



Empulse M90

Trouble Shoot Guide: Checklist / Q&A

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Empulse

Introduction and Recourses

- The following checklist is intended to ensure that all necessary steps have been completed for proper M90 installation and operation.
- The **Q&A / Troubleshooting** section includes the most common issues and solutions to help you quickly resolve potential problems.
- For detailed instructions, please refer to the resources listed below, all of which are available on the **Empulse M90 webpage** at www.SunriseMedical.com.
 - **Additional Resources**
 - **M90 Owner's Manual** – Included with every M90 and available on the Empulse M90 webpage.
 - **M90 Let's Go Guide** – Included with every M90 and available on the Empulse M90 webpage.
 - **M90 Installation Guide** – Available on the Empulse M90 webpage.
 - **M90 Instructional Videos** – Available on the Empulse M90 webpage.
 - **M90 Compatibility Guide** – Available on the Empulse M90 webpage.
 - **M90 Installation Instruction Sheets** – Specific to each wheelchair model and included with the corresponding M90 mounting kit. Instructions can also be found in the Sunrise Medical Spare Parts Catalog.
- If you experience an issue not covered in this document, please contact your local Sunrise Medical support team.

M90 Install Checklist

Installation & Function Check

❑ Verify battery charge levels

- ❑ Wheel batteries should be fully charged, indicated by three green battery LEDs on the controller, or a solid purple LED on the wheel or docking charger while charging.
- ❑ The controller battery should be fully charged, indicated by a green controller battery LED, or a solid purple controller LED while charging.

❑ Verify mounting bracket installation and orientation.

- ❑ The left-hand bracket with the magnet must face vertically upward or forward. Refer to the wheelchair-specific installation instructions included with the M90 mounting kit for proper bracket orientation.
- ❑ The right-hand bracket must face the opposite direction.

❑ Verify wheel magnet placement.

- ❑ The silver magnet must be securely installed in the circular recess at the tip of the left-hand mounting bracket.

** If the magnet is missing, contact your Sunrise Medical Customer Service representative.*

❑ Verify controller docking tray magnet placement.

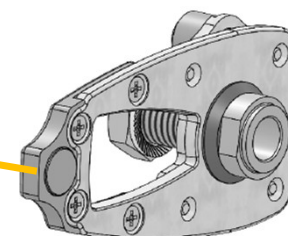
- ❑ A silver magnet must be securely installed in the circular recess on the bottom-left side of the M90 controller dock.

** If the magnet is missing, contact your Sunrise Medical Customer Service representative.*

❑ Check quick-release axle adjustment.

- ❑ The locking balls must fully extend when the axle is inserted.
- ❑ The wheel should be securely attached with minimal movement.

** Excessive lateral movement in the quick-release axle can cause the M90 wheel to move away from the mounting bracket, preventing the system from detecting the wheelchair. If this occurs, the M90 will stop and the wheels will need to be re-engaged.*



M90 Install Checklist

❑ Verify Controller Docking

- ❑ The controller must click securely into the dock and should not be removable without releasing the gray latch. After the controller has been secured in the docking tray tap check the controller LED, if white tap the controller power button. The controller LED will turn green.

❑ Verify successful wheel calibration.

- ❑ Refer to the M90 Let's Go Guide, M90 Installation Guide, or calibration video available on the M90 webpage.

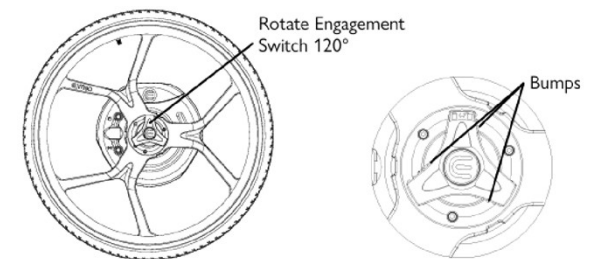
❑ Verify wheel engagement.

- ❑ Ensure both wheels are engaged by rotating the engagement switch located at the center of each wheel. Do this by push against the bumps on the surface of the switch until it stops rotating.

❑ Verify system activation and wheel engagement.

- ❑ With the rider seated, wheel locks engaged, and engagement switches in position push and hold the controller forward until both wheels audibly click and the controller status LED turns green.

**Even if the wheel drive pins are already secured into the mounting brackets, the controller must be pushed forward to allow the system to verify successful wheel engagement.*



If all checks above are confirmed and the M90 still does not function correctly, repeat the wheel calibration processes. In some cases, calibration may need to be performed twice.

M90 Q&A / Troubleshooting

- **Activation not possible – M90 wheels turn in opposite directions during activation.**
 - The M90 does not detect sufficient load. Ensure the rider is seated in the wheelchair with the wheellocks engaged during the activation process.
- **Activation not possible – Controller Power Indicator flashing white.**
 - The M90 controller does not detect its paired M90 wheels.
 - Check the wheel batteries are charged and properly installed.
 - The batteries may not have been removed and reinserted after calibration. Repeat the calibration process.
- **Activation not possible – Status Indicator returns to white after the wheel engagement process.**
 - Wheel calibration has not been completed successfully. Repeat the M90 wheel calibration process being sure not to move chair during the process.
 - Check hardware installation and the quick release axle length.
- **Drive performance issue – Steering or control is reversed.**
 - Check mounting bracket installation. Verify bracket orientation and compare it to the wheelchair-specific mounting instructions.
- **Drive performance issue – Wheels slow down when driving up a hill or ramp.**
 - This is normal behavior. The M90 automatically reduces power under high load conditions to protect the rider and the M90.
- **Drive performance issue – Wheels cannot reach maximum speed. Wheel LEDs are yellow.**
 - Yellow wheel LEDs indicate a battery charge level between 5% and 15%. At this charge level, the system limits performance to conserve battery life.
- **Charging issue – Charger connected directly to the wheels and wheel LEDs are flashing yellow.**
 - Verify the charging cable is connected correctly and the magnetic connector is properly aligned. The arrow on the M90 wheel and Lighting bolt symbol on cable must be aligned. See owners manual section 10.1 Charge the Battery Using the Wheel for more details.
 - Wheel LEDs will flash purple when charging. Wheel LEDs will display solid purple when wheel is charged.
 - If the LEDs continue to flash yellow, the wheel temperature may be above 50°C (122°F). Allow the wheels to cool before charging again.

M90 Q&A / Troubleshooting

- If the M90 Installation Checklist and Troubleshooting Guide do not resolve the issue, please contact Sunrise Medical Customer Service
- Before contacting Customer Service, gather any relevant information, including the wheelchair model, M90 serial number, controller serial number, and a description of the issue.
- If possible, provide photos or videos of the issue to assist with diagnosis.
- Do not continue using the M90 if the system is not functioning as expected or if any damage is suspected.