# AMR-350 MAINTENANCE AND TROUBLESHOOTING GUIDE

## AMR-350 MAINTENANCE AND TROUBLESHO

**Document ID: TD-2023-114**

**Version: 3.1**

**Effective Date: January 15, 2024**

**Classification: CONFIDENTIAL - Internal Use Only**



## 1. INTRODUCTION AND SCOPE

1. This Maintenance and Troubleshooting Guide ("Guide") is the auth

2. This Guide covers maintenance procedures, troubleshooting protoc

## 2. LEGAL NOTICES AND WARRANTY LIMITATIONS

1. This Guide contains confidential and proprietary information of Nav

2. Any maintenance or repairs performed outside the scope of this Gu

3. NaviFloor expressly disclaims any liability for damages resulting fro

a) Unauthorized modifications to the AMR-350 system

b) Failure to follow prescribed maintenance procedures

c) Use of non-approved replacement parts

d) Operation outside specified environmental parameters

## 3. REQUIRED MAINTENANCE SCHEDULE

1. Daily Inspections

- Visual inspection of external sensors and bumpers
- Battery charge level verification
- TerrainSense(TM) calibration check
- Emergency stop system functionality test

2. Weekly Maintenance

- LiDAR sensor cleaning and alignment verification
- Drive wheel wear inspection

Firmware version confirmation

-

System log review and backup

3. Monthly Service Requirements

-

Full diagnostic system scan

-

Battery performance analysis

-

Motor current draw testing

-

Navigation accuracy validation

-

Sensor array calibration

## 4. TROUBLESHOOTING PROCEDURES

1. Error Code Response Protocol

-

Error codes must be documented using Form TD-350-E

-

Initial diagnostic procedures must follow Appendix A guidelines

-

Critical errors (4000-series) require immediate system shutdown

2. Navigation System Issues

-

TerrainSense(TM) recalibration procedures

Environmental mapping updates

-

Sensor array diagnostic sequence

-

Path planning algorithm verification

3. Safety System Faults

-

Emergency stop circuit testing

-

Proximity sensor validation

-

Safety zone configuration review

-

Collision avoidance system verification

## 5. REPLACEMENT PARTS AND SERVICE TOOLS

1. Authorized Components

- Only NaviFloor-certified replacement parts may be used
- Part numbers must be verified against current revision list
- Installation must be performed by certified technicians

2. Required Tools

- NaviFloor Diagnostic Interface Kit (P/N: DI-350-K2)

Calibration tools (P/N: CAL-350-SET)

-

Torque wrenches rated for specified values

-

Digital multimeter with minimum 0.1% accuracy

## 6. SAFETY PROTOCOLS

1. Maintenance Safety Requirements

-

Lock-out/tag-out procedures must be followed

-

Personal protective equipment requirements

-

Environmental safety considerations

-

Emergency response procedures

2. Operational Safety Compliance

-

ANSI/RIA R15.06 compliance requirements

-

ISO 10218-1 safety standards

-

Site-specific safety protocols

-

Risk assessment documentation

## 7. TECHNICAL SUPPORT AND DOCUMENTATION

1. Support Resources

- Technical Support Hotline: 1-888-NAV-TECH
- Online Knowledge Base: support.navifloor.com
- Certified Service Center locations
- Training certification requirements

2. Required Documentation

- Maintenance log requirements
- Incident reporting procedures

Certification documentation

-

Compliance records retention

## 8. DOCUMENT CONTROL

1. This Guide is subject to periodic updates. Current version available

2. Change History:

-

v3.1: January 15, 2024 - Updated safety protocols

-

v3.0: October 1, 2023 - Major revision

-

v2.2: June 15, 2023 - TerrainSense(TM) updates



## 9. CERTIFICATION

This document has been reviewed and approved by:

/s/ Marcus Depth

Marcus Depth

Chief Technology Officer

NaviFloor Robotics, Inc.

Date: January 15, 2024

/s/ Dr. Elena Kovacs

Dr. Elena Kovacs

Chief Research Officer

NaviFloor Robotics, Inc.

Date: January 15, 2024