**.PNT FILE USED FOR PRINT SETTINGS*

Plotter Configuration Files

You can save or modify a `.pcf` file with the name of the text in the **Destination** box in the Print dialog box or create from a file.

When Pro/ENGINEER is installed, plotter configuration file options are available in addition to those that you define within the plotter configuration file directory.

You can also use a plotter configuration file (filename`.pcf`) in interactive and batch plotting to preset some or all of the plotting options. The system displays the name of your `.pcf` file without the extension in the list available from the button to the right of the **Destination** box in the Print dialog box. If your `.pcf` file has the option button_name defined, this string appears in the list.

When creating plotter configuration files, keep in mind the following requirements:

- You can maintain a plotter configuration file locally, or place it in another location. If you place it somewhere else, you must indicate its location by setting the config.pro configuration file option pro_plot_config_dir.
- You must enter the contents and the name of the plotter configuration file in lowercase characters.
- The printer option is mandatory.

- All numeric arguments for the plotter configuration options are mandatory.

The following sample shows a plotter configuration file:

```
plotter                 postscript
plotter_command         plot
plot_names              yes
rotate_plotting         no
paper_size              e
plot_segmented          yes
plot_scale              model 2
```

In the preceding example, the `.pcf` file instructs the system to print any size drawing to an E-size Postscript printer. Notice that the configuration file is set up to generate a segmented plot.

The following list presents valid options for plotter configuration files. The default value for each option is italicized.

Note: These options are *not* the same as Pro/ENGINEER configuration file options.

allow_file_naming

yes, no

- yes—Enter the name of the plot file.
- no—System uses the name of the object as the default name for the plot file.

button_name

string

Adds the specified name to the selection list. Otherwise, the system uses the name of the plotter configuration file.

button_help

string

Provides one-line help for an item specified by the button_name option.

create_separate_files

yes, *no*

Defines the default in the Print to File dialog box.

- yes—Sets the default to Create Separate Files.
- no—A single file is created by default.

delete_after_plotting

yes, *no*

If set to yes, deletes the plot file from the directory in which it resides after it plots successfully.

interface_quality

0, 1, 2, *3*

Defines the amount of checking for overlapping lines in a plot or 2-D export file, such as IGES, before making a file. Interprets the values as follows:

- 0—Does not check for overlapping lines or collect lines of the same pen color.
- 1—Does not check for overlapping lines, but collects lines of the same pen color for plotting.
- 2—Partially checks edges with two vertices, and collects lines of the same pen color for plotting.
- 3—Does a complete check of all edges against each other, regardless of the number of vertices, font, or color. Collects lines of the same pen color for plotting.

paper_size

paper size, variable X Y units

Specifies particular paper size to which to plot (for example, A1). You can specify a custom size by entering a variable, followed by the paper dimensions and units.

paper_size_allowed

List of possible paper sizes

Specifies all of the paper sizes (separated by spaces) that can be used for your plotter model, for example, a b c. This limits sizes in the Size list to only those in your list.

pen_slew

no_slew, *value*

Sets the plotter pen speed along both the x- and y-axes, where the value can be from 0.1 to 100.

pen_table_file

path and name

Specifies a default pen mapping table that supersedes other pen mapping information.

plot_area

yes x1 y1 x2 y2, *no*

Sets the Plot Area button in the Plot list of the Plot Configuration dialog box as the default.

plot_access

create, append, default

Creates a new plot file, or appends the new data to another plot file.

plot_clip

yes x1 y1 x2 y2, no, default

Set to yes, enter a portion of the drawing to plot. The x- and y-coordinates are mandatory. They are normalized values from 0.0 to 1.0 (0,0 corresponds to the lower-left corner of the plot) that indicate which portion of the window to plot. For example, to clip half of the window in the center of the screen, the line should read: plot_clip yes 0.25 0.25 0.75 0.75.

plot_drawing_format

yes, no, default

If set to no, generates a plot without format.

plot_file_dir

directory name

Specifies the directory to which the system should write plot files. Use the *full* pathname, for example, /home/users/plotfiles.

plot_label

yes, *no*, default

If set to `yes`, generates the plot with a label.

plot_label_height

<value> in, <value> `cm`

Sets the height of the plot labels. Enter a numeric value for this option, followed by the units in inches (`in`) or centimeters (`cm`).

plot_layer

current, `by_layer #`, `default`

Specifies a layer of the drawing to be plotted. In `by_layer#`, where # is the layer ID number.

plot_linestyle_scale

any positive number, *1.0*

Specifies the scaling factor for the hidden line font in your plot. Enter any positive number, such as `2.0`, as a value for this option.

plot_names

`yes`, *no*

- `yes`—gives descriptive extensions to plot files when it creates them. The extensions are as follows:
  - `hp`—Hewlett-Packard plotters
  - `hp2`—Hewlett-Packard hpgl2 plotters
  - `cal`—Calcomp plotters
  - `ver`—Versatec plotters
  - `ger`—Gerber photoplotters
  - `ps`—PostScript plotters (including color)
- `no`—all plot files have the extension `.plt`.

  Note: Pro/BATCH does not support this option.

plot_roll_media

yes, *no*

- yes—The media type is roll paper.
- no—The media type corresponds to the default setting of the particular printer.

plot_scale

fit_paper, model #, plot #, default

Specifies a scale factor for scaling a model or drawing for plotting, where # is the scale value from 0.01 to 100.0.

plot_segmented

yes, *no*, default

If set to yes, generates a segmented plot.

plot_sheets

current, range low high, default, all

Specifies sheets to plot. To indicate a range of sheets, set this option to range, followed by low and high values for the range.

plot_translate

<value>, <x value> <y value>, <x value> <y value> <units>

Sets the offset of the plot from its origin. Enter only the x-offset value or both the x-offset and y-offset values. You can only specify units (such as mm) when you have given the offset in both directions. For example:

```
plot_translate .25
```

or

```
plot_translate .25 .35
```

for offsetting 0.25 in the x direction and 0.35 in the y direction.

Note: When a single value is given, it is used for both x and y.

plot_to_scale_full_window

yes, no

Scales the output plot file to the full size of the screen window.

plot_with_panzoom

yes, no

Determines whether the plot is based on zoom or full plot.

- yes—Plot is based on zoom.
- no—Plot is full plot.

plotter_command

command, windows_print_manager <plotter or printer name>

Specifies the command for the system to use when sending a plot to the printer on your system. For example:

- In UNIX, you can specify a plotter command as one of the following:

  ```
  plotter_command lp -d <plotter_name>
  ```

  or

  ```
  plotter_command lpr -P <plotter_name>
  ```

- In Windows NT or Windows 95, you can specify the plotter command as:

  ```
  plotter_command windows_print_manager <plotter or
  printer name
  ```

plotter_handshake

hardware, software

Sets the type of plotter handshake initialization sequence, generated in the plotter files. For each of the two modes, you must set the data port of the host computer appropriately:

- Software handshake mode is Xon/Xoff.
- Hardware handshake mode requires hardware control.

  Note: Consult your system manager for more information on handshaking.

plotter

desired plotter name

Establishes the default plotter when making plot files.

Pen Mapping

When you specify a Pro/ENGINEER entity for plotting, the system assigns it a pen based on the default system color corresponding to this entity type. When it plots entities, it uses the line width and line font associated with a particular color. For example, the system uses pen #1 to plot all entities that appear in Pro/ENGINEER in white and have the same line width and thickness.

If your plotter supports eight plotter pens, and you want to use them for plotting, set the configuration file option use_8_plotter_pens to yes. The following table illustrates the default pen mapping that occurs. A plotter that supports four pens uses the first four pens listed in the table.

Pen Number	System Color	Mapping
1	Geometry (white) Curves (brown) Volume (magenta)	Visible geometry (plot as solid lines, except where noted): • Cross-section cutting plane lines: plot as phantom lines • Cross-section cutting plane arrows and text • Drawing format and boundary • Tag text • Centerline line font with white color
2	Letter (yellow)	All items plot as solid lines (except where noted): • Dimension lines • Leaders • Axes and centerlines: plot as centerlines • Geometric tolerance lines • All text (except cross-section text) • Balloon notes • Cross-hatching • Yellow portion of datum planes • Centerline line font with yellow color
3	Hidden (gray)	Hidden lines: plot as dashed lines, phantom font

Pen Number	System Color	Mapping
4	Highlight (red)	All items plot as solid lines: • Red portion of datum planes • Spline surface grid (does not plot in drawings)
5	SheetMetal (green)	Sheet metal color entities
6	Section (cyan)	Sketcher section entities
7	Dimmed Menu (gray)	Toggled sections, grayed dimensions and text, dimmed tangent edges
8	Edge High (blue)	Spline surface grid

Changing Attributes for Pen Plotting

You can change the attributes and assign your own line font, thickness, or color to a pen using the table.pnt file. Any attribute that you specify overwrites the default instructions.

The format for an entry in the table.pnt file is as follows:

```
pen # pattern values units; thickness value units; color values;
<color_name>;
```

where

- pattern—Specifies plotted line font definition drawn according to defined values in the given units. The system creates the values in the following order: first line segment length, first space length, second line segment length, second space length, and so on. For example: `pen 3 pattern .1 .05 .025.05.`
- thickness—Specifies plotted line thickness in the given units.
- color—Specifies color used for plotting; defines color using proportions of red, green, and blue on a scale 0 to 1. Works only on color plotters.
- <color_name>—Corresponds to the default Pro/ENGINEER color that the system assigns to a particular entity type (to access the default system colors, choose **Utilities > Colors > System > Scheme > Default**). See Color Correspondence Table on page 3 - 25 for a list of color names.

When changing attributes for pen plotting, keep in mind the following:

- You can assign more than one color to the same pen in the table.pnt file.

- You can separate multiple color names by spaces or commas.
- You can separate attributes by semicolons.
- You can include any or all attributes for each pen.
- Those attributes that were not included in the table.pnt file appear unchanged, as in normal plotting.

The following is a sample table.pnt file:

```
pen 1 color 0.0 0.0 0.7; highlite_color
pen 2 thickness .5 cm; letter_color
pen 5 pattern 1.0 0.1 0.5 .01 in; color 1.0 0.0 1.0; drawing_color
```

When creating a table.pnt file, you can:

- Use units in inches (in) or centimeters (cm), and mix them in font definitions; for example, you can specify a font pattern in inches and thickness in centimeters.
- Use the backslash (\) at the end of a line to continue the entry on the next line.
- Use an exclamation point (!) at the beginning of a line in the file to make it a comment.

The following is another example of a table.pnt file:

```
!Exclamation points denote comment lines in the file
!
!Change yellow entities to plot w/ pen 1
pen 1 thickness 0.1 cm; letter_color
!
Change hidden lines to plot w/ pen 2
pen 2 pattern 0.1, 0.1 in; thickness 0.1 cm; half_tone_color
!change geometry lines to pen 3
pen 3 drawing_color
!
Green sheetmetal lines to pen 5
pen 5 thickness 0.1 in; attention_color
```

The table.pnt file also enables you to reassign Pro/ENGINEER colors to another pen to overwrite the default mapping. The following table shows the default correspondence between the name of the system color and how it actually appears on the screen.

Color Correspondence Table

COLOR_NAME	Visible Color
attention_color	green
letter_color	yellow
highlite_color	red
drawing_color	white
background_color	dark blue
half_tone_color	gray
edge_highlite_color	blue
dimmed_color	gray
magenta_color	magenta
section_color	cyan

If you change a default color using the thermoscales, the system remembers the color_name that corresponds to entities that had their color changed. However, if you reassign an entity to another line style, this changes the associated color_name and the system plots the entity as defined for that color name.

Note: Pro/ENGINEER plots entities by their assigned colors. User-defined colors always map to Pen 1. If Pen 1 has a default pattern, thickness, and so on, the system reflects this default in the plot.

Specifying a Default Pen Mapping Table

You can specify the default pen mapping table in your configuration file as follows:

```
pen_table_file <path/filename>.pnt
```

where <path> is the directory path name for the location of the appropriate table.`pnt` file.

Note: Not all plotters can support every combination in the table.`pnt` file.

Interface Quality for Pen Plots

The configuration file option interface_quality informs Pro/ENGINEER of how much checking, if any, should be done before creating a plot file. In the default mode of operation, the system does not create lines over lines that would cause a plotter to perform unnecessary or redundant plotting. The priority of creating lines in Pro/ENGINEER when creating a plot file is as follows:

1. Object lines (solid)
2. Hidden lines (dashed)
3. Center lines
4. Datum lines
5. Extension lines

For example, if a center line, hidden line, and object line coincide or overlap and the interface_quality option is set to 0, all lines are plotted. On the other hand, if the interface_quality option is set to 3, only the object line is plotted.

Notes:

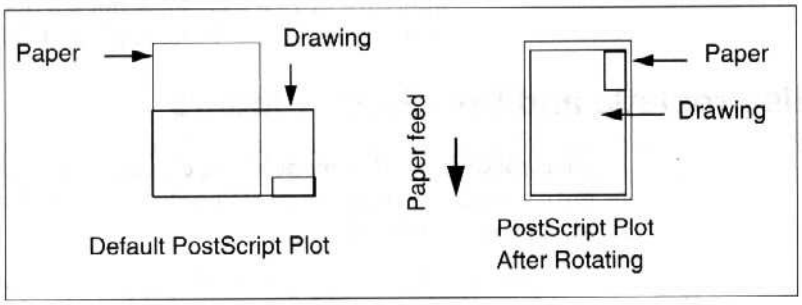
- The interface_quality option also affects the export of 2-D objects to IGES, DXF, DWG, and so on. See the chapters IGES Files and DXF and DWG Files for more information.
- The higher the interface setting, the longer it takes the system to create the plots. If you are using a printer that does not use pens, set the interface_quality to zero to speed up plot creation.

Plotter-Specific Information

Pro/ENGINEER supports each plotter only up to the level of its capabilities. This means that on some plotters, certain line fonts, filled text fonts, and so on, might not be available. The following describe what to expect from various types of plotters. However, your plotter model might be different.

PostScript Plots

You can generate PostScript plots for any plotter or laser printer that can handle PostScript data. You can also use them in documents created by electronic publishing systems that can incorporate the PostScript data. The PostScript output format is 2.0 compliant (the bounding box directive is included). You might have to rotate PostScript plots to plot them correctly (see the following illustration).



Gerber Photoplotters

Before generating a Gerber plot file, you must create a correspondence table between the aperture ID of the photoplotter device and all of the thicknesses used in the drawing or model. For any thickness that is not defined, the plot uses the last used thickness value. In such cases, Pro/ENGINEER issues a warning (displayed in the startup window) while a plot file is being created and informs you that the encountered line thickness has not been specified.

The default thicknesses that Pro/ENGINEER uses for geometry, dimension lines, and so on, are 0.005, 0.01, 0.015, and 0.02.

You must store the correspondence table in the file gerber.dat, located in your current directory. The file format is as follows:

Aperture	ID Thickness	Units
1 through 24	value	in or mm

The following example shows an aperture file using these values:

```
2        0.005        in
3         0.01        in
5        0.015        in
6         0.02        in
```

Note: You should use only the aperture file to establish the aperture IDs for entities in the plot file. If you use an aperture device that does not correspond to the plot file being created, the system plots it incorrectly.

Electrostatic and PostScript Plotters

Electrostatic plotter models can change line width, pattern, and entity type. You can change the color only for those plotters that are supported as color devices.

User-defined line fonts and widths appear on the plot exactly as you defined them in the drawing. Pro/ENGINEER-supplied line styles always plot with a predetermined width corresponding to a specific pen number. Set the config.pro configuration file option pen#_line_weight <value> (where # is a numeral between 1 and 8) to the appropriate pen number and line weight (1 for thinnest to 16 for thickest) to control the width setting. Each value unit represents 1/200 of an inch. The system uses the same line weight to plot all entities that plot with a specific pen. See Configuration File Options in Pro/HELP (online only) for a complete description of this configuration file option.

Pen Plotters

Different models of pen plotters have different levels of support for plotted entities. Pro/ENGINEER does not define weight information for its pen plotter drivers, so it ignores thickness values within the table `.pnt` file. The few known differences for Hewlett-Packard and Calcomp plotters are described here.

Hewlett-Packard

Hewlett-Packard HPGL pen plotters do not support line widths and provide limited font support. The pen widths depend on the size of the pen. The system maps line fonts to one of five supported fonts. User-defined line fonts plot using the HP font that best fits the definition.

The following fonts are supported:

- Dot
- Short dash
- Long dash
- Centerline
- Phantom

HPGL plotters can only process plot files one at a time. Therefore, you should send a plot file to the plotter only after the previous plot file has been plotted.

Calcomp

Calcomp pen plotters plot user-defined line fonts exactly as defined. They do *not* support line widths or filled text fonts. In the case of filled fonts, the polygon boundary is plotted.

Printing with Windows NT or Windows 95

Pro/ENGINEER can be configured to plot to a recognized device in the Windows NT or Windows 95 Print Manager.

Note: Shaded plots cannot be generated with the Microsoft print manager.

➤ **How to Print Pro/ENGINEER Files from Windows NT or 95**

1. Choose **File** > **Print**. The Print dialog box opens.
2. Complete the Print dialog box to set up the number of sheets and copies that you want printed.
3. Click **OK**. Another Print dialog box opens. This is the MS Print Manager.
4. Click **OK** in the Print dialog box to send the print to the printer or to a file.