

Customer Tips

...for the user

dc06cc0408

October 12, 2006

PDL Reference Guide for the WorkCentre 7228/7235/7245

Accessing Extended Features

Overview

This document enables you to access the extended features of the WorkCentre 7228/7235/7245 in environments that do not have a custom driver.

Note: Some of the commands and syntax used in this document requires familiarity with either PostScript (PS) or Printer Command Language (PCL).

This document provides the Printer Description Language (PDL) commands and syntax for each feature. The following items are also included:

- A PCL table that describes the PCL features the WorkCentre supports and the syntax to use the feature.
- A PS table that describes the PS features the WorkCentre supports and the syntax to use the feature.

This document is not intended to be a complete PS or PCL reference manual. It is a guide for using the PS and PCL commands with a WorkCentre 7228/7235/7245 only. Refer to these references for additional details:

- *PostScript Language Reference Manual, Third Edition*, ISBN 0-201-38922-8,
- *PCL5 Printer Language Technical Reference Manual*
(<http://h20000.www2.hp.com/bc/docs/support/SupportManual/bpl13210/bpl13210.pdf>),
- *Printer Job Language Technical Reference Manual*
(<http://h20000.www2.hp.com/bc/docs/support/SupportManual/bpl13208/bpl13208.pdf>), a Hewlett-Packard manual.

Using this Guide

Search the Feature Table to determine whether the feature you wish to use is supported.

Verify that the feature is supported by the platform. For example, the WorkCentre must have an optional finisher installed to use stapling commands.

Follow across the table to find the syntax listed for the PDL examples shown. Reference the "Dependencies/Caveats" section when working with PS and/or PCL commands.

This document applies to the Xerox product WC 7228/7235/7245. It is assumed that your device is equipped with the appropriate option(s) to support the information in this document.

PCL

This WorkCentre supports PCL5e and PCL XL Color emulations that enable the features listed in the following table.

Feature	Description
Job Name	The value for Job Name is stored for printing on the banner page.
Custom Paper Size – available only for PCL	Customer designated paper size on which to print a job.
Media Size	The size of media on which to print a job.
Media Source	Specifies the tray to supply the job's media.
Output Location	Indicates the output bin where the completed print job is sent.
Stapling	Indicates use and location of staple(s).
Punch	Indicates use, location, and number of hole punches.
Booklet	Print job in booklet format.
Collation	Collated creates a set that includes 1 copy of each page. Uncollated creates a stack of multiple copies of the same page.
Resolution	Resolution used to image a job.
Quantity	Number of copies of a job to print.
Simplex	Delivers one-sided output.
Duplex	Delivers two-sided output.
Orientation	Delivers output in landscape or portrait orientation.
Force Short Edge Feeding	Rotates orientation of job.
Job Type	Specify Store (Secure) to hold the print job at the device until it is released by input at the local UI (see documentation shipped with the device for more information), or Proof to print the first of multiple copies to check that all attributes of a job are correct.
Interleaving Paper (transparency separator)	Insert blank media to separate sheets of transparent media.
Job Based Accounting	Allows entry of an accounting code and user ID. To enable this feature the optional Network Accounting kit is required.
Delayed Print	Specify the time to print a job.

PCL/PJL Implementation

The following table contains the PCL feature commands and shows the syntax required to use the feature. After the table are examples of how to use these commands and examples of a PCL file.

For more details, refer to these reference materials: *PCL5 Printer Language Technical Reference Manual* and *Printer Job Language Technical Reference Manual*, (Hewlett-Packard manuals).

Feature	Implementation	Values
Job Name	@PJL SET JOBNAME = "jobname-string"	Where <i>jobname-string</i> is a maximum of 32 characters Do not use " (22 hex) character
Custom Paper Size – available only for PCL	<ESC>&l101A	Width of Custom Paper is specified by <ESC>&f#l where # = decipoints for 100 - 305 mm. Length of Custom Paper is specified by <ESC>&f#J where # = decipoints for 140 – 482 mm. For example, 4.25-inch x 5.5-inch paper appears as: <ESC>&f3060l3960J 4.25-inch x 720 decipoints/inch = 3060 and 5.5-inch x 720 decipoints/inch = 3960.
Media Size	@PJL SET PAPER = <i>value</i>	Where <i>value</i> is one of the following: A3 A4 JISB4 JISB5LEDGER: 11x17 LEGAL: 8.5x14 JISEXEC: 8.5x13 LETTER: 8.5x11 CUSTOM: Custom paper
	<ESC>&l <i>int</i> A	Where <i>int</i> is one of the following: 2: Letter (8.5x11) 3: Legal (8.5x14) 6: Ledger (11x17) 45: B5 (JIS) 26: A4 27: A3 46: B4(JIS) 101: Custom
Media Source	@PJL SET MEDIASOURCE = <i>value</i>	Where <i>value</i> is one of the following: TRAY1: Feed from paper tray 1 TRAY2: Feed from paper tray 2 TRAY3: Feed from paper tray 3 TRAY4: Feed from paper tray 4
	<ESC>&l <i>int</i> H	Where <i>int</i> is one of the following: 0: Feed paper from default tray 4: Tray1 1: Tray2 5: Tray3 8: Tray4 20 = Auto 2 or 3 = bypass tray

Feature	Implementation	Values
Output Location	@PJL SET OUTBIN = <i>value</i>	Where <i>value</i> is one of the following: UPPER: Main tray MAINTRAY: Main tray (no finisher installed) LOWER: Side tray SIDETRAY: Side tray MAINTRAY3: Top tray of Advanced Office and Professional Finishers OUTBIN101: Finisher tray (w/ B-Finisher or C-Finisher) BOOKLETTRAY: Booklet tray of Professional Finisher with booklet module
	<ESC>&l <i>int</i> G	Where <i>int</i> is one of the following: 0: Automatic selection 1: Main tray 2: Side tray 6: Finisher tray (applies to all finishers)
Stapling	@PJL SET STAPLE = <i>value</i>	Where <i>value</i> is one of the following: TOPDUAL TOPLEFT TOPRIGHT BOTTOMDUAL BOTTOMLEFT BOTTOMRIGHT LEFTDUAL RIGHTDUAL SADDLE NONE
Punch	@PJL SET PUNCH = <i>value1</i>	Where <i>value1</i> is one of the following: TOP RIGHT LEFT BOTTOM NONE
	@PJL SET JOBATTR = "@PNHN = <i>value2</i> "	Where <i>value2</i> is TWO: 2 holes
Folding	@PJL SET JOBATTR = "@FOLD = <i>value1</i> "	Where <i>value1</i> is one of the following: BIFOLDINSIDE: Bi-fold single page BIFOLDMULTIOUTSIDE: Bi-fold multi-page
Collation	@PJL SET QTY = <i>int</i>	Where <i>int</i> is: 1-999 sets of collated documents.
Resolution	@PJL SET RESOLUTION = <i>value</i>	Where <i>value</i> is 600
Bits Per Pixel	@PJL SET BITS PER PIXEL = <i>value</i>	Where <i>value</i> is 1: 1 bit per pixel (per plane)
Quantity	@PJL SET COPIES = <i>int</i>	Where <i>int</i> is: 1-999 sets of uncollated documents.
	<ESC>&l <i>int</i> X	Where <i>int</i> is: 1-999
Simplex	@PJL SET DUPLEX = <i>value1</i>	Where <i>value1</i> is OFF: simplex
	<ESC>&l <i>int</i> S	Where <i>int</i> is 0: simplex
Duplex	@PJL SET DUPLEX = <i>value1</i> @PJL SET BINDING = <i>value2</i>	Where <i>value1</i> is ON: duplex Where <i>value2</i> is one of the following: LONGEDGE SHORTEDGE (<i>value2</i> is used combined with <i>value1</i> = ON)
	<ESC>&l <i>int</i> S	Where <i>int</i> is one of the following: 1: Duplex long edge binding 2: Duplex short edge binding

Feature	Implementation	Values
Orientation	@PJL SET ORIENTATION = <i>value</i>	Where <i>value</i> is one of the following: PORTRAIT LANDSCAPE
	<ESC>&l <i>int</i> O	Where <i>int</i> is one of the following: 0: Portrait 1: Landscape 2: Reverse Portrait 3: Reverse Landscape
Force short edge feeding	@PJL SET PAPERDIRECTION = <i>value</i>	Where <i>value</i> is one of the following: SEF: Short Edge Feed LEF: Long Edge Feed
Job Mode	@PJL JOB MODE = <i>value</i>	Where <i>value</i> is PRINTER: Printer
Job Type (Secure Print / Proof Print)	@PJL SET HOLD = <i>value1</i>	Where <i>value1</i> is one of the following: PROOF: proof print STORE: confidential print (secure print)
	@PJL SET HOLDKEY = " <i>four-digit string</i> "	The HOLDKEY variable acts as a password without encryption to protect a held job. Four-digit string can be any four-digit value from 0000 to 9999. The default value is "". When ""(null) is specified, no password is required.
Job Based Accounting or Auditron (which ever is enabled)	@PJL SET JOBATTR = "@JOAU = <i>string1</i> "	Where <i>string1</i> is a maximum of 32 ascii characters (in the range 20 – 7E hex) indicating job owner (case sensitive).
	@PJL SET JOBATTR = "@JOAP = <i>string2</i> "	Where <i>string2</i> is a maximum of 12 ascii characters (in the range 20 – 7E hex) indicating password without encryption. Null is a valid entry (zero length string).
	@PJL SET JOBATTR = "@DAID = <i>string3</i> "	Where <i>string3</i> is a maximum of 32 ascii characters (in the range 20 – 7E hex) indicating account ID. It can be null (zero length string).
Delay Print	@PJL SET JOBATTR = "@PRTM = YYYYY:MM:DD:hh:mm"	Where: YYYY: year (AD 2000 -- 2099) MM: month (1 -- 12) DD: day (1 -- 31) hh: hour (0 -- 23) mm: minute (0 -- 59)
Banner Sheet	@PJL SET JOBATTR = "@BANR= <i>value</i> "	Where <i>value</i> is one of the following: START: enable banner sheet DEVICE: use device setting OFF: no banner sheet
	@PJL SET JOBATTR = "@BCMT= <i>comment string</i> "	Where <i>string</i> is a maximum of 255 ascii characters (in the range 20 – 7E hex) for display on the banner sheet.

PJL Template

This section illustrates a standard PJL template that is used to access general print features as well as features unique to a WorkCentre. This template lists each feature and the syntax, and shows both the PCL and PJL commands required to enable the features.

Section 1 (Opening Command, Required for all files)

```
<ESC>%-12345X@PJL JOB MODE=PRINTER
```

Section 2 (PJL Set Commands)

```
@PJL SET RESOLUTION=600
```

```
@PJL SET COPIES=1
```

Section 3 (PCL Code used to invoke PCL Language)

```
@PJL ENTER LANGUAGE=PCL
```

Section 4 (PCL Data Stream or ASCII Document inserted here for Options such as selection Different Fonts, Simplex, Duplex, etc.)

```
''''''''
```

Section 5 (Closing Command, Required at end of Document)

```
<ESC>%-12345X@PJL EOJ
```

Sample PJL Headers

This section contains examples of these commands in use.

Example 1 Simple Print

```
<ESC>%-12345X@PJL JOB MODE=PRINTER<CR><LF>  
@PJL COMMENT Beginning PCL Job<CR><LF>  
@PJL SET OUTBIN=MAINTRAY<CR><LF>  
@PJL SET QTY=1<CR><LF>  
@PJL SET RESOLUTION=600<CR><LF>  
@PJL SET JOBATTR="@JOAU=John" <CR><LF>
```

Example 2 Finishing Options (Stapling)

```
<ESC>%-12345X@PJL JOB MODE=PRINTER<CR><LF>  
@PJL SET OUTBIN=OUTBIN101<CR><LF>  
@PJL SET FINISH=ON<CR><LF>  
@PJL SET STAPLE=TOPLEFT<CR><LF>
```

Example 3 Finishing Options (Punch)

```
<ESC>%-12345X@PJL JOB MODE=PRINTER<CR><LF>  
@PJL SET OUTBIN=OUTPIN101<CR><LF>  
@PJL SET FINISH=ON<CR><LF>  
@PJL SET PUNCH=LEFT<CR><LF>  
@PJL SET JOBATTR="@PNHN=TWO" <CR><LF>
```

Example 4 Proof Print

```
<ESC>%-12345X@PJJL JOB MODE=PRINTER<CR><LF>  
@PJJL SET HOLD=PROOF <CR><LF>  
@PJJL SET USERNAME="John" <CR><LF>  
@PJJL SET JOBNAME="Job1" <CR><LF>
```

Example 5 Confidential (Secure) Print without encryption (Password: 1234)

```
<ESC>%-12345X@PJJL JOB MODE=PRINTER<CR><LF>  
@PJJL SET HOLD=STORE <CR><LF>  
@PJJL SET HOLDKEY="1234" <CR><LF>  
@PJJL SET USERNAME="John" <CR><LF>  
@PJJL SET JOBNAME="Job1" <CR><LF>
```

Example 6 Banner Sheet

```
@PJJL SET JOBATTR="@BANR=START" <CR><LF>  
@PJJL SET JOBATTR="@BCMT=Please Recycle" <CR><LF>
```

Example 7 Job Based Accounting & Auditron (User ID:Patricia, Password: none, account ID: none)

```
<ESC>%-12345X@PJJL JOB MODE=PRINTER<CR><LF>  
@PJJL SET JOBATTR="@JOAU=Patricia" <CR><LF>  
@PJJL SET JOBATTR="@JOAP=" <CR><LF>  
@PJJL SET JOBATTR="@DAID=" <CR><LF>
```

PCL/PJL Feature Dependencies/Caveats

- All PJL commands must be in the first 2,500 bytes of the job.
- To combine printer escape commands (not including PJL commands):
 - The first two characters after the <esc> MUST be the same.
 - All alpha characters MUST be lowercase, except the final terminating character.
 - Read commands from left to right. Combine commands in the order you wish them to execute.
 - For example, combine print 5 copies (<ESC>&|5X) and use letter size (<ESC>&|2A) as <ESC>&|5x2A.
- In case of duplicate commands, the last one requested takes precedence.
- The @PJL SET COPIES takes precedence over the PCL escape command (<ESC>& | int X>) to set copies. In general, a PJL command takes precedence over a PCL command.
- A request to duplex these media sizes is ignored: A6, JISB6, 12x18, JPOST, JPOSTD, POSTCARD, 50X70, and TYOUKEI3.
- A request to staple these media sizes is ignored: A5, A6, JISB6, STATEMENT, EXECUTIVE, 11x15, 12x18, JPOST, JOPSTD, POSTCARD, 50x70, TYOUKEI3 and CUSTOM.
- Valid media classes for duplex are fine paper, stationary, recycled paper, user 1-5 paper, thick paper 1 (including A-S), thick paper 1 for finisher (including A-S), coated paper, and coated paper for finisher.
- Valid media classes for staple are fine paper, stationary, recycled paper, stationary side 2, user 1-5 paper, thick paper 1 finisher, and coated paper 1 for all optional finishers. For the Advanced Office and Professional (C) Finishers thick paper 1 (including A-S), thick paper 2 (including A-S), thick paper 1 reverse, thick paper 2 reverse, coated paper 1 and coated paper 1 reverse are also valid.

PCL Fonts

The following PCL fonts are resident.

The commands in the table reference a 12-point font. If you wish to use any other point size, change the 12v to the desired size (.25 – 999.75).

The commands listed use the default symbol set, Roman-8. To change the symbol set, you include the alternate symbol set after the first <ESC> and before the second <ESC>. Use the line printer examples as a reference.

Font Name	PCL Escape Command
Albertus Medium	<esc><esc>(s1p12v0s1b4362T
Albertus Extra Bold	<esc><esc>(s1p12v0s4b4362T
Antique Olive	<esc><esc>(s1p12v0s0b4168T
Antique Olive Bold	<esc><esc>(s1p12v0s3b4168T
Antique Olive Italic	<esc><esc>(s1p12v1s0b4168T
Arial	<esc><esc>(s1p12v0s0b16602T
Arial Bold	<esc><esc>(s1p12v0s3b16602T
Arial Italic	<esc><esc>(s1p12v1s0b16602T
Arial Bold Italic	<esc><esc>(s1p12v1s3b16602T
CG Times	<esc><esc>(s1p12v0s0b4101T
CG Times Bold	<esc><esc>(s1p12v0s3b4101T
CG Times Italic	<esc><esc>(s1p12v1s0b4101T
CG Times Bold Italic	<esc><esc>(s1p12v1s3b4101T
CG Omega	<esc><esc>(s1p12v0s0b4113T
CG Omega Bold	<esc><esc>(s1p12v0s3b4113T

Font Name	PCL Escape Command
CG Omega Italic	<esc><esc>(s1p12v1s0b4113T
CG Omega Bold Italic	<esc><esc>(s1p12v1s3b4113T
Clarendon Condensed	<esc><esc>(s1p12v4s3b4140T
Coronet	<esc><esc>(s1p12v1s0b4116T
Courier	<esc><esc>(s1p12v0s0b4099T
Courier Bold	<esc><esc>(s1p12v0s3b4099T
Courier Italic	<esc><esc>(s1p12v1s0b4099T
Courier Bold Italic	<esc><esc>(s1p12v1s3b4099T
Garamond Antiqua	<esc><esc>(s1p12v0s0b4197T
Garamond Halbfett	<esc><esc>(s1p12v0s3b4197T
Garamond Kursiv	<esc><esc>(s1p12v1s0b4197T
Garamond Kursiv Halbfett	<esc><esc>(s1p12v1s1b4197T
Line Printer (Roman-8)	<esc>(8U<esc>(s0p16.67h8.5v0s0b0T
Line Printer (Latin-1)	<esc>(0U<esc>(s0p16.67h8.5v0s0b0T
Line Printer (PC-8)	<esc>(10U<esc>(s0p16.67h8.5v0s0b0T
Line Printer (PC-8 D/N)	<esc>(11U<esc>(s0p16.67h8.5v0s0b0T
Line Printer (PC-850)	<esc>(12U<esc>(s0p16.67h8.5v0s0b0T
Line Printer (Legal)	<esc>(1U<esc>(s0p16.67h8.5v0s0b0T
Marigold	<esc><esc>(s1p12v0s0b4297T
Times New	<esc><esc>(s1p12v0s0b16901T
Times New Bold	<esc><esc>(s1p12v0s3b16901T
Times New Italic	<esc><esc>(s1p12v1s0b16901T
Times New Bold Italic	<esc><esc>(s1p12v1s3b16901T
Symbol	<esc>(19M<esc>(s1p12v0s0b16686T
Wingdings	<esc>(579L<esc>(s1p12v0s1b31402T
Univers Bold	<esc><esc>(s1p12v0s3b4148T
Univers Bold Italic	<esc><esc>(s1p12v1s3b4148T
Univers Bold Condensed	<esc><esc>(s1p12v4s3b4148T
Univers Bold Condensed Italic	<esc><esc>(s1p12v5s3b4148T
Univers Medium	<esc><esc>(s1p12v0s0b4148T
Univers Medium Italic	<esc><esc>(s1p12v1s0b4148T
Univers Medium Condensed	<esc><esc>(s1p12v4s0b4148T
Univers Medium Condensed Italic	<esc><esc>(s1p12v5s0b4148T
Letter Gothic	<esc><esc>(s1p12h0s0b4102T
Letter Gothic Italic	<esc><esc>(s1p12h1s0b4102T
Letter Gothic Bold	<esc><esc>(s1p12h0s3b4102T
Times Roman	<esc><esc>(s1p12h0s3b4102T
Times Italic	<esc><esc>(s1p12h0s3b4102T
Times Bold	<esc><esc>(s1p12h0s3b4102T
Times Bold Italic	<esc><esc>(s1p12h0s3b4102T
Helvetica	<esc><esc>(s1p12v0s0b24580T
Helvetica Oblique	<esc><esc>(s1p12v1s0b24580T
Helvetica Bold	<esc><esc>(s1p12v0s3b24580T
Helvetica Bold Oblique	<esc><esc>(s1p12v1s3b24580T
CourierPS	<esc><esc>(s0p12h0s0b24579T
CourierPS Oblique	<esc><esc>(s0p12h1s0b24579T
CourierPS Bold	<esc><esc>(s0p12h0s3b24579T
CourierPS Bold Oblique	<esc><esc>(s0p12h1s3b24579T
SymbolPS	<esc>(19M<esc>(s1p12v0s0b45358T
Palatino Roman	<esc><esc>(s1p12v0s0b24591T
Palatino Italic	<esc><esc>(s1p12v0s0b24591T
Palatino Bold	<esc><esc>(s1p12v0s0b24591T
Palatino Bold Italic	<esc><esc>(s1p12v0s0b24591T
ITC Bookman Light	<esc><esc>(s1p12v0s-3b24623T
ITC Bookman Light Italic	<esc><esc>(s1p12v1s-3b24623T
ITC Bookman Demi	<esc><esc>(s1p12v0s2b24623T
ITC Bookman Demi Italic	<esc><esc>(s1p12v1s2b24623T
Helvetica Narrow	<esc><esc>(s1p12v4s0b24580T
Helvetica Narrow Oblique	<esc><esc>(s1p12v5s0b24580T

Font Name	PCL Escape Command
Helvetica Narrow Bold	<esc><esc>(s1p12v4s3b24580T
Helvetica Narrow Bold Oblique	<esc><esc>(s1p12v5s3b24580T
New Century Schoolbook Roman	<esc><esc>(s1p12v0s0b24703T
New Century Schoolbook Italic	<esc><esc>(s1p12v1s0b24703T
New Century Schoolbook Bold	<esc><esc>(s1p12v0s3b24703T
New Century Schoolbook Bold Italic	<esc><esc>(s1p12v1s3b24703T
ITC Avant Garde Book	<esc><esc>(s1p12v0s0b24607T
ITC Avant Garde Book Oblique	<esc><esc>(s1p12v1s0b24607T
ITC Avant Garde Demi	<esc><esc>(s1p12v0s2b24607T
ITC Avant Garde Demi Oblique	<esc><esc>(s1p12v1s2b24607T
ITC Zapf Chancery Medium Italic	<esc><esc>(s1p12v1s0b45099T
ITC Zapf Dingbats	<esc><esc>(s1p12v0s0b45101T

PostScript

This WorkCentre supports PS level 3 commands that enable the features listed in the following table.

Feature	Description
Media Size	Select the physical paper (media) size. (width and height)
Media Direction	Feed direction of paper –LEF or SEF
Media Source	Specifies the tray to supply the job's media.
Media Source from Bypass Tray	Specifies the bypass tray to supply the job's media.
Media Color	Select the color of the media used to print a job
Media Weight	Media weight. Unit: (gsm) gram per square-meter
Media Class	Paper class (example: normal, thick, recycled)
Media Type	Used to identify the type of media a job requires.
Media Selection	Specifies immediate or deferred media selection.
Print Mode	Specify horizontal or vertical resolution and bits per pixel.
Duplex	Delivers two-sided output. Landscape documents read like a calendar and portrait documents read like a book.
Tumble	Deliver two-sided output (combine with Duplex) Landscape documents read like a book and portrait documents read like a calendar.
Image Enhancement	Use to apply edge-smoothing to output after rendering.
Toner Save	Specify to decrease output density to save toner.
Halftone Screen Selection	Specify a screen type.
Output Location	Output bin
Quantity	Number of copies (max: 999)
Collation	Collated or Uncollated
Jog	Offsetting
Stapling	Stapling. See details on StapleDetails.
Punch	Specify how you Punch
Booklet	Specify how you file
Interleaving Paper (Transparency Separator)	Insert blank sheet between OHP sheets.
Process Color Model	Select process color model (DeviceGray, DeviceRGB, DeviceCMYK,,)
RGB Correction	Specify whether you apply RGB correction to color conversion process
Gray Guaranteed	Specify whether to convert RGB black (R=G=B) to pure black for text and graphics objects.
Gamma Correction	Specify gamma value for RGB color conversion
CMYK Correction	Specify whether you apply CMYK correction to color conversion process
White Point	Specify White Point of Client side
RGB Space	Specify RGB Space for RGB correction
Brightness	Specify brightness of output color
Separations	Specify whether multiple color separations are generated for each page of output.
Separation Color Names	Specify the process colorant name.
Separation Order	Specify the order of process colorant name.

Feature	Description
Use CIE Color	Specify to apply CIE-based color space through color conversion.
Job Name	No PostScript command for this feature – use the PjL set command listed in the “PCL” section.
Job Type (Secure Print / Proof Print)	
Job Based Accounting	
Auditron	
Delay Print	
Banner Sheet	

PostScript Implementation

The following table contains the PostScript commands and shows the syntax required to use the feature. Following the table are examples of commands and a PS file.

For more details about PostScript commands, refer to the *PostScript Language Reference Manual, Third Edition*, ISBN 0-201-37992-8.

PostScript Print Features/Implementation

In the following table, default values are marked with an asterisk (*).

Feature	Implementation	Values
Media Size	<</PageSize [width height]>> setpagedevice	<p>[width x height] in 1/72 inch(points)</p> <p>[842 1191] = A3 [595 842] = A4 [420 595] = A5 † [729 1032] = B4 [516 729] = B5 [792 1224] = 11 x 17 [612 1008] = Legal (8.5 x 14) [612 936] = Legal 13 (8.5 x 13) [612 792] = Letter (8.5 x 11) [522 756] = Executive (7.25 x 10.5) [396 612] = Statement (5.5 x 8.5) † [576 720] = 8 x 10</p> <p>†: Whether each paper is available depends on NV memory setting.</p> <p>The following paper sizes are only available with bypass tray.</p> <p>[297 420] = A6 [363 516] = B6 [792 1080] = 11 x 15 [864 1296] = 12 x 18 [864 1368] = 12 x 19 [907 1274] = SRA3 [288 432] = 4 x 6 [360 504] = 5 x 7 [522 756] = 7.25 x 10.5 [609 892] = 8.46 x 12.4 [632 842] = A4 Cover [648 792] = 9 x 11</p>

Feature	Implementation	Values
Media Direction	<</LeadingEdge <i>int</i> >> setpagedevice	Where <i>int</i> is one of the following: 0 = Short Edge; top of standard page 1 = Long Edge; right side of standard page 2 = Short Edge; bottom of standard page 3 = Long Edge; left side of standard page null* = Auto
Media Source	<</MediaPosition <i>int</i> >> setpagedevice	Where <i>int</i> is one of the following: 0 = Tray1 1 = Tray2 2 = Tray3 3 = Tray4 null* = Auto
Media Source from Bypass	<</ManualFeed <i>value</i> >> setpagedevice	Where <i>value</i> is one of the following: true = Feed paper from bypass tray. false* = Feed paper from a tray other than bypass tray.
Media Color	<</MediaColor (<i>string</i>)>> setpagedevice	Where <i>string</i> is any value. (MediaColor does not affect a tray selection.)
Media Weight	<</MediaWeight <i>real</i> >> setpagedevice	Where <i>real</i> is in gsm (grams per square-meter) or null* (MediaWeight does not affect a tray selection.)
Media Class	<</MediaClass (<i>string</i>)>> setpagedevice	Where <i>string</i> is one of the following or null*: fine = high quality paper stationary = normal paper stationary side2 = normal paper reverse recycled = recycled paper transparency = transparency sheet thick1 = thick paper 1 thick1 [A] = thick paper 1(A) thick1 [B] = thick paper 1(B) thick1 [C] = thick paper 1(C) thick1 [S] = thick paper 1(S) thick1 finisher = thick paper 1 finisher thick1 finisher [A] = thick paper 1 finisher(A) thick1 finisher [B] = thick paper 1 finisher(B) thick1 finisher [C] = thick paper 1 finisher(C) thick1 finisher [S] = thick paper 1 finisher(S) thick2 = thick paper 2 thick2 [A] = thick paper 2(A) thick2 [B] = thick paper 2(B) thick2 [C] = thick paper 2(C) thick2 [D] = thick paper 2(D) thick2 [S] = thick paper 2(S) thin1 = thin paper user1 = user defined paper 1 user2 = user defined paper 2 user3 = user defined paper 3 user4 = user defined paper 4 user5 = user defined paper 5 label = label paper coating1 = coat paper 1 coating1 finisher = coat paper 1 finisher coating2 = coat paper 2 thick1 side2 = thick paper 1 reverse thick2 side2 = thick paper 2 reverse coating1 side2 = coat paper 1 reverse

Feature	Implementation	Values
		coating2 side2 = coat paper 2 reverse
Media Type	<</MediaType (<i>string</i>)>> setpagedevice	Where <i>string</i> is any value or null*. (MediaType does not affect a tray selection.)
Media Selection	<</DeferredMediaSelection <i>value</i> >> setpagedevice	Where <i>value</i> is one of the following: true* = Deferred media selection by output device (more powerful and flexible media selection). false = Immediate media selection by strict setpagedevice operator. To select the appropriate media when using MediaClass / Staple / Punch feature, <i>value</i> must be set to true intentionally in the beginning of header.
Print Mode	<</HWResolution [x y] /DeviceRenderingInfo << /Type 26 /ValuesPerColorComponent int1 >> >> setpagedevice	Where combination of x, y and int1 is one of the following: x y int1 = ... 600 600* 2 = 600x600dpi 1bit/color 600 600 16 = 600x600dpi 4bits/color 1200 1200 2 = 1200x1200dpi 1bit/color
Duplex	<</Duplex <i>value</i> >> setpagedevice	Where <i>value</i> is one of the following: true = Duplex false* = Simplex
Tumble	<</Tumble <i>value</i> >> setpagedevice	Use this feature when Duplex is true. Where <i>value</i> is one of the following: true = Tumble (Short edge binding Duplex) false* = Duplex (Long edge binding Duplex)
Image Enhancement	<</PostRenderingEnhance true /PostRenderingEnhanceDetails << /Type 32 /REValue <i>int</i> >> >> setpagedevice	Where <i>int</i> is one of the following: 0 = No image enhancement 1* = Activate image enhancement
Toner Save	<</PostRenderingEnhance true /PostRenderingEnhanceDetails << /Type 32 /TonerSaver <i>int</i> >> >> setpagedevice	Where <i>int</i> is one of the following: 0* = No toner saving 1 = Lighten output density, toner saving
Halftone Screen Selection	<</PostRenderingEnhance true /PostRenderingEnhanceDetails << /Type 32 /EngineScreen <i>int</i> >> >> setpagedevice	Where <i>int</i> is one of the following: 0 = for text, graphics screen 1 = for photograph screen 2* = most suitable screen
Output Location	<</OutputType (<i>string</i>)>> setpagedevice	Where <i>string</i> is one of the following or null: CENTER TRAY = facedown tray (top tray of Advanced Office or Professional (C) Finisher) TOP TRAY = facedown tray on the top of C Finisher. SIDE TRAY = side tray STACKER TRAY = finisher tray (w/ B-Finisher or C-Finisher) BOOKLET TRAY = booklet tray of Professional (C)-Finisher with booklet module null* = Not specified
Quantity	<</NumCopies <i>value</i> >> setpagedevice	Where <i>value</i> is one of the following: integer from 1 to 9999 : number of copies null*: Not specified
Collation	<</Collate <i>value</i> >> setpagedevice	Where <i>value</i> is one of the following: true = collated false* = uncollated
Jog	<</Jog <i>int</i> >>setpagedevice	Where <i>int</i> is one of the following:

Feature	Implementation	Values
		0* = Do not offset 3 = Offset at the beginning of each page [set]
Stapling (w/ B-Finisher or C-Finisher)	<</Staple <i>int1</i> /StapleDetails << /Type 7 /Location <i>int2</i> >> >> setpagedevice	Where <i>int1</i> is one of the following: 0* = Do not staple 3 = Staple at the end of each set Where <i>int2</i> is one of the following: 0* = top-left-single 1 = bottom-left-single 2 = top-right-single 3 = bottom-right-single 4 = top-double 5 = bottom-double 6 = left-double 7 = right-double
Punch (Advanced Office and Professional Finishers)	<</Punch <i>int1</i> /PunchDetails << /Type 5 /Position <i>int2</i> /Numholes <i>int3</i> >> >> setpagedevice	Where <i>int1</i> is one of the following: 0* = Do not punch 3 = Punch by set unit. Where <i>int2</i> is one of the following: 0 = topline 1 = bottom side 2 = left side 3 = right side Where <i>int3</i> is one of the following: 2* = 2 holes
Booklet (Professional Finisher with booklet module)	<</Booklet <i>value1</i> /BookletDetails << /Type 3 /StapleType <i>int</i> /PrintInside <i>value2</i> >> >> setpagedevice	Where <i>value1</i> is one of the following: true = Do Booklet. false* = Do not Booklet. Where <i>int</i> is one of the following: 0* = Do not file on inside. 1 = File on inside. Where <i>value2</i> is one of the following: true* = Print on inside. This feature is effective only in conjunction with that StapleType is 0.
Interleaving Paper (transparency separator)	<</SlipSheet <i>int1</i> /SlipSheetDetails << /Type 1 /AutoTraySelect <i>int2</i> /SheetTray <i>int3</i> /MediaClass (<i>string</i>) >> >> setpagedevice	Where <i>int1</i> is one of the following: 0* = Do not deliver interleaving paper. 4 = Deliver interleaving paper at the end of each page Where <i>int2</i> is one of the following: 0 = SheetTray is referred and feed interleaving paper from the SheetTray 1* = Feed interleaving paper from a tray following system setting. SheetTray is not referred. Where <i>int3</i> is one of the following: 0* = Feed interleaving paper from Tray1 1 = Tray2 2 = Tray3 3 = Tray4 100 = SMH (MSI) Where <i>string</i> is same as the "Media Class" feature. It means media class for the interleaving paper.

Feature	Implementation	Values
Process Color Model	<</ProcessColorModel <i>name</i> >> setpagedevice	Where <i>name</i> is one of the following: /DeviceGray /DeviceRGB (with Separations true) /DeviceCMYK /DeviceCMY (with Separations true) /DeviceRGBK (with Separations true)
RGB Correction	<</DeviceRenderingInfo << /Type 26 /RGBCorrection <i>int</i> >> >> setpagedevice	Where <i>int</i> is one of the following: 0 = do not correct 1 = for photograph 2 = for WEB page 3* = standard correction 4 = for presentation document 5 = CAD 10 = Perceptual 11 = Saturation 12 = Relative colorimetric 13 = Absolute colorimetric
Gray Guaranteed	<</DeviceRenderingInfo << /Type 26 /RGBToK <i>int</i> >> >> setpagedevice	Where <i>int</i> is one of the following: 0* = No gray guaranteed 1 = Gray guaranteed
Gamma Correction	<</DeviceRenderingInfo << /Type 26 /GammaCorrection <i>int</i> >> >> setpagedevice	Where <i>int</i> is one of the following: 0 = Do not correct 1 = Gamma 1.0 2 = Gamma 1.4 3* = Gamma 1.8 4 = Gamma 2.2 5 = Gamma 2.6
CMYK Correction	<</DeviceRenderingInfo << /Type 26 /CMYKCorrection <i>int</i> >> >> setpagedevice	Where <i>int</i> is one of the following: 0* = Don't correct 1 = JapanColor2001 (Art) 2 = JapanColor2001 (Coat) 3 = JapanColor2001 (Mat) 4 = EuroScale (Art) 5 = EuroScale (Coat) 6 = EuroScale (Mat) 7 = SWOP-Coated
WhitePoint	<</DeviceRenderingInfo << /Type 26 /WhitePoint <i>int</i> >> >> setpagedevice	Where <i>int</i> is one of the following: 0 = 5000K (D50) 1* = 6500K (D65) 2 = 9300K
RGBSpace	<</DeviceRenderingInfo << /Type 26 /RGBSpace <i>int</i> >> >> setpagedevice	Where <i>int</i> is one of the following: 0* = sRGB 1 = AdobeRGB
Brightness	<</DeviceRenderingInfo << /Type 26 /Brightness <i>int</i> >> >> setpagedevice	Where <i>int</i> is one of the following: 5 = Bright (+5) 4 = Bright (+4) 3 = Bright (+3) 2 = Bright (+2) 1 = Bright (+1) 0* = Normal -1 = Dark (-1) -2 = Dark (-2) -3 = Dark (-3) -4 = Dark (-4) -5 = Dar (-5)

Feature	Implementation	Values
Separations	<</Separations <i>value</i> >> setpagedevice	Where <i>value</i> is one of the following: true = Multiple color separations will be generated for each page of output. false* = All colorants will be combined into a single composite page on a single sheet of physical medium.
Separation Color Names	<</SeparationColorNames <i>value</i> >> setpagedevice	Where <i>value</i> is an array. Legal element values are the process colorant names implied by the process color model. Valid colorant names for each process color model are like the following in case of separation DeviceCMYK = cyan, magenta, yellow, black DeviceCMY = cyan, magenta, yellow DeviceRGB = red, green, blue DeviceRGBK = red, green, blue, gray DeviceGray = gray
Separation Order	<</SeparationOrder <i>value</i> >> setpagedevice	Where <i>value</i> is an array. Legal element values are the process colorant names implied by the process color model.
Use CIE Color	<</UseCIEColor <i>value</i> >> setpagedevice	Where <i>value</i> is one of the following: true = Re-map each color from device color space to device independent's CIE- based color space false* = Do not re-map color

Sample PostScript Headers

Example 1 Header for Simple Print

```
%!PS
```

Example 2 Header for Finishing

(Letter paper, duplex, 10 copies with collation, stapling with left-upper single and stacker tray for output bin)

```
%!PS
```

```
<< /DeferredMediaSelection true >> setpagedevice
```

```
<</PageSize [612 792]>>setpagedevice
```

```
<</Duplex true /Tumble false>>setpagedevice
```

```
<</OutputType (STACKER TRAY)>>setpagedevice
```

```
<</Collate true>>setpagedevice
```

```
<</NumCopies 10>>setpagedevice
```

```
<</Staple 3 /StapleDetails << /Type 7 /Location 0 >>  
>>setpagedevice
```

PostScript Feature Dependencies/Caveats

- All DSC (document structure convention) comments are ignored and not interpreted.
- Valid media sizes for duplexing are between [253 x 360] and [841 x 1224] (point) or all sizes that can be fed from tray1 - 4.
- Valid media sizes for stapling include A3, A4, B4, B5, 8.5 x 11, 8.5 x 13, 8.5 x 14, 11 x 17, and 8 x 10.
- Valid media classes for duplex are fine paper, stationary, recycled paper, user1-5 paper, thick paper 1, and coated paper.
- Valid media classes for staple are fine paper, stationary, recycled paper, stationary side 2, user1-5 paper, thick paper 1 finisher and coated paper 1 finisher for all finishers. For Advanced Office and Professional (C) Finisher, thick paper 1 (including A-S), thick paper 2 (including A-S), thick paper 1 reverse, thick paper 2 reverse, coated paper 1 and coated paper 1 reverse are also valid.

PostScript Fonts

The following PostScript fonts are resident with Adobe interpreter.

Font Name	PostScript Font Name
Albertus	/AlbertusMT
Albertus Italic	/AlbertusMT-Italic
Albertus Light	/AlbertusMT-Light
Antique Olive Roman	/AntiqueOlive-Roman
Antique Olive Italic	/AntiqueOlive-Italic
Antique Olive Bold	/AntiqueOlive-Bold
Antique Olive Compact	/AntiqueOlive-Compact
Apple Chancery	/Apple-Chancery
Arial	/ArialMT
Arial Italic	/Arial-ItalicMT
Arial Bold	/Arial-BoldMT
Arial Bold Italic	/Arial-BoldItalicMT
ITC Avant Garde Gothic Book	/AvantGarde-Book
ITC Avant Garde Gothic Book Oblique	/AvantGarde-BookOblique
ITC Avant Garde Gothic Demi	/AvantGarde-Demi
ITC Avant Garde Gothic Demi Oblique	/AvantGarde-DemiOblique
Bodoni Roman	/Bodoni
Bodoni Italic	/Bodoni-Italic
Bodoni Bold	/Bodoni-Bold
Bodoni Bold Italic	/Bodoni-BoldItalic
Bodoni Poster	/Bodoni-Poster
Bodoni Poster Compressed	/Bodoni-PosterCompressed
ITC Bookman Light	/Bookman-Light
ITC Bookman Light Italic	/Bookman-LightItalic
ITC Bookman Demi	/Bookman-Demi
ITC Bookman Demi Italic	/Bookman-DemiItalic
Carta	/Carta
Chicago	/Chicago
Clarendon Roman	/Clarendon
Clarendon Bold	/Clarendon-Bold
Clarendon Light	/Clarendon-Ligh
Cooper Black	/CooperBlack
Cooper Black Italic	/CooperBlack-Italic
Copperplate Gothic 32BC	/Copperplate-ThirtyTwoBC
Copperplate Gothic 33BC	/Copperplate-ThirtyThreeBC
Coronet	/Coronet-Regular

Font Name	PostScript Font Name
Courier	/Courier
Courier Oblique	/Courier-Oblique
Courier Bold	/Courier-Bold
Courier Bold Oblique	/Courier-BoldOblique
Eurostile Medium	/Eurostile
Eurostile Bold	/Eurostile-Bold
Eurostile Extended No. 2	/Eurostile-ExtendedTwo
Eurostile Bold Extended No. 2	/Eurostile-BoldExtendedTwo
Geneva	/Geneva
Gill Sans	/GillSans
Gill Sans Italic	/GillSans-Italic
Gill Sans Bold	/GillSans-Bold
Gill Sans Bold Italic	/GillSans-BoldItalic
Gill Sans Light	/GillSans-Light
Gill Sans Light Italic	/GillSans-LightItalic
Gill Sans Extra Bold	/GillSans-ExtraBold
Gill Sans Condensed	/GillSans-Condensed
Gill Sans Condensed Bold	/GillSans-BoldCondensed
Goudy Oldstyle	/Goudy
Goudy Oldstyle Italic	/Goudy-Italic
Goudy Bold	/Goudy-Bold
Goudy Bold Italic	/Goudy-BoldItalic
Goudy Extra Bold	/Goudy-ExtraBold
Helvetica	/Helvetica
Helvetica Oblique	/Helvetica-Oblique
Helvetica Bold	/Helvetica-Bold
Helvetica Bold Oblique	/Helvetica-BoldOblique
Helvetica Narrow	/Helvetica-Narrow
Helvetica Narrow Oblique	/Helvetica-Narrow-Oblique
Helvetica Narrow Bold	/Helvetica-Narrow-Bold
Helvetica Narrow Bold Oblique	/Helvetica-Narrow-BoldOblique
Helvetica Condensed	/Helvetica-Condensed
Helvetica Condensed Oblique	/Helvetica-Condensed-Oblique
Helvetica Condensed Bold	/Helvetica-Condensed-Bold
Helvetica Condensed Bold Oblique	/Helvetica-Condensed-BoldObl
Hoefler Text	/HoeflerText-Regular
Hoefler Text Italic	/HoeflerText-Italic
Hoefler Text Black	/HoeflerText-Black
Hoefler Text Black Italic	/HoeflerText-BlackItalic
Hoefler Ornaments	/HoeflerText-Ornaments
Joanna	/JoannaMT
Joanna Italic	/JoannaMT-Italic
Joanna Bold	/JoannaMT-Bold
Joanna Bold Italic	/JoannaMT-BoldItalic
Letter Gothic	/LetterGothic
Letter Gothic Slanted	/LetterGothic-Slanted
Letter Gothic Bold	/LetterGothic-Bold
Letter Gothic Bold Slanted	/LetterGothic-BoldSlanted
ITC Lubalin Graph Book	/LubalinGraph-Book
ITC Lubalin Graph Book Oblique	/LubalinGraph-BookOblique
ITC Lubalin Graph Demi	/LubalinGraph-Demi
ITC Lubalin Graph Demi Oblique	/LubalinGraph-DemiOblique
Marigold	/Marigold
Monaco	/Monaco
ITC Mona Lisa Recut	/MonaLisa-Recut

Font Name	PostScript Font Name
New Century Schoolbook Roman	/NewCenturySchlbk-Roman
New Century Schoolbook Italic	/NewCenturySchlbk-Italic
New Century Schoolbook Bold	/NewCenturySchlbk-Bold
New Century Schoolbook Bold Italic	/NewCenturySchlbk-BoldItalic
NewYork	/NewYork
OCR-B Letterpress M	/OCRBLetM
Optima Roman	/Optima
Optima Italic	/Optima-Italic
Optima Bold	/Optima-Bold
Optima Bold Italic	/Optima-BoldItalic
Oxford	/Oxford
Palatino Roman	/Palatino-Roman
Palatino Italic	/Palatino-Italic
Palatino Bold	/Palatino-Bold
Palatino Bold Italic	/Palatino-BoldItalic
Stempel Garamond Roman	/StempelGaramond-Roman
Stempel Garamond Italic	/StempelGaramond-Italic
Stempel Garamond Bold	/StempelGaramond-Bold
Stempel Garamond Bold Italic	/StempelGaramond-BoldItalic
Symbol	/Symbol
Tekton Regular	/Tekton
Times Roman	/Times-Roman
Times Italic	/Times-Italic
Times Bold	/Times-Bold
Times Bold Italic	/Times-BoldItalic
Times New Roman	/TimesNewRomanPSMT
Times New Roman Italic	/TimesNewRomanPS-ItalicMT
Times New Roman Bold	/TimesNewRomanPS-BoldMT
Times New Roman Bold Italic	/TimesNewRomanPS-BoldItalicMT
Univers 45 Light	/Univers-Light
Univers 45 Light Oblique	/Univers-LightOblique
Univers 55	/Univers
Univers 55 Oblique	/Univers-Oblique
Univers 65 Bold	/Univers-Bold
Univers 65 Bold Oblique	/Univers-BoldOblique
Univers 57 Condensed	/Univers-Condensed
Univers 57 Condensed Oblique	/Univers-CondensedOblique
Univers 67 Condensed Bold	/Univers-CondensedBold
Univers 67 Condensed Bold Oblique	/Univers-CondensedBoldOblique
Univers 53 Extended	/Univers-Extended
Univers 53 Extended Oblique	/Univers-ExtendedObl
Univers 63 Extended Bold	/Univers-BoldExt
Univers 63 Extended Bold Oblique	/Univers-BoldExtObl
Wingdings	/Wingdings-Regular
ITC Zapf Chancery Medium Italic	/ZapfChancery-MediumItalic
ITC Zapf Dingbat	/ZapfDingbats

Additional Information

Xerox Customer Support welcomes feedback on all documentation - send feedback via e-mail to: USA.DSSC.Doc.Feedback@mc.usa.xerox.com.

You can reach Xerox Customer Support at 1-800-821-2797 (USA), TTY 1-800-855-2880 or at <http://www.xerox.com>.

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