ElixiFont
User Guide

Changes are periodically made to this document. Changes, technical inaccuracies, and typographic errors will be corrected in subsequent editions.

Notes and cautions

The following note applies to ElixiFont.

Elixir HP driver

The Elixir HP driver is no longer available when printing from the font sampling pad, accessible through the Sample tool.

Table of contents

1. Introduction

This User Guide describes ElixiFont, a sophisticated Windows-based bitmap font editor that allows you to create and edit fonts in what-you-see-is-what-you-get (WYSIWYG) format.

ElixiFont allows you to perform the following operations to fonts:

- edit individual characters in a font by providing tools to manipulate each character bitmap

- apply transformations to one, all, or a sequence of characters in a font, enabling you to embolden, italicize, underline and to perform other transformations

- display and change character or font properties such as kerning, baseline offset, orientation, etc.

For fonts converted from Xerox format, ElixiFont also allows you to display and change Xerox header information.

The ElixiSys Desktop enables you to import fonts and convert them to Elixir's generic font format. In this format, you can display or edit fonts on your PC and re-convert them back to the original or other formats. See the printer specific sections of the *ElixiSys Desktop User Guide* for information about formats to and from which you can convert Elixir fonts.

Note that the minimum point size supported in ElixiFont is 4 points, and the maximum point size supported is 99 points.

Customer support

Elixir customer support centers provide telephone technical assistance for Elixir users during business hours.

- If you have purchased your Elixir product directly from Xerox Corporation then you should contact the Xerox customer support center telephone number provided by Xerox.

- If you have purchased your Elixir product directly from Elixir Technologies then contact one of the support center hotlines.

See the *Elixir Getting Started Guide* for information about contacting your support center.

ElixiFont environment

ElixiFont is designed to work with the ElixiSys Desktop, a Windows-based desktop. The ElixiSys Desktop simplifies file conversions and management by presenting the user with icons which you can manipulate with simple mouse drag-and-drop techniques (see the *ElixiSys Desktop User Guide* for more information).

Other Elixir products you can use with the ElixiSys Desktop are:

- ElixiGraphics, a Windows-based bitmap graphics editor which you can use to tile Elixir-format graphics into Elixir-format fonts (see the *ElixiGraphics User Guide* for more information).

- ElixiForm, a forms creation package that enables users to create and edit boilerplate forms using standard FSL form elements. See the *ElixiForm User Guide* for more information.

Who should use this guide

This guide is intended for users familiar with Xerox font resources.

Knowledge of Windows and DOS, especially navigation through directory and subdirectory structures and file operations is also required.

Conventions

This section describes display and typographical conventions used in this guide.

Display conventions

ElixiFont adheres to Microsoft Windows conventions for using menus, menu commands, dialog boxes, command buttons, icons, and a mouse. See your Windows manual for more information.

Typographical conventions

The following typographical conventions are used throughout this guide:

- Keystrokes are shown enclosed in < > (angle brackets). For example, <Enter>.

- Key combinations are denoted by a plus sign between keys. For example, <Shift> + <F1> indicates to simultaneously press the <Shift> and the <F1> keys.

- Menu titles are shown in **bold**. Menu options are enclosed in [ ] (square brackets). For example,

    Pull down the **File** menu and select [New font].

- Commands, options, actions, and parameters that require description are shown in bold followed on the next line by the description. For example:

  Delete
  Deletes the selected characters.

- Steps in a procedure are shown in numbered bold paragraphs. For example

1. Pull down the Window menu and select [Tile].

  Comments relating to a step (such as this paragraph) are shown in regular text following the bold paragraph.

On-line help

ElixiFont uses the Microsoft Window Help program to provide on-line Help for functions.

For more information about Windows Help, select the [How to Use Help] option in the **Help** menu, or see your Microsoft Windows documentation.

The Help files included with ElixiFont include graphics which were created using screen drivers with large fonts. If you use a screen driver with small fonts, the Help file graphics may not display clearly. For optimum graphics display, use a screen driver that uses large fonts. .

You can display on-line Help in the following ways:

Bubble Help
Click on an icon with the right mouse button to view its properties (if applicable) or to display "bubble help". Bubble help is a short description of the icon function that displays in a bubble extending from the icon.

Quick Help
Enable the quick help function by selecting the [Show Quick Help] option in the Usage Switches dialog box. When you move the screen pointer over an icon on the screen, a short description of the icon function displays in the Message area of the screen. During certain operations a message about the function you are performing also displays in the Message area. You can disable Quick Help if you prefer to see these operational messages.

Context sensitive Help
To use this function, click on an icon and press <F1>. If available, the appropriate Help topic displays. If no specific topic is available, the Help table of contents displays.

Help menu
Select [Help] from the ElixiFont menu bar and select one of the displayed topics.

Dialog box Help
Click on the [Help] button in a dialog box to view an associated Help topic. Under Windows 95 and Windows NT, right-click on a dialog box option to display an associated Help topic.

Help pop-ups and jumps
Within Help topic text, words or phrases underlined in green are pop-ups or jumps. When you click on a pop-up topic, a box displays within the current Help topic with additional information. When you click on a jump, a different, associated Help topic displays.

Help Hypergraphics
Hypergraphics are special graphics within Help files that contain "hot spots". Hot spots are either pop-up topics or jumps. Hypergraphics in Elixir Help are most commonly dialog boxes with option hot spots (pop-up definitions), toolboxes with tool hot spots (topic jumps), and menus with option hot spots (topic jumps or pop-up definitions). Move the cursor over a hypergraphic until a hand displays, then click on this hot spot to display a pop-up topic, or a "jump".

To close a pop-up topic, click the mouse button. To return to the original Help topic from a jump, click on <Back> in the Help file menu.

Organization of this Guide

This guide provides the following information:

- an overview of Elixir font structure

- how ElixiFont handles fonts converted from other formats

- ElixiFont features and how to use them.

This User Guide is organized as follows:

Chapter 1, "Introduction," is an overview of ElixiFont and provides information about hardware and software requirements for successful installation. The chapter also describes installing and starting ElixiFont and gives additional information about the contents of this manual.

Chapter 2, "ElixiFont basics," describes the layout and components that make up the ElixiFont main screen.

Chapter 3, "Creating and editing fonts," describes how you can create or edit a character or an entire font.

Chapter 4, "Transforming fonts," describes how to apply a variety of transformations to individual characters and to the entire font.

Chapter 5, "Frequent operations and advanced functions," describes some of the frequent operations and advanced functions available with ElixiFont.

Glossary.

Installing ElixiFont

The current release of ElixiFont installs during ElixiSys Desktop installation. No additional installation is required.

See the *Xerox Elixir Getting Started Guide* for installation information.

Starting ElixiFont

You can only start ElixiFont from the ElixiSys Desktop.

To start ElixiFont from the Desktop:

Open (double-click on) the ElixiFont icon at the right of the Desktop.

The ElixiFont main screen shown in the following figure displays.
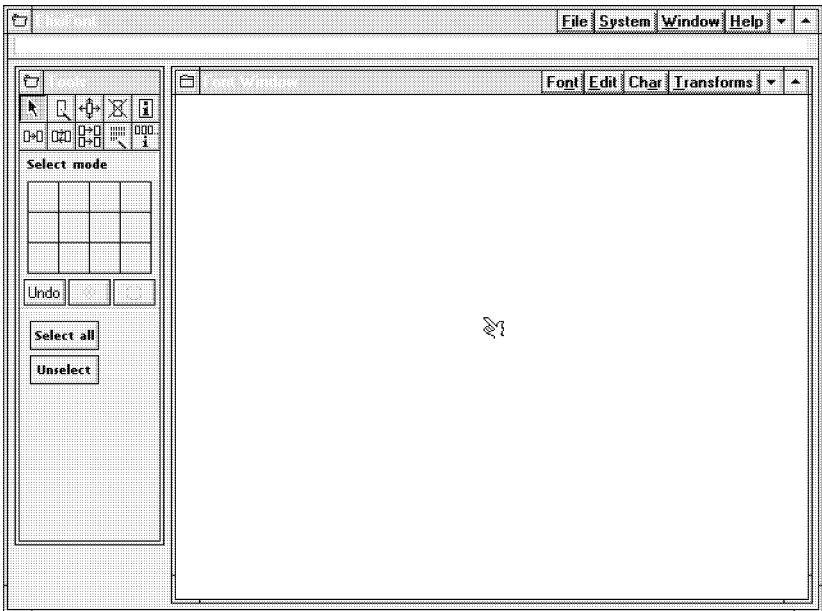
Figure 1-1. ElixiFont main screen

Alternatively, with the Desktop displayed, open the Elixir Fonts folder to display the Elixir Fonts window.
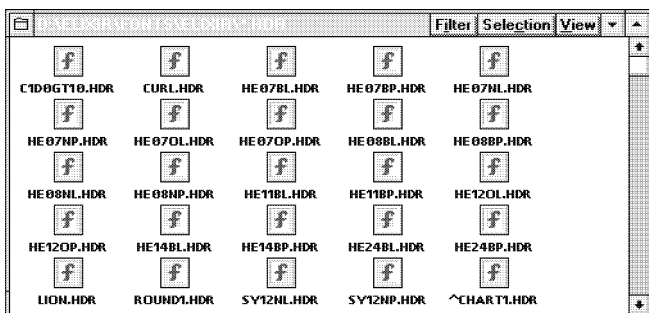
Figure 1-2. Elixir Fonts folder

Open (double-click on) any .HDR font file. The Elixi-Font main screen displays with the font loaded.
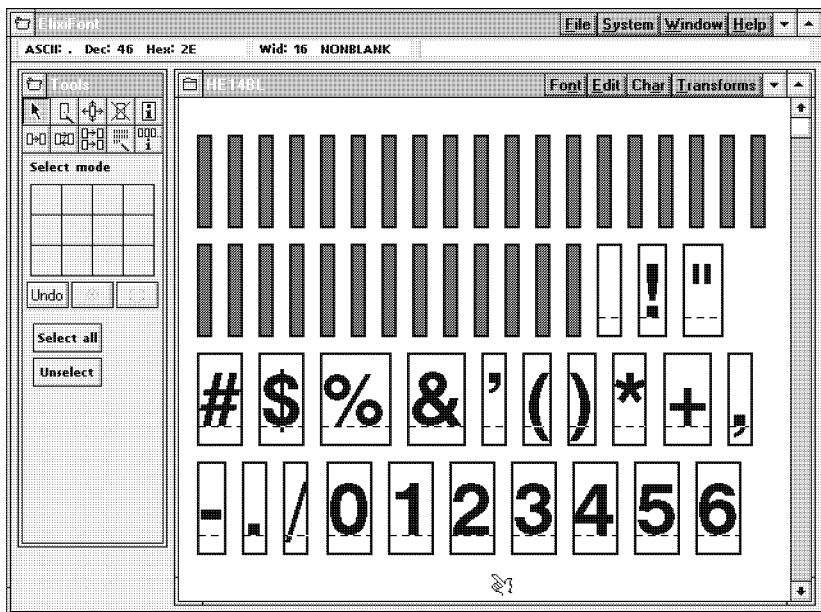
Figure 1-3. Loaded font

See the "Creating and editing fonts" chapter for a description of the ElixiFont screen layout.

Exiting ElixiFont

To exit ElixiFont, double-click on the Exit button at the top left of the ElixiFont main screen, or pull down the **File** menu and select [Exit].

2. ElixiFont basics

This chapter describes the layout and components that make up the ElixiFont main screen.

Main screen components

The ElixiFont main screen contains the following components:

* ElixiFont menu bar
* Toolbox
* Work area menu bar

Start the ElixiFont application by double-clicking on the ElixiFont icon. The main screen displays.
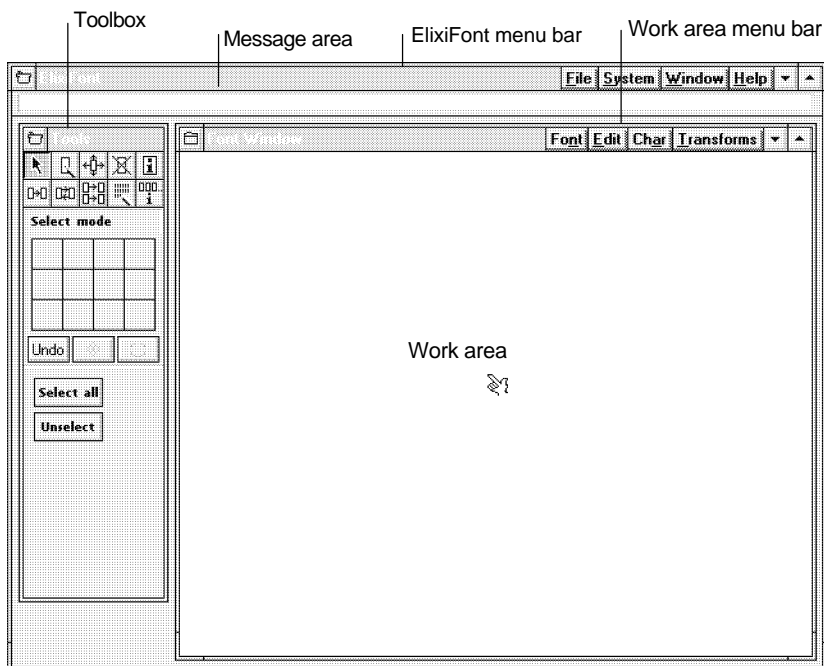
Figure 2-1. ElixiFont main screen

ElixiFont menu bar

The ElixiFont menu bar controls:

- loading and saving fonts
- usage switches and defaults
- window display
- access to Help files.

Figure 2-2. ElixiFont menu bar

File menu

The **File** menu allows you to:

- load and save fonts
- exit ElixiFont

Open Font

When you select this option, the Load Font dialog box listing .HDR files displays. Select a font and click on [OK].

Save Font

Select this option to save the loaded font with the same name unless it is a new font and then you are prompted for a new name. This option acts as the quick-save feature.

Save Font as

Select this option to save the loaded file with a new name.

Exit <Alt + F4>

Select this option to exit ElixiFont and return to the Desktop.

System menu

The **System** menu allows you to set usage switches, reset to defaults, and save customized configurations.

Usage Switches

When you select this option, the Usage Switches dialog box displays.

Figure 2-3. Usage Switches dialog box

The Usage Switches dialog box contains the following options:

Save State on Exit
Select this option to save your customized settings. Deselect this option to return settings to ElixiFont defaults.

Show Quick Help
Select this option to display a short description of an icon as your cursor passes over it, in the message area.

Always Bring Toolbox to Top
Select this option to display the Toolbox on top of any window.

Truncate Long Font
Select this option to truncate characters with ASCII values over 255 (hex FF) when loading a font that contains more than 256 characters.

Reset to Defaults

When you select this option, all configuration parameters are reset to the ElixiFont default values.

Save Configuration

Select this option to save your customized settings rather than resetting to ElixiFont defaults.

Window menu

The **Window** menu controls the way each open window displays. You can:

- tile all displayed windows

- toggle the display on or off for the Toolbox and Work Area.

Help menu

The **Help** menu loads the online Help file for the Elixi-Font application. You can choose [Contents] or any of the topic options.

Toolbox

The left side of the screen displays the Toolbox which contains buttons you can select to view, edit, and manipulate individual characters or the entire font.

Tools

The top of the Toolbox contains the tools you can select. These display in two rows as shown in the following figure:
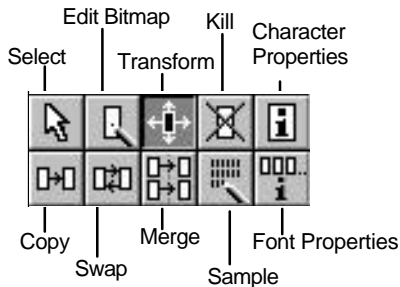
Figure 2-4. ElixiFont tools

Toolbox options

Selecting a tool displays the options for that tool in the Toolbox. Most tools also contain the options shown below.
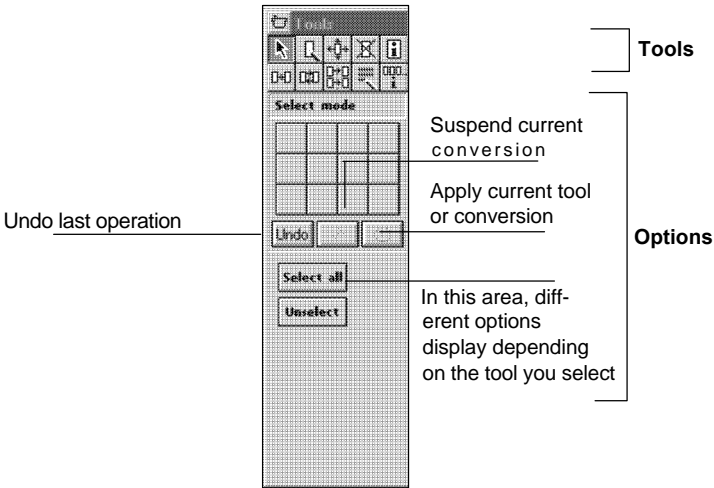
Figure 2-5. Toolbox example

If you suspend the current conversion, the Undo operation may not be available.

The ElixiFont tools are described in more detail in the following chapters of this guide.

Work Area menu bar

You use the Work area menu for creating, editing, merging, transforming and saving fonts. This menu also allows access to information about the properties and statistics of a complete font and lets you view a sample of how the font will print.

Figure 2-6. Work area menu bar

Font menu

The **Font** menu options allow you to create and save a font, merge characters from various fonts, access information about font properties and statistics, and view a sample of how the font will print.

New Font
Allows you to create a new font through use of several dialog boxes requesting information about your new font. Once you have entered the required information, the new font displays.

Merge Fonts
Allows you to load another font (source font) and drag and drop one or more characters from the source font to the loaded font (target font).

Properties
Displays the Font Properties dialog box which provides orientation, resolution, header and other information for the loaded font.

Statistics
Displays the Size of Elixir Format Font dialog box which provides the size (bytes) various font and character components, and the total size of the loaded character set.

Sample
Displays a sample pad showing the characters as they will print on a page.

Convert
For future implementation.

Edit menu

The **Edit** menu allows you to undo actions and delete or select/unselect characters or entire fonts.

Undo
Undoes the last edit operation.

Delete
Allows you to remove a selected character from a character set.

Allows you to select all characters in the character set.

Unselect All
Allows you to unselect all selected characters in the character set.

Char menu

The **Char** menu displays properties and allows editing of an individual character.

Properties
Displays the Character Properties dialog box which provides values and parameters of the selected character.

Copy
Allows you to copy a selected font to a new location.

Kill
Allows you to remove a selected character from a font.

Swap
Allows you to swap the position of the currently selected character with that of another character.

Load Image
Displays the Load Image dialog box which allows you to load BMP, LP3, PCX, or TIF images. Size limit is 64K.

Transforms menu

The **Transforms** menu allows you to perform transformation options to selected characters or to a complete character set. See the "Transforming fonts" chapter for complete option descriptions.

3. Creating and editing fonts

This chapter describes how to create new fonts and edit Elixir-format fonts.

Some examples of Elixir fonts are loaded in the *drive*:\ELIXIR\FONTS\ELIXIR directory on your PC during installation, for example HE07NP.

The stem name of the font provides information about the font type. For example, HE07NP is a Helvetica 7-point normal portrait font.

You can also generate your own Elixir-format fonts by using the Elixir Font Generator (Efont Factory) to convert Bitstream FaceLift fonts to Elixir-format fonts. See the *ElixiSys Desktop User Guide* for more information.

Font basics

This section describes Elixir font characteristics and procedures used to display, edit, and apply metrics to fonts. The following figure shows some important characteristics of a character in a cell.

See the "Creating a new font" section for procedures on how to create a new, custom font. You should familiarize yourself with the other sections in this chapter before you attempt to create a new font.

Above
baseline

Blanks
Left

Blanks
Right

Cell
Height

Below
baseline

Baseline
Offset

Cell width
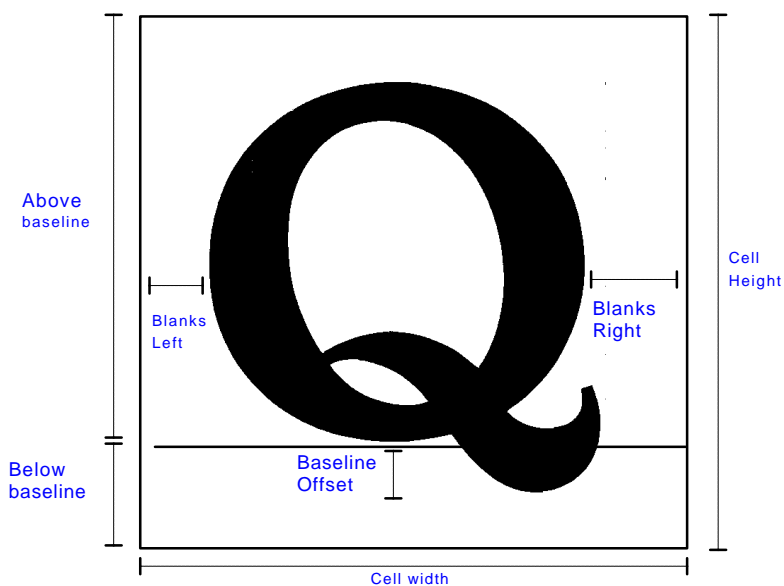
Figure 3-1. Character and cell components

The next figure shows some character and line-spacing attributes on a printed page.

Above base-line

Below base-line

Linespacing

Leading

Figure 3-2. Line spacing components

The following is the line-spacing calculation formula:

Line spacing = above baseline + below baseline + leading

Creating a new font

To create a new font:

1. **Pull down the Font menu and select [New Font].**

   The Properties of New Font dialog box displays.
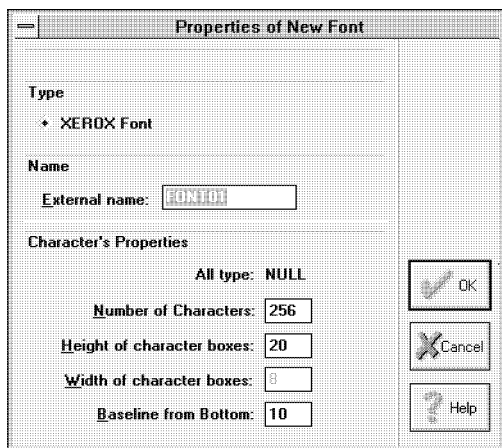
   Figure 3-3. Properties of New Font
   dialog box

   The Properties of New Font dialog box contains the following options:

   Type
   You cannot change the default setting of [Xerox Font] for this option.

   External name
   This option allows you to specify the external (DOS) stem name for the font. The maximum number of characters for a DOS stem name is eight characters.

   Note that the maximum length for Xerox font stem names is six characters.

   Number of characters
   Specify how many characters you want in your font (the maximum is 256).

Height of character boxes
Specify the height of the character cell in dots.

Width of character boxes
Specify the width of the character cells in dots.

Baseline from Bottom
Specify the "below the baseline" value in dots.

2. **After specifying the properties for your font, click on [OK].**

    The Font Properties dialog box displays. See the "Font Properties toolbox" section in this chapter.

3. **After specifying properties for your font, click on [OK].**

    Blank cells (representing characters in the font) display in a window.

4. **Open a blank cell (double-click) to display it in the Edit Window.**

5. **Use any of the editing tools described in this chapter to create a customized character in the cell.**

    The easiest way to add characters to your blank cells is to use the Merge operation described in the "Merge tool" section of this chapter.

6. **Pull down the Char menu and select [Post] to save the newly created character.**

    You can now transform the character in the cell using any of the transformation operations described in the "Transforming fonts" chapter.

Loading a font

To load a font:

1. Start ElixiFont, pull down the File menu and select [Open Font].
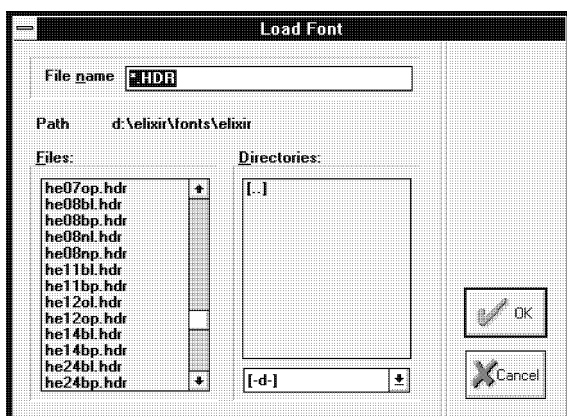
The Load Font dialog box displays.

Figure 3-4. Load Font dialog box

2. From the list of Elixir fonts (files with .HDR extensions in *drive*:\ELIXIR\FONTS\ELIXIR), select a file and click on [OK] to load it.

The ElixiFont main screen displays the font as shown in the following figure.
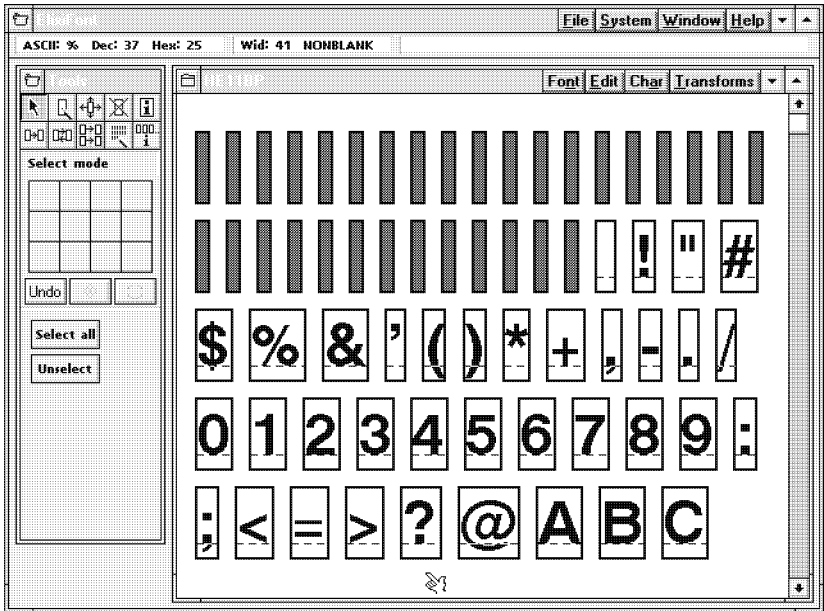
Figure 3-5. A loaded font

The character bitmaps of the font are arranged left-to-right and top-to-bottom by the ASCII position of the character in the font (the positions are defined in the font header .HDR file). The maximum number of characters in a font is 256.

You can use <Page Up>, <Page Down>, <Home>, and <End>, or the scroll buttons to scroll through a font if necessary.

Placing the screen pointer on a character displays a dark box around it (this is now the current character). The Message area shows the position of the current character in ASCII, Decimal and Hexadecimal values.

Also shown is the width (in dots) of the character, and character type: NULL, SPACING, or NONBLANK. A null character indicates that no character is defined for this position and displays as a filled gray cell (like the first 32 characters in the displayed font).

A spacing character occupies a cell but does not have a bitmap and prints as a blank space. All other characters are nonblank and contain bitmaps.

Toolbox

The Toolbox contains buttons you can select to view, edit, and manipulate individual characters or the entire font. See the "ElixiFont basics" chapter for an overview of the Toolbox.

This section describes the Toolbox tools and ElixiFont menus used for editing, transforming, and setting font properties.

Select toolbox

The Select tool allows you to select one or more characters in a loaded font.

Select tool

Select all characters

Unselect characters
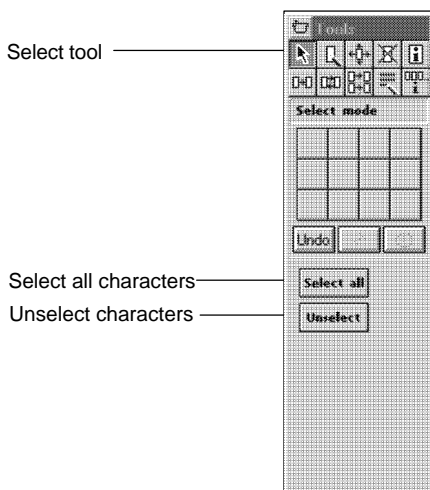
Figure 3-6. Select tool and options

Use the <Ctrl> + <A> fast key to select and deselect all characters in a font (toggle).

Select a range of characters by clicking on the first character, then <Ctrl>-clicking on the last one.

Edit toolbox

The Edit tool allows you to edit individual character bitmaps.

Select a character and then select the Edit tool to edit the character. If you do not select a character, the software defaults to the first nonspace or non null character. Alternatively, double-click on the character. The Edit Window displays at the right of the screen.

Edit Tool

Edit Window Toolbar

Edit Window Menu Bar

Framing window

Figure 3-7. Edit Window

The bottom of the screen shows a partial list of characters with the current character selected. You can select another character to display it in the Edit wind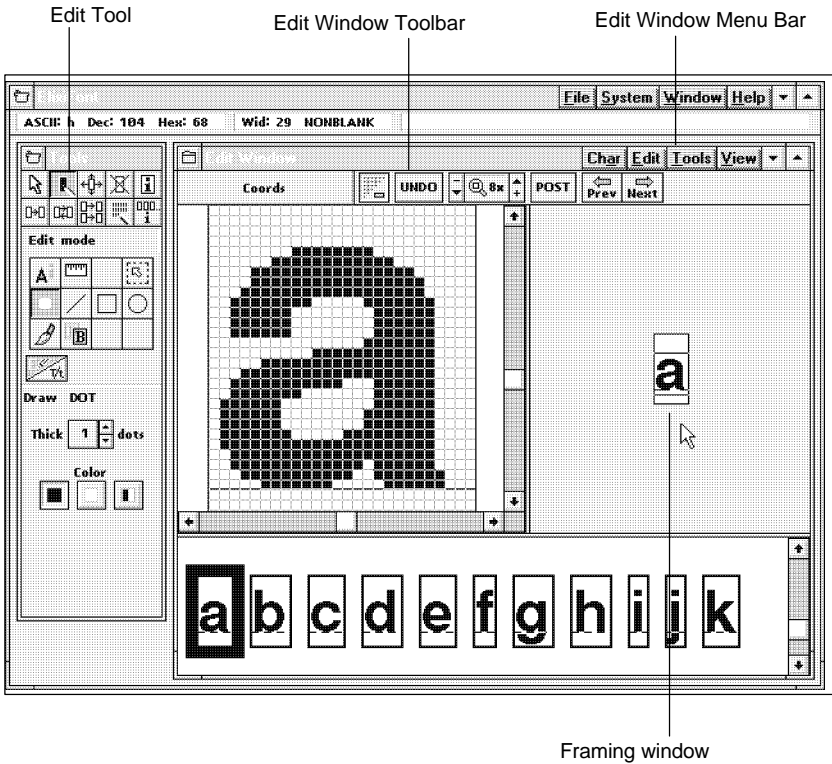ow. You can also scroll through the entire font using the <Page Up>, <Page Down>, <Home>, and <End> keys (or use the scroll buttons).

The right of the screen shows the framing window which you can move to display different portions of the character you are editing.

Initially the character displays at 8 magnification (each dot in the bitmap displays as a black or white box 8 bits high and 8 bits wide).

The Edit toolbox contains editing tools and various tool options. A selected tool or option displays with a dark background. In addition, you can select options available from menus in the Edit Window menu bar, or from the Edit Window Toolbar displayed just below the menu bar.

Edit toolbox options

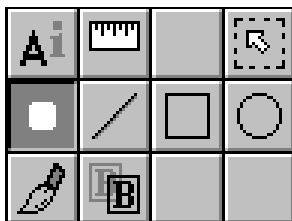The Edit toolbox options are shown in the following figure:

Figure 3-8. Edit toolbox options

Character Properties <F2>
Select this option to display the Character Properties dialog box with properties for the current character. See the "Character Properties toolbox" section later in this chapter for more information.

When you view the character properties of a null or spacing character, a Properties of Null Character or Properties of Spacing Character dialog box displays in place of the standard Character Properties dialog box.

Ruler
Select this option to display the horizontal and vertical coordinates of the screen pointer from the top left of the character cell (in dots). The coordinates display at the left of the Toolbar.

The ruler also allows you to display the distance in dots between two points. With the ruler selected, click and hold the mouse button and move the screen pointer. The distance of the screen pointer from the click position displays in the Line option in the Toolbar.

Select Area
Allows you to select a rectangular area of the displayed character and to move or copy the area (by selecting [M] or [CC] in the Toolbox) to another location in the cell. Alternatively press <Ctrl> + <M> to activate Move mode or <Ctrl> + <O> to activate Copy mode.

Draw Dot
Allows you to draw a dot in the character cell. You can select the color (black, white, or reverse current dot), and the dot thickness from the options at the bottom of the Edit toolbox.

Draw Line
Allows you to draw a line in the character cell. You can select the line color (black, white, or reverse current dot), and the line thickness from the options at the bottom of the Edit toolbox.

Draw Rectangle
Allows you to draw a rectangle in the character cell. You can select the border color (black, white, or reverse current dot), and the border thickness (in dots) from the options at the bottom of the Edit toolbox. You can also fill the rectangle with white or black.

Draw Circle

Allows you to draw a circle in the character cell. You can select the border color (black, white, or reverse current dot), and the border thickness (in dots) from the options at the bottom of the Edit toolbox. You can also fill the circle with white or black.

Draw Brush

Allows you to draw with a brush. You can set the brush thickness and color (black, white, or reverse current dot) from the options at the bottom of the Edit toolbox. The effect of drawing with a brush in reverse mode depends on the speed at which you draw.

Blend

Allows you to blend another character into the current cell. After selecting the Blend tool, select another character from the font. The character displays on top of the current character in the framing window. After positioning it, click on [Accept] at the bottom of the Edit toolbox to blend it with the first character.

After editing or viewing the bitmap, close the Edit window to return to the ElixiFont main screen.

Transform

Allows you to apply the transformations described in the "Transforming fonts" chapter to the character bitmap.

Edit Window menu bar

The Edit Window menu bar (at the top of the window) contains the following pull-down menus and options:

Char

Post	
Blend	
Prev Char	<Ctrl> + <P>
Next Char	<Ctrl> + <N>
Properties	<F2>

Edit

Undo	<Ctrl> + <Z>
Cut	<Ctrl> + <X>
Copy	<Ctrl> + <C>
Paste	<Ctrl> + <V>
Delete	<Ctrl> + <Del>

Tools

Dot	
Line	
Box	
Circle	
Brush	
Ruler	
Move Area	<Ctrl> + <M>
Copy Area	<Ctrl> + <O>

View

Show Grid	<F4>
Show Coordinates	

You can also select these functions from the Toolbox or the Edit Window Toolbar.

Edit Window Toolbar

The Edit Window Toolbar displays just below the Edit Window menu bar.

Figure 3-9. Edit Window Toolbar

The buttons, from left to right, are as follows:

Pointer Coordinates
Displays the current pointer position in X (horizontal) and Y (vertical) coordinates.

Drawing Start Coordinates
Displays the starting horizontal and vertical coordinates for the current drawing operation.

Drawing Size
When the corresponding option is selected, displays the current ruler length, copy/move area width and height, line length, box width and height, or circle radius.

Grid <F4>
Displays/hides the grid (toggle). The grid does not display for magnifications of 4x and less.

Undo <Alt> + <BkSp>
Undoes the last edit operation.

Down Arrow <->
Decreases the magnification.

Magnification
Shows the current magnification.

Up Arrow <+>
Increases the magnification.

Post
Saves changes made to the character bitmap.

Prev <Ctrl> + <P>
Displays the previous character in the font for editing. Prompts for confirmation if you made changes to the current character.

Next <Ctrl> + <N>
Displays the next character in the font for editing. Prompts for confirmation if you made changes to the current character.
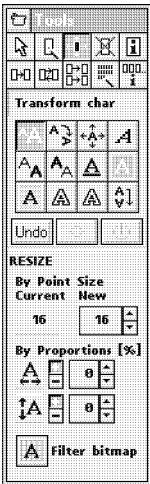
Transform toolbox

The Transform tool allows you to change the appearance of single characters or the entire font.

The transformations you can perform are:

Resize   Rotate   Shift   Slant
Darken   Lighten   Underline   Reverse
Filter   Outline   Halftone   Mirror

Use the additional tool options to define
how you want to apply the transformation

Figure 3-10. Transformation tools and options

You can also use the **Transforms** menu to perform all
the above actions.

The "Transforming fonts" chapter describes in full the
transformation tools and their operation.

Kill toolbox

The Kill tool deletes or blanks a character from the font, depending on your option selection.
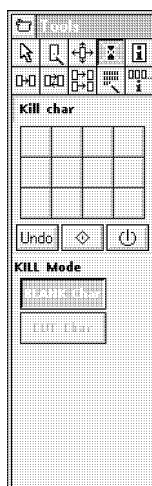

Figure 3-11. Kill tool

Character Properties toolbox <F2>

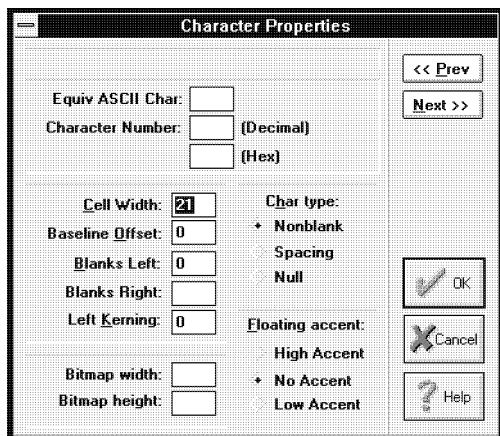Displays the Character Properties dialog box.

Figure 3-12. Character Properties dialog box

The Character Properties dialog box contains the following options:

Prev/Next
Selecting the [Prev] and [Next] buttons displays the Character Properties dialog box for the previous and next characters in the font.

Equiv ASCII Char
The ASCII representation of the selected character.

Character Number
The ordinate position of the character in the font in decimal and hexadecimal notations.

Cell Width
The width of the cell the character is in. Also called the character width or the delta-X of the character.

Baseline Offset
The baseline offset of the character; this is the distance in dots from the bottom of the character bitmap to the baseline. The baseline is positive if the character sits above the baseline and negative if it sits below the baseline.

Blanks Left
The blanks left of the character. This is the distance (in dots) between the left side of the character cell and the start of the character bitmap.

Blanks Right
The blanks right of the character. This is the distance (in dots) between the right side of the character bitmap and the right side of the cell. If the character has right kerning, this value is negative and the character protrudes over the right side of the cell.

Left Kerning
The left kerning of the character. This is the distance (in dots) the character protrudes over the left side of the cell. This value produces left kerning only after the font converts. The 9700 family of printers does not support left kerning.

Bitmap width/Bitmap height
The width and height of the character bitmap in dots.

Char type
The type of the character, which in this example is [Nonblank]. You can change the type to [Spacing] for a spacing character, or [Null] to eliminate the character.

Floating accent
A flag for distributed printers which instructs the printer to map accents to a high or low position or to assign no accent to the character. This option is not used for the 9700 series printers and refers to the European ISO standard.

Copy toolbox

Allows you to copy a character into any other position in the font. Select the character to copy, then select a target position to which you want to copy the character. If the target position already contains a character, the character is replaced.

You can also copy a range of characters to a new position in a font. Click and <Ctrl>-click to select a range of characters and then click on a target character cell. The selected range of characters are copied to new positions starting at the target character cell.

Swap toolbox

Allows you to swap the positions of two characters in the font. Select the first character, then select the second character. The two characters swap positions.

Merge toolbox

Allows you to load another font and copy the font characters into your original font. A Load Font for Merge dialog box displays from which you select another Elixir-format font. After font selection, the screen splits into Source and Target font windows. The Target window contains the font you originally loaded; the Source window contains the font from which you want to merge.

Select the source character you want to merge into the target font, then select the target character you want to replace. The source character overwrites the target character.

The **Merge Font** and **Edit** menus contain options for loading another source font and undoing a merge operation, respectively.

Merging a tall character into a smaller font will vertically stretch all of the cells in the smaller font (see the following figures for an illustration of the effect of merging a tall character into a smaller one).
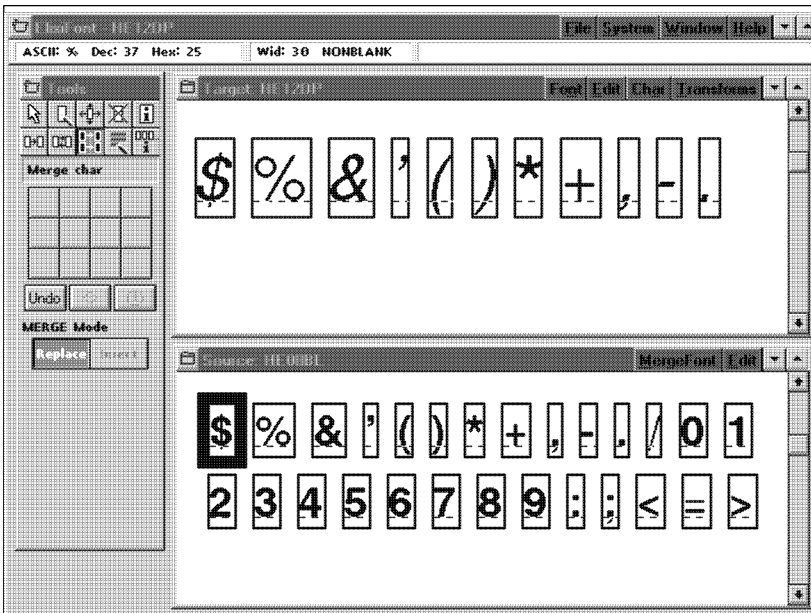
Figure 3-13. Selecting a character for merging
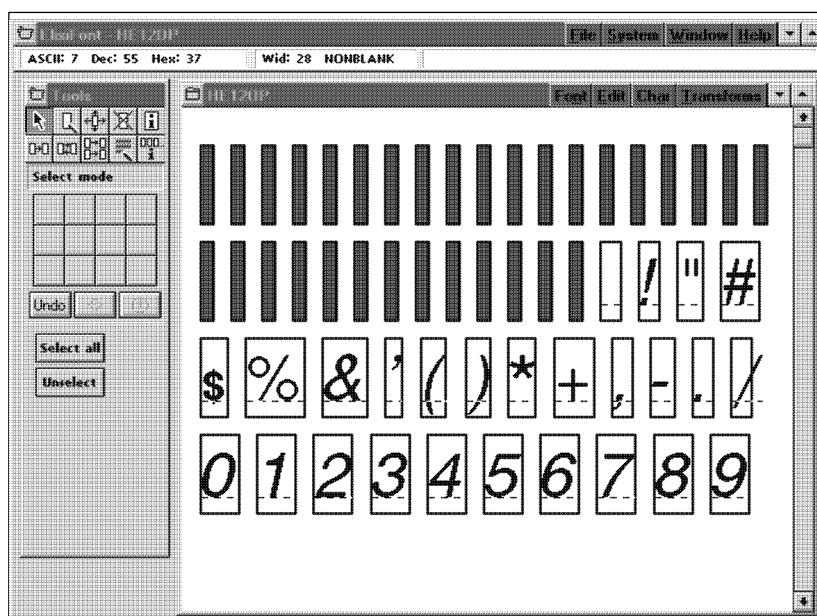
Figure 3-14. Effect of merging a character

Press <F7> to save the revised target font with a new name, or <Ctrl> + <S> to save the font with its original name.

Close the source font window and restore the target font window to its original size.

Sample toolbox

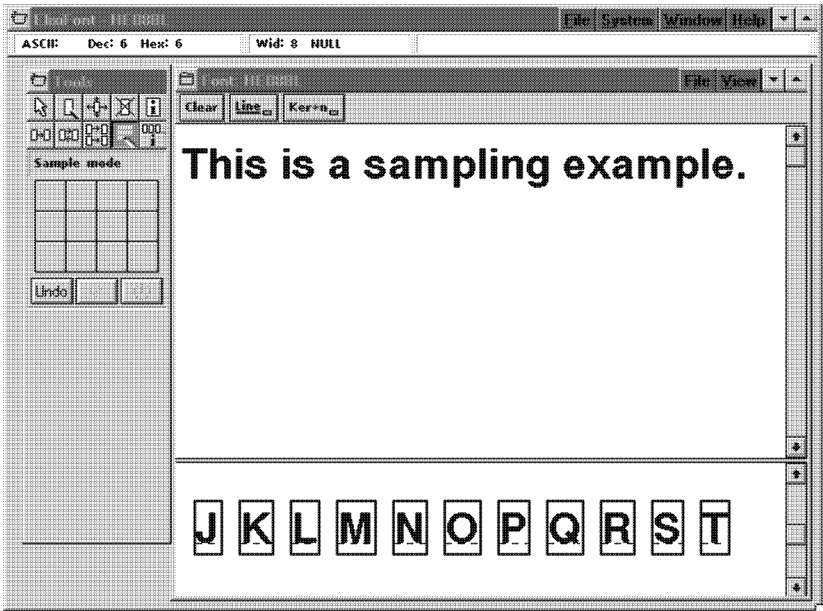Displays a font sampling pad in which you can see how text created with the current font will print.

Figure 3-15. Sampling pad example

Use the keyboard or click on the characters in the Character Set window to place the characters in the sampling pad.

Pull down the **File** menu and select [Print Sample] to proof print the sampling pad. When proof printing, text prints as bitmaps.

Select the [Line] option in the sampling pad window header to display the baseline when entering characters, or pull down the **View** menu and select [Show Baseline].

Select the [Kern] option in the sampling pad window header to show the effect of kerning character pairs. Alternatively, pull down the **View** menu and select [Show Kerning]. For this effect to be visible, the bitmap of the kerned character must extend beyond the character cell. See the "Glossary" for an explanation of kerning.

Font Properties toolbox <Ctrl> + <F2>
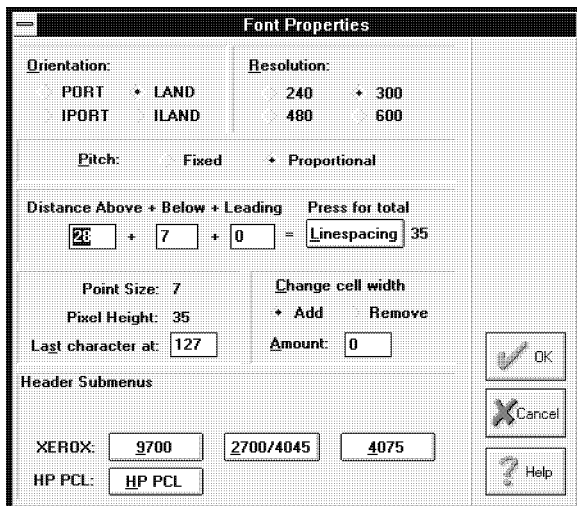
Displays the Font Properties dialog box.

Figure 3-16. Font Properties dialog box

The Font Properties dialog box contains the following
options:

Orientation
Specify the font orientation as Portrait, Landscape, In-
verse Portrait, or Inverse Landscape.

Resolution
Specify the font resolution as [240] or [300]. Note that
[480] and [600] options are for future implementation.

Pitch
Specify [Fixed] or [Proportional] fonts. If creating a
fixed-pitch font, a dialog box displays with options for
specifying the fixed cell width in dots, and selecting
the placement of the bitmap in the cell.

Distance Above + Below + Leading
Specify above, below and leading values for line spac-
ing. If you change any of these values, click on the
[Linespacing] button to recalculate the line-spacing
value.

Point Size/Pixel Height
Displays the point size and height in dots. You cannot change these values.

Last Character At
Specify the decimal position of the last character in the font.

Change Cell Width
Specify whether to add or remove from the cell width the number of dots you enter in [Amount].

Header Submenus
Displays the font header information for 9700, 2700/4045, 4075, and HP PCL fonts. See the "Header submenus" section of this chapter.

Header submenus

The [Header submenus] option in the Font Properties dialog box contains font header information for the following fonts: 9700, 2700/4045, 4075, and HP PCL.

Xerox 9700

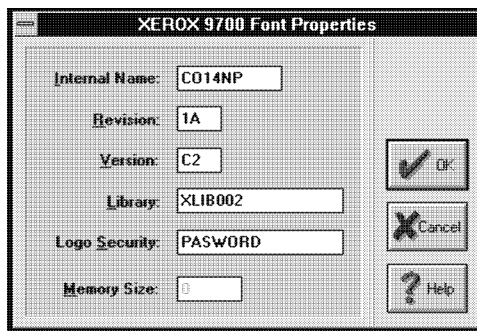Displays the Xerox 9700 Font Properties dialog box:

Figure 3-17. Xerox 9700 Font Properties
dialog box

The Xerox 9700 Font Properties dialog box contains the following options:

Internal Name
Specify a unique 6-character internal name. As the 9700 printer requires each font to have a unique name, you should change this name if you change the font orientation, or if you create a modified version of an existing font. The internal font name automatically changes to the new file name if you save the font into a new file.

Revision
Specify a 2-character font revision field for font library management.

Version
Specify a 2-character font version field for font library management.

Library
Specify a 10-character font library name for font library management.

Logo Security
Specify a 10-character logo security information field. Note that the printer software does not support the logo security information field.

Memory Size
This option is an information-only statistic displaying the amount of memory used by the font on a Xerox 9700 printer. This value is computed when converting to the 9700 output format, and will only display as a non-zero value if you subsequently reconvert the 9700 font back to Elixir format. If you edit the font in Elixi-Font, the this option will not reflect any changes you made.

Xerox 2700/4045

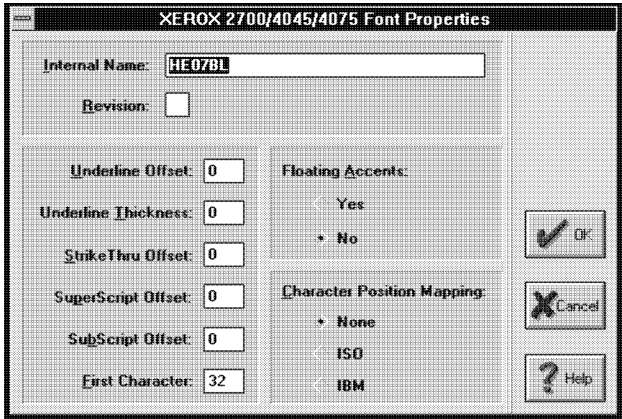Displays the Xerox 2700/4045/4075 Font Properties dialog box:

Figure 3-18. Xerox 2700/4045/4075 Font Properties
dialog box

The Xerox 2700/4045/4075 Font   Properties dialog
box contains the following options:

Internal Name
Specify a unique 20-character internal name for the
font. Change this name if you change the font orien-
tation or create a modified version of this font.

If the internal name on an XES font is defined, saving
the font will not overwrite the internal name. If the in-
ternal name of an XES font is not defined, saving the
file automatically assigns the file name to the internal
name.

Revision
Specify a 1-character font revision field for font library
management.

Underline Offset
Specify a value for the offset of the character
underlines.

Underline Thickness
Specify a value for the thickness of character
underlines.

Strike Thru Offset
Specify a value for the offset of character strike-throughs.

SuperScript Offset
Specify a value for the offset of all superscripts.

SubScript Offset
Specify a value for the offset of all subscripts.

First Character
Specify the decimal value of the position of the first non-null character in the font.

Floating Accents
Select whether or not there are floating accents in the font to be mapped to characters at print time (for European ISO fonts). See the "Production and distributed printer differences" section in the "Frequent Operations and advanced functions" chapter for more information.

Character Position
Select to map the font to an ISO or IBM character set at print time. Select [None] to not map the font.

Xerox 4075

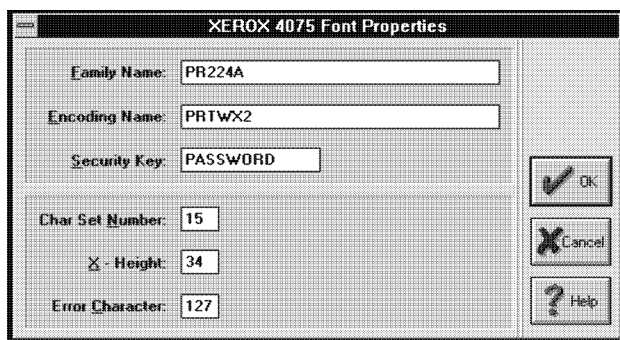Displays the Xerox 4075 Font Properties dialog box:

Figure 3-19. Xerox 4075 Font Properties dialog box

The Xerox 4075 Font Properties dialog box contains the following options:

Family Name
Specify a 20-character font family name.

Encoding Name
Specify a 20-character encoding name.

Security Key
Specify an 8-character security key information field. Note that the printer software does not support the security key information field.

Char Set Number
Specify a number for the character set.

X-Height
Specify a value for the X-Height of the font.

Error Character
Specify a number for the error character.

Note that the 4075 is a 240 dot per inch (dpi) printer and the 9700, 4045, and 2700 printers are 300 dpi. To print a font on the 4075 the same size as on a 9700, 4045, or 2700, downsize the characters as described in the "Frequent operations and advanced functions" chapter.

Entries in both the 2700/4045 and 4075 menus are required for a 4075 font.

HP PCL
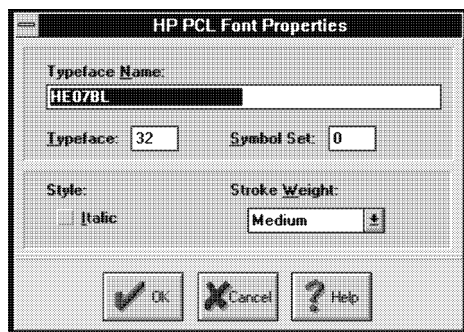
Displays the HP PCL Font Properties dialog box:

Figure 3-20. HP PCL Font Properties
dialog box

The HP PCL Font Properties dialog box contains the
following options:

Typeface Name
Specify the typeface name (file name of the font).

Typeface
Specify the typeface number.

Symbol Set
Specify the symbol set of the font.

Style
Select this option for italic or deselect this option for
normal.

Stroke Weight
Select the stroke weight (boldness) from the pull down
list.

4. Transforming fonts

This chapter describes how to use ElixiFont to apply transformations to single characters or to all characters in a font.

Transformations are editing functions that change the printing characteristics of characters. The transformations you can apply are:

Resize, Rotate, Shift, Slant, Darken, Lighten, Underline, Reverse, Filter, Outline, Halftone, and Mirror.

The following figure shows some examples of single-character transformations.

Figure 4-1. Transformation examples

To apply a transformation:

1. Select either a single character or the entire font.

   To select an entire font, pull down the **Edit** menu and select [Select all].

2. Select the Transformation tool.

3. Select a transformation operation from the toolbox, or pull down the Transforms menu and select a transformation option.

4. **Select the options for the transformation from the toolbox.**

5. **Click on the [Start Transform] button to start the transformation.**

Click on the [Stop] button in the toolbox to stop the transformation during execution or click on [Undo] in the toolbox to undo the transformation just applied. Note that the undo function does not reverse a transformation that is stopped during execution.

The following sections describe each transformation in detail.

Transformation tool options

This section describes Transformation tool options that display in the ElixiFont Toolbox.

Transformation tool options
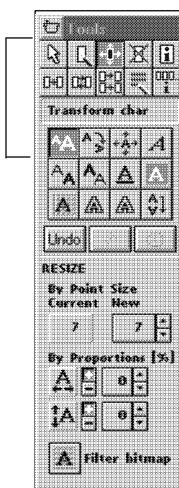
Figure 4-2. Transformation toolbox

Resize

The Resize transformation allows you to increase or decrease the size of a selected character or font by up to 50% more or less than the current point size. When resizing the entire font, line spacing, cell widths, and other values are resized proportionally.

If you are resizing the entire font, or increasing the character size and the enlarged character does not fit in the character cell, you are prompted for confirmation.

Note that the Undo operation is not supported for Resize transformations.
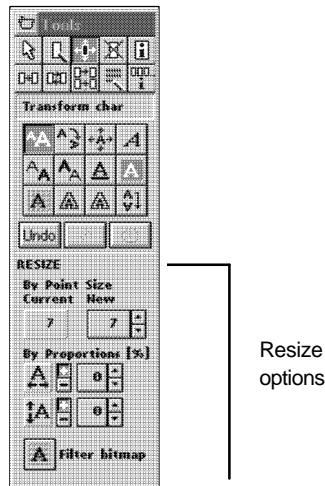
Figure 4-3. Resize options

The Resize toolbox contains the following options:

Resize by Point Size
To resize the character or font by point size, click on the up or down arrow in the [NEW] option until new point size displays. Note that the current point size also displays in the toolbox.

Resize by Proportions
To resize the height and width of a character or font by proportion, click on [+] to increase the size of the character or font and click on [-] to decrease the size of the character or font, then click on the up or down arrows to specify the percentage to increase or decrease the point size.

Filter Bitmap
To remove jagged edges and single bits after resizing, select the [Filter Bitmap] option to remove single black bits or deselect the [Filter Bitmap] option to remove single white bits. Before applying filtering to an entire font, you may want to apply filtering to a single character to see the effect of different filtering options. Repeatedly resizing the same font, significantly distorts the font and is not recommended.

Rotate

The Rotate transformation allows you to rotate a character or the entire font in increments of 90 degrees.

If you rotate the entire font more than once, cell dimensions cannot be preserved and reversing the rotation will not restore the font exactly.

Note that this option does not create a landscape font from a portrait font or a portrait font from landscape font. To change the orientation of the font, modify the [Orientation] option in the Font Header dialog box.
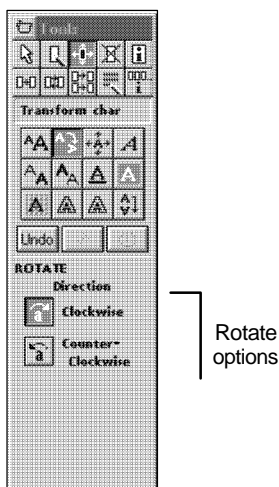
Figure 4-4. Rotate options

The Rotate toolbox contains the following options:

Clockwise
Click on this option to rotate the selected character or font 90 degrees clockwise. Each time you click on this option, the character or font rotates an additional 90 degrees.

Counterclockwise
Select this option to rotate the selected character or font counterclockwise. Each time you click on this option, the character or font rotates an additional 90 degrees.

Shift

The Shift transformation shifts a character or font within the cells.

If shifting a character extends it beyond its cell, a dialog box requests confirmation for increasing the size of the character cell.
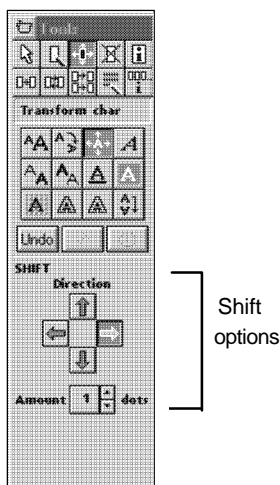
Figure 4-5. Shift options

The Shift toolbox contains the following options:

Direction
Select a direction to shift: up, down, left, or right.

Amount
Specify the number of dots you want the characters to shift.

Slant

The Slant transformation allows you to slant a charac-
ter or font. This feature is useful for creating italic ver-
sions of a character or a font.

A warning dialog box prompts you if slanting a charac-
ter extends it beyond its cell.

Each slant operation adds distortions (like jagged
edges, single bits, etc.) that compound with repeated
operations. Therefore, repeated slanting of charac-
ters is not recommended.
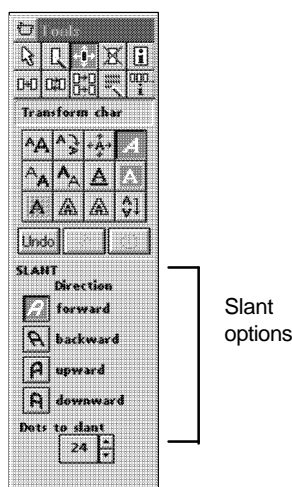
Figure 4-6. Slant options

The Slant toolbox contains the following options:

Direction
Select the slant direction: [Forward], [Backward], [Upward], or [Downward].

Dots to Slant
Select the number of dots, up to 99, by which you want the character(s) slanted.

Darken

The Darken transformation allows you to darken (embolden) characters by adding one or more dots next to existing dots in the character bitmap.
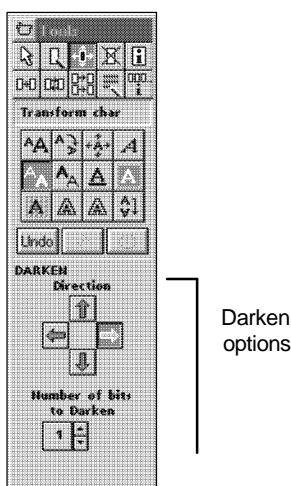
Figure 4-7. Darken options

The Darken toolbox contains the following options:

Direction
Select the side of the bitmap where you want dots
added.

Number of Bits to Darken
Specify the number of dots to add.

Lighten

The Lighten transformation allows you to lighten (un-bold) characters by removing one or more dots from existing dots in the character bitmap.
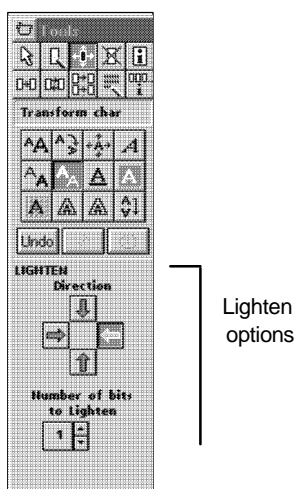
Figure 4-8. Lighten options

The Lighten toolbox contains the following options:

Directions
Select the side of the bitmap where you want dots removed.

Number of Dots to Lighten
Specify the number of dots to remove.

Underline

The Underline transformation allows you to underline characters.
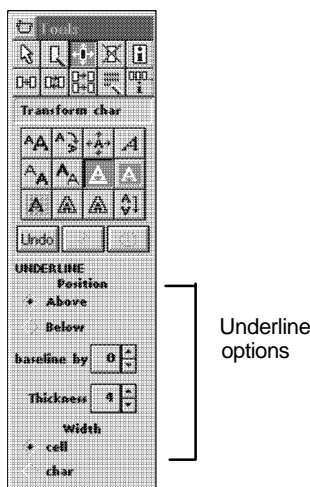
Figure 4-9. Underline options

The Underline toolbox contains the following options:

Position
Select the position of the underline above or below the baseline.

Baseline by
Specify the distance from the baseline.

Thickness
Specify the thickness, in dots, of the underline. The default is 4 dots.

Width
Select the underline as either the width of the cell or the width of the character.

Reverse

The Reverse transformation reverses character cells by changing black to white and white to black.

If you are reversing an entire font, a dialog box displays to confirm the operation.
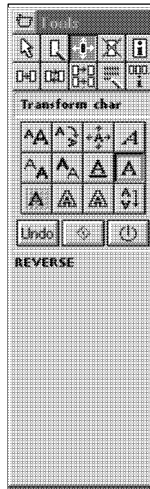
Figure 4-10. Reverse toolbox

Filter

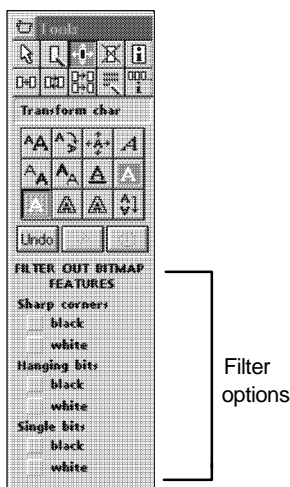The Filter transformation allows you to apply filtering to one or more characters in a font.

Figure 4-11. Filter options

The Filter toolbox contains options for filtering the following: [Sharp Corners], [Hanging Bits], and [Single Bits].

The following figure shows the filter options:
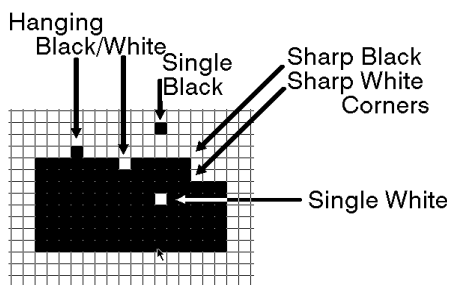
Figure 4-12. Filtering options

Note that the filtering result may not be consistent with bits that are on outer edges of the character bitmap. After filtering and performing manual edits, you should check character bitmaps.

Outline

The Outline transformation encloses the character bit-map with a border and reverses the enclosed area.
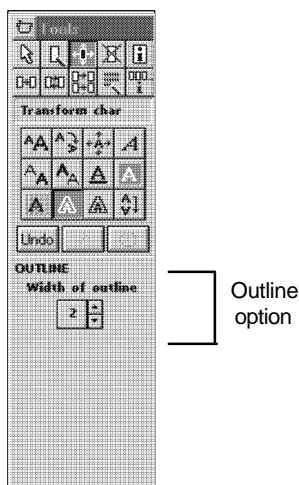

Figure 4-13. Outline option

The Outline toolbox contains the following option:

Width of Outline
Specify the outline thickness between 1 and 9 dots. The default is 2 dots.
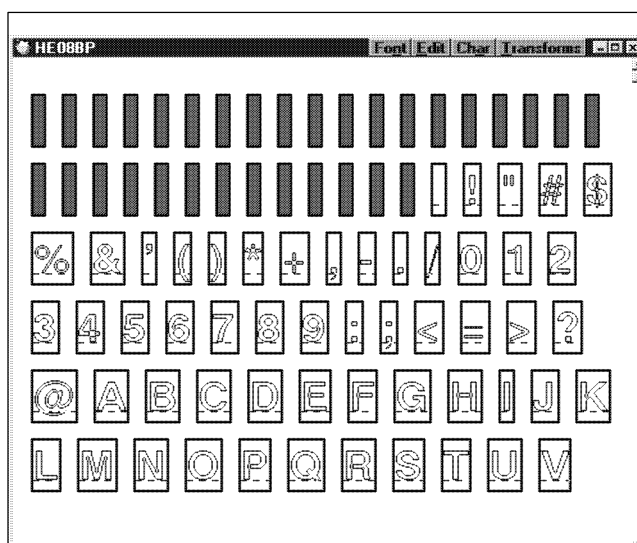
The following figure shows the effect of outlining:

Figure 4-14. Outlining example

Halftone

The Halftone transformation allows you to apply line or shading patterns to characters.

Halftoning is applied to solid black portions of a character. If you are halftoning a character that is not solid black, for example a shaded or previously halftoned character, only the black portions of the character are halftoned. When halftoning a spacing character, reverse it to black then apply halftoning to the foreground.

Note that when halftoning an entire font, you may be required to adjust some character width settings for correct character fit when placed together.
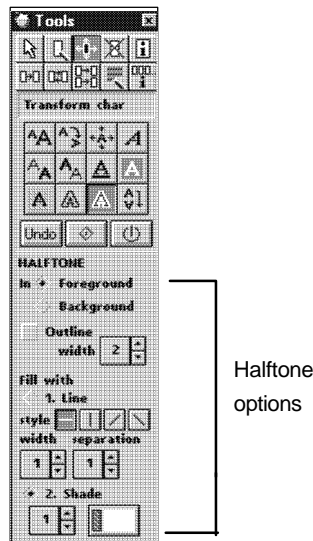
Figure 4-15. Halftone options

The Halftone toolbox contains the following options:

Foreground/Background
Select to apply halftoning to the character bitmap [Foreground], or the cell [Background].

Outline
Select this option to outline the character bitmap and then select the number of dots for the width of the outline.

Line
Select this option to apply halftoning as lines, and then select the [Style], [Width] and [Separation] options.

Style
Select to apply halftoning using horizontal, vertical, 45 degree or 135 degree lines.

Width
Specify the line width for halftoning.

Separation
Specify the line separation in dots.

Shade
Select this option to apply halftoning using shades, then click on the up or down arrows to select a shade pattern number. The pattern displays in the pattern preview box.

Mirror

This Mirror transformation rotates characters vertically or horizontally.
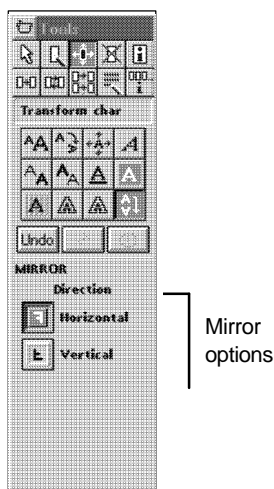

Figure 4-16. Mirror options

The Mirror toolbox contains the following option:

Direction
Select to mirror the characters horizontally or vertically.

The following figure shows an example of horizontal and vertical mirroring of the character G.
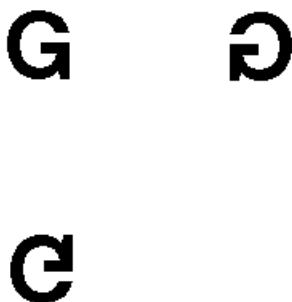

Figure 4-17. Mirroring example.

5.   Frequent operations and advanced functions

This chapter describes some examples of frequently performed actions using ElixiFont.

Changing the font orientation

Changing the orientation of a font is different from rotating the characters in a font. When rotating characters, the print direction (the direction of advancing text) remains the same. When the orientation of a font changes, the print direction also changes. Information about the orientation of a font, including the print direction, is included in the font header.

Font orientation is specified as portrait, landscape, inverse portrait, and inverse landscape. The way text prints on a page depends on the orientation of a page which can be portrait or landscape. The following figure illustrates the effect of printing text with different orientations on portrait and landscape pages.
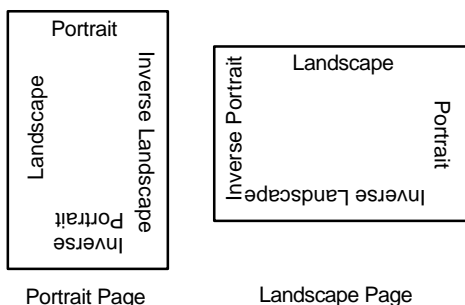
Figure 5-1. Portrait and landscape text and pages

To change the font orientation, select either [PORT], [LAND], [IPORT], or [ILAND] in the Font Properties dialog box. See the "Creating and editing fonts" chapter for more information.

To distinguish the new font from the original font, use the [Save Font As...] option to change the font name. You may want to use a naming convention, such as using an L suffix for landscape fonts, to distinguish fonts with different orientations.

To use the new font in Elixir applications such as Elixi-Form, create a screen version of the font using the ElixiSys Desktop. See your *ElixiSys Desktop and Converters User Guide* for more information.

When converting the font to another format using the ElixiSys Desktop, the orientation of the output font is included in the header.

If you create a font with a new orientation and want to later convert it to Xerox format, change the internal name of the font (using the [Header Submenus] options in the Font Properties dialog box), and the DOS external file name to distinguish the new font from the font with the original orientation. See the "Creating and editing fonts" chapter for more information.

To generate all four orientations, change the font header orientation and save it as a different name for each one of the four orientation options. Then use the ElixiSys Desktop to convert each file.

Note that stem names of Xerox production-printer fonts can contain only six characters. If the stem name of a font being converted to Xerox production-printer format contains more than six characters, the last (right side) characters are truncated. Check the font names before conversion.

Changing the width of character cells

After proofing text created by a proportional font, you may want to change the width of individual cells to make printed text more appealing.

- To change the width of a character, select it and change the [Cell Width] option in the Character Properties dialog box.

- To change the width of all character cells by the same amount, change the [Cell Width] option in the Font Properties dialog box.

- To make the cell widths the same fixed amount, select [Fixed] in the Font Properties dialog box and enter the fixed width in the Changing to Fixed Pitch dialog box.

See the "Creating and editing fonts" chapter for more information.

Note that if you want to convert your fonts to Xerox format, Xerox printers cannot accommodate characters with width, height, or baseline offset larger than 512.

Changing the baseline offset

The baseline offset refers to where characters sit with respect to the baseline. There are two ways to change the baseline offset:

• Change the [Baseline Offset] option in the Character Properties dialog box. See the "Creating and editing fonts" chapter for more information.

• Shift the character up or down using the Shift transformation. You can also use the Shift transformation to shift all characters in the font by the same amount. See the "Transforming fonts" chapter for more information.

Changing the font internal name

Procedures for changing the internal name of a font depend on whether you want to print the font on a production (9700 format) or a distributed (XES) printer.

As printer font names can contain up to six characters, do not use more than six characters to specify internal and external names for fonts you want to convert.

To change the internal font name of a font you want to print on a production printer:

1. Pull down the Font menu and select [Properties].

The Font Properties dialog box displays.

2. Select [9700].

The Xerox 9700 Font Properties dialog box displays.

3. Enter a new internal name in upper case letters and click on [OK].

To change the internal font name of a font you want to print on a distributed (XES) or a 4075 printer:

1. **Pull down the Font menu.**

   The Font Properties dialog box displays.

2. **Select [2700/4045]**

   The Xerox 2700/4045/4075 Font Properties dialog box displays.

3. **Enter the new internal name in upper case or lower case letters.**

For easier tracking and management, you may want to match the internal font name and the external DOS names.

To change the DOS file name:

1. **Pull down the File menu.**

2. **Select [Save Font As].**

3. **Save the font with a new name.**

Note that when you save a font with a new DOS name, the internal name is also changed.

Horizontal character spacing

You can change the spacing of individual characters or the whole font.

To change the character spacing for a single character, select a font, pull down the **Char** menu, select [Properties], and enter a new value for the [Cell Width] option.

To change the character spacing for the entire font, select the font, pull down the **Font** menu, select [Properties], and select to [Add] or [Remove] dots from the [Change Cell Width] option.

See the "Creating and editing fonts" chapter for more information about these options.

Null character conversions

You can edit null characters to create spacing and nonblank characters.

To edit a null character:

1. **Select the null character.**

2. **Pull down the Char menu and select [Properties].**

   The "Properties of Null Character" dialog box displays.

3. **In the [Char Type] option, select [Spacing] and click on [OK].**

   The null character is converted to a spacing character.

4. **With the spacing character still selected, pull down the Char menu and select [Properties].**

   The "Properties of Spacing Character" dialog box displays.

5. **Enter a value for the [Cell Width] option and click on [OK].**

6. **Double-click on the spacing character.**

7. **Create a nonblank character using the editing tools.**

   See the "Creating and editing fonts" chapter for more information about creating a nonblank character.

Production/distributed font conversion

You can convert between 9700 (production-printer) fonts and 2700/4045 (distributed) fonts using ElixiSys Desktop.

When converting fonts, consider the effect of the different printer hardware and software on printer output. For example, the size and shape of dots are different for different Xerox printer types.

In addition, some early (1984 - 1985) Xerox 4045 printers print at 303 dots per inch, while the 9700 series print at 300 dots per inch. This one percent difference may be important in some applications.

Production and distributed printer differences

The following list describes the major differences between Xerox production and distributed printers.

• The 9700 does not permit characters at decimal positions 0 - 15, while distributed printers permit all characters. Converting from a 4045 font to a 9700 font may cause characters to be dropped unless explicitly moved to safe positions in ElixiFont.

• The maximum length of a 9700 font name is six characters. The maximum length of a distributed internal name is 20 characters. DOS file names can contain up to eight characters plus up to three characters for the extension.

When converting a font from a distributed to production-printer format, the first six characters must be unique.

• Distributed printer fonts, through the ISO character mapping scheme, support a wide range of floating accents which are dynamically placed above characters at print time. In production printers, accents are part of the character bitmap. To create accented 9700 characters, use the [Copy] and [Blend] options.

- Handling overstrike characters: The hardware inside a distributed printer can overlay characters to produce overstrikes, strikethroughs and underlines. A 9700 cannot perform these functions. To generate underlined text on a 9700, use ElixiFont to create characters with underlining, then convert the font using ElixiSys Desktop and use the underlined characters on the page.

- The Xerox 9700 and Xerox 2700/4045 Font Properties dialog boxes display the major differences between the internal fields of the two types of printers.

  These fields are extracted from the appropriate Xerox font headers and do not affect ElixiFont operation. However, if you convert Elixir fonts to Xerox format, the values specified for the fields in the Font Properties dialog box are converted and included in the Xerox font header. Before specifying or changing any of these fields in these dialog boxes, consult your Xerox printer or font manual.

Working with reversed fonts

The best way to work with reversed fonts is to first reverse the entire font to a normal "black on white" mode. You can then resize, slant, rotate edit, shift and perform any other operation on the font.

When you have completed your transformations, reverse the font again so that the characters are white on black.

Make sure characters do not partially extend beyond their cells, for example you should not attempt kerning on a reversed font.

Kerning characters

Kerning is the process of adjusting the spacing between character pairs to enhance readability and to visually equalize the spacing among all characters within a line. The amount of space added or subtracted between character pairs is dependent upon the font and point size used.

There are two types of kerning:

• Left kerning is when the space between a character and the one preceding it is adjusted (usually reduced).

• Right kerning is when the space between a character and the one following it is adjusted (usually reduced).

ElixiFont and Xerox printers fully support right kerning. To kern a character, decrease the cell width of the character so that the [Blanks right] option in the Character Properties dialog box becomes negative and the character extends beyond the right edge of the cell. See the "Creating and editing fonts" chapter for more information about the Character Properties dialog box.

See your Xerox printer manual(s) for more information about kerning on your printer.

Producing large ascenders/descenders

To have a character whose top or bottom extends beyond the top or bottom of the cell, display the Character Properties dialog box and change the [Baseline Offset] to large positive or negative values. This will cause the character to extend upwards or downwards beyond the cell.

A.   Keyboard shortcuts

This appendix lists keyboard shortcuts (fast keys) specific to ElixiFont operation.

To display a pull down menu, click on it or hold down the <Alt> key and press the underlined letter in the menu. Set <Num Lock> off for fast keys using the numeric keypad.

Function	Shortcut Key
Copy bitmap to clipboard (Edit mode)	<Ctrl> + <C>
Copy area (in Edit mode)	<Ctrl> + <O>
Cut area (in Edit mode)	<Ctrl> + <X>
Delete Character Bitmap (in Edit mode)	<Del> <Ctrl> + <Del>
Exit	<Alt> + <X> <Alt>+<F4>
Go to Previous page of font characters	<PgUp>
Go to Next page of font characters	<PgDn>
Go to First page of font characters	<Home>
Go to Last page of font characters	<End>
Grid toggle (Edit mode)	<F4>
Help	<F1>

Move area (Edit mode)	\<Ctrl> + \<M>
Next character (Edit mode)	\<Ctrl> + \<N>
Open	\<F8>
Pan up edit window	\<up arrow>
Pan down edit window	\<down arrow>
Pan left edit window	\<left arrow>
Pan right edit window	\<right arrow>
Paste (in Edit mode)	\<Ctrl> + \<V>
Previous character	\<Ctrl> + \<P>
Properties Character / CodePoint Font / CodePage	 \<F2> \<Ctrl> + \<F2>
Save	\<Ctrl> + \<S>
Save as..	\<F7>
Select / Unselect all	\<Ctrl> + \<A>
Toolbox show / hide	\<F10>
Undo	\<Alt> + \<Bksp> \<Ctrl> + \<Z>
Zoom in	\< + >
Zoom out	\< - >

B. Conversion chart

You can convert fonts created in ElixiFont to different formats using the ElixiSys Desktop. The following chart shows the supported conversions.

	ELIXIR TO	Screen TO	WIN TO	HP PCL TO	4045 TO	2700 TO	3700 TO	9700 TO	4075 TO	5Word TO
ELIXIR	---			**X**	**X**	**X**	**X**	**X**	**X**	**X**
Screen	**X**	---		**X**	**X**	**X**	**X**	**X**	**X**	**X**
WIN	**X**		---	**X**	**X**	**X**	**X**	**X**	**X**	**X**
HP PCL	**X**			---	**X**	**X**	**X**	**X**	**X**	**X**
4,045	**X**			**X**	---	**X**	**X**	**X**	**X**	**X**
2,700	**X**			**X**	**X**	---	**X**	**X**	**X**	**X**
3,700	**X**			**X**	**X**	**X**	---	**X**	**X**	**X**
9,700	**X**			**X**	**X**	**X**	**X**	---	**X**	**X**
4,075	**X**			**X**	**X**	**X**	**X**	**X**	---	**X**
5Word	**X**			**X**	**X**	**X**	**X**	**X**	**X**	---
PS Type 3	**X**				**X**	**X**	**X**	**X**	**X**	**X**

Glossary

accent
A mark over, under, or through a letter that indicates the vocal quality or sound value (inflection, tone, stress, etc.).

ascender
The part of a lowercase letter which extends above the x-height.
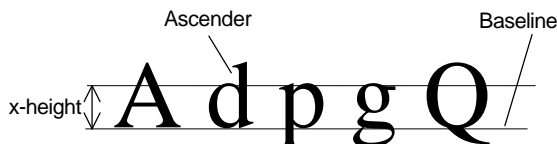
Figure G-1. Ascender and baseline

baseline
An imaginary line which is used to position a character. Characters may rest on the baseline or extend above or below it. Characters are normally positioned so that their baselines are aligned. Such characters are said to be base aligned.

baseline offset
The distance (in dots) from the bottom of the character bitmap to the baseline. The baseline offset is positive if the character sits above the baseline and negative if it sits below the baseline.

bitmap
A two-dimensional array of dots which is used to represent each character in a computerized font.

blanks left
The distance (in dots) between the left side of the character cell and start of the character bitmap.

blanks right
The distance (also in dots) from the right side of the character bitmap and the edge of the cell. If the character has right kerning, this value is negative and the character extends over the right side of the cell.

bold
A darker version of a font or character formed using heavier strokes. See also *weight*.

cell
An invisible frame surrounding a character whose width equals the set width and whose height equals the line spacing of the font.

cell height
The cell height of a character is equal to the line spacing of the font.

cell width
The width of a character cell, also called the set width, character width, or delta-x.

centralized printer
A classification of high speed Xerox printers. Examples of centralized printers are the 4050, 4650, 4090, 8700, 8790, 9700, and 9790. See also *distributed printers*.

character cell
See cell.

character header
A record stored in the computer for each character which contains information such as the set width and the position of the descender relative to the baseline.

character width
The width of the cell containing the character. This is also called the *delta-X* or *set width* of the character.

debolden
To lighten a character by removing bits from it.

delta-x
The delta-x of a character is the same as the character width or set width.

descender
The part of a letter which extends below the baseline.

Descender

Figure G-2. Descender

distributed printers
A classification of Xerox printers that are smaller and slower than Xerox *centralized printers*. Examples of distributed printers are the 2700, 3700, 4030, and 4045.

dot
See *point*.

embolden
To darken a character by adding bits to it. See also *bold*.

fixed-pitch
See *monospace*.

font
A complete set of characters of a particular font family, size, typeface, and orientation.

font family
A set of fonts with similar design characteristics, usually including many sizes, typefaces, and orientations.

font header
A record within the computer which contains information applicable to the entire font such as the font name, the line spacing, and the orientation.

halftoning
The application of line or shading patterns to a character so it may appear gray or textured.

inverse landscape/portrait orientation
Refers to the print direction of fonts as shown in the following figure.
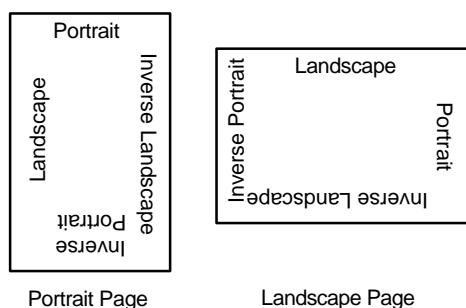
Figure G-3. Page and print orientations

kerning
Kerning is the process of adjusting the spacing between certain character pairs to enhance readability and to visually equalize the spacing among all characters within a line. The amount of space added or subtracted between certain character pairs is dependent upon the font and point size used.

Left kerned f
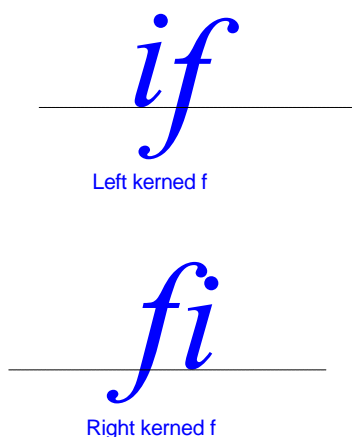
Right kerned f

Figure G-4. Left and right kerning

landscape orientation
Refers to the print direction of fonts. See figure G-3.

leading
The amount of white space placed at the top or bottom of characters for aesthetic effect, to improve readability, and to prevent overlapping between succeeding lines. Line spacing is usually equal to the point size plus the leading.

line spacing
The distance between succeeding lines of text when printed on a page. In other words, the line spacing is the distance from the top of the characters on one line to the top of the characters on the next line.

monospace
The characteristic of a font family whose characters are all assigned the same horizontal spacing (also called *fixed-pitch*).

mirroring
The rotation of a character so that its top becomes its bottom or its right becomes its left.

nonblank character
A printable character with a bitmap containing a character or symbol.

null character
An unprintable character that occupies an unused position in a font.

orientation
The orientation of a font is the direction of the type in reference to the upper left corner of a portrait page. See figure G-3.

overstrike
To print characters over each other.

pica
One pica is 12 points or 1/6 of an inch. The length of a printed line of characters is measured in picas.

pitch
The size (specifically the width) of a monospaced font in characters per inch.

pixel
The smallest mark that can be printed. A pixel is sometimes referred to as a dot. Character bitmaps are made up of dots or pixels. The word pixel is a contraction of picture element. A pixel can contain additional information such as color and can be larger than one bit while still representing one dot.

point
The size of the characters of a font when they appear on paper is given in points. One point is 1/72 of an inch or 0.352 mm.

point size
The size of a printed character in points from the top of the ascender to the bottom of the descender. Thus, if the characters in a font are, on average, 1/2 inch high when printed, the font is said to have a "point size of 36" or to be a "36 point font."

portrait orientation
Refers to print direction of fonts. See figure G-3.

proportional spacing
The characteristic of a font family, each character of which is assigned its own horizontal spacing. Proportional space fonts are aesthetically more pleasing and are easier to read. The text in this guide is proportionally spaced.

reverse
To switch a character from black on a white background to white on a black background black, or vice versa.

sans serif
Without a serif. See *serif*.

serif
A short stroke that projects out from the main part of a character.

Serif

Serif font   Sans serif font

Figure G-5. Serif and sans serif

set width
The distance from the start of the character cell to the beginning of the next character cell. Also called the character width or delta-x.

spacing character
A blank character that is used for positioning characters on a line. These characters do the same thing as a space key on a typewriter. Proportional fonts contain spacing characters with different widths. An em space is as wide as the "M" character, and an en space is as wide as the "N" character.

style
A modified version of a typeface. An example of a style is Italic. Thus, a Press Roman typeface may be in the Italic style.

typeface
A unique design for printed letters, such as Press Roman.

underline
To place a line under text, usually for emphasis (also called *underscore*).

weight
The thickness of a font which can be changed by emboldening or deboldening characters in a font.

x-height
The height of the lowercase x character. See figure G-1.

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