

Mighty Max Battery ML12-6F2

Mighty Max Battery ML12-6F2 6V 12AH F2 SLA Battery Instruction Manual

Model: ML12-6F2

1. INTRODUCTION

This manual provides essential instructions for the safe and effective use of your Mighty Max Battery ML12-6F2 6V 12AH F2 Sealed Lead Acid (SLA) battery. This battery is a rechargeable, maintenance-free unit designed for various applications, including power tools and other devices requiring a reliable 6V power source. Please read this manual thoroughly before installation and operation.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent injury or damage to the battery and equipment:

- **Risk of fire, explosion, or burns:** Do not disassemble, heat above 60°C (140°F), or incinerate.
- **Do not short-circuit terminals:** This can cause severe sparks, heat, and potential fire.
- **Wear protective eyewear and clothing:** When handling batteries, especially during installation or maintenance.
- **Keep out of reach of children.**
- **Do not mix old and new batteries** or batteries of different types.
- **Recycle properly:** Batteries must be recycled or disposed of properly. Do not dispose of in household waste.
- **Ventilation:** Ensure adequate ventilation when charging to prevent accumulation of gases.

3. SETUP

3.1 Unpacking and Inspection

Upon receiving your Mighty Max Battery, carefully unpack it and inspect for any signs of physical damage. If any damage is observed, contact your supplier immediately.

3.2 Connecting the Battery

The ML12-6F2 battery features F2 terminals. Ensure that the terminals on your device or charger are compatible. Connect the

positive (+) terminal of the battery to the positive lead of your device/charger and the negative (-) terminal to the negative lead. Ensure connections are secure to prevent arcing and ensure optimal performance.



Figure 3.2.1: Close-up of an F2 terminal, showing the spade connector type.

3.3 Mounting

The Sealed Lead Acid (SLA) / Absorbent Glass Mat (AGM) design of this battery allows it to be mounted in any position without risk of leakage. Ensure the battery is secured to prevent movement or vibration during operation, which could lead to damage or loose connections.



3.94in
(10cm)
 Including Terminal



5.94in
(15.08cm)



3.70in
(9.4cm)
 Battery, Not Including Terminal

2.01in
(5.11cm)

Figure 3.3.1: Battery dimensions for mounting reference. Length: 5.94 in (15.08 cm), Width: 2.01 in (5.11 cm), Height (including terminal): 3.94 in (10 cm), Height (excluding terminal): 3.70 in (9.4 cm).

4. OPERATING INSTRUCTIONS

4.1 General Use

The ML12-6F2 battery is designed for reliable power delivery. Ensure the battery is adequately charged before initial use and after each discharge cycle. Avoid deep discharges to prolong battery life. The battery is suitable for both cyclic and float applications.

4.2 Temperature Considerations

Battery performance and lifespan are affected by temperature. Optimal operating temperatures are typically between 20°C and 25°C (68°F and 77°F). Operating outside this range can reduce capacity and cycle life. Refer to the specifications section for detailed temperature effects on capacity and float life.

5. MAINTENANCE

5.1 Recharging

Always use a charger specifically designed for 6V Sealed Lead Acid (SLA) batteries. Overcharging or undercharging can significantly reduce battery life. Recommended charge voltage for float use is 6.80-6.90V at 77°F (25°C), and for cycle use is 7.25-7.45V at 77°F (25°C). Maximum charge current is 3.6A.

5.2 Storage

Store the battery in a cool, dry place away from direct sunlight and extreme temperatures. For extended storage, recharge the battery every 3 to 6 months to prevent irreversible capacity loss due to self-discharge. The self-discharge rate is approximately 3% per month at 20°C (68°F).

5.3 Cleaning

Keep battery terminals clean and free from corrosion. Use a dry cloth to wipe away any dust or dirt. If corrosion is present, clean with a wire brush and a solution of baking soda and water, then rinse with clean water and dry thoroughly.

5.4 Maintenance-Free Design

The ML12-6F2 is a Sealed Lead Acid (SLA) battery, meaning it is maintenance-free and does not require water additions. The Absorbent Glass Mat (AGM) technology ensures a spill-proof design and efficient gas recombination.

6. TROUBLESHOOTING

If you experience issues with your battery, consider the following common problems and solutions:

- **Battery not holding charge:**
 - Ensure the charger is functioning correctly and is compatible with SLA batteries.
 - Check for proper connection between the battery and charger.
 - Verify the battery is not over-discharged. Deep discharges can permanently reduce capacity.
 - Consider the age of the battery; all batteries have a finite lifespan.
- **Low voltage output:**
 - Check all connections for looseness or corrosion.
 - Ensure the battery is fully charged.
 - Verify the load is not exceeding the battery's discharge capabilities.
- **Battery overheating during charge:**
 - Stop charging immediately.
 - Ensure the charger is appropriate for the battery type and voltage.
 - Check for proper ventilation around the battery.

If problems persist after following these steps, contact customer support or a qualified technician.

7. SPECIFICATIONS

The Mighty Max Battery ML12-6F2 is a high-performance Sealed Lead Acid (SLA) battery with Absorbent Glass Mat (AGM) technology. Key specifications are detailed below:

7.1 General Specifications

- **Nominal Voltage:** 6V
- **Nominal Capacity (20HR):** 12AH

- **Terminal Type:** F2
- **Battery Type:** Sealed Lead Acid (SLA) / Absorbent Glass Mat (AGM)
- **Dimensions (L x W x H):** 5.94 in x 2.01 in x 3.94 in (15.09 cm x 5.11 cm x 10.01 cm)
- **Approximate Weight:** 1.75 kg (3.75 lbs)
- **Internal Resistance:** Approximately 20mΩ (Full Charged, 77°F/25°C)
- **Operating Temperature Range:** Discharge: -15°C to 50°C (5°F to 122°F), Charge: -15°C to 40°C (5°F to 104°F), Storage: -15°C to 40°C (5°F to 104°F)

7.2 Internal Configuration

The battery's internal structure is designed for durability and performance, featuring copper and silver plated terminals, sealed safety valve, high-impact case, and absorbent glass mat (AGM) separator.

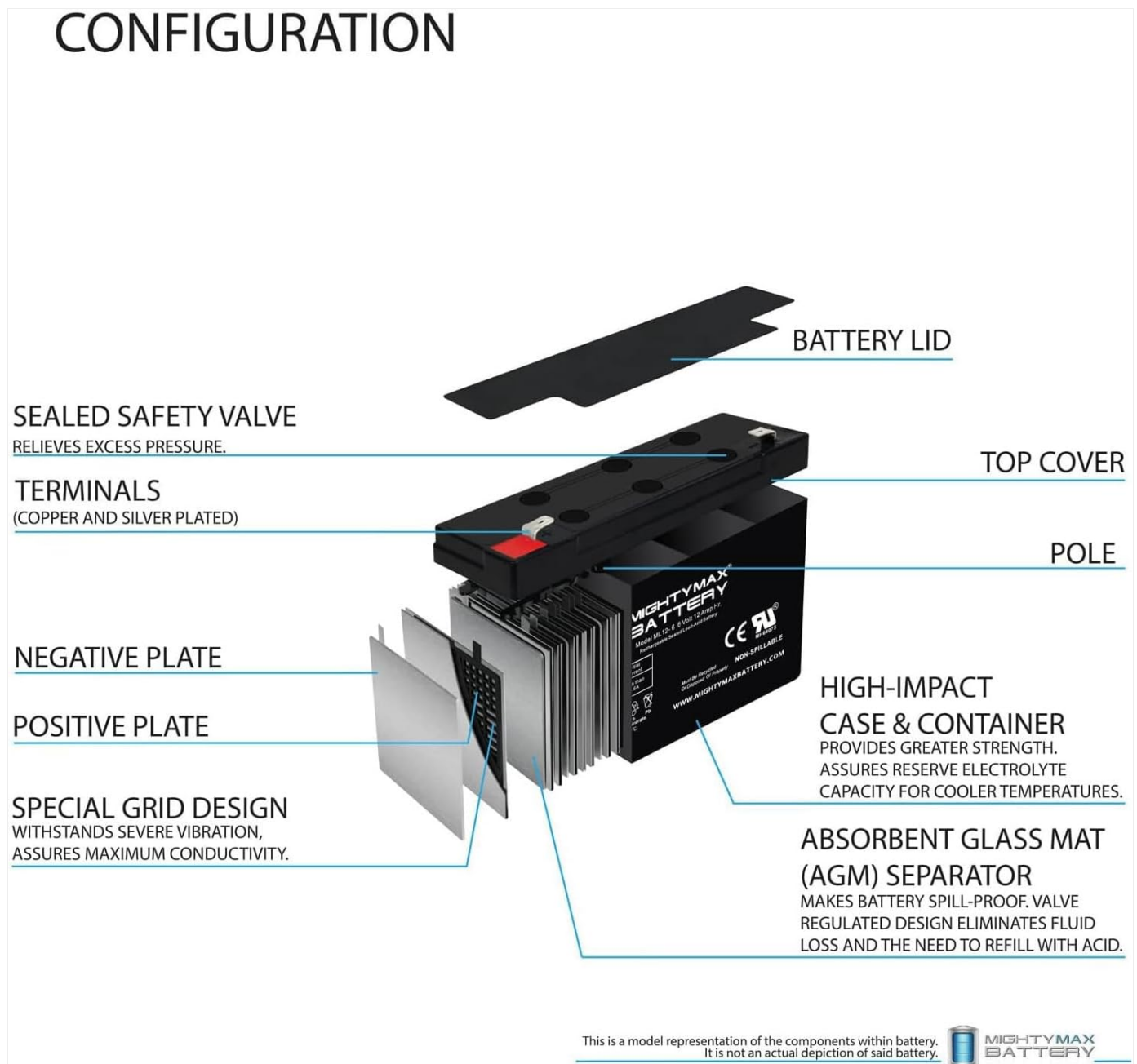


Figure 7.2.1: Internal configuration of the ML12-6F2 battery.

7.3 Performance Characteristics

Detailed performance data, including capacity vs. discharge rate, temperature effects, and self-discharge rates, are provided in the



ML12-6(6V12Ah/20hr)

The rechargeable batteries are lead-lead dioxide systems. The dilute sulfuric acid electrolyte is absorbed by separators and thus immobilized.

Should the battery be accidentally overcharged producing hydrogen and oxygen, Special one-way valves allow the gases to escape thus avoiding excessive pressure build-up. Otherwise, the battery is completely sealed and is, therefore, maintenance-free, leak proof and usable in any position.

Battery Construction

Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	F2	Fiberglass	Sulfuric acid

General Feature

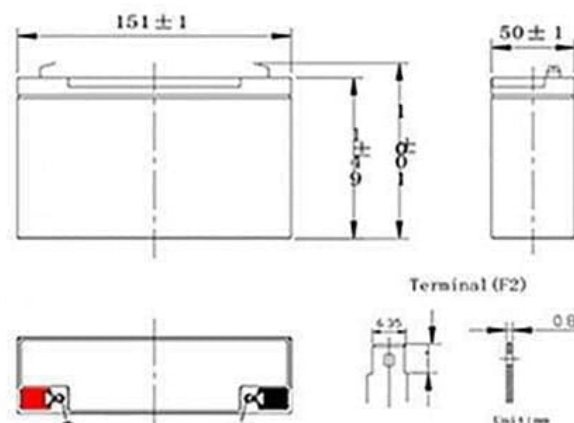
- Absorbent Glass Mat(AGM) technology for efficient gas recombination of up to 99% and freedom from electrolyte maintenance or water adding.
- Computer designed lead, calcium tin alloy grid for high power density. Long service life, float or cyclic applications. Maintenance-free operation.
- Low self discharge.

Performance Characteristics

Capacity 77°F(25°C)	20 hour rate (0.6A, 5.25V)	12Ah
	10 hour rate (1.14A, 5.25V)	11.4Ah
	5 hour rate (2.05A, 5.25V)	10.2Ah
	1 hour rate (7.5A, 4.8V)	7.5Ah
Internal Resistance	Full charged Battery 77°F(25°C): 20mΩ	
Capacity affected by Temperature (20 hour rate)	104° F(40°C)	102%
	77° F(25°C)	100%
	32° F(10°C)	85%
	5° F(-15°C)	65%
Self-Discharge 68°F(20°C)	Capacity after 3 month storage	90%
	Capacity after 6 month storage	80%
	Capacity after 12 month storage	60%
Max. discharge current 77°F(25°C): 180A(5S)		
Charge (Constant Voltage)	Float: 6.80~6.90 V/77° F(25°C)	
	Cycle: 7.25~7.45 V/77°F(25°C)	
	Max. Current: 3.6A	

SPECIFICATION

Nominal voltage	6V
Number of cell	3
Length(mm/inch)	151/5.94
Width(mm/inch)	50/1.97
Height(mm/inch)	94/3.70
Total Height(mm/inch)	100/3.94
Approx. Weight (kg/lbs)	1.7/3.75



Discharge Constant Current (Amperes at 77° F 25°C)

End Point Volts/Cell	5min	10min	15min	30min	1h	3h	5h	16h	20h
1.60V	45.6	31.0	24.3	18.3	7.50	3.15	2.12	1.18	0.61
1.65V	41.2	28.1	23.8	12.9	7.43	3.12	2.10	1.17	0.61
1.70V	42.7	29.2	23.2	12.6	7.37	3.09	2.07	1.16	0.61
1.75V	41.3	28.3	22.7	12.3	7.30	3.06	2.05	1.14	0.60
1.80V	39.8	27.5	22.1	12.0	7.23	3.03	2.02	1.12	0.59

Discharge Constant Power (watts at 77° F 25°C)

End Point Volts/Cell	5min	10min	15min	30min	45min	1h	2h	3h	5h
1.60V	88.0	59.2	47.7	28.2	21.0	15.6	9.78	6.52	4.24
1.65V	82.5	55.7	45.1	26.8	20.0	14.9	9.49	6.36	4.17
1.70V	77.1	52.3	42.5	25.3	19.0	14.2	9.17	6.19	4.09
1.75V	71.7	48.8	39.8	23.9	18.0	13.5	8.81	6.00	4.00
1.80V	66.4	45.4	37.2	22.4	17.0	12.8	8.43	5.80	3.90

(Note) The above characteristics data are average values obtained Within three charge/discharge cycles not the minimum values.

Figure 7.3.1: Battery Construction and Performance Characteristics.

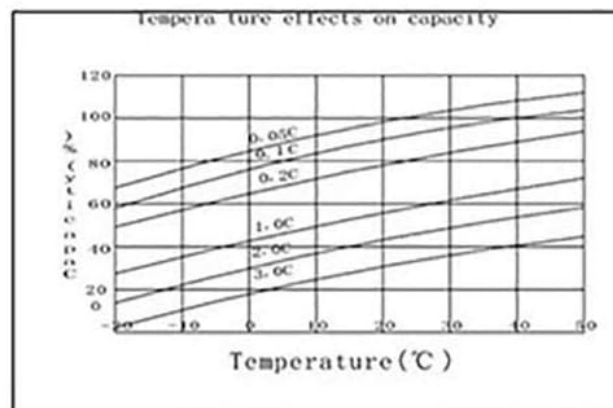
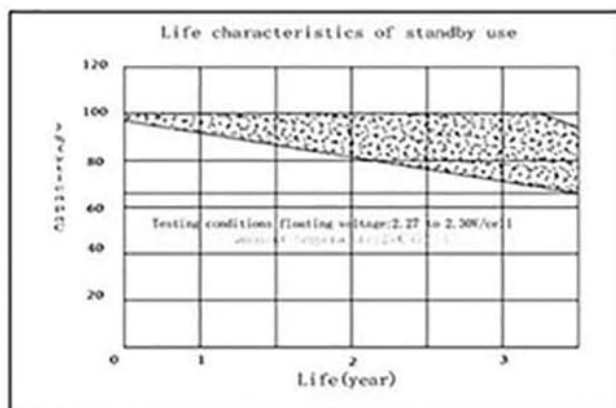
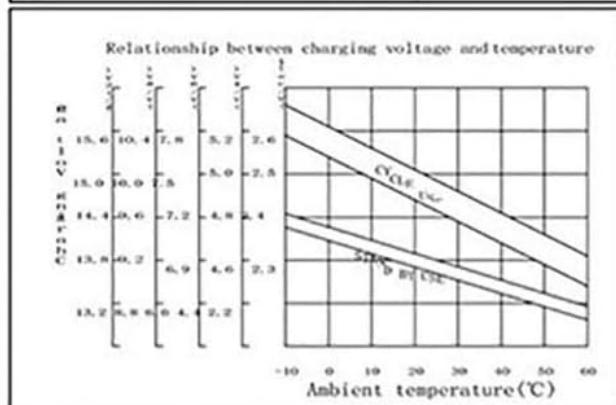
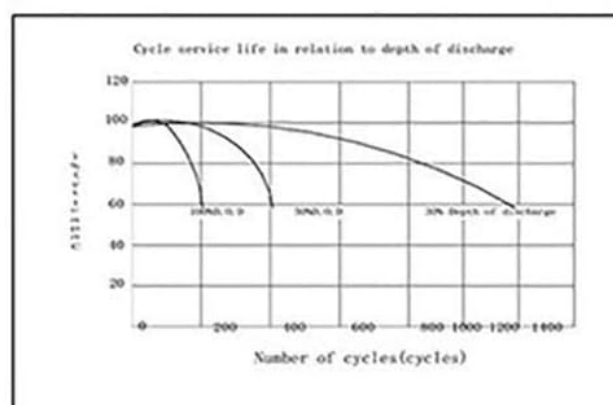
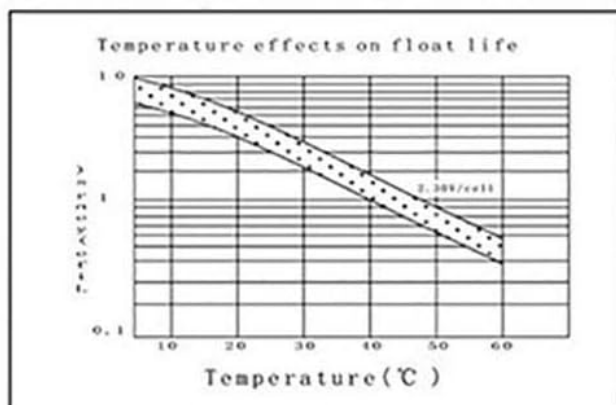
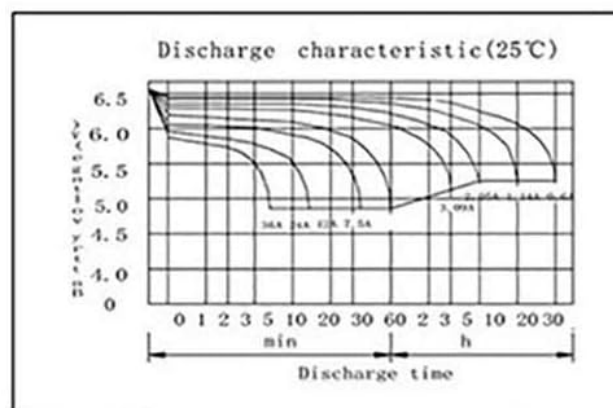
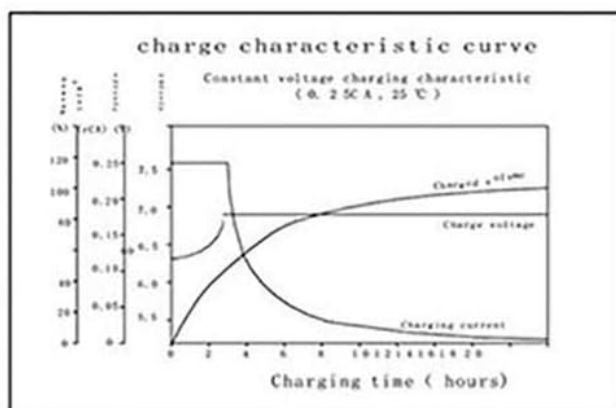


Figure 7.3.2: Battery Characteristic Curves and Life Data.

8. WARRANTY INFORMATION

This Mighty Max Battery ML12-6F2 comes with a **One Year Manufacturer's Warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by misuse, abuse, unauthorized modification, or improper installation. For warranty claims, please retain your proof of purchase and contact customer support.

9. CUSTOMER SUPPORT

For further assistance, technical support, or inquiries regarding your Mighty Max Battery, please visit the manufacturer's website:

www.mightymaxbattery.com

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question