Installation Guide: NexBot Robotics HA014-005 6-Axis Robot Arm 250kg Payload

SKU: NXB-ROB-HA014-005 | Revision: 1.0 | Category: Robots > Articulated Robots > Heavy Articulated (>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 >3000 kg)
- Calibrated industrial torque wrench (for M24 bolts)
- Laser alignment tool for base leveling
- Precision steel leveling shims
- Heavy-duty metric socket set
- Digital multimeter with high voltage probes
- PROFINET network cable tester
- Non-shrink industrial grout and application tools

2. Pre-Installation Checks

1. Verify the concrete foundation is cured and meets the specified flatness and load-bearing requirements for the 2350.0 kg robot.
2. Confirm that a dedicated 480VAC 3-phase power circuit is available, de-energized, and locked-out/tagged-out at the source.
3. Inspect the installation area for adequate clearance, ensuring no obstructions within the robot's 3100 mm reach and full work envelope.
4. Upon uncrating, visually inspect the NexBot Robotics HA014-005 for any signs of shipping damage.
5. Confirm all anchor bolts and mounting hardware are on-site and match the specifications in the foundation plan.
6. Ensure the installation site is clean, dry, and free of any debris, oils, or contaminants.

3. Installation Procedure

Step 1: Step 1: Robot Positioning

Using a certified crane with appropriate rigging, carefully lift the 2350.0 kg HA014-005 robot from its shipping pallet. Slowly lower the robot onto the prepared foundation, aligning the base mounting holes with the anchor bolts.

> **Warning:** Ensure lifting equipment is properly rated and operated by certified personnel. Maintain a safe distance from the suspended load at all times.

Step 2: Step 2: Leveling the Base

Place precision steel shims near each anchor bolt location as needed. Use a laser alignment tool or precision level to ensure the robot mounting flange is perfectly level to within the specified tolerance.

Step 3: Step 3: Securing the Robot Base

Install washers and nuts onto the anchor bolts and hand-tighten. Following the sequence specified in the manual, use a calibrated torque wrench to tighten the bolts to the recommended torque value.

> **Warning:** Uneven or incorrect torque can induce stress on the robot base casting and affect performance. Always follow the specified cross-pattern tightening sequence.

Step 4: Step 4: Grouting the Base

If specified for your application, prepare and apply non-shrink grout into the cavity beneath the robot base. This provides maximum rigidity and vibration damping during high-speed operations.

Step 5: Step 5: Connecting Main Power

A certified electrician must connect the 480VAC 3-phase supply lines to the main terminals inside the robot controller. Verify the phasing is correct before closing and securing the cabinet door.

> **Warning:** Hazard of electric shock. Ensure all power sources are locked out before opening the controller cabinet. All electrical work must comply with local codes.

Step 6: Step 6: Connecting Robot and Controller Cables

Route the main power and signal cables from the controller to the connection panel at the robot's base. Securely fasten the industrial connectors, ensuring the locking mechanisms are fully engaged to maintain the IP67 rating.

Step 7: Step 7: Establishing PROFINET Communication

Connect a shielded Ethernet cable from your plant's PLC or network switch to the designated PROFINET port on the robot controller. Configure the device name and IP address as required by your network administrator.

Step 8: Step 8: Mounting End-of-Arm Tooling (EOAT)

Mount the specified gripper or tool to the J6 axis flange. Ensure the combined weight of the tooling and workpiece does not exceed the robot's maximum payload capacity of 250 kg.

> **Warning:** Improperly secured or overweight tooling can become a projectile hazard during operation.

4. Post-Installation Verification

1. Apply power to the controller and verify that no fault lights are present on the controller or teach pendant.
2. Check the teach pendant to confirm a stable communication link with the robot.
3. Perform a slow-speed manual jog of each of the 6 axes to their limits to verify correct movement and check for any binding or obstructions.
4. Verify that the robot's mastering (zero position) is correct and has not been lost.
5. Establish a connection via the PROFINET network and verify that I/O signals can be toggled between the robot and the master PLC.

6. Run a simple test program at low speed without a part to ensure the robot follows the programmed path correctly.

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