

Installation Guide: NexBot Vision MA012-011 6-Axis Robot Arm 25kg Payload

SKU: NXB-ROB-MA012-011 | Revision: 1.0 | Category: Robots > Articulated Robots > Medium Articulated (10-50kg)

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

1. Required Tools & Materials

- Certified hoist and lifting straps (rated for >500 kg)
- M16 anchor bolt kit with chemical or expansion anchors
- Calibrated torque wrench (150-300 Nm range)
- Precision machinist's level or laser level
- Industrial metric Allen key and socket set
- Calibrated multimeter for voltage verification
- Laptop with NexBot Robotics configuration software
- PROFINET-compatible network cable and diagnostic tool

2. Pre-Installation Checks

1. Verify the concrete foundation is cured, level, and engineered to support the robot's static weight (285.0 kg) and dynamic operational loads.
2. Confirm the dedicated 400-480VAC 3-Phase power source is installed, de-energized, and follows lock-out/tag-out (LOTO) procedures.
3. Inspect the shipping crate and robot for any visible damage that may have occurred during transit before uncrating.
4. Cross-reference the packing list with the received components, including the robot, controller, teach pendant, and umbilical cables.
5. Ensure the planned installation area accommodates the robot's full 1750 mm reach plus a mandated safety clearance zone.
6. Validate that the PROFINET network drop is active and accessible at the intended location for the robot controller.

3. Installation Procedure

Step 1: Positioning and Mounting the Robot

Using a certified hoist, carefully lift the 285.0 kg robot from the shipping pallet and position it over the prepared mounting location. Gently lower the base, aligning its mounting holes with the floor anchors.

Warning: Never stand under a suspended load. Use only the designated lifting points on the robot body. Ensure lifting equipment is properly rated and inspected.

Step 2: Leveling and Securing the Base

Insert M16 anchor bolts through the robot base. Use a precision level across the machined mounting surface of the base, adjusting leveling nuts as needed until the base is perfectly level in all directions.

Warning: An unlevel base can cause premature wear on drive components and introduce positioning errors that exceed the ± 0.03 mm repeatability specification.

Step 3: Torquing Mounting Bolts

Tighten the M16 mounting bolts in a star pattern to the torque value specified in the service manual. This ensures even clamping force and a rigid connection to the foundation.

Step 4: Connecting the Robot Umbilical

Route the main power and data umbilical from the robot base to the robot controller. Securely fasten the industrial connectors at both ends, ensuring the locking rings are fully engaged to maintain the IP rating.

Step 5: Connecting Main Electrical Power

With the main supply de-energized, connect the 3-phase power lines (L1, L2, L3) and Protective Earth (PE) to the main input terminals of the controller cabinet. All wiring must be performed by a certified electrician and conform to local codes.

Warning: Verify the incoming voltage is within the 400-480VAC range. Incorrect voltage can cause catastrophic damage to the controller and power supply.

Step 6: Integrating PROFINET Communication

Connect the plant's PROFINET network cable to the designated port on the controller. Configure the robot's device name and IP address using the teach pendant to establish communication with the master PLC.

Step 7: Removing Shipping Brackets

Before applying motor power, locate and remove all red-painted shipping brackets and motor locks on each of the 6 axes. These devices prevent movement during transport and must be removed for operation.

Warning: Failure to remove all shipping brackets before enabling the motors will result in severe mechanical damage to the robot's gearboxes and linkages.

4. Post-Installation Verification

1. Perform a final visual inspection of all mechanical fasteners and electrical connections.
2. Power on the controller and ensure no fault codes are present on the teach pendant's home screen.
3. In T1 (manual) mode, jog each of the 6 axes at a low speed (10%) to verify smooth movement and direction.
4. Verify that the robot is visible and communicating correctly on the PROFINET network from the PLC.
5. Check the status of all connected safety circuits, such as emergency stops and safety gates.
6. Perform a system backup of the initial configuration before loading any application programs.

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

