

# Service Bulletin

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**Machinery Affected:** RX3i PLC  
**Document:** SB210  
**Title:** Upgrading PLC Software  
**Applies To:** Any Equipment With RX3i Model  
**Distribution:** Upon Order



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Item # and Rev.	SB210 rev. D
Date Created	7 January 2015
Created By	R. Tucker
Reviewed by	V. Carroll
Approved by	V. Carroll
Revision Date	26 April 2016
Revised By	R. Tucker
Approved By	V. Carroll
Applicability	
Effectivity	all equipment w/ RX3i PLC

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## Purpose and Scope

### Overview

This procedure describes how to upgrade the PLC software on any equipment using an RX3i PLC.

The RX3i is referred to by the manufacturer as a Programmable Automation Controller, but for the purposes of this equipment, it is called a PLC.

If you have any questions, call MiTek Machinery Division Customer Service at 800-523-3380.

### Supplies Needed

Before beginning, locate or purchase a Removable Data Storage Device (RDSD), as described on page 3.

## Procedure

### Downloading the Software Onto a Storage Device

The PLC program on the RX3i PLC can be loaded onto an RDSD by following these steps. In some instances, an RDSD is sent to you by MiTek with the software already loaded.



If the files have already been provided on a storage device, skip to page 5.

1. Obtain a Removable Data Storage Device (RDSD), which is often called a USB drive, flash drive, or thumb drive. This can be purchased in many different styles and sizes at many retail or electronic stores. If the program has been supplied to you as part of a kit, the RDSD is part of that kit, and you should skip to page 6.




The specifications required for the RDSD are:

- Minimum of 8 gigabytes of storage (8G or higher)
  - Must be USB 2.0 (higher or lower versions will not work)
2. Plug the customer-supplied RDSD into your own computer's USB port and delete ALL files from the device so you are starting with a clean drive. Everything on this RDSD will be transferred to the saw later.

3. Place the correct files onto the RDS D.
  - If the files have been sent to you (via e-mail, *Dropbox*<sup>™</sup>, etc.), the full, uncompressed files must be placed onto the RDS D. If it is a zip file, refer to step 3b on page 4 for assistance.
  - For most equipment, the files you need are on our web site. Follow these instructions carefully to download the correct files.
    - a) Using the MiTek web site, navigate to the Machinery Software page:
      - 1) Go to [www.mitek-us.com](http://www.mitek-us.com).
      - 2) Go to the Machinery section of the web site and navigate to the Machinery Software page.
      - 3) Log in using your company's customer number and password. The password is the same password used by Truss Engineering.
    - b) Download the correct files onto the RDS D by following these steps:



The next steps is assuming *WinZip*<sup>™</sup> software is being used to extract the zipped files. Most Windows computers come with *WinZip* software. Other extraction software can be found on the Internet. If an extraction software other than *WinZip* is being used, the specific steps may vary slightly.

- 1) From the Machinery Software page, click on the correct equipment name.
- 2) Look for the link labeled *PLC Software*, and click the link.
- 3) Write down the version number indicated in the link or file name.
- 4) If your computer asks if you want to Open or Save, choose *Open*. A screen appears showing the zipped file.
- 5) Inside this screen, select the PACS zipped folder.   
If using *WinZip*, the file has this icon next to it:
- 6) Select *Extract* from the top toolbar.
- 7) Browse to the location of the RDS D so the files will be placed onto the RDS D.
- 8) Click *Extract*. The files will begin to download onto the RDS D. This may take several minutes or up to an hour, depending on the size of the files and the connection speed.



The project files, consisting of the entire contents of the PACS folder and all of its subdirectories, must be loaded on the RDS D and must NOT be modified

- 9) When the download is complete, eject the RDS D by using the ejection icon in the *Windows*<sup>®</sup> tray or by right-clicking the drive in the *My Computer* window.

## Unzipping the Files




If you downloaded the files from the MiTek web site, you already unzipped them and can continue to the next page.

If the RDSB was sent to you with files already on it, complete this step to ensure you have the uncompressed files ready to load onto the RX3i PLC.

1. Plug the RDSB into a computer's USB port and view the files on it:

A navigation window may appear showing the contents of the RDSB when you plug it into the USB port, or you may need to navigate through My Computer to find the correct drive.

- If the file structure looks something like Figure 1, the files are ready to load into the RX3i PLC and you may proceed to page 6.
- If the files look something like Figure 2, follow these steps to unzip them:

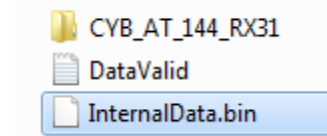
- a) Inside this screen, select the PACS zipped folder. If using *WinZip*, the file has this icon next to it: 
- b) Select *Extract* from the top toolbar.
- c) Browse to the location of the RDSB so the files will be placed onto the RDSB.
- d) Click *Extract*. The files will begin to download onto the RDSB. This may take several minutes or up to an hour, depending on the size of the files and the connection speed.



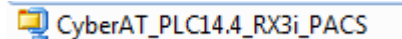
The project files, consisting of the entire contents of the PACS folder and all of its subdirectories, must be loaded on the RDSB and must NOT be modified

2. Write down the version number indicated in the link or file name.



**Figure 1: Sample of Actual Files (Not Zipped)**



**Figure 2: Sample of Zipped File**



## Downloading the Software to the PLC

	 <b>WARNING</b>
	<p><b>ELECTROCUTION HAZARD!</b></p> <p>All electrical work must be performed by a qualified electrician and in conformance with governing codes.</p> <p>Only a qualified electrician, using the personal protective equipment and following the procedures recommended in NFPA 70E should ever attempt service or repair of or near an energized area or component of the machine.</p> <p>Whenever maintenance is performed while the equipment is electrically energized, there is a potential electric arc flash hazard. Refer to NFPA 70E for the personal protective equipment required when working with electrically energized components. Pneumatic and hydraulic components may move unexpectedly if not de-energized. Physically restrain any components capable of movement when working on or near those components.</p>

1. Before beginning:

- a) Locate the Removable Data Storage Device (RDSD) with the new PLC software on it.
- b) Ensure the saw disconnect handle is in the ON position.
- c) If the machine has a control computer (such as a touch screen), ensure it is powered on.
- d) Close down any operating software.

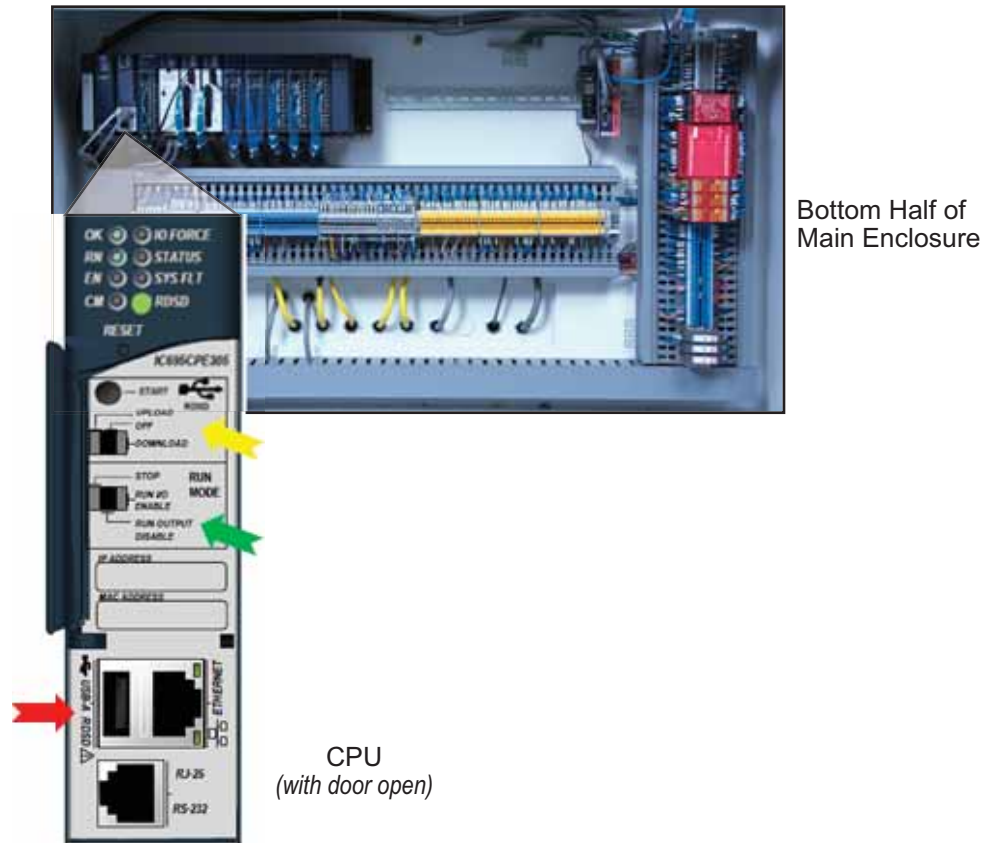
2. Prepare the PLC’s CPU to accept the new software update using these steps:






If the RDSD is removed during data transfers to the CPU, the RX3i controller will generate a fatal fault (sequence store fault). You will need to clear the fault by power cycling the CPU with the Energy Pack disconnected before attempting to download again.

- a) Locate the PLC CPU (IC695CPE305) in the main electrical enclosure. The CPU for the BLADE saw is shown in Figure 3. Refer to your electrical drawings if you are uncertain where the CPU is.

Figure 3: PLC CPU on the BLADE Saw, Shown With CPU Door Open.



- b) Open the small door on the CPU to expose the switches as seen in Figure 3.
- c) Plug the RDS into the USB-A RDS slot. 
- d) Wait until the RDS LED turns solid green. This indicates that the CPU has detected the RDS and is ready for downloading.
- e) Switch the RUN MODE direction switch to the left (STOP) position. 
- f) Move the RDS direction switch to the right (DOWNLOAD) position. 



Be very careful NOT to select UPLOAD. To upload means the program on the CPU will be loaded onto the RDS, thus corrupting the program you are trying to download. If by accident you upload, contact Customer Service for a new RDS.

3. Momentarily depress the START pushbutton to begin transferring the program to the CPU. The start button is indicated in Figure 4.



DO NOT remove the RDS D from the CPU during transfer!



transferring the software to the PLC could take up to 15 minutes depending on the type of RDS D.

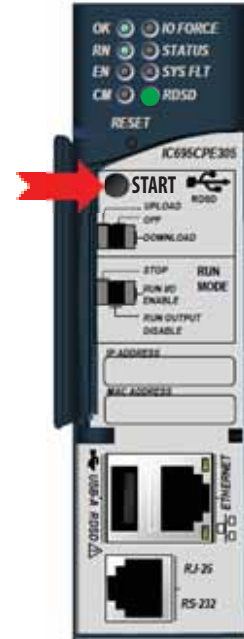
- a) Notice the RDS D indicator light on the CPU.
  - If the RDS D indicator light **blinks green**, the program is downloading and will become a solid green light once the download is complete. This could take several minutes, so please be patient. Once the download is complete, proceed to step b.
  - If the RDS D indicator light **blinks red**, this is acceptable. It has acknowledged that the program has a different name than what is currently loaded; momentarily depress the START pushbutton again. The RDS D indicator light should then blink green during the transfer.
  - If the RDS D indicator light turns **solid red**, the transfer has failed. Perform the following steps:
    - Check to make sure the proper software PACS\_Folder is on the RDS D device (see note on page 4).
    - Power down the PLC, wait a few minutes, then power it back up.
    - Try repeating the entire process before contacting MiTek Customer Service for support.



Errors are indicated when the RDS D LED becomes solid red (not blinking). All errors are reported in the Controller fault table and are written to a file on the RDS D. The fault tables are written to a file *plcfaulter.dat* and *iofaulter.dat* and can be viewed by MiTek Customer Service.

- b) When the RDS D LED turns a solid green, the transfer has completed successfully. Perform these steps:
  - 1) Remove the RDS D from the CPU.
  - 2) Return the CPU's RDS D switch to OFF and the RUN MODE switch to RUN I/O ENABLE.

Figure 4: Start Button on CPU





4. Return all settings to default and verify they are accepted:
  - a) Validate the CPU is back in RUN mode by verifying the following is true before continuing:
    - OK LED is solid green.
    - RN LED is solid green.
    - EN LED is solid green.
  - b) For the *Cyber A/T* saw, verify the following on the Profibus Master Module:
    - PROFIBUS OK LED is green.
    - NETWORK LED is yellow.
    - MOD STATUS LED is static on.
  - c) For the *BLADE* saw, verify the following on the transmitter module:
    - EXP OK LED is lit.
    - Expansion Active LED is ON.
  - d) Verify on the HMI (operator interface) that the PLC version number has been updated. If the equipment being used is listed below, refer to this list for the name of the screen that shows the PLC version:
    - *Blade*<sup>™</sup> saw— Detailed Diagnostics screen
    - *Cyber A/T*<sup>®</sup> saw— PLC screen
    - *Cyber*<sup>®</sup> saw— PLC screen
    - *SmartSet Pro*<sup>®</sup> saw— Service screen
    - Horizontal Stacker— The PLC version is not displayed anywhere.
5. If the PLC was just upgraded to an RX3i PLC as described in Service Bulletin 208, the following equipment requires a calibration before operating it. Refer to the Equipment Manual for calibration instructions if necessary.
  - *Cyber A/T* saw
  - *Cyber* saw

**END OF SERVICE BULLETIN**