AMR-350 ASSEMBLY INSTRUCTIONS MANUAL

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Document Number: TDM-2024-0113-A

Version: 3.1

Effective Date: January 15, 2024

NaviFloor Robotics, Inc.

1. DOCUMENT CONTROL AND LEGAL NOTICES

1 This Assembly Instructions Manual ("Manual") is the confidential an

2 This Manual is protected under U.S. and international copyright laws

3 The procedures described herein are covered under U.S. Patents 1

2. SAFETY WARNINGS AND COMPLIANCE

1 The AMR-350 autonomous mobile robot must be assembled and op

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ANSI/RIA R15.06-2012

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ISO 10218-1:2011

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IEC 61508-1:2010

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CE Machinery Directive 2006/42/EC

2 Failure to follow these assembly instructions precisely may result in:

- Malfunction of safety systems
- Compromised structural integrity
- Void warranty coverage
- Risk of serious injury or death

3. REQUIRED TOOLS AND COMPONENTS

1 Assembly Tools (ISO/IEC Certified):

- Calibrated torque wrench (5-50 Nm)

Precision hex key set (2.5mm - 10mm)

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Digital multimeter (CAT III 1000V minimum)

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ESD-safe screwdriver set

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LiDAR alignment tool (NaviFloor P/N: ALT-350)

2 Primary Components:

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Base chassis assembly (P/N: CHS-350-A)

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LiDAR sensor array (P/N: LDR-350-B)

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Control computer module (P/N: CCM-350-C)

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Battery system (P/N: BAT-350-D)

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Drive motor assemblies (P/N: DMA-350-E)

4. ASSEMBLY SEQUENCE AND PROCEDURES

1 Base Chassis Preparation:

a) Verify chassis serial number matches shipping documentation

b) Install isolation mounts at specified torque values:

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M8 mounts: 23 1 Nm

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M6 mounts: 12 1 Nm

c) Confirm ground path resistance: <0.1 Ω

2 LiDAR Integration:

a) Mount sensor array using supplied brackets

b) Calibrate alignment within ±0.05° on all axes

c) Connect fiber optic harness observing minimum bend radius

d) Verify optical throughput meets specification

3 Control Systems Installation:

a) Install CCM in shock-mounted enclosure

b) Connect all labeled interfaces per wiring diagram TD-350-W

c) Load firmware version 3.1.5 or later

d) Perform POST diagnostics

5. QUALITY CONTROL AND TESTING

1 Required Verification Tests:

- Power system isolation: >10M at 500V DC
- Motor phase balance: <2% variation
- Network latency: <5ms round trip
- Sensor calibration: within 1mm at 10m

2 Documentation Requirements:

- Record all serial numbers

- Log calibration data

- Document test results

- Photograph critical assemblies

6. WARRANTY AND LIABILITY

1 Assembly by non-certified personnel voids all warranties expressed

2 Company assumes no liability for damages arising from improper as

3 All claims related to defective components must be submitted within

7. TECHNICAL SUPPORT

1 Certified assembly support is available at:

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Phone: (888) 555-0123

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Email: support@navifloor.com

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Portal: https://support.navifloor.com

2 Emergency technical support is available 24/7 for safety-critical issu

8. REVISION HISTORY

Version | Date | Description | Approved By

---|---|---|---

1 | 2024-01-15 | Updated LiDAR calibration specs | E. Kovacs

0 | 2023-11-30 | Major revision for new hardware | M. Depth

1 | 2023-08-15 | Added safety compliance updates | R. Torres

9. CERTIFICATION

This document has been reviewed and approved by:

/s/ Dr. Elena Kovacs

Chief Research Officer

NaviFloor Robotics, Inc.

Date: January 15, 2024

/s/ Marcus Depth

Chief Technology Officer

NaviFloor Robotics, Inc.

Date: January 15, 2024