

HPDJC

COLLABORATORS

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REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

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Chapter 1

HPDJC

1.1 main

<<----- For best viewing, adjust window to this width ----->>

HP DESKJET CONTROLLER v1.4
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Purpose, Function and Major Features
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1.2 purpose

PURPOSE, FUNCTION AND MAJOR FEATURES

The HP DeskJet Controller is designed to give Amiga users the ability to send HP PCL Printer Commands to the HP DeskJet Series Printers from a Workbench window interface.

Although program design is based on the HP 560C model, many HP DeskJets have very similar features and commands, giving the HP DeskJet Controller a great degree of utility for several printers in the HP DeskJet line. Feedback from users has indicated good PCL compatibility across various DeskJet models. Unregistered users may test the program on their specific HP DeskJet model to determine if it is useful for their printer, system and applications.

The most useful function of the HP DeskJet Controller is its ability to configure DeskJet printers for plain text or word processing printouts which use internal and/or optional fonts. Many of these parameters are not adjustable from the Amiga Printer Preferences and are typically not configurable in word processing programs.

The HP DeskJet Controller insures that font selection commands are issued to your DeskJet utilizing HP's prescribed hierarchy. Its use also precludes the transmission of illegal printing commands to your printer.

Support for the various character sets and typefaces, available through optional font cartridges, has been incorporated.

Test printing may be performed prior to sending a text print job in order to preview whether the DeskJet's configuration is satisfactory.

Certain graphic printing commands may be sent from the GUI (graphical user interface). (However, note that most Amiga programs which print graphics will consult the Printer Graphic Preferences and overwrite these settings prior to printing.)

All commands are sent exclusively through the parallel device, "par:".

1.3 registration

USER REGISTRATION AND THE INPUT SEQUENCE

Deneban Software's HP DeskJet Controller is a Shareware. A modest registration fee of \$5.00 is imposed to compensate us for our efforts.

Unregistered users are permitted to sample the program for 2.5 minutes for each time it is loaded. (Note that only momentary window minimization is permitted). Within this context, users are to determine whether they wish to become registered users.

To register, send \$5.00 in US cash or check drawn from a US bank, your name and your address to:

Deneban Software

c/o Russell J. Grasso
16 Arbor Road
Holbrook, MA, 02343-1302

IMPORTANT: Checks must be made out to "Russell Grasso" in order for registration to be successful.

Upon receipt of registration, the user is immediately sent the "Input Sequence" via US Mail.

The "Input Sequence" is a simple and painless input combination which prevents the program from self-terminating. It may be entered anytime during the first 2.5 minutes of program execution, but must be input each time the program is reloaded. Once the correct sequence is entered, the feedback box at the top of the program window confirms the sequence has been received and that indefinite operation is in effect.

(Potential registered users who are put off by the concept of the "Input Sequence" should note that it is so painless, Deneban Software uses the same program version offered here and has never compiled an unprotected version.)

1.4 compatibility

COMPATIBILITY WITH OTHER HP SERIES 500 DESKJET PRINTERS

Page 16 of the HP-560C Setup Guide lists the cross-compatibility of their printer drivers for all printer models to date in this series. All the drivers listed show support for at least all black, non-envelope printing. The implication from this is that most features of this program ought to work with all 500 DeskJet models, up until the 560C. A comparison between the 500C and 560C control codes revealed that only a small number of program command codes are not applicable to the 500C. These are as follows:

- Line Termination Modes
- Page Size US Executive
- Page Size DL Envelope (landscape)
- Planes per Row - Foreground Color
- Planes per Row - 1
- Planes per Row - 4 KCYM

Therefore, there should be a very high level of compatibility when using this program to control an HP 500C and the program should work satisfactorily on all HP DeskJet 500 series printers.

Reports from users with 600 series and greater models also indicate a satisfactory level of compatibility.

Insofar as 600 dpi graphic printing, there is no "600 dpi" escape code for the 500 series printers. This resolution is only available through software interlacing. This program does not support 600 dpi graphic printing.

1.5 installation

PREREQUISITES AND INSTALLATION

1. All printer DIP switches are in their "down" position.
2. The AmigaDOS "echo" and "type" commands must be in the "c:" directory.
- 3.~The "Amigaguide.library" must be in the "libs:" directory or a "libs:" path
~~~for the "Documentation" button to function.
4. The program has no file system location requirements or assignment  
~~~requirements. However, this guide must be in the same directory as the  
program in order for the "Documentation" button to function.
5. If the printer is not on when the program starts, it will prompt the
user to turn on the printer.
6. User feedback has indicated that this program is AmigaDOS 1.3 compatible.

1.6 workbench

WORKBENCH ENVIRONMENTAL CONSIDERATIONS

The HP DeskJet DeskJet Controller program window will move in front of all other Workbench screen windows when it is activated. The program contains no menus.

1. Screen Mode Preferences

The Workbench screen must be at least 4 colors in depth.

~~~The HP DeskJet Controller has been tested in both ECS and AGA chip set modes. The following Workbench screen modes have tested satisfactorily:

NTSC:High Res (640 x 200)  
NTSC:High Res Laced (640 x 400)  
DBLNTSC:High Res No Flicker (640 x 400)  
DBLPAL:High Res No Flicker (640 x 512)  
MULTISCAN:Productivity (640 x 480)  
SUPER72:High Res Super-High Res (800 x 300)

~~~The program window is designed to be 640 x 300 to satisfy all the above, except the NTSC:High Res Workbench screenmode. The recommended practice for loading the program in that screenmode is to use a virtual screen of 640 x 400. If this is not the case, the Graphics and Testing portions of the window will be inaccessible.

2. Font Preferences

~~~AmigaDOS 2.0 and up allows the user to select the Workbench Screen Text Font. Such fonts set larger than 14 points will interfere with the users ability to use the "Minimize Window" button. Beyond this, the program window uses the Topaz 8 font exclusively.

#### 3. Printer Preferences

---

~~~The majority of printer parameters set by the Printer Preferences program concern text-based printing parameters. This is also the case with this program.

~~~If you print from the "Print Document" facility of this program, the printer settings of this program will supplement or overwrite those of the Printer Preferences program.

~~~Some applications read either the Printer Preferences settings or their own printer preferences each time they are requested to print (usually they initiate a printer reset). This program cannot affect the printout of such applications. An example of such an application is "Final Writer" (when used in graphic draft mode).

~~~Other applications such as ("MuchMore" and "Directory Opus 4") will not re-read the Printer Preferences when asked to print. In this case, the resulting text-based (i.e. "draft" or "near-letter quality") printouts will be affected by the printer settings of this program. It is with these types of applications that the HP DeskJet Controller has the most utility. To apply the HP DeskJet Controller to printouts of these types of applications: a) load the application, b) adjust the settings of the HP DeskJet Controller and then c) request the application to print.

~~~The user should experiment with their various text-based printing applications to learn which may be affected by the HP DeskJet Controller.

4. Printer Graphic Preferences

~~~Virtually all graphic printing applications, even those as simple as Workbench's "Multiview" and "Graphic Dump", take firm control of the printer configuration prior to proceeding with transmitting the raster graphics. Graphic printing applications will reset the printer in accordance with the Graphic Printer Preferences settings or their own internal settings, prior to each printout. Therefore, this program usually cannot affect the graphic printout of such applications. The graphic settings section of this program are provided in the event that the user has any applications which do not send graphic settings to the printer whenever a printout is initiated (admittedly, such applications are few and far between).

~~~Some graphics programs completely bypass the "PRT:" device and Printer Graphic Preferences and send their output to the "PAR:" device (parallel port). Examples of this type of application are "Pagestream 2" and "mCAD". Once again, this program cannot affect the printout of such applications.

5. Postscript Preferences

~~~If the user's system contains the Postscript Preferences program, it should be set to the "pass-through" mode.

## 1.7 program

### PROGRAM CONTROL GADGETS

#### 1. "Feedback" Field Gadget

---

~~~This gadget is the text box which appears at the top of the program window. Its function is to notify the user as to what the program is doing as a result of mouse or keyboard input. One important feedback provided by this window is that it acknowledges the when the correct "Input Sequence" has been received.

2. "Minimize Window" Button Gadget

~~~Found at the upper right corner of the program window, pressing this button gadget converts the program window to a small title bar. This optional feature is provided to help relieve Workbench screen congestion when the user encounters a period which does not require use of the program.

~~~In the minimized state, the program can only execute two commands: 1) The program may be shutdown by clicking on the window closure gadget; and 2) the program window may be converted back to its native state by clicking on the right mouse button when the program window is the active Workbench window.

~~~If the "Input Sequence" has not been received by the program, only momentary window minimization will occur. This allows unregistered users to see how this feature operate.

## 3. "Documentation" Button Gadget

~~~Depressing this gadget activates this Amigaguide and suspends all other user input. Alternatively, the documentation may be brought up by pressing "Help" on the keyboard.

~~~Note that the timer which trips program shutdown in the absence of a correct Input Sequence is also suspended. This allows unregistered users to have an unlimited amount of time to read the documentation.

## 4. "Continuous Roll-up Gadgets" Checkmark Gadget

~~~Located between the "Font Selection" and "Test Printing" areas of the program window, this checkmark gadget allows the "Font Selection" roll-up gadgets to continuously rotate through their selections while the left mouse button remains depressed over them. The default state, unchecked, only allows the gadget to roll through one selection per depression of the left mouse button.

~~~This gadget only affects the roll-up gadgets found within the white-bordered "Font Selection" area of the program window.

# 1.8 printer

## PRINTER CONTROL GADGETS

### 1. "Reset" Button Gadget

~~~~This button performs several functions when it is depressed. It is based on the assumption that all printer DIP switches are in their down position. This command is automatically executed on program start-up.

LF => CR + LF
FF => CR + FF

~~~~Determines how the printer interprets three non-printable control characters: the carriage return character (decimal character 13, denoted "CR"), line feed character (decimal character 10, denoted "LF") and the form feed character (decimal character 11, denoted "FF").

~~~~The Amiga "PAR:" (parallel device) may have something to say about these characters prior to them being transmitted to the printer. For example, a single line feed character may be ignored by "PAR:" unless it is preceded by a normal printable character. Unless application-specific problems are experienced with the default mode, it should be always be used when transmitting from an Amiga.

~~~~This gadget does not affect bitmapped/graphic text sent from the Amiga to the printer.

~~~~This gadget is not compatible with all HP DeskJet 500 series printers.

5. "EOL Wrap" Roll-up Gadget

Default: Off

Other settings: On

~~~~EOL is an abbreviation of "End of Line". This parameters determines what the printer will do if it encounters a right margin without having encountered a carriage return (or equivalent) character. In the default mode, all characters on a line after the right margin will be truncated (i.e. chopped off). If this option is on, they will spill over to the next print line, thereby displacing all following lines by one line. Both modes have their uses.

~~~~If it is desired to print everything contained in the transmitted text, this option should be turned "on".

~~~~If it is important that lines not be displaced onto a subsequent page, this option should remain "off".

~~~~This gadget does not affect bitmapped/graphic text sent from the Amiga to the printer.

6. "Displ Funcs" Roll-up Gadget

Default: Off

Other settings: On

~~~~(Display Functions Mode) is typically not useful to users unless they are trying to debug data being transmitted to the printer. This feature attempts to print all bytes sent through the parallel port, and reports them using the current character set. Exotic characters accompany the normal text in an attempt to "tell all". To determine which values these characters represent, the user can look them up in the character set table in the printer user manual.

~~~~The 500 DeskJet series appear to be a hybrid between a page printer (like a laser printer) and a line printer (like a dot matrix printer). They will print some lines and pause without ejecting the page/envelope. However, they do not seem to always immediately print all characters they have

received unless a form feed occurs. Anyone using this mode for debugging should keep this potential for "delayed printing" in mind.

7. "Form Feed" Button Gadget

~~~~Prints all data in the printer buffer for the current form and then ejects the current form. If the user knows that there is transmitted data that has not yet printed, this command should be executed to flush all of it out.

~~~~No selectable parameters are affected by this command.

~~~~When using this program to pre-configure the printer prior to printing a new document, "Form Feed" should be used rather than "Reset" so that the current settings are not lost.

## 1.9 font

### FONT SELECTION GADGETS

#### 1. General Discussion

~~~~~

The roll-up style Font Selection Gadgets are the only input gadgets in the program which do not immediately send commands the printer. Because of HP's command hierarchy and limitation on font parameter combinations, it is necessary to use a single validation and command dispatch gadget. The "Set Font" button gadget serves this purpose.

To establish a valid font selection (one which exists within the printer), a three-step procedure must be followed:

~~~~a. The user first sets the "Print Orientation" radio buttons to the desired setting.

~~~~b. Next, the roll-up Font Selection gadgets are configured until the desired parameters are displayed.

~~~~c. Finally, the "Set Font" button is pressed.

After modifying print orientation or a font parameter, an arrow will flash next to the "Set Font" button. This indicates to the user that the "Set Font" button should be depressed prior to attempting to print. The reasons for this flashing reminder are: a) the font parameters displayed on the screen have not been validated by the program as a legal combination, and b) the printer is unaware of the changes made on the screen by the user since the last "Set Font" command was issued.

#### 2. "Set Font" button gadget

~~~~~

The printer cannot print all possible combinations which can be displayed in the Font Selection area of the program window. When the "Set Font" button is pressed, the HP DeskJet Controller will first check to see if the user has entered a legal combination. If, so it will send these parameters to the

printer in the proper order specified by HP.

If the "Set Font" button is pressed and the HP DeskJet Controller finds that an illegal font parameter combination has been specified, it will automatically modify the parameters to a legal combination which nearly matches the attempted combination (usually by incrementing one or more parameter settings). The legal combination is sent to the printer (in the proper order specified by HP) and the legalized parameters are displayed in the program window. If the user is satisfied with the validated parameter combination, he/she may proceed to print. Otherwise, the user revises the roll-up gadgets and presses the "Set Font" button again to validate the new combination. This process may be repeated until a satisfactory legal combination is obtained.

A more efficient method of setting a legal font combination is to simply enter a combination which is known to be legal. This document lists the valid combinations for the user in the "Reference" section of this Amigaguide. The printer user guide also lists the legal combinations.

In the font parameter validation process, the HP DeskJet Controller uses the following hierarchy to establish a legal combination, listed from highest to lowest:

- Print Orientation
- Typeface
- Point Size
- Style
- Pitch and Spacing

For example, if the user asks for the illegal combination of "Univers" typeface with "Landscape" print orientation, the program will change the typeface to "Courier" rather than revising the orientation to "Portrait" because typeface has a lower priority than print orientation.

"Print Orientation" is never impacted by the validation process (i.e. pressing the "Set Font" button) because it is the highest priority.

Notice that "Character Set", "Stroke Weight" and "Quality" parameters do not enter into the validation hierarchy. This is because all of their settings are compatible with any combination. These parameters will never be revised as a result of pressing "Set Font".

If a parameter is found to be illegal, the next "highest" setting is tested for validity. For example, if an illegal point size setting of "9.5" is requested with "Portrait" print orientation and "Courier" typeface, the validation process will attempt the next highest point size setting, "10". This is still an illegal point size for "Courier", so "12" is selected next. Since this is legal, "12" is displayed in the point size gadget and the program looks at the next parameter, "Style". This all happens instantaneously when the user presses the "Set Font" button. Only the final results of the validation are presented when the validation is complete.

If the validation process is at the "highest" setting for a particular parameter and the combination is still found to be illegal, it will change the parameter to the "lowest" setting. For example, if point size "24" is found to be illegal, "5" is attempted next.

The validation process does not account for illegal format combinations

introduced by the addition of optional font cartridges. The feedback field will indicate when the program cannot validate the font selection parameters displayed.

3. "Character Set" roll-up gadget
 ~~~~~

|                       |                    |                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default setting: PC-8 | Other settings:    | HP Roman8<br>PC-8 Danish/Norwegian<br>PC-850<br>ECMA-94 Latin 1<br>German (ISO 21)<br>French (ISO 69)<br>Italian (ISO 15)<br>Spanish (ISO 17)<br>Swedish Names (ISO 11)<br>Swedish (ISO 10)<br>Norwegian1 (ISO 60)<br>Norwegian2 (ISO 61)<br>Portuguese (ISO 16)<br>United Kingdom (ISO 4)<br>ANSI ASCII (ISO 6)<br>JIS ASCII<br>HP Legal<br>ISO IRV |
|                       | Optional settings: | Line Draw<br>Math7<br>Math8<br>Math8a<br>Math8b<br>PIFont<br>PIFonta                                                                                                                                                                                                                                                                                 |

~~~~~The "Character Set" determines what sort of "shape" is printed given a specific printable character number. For example, if decimal character "93" is printed with the "PC-8" default character set, the character printed is a "\". However, if the "Spanish" character set is invoked, the same "93" character number will printout as the upside-down question mark.

~~~~~The "Character Set" definitions are too extensive to reiterate in this document. The user must refer to the charts in the users manual for this information.

~~~~~The "optional" character sets are only available through add-on font cartridges. This program supports calling up these optional character sets.

~~~~~All four built-in typefaces (Courier, CG Times, Letter Gothic and Univers) are compatible with all built-in (non-optional) character sets.

4. "Spacing" roll-up gadget  
 ~~~~~

Default setting: Fixed	Other settings: Proportional
------------------------	------------------------------

~~~~~"Spacing" refers to the horizontal space to be applied between printed





will roll through a single option for each click of the left mouse button. When checked, each roll-up gadget will continually roll through their options as long as the left mouse button remains depressed. This gadget only affects the roll-up gadgets in the white boarder.

## 1.10 permissible

### PERMISSIBLE FONT PARAMETER COMBINATIONS

| Orientation | Typeface      | Point Size               | Style             | Pitches          |
|-------------|---------------|--------------------------|-------------------|------------------|
| Portrait    | Courier       | 6 or 12                  | Upright           | 5, 10, 16.67, 20 |
| Portrait    | Courier       | 6 or 12                  | Italic            | 5, 10, 20        |
| Portrait    | CG Times      | 5, 6, 7, 8, 10, 12 or 14 | Upright or Italic | Proportional     |
| Portrait    | Letter Gothic | 6 or 12                  | Upright or Italic | 6, 12, 24        |
| Portrait    | Univers       | 5, 6, 7, 8, 10, 12 or 14 | Upright           | Proportional     |
| Portrait    | Univers       | 5, 6, 10 or 12           | Italic            | Proportional     |
| Landscape   | Courier       | 6, 12 or 24              | Upright           | 10, 16.67, 20    |
| Landscape   | Letter Gothic | 6, 12 or 24              | Upright           | 6, 12, 24        |
| Landscape   | Letter Gothic | 5, 6, 10 or 12           | Upright           | 4.75, 9.5, 19    |

## 1.11 graphic

### GRAPHIC CONTROL GADGETS

As previously stated under "Printer Graphics Preferences" in the "Workbench Environmental Considerations" section of this Amigaguide, most graphic printing programs take no printer settings for granted when they are requested to send raster graphics to the printer. Virtually all applications will overwrite any settings originating from the HP DeskJet Controller. The user has control of these overwriting settings through either the Graphic Printer Preferences Program or through the application which is sending the printout.

Users are hereby advised that these gadgets may be ineffective for most cases.

Nevertheless, the Graphic Control Gadgets are provided in the event that an isolated user finds a specific instance where they may be applied. Only those commands which are useful as single isolated commands have been incorporated into the program.

The graphic controls gadgets are not compatible with all HP DeskJet 500 series printers.

## 1.12 test

### TEST CONTROL GADGETS

Two types of text printing are available: a single line test and a document test. Additionally, the printer-resident "Self-test" may be called from this program.

#### 1. "Test Text" field gadget

~~~~Initially set to be the program name, this field can be freely modified by the user to establish what text will be printed when the "Print Test Text" button is pressed.

2. "Print Test Text" button gadget

~~~~Sends the "Test Text" string to the printer via the "PAR:" device. Several solid ">" characters are sent after the "Test Text" as well. These additional characters move the printed "Test Text" sufficiently away from the print head for the user to be able to immediately see the resulting printout.

~~~~Since HP DeskJets are not full-fledged line printers, the number of characters caught in the buffer and not yet printed cannot be predetermined. As a matter of fact, for the same test text the number of "retained" characters may be inconsistent between tests. However, sufficient ">" characters are sent to ensure the "Test Text" will be visible.

~~~~For this reason, the user will want to clear the buffer after finishing up with "Print Test Text". The best way to do this is pressing the "Form Feed" button gadget so that current settings will not be lost.

~~~~Note that using this feature causes the printer's "Busy" light to flash until the buffer is cleared by a "Reset", "Form Feed", "Self-test" or power-down.

3. "Self-test" button gadget

~~~~Initiates HP's printer-resident test program. This prints out several pages of internal font samples, alignment tests and landscape printing samples.

#### 4... "Test Document" document gadget

~~~~As with "Test Text", the user is free to type into this gadget. However unlike "Test Text", this gadget accepts linefeeds. Alternatively, the user may wish to load a prewritten text document from disk using "Load Document". Horizontal and vertical scroll-bars are provided so it is possible to view any character in the document.

~~~~At start-up, this document reminds the user to enter the "Input Sequence" to affect indefinite operation.

5. "Load Document" button gadget

~~~~Brings up the default system-based file requester for which the user selects a prewritten text document to be loaded into "Test Document" gadget. The existing document is cleared with this action.

6. "Print Document" button gadget

~~~~Attempts to print the text in the "Test Document" gadget via the "PAR:" device. Unlike "Print Test Text", printing will not pause between pages. A form feed is automatically executed at the end of the printing job and the "Busy" light on the printer will go out.

No raster graphic test printing is supported within this program.

## 1.13 history

### REVISION HISTORY

Version 1.0 Dated 10/24/94

Version 1.1 Dated 11/5/94

#### Upgrades:

1. A flashing arrow will now appear next to the Set Font button whenever the user has changed the displayed font selection settings or print orientation. The arrow gets turned off when the printer has the on-screen parameters.

#### Swatted Bugs:

1. Fixed bug in font validation routine which caused an infinite loop (yikes!) by pressing Point size gadget. Routine kept revising Pitch until a Point size was satisfied (i.e. never).
2. Fixed escape code errors in "Spacing" roll-up gadget. Proportional and Fixed were reversed causing Univers typeface to be always inaccessible and CG Times typeface to be in effect when Letter Gothic was expected.
3. Fixed escape code errors in "Reset" routine.

Version 1.2 Dated 11/6/94

#### Swatted Bugs:

1. Fixed Document Printing routine so that proper filename is send to AmigaDOS.

Version 1.3 Dated 12/24/96

#### Swatted Bugs:

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None

Upgrades:

1. Program adopted by Deneban Software - added Deneban Software markings.
2. Revised program name and all references to "HP DeskJet 560C Controller" to "HP DeskJet Controller".
3. This Amigaguide extensively re-edited.

Version 1.4 Dated 1/5/97

Swatted Bugs:

1. Fixed Help key. Help key was not working because guide filename was changed in version 1.3.

Upgrades:

1. Improved icon design. Three icons are now provided with Deneban Software logos on "icon-selected" images.
2. Unregistered users can now sample the program for 2.5 minutes rather than only 1 minute. Revised this guide to reflect this.
3. Included screen capture in archive for new users to view interface.

Minor Changes:

1. Combined coding of Help Key and Documentation Button and improved feedback in feedback text gadget.
2. Revised this guide to state that the program is AmigaDOS 1.3 compatible drawing from user feedback.

## 1.14 deneban

ABOUT DENEBAN SOFTWARE

Deneban Software provides useful and economical shareware and freeware for the Amiga Community.

Visit our Web Site on Galaxy Internet Services at:

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