Installation Guide: NexBot Robotics ELC412-004 Electric Gripper 120N

SKU: NXB-GEN-ELC412-004 | Revision: 1.0 | Category: End-of-Arm Tooling > Grippers > Electric Grippers

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

1. Required Tools & Materials

- Metric hex key set (2mm - 8mm)
- Calibrated torque wrench (up to 10 Nm)
- M6 mounting screws (length as required by robot flange)
- Precision wire stripper and crimping tool
- Digital multimeter
- IO-Link Master device for configuration
- Anti-static wrist strap
- Safety glasses

2. Pre-Installation Checks

1. Verify the SKU on the packaging is NXB-GEN-ELC412-004 and matches the purchase order.
2. Visually inspect the gripper's anodized aluminum housing and electrical connector for any signs of shipping damage.
3. Confirm the robot arm's mounting flange pattern is compatible with the ELC412-004 gripper.
4. Ensure a regulated 24VDC power supply with sufficient current capacity is available.
5. Verify that the control system (PLC or robot controller) has a compatible and available IO-Link Master port.
6. Read all safety notices in the user manual before beginning the installation procedure.

3. Installation Procedure

Step 1: Power Down and Lockout Robot

Before installation, completely power down the robot arm and associated machinery. Follow standard Lockout/Tagout (LOTO) procedures to prevent accidental startup.

> **Warning:** Failure to de-energize the system can result in unexpected robot motion, leading to severe injury or death.

Step 2: Mechanically Mount Gripper

Align the mounting holes on the ELC412-004 gripper with the robot arm flange. Insert the appropriate length M6 screws through the gripper body into the flange and tighten them by hand.

Step 3: Torque Mounting Screws

Use a calibrated torque wrench to tighten the M6 mounting screws to the specified torque of 4 Nm. Tighten screws in a star or cross pattern to ensure even pressure and a secure connection.

> **Warning:** Do not exceed the specified torque. Overtightening can damage the gripper's aluminum housing or the threads on the robot flange.

Step 4: Install Gripper Fingers

Attach the custom or standard gripper fingers to the parallel jaws using the provided threaded holes. Ensure the fingers are securely fastened and aligned correctly for the intended workpiece.

Step 5: Connect Electrical Cable

Securely connect the M12 industrial connector to the port on the rear of the gripper. Route the cable along the robot arm, using cable guides to prevent pinching, stretching, or snagging during robot motion.

> **Warning:** Ensure the system is powered off before connecting or disconnecting the cable to prevent electrical arcing and damage to the electronics.

Step 6: Wire to Power and IO-Link Master

Connect the cable's power leads to the 24VDC power supply, observing correct polarity. Connect the communication and ground wires to the designated port on the IO-Link Master.

Step 7: System Power-Up and Communication Check

Remove LOTO devices and power on the control system and 24VDC supply. Observe the status LEDs on the gripper to confirm it has power and has established a communication link with the IO-Link Master.

4. Post-Installation Verification

1. Verify the gripper appears as a connected device in the IO-Link Master's configuration software.
2. Check the controller for any fault codes related to the gripper or IO-Link port.
3. Slowly move the robot arm through its entire range of motion to ensure the gripper cable does not bind or snag.
4. Using the control software, command the gripper to open and close to confirm basic functionality.
5. Test the programmable force by setting it to a low value (e.g., 10 N) and a high value (e.g., 100 N) and observing the change.
6. Command the gripper to a specific position and verify its reported position feedback is accurate and repeatable.

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