

Installation Guide: NexBot Robotics 832-005 Dowel Pin And Key Set (Hardened Steel)

SKU: NXB-GEN-832-005 | Revision: 1.0 | Category: Accessories & Mounting > Fasteners & Hardware > Dowel Pins & Keys

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

1. Required Tools & Materials

- ANSI-approved safety glasses
- Industrial nitrile gloves
- 6mm steel pin punch
- Soft-faced mallet or dead-blow hammer
- Digital calipers
- Lint-free industrial cloths
- Isopropyl alcohol (99%) in a spray bottle
- Calibrated torque wrench with appropriate sockets

2. Pre-Installation Checks

1. Verify the robot system is powered down and in a full Lock-Out/Tag-Out (LOTO) state before approaching.
2. Confirm the robot's operational hours align with the scheduled service interval requiring the NXB-GEN-832-005 kit.
3. Inspect the sealed kit packaging for any signs of damage; do not use if the seal is broken or contents appear compromised.
4. Open the kit and inventory the contents: confirm presence of 4x 6mm x 20mm dowel pins and 4x 6mm x 30mm dowel pins.
5. Ensure the work area is clean, well-illuminated, and all required tools are staged and accessible.
6. Review the robot-specific service manual to identify the exact locations of the pins to be replaced.

3. Installation Procedure

Step 1: Prepare Service Area and Kit Contents

Lay out the contents of the NXB-GEN-832-005 kit on a clean, non-abrasive surface. Organize the 20mm and 30mm pins into separate groups for easy identification during the replacement procedure.

Step 2: Access Serviceable Components

Following the procedures in the robot's primary service manual, carefully remove any access panels, covers, or peripheral components that obstruct access to the dowel pins designated for replacement.

Warning: Ensure all removed components are labeled and organized to prevent incorrect reassembly.

Step 3: Extract Existing Dowel Pin

Select a 6mm pin punch. Place the punch squarely on the end of the old dowel pin and use firm, controlled strikes with a soft-faced mallet to drive it out of its bore. Support the surrounding assembly to prevent damage.

Warning: Never use a steel hammer directly on the robot assembly. Striking hardened components can cause fractures.

Step 4: Clean and Inspect Bore

Once the old pin is removed, thoroughly clean the bore with a lint-free cloth and isopropyl alcohol to remove any grease or particulates. Visually inspect the inside of the bore for signs of excessive wear, elongation, or scoring.

Step 5: Verify and Select New Pin

Identify the correct length replacement pin (20mm or 30mm) from the kit that matches the one just removed. Use digital calipers to verify the new pin's diameter is 6mm before proceeding.

Warning: Installing an incorrect length pin can lead to component misalignment or failure.

Step 6: Install New Dowel Pin

Align the new hardened steel dowel pin with the cleaned bore. Gently tap the pin into place using a soft-faced mallet until its end is flush with the component surface, or to the depth specified in the robot service manual.

Step 7: Repeat for All Designated Locations

Systematically repeat the extraction, cleaning, and installation process for all dowel pins covered by this specific maintenance event, using all components provided in the NXB-GEN-832-005 kit.

Step 8: Dispose of Used Components

Gather all old dowel pins removed during the service. These components are not reusable and should be disposed of in accordance with your facility's scrap metal recycling or waste disposal procedures.

Step 9: Reassemble Robot Components

Carefully reinstall all covers, panels, and other components that were removed. Use a calibrated torque wrench to tighten all fasteners to the precise values specified in the robot's service manual.

Warning: Improper torque values can lead to vibration, misalignment, or catastrophic failure.

4. Post-Installation Verification

1. Visually confirm that all newly installed dowel pins are seated correctly and are flush with their respective surfaces.
2. Conduct a tool and materials check to ensure no items, including the kit's packaging, have been left inside the robot's work envelope.

3. Gently attempt to move the serviced joints by hand (with power off) to feel for any binding, grinding, or unexpected resistance.
4. Follow the official procedure to remove LOTO devices and safely re-energize the robot system.
5. Execute a low-speed system calibration or homing routine to verify the integrity and alignment of the serviced axes.
6. Run a pre-programmed test cycle without load to monitor for any unusual noises or motion profiles before returning the robot to production.

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