

KINOVA



TOGETHER IN ROBOTICS

MEET LINK6

v3.3

RELEASE NOTES

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Overview

The Release Notes contain information about changes to the Kinova® Link 6 robot enabled by Kinova® Kortex™ Software Update Package version 3.3.0. The changes are presented in reverse chronological order, with the most recent changes at the start.

Each release section contains the same order of information to maintain consistency throughout the document.

- "Compatibility matrix" outlines the versions of plugins that work with the current release.
- "New features" outlines any new functionality in the current release.
- "Fixes" lists issues that are now fixed.

After all the information specific to the current release, are two more sections.

- "Limitations and workarounds" describes some of the limitations of the robot, along with temporary solutions to bypass any problems that these limitations raise.
- "Known issues" briefly describes unexpected behavior of the robot under specific conditions. It is important to remember that issues listed here may or may not occur in your installation of the robot.

System requirements

Kortex Web App

Kortex Web App is supported Google Chrome version 64+.

Kortex development computer platform

The software requirements for a development computer are multi-platform.

- Microsoft: Windows 7/10/11 (64-bit)
- Linux: Ubuntu 20.04 and higher (64-bit)
- Python 3.8 and higher

Safety Information

Users need to review safety and warning information about the Link 6 before using it. Safety information for the robot can be found in *Link 6 User Guide*.

Compatibility matrix

The current version of Link 6 is compatible with specific versions of plugins and products.

Table 1: Compatibility with plugins and products

Plugin or product	v3.1.1	V3.2.0	Current version (v3.3.0)
Plugin: OnRobot	1.1.0	1.2.0 to 2.0.0	2.1.0
Plugin: Robotiq	1.1.0	1.2.0 to 1.3.0	1.4.0
Plugin: Fieldbus Adapter	1.0.0	1.1.0	1.2.0
Plugin: Link Toolkit	n/a	1.0.1	1.1.0
Plugin: Vision	n/a	1.1.0	1.2.0
Kortex Python API	n/a	3.2.0	3.3.0

Release 3.3.0

The modifications made to Link 6 address issues found in the previous release. Some of the modules are impacted.

Release date: 2023-11

Table 2: Previous and current versions of each software and firmware module

Component name	Previous version	Current version
Software Package	3.2.0	3.3.0
Armbase firmware	3.2.0	3.3.0
Actuator 1 to 6 firmware	3.2.0	3.3.0
Wrist firmware	3.2.0	3.3.0
Actuator safety unit 1 to 6 firmware	3.2.0	3.3.0
Safety Control Unit firmware	1.2.0	1.3.0
Kortex Web App	3.2.0	3.3.0
Web Client API	3.2.0	3.3.0

New features

New features introduced in Kinova® Kortex™ Software Package v3.3.0 range from new action tiles available for visual programming, improved saving and importing programs, enhanced plugin compatibility management, and more

Action tile: Change Active Tool List

Use the **Change Active Tool List** action to modify the active tool list while a program is running. The arm must not be moving when the **Change Active Tool List** action is performing.

Action tile: Edit Tool Parameters

Use the **Edit Tool Parameters** action to change the parameters of a tool while a program is running. The parametric changes persist throughout the current program and subsequent programs.

Action tile: Exit

Use the **Exit** action to exit a program. The **Exit** action has two types of possible exits: **Abort Program** and **Exit Program**.

Abort Program stops the program immediately and enters Monitored Stop mode. The robot cannot start moving again until the operating mode is changed manually.

Exit Program stops the program immediately and stays in the current operating mode. The robot can start moving again when a program starts.

Action tile: Message generates event

All **Message** actions now generate events that are accessed from the notification icon that launches the **Events** page. Use the action to help troubleshoot programs when they are running.

Action tile: Tool Path

Use the **Tool Path** action to make the robot move fluidly from one point to the next when the path involves any combination of straight lines and circular segments.

Define straight line motion for the tool path trajectory using **Straight line**.

Define circular motion for the tool path trajectory using **Arc point**.

Use **Blending** to make sure the robot moves at a constant speed and precisely follows the trajectory, even across waypoints.

Test waypoint configuration by running a single waypoint or a set of waypoints in the waypoint list of the **Tool Path** action.

Changes in default accelerations of waypoints and tool path

The default accelerations of waypoints and of the tool path have been reduced.

- Cartesian linear acceleration: 2.5 m/s^2
- Cartesian rotation acceleration: $300 \text{ }^\circ/\text{s}^2$

Custom frames

Change custom frames at run time by assigning variables to custom frames.

Teach a trajectory involving a fixed custom frame by using the Snapshot button on the wrist, the **SNAPSHOT** functionality in Kortex Web App, custom frame variables that are in the Base reference frame, or a Custom Point of Reference variable.

Configure the custom frame, based on the current TCP frame, by using the **SNAPSHOT** functionality.

Arm speed factor

When running in Hold to Run mode, slow the arm by a percentage of the allowed speed of the arm. It uses color codes to visually inform the user when the current speed of the robot is at the maximum speed limit or over the maximum speed limit.

Speeds slower than 100 mm/s are achieved with the TCP slider. The speed configuration applies to translation and orientation speeds.

Generic user interface changes

The **UPDATE** button has been renamed to **SNAPSHOT**.

Access to the **System Upgrade** page has moved from **Systems > Upgrade** to **Systems > Maintenance**. The change in location serves as a reminder to the user to save the system configuration before performing an update of the system.

Program variable export and import

Programs can be saved for future use by being exported with their defined persistent variables to a JSON file.

Programs with and without defined persistent variables can be imported. If the program calls on a persistent variable, but does not have the definition of the variable, the program still imports, but with a warning for you to define and validate the variable.

Program migration

A program migration function to migrate and update an incompatible program created in an older Software Package to become compatible with the currently installed version of the Software Package.

Programs that are created with an older version of the Software Package can be made compatible with the currently installed version.

Plugin infrastructure controlled environment

The plugin framework protects the system against plugin issues by being separated from the rest of the system and run in a controlled environment with their own resources.

A USB storage device can be inserted and left in the controller for importing and exporting plugins and programs.



Important: When a USB device is connected to the controller while a plugin is already running, the plugin must be restarted so that it can access the USB device.

Plugin infrastructure compatibility management

The plugin framework supports more tools for compatibility management between the Software Package and plugin versions.

Configuration data of robot can be saved separately from the plugin data. Configuration data associated with the plugin can be saved separately from the robot data.

Before upgrading Link 6 from v3.2 to v3.3, back up the entire robot configuration by tapping **Systems > Maintenance > Configurations > SAVE** and then back up the plugin data by exporting all the programs. The upgrade deletes all the plugins.

After upgrading to v3.3, re-install all the plugins, import all the programs, and load the robot configuration.

Plugin Manager error handling improvements

When a plugin crashes, the Plugin Manager provides a clear error message that indicates which plugin has crashed. All plugin crashes put the arm in a fault state.

Changes in the teach pendant

The teach pendant supports touch gestures, such as drag, scroll, and pinch to zoom.

Changes in the maintenance fuse

North American installations use a generic 3AB/AG, Fast-Acting, 15 A fuse.

European installation use a generic 5 mm x 20 mm, Fast-Acting, 15 A fuse.

Kortex API

Kortex API documentation and examples are now available at <https://github.com/Kinovarobotics/Kortex3> for those users who would like to enhance their experience by interfacing directly with Link 6 through Python code.

Fixes

All issues that are described are now fixed in the current release.

The fixes are listed as they were when they were issues.

- Configuration backups from v3.2 with plugins shows failure even though the backup was successful. Configuration backups require User Roles and Tool Sphere to correct the false backup status.
- Kortex Web App and the Kortex API do not use the same safety function range limits. The lower range limits in the API are never 0.

- When the retrieved safety function range limit is lower than the acceptable minimum limit of the safety function, there is no message to indicate the lowest available limit of the safety function.
- The arm cannot move when exporting system logs. The topic "Exporting Logs" in the *Link 6 user guide* does not outline the steps to avoid errors when exporting logs.
- Duplicated protection zones take on the name of the original protection zone with "Copy of" added to the front of the name. The protection zone is not duplicated when the name of the protection zone is more than 17 characters.
- Force torque sensor specifications are not updated in the *Link6 user guide*.
- Various typographical errors in Kortex Web App.
 - **Wrist** page that is accessed by tapping **Diagnostics > Status > Wrist**
 - **Set Output** action **Tile configuration** pane
 - **Change Payload** action **Tile configuration**
- The **SET AS ACTIVE** button for the **Change Payload** action silently fails when there is a variable in the **Tile configuration** pane.
- No error message is provided when an action of a deactivated plugin is dragged into the **Sequence editor**.
- Active tools cannot be configured when the robot is in Monitored Stop mode.
- The status Teach pendant emergency stop button signals disagreement, Malfunction detected in Emergency Stop Delay Circuit B do not reflect their state when they are triggered.
- When setting the elbow speed limit in **Normal Speed Mode** to a number with a decimal, the elbow speed limit in **Reduced Speed** mode displays an error that states the speed limit is too high.
- It is not possible to switch from Automatic mode to Hold to Run mode without the system going into Monitored Stop mode.
- When a variable is used as an index to another variable of type `Arm plugin - Matrix Output` and the variable is used as the **Custom Frame** in a waypoint list, the program stops running, no error message is launched, and no information is listed on the **Events** page.
- The action **Play** (▶) button in the action **Tile configuration** pane can play back the currently selected action, except for the **Condition** and the **Loop** actions.
- When an operator taps **ELEVATE PERMISSIONS** and taps **Systems > Users**, no users are listed.
- When the physical state of safety output pins are updated, all safety outputs are forced to 0 in the SCU when any self-test fails. Outputs that receive a value of 0 are activated when they should not be activated.

- When you stop a currently running program using **Monitored Stop** in the Robot control panel and restart the program, the robot automatically enters Monitored Stop mode.
- When a variable, such as a **Custom Frame**, is defined in a waypoint, an incorrect message is displayed.

```
The waypoint list cannot be validated or converted because the Custom Frame contains a Variable.
```

- When the arm is switched on during a protective stop, the robot attempts to resume the program and enters a fault state.
- When the safety function SF06 Protection Zone is enabled, it may disable stop category 2.
- Monitored stop is not active when the program finishes successfully.
- When the SCU performs the ENABLING_DEVICE_OPERATING_MODE_VIOLATION self-test and triggers an error event, the operating mode is missing from the explanation in the **Events** page.
- Change the parameters of a tool on the **Tools** page; refer to this tool as the first tool. Select a different tool on the **Tools** page; refer to this tool as the currently selected tool. The parameters in Kortex Web App display the values of the first tool, not of the currently selected tool. The parameters that are changed for the first tool are applied to the first tool; the parameters are not applied to the currently selected tool.
- When the robot collides with a Protection Zone, the safety function SF05 Monitored Stop is triggered and the robot enters a Fault (❗), but no SF06 Protection Zone event pop-up message launches and no SF06 Protection Zone event is listed in the **Events** page.
- The `Joint Position Limit` event does not show the list of all actuators within the position limit.
- When the arm is backdriven to get it out of a potentially dangerous position, a confirmation dialog launches with the arm shown to be in the zero position and not in the actual position.
- When the **Delete** icon is tapped for the first time on the **Program** page without first selecting a tile from the **Sequence editor** pane, the first tile is deleted. When the Delete icon is tapped subsequent times without selecting a tile, a dialog launches asking to confirm the deletion, but nothing is deleted from the program.
- When the robot is backdriven with the arm switched off and the arm is switched back on, Kortex Web App launches a confirmation dialog for the current position of the arm and the arm exits the initialization state only after refreshing the page.
- When running a program in Automatic mode, the safety function SF03 Joint Position Monitoring reports the issue with the wrong waypoint.
- When a program is running without any robotic movements, it may be possible to tap **Hand Guiding** and move the robot without stopping the program.

- When the upper and lower position limits are entered on the **Safety > Joint Limits Position Limits** page, no error message is displayed.
- When the teach pendant is switched off with its power button, the touchscreen remains active.
- When the robot is operating in Automatic mode and the wrist enabling device is fully pressed, the robot continues operating.
- Even when faults are triggered, the faults are not displayed.
 - Malfunction detected in Emergency Stop Delay Circuit B
 - Teach pendant enabling button signals disagreement
- Cannot switch from Automatic mode to Hold to Run mode while a program is running.
- It is possible, although rare, that some of the joints are not detected when the arm is switched on.
- The Program play area is not visible in the Robot control panel when the program is paused or running.
- When a waypoint list is defined to have a **Custom Frame** where all fields are set to 0, no more waypoints can be added to that waypoint list.
- The teach pendant has several issues.
 - The teach pendant cannot display long program names.
 - The Enter key on the Virtual Keyboard does not provide a new line in the text area. Instead, it closes the Virtual Keyboard.
 - The bottom of the **Protection Zones** page has extra white space.
 - When the Backspace key on the Virtual Keyboard is used to delete a letter from the name of the program, the entire name is deleted.
 - The scroll bar beside the variables cannot be accessed to scroll to the other variables when the Virtual Keyboard is enabled.
 - The SHIFT and CAPS LOCK keys behave the same: tap once and all the letters on the Virtual Keyboard are capital; tap again to make all the letters lower case.
 - Tapping on the speed fields when in Virtual Jog mode launches the Virtual Keyboard although the fields are not editable.
 - When creating a new tool, tapping on any text field launches the Virtual Keyboard, which is correct. However, tapping the buttons on the dialogs merely closes the Virtual Keyboard; the dialog remains visible.
 - When a letter is inserted in the middle of text in a text field using the Virtual Keyboard, the cursor moves to the end of the word instead of staying in place.
- The Hand Guiding window does not close automatically when the wrist enabling device is released.

Release 3.2.0

The modifications made to Link 6 address issues found in the previous release. Some of the modules are impacted.

Release date: 2023-01

Table 3: Previous and current versions of each software and firmware module

Component name	Previous version	Current version
Software Package	3.1.1	3.2.0
Armbase firmware	3.1.0	3.2.0
Actuator 0 to 5 firmware	3.1.0	3.2.0
Wrist firmware	3.1.0	3.2.0
Actuator safety unit 0 to 5 firmware	3.1.0	3.2.0
Safety Control Unit firmware	1.1.0	1.2.0
Kortex Web App	3.1.1	3.2.0
Web Client API	n/a	3.2.0

New features

A few new features are introduced in Kinova® Kortex™ Software Package v3.2.0.

Collision detection

Link 6 may detect a collision between the arm and at least one person, or object. When a collision is detected, the robot transitions to Monitored Stop.

Reduce the amount of force used whenever the robot comes into contact with another object or with a person by configuring collision detection parameters and energy limitation parameters.

Configure force thresholds from the **Collision Detection** pane of the **Robot Arm** page at normal and reduced speeds. The thresholds are the amount of force detected before stopping the robot. The thresholds do not prevent applying more force. Any detected force that is greater than the threshold triggers a Collision Detected fault.

Energy limitation

When the energy that can be used for the TCP and the elbow is limited, the speed that the robot travels along the trajectory is controlled.

Kinetic energy of the TCP and the elbow is monitored at all times.

Small limits of energy means the robot travels slower along a trajectory. Large limits of energy means the robot travels faster along a trajectory.

Configure the amount of energy that can be used to control the maximum speed of the TCP or elbow from the **Energy Limitation** pane of the **Robot Arm** page.

Change Payload action

A new action, available to all programs in the Visual programming interface, can be accessed from the **Robot** action menu (🏠): **Change Payload** (📦). The **Change Payload** action must be used in programs where collision detection and energy limitation are expected to work properly.

A payload can be changed during the course of a program. The parameters of the payload can be configured from the **Tile configuration** pane in the Visual Programming interface when the arm is off or in an idle state. The currently active payload is displayed in the **Payload** pane on **Systems > Robot > Arm**.

Drive power indication

There is a safety output available that indicates whether actuators are receiving power. It can be used to visually inform users by using a yellow or amber light, as prescribed by UL1740.

Maintenance mode

Administrators can perform basic maintenance on a regular basis from Kortex Web App. Log in to Kortex Web App with **MAINTENANCE MODE** selected or access it from **Systems > Maintenance** Maintenance mode.

- Back up the software configuration of the Link 6 system. The backup includes all plugins currently installed on the robot.
- Load a specific configuration of the system.
- Save log files that contain vital information for debugging purposes.

Open Source Software page

A full disclosure of Open Source Software used in Link 6 is available by tapping **Open Source Software** from the bottom of the Kortex Web App side menu.

Loop tile

The behavior of the **Loop** action () in the Visual Programming interface has changed slightly with respect to the iterator and the maximum number of iterations.

The iterator is a variable of type integer that increments by 1 on each repetition of the actions in the loop. The default value of the iterator is the number from which it starts to count.

The maximum number of iterations is the maximum number of times the actions in the loop are performed. If the maximum number of iterations is explicitly set to 0, the loop continues as long as the conditions set are true. If no maximum is entered, the maximum defaults to 1.

When a variable is assigned as the iterator of a loop of X iterations, the value of the variable after all iterations is the initial value of the variable plus the number of iterations. The variable is not incremented at the end of the last iteration.

Behavior of installing and uninstalling tools associated with plugins

When a plugin is associated with one or more tools, the tools are automatically added to the list of **Inactive (drag & drop)** tools on the **Tools** page when the plugin is installed.

When a plugin is associated with one or more tools, the tools are automatically removed from the list of **Active** and **Inactive (drag & drop)** tools on the **Tools** page when the plugin is uninstalled.



Important: Make sure that the tool list is configured correctly after installing, uninstalling, and updating plugins.

Kortex API

Kortex API is now available for those users who would like to enhance their experience by interfacing directly with Link 6 through Python code.

Fixes

All issues that are described are now fixed in the current release.

The fixes are listed as they were when they were issues.

- Various typographical errors in Kortex Web App.
- When controllers operate for several days in a row, the controllers may not be able to detect a USB that is inserted.
- No error message is provided when an action of a deactivate plugin is dragged into the **Sequence editor**.

- When setting the elbow speed limit in **Normal Speed Mode** to a number with a decimal, the elbow speed limit in **Reduced Speed** mode displays an error that states the speed limit is too high.
- When a variable is used as an index to another variable of type `Arm plugin - Matrix Output` and the variable is used as the **Custom Frame** in a waypoint list, the program stops running, no error message is launched, and no information is listed on the **Events** page.
- When the arm is backdriven to get it out of a potentially dangerous position, a confirmation dialog launches with the arm shown to be in the zero position and not in the actual position.
- When the **Delete** (🗑️) icon is tapped for the first time on the **Program** page without first selecting a tile from the **Sequence editor** pane, the first tile is deleted. When the Delete (🗑️) icon is tapped subsequent times without selecting a tile, a dialog launches asking to confirm the deletion, but nothing is deleted from the program.
- When a program is imported and the program contains actions that belong to a plugin that is not installed, Kortex Web App displays a spinner indefinitely in the robot control panel.

Release 3.1.1

The modifications made to Link 6 address issues found in the previous release. Some of the modules are impacted.

Release date: 2022-09

Table 4: Previous and current versions of each software and firmware module

Component name	Previous version	Current version
Actuator Main MCU firmware	3.1.0	3.1.0
Actuator Safety MCU firmware	3.1.0	3.1.0
Wrist firmware	3.1.0	3.1.0
Base firmware	3.1.0	3.1.1
SCU firmware	1.1.0	1.1.0
Kortex Web App	3.1.0	3.1.1
Kortex Runner	2.0.0	2.0.0
Plugin Manager	1.1.0	1.1.1
Arm Plugin	1.1.0	1.1.0
Session Manager	1.0.0	1.0.1
Event Broker	1.0.0	1.0.0
Industrial_IO	1.1.0	1.1.0
Modbus Master	1.1.0	1.1.0

New features

No new features are introduced in Kinova® Kortex™ Software Package v3.1.1.

Fixes

All issues that are described are now fixed in the current release.

- Plugin tools now display all changes applied to them on the **Tools** page in Kortex Web App.

Example procedure:

1. Install a plugin that has tools associated with it.
2. Tap **Systems > Tools**.
3. Tap one of the tools that come from the plugin.
4. Modify any one of the **Transform** fields.
5. Tap another tool.
6. Tap the modified tool.

Result: The value that was entered on the modified tool is still displayed and is used in all calculations.

- The TCP rotation transform is applied taking into account the offset of the previous transform.
- The Vision Module Tool is removed.

Known issues

The current version of Link 6 has a few known issues. Kinova is working towards to fixing the issues.



CAUTION: ISSUE OF CONCERN WITH KORTEX API

When using the `ExecuteAction` RPC command from Kortex API while a trigger to Safety Function 2 (SF02) Protective Stop is received, the arm continues to execute the commanded motion for an additional delay before applying a stop. This delay in the stop behavior may result in the arm going into a fault state. Please note that this issue only occurs under specific conditions and does not pose any additional safety risks. Configuring the robot with respect to safety considerations should account for this delay. It is mandatory to wait for the confirmation of the SF02 before proceeding to avoid safety risks. This issue will be fixed in the next immediate release of the software.

Other known issues

- When reading to and from the wrist I/O, as well as when writing to and from the wrist I/O, There is a delay of up to 10 ms between the moment the wrist receives the command and the moment it sets the I/O. The delay does not include the debouncing value.
- Duplicated tools take on the name of the original tool with "Copy of" added to the front of the name. A tool with a name that is more than 17 characters cannot be duplicated.
- When the name of a tool is more than 17 characters, the tool cannot be duplicated.
- When a USB with a SWU file is inserted into the controller and the user navigates to **Systems > System Upgrade**, the SWU file is in the list of possible files to upload; when the USB is removed from the controller, the file remains in the list of available SWU files.
- When the robot is in Recovery mode, the **Monitored Stop** button is not visible in the robot control panel.
- When an action cannot be performed while in Hold to Run, the program does not run and no feedback is displayed.
- When attempting to change values in the **Zone configuration** of the **Protection Zones** page from the teach pendant, the Kortex Web App flickers and a scroll bar may appear briefly.
- When **Export All** on the **Protection Zones** page is selected, the Tool Sphere does not export with the other protection zones.
- When performing a Protective Stop Reset, the Safety Inputs Visual Indicator is not useable.
- When first starting the robot, the Industrial IO plugin may not appear on the **Plugins** page.
- When a program is created on the teach pendant, sometimes during the renaming of the program the cursor does not follow the typing.

- When using a GO-TO function in Hold to Run mode and a Joint Position Limit Reached safety function is triggered, the incorrect index of the waypoint causing the issue is displayed in the **Events** page.
- When a plugin that is associated with a tool is installed on the robot, and the plugin is deactivated only to be reactivated, the associated tools are displayed as being disconnected.
- When the teach pendant is used to navigate the Kortex Web App, sometimes the wrong cursor icons are used. For example, drag and drop functionality on the teach pendant sometimes uses X instead of the usual hand cursor.
- When using Kortex Web App on a Windows PC with a resolution of 1920x1080 and a scaling of 125%, and the Horizontal Page Layout icon is toggled, the top toolbar disappears.

Limitations and workarounds

The current version of Link 6 has a few limitations. Some of the limitations have workarounds.

Momentary display of previously selected device when performed on the OnRobot Move action

When the name of the device is changed on an OnRobot Move action tile, the name of the previous device is displayed momentarily.

Workaround: Wait an additional delay of no less than 2 seconds before entering any other field.

Tool Path action does not work as expected with identical contact points

When the contact point of two segments of a Tool Path action are the same, the robot may not move in the expected trajectory.

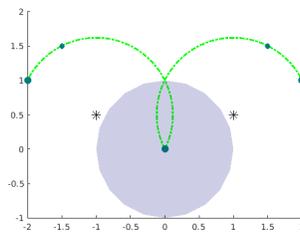


Figure 1: Common contact point for arc points

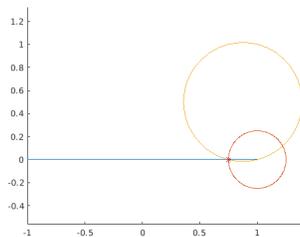


Figure 2: Common contact point for line arc points

Workaround: None

Modification of Vision Job action in a program does not invalidate the program

When a **Vision Job** action is in a validated program and any of its configuration is modified within the action, the program remains validated; it should revert to needing validation.

Workaround: Always remember to revalidate a program after modifying any **Vision Job** action configuration.

Undefined boolean variables default to false	<p>When a <code>boolean</code> variable has an undefined default value, the variable is treated as if its default value is <code>false</code>. No error is returned. Undesirable behavior may occur.</p> <p>Workaround: Define variables of type <code>boolean</code> as either <code>true</code> or <code>false</code>. Make sure to define the default value with a value that is meaningful to your purposes.</p>
Protection Zone event may take longer than expected to trigger	<p>There is a lag in the system for reporting triggers when a program is running and the Notification page is launched.</p> <p>Workaround: Always close the Notification page when it is not being used.</p>
Joint Position Limit Reached event triggers in Hold to Run mode	<p>When creating, modifying, or testing programs in Hold to Run mode, safety function events, such as <code>Joint Position Limit Reached</code> and <code>TCP Translation Speed Limit Reached</code>, display the incorrect waypoint index.</p> <p>Workaround: None</p>
Tools page does not update when tools are made active	<p>Moving tools from the Inactive (drag & drop) list to the Active list does not always adjust the TCP in the visualizer in Kortex Web App. Also, the mass of the tool is not taken into account, which makes Hand Guiding difficult.</p> <p>Workaround:</p> <ol style="list-style-type: none">1. Tap Systems > Tools.2. Remove all tools from the Active list.3. Reboot the controller.4. Move the tools that are on the arm from the Inactive to the Active.

Support

If you have any issues, questions or comments, please feel free to contact us.

Access all technical and product resources on the Kinova website.

Contact your Field Applications Engineer if you have questions at support@kinova.ca.

TOGETHER IN ROBOTICS



PROUDLY MADE IN

📍 QUEBEC, CANADA

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