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Update XPR Firmware through Phoenix over EtherCAT®

Application Note

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Introduction

You can check for and apply XPR170/300 firmware updates over EtherCAT in Phoenix 10.13 and subsequent versions (including on all new CNCs and CNCs with Image 50 and subsequent images).

> 📄 XPR460 firmware is not included in the EDGE Connect Suite Installer. To update XPR460 firmware, use the XPR Web Interface or a USB memory stick. Refer to Hypertherm Field Service Bulletin 10084813 available at hypertherm.com/docs.

Before you begin

XPR170/300 firmware can only be updated over EtherCAT if **all of these conditions** are met:

- **Phoenix 10.13 or later** is installed on your CNC.

  > 📄 To get the latest XPR firmware, make sure that you have the latest version of Phoenix installed.

- **At least one XPR170/300 is selected** on the Station Configuration screen in Phoenix.
- The main control PCB on the XPR170/300 already has **firmware version M or later** installed.

  > 📄 To find out which PCB firmware versions are installed on your XPR cutting system, refer to the **Other** tab in the XPR Diagnostics View at the CNC.

  > 📄 To update XPR170/300 firmware from version L to M or to update XPR web interface firmware, refer to Hypertherm Field Service Bulletin 809820.

- **The XPR's remote on-off** switch is in the ON position.
- If automatic checks for firmware updates were manually disabled with a password, use the ENABLEAUTOFOE password to enable the feature again.

  > 📄 To prevent firmware updates on a specific XPR, take that XPR out for service before updating firmware on other XPRs. **All XPR460s on the network must also be taken out for service.** For instructions, refer to *Cut and Mark with an XPR® on an EDGE® Connect CNC* (809900) available at hypertherm.com/docs.

Check for XPR170/300 firmware updates

By default, Phoenix does an automatic check for XPR170/300 firmware updates when it launches. You can also do a manual check for XPR firmware updates.

If firmware updates are available, you must apply **all** available updates **or none** of them. Only advanced users doing troubleshooting can select which firmware files to update. Refer to .

To disable Phoenix from doing automatic checks for XPR firmware updates, refer to .

About automatic checks for firmware updates

If the conditions in on page 3 have been met, then Phoenix does an automatic check for XPR firmware updates when it launches.

1. Start Phoenix 10.13 or later.

2. A **"Checking for firmware updates. Please wait…"** dialog is shown (usually for a very short time).

   - If firmware updates are available, a dialog shows a list of **"Plasma supply firmware updates."** Refer to on page 5.

   - If you do NOT see a dialog with a list of "Plasma supply firmware updates", then your firmware is up to date with the installed Phoenix version. Continue with your standard cutting operations.

     > The **"No updates found"** dialog is not shown during automatic checks for firmware updates. That message only shows if you do a manual check for firmware updates **and** no updates are found. Refer to the next section.

Do a manual check for firmware updates

To find out if the XPR170/300s on your EtherCAT network have the newest firmware that is compatible with your Phoenix version:

1. On the **Main screen** in Phoenix, select **Setups > Password**.

2. Type **CHECKFOEUPDATES**. If necessary, the EtherCAT network starts automatically.

3. If a dialog shows:
   - **"No updates found"**, then your firmware is up to date with the installed Phoenix version. Continue with your standard cutting operations.

   - **"Plasma supply firmware updates",** refer to on page 5.

Apply or cancel XPR firmware updates

1. If firmware updates are available, a dialog shows the firmware to update and the approximate time that is necessary to complete the updates.

    Example
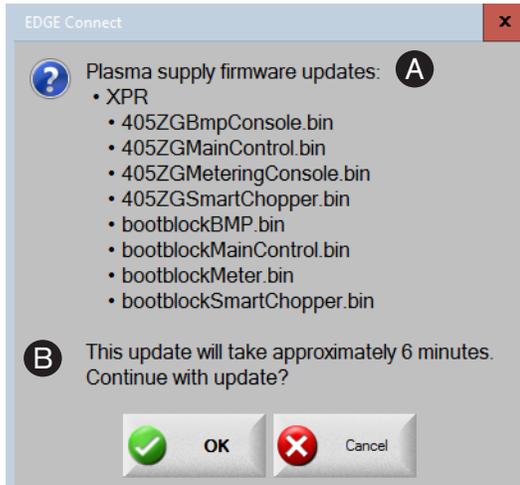
    A **Firmware files with updates available**
    - This list includes all of the newest XPR firmware that is compatible with the installed Phoenix version.*****
    - To see which XPR firmware versions are included in a Phoenix version, refer to the Phoenix Release Notes (809720).

    B **Estimated time to complete the updates****

    * To get the latest XPR firmware, make sure that you have the latest version of Phoenix installed.

    ** The time estimate changes in relation to the file sizes and number of XPRs with updates available.

    - If you do not want to apply firmware updates now, select **Cancel**.
    - To apply the updates now, select **OK**.

        📄 If an XPR is out for service, you are prompted to put the XPR back in service before you can update that XPR's firmware. If you do not want to update an XPR's firmware, keep the XPR out for service.

2. To monitor the firmware updates, refer to the status messages in blue font below the part preview area on the Phoenix Main screen.

3. A dialog shows when the update is complete. Select **OK** to restart the network and continue with standard cutting operations.
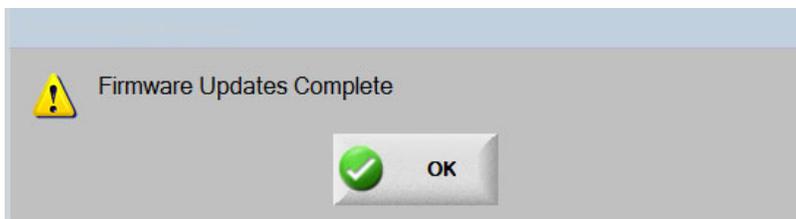
    You can see what firmware versions have been installed if you go to the **Other** tab in the XPR Diagnostics View at the CNC. If you have a problem, refer to

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Disable/enable automatic checking for XPR170/300 firmware updates

By default, Phoenix checks for available XPR170/300 firmware updates when it launches.

Disable automatic checks for firmware updates

To prevent Phoenix from doing automatic checks for firmware updates:

1. On the **Main screen** in Phoenix, select **Setups > Password**.

2. Type **DISABLEAUTOFOE**.

When automatic firmware updates are disabled, Phoenix does not check for or apply firmware updates again unless you take either of these actions:

■ Do a manual check for firmware updates with a password.

■ Enable automatic checks for firmware updates with a password.

Updating an EDGE Connect with the EDGE Connect Suite Installer does NOT re-enable automatic checks for XPR firmware updates.

Enable automatic checks for firmware updates

If automatic checks for firmware updates are disabled, use the **ENABLEAUTOFOE** password to re-enable them.

1. On the **Main screen** in Phoenix, select **Setups > Password**.

2. Type **ENABLEAUTOFOE**.

3. Restart Phoenix and refer to <u>Check for XPR170/300 firmware updates</u> on page 4.

Troubleshooting

The table below gives common problems and solutions to help with basic troubleshooting tasks.

Problem	Causes	Solution
The firmware update did not work.	• The XPR that you wanted to update was taken out for service when the firmware update was attempted. • An XPR460 was active on the EtherCAT network when the firmware update was attempted. • The installation process was canceled before the updates were completed.	Do the update process again and make sure that: • All XPRs that you want to update are active on the EtherCAT network. • XPR460s (if any) are taken out for service. • You do not cancel the installation before it completes.
The prompt to install firmware updates is not shown.	• XPR firmware is already up-to-date. • Automatic firmware updates are disabled. • The criteria in Before you begin on page 3 has not been met.	• To make sure that your firmware is up to date, refer to Do a manual check for firmware updates on page 4. • To enable automatic firmware updates, refer to page 6. • Review Before you begin on page 3.
The firmware update completed, but now the XPR has node reset or other errors or faults.	After the firmware updates completed and the EtherCAT network restarted, the XPR Main Control PCB did not fully refresh its data.	• Remove the power from the XPR plasma power supply. Supply the power to the XPR cutting system again. Refer to the operator manual supplied with your XPR plasma power system for details. • Restart the CNC.

If you continue to have problems updating firmware over EtherCAT, you can:

- Apply firmware updates with the XPR web interface or a USB memory stick instead. Refer to Hypertherm Field Service Bulletin 809820 available at hypertherm.com/docs.

- Contact your OEM or Hypertherm Technical Services for advanced help. If necessary, they can manually update XPR170/300 firmware as described on page 8.

Manually update XPR170/300 firmware (advanced)

⚠ CAUTION

The manual update method lets you install incompatible firmware files which may prevent the XPR from operating. Hypertherm recommends using the automatic method of updating firmware (on [page 4](#)) to make sure that all of the newest compatible firmware is installed.

The manual method of updating firmware over EtherCAT is **only intended to help advanced users to** do either of these troubleshooting tasks:

- Install an older version of firmware

- Update firmware on an individual XPR170/300 component

1. On the Main screen in Phoenix, select **Setups > Passwords**.

2. Type **FOEUPDATE** and then select **OK**.

3. In the file selection dialog, select all firmware (***.bin**) files that you want to update on all available XPRs. Hypertherm recommends that you update all firmware files at the same time.

   Example
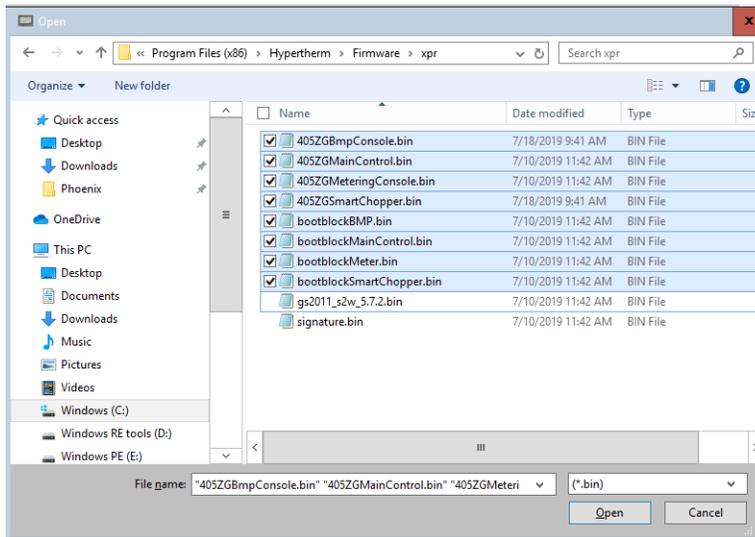
   - The XPR Web Interface firmware files cannot be updated over EtherCAT. To update XPR web interface firmware, refer to Hypertherm Field Service Bulletin 809820.

   - The EDGE Connect Suite Installer saves the newest compatible XPR firmware files on your CNC at: **C:\Program Files (x86)\Hypertherm\Firmware\XPR**. To install an older version of XPR firmware, replace the files in this location. **Do not rename the firmware files.**

4. Click **Open** and then wait while the EtherCAT Network resets.

5. A dialog shows the firmware to update and the **approximate time** that is necessary to complete the updates. Refer to [Apply or cancel XPR firmware updates](#) on page 5.