

User Manual: NexBot Drives 232-002 Simulation Software License

SKU: NXB-GEN-232-002 | Version: 1.0 | Brand: NexBot Robotics

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1. Safety Information

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

WARNING: A simulation is not a perfect representation of reality. Always validate and test robot programs on actual hardware in a controlled environment before deploying to a production workcell.

WARNING: Incorrectly configured physics, payload data, or tool center point (TCP) settings in the simulation can lead to programs that are unsafe or cause equipment damage when run on a physical robot.

CAUTION: Exporting a program from the simulation software to a controller with different firmware or hardware revisions may result in unpredictable behavior. Always ensure the virtual controller settings match the target hardware.

NOTICE: The NXB-GEN-232-002 is a node-locked license. It is tied to the specific workstation where it is activated. Deactivate the license

through the License Manager before decommissioning or re-imaging the workstation to avoid losing the activation.

NOTICE: Save your simulation projects frequently. Complex simulations with many moving parts can consume significant system resources and may lead to application instability.

2. Product Overview

NexBot Drives 232-002 Simulation Software License (NXB-GEN-232-002) is a simulation software used in industrial robotics equipment where category-specific fit, electrical or mechanical compatibility, and predictable serviceability are important to buyers. The product should be understood as the exact component named by its category path, not as a complete robot or a generic service item. It supports installation, replacement, and maintenance workflows in robotic production cells by giving procurement and maintenance teams a clearly defined part class, relevant engineering specifications, and application context that matches the actual hardware being purchased.

3. Getting Started

1. Understanding the User Interface

The main interface is divided into several key panels: the 3D Viewport for visualizing the workcell, the Project Tree for managing assets, the Program Editor for writing robot logic, and the Properties Panel for configuring selected items. Familiarize yourself with these areas to navigate the software effectively.

2. Creating a New Project

To begin, go to 'File' > 'New Project'. Give your project a name and select a location to save it. This creates a dedicated folder structure for your simulation, including scenes, robot programs, and component libraries.

3. Importing a Robot Model

From the 'Assets' library panel, locate the desired NexBot robot model. Drag and drop the model into the 3D Viewport. The robot will appear at the world origin, ready to be positioned and programmed.

4. Basic 3D Navigation

Use the mouse to navigate the 3D Viewport. Right-click and drag to orbit the camera, use the scroll wheel to zoom in and out, and middle-click and drag to pan the view. These controls allow you to inspect your virtual workcell from any angle.

4. Operation

Building a Workcell

Add components such as conveyors, fixtures, and safety fencing from the component library to build your virtual workcell. Use the positioning tools to accurately place and orient each object in the 3D space. You can

also import custom geometry from CAD files in standard formats like STEP or IGES.

Tip: Use the 'Snap to Grid' and 'Snap to Object' features for precise alignment of workcell components.

Defining Tool Center Points (TCPs)

Accurately defining the TCP is critical for correct robot motion. Select the robot's tool flange, use the TCP definition utility, and follow the on-screen wizard to define the point, orientation, and payload of the attached end-of-arm tooling.

Programming Robot Motion

Use the teach pendant interface or the offline editor to create motion points and program logic. The software supports joint, linear, and circular move types. Jog the virtual robot into position to teach points or enter coordinates manually for high precision.

Tip: Create named positions and reference them in your program. This makes it much easier to update the program if a position needs to be adjusted later.

Simulating Logic and I/O

The simulation environment can model digital and analog I/O signals. Use the I/O simulator panel to manually toggle inputs and observe the robot program's response. This is essential for debugging logic related to sensors, grippers, and other peripheral devices before deploying to the field.

Running Cycle Analysis

Use the built-in analysis tools to run the simulation and record key performance metrics. The software can automatically calculate the total cycle time, identify potential collisions, and generate reports. This helps optimize the robot path for speed and efficiency before any hardware is involved.

5. Maintenance Schedule

Interval	Task	Notes
Annually	Renew the NexBot Drives 232-002 Simulation Software License subscription.	An active subscription is required to receive software updates, access technical support, and maintain license activation.
Quarterly	Check for software updates via the 'Help' > 'Check for Updates' menu.	Regular updates provide new features, performance enhancements, updated component libraries, and important security patches.

Interval	Task	Notes
Monthly	Archive completed or inactive simulation projects to a network drive or cloud storage.	This practice helps keep the primary workstation's storage free and improves software performance when browsing projects.
As Needed	Backup custom component libraries and user settings.	User-created assets are stored in the application data folder. Back these up before major system changes or software upgrades.
As Needed	Deactivate the license using the License Manager before migrating to a new workstation.	Deactivation releases the license back to the NexBot server, allowing it to be activated on a different machine.
Weekly	Clean up the project recycle bin to permanently delete old, unneeded simulation files.	Files are moved to an internal recycle bin before permanent deletion, which can consume significant disk space over time.

6. Troubleshooting

Symptom	Possible Cause	Solution
License activation fails with a network error.	A firewall, proxy server, or antivirus software is blocking the License Manager's connection to the NexBot activation server.	Ensure an exception is made in your firewall and antivirus for the NexBot License Manager application. Verify your system's proxy settings are correct or try activating from a less restrictive network.
The simulation runs very slowly or is choppy.	The workstation's hardware is insufficient for the complexity of the simulation, or graphics drivers are outdated.	Verify your PC meets the recommended (not minimum) system specifications. Update your graphics card drivers to the latest version. Reduce simulation complexity by hiding non-essential objects or lowering the quality of the physics simulation.
Imported CAD models appear distorted or are missing.	The CAD file format is not fully supported, the file is corrupt, or the import scaling is incorrect.	Export the model from your CAD software using a neutral format like STEP AP214 or IGES. Verify the file can be opened in another viewer. Check the import dialog settings to

Symptom	Possible Cause	Solution
		ensure the units (e.g., mm, inches) are correctly specified.
The software crashes upon loading a specific project.	An asset or configuration file within the project has become corrupted.	Try to load one of the project's automatic backup files from the project subfolder. If that fails, create a new project and import the assets (programs, components) from the corrupted project one by one to identify the problematic file.
Collision detection does not report an obvious collision.	Collision detection is disabled for one or both of the objects, or their collision meshes are not properly defined.	Select each object and verify that the 'Enable Collision Detection' checkbox is ticked in the Properties Panel. For imported geometry, ensure a collision mesh has been generated or assigned.
The virtual robot controller is stuck in a boot loop.	The virtual controller configuration is invalid or its files have been corrupted.	In the virtual controller settings, use the 'Reset to Factory Defaults' option. If the issue persists, run the software installer again and choose the 'Repair' option to restore the virtual controller system files.
A 'Feature Not Licensed' error appears when trying to use a tool.	The specific feature (e.g., advanced path planning, a specific communication protocol) is not included in the NXB-GEN-232-002 license tier.	Check the product datasheet for the features included with your license. Contact NexBot sales to inquire about upgrading your license to a higher tier.

7. Technical Specifications

Parameter	Value	Unit
Country of Origin	CH	