

User Manual: NexBot Robotics 832-005 Dowel Pin And Key Set (Hardened Steel)

SKU: NXB-GEN-832-005 | Version: 1.0 | Brand: NexBot Robotics

Table of Contents

1. Safety Information
2. Product Overview
3. Getting Started
4. Operation
5. Maintenance
6. Troubleshooting
7. Technical Specifications

1. Safety Information

READ ALL SAFETY INSTRUCTIONS BEFORE OPERATION. Failure to follow safety procedures may result in serious injury or equipment damage.

DANGER: Hazardous voltage and unexpected powerful movement. Failure to completely de-energize and lock out the robot before service will result in electrocution, crushing, or death.

WARNING: Always wear ANSI-approved safety glasses with side shields when driving pins. Hardened steel can shatter or eject small, sharp fragments under impact.

WARNING: Use only a soft-faced or dead-blow hammer for installation. Using a steel hammer can damage the pin or the robot assembly, leading to premature failure.

CAUTION: The NXB-GEN-832-005 kit is for single-use only. Do not reuse old pins or substitute components with non-NexBot parts, as this will void the warranty and may compromise safety.

NOTICE: This kit is intended for use by trained and qualified service personnel only. Improper installation can cause significant damage to the robotic system.

2. Product Overview

NexBot Robotics 832-005 Dowel Pin And Key Set (Hardened Steel) (NXB-GEN-832-005) is a complete multi-part maintenance kit assembled for planned service on compatible NexBot robot platforms at the scheduled service interval. The kit is intended to be received, opened, and used as a single service package rather than as a single replacement part. Included components typically cover the main wear and service items required for the maintenance event, including 4x 6mm x 20mm Dowel Pin, 4x 6mm x 30mm Dowel Pin, 4x 8mm x 30mm Dowel Pin, 2x 4mm x 4mm x 25mm Parallel Key, 2x 5mm x 5mm x 30mm Parallel Key, 1x Storage Case. This structure helps maintenance planners order one kit for the service window and ensures technicians have the core consumables and replacement parts on hand before shutdown begins. The kit is appropriate for preventive maintenance execution, planned overhauls, and standardized service handoff where parts completeness and interval accuracy matter.

3. Getting Started

1. Kit Purpose and Scope

The NexBot Robotics 832-005 Dowel Pin And Key Set is a consolidated maintenance kit containing all necessary dowel pins for a specific planned service interval. Assembled and verified by NexBot, this kit streamlines the maintenance process by providing the exact hardened steel components needed to maintain your robot's mechanical precision and reliability.

2. Service Interval Confirmation

Before opening this kit, consult your robot's primary service manual and its operational hour log. This kit is designated for a specific, scheduled maintenance event; using it at the wrong interval may result in unnecessary downtime or missed service on other components.

3. Contents Verification

Upon opening, immediately verify the contents against the service manual's part list for this task. The kit should contain four 6mm x 20mm and four 6mm x 30mm dowel pins. Report any discrepancy or damage to your NexBot Robotics service representative before starting work.

4. Operation

Function of Hardened Steel Dowel Pins

Dowel pins serve as highly accurate locating devices, ensuring that critical components in the robot's drivetrain and structure remain in precise alignment under operational loads. The hardened carbon steel material provides exceptional shear strength and resistance to wear, which is essential for maintaining the robot's long-term positional accuracy.

Tip: When inserting a new pin, a light coating of machine oil can aid in a smooth press-fit, but avoid using heavy grease which can attract contaminants.

Handling and Storage of Kit

If not used immediately, store the unopened NXB-GEN-832-005 kit in a dry, climate-controlled environment to prevent corrosion. When handling the individual pins, use clean nitrile gloves to avoid transferring skin oils onto the precision-ground surfaces.

Importance of a Complete Replacement

This kit is designed for a complete replacement of a designated set of pins. Do not perform a partial service or save unused pins for a later date. Replacing all specified pins at once ensures uniform wear characteristics and restores the joint to its original design specifications.

Recording Service in Maintenance Log

Proper documentation is critical for asset management and warranty compliance. After completing the service, record the date, robot operational hours, technician's name, and the kit SKU (NXB-GEN-832-005) in the robot's permanent maintenance logbook.

Tip: Take a photo of the completed log entry and the empty kit packaging for your digital service records.

5. Maintenance Schedule

Interval	Task	Notes
Per Service Interval	Utilize the complete NXB-GEN-832-005 kit to replace the full set of specified dowel pins.	This task is the primary purpose of the kit and should be performed at the interval specified in the main robot service manual.
Quarterly	Visually inspect the external areas around the serviced joints.	Look for signs of fretting corrosion (reddish-brown residue) or witness marks indicating component shifting. This can be an early indicator of a developing issue.
Annually	Audit inventory of all scheduled maintenance kits.	Ensure that a sufficient stock of NXB-GEN-832-005 and other service kits are on hand to support the upcoming year's planned maintenance schedule without delays.
Post-Service	Perform a robot mastering and calibration check.	Even with precise dowel pins, reassembly can introduce minor deviations. Running a calibration routine ensures the robot's tool center point (TCP) is accurate.
As Needed	Update robot controller maintenance alarms.	After completing the service, reset the corresponding maintenance timer or counter in the robot's control software to begin the countdown to the next service interval.

6. Troubleshooting

Symptom	Possible Cause	Solution
New pin feels too tight and requires excessive force to install.	The bore may be contaminated, have a burr on its edge, or has been damaged.	Stop immediately. Remove the pin and re-clean the bore. Inspect the leading edge of the bore for a burr and carefully deburr if necessary. If the bore appears damaged, contact technical support.
New pin feels loose or can be pushed in by hand.	The bore has been worn or stretched beyond its tolerance, known as 'bore-growth'.	Do not complete the installation. This indicates wear on the parent component (e.g., a gear housing), which will require replacement. Document the issue and contact NexBot Robotics support.
The old pin breaks during removal.	The pin was severely seized from corrosion or the removal force was applied at an angle.	Use a smaller pin punch to attempt to drive out the remaining piece. If this fails, advanced machining techniques may be required. Consult NexBot Robotics technical support before proceeding.
Robot exhibits vibration or an audible 'click' from the joint after service.	A pin may not be fully seated, or a reassembled bolt was not torqued correctly and has come loose.	Immediately stop the robot and perform a LOTO. Re-inspect the service area, checking that all pins are flush and re-torquing all fasteners to their specified values.
The kit was missing a pin or contained a damaged component.	This is a rare quality control issue during packaging.	Do not use the kit. Quarantine the entire kit and its contents, and contact your NexBot Robotics parts distributor immediately with the lot number from the packaging for a replacement.
The end of the new pin 'mushroomed' or deformed during installation.	A hard-faced steel hammer was used instead of a soft-faced mallet, or the blows were not square to the pin.	Carefully drive the damaged pin back out and discard it. Use a new pin from the kit and ensure you are using the correct type of mallet with square, controlled strikes.

7. Technical Specifications

Parameter	Value	Unit
Weight	0.5	kg
Material	Hardened Carbon Steel	
Country of Origin	DE	