

PREVENTIVE MAINTENANCE SCHEDULE AND CHECKLIST Q4-2023

PREVENTIVE MAINTENANCE SCHEDULE A

Q4 2023 - NAVIFLOOR ROBOTICS, INC.

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Effective Date: October 1, 2023

Last Updated: September 15, 2023

Document Owner: Operations Department

Classification: Confidential

1. PURPOSE AND SCOPE

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1. This Preventive Maintenance Schedule and Checklist ("Schedule") establishes

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2. This Schedule applies to all Series NF-2000 and NF-3000 AMR units, including

2. MAINTENANCE FREQUENCY AND SCHEDULING

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1. ****Daily Inspections****

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Visual inspection of external sensors and cameras

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Battery charge level verification

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Basic movement and response testing

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Safety system functionality check

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2. ****Weekly Maintenance****

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LiDAR sensor calibration and cleaning

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Wheel assembly inspection and torque verification

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Navigation system diagnostic scan

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Firmware version verification

-

Network connectivity testing

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3. ****Monthly Maintenance****

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Full system diagnostic review

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Terrain-mapping accuracy validation

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Motor performance analysis

-

Battery capacity testing

-

Obstacle detection system calibration

-

Emergency stop system verification

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4. ****Quarterly Overhaul (Due December 15-30, 2023)****

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Complete hardware inspection

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Software/firmware updates

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Sensor array recalibration

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Drive train maintenance

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Battery replacement (if necessary)

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Full system restoration point creation

3. SPECIFIC MAINTENANCE PROCEDURES

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1. **LiDAR System Maintenance**

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Clean optical surfaces using approved cleaning solution #NF-C101

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Verify angular resolution accuracy within $\pm 0.1^\circ$

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Confirm scanning frequency at $25\text{Hz} \pm 1\text{Hz}$

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Test distance measurement accuracy at 0.5m, 5m, and 10m markers

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Validate point cloud density specifications

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2. ****Terrain-Mapping Module****

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Verify depth sensor alignment

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Calibrate surface recognition algorithms

-

Test multi-surface transition detection

-

Validate elevation change measurement accuracy

-

Update terrain reference database

-

3. ****Drive System****

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Inspect wheel wear patterns

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Measure motor current draw under load

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Test acceleration and deceleration curves

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Verify steering precision

-

Lubricate all moving components per specification NF-L203

4. DOCUMENTATION REQUIREMENTS

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1. All maintenance activities must be logged in the NaviFloor Maintenance M

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2. Required documentation includes:

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Technician identification

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Date and time of maintenance

-

AMR unit serial number

-

Specific procedures performed

- - 9 -

Parts replaced or serviced

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Test results and measurements

-

Anomalies or concerns

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Follow-up actions required

5. QUALITY CONTROL

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1. All maintenance must be performed by certified NaviFloor technicians ho

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2. Post-maintenance testing must verify:

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Navigation accuracy within $\pm 5\text{mm}$

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Obstacle detection at all specified ranges

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Emergency stop functionality under full load

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Network latency below 50ms

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Battery performance within 95% of specification

6. SAFETY PROTOCOLS

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1. All maintenance activities must comply with:

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OSHA Standard 1910.212 for machinery protection

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ANSI/RIA R15.06-2012 for industrial robots

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Company Safety Protocol NF-SP-2023-01

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Local facility safety requirements

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2. Required PPE:

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ESD-safe gloves

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Safety glasses

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Steel-toed boots

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High-visibility vest

7. COMPLIANCE AND REPORTING

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1. Quarterly compliance reports must be submitted to:

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Operations Department

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Quality Control

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Safety Committee

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Regulatory Compliance Officer

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2. Non-compliance or maintenance delays must be reported within 24 hours

8. AUTHORIZATION

This Schedule is authorized and approved by:

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Richard Torres

Chief Operating Officer

NaviFloor Robotics, Inc.

Date: September 15, 2023

9. REVISION HISTORY

Version 1.0 - September 15, 2023 - Initial Release

Version 1.1 - September 30, 2023 - Updated LiDAR calibration specification

Version 1.2 - October 15, 2023 - Added new safety protocols

