

# NAVIFLOOR ROBOT ASSEMBLY PROCESS GUIDE

## NAVIFLOOR ROBOT ASSEMBLY PROCESS

Document Version 2.3

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### 1. DOCUMENT PURPOSE AND SCOPE

1. This Assembly Process Guide ("Guide") constitutes the official standard for the assembly of Navifloor robots.
2. This Guide supersedes all previous versions and shall be implemented by all relevant departments.

## **2. DEFINITIONS**

1. "Certified Assembly Technician" means any individual who has completed the required training and certification program.
2. "Core Assembly Module" refers to the primary navigation and control system used for the assembly process.
3. "Quality Control Checkpoint" means designated stages in the assembly process where inspection and testing are required.

## **3. ASSEMBLY ENVIRONMENT REQUIREMENTS**

1. All assembly operations shall be conducted in ISO Class 7 (Class 100,000) cleanroom environment.
  - a) Temperature: 20 C ± 2 C
  - b) Relative Humidity: 45% ± 5%
  - c) Positive air pressure: minimum 0.03" water column

2. ESD protection protocols must be strictly observed, including:

- a) Continuous monitoring of surface resistivity
- b) Mandatory use of approved ESD garments and equipment
- c) Daily verification of grounding systems

## **4. CORE ASSEMBLY SEQUENCE**

1. Pre-Assembly Verification

- a) Confirm all components match the Bill of Materials (BOM-2024-V3)
- b) Verify component serial numbers against tracking system
- c) Document environmental conditions

2. Navigation Module Assembly

- a) Install NaviCore(TM) processor using torque sequence NCP-223

- b) Connect primary sensor array following Diagram SET-445
- c) Calibrate LiDAR mounting brackets to 0.02mm tolerance

### 3. Mobility System Integration

- a) Install drive motors according to Specification DM-334
- b) Configure terrain adaptation servos
- c) Verify motor encoder alignment

## 5. QUALITY CONTROL PROCEDURES

### 1. Mandatory Inspection Points

- a) Post-navigation module assembly
- b) After drive system integration
- c) Prior to firmware loading

d) Final system verification

## 2. Testing Requirements

a) Full sensor array calibration check

b) Motor function verification under load

c) Navigation system accuracy validation

d) Environmental resistance testing

## 6. SAFETY PROTOCOLS

### 1. Personal Protection Requirements

a) Safety glasses with side shields

b) ESD-safe footwear and garments

c) Cut-resistant gloves for specified procedures

## 2. Emergency Procedures

- a) Location of emergency power cutoffs
- b) Chemical exposure response protocols
- c) Fire safety and evacuation procedures

## **7. DOCUMENTATION REQUIREMENTS**

### 1. Each Unit assembly must be documented with:

- a) Component serial number log
- b) Quality control checkpoint signoffs
- c) Environmental condition records
- d) Test result documentation

### 2. Records Retention

- a) Assembly records: 7 years minimum
- b) Quality control documentation: 5 years minimum
- c) Calibration records: 3 years minimum

## 8. PROPRIETARY INFORMATION

1. This Guide contains confidential and proprietary information of Nav
2. Reproduction or dissemination of this Guide or its contents is strictl

## 9. REVISION HISTORY

Version 2.3 - January 15, 2024

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Updated torque specifications for NaviCore(TM) processor

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Added new quality control checkpoints

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Revised environmental requirements

Version 2.2 - August 30, 2023

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Updated sensor calibration procedures

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Modified documentation requirements

## **10. APPROVAL AND AUTHORIZATION**

This Guide has been reviewed and approved by:

/s/ Richard Torres



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