Elixir

ElixirFont

for AFP

User Guide

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1.   Introduction

This User Guide describes ElixirFont for AFP™, a so-phisticated bitmap character set editor that allows you to create and edit character sets in what-you-see-is-what-you-get (WYSIWYG) format.

With ElixirFont, you can perform the following opera-tions 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 perform other transformations

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

The current release of ElixirFont fully supports charac-ter set editing and creation for conversion to and from AFP bounded-box and unbounded-box fonts, double-byte fonts, and HP fonts.

In conjunction with the Elixir Desktop and Converters for AFP, fonts can easily be imported and converted to Elixir's generic font format, edited, and reconverted back to their original or other formats.

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 Elixir Technologies then contact one of the support center hotlines.

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

Elixir training

Elixir Technologies Corporation offers training for the full range of our Windows-based family of products. For more information, contact:

> **Elixir Learning**
> **(805) 641-5900 ext. 6**

ElixirFont environment

ElixirFont is designed to work with the Elixir Desktop for AFP, a Windows-based desktop. The Elixir Desktop simplifies file conversions and management by providing icons which you can manipulate with simple mouse drag-and-drop techniques (see the *Elixir Desktop and Converters for AFP User's Guide* for more information).

Other Elixir products that you can use with ElixirFont are:

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

- ElixirForm for AFP, a forms creation package that enables users to create and edit boilerplate forms using standard OGL form elements (see the *ElixirForm for AFP User's Guide* for more information).

Who should use this guide

This guide is intended for users familiar with AFP character sets and with AFP page printing resources.

Knowledge of Windows and DOS, specifically 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

ElixirFont 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

Elixir software uses the Microsoft Windows Help program to provide on-line Help for all 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 your Elixir software include graphics 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 with 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 function by selecting the quick help option in the Usage Switches (or Preferences -- for ElixirImage) 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. To see these operational messages, disable quick help.

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 top pull-down menu and choose 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 includes the following:

● an overview of AFP font structure

● how ElixirFont handles fonts converted from AFP and non-AFP formats

● ElixirFont features and how to use them.

This User Guide is organized as follows:

Chapter 1, "Introduction," provides an overview of ElixirFont and describes how to install and start Elixir-Font. It also gives additional information about the contents of this manual.

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

Chapter 3, "Font structure," describes the AFP and Elixir-format font structure, and the AFP terminology used throughout this guide. If you are not familiar with font structures and, specifically, AFP character sets, we strongly recommend that you read this chapter.

Chapter 4, "Loading fonts and code pages," describes how to create a new character set, load an existing font, and load and edit a code page.

Chapter 5, "Editing non-AFP fonts," describes how you can edit fonts originating from non-AFP sources.

Chapter 6, "Transforming non-AFP fonts," describes how to apply a variety of transformations to individual characters and to the entire font.

Chapter 7, "Editing Elixir-format character sets," describes how to edit character header values and character bitmaps, and how to merge, sample, copy, and delete characters from an Elixir-format character set.

Chapter 8. "Transforming Elixir-format character sets," describes how to apply a variety of transformations to individual characters and to the entire character set.

Glossary.

Index.

Installation

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

Starting ElixirFont

You can only start ElixirFont from the Elixir Desktop.

To start ElixirFont from the Elixir Desktop, open (double-click on) the ElixirFont icon at the right of the Desktop.

The ElixirFont main screen displays.
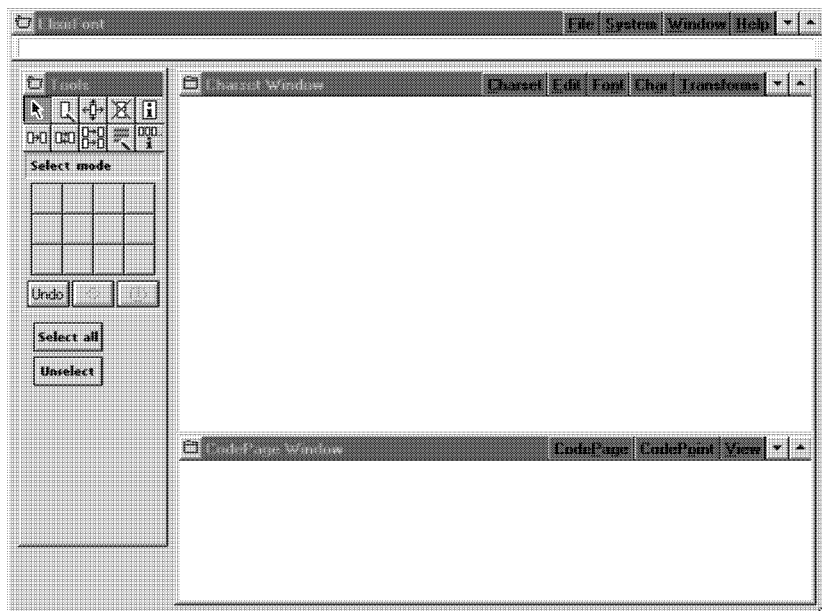
Figure 1-1. ElixirFont main screen

Alternatively, with the Elixir Desktop displayed:

1. **Open the Elixir Fonts folder.**

2. **Make sure you selected the [Show Charset] option (as shown below) or the [Show Coded Fonts] option in the Filter menu.**

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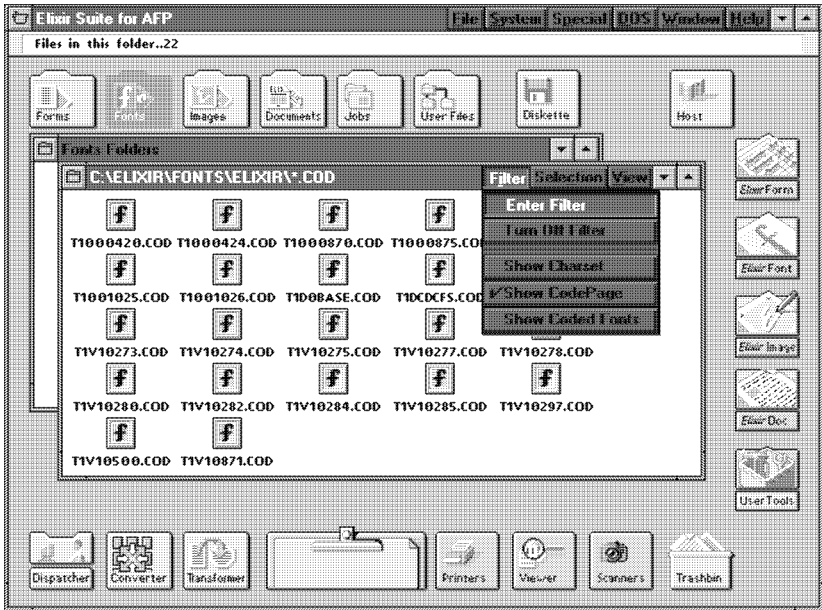
Figure 1-2. Elixir Fonts folder

3.   Open (double-click on) any .HDR font file.

The ElixirFont Character Set window displays the font
loaded.
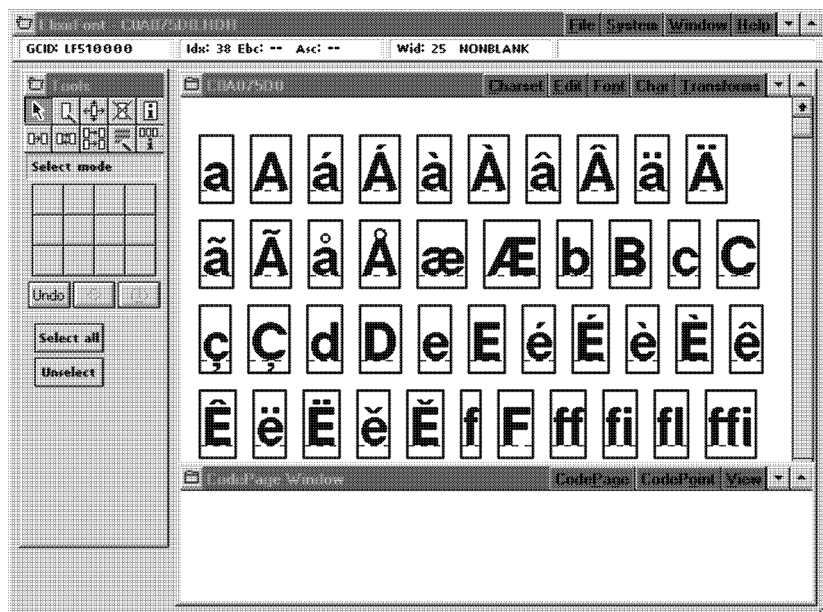
Figure 1-3. Loaded font in ElixirFont

Exiting ElixirFont

To exit ElixirFont, double-click on the Exit button at the top left of the main screen.

2.   ElixirFont basics

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

Main screen components

The ElixirFont main screen contains the following components:

- ElixirFont menu bar
- Toolbox
- Character Set window menu bar
- Code Page window menu bar.

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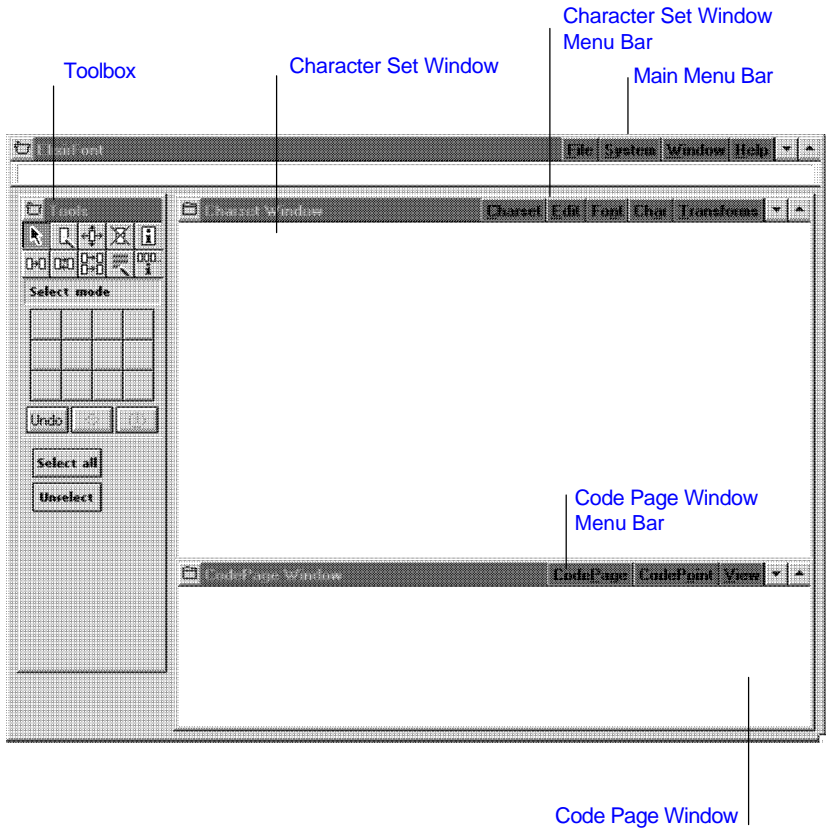
Figure 2-1. ElixirFont main screen

ElixirFont menu bar

The ElixirFont menu bar controls:

- loading and saving character sets, coded fonts, and code pages

- usage switches

- window display

- access to Help files.

File **System** **Window** **Help**

Figure 2-2. ElixirFont menu bar

File menu

The **File** menu allows you to:

● load and save character sets, coded fonts, and
code pages

● exit ElixirFont.

Open Coded Font
Displays the Load Coded Font dialog box listing .CDF
files. Select a coded font and click on [OK].

Open Charset
Displays the Load Charset dialog box listing .HDR
files. Select a character set and click on [OK].

Open Code Page
Displays the Load Code Page dialog box listing .COD
files. Select a code page and click on [OK].

Save Coded Font
Allows you to save the .CDF file with the names of the
currently loaded character set and code page.

Save Charset as
Allows you to save an edited character set under a
new name or an existing name (overwrites old file).

Save Code Page as
Allows you to save an edited .COD code page file un-
der a new name or an existing name (overwrites old
file).

Exit <Alt + F4>
Exits ElixirFont and returns you to the Desktop.

System menu

The **System** menu allows you to:

* set usage switches
* reset to defaults
* save customized configurations.

Usage Switches
Displays the Usage Switches dialog box with the following options:
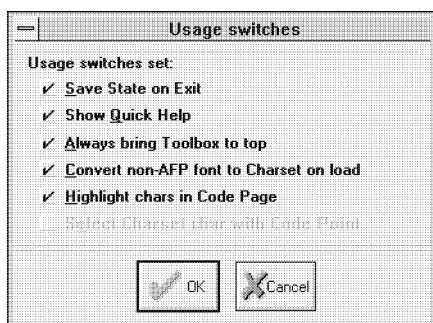
Figure 2-3. Usage Switches
dialog box

Save State on Exit
Select to save your customized settings. Unselected returns settings to ElixirFont defaults.

Show Quick Help
Select to display short descriptions in the area under the ElixirFont menu bar.

Always bring Toolbox to top
Select to have the Toolbox always display on top of any window (no need to tile windows to access Toolbox).

Convert non-AFP font to Charset on load
Select to load and reformat fonts as an Elixir-format character set. Unselected loads the font as a non-AFP font.

Highlight chars in the Code Page
Select to display all fonts referenced in the code page as a different color in the Character Set window.

Select Charset with Code Point
Reserved for future use.

Reset to Defaults
Resets all configuration parameters to the ElixirFont
default values.

Save Configuration
Saves your customized settings rather than resetting
to ElixirFont defaults.

Window menu

The **Window** menu controls the way each editing win-
dow displays. You can:

- tile all displayed windows

- toggle the display on or off for the Character Set,
  Code Page, and Toolbox windows.

Help menu

The **Help** menu allows you to access the on-line help
files for ElixirFont. See the "Introduction" chapter for
information about how to use on-line help.

Toolbox

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

Tools

At the top of the Toolbox are the tools you can select. These display in two rows as shown in the following figure.

Select

Edit Bitmap

Transform (selected)

Kill

Character
Properties

Font
Properties

Sample

Merge

Swap

Copy
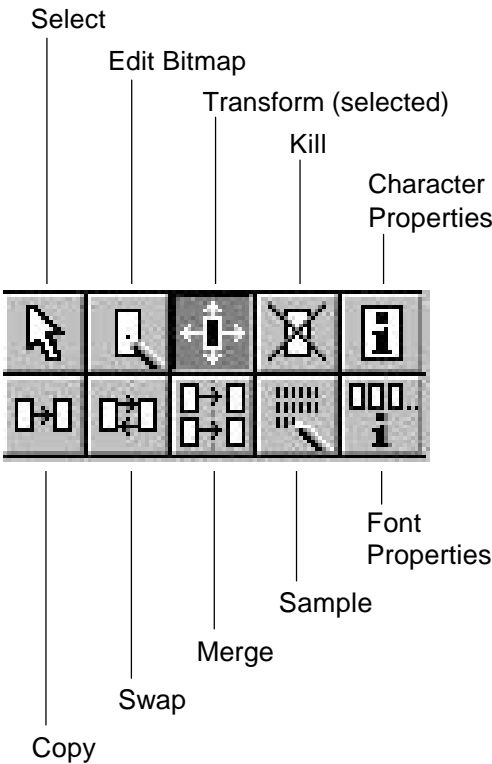
Figure 2-4. ElixirFont tools

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Toolbox options

This section describes ElixirFont tools and their functions.

Select a tool to display options for that tool at the bottom of the Toolbox. Most tools also contain the options shown below.
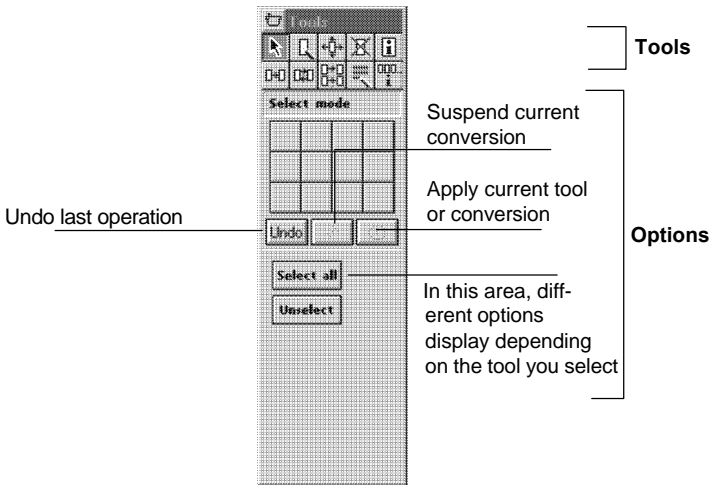
Figure 2-5. Toolbox example

The middle buttons allow you to undo the last operation, suspend the current conversion, or to apply the current tool or conversion.

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

The area below the buttons contains different options depending on the selected tool.

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

Character Set window menu bar

You use the Character Set window menu bar for creating, editing, and saving character sets with selected coded fonts.

Charset Edit Font Char Transforms

Figure 2-6. Character Set window menu bar

Charset menu

The options in the **Charset** menu allow you to create, open, and save a coded font, and merge character sets together.

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

Open Charset
Displays the Load Charset dialog box listing .HDR files. Select a character set and click on [OK].

Open Coded Font
Displays the Load Coded Font dialog box listing .CDF files. Select a coded font and click on [OK].

Save Charset
Allows you to save a character set.

Save Charset as
Allows you to save an edited character set under a new name or an existing name (overwrites old file).

Save Coded Font
Allows you to save the .CDF file with the same name.

Merge Charsets
Displays the Load Charset for Merge dialog box listing the .HDR files. Select a character set to merge with the currently displayed character set and click on [OK].

Edit menu

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

Undo
Undoes the last edit operation.

Delete
Allows you to delete selected characters.

Select all
Allows you to select all characters in the character set.

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

Font menu

The **Font** menu allows access to information about the properties and statistics of a complete font and re-format of a non-AFP font. You can also view a sample of how the font will print.

Properties
Displays the Font Properties dialog box which provides values and parameters of the loaded character set.

Statistics
Displays the Size of Elixir Format Font dialog box which provides the size (bytes) of each component (headers, bitmaps, etc.), and the total size of the loaded character set.

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

Reformat
Allows you to reformat a non-AFP font to AFP. Disabled if an AFP character set is loaded.

Convert
For future implementation.

Sort
Sorts characters by their GCID's.

Char menu

The **Char** menu provides properties and statistics of an individual character.

Properties
Displays the Character and CodePoint Properties dialog box which provides rotation, GCID, and characteristics of an individual font.

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

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

Swap
Allows you to swap a selected character with 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 chapters on transforming for complete option descriptions.

Code Page window menu bar

The Code Page window menu bar allows you to create, load, and save code pages, edit code points, and control how the Code Page window displays.

CodePage | CodePoint | View

Figure 2-7. Code Page window menu bar

CodePage menu

The **CodePage** menu allows you to create, save, or open an existing code page.

New Code Page
Displays the Code Page Properties dialog box which provides options that include:

* Code Page description
* default character information
* variable space character information.

Open Code Page
Displays the Load Code Page dialog box listing .COD files. Select a code page and click on [OK].

Open Coded Font
Displays the Load Coded Font dialog box listing .CDF files. Select a coded font and click on [OK].

Save Code Page
Allows you to save the loaded code page, overwriting the original. No warning is given if you edited characters within the code page.

Save Code Page as
Allows you to save an edited code page under a new name or an existing name (overwrites old file).

Save Coded Font
Allows you to save the loaded coded font file, overwriting the original. If you loaded a character set and coded font individually, the program prompts you for the name of the coded font, either creating a new file or overwriting the existing file.

Properties
Displays the Code Page Properties dialog box containing the following:

* Code Page description
* default character information

• variable space character information.

CodePoint menu

The **CodePoint** menu allows you to edit code points.

Properties
Displays the Code Point Properties dialog box which provides GCID, hex/decimal, and flag information.

Copy
Allows you to copy selected code points.

Swap
Allows you to swap selected code points.

Delete
Allows you to remove a code point.

Undo
Undoes the last edit operation.

View menu

The **View** menu allows you to select the Code Page window display:

Real Size
Displays the Code Page at actual size.

Fit to Window
Adjusts the display of the Code Page to fit in the Code Page window.

By Column
Displays the Code Page by column.

By Row
Displays the Code Page by row.

3.   Font structure

This chapter describes AFP and Elixir font structures and how ElixirFont handles fonts originating from AFP and non-AFP sources. We strongly recommend that you read this chapter, even if you are familiar with AFP fonts. If you are not familiar with AFP fonts, you should also read IBM's *Host Font Data Stream Reference* and *About Type* manuals.

ElixirFont uses a proprietary structure that enables you to display and edit characters in a WYSIWYG format.

Converters in the Elixir Desktop allow you to convert fonts from AFP Bounded Box and Unbounded Box, Hewlett-Packard (HP), and Bitstream Facelift outline (contour) formats, to Elixir format fonts.

AFP font structure

To understand AFP fonts, you must have a basic understanding of some general font-related definitions. The following sections describe the components of a type family, a term that encompasses all the characteristics of printed text.

Type family

A type family is a group of typefaces that have a common basic design but can vary in size and style. Examples of type families are:

- Sonoran Sans Serif
- Courier
- ITC Avant Garde Gothic

Typeface

A typeface is collection of characters with the same style, weight, and *w*idth, as described below:

*   Style is the inclination of characters with respect to the vertical axis; for example, Roman (upright) or *italic* (top slant to the right).

*   Weight is the degree of **boldness** of a typeface, for example, semi-light, light, medium, or bold.

*   Width is the degree of horizontal spacing of a character; for example, condensed or normal.

Examples of typefaces are:

*   Sonoran Sans Serif Roman medium normal
*   Helvetica italic bold condensed
*   Times italic light normal

Type font

A type font (also called a font) is a collection of characters that share the same type family, typeface, and size. Examples of fonts are:

*   Sonoran Sans Serif 10-point Roman medium normal

*   Helvetica 8-point italic bold condensed

*   Times 12-point italic light normal

AFP font types

AFP fonts can be Bounded Box or Unbounded Box fonts.

Unbounded Box fonts

Unbounded Box fonts are AFP fonts for IBM 3800 printers. A characteristic of Unbounded Box fonts is that for printing rotated text, a separate font is required for each of the four rotations of the font (0º, 90º, 180º, and 270º from the inline print direction).

Bounded Box fonts

Bounded Box fonts are AFP fonts for IBM printers other than the 3800. For printing rotated fonts on these printers, only one version of the font is required which is rotated "on the fly".

AFP font components

Each AFP font has three components:

- Character set
- Code page
- Coded font

Character set

An AFP character set corresponds to the type font (or font) described in the previous section. A character set contains information about a single type family, typeface, bitmap, and point size, and can also include information about the baseline positioning, rotation, ascender, etc. Included in the character set is a unique identifier for each character in the character set called a graphic character ID (GCID).

Code page

A code page maps keyboard entries to characters in a character set. Each key on a keyboard corresponds to a hexadecimal code point. When printing on an AFP printer, the code point is matched to a GCID in the code page. This allows you to use different code pages, for example to print subsets of characters in a character set (like for different European languages).

Hex. Code Point	Graphic Character ID
C1	LA020000
...	
97	LP010000
...	
D8	LQ020000

Figure 3-1. Code Page

Coded font

A coded font links a character set to a code page. In order for a character to be printed, you must include it in the character set, and list it in a code page, and the two must link in a coded font.

Coded Font

Character Set Names	**Code Page names**

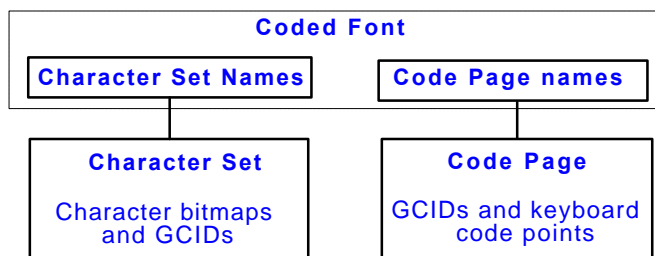| **Character Set**	**Code Page**
Character bitmaps and GCIDs	GCIDs and keyboard code points

Figure 3-2. AFP font components

For example, the binary representation of upper case

(also called the code point). When printing the letter A:

- its code point (C1) is matched to a GCID in the code page for the font (LA020000 in the example shown in figure 3-1)

- the GCID is matched to a raster pattern in the character set for the font

- the raster pattern is printed as upper case A.

Note that you must include all GCIDs (in the code page) in the character set, otherwise an error condition will exist at print time.

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AFP font characteristics

This section describes some characteristics of AFP fonts, particularly their appearance on a printed page.

Inline (Print) direction

The inline print direction (or simply print direction) is the direction in which characters are added to a line of text. The inline print direction has four possible values: 0º, 90º, 180º, and 270º as shown below (with respect to this page):
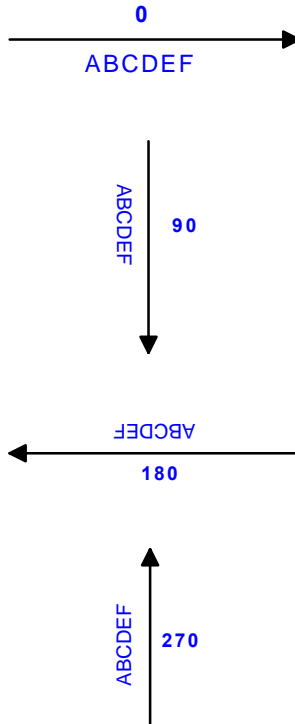
```
                        0
        ──────────────────────────────▶
                     ABCDEF


                              │
                              │
                          A   │
                          B   │  9 0
                          C   │
                          D   │
                          E   │
                          F   ▼


                          ⅎƎ◖ƆᗺA
        ◀──────────────────────────────
                     1 8 0


                          ▲
                          │
                          A   │
                          B   │  270
                          C   │
                          D   │
                          E   │
                          F   │
                              │
```

Figure 3-3. Inline (print) directions

Limitation: Unbounded Box fonts do not support 180º print direction.

Character baseline

The character baseline is a reference to which char-
acters align as they are added to the page in the inline
(print) direction. The character baseline is always par-
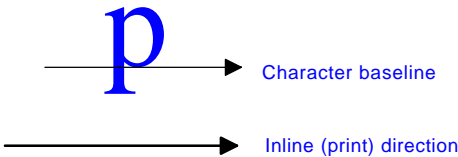allel to the inline (print) direction.

Figure 3-4. Character baseline

Character rotation

The character rotation is the angle through which you
rotate a printed character clockwise in 90° increments
about the character baseline.

The following figure shows the four character rotations
for the 0° inline (print) direction.
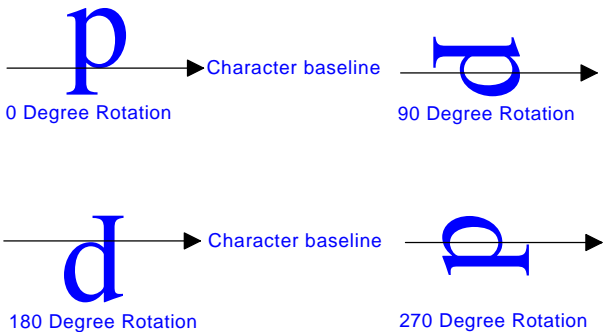
Figure 3-5. Character rotations for 0° inline
print direction

As there are four inline print directions, there are a to-tal of 16 combinations of inline (Print) directions and character rotations. Note that since Unbounded Box fonts do not support the 180° print direction, only 12 combinations apply for Unbounded Box fonts.

Toned-Pel box

A Toned-Pel box defines the boundaries of a charac-ter bitmap. Each character bitmap in a character set consists of an ordered array of black dots called toned pels and non-printing blank dots called untoned pels. The toned pels define the shape of the character and the untoned pels define the white space in and about the character.
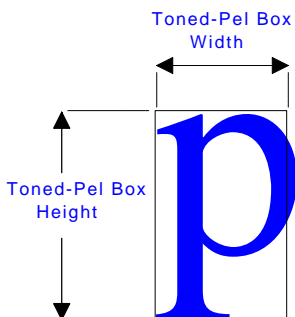
Figure 3-6. Toned-Pel box

Printing adjacent characters

When printing side-by-side characters (like text in a word), each character is positioned according to its character reference point and character escapement point.

The character reference point defines the current print position for the character.

The character escapement point marks the end of the space along the character baseline allocated for the character. When printing adjacent characters, the ref-erence point of the next character is placed at this point.

The distance from the character reference point to the near edge of the toned-pel box is the "A-space" for the character.

The toned-pel box width is the "B-space" for the character.

The distance from the far edge of the toned-pel box to the character escapement point is the "C-space" for the character.
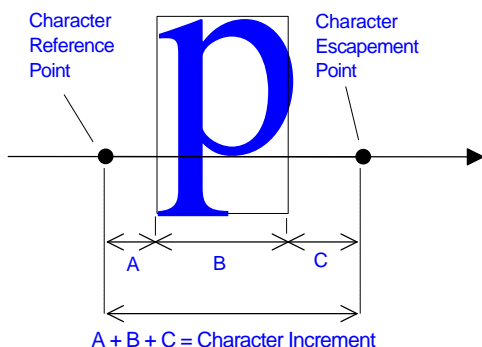

A + B + C = Character Increment

Figure 3-7. Character measurements

A-space, B-space, and C-space are measured in pels (dots).

The sum of the A-space, B-space, and C-space is the character increment.

If a font's characters have the same increment (or uniform increment), the font is a monospaced or fixed pitch font.

If a font's character increments are different for each character, the font is a proportional-spaced or typographic font.

Raster-Pattern box

A Raster-Pattern box encloses, or is superimposed on the toned-pel box. The Raster-Pattern box provides another method of placing characters on a printed page.
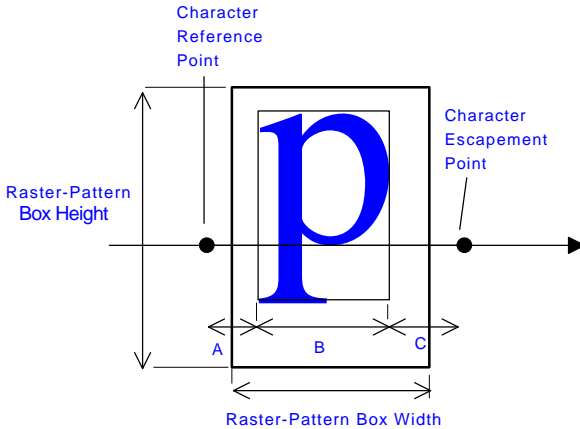

Figure 3-8. Raster-Pattern box

For a Bounded-box font, the width of the Raster-Pattern box is measured along the inline (print) direction.

For an Unbounded-box font, the width of the Raster-Pattern box is always measured along the top edge of the printed form.

For a Bounded-box font, the Uniform A-space is the number of pels of the character's A-space from the near edge of the Raster-Pattern box to the Character Reference Point. The Uniform A-space can be zero or positive (zero means that the Character Reference Point lies on the near edge of the Raster-Pattern box).

Monospaced Bounded-box fonts have the same uniform A-space value for all characters.

In an Unbounded-box font, this measurement is the Uniform Inline Offset and is used to shift characters left when left kerning. See the "Kerning" section in this chapter for more information.

Ascenders and descenders

The character ascender is the distance from the character baseline to the topmost toned pel.

The character descender is the distance from character baseline to the lowest toned pel.
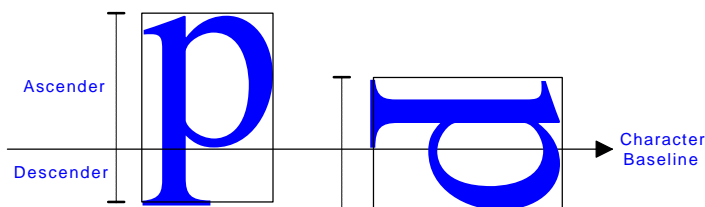

Figure 3-9. Ascenders and descenders

Note that ascenders and descenders are different for different rotations of a character.

Baseline positioning

The character baseline offset specifies where to place the character relative to the character baseline. The following figure shows the baseline offset (measured in pels) for different character rotations.
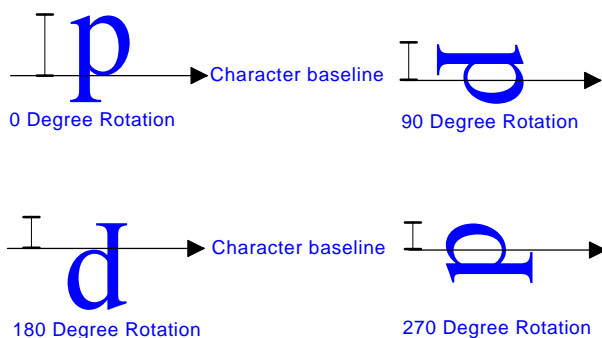
Figure 3-10. Baseline offsets

If the baseline offset is the same for all characters in a given rotation of a character set, it is a Uniform Baseline Offset.

If the baseline offset is different for characters in a given rotation, the largest offset is the Maximum Baseline Offset.

Kerning

Kerning is a technique of printing characters so that they partially overlap. Kerning is normally used to place italicized characters closer to each other for a more pleasing appearance.
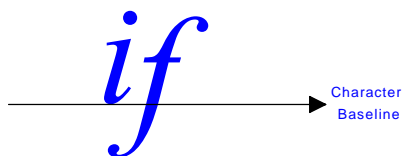

Figure 3-11. Left kerning example

Kerning can be of two types:

- A character is Left kerned if it partially overlaps the preceding character, like the letter *f* in the figure above.

- A character is Right kerned if it partially overlaps the next character, like the letter *f* in the following example.
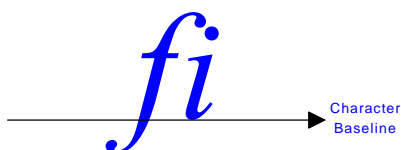

Figure 3-12. Right kerning example

A left kerned character has a negative A-space.

A right kerned character has a negative C-space.

Summary: Character placement

Characters are placed on the printed page using the following concepts (described in the previous sections).

Bounded-box

Bounded-box characters are placed using the following:

- Character reference point
- Character A-space
- Uniform A-space
- Character baseline offset
- Uniform baseline offset
- Character increment
- Uniform increment
- Raster-pattern box.

Unbounded-box

Bounded-box characters are placed using the following:

- Character reference point
- Uniform inline offset
- Uniform baseline offset
- Character increment
- Uniform increment
- Raster-pattern box.

AFP font naming conventions

AFP font naming conventions relate the inline (Print) direction and character rotation combination to a two-character file name prefix. The two-character prefix identifies the coded font or character set, and the remaining (one to six) characters are the coded font ID or character set ID. See an *About Type Reference Manual* for more information.

Bounded-box naming convention

All Bounded-box coded fonts are prefixed with X0, and all Bounded-box character sets are prefixed with C0.

Unbounded-box naming convention

Unbounded-box font file name prefixes depend on the inline (print) direction and the font rotation, as shown in the following table.

Coded Font ID Prefix	Inline (Print) Direction	Character Rotation	Character Set ID Prefix
X1	0º	0º	C1
X2	90º	0º	C2
X4	270º	0º	C4
X5	0º	90º	C5
X6	90º	90º	C6
X8	270º	90º	C8
X9	0º	180º	C9
XA	90º	180º	CA
XC	270º	180º	CC
XD	0º	270º	CD
XE	90º	270º	CE
XG	270º	270º	CG

Note that Unbounded-box fonts do not support printing in the 180º inline (print) direction.

Elixir currently only supports X1, X2, and X4 rotations.

Code Page naming convention

AFP code page file names are always prefixed with T1.

Elixir font structure

When converted to Elixir format, you can edit a font in a variety of ways; for example, you can resize a font, merge it with other fonts, italicize it, etc. The operations you can perform on individual characters and on the font depends on the source of the font; whether you converted the font from an AFP character set or from a non-AFP font.

The following sections in this chapter describe how ElixirFont handles fonts from AFP (Bounded-box and Unbounded-box) and non-AFP (such as HP PCL and Bitstream Facelift) sources.

Chapters following this one describe how to edit and transform AFP and non-AFP sourced fonts.

Elixir font converted from a non-AFP source

Each Elixir format font includes at least three components with different file extensions in the *drive*:\ELIXIR\FONTS\ELIXIR directory. These are:

● A .HDR component; this file contains the font header information.

● A .GLH component; this file contains header information for each character.

● A .GLY component; this file defines the actual bitmaps of the characters.

If you converted an Elixir format font from an AFP source (Bounded-box or Unbounded-box) using the Elixir Desktop Converter icon, it also contains the files described in the following section.

Elixir font converted from an AFP source

When you use the Desktop Converter icon to convert an AFP (Bounded-box or Unbounded-box) font to Elixir format, a dialog box prompts you to create either a "PC-mapped" or "Full" Elixir version of the AFP font.

PC-mapped Elixir fonts

The "PC-mapped" option creates an Elixir version that is a subset of the AFP font. Because an AFP character set may contain many more characters than allowed by other non-AFP fonts, the "PC-mapped" version limits the number of characters to 256, the number allowed by many other font formats. An Elixir Keyboard Mapping Table determines the subset that converts (the table is a .KMP file in *drive*:\ELIXIR\FONTS\MAPS).

A number of .KMP files are written to the *drive*:\ELIXIR\FONTS\MAPS directory during Elixir Desktop and Converters installation. Each .KMP file is an ASCII file which lists GCIDs with corresponding ASCII (hex) keyboard positions. You select the .KMP file (used for font conversions) when you install the Elixir Desktop and Converters and normally will not change it unless generating fonts in another language (see the *Elixir Desktop and Converter for AFP User's Guide* for more information).

Typically, you use the "PC-mapped" option if you do not want to edit the font, but want to convert it to another non-AFP format (such as HP PCL). The "PC-mapped" font contains the three .HDR, .GLH, and .GLY components described in the previous section. The "PC-mapped" Elixir font stem name starts with X0 if the source was a Bounded-box font and X1, X2, or X4 if the source was an Unbounded-box font.

Note: You should not edit a "PC-mapped" font unless you do not plan to reconvert the font back to AFP format.

Full character set Elixir fonts

The "Full" character set option converts the entire AFP character set to an Elixir-format font. You use

this option if you want to edit the Elixir-format font, then reconvert the font back to AFP format (Bounded-box or Unbounded-box). When creating a "Full" font, the following components are generated in the *drive*:\ELIXIR\FONTS\ELIXIR directory:

Bounded-box fonts:

- .HDR, .GLH, and .GLY components described in the previous section. The stem names are the same as the AFP character set and start with C0.

- GL1, .GL2, GL3, and .GL4 files. The stem name of each file is the same as the stem name of the Bounded-box character set (for example, C0A075N0.GL1, C0A075N0.GL2, etc.). The files correspond to 0°, 90°, 180° and 270° rotations of the Bounded-box character set, respectively. Note that each is an ASCII file containing metrics information (such as the A-space, B-space, C-space, GCID, and orientation) and other information for each character in the character set. All four files are created during conversion.

- A .HDA file with the same stem name as the Bounded-box character set (starting with C0). This file contains additional font header information for the Bounded-box font.

Unbounded-box fonts:

- HDR, .GLH, and .GLY components described in the previous section. The stem names are the same as the AFP Unbounded-box font file and start with C1, C2, or C4 depending on the source font orientation.

- A .GL0 file (called the GCID Mapping List) with the same stem name as the Unbounded-box font (starting with C1 through CG depending on the source font orientation). The file includes metrics information (such as the A-space, B-space, C-space, GCID, and orientation) and other information for each character in the character set.

- A .HDA file with the same stem name as the Unbounded-box character set (starting with C1 through C4 depending on the source font orientation). This file contains additional font header

information for the Elixir version of the Unbounded-box font.

The following components are created for both Unbounded-box and Bounded-box fonts:

• A .COD file with the same stem name as the character set (starting with T1). This is an ASCII file that derives from the AFP Code Page and is a list of EBCDIC code points and corresponding GCIDs for each character in the AFP character set.

• A .CDF file with the same stem name as the character set (starting with X0, X1, X2, or X4 depending on the source font). This is an ASCII file that derives from the AFP Coded Font and is a list of correspondence between the character set name, code page name, and the Keyboard Mapping File (.KMP).

Elixir character set and font differences

The differences described in this section assume that you are familiar with editing Elixir-format character sets and non-AFP fonts described in the following chapters.

ElixirFont handles Elixir-format character sets and non-AFP fonts differently in the following ways:

• AFP-originated character sets are arranged in order of GCID; non-AFP fonts are arranged in ASCII-sorted order in the displayed character cells.

• Non-AFP fonts may have null (gray) characters; Elixir-format character sets do not.

• The [Swap] option is disabled when editing character sets.

• When using the [Merge] option in a character set, the program prompts you for the character rotation and GCID of each in the target font. If the GCID exists in the target font, you are prompted

whether you want the original character replaced. Otherwise the character is merged in the target font and the character set is restored. When using the [Merge] option in a non-AFP font, the target character is overwritten.

• Character header properties dialog boxes are different.

• The character set header information displays in three additional dialog boxes.

4. Loading fonts and code pages

This chapter describes how to create a new character set, load an existing font, and load and edit a code page.

Loading an Elixir-format character set

To display an Elixir-format character set, load one of the following by opening them from the Desktop Elixir Fonts folder, or by using the ElixirFont main screen **File** menu, or the Character Set window **Charset** menu (described later in this section):

- an Elixir-format character set (C0 or C1 prefixed file)

- a Coded Font (X0 or X1 prefixed file)

- a non-AFP font. (Respond with YES to [Reformat to AFP Charset]).

When opening files note the following:

- Opening a Character Set (C0, C1 prefix) displays the character set in the Character Set window.

- Opening a Code Page (T1 prefixed files) displays the code page in the Code Page window.

- Opening a Coded Font (X0, X1 prefixed files) displays both the character set and code page in the appropriate windows.
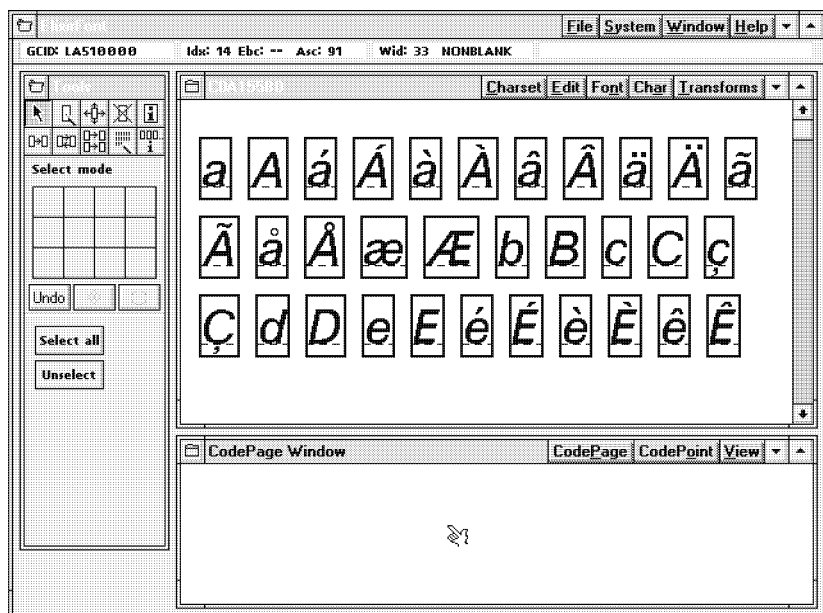
Figure 4-1. Loaded character set

The ElixirFont screen header shows the ElixirFont menu bar.

The top right portion of the screen shows the Character Set Window which displays rows of characters arranged (left-to-right and top-to-bottom) in alphabetical order by character GCID. Each character bitmap displays in a rectangular cell. The Character Set Window header also shows a menu bar.

The left of the screen shows a number of editing tools arranged in a Toolbox. These and other operations are briefly described at the end of this chapter and in more detail in later chapters.

The bottom right portion of the screen is the Code Page Window (initially blank if you loaded a character set). Loading and using a Code Page is described later in this chapter. The Code Page Window header displays the Code Page Window menu bar.

Use the standard Windows handles to enlarge, maximize, and move the Edit and Code Page windows and to move the Toolbox. Use the **Window** menu to hide/show the Edit, Code Page, and Toolbox windows.

When you move the screen pointer over a character, the GCID of that character displays at the top left of the screen. (A gray border displays around the current character cell).

The top of the screen also shows (from left to right) the positional order of each character in decimal and hexadecimal notation, the width of the character in pels, and whether the current character is NON-BLANK or a SPACING character. A spacing character is a blank bitmap used for applying spacing between characters or words. All other characters which contain bitmaps are NONBLANK characters.

Loading a non-AFP font

To load a non-AFP Elixir font, follow these steps:

1. Pull down the System menu and select [Usage Switches].

The Usage Switches dialog box displays.
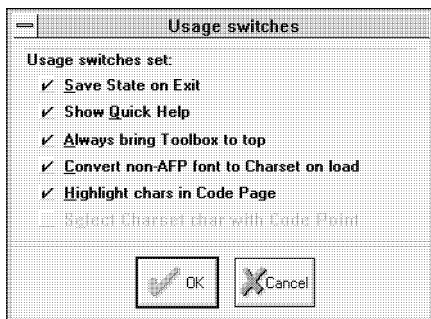
Figure 4-2. Usage Switches dialog box

2. Select the [Convert non-AFP font to Charset on load] option and click [OK].

3. Press <F8> (or pull down the File menu and select [Open Charset]).

The Load Charset dialog box displays and lists the .HDR components of fonts.

4. Select a non-AFP font.

Note that AFP character sets begin with C0 and C1, and that non-AFP fonts can begin with any character.

5. Click on [OK].

The following dialog box displays:
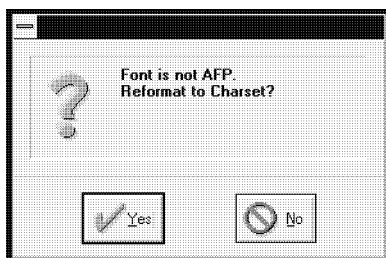
Figure 4-3. Reformat to Charset option
dialog box

Your selection at this point determines how ElixirFont handles the loaded non-AFP font:

• Click on [Yes] to load the font and reformat it as an Elixir-format character set. See the "Reformatting to a character set" section in this chapter for further information.

• Click on [No] to load the font as a non-AFP font. See the "Loading as a non-AFP font" section in this chapter for further information.

Reformatting to a character set

To reformat to a character set:

1. Follow the steps for loading a non-AFP font.

2. Select [Yes] to reformat the font into an Elixir-format character set.

The Reformatting to AFP Character Set dialog box displays:
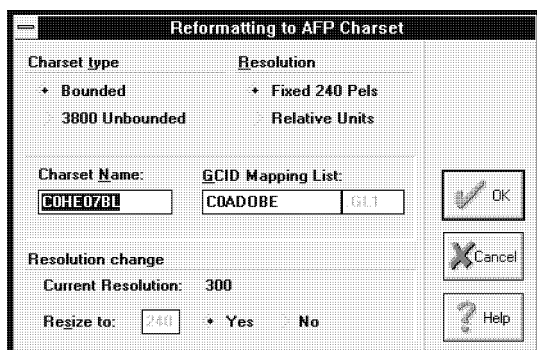
Figure 4-4. Reformatting to AFP Character Set dialog box

The Reformatting to AFP Character Set dialog box contains the following options:

Charset type
Select the character set type:

• Select [BOUNDED] to reformat the font to a Bounded-box format.

• Select [3800 UNBOUNDED] to reformat the font to a 0° rotation Unbounded-box format.

Note that you cannot use ElixirFont to reformat an Unbounded-box font to 90° or 270° rotations. To do so, you must use the Elixir Desktop Converter to convert the font to Unbounded-box format and specify the rotation in the dialog box that displays. See the *Elixir Desktop and Converters User Guide* for more information.

Resolution
Select [Fixed 240 Pels] or [Relative Units] to set a flag which specifies the internal measurements (such as A-space, etc.) of a Bounded-box font to fixed 240 dots per inch or to relative units (the actual relative measurement is specified in the AFP font header and cannot be specified from Elixir-Font). Unbounded-box fonts can only be set to 240 pels.

Most users should select [Fixed 240 Pels] unless you want to generate a font for the IBM 4028 which operates at 300.

Charset name
Select the name of the reformatted character set:

•   The default for a Bounded-box font is C0 appended to the start of the font stem name. For example, C014NP converts to C0C014NP.

•   The default for an Unbounded-box font is C1 appended to the start of the original file name. For example, C014NP converts to C1C014NP.

The last characters of the original non-AFP font stem name truncate if the original font name contains more than six characters. We recommend using the default character set name that displays.

GCID Mapping list
The GCID mapping list is a file that maps character positions in a non-AFP font to predefined GCIDs. Two default GCID mapping lists are provided: C0ADOBE.GL1 for creating Bounded-box fonts and C0ADOBE.GL0 for creating Unbounded-box fonts. You can overwrite these but we recommend using the defaults.

Current Resolution
The current resolution of the font in pels (cannot be edited).

Resize to 300
Applicable only for Bounded-box fonts when changing the resolution using the **Resolution** field, described above. When you resize the font by specifying this option, check the quality of the output font. We recommend resizing the font using the [Resize] option in ElixirFont. See the "Transforming Elixir-format character sets" chapter for more information about the [Resize] option.

Loading as a non-AFP font

To load as a non-AFP font:

1. Follow the steps for loading a non-AFP font.

2. Select [No] to load the font as an non-AFP Elixir-format font.

The character set displays in the Character Set window as shown in the following figure:
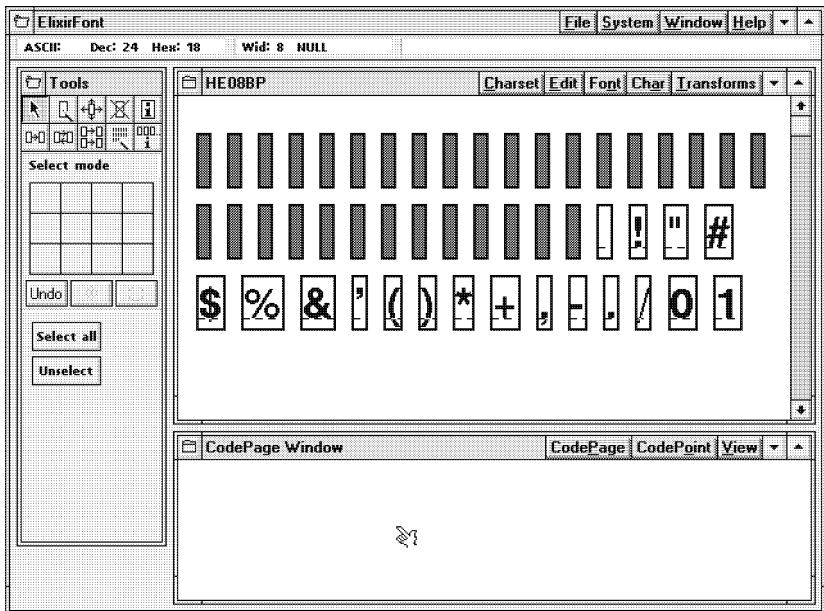
Figure 4-5. Loaded non-AFP font

The Character Set window shows the character bit-maps of the font 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 file (.HDR).

The top of the screen shows the position of each character in decimal and hexadecimal notation when you move the screen pointer over the character (a gray box appears around the current character).

The Code Page window is initially blank.

Also shown is the width (in pels) of the character, and whether the character is NULL, SPACING, or NON-BLANK. A null character means that a character is not defined for this position and displays as a filled gray cell (like the first 32 characters in the font). A spacing character occupies a cell but does not have a bitmap and prints as a spacing character. All other nonblank characters contain bitmaps.

The left of the screen displays the Toolbox with tools that you can use to edit and manipulate the characters or the entire Elixir-format character set. See the "Editing non-AFP fonts" chapter for more information about the Toolbox.

Creating new character sets

ElixirFont allows you to create the following types of font:

* PC-mapped font.
* Elixir format character set.

Creating a new PC-mapped font

To create a new PC-mapped font,

1. Pull down the Charset menu and select [New Charset].

The Properties of New Font dialog box displays.
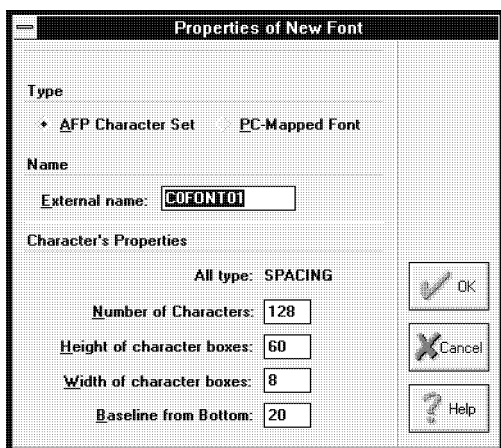
Figure 4-6. Properties of New Font
dialog box

2.   Select [PC-Mapped Font].

Note that the default stem name and spacing type
for a new PC-mapped font are FONT01 and
NULL.

**3.   Specify the [Number of Characters], [Height of
character boxes], [Width of character boxes],
and [Baseline from bottom] for the new font
and click on OK.**

The Font Properties dialog box displays.

**4.   Select options in the Font Properties dialog
box.**

See the "Editing non-AFP fonts" chapter for infor-
mation about the options in the Font Properties
dialog box.

5.   Click [OK].

A new PC-mapped font containing all NULL char-
acters is created.

Adding a bitmap to a cell

To add a bitmap to a cell:

1.   Select a NULL cell and press <F2>.

The Properties of Null Character dialog box displays.

2.   Change the character type to [Spacing] and click on OK.

3.   Double-click on the new SPACING character and edit the bitmap.

See the "Editing non-AFP fonts" chapter for information about editing a bitmap.

Creating a new AFP character set

To create a new AFP character set:

1.   Pull down the Charset menu and select [New Charset].

The Properties of New Font dialog box displays.
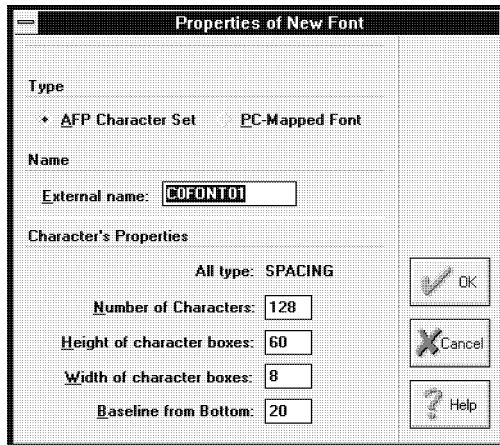
Figure 4-7. Properties of New Font
dialog box

2.   Select [AFP Character Set].

Note that the default stem name and spacing type for a new AFP character set are C0FONT01 and SPACING

3. **Specify the [Number of Characters], [Height of character boxes], [Width of character boxes], and [Baseline from bottom] for the new character set.**

4. **Click on OK.**

The Reformatting to AFP Character Set dialog box described earlier in this chapter displays. Note that the [GCID Mapping List] option is not available when creating a new character set.

5. **Select options and click on [OK] as the following dialog boxes display:**

•   Font Properties
•   Character Set Attributes
•   Character Set Increments
•   Character Set Design

Options in these dialog boxes are described in the "Editing Elixir-format character sets" chapter.

A new AFP character set containing all SPACING characters loads into the Character Set window.

6. **Double-click on each new SPACING character and edit the bitmap.**

See the "Editing Elixir-format character sets" chapter for more information.

Loading a Code Page

A Code Page maps keyboard entries to characters in a character set. Each key on the keyboard corresponds to a hexadecimal Code Point. When printing on an AFP printer, the Code Point is matched to a GCID in the Code Page. This allows you to use different code pages (for example to print subsets of characters in a character set which is useful for printing different European languages).

Elixir provides PC versions of code pages as T1*.COD format ASCII files in *drive*:\ELIXIR\FONTS\ELIXIR.

To load a Code Page:

1. From the Desktop, open a T1, X0, or X1 prefixed file in the Elixir Fonts folder

Note that opening a T1 file loads only a code page while opening an X0 or X1 file loads both a code page and its associated character set.

Alternatively:

• Make the Code Page Window the active window and either press <F8> or pull down the **CodePage** menu and select [Open Coded Page].

• In the ElixirFont Screen, pull down the **File** menu and select [Open Code Page].

The Load Code Page dialog box displays a list of code pages in the default directory.
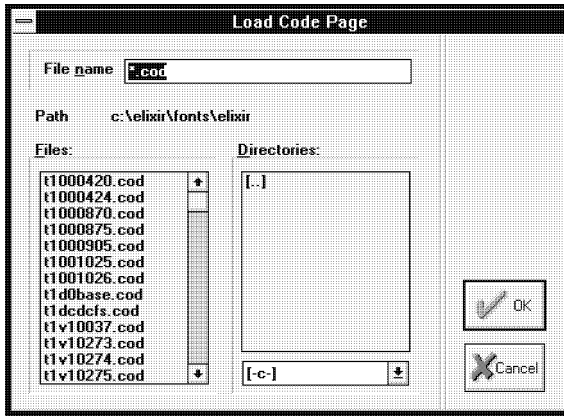
Figure 4-8. Load Code Page dialog box

2.   Select a Code Page and click [OK].

The Code Page Window displays the selected Code
Page as shown at the bottom of the following figure. If
a character set is not loaded, the Code Page displays
GCID names only.
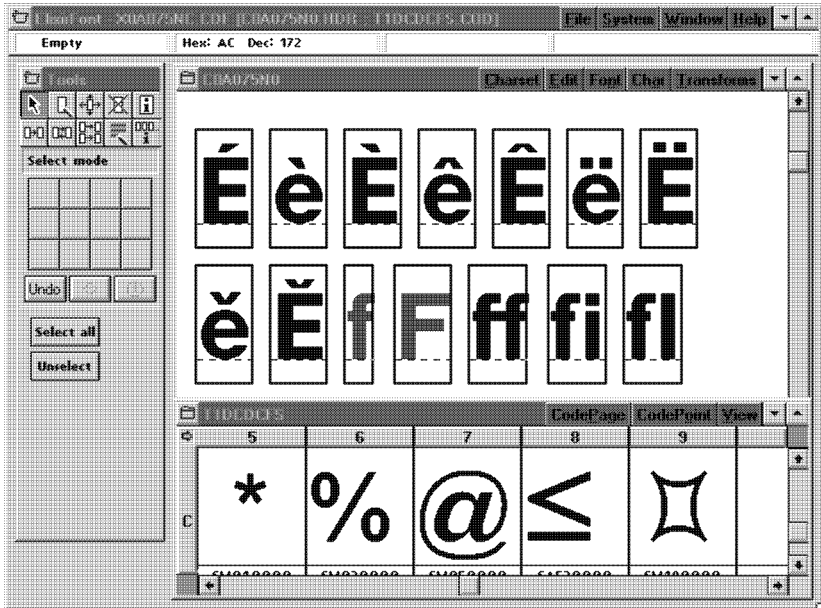
Figure 4-9. Loaded Code Page and Character Set

   3. Pull down the System menu and select [Usage Switches].

   The Usage switches dialog box displays as shown earlier.

   4. Select [Highlight chars in Code Page] and click on [OK].

   This highlights characters in the selected character set that map to the Code Page.

Editing a code page

To edit a code page, maximize the Code Page Window for a better view.

Horizontal/Vertical
Hex Display Toggle
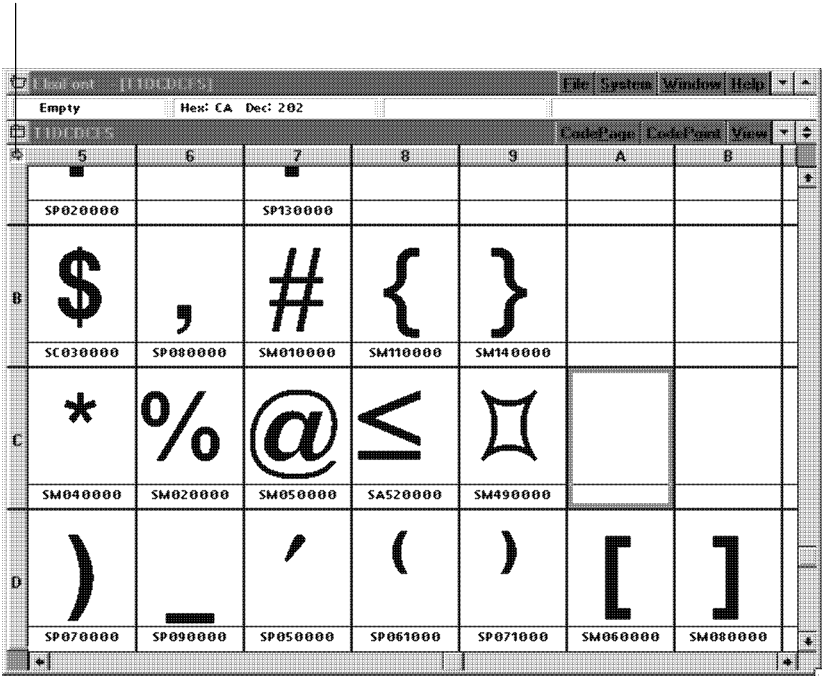
Figure 4-10. Maximized Code Page

The Code Page shows a grid of cells arranged in rows and columns identified by hexadecimal digits across the top row and left column.

The arrow at the top left of the grid (shown in the figure above) points to the row or column that specifies the first hex digit of the code point.

For example, in the above figure, the number 1 has a hex code point B1. To switch rows and columns, click on the arrow.

Each cell (identified by its hex code point) shows the GCID and corresponding character bitmap for the current Code Page.

You can edit a Code Page as follows:

• Select any character/GCID and drag and drop it to another blank cell (code point).

• Drag and drop a character from the Character Set Window to any cell in the Code Page Window.

This powerful ElixirFont feature allows you create custom code pages using simple drag and drop techniques.

5. Editing non-AFP fonts

This chapter describes how to edit Elixir-format fonts that were not originally sourced from AFP character sets.

Some examples of non-AFP fonts are installed in the *drive*:\ELIXIR\FONTS\ELIXIR directory on your PC during installation (CURL, ROUND1, and LION).

You can also generate your own Elixir-format fonts by using the Efont Factory to convert Bitstream Facelift fonts to Elixir-format fonts. See the *Elixir Desktop and Converters User's Guide* for more information.

Font basics

This section describes the characteristics of non-AFP fonts used to display, edit, and apply metrics to non-AFP fonts. The following figure shows some important characteristics of a character in a cell.
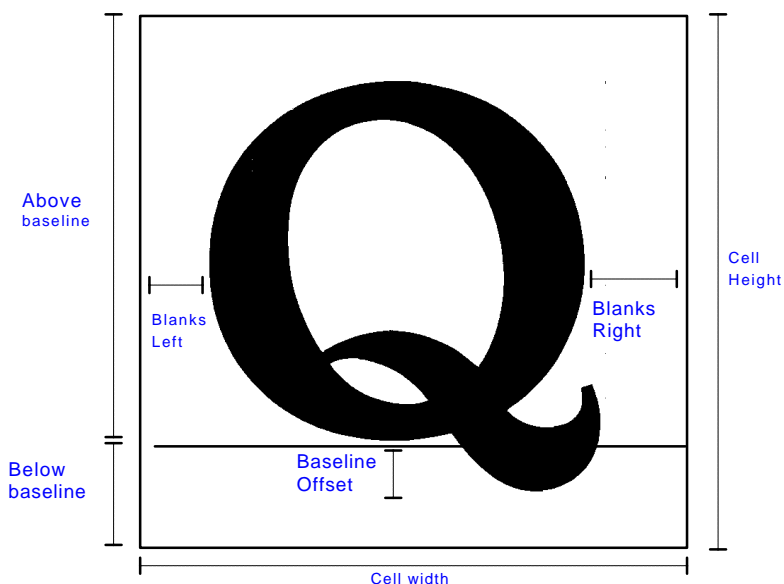
Figure 5-1. Character attributes

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

Figure 5-2. Character and line attributes

The following formula is used for calculating line spacing:

Line spacing = above baseline + below baseline + leading

ElixirFont tools

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

Select tool

The Select tool allows you to select one character or all characters in a loaded font.
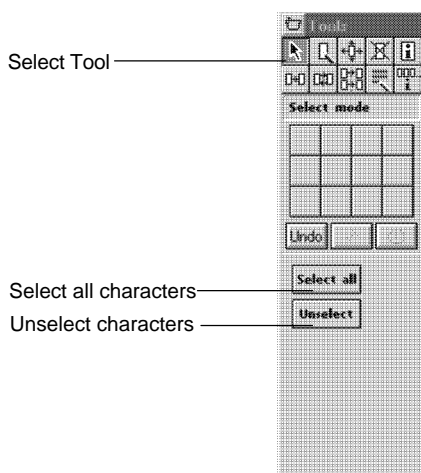
Figure 5-3. Select tool and options

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 character.

Edit tool

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 non-space 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
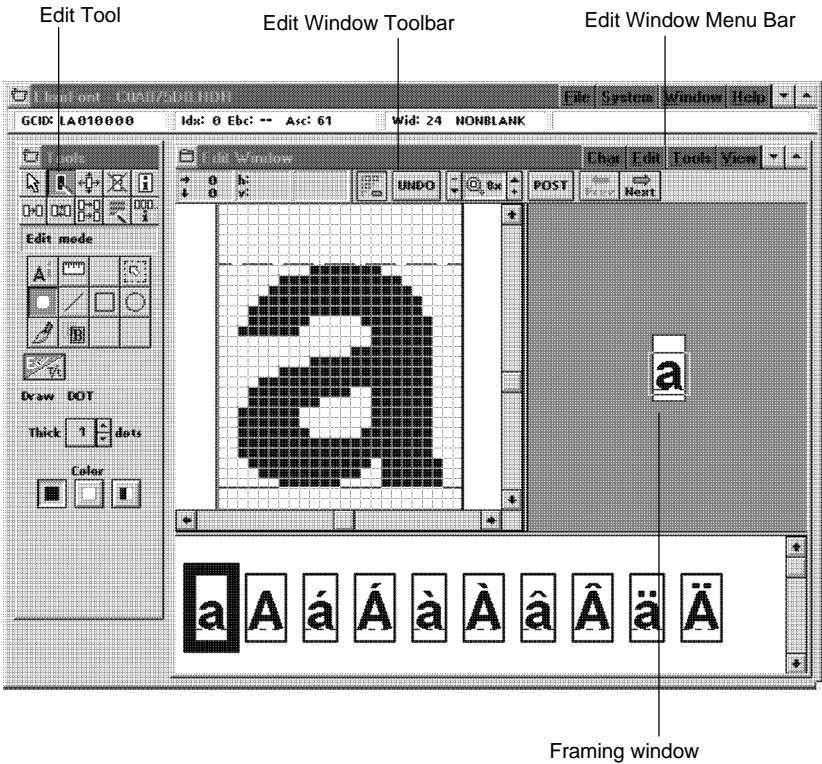
Figure 5-4. Edit Window

The bottom of the screen shows a partial list of characters with the current character selected. You can click on another character to display it in the edit window. You can also scroll through the entire font using the <Page Up>, <Page Down>, <Home>, and <End> keys, or use the Windows scrolling 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 8X magnification
(each dot in the bitmap displays as a black or white
box 8 bits high and 8 bits wide).

The Toolbox now shows editing tools and various op-
tions which you can select. A selected tool or option
displays with a black background. In addition, you can
select options available from menus shown in the Edit
Window menu bar, and also from the Edit Window
Toolbar displayed just below the menu bar.

Edit Window menu bar

The Edit Window menu bar contains the following pull-
down menus and menu options:

Char
>Post
>Blend
>Prev Char
>Next Char
>Properties

Edit
>Undo
>Cut
>Copy
>Paste
>Delete

Tools
>Dot
>Line
>Box
>Circle
>Brush
>Ruler
>Move Area
>Copy Area

View
>Show Grid
>Show Coordinates

You can also select these functions from the Toolbox.

Edit Window Toolbar

The Edit Window Toolbar displays just below the Edit Window menu bar.
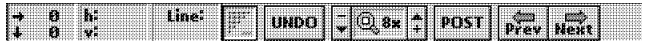
Figure 5-5. Edit Window Toolbar

The three left blocks display object coordinates and size, and change based upon the selected tool.

The following are the other options, from left to right:

Grid
Displays or hides the grid. The grid does not display for magnifications of 4x and less.

Undo
Undoes the last edit operation.

Magnification
Shows the current magnification. Click on the down arrow to decrease the magnification, or the up arrow to increase it.

Post
Saves changes made to the character bitmap.

Prev
Displays the previous character in the font for editing. Prompts for confirmation if you made changes.

Next
Displays the next character in the font for editing. Prompts for confirmation if you made changes.

Edit tool options

The editing tools display at the top of the Toolbox as shown in the following figure.
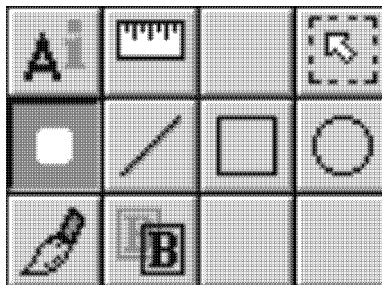
Figure 5-6. Editing tools

Character Properties
Displays the Character Properties dialog box. See the "Character Properties tool" section in this chapter for more information.

Ruler
Displays 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 Edit Window Toolbar.

Select area
Allows you to select a rectangular area of the displayed character and to move or copy it (by selecting [M] or [C] in the Toolbox) to another location in the cell.

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 thickness of the dot.

Draw line
Allows you to draw a line in the character cell. You can select the color (black, white, or reverse), and the thickness of the line.

Draw box
Allows you to draw a box in the character cell. You can select the color (black, white, or reverse) and the thickness of the border, and draw hollow or filled boxes.

Draw circle
Allows you to draw a circle in the character cell. You can select the color (black, white, or reverse) and the thickness of the border, and draw hollow or filled circles.

Draw brush
Allows you to draw with a brush tool. You can select the brush thickness and color (black, white, or reverse) and paint with hollow or filled strokes.

Blend
Allows you to blend another character into the current cell. After selecting the Blend tool, click on another character from the font to view it in the framing window blended with the current character. Click in the framing window and drag the new character to position it on top of the current character, then click on [Accept] in the Toolbox to save the blend.

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

Transform
Allows you to alternate between edit mode and transform mode with the current character set or character. See the "Transforming non-AFP fonts" chapter for more information about transformations.

Transform tool

 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 setup options to define how you want to apply the transformation

Figure 5-7. Transformation tools and options

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

See the "Transforming non-AFP fonts" chapter for information about the transformation tools and their operations.

Kill tool

The Kill tool deletes or blanks a character from the font, depending on your selection below the Toolbox.
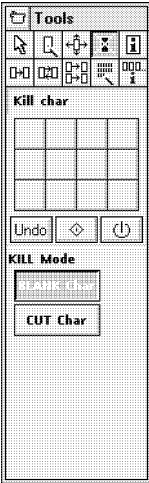
Figure 5-8. Kill tool

Character Properties tool

The Character Properties tool displays the Character Properties dialog box.
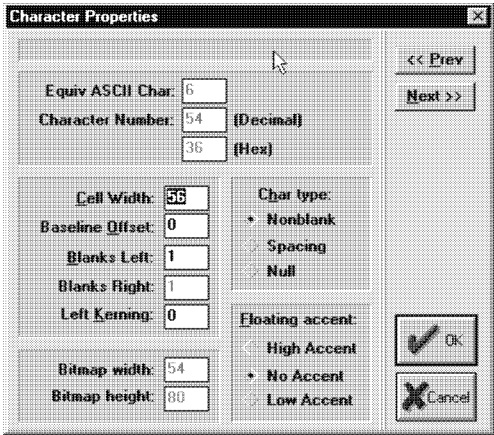
Figure 5-9. Character Properties dialog box

Equivalent 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 character cell. Also called the character width or the delta-X of the character.

Baseline Offset
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) 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 past the right side of the cell.

Left Kerning
The left kerning of the character. This is the distance (in dots) the character extends 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. [Spacing] makes the character a spacing character and [Null] eliminates the character. When you select a [Null] or [Spacing] character, a dialog box with fewer options displays

Floating accent

The flag for distributed printers which instructs the printer to map accents to a [High] or [Low] position or to assign [No] accent to a character. This option is not used for the 9700 series printers and refers to the European ISO standard.

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

Copy tool

The Copy tool 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, it 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 click on a target character cell. The selected range of characters are copied to new positions starting at the target character cell.

Swap tool

The Swap tool allows you to swap the positions of two characters in the font. Use the screen pointer to select the first character, then select the second character. The two characters swap positions.

Merge tool

The Merge tool allows you to load another font and copy the font characters into or replace characters in your original font. A dialog box displays from which you select another Elixir-format font. After font selection, the screen splits into source and target font windows. The source window shows the font from which you want to merge characters; the target window contains the font you originally loaded.

To merge fonts:

1. Select the character you want to merge (source).

2. Select the [Replace] or [Insert] option in the Toolbox.

3. Click on the character in the target font you want to replace or insert a character in front of.

The character from the source window is copied to the target window. The Replace operation overwrites any character in the chosen position of the target font. The Insert operation inserts characters in the position before the selected character in the target.

To cancel a selected character, select another character.

Merging a tall character into a smaller font vertically stretches 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.
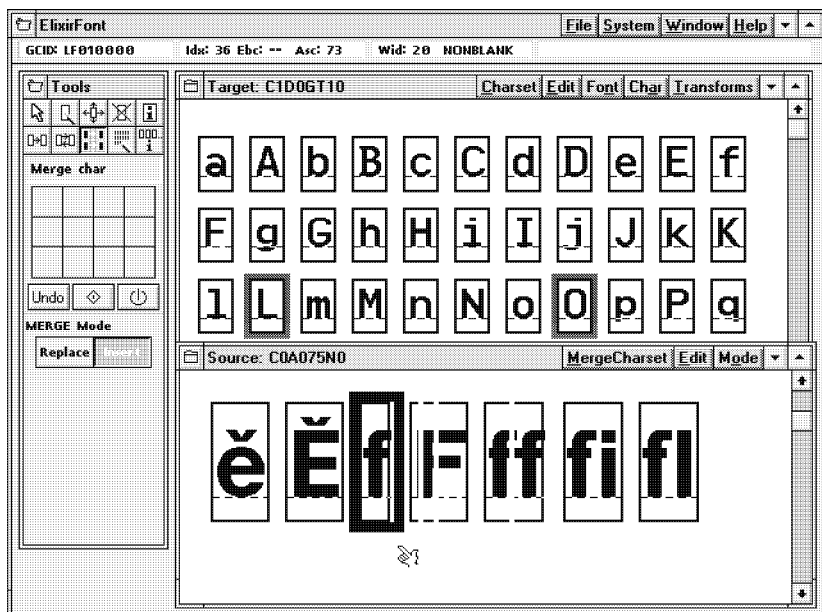
Figure 5-10. Selecting a character for merging
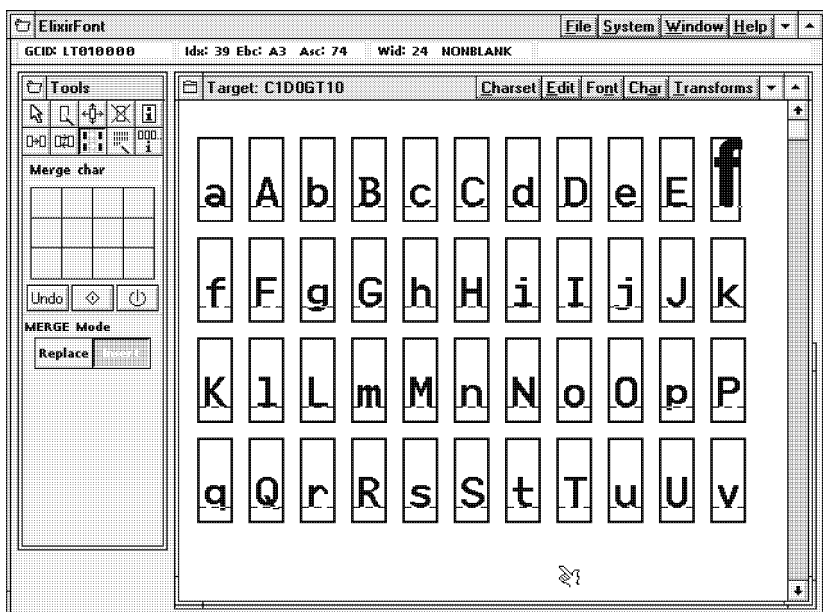
Figure 5-11. Effect of merging the character

Sample tool

The Sample tool displays a font sampling pad in which you can see how text created with the current font will display at print time.
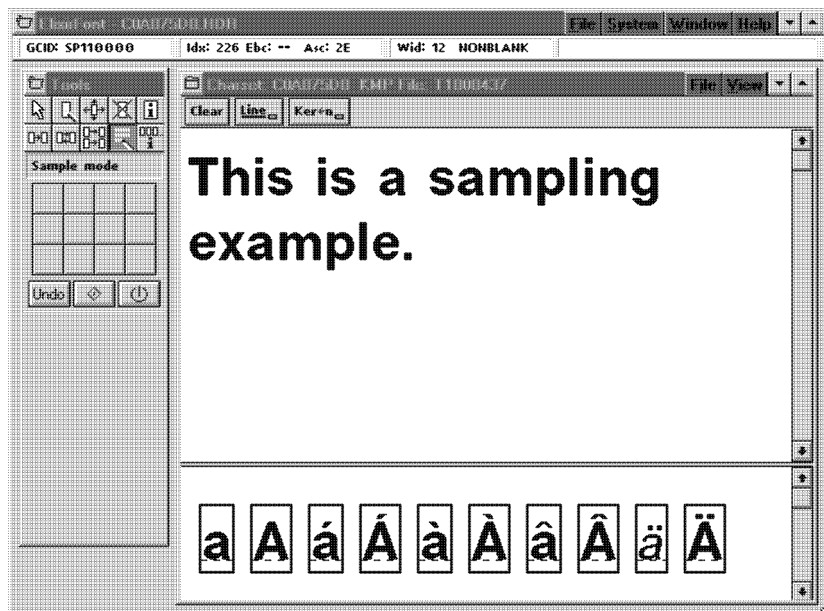
Figure 5-12. Sampling pad example

Use the keyboard or click on the characters in the character set window to place the characters in the sampling pad.

Select [Print Sample] from the **File** menu to proof print the sampling pad (when proof printing, text prints as bitmaps).

Click on [Line] in the Font window Toolbar to display the baseline when entering characters (or select [Show Baseline] from the **View** menu).

Click on [Kern] in the Font window Toolbar to see the effect of kerning character pairs (or select [Show Kerning] from the **View** menu). The bitmap of the kerned character must extend beyond the character cell for this effect to be visible.

Font Properties tool <Ctrl> + <F2>

The Font Properties tool displays the Font Properties dialog box.

Figure 5-13. Font Properties dialog box

Orientation
The orientation of the font: portrait, landscape, inverse portrait, or inverse landscape.

Resolution
The font resolution: [240], [300], [480], or [600] dpi.

Pitch
Fixed or proportionally spaced. Selecting [Fixed] displays a dialog box requesting a fixed width value.

Linespacing
Changing [Distance Above], [Below], or [Leading] changes the linespacing. To calculate the new line spacing, click on the [Linespacing] button.

Point Size
Display only. The point size of the font (a point is 1/72 inches).

Pixel Height
Display only. The height of the font cell in dots.

Last Character at
The decimal position of the last character. The first
character position is always 0, and the maximum last
character position is 255. If you increase this value,
new null characters are added to the end of the font. If
you decrease this value, characters are removed from
the end of the font.

Change cell width
Allows you to increase or decrease the width of every
cell in the font by the number of dots you enter. You
can change the relative spacing between characters
for the entire font.

Header submenus

Displays the font header information for HP PCL fonts
(other options are grayed).

HP PCL
Displays the HP PCL Font Properties dialog box.
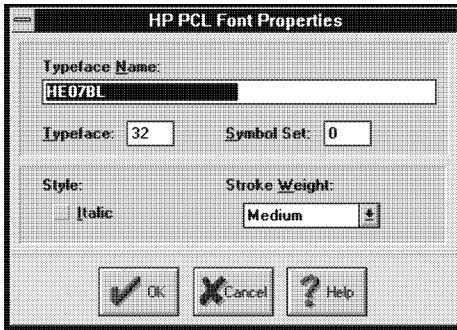
Figure 5-14. HP PCL Font Properties
dialog box

Options in the dialog box are:

• the typeface name (file name of the font)

• the typeface number

• the symbol set of the font

• the style (italic or normal)

- Select the stroke weight (boldness), from [Ultra-Light] to [UltraBold]

6. Transforming non-AFP fonts

This chapter describes how to use ElixirFont 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.

Some examples of single-character transformations are shown in the following figure.

Figure 6-1. Transformation examples

To apply a transformation:

1. **Select either a single character or the entire font (<Ctrl>-<A>).**

2. **Pull down the Transforms menu or click on the Transformation tool (the top center tool in the Toolbox) and select the transformation you want to apply.**

3. **Select the transformation options you want from the bottom of the Toolbox area.**

4. **Click on the ⏻ button in the Toolbox to start the transformation.**

5. **Click on the ◇ button in the Toolbox if you want to stop the transformation during execution.**

6. **Click on the [Undo] button in the Toolbox to undo the transformation just applied (the undo function does not reverse a transformation that is stopped during execution).**

The following sections describe transformations in more detail.

Transformation tool   Transforms menu

Figure 6-2. Transformation tools and menu

Transformation tool options

This section describes the Transformation tool options in the ElixirFont Toolbox.

Transformation tool options
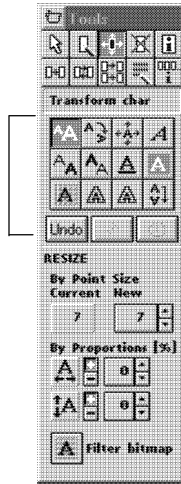
Figure 6-3. Transformation tool selected

Resize

This transformation resizes a single character or the entire font.
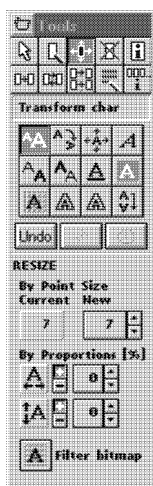
Figure 6-4.
Selected Resize tool and options

The current point size displays. Enter a new point size by clicking on the up and down arrows (you can only resize within an allowable range), or specify horizontal and vertical resize percentages within the allowable range.

Select the [Filter bitmap] button to remove jagged edges and single bits after resizing. The bitmap features that are filtered are those currently selected in the Filter Toolbox. To verify the selected options, select the Filter tool and specify:

• Remove single black bits
• Remove single white bits

You may want to apply filtering to a single character to see the effect of different filtering options.

When resizing the entire font, a second dialog box displays requesting resize confirmation. Line spacing, cell widths, and other values are resized proportionately.

If you are increasing the character size and the en-larged character does not fit in the character cell, a dialog box requests confirmation for increasing the size of the character cell.

Repeatedly resizing the same font significantly distorts the font and is not recommended.

Rotate

This transformation rotates characters in 90-degree increments.
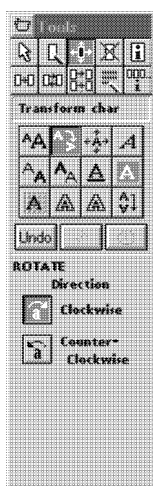
Figure 6-5. Selected Rotate tool and options

Select [Clockwise] or [Counter-clockwise] rotation.

If you rotate the entire font more than once, cell di-mensions such as blanks left are not preserved, and reversing the rotation does not restore the font precisely.

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 orienta-tion in the Font Properties dialog box.

Shift

This transformation shifts a character in its cell. Select a direction to shift (up, down, left, or right arrow), and set the number of dots you want the characters to shift.
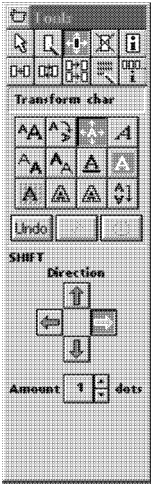
Figure 6-6. Selected Shift tool and options

If shifting a character extends it beyond its cell, a dialog box requests confirmation for increasing the size of the character cell.

Slant

This transformation is useful for creating an italic version of a character or a font.
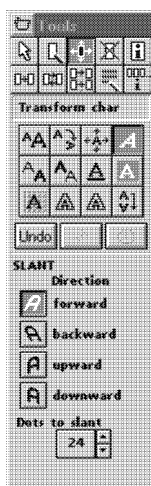
Figure 6-7. Selected Slant too
and options

Select the slant direction by clicking on it, then select the number of dots by which you want the character(s) slanted.

If slanting a character extends it beyond its cell, a warning dialog box displays.

You should not repeatedly slant characters. Each slant operation adds distortions (like jagged edges, single bits, etc.) that are compounded with repeated operations.

Darken

This transformation darkens (emboldens) characters.
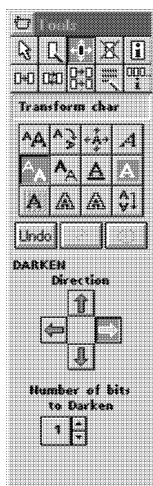
Figure 6-8. Selected Darken tool
and options

This operation adds one or more dots next to existing
dots in the character bitmap.

Specify the number of dots, and the side of the bitmap
to which you want dots added.

Lighten

 This transformation lightens (debolds) characters.

Figure 6-9. Selected Lighten tool
and options

This operation removes one or more dots near exist-
ing dots in the character bitmap.

Specify the number of dots, and the side of the bitmap
from which you want dots removed.

Underline

 This transformation underlines characters.
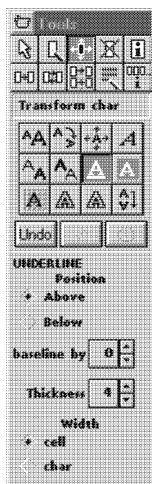
Figure 6-10. Selected Underline tool
and options

Specify the position of the underline as above or be-
low the baseline, and the distance to the baseline.

You can also specify the thickness of the underline (in
dots, default 4 dots) and whether the width of the un-
derline is across the character or across the cell.

Reverse

This transformation reverses (changes black to white and white to black) character cells.
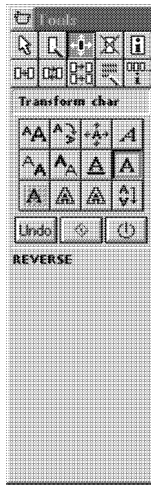
Figure 6-11. Selected Reverse tool

You are prompted for confirmation when you want to reverse the entire font, but not when you want to reverse a single character.

Filter

This transformation applies filtering to one or more characters in a font.
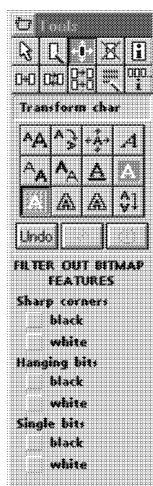
Figure 6-12. Selected Filter tool
and options

The following figure shows the features that you can filter.
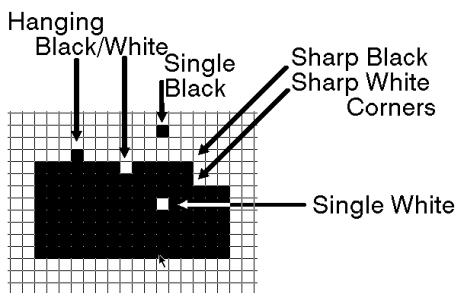
Figure 6-13. Filtering features

The effects of the filter are limited. For example, the filtering result may not be consistent with bits that are on outer edges of the character bitmap. You should always check character bitmaps after filtering and performing manual edits.

Outline

This transformation encloses the character bitmap with a border and reverses the enclosed area.
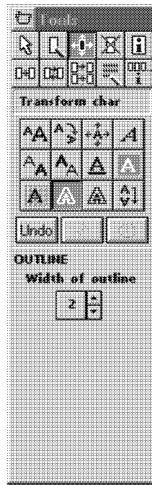
Figure 6-14. Selected Outline tool
and options

Specify the outline thickness between 1 and 9 dots (the default is 2 dots).

The following figure shows the effect of outlining.
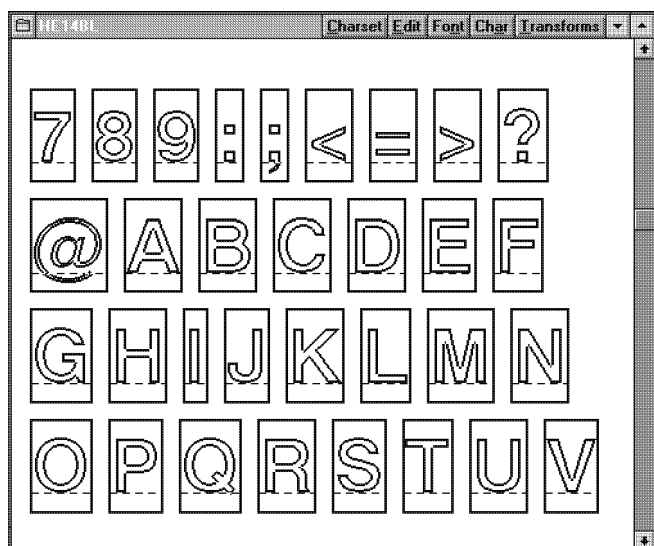
Figure 6-15. Outlining example

Halftone

 This transformation applies line or shading patterns to characters.
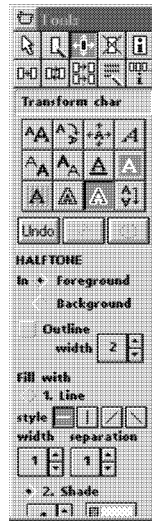
Figure 6-16. Selected Halftone tool
and options

You can apply halftoning as horizontal, vertical, and slanted (45° and 135°) lines, and in many shades.

You can specify the line width and line separation in dots, and apply halftoning to the character bitmap (foreground) or the cell background.

You can also outline the character bitmap and specify the outline width in dots.

When halftoning a spacing character, reverse it to black then apply halftoning to the foreground.

Halftoning is applied to solid black portions of a character. Halftoning a character that is not solid black (for example, a shaded or previously halftoned character) results in halftoning being applied only to the black portions of the character.

When halftoning an entire font, you may be required to adjust some character width settings for correct character fit when placed together, as shown in the following figure.

Figure 6-17. Incorrect cell spacing example

Mirror

This transformation rotates characters vertically or horizontally to create a mirror image.

Figure 6-18. Selected Mirror tool
and options

The following figure shows a mirroring example.
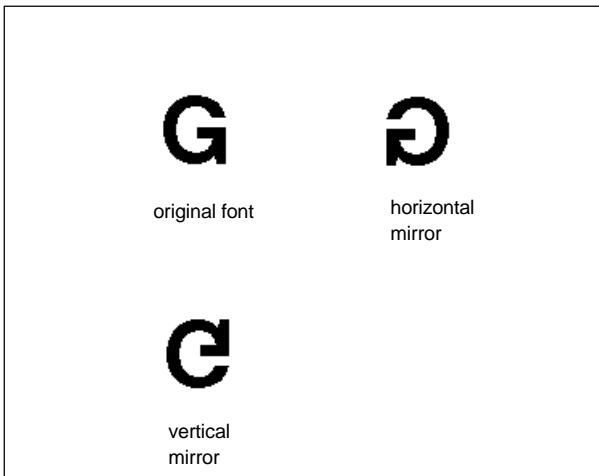
Figure 6-19. Mirroring example

7.   Editing Elixir-format character sets

This chapter describes how to edit Elixir-format character sets that were converted from AFP format using Elixir converters. See the *Elixir Desktop and Converters for AFP User Guide* for more information about font conversions.

Some examples of Elixir-format character sets are loaded in the *drive*:\ELIXIR\FONTS\ELIXIR directory on your PC during installation (for example, C0A05570 and C0A05580).

Bounded-box character set names start with C0 and Unbounded-box character sets can start with C1 through CG; however Elixir only supports C1, C2, and C4 prefixed character sets, as described below.

ElixirFont supports editing C1, C2, and C4 prefixed Unbounded-box fonts that were converted from AFP format using Elixir converters.   ElixirFont can also create C1 prefixed   (0° inline print direction) Unbounded-box character sets. Other inline print directions for Unbounded-box character sets can be obtained by converting to AFP format and selecting 90° or 270° directions.

Character set basics

You should refer to the "Font structure" chapter for an overview of AFP and Elixir-format character sets and to understand the terminology used in this chapter.

Editing Elixir fonts

The ElixirFont font editor functions in two different ways depending on the source of the Elixir font and the format to which you want to convert the edited font:

In this guide, Elixir-format fonts that contain only .GLH, .GLY, and .HDR components are referred to as "non-AFP" Elixir fonts. These fonts are created in the following ways:

* The Desktop Converter icon was used to create the Elixir font from a non-AFP source (such as Bitstream Facelift or HP).

* The Desktop Converter icon was used to create the Elixir font from an AFP (Bounded-box or Unbounded-box) character set using the "PC-mapped" option.

* The font was originally a "non-AFP" font and was edited and saved using ElixirFont.

Alternatively, if you use the Desktop Converter icon to convert an AFP character set to Elixir format and specify the "Full AFP font" option, in addition to the .GLH, .GLY, and .HDR components, the converted Elixir font includes components described in the previous section. In this guide, these fonts are referred to as "Elixir-format character sets".

ElixirFont tools

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

Select tool

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

Select Tool ─────

Select mode

Undo

Select all characters ─── Select all

Unselect characters ─── Unselect
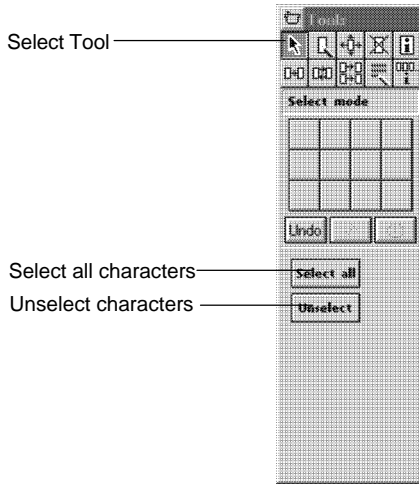
Figure 7-1. Select tool and options

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 character.

Edit tool

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
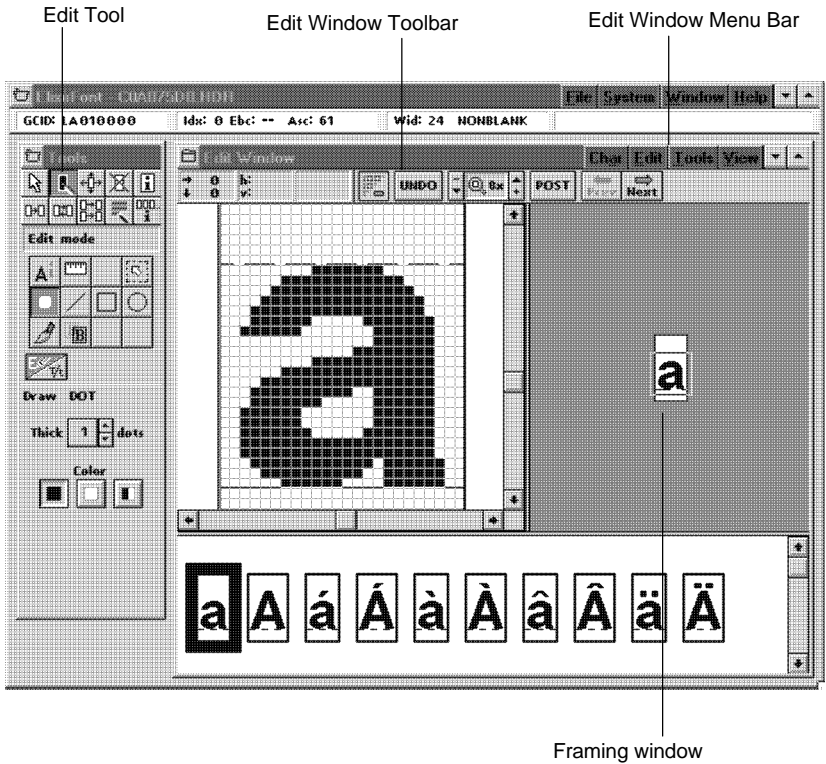
Figure 7-2. Editing a bitmap

The bottom of the screen shows a partial list of characters with the current character selected. You can click on another character to display it in the edit window. You can also scroll through the entire font using the <Page Up>, <Page Down>, <Home>, and <End> keys (or use the Windows scrolling 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 is shown at 8X magnification (each dot in the bitmap displays as a black or white box 8 bits high and 8 bits wide).

The Toolbox now shows editing tools and various options which you select. A selected tool or option displays with a black background. In addition, you can select options available from menus shown in the Edit Window menu bar, and also from the Edit Window Toolbar displayed just below the menu bar.

Edit Window menu bar

The Edit Window menu bar displays the following pull-down menus and menu options:

Char
Post
Blend
Prev Char
Next Char
Properties

Edit
Undo
Cut
Copy
Paste
Delete

Tools
Dot
Line
Box
Circle
Brush
Ruler
Move Area
Copy Area

View
Show Grid
Show Coordinates

You can also select these functions from the Toolbox.

Edit Window Toolbar

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

Figure 7-3. Edit Window Toolbar

The three left blocks display object coordinates and size, and change based upon the selected tool.

The following are the other options, from left to right:

Grid
Displays or hides the grid. The grid does not display for magnifications of 4x and less.

Undo
Undoes the last edit operation.

Down arrow
Decreases the magnification

Magnification
Shows the current magnification. Click on the down arrow to decrease the magnification, or the up arrow to increase it.

Post
Saves changes made to the character bitmap.

Prev
Displays the previous character in the font for editing. Prompts for confirmation if you made changes.

Next
Displays the next character in the font for editing. Prompts for confirmation if changes were made.

Edit tool options

The editing tools display at the left of the screen as shown in the following figure.
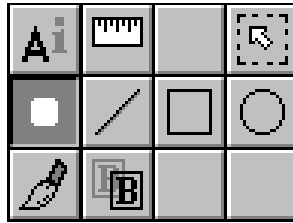
Figure 7-4. Editing tools

Character Properties
Displays the Character and CodePoint Properties dia-
log box. See the "Character Properties" section for
more information.

Ruler
Displays 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 Edit
Window Toolbar.

Select area
Allows you to select a rectangular area of the dis-
played character and to move or copy it (by selecting
[M] or [C] in the Toolbox) to another location in the
cell.

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 thickness of the dot.

Draw line
Allows you to draw a line in the character cell. You
can select the color (black, white, or reverse), and the
thickness of the line.

Draw box
Allows you to draw a box in the character cell. You
can select the color (black, white, or reverse) and the
thickness of the border and draw hollow or filled
boxes.

Draw circle

Allows you to draw a circle in the character cell. You can select the color (black, white, or reverse) and the thickness of the border, and draw hollow or filled circles.

Draw brush

Allows you to draw with a brush tool. You can select the brush thickness and color (black, white, or reverse) and paint with hollow or filled strokes.

Blend

Allows you to blend another character into the current cell. After selecting the Blend tool, click on another character from the font to view it in the Framing window blended with the current character. Click in the framing window and drag the new character to position it on top of the current character, then click on [Accept] in the Toolbox to save the blend.

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

Transform

Allows you to alternate between edit mode and transform mode with the current character set or character. See the "Transforming Elixir-format character sets" chapter for more information about transformations.

Transform tool

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 setup options to define how you want to apply the transformation

Figure 7-5. Transformation tools and options

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

The "Transforming Elixir-format character sets" chapter for more information about the transformation tools and their operations.

Kill tool

This tool deletes or blanks a character from the font, depending on your selection below the Toolbox.
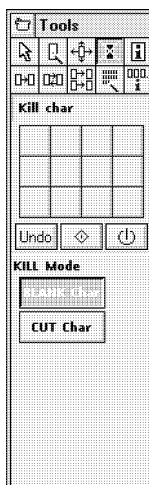
Figure 7-6. Kill tool

Character Properties tool

The Character Properties tool displays the Character and CodePoint Properties dialog box.
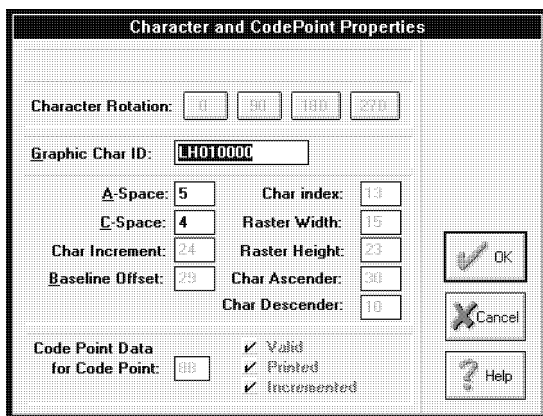
Figure 7-7. Character and CodePoint Properties dialog box

Character Rotation
(Bounded box character sets only.) The angle through
which a printed character is rotated clockwise in
90-degree increments, relative to the character
baseline.

Graphic Char ID
The character identifier (GCID) for each character in
the character set.

A-space
The distance from the current print position to the
near edge of the character cell.

C-space
The distance from the far edge of the character cell to
the character escapement point (the end of the space
along the character baseline that is allocated for the
character).

Char Increment
The sum of the character's A-space, B-space, and
C-space.

Baseline Offset
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.

Char index
The character index number. The first character in a
font has a character index of zero.

Raster Width
The width of the character bitmap.

Raster Height
The height of the character bitmap.

Char Ascender
The distance from the character baseline to the top-
most toned pel.

Char Descender
The distance from the character baseline to the lowest
toned pel.

Code Point Data for Code Point
The hexadecimal representation of the current characters code point.

Options which you cannot edit are grayed.

Copy tool

The Copy tool allows you to copy a character into any other position in the character set. 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, it 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 click on a target character cell. The selected range of characters are copied to new positions starting at the target character cell.

Swap tool

The Swap tool allows you to swap the positions of two characters in the font. Use the screen pointer to select the first character, then select the second character. The two characters swap positions.

Merge tool

The Merge tool allows you to load another font or character set and copy into or replace characters in your original character set. A dialog box displays from which you select another Elixir-format font or character set. After selection, the screen splits into Source and Target font windows. The Target window contains the character set you originally loaded; the Source window shows the font or character set from which you want to merge characters.

To merge fonts:

1. **Select the character you want to merge (source).**

2. **Select the [Replace] or [Insert] option in the Toolbox.**

3. Click on the character in the target font you want to replace or insert a character in front of.

The character from the source window is copied to the target window. The Replace operation overwrites any character in the chosen position of the target font. The Insert operation inserts characters in the position before the selected character in the target.

To cancel a selected character, select another character.

If you are merging a character into a position for which a GCID is already defined, or if you are merging to a character with a duplicate GCID, a warning dialog box displays to confirm continuing with the operation after entering a new GCID, or allows you to Stop the operation.

If your merge operation is from a non-AFP font, the following dialog box displays.
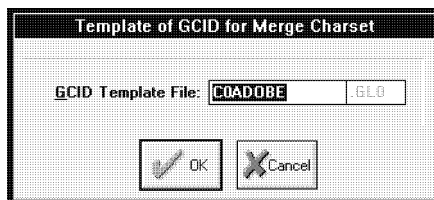
Figure 7-8. Template of GCID for
Merge Charset dialog box

Because a non-AFP font does not have GCIDs or other information required for AFP character sets defined, you must specify a GCID template file (mapping list) for the information. Elixir provides default GCID template files for Unbounded-box character sets (C0ADOBE.GL0) and for Bounded-box character sets (C1ADOBE.GL1). Unless you are familiar with GCID mapping tables, you should use these default mapping lists when merging from non-AFP fonts.

When merging a character from a non-AFP font, the following dialog box displays to allow you to specify a different GCID for the merged character (to avoid overwriting the current GCID with the new character), or to stop the operation.
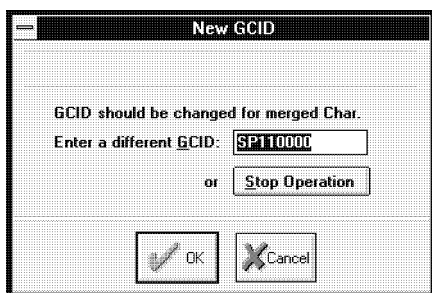
Figure 7-9. New GCID dialog box

Merging a tall character into a smaller font vertically stretches 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.
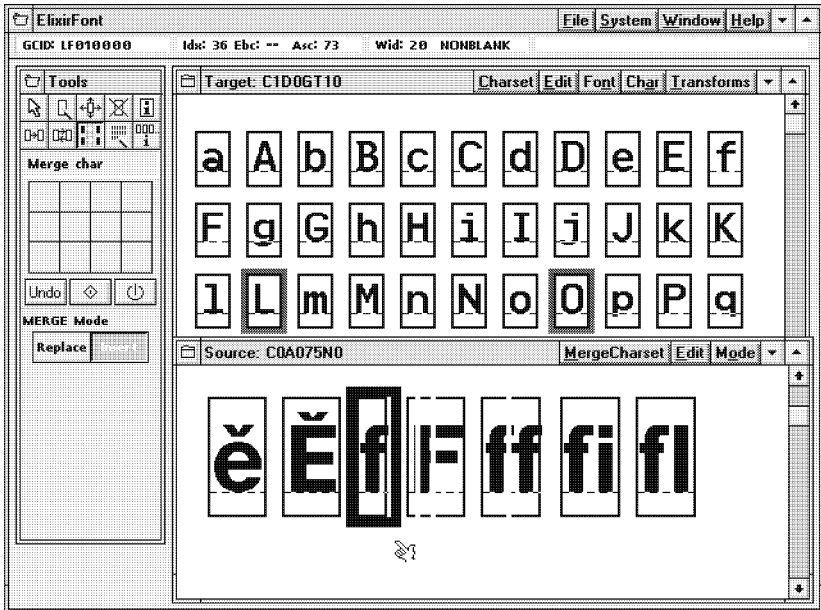
Figure 7-10. Selecting a character for merging
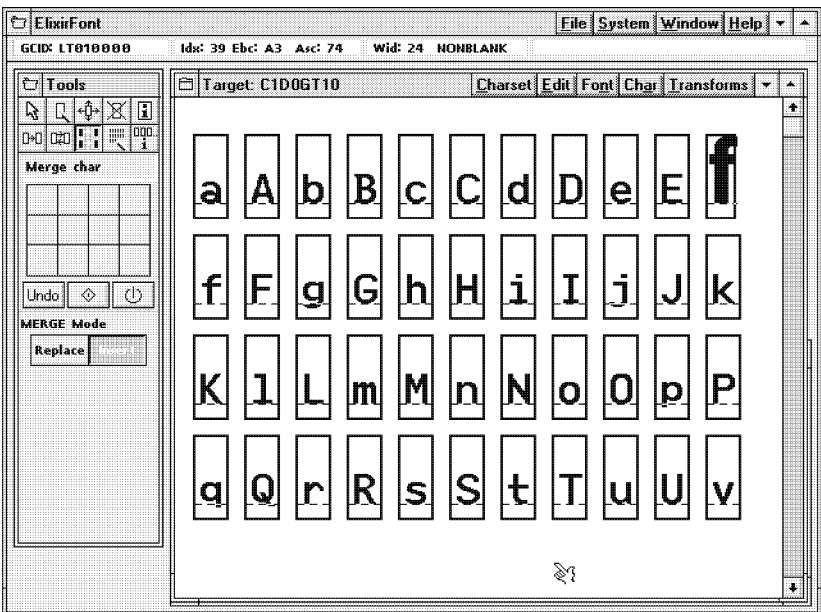
Figure 7-11. Effect of merging the character into a smaller
character set

Sample tool

The Sample tool displays a font sampling pad in which you can see how text created with the current font will appear at print time.
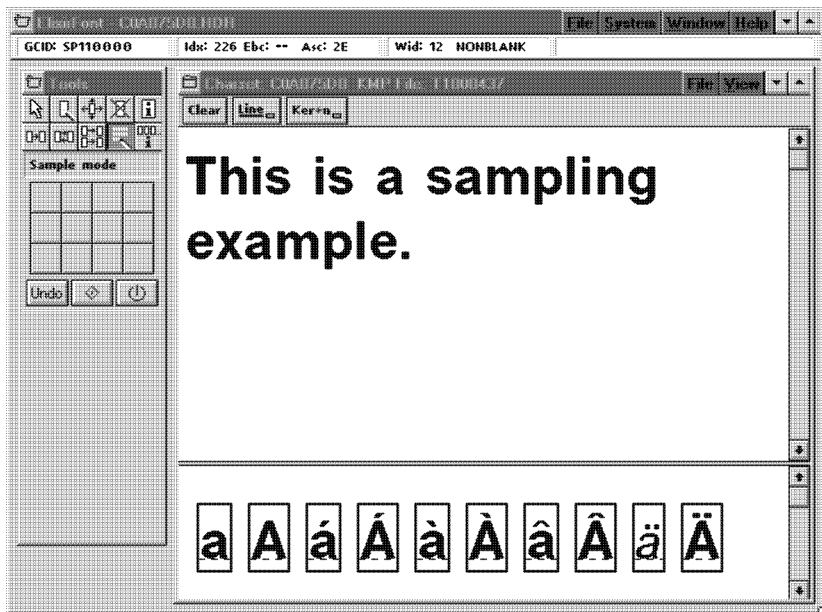
Figure 7-12. Sampling pad example

Use the keyboard or click on the characters in the character set window to place the characters in the sampling pad.

Select [Print Sample] from the **File** menu to proof print the sampling pad (when proof printing, text prints as bitmaps).

Click on [Line] in the Font window Toolbar to display the baseline when entering characters (or select [Show Baseline] from the **View** menu).

Click on [Kern] in the Font window Toolbar to see the effect of kerning character pairs (or select [Show Kerning] from the **View** menu). The bitmap of the kerned character must extend beyond the character cell for this effect to be visible.

Font Properties tool <Ctrl> + <F2>

The Font Properties tool displays the Font Properties dialog box.

Figure 7-13. Font Properties dialog box

Orientation
Not applicable for AFP character sets.

Resolution
The font resolution: [240], [300], [480], or [600] dpi.

Pitch
Fixed or proportionally-spaced. Selecting [Fixed] displays a dialog box requesting a fixed width value.

Linespacing
Changing [Distance Above], [Below], or [Leading] changes the linespacing. To calculate the new line spacing, click on the [Linespacing] button.

Point Size
Display only. The point size of the font (a point is 1/72 inches).

Pixel Height
Display only. The height of the font cell in dots.

Last Character
The decimal position of the last character. The first character position is always 0, and the maximum last character position is 255. If you increase this value, new null characters are added to the end of the font. If you decrease this value, characters are removed from the end of the font.

Change cell width
Allows you to increase or decrease the width of every cell in the font by the number of dots you enter. You can change the relative spacing between characters for the entire font.

Header submenus

Displays the font header information for AFP character sets.

AFP/Attributes
Displays the Character Set Attributes dialog box which allows you to change attributes for the character set.
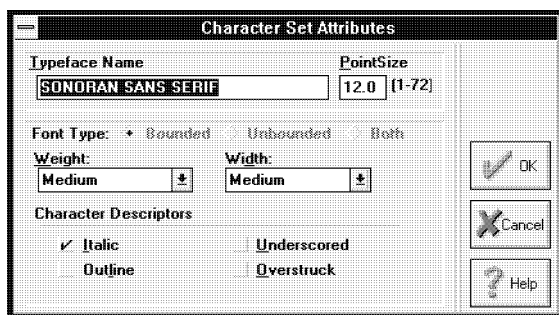
Figure 7-14. Character Set Attributes
dialog box

Changing character attributes by editing or transformation does not change the corresponding values in this dialog box. You must manually reset the values.

When you convert an Elixir character set to an AFP-format character set, values in this dialog box are included in the AFP data stream and read by text formatters such as DCF.

Typeface Name
A description of the current typeface, up to 32 characters.

Point Size
The character set point size.

Font Type
Display only. Shows whether the character set type is Bounded-box or Unbounded-box or both.

Weight
Select the option that best describes the weight of the character set you are creating or modifying.

Width
Select the option that best describes the width of the character set you are creating or modifying.

Character Descriptors
(Optional) Select a character attribute.

AFP/Increment
Displays the Character Set Increments dialog box.
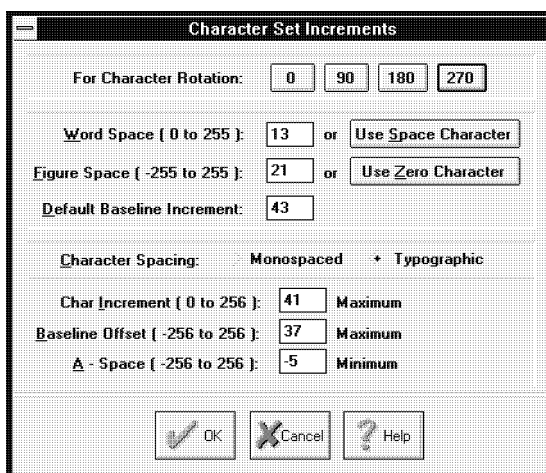
Figure 7-15. Character Set Increments
dialog box

For Character Rotation
(Bounded-box character sets only). Select the rotation of the printed characters: [0], [90], [180], or [270] degrees.

Word Space
The spacing between printed words, in pels. Enter the number of pels or click on [Use Space Character]. You cannot use [Use Space Character] when creating a new character set as a spacing character GCID (SP010000) does not exist.

Figure Space
The character increment for the numerals 0 through 9, in pels. Enter a value or click on [Use Zero Character] to use the GCID for the numeral 0 (ND100000). This value is sometimes equal to the numeric space character (GCID SP310000).

Default Baseline Increment
The default baseline increment as set in the Font Properties dialog box [Linespacing] option. You can override the line spacing value in this dialog box.

Character Spacing
Specifies whether the character set you are creating or modifying is [Monospaced] (fixed pitch) or [Typographic] (proportionally spaced).

Char Increment
The character increment in pels. For monospaced character sets, the uniform increment displays. For typographic character sets, the largest increment (maximum) of the character set displays.

Baseline Offset
For monospaced and typographic character sets, specifies the maximum baseline offset value in pels.

A-Space
The Uniform A-space value in pels for mono-spaced character sets and the minimum A-space value in pels for typographic character sets.

AFP/Design
Displays the Character Set Design dialog box.
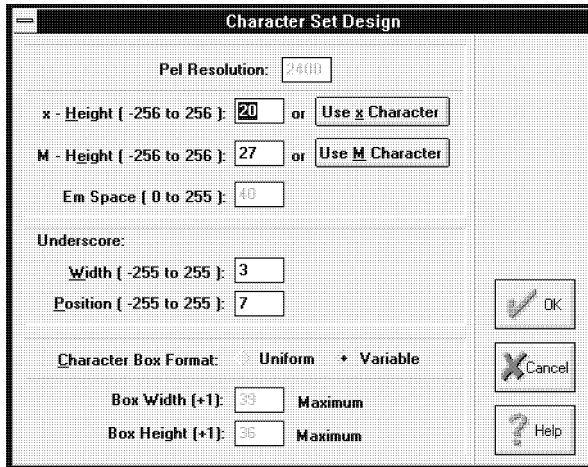
Figure 7-16. Character Set Design dialog box

Pel Resolution
For display only. The pel resolution per inch, multiplied by a factor of ten.

x-Height
The height in pels of the lower case x charac-ter (GCID LX010000). Click on [Use x Char-acter] to use the standard lower case character height without descenders or ascenders.

M-Height
The height in pels of the upper case M char-acter (GCID LM020000). Click on [Use M Character] to use the standard upper case character height without descenders or ascenders.

Em Space
The character increment in pels of an em
space. An em is a square with sides equal to
the point size. For example, 9 point at 240
dpi is 30 pels (240/9=30). An 9-point em is a
30 x 30 pel square.

Underscore/Width
The thickness of the underscore stroke in
pels.

Underscore/Position
The number of pels from the baseline to the
top pel of the underscore stroke, including
the top pel. A positive value signifies an un-
derscore under the baseline, a negative
value signifies an underscore above the
baseline, and a zero value specifies that the
underscore is on the baseline.

Character Box Format
Specifies whether the raster-pattern boxes
for the character set are all the same size
[Uniform] or are different sizes [Variable].

Box Width/Box Height
Display only. For Uniform raster-pattern
character sets, the Uniform box width and
height display. For [Variable] raster-pattern
character sets, the [Maximum] box width and
height display.

HP PCL
Displays the HP PCL Font Properties dialog box.
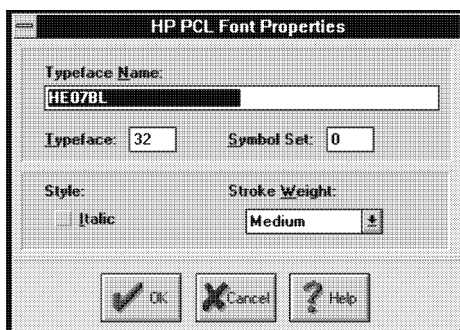
Figure 7-17.
HP PCL Font Properties dialog box

Options in the dialog box are:

- the typeface name (file name of the font)

- the typeface number

- the symbol set of the font

- the style (italic or normal)

- Select the stroke weight (boldness), from [Ultra-Light] to [UltraBold]

8. Transforming Elixir-format character sets

This chapter describes how to use ElixirFont to apply transformations to single characters or to all characters in a character set.

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.

Some examples of single-character transformations are shown in the following figure.

Figure 8-1. Transformation examples

To apply a transformation:

1. **Select either a single character or the entire font (<Ctrl>-<A>).**

2. **Pull down the Transforms menu or click on the Transformation tool (the top center tool in the Toolbox) and select the transformation you want to apply.**

3. **Select the transformation options you want from the bottom of the Toolbox area.**

4. **Click on the** ⏻ **button in the Toolbox to start the transformation.**

5. **Click on the** ◇ **button in the Toolbox if you want to stop the transformation during execution.**

6. **Click on the [Undo] button in the Toolbox to undo the transformation just applied (the undo function does not reverse a transformation that is stopped during execution).**

The following sections describe transformations in more detail.

Transformation tool   Transforms menu

Figure 8-2. Transformation tools and menu

Transformation tool options

This section describes the Transformation tool options in the ElixirFont Toolbox.

Transformation tool options
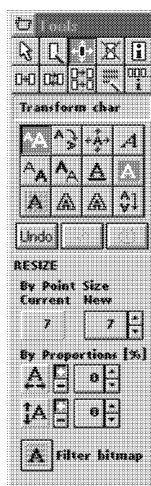
Figure 8-3. Transformation tool selected

Resize

This transformation resizes a single character or the entire character set.
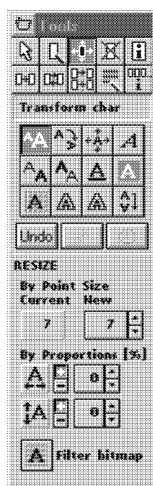
Figure 8-4. Selected Resize tool
and options

The current point size displays. Enter a new point size by clicking on the up and down arrows (you can only resize within an allowable range), or specify horizontal and vertical resize percentages within the allowable range.

Select the [Filter bitmap] button to remove jagged edges and single bits after resizing. The bitmap features that are filtered are those currently selected in the Filter Toolbox. To verify the selected options, select the Filter tool and specify:

• Remove single black bits
• Remove single white bits

You may want to apply filtering to a single character to see the effect of different filtering options.

When resizing the entire character set, a second dialog box displays requesting resize confirmation. Line spacing, raster-pattern box widths, and other values are resized proportionately.

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If you are increasing the character size and the en-
larged character does not fit in the character raster-
pattern box, a dialog box requests confirmation for in-
creasing the size of the character raster-pattern box.

Repeatedly resizing the same character set signifi-
cantly distorts the character set and is not
recommended.

Rotate

This transformation rotates characters in 90-degree
increments.
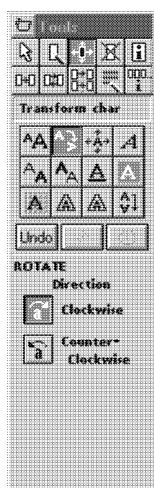
Figure 8-5. Selected Rotate tool
and options

Select [Clockwise] or [Counter-clockwise] rotation.

If you rotate the entire character set more than once,
raster-pattern box dimensions such as blanks left are
not preserved, and reversing the rotation does not re-
store the character set precisely.

This option does not change the inline print direction
of a character set. To change the inline print direction
of an Unbounded-box character set, use the Desktop
converters to convert the 0° Elixir-format Unbounded-
box character set to Unbounded-box AFP format and
specify the inline print direction as X1, X2, or X4 dur-
ing conversion (see the *Elixir Desktop and Converters
for AFP User's Guide* for more information).

Shift

This transformation shifts a character in its raster-
pattern box. Select a direction to shift (up, down, left,
or right arrow), and set the number of pels you want
the characters to shift.
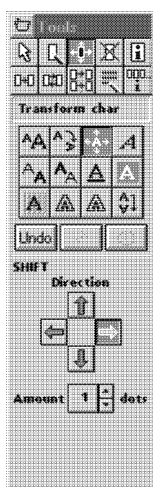
Figure 8-6. Selected Shift tool
and options

If shifting a character extends it beyond its raster-
pattern box, a dialog box requests confirmation for in-
creasing the size of the character raster-pattern box.

Slant

This transformation is useful for creating an italic version of a character or character set.
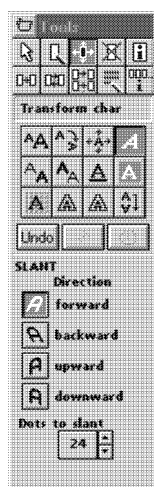
Figure 8-7. Selected Slant tool
and options

Select the slant direction by clicking on it, then select the number of pels by which you want the character(s) slanted.

If slanting a character extends it beyond its raster-pattern box, a warning dialog box displays.

You should not repeatedly slant characters. Each slant operation adds distortions (like jagged edges, single bits, etc.) that are compounded with repeated operations.

Darken

This transformation darkens (emboldens) characters.
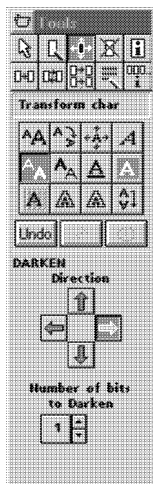
Figure 8-8. Selected Darken tool
and options

This operation adds one or more pels next to existing pels in the character bitmap.

Specify the number of pels, and the side of the bitmap to which you want pels added.

Lighten

This transformation lightens (debolds) characters.
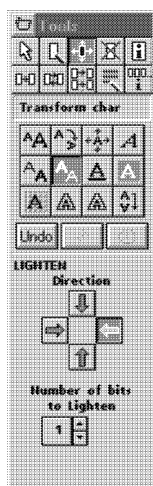
Figure 8-9. Selected Lighten tool
and options

This operation removes one or more pels near exist-
ing pels in the character bitmap.

Specify the number of pels, and the side of the bitmap
from which you want pels removed.

Underline

This transformation underlines characters.
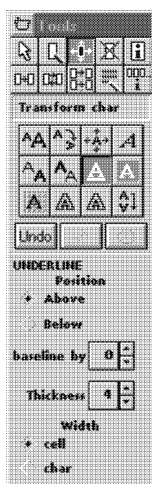
Figure 8-10. Selected Underline tool
and options

Specify the position of the underline as above or be-
low the baseline, and the distance to the baseline.

You can also specify the thickness of the underline (in
dots, default 4 dots) and whether the width of the un-
derline is across the character or across the cell.

Underlining a SPACING character is not recom-
mended unless you change the Code Page name. If
you convert the character set to AFP format and up-
load it to a host, not changing the Code Page name
may affect other applications on the host.

Underlining the entire character set

Special consideration must be given when underlining an entire character set or coded font.

When printing on AFP printers, sometimes a calculated value is used to separate words rather than using the spacing character. In such cases, applying the Underline transformation to the spacing character in the Elixir character set will not translate to the AFP character set, and spaces between words on the AFP printout will remain blank.

To allow translation of the underlined spacing character, you must turn off the variable spacing field in the associated Code Page.

When underlining the entire character set, if only the character set is loaded, the following dialog box displays with a warning to turn off the variable spacing field on the Code Page used with the character set.
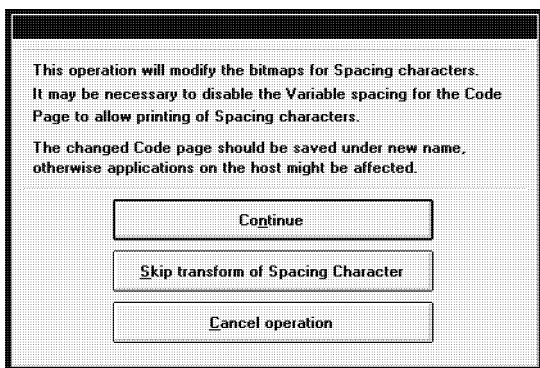
Figure 8-11. Code Page warning

Continue
Underlines all characters including any spacing characters.

Skip transform of Spacing Characters
Underlines all characters except spacing characters.

When underlining the entire character set, if the Coded Font (Character Set and Code Page combination) is loaded, the following dialog box displays with a warning that the variable spacing in the currently loaded Code Page will be turned off.
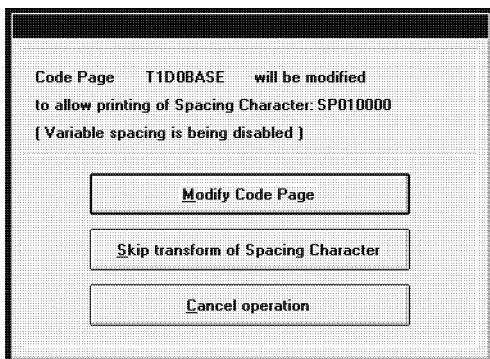
Figure 8-12. Code Page warning

Modify Code Page
Modifies the Code Page and underlines all characters including any spacing characters.

Skip transform of Spacing Characters
Does not modify the Code Page and underlines all characters except spacing characters.

When underlining a character set, you should create a custom Code Page by copying an existing IBM Code Page and renaming it (you can use the custom Code Page with other character sets as well). Modifying an existing IBM Code Page may affect the printing of resources created with page composition packages such as DCF/SCRIPT which use the calculated variable spacing value for word spacing.

Reverse

This transformation reverses (changes black to white and white to black) character cells.
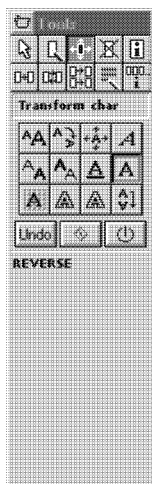
Figure 8-13. Selected Reverse tool

You are prompted for confirmation when you want to reverse the entire character set, but not when you want to reverse a single character.

Reversing the entire character set

Special consideration must be given when reversing an entire character set or coded font.

When printing on AFP printers, sometimes a calculated value is used to separate words rather than using the spacing character. In such cases, applying the reverse transformation to the spacing character in the Elixir character set does not translate to the AFP character set, and spaces between words on the AFP printout remain blank.

To allow translation of the reversed spacing character, you must turn off the variable spacing field in the associated Code Page.

When reversing the entire character set, if only the character set is loaded, the following dialog box displays with a warning to turn off the variable spacing field on the Code Page used with the character set.
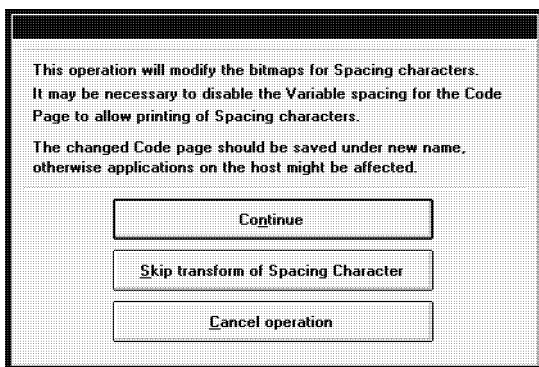
Figure 8-14. Code Page warning

Continue
Reverses all characters including spacing characters.

Skip transform of Spacing Characters
Reverses all characters except spacing characters.

When reversing the entire character set, if the Coded Font (Character Set and Code Page combination) is loaded, the following dialog box displays to warn that the variable spacing in the currently loaded Code Page will be turned off.
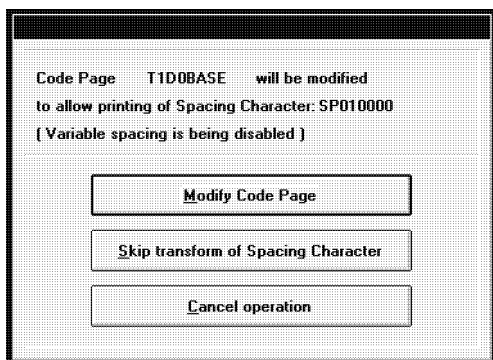
Figure 8-15. Code Page warning

Modify Code Page
Modifies the Code Page and reverses all characters including any spacing characters.

Skip transform of Spacing Characters
Does not modify the Code Page and reverses all characters except spacing characters.

When reversing a character set, you should create a custom Code Page by copying an existing IBM Code Page and renaming it (you can use the custom Code Page with other character sets as well). Modifying an existing IBM Code Page may affect the printing of resources created with page composition packages such as DCF/SCRIPT which use the calculated variable spacing value for word spacing.

Filter

This transformation applies filtering to one or more characters in a character set.
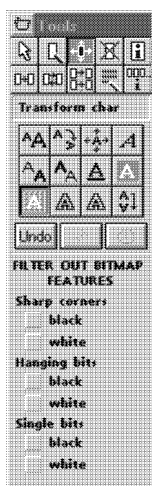
Figure 8-16. Selected Filter tool
and options

The following figure shows the features that you can filter.
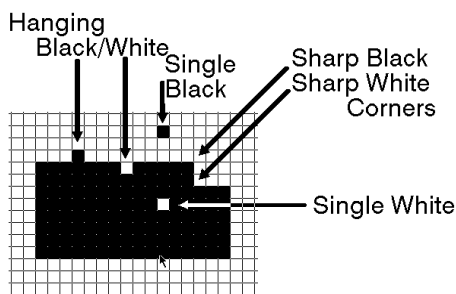
Figure 8-17. Filtering features

The effects of the filter are limited. For example, the filtering result may not be consistent with bits that are on outer edges of the character bitmap. You should always check character bitmaps after filtering and per-forming manual edits.

Outline

This transformation encloses the character bitmap with a border and reverses the enclosed area.
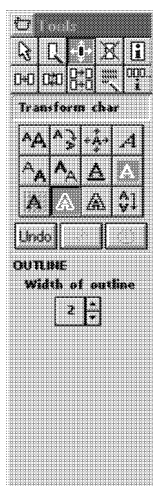
Figure 8-18. Selected Outline tool
and options

Specify the outline thickness between 1 and 9 dots (the default is 2 dots).

The following figure shows the effect of outlining.
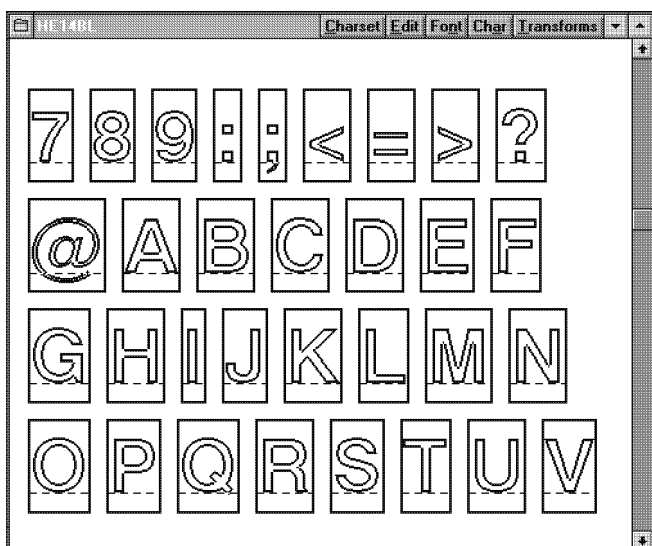
Figure 8-19. Outlining example

Halftone

This transformation applies line or shading patterns to characters.
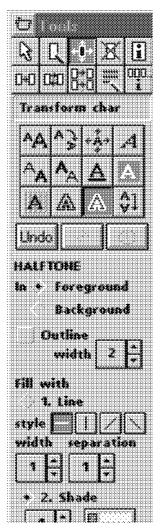
Figure 8-20. Selected Halftone tool
and options

You can apply halftoning as horizontal, vertical, and slanted (45° and 135°) lines and in many shades.

You can specify the line width and line separation in pels, and apply halftoning to the character bitmap (foreground) or the raster-pattern box background.

You can also outline the character bitmap and specify the outline width in pels.

When halftoning a spacing character, reverse it to black then apply halftoning to the foreground.

Halftoning is applied to solid black portions of a character. Halftoning a character that is not solid black (for example, a shaded or previously halftoned character) results in halftoning being applied only to the black portions of the character.

When halftoning an entire character set, you may be required to adjust some character width settings for correct character fit when placed together, as shown in the following figure.

Figure 8-21. Incorrect raster-pattern box spacing example

Mirror

This transformation rotates characters vertically or horizontally to create a mirror image.
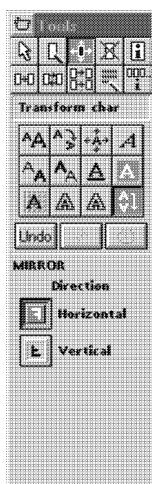
Figure 8-22. Selected Mirror tool
and options

The following figure shows a mirroring example.

original font

horizontal
mirror

vertical
mirror
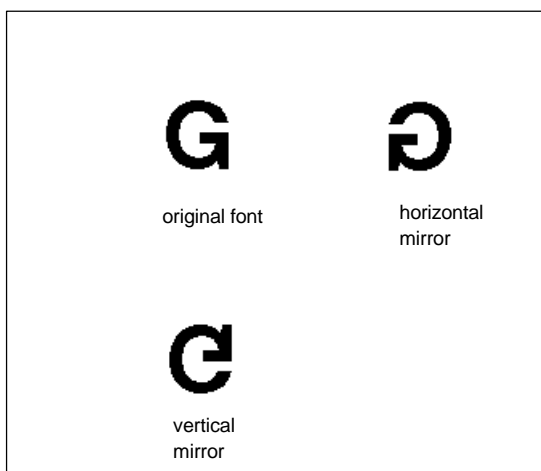
Figure 8-23. Mirroring example

A.   Keyboard shortcuts

This appendix lists keyboard shortcuts (fast keys) specific to ElixirFont 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	< - >

Glossary

ascender
The part of a lowercase letter which extends above the x-height. Another name for a spacing character.

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.

bitmap
A two-dimensional array of dots or pixels which is used to represent each character in a computerized font. Each black dot in a bitmap is represented in the computer as a number 0, and each white dot is represented as a number 1.

cell
An imaginary frame surrounding a character whose width equals the set width and whose height equals the linespacing of the font.

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

cell width
The cell width of a character is equal to the set width.

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.

debolden
To lighten a character by removing bits from it.

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

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

dot
See point.

embolden
To darken a character by adding bits to it. A complete set of characters of a certain size and orientation (such as portrait or landscape) in one typeface.

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

glyph
Another name for a character.

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

inverse landscape orientation
Refers to printing from right to left across the length of the page.

inverse portrait orientation
Refers to printing from right to left across the width of the page.

kerning
If the black part of a character extends outside of its cell, then the character is said to be kerned. Right kerning is when the character extends outside of its cell to the right. Left kerning is when the character extends outside of its cell to the left.

landscape orientation
Refers to printing from left to right across the length of the page.

leading
The amount of white space placed at the top or bottom of characters to prevent overlapping between succeeding lines. Usually linespacing is equal to the point size plus the leading.

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

mirroring
The flipping 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.

overstrike
To print characters over each other.

page
A number of characters and their cells which fill a screen.

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

picture element
See pixel.

pitch
A fixed pitch font has the same set widths for all characters. With proportional pitched, the set widths vary from character to character.

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.

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 number of points from the top of the ascender to the bottom of the descender. Sometimes the point size is given in dots or pixels, and in other instances, it is given as how many points (or units of 1/72nd of an inch) the font will have when the characters are printed on paper. 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 printing from left to right across the width of the page.

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

serif
A short stroke that projects out from the main part of a character. An example of a serif is the chisel-like attachments on the end of a Press Roman uppercase letter I. Fonts without these strokes are called sans serif.

set width
The distance from the start of the character to the beginning of the next character.

spacing character
A blank or all white character that is used for positioning characters on a line. These characters do the same thing as a space key on a typewriter.

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
A black rectangle positioned in the character cell.

x-height
The height of the lowercase x character.

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