



# **BioNex Solutions Hive Automation Platform**

## **Device Driver Quick Reference**

Original Instructions

# Notices

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# BioNex Solutions Hive Automation Platform Device Driver Quick Reference

This document contains the following topics:

- [About this document](#)
- [BioNex Hive Diagnostics](#)
- [BioNex Hive protocol tasks](#)

## About this document

### What this guide covers

The BioNex Solutions Hive Automation Platform automates laboratory workflows and provides labware storage functions. The platform can be integrated into a lab automation system that is controlled by the VWorks software.

This document provides a quick reference of the commands, selections, and parameters in the following:

- [BioNex Hive Diagnostics](#)
- [BioNex Hive protocol tasks](#)

### Assumptions

This document assumes that you are familiar with the VWorks software and that you know how to:

- Add a device to a device file.
- Open the device diagnostics software.
- Create and manage profiles.
- Create a protocol and add protocol tasks.

### Software version

The functions described in this document are available in the following software:

- VWorks Automation Control 11.4 or later
- BioNex Solutions Synapsis 1.0 or later

### Related documents

Use this document in conjunction with the following:

- [VWorks Automation Control Setup Guide](#)
- [VWorks Automation Control User Guide](#)
- Lab automation system user guide, such as the [BioCel System User Guide](#)
- User documentation for the BioNex Solutions Hive Automation Platform and Synapsis control software

For user information about other Automation Solutions products, you can search the product knowledge base or download the latest version of a PDF file from the Agilent Technologies website at:

[www.agilent.com/chem/askb](http://www.agilent.com/chem/askb).

# BioNex Hive Diagnostics

## About BioNex Hive Diagnostics

You use BioNex Hive Diagnostics to:

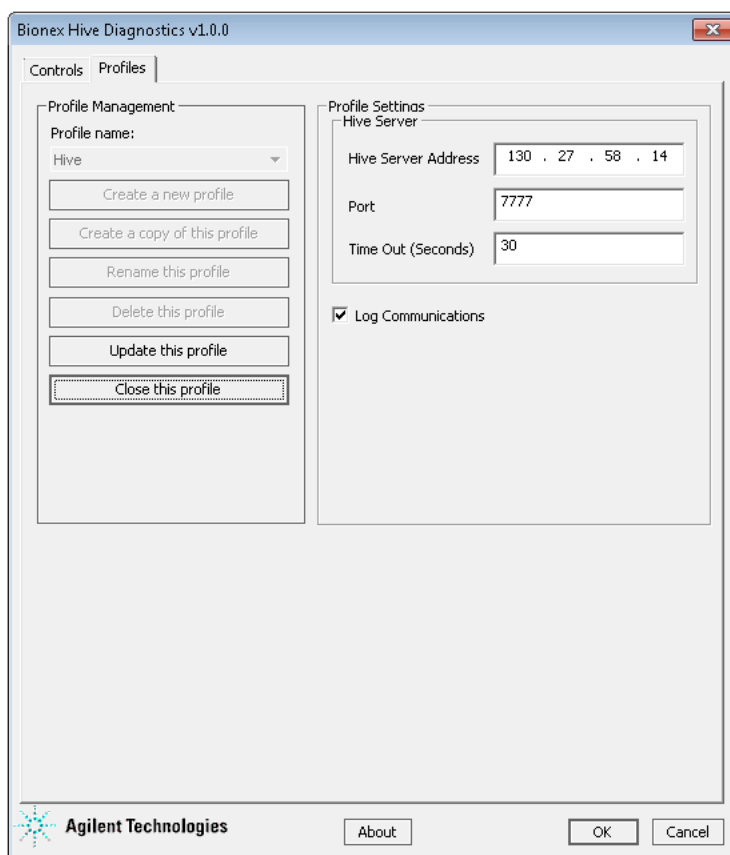
- *Create and manage profiles.* A profile allows you to set up communication between the Hive Platform and the controlling computer.
- *Load and unload labware.* Using the available commands, you can load specific labware into or unload the labware from the hive.
- *Display the hive inventory.* Using the available command, you can scan the labware barcodes in the hive and display the inventory in the diagnostics screen.

This topic provides a quick reference of the commands, selections, and parameters in the following BioNex Hive Diagnostics tabs:

- [Profiles tab](#)
- [Controls tab](#)

For instructions on adding the BioNex device to your device file and opening BioNex Hive Diagnostics, see the lab automation system user guide, such as the [BioCel System User Guide](#).

## Profiles tab



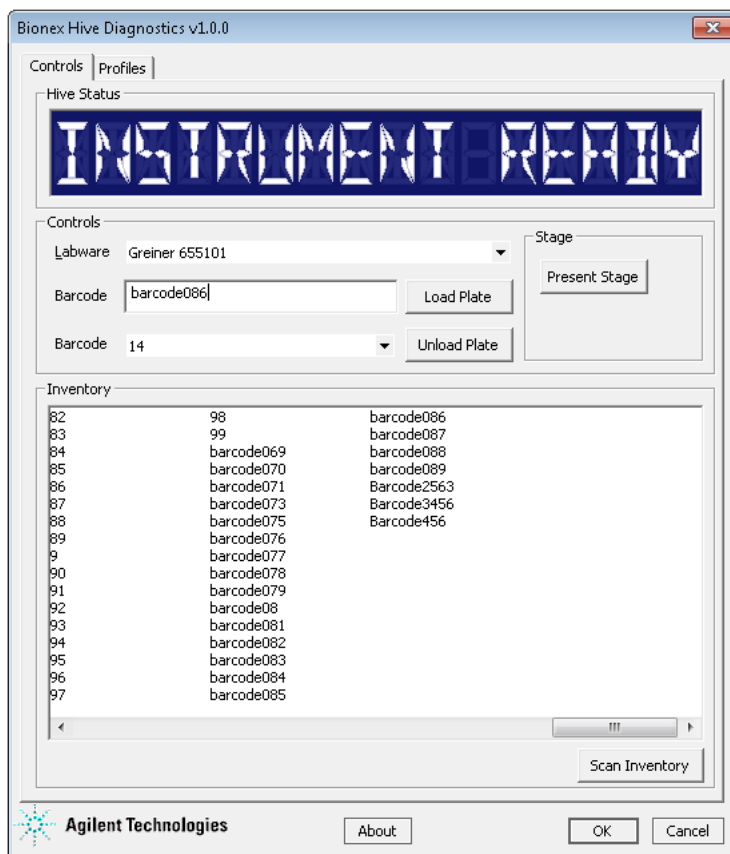
### Profile Management area

| Command                       | Description   |
|-------------------------------|---|
| Profile name                  | Displays the selected profile. Also allows you to select from the list of available profiles. |
| Create a new profile          | Creates a new profile.  |
| Create a copy of this profile | Creates a duplicate copy of the selected profile.   |
| Rename this profile           | Renames the selected profile.   |
| Delete this profile           | Deletes the selected profile.   |
| Update this profile           | Saves changes to the selected profile.  |
| Initialize this profile       | Initiates communication with the device using the selected profile.                           |

### Profile Settings area

| Setting or option   | Description   |
|---------------------|---|
| Hive Server Address | The IP address of the computer that is connected to the Hive Platform and is running the Synapsis control software.   |
| Port                | The controlling computer IP port number that is connected to the Hive Platform.   |
| Time Out (seconds)  | The length of time, in seconds, to wait after you click <b>Load Plate</b> or <b>Unload Plate</b> in the Controls tab. If the system is unable to complete the Load Plate or Unload Plate action after the specified time, the software displays an error message. |
| Log Communications  | The option to record all communication between the hive and the computer.   |

## Controls tab



### Hive Status area

Displays the status of the hive.

### Controls area

| Setting or command                                  | Description  |
|---|--|
| Labware   | The type of labware that you want to load into the hive or unload from the hive. Select from the list of available types.<br><br><b>IMPORTANT</b> The labware type must be defined in the VWorks Labware Editor and the Synapsis software. In addition, the labware definition in both software must be identical. |
| Barcode (text box next to the Load Plate button)    | The barcode of the labware that you want to move into the hive. Type or scan the barcode.  |
| Load Plate  | The command that moves the specified labware into the hive.  |
| Barcode (selection next to the Unload Plate button) | The barcode of the labware you want to move from the hive. Select from the list of barcodes that are currently in the hive inventory.  |

| Setting or command | Description  |
|--------------------|--|
| Unload Plate       | Moves the specified labware out of the hive.   |
| Present Stage      | Rotates the transfer stage so that the system robot can pick up labware from or place labware on the stage. The stage is an interim location for the labware that is moving into or out of the hive. |

### Inventory area

| Area or command        | Description  |
|------------------------|--|
| Inventory display area | Displays the inventory of the labware in the hive.   |
| Scan Inventory         | Scans the barcodes of the labware in the hive. After the system finishes the scan, the software displays the inventory of labware in the Inventory display area. |

## BioNex Hive protocol tasks

### About the tasks

The following tasks are associated with the BioNex Solutions Hive Automation Platform:

- Load
- Unload
- [Move Plate](#)
- [Re-inventory](#)

The Load and Unload tasks are generic VWorks protocol tasks that you can use to move labware into and out of the hive. For detailed information about using these tasks, see the *VWorks Automation Control User Guide*.

The Move Plate and Re-inventory tasks are associated with the BioNex Solutions Hive Automation Platform only. This topic describes the two device-specific tasks.


## Requirements

All labware that are stored in the hive must all have barcodes. In addition the barcodes must meet the following requirements:

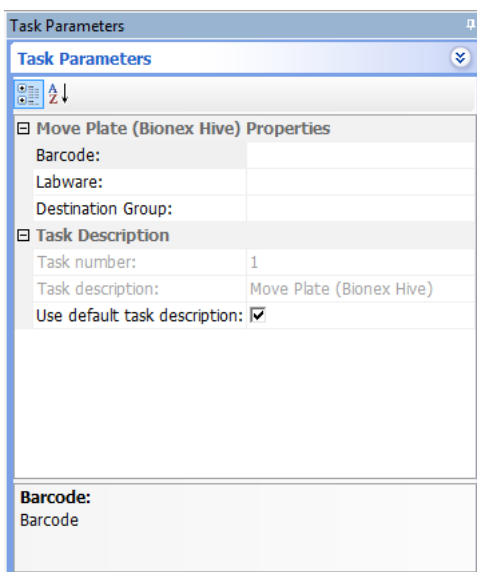
- The barcode labels must be on the east side of the labware.
- The first character of the barcode must identify the labware type. In addition, the labware type information in the barcodes must match the labware type information defined in the BioNex Solutions Synapsis control software. For more information, see the user documentation for the Synapsis control software.

## Move Plate

### Description

The Move Plate (  Move Plate (Bionex Hive) ) task moves specified labware from its current location in the hive to the specified destination group. For information about destination groups, see the BioNex Solutions Hive Automation Platform user documentation.

### Task parameters




| Parameter | Description                                       |
|-----------|---|
| Barcode   | The barcode of the labware that you want to move. |
| Labware   | The type of labware that you want to move.        |

| Parameter                    | Description  |
|------------------------------|--|
| Destination Group            | <p>The name of the destination group into which you want to move the labware.</p> <p><i>Note:</i> The hive will automatically create the specified destination group if a cart is available. To move the labware from the cart to static storage, type <code>Hold</code>. Be aware that the system is case-sensitive.</p> <p>For information about destination groups and carts, see the BioNex Solutions Hive Automation Platform user documentation.</p> |
| Task number                  | The number that indicates the position of the task in the protocol.  |
| Task description             | The description of the task.   |
| Use default task description | <p>The option to use the default task description or provide your own description for the task.</p> <p>Select the check box to use the default description. Clear the check box to provide your own description.</p>   |

## Re-inventory

### Description

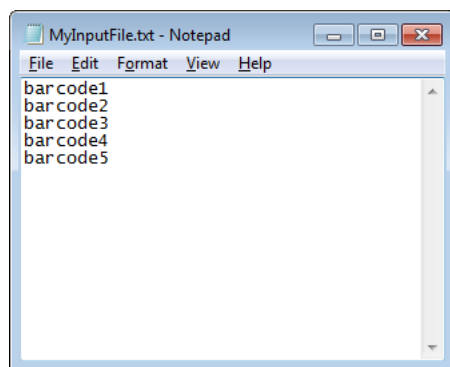
The Re-inventory (  Re-inventory (Bionex Hive) ) task scans the barcodes of the labware in the hive and:

- Records the inventory in the specified output file.
- Compares the scanned barcodes with the barcodes in a specified input file for validation purposes.

*Note:* The Re-inventory task is available only in the Startup Protocol.

### Input file requirements

The input file is a text file containing a single column of barcodes, as the following figure shows.



## Task parameters

| Parameter                    | Description   |
|------------------------------|---|
| Input file                   | <p>The location and name of the input file. The input file contains the barcodes that the software will use to validate against those from the hive inventory.</p> <p>Type the file path and file name in the field.</p> <p><i>Note:</i> If you do not supply the input file, the software will not validate the hive contents. Instead, the Re-inventory task will scan the barcodes of the labware in the hive and save the information in the output file.</p> |
| Output file name             | <p>The name of the output file. The output file is created by the software after the system scans the barcodes of the labware in the hive. The output file lists the current hive inventory.</p> <p>The software will compare the contents of the input and output files to verify that the labware exist in the hive. If a labware is expected in the hive but does not exist, the software will display the missing barcode in an error message.</p>            |
| Task number                  | The number that indicates the position of the task in the protocol.   |
| Task description             | The description of the task.  |
| Use default task description | <p>The option to use the default task description or provide your own description for the task.</p> <p>Select the check box to use the default description. Clear the check box to provide your own description.</p>  |







**Quick Reference**

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