Installation Guide: NexBot R-20 Articulated Robot, 50kg

SKU: NXB-ROB-R20-050-A | 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

- Forklift or overhead crane (rated for > 1200 kg)
- Calibrated industrial torque wrench (up to 1000 Nm)
- Metric heavy-duty socket set
- Precision machinist's level or laser level
- Industrial multimeter with insulated probes
- PROFINET cable tester
- Wire stripping and crimping tools for power conductors
- Certified lifting straps and shackles

2. Pre-Installation Checks

1. Verify the concrete foundation meets the dynamic load specifications for the 1180.0 kg robot.
2. Confirm the dedicated 400-480VAC 3-Phase power source is de-energized and locked-out/tagged-out.
3. Ensure the planned installation area is clear of obstructions and provides full clearance for the robot's work envelope.
4. Check the packing list against the delivered components (robot arm, controller, cables, teach pendant) and inspect for shipping damage.
5. Confirm the floor mounting surface is clean, level, and prepared with the correct bolt pattern.
6. Verify the PROFINET network port is active and accessible near the planned controller location.

3. Installation Procedure

Step 1: Uncrating and Lifting

Carefully uncrate the NexBot R-20 robot. Attach certified lifting straps to the designated lifting points on the robot's main body as indicated in the manual, and use a suitable crane to lift the 1180.0 kg unit.

> **Warning:** Ensure lifting equipment is properly rated and inspected. Never stand under a suspended load.

Step 2: Positioning and Mounting

Slowly lower the robot onto the prepared foundation, aligning the base mounting holes with the anchor bolts. Install all provided washers and nuts, finger-tightening them to secure the initial position.

Step 3: Leveling the Robot Base

Place a precision level across the machined mounting flange at the robot's base. Make adjustments using industrial-grade shims as necessary until the base is level within the specified tolerance. An unlevel base can cause premature wear and accuracy issues.

Step 4: Torquing Mounting Bolts

Using a calibrated torque wrench, tighten the mounting bolts in a star or crisscross pattern to the torque value specified in the service manual. This ensures even clamping pressure on the base.

> **Warning:** Do not exceed the specified torque value. Over-torquing can damage the bolts or the robot base casting.

Step 5: Connecting Main Power

A certified electrician must connect the facility's 400-480VAC 3-Phase supply to the main terminals inside the robot controller

cabinet. Verify correct phasing and ensure a solid connection to the chassis earth ground.

> **Warning:** Lethal voltage is present. All power must be locked out before opening the controller cabinet.

Step 6: Connecting Umbilical and Peripherals

Connect the main robot power and signal umbilical cable from the robot base to the controller. Connect the teach pendant cable to its dedicated port on the controller door. Ensure all connectors are fully seated and secured.

Step 7: Network Integration

Connect a shielded Ethernet cable from the controller's PROFINET port to the factory network switch. Configure the robot's IP address, subnet mask, and device name via the teach pendant to establish communication with the plant PLC.

4. Post-Installation Verification

1. Double-check that all mechanical fasteners are torqued to specification.
2. Visually inspect all electrical connections for security and proper termination.
3. Remove all tools and equipment from the robot's work envelope.
4. Power on the controller and verify that no critical faults are displayed on the teach pendant.
5. Using the teach pendant, slowly jog each robot axis at low speed to confirm correct movement and listen for any unusual noises.
6. Verify network status and confirm that the robot is visible to the PROFINET master/PLC.

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