Installation Guide: NexBot Vision LA013-003 6-Axis Robot Arm 120kg Payload

SKU: NXB-ROB-LA013-003 | 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 forklift or crane with certified rigging (rated for >1500 kg)
- Calibrated torque wrench set (up to 500 Nm)
- Industrial laser level or precision machinist's level
- M20 high-tensile strength mounting bolts (Grade 10.9 or higher)
- Multimeter with AC voltage and continuity functions
- PROFINET cable crimping and testing tools
- Appropriate personal protective equipment (PPE): steel-toed boots, safety glasses, gloves
- Grout or anchoring compound for foundation preparation

2. Pre-Installation Checks

1. Verify the concrete foundation meets the specified depth, curing time, and flatness requirements outlined in the site preparation manual.
2. Confirm the incoming 3-phase power supply is within the 400-480VAC range and that a suitable circuit breaker is installed.
3. Inspect the robot's shipping crate and contents for any signs of damage that may have occurred during transit.
4. Ensure the planned installation area is clear of obstructions and provides the full 2,650 mm reach envelope plus a safety buffer zone.
5. Check that the ambient temperature and humidity of the installation site are within the robot's operational limits.

6. Verify that the robot controller and teach pendant are on-site and undamaged.

3. Installation Procedure

Step 1: Foundation Preparation and Mounting Plate Installation

Prepare the mounting surface according to the official NexBot floor plan. Install and level the base plate using high-strength anchoring bolts, ensuring the surface is perfectly flat to prevent mechanical stress on the robot base.

> **Warning:** An uneven mounting surface can cause premature wear and positioning errors. Verify flatness to within 0.5 mm over the entire base.

Step 2: Lifting and Positioning the Robot

Using a certified crane and the designated lifting points on the robot, carefully lift the 1050.0 kg unit. Slowly lower the robot onto the mounting plate, aligning the bolt holes precisely without any shock loading.

> **Warning:** Never stand under a suspended load. Use certified rigging and trained personnel for all lifting operations.

Step 3: Securing the Robot Base

Insert all M20 mounting bolts and washers. Tighten the bolts in a star pattern to the specified torque value found in the service manual to ensure even clamping force across the base.

> **Warning:** Under-torqued bolts can lead to vibration and positioning inaccuracy. Over-torqued bolts can damage the robot's casting.

Step 4: Connecting Main Power

With the main disconnect locked out, connect the 400-480VAC 3-Phase power cable to the designated terminals in the robot base. Ensure proper phasing and a secure earth ground connection as per local electrical codes.

> **Warning:** High voltage is present. All electrical work must be performed by a qualified electrician with power locked and tagged out.

Step 5: Connecting the Controller and Teach Pendant

Connect the main robot umbilical cable between the robot base and the NexBot controller. Connect the teach pendant to its designated port on the controller.

Step 6: Establishing PROFINET Communication

Connect the PROFINET network cable to the communications port on the controller. Configure the robot's IP address and device name to integrate it into the plant's automation network.

> **Warning:** Incorrect network settings can disrupt plant-wide communications. Consult with your IT or Automation department before connecting to the network.

Step 7: Installing End-of-Arm Tooling (EOAT)

Mount the desired gripper or tool to the J6 axis flange. Connect any pneumatic or electrical lines for the tooling, ensuring they are routed securely and allow for the full range of motion without snagging.

> **Warning:** Ensure the combined weight of the tooling and workpiece does not exceed the 120 kg maximum payload.

Step 8: Powering On and System Initialization

Remove all lock-out/tag-out devices. Power on the main disconnect, then the robot controller. Wait for the system to boot and verify that no critical errors are displayed on the teach pendant.

> **Warning:** Ensure all personnel are outside the robot's work envelope before applying power for the first time.

4. Post-Installation Verification

1. Verify all mounting bolts are torqued to specification.
2. Check for any error messages or alarms on the teach pendant after initial power-up.
3. Perform a slow, manual jog of each of the 6 axes to confirm correct movement and identify any potential obstructions.
4. Verify the E-stop circuit is functional by testing the E-stop buttons on the controller and teach pendant.
5. Check PROFINET communication status to confirm the robot is visible and communicating with the PLC or master device.
6. Calibrate the Tool Center Point (TCP) for the installed end-of-arm tooling.

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