.

Chapter 6—Parts Lists. Lists part numbers for the defibrillator's replaceable parts, and provides assembly drawings.

Chapter 7—Theory of Operation. Provides an overview of how the defibrillator works and describes the operation of the major subassemblies.

Appendix A—Appendix A Connector Pin Assignments. Identifies and defines the signals assigned to the subassembly interconnections.

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Introduction

This chapter introduces the CodeMaster XL+ M1722B Defibrillator/Monitor and lists the technical specifications.

WARNING

Dangerous voltages capable of causing injury or death are present at the paddles or patient cables during normal operation. This defibrillator is to be used and serviced only by qualified personnel.

CAUTION

Operation of this device in the vicinity of high-powered transmitters or electrosurgical instruments may result in interference of the ECG display.

NOTE

Safe and effective use of medical instrumentation requires periodic inspection and preventive maintenance. Perform the preventive maintenance procedures in Chapter 3, **Performance Verification and Maintenance**, of this manual at the required intervals to ensure satisfactory instrument performance.

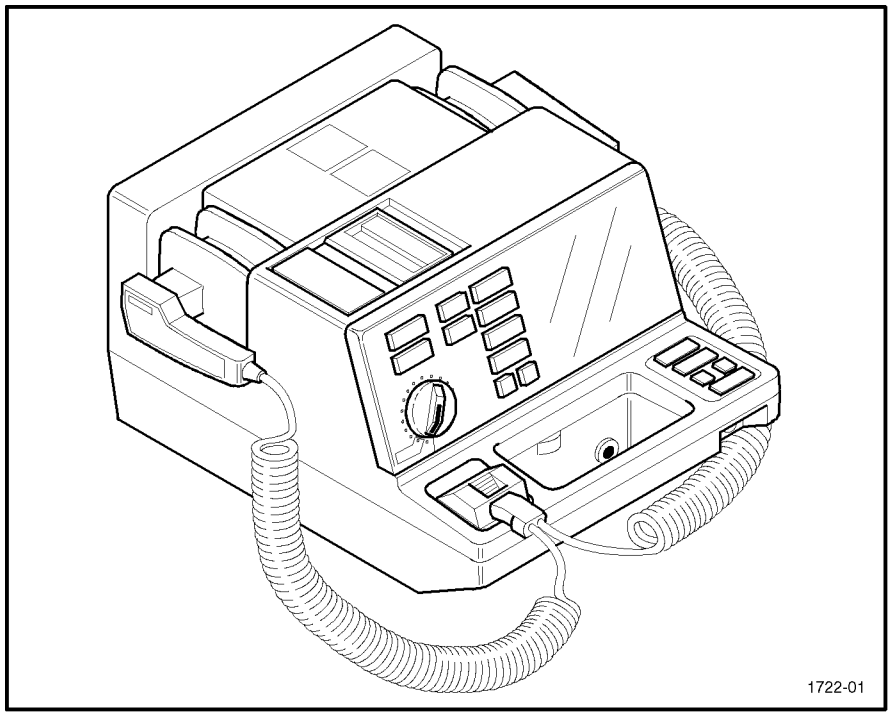
The CodeMaster XL+ Defibrillator/Monitor

This instrument is a portable defibrillator/monitor powered by internal battery or AC power. It combines a 360-joule defibrillator, ECG monitor, and annotating strip chart recorder in a compact, light-weight package. Instrument features include crisis-oriented controls, fast charge, a real-time clock, interchangeable paddles, and automatic documentation of events. The monitor includes a 5-inch screen which displays the ECG, selected ECG source, heart rate, and messages and alerts. A microprocessor-based system rejects noise and artifact, and automatically stabilizes and restores baseline.

In addition, the XL+ Option A01 has adjustable heart rate alarms, patient contact indicator (PCI), recorder event marker, complete recorder annotation, event summary, and 3- and 5-wire patient cable ECG capability. Oxygen saturation measurement (SPO_2) is available as an option. Transcutaneous external pacing is also available as an option or field upgrade for the XL+. The optional 12-pin ECG input connector is compatible with the ECG patient cable. The XL+ can interface to the HP Central Station via an analog-only high-level ECG Out signal. Figure 1-1 shows the XL+ defibrillator.

The XL+ defibrillator fits onto the MTRO-OO336L cart. The cart features three drawers (with a latch/lock system) for storing suction pumps and other resuscitation equipment.

Figure 1-1



CodeMaster XL+ Defibrillator/Monitor

The defibrillator is designed for long-term reliability. The modular design makes extensive use of VLSI and gate-array technology. The modular approach means less downtime for the user, due to the quick field repair times inherent in the subassembly replacement philosophy of repair. The built-in menu-driven tests efficiently aid in identifying faulty operation, further speeding the repair process.

MTRO-00336L Cart

The MTRO-00336L Cart provides mobility for the CodeMaster defibrillator. The cart shell and drawers are constructed of a durable light-weight polymer material that will not corrode, rust, or dent. Built-in hand grips and 5-inch non-marring casters (two with brakes) provide easy maneuverability. The cart surfaces are smooth and stain-resistant, with rounded corners. Drawers can be removed without tools for thorough cleaning.

Inquiries

For questions or comments regarding these instruments, contact the nearest Sales/Service Office or one of the Service Dispatch Centers. Always identify the instrument by model number and serial number in all correspondence. Sales and service offices are listed at the end of this manual. Toll-free numbers for Service Dispatch Centers are listed in Chapter 6, **Parts Lists**.

Specification Data

The following tables list the technical specifications for the defibrillator and the mobile cart.

Table 1-1 **Physical Specifications**

Parameter	Specification
Dimensions (l × w × h)	
defibrillator:	15.75" × 12.75" × 8.0" (40.05 cm × 32.39 cm × 20.32 cm)
cart:	22" × 34" × 34.5" (55.9 cm × 86.3 cm × 87.6 cm)
Weight	
defibrillator:	24 lbs. (10 kg) (includes external paddles, battery, and recorder paper.)
cart:	82 lbs. (37 kg)
Chemical resistance, cleaners:	Withstands the following: isopropyl alcohol (except leadwires and patient cable), mild soap and water, chlorine bleach and water (30 ml/l of water).

CAUTION

The main battery will be damaged if stored for extended periods at a temperature greater than 50° C.

Table 1-2 **Environmental Specifications**

Parameter	Specification
Temperature	
operating:	0° to 55° C (32° to 131° F)[1]
storage:	–20° to 70° C (–4° to 158° F)[1]

Table 1-2 Environmental Specifications

Parameter	Specification
Humidity	
operating:	15 to 95% RH, non-condensing
storage:	15 to 95% RH, non-condensing
Pressure (altitude)	
operating:	To 15,000 ft. (4600 m)
storage:	To 15,000 ft. (4600 m)

[1]Battery must be removed below 0° C (32° F) and above 45° C (113° F).

Table 1-3 Electrical Specifications

Parameter	Specification
Defibrillator	
Output energy (delivered):	2, 3, 5J (±1J)
	7, 10J (±2J)
	20, 30J (±4J)
	50, 70, 100, 150, 200, 300, and 360J (±15%)
Waveform:	Damped sinusoidal (Lown).
Charge control:	Push-button on apex paddle and on front panel.
Charge time (Battery operation):	Less than 5 seconds to 360 joules.
Armed indicators:	Charge done tone, charge done lamp on apex paddle, and available energy indicated on display.
Paddle contact indicator (PCI): (Option A01)	3-color LED bar graph array on STERNUM paddle indicates quality of defibrillator paddle contact before discharge.
Paddles:	Standard paddles are anterior/anterior, adult and pediatric. Adult electrodes (83 cm sq) slide off to expose pediatric electrodes (21 cm sq). Paddle cord is 10 ft (3m). Full range of internal paddles are available.
Synchronizer:	SYNC message appears on monitor and is annotated periodically on recorder while in synchronous mode. An audible beep sounds with each detected R- wave, while a marker on the monitor and sync designator on the recorder strip indicate the discharge point.
Monitor	
Inputs:	ECG may be viewed through paddles or patient cable. Lead I, II, III, or PADDLES selectable. Additional leads (avR, avF, AvL, V Leads) and PADS are available (Option A01). Monitor and recorder indicate selected ECG source.
Lead fault:	LEADS OFF message and dashed baseline appear on monitor if a lead becomes disconnected.

Table 1-3 Electrical Specifications (Continued)

Parameter	Specification
Common mode rejection:	Leads: ≥100 dB and Paddles: ≥90 dB measured as per AAMI standards for cardiac monitors (EC13).
Pace pulse rejection:	The pace pulse rejection algorithm of this product meets the requirements of Section 3.1.4.1 (Pacemaker Pulse Rejection Without Over/Undershoot) of AAMI EC13 - 1983 (Cardiac Monitors, Heart Rate Meters and Alarms). This product will not reject pace pulses as described in Section 3.1.4.2 (Pacemaker Pulse Rejection With Over/Undershoot) of the same document.
Display size and type:	5 inch diagonal (12.7 cm) CRT for 4 seconds of ECG data on screen; non-fade, fixed trace. Scrolling trace is selectable.
Sweep speed:	25 mm/sec nominal.
Frequency response:	0.5 to 40 Hz.
Heart rate display:	Digital readout on monitor from 15 to 350 BPM.
Heart rate alarms:	Three pairs of high and low heart rate alarm limits from 20 to 280 BPM. On Option A01, limits are configurable.
ECG output:	1 V/mV.
Patient cable length:	10 ft.
Thermal Array Recorder	
Event summary: (Option A01)	Stores and prints 3 seconds of pre-critical event data, and 8 seconds of post-critical event data for up to 28 events. Data is retained after unit is turned off.
Annotates:	Time, date, HR, ECG mode, event marker, defibrillator mode, and selected energy. Additionally, on XL+, actual delivered energy, peak current, and patient impedance.
Speed:	25 mm/sec.
Paper size:	50 mm by 30 m (100 ft).
Recorder mode:	May be configured to automatically document events and ECG during defibrillation episodes. The recorder can be configured to run in either real time or with a 6 second delay.
Frequency response:	0.5 to 40 Hz. Additionally, on Option A01, 0.05–150 Hz selectable.

Table 1-4 Power and Battery Specifications

Parameter	Specification
AC Line Power	
Line frequency:	50 and 60 Hz.
Line voltage:	100–230 V AC ±15%.
Battery	
Type:	Rechargeable sealed lead-acid. 4 Ah, 12 V nominal.

Table 1-4 Power and Battery Specifications

Parameter	Specification
Charge time:	Approximately 2 hours to 90% of full capacity. 18 hours to 100% capacity. Repeated charging to less than 100% will reduce useful life of battery.
Capacity:	Approximately 2.5 hours of monitoring, or 50 full-energy discharges, or 1 hour of monitoring and recording.
Indicators:	Illuminated LED indicates battery is charging. LOW BATTERY message appears on monitor when limited battery capacity remains.

Table 1-5 External Pacer (Optional)

Parameter	Specification
Current pulse amplitude:	10 mA to 200 mA.
Pulse width:	20 msec.
Rate:	40 ppm to 180 ppm.
Modes:	Demand or fixed rate.
Refractory period:	40 to ≤80 ppm: 340 msec ± 10%; > 80 to 180 ppm: 240 msec ± 10%.

Table 1-6 SpO_2 Monitor (Optional)

Parameter	Specification
SpO_2 measurement	Range: 0 to 100% Accuracy with HP 1190A transducer: 1 standard deviation. 65% to 80%: ±2.5% 80% to 100%: ±1.5% Accuracy with Nellcor N-25, I-20, D-20, D-25, Oxiband A/N, Oxiband P/I sensors: 1 standard deviation. 80% to 100%: ±3%
Pulse rate measurement	Range: 30 to 300 bpm. Accuracy: ±1% Resolution: 1bpm
Averaging	SpO_2 and pulse rate: averaged over eight beats.
SpO_2 alarm limits	Three preset limits: 100/90, 100/85, and 100/80. Default is alarms off.
Time to alarm	Alarm within 10 seconds of SpO_2 value dropping below alarm setting.
Time to valid numeric	Valid 15 seconds after power on.
Recovery after defibrillation	Valid numeric 15 seconds after a discharge

Table 1-6 **SpO_2 Monitor (Optional)**

Parameter	Specification
INOP alerts	Warning messages for: SpO_2 cable off noisy signal low signal light interference
Pulse amplitude indicator	Indicates pulsatile activity.

Table 1-7 **Shock Advisory (Optional)**

Parameter	Specifications
Analysis Time	seven to ten seconds
Output Energy (Delivered)	Factory default protocol 200J, 200J, 360J
Analysis Control	Push-button on front panel
Charge Time	Less than 5 seconds to 360 joules with battery present. Less than 15 seconds to 360 joules to AC only.
Armed Indicators	Charge done tone and available energy indicated on display
Advisory Event Summary	Stores approximately 200 events and 50 ECG strips. Data retained after instrument turned off.
Waveform:	Damped sinusoidal (Lown)

Options and Accessories

CodeMaster XL+ Defibrillator/Monitor

These tables list the options and accessories available for the XL+ defibrillator/monitor.

Country Options

Each country option includes appropriate power cord, and language. Table 1-8 shows the configuration of each country option.

Table 1-8 Country Option Configurations

Option	Country	Labels	Users Manuals[1]	Voltage[2]	Frequency[2]	Power Cord[3]
ABA	North America	English	English	120	60	903-US, NEMA 5-15
ABB	Europe	English	English	220	50	902-EURO, IEC 83
ABC	Canada	French	French	120	60	903-US, NEMA 5-15
ABD	Germany	German	German	230	50	902-EURO, IEC 83
ABE	Spain	Spanish	Spanish	230	50	902-EURO, IEC 83
ABF	France	French	French	230	50	902-EURO, IEC 83
ABG	Australia	English	English	240	50	901-Australia
ABH	Netherlands	Dutch	Dutch	230	50	902-EURO, IEC 83
ABJ	Japan	Japanese	Japanese	100	50	903-US, NEMA 5-15
ABK	Intercon English	English	English	220	50	902-EURO, IEC 83
ABL	Canada	English	English	120	60	903-US, NEMA 5-15
ABM	Latin America	Spanish	Spanish	120	60	903-US, NEMA 5-15
ABN	Norway	Norwegian	Norwegian	220	50	902-EURO, IEC 83
ABP	Switzerland	German	German	230	50	906-Swiss
ABQ	Switzerland	French	French	230	50	906-Swiss
ABS	Sweden	Swedish	Swedish	230	50	902-EURO, IEC 83
ABU	United Kingdom	English	English	240	50	900-UK, BS 1363 A
ABX	Finland	Finnish	Finnish	230	50	902-EURO, IEC 83
ABY	Denmark	Danish	Danish	230	50	912-Danish
ABZ	Italy	Italian	Italian	230	50	902-EURO, IEC 83
ACD	Switzerland	English	English	230	50	906-Swiss
ACQ	South Africa	English	English	240	50	917-EURO, IEC 83
ACS	Europe	French	French	220	50	902-EURO, IEC 83
AKL	Thailand	English	English	220	50	903-ULS, NEMA 5-15
AKM	China	English	English	220	50	901-China
AKV	South America	Spanish	Spanish	220	50	902-EURO, IEC 83
A1V	Korea	English	English	220	60	902-EURO, IEC 83

Table 1-8 Country Option Configurations (Continued)

Option	Country	Labels	Users Manuals[1]	Voltage[2]	Frequency[2]	Power Cord[3]
AB4	Singapore	English	English	220	50	900, BS 1363 A
AB5	Hong Kong	English	English	220	50	900, BS 1363 A
ABW	Belgium	Dutch	Dutch	230	50	902-EURO, IEC 83
AC8	Argentina	Spanish	Spanish	220	50	920 ARG. Res 63
ABW	Belgium	French	French	230	50	902-EURO, IEC 83
ACJ	India	English	English	240	50	917 BS 546 (15A)
ACM	Belgium	German	German	230	50	902-EURO, IEC 83
ACP	Austria	German	German	230	50	902-EURO, IEC 8
AKH	Chile	Spanish	Spanish	220	50	921 CEI 23 - 16
AKJ	Israel	English	English	220	50	919 SI 32
AKY	Peru	Spanish	Spanish	220	60	904 UL 1681
AR6	Indonesia	English	English	220	60	902-EURO, IEC 8
AWB	Greenland	English	English	220	50	912 SR 107 2 D1
AWC	Laos	French	French	220	50	903 UL 1681
AWD	Paraguay	Spanish	Spanish	220	50	902-EURO, IEC 8
AWN	Lybia	English	English	240	50	902-EURO, IEC 83

[1]See Table 1-9 and Table 1-10 for part numbers.

[2]CodeMaster AC input: 100 to 230 VAC, ±15%, 50 to 60 Hz.

[3]See Table 1-10 for part numbers.

Table 1-9 Codemaster XL+ (M1722B) Documentation Part Numbers

Country	User Guide Part Number	User Card Part Number	Pacer Card Part Number	Checkcard Part Number	SpO_2 Concept Guide	SpO_2 Sensor Guide
English	M1722-94980	M1722-92908	M1722-93900	M1722-93920	M1722-93950	M1722-93970
French	M1722-94981	M1722-92918	M1722-93901	M1722-93921	M1722-93951	M1722-93971
German	M1722-94982	M1722-92928	M1722-93902	M1722-93922	M1722-93952	M1722-93972
Dutch	M1722-92983	M1722-92938	M1722-93903	M1722-93923	M1722-93953	M1722-93973
Spanish	M1722-94984	M1722-92948	M1722-93904	M1722-93924	M1722-93954	M1722-93974
Italian	M1722-94985	M1722-92958	M1722-93905	M1722-93925	M1722-93955	M1722-93975
Swedish	M1722-94986	M1722-92968	M1722-93906	M1722-93926	M1722-93956	M1722-93976

Table 1-9 Codemaster XL+ (M1722B) Documentation Part Numbers

Country	User Guide Part Number	User Card Part Number	Pacer Card Part Number	Checkcard Part Number	SpO_2 Concept Guide	SpO_2 Sensor Guide
Japanese	M1722-94987	M1722-92978	M1722-93907	M1722-93927	M1722-93957	M1722-93977
Norwegian	M1722-94988	M1722-92919	M1722-93908	M1722-93928	M1722-93958	M1722-93978
Finnish	M1722-94989	M1722-92920	M1722-93909	M1722-93929	M1722-93959	M1722-93979
Danish	M1722-94990	M1722-92921	M1722-93910	M1722-93930	M1722-93960	M1722-93980

Table 1-10 CodeMaster XL+ (M1722B) Shock Advisory Documentation

Country	User's Guide Part Number	Concept Guide Part Number
English	M1722-94960	M1722-94940
French	M1722-94961	M1722-94941
German	M1722-94962	M1722-94942
Dutch	M1722-94963	M1722-94943
Spanish	M1722-94964	M1722-94944
Italian	M1722-94965	M1722-94945
Swedish	M1722-94966	M1722-94946
Japanese	M1722-94967	M1722-94947
Norwegian	M1722-94968	M1722-94948
Finnish	M1722-94969	M1722-94949
Danish	M1722-94970	M1722-94950

Table 1-11 Power Cord Part Numbers

Power Cord Key	HP Part Number
900	8120-1351
901	8120-1369
902	8120-1689
903	8120-1378
906	8120-2104
912	8120-3997
917	8120-4211

Pacing Option—A01 Plus Package
- Paddle set with PCI
- 5-Lead ECG capability
- Configurable heart rate alarms
- Event review

C02 Option

Add Pacing

SpO_2 Option

C62	Add SpO_2
C73	SpO_2 adult finger tip sensor, reusable (M1190A)
C74	Adaptor cable for Nellcor sensors (M1900B)

Paddles and Pad Options

C13	Delete Standard Ant/Ant Paddles
C14	Add Internal Paddle Adapter Cable
C15	Add 7.5 cm Internal Paddles (switchless)
C16	Add 6.0 cm Internal Paddles (switchless)
C17	Add 4.5 cm Internal Paddles (switchless)
C18	Add 2.8 cm Internal Paddles (switchless)
C20	Add Adhesive Pads Adapter
C21	Add Adhesive Pads
C24	Add Sterilizable External Paddle Set
C25	Add Paddle Contact Indicator (PCI)
C26	Add 7.5 cm Internal Paddles (switched)
C27	Add 6.0 cm Internal Paddles (switched)
C28	Add 4.5 cm Internal Paddles (switched)
C29	Add 2.8 cm Internal Paddles (switched)

ECG Cable/Connector Options

C30	Substitute 6-pin AAMI ECG connector; includes 6-pin 3-wire AHA cable
C31	Substitute 6-pin AAMI ECG connector; includes 6-pin 5-wire AHA cable (Option A01 only)
C32	Substitute 12-pin HP CMS ECG connector; includes 12-pin 3-wire AHA cable
C33	Substitute 12-pin HP CMS ECG connector; includes 12-pin 5-wire AHA cable (Option A01 only)
C34	Substitute 12-pin HP CMS ECG connector; includes 12-pin 3-wire IEC cable
C35	Substitute 12-pin HP CMS ECG connector; includes 12-pin 5-wire IEC cable (Option A01 only)
C36	Substitute 8-pin 5-wire AHA ECG cable (Option A01 only)
C37	Substitute 8-pin 5-wire IEC ECG cable (Option A01 only)

Defibrillator Case Color

048	Parchment White
049	High Visibility Yellow

Hardware Options

C50	Add Swivel Wall-Mount Hardware
C51	Add Carrying Case
C52	Add Accessory Pouch

Shock Advisory Option

C80	Add Shock Advisory

Multifunction Electrodes

C81	Multifunction Pediatric Defibrillator Electrode
C82	Multifunction Adult Defibrillator Electrode

Upgrade Program

085	Defibrillator Upgrade Program

Sync Cable Options

J01	Add 8-pin Sync Cable
J02	Add 6-pin AAMI Sync Cable
J03	Add 12-pin HP CMS Sync Cable

Documentation Options

0B3	Service Manual (English only)
0BP	In-Service Training Video (VHS-NTSC)
0BQ	In-Service Training Video (VHS-PAL)
0BR	Service Training Video (VHS-NTSC)
0BS	Service Training Video (VHS-PAL)

Standard Accessories Supplied

- *CodeMaster XL+ Users Guide* (M1722A/B and M1723A/B)
- *CodeMaster XL+ Series Quick Reference Card* (M1722A/B and M1723A/B)
- ECG Patient Cable (language/country specific)—M1733A/M1735A
- Disposable Electrodes—HP 14445C
- 1 roll, Thermal Paper—HP 40457C

Cart

MTRO-00336L	Add Cart

Warranty

W07	5 years warranty on-site

Setup and Configuration

Introduction

This chapter covers setting up and configuring the CodeMaster XL+ Defibrillator/ Monitor. If you are a Hewlett-Packard service representative, this information provides a factory-recommended process to use when assisting customers. The configuration information guides you through the setup menus, and describes configuration choices.

Setup

The defibrillator is ready for operation when the following tasks have been properly performed:

- Install battery.
- Charge battery (for 24 hours).
- Install paper.
- Make sure that the paddle set connector is seated and locked.
- Select configuration settings; set date and time.

Line Voltage Settings

The defibrillator automatically adjusts to the line voltage that is supplied (from 100–230 VAC ±15% at 50/60 Hz). No manual setting or adjustment is required.

Installing and Charging the Battery

This procedure describes installing the battery for the first time. To replace a battery, refer to the battery replacement procedure in Chapter 5, **Removal and Replacement**.

NOTE

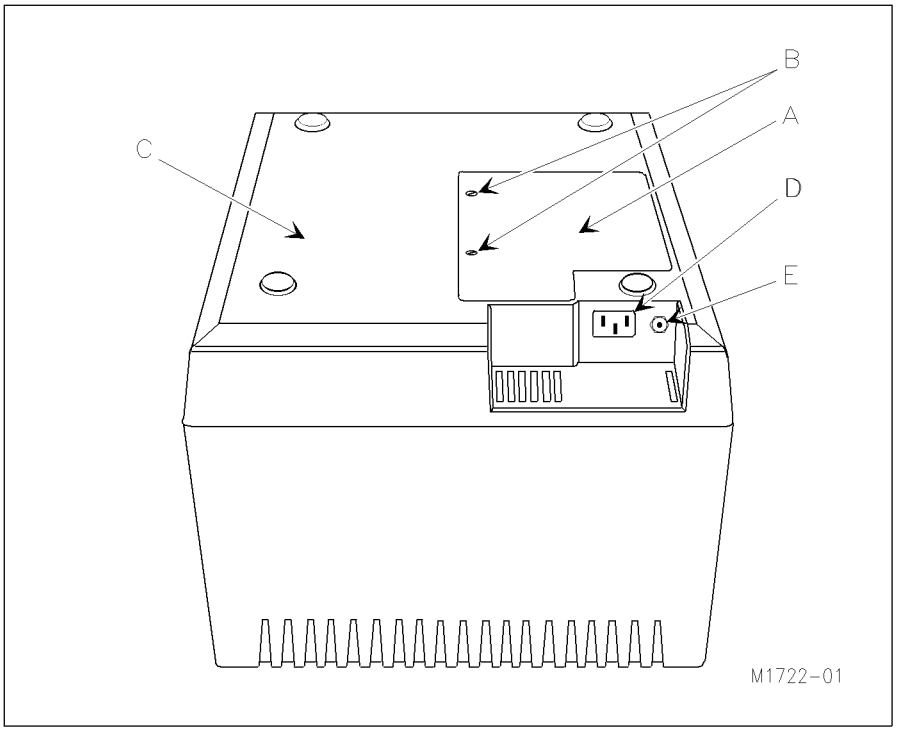
The defibrillator operates from either battery or AC power.

Use only HP battery assembly M1758A. The use of a non-HP recommended battery, may induce a problem and void the product warranty.

WARNING

To avoid the possibility of hazardous electrical shock, unplug the instrument from the AC power source before installing or replacing the battery.

Figure 2-1



Accessing the Battery Compartment

A Battery compartment door.

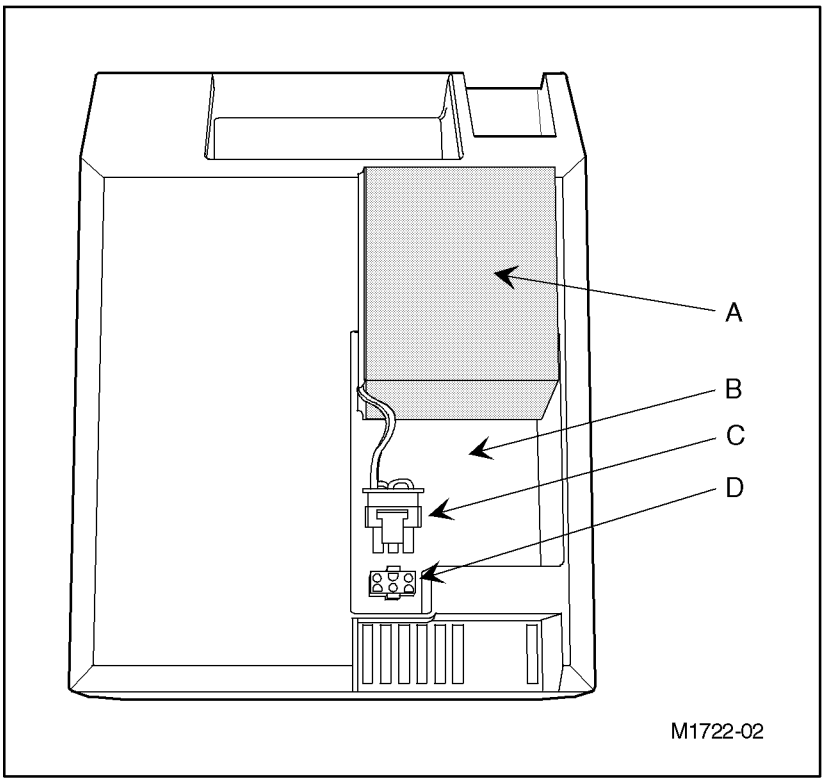
B Retaining screws ($\frac{1}{4}$ turn).

C Bottom side of defibrillator.

D AC power receptacle.

E Equipotential connector.

Figure 2-2



Installing the Battery

A Battery.

B Battery compartment.

C Battery plug.

D Battery connector.

To install the battery:

1 Turn the instrument upside down.

2 Open the defibrillator battery compartment by turning the two $\frac{1}{4}$-turn screws on the battery door $\frac{1}{4}$ turn counter clockwise (as shown in Figure 2-1); then, lift off the battery door.

3 Align the polarized battery plug with the battery connector located inside the battery compartment (as shown in Figure 2-2). Be sure to match the keying.

4 Push the plug into the connector until the plug is locked.

5 Gently lower the battery into the battery compartment until completely seated.