

PRODUCTION LINE TROUBLESHOOTING MANUAL

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NaviFloor Robotics, Inc.

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1. INTRODUCTION AND SCOPE

1. This Production Line Troubleshooting Manual ("Manual") is the prop

2. This Manual applies to all Production Series AMR units, including b

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NaviFloor Scout(TM) Series (Models S100-S500)

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NaviFloor Carrier(TM) Series (Models C750-C2000)

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NaviFloor Navigator(TM) Series (Models N3000-N5000)

2. DEFINITIONS

1. "Critical System Failure" means any malfunction that renders an AM

2. "LiDAR Assembly" refers to the proprietary terrain-mapping system

3. "Production Line" means any of the Company's automated assemb

4. "Quality Control Gateway" refers to designated testing stations where

3. SAFETY PROTOCOLS

1. All troubleshooting procedures must comply with:

(a) OSHA Standard 1910.212 for machinery protection

(b) ISO/TS 15066:2016 for collaborative robotics

(c) Company Safety Protocol CSP-2023-12

2. Required Personal Protective Equipment (PPE):

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ESD-compliant footwear

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Safety glasses with side shields

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Level 2 cut-resistant gloves

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Company-issued security badge

4. DIAGNOSTIC PROCEDURES

1. Initial Assessment Protocol

- (a) Verify error codes through NaviFloor Diagnostic Interface v4.2
- (b) Document all observable anomalies in Production Tracking System
- (c) Initiate Diagnostic Sequence DS-101 for system-wide evaluation

2. LiDAR System Diagnostics

- (a) Execute calibration verification procedure CV-450
- (b) Confirm sensor alignment within 0.02 tolerance

(c) Validate depth-sensing algorithm performance using Test Suite TS-003

3. Navigation System Verification

(a) Perform terrain-mapping accuracy test using Standard Course SC-001

(b) Verify multi-surface adaptation responses

(c) Validate path-planning algorithms through Simulation Environment

5. TROUBLESHOOTING HIERARCHY

1. Level 1 Issues (Production Line Technician Response)

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Basic calibration adjustments

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Software resets

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Component replacement from approved spare parts inventory

2. Level 2 Issues (Senior Technical Specialist Response)

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Advanced diagnostic procedures

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Firmware updates

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System integration verification

3. Level 3 Issues (Engineering Team Response)

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Custom software modifications

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Complex mechanical failures

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Design-related issues

6. QUALITY ASSURANCE

1. All troubleshooting actions must be:

- (a) Documented in the Quality Management System (QMS)
- (b) Verified through established testing protocols
- (c) Approved by authorized Quality Control personnel

2. Post-Resolution Testing Requirements:

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Full system diagnostic scan

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Minimum 4-hour observation period

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Performance validation using Standard Test Protocol STP-24

7. DOCUMENTATION REQUIREMENTS

1. Mandatory Recording

- (a) Issue identification timestamp
- (b) Diagnostic steps performed
- (c) Components replaced or modified
- (d) Testing results and verification data
- (e) Technical personnel involved

2. Resolution Documentation

- (a) Complete troubleshooting report

(b) Quality Control sign-off

(c) Production line restart authorization

8. CONFIDENTIALITY AND INTELLECTUAL PROPE

1. This Manual contains trade secrets and confidential information of I

2. All diagnostic procedures, error codes, and resolution protocols des

9. REVISION AND CONTROL

1. This Manual shall be reviewed and updated annually or as required

(a) Engineering process changes

(b) Safety requirement updates

(c) Regulatory modifications

2. All revisions must be approved by:

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Chief Technology Officer

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Director of Manufacturing

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Quality Assurance Manager

APPROVAL AND IMPLEMENTATION

APPROVED BY:

Marcus Depth

Chief Technology Officer

Date: January 1, 2024

Richard Torres

Chief Operating Officer

Date: January 1, 2024

