

Technical Reference

DisplayWrite 5/2
Composer Extension

Office Systems Family

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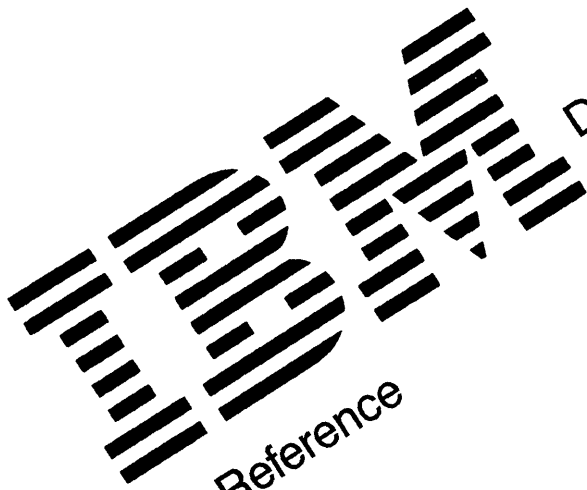
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About This Book

This book is a supplement to the DisplayWrite 5/2 Composer Extension Reference Guide. It is intended for use by programmers and other individuals with a need for specific, specialized, technical information.

This book contains:

- Support information for:
 - Installation
 - Font Generation
 - Characters and symbols
 - Printers
 - Applications
- A description of DW 5/2 Composer Extension messages, why these messages occurred, and steps for recovery
- An Appendix with a description of the Import Font File format
- An index.

Related Publications

DisplayWrite 5/2 Composer Extension Getting Started. This book contains the steps and basic information needed to start and begin using the composer. It includes exercises that introduce you to some of the features of DisplayWrite 5/2 Composer Extension.

DisplayWrite 5/2 Composer Extension Reference Guide. This book contains the most comprehensive information about the composer. It is divided into three major sections on Documents, Stylesheets, and Utilities. In addition, it contains a Glossary and an extensive Index.

DisplayWrite 5/2 Composer Extension Style Guide. This book contains guidelines to the elements of style and a portfolio of stylesheets upon which you can base your document designs.

Operating System/2 Standard Edition, Version 1.1 or Extended Edition, Version 1.1. This book contains information on how to use OS/2.

About The Help Facility

Pressing Help (**F1**) displays information related to the current task. While in a Help panel, pressing **F3 Index** displays an index of Help topics. Any of these topics can then be selected for additional information. For more information and instructions for using Help, refer to *DW 5/2 Composer Extension Getting Started*.

Disk Backup

All magnetic media are subject to physical damage, erasure, and loss for a variety of reasons, including operator error, accidental occurrences, and machine malfunction. In addition, magnetic media are subject to theft. Therefore, an integral part of any information system should be to establish and implement backup (duplication) procedures. The customer, **not IBM**, is solely responsible for establishing and implementing all such procedures.

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Install Support

Install Support contains information about displays, adapters, batch files, memory requirements, code page switching, voice/audio support, and typeface installation.

Displays

The DisplayWrite (DW) 5/2 Composer install program sets up all supported display types to run in All Points Addressable (APA) mode.

In APA mode, all the EBCDIC (Extended Binary-Coded Decimal Interchange Code) characters and symbols in the Characters Sets and the Symbols Sets can be displayed. For information about the EBCDIC characters and symbols that are supported, see the EBCDIC columns in the “Charts for Characters and Symbols Sets” on page 12.

To run DW 5/2 Composer Extension, you must have either a Video Graphics Array (VGA) adapter, an Enhanced Graphics Adapter (EGA) card, or a Color Graphics Adapter (CGA) installed in your IBM Personal Computer. A Color Graphics Adapter (CGA) card will limit your display to monochrome (light and dark only).

DW 5/2 Composer Extension displays in the following modes:

- VGA, 640x480, 16 colors
- EGA(256K), 640x350, 16 colors
- EGA(64K), 640x350, 4 colors
- CGA, 640x200, 2 colors (light and dark)

If your IBM Personal Computer configuration supports two colors (light and dark), your display may also support a bright version of the light color when light is assigned to the foreground.

Use Profile from the Main Menu to choose one of three color palettes. You may not change individual colors within a palette.

The acronyms and terms used in the installation procedure are defined as follows:

Term	Definition
ECD	Enhanced Color Display
EGA	Enhanced Graphics Adapter card
CD	Color Display
CGA	Color Graphics Adapter card
Mono	Monochrome Display
Full Color	16 Colors (Eight Colors + Brightness)
VGA	Video Graphics Array adapter card

Batch Files for Running DW 5/2 Composer Extension

After you complete the Install program, type **DW5C** to start DW 5/2 Composer Extension. OS/2 is actually loading a batch file called **DW5C.CMD**.

The **DW5C.CMD** file created by the Install program does the following:

- Remembers the current drive and directory for your fixed-disk system when you load DW 5/2 Composer Extension
- Uses a series of commands to define the operating environment for your system (for example, display modes, paths for loading and running the program, and a default path for retrieving and saving documents)
- Restores the original drive and directory for your fixed-disk system when you exit DW 5/2 Composer Extension
- Starts DW 5/2 Composer Extension.

The **DW5C.CMD** file is saved in the root directory of the first fixed disk and in the directory you specify as the program path. The Install program sets up **\DW5-2C** as the program path. DW 5/2 Composer Extension uses the program path to locate the DW 5/2 Composer Extension program files to be loaded.

Memory Requirements

The amount of memory required to run DW 5/2 Composer is the same amount required for OS/2, which should already be installed on your system. OS/2 Version 1.1 EE requires 3 megabytes of memory. OS/2 Version 1.1 SE requires between 3 and 4 megabytes of memory. Refer to the *IBM OS/2* documentation for information on OS/2 memory requirements.

Generally, the addition of more memory will improve performance in a stand-alone environment.

Code Page Switching

All code page switching is done outside of the DW 5/2 Composer Extension environment. Refer to the *IBM OS/2* documentation for information on how to switch code pages.

Voice/Audio Support

DW 5/2 Composer Extension does not support the IBM Voice Communications Adapter card and the IBM Voice Communications Operating Subsystem program. **Existing voice notes will be stripped from the document.**

Font Generation

The composer contains three *families* of typefaces: CG Times, CG Triumvirate and CS Courier. Each *family* contains four typeface styles: Roman, Italic, Bold and Bold Italic. An example of a *typeface*, therefore, is CG Times Bold. A typeface is an outline that can be *rendered*, that is, interpreted or translated into a particular size. A *font* is a rendering of a typeface in a particular type size.

During the initial installation of DW 5/2 Composer, the following fonts are automatically rendered:

- CG Times 9, 10 and 12 point
- CG Times Italic 12 point
- CG Triumvirate 10, 11, and 12 point
- CG Triumvirate Bold 10, 12, and 16 point

You may add other fonts using the installed typefaces. Many of the predefined stylesheets described in the *DW 5/2 Composer Extension Style Guide* use fonts other than those automatically generated in the initial installation. To use these stylesheets and to create a variety of your own designs, it is recommended that you generate a more robust and diversified group of fonts. It is also recommended that you generate screen fonts in order to take advantage of the fidelity of the screen representation in DW 5/2 Composer Extension.

If you want fonts other than those available in DW 5/2 Composer Extension, you may purchase additional typefaces and render fonts from them using the Font Librarian. Contact your IBM dealer or authorized representative.

Font Librarian

The Font Librarian is common to DW 5/2 and DW 5/2 Composer Extension and is used to maintain the shared font library. Movement and selection conventions are the same as in DW 5/2 and DW 5/2 Composer Extension. Use the cursor movement keys to highlight your selection and press the space bar to select. When all selections have

been made, submit your choices by pressing **Enter**. Press **Esc** to quit or cancel.

To Invoke the Librarian

- At the system prompt, type **FL**

The Font Librarian menu is displayed with the choices:

1. Font Installation
2. Import Font
3. Erase Font
4. Add Typeface
5. Remove Typeface

Font Installation

Choose **Font Installation (1)**. If more than one printer is installed, the composer presents you with a list of your installed printers from which you select the one for installing fonts.

The font generation program examines your system and based on the typefaces you have installed, presents options to you.

The Font Librarian presents you with a list of installed typefaces. Select one or more by highlighting the choice and pressing the space bar.

When all typeface choices are made, press **Enter** to submit them.

If you select Courier, a fixed-width typeface, your choices are presented in an array of pitches in the four styles: Roman, Bold, Italic and Bold Italic.

Make your selections by moving the highlight bar to your choice and pressing the space bar. When all your selections are tagged, press **Enter** to submit your choices.

Next, choose point sizes.

Point Sizes

Choose from three groups of point sizes:

- 6 to 14 point

Choose this group to generate 6, 8, 10, 12, and 14 point fonts. These are common sizes for body text and section headings.

- 18 to 24 point

Choose this group to generate 18, 20, and 24 point fonts. These are commonly used for small headings.

- 36 to 72 point

Choose this group to generate 26, 48, and 72 point fonts. These are large types, used for titles and so forth.

As you highlight each choice, the explanation line displays the specific point sizes to be generated.

In addition to the groups of point sizes provided, the composer provides three data entry boxes into which you may enter specific point sizes directly. The point sizes can be between 4 and 108 point in 1/2 point increments. The point sizes entered here can be in addition to, or instead of, the size groups provided.

Choose a character set, either the full set or one or more choices from Standard, European, Math and Symbols sets.

Choose No or Yes to generate screen fonts. Not generating every screen font saves time and storage space. For example, generating a screen font for Courier 10 pitch uses approximately 50,000 bytes. Generating screen fonts for a proportional (variable width) typographic typeface could use approximately 100,000 bytes. Once you have generated a screen font in a particular typeface, all other fonts in that typeface will be generated on the screen. If you choose not to generate screen fonts, the composer displays your text in the closest available screen font. While the typeface displayed is an approximation, the spacing and line breaks displayed are accurate.

The Font Librarian calculates space requirements and presents you with a request to confirm the operation.

Creating fonts could take a long time, depending on your selections.

Import Font

Importing allows you to convert an existing bitmap font to a composer font. For a description of the file format, see “Appendix A - Import Font File Format”.

Erase Font

Since each font may require considerable disk space, you may want to delete a font you no longer need.

To Erase a Font

1. Type **FL** at the system prompt to start the Font Librarian
2. Select **3 Erase Font**.
3. Select your printer from the list of installed printers.
4. Highlight the typeface for the font you want to erase and press the space bar to tag it.
5. If you do not want to erase all the fonts created from that typeface, press **→** to move to the size/pitch selections. Choose the size of the font you want to erase, then press **Enter**.
6. The Librarian erases the font(s) from your disk.

If text in a document uses a font which you have deleted, the composer will use a font of the closest type size.

Add Typeface

Before generating new *fonts* you must copy the *typefaces* onto your fixed disk.

To Add a Typeface

1. Type **FL** at the system prompt to start the Font Librarian
2. Choose **4 Add Typeface**.
3. Insert a typeface disk into drive **A**, then press **Enter**.

The Font Librarian copies the typefaces and installs them in the library. When the copying is complete, you are asked if you want to copy another disk.

4. Type **Y(Yes)** to copy another disk or **N(No)** to end the installation.

Remove Typeface

After you have created the fonts you want, you can remove the typefaces from your fixed disk. Since typefaces are only the outline used to create a font, you can remove the typeface without deleting the fonts you have generated.

To Delete a Typeface.

1. Type **FL** at the system prompt to start the Font Librarian.
2. Select **5 Remove Typeface**.

A list of the typefaces on your fixed disk is displayed.

3. Use **↑** or **↓** to move the highlight bar to the typeface you want to remove and press the space bar to tag it.
4. Press **Enter**.

The Font Librarian deletes the typeface.

Characters and Symbols Support

Characters and Symbols Support contains information about Characters Sets and Symbols Sets.

You can display and print a wide range of characters and symbols in addition to those engraved on your keyboard. The Characters Set charts, and Symbols Set charts on the following pages identify the characters and symbols used in DW 5/2 Composer Extension. Because DW 5/2 Composer Extension uses APA (All Points Addressable) mode, you can display all the EBCDIC (Extended Binary-Coded Decimal Interchange Code) characters and symbols shown in the charts.

Files imported from other programs may contain the ASCII equivalent shown in the charts. (Many IBM printer manuals refer to the ASCII character set as PC Character Set 1 and PC Character Set 2.)

Symbols can be entered in text mode only. Pressing **F12** displays the available symbols.

Related Topics:

“Charts for Characters and Symbols Sets” on page 12

“Profile” in *The DW 5/2 Composer Extension Reference Guide*

The charts on the following pages represent all the characters and symbols that can be displayed and printed using DW 5/2 Composer Extension. In these charts:

- The EBCDIC Graphic Character Names column identifies the EBCDIC Graphic Character.
- The EBCDIC columns identify the EBCDIC characters or symbols and their corresponding EBCDIC hexadecimal values.
- The ASCII columns identify the ASCII characters or symbols and their corresponding ASCII hexadecimal values.
- A small x signifies that a character should be put in that place
- An underline indicates that the character is not available.

This table is necessary for the third party font vendor and serves as a reference for the user to see which characters will Import/Export with RFT documents and Import from ASCII files from different code pages.

DW 5/2 Composer Extension Character Class
Breakdown and Character Codes

CC	Description	EBCDIC		CP 437		CP 850		CP 860		CP 863		CP 865		
ASCII PLUS Character Class														
33	Exclamation Point	!	256	4F	!	21	!	21	!	21	!	21	!	21
34	Quotation Marks	"	256	7F	"	22	"	22	"	22	"	22	"	22
35	Number Sign	#	256	7B	#	23	#	23	#	23	#	23	#	23
36	Dollar Sign	\$	256	5B	\$	24	\$	24	\$	24	\$	24	\$	24
37	Percent Sign	%	256	6C	%	25	%	25	%	25	%	25	%	25
38	Ampersand	&	256	50	&	26	&	26	&	26	&	26	&	26
39	Apostrophe	'	256	7D	'	27	'	27	'	27	'	27	'	27
40	Left Parenthesis	(	256	4D	(	28	(	28	(	28	(	28	(	28
41	Right Parenthesis	)	256	5D	)	29	)	29	)	29	)	29	)	29
42	Asterisk	*	256	5C	*	2A	*	2A	*	2A	*	2A	*	2A
43	Plus Sign	+	256	4E	+	2B	+	2B	+	2B	+	2B	+	2B
44	Comma	,	256	6B	,	2C	,	2C	,	2C	,	2C	,	2C
45	Syllable Hyphen	-	259	CA	-	2D	-	F0	-	2D	-	2D	-	2D
46	Period	.	256	4B	.	2E	.	2E	.	2E	.	2E	.	2E
47	Slash	/	256	61	/	2F	/	2F	/	2F	/	2F	/	2F
48	Zero	0	256	F0	0	30	0	30	0	30	0	30	0	30
49	One	1	256	F1	1	31	1	31	1	31	1	31	1	31
50	Two	2	256	F2	2	32	2	32	2	32	2	32	2	32
51	Three	3	256	F3	3	33	3	33	3	33	3	33	3	33
52	Four	4	256	F4	4	34	4	34	4	34	4	34	4	34
53	Five	5	256	F5	5	35	5	35	5	35	5	35	5	35
54	Six	6	256	F6	6	36	6	36	6	36	6	36	6	36
55	Seven	7	256	F7	7	37	7	37	7	37	7	37	7	37
56	Eight	8	256	F8	8	38	8	38	8	38	8	38	8	38
57	Nine	9	256	F9	9	39	9	39	9	39	9	39	9	39
58	Colon	:	256	7A	:	3A	:	3A	:	3A	:	3A	:	3A
59	Semicolon	;	256	5E	;	3B	;	3B	;	3B	;	3B	;	3B
60	Less Than Sign	<	256	4C	<	3C	<	3C	<	3C	<	3C	<	3C
61	Equal Sign	=	256	7E	=	3D	=	3D	=	3D	=	3D	=	3D

DW 5/2 Composer Extension Character Class
Breakdown and Character Codes

CC	Description	EBCDIC		CP 437		CP 850		CP 860		CP 863		CP 865		
ASCII PLUS Character Class														
62	Greater Than Sign	>	256	6E	>	3E	>	3E	>	3E	>	3E	>	3E
63	Question Mark	?	256	6F	?	3F	?	3F	?	3F	?	3F	?	3F
64	At Sign	@	256	7C	@	40	@	40	@	40	@	40	@	40
65	A Capital	A	256	C1	A	41	A	41	A	41	A	41	A	41
66	B Capital	B	256	C2	B	42	B	42	B	42	B	42	B	42
67	C Capital	C	256	C3	C	43	C	43	C	43	C	43	C	43
68	D Capital	D	256	C4	D	44	D	44	D	44	D	44	D	44
69	E Capital	E	256	C5	E	45	E	45	E	45	E	45	E	45
70	F Capital	F	256	C6	F	46	F	46	F	46	F	46	F	46
71	G Capital	G	256	C7	G	47	G	47	G	47	G	47	G	47
72	H Capital	H	256	C8	H	48	H	48	H	48	H	48	H	48
73	I Capital	I	256	C9	I	49	I	49	I	49	I	49	I	49
74	J Capital	J	256	D1	J	4A	J	4A	J	4A	J	4A	J	4A
75	K Capital	K	256	D2	K	4B	K	4B	K	4B	K	4B	K	4B
76	L Capital	L	256	D3	L	4C	L	4C	L	4C	L	4C	L	4C
77	M Capital	M	256	D4	M	4D	M	4D	M	4D	M	4D	M	4D
78	N Capital	N	256	D5	N	4E	N	4E	N	4E	N	4E	N	4E
79	O Capital	O	256	D6	O	4F	O	4F	O	4F	O	4F	O	4F
80	P Capital	P	256	D7	P	50	P	50	P	50	P	50	P	50
81	Q Capital	Q	256	D8	Q	51	Q	51	Q	51	Q	51	Q	51
82	R Capital	R	256	D9	R	52	R	52	R	52	R	52	R	52
83	S Capital	S	256	E2	S	53	S	53	S	53	S	53	S	53
84	T Capital	T	256	E3	T	54	T	54	T	54	T	54	T	54
85	U Capital	U	256	E4	U	55	U	55	U	55	U	55	U	55
86	V Capital	V	256	E5	V	56	V	56	V	56	V	56	V	56
87	W Capital	W	256	E6	W	57	W	57	W	57	W	57	W	57
88	X Capital	X	256	E7	X	58	X	58	X	58	X	58	X	58
89	Y Capital	Y	256	E8	Y	59	Y	59	Y	59	Y	59	Y	59
90	Z Capital	Z	256	E9	Z	5A	Z	5A	Z	5A	Z	5A	Z	5A

DW 5/2 Composer Extension Character Class
 Breakdown and Character Codes

CC	Description	EBCDIC		CP 437		CP 850		CP 860		CP 863		CP 865		
ASCII PLUS Character Class														
91	Left Bracket	[	259	4A	[	5B	[	5B	[	5B	[	5B	[	5B
92	Backslash	\	256	E0	\	5C	\	5C	\	5C	\	5C	\	5C
93	Right Bracket	]	259	5A	]	5D	]	5D	]	5D	]	5D	]	5D
94	Circumflex Accent	^	259	5F	^	5E	^	5E	^	5E	^	5E	^	5E
95	Underline, Continuous Underscore	_	256	6D	_	5F	_	5F	_	5F	_	5F	_	5F
96	Grave Accent	`	259	79	`	60	`	60	`	60	`	60	`	60
97	a Small	a	256	81	a	61	a	61	a	61	a	61	a	61
98	b Small	b	256	82	b	62	b	62	b	62	b	62	b	62
99	c Small	c	256	83	c	63	c	63	c	63	c	63	c	63
100	d Small	d	256	84	d	64	d	64	d	64	d	64	d	64
101	e Small	e	256	85	e	65	e	65	e	65	e	65	e	65
102	f Small	f	256	86	f	66	f	66	f	66	f	66	f	66
103	g Small	g	256	87	g	67	g	67	g	67	g	67	g	67
104	h Small	h	256	88	h	68	h	68	h	68	h	68	h	68
105	i Small	i	256	89	i	69	i	69	i	69	i	69	i	69
106	j Small	j	256	91	j	6A	j	6A	j	6A	j	6A	j	6A
107	k Small	k	256	92	k	6B	k	6B	k	6B	k	6B	k	6B
108	l Small	l	256	93	l	6C	l	6C	l	6C	l	6C	l	6C
109	m Small	m	256	94	m	6D	m	6D	m	6D	m	6D	m	6D
110	n Small	n	256	95	n	6E	n	6E	n	6E	n	6E	n	6E
111	o Small	o	256	96	o	6F	o	6F	o	6F	o	6F	o	6F
112	p Small	p	256	97	p	70	p	70	p	70	p	70	p	70
113	q Small	q	256	98	q	71	q	71	q	71	q	71	q	71
114	r Small	r	256	99	r	72	r	72	r	72	r	72	r	72
115	s Small	s	256	A2	s	73	s	73	s	73	s	73	s	73
116	t Small	t	256	A3	t	74	t	74	t	74	t	74	t	74
117	u Small	u	256	A4	u	75	u	75	u	75	u	75	u	75
118	v Small	v	256	A5	v	76	v	76	v	76	v	76	v	76
119	w Small	w	256	A6	w	77	w	77	w	77	w	77	w	77

DW 5/2 Composer Extension Character Class
Breakdown and Character Codes

CC	Description	EBCDIC		CP 437		CP 850		CP 860		CP 863		CP 865		
ASCII PLUS Character Class														
120	x Small	x	256	A7	x	78	x	78	x	78	x	78	x	78
121	y Small	y	256	A8	y	79	y	79	y	79	y	79	y	79
122	z Small	z	256	A9	z	7A	z	7A	z	7A	z	7A	z	7A
123	Left Brace	{	259	C0	{	7B	{	7B	{	7B	{	7B	{	7B
124	Logical OR, Vertical Line Unbroken	|	256	BB	|	7C	|	7C	|	7C	|	7C	|	7C
125	Right Brace	}	259	D0	}	7D	}	7D	}	7D	}	7D	}	7D
126	Tilde Accent	~	259	A1	~	7E	~	7E	~	7E	~	7E	~	7E
156	Pound Sign	£	256	B1	£	9C	£	9C	£	9C	£	9C	£	9C
158	Multiply Sign	×	259	A5	×	5F	×	9E	×	5F	×	5F	×	5F
169	Registered Trademark Symbol	®	259	7F	•	FA	®	A9	•	FA	•	FA	•	FA
170	Logical Not	¬	256	BA	¬	AA	¬	AA	¬	AA	¬	AA	¬	AA
171	One Half - Fraction	½	256	B8	½	AB	½	AB	½	AB	½	AB	½	AB
172	One Quarter - Fraction	¼	256	B7	¼	AC	¼	AC	¼	AC	¼	AC	¼	AC
176	Trademark Symbol	™	259	9D	◆	04	—	5F	—	5F	◆	04	—	5F
177	Dagger	†	259	4B	—	5F	—	5F	—	5F	—	5F	—	5F
178	Open Single Quote	'			'	27	'	27	'	27	'	27	'	27
179	Double Dagger	‡	259	59	—	5F	—	5F	—	5F	—	5F	—	5F
180	Liter Symbol	ℓ	259	D7	—	5F	—	5F	—	5F	—	5F	—	5F
184	Copyright Symbol	©	259	4E	—	A9	©	B8	—	5F	—	A9	—	A9
185	Minus Sign	—	259	60	—	2D	—	2D	—	2D	—	2D	—	2D
186	0 Subscript	₀	259	B0	—	5F	—	5F	—	5F	—	5F	—	5F
187	Minute Symbol	'	259	6A	—	27	—	27	—	27	—	27	—	27
188	Open Double Quote	"			"	22	"	22	"	22	"	22	"	22
189	Cent Sign	¢	256	B0	¢	9B	¢	BD	¢	9B	¢	9B	—	5F
190	Yen Sign	¥	256	B2	¥	9D	¥	BE	—	5F	—	5F	—	5F
191	Per mille Symbol	‰	259	90	—	5F	—	5F	—	5F	—	5F	—	5F
192	Prescription Symbol	℞	259	54	■	DC	■	DC	■	DC	■	DC	■	DC
194	Close Double Quote	"			"	22	"	22	"	22	"	22	"	22
195	En Dash	—			—	2D	—	2D	—	2D	—	2D	—	2D

DW 5/2 Composer Extension Character Class
Breakdown and Character Codes

CC	Description	EBCDIC		CP 437	CP 850	CP 860	CP 863	CP 865
ASCII PLUS Character Class								
196	Em Dash			-	2D	-	2D	-
207	1 Subscript	1	259	B1	5F	-	5F	-
221	Fraction One Eighth	¼	259	FB	5F	-	5F	-
223	Em Leader			-	5F	-	5F	-
230	2 Subscript	2	259	B2	5F	-	5F	-
240	Fraction Three Eighths	¾	259	FC	5F	-	5F	-
241	Plus or Minus Sign	±	256	8F	±	F1	±	F1
242	Fraction Five Eighths	⅝	259	FD	5F	-	5F	-
243	Three Quarters - Fraction	¾	256	B9	■	FE	¼	F3
244	Paragraph Symbol (USA)	¶	259	C8	¶	14	¶	14
245	Section Symbol (USA)	§	259	D2	§	15	§	15
246	Divide Sign	÷	259	7A	÷	F6	÷	F6
248	Degree Symbol	°	256	90	°	F8	°	F8
250	Numeric Space		256	E1		20		20
251	Required Space		259	41		20		20
253	Fraction Seven Eighths	⅞	259	FE	-	5F	-	5F
254	3 Subscript	3	259	B3	-	5F	-	5F
255	International Currency Symbol	¤	259	BE	▶	10	¤	CF
256	4 Subscript	4	259	B4	-	5F	-	5F
257	5 Subscript	5	259	B5	-	5F	-	5F
258	6 Subscript	6	259	B6	-	5F	-	5F
259	7 Subscript	7	259	B7	-	5F	-	5F
260	8 Subscript	8	259	B8	-	5F	-	5F
261	9 Subscript	9	259	B9	-	5F	-	5F
262	0 Superscript	0	259	F0	-	5F	-	5F
263	1 Superscript	1	259	F1	‡	5F	‡	FB
264	2 Superscript	2	259	F2	‡	FD	‡	FD
265	3 Superscript	3	259	F3	n	FC	3	FC
266	4 Superscript	4	259	F4	-	5F	-	5F

DW 5/2 Composer Extension Character Class
 Breakdown and Character Codes
 CC Description

		EBCDIC		CP 437	CP 850	CP 860	CP 863	CP 865
ASCII PLUS Character Class								
267	5 Superscript	⁵ 259	F5	- 5F	- 5F	- 5F	- 5F	- 5F
268	6 Superscript	⁶ 259	F6	- 5F	- 5F	- 5F	- 5F	- 5F
269	7 Superscript	⁷ 259	F7	- 5F	- 5F	- 5F	- 5F	- 5F
270	8 Superscript	⁸ 259	F8	- 5F	- 5F	- 5F	- 5F	- 5F
271	9 Superscript	⁹ 259	F9	- 5F	- 5F	- 5F	- 5F	- 5F
272	Zero Slash	Ø 259	FA	## B2	## B2	## B2	## B2	## B2

DW 5/2 Composer Extension Character Class
 Breakdown and Character Codes
 CC Description

		EBCDIC		CP 437		CP 850		CP 860		CP 863		CP 865		
EUROPEAN Character Class														
127	Peseta Sign	Pt	256	B3	Pt	9E	Pt	FA	Pt	9E	-	5F	Pt	9E
128	C Cedilla Capital	Ç	256	68	Ç	80	Ç	80	Ç	80	Ç̇	80	Ç	80
129	u Diaeresis Small	û	256	DC	û	81	û	81	û	81	û	81	û	81
130	e Acute Small	é	256	51	é	82	é	82	é	82	é	82	é	82
131	a Circumflex Small	â	256	42	â	83	â	83	â	83	â	83	â	83
132	a Diaeresis Small	ã	256	43	ã	84	ã	84	-	5F	-	5F	ã	84
133	a Grave Small	à	256	44	à	85	à	85	à	85	à	85	à	85
134	a Overcircle Small	á	256	47	á	86	á	86	-	5F	-	5F	á	86
135	c Cedilla Small	ç	256	48	ç	87	ç	87	ç	87	ç	87	ç	87
136	e Circumflex Small	ê	256	52	ê	88	ê	88	ê	88	ê	88	ê	88
137	e Diaeresis Small	ë	256	53	ë	89	ë	89	-	5F	-	5F	ë	89
138	e Grave Small	è	256	54	è	8A	è	8A	è	8A	è	8A	è	8A
139	i Diaeresis Small	ï	256	57	ï	8B	ï	8B	-	5F	-	5F	ï	8B
140	i Circumflex Small	î	256	56	î	8C	î	8C	-	5F	-	5F	î	8C
141	i Grave Small	í	256	58	í	8D	í	8D	-	5F	-	5F	í	8D
142	A Diaeresis Capital	Ä	256	63	Ä	8E	Ä	8E	-	5F	-	5F	Ä	8E
143	A Overcircle Capital	Å	256	67	Å	8F	Å	8F	-	5F	-	5F	Å	8F
144	E Acute Capital	É	256	71	É	90	É	90	È	90	È	90	É	90
145	ae Diphthong Small	æ	256	9C	æ	91	æ	91	-	5F	-	5F	æ	91
146	AE Diphthong Capital	Æ	256	9E	Æ	92	Æ	92	-	5F	-	5F	Æ	92
147	o Circumflex Small	ô	256	CB	ô	93	ô	93	ô	93	ô	93	ô	93
148	o Diaeresis	õ	256	CC	õ	94	õ	94	-	5F	-	5F	õ	94
149	o Grave Small	ò	256	CD	ò	95	ò	95	ò	95	-	5F	ò	95
150	u Circumflex Small	ù	256	DB	ù	96	ù	96	-	5F	-	5F	ù	96
151	u Grave Small	ú	256	DD	ú	97	ú	97	ù	97	ù	97	ú	97
152	y Diaeresis Small	ÿ	256	DF	ÿ	98	ÿ	98	-	5F	-	5F	ÿ	98
153	O Diaeresis Capital	Ö	256	EC	Ö	99	Ö	99	-	5F	-	5F	Ö	99
154	U Diaeresis Capital	Û	256	FC	Û	9A	Û	9A	Ū	9A	Ū	9A	Û	9A
155	o Slash Small	ø	256	70	o	6F	ø	9B	o	6F	o	6F	ø	9B

DW 5/2 Composer Extension Character Class
Breakdown and Character Codes

CC	Description	EBCDIC		CP 437		CP 850		CP 860		CP 863		CP 865		
EUROPEAN Character Class														
157	O Slash Capital	Ø	256	80	O	4F	Ø	9D	O	4F	O	4F	Ø	9D
159	Florin Sign	f	256	B4	f	9F	f	9F	_	5F	f	9F	f	9F
160	a Acute Small	á	256	45	á	A0	á	A0	á	A0	-	5F	á	A0
161	i Acute Small	í	256	55	í	A1	í	A1	í	A1	-	5F	í	A1
162	o Acute Small	ó	256	CE	ó	A2	ó	A2	ó	A2	ó	A2	ó	A2
163	u Acute Small	ú	256	DE	ú	A3	ú	A3	ú	A3	ú	A3	ú	A3
164	n Tilde Small	ñ	256	49	ñ	A4	ñ	A4	ñ	A4	-	5F	ñ	A4
165	N Tilde Capital	Ñ	256	69	Ñ	A5	Ñ	A5	Ñ	A5	-	5F	Ñ	A5
166	a Underline Small (Ordinal Indicator, Female)	â	256	9A	â	A6	â	A6	â	A6	-	5F	â	A6
167	o Underline Small (Ordinal Indicator, Male)	ë	256	9B	ë	A7	ë	A7	ë	A7	-	5F	ë	A7
168	Question Mark Inverted	¿	256	AB	¿	A8	¿	A8	¿	A8	-	5F	¿	A8
173	Exclamation Point Inverted	¡	256	AA	¡	AD	¡	AD	¡	AD	-	5F	¡	AD
174	Left Angle Quotes (Double)	«	256	8A	«	AE	«	AE	«	AE	«	AE	«	AE
175	Right Angle Quotes (Double)	»	256	8B	»	AF	»	AF	»	AF	»	AF	-	5F
181	A Acute Capital	Á	256	65	-	5F	Á	B5	Á	86	-	5F	-	5F
182	A Circumflex Capital	Â	256	62	-	5F	Â	B6	Â	8F	Â	84	-	5F
183	A Grave Capital	À	256	64	-	5F	À	B7	À	91	À	8E	-	5F
193	Seconds Symbol	"	259	7E	-	22	"	22	"	22	"	22	"	22
197	Inferior Unquote				-	5F	-	5F	-	5F	-	5F	-	5F
198	a Tilde Small	ã	256	46	-	5F	ã	C6	ã	84	-	5F	-	5F
199	A Tilde Capital	Ã	256	66	-	5F	Ã	C7	Ã	8E	-	5F	-	5F
200	Open Single French Quote				-	5F	-	5F	-	5F	-	5F	-	5F
201	Close Single French Quote				-	5F	-	5F	-	5F	-	5F	-	5F
202	OE Diphthong Capital				-	5F	-	5F	-	5F	-	5F	-	5F
203	oe Diphthong Small				-	5F	-	5F	-	5F	-	5F	-	5F
204	IJ Diphthong Capital				-	5F	-	5F	-	5F	-	5F	-	5F
205	ij Diphthong Small				-	5F	-	5F	-	5F	-	5F	-	5F
206	Y Diaeresis Capital				-	5F	-	5F	-	5F	-	5F	-	5F
208	eth Icelandic Small	ð	256	8C	-	5F	ð	D0	-	5F	-	5F	-	5F

DW 5/2 Composer Extension Character Class
Breakdown and Character Codes

CC	Description	EBCDIC		CP 437	CP 850	CP 860	CP 863	CP 865
EUROPEAN Character Class								
209	Eth Icelandic Capital	Ð 256 AC	-	5F	Ð D1	5F	5F	5F
210	E Circumflex Capital	Ê 256 72	-	5F	Ê D2	Ě 89	Ě 92	5F
211	E Diaeresis Capital	Ë 256 73	-	5F	Ë D3	5F	Ë 94	5F
212	E Grave Capital	È 256 74	-	5F	È D4	Ě 92	È 91	5F
213	i Dotless Small	ı 256 DA	-	5F	ı D5	5F	5F	5F
214	I Acute Capital	Í 256 75	-	5F	Í D6	Ī 8B	5F	5F
215	I Circumflex Capital	Î 256 76	-	5F	Î D7	5F	Ī A8	5F
216	I Diaeresis Capital	Ï 256 77	-	5F	Ï D8	5F	Ï 95	5F
217	S Caron Capital		-	5F	5F	5F	5F	5F
218	s Caron Small		-	5F	5F	5F	5F	5F
219	Z Caron Capital		-	5F	5F	5F	5F	5F
220	z Caron Small		-	5F	5F	5F	5F	5F
222	I Grave Capital	İ 256 78	-	5F	İ DE	Ī 98	5F	5F
224	O Acute Capital	Ó 256 EE	-	5F	Ó E0	Ó 9F	5F	5F
225	Sharp s Small	ß 256 59	ß	E1	ß E1	ß E1	ß E1	E1
226	O Circumflex Capital	Ô 256 EB	-	5F	Ô E2	Ô 8C	Ô 99	5F
227	O Grave Capital	Ò 256 ED	-	5F	Ò E3	Ò A9	5F	5F
228	o Tilde Small	ö 256 CF	-	5F	ö E4	ö 94	5F	5F
229	O Tilde Capital	Õ 256 EF	-	5F	Õ EF	Õ 99	5F	5F
231	Thorn Icelandic Small	þ 256 8E	-	5F	þ E7	5F	5F	5F
232	Thorn Icelandic Capital	Þ 256 AE	-	5F	Þ E8	5F	5F	5F
233	U Acute Capital	Ú 256 FE	-	5F	Ú E9	Û 96	5F	5F
234	U Circumflex Capital	Û 256 FB	-	5F	Û EA	5F	Û 9E	5F
235	U Grave Capital	Û 256 FD	-	5F	Û EB	Û 9D	Û 9D	5F
236	y Acute Small	ÿ 256 8D	-	5F	ÿ EC	5F	5F	5F
237	Y Acute Capital	Ÿ 256 AD	-	5F	Ÿ ED	5F	5F	5F
252	Double Exclamation Point		-	5F	5F	5F	5F	5F

DW 5/2 Composer Extension Character Class
Breakdown and Character Codes

CC	Description	EBCDIC	CP 437	CP 850	CP 860	CP 863	CP 865
MATH Character Class							
275	Equal Sign Superscript	=	259 42	5F	5F	5F	5F
276	Minus Sign Superscript	-	259 43	5F	5F	5F	5F
277	Plus Sign Superscript	+	259 44	5F	5F	5F	5F
278	Infinity Symbol Superscript	∞	259 45	5F	5F	5F	5F
279	Pi Superscript	π	259 46	5F	5F	5F	5F
280	Delta Superscript	Δ	259 47	5F	5F	5F	5F
281	Right Arrow Superscript	\rightarrow	259 48	5F	5F	5F	5F
282	Slash Superscript	/	259 49	5F	5F	5F	5F
283	Less Than Or Equal Sign	\leq	259 50	F3	5F	F3	F3
284	Radical	$\sqrt{\quad}$	259 4F	FB	5F	FB	FB
286	Left Angle Bracket Superscript	\langle	259 52	DE	5F	DE	DE
288	Right Angle Bracket Superscript	\rangle	259 53	DD	5F	DD	DD
289	"Is not an Element of" Symbol	\notin	259 55	5F	5F	5F	5F
290	"Therefore" Symbol	\therefore	259 56	5F	5F	5F	5F
291	Increase	\nearrow	259 57	5F	5F	5F	5F
292	Decrease	\searrow	259 58	5F	5F	5F	5F
293	Middle Dot, Product Dot	\cdot	259 5B	F9	FA	F9	F9
294	Not Equal Sign	\neq	259 5C	AA	AA	AA	AA
295	Greater Than or Equal Sign	\geq	259 61	F2	5F	F2	F2
296	OR Symbol	\vee	259 62	5F	5F	5F	5F
297	AND Symbol	\wedge	259 63	5F	5F	5F	5F
298	Parallel Symbol	\parallel	259 64	B1	B1	B1	B1
299	Angle Symbol	\sphericalangle	259 65	5F	5F	5F	5F
300	Left Angle Bracket	\langle	259 66	5F	5F	5F	5F
301	Right Angle Bracket	\rangle	259 67	5F	5F	5F	5F
306	Integral Symbol	\int	259 6F	5F	5F	5F	5F
307	Intersection, Logical Product	\cap	259 70	EF	5F	EF	EF
308	Union, Logical Sum	\cup	259 71	5F	5F	5F	5F
309	"Is Included In" Symbol	\subset	259 72	5F	5F	5F	5F

DW 5/2 Composer Extension Character Class
Breakdown and Character Codes

CC	Description	EBCDIC		CP 437	CP 850	CP 860	CP 863	CP 865	
MATH Character Class									
310	"Includes" Symbol	⊃	259 73	-	5F	-	5F	-	5F
311	Circle Plus, Closed Sum	⊕	259 74	-	5F	-	5F	-	5F
312	Right Angle Symbol	⊥	259 75	⊥	1C	⊥	1C	⊥	1C
313	Circle x, Closed Product	⊗	259 77	-	5F	-	5F	-	5F
318	Alpha - Small	α	259 81	α	E0	α	E0	α	E0
319	Beta - Small	β	259 82	β	E1	β	E1	β	E1
320	Psi - Small	ψ	259 83	-	5F	-	5F	-	5F
321	Phi - Small	φ	259 84	φ	ED	φ	ED	φ	ED
322	Epsilon - Small	ε	259 85	ε	EE	ε	EE	ε	EE
323	Pi - Small	π	259 86	π	E3	π	E3	π	E3
324	Lambda - Small	λ	259 87	-	5F	-	5F	-	5F
325	Eta - Small	η	259 88	-	5F	-	5F	-	5F
326	Iota - Small	ι	259 89	-	5F	-	5F	-	5F
329	Theta - Small (Open Form)	ϑ	259 91	-	5F	-	5F	-	5F
330	Kappa - Small	κ	259 92	-	5F	-	5F	-	5F
331	Omega - Small	ω	259 93	-	5F	-	5F	-	5F
332	Radical Extension			-	5F	-	5F	-	5F
333	Nu - Small	ν	259 95	-	5F	-	5F	-	5F
334	Omicron - Small	ο	259 96	-	5F	-	5F	-	5F
335	Rho - Small	ρ	259 97	-	5F	-	5F	-	5F
336	Gamma - Small	γ	259 98	-	5F	-	5F	-	5F
338	Theta - Small	θ	259 99	-	5F	-	5F	-	5F
341	"Congruent To" Symbol	≅	259 A0	≈	F7	≈	F7	≈	F7
342	Sigma - Small	σ	259 A2	σ	E5	σ	E5	σ	E5
343	Tau - Small	τ	259 A3	τ	E7	τ	E7	τ	E7
344	Xi - Small	ξ	259 A4	-	5F	-	5F	-	5F
346	Delta - Small	δ	259 A6	δ	EB	δ	EB	δ	EB
347	Chi - Small	χ	259 A7	-	5F	-	5F	-	5F
348	Upsilon - Small	υ	259 A8	-	5F	-	5F	-	5F

DW 5/2 Composer Extension Character Class
Breakdown and Character Codes

CC	Description	EBCDIC		CP 437	CP 850	CP 860	CP 863	CP 865
MATH Character Class								
349	Zeta - Small	ζ	259	A9	-	5F	-	5F
350	Lower Right / Upper Left Brace Section	}	259	AE	-	5F	-	5F
351	Upper Right / Lower Left Brace Section	{	259	AF	-	5F	-	5F
352	Minus Sign or Plus Sign	±	259	68	5F	5F	5F	5F
353	Solid Diamond	◆	259	CB	◆	04	◆	04
354	Mu - Small (Micro Symbol)	μ	256	A0	μ	E6	μ	E6
355	Down Arrow	↓	259	D6	↓	19	↓	19
362	Perpendicular Symbol	⊥	259	BA	-	5F	-	5F
363	Total Symbol	×	259	BB	-	5F	-	5F
364	Del, Delt, Nabla	∇	259	C1	-	5F	-	5F
365	Infinity Symbol	∞	259	C2	∞	EC	∞	EC
366	Psi - Capital	Ψ	259	C3	5F	5F	5F	5F
367	Phi - Capital	Φ	259	C4	Φ	E8	Φ	E8
368	Left Arrow	←	259	C5	←	1B	←	1B
369	Pi - Capital	Π	259	C6	-	5F	-	5F
370	Lambda - Capital	Λ	259	C7	-	5F	-	5F
371	Up Arrow	↑	259	C9	↑	18	↑	18
375	Substitute Blank (b with slash)	Ⓟ	259	CF	⋮	B0	⋮	B0
376	Omega - Capital	Ω	259	D3	Ω	EA	Ω	EA
377	Partial Differential Symbol	∂	259	D4	5F	5F	5F	5F
378	Sine Symbol	~	259	D5	~	7E	~	7E
380	Gamma - Capital	Γ	259	D8	Γ	E2	Γ	E2
381	Theta - Capital	Θ	259	D9	Θ	E9	Θ	E9
382	Upper Sumrnation Section	∑	259	DE	-	5F	-	5F
383	Lower Sumrnation Section	∑	259	DF	-	5F	-	5F
384	Sigma - Capital	Σ	259	E2	Σ	E4	Σ	E4
385	Right Arrow	→	259	E3	-	5F	-	5F
386	Xi - Capital	Ξ	259	E4	-	5F	-	5F
387	*Proportional To* Symbol	∝	259	E5	-	5F	-	5F

DW 5/2 Composer Extension Character Class
 Breakdown and Character Codes

CC	Description	EBCDIC		CP 437		CP 850		CP 860		CP 863		CP 865		
MATH Character Class														
388	Delta - Capital	Δ	259	E6	~	7E	∅	7F	∅	7F	∅	7F	∅	7F
389	Identity Symbol	≡	259	E7	≡	F0	-	5F	≡	F0	.	F0	≡	F0
390	Upsilon - Capital	Υ	259	E8	-	5F	-	5F	≡	5F	≡	5F	≡	5F
391	"Approximately Equal To" Symbol	≈	259	E9	≈	F7	-	5F	≈	F7	≈	F7	≈	F7
392	"Equivalent To" Symbol, Cycle Symbol (Similiar)	~	259	EA	∅	EF	-	5F	∅	EF	∅	EF	∅	EF
395	Upper Integral Section	∫	259	EE	∫	F4	-	5F	∫	F4	∫	F4	∫	F4
396	Lower Integral Section	∫	259	EF	∫	F5	-	5F	∫	F5	∫	F5	∫	F5

DW 5/2 Composer Extension Character Class
Breakdown and Character Codes

CC	Description	EBCDIC	CP 437	CP 850	CP 860	CP 863	CP 865
SYMBOL Character Class							
446	End of Line Symbol		AA	AA	AA	AA	AA
447	Down Pointing Triangle		1F	1F	1F	1F	1F
448	Arrow Indicator	▶ 259 EC	5F	5F	5F	5F	5F
449	Vertical Line Broken		|	|	|	|	|
450	Bottle Symbol	● 259 CD	5F	5F	5F	5F	5F
451	Left Pointing Triangle		11	11	11	11	11
452	Lozenge	⋈ 259 69	5F	5F	5F	5F	5F
453	Female Symbol	♀ 259 6B	0C	0C	0C	0C	0C
454	Large Bullet, Closed Circle	● 259 BC	•	•	•	•	•
455	Overline	— 259 DD	5F	5F	5F	5F	5F
456	Double Overline	= 259 80	x	x	x	x	x
457	Lower Left Parenthesis Section	⌋ 259 8F	5F	5F	5F	5F	5F
459	Lower Right Parenthesis Section	⌌ 259 9F	5F	5F	5F	5F	5F
460	Open Square	□ 259 DA	DB	DB	DB	DB	DB
461	Slash Square	◻ 259 DC	/	/	/	/	/
462	Solid Square	■ 259 DB	FE	FE	FE	FE	FE
463	Solid Triangle	▲ 259 ED	5F	5F	5F	5F	5F
464	Upper Left Parenthesis Section	{ 259 8E	5F	5F	5F	5F	5F
465	Upper Right Parenthesis Section	} 259 9E	5F	5F	5F	5F	5F
466	Male Symbol	♂ 259 6C	0B	0B	0B	0B	0B
467	Small Box, Filled		▪	▪	▪	▪	▪
468	Large Box, Filled		▪	▪	▪	▪	▪
469	Small Bullet, Filled		•	•	•	•	•
470	Medium Bullet, Filled		•	•	•	•	•
471	Small Box, Open		□	□	□	□	□
472	Large Box, Open		□	□	□	□	□
473	Small Bullet, Open		•	•	•	•	•
474	Medium Bullet, Open		•	•	•	•	•
475	Large Bullet, Open		•	•	•	•	•

DW 5/2 Composer Extension Character Class
 Breakdown and Character Codes

CC	Description	EBCDIC	CP 437	CP 850	CP 860	CP 863	CP 865
SYMBOL Character Class							
476	Heart		5F	5F	5F	5F	5F
477	Club		5F	5F	5F	5F	5F
478	Spade		5F	5F	5F	5F	5F
479	Musical Note, Single		5F	5F	5F	5F	5F
480	Musical Note, Double		5F	5F	5F	5F	5F
481	Smile Face, Open		5F	5F	5F	5F	5F
482	Smile Face, Filled		5F	5F	5F	5F	5F
483	Diamond		5F	5F	5F	5F	5F
484	Macron Accent	256 BC	5F	EE	5F	A7	5F
485	Acute Accent	259 7D	7	EF	7	A1	7
486	Cedilla Accent	256 9D	■	F7	■	»	AF
487	Diaeresis Accent	259 5E	■	F9	■	x	A4
488	Breve Accent	259 78		5F	5F	5F	5F
489	Caron Accent	259 CC		5F	5F	5F	5F
490	Center Box Bar Vertical, Single	259 8D	|	B3	|	B3	|
491	Right Middle Box Side, Single	259 AB	|	B4	|	B4	|
492	Right Middle Box Side, Double		||	B9	||	B9	||
493	Center Box Bar Vertical, Double		||	BA	||	BA	||
494	Upper Right Box Corner, Double		||	BB	||	BB	||
495	Lower Right Box Corner, Double		||	BC	||	BC	||
496	Upper Right Box Corner, Single	259 AA	|	BF	|	BF	|
497	Lower Left Box Corner, Single	259 8C	|	C0	|	C0	|
498	Middle Box Bottom, Single	259 9C	⊥	C1	⊥	C1	⊥
499	Middle Box Top, Single	259 9A	⊥	C2	⊥	C2	⊥
500	Left Middle Box Side, Single	259 8B	|	C3	|	C3	|
501	Center Box Bar Horizontal, Single	259 AD	-	C4	-	C4	-
502	Box Cross, Box Corner, Single	259 9B	⊥	C5	⊥	C5	⊥
503	Lower Left Box Corner, Double		||	C8	||	C8	||
504	Upper Left Box Corner, Double		||	C9	||	C9	||

DW 5/2 Composer Extension Character Class
Breakdown and Character Codes

CC	Description	EBCDIC			CP 437			CP 850			CP 860			CP 863			CP 865		
SYMBOL Character Class																			
505	Middle Box Bottom, Double							⌌	CA	⌌	CA	⌌	CA	⌌	CA	⌌	CA	⌌	CA
506	Middle Box Top, Double							⌌	CB	⌌	CB	⌌	CB	⌌	CB	⌌	CB	⌌	CB
507	Left Middle Box Side, Double							⌌	CC	⌌	CC	⌌	CC	⌌	CC	⌌	CC	⌌	CC
508	Center Box Bar Horizontal, Double							=	CD	=	CD	=	CD	=	CD	=	CD	=	CD
509	Box Cross, Box Corner, Double							⌌	CE	⌌	CE	⌌	CE	⌌	CE	⌌	CE	⌌	CE
510	Lower Right Box Corner, Single	┘	259	AC				┘	D9	┘	D9	┘	D9	┘	D9	┘	D9	┘	D9
511	Upper Box Left Corner, Single	┌	259	8A	┌			┌	DA	┌	DA	┌	DA	┌	DA	┌	DA	┌	DA

Printer Support

You can use DW 5/2 Composer Extension with the following printers, or their equivalents:

IBM 3812 Pageprinter Models 1 and 2
IBM 3852-2 Color Jetprinter
IBM 4201 Proprinter
IBM 4201 Proprinter II
IBM 4201 Proprinter III
IBM 4202 Proprinter XL
IBM 4202 Proprinter II XL
IBM 4202 Proprinter III XL
IBM 4207 Proprinter X24
IBM 4207 Proprinter X24E
IBM 4208 Proprinter XL24
IBM 4208 Proprinter XL24E
IBM 5152-2 Graphics Printer
IBM 5201 Quietwriter Model 2
IBM 5202 Quietwriter III
IBM 5204 Quickwriter
C.Itoh C-715A
Citizen 120-D
Epson EX-800
Epson EX-1000
Epson FX-86e
Epson FX-286
Epson FX-286e
Epson LQ-500
Epson LQ-800
Epson LQ-850
Epson LQ-1000
Epson LQ-1050
Epson LQ-2500
Epson LX-800
Hewlett-Packard LaserJet+
Hewlett-Packard LaserJet series II
NEC Pinwriter CP6
NEC Pinwriter CP7
NEC Pinwriter P6
NEC Pinwriter P7

NEC Pinwriter P9XL
OKIDATA MICROLINE 192 Plus
OKIDATA MICROLINE 193 Plus
OKIDATA MICROLINE 293
OKIDATA MICROLINE 393
OKIDATA MICROLINE 393C
Panasonic KX-P1080i
Panasonic KX-P1091i
Star NX-1000
Star NX-15
Toshiba P351 3-IN-ONE
Toshiba P351 3-IN ONE Model 2
Toshiba P351SX 3-IN-ONE

The following PostScript printers are supported:

IBM 4216 Model 030 Personal Page Printer II
QMS-PS 810
TI OmniLaser 2108
TI OmniLaser 2115

It is likely that other PostScript printers will perform well with DW 5/2 Composer Extension. Support for PostScript printers is provided using all native PostScript fonts. Support is such that only the PostScript data stream is sent to the printer achieving maximum printer speed.

DW 5/2 Composer Extension supports many printers of varying resolution capability. For dot matrix printers with resolution under 180 x 180, text in point sizes smaller than 6 may be unreadable, and text in point sizes larger than 30 may appear jagged.

Ribbon quality, platen tightness, and use of form feed in combination with platen tightness can also influence the appearance of your output.

DW 5/2 Composer Extension provides no capability for custom installation of a printer.

Scanner Support

You can use the following scanners with DW 5/2 Composer Extension:

- IBM Model 3117
- IBM Model 3119

See your scanner documentation for full information.

Applications Support

Applications Support contains information about document interchange and graphic files support.

Document Interchange

DW 5/2 Composer Extension provides a range of capabilities for interchanging documents with other IBM programs or systems, using DisplayWrite document files and the Revisable-Form Text Document Content Architecture (RFTDCA).

Document Interchange falls into three categories: Import, Revise, and Export.

Import

DW 5/2 Composer Extension allows you to import both DisplayWrite and RFTDCA documents into the current DW 5/2 Composer Extension document using the **Get (Ctrl + F6)** function. Non-text objects are not imported as part of the RFT stream.

You can also use **Get (Ctrl + F6)** to insert ASCII (American National Standard Code for Information Interchange) files as well as documents created with WordStar, MultiMate, MicroSoft Word, and WordPerfect.

The function imports text and takes on the characteristics of the current DW 5/2 Composer Extension document stylesheet. Attributes not specifically listed can be assumed to be lost.

The following attributes are preserved:

- Bold
- Italic
- Subscript
- Superscript
- Overstrike

Note: The overstrike character supported is a dash. All other overstrike characters encountered are converted to dash overstrikes.

- Underscore
- Double Underscore
- Tab Stops and Tab Characters

Note: Although tab characters are imported, they may not appear to exist in the current paragraph style unless the cursor rests on them.

Footnotes, endnotes, and textnotes are treated as regular text. Headers and footers are ignored during import. To preserve more of the original characteristics of DisplayWrite and RFTDCA documents, use Revise.

Revise

You may revise DisplayWrite and RFTDCA documents directly.

When a DisplayWrite/36TM¹ (DW/36), DisplayWrite AssistantTM (DWA), or DisplayWrite/370TM (DW/370) document is to be revised with DW 5/2 Composer Extension, the user should save the document in the revisable-form text (RFT) format.

DW 5/2 Composer Extension builds a stylesheet based on the import document and converts it to the composer format. Up to 20 paragraph styles can be created to support the paragraph properties in the original document. After the 20 paragraph styles are created, imported paragraphs are matched to the closest possible style.

Multiple columns are imported and each multiple-column sequence is treated as a separate story. A change in the column format starts a new story.

¹ DisplayWrite/36, DisplayWrite Assistant, and DisplayWrite/370 are trademarks of International Business Machines Corporation.

Non-text objects in IBM Graphics Object Content Architecture (GOCA) or IBM Image Object Content Architecture (IOCA) are imported.

DW 5/2 Composer Extension retains the following text attributes:

- Bold
- Italic
- Subscript
- Superscript
- Overstrike

Note: Only the dash is supported as an overstrike character. All other overstrike characters encountered are converted to dash overstrikes.

- Underscore
- Double Underscore
- Typeface Changes

Note: Typeface changes are matched to the closest DW 5/2 Composer Extension font.

- Tab Stops and Tab Characters

Note: tab characters are imported and tab paragraph styles supporting up to seven tab characters per paragraph are created automatically.

Created paragraph styles preserve the following information from the original:

- Line spacing
- Typestyle, point size
- Margins
- Paragraph format (Centered, Justified, Flush Right, Ragged Right, Tabbed)

Export

You may save a DW 5/2 Composer Extension document in RFT format by choosing an option on the **F2 End/Save** menu in the editor. The following text, structure, non-text objects, and story attributes are preserved:

1. Text Attributes

- Bold
- Subscript
- Superscript
- Overstrike
- Underscore
- Double Underscore

2. Structural Attributes

- Multiple Columns

One column change per page is allowed. When a second change in the number of columns on a single page is encountered, the remainder of the page is set to one column. To be recognized, multiple columns must have the same width and top and bottom coordinates.

- Line justification of centered, justified, ragged right or flush right.
- Tabs

Tab characters are exported and tab stops are set in the RFT document line format change.

- Margins
- Headers/Footers

3. Non-text Objects

Non-text objects in IBM GOCA or IBM IOCA format are imported.

4. Story Attributes

Stories are processed sequentially as they are encountered in the document. Each story is processed in its entirety followed by the

next story. For example, in a document with one story and multiple liftouts, the main story is processed first followed by the liftouts in sequential order. Each story is followed by a hard page break.

Supported Graphics Files

The following graphics files are supported for use in a document:

- Lotus PIC files
- DW 5/2 Composer PIC files
- IBM IOCA files
- IBM GOCA files
- PIF files
- TIFF files

Messages

This section contains a list of messages that require an action from you in order for the system to continue.

The messages are arranged alphabetically by the first character.

Each message includes a cause and an action. The cause describes what may have caused the message, and the action describes a possible response to the message.

Cannot adjust the current character.

Cause: The cursor is on a character that cannot be kerned, such as a space.

Action: Move the cursor to a displayed character.

Cannot delete last remaining paragraph style.

Cause: You have attempted to delete the one remaining paragraph style.

Action: You must have at least one paragraph style per document.

Cannot insert column break into this type of block.

Cause: You are attempting to insert a column break in a non-text block; for example, a caption or liftout.

Action: Move into a text block to insert a column break.

Cannot insert page break into this type of block.

Cause: You are attempting to insert a page break in a non-text block, a caption or liftout, for example.

Action: Move into a text block to insert a page break.

Cannot move any paragraph styles.

Cause: You have attempted to move a paragraph style when there is only one paragraph style for this document.

Action: This operation is not permitted.

Document not found.

Cause: You have entered a document name that is not valid.

Action: Check the spelling of the name you entered.

Invalid key pressed.

Cause: You have attempted an action which is not valid at this time. For example, you may be invoking a command in layout mode that is only valid in text mode.

Action: Review your action to see if you are in the appropriate mode. Check the menu bar for available commands.

No more paragraph styles can be created.

Cause: You have reached the limit of 25 paragraph styles per document.

Action: Delete a paragraph style you are no longer using.

Press Scroll Lock key and try again.

Cause: You have attempted an operation that is not available with Scroll Lock on.

Action: Press Scroll Lock to turn it off.

Press Switch to Text Key and try again.

Cause: You have attempted an operation that is only available in text mode.

Action: Switch to text mode.

Set file mask illegal in Directory Management.

Cause: You are attempting to set a file mask while in Directory Management mode.

Action: Press Switch Mode (F5) before setting a file mask.

Stylesheet cannot be found.

Cause: (1) The stylesheet does not exist, (2) the stylesheet is not in the directory where the composer looks for stylesheets. The default stylesheet directory is Styles. You can change the default using the Profile option from the Main Menu, or (3) you have deleted the stylesheet, BASIC, which composer uses when building imported documents and stylesheets.

Action: Check the directory for the stylesheet. Check the path composer uses to look for stylesheets. Copy the original BASIC.STY into the directory where you keep your stylesheets.

This picture format may not be manipulated.

Cause: You are attempting to slide or scale a picture in LOTUS.PIC or GOCA format.

Action: These file types cannot be manipulated.

This type of document cannot be changed.

Cause: You are attempting to open a document in a non-supported format.

Action: Convert the document to a supported format such as RFT or ASCII.

Appendix A. Import Font File Format

The following tables describe the file format which will be recognized by the Font Librarian Import Font function.

Definitions

Term	Description
IUNITS	Composer internal measurement units, equal to 1/900th inch. 1 point = 12.5 IUNITS
INTEGER	A 16 – bit signed number
LONG INTEGER	A 32 – bit signed number
CARDINAL	A 16 – bit unsigned number.

Font File Structure

The external font file is made up of the following records:

- Font Header Record
- Letter Table Record(s)
- Kern Table (optional)
- Bitmap Chunk Table Records(s)
- Bitmap Chunk Record(s).

Data Types

Listed below are the applicable data types.

- I = Integer
- C = Cardinal
- LI = Long integer
- E = Enumerated type
- S = String

Font header record

The Font Header describes the font attributes and the locations in the file of the Letter Table, Kern Table, Bitmap Table, and Copyright Notice. The format of the font header record is:

Offset	Length/Type	Field Description	Allowed Values	Comment
0	8/S	Reserved	[BWFONT]	
8	2/C	Reserved	113	
10	1/E	Reserved	2	
11	2/C	total height (pixels)	≥33	Sum of pixels above and below baseline cannot exceed total height
13	2/C	ascender height (pixels)		
15	2/C	descender depth (pixels)		
17	2/C	first character code in font file		
19	2/C	last character code in font file	≤511	
21	4/LI	offset of letter table		
25	2/I	underline offset (pixels)		+ above baseline – below baseline
27	2/C	underline thickness (pixels)		
29	2/I	strikeout offset (pixels)		+ above baseline – below baseline
31	2/C	strikeout thickness (pixels)		
33	2/I	double underline offset (pixels)		
35	2/C	double underline thickness (pixels)		
37	2/I	offset top to bottom underline (pixels)		
39	2/C	width of en space (pixels)		
41	2/C	width of hyphen (pixels)		
43	2/I	horizontal resolution (DPI)		
45	2/I	vertical resolution (DPI)		
47	2/I	horizontal/set size (IUNITS)		
49	2/I	vertical/point size (IUNITS)		
51	4/LI	typeface code		vendor supplied
55	50/S	typeface name		space padded, NUL terminated
105	4/C	family code	0	always 0

Offset	Length/Type	Field Description	Allowed Values	Comment
109	2	font attributes bit 0-UltraLight bit 1-Light bit 2-Book bit 3-Medium bit 4-SemiBold bit 5-Bold bit 6-UltraBold bit 7-Heavy bit 8-Italic bit 9-Outline bit 10-Condensed bit 11-Expanded bit 12-Monospaced(1)/Proportional(0) bit 13-Serif(1)/San Serif(0) bit 14-Script bit 15-Weirdo		bit 0-6 are mutually exclusive
111	1	character set bit 0-OFF(0) bit 1-ASCII Plus set bit 2-European set bit 3-Math set bit 4-Symbol set bit 5-OFF(0) bit 6-OFF(0) bit 7-OFF(0)		
112	1	Reserved	0	always 0
113	4/LI	offset of bitmap chunk table		
117	2/C	number of bitmap chunks		
119	4/LI	offset of kern pair table		
123	2/C	number of kern pair tables		
125	1/E	kern type	0 - none 1 - kern pairs 2 - sector kerning	
126	4/LI	offset of copyright message		
130	2/C	length of copyright message		
132	50/S	Postscript font name		space padded,NUL terminated

Letter table record

Each letter of a font has a 16 – byte record describing its size and how to draw it. All of the letter records are grouped into one table, called a letter table.

The letter table starts with the first character in the font file. Letter records must be sequential order and each letter between the beginning and ending letters must have an entry, even if the character does not exist in the font.

The Letter Table Record has the following format:

Offset	Length/Type	Field Description
0	2/C	width of bounding box in pixels
2	2/C	height of bounding box in pixels
4	2/I	offset from baseline in pixels, up (+) down (-)
6	2/I	number of pixels to move right (+) left(-)
8	2/C	net width of character in pixels
10	2/C	bitmap size if bitmap is run – length encoded, 0 NOT run – length encoded
12	2/C	number of bitmap chunk containing this letter
14	2/C	offset from beginning of bitmap chunk

Bitmap chunk table record

Because bitmaps can get very large, the total font bitmap storage is divided into chunks. Each chunk should be less than 32 Kilobytes.

The Bitmap chunk table has the following structure:

Offset	Length/Type	Field Description
0	2/C	size of bitmap area in bytes
2	4/LI	offset to bitmap chunk
6	2	Reserved
8	4	Reserved

Kern table record

The Kern Table can be either a table of kerned pairs or sectored kern information. The structure for kerned pairs is as follows:

Offset	Length/Type	Field Description
0	2/C	First character code
2	2/C	Second character code
4	2/I	Amount of kern in IUNITS*

*Negative number means characters will be closer

Sectored kerning consists of 4 two – byte numbers in each of left and right arrays. There are four kern values along each side of a character (8 values per character).

The smallest summed kerning value pair is chosen and the characters are kerned those relative values.

The structure for sectored kerning is as follows:

Offset	Length/Type	Field Description
0	2/I	Top left value in IUNITS
2	2/I	
4	2/I	
6	2/I	Bottom left value in IUNITS
8	2/I	Top right value in IUNITS
10	2/I	
12	2/I	
14	2/I	Bottom right value in IUNITS

Copyright message

The copyright message must be NUL terminated. The length includes the NUL terminator.

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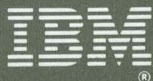
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