

# Installation Guide: NexBot Robotics LA013-010 6-Axis Robot Arm 120kg Payload

SKU: NXB-ROB-LA013-010 | Revision: 1.0 | Category: Robots > Articulated Robots  
> Large Articulated (50-200kg)

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

## 1. Required Tools & Materials

- Heavy-duty overhead crane or forklift (rated for >1500 kg)
- M24 high-tensile strength anchor bolts and chemical anchors
- Industrial torque wrench (calibrated for 500-1000 Nm)
- Laser leveling system or precision machinist's level (0.02 mm/m)
- 480VAC 3-phase power cable (4-conductor, appropriate gauge)
- Shielded Cat6A PROFINET industrial ethernet cable
- Laptop with NexBot Robotics Configuration Suite software
- Personal Protective Equipment (PPE): hard hat, steel-toed boots, safety glasses, high-voltage gloves

## 2. Pre-Installation Checks

1. Verify foundation concrete is fully cured and meets the specified load requirements for the robot's 1280.0 kg static weight and dynamic forces.
2. Confirm the installation site is level to within 0.5 mm/m and clear of obstructions within the full 2655 mm work envelope.
3. Ensure a dedicated, lockable 480VAC 3-phase power source is installed and de-energized prior to connection.
4. Verify the PROFINET network drop is installed, terminated, and tested for connectivity to the master PLC or network switch.
5. Uncrate the NXB-ROB-LA013-010 and inspect for any damage that may have occurred during shipping.
6. Cross-reference the packing list to ensure all components, including the controller, teach pendant, and umbilical cables, have been received.

### 3. Installation Procedure

#### Step 1: Positioning Robot Base

Using a certified overhead crane and the designated lifting points on the robot, carefully hoist the 1280.0 kg robot. Slowly lower the robot base onto the prepared foundation, aligning its mounting holes with the anchor bolt locations.

**Warning:** Crush hazard. Maintain a safe distance during lifting and positioning. Never stand under a suspended load.

#### Step 2: Anchoring and Grouting

Insert M24 anchor bolts and tighten them in a star pattern to the torque value specified in the foundation plan. After initial torquing, apply high-strength, non-shrink grout under the robot base to ensure full contact and vibration damping.

#### Step 3: Leveling the Robot

Using a laser leveling system, adjust the integrated leveling jacks on the robot base. The base must be perfectly level to ensure the specified repeatability of  $\pm 0.05$  mm is achievable.

#### Step 4: Connecting Main Power and Umbilical

Connect the main robot umbilical cable between the robot base and the controller cabinet. With the power source locked out, connect the 480VAC supply lines to the main circuit breaker within the controller cabinet.

**Warning:** High voltage risk. This step must be performed by a qualified electrician. Ensure lockout/tagout procedures are strictly followed.

#### Step 5: Connecting Communication and Safety Circuits

Connect the PROFINET cable to the designated port on the controller's communication module. Wire external safety circuits, such as light curtains

and gate switches, to the safety I/O terminal block as per the electrical schematics.

### **Step 6: Attaching the Teach Pendant**

Connect the teach pendant cable to the port on the front of the controller cabinet. Ensure the cable is routed to prevent pinching and allow the operator free movement without creating a trip hazard.

### **Step 7: Initial Power-Up and System Check**

Clear the work area of all tools and personnel. Remove the lockout/tagout device and energize the main breaker. Power on the controller and observe the boot sequence on the teach pendant for any initial hardware faults.

**Warning:** The robot may perform a slight, unexpected motion during its first power-up. Ensure the work envelope is completely clear.

### **Step 8: Mastering and Calibration Verification**

Perform the mastering (homing) procedure from the teach pendant to establish the absolute encoder positions for all 6 axes. Verify the mastering data against the calibration certificate provided with the unit.

## **4. Post-Installation Verification**

1. After the grout has cured, perform a final torque check on all M24 anchor bolts.
2. Execute a slow-speed, full range-of-motion test for all 6 axes to confirm there are no obstructions or cable binding issues.
3. Verify successful PROFINET communication by checking the device status in the master PLC's hardware configuration.
4. Test all integrated and external safety systems, including all Emergency Stop buttons, gate interlocks, and light curtains.
5. Define basic safety zones and a work envelope in the software to restrict motion to the intended operational area.
6. Mount the intended end-of-arm tooling and confirm the total weight is below the 120 kg payload limit before programming.

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