

# Upgrading to PathPilot® v2.x

# TECHNICAL DOCUMENT

## 1.1 PRODUCT INFORMATION

**Product:** This kit includes one PathPilot® v2.0 Upgrade (PN 38249).  
-----

## 1.2 PURPOSE

This document gives instructions on installing the PathPilot® v2.0 Upgrade.

## 1.3 WHAT'S NEW IN PATHPILOT® V2.X

PathPilot® v2.x includes a new core operating system. While the PathPilot® v2.x operating system has the same features and functionality as PathPilot® v1.9.13, it has a number of improvements, including:

- **Wi-Fi networking.** For information, see "Enabling Internet Connection (Optional)" (page 8).
- **Dropbox stability.** For information, see "Connect to Dropbox (Optional)" (page 8).

When you upgrade PathPilot® from v1.x to v2.x, your ability to complete jobs using your machine should not be affected. If you have problems, we can help. Email [support@tormach.com](mailto:support@tormach.com) to contact Tormach Technical Support for guidance on how to proceed.

For a complete list of improvements included in PathPilot® v2.x, see [tormach.com/pp-updates](http://tormach.com/pp-updates).

# TECHNICAL DOCUMENT

## 2.1 PATHPILOT® V2.X UPGRADE PROCEDURE

**NOTICE!** Because PathPilot® v2.x is a major upgrade, it overwrites the internal drive of the PathPilot® controller. You must complete the upgrade procedures in the order specified. If you do not follow the order listed, you risk losing all G-code files, settings, and tool and offset information.

Complete the upgrade procedure in the following order:

1. "Update to PathPilot® v1.9.x" (below)
2. "Create Backup Files" (below)
3. "Install PathPilot® v2.x" (on the next page)

### 2.1.1 Update to PathPilot® v1.9.x

Before upgrading to PathPilot® v2.x, you must make sure the PathPilot® controller is updated to the latest version of PathPilot® v1.9.x. The latest version of PathPilot® v1.9.x has settings that improve the backup process, so you must update to this version before backing up your files.

To update to PathPilot® v1.9.x:

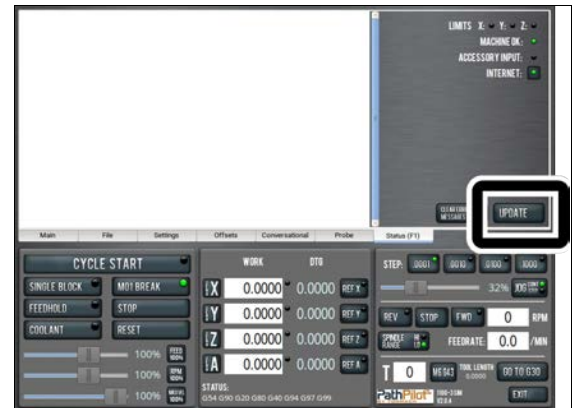
1. From the PathPilot® interface, locate the machine configuration and software version, as shown in the following example.



**Figure 2-1: Machine configuration and software version in PathPilot®.**

2. Make note of the current machine configuration, which you need to re-enter after upgrading.
3. Make note of the current software version.
4. From [tormach.com/pp-updates](http://tormach.com/pp-updates), identify the latest version of PathPilot® v1.9.x available.

5. Depending on the version of PathPilot® installed, do one of the following:
  - If you have the latest version of PathPilot® v1.9.x: Go to "Create Backup Files" (below).
  - If you do not have the latest version of PathPilot® v1.9.x: Go to Step 6.
6. From [tormach.com/pp-updates](http://tormach.com/pp-updates), download the most recent PathPilot® update file.
7. Transfer the PathPilot® update file to a USB drive.
8. On the PathPilot® controller, insert the USB drive.
9. Make sure the PathPilot® controller is powered on.
10. Push in the red **Emergency Stop** button.
11. From the PathPilot® interface, on the **Status** tab, click **Update**.



**Figure 2-2: Update button on the Status tab.**

12. Select the PathPilot® update file on the USB drive, and then click **Update**.
13. Follow the instructions on the screen to restart the PathPilot® controller.
14. When restarted, the PathPilot® v1.9.x interface displays.
15. Go to "Create Backup Files" (below).

### 2.1.2 Create Backup Files

1. On the PathPilot® controller, insert a blank, formatted USB drive.

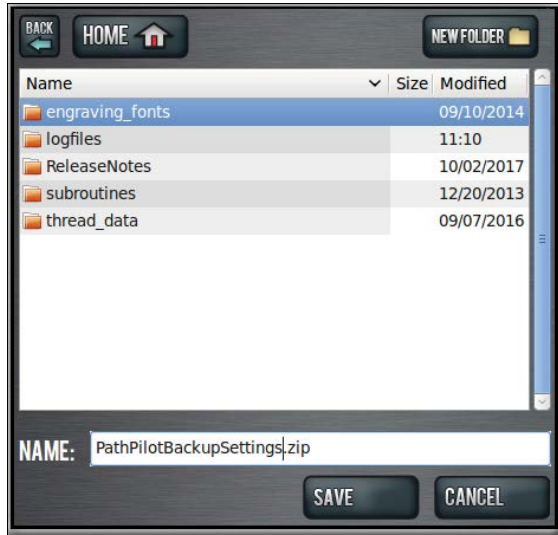
**NOTE:** To prevent errors when backing up and restoring files, only use a blank, formatted USB drive. Do not use the PathPilot® v2.0 Upgrade.

2. From the PathPilot® interface, on the **Main** tab, in the **MDI Line DRO** field, type **ADMIN SETTINGS BACKUP**.

# TECHNICAL DOCUMENT

3. Press **ENTER** on the keyboard.

PathPilot® generates a backup **.zip** file, and the **Admin Settings Backup** dialog box displays.



**Figure 2-3: Admin Settings Backup dialog box.**

4. From the **Admin Settings Backup** dialog box, specify where on the PathPilot® controller to save the backup **.zip** file.
5. Click **Save**.  
The backup **.zip** file is saved on the PathPilot® controller.
6. You must manually transfer the backup **.zip** file — along with other files you want to back up (like G-code programs) — from the PathPilot® controller to a USB drive. From the PathPilot® interface, on the **File** tab, in the **Controller File** window, select the backup **.zip** file and any other files you want to back up.



**Figure 2-4: Controller File window on the File tab.**

**NOTE:** Files must have unique names. If they do not, PathPilot® prompts you to overwrite or rename files, or cancel the file transfer.

7. To prevent errors, make sure you do not include the following folders:

- **logfiles**
- **media**

- **ReleaseNotes**
- **subroutines**
- **USB**

8. Click **Copy to USB**.

The files are copied and display in the **USB File** window.

9. From the PathPilot® controller, eject the USB drive.
10. From the PathPilot® interface, click **Exit**.
11. Verify that all files are properly saved. On a device other than the PathPilot® controller, insert the USB drive, and review the list of files on the USB drive.
12. *(Optional)* As an extra precaution, copy all the files onto the device.
13. Go to "Install PathPilot® v2.x" (below).

## 2.1.3 Install PathPilot® v2.x

1. On the PathPilot® controller, make sure that there are no USB drives inserted.
2. Insert the PathPilot® v2.0 Upgrade.
3. Verify that the red **Emergency Stop** button is pushed in. If it is not, you must push it in.
4. Power off, then power on, the PathPilot® controller.

# TECHNICAL DOCUMENT

- When the PathPilot® controller powers on, repeatedly press **F10**, **F11**, and **F12** on the keyboard in rapid succession until the BIOS boot menu displays.

**NOTE:** Do not press **F10**, **F11**, and **F12** at the same time. Depending on when you purchased the PathPilot® controller, the exact key required to access the **BIOS** boot menu varies.

A **BIOS** boot menu displays, similar to the following image.

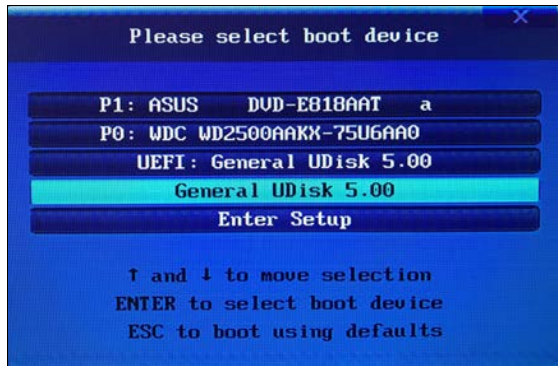


Figure 2-5: BIOS boot menu.

If the **BIOS** boot menu does not display, you must try pressing a different key to access it. Repeat Steps 4 through 5.

- From the **BIOS** boot menu, select the USB device option and press **ENTER** on the keyboard.

For example, select **General UDisk 5.00**.

**NOTE:** Do not select the option prefaced with **DVD**, **UEFI**, or **WDC**. For example, do not select **UEFI: General UDisk 5.00**. Depending on when you purchased the PathPilot® v2.0 Upgrade, the device name varies.

The **Startup Options** screen displays.

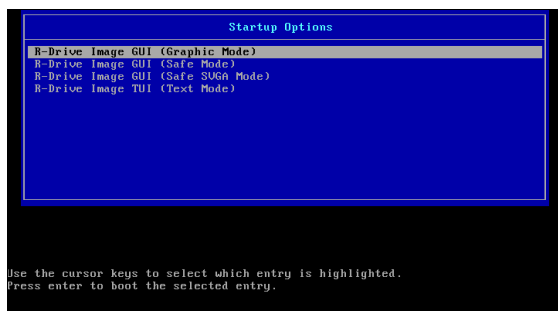


Figure 2-6: Startup Options screen.

If the **Startup Options** screen does not display, you must try selecting a different device to access it. Repeat Steps 4 through 6.

- From the **Startup Options** screen, select **R-Drive Image GUI (Graphic Mode)**.

**NOTE:** On the **Startup Options** screen, **R-Drive Image GUI (Graphic Mode)** is automatically selected if no action is taken in five seconds.

- Press **ENTER** on the keyboard.

The **R-Drive Image License Agreement** dialog box displays.

**NOTE:** If the **R-Drive Image License Agreement** dialog box displays and you did not press **ENTER** on the keyboard, this indicates that **R-Drive Image GUI (Graphic Mode)** was automatically selected from the **Startup Options** screen.

- From the **R-Drive Image License Agreement** dialog box, click **Yes**.

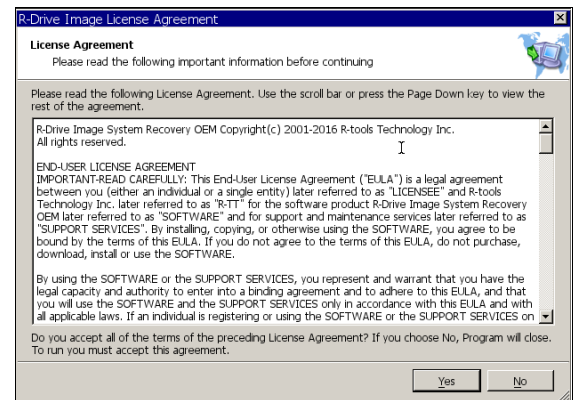


Figure 2-7: R-Drive Image License Agreement dialog box.

An **R-Drive Image** overwrite caution displays.

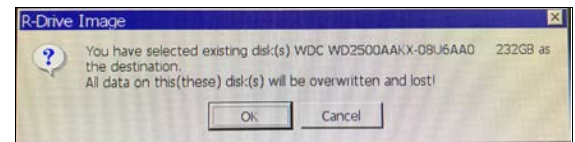
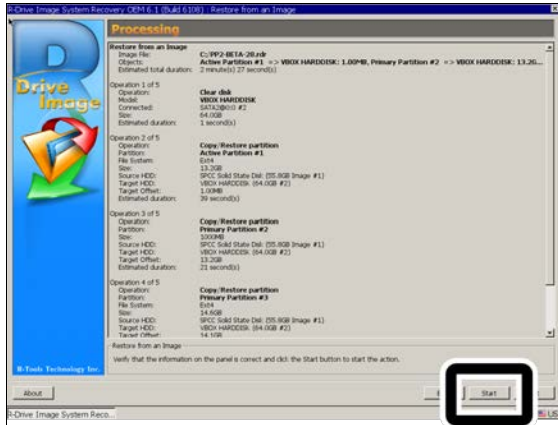


Figure 2-8: R-Drive Image overwrite caution.

# TECHNICAL DOCUMENT

10. Click **OK**.

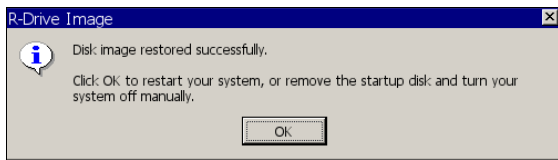
The the **R-Drive Image System Recovery** window displays.



**Figure 2-9: R-Drive Image System Recovery window.**

11. From the **R-Drive Image System Recovery** window, click **Start**.

The PathPilot® installation starts and continues for about 10 minutes. When done, an installation confirmation displays.



**Figure 2-10: Installation confirmation.**

12. Click **OK**.
13. From the PathPilot® controller, eject the PathPilot® v2.0 Upgrade.
14. Power off, then power on, the PathPilot® controller.
15. You must configure the PathPilot® controller. Go to "Configuring the PathPilot® v2.x Controller" (page 7).

# TECHNICAL DOCUMENT

## 3.1 CONFIGURING THE PATHPILOT® V2.X CONTROLLER

To configure the PathPilot® controller, complete the following steps in the order listed:

1. "Select Your Machine in the PathPilot® Interface" (below)
2. "Restore Backup Files" (below)
3. "Enabling Internet Connection (Optional)" (on the next page)
4. "Connect to Dropbox (Optional)" (on the next page)
5. "Enable Automatic Updates (Optional)" (page 10)

### 3.1.1 Select Your Machine in the PathPilot® Interface

1. From the **Tormach Machine Controller Configuration** screen, select the machine that you are using with the PathPilot® operating system.



**Figure 3-1: Tormach Machine Controller Configuration screen.**

The PathPilot® interface displays.

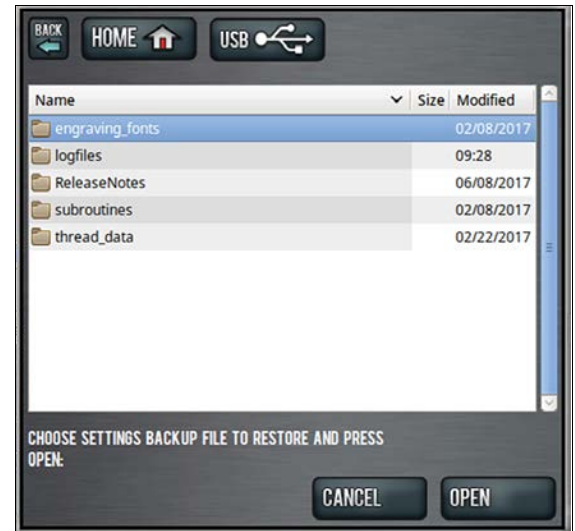
2. Go to the next section, "Restore Backup Files" (below).

### 3.1.2 Restore Backup Files

1. On the PathPilot® controller, insert the USB drive onto which you had copied your backup .zip file and other files.
2. From the PathPilot® interface, on the **Main** tab, in the **MDI Line** DRO field, type **ADMIN SETTINGS RESTORE**.

3. Press **ENTER** on the keyboard.

The **Admin Settings Restore** dialog box displays.



**Figure 3-2: Admin Settings Restore dialog box.**

4. From the **Admin Settings Restore** dialog box, navigate to the backup .zip file on the USB drive, and then click **Open**. The PathPilot® operating system restores the backup, then restarts.
5. If you backed up any other files onto the USB drive, you must manually transfer the files to the PathPilot® controller. From the PathPilot® interface, on the **File** tab, in the **USB File** window, select the files you want to transfer.



**Figure 3-3: USB File window on the File tab.**

**NOTE:** To navigate backward, click **Back**. To navigate to the top level, click **USB**.

6. From the **Controller File** window, select the folder into which you want to copy the files.
7. Click **Copy From USB**.

The files display in the **Controller File** window.

**NOTE:** Files must have unique names. If they do not, PathPilot® prompts you to overwrite or rename files, or cancel the file transfer.



# TECHNICAL DOCUMENT

8. If desired, you can enable an Internet connection in the PathPilot® controller, which allows you to use Dropbox with PathPilot®, and receive automatic PathPilot® updates. Go to the next section, "Enabling Internet Connection (Optional)" (below).

If you do not want to use these features, you have completed installing and configuring PathPilot® v2.x.

### 3.1.3 Enabling Internet Connection (Optional)

If desired, you can enable an Internet connection on your PathPilot® controller to receive automatic PathPilot® updates, and save time while completing common tasks, like transferring files with Dropbox instead of a USB drive.

To enable an Internet connection:

1. From the PathPilot® interface, on the **Status** tab, click the **Internet** button.



Figure 3-4: Internet button on the Settings tab.

The **Network Configuration** dialog box displays.

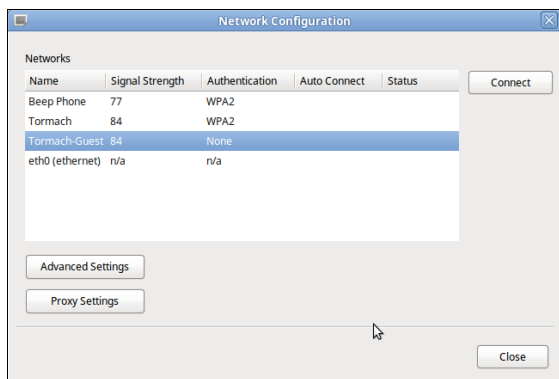


Figure 3-5: Network Configuration dialog box.

2. From the **Network Configuration** dialog box, in the **Networks** list, select the network you want to use, and then click **Connect**.

**NOTE:** Wi-Fi connection signal strengths are indicated on a scale of **0 to 100**, with 100 being the strongest. PathPilot® continually refreshes the signal levels to help you find the best placement for your Wi-Fi network adapter. Ethernet connections are indicated by a prefix in the format **eth[NUMBER]**. For example, **eth1**.

The PathPilot® operating system connects to the Internet using the network you specified. It continues to detect and connect to the Wi-Fi network, even after power cycles.

3. Once connected, you can use the Dropbox and automatic updates features. Depending on what you want, see the following procedures:
  - "Connect to Dropbox (Optional)" (below)
  - "Enable Automatic Updates (Optional)" (page 10)

### 3.1.4 Connect to Dropbox (Optional)

**NOTE:** Dropbox requires an Internet connection. If you haven't yet enabled it, see "Enabling Internet Connection (Optional)" (above).

If desired, you can connect your PathPilot® controller to a Dropbox account to easily synchronize your G-code files, which eliminates the need to transfer them with a USB drive.

**NOTE:** Dropbox stops synchronizing once the PathPilot® controller's internal drive has less than 500 MB of free space. To avoid this, we recommend that you organize your Dropbox account on a separate computer before you connect Dropbox to the PathPilot® controller. Also, make sure to only store files in the top-level that you want synchronized to your PathPilot® controller.

To connect to Dropbox:

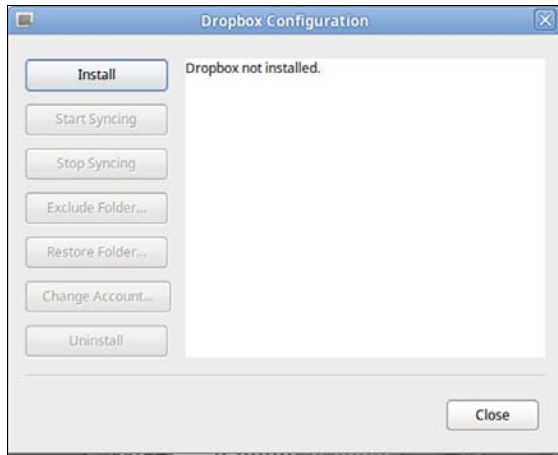
1. From the PathPilot® interface, on the **Main** tab, in the **MDI Line DRO** field, type **ADMIN DROPBOX**.



# TECHNICAL DOCUMENT

2. Press **ENTER** on the keyboard.

The **Dropbox Configuration** application displays.



**Figure 3-6: Dropbox Configuration application.**

3. Click **Install**.

The **Dropbox Installation** dialog box displays.

4. Click **OK**.

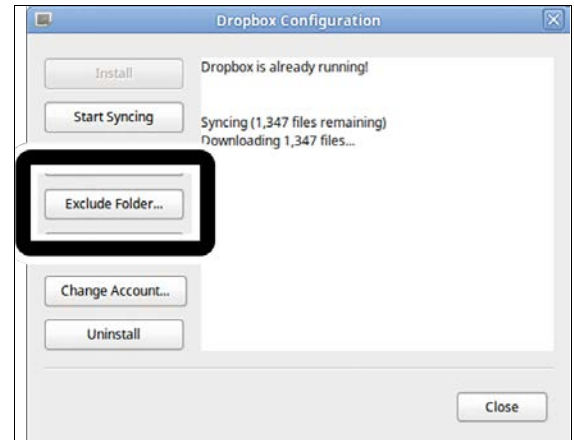


**Figure 3-7: Dropbox Installation dialog box.**

The Dropbox installation starts and continues for about a minute. When done, a web browser displays.

5. From the web browser, sign in or create a Dropbox account. The PathPilot® controller connects to the Dropbox account, creates a local **Dropbox** folder that is visible in **File** tab, and synchronizes the folder.

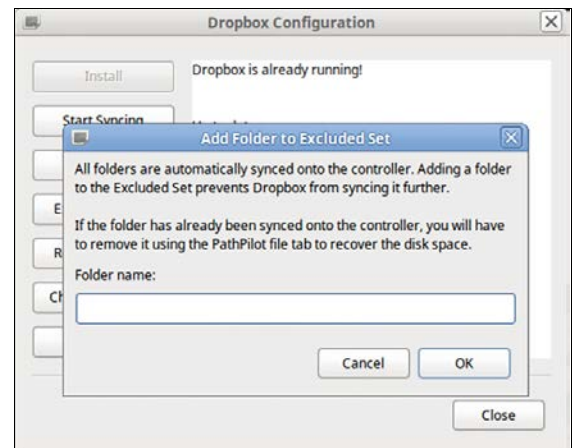
6. Because Dropbox stops synchronizing once the PathPilot® controller's internal drive has less than 500 MB of free space, we recommend that you exclude large or unrelated folders from synchronization. Click **Exclude Folder...**



**Figure 3-8: Exclude Folder button.**

The **Add Folder to Excluded Set** dialog box displays.

7. From the **Add Folder to Excluded Set** dialog box, type the name of the folder to exclude.



**Figure 3-9: Add Folder to Excluded Set dialog box.**

**NOTE:** You can only exclude folders, not individual files.

8. Click **OK**.
9. Click **Close**.  
The PathPilot® controller is now connected to Dropbox.

## 3.1.5 Enable Automatic Updates (Optional)

**NOTE:** Automatic updates require an Internet connection.



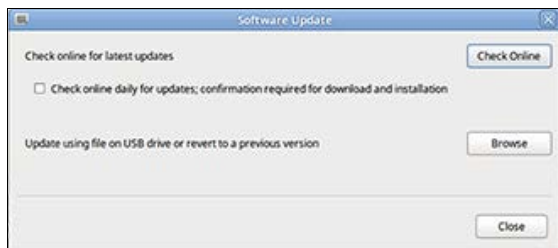
If you haven't yet enabled it, see "Enabling Internet Connection (Optional)" (page 8).

If desired, you can enable automatic updates for PathPilot®.

To enable automatic updates:

1. From the PathPilot® interface, on the **Status** tab, click **Update**.

The **Software Update** dialog box displays.



*Figure 3-10: Software Update dialog box.*

2. From the **Software Update** dialog box, select the **Check online daily for updates; confirmation required for download and installation** checkbox.
3. Click **Close**.

When future updates are available, the **Status** tab displays a notification.

## 4.1 TROUBLESHOOTING

### 4.1.1 Reverting from PathPilot® v2.x to v1.x

If you need to restore to a previous version of the PathPilot® operating system, use the PathPilot® Restore DVD (PN 35246) included with your PathPilot® controller. If you do not have the PathPilot® Restore DVD, we can help. Email [support@tormach.com](mailto:support@tormach.com) to contact Tormach Technical Support for guidance on how to proceed.