Installation Guide: NexBot Drives CLR032-002 SCARA Robot 5kg Payload

SKU: NXB-ROB-CLR032-002 | Revision: 1.0 | Category: Robots > SCARA Robots > Cleanroom SCARA

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

1. Required Tools & Materials

- Lifting straps or hoist (rated for >25 kg)
- M8 mounting bolts (4x, grade 8.8 or higher)
- Torque wrench with M8 socket
- Precision spirit level or laser level
- Shielded CAT5e or better EtherCAT network cable
- 200-240VAC power cable with appropriate termination
- Wire stripper and crimping tool
- Digital multimeter

2. Pre-Installation Checks

1. Verify the mounting surface is flat, rigid, and capable of supporting the robot's 25.0 kg weight plus dynamic operational loads.
2. Confirm the dedicated power source provides stable 200-240VAC Single Phase power and is protected by an appropriate circuit breaker.
3. Inspect the robot and controller for any signs of damage that may have occurred during shipping.
4. Ensure the planned installation area provides clearance for the robot's full 450 mm reach and is free of obstructions.
5. Confirm the EtherCAT master controller is powered, configured, and accessible on the network.
6. Check that all required mounting hardware, cables, and tools are available on-site before beginning installation.

3. Installation Procedure

Step 1: Unpacking and Inspection

Carefully remove the NexBot CLR032-002 robot from its packaging on a clean, stable surface. Inspect the cleanroom-grade coated aluminum finish for any scratches or damage and verify all components from the packing list are present.

Step 2: Positioning and Mounting

Using certified lifting equipment, carefully position the robot base onto the prepared mounting surface. Align the mounting holes with the 210 x 210 mm footprint pattern drilled into the surface.

> **Warning:** The robot weighs 25.0 kg. Use a team lift or mechanical assistance to prevent injury and damage to the equipment.

Step 3: Securing the Base

Insert four M8 mounting bolts through the robot base into the mounting surface. Hand-tighten the bolts, then use a calibrated torque wrench to tighten them in a crisscross pattern to the specification listed in the full service manual.

Step 4: Chassis Grounding

Connect the robot's chassis grounding terminal to the facility's main earth ground point using a low-impedance grounding wire. This is a critical step for electrical safety and noise immunity.

> **Warning:** Failure to properly ground the robot may result in a serious electrical shock hazard and unreliable operation.

Step 5: Connecting Main Power

With the main power source locked-out and tagged-out, connect the 200-240VAC single-phase supply to the robot's power input

terminal. Ensure all connections are secure and wiring conforms to local electrical codes.

> **Warning:** Risk of electric shock. All electrical connections must be made by a qualified technician with the power source de-energized.

Step 6: Connecting EtherCAT Communication

Connect a shielded EtherCAT cable from the EtherCAT master controller's output port to the corresponding input port on the robot's base. Ensure the connector is fully seated and the locking tab engages to prevent accidental disconnection.

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

Mount the desired gripper or end effector to the robot's J4 axis flange. Ensure the combined weight of the tooling and the workpiece does not exceed the maximum 5 kg payload capacity.

4. Post-Installation Verification

1. Verify all mounting bolts are torqued to the correct specification.
2. Confirm that all power, grounding, and EtherCAT communication cables are securely fastened and properly routed.
3. Before applying power, use a multimeter to verify the supply voltage is within the 200-240VAC operational range.
4. Power on the system and check that the EtherCAT master establishes a stable communication link with the robot.
5. Ensure the robot's work envelope is completely clear of personnel, tools, and other obstructions.
6. Perform a low-speed manual jog of each of the 4 axes to their limits to confirm free and unrestricted movement.

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