

# ***Phoenix™ Software*** ***Version 9.76.4***

## **リリースノート**

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これは、バージョン 9.75.2. から始まる、Phoenix 9.0 リリースノートの部分翻訳です。9.75.2 以前の Phoenix ソフトウェア リリースノートについては、Phoenix 9.0 リリースノートの英語版を参照してください。

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<b>ソフトウェアの更新 .....</b>	<b>7</b>
はじめに .....	7
ソフトウェアの更新 .....	8
ヘルプの更新 .....	8
他の使用言語でも更新する .....	8
切断条件表の更新 .....	9
変更した切断条件表のバックアップ .....	9
切断条件表の更新 .....	9
Hypernet ファームウェアの更新 .....	10
<b>Phoenix Software Version 9.76.4 リリースノート .....</b>	<b>13</b>
Resolution .....	13
<b>Phoenix Software Version 9.76.3 リリースノート .....</b>	<b>15</b>
Features .....	15
Improvements .....	15
Resolutions .....	15
<b>Phoenix Software Version 9.76.2 リリースノート .....</b>	<b>17</b>
Ease of use and embedded process expertise .....	17
Software enhancements .....	17
Software resolutions .....	17
Motion support .....	18
Software resolutions .....	18
Plasma support .....	18
Software enhancements .....	18
Software resolution .....	18

Waterjet support .....	19
Software resolutions .....	19
Bevel support .....	19
Software enhancements .....	19
Software resolutions .....	19
Sensor THC support .....	19
Software enhancements .....	19
Software resolutions .....	20
Translations .....	20
Channel partner support .....	20

**Phoenix Software Version 9.76.1 リリースノート ..... 21**

Ease of use and embedded process expertise .....	21
Software enhancements .....	21
Software resolutions .....	22
Motion Support .....	22
Software enhancements .....	22
Software resolutions .....	22
Waterjet support .....	23
Software enhancements .....	23
Bevel support .....	23
Software enhancements .....	23
Software resolutions .....	23
Sensor THC support .....	23
Software enhancements .....	23

**Phoenix Software Version 9.76.0 リリースノート ..... 25**

Waterjet support .....	25
Software enhancements .....	25
Software resolutions .....	26
Motion support .....	27
Software enhancements .....	27
Software resolutions .....	27
Ease of use and embedded process expertise .....	28
Notification .....	28
Software enhancements .....	28
Software resolutions .....	28
Plasma support .....	29
Software enhancements .....	29
Software resolutions .....	30

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ArcGlide® THC support .....	30
Software resolutions .....	30
Bevel support .....	30
Software resolutions .....	30
Pipe and tube cutting support .....	31
Software resolutions .....	31
HFL010, HFL015, HFL020, HFL030 HyIntensity Fiber Laser support .....	31
Software resolutions .....	31
Firmware updates included in Phoenix version 9.76 .....	32
HyIntensity Fiber Laser .....	32
Documentation changes .....	32
<b>Phoenix Software Version 9.75.2 リリースノート .....</b>	<b>33</b>
作動サポート .....	33
ソフトウェアの強化 .....	33
使い易さと組み込まれた切断条件搭載 .....	33
ソフトウェア上の解決 .....	33
プラズマサポート .....	34
ソフトウェア上の解決 .....	34
THC サポート .....	34
ソフトウェア上の解決 .....	34
翻訳サポート .....	34



以下のセクションでは、Phoenix ソフトウェアと Hypernet® ファームウェアにおける変更について説明します。

### はじめに

Hypertherm は Phoenix ソフトウェアを定期的に更新していますので、これらの更新について定期的にチェックなさることをお勧めします。さらに、ゴーストイメージの復元後は、最新版のソフトウェアに更新することが必要です。最新のソフトウェアは、ウェブサイト [www.hypertherm.com](http://www.hypertherm.com) からダウンロードできます。「Phoenix ソフトウェア更新」を検索して、Phoenix ソフトウェアの更新ページからダウンロードしてください。

- Phoenix ソフトウェア更新 (update.exe)
- Phoenix ヘルプファイル (Help.exe)
- 切断条件表 (CutChart.exe)

ウェブページの説明に従って、ご希望の言語の最新版をダウンロードしてください。Phoenix ソフトウェアの更新に際しては、以下のガイドラインに従ってください。

- システムファイルのバックアップ：メイン画面から、ファイル > ディスクに保存 > システムファイルをディスクに保存の順に進みます。
- Hypertherm.com からダウンロードしたファイルを USB メモリスティックのルートディレクトリにコピーします。
- ソフトウェア更新後、CNC を再起動します。

### 注：

- ❑ 重要 EDGE® Pro CNC が Phoenix V9.50.0 またはそれ以降のバージョンに含まれていない場合は、V9.50.1 またはそれ移行のバージョンに更新する前に [Return.Materials@Hypertherm.com](mailto:Return.Materials@Hypertherm.com) にご連絡の上、無料のハードドライブアップデートを入手してください。
- ❑ Phoenix ソフトウェアの更新版を CNC にダウンロードする場合は、切断条件表を更新する前に、ソフトウェアをダウンロードしてインストールすることが必要です。
- ❑ 対応する更新版のソフトウェアをインストールするまでは、更新した切断条件表を使用しないでください。
- ❑ ソフトウェアと切断条件表の両方を更新した後でソフトウェアを以前のバージョンに復元する場合は、対応する切断条件表も以前のバージョンに復元しなければなりません。

### ソフトウェアの更新

英語版の Phoenix ソフトウェアアップデートは、update.exe. と名付けられています。英語以外の言語でソフトウェアアップデートをダウンロードする場合、ファイル名は language\_Phoenix9.zip となります。.zip ファイルから update.exe ファイルを解凍し、メモリスティックのルートフォルダーに保存します。

1. CNC の USB ポートに、update.exe ファイルを含むメモリスティックを挿入します。  
update.exe がメモリスティックのルートフォルダーにあることを確認してください。
2. メイン画面で、設定 > パスワードの順に進みます。キーボードを使用していない場合は、画面をダブルタップすると画面上にキーボードが表示されます。
3. UPDATESOFTWARE (ひと続きの一語) とタイプして、Enter キーを押します。CNC はソフトウェアを更新し、更新が終了するとシステムを再起動します。

### ヘルプの更新

1. CNC の USB ポートに、Help.exe ファイルを含むメモリスティックを挿入します。  
Help.exe がメモリスティックのルートフォルダーにあることを確認してください。
2. メイン画面で、設定 > パスワードの順に進みます。キーボードを使用していない場合は、画面をダブルタップすると画面上にキーボードが表示されます。
3. UPDATEHELP (ひと続きの一語) とタイプして、Enter キーを押します。Phoenix ソフトウェアは自動的にメモリスティックを読み取り、新しいヘルプファイルをインストールします。

### 他の使用言語でも更新する

CNC で使用する他の言語でも更新する場合は、各言語ずつ順番に更新することが必要です。

1. 設定 > パスワード > スペシャルセットアップの順に進み、スペシャルセットアップの画面を開きます。
2. 更新を行う言語を選択します。CNC はその言語で再起動します。
3. Hypertherm.com から使用言語の Phoenix ソフトウェアをダウンロードします。ファイル名は language\_Phoenix9.zip です。
4. 使用言語でヘルプファイルをダウンロードします。ファイル名は language\_Help.zip です。
5. .zip ファイルから update.exe ファイルを解凍し、メモリスティックのルートフォルダーに保存します。
6. .zip ファイルから help.exe ファイルを解凍し、メモリスティックのルートフォルダーに保存します。
7. CNC の USB ポートにメモリスティックを挿入します。
8. 設定 > パスワードの順に進み、UPDATESOFTWARE (ひと続きの一語) とタイプして、Enter キーを押します。CNC はソフトウェアを更新し、更新が終了するとシステムを再起動します。



9. CNC が再起動したら、設定 > パスワードの順に進み、UPDATEHELP（ひと続きの一語）とタイプして、Enter キーを押します。Phoenix ソフトウェアがヘルプファイルを更新します。

## 切断条件表の更新

Hypertherm は切断条件表を .fac と .usr の 2 つのファイル形式で提供しています。工場出荷時に提供されている切断条件表は .fac ファイルです。これらの切断条件表は変更できません。.usr 形式の切断条件表にはどのような変更でも追加することができ、Save Process（プロセスの保存）ソフトキーを使って保存します。

切断条件表更新ファイル (CutChart.exe) には .fac と .usr の両方の切断条件表ファイルが含まれています。更新するとすべての .usr 切断条件表が自動的に上書きされます。アップデートをインストールする前に、変更された切断条件表をバックアップしてください。

Hypertherm は変更した切断条件表をカスタム切断条件表として保存することをお勧めします。カスタム切断条件表を作成すると、Phoenix ソフトウェアは一意の名前の .usr ファイルを作成します。これにより、工場出荷時の切断条件表とカスタム切断条件表の両方が CutChart.exe 内のファイルで上書きされることを防ぎます。詳しい方法については、Phoenix 取扱説明書 (806400) のカスタム切断条件表のセクションを参照してください。

## 変更した切断条件表のバックアップ

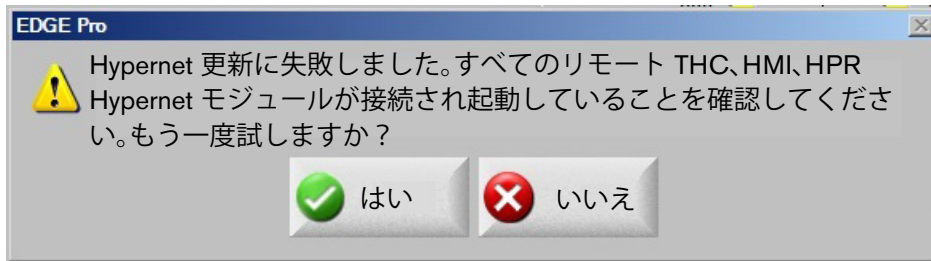
1. CNC の USB ポートにメモリスティックを挿入します。
2. メイン画面で、Plasma 1 Cut Chart（プラズマ 1 切断条件表）のような、切断条件表のソフトキーのひとつを選択します。
3. [切断条件表の保存] のソフトキーを選びます。Phoenix は Plasma 1（プラズマ 1）トーチ種類に関連するすべての切断条件表をメモリスティックにコピーします。
4. CNC で選択した Plasma 2（プラズマ 2）、Marker 1（マーカー 1）などの各プロセス種類にこの手順を繰り返します。

## 切断条件表の更新

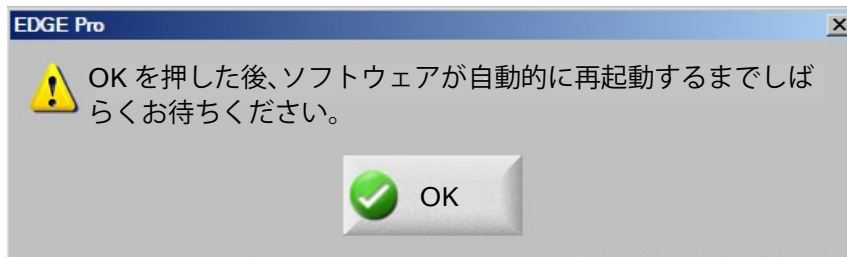
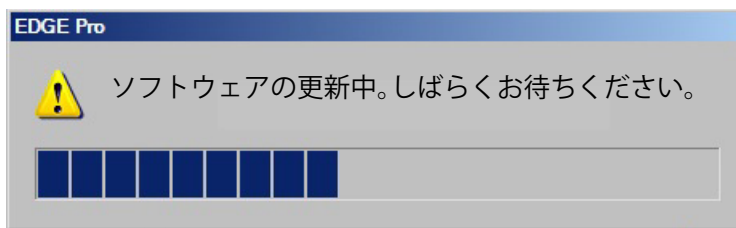
1. CNC の USB ポートに CutChart.exe ファイルを含むメモリスティックを挿入します。  
メモリスティックのルートフォルダーに CutChart.exe があることを確認してください。
2. メイン画面で、[プロセス] を選び、Plasma 1 Cut Chart（プラズマ 1 切断条件表）のような、切断条件表のソフトキーのひとつを選択します。
3. 切断条件表のソフトキーの読み込みを選択し、メモリスティックから切断条件表を読み込むよう指示が出たら、「はい」を選択します。Phoenix は切断条件表を抽出し、それをハードドライブにコピーします。
4. 変更した切断条件表をハードドライブに再度コピーする場合は、Phoenix を終了し、Windows® Explorer を使用して .usr ファイルをハードドライブにコピーします。切断条件表のフォルダーは、C:\Phoenix\CutCharts にあります。

### Hypernet ファームウェアの更新

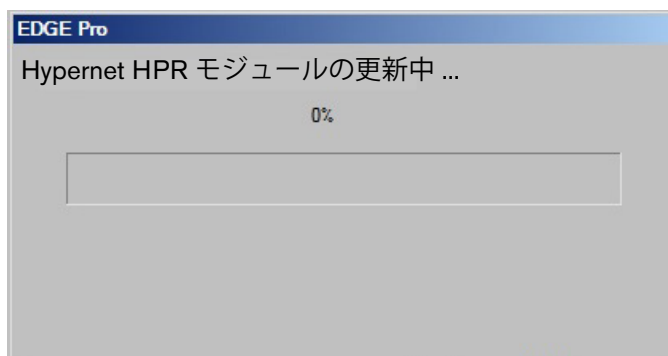
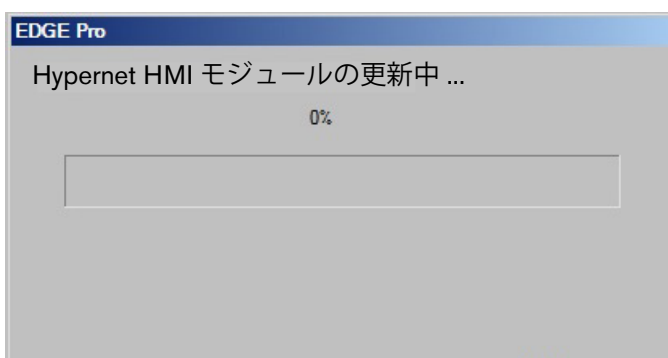
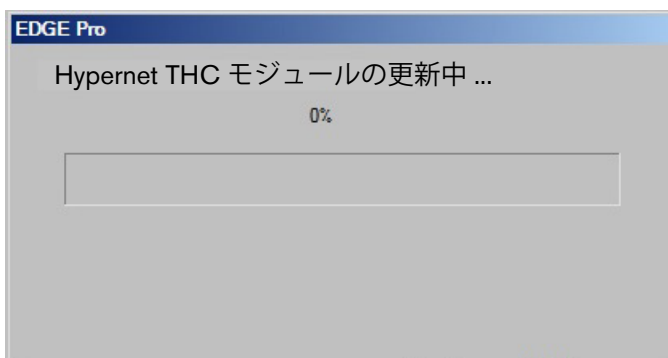
Hypernet を使用している場合は、Phoenix のソフトウェア更新が終了し、システムが再起動されると、Hypernet ファームウェアは自動的に更新を行います。このファームウェアのアップデートが正しく行われるためには、Hypernet に接続されているすべてのシステム（ArcGlide THC、HPR、CNC、HMI など）がファームウェアのアップデートを実行する前に起動していなければなりません。そうでない場合は、以下に示されているような通信エラーが生じます。



以下のスクリーンショットは、THC、HMI、HPR がすべて Hypernet に接続されている環境で Hypernet ファームウェアの更新が正しく行われたときにメッセージが表示される順番を示しています。



Hypernet ファームウェアの更新中、以下のメッセージが表示されます。



CNC が Hypernet ファームウェアを更新したら、ソフトウェア更新は完了です。



### Resolution

One of the 3 files needed to add support for a software patch that resolves a limitation in a revised LS7267 Encoder Integrated Circuit device, which is used on current analog motion control cards, is missing in the 9.76.3 release dated 3/31/17. The file which supports the EDGE Pro Ti was not included. The 9.76.4 release includes the missing file. All customers, including those who have updated to 9.76.3, should update to 9.76.4



### Features

- Added support for HPR XD 80A and 400A SilverPlus electrodes.

### Improvements

- Changes made to Phoenix MCC code to correct faulty encoder readings from a revised LS7267 encoder integrated circuit device that can fail to return the correct encoder position.
- Added support for F10, Stop Button, and Safety Mat inputs to turn off Test Lifter function from within the process screen.

### Resolutions

- Changed the Torch Height Disable signal to turn off when exiting a Bevel Corner Loop, and the proper Cut Speed is being used after exiting a Bevel Corner Loop.
- The Test Lifter button now activates correctly when the THC is near the top of the Lifter Slide.
- The Stop button is being honored even when the Start and Stop buttons are pressed very quickly in succession.
- A Joystick controlled rip cut can now be started after an E-stop occurs in the middle of a previous Joystick controlled Rip Cut.
- Occasionally, when the torch was at the first pierce point, a “Traversing” message was shown giving the user the impression that Phoenix was locked up. This issue occurs when the station is not enabled, the part program contains an M37 Txx code, and the THC is in automatic mode. Now the program pauses and the correct status message, “Need Station Select”, is shown.
- When activated immediately after starting a part (Trialing or Cutting), pressing the front panel E-stop no longer results in improper motion from the Return to Start button.
- Resolved a Phoenix exception issue when pressing Stop during Laser Pointer Offset in the Cut Pro Wizard.
- Resolved an issue with switching from Mild Steel to Stainless Steel with HPRXD in the Cut Pro Wizard when picking a cutting process. The process is now updated correctly and the screen is refreshed.
- A Pierce Count Overrun Check was added to prevent getting stuck on the Pause screen or with a Phoenix Exception error.

- Resolved an issue where Cutting or Trialing large parts at extremely slow speeds caused motion issues.
- Resolved an improper Return to Start motion after an E-stop when using the Part Program Resume/Power Loss function.
- Resolved an issue where pressing the E-Stop, while the Cut Pro or Align Wizards are active, resulted in the Manual Screen displaying unresponsive OK and Cancel buttons.
- Resolved a Phoenix Exception Error that occurred because of excess Speed pot activity or electrical noise introduced into the Speed pot.
- Resolved an issue where backing up on path continuously to the beginning of the part can cause IHS to occur.
- Resolved an issue with the Circle in Cross Simple Shape containing redundant G41 M07 G41 M07 codes.



### Ease of use and embedded process expertise

#### Software enhancements

- Remote Help™ can now be used with URL-launch-capable screen-sharing tools by automatically detecting and loading a URL file (RemoteHelp.txt) from a USB memory stick attached to the CNC. Bomgar™, TeamViewer®, and ScreenConnect® are some examples of screen-sharing tools that can be used. Also, the URL was updated from support.hypertherm.com to remotehelp.hypertherm.com. There is detailed information in field service bulletin 807560, which can be found in the downloads library on Hypertherm.com.
- Phoenix now recognizes pipe and tube parts when the comment Pipe Part or Tube Part appears as the first line in the part program.
- A new output (Error During Program) was added that can be used to turn on for any fault conditions or plasma system errors that pause a program or block a part program from completing. The Program Running output was also improved so it does not stay on for any fault conditions or plasma system errors that pause a program or block a part program from completing.

#### Software resolutions

- Resolved an issue where a conflicting process message was displayed for oxyfuel stations using Sensor THCs that are assigned to other stations and processes for positioning.
- Resolved an issue where users were not getting valid values when a fault occurred while using Sample Arc Voltage (SAV). The value for each sample is now set to zero volts (0 V) before taking the next valid sample. If a problem occurs that prevents a new sample from being taken, such as losing the arc while cutting, the sample value will be 0 V. A zero volt value prevents the SAV algorithms from running.
- Resolved an issue where SilverPlus® was shown as an option on the Change Consumables screen when there was no SilverPlus electrode for that process. SilverPlus is no longer shown for HPRXD Bevel or HPRXD Thick Torch types.
- Resolved an issue that produced a nick in parts when cutting transitioned from a straight line to an arc due to an unneeded acceleration or deceleration at the line/arc intersection.
- Resolved an issue where updates to the Kerf and Speed edit fields in the Watch window were not updating correctly.
- Resolved an issue where Phoenix would stop working after loading a large part. Phoenix now finishes drawing the part on screen before allowing the user to exit a setup or file load screen.

- Resolved an issue that caused an MCC Error or File Not Found error when loading a part that used the M65 code (Auto Reload) at the end of a program. Phoenix now recognizes file names that begin with a number when looking for the next file in a sequence of files.

## Motion support

### Software resolutions

- S curve calculations were improved to prevent motion issues that could occur when trialing bevel part programs that include F codes, Phoenix now limits the speed of motions that use Bevel Angle Change on the Fly (BACF). Phoenix also limits the speed of these motions when you use Jog on Path.
- Resolved an issue that caused motion to stop or jerk when using the increase or decrease speed soft keys while cutting or running a part in Trial Mode, when the part program had Z-axis commands between each hole.
- Resolved Kerf Too Large, Segment has Disappeared and subsequent motion jerk issue when performing miter cuts from 11 to 17 degrees.
- Resolved an issue that caused a part program to shift by one or more drill points after pausing and resuming. This occurred when a part program was (1) paused at a drill point, (2) the drill was moved off path, (3) return to path was selected, (4) before restarting, trial mode was selected for one or more drill points, and (5) the program was paused again.
- Resolved an issue where motion stopped at pierce but the speedometer continued to indicate the machine was still moving.

## Plasma support

### Software enhancements

- Pierce Control for the MAXPRO200® now turns on with Cut Control versus after Cut Sense. Also, if preflow during IHS is enabled, the Pierce Control output will turn on when the Sensor THC lifter begins to lower to the plate during the IHS, but will not turn on between cuts, as occurs with the Cut Control and Hold outputs.
- The Change Consumable screen now shows the SilverPlus electrode for the 130 A, mild steel, HSD130 process.
- The MAXPRO200 cut charts now support 16 mm and 19 mm thicknesses for 130 A and 200 A processes.
- Cut charts and EIA code F28 were added to support Powermax 65/85/105 stainless steel cutting using F5 gas.
- Phoenix now only pauses a part program when an HPR produces a No Pilot Arc, No Arc Transfer, Lost Transfer, or Lost Current error while piercing, and displays the reason for the pause. Previously Phoenix paused the program any time the HPR produced one of these errors, not just while piercing. The program still pauses on HPR errors greater than error code 64.
- Resolved an issue where adding or removing a specific material in a cut chart caused the Plasma Cut Chart Combo boxes to reset and default to the HPR process. You had to navigate back to the cut chart you were using originally.

### Software resolution

- Powermax lead lengths greater than 15.24 m are now recognized by Phoenix through serial communications.

## Waterjet support

### Software resolutions

- Resolved an issue where the Abrasive Control and Cut Control signals could activate if the Test Lifter soft key was pressed on the Main screen, the Setups screen was entered and exited, and then Change Cut Mode was pressed.
- Up to a 2-second delay (-2) is now supported for Abrasive On/Off and Water Off. If the delay exceeds -1 second for either of the two Off times, only the first -1 second delay is within the motion section. The remainder of the time will be after Cut Off and prior to lifter retract.

## Bevel support

### Software enhancements

- Resolved an issue for bevel and pipe machines, where the Manual Options Move Tilt dialog was grayed out after a tilt fault and re-homing.
- Resolved an issue where Bevel Offset was skipped after moving forward 2 pierces, when using BACF or BRACF (Bevel and Rotation Angle Change on the Fly) bevel motions for the first shape of a repeated nest of identical shapes.
- Resolved an issue that occurred when a bevel cut was stopped and Move Part was selected. The wrong bevel angle was used when cutting resumed. The Bevel A command was not reached after resuming near the end of a bevel corner loop.
- Resolved an issue that caused a torch collision when a bevel cut was stopped, Move Part was selected, and then the cut was resumed. Torch Height Disable deactivated too soon when resuming in a bevel corner loop.

### Software resolutions

- Resolved an issue that prevented bevel offsets from being applied when a cut was resumed after being paused during an IHS with an ABXYZ bevel part program that has a command after the M07 cut on.
- Resolved an issue with rounded bevel parts using M29 and M28 follower codes. Tangent Angle Updates are now blocked during BACF A axis motions where the C axis is not being commanded and M28 (Follower Disabled) is Active.
- Resolved an issue where the Contour Bevel Head (CBH) Rotate soft key remained grayed out in manual options after the CBH was homed.

## Sensor THC support

### Software enhancements

- Added a check to block upward THC motion past the upper limit, even if retracting after IHS and the Nozzle Contact Sense signal has not turned off.

### Software resolutions

- When the distance to the plate surface is unknown, IHS plate sensing now starts at 12.7 mm from the home position of the THC. This maximizes the IHS distance and prevents unintended nozzle contact (home switch) detection at the top of the slide.

### Translations

- Resolved an issue where the Spanish version of Phoenix would return an error when opening parts from the Simple Shape Library.
- Corrected an error where Italian text was shown instead of Russian on the Plasma Process screen soft key for HPR plasma.

### Channel partner support

- Resolved an issue where the OEM Limit Tool only recognized hardware key IDs that contained 7 or 8 alphanumeric characters. When a valid 6 character ID was entered an error occurred. The OEM Limit Tool now recognizes IDs with 6 to 8 characters.

### Ease of use and embedded process expertise

#### Software enhancements

- Added the ability to split ProNest® CNC output files using M65 codes and numerical file naming so files load faster. Support was added for retention of the skew angles across files separated by M65 codes, resume last part, and power loss recovery within each M65 split file so the next M65 file/section loads automatically.
- A “Ready To Move” message was added in the Homing screens to prevent unwanted motion from a single key press. NOTE: This message is enabled by default and requires the user to press an additional dialog box before motion occurs. Use of this feature is encouraged, but can be disabled in the Special Setups Message list box. A password is required to disable the message. “Ready to Move” message added for:
  - 12 Go To Home soft keys
  - All Home Axes soft keys (other than THC)
  - Forward, Backup and Return to Path
  - 2 Return to Start soft keys
  - Jog Key Watches
  - Manual Offsets
  - Send Tilt/Rotate Home
- The warning for battery-backed memory on the motherboard has been changed from “Battery Backup Invalid” to “Warning: Battery RAM invalid! If utility card or MCC were replaced or software updated, then this is normal and can be ignored. But if this message continues to occur please contact Technical Service.” The new warning better describes what might be causing the fault.
- Absolute Homing is now supported in SERCOS III systems for Kollmorgen AKD drives with the part format AKD-PXXXXX-NBS3-XXXX. Firmware version 01-13-05 or later and Phoenix version 9.76.1 or later is required.
- The option “Message plasma PS via HyperNet” has been restored on the Machine Setup screen. This allows error-free use of an ArcGlide without serial communication to the plasma power supply.

## Software resolutions

- Resolved an issue with the Encoder Monitoring window with Bosch IndraDrive Cs motors and SERCOS III where Phoenix was not forcing machine homing after the Encoder Monitoring window in the amplifier had been exceeded and motion was not under feedback control. In this condition, the system loses the known position when the range of the encoder is exceeded. Homing the system reestablishes the known position.
- Resolved an issue where F Codes (speed overrides) were being ignored immediately after M07 when the creep time was set to 0.
- Manual Move Speed is now shown on the Manual Options screen. Jog speed is equal to the manual move speed.
- Resolved an issue where the incorrect drive address was displayed for all SERCOS III drive faults.
- Resolved an issue where the error message “CNC – Spare” was being displayed for an unknown drive fault. The error message was changed to “Drives Disabled – Check Drives for Possible Fault” along with a fault number that can be used for further diagnosis.
- Resolved an issue where the kerf value was reset to zero when Move to Pierce was used with simple shapes.
- Resolved a condition that could result in a Phoenix Application exception error, when a torch collision occurs while homing the bevel axes.
- Resolved an issue with the Cut Pro Wizard where 200 A was selected incorrectly if Fine Feature was the previous selection and you are loading a 130 A G59 part file with no specific material.
- Resolved a condition that could result in a Phoenix application exception error when a torch collision occurs during bevel homing.
- Resolved an issue where a Phoenix application exception caused Phoenix to shut down when the oxyfuel cut cycle started. A change was made to make sure power loss recovery files are not saved during Phoenix startup or shutdown.

## Motion Support

### Software enhancements

- A Probe Down Sense input was added for Offset IHS using an external probe to improve accuracy. If Offset IHS is enabled and the Torch Down Sense input is assigned, Phoenix will keep the THC from performing an IHS until the Torch Down Sense input activates. The part program will pause if the torch down sense input does not activate within 5 seconds.

### Software resolutions

- Pipe and Tube commands (G01 Pxx Fyy) are now rotational RPM values for motion execution. Previously the F codes incorrectly used linear (ipm/mmpm) values. This only applies to G01 Pxx Fyy and not G00 Pxx Fyy. The latest version of ProNest (ProNest 2015 v. 11) is also required. ProNest users who would like an updated setup that supports this new feature should contact CAM support at (716) 434-3755, menu option 3 or TechSupportVoiceMail@hypertherm.com.

## Waterjet support

### Software enhancements

- Raise/Lower Inputs have been added for waterjet height control (WHC) so the cutting head can be raised and lowered while cutting. The cutting head moves up or down by 0.01 inches per input activation. This is for motion while cutting only, no manual motion is allowed.

## Bevel support

### Software enhancements

- Contour Bevel Head and Tilt-Rotator manual motions are now blocked unless the system was homed previously or homed after a fault.

### Software resolutions

- Resolved an issue with uneven motion (jerking) at the end of a long bevel section when the torch returned to the vertical position. A change was made to increase the precision and number of motion corrections for slightly non-tangent segment intersections.
- Resolved a bevel alignment issue with bevel parts using M28 and M29 follower enable/disable codes.
- Resolved an issue where laser marking motion remained at creep speed after pausing and resuming the part program during a rapid move.

## Sensor THC support

### Software enhancements

- The Plate Sensing distance used at power up and if the system is idle for more than 30 seconds now defaults to 0 instead of 1/10th the slide length. This prevents IHS errors when handling thick material and dome shapes where only a very small IHS distance is available. An improvement was also made to enable the THC to retract to the top of the slide when at pierce or transfer height, instead of to the cut height, and the desired retract distance is greater than or equal to the current THC position. This also maximizes the space available for IHS.
  - In Phoenix 9.73.0, when performing a first initial height sense, the Sensor THC would travel a distance equal to 1/3 of the slide length (entered in the THC Axis screen) at maximum speed before starting the IHS process. In some cases, this distance exceeded the torch-to-work distance (the distance between the torch tip and the workpiece) and caused the IHS to fail and the torch to collide with the workpiece. In Phoenix 9.74.0 the Sensor THC traveled a distance equal to 1/10 of the slide length at maximum speed before starting the IHS process. In some cases this still caused IHS to fail so the plate sensing distance now defaults to 0.





### Waterjet support

Support has been added for the Sensor waterjet height control (WHC). The WHC functions like the Sensor THC does for plasma, but for Waterjet cutting process. The OEM supplies the lifter mechanics and sensing probe (for example, a foot-sensor). The foot-sensor provides a 0–10 V calibrated analog input that the CNC uses to establish and maintain height while cutting.



Full documentation and manual support for this product feature is currently in process. Interested customers should contact automation applications support at Hypertherm.

### Software enhancements

- Added support for Low Pressure Piercing using the G59 V827 F2 waterjet variable.

Code	Description
G59 V827 F2 Optional: PXXXXX to set pump pressure if the pump is equipped with serial communication to the CNC.	Low pressure pierce, maintain (F2) until next G59 V827, or a new cut chart is selected, or a new part program is loaded. Include P XXXXXX for pressure if there is serial communication. Set the pressure at the pump if there is no serial communication.
G04 Xx	Dwell for $x$ seconds to allow the waterjet pump to transition to low pressure setting.



All other G59 variables in the part program must come before G59 V827 F2 and the G04.

The CNC also provides a Low Pressure Pierce output which can be connected to an input on the pump PLC to switch the pump to low pressure mode. You can view the Low Pressure Pierce output in the I/O section of the Watch Window.

- An input, Foot Sensor Up, has been added to protect the waterjet nozzle from being damaged when the foot-sensor is in the up position. Phoenix now detects the Foot Sensor Up input and blocks waterjet calibration, WHC IHS, and waterjet part program or rip cutting until the foot-sensor is lowered.
- Added support for Sensor waterjet height control (WHC) homing. Sensor WHC homes at power up and from the Homing screen.

- In the Waterjet Cut Chart and Waterjet Process screens, and the HyPrecision™ Cut Calculator, Q6 mode, Wet Run, has been renamed to Marking.
- Added support for the automatic calculation of Abrasive On Delay, Off Delay, and Water Off Delay settings in the CNC when using the Sensor WHC.

### Software resolutions

- Resolved an issue where you could not select a cut speed above 600 ipm on the Waterjet Cut Chart screen. You can now set the cut speed up to the maximum value of the machine speed.
- Resolved an issue where part programs and rip cutting were still available when a Waterjet station was left enabled while the system was in Plasma mode. Part programs and rip cutting are now blocked if you are not in Trial Mode and any Waterjet WHC station is enabled.
- Resolved an issue where the G59 V829 Pierce Motion Delay, V830 Abrasive Delay On, V831 Abrasive Delay Off, and V832 Water Off Delay caused Phoenix to remain in the Pierce Motion Delay state. Limits were added to Pierce Motion, Abrasive On/Off and Water Off delays. This solution also resolved a Phoenix error where the G59 memory was not cleared on Waterjet, when the G59 code was processed.
- Resolved an issue where the Pierce Time, Pierce Motion Delay, and Pierce Displacement were not displayed properly because the precision was set to 6 significant digits. The default precision for the Process Watch screen was lowered from 6 digits to 3 digits. This solution also resolved an issue where the Abrasive On Delay and Abrasive Off Delay times sometimes display a dash (-) until Start was pressed.
- Resolved an issue with a Dual Transverse cutting system where one of the Transverse axes was parked and disabled but continued to perform Circular and Wiggle pierce motions.
- Resolved an issue where the separation value listed in the Waterjet Cut Chart Calculator displayed units in English when running in Metric mode.
- Resolved an issue where pressing STOP in Waterjet mode did not execute the Abrasive On and Off delays and Water Off delay. Water and the abrasive are turned off based on delay times in the Process screen whenever motion is paused or when pre-piercing holes. Previously under these conditions, if the delay times were negative, both processes would be turned off at the same time.
- Resolved an issue where all the cut chart drop down boxes in the Waterjet CutPro® Wizard went blank when using Next and Previous buttons.
- Resolved an issue where the material type could not be changed in the Waterjet CutPro Wizard.
- Resolved an issue where homing is prevented when the waterjet pump is off. The CNC now allows motion and homing when the waterjet pump is off except when an error or cut mode is active.
- Resolved an issue with Waterjet initial setup when Oxyfuel and Plasma are both selected under Setups > Password > Special Setups > Tools Installed. After selecting Waterjet as a tool, entering the Process screen and saving changes, the Waterjet Cut Chart screen showed blank pull-down menus and values in blue. Upon exit, the CNC would display an MCC error.

## Motion support

### Software enhancements

- Added support for the SERCOS III WAGO® I/O modules at a 2 ms module update rate over a 1 ms SERCOS III ring update rate. The CNC can also detect a loss of the bus extender cable. The SERCOS III screen now shows a generic field to add an inline I/O coupler at address 50. The following SERCOS III WAGO products are supported by Hypertherm CNCs:

WAGO Part Number	Description	Comments
750-459	Analog input module (4 inputs)	0–10 VDC (single ended)
750-351	SERCOS III coupler	
750-530	Output module (8 outputs)	24 VDC outputs
750-430	Input module (8 inputs)	24 VDC inputs
750-559	Analog output module (4 outputs)	0–10 VDC
750-627	Terminal bus extension	Allows connecting of remote I/O modules
750-628	Terminal bus extension coupler	
750-1500	Output module (16 outputs)	Ribbon cable interface
750-1400	Input module (16 inputs)	Ribbon cable interface
750-600	End module	No function (physical end cap)

- Added support for the Beckhoff EK9700 coupler I/O modules.

Beckhoff Part Number	Description
EL1008	8-channel digital input terminal 24 V DC, 3 ms
EL2008	8-channel digital output terminal 24 V DC, 0.5 A
EL3064	4-channel analog input terminal 0-10 V, single-ended, 12 bit
EL4004	4-channel analog output terminal 0-10 V, 12 bit

### Software resolutions

- Resolved an issue with S-curve where motion stopped in a part program because there was too large a difference between the mG settings of two adjacent speed breaks.
- Resolved an issue where motion was stopping in the corners of a part when the speed was lowered while using Trapezoidal or S-curve deceleration at minimum corner speed.
- Resolved an issue where a prompt for backing up the non-Windows XP operating system was seen even when the Automated Backup setting in the Special Setups > System screen is set to None. The problem occurred when Norton Ghost™ was uninstalled.
- Resolved an issue where the jog keys were not visible. This occurred if you selected the jog keys in the middle watch location and then attempted to select a parameter in the upper Watch Window location.
- Resolved an issue where the alignment process was canceled when the Manual soft key within the jog key Watch Window was pressed multiple times.
- Resolved an issue where no diagonal motion was possible while in the Align screen with keyboard-only selected in the Special Setups screen. Latch Manual Motion is now supported by the Shift+F11 combination when keyboard only is selected, but is only available when F11 is used first to enable motion in the Align screen. The jog key Watch Window buttons turn green to indicate that the keyboard arrow motion keys are active.

- Resolved an issue where a part program calling for an Ar/Air marking process, with an HPRXD plasma system, resulted in the N2/N2 marking chart being selected. A new cutchart.exe is available at [Hypertherm.com](http://Hypertherm.com). See ???????? on page 9.
- Resolved an issue where the THC Test Lifter dialog would appear on screen and could not be cleared unless Phoenix was restarted. This occurred when there was a fault or a drive became disabled while performing the Test Lifter operation. The lifter now remains at it's current position instead of retracting if a fault occurs.

## Ease of use and embedded process expertise

### Notification

Some SanDisk® USB flash drives (memory sticks) manufactured during a limited period in 2013 were formatted as local disk drives. Hypertherm CNCs auto-detect a memory stick as a removable disk drive, and therefore, the SanDisk flash drives formatted as local drives cannot be read by Hypertherm CNCs. At the end of 2013, SanDisk reverted to formatting USB flash drives as removable drives.

### Software enhancements

- Added support for tool offsets with plasma and waterjet or plasma and laser combination machines.
- A new option in the Special Setups screen allows you to disable the message “Unable to load some setups” which is followed by a list of parameters. This message shows when you load a new version of the Phoenix software that has parameters which the previous version did not support.

### Software resolutions

- Resolved an issue where entering into Manual Options from the Align screen did not allow the user to cancel an offset after applying a manual offset in the Current Part Options screen.



This feature is not allowed while the alignment function is in process.

- Resolved an issue where entering into Manual Options from the Align screen meant you could not cancel an offset after applying a manual offset in the Current Part Options screen. Manual Offset and Cancel Manual Offset are not allowed when entering Manual Options from the Align screen when alignment is in process.
- Resolved an issue that caused the Arc Voltage and Voltage Offset values in the process data Watch Window to display incorrectly in some languages, specifically French.
- Resolved an issue that prevented you from clearing the error list in the Watch Window by holding Right Shift+F5 or F5+].
- Resolved an issue where a soft key and several other items from the Process screen were being incorrectly displayed on the timing diagram screen.
- Resolved an issue with user level data not displaying according to the corresponding level of the user. For example, fields were being displayed in beginner mode that should not have been visible.
- Occasionally, when loading a Phoenix setup file (Phoenix.ini) onto the CNC from a memory stick, the CNC shows the message “Setups removed, modified, or corrupted. Use backup Setups?”. The message appears only when you have previously saved the setup file onto a memory stick that is formatted using NTFS and not FAT. Windows® XP, the CNC operating system, does not fully support NTFS formatting on a memory stick. You can load a setup file that has been copied to an NTFS-formatted memory stick, but not saved to it.

- Resolved an issue where the string sent from the CNC to an inkjet printer, using a REA-JET print head, is being received differently than when the same string is sent from a PC to the printer. The message requires an XOR checksum. The checksum this print head is expecting requires the ETX (End of text) character to be added to the checksum. Two new character formats were added, 52 and 53. Format character 52 is a combination of format characters 16 and 32. Format character 53 is a combination of format characters 1, 16 and 32. The checksums for both include the message plus the ETX at the end of the message.
- Resolved an issue where deleting a file that had just been saved to a unique folder location would cause a Phoenix application error.
- Resolved an issue where the user was not being notified when setup files were corrupted. The boot-up operation was updated to notify the user if there are no valid Setup, Backup, and Default initialization files. This will cause the system to use factory default settings.
- Resolved an issue where Vaporize was incorrectly available in the drop down box of available materials for oxyfuel and waterjet. It is no longer available.
- Resolved an issue where the SERCOS OEM back door picture was showing the HyPath axis cover plate when fewer than 5 axes are enabled.
- Resolved an issue where the torch up and down times were not being reset to 0 when assigning an ArcGlide. This caused a delay in torch motion. The torch up and down times are now reset to 0 when assigning Sensor THC, ArcGlide, or Command THC.
- Resolved an issue where the same nozzle retaining cap was being shown on the Change Consumable screen for both aluminum and stainless steel 600 A processes.
- Corrected an issue in the LAN diagnostic test where the test would succeed when no loopback connector was installed in the LAN port. The Reset Setups/Default Setups soft key on the System Tools screen and the RESETSETUPS password now create new setup files (Phoenix.ini and Phoenix.bak) after the software loads the factory setup values.

## Plasma support

### Software enhancements

Added new cut processes:

True Hole®

- 80 A, 8 mm
- 80 A, 5/16 inch

True Bevel™

- 200 A, Bevel, 10 mm, 12 mm, 16 mm
- 200 A, Bevel, 3/8 inch, 1/2 inch, and 5/8 inch



ProNest® users who would like an updated setup that supports these new True Hole or True Bevel thickness/consumable combinations should contact CAM support at (716) 434-3755, menu option 3 or [TechSupportVoiceMail@hypertherm.com](mailto:TechSupportVoiceMail@hypertherm.com).

## Software resolutions

- Resolved an issue where conflicting processes were not detected. A station configured with an HPR system as Plasma 1 for example, could also have laser, waterjet, or oxyfuel selected for the same station. If you made a cut in plasma mode the CNC did not detect a conflicting process and abort the cut as it should have.
- Resolved an issue where you could not save the cut mode for a Powermax® system on the Process screen. You can now save the cut mode when there is serial communication and you are in Full Mode. The cut mode cannot be saved in Monitor mode.
- Resolved an issue where the Process screen crashed when leaving the Plasma 2 cut chart from the Process screen, and re-entering the Plasma 2 cut chart again.
- Resolved an issue where the shield gas pressure was missing from the HyPro HT2000 cut chart.
- Resolved an issue where the soft key for the Powermax125 Operator Manual was not displayed on the help screen and the Change Consumables instructions were not displayed on the Change Consumables screen.
- The option that specifically disables power supply communication over Hypernet (choosing No for Message Plasma PS via Hypernet) while using RS-422 communication over HyperNet, has been removed. This option was added for the MAXPRO200, but it was determined that it was not necessary. It caused some confusion with HPRXD and MAXPRO200 plasma supplies using Hypernet so the option has been removed for simplicity.
- Resolved an issue where the addition of metric only thicknesses to some Hypertherm cut charts caused an error dialog box to appear saying No Marking Process Available.

## ArcGlide® THC support

### Software resolutions

- Resolved an issue where the keyboard only option ( ] + F5) for clearing the errors listed in the error Watch Window did not work. The problem existed because the top row of soft keys on the ArcGlide diagnostics screen had buttons that were not set to visible so the key combination did not work.
- Resolved an issue where the THC raise/lower status message was displayed continuously or switched between displaying “Lowering Torch” and “Raising Torch”. The Alt+F4 function was also disabled. This solution also resolved an issue where the message “No THCs Selected or Enabled” was displayed continuously when using the ArcGlide. It is only displayed now when you use the raise and lower keys.
- Resolved an issue where the ArcGlide THC was not using the correct laser pointer offset distance.
- Resolved an issue where the CNC was not automatically canceling a laser pointer offset when you pressed Cycle Start to start running a part program.

## Bevel support

### Software resolutions

- Resolved an issue where the metric Servo Error Tolerance was not being updated when you exited from the Rotate and Tilt axes setup screens. This would cause Phoenix to ignore the error tolerance until the CNC is rebooted or Phoenix restarted. Changes to the Servo Error Tolerance now take effect immediately for the Rotate and Tilt (and Dual Rotate and Dual Tilt) axes.
- Resolved an issue where bevel tangent angle adjustments were made that did not result in the shortest path around corners. The corner bevel tangent angle adjustments are now  $\leq \pm 180$  degrees.

- Vent Control routines now can be activated by the position of the ABXYZ bevel torch tip position instead of the location of the rail to improve fume extraction.
- Resolved an issue where the bevel head was being prevented from reaching a vertical position before M28 (Rotator Disable) because of non-tangent line segments. M28 is now handled conditionally so the correction can be made for non-tangent line segments to make sure the bevel head can return to the vertical position after an M08 (Cut Off).

## **Pipe and tube cutting support**

### **Software resolutions**

- Resolved an issue where a part program that contained lowercase “f” (feed rate/speed) codes would load or translate incorrectly. Lowercase “f” codes will now work when used in part programs. To avoid similar issues in the future, Hypertherm recommends using upper case letters in part programs, per EIA standards.

## **HFL010, HFL015, HFL020, HFL030 HyIntensity Fiber Laser support**

### **Software resolutions**

- Resolved an issue that generated a laser power supply current fault. The fault was due Phoenix Software Version 9.76.4 to the current exceeding the maximum error setting. Increasing the maximum error corrected the issue.
- Resolved an issue that occurred when a cutting process change was made between laser and plasma. The change should have initiated a full retract on the station that became inactive to protect the tool while cutting with the other process. Added Full Retract program code support for cut off (M08RF), disable marker 1 (M10RF), and disable Marker 2 (M14RF) on Sensor THC (not currently supported on ArcGlide THC). Note that if an M50 True Hole code for plasma is used for early cut off, the Full Retract will also occur in this case.
- Resolved an issue where marking and vaporization were available as choices for material thickness. They will no longer be available in the Shape Wizard or on the cut chart screen.
- Resolved an issue where the Laser Pulse Enable parameter was always on. V810 defaults to Off, but if a value is entered it will override the Corner Power Setting. The Pulse Enable parameter is now properly set in all cases. The Cam Power parameter was removed because it is not used.
- Resolved an issue where the sub-mode was not skipping move to pierce height when there was no pierce. Laser Marking and Vaporize now move directly to cut, mark, or vaporize height. Cut height is now used as the controlling height for torch down and move slowly to final cutting height when in the laser sub-modes described above.
- Resolved an issue where the marking process was not loading properly with simple shape selected.
- Resolved an issue where the pulsing signal was turned on before deceleration. G59 V814 (Laser Mode) speed changes now work like F codes (Speed Overrides).
- Resolved an issue with flow errors occurring when the pump is on because the pump-on delay is not long enough to allow the pumps to build up system flows before the LPC checks the error state. There was no delay for the main flow switch. A delay was added with same time as the other two flow switches (Approximately 1.6 seconds.)

## Firmware updates included in Phoenix version 9.76

### HyIntensity Fiber Laser

- Laser head controller (LHC) remains at V2.17
  - Nozzle position offset is non-volatile and will be maintained through a power cycle.
  - Added a laser power display scaling parameter to allow 0.9 – 1.10 multiplier to the total laser power display. Use Password 20 to access the scaling parameter.
  - Changed error messages to separate the 3 types of power supply faults that can occur:
    - Error 57 is now a laser supply feedback error.
    - Error 47 laser supply current fault occurs if maximum amps for the system are exceeded.
    - Error 29 power supply error is mapped to the power supply fault input.
- Laser power controller (LPC) updated to V2.36
  - Added a delay counter to the main water flow switch to avoid nuisance trips during a restart of system. This addition makes the main flow switch the same as the existing flow switches.
  - Power supply faults were separated into the 3 separate faults that can occur
    - Laser Supply Feedback Fault – an error is generated if the command for current is >25 A and the feedback from the power supply is less than 15 A.
    - Laser Supply Current Fault – an error is generated if the feedback amperage from power supply is greater than the maximum value allowed.
    - Power Supply Error – this is an old error that is only used with the original Schaefer power supply which had a power supply fault output. The output is only checked when DIP switch 1 inside the LPC is on.
- Increased the filter timing of the laser supply feedback fault-delay due to slow feedback at beam on with the Schaefer power supply.
- Fixed the nuisance laser supply current fault in 1.5 kW and 2 kW systems. The maximum current threshold was relaxed.

### Documentation changes

- Added a new user interface translation for Hungarian.
- Resolved confusion about how arc voltage offsets are used by clarifying the THC voltage offsets information in the Phoenix Operator Manual.
- Improved the way error code help is displayed by adding context sensitivity to the Help button. When the CNC displays an error and you choose the Help button, information about that error is displayed. Previously, the first page of the error section was displayed and you had to navigate to the specific error information.



### 作動サポート

#### ソフトウェアの強化

- ボッシュ レックスロス インドラドライブ C、MPC ファームウェア 18v08 の搭載された PLC（プログラマブルロジックコントローラー）をサポートするインドラドライブ C の SERCOS III に対するサポートを追加しました。
- レール軸（縦軸）画面において、使用されない「ホーム」パラメーターを設定する場合にトランスバース軸（横軸）のホームもオフになってしまう問題を解決しました。それぞれの軸で「ホーム」パラメーターを個々に設定することができるようになりました。
- 2 度以下の非正接線セグメントの交差を含む可能性がある円弧のセグメントで構成される楕円形状で、パイプサドル切断におけるパイプ開先切断の改善をしました。

### 使い易さと組み込まれた切断条件搭載

#### ソフトウェア上の解決

- デフォルトの EDGE® Pro Ti CNC の設定が二次ステーションの追加を困難にしていた点を解決しました。デフォルトの切断コントロールは二次行程の切断コントロールとしても同時に有効になります。デフォルト EDGE Pro Ti CNC 設定は、次ステーションの追加を容易にするため、切断コントロール 1 と切断検出 1 を使用するよう変更されました。
- マーカーホームが、関連する Phoenix™ 軸の設定画面で有効化されない場合、マーカーパルスエンコーダーのない顧客がドライブエラーを受けたり、ドライブのブートが失敗するような問題が解決されました。IDN 277 ビット 9 のボッシュ マーカー評価は、マーカーホームが関連する Phoenix 軸設定画面で有効化されない限り、オンにはなりません。
- 正しいメッセージを表示する前に、1 つ以上の ArcGlide® THC を持つシステムが数ミリ秒の間、間違ったメッセージを表示する問題が解決されました。これは、最初の ArcGlide THC がオフで、2 つ目がオンになっている場合に、トーチを降下させようとした後に起こっていました。しかし、もし最初の ArcGlide THC ステーションがオンで、2 つ目の ArcGlide THC ステーションがオフであればこのメッセージを受けることはありませんでした。

- 切断が一時停止し、オペレーターがカーフ、または工程パラメーターを変更した時、ミラーリングされていたシンプル形状のミラーリングが失われていた問題を解決しました。この状態は、シンプル形状が X と Y の両方でミラーリングされた場合でなく、X または Y でミラーリングされた場合のみに起こっていました。

### プラズマサポート

#### ソフトウェア上の解決

- EDGE Pro CNC/MAXPRO200® プラズマシステムのインストールにおける、トランスファーエラー、または電流エラーを、システムが切断を再開する前に何度もクリアしなければならなかった問題を解決しました。MAXPRO200 システムのエラー処理は、エラー処理のために HPR システムを改善するエラー処理に一致するように変更されました。
- HPR400XD® と HPR800XD プラズマシステムにおいて、ドライブ無効化入力を使用してドライバーが無効化、または Phoenix が再起動されない限り、電流喪失が検出されたときに作動は停止するが、Phoenix は一時停止ウィンドウを表示しなかった問題が解決されました。これは、Phoenix がフリーズしたように表示されていました。電流喪失が検出されたとき、一時停止ウィンドウが表示されることを確かにするため、チョッパー 3 とチョッパー 4 における電流喪失のチェックを追加しました。

### THC サポート

#### ソフトウェア上の解決

- Phoenix が推測する工程パラメーターに先立ってインストールされたトーチ高さコントロールの種類をテストするようになりました。工程推測は、Sensor™ THC、または ArcGlide® THC がインストールされるときにのみ行われなければなりません。
- 切断モードが試行モードに設定されているとき、手動モードからリップ切断を選択すると、ガス溶断がインストールされたツールでなくても、切断モードがガス切断に変更されることがあった問題を解決しました。インストールされたツールは、リップ切断が手動モードから選択されている場合、ステーション設定画面でステーション割り当てに対して、チェックされるようになりました。
- 切断高さ遅延計算は、Sensor THC と ArcGlide THC において (Hypernet® と使用されている場合) 切断品質向上のため改善されました。この問題は自動設定がパラメーターについてチェックされたとき、ピアス高さから切断高さへ移行する間に起こっていました。
- デフォルト最大速度、15240 mm/分から THC ポジションエラーを起こす、EDGE Pro Ti CNC における Sensor Ti THC での問題を解決しました。デフォルト値は、次のようにアップデートされました。
  - THC 速度は、15240 mm/分から 10160 mm/分へ変更。
  - THC 加速率は 50 mG から 30 mG へ変更。
  - THC 電圧ゲインは 25 から 100 へ変更。

### 翻訳サポート

- Hypertherm CNC は、改善された日本語ユーザーインターフェイスがご利用いただけるようになりました。