```
[MAP]
#define param_lines 5
#define param_encoding 10
#define param_info 15
#define param_kerning 25
#define param_global 20
#define param_stems 30
#define file_new 100
#define file_open 105
#define file_save 110
#define file_saveas 115
#define file_TTbuild 125
#define file_TTimp 130
#define file_Alimp 135
#define file_exit 120
#define edit_del 200
#define edit_copy 205
#define edit_paste 210
#define edit_mark 215
#define edit_unmark 220
#define edit_dup 225
#define edit_extreme 230
#define pref 300
#define back_bitfont 400
#define back_char 405
#define back_size 410
#define control 900
#define tools 999
#define tool_zoom 1000
#define tool_mark 1001
#define tool_line 1002
#define tool_curve 1003
#define tool_move 1004
```

```
#define tool_xy 1005
#define tool_cut 1006
#define tool_mirror 1007
#define tool_stretch 1008
#define tool_spin 1009
#define tool_border 1010
#define tool_hint 1011
#define tool_start 1012
#define tool_order 1013
```

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Reference Point

A **reference point** is the begin or end point of a character element.
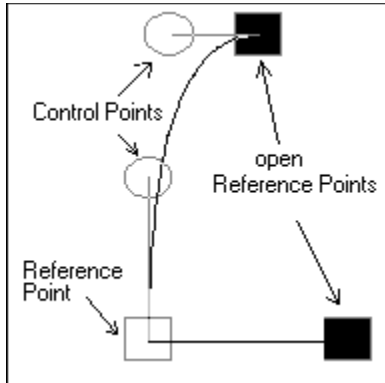
Reference points are symbolized by a square. Open reference points, that is, those not connected with other reference points, are drawn in black.

Segment

A **segment** is a series of connected character elements.
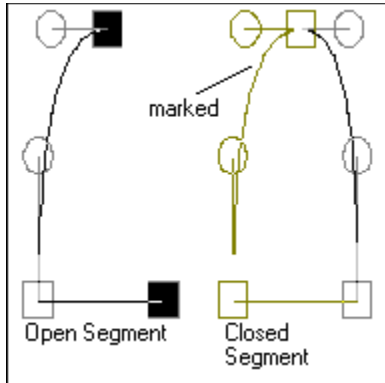
A segment that includes open reference points is referred to as an open segment. Correct characters consist only of closed segments.

Character Element

Characters in a Type1 font are generally described by an outline. Only straight lines and curves (cubical Bezier curves) are used for describing characters.

The term **character element** always refers to either a straight line or a curve.

We will use the term character parts to refer to a collection of character elements, either they may be connected or not.
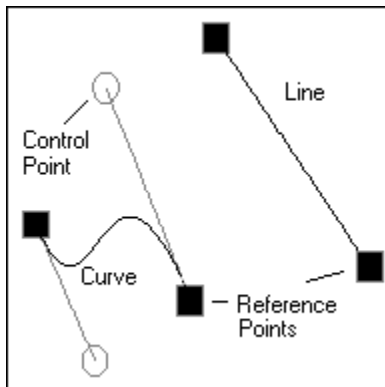
Control Point

You determine the shape of the curve with both its **control points**.
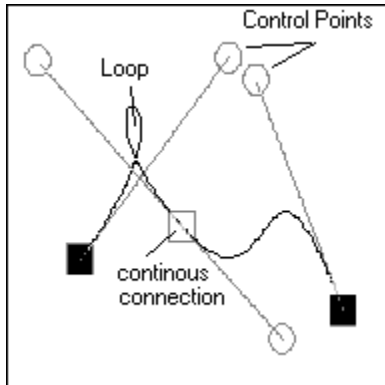
The curve is "drawn" in the direction of the control points. Note that you should not form loops.

Getting Help

There are several ways by which Type-Designer offers help.

Help Cursor

Whenever the ❓ cursor appears, press the <u>right mouse button</u> to call up the Help overview.

Menu Selection
Select the topic from the Help menu you would like help for.

- **Index** gives you an overview of help topics.

- **Control Panel** gives you all information on the control panel.

- **Tools** gives you information on (the tools for) character editing.

- **Kerning** gives you information on the kern pair editor.

Dialog Boxes
If you click the Help button in a dialog box, you will get help for those inputs possible in this dialog box.

Tools
If you move the mouse cursor on an Edit menu icon and press the <u>right mouse button</u>, you will get help for this tool.

Caching

Almost all font managers use **caching** to accelerate the generation of characters on the output device.

Characters which have just been rastered are stored internally (or on the harddisk).

If the character is needed again later, it doesn't have to be rastered again but just taken from memory.

Rasterizer

Because characters in a Type1-Font are saved as outlines, these must first be converted for an output device. This job is done by a program (**Rasterizer**), which can, for example, be built in a PostScript printer or work like a driver under an operating system   like, for instance, the Adobe Type Manager.

The better an output device is, the finer the raster usually is to which character outlines are imaged.

While monitors have resolutions of approx. 100 dpi (dots per inch), laser exposure devices increase that to over 3000 dpi.
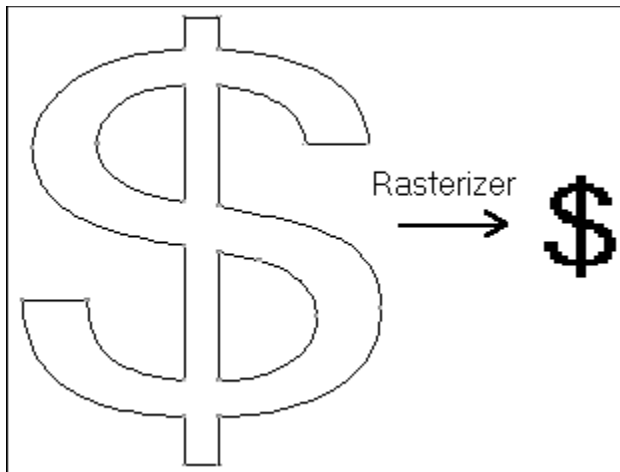
Font

A **font** refers to a set of characters which belongs to one group of type shape, for instance, *Times Italic*.

Normally, several type shapes comprise one type family. So, for instance, *Italic*, **Bold** and ***Bold Italic*** type shapes belong to the Times type family.

Hints

With **hints** you will be able to considerably improve the appearance of characters at low resolutions. Hints inform the <u>rasterizer</u> where horizontal and vertical stems are located in a character, and how the characters are to be aligned vertically.

The following options will provide you with detailed information:

<u>Hint</u>

<u>Starting-Point</u>

<u>Segment sequence</u>.

Design Principles

You can design high quality <u>fonts</u> by following the general procedure below.

- Align all characters, which have the same height, at the top and bottom at the same level. <u>Guide lines</u> can be of great help in this.

- <u>Character elements</u>, which determine the width of equivalent bars, should always be exactly equally spaced.

- <u>Reference points</u> should always lie at extreme points, that is, on outermost points.

- Try using as few character elements as possible.

- <u>Segments</u> should never overlap.

- Curves should not form loops.

- Use <u>hints</u> with all characters, especially the same hints with the same partial characters.

- Copy partial characters from characters already designed if they are needed again.

Deleting of character parts

Use menu option **Edit - Delete** or the key combination

      `<Shift><Del>`

to delete parts of characters.

Mark those character parts which are to be deleted with the <u>marker tool</u>.

If the entire character is to be deleted, you may also use either <u>Edit - Mark All</u> or `<Ctrl A>` to mark.

The deleted character parts are saved to the clipboard and can be inserted into other characters with the <u>Edit - Paste</u> or `<Shift><Ins>` command.

Copy to Clipboard

Use menu option **Edit - Copy** or both

    <Ctrl><Ins>

keys to copy character parts.

Mark those character parts which are to be copied with the <u>marker tool</u>.

You may also use either <u>Edit - Mark All</u> or <Ctrl A> to mark if the entire character is to be copied.

The marked character parts are saved in the clipboard and can be inserted into other characters with either the <u>Edit - Paste</u> or <Shift><Ins> commands.

Paste from Clipboard

With menu option **Edit - Paste** or the key combination

`<Shift><Ins>,`

you can paste character parts or import a background image from the clipboard.

Character parts must first be copied with <u>Edit - Delete</u> or <u>Edit - Copy</u> to the clipboard.

Import of Background Image

If you want to import a <u>background image</u> from the clipboard, then note the following:

The following formats are supported:

   - DIB (Device Independent Bitmap)
   - black and white bitmap

Background images requiring more than 64 kBytes of memory cannot be used.
You can determine the size of the background image using the menu option
<u>Background - Size</u>.

Mark All

Use the **Edit - Mark All** or

```
<Strg A>
```

command to mark the entire character.

This is useful, for instance, if the entire character is to be deleted, duplicated, rotated, mirrored or moved.

You can undo the marking of single character elements with the <u>marker tool</u>. Using the <u>Edit - Delete Markers</u> command will delete all markers.

Delete Markers

Use the **Edit - Delete Markers** or

    <Ctrl U>

command to delete all character markers.

You can set or delete the marker of single character elements or segments with the <u>marker tool</u>. Use the <u>Edit - Mark All</u> command to mark all character elements.

Duplicate Character Parts

Use the **Edit - Duplicate** command or

        <Ctrl D>

command to duplicate parts of characters.

Note that only marked elements will be duplicated.

Use the <u>marker tool</u> or the <u>Edit - Mark All</u> command to set markers.

After duplicating you can use the <u>move tool</u> to move the duplicated character parts to other positions.

Insert Extrema

This command, which you execute by using either the key combination

     `<Strg><E>,`

or the menu item **Edit - Insert Extrema**, helps you considerably in editing fonts. The example below illustrates what this function can do:
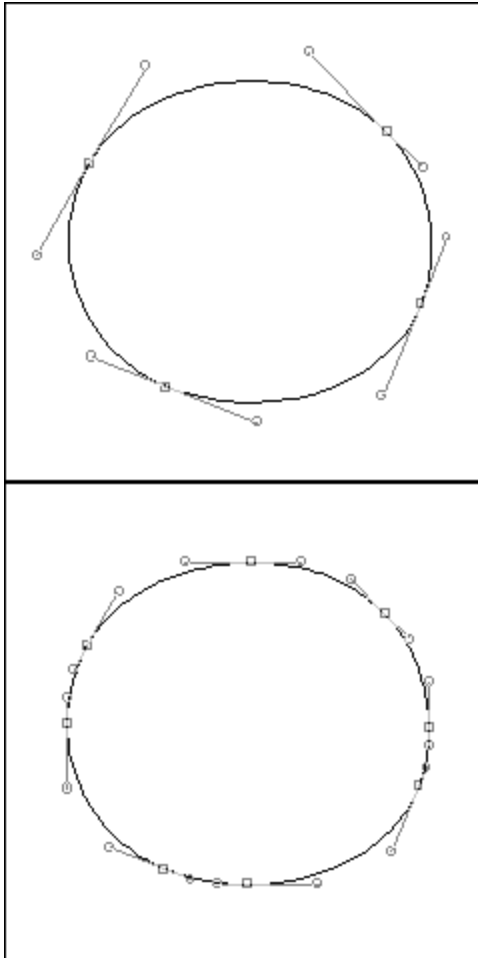
New Font

Use menu option **File - New** to create a new font.

Enter a file name which does not yet exist.

Symbol Sets

Choose the symbol set which should comprise your new font. The following settings are possible:

Roman

Comprises all Roman character names also supported by the Original Adobe fonts.

Symbols

Contains all character names of the Adobe symbol font.

Other Characters

Comprises only the character name .notdef, which must exist in every font. All other character names are to be defined with the control panel option New.

FontInfo

You will be automatically taken to the FontInfo menu where you specify required font information.

Load Font

Use the menu option **File - Open** to load a font for editing.

Simply select the file to be edited from the list given in the dialog box.

Standard Directory

The standard font directory can be set through the menu item <u>Preferences</u>. This is then automatically selected when fonts are loaded.

Editing Original Fonts

Note that the original fonts from Adobe, ITC etc. are copyrighted font programs. These may be used only with attention to licensing conditions.

Also, these original fonts contain special commands which are either ignored or simplified by Type-Designer. If you load such a font and then save it again, it will normally use more space on your harddisk. Also, when displaying fonts in small sizes quality loss may occur.

Low-cost fonts, on the other hand, do not include hints but rather, in many cases, some design errors and can be greatly improved (e.g Image Club) qualitatively with Type-Designer.

Save Font

Use the menu option **File - Save** to save a font to disk

Additional Files

You may have Type-Designer create the following files:

PFB File   The PFB file covers the Type 1 Font. You should create this file always after modifying a font. This includes changes to individual characters, to borders and encoding. If you use Type-Designer "only" as a <u>pair kern editor</u>, you should deactivate this option!

PFM File   (**P**rinter **F**ont **M**etric), which supplies all Windows programs with information on character widths. This file is almost always necessary but needs only to be created when you save a font for the first time, or when character widths, encoding or kerning have changed.

AFM File   (**A**dobe **F**ont **M**etric), which contains information on character widths and font encoding. This file is also only to be created when character widths, encoding or kerning has changed. You should create this file always after changing kerning pairs, because the PFM file only covers kerning pairs, wich are <u>encoded</u>

INF File   which contains global font information. This file is seldom used. But i.e. if no PFM file is available, ATM Control Panel is able to create PFM files just from INF and AFM files. Other programs like Ventura Publisher for GEM will defenitly need the INF files for adding new fonts. Sometimes it is necessary to manually edit the INF-file to avoid naming conflicts.

Updating Initialization Files

WIN.INI   Select the option Update WIN.INI if you are outputting in PostScript and saving the font for the first time. Type-Designer then adds an entry to your WIN.INI file so that your newly-created font is made available to your printer. Then re-start Windows for this change to take effect.

ATM.INI   Select the option Update ATM.INI if you are using the Adobe Type Manager and saving the font for the first time. Type-Designer then adds an entry to your ATM.INI file so that your newly-created font is made available to the Adobe Type Manager. Then re-start Windows for this change to take effect.

Save without hints

The activation of this option might be necessary for some high resolution output devices and fonts with complex hinting. Some typesetting devices will refuse fonts wich have to much hints and hint replacements. In such a case just save the font with another file name and without hints. Use the hinted font on screen and normal printers and the font without hints on the typesetting device.

Backup Copies

Type-Designer automatically creates a file with the name

(Name).~FB

which contains the previous version of the font.

Adobe Type Manager Support

If you are using the Adobe Type Manager a window will open after you save the font, in which you will see 12 dummy fonts.

This is necessary since it is not possible at this time to inform the Adobe Type Manager that a font has changed.

Enter 64 kByte as cache size in the ATM control panel as long as you are designing fonts, otherwise errors in the Adobe Type Manager may occur.

Future versions of the Adobe Type Manager will very likely provide (according to Adobe Developers Association Europe) direct support for editing fonts.

Save Font as

Use the menu option **File - Save As** to save a font under another name.

The same dialog box will appear as with the menu item <u>File New</u>.

First type in the <u>file name</u> for the font. Follow the same procedure as with File New.

You will then have the option, as with <u>File Save</u>, to create additional files and to have the Windows initialization file updated.

If the file with the new name already exists, you will be asked if you want to overwrite the file.

Exit

With the menu option **File - Exit** you will quit Type-Designer.

If fonts have been changed and not yet saved, you can do this now.

The same dialog box as that of <u>File - Save</u> will appear.

Build TrueType

By selecting the menu item **File - Build TrueType**, you can not only save those fonts you have created yourself in TrueType format, but also convert Type 1 fonts to the TrueType format. Type-Designer thus enables you to work without the Adobe Type Manager.

To create a font in TrueType format, you must first create or load a Type 1 font. Make sure that all settings in the <u>Parameter - Info</u> menu are as you would like them.

TrueType Name

The TrueType font is by default given the same file name as the Type 1 font but with the extension .TTF. Normally the font is saved in the Windows system directory. You can select another file name or another directory by clicking the

> **Choose different name**

button. The dialog box, which you already know from the menu item <u>File - Save As</u>, then appears.

Install automatically

If you would like to install the created TrueType font in the Windows system, leave the option

> **Install font in system**

activated.

A file with the ending .FOT is then automatically created, which contains important information for Windows on the TrueType fonts. Also, the WIN.INI file is automatically updated. This option must also be activated if the corresponding TrueType font already exists and you have made only a few changes.

Start conversion

Conversion is started by clicking the **OK** button.

Which character is currently being processed and what percentage of the conversion has already been completed is displayed in the lower part of the dialog box to monitor the progress of the conversion.

If a TrueType font with the same file name already exists, you will receive a corresponding message and can decide whether or not conversion should

continue.

If an error occurs during conversion, you will receive a corresponding error message.

If conversion is completed without any error messages, the TrueType font will be available to all Windows applications that support scalable fonts.

Import TrueType

With the menu option **File - Import TrueType** you are able to retrieve outlines from already installed TrueType fonts for your own designs.

After selecting this menu item you will see the Windows standard dialog for selecting fonts. All installed TrueType fonts will be shown. If you want to get outlines from other TrueType fonts, you first have to install them with the Windows Control Panel.

You are able to see a sample of every available font by selecting a font and a font size. For importing the font, a size is not necessary.

After selecting a font and clicking on OK, this font will be imported. This means, Windows System functions are used to retrieve the outlines and other required font information.

Warning

If you just change a few characters and would like to use that changed fonts as a TrueType font again, it is best to overwork the font information with the Parameter -FontInfo dialog, and use other names for this new font. Otherwise it is possible to generate a naming confict or to overwrite an existing TrueType font.

Import Adobe Illustrator

The new option **File - Import AI** enables you to directly import graphics from programs like Adobe Illustrator or CorelDraw.

Therefor you have to export graphics you would like to import in Type-Designer as Adobe Illustrator EPS (encapsulated PostScript) format, most often referred to as AI format. If there is no AI export available, it might also be possible to select a PostScript printer and print to a file. Some graphics programs, like CorelDraw are using the same commands for curves and lines as with AI format. Especially with CorelDraw, printing to a file is highly recommended, because Corels AI exports most often intersects outlines by horizontal strokes.

After selecting a file from the well known file opening dialog, the curve and line commands are extracted and the maximum required size is calculated.

Scaling

After successfull import you will see a dialog box, wich shows the scaling factor for the AI file. By choosing automaic scaling the imported graphic will never require more than 10000 units in height and 20000 untis in width.

If you want to import several graphics, which are build in a way, that width and height information have to be in a certain proportion, you should use Manual scaling with the same factor for all your graphics.

After entering a scaling factor manually, the new width and height are shown immediatly.

By pressing OK the graphic is scaled accordingly and shown in the edit window.

Warning

When importing AI files, the outlines are not necessarily closed. Also overlapping parts may be possible. Thus, most often you have to overwork the imported outlines to ensure to get correct characters.

File Names

File names for Adobe Type1 fonts usually consist of a two-letter abbreviation that describes the type family, as well as other letters which provide additional information; I, for instance, might stand for *Italic* and B for **Bold**.

Fill unused character spaces with an underscore "_" and always use `.PFB` as an extension.

In general, use a name by which fonts can be easily identified.

Guide Lines

Use the menu option **Parameter - Guide Lines** to define guide lines for creating characters.

These guide lines are especially useful in aligning similar characters in the same way. Together with vertical hints they are also used by the rasterizer for an overshot control at low resolutions and small sizes. Therefor they are extremly important. More information on this is given in the manual.

Note: Because guide lines are also saved in the Type1 font and used by the Rasterizer, note the following:

- The first field always describes the baseline alignment. If, for instance, characters like "O" extend below the baseline,then the lowest point of the letter "O" is taken as the Y-value. For the height, enter the distance from this point to the baseline.

- Use all other inputs of the first block only for aligning upper character parts, such as, for example, the upper part of the haracter "Q".

- Use the second block only for aligning lower parts of letters, such as, for instance, the lower part of the letter "g" or the middle part of the number "9".

Input Error

If you give the wrong input, you will get an error message and be asked to correct the value.

Guide Line Display

You can turn guide lines on or off by activating or deactivating the Guide Line option of the <u>control panel</u>.

Stem Width

With menu option Parameter Stems you are able to define the most oftenly used width of stems within character outlines of your actual font.

The Type 1 rasterizer uses this information to avoid irregularities resulting from inexact digitalisition at very low resolutions and small point sizes.

The Main Stems are most important. They can especially be used to avoid irregularities of small and capital letters at typical screen resolutions.

We cannot give exact guide lines of how to compute reasonable main stem width. Most often in commercial available fonts you will find values taken from the character "o".

Note

You have to enter vertical distances for horizontal stems, that is the difference of y-coordinates. For horizontal stems you have to use x-coordinates, respectively.

Encoding

With menu item **Parameter - Encoding** you can determine which single characters are to be assigned which code (key).

In the table to the **left** you will find the following information:

- **Key**

   which corresponds to the code number in the Windows ANSI character set.

- **Code**

   a number between 0 and 255 used for positive identification.

- **Name**

   of the character which is assigned to the code.

The table to the **right** lists all character names used in the font.

Standard Encoding

Activate the Standard Encoding option for standard PostScript encoding.

This should always be used when creating a Roman font not intended for private use only. Note that you must then also use the standard PostScript character names.

If you use a font with standard encoding under the Adobe Type Manager, then you will get Windows ANSI encoding rather than PostScript standard encoding.

Individual Encoding

An individual character assignment is only possible if the option Standard Encoding is deactivated. Proceed as follows:

- Position the black bar in the left table onto the code to be assigned. Select the name with which to assign the code by positioning the bar in the right table.

- Finally, click the arrow in the middle.

You will immediately see how the assignment has changed.

Both bars are moved down one position automatically, so that a simple click on the arrow will result in sequential assignments.

Loading and Saving

By pressing the Save button you can save your individual encoding table for further use. In the then visible file dialog you can choose a name of your choice.

The Load button can be used to assign a previously saved encoding table to your actual font. This makes it easy i.e. to assign the same encoding to several styles a the same font family.

But you should be aware, that only those character names are assigned to codes, which are also available in the actual font.

FontInfo

With menu item **Parameter - FontInfo** you can determine required and informative font descriptions.

If your input is incorrect, you will at some point receive a corresponding error message. If your entry does not correspond to current conventions, you will receive a warning.

In edit fields permitting free text input you should as a rule use opening brackets "(" only if each of them is also followed by a closing bracket ")" .

Name

The name by which the font is addressed in the PostScript printer has to be entered here. The name used here must not appear in the other fonts you use. Blanks are not allowed.

Full Name

For PostScript output devices the complete name has a purely informative function. If the TrueType variation is also used, then this input is used in the font selection menu by some application programs.
To prevent complications, enter here the Family name of the font, adding further descriptions like **Bold** or **Oblique**.
Blanks are permitted here and in fact should be used for better readability.
E.g.: Times Roman Bold Italic

Family

Enter here the family name of the font. Blanks can be used here too. Note that the family name should be the first part of the Full Name.
The name entered here is normally listed in the font selection menu of various application programs.
E.g.: Helvetica

Weight

The weight describes how black a font is. This can range from **Ultra Thin** to **Ultra Black**. Because a number which Windows uses to determine for instance if the font is bold is calculated from the value entered here, only the pre-defined values from the list should be used. Using an unlisted weight always results in the font being treated as **Regular**.
Note especially that it is theoretically possible to define many different weight variations of a font under one family name. There have been up until now, however, practically no Windows programs capable of more than

distinguishing between just Bold and Normal. You should therefore create individual font families for different weight variations.

Width Class

This specification, relevant only to TrueType fonts, determines whether the font is condensed or expanded. This can range from **Ultra-condensed** to **Ultra-expanded**.
Whether there are already Windows applications making use of this type of font classification is currently not known. If you would like to use or sell your fonts for use with the common word processors, you should always create individual font families for condensed or expanded variations.
E.g.: Helvetica Narrow

Style

The combination of entries in both list boxes allows a font to be related to a certain font class. Windows enables you to select fonts without having to know the exact name of a font. The entries here ensure that no unpleasant surprises occur; for instance, it would look strange if a text font without serifs were needed but instead a font with chemical symbols would be displayed.

Italic Angle

With this entry you can determine at how much of an angle the font is inclined. A **negative** value has to be entered for fonts inclining to the *right*.
The font is marked as italic if the angle specified here is less than -1 or greater than 1.

ID Number

ID numbers are assigned centrally by Adobe Inc. and serve to effectively cache fonts for different printing jobs. Within a controlled applications environment (e.g. a local network of a department), you can use ID numbers between 4,000,000 and 4,999,999.
Otherwise, unless you are assigned a number by Adobe, always use a value of 0.

Und. Position

Enter here the y-coordinate of the underline's upper border. As reference you may use the underscore character.

Und. Thick.

Here you determine how thick the underline should be.

Notice

This is a purely informative entry which normally serves to record a copyright.

Ascender

Windows programs usually calculate the line spacing between two lines using this and the following two entries.
If no value is specified here, Type-Designer automatically calculates a plausible value.
All members of a font family should have the same value for Ascender, Descender and Line Gap. In this way, different line spacings can be avoided when using members belonging to one font family.

Descender

The value to which the normal font charcaters extend below the baseline is entered here. If a value of 0 is given, a plausible value will be calculated.

Line Gap

If the line spacing defined by ascender and descender is too small, this value will extend line spacing.
Note that not necessarily all application programs make use of this option.

Proportional

Activate this option if not all characters are equally wide.

Bold

Activate this option only if your designed font should also appear bold in smaller sizes.
Whether the font is recognized as bold by application programs is set independently from this entry with the Weight option.

Special Font

Activate this option only if you have designed characters which are not of Roman origin, such as, for instance, Chinese characters.

Protection

With Windows 3.1 a new concept was introduced which enables you to

save the TrueType fonts together with the document they were used for. A document saved in this way can then be transfered to a different computer, even if the fonts used are not available on the target computer. Since font manufacturers are, however, normally not interested in having their fonts transfered to just any computer without purchase, this entry can be used to specify the type of font protection desired.
Whether or not applications exist which already support this option is not known to us.

No Protection

The font may be transfered to any system and also be permanently installed.

Read-Only Protection

The font may be transfered together with the document to other systems but may not, however, be permanently installed. The fonts can therefore only be used for editing and printing this document.

Complete Protection

The font may not be transfered together with documents to other systems.

Direction

This TrueType option determines the direction of writing. Neutral characters are those which can be written from right to left as well as from left to right.
This option is only interesting for future Windows versions with support for foreign languages such as Arabic.

Unicode

Under Windows, coded TrueType fonts based on Unicode can be used. At the moment only 224 characters per font can be addressed. Character codes from 0 to 31 cannot be used.
Type-Designer allows the creation of Unicode fonts with 224 characters. The option Standard Encoding must first be deactivated using Parameter - Encoding to create a font coded in Unicode.
Assign the key layout as usual.
Enter here the hexadecimal number under Unicode, which should be assigned to the key with code 32. All other Unicode values are consecutively numbered. Thus a Unicode starting value of F100 would be required, for instance, for Arabic Windows fonts, which are used with a special Arabic Windows version.

Kerning

Introduction

The kerning editor allows for the creation of arbitrary kerning pairs. A kerning pair is comprised of two characters, whereby the space between them is either reduced or enlarged by a certain amount.

Kerning information is, however, not directly saved in a Type 1 font, but rather in **AFM** (Adobe Font Metric) and **PFM** (Printer Font Metric) files.

When opening a font, it is first determined if a corresponding AFM or PFM file exists. This file must have the same name as the font file and must be found in the directory specified under <u>Preferences</u>

If no kerning pairs are found, because either the file was not found or no pairs exist, you will receive a corresponding message when loading a font.

You access the kerning editor by selecting the option **Parameter - Kerning** from the menu.

Layout:

List boxes are located to the left and right, from which the left and right characters of a kerning pair are selected, as well as other elements used to select and set values.

A window is located in the center, in which the current kerning pair is displayed.

If no character names appear in the left list box after calling up the kerning editor, then there are no kerning pairs as yet in the font, since only the character names of existing pairs are listed first.

If you want to create new kerning pairs, you have to activate the option

All Charcaters.

Otherwise, only the already existing kerning pairs can be edited.

To do this, select one character name from each list box.

Both characters of the pair will now appear in the center window. You will also see a horizontal and three vertical lines.

The horizontal line is the baseline. The vertical lines indicate the borders of the characters. The solid line determines the right border of the left character. Both dashed lines mark the borders of the right character.

There are several ways to input kerning values:

With the Mouse

- Move the mouse cursor onto the dashed line of the left border of the right character.

- Press the left mouse button and keep it pressed.

- Now move the mouse to the position where you would like to have the left border. Both dashed lines will move with the mouse.

- Release the mouse button. The change in kerning spacing will immediately be displayed.

Direct Input

You can also directly input the desired value in the small upper right edit window. The modified spacing will immediately be displayed.

Minor Adjustments

Minor adjustments can be made using both arrow keys to the right of the small edit window. The kerning value is thereby increased or decreased respectively by one.

Reset

If you would like to reset the kerning to the original value, simply click the **Reset** button.

Notes

Zooming

By enlarging or reducing the kerning window, you can also set the display size of the character.
Hint: The higher the window, the larger the character!

Saving Kerning Pairs

Kerning information is saved in AFM and PFM files. All kerning pairs can be saved in the AFM file. Only those pairs where both characters are coded, i.e. mapped to the keyboard using <u>Parameter - Encoding</u>, can be saved to the PFM file. If you have changed only the kerning pairs of one font, you can deactivate the option Create PFB File in the Save menu. Original fonts

remain unchanged.

Global Change

With menu item **Parameter Global** you can change the appearance of all the characters within a font.

The following options are possible:

- **Enlarge**
  If you enter here a value other than 100% the entire font will be accordingly enlarged or reduced.

- **Rotate**
  Enter here the angle at which the entire font should be rotated clockwise.

- **Italicize**
  Entire here the angle at which the font should be italicized. A positive angle causes slanting to the right.

Combinations

You can, of course, combine all of the options described above with one another. That is, a font can, for instance, be enlarged and italicized simultaneously.

Checking

After starting Global Change you will be shown for checking which characters are being changed and what percentage has already been changed.

Preferences

You can use menu option **Preferences** to define the work area and the standard directories.

The settings done here are saved in a file called TYPEDSGN.INI . Starting Type-Designer will automatically load the settings from this file. You will therefore not be required to type them in again.

Working Area

Determine the maximum editing area using the inputs for **left**, **right**, **top** and **bottom**. For Roman fonts note the following:

The distance between the uppermost point of a "X" and the lowermost point of a "p" should total approx. 9000 points. If you use accented characters, then a correspondingly larger work area must be chosen.

Select the left and right boundary of the work area so that all characters can still be seen together as a whole.

If you load a font that requires a larger work area, the work area automatically adjusts to the new requirements.

PostScript Directories

PFB Directory: Enter here the directory you normally use to save your Type1 fonts. The standard setting is **C:\PSFONTS**.

PFM Directory: Enter here the directory in which the Printer Font Metric files for Type1 fonts are to be stored. The standard setting is **C:\PSFONTS\PFM**.

AFM Directory: Enter here the directory for the Adobe Font Metric files. The standard setting is **C:\PSFONTS\AFM**.

INF Directory: Enter here the directory for the font information files. The standard setting is **C:\PSFONTS\INF**.

Other Directories:

AI Directory: Enter here the directory that normally contains the EPS files in Adobe Illustrato format for import in Type-Designer. The standard setting is **<Type-Designer dirtectory>\ EPS**.

HPSoft Directory: Enter here the directory that normally contains the bitmap fonts to be used as background patterns. The standard setting is **C:\PCLFONTS**.

If you choose a directory that does not exist, you will be asked if Type-

Designer should create that directory for you. If the required directory cannot be creted, you will receive an error message and have to enter another name.

Exit immediatly

If this option is activated, Type-Designer is immediatly closed when you choose Exit from the file menu. Otherwise you will be asked if you are sure to close Type-Designer.

Color display

If you are working on a gray scale monitor, you should deactivate this options. This ensures, that other colors are used in the edit window, which are easier to distinguish. On a color monitor you do best by activating the option color display .

Background

With Type-Designer you will be able to use bitmap graphics and fonts as models.

Bitmap Images

You can simply paste bitmap graphics from the clipboard with the Edit - Paste or `<Shift><INS>` command.

Bitmapfonts

Using the command Background - Bitmapfont you will be able to use existing bitmap fonts as the basis for developing your own Type1 fonts.

Use the command Background - Character to select a character as background after loading a bitmap font.

Bockground Size

You can use the Background - Size command to specify the scaling factors for the background.

Display of Background

Note that the background will only be displayed if the control panel's Background option is selected.

It is even recommended for certain operations to briefly turn off the background because the Windows system function for displaying bitmaps may take quite a while to set up the screen display.

Background Bitmapfont

Using the command **Background - Bitmapfont** you will be able to use existing bitmap fonts as the basis for developing your own Type1 fonts.

After selecting a bitmap font from the dialog box it will be loaded. If the font cannot be completely read or contains errors, you will receive an error message.

Though it is not impossible to load very small or very large bitmap fonts as background images, you should note the following:

- Sizes up to 24 points are normally too coarse to allow recognition of the actual structure.

- Sizes over 48 points may require a lot of memory and especially time to be scaled to the screen (especially with more detailed views).

Supported Formats

HP softfont	Uncompressed softfonts for the most widely-used laser printers (HP-Laserjet II).
WITEX laser	Compressed and uncompressed laser printer fonts of the scientific word processor WITEX (Version 3.x to 4.x).

Scaling

The scaling of softfonts for background masks is done automatically on the basis of size information saved in the bitmap fonts. Unfortunately, though, this is not always specified correctly (especially in the case of public domain fonts).

You can, therefore, use the <u>Background Size</u> command to specify the scaling factors for the background.

Background Character

Use the **Background - Character** command to select a character as background after loading a bitmap font.

Note that the selected character is displayed only if you activate the <u>control panel's Background option</u>.

Background Size

Use this **Background - Size** command to change the scaling factors of a background image.

The larger the factors chosen for x- and y-values, the larger they will appear on the screen.

Note that a 40-point font will require approximately factors of around 60.

You can, of course, also change the size of a created character later using the stretch tool.

Control Panel

The control panel is located between the menu bar and edit window. It displays important information and facilitates the efficient selection of editing options.

The control panel is composed in the following way:

Get, Save and Undo

To the very left you will find the keys with which characters can be loaded into and saved from the edit window, as well as an Undo button.

Preview Window

Beside these keys you'll find the preview window, which enables you to select the characters to be edited. The mouse buttons can be used in this window to leaf through a font, as well as to switch to a different font.

Font and Character Names

The names of the current font and of the character currently displayed in the preview window are located to the right.

You can add new characters, delete characters or change character names with the controls at the bottom.

Cursor Position

The position of the mouse cursor in the edit window is displayed below.

General Options

You can select display and editing options in the little box to the right.

Direction Options

You can set the direction of movement to horizontal, vertical or arbitrary in the little box to the very upper left.

Curve Type

You can set the curve type with the curves tool in the little box.

Other Options

You can set an option that allows a 1:1 view of characters in the preview and edit window in the very upper right box.

The other option in that box allows stretching   and rotating relative or absolute.

Test Button

The test button enables individual characters to be effectively tested

Get Character

Press the **Get** button to load the character from the <u>preview window</u> into the edit window. You can then edit the character.

Before you load a character into the edit window, don't forget to <u>save</u> the character currently displayed in the edit window.

If you hold down the **Shift-Key** while pressing the **Get button**, the entire character in the edit window will not be destroyed. This option is useful for combining various characters.

Save Character

Press the **Save** button save the character in the edit window.

It overwrites the character in the <u>preview window</u>.

If the character in the edit window belongs to another character name, then you will be asked if the character in the preview window should be overwritten.

UNDO

Press the **UNDO** button of the control panel to undo the last change made to the character in the edit window.

This undo function is nested **10** times, that is, you can undo the last 10 editing steps.

If you want to retrieve the original character, just press the Get button.

Preview Window

The preview window displays the character which you can load into the edit window with the Get button.

If you move the mouse cursor into this window, you will be able to leaf through the fonts with the mouse buttons:

left mouse button	Displays the previous character
right mouse button	Displays the next character
both mouse buttons	Changes the font

Note that you can edit **two fonts** simultaneously.

Pressing **both** mouse buttons in the preview window lets you switch back and forth between fonts.

Displaying the Font Name

If no font has yet been loaded or created, then the font name field is empty.

You can switch two a second font by clicking on the arrow to the right and selecting it by pointing on the second entry in the then appearing list box.

If you want to change the font name, you can only do so with the <u>Parameter Info</u> command.

Character Name Display

The name of the current character (the character in the <u>preview window</u>) is displayed below the <u>font name</u>.

Character Selection

Press the arrow to the right of the character name to display a list of all the character names of the font.

You can directly select a current character from this list.

Changing the Name List

You can <u>insert</u>, <u>delete</u> or <u>change</u> a character name with the buttons below the name field.

Delete Character

Delete the current character from the font with the **Delete** button in the control panel.

So that you don't inadvertantly delete a character, after pressing the Delete button you will be asked if you really want to delete the character.

New Character

Add a character to the font using the **New** button the control panel.

Enter a name which does not yet exist in the font.

If you create a roman font, then you can also select a new name from the optional list (by pressing the arrow).

If the name already exists, you will be asked to choose another name.

Change Character Name

Change the name of the current character with the **Edit** button from the control panel.

Also type in a name which does not yet exist in the font.

If you type in a name that is already in use in the font, an error message will appear.

Cursor Position

The position of the mouse cursor in the edit window is displayed to the lower right beside the preview window.

If the option <u>Round Off</u> is switched **ON** the cursor position will be rounded off to a multiple of 10.

Display and Editing Options

You can select general options in the little box right to the Font Name display. The following selections are possible:

Snap

If the Snap option is switched on, open reference points are automatically joined when reference points are moved and lines and curves are drawn if the moved open reference point touches another one.

Two reference points count as touching each other when their black squares meet.

If the Snap option is switched off, two open reference points must meet on exactly the same coordinates in order to be joined.

Borders

If you switch on this option, you will see the borders of the character in the edit window as horizontal and vertical lines. These can be changed with the border tool.

Guide Lines

Activating this option displays guide lines in the edit window. These can be set with menu option Parameter Guide Lines.

Background

If you have loaded a bitmap font or a bitmap image as background, you will be able to turn this background mask **ON** and **OFF**.

Round Off

If this option is switched **ON**, the position of the mouse cursor in the edit window and all changed character coordinates are rounded off to a multiple of **10**.

This option should always be switched on unless you need very small structures in a character.

Note that coordinates which are not rounded off require around three times more memory in the font file.

Moving Options

You can set the direction for various editing functions in the framed boxes with the two vertical and horizontal switches in the control panel.

Only one of the two options can be activated at any one time. Pressing the switch again deactivates an option.

The following tools are affected by the setting of the switches:

> Line
> Move
> Mirror
> Stretch
> Rotate
> Hint

Hotkeys

You may also use the keys name <H> and <V> to change the direction in the same way as by clicking on the option with the mouse.

Curve Type

You can set the curve type with the <u>curve tool</u> in the framed box with the two Continuous Curve and Elliptical Curve switches.

Only one of the two options can be activated at any one time. Pressing the button again deactivates an option.

Hotkeys

You can also use the <E> and <S> key for changing the curve directions in the same way as if you click on the option with the mouse.

1:1 View

By activating the 1:1 option characters in the preview and edit window will not be shown distorted, that is horizontal and vertical scaling will be the same.

You should use a 1:1 view, if you want to design characters from scratch.

Deactivation of this option is often useful for working with background images.

Relative

This option is only important for the <u>stretching</u> and <u>rotating tool</u>.

If this option is deactivated, the reference point for stretching and rotating is the reference point of the entire character.

By activating this option you select the midpoint of all marked character elements as the reference point. This is most useful for doing local changes.

Test

The button labeled **Test**, located in the lower right of the control panel, enables individual characters to be effectively tested.

In this way, you can check both whether the design of a character is correct and how hints affect its appearance.

For this purpose, a temporary TrueType font with the character from the preview window is created. To test a newly created character, it first has to be saved using the <u>Save</u> button.

The character to be tested is then displayed in an extra window in sizes ranging from a few pixels to covering the entire screen.

You determine the visible portion by enlarging or reducing the size of the window and by moving the scroll bars.

Although TrueType technology does not have much in common with that of the Type 1 format, this function can nonetheless determine the behavior of Type 1 characters too, since the hints are imaged on adequate TrueType instructions.

Tools

You will see those tools you'll need for editing characters as icons to the left beside the edit window.

Select a tool by moving the mouse cursor to the icon and pressing the **left** mouse button. The icon will then be displayed inverted.

For verification, each tool has its own cursor. You will see it if you move the mouse to the edit window.

Help

You will receive help with a tool by moving the mouse cursor to an icon and pressing the **right** mouse button.

Zooming

Use the **zooming tool** if you want to view details of a character.

Viewing Details

- Move the center of the mouse cursor to the upper left corner of the section you want to view.

- Press the left mouse button and keep it pressed.

- Now move the mouse down to the right until the rectangle frames the section you want to view.

- Release the mouse button.

- The selected section now appears in the edit window.

Viewing the Entire Character

If you are viewing a detail of the character and want to switch back to a total view, then

- move the mouse cursor into the edit window,

- press the left mouse button and then

- release it immediately.

- The total view of the character will appear in the edit window.

Marking Character Parts

Use the **marker tool** to mark character parts.

Character parts must be marked for the following operations:

Copying to the clipboard
Duplicating character parts
Moving character parts
Mirroring
Stretching
Rotating

Marking Single Elements

- Move the mouse cursor ☝ near the character element which is to be marked.

- Click the left mouse button and release it immediately.

- The character element will now be displayed in another color and is then marked.

Marking Segments

- Move the mouse cursor ☝ near the segment, which is to be marked.

- Doubleclick the left mouse button.

- The segment will now be displayed in another color and is then marked.

Marking by frame

By holding down the left mouse button you can drag a frame around character parts which are to be marked. If both starting and endpoint of a character part is in the box this character part is marked by releasing the mouse button.

If you hold down the SHIFT-key while dragging the marker frame, the markers of the enclosed character parts are deleted.

Marking Entire Characters

Use the Edit Mark All or <Ctrl A> command to mark the entire character.

Delete Markers

If you do the above with character elements already marked, the markers on the character elements will be deleted.

All markers of a character can be deleted with the <u>Edit Delete Markers</u> or `<Ctrl U>` command.

Drawing lines and rectangels

Use the **lines tool** to draw lines or rectangles.

Drawing lines

Depending on how <u>Direction</u> is set in the control panel, you can create horizontal, vertical or arbitrary lines.

If the <u>Snap setting</u> of the control panel is activated, then open segments will be joined when drawing lines as soon as open reference points touch.

Setting Snap to OFF will only join elements if they meet on exactly the same coordinates.

- Move the center of the mouse cursor to the position where the line should begin.

- Press the left mouse button and keep it pressed.

- Move now the cross to the position where the line should end.

- Release the mouse button.

Drawing rectangles

- Move the center of the mouse cursor to the position where the upper left edge of the rectangle should begin.

- Press the rightt mouse button and keep it pressed.

- Now move the down to the right until you reach the disired position.

- Release the mouse button.

Drawing Curves and Ellipses

Use the **curves tool** to draw curves and ellipses.

Drawing Curves

Depending on how the curve type is set in the control panel, you can create smooth, elliptical or arbitrary curves.

The   procedures to follow for creating curves are slightly different for the different type of curves.

Note that when setting end points they might automatically be joined to an open segment (i.e. they connect upon touching with Snap ON or must be exactly matched with Snap OFF).

If this occurs this end point can no longer be moved. The program then proceeds either to or with the next control point, or drawing of the curve is finished.

Arbitrary Curves

- Move the center of the mouse cursor ┼ to the position where the curve is to begin.

- Press the left mouse button and keep it pressed.

- Now move the cross to the position where the curve should end.

- Release the mouse button (or an open segment is joined).

- Move the control point to the desired position.

- Press the left mouse button and release it immediately.

- Move now the second control point to the desired position.

- Press the left mouse button and release it immediately.

Continuous Curves

Continuous curves differ from arbitrary curves in that they are "evenly" connected to neighbouring curves or lines.

The procedure for drawing continuous curves is the same as for drawing arbitrary curves.

In contrast to arbitrary curves, though, direction of movement is limited when setting control points (which lie on connecting lines).

This is, however, only possible if there is a connection established with an open segment when setting end points. Otherwise, the control point can be set as desired.

Elliptical Curves

Control points are automatically set when drawing elliptical curves in such a way as to create 1/4 of an ellipsis.

The ellipsis is set counterclockwise.

- First set the starting point by pressing the left mouse button.

- Keep it pressed and move the mouse cursor simultaneously to the end point of the ellipsis.

- Release the mouse button.

Drawing Ellipses

- Move the center of the mouse cursor to the position where the upper left edge of the enclosing rectangle of the ellipses should begin.

- Press the right mouse button and keep it pressed.

- Now move the down to the right until you reach the disired position.

- Release the mouse button.

Moving

Use the **move tool** to move <u>reference points</u>, <u>control points</u> or <u>character parts</u>.

Moving Control and Reference Points

- Position the tip of the mouse cursor ⌐ to the control point to be moved.

-    Press the left mouse button.

-    Move the cursor to the new position.

-    Release the mouse button

If <u>Direction</u> in the control panel is set to vertical or horizontal, then the corresponding point can also only be moved in this direction.

Continuous Moving

Use the **right** mouse button instead of the left to move reference or control points continuously, that is, by connecting evenly.

Otherwise, proceed as described above.

When moving points continuously they will be moved regardless of the direction set in the control panel.

Separating Reference Points

You can separate joined reference points by keeping the SHIFT key pressed while moving reference points. In particular, closed segments can be opened this way.

As long as you keep the SHIFT key pressed, joining with another reference point is inhibited.

Moving Character Parts

Before you can move entire character parts you must mark them with the <u>marker tool</u>, <u>Edit Mark All</u> or `<Ctrl A>`.

- Move the tip of the arrow ⌐ to a reference point positioned between two marked character parts, or to a control point of a marked curve.

- Press the left mouse button.

- Move the cursor to the new position.

- Release the mouse button.

Note that results also depend on how the direction of movement in the control panel is set, and that, when moving, the junctures between marked and unmarked character parts are retained.

Coordinate Control

Use the **coordinate control tool** to change the coordinates of <u>reference</u> or <u>control points</u> directly.

Displaying Coordinates

- Move the tip of the mouse cursor ⬉ to the point whose coordinates are to be changed.

- Press the left mouse button and then release it.

- A window will appear to the right below the point clicked on, in which the coordinates of the points are displayed.

Changing Coordinates

Click one of the arrows ⬍ to the right of the coordinates to change them. Pressing the

▲ arrow will increase the value, pressing the
▼ arrow will decrease it.
If the option <u>Round Off</u> is activated, then the coordinates will be changed by multiples of **10**.
The new coordinates can also be directly typed in as numbers.

Marked Character Parts
If the selected point belongs to a marked character part, then all other marked parts will also be moved the same distance.

Several Windows
Up to four coordinate windows can be displayed simultaneously. If you attempt to open a fifth window, the first opened window will be closed.

Cutting

Use the **cutting tool** to insert new <u>reference points</u> into already existing <u>character parts</u>.

Single Cutting

- Move the tip of the mouse cursor near the character element into which control point is to be inserted.

- Press the left mouse button and keep it pressed.

- Now move the mouse so that the line which runs from the starting point to the tip of the knife crosses the character element to be separated.

- Release the mouse button.

- A reference point is thereby inserted.

Multiple Cutting

If the line running from the knife intersects several character elements, a reference point will be inserted into each of these elements.

Joining Curves

You can join two curves into a single one by proceeding as follows:

- Move the tip of the mouse cursor to the reference point between the two curves to be joined.

- Press the **right** mouse button and release it.

- Both curves are now joined into one.

It is basically possible to join any two curves. This is, however, often pointless since the appearance of two curves cannot always be simulated by one. The use of this new smoothing function should be limited to joining curves to quarter ellipses.

Mirroring

Use the **mirror tool** to mirror character parts.

Note the setting of <u>Direction</u> in the control panel when mirroring.

Also, only those character parts already marked by the <u>marker tool</u> or <u>Edit Mark All</u> will be mirrored.

Arbitrary Mirroring

When mirroring arbitrarily, use two points to define a line at which the marked character parts are to be mirrored.

You will often be able to use <u>reference points</u> for this purpose. To facilitate the task, activate the option <u>Snap</u> in the control panel. The starting and end points of the line then "stick" to the reference points.

- Move the center of the mouse cursor to the position where the mirroring line should begin.

- Press the left mouse button and keep it pressed.

- Move now the mouse so that the line running from the starting point to the center of the cross is where you want it.

- Release the mouse button.

- The marked characters are thereby mirrored.

Horizontal or Vertical Mirroring

You can also use the Snap option when mirroring on horizontal or vertical lines in order to align the mirroring axis with reference points.

- Press the left mouse button and keep it pressed.

- Now move the mouse so that the horizontal or vertical line is at the position where you want to mirror.

- Release the mouse button.

Stretching

Use the **stretch tool** to enlarge or reduce characters or character parts.

Note that stretching is also affected by how <u>direction</u> and <u>relative</u> is set in the control panel.

Also, only those characters marked with the <u>marker tool</u> or <u>Edit Mark All</u> will be distorted.

Procedure

- Move the top of the arrow to a <u>reference point</u> between two marked <u>character parts</u>, or to a <u>control point</u> of a marked curve.

- Press the left mouse button.

- Move the cursor until you have reached the desired size. Distortion factors will be displayed in the upper left corner of the edit window for checking.

- Release the mouse button.

Rotate

Use the **rotate tool** to rotate or italicize characters or character parts.

When rotating, take note of the <u>Direction</u> setting in the control panel (i.e. characters can be *italicized* if direction is set to horizontal). Rotation is also affected by the setting of the <u>relative</u> option.

Only those character parts marked with the <u>marker tool</u> or <u>Edit Mark All</u> will be rotated.

Procedure

- Move the tip of the arrow to a <u>reference point</u> between two marked <u>character parts</u>, or to a <u>control point</u> of a marked curve.

- Press the left mouse button.

- Move the cursor until you reach the desired angle. The angle of rotation will be displayed in the upper left corner of the edit window for checking.

- Release the mouse button.

Borders

Use the **border tool** to set the borders of characters.

These include the <u>left</u> and <u>right</u> borders, the <u>baseline</u> and the <u>height</u> of a character (only of interest for vertical character output).

When selecting this tool character borders will be displayed as horizontal and vertical lines, regardless of how the <u>border option</u> of the control panel is set.

A window will also open in the upper left corner which displays the values of all settings.

Moving Lines

To change the borders of a character, move the corresponding lines on the monitor:

- Move the tip of the arrow near the border line to be moved.

- Press the left mouse button and keep it down.

- Move the cursor until it reaches the desired position. For checking, the change will also be displayed as a number.

- Release the mouse button.

Changing the Value

You can also directly change the corresponding value to reset the border of a character.

Each change of the value will also be visualized by moving the corresponding line.

Hint

Use the **hint tool** to considerably improve the presentation of characters at small resolutions.

You will find a whole chapter on hinting in the manual of Type-Designer.

Appearance of Hints

Hints in a character are symbolized by a <u>thick line</u>, the starting point of the hint by a black circle.

General

With hints you inform the rasterizer where horizontal and vertical stems are located in a character.

The rasterizer uses this information to accurately display stems of similar width. It would not look nice, for instance, if the two stems in the letter <u>"H"</u> were to have different widths.

Hints are also important for aligning characters vertically. The letter <u>"I"</u> has, for example, no horizontal stems. However, giving a corresponding hint to this character would align the top and bottom borders exactly as in the letter "Z".

An other important feature of hints is <u>gridfitting</u> of curve endpoints.

Equivalent Hints

Vertical and horizontal hints affecting the same area are <u>equivalent</u>. The hint needs, therefore, only to be set once.

Only when hints overlap is there an exception to this.

Overlapping Hints

If <u>hints overlap</u> horizontally or vertically in a character, use the <u>starting point tool</u> and <u>segment sequence tool</u> to inform the rasterizer when which hints are to be used.

Setting Hints

Hints can only be set by starting from a <u>reference point</u>.

Even if hints should normally end at the x- or y-value of an opposite-lying reference point, this doesn't have to be the case (see example with "I").

In most cases, you will probably only want to set horizontal or vertical hints. Setting the direction of movement in the control panel correspondingly will make the task easier.

Switch on the Snap option in the control panel so that the hint to be set ends exactly on a x- or y-value of a reference point. The hints will "stick" to the coordinates of the reference points.

- Move the center of the cross to the reference point where the hint should begin.

- Press the left mouse button and keep it pressed.

- Move the cursor until it is at the desired position.

- Release the mouse button.

Deleting Hints

To delete a hint,

- move the mouse cursor to the reference point where the hint begins,

- press the left mouse button and then release it immediately.

Starting Point

Use the **starting point tool** to set the starting point of a <u>segment</u> or the location where a hint is to be replaced.

This is necessary so as to inform the <u>rasterizer</u> when it can use which hints when <u>hints overlap</u>.

This is done by defining the location where old hints are replaced by new ones.

Orientation of Segments

When defining the starting points or locations of hint replacements you will have to consider how rasterizing will take place, that is, how it will be carried out, for example, by the Adobe Type Manager.

Each segment is, beginning with its starting point, imaged onto the output raster subject to its orientation.

The <u>orientation</u> of segments is such that, visually tracing the segments, the black part would always be on the left side.

Starting Point with Overlappings in a Segment

If, while tracing a segment, you come across a hint that overlaps the hint of the segment being traced, you should use this or a previous location for hint replacement.

If, when tracing a segment, you reach a location where a <u>replaced hint is needed again</u>, then you should use it there again otherwise the rastered character will can appear assymmetrical.

Try to set the starting point in such a way that will require as few   multiple hints as possible.

Starting Point with Overlapping in Separate Segments

First define the <u>segment sequence</u>.

Make each starting point of an <u>overlapping segment</u> the location of a hint replacement.

Set Starting Points

After you select the starting point tool you will see the segment number

displayed to the right of a segment 's starting point.

Note that only the starting points of closed segments can be changed.

To make a reference point a new starting point,

- move the mouse cursor Start to the point which is to be defined as the new starting point.

- Press the left mouse button and then release it.

- The segment number will now be displayed beside the new starting point.

Define Hint Replacement Locations

Hint replacement locations are marked by a "R" to the left of the reference point.

The procedure for setting hint replacement locations is the same as for setting starting points. Use the right mouse button instead.

Clicking a hint replacement location again will delete it.

Note that the hint, which begins from the starting point, belongs to the last reference point of the segment.

Segment Sequence

Use the **segment sequence tool** to define the order of <u>segments</u> of a character.

If <u>hints overlap</u> within a character comprised of several segments, not only the starting points but also the sequence of segments must usually be defined.

A sequence should be chosen so that segments <u>linked by hints</u> lie one behind the other.

Defining Sequence

After you select the starting point tool, you will see the segment number displayed to the right beside the starting point of a segment.

Note that only the segment number of   a closed segment can be changed.

- Move the tip of the mouse cursor 1^2 near the segment to be designated the first segment.

- Press the left mouse button and then release it.

- Repeat these three steps for the other segments.
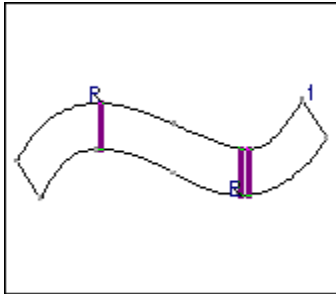
Overlapping Hints

'H' without Hint

H
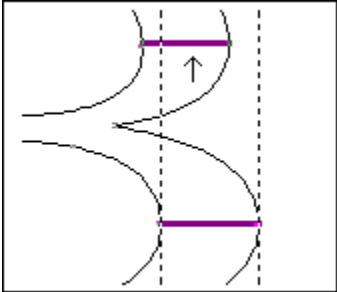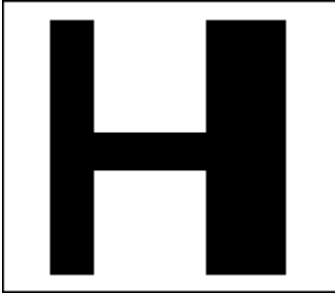
Equivalent Hints
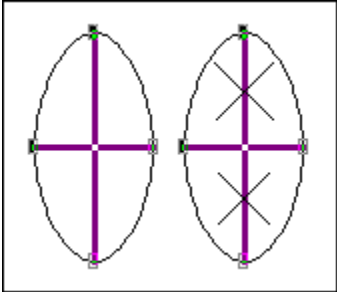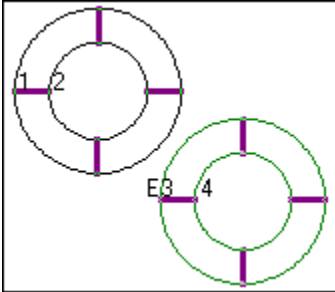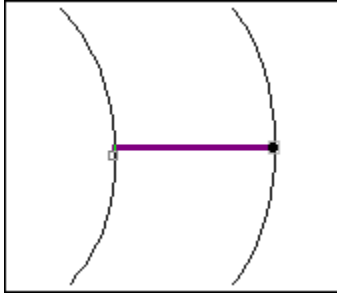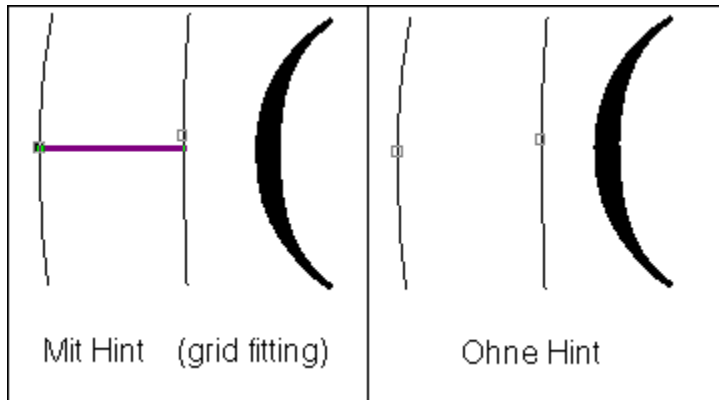
'I' with Hint
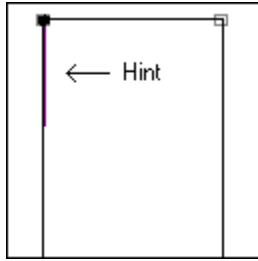
Orientation of Segments
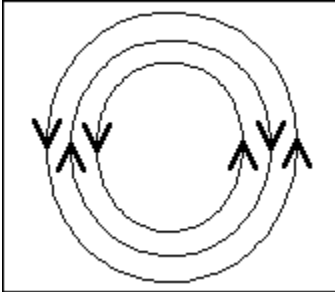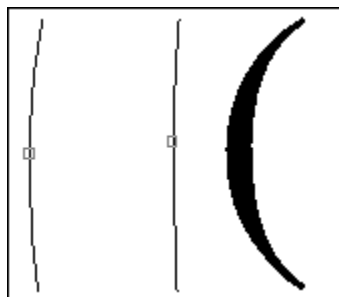
Repeated Hint

Segment Sequence (linked by hints)

Appearance of hints

Gridfitting

| Mit Hint | (grid fitting) | Ohne Hint |

with hint = gridfitted

without hint = jagged

Overlapping in Seperate Segments