

Installation Guide: NexBot Robotics 813-010 Tool Adapter Plate ISO 9409-1-100-6-M8

SKU: NXB-MNT-813-010 | Revision: 1.0 | Category: Accessories & Mounting > Brackets & Adapters > Tool Adapter Plates

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

1. Required Tools & Materials

- Torque wrench with appropriate range for M8 bolts
- Metric hex key or socket set (including M8 size)
- Lint-free industrial wipes
- Isopropyl alcohol (99% pure)
- Medium-strength thread-locking compound (e.g., Loctite 243)
- Digital caliper or precision ruler
- Personal Protective Equipment (PPE): Safety glasses, gloves
- Alignment dowel pins (if required by robot flange)

2. Pre-Installation Checks

1. Confirm the robot arm flange complies with the ISO 9409-1-100-6-M8 standard.
2. Inspect the NexBot Robotics 813-010 Tool Adapter Plate for any shipping damage, scratches, or burrs on mounting surfaces.
3. Power down the robot controller and perform full Lockout/Tagout (LOTO) procedures on the robotic system.
4. Thoroughly clean the robot arm flange and the mounting surface of the tool adapter plate with isopropyl alcohol and a lint-free wipe.
5. Verify you have the correct quantity (6) and length of high-grade M8 bolts. Bolt length must account for the 15 mm plate thickness plus the required thread engagement in the robot flange.
6. Ensure the End-of-Arm Tooling (EOAT) has a mounting pattern compatible with the NexBot Robotics 813-010.

3. Installation Procedure

Step 1: Step 1: System De-energization and Safety Lockout

Ensure the robot and all related equipment are fully powered down, de-energized, and locked out according to established safety protocols. This prevents any unexpected movement during the installation process.

Warning: Failure to perform Lockout/Tagout can result in serious injury or death from unexpected robot motion.

Step 2: Step 2: Prepare Mounting Surfaces

Using a lint-free wipe and isopropyl alcohol, meticulously clean the robot's mounting flange and both faces of the NXB-MNT-813-010 adapter plate. Ensure surfaces are free of oil, grease, debris, and any old thread-locking compound.

Step 3: Step 3: Align the Adapter Plate

Carefully place the adapter plate onto the robot arm flange, aligning the six bolt holes. If the flange uses a dowel pin for precise orientation, ensure the plate is seated correctly on the pin before proceeding.

Warning: Misalignment can introduce stress on the mounting bolts and cause positional inaccuracies in the robot tool center point (TCP).

Step 4: Step 4: Apply Thread-Locking Compound

Apply a small, appropriate amount of medium-strength thread-locking compound to the threads of each of the six M8 mounting bolts. This will prevent the bolts from loosening due to vibration during robot operation.

Step 5: Step 5: Insert and Hand-Tighten Bolts

Insert all six M8 bolts through the adapter plate and into the robot flange. Hand-tighten them in a star or crisscross pattern to ensure the plate seats evenly without binding.

Warning: Do not use power tools for initial tightening as this can cause cross-threading.

Step 6: Step 6: Torque Bolts to Specification

Using a calibrated torque wrench, tighten the M8 bolts to the specification provided by the robot manufacturer. Follow a two-stage star pattern, first bringing all bolts to 50% of the final torque value, then repeating the pattern to bring them to 100% of the final torque value.

Warning: Over-torquing can damage the threads in the robot flange, while under-torquing can lead to the plate loosening during operation.

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

Mount your desired EOAT onto the front face of the NXB-MNT-813-010 adapter plate. Use the appropriate fasteners and torque values as specified by the EOAT manufacturer.

4. Post-Installation Verification

1. Verify that the adapter plate is seated flush against the robot flange with no visible gaps.
2. Gently attempt to rock the adapter plate and tooling by hand to ensure there is no movement or play.
3. After removing LOTO and powering on the system, teach a new Tool Center Point (TCP) to account for the 15 mm thickness of the adapter plate.
4. Operate the robot at a low speed through its full range of motion, listening and watching for any signs of unusual vibration or loosening.
5. Double-check all electrical and pneumatic connections to the EOAT to ensure they are secure and have sufficient slack for all robot movements.
6. Document the installation date and responsible technician in the robot's maintenance log.

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

