

# Installation Guide: NexBot Robotics SA011-005 6-Axis Robot Arm 10kg Payload

SKU: NXB-ROB-SA011-005 | Revision: 1.0 | Category: Robots > Articulated Robots  
> Small Articulated (≤10kg)

**DANGER:** Disconnect all power sources before beginning installation. Follow lockout/tagout (LOTO) procedures per OSHA 1910.147.

## 1. Required Tools & Materials

- Forklift or overhead crane with a minimum 250 kg rated capacity
- Calibrated metric torque wrench (up to 200 Nm)
- Metric socket and wrench set (M6-M16)
- Industrial laser or precision bubble level
- Digital multimeter with CAT III rating
- Lifting eyebolts (M16) and certified lifting straps
- M12 grade 10.9 mounting bolts (quantity 4, length per foundation requirements)
- EtherCAT network cable tester

## 2. Pre-Installation Checks

1. Verify the mounting foundation is flat, level, and capable of supporting the static 125.0 kg weight plus all dynamic operational loads.
2. Confirm that a dedicated, lockable 400-480VAC 3-Phase power source is available within 3 meters of the controller installation site.
3. Inspect the robot shipping crate and contents for any signs of damage; cross-reference all delivered items with the packing list.
4. Ensure the ambient operating environment is free from excessive dust, corrosive gases, and electromagnetic interference.
5. Verify that the planned robot work envelope is clear of all obstructions and that required safety guarding is in place.
6. Check that the flooring surface provides a secure, non-slip path for moving the robot from unloading to the installation point.

### 3. Installation Procedure

#### Step 1: Position and Secure Robot Base

Using a certified lifting apparatus, carefully hoist the 125.0 kg robot arm and position it onto the prepared foundation, aligning the mounting holes. Loosely install four M12 mounting bolts to temporarily secure the unit.

**Warning:** Crush Hazard. Keep all personnel clear from under the suspended load during lifting and placement operations. Never stand on the foundation during placement.

#### Step 2: Level the Robot

Place a precision level across the machined mounting surface at the base of the robot. Make adjustments using industrial-grade metal shims as necessary until the base is level to within 0.1 mm per meter in all directions.

#### Step 3: Torque Mounting Bolts

Tighten the M12 mounting bolts in a star pattern to the torque value specified in the NexBot foundation plan. Re-verify levelness after torquing is complete.

**Warning:** Improper torque can lead to excessive vibration and positioning errors. Always use a calibrated torque wrench.

#### Step 4: Connect Main Power and Grounding

With the main supply de-energized and locked-out, connect the 400-480VAC 3-Phase power lines to the controller's main input terminals. Connect the controller chassis to the facility's earth ground using the provided grounding lug.

**Warning:** Risk of severe electrical shock or death. All electrical work must be performed by a qualified electrician in accordance with local codes.

### Step 5: Connect Robot to Controller

Connect the main robot umbilical cable from the base of the SA011-005 arm to the corresponding port on the robot controller. Ensure the connectors are fully seated and locked.

### Step 6: Establish EtherCAT Communication

Connect the EtherCAT IN port on the controller to your plant's EtherCAT master network. If the robot is the last device on the line, ensure the EtherCAT OUT port is properly terminated or connected to the next device.

**Warning:** Improper network connection will prevent the robot from being controlled. Verify link and activity lights after power-up.

### Step 7: Mount End-of-Arm Tooling (EOAT)

Mount the user-supplied gripper or tool to the ISO standard flange on Axis 6. Ensure the total weight of the EOAT and workpiece does not exceed the 10 kg maximum payload.

## 4. Post-Installation Verification

1. Visually inspect all electrical connections, cable routing, and mechanical fasteners.
2. Remove the lockout/tagout device and apply power to the robot controller via the main disconnect.
3. Check the teach pendant for any startup errors or fault messages.
4. Verify successful EtherCAT communication between the robot controller and the network master.
5. Using the teach pendant at low speed (10% or less), manually jog each of the 6 axes to confirm correct movement and absence of binding.
6. Test the functionality of all emergency stop circuits, including the teach pendant and controller E-stops.

**Note:** For technical support, contact your authorized service provider or visit <https://robotics.barca.group/support>.

