Mighty Max Battery ML18-12

Mighty Max Battery ML18-12 12V 18AH SLA Battery Instruction Manual

Introduction

This manual provides essential information for the safe and effective use of your Mighty Max Battery ML18-12 12V 18AH Sealed Lead Acid (SLA) battery. Please read these instructions carefully before installation, operation, or maintenance to ensure optimal performance and longevity of your battery.

Product Overview

The Mighty Max ML18-12 is a 12V 18AH Sealed Lead Acid (SLA) rechargeable battery designed for various applications, including power stations, UPS systems, and other devices requiring reliable power. It is a maintenance-free battery with a spill-proof design.

Key Features:

- **Model:** ML18-12
- **Voltage:** 12V
- **Capacity:** 18AH
- **Battery Type:** Sealed Lead Acid (SLA) / Absorbent Glass Mat (AGM)
- **Maintenance-Free:** No need for water additions.
- **Spill-Proof Design:** Can be mounted in any position.
- **High Discharge Rate:** Suitable for demanding applications.
- **Wide Operating Temperatures:** Performs reliably across various temperatures.
- **Long Service Life:** Designed for durability in float and cyclic applications.
- **UL Certified:** Ensures safety and quality standards.

What's in the Box:

- One (1) Mighty Max ML18-12 12V 18AH SLA Battery
- Screws for terminal connection

Image: Front view of the Mighty Max ML18-12 12V 18AH SLA Battery, showing the brand logo, model number, voltage, and capacity.

Specifications

Image: Diagram illustrating the dimensions of the Mighty Max ML18-12 battery, showing length (7.17 inches), width (3.03 inches), and height (6.57 inches including terminals).

Mighty Max ML18-12 Battery Specifications

Specification	Value
Model Number	ML18-12
Nominal Voltage	12V
Battery Capacity	18 Amp Hours (AH)
Product Dimensions (L x W x H)	7.12 x 3.00 x 6.50 inches (18.08 x 7.62 x 16.51 cm)
Item Weight	12 pounds
Terminal Type	Nut and Bolt
Battery Type	Sealed Lead Acid (SLA) / Absorbent Glass Mat (AGM)
UL Certified	Yes

MIGHTY MAX BATTERY

ML18-12 *(12V18Ah/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 bydrogen 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

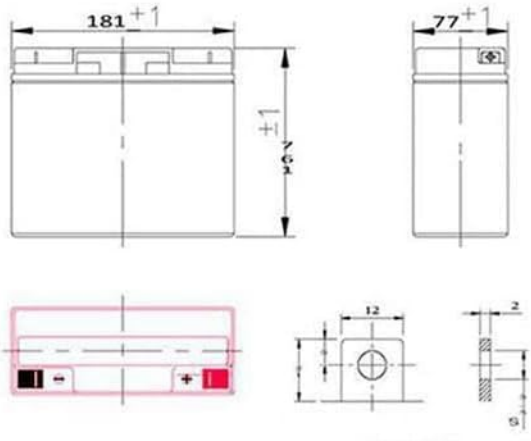
Component	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	NB	Fiberglass	Sulfuric acid

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.

SPECIFICATION

Nominal voltage ····· 12V
Number of cell 6
Length(mm/inch) ····· 181/7.13
Width(mm/inch ····· 77/3.03
Height(mm/inch) ····· 167/6.57
Total Height(mm/inch) ····· 167/6.57
Approx. Weight(kg/lbs) ····· 5.1/11.2



Performance Characteristics

Capacity 77°F(25℃)	20 hour rate (0.90A、10.5V)	18Ah
	10 hour rate (1.62A、10.5V)	16.2Ah
	5 hour rate (2.9A、10.5V)	14.5Ah
	1 hour rate (11A、9.6V)	11Ah
Internal Resistance	Full charged Battery77°F(25℃):16mΩ	
Capacity affected by Temperature (20 hour rate)	104° F(40℃)	102%
	77° F(25℃)	100%
	32° F(10℃)	85%
	5° F(-15℃)	65%
Self-Discharge 68°F(20℃)	Capacity after 3 month storage	90%
	Capacity after 6 month storage	80%
	Capacity after 12month storage	60%
Max. discharge current77°F(25℃): 255A(5S)		
Charge (Constant Voltage)	Float: 13.6~13.8 V/77° F/(25℃)	
	Cycle:14.5~14.9 V/77°F/(25℃) Max. Current: 5.4A	

Discharge Constant Current (Amperes at 77° F25 ℃)

End Point Volts/Cell	5min	10min	15min	30min	1h	3h	5h	10h	20h
1.60V	63.7	42.8	32.6	19.2	11.0	4.49	3.05	1.68	0.89
1.65V	61.4	41.8	31.8	18.8	10.7	4.40	3.00	1.66	0.88
1.70V	59.1	40.8	31.0	18.4	10.4	4.30	2.95	1.64	0.87
1.75V	56.8	39.6	30.2	18.0	10.0	4.21	2.90	1.62	0.85
1.80V	54.5	38.6	29.4	17.5	9.7	4.12	2.85	1.60	0.84

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

End Point Volts/Cell	5min	10min	15min	30min	45min	1h	2h	3h	5h
1.60V	129	81.7	64.9	38.0	27.8	22.4	14.5	10.5	6.57
1.65V	125	79.2	63.4	36.8	26.8	21.5	13.6	9.84	6.57
1.70V	120	76.0	60.8	35.6	25.6	20.4	12.8	9.09	6.24
1.75V	113	72.7	58.3	34.3	24.5	19.3	12.0	8.29	5.89
1.80V	107	69.3	56.0	32.9	23.1	18.0	10.9	7.38	5.46

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

Image: Detailed technical specifications and performance characteristics for the ML18-12 battery, including discharge rates, capacity vs. temperature, and self-discharge rates.

Safety Information and Warnings

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

- **Risk of Fire, Explosion, or Burns:** Do not attempt to open, disassemble, or modify the battery.
- **Temperature Limits:** Do not heat the battery above 40°C (104°F) or incinerate it. The recommended storage temperature should not exceed 50°C (122°F).
- **Short Circuit Prevention:** Avoid short-circuiting the battery terminals. Ensure no metal objects come into contact with both terminals simultaneously.
- **Recycling:** This battery contains lead and must be recycled or disposed of properly. Do not dispose of in household waste.
- **Ventilation:** Although sealed, ensure adequate ventilation during charging to dissipate any potential gas buildup.
- **Handling:** Handle with care. The battery is heavy (12 pounds).

Image: Top view of the Mighty Max ML18-12 battery, clearly showing warning labels regarding fire, explosion, burns, and proper disposal/recycling.

Setup and Installation

The ML18-12 battery is designed for easy installation. Follow these steps:

1. **Inspect the Battery:** Before installation, visually inspect the battery for any signs of damage.

2. **Mounting Position:** The SLA/AGM spill-proof design allows the battery to be mounted in any position (vertical, horizontal, or on its side). Ensure it is securely placed to prevent movement or vibration.
3. **Terminal Connection:**
    - Identify the positive (+) and negative (-) terminals. The positive terminal is typically marked with a red indicator or a plus sign.
    - Connect the positive cable from your device to the positive terminal of the battery using the provided nut and bolt.
    - Connect the negative cable from your device to the negative terminal of the battery using the provided nut and bolt.
    - Ensure all connections are tight and secure to prevent arcing or poor performance. Do not overtighten.
4. **Initial Charge:** For optimal performance, it is recommended to fully charge the battery before its first use. Refer to the "Operating Instructions" section for charging guidelines.

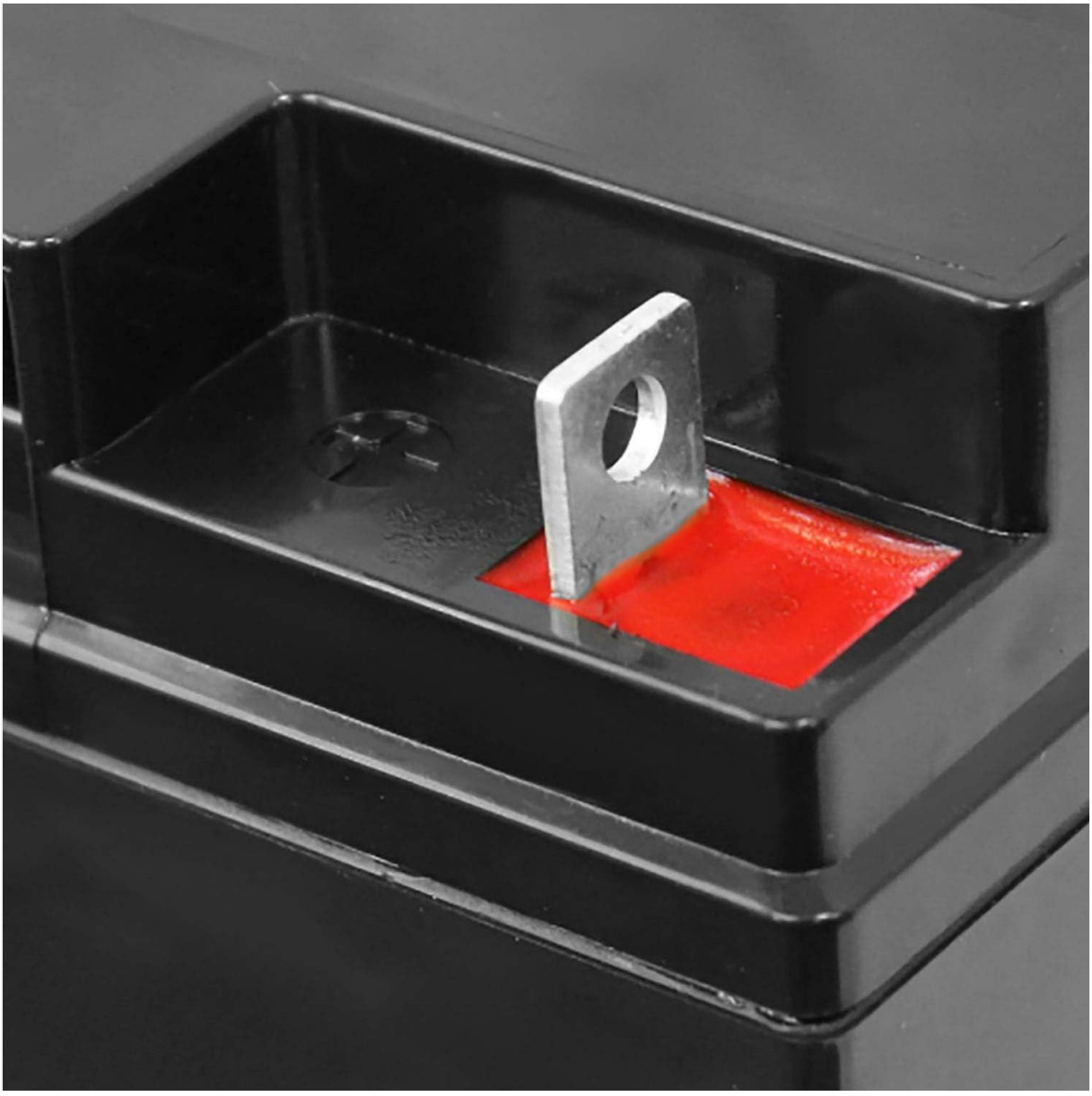


Image: Close-up view of the nut and bolt terminal on the Mighty Max ML18-12 battery, showing the connection point for external cables.

Image: Diagram illustrating the nut and bolt terminal connection for the 12 Volt 18 Amp Hr Rechargeable SLA Battery.

Operating Instructions

Charging the Battery:

Use a charger specifically designed for 12V Sealed Lead Acid (SLA) or AGM batteries. Incorrect chargers can damage the battery or reduce its lifespan.

- **Floating Use (Standby):** For applications where the battery is continuously connected to a charger and provides power only when the main power fails (e.g., UPS systems), maintain a voltage regulation of **13.6-13.8V**.
- **Cycle Use (Deep Cycle):** For applications where the battery is regularly discharged and recharged (e.g., electric vehicles, portable power), maintain a voltage regulation of **14.5-14.9V**.
- **Initial Current:** The initial charging current should be less than **5.4A**.
- Always follow the instructions provided with your battery charger.

Usage:

The ML18-12 battery is suitable for a wide range of applications. Ensure the current draw of your device does not exceed the battery's capabilities to prevent damage or premature failure.

Maintenance

The Mighty Max ML18-12 is a maintenance-free battery, meaning it does not require water additions. However, proper care can extend its lifespan:

- **Keep Clean:** Periodically clean the battery terminals and top surface to prevent corrosion and ensure good electrical contact. Use a damp cloth and avoid harsh chemicals.
- **Check Connections:** Ensure terminal connections remain tight and free from corrosion.
- **Storage:**
    - Store the battery in a cool, dry place.

- The storage temperature should not exceed 50°C (122°F).
- For long-term storage, fully charge the battery before storing and recharge it every 3-6 months to prevent deep discharge, which can permanently damage the battery.

- **Avoid Deep Discharge:** While the battery has good deep discharge recovery, repeatedly discharging it completely can shorten its lifespan.

Troubleshooting

If you experience issues with your Mighty Max ML18-12 battery, consider the following:

- **Battery Not Holding Charge:**
  - Ensure your charger is functioning correctly and is appropriate for SLA/AGM batteries.
  - Check for loose or corroded terminal connections.
  - Verify the battery has not been subjected to extreme temperatures or deep discharge for extended periods.
- **Device Not Powering On:**
  - Confirm the battery is fully charged.
  - Check all cable connections for tightness and proper polarity (+ to +, - to -).
  - Verify the device itself is functioning correctly.
- **Reduced Performance:**
  - Battery performance can be affected by extreme cold. Allow the battery to warm up if operating in very low temperatures.
  - Ensure the battery is being charged correctly according to the "Operating Instructions" for its specific use (float or cycle).

If problems persist, contact Mighty Max Battery customer support for assistance.

Warranty and Support

Your Mighty Max ML18-12 battery comes with a **Full One Year Warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.
For warranty claims, technical support, or any questions regarding your battery, please contact Mighty Max Battery directly. Keep your proof of purchase for warranty validation.
Manufacturer: Mighty Max Battery

Recycling Information

This product contains lead-acid batteries, which are hazardous waste and must be recycled. Do not dispose of the battery with general household waste. Please take the battery to an authorized recycling center or return it to the point of purchase for proper disposal. Proper recycling helps protect the environment and prevents potential health hazards.

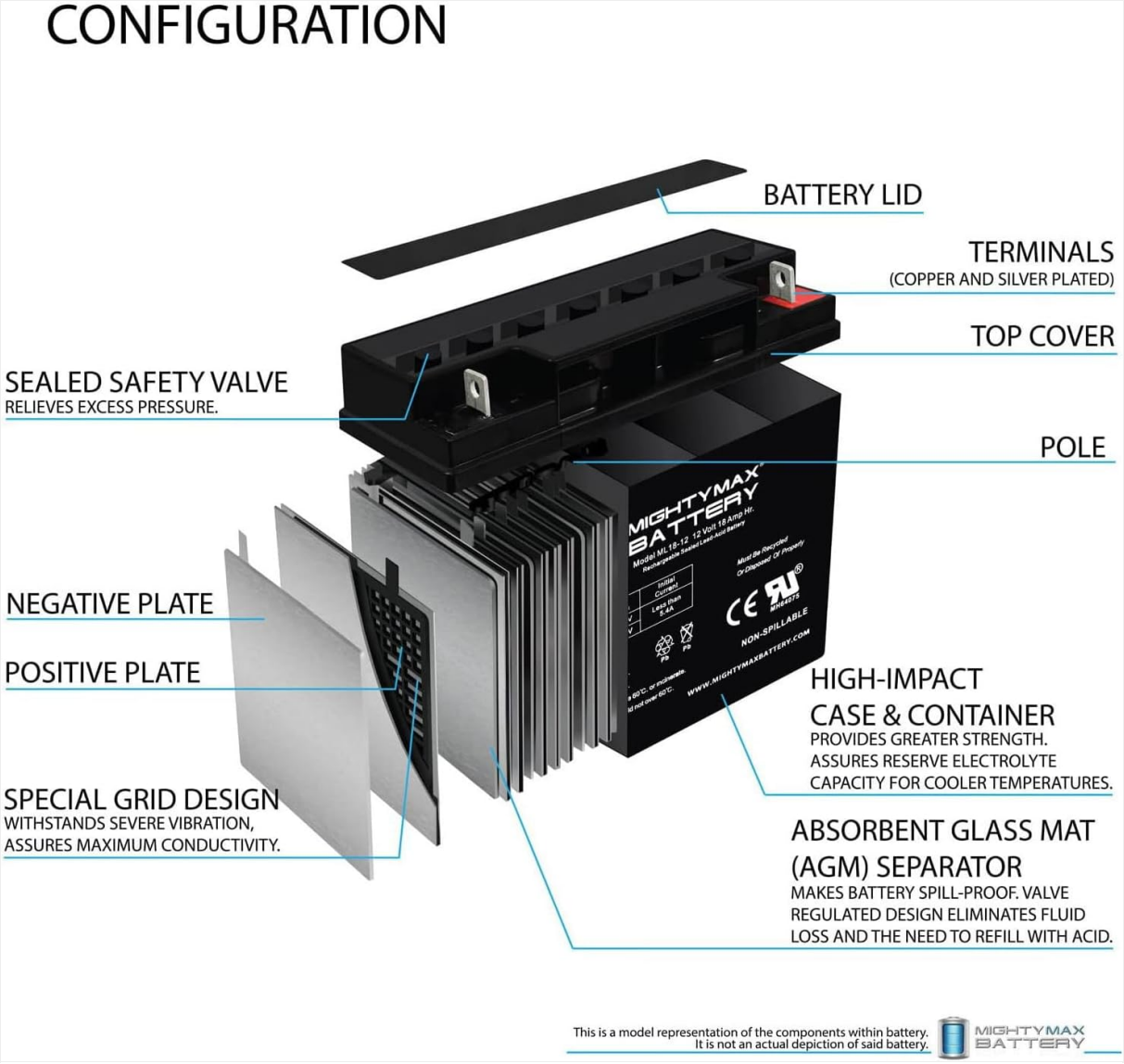


Image: Exploded view diagram of the Mighty Max ML18-12 battery, showing internal components such as the sealed safety valve, positive and negative plates, and absorbent glass mat (AGM) separator, highlighting its non-spillable design.