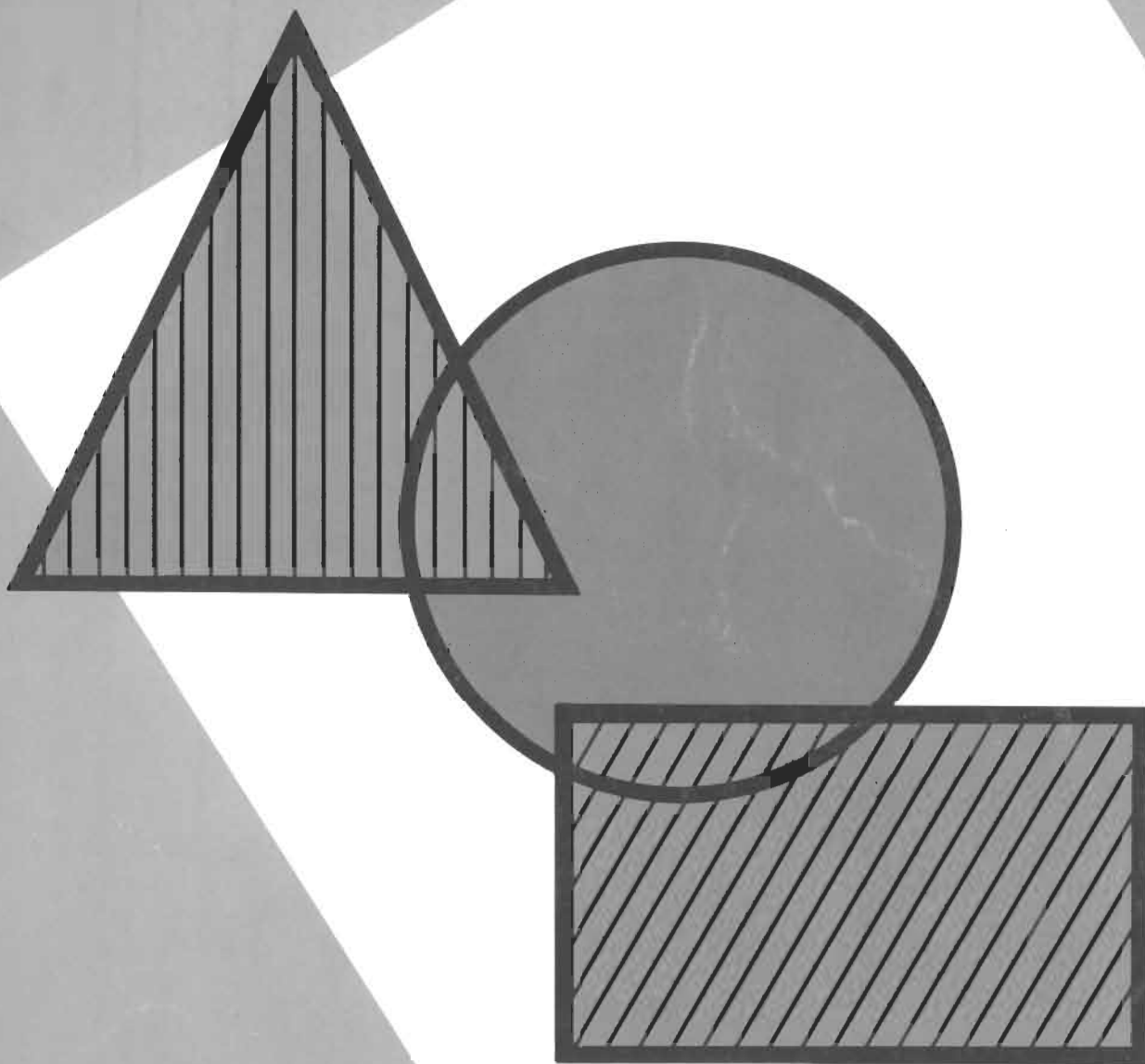


HEWLETT-PACKARD

HP-GL Product Comparison Guide



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HP-GL Product Comparison Guide



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Introduction

This manual provides information to aid in the design of hardware, firmware, or software for use with the HP family of HP-GL plotters. Its goal is to show the similarities and differences between plotter models and to provide the information needed to define the HP-GL instruction subset and general syntax that is compatible with any given combination of these plotters.

This manual is a continuation of the *HP-GL Programmer's Reference Manual* (Part No. (11)5953-9765). This new manual provides the same type of information for an updated selection of products. Refer to the following list of products covered by each manual. Note the addition of new products in the *Comparison Guide* and the overlap of current products.

HP-GL Programmer's Reference Manual	HP-GL Product Comparison Guide
7090A	7090A
7220A,C,S,T	7440A/17440A (ColorPro plotter)
7225A,B/17601A	7470A
7225A,B/17603A	7475A
7225A,B/17604A	7510A
7240A	7550A
7245A	7570A (DraftPro plotter)
7245B	7580A,B
7470A	7585A,B
7475A	7586B
7550A	7595A (DraftMaster I plotter)
7580A,B	7596A (DraftMaster II plotter)
7585A,B	
7586B	
9872A,B,C,S,T	

Before using the manual, please note the following items.

- Plotter models currently in production are shown in **boldface** type throughout this manual to differentiate them from obsolete models. Prior knowledge of HP-GL is assumed.
- Descriptions of the HP 7090 pertain only to its HP-GL plotting functions. The HP 7090 performs as a digital plotter and as an analog-to-digital measuring instrument.
- The product number rather than the marketing name is used in this document for the following products: 7440A (the ColorPro plotter), 7570A (the DraftPro plotter), and 7595A and 7596A (the DraftMaster I and II plotters).
- The term HP 758X denotes the following HP plotter models in any series: 7580, 7585, or 7586. HP 758XA denotes the 7580A and 7585A; HP 758XB denotes the 7580B, 7585B, and 7586B. HP 759XA denotes the 7595A and 7596A.
- Words typed in **SMALL BOLDFACE TYPE** are switches found on the plotter. **BOLD CONDENSED** type denotes a single ASCII character which should be sent to the plotter.

Following is a list of pertinent manuals recommended for use in conjunction with this manual. They should be used as memory refreshers and to determine characteristics such as front-panel operation and parameter ranges of device-control instructions.

Plotter Manuals

HP Plotter	Manual Title	Part Number
7090A	Interfacing and Programming Manual	07090-90001
7090A	Operator's Manual	07090-90002
7440A	Programming Manual	07440-90001
7440A	Operating Manual	07440-90002
7470A	Interfacing and Programming Manual	07470-90001
7470A	Operator's Manual	07470-90002
7475A	Interfacing and Programming Manual	07475-90001
7475A	Operation and Interconnection Manual	07475-90002
7510A	Programming Manual	07510-90001
7510A	Operating Manual	07510-90002
7550A	Interfacing and Programming Manual	07550-90001
7550A	Operation and Interconnection Manual	07550-90002
7570A	Programmer's Reference	07570-90001
7570A	User's Guide	07570-90002
7580A/7585A	Interfacing and Programming Manual	07580-90014
7580A/7585A	Operator's Manual	07580-90013
*7580B/7585B	Interfacing and Programming Manual	07580-90024
*7580B/7585B	Operator's Manual	07580-90023
**7580B/ 7585B/7586B	Interfacing and Programming Manual	07580-90034
**7580B/ 7585B/7586B	Operator's Manual	07580-90033
7595A/7596A	Programmer's Reference	07595-90001
7595A/7596A	User's Guide	07595-90002

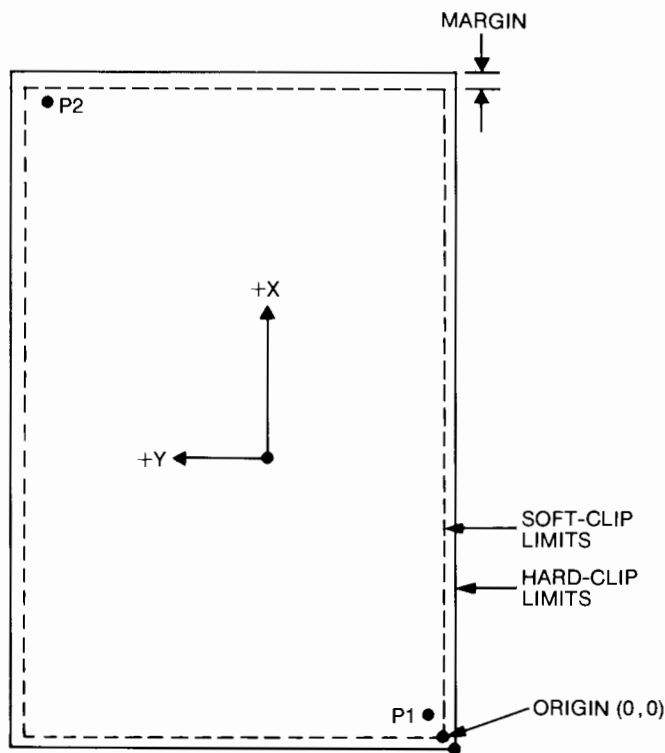
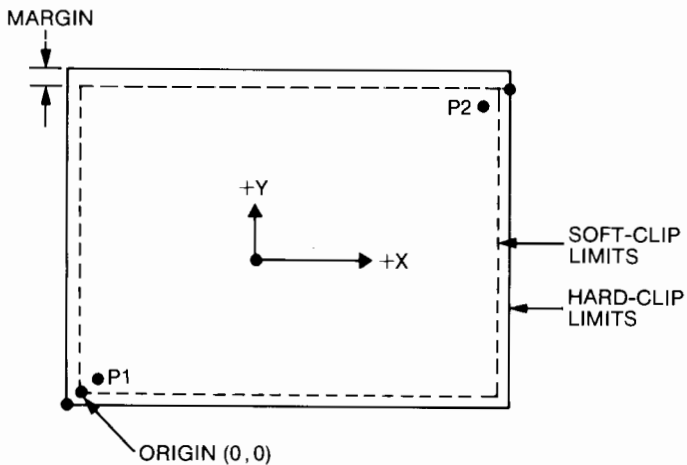
*For HP 7580B and 7585B plotters with serial prefix numbers 2309, 2331, 2334, and 2335.

**For HP 7580B, 7585B, and 7586B plotters with serial prefix numbers 2402 and above.

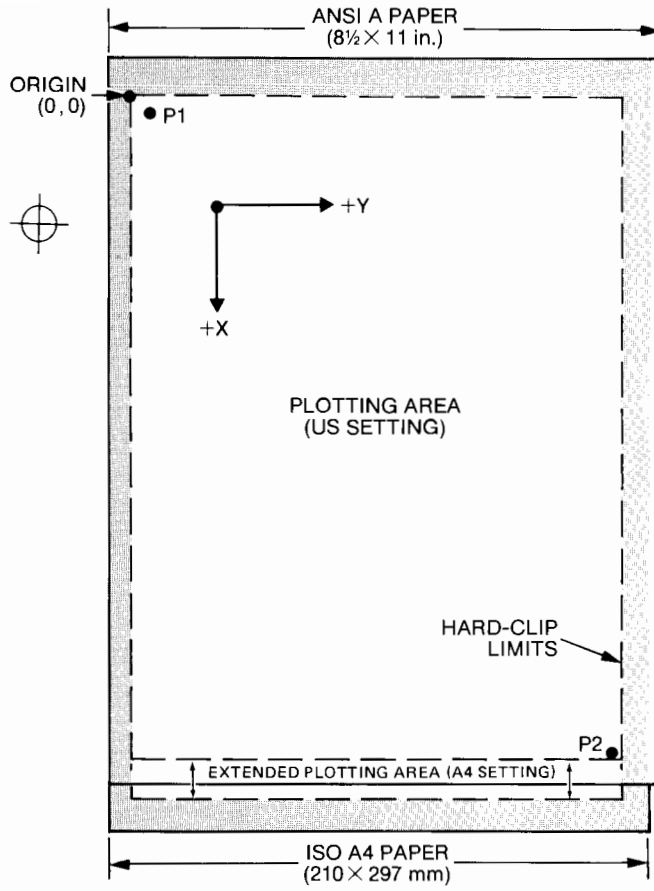
The Plotter Coordinate System

The plotting surface of all HP plotters is a Cartesian coordinate system that is scaled in plotter units. The plotter unit is the smallest possible addressable move and is 0.025 mm (approximately 0.001 in.) in length. The orientation of the X- and Y-axes, the locations of the origin point, and the default location of scaling points P1 and P2 are shown in the following diagrams. The paper is shown as though you were facing the front of the plotter and looking down on it. Default coordinate values for P1 and P2 and the plotter-unit range within the mechanical (hard-clip) limits of each plotter are included in the table entitled Plotting Areas and Default P1,P2 Locations.

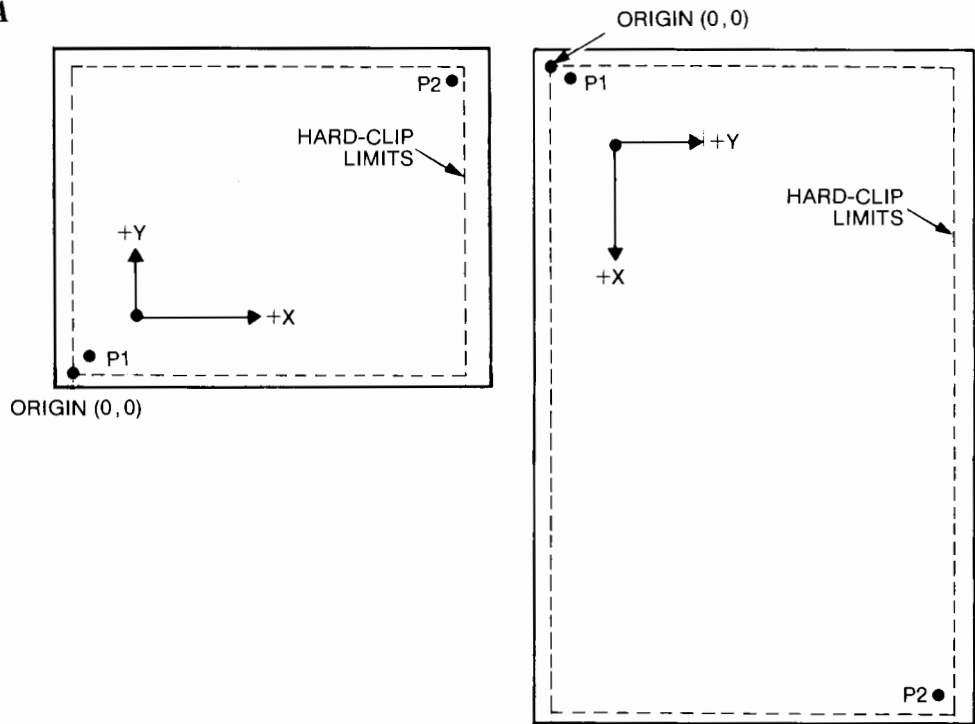
7090A



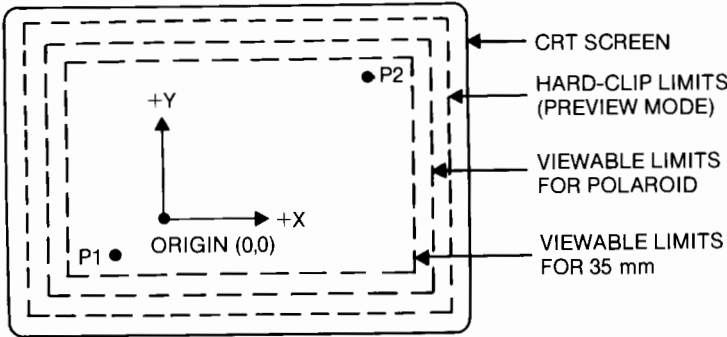
7440A
7470A



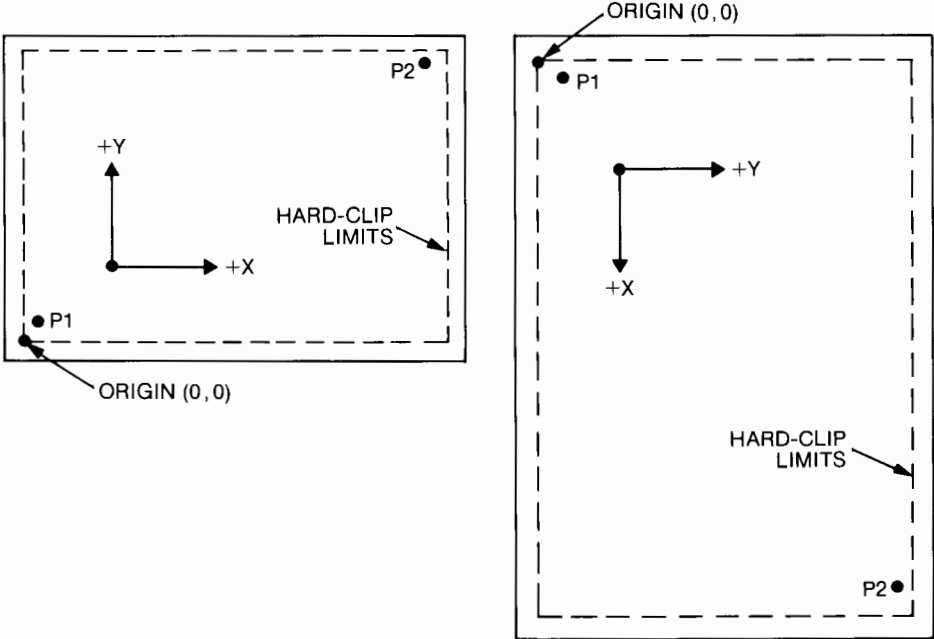
7475A



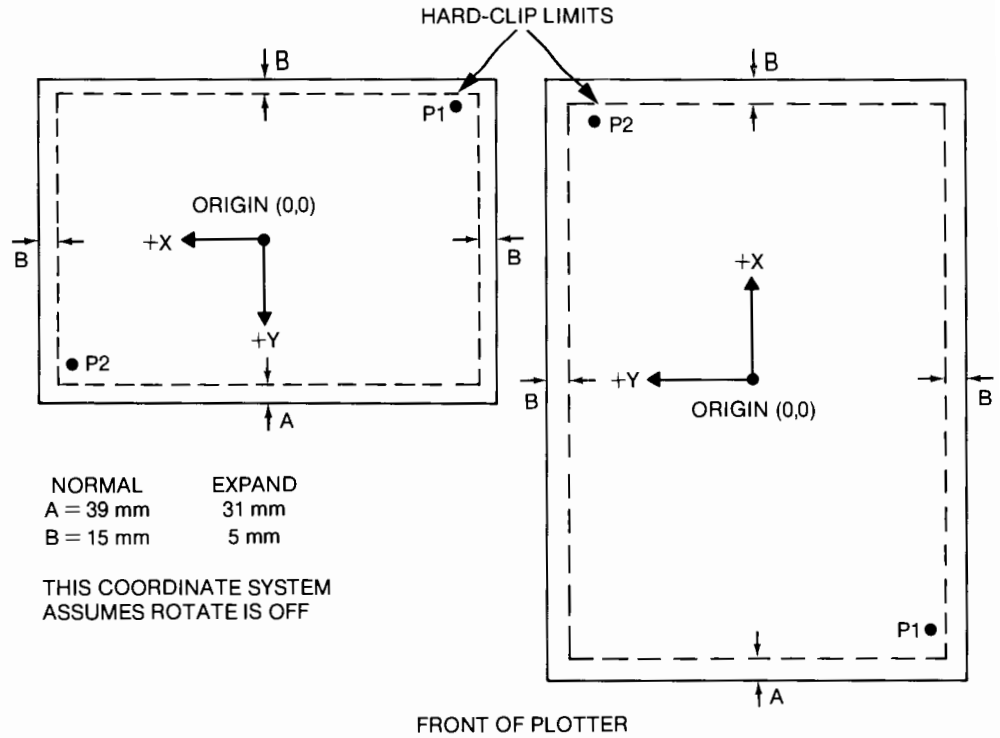
7510A



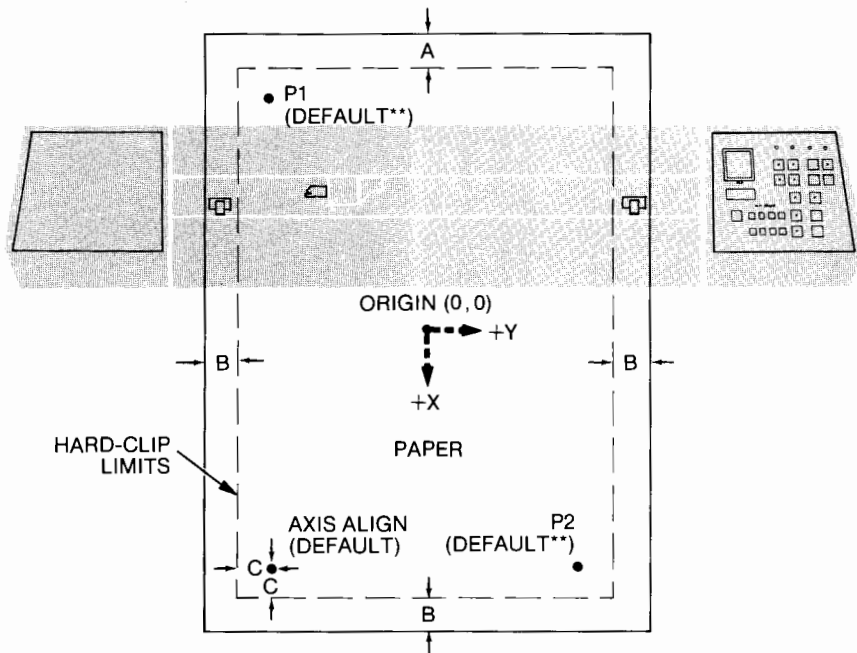
7550A



7570A



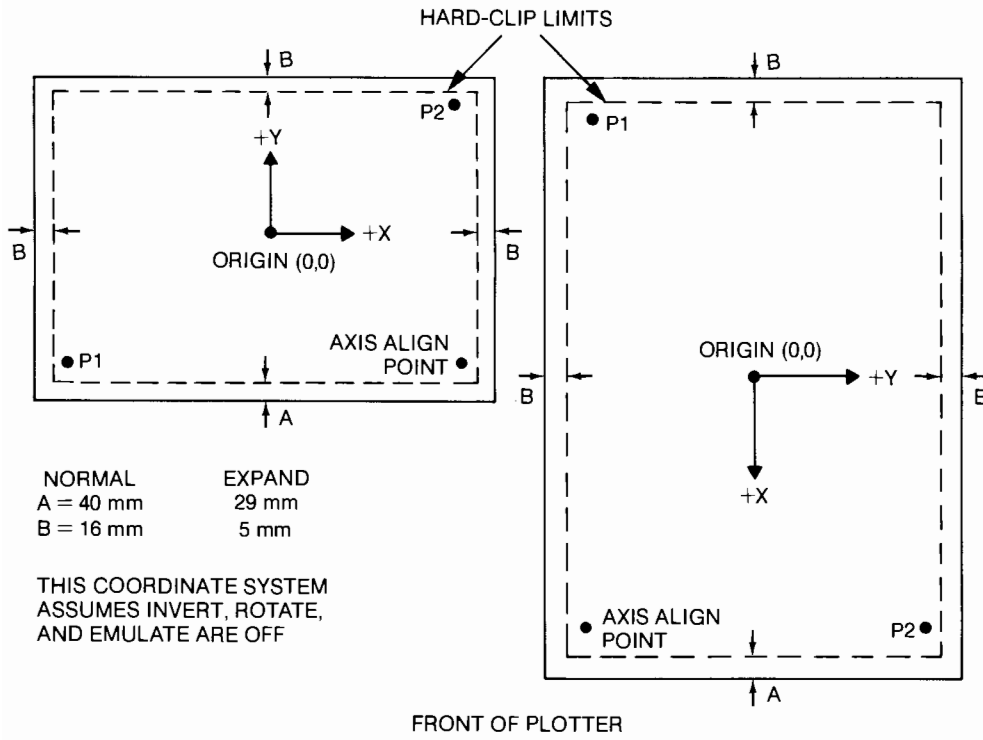
758X



NORMAL	EXPAND
A = 39 mm	29 mm
B = 15 mm	5 mm
*C = 15 mm	15 mm

*TYPICAL FOR P1, P2, AND AXIS ALIGN

**DEPENDENT ON PAPER SIZE



Plotting Areas and Default P1,P2 Locations

HP Plotter	Optional Switch Settings and/or Paper Type/Size	Default Scaling Points		Plotting Range		Maximum Plotting Area (X by Y)
		P1 _x ,P1 _y	P2 _x ,P2 _y	X-axis	Y-axis	
7090A	ANSI (A-size)	160, 447	10 210, 7682	-333 to 10 703	-100 to 7987	10.82 × 7.93 in.
	ANSI (B-size)	865, 160	16 140, 10 210	-475 to 16 260	-333 to 10 703	16.40 × 10.82 in.
	ISO (A4-size)	514, 348	10 564, 7583	-322 to 11 400	-100 to 7785	293.05 × 197.13 mm
	ISO (A3-size)	325, 514	15 600, 10 564	-525 to 15 762	-322 to 11 400	407.18 × 293.05 mm
7440A	US (A-size)	250, 279	10 250, 7479	0 to 10 300	0 to 7650	10.2 × 7.5 in.
7470A	A4 (A4-size)	250, 279	10 250, 7479	0 to 10 900	0 to 7650	272 × 191 mm
7475A	US/A4 (A-size)	250, 596	10 250, 7796	0 to 10 365	0 to 7962	10.15 × 7.8 in.
	US/A3 (B-size)	522, 259	15 722, 10 259	0 to 16 640	0 to 10 365	16.3 × 10.15 in.
	MET/A4 (A4-size)	603, 521	10 603, 7721	0 to 11 040	0 to 7721	274.6 × 192.1 mm
	MET/A3 (A3-size)	170, 602	15 370, 10 602	0 to 16 158	0 to 11 040	401.9 × 274.6 mm
7510A	STANDARD (35 mm)	1634, 1090	14 710, 9806	0 to 16 344	0 to 10 896	—
	STANDARD (Polaroid)	1634, 1090	14 710, 9806	0 to 16 344	-680 to 11 576	—
	STANDARD (Preview)	1634, 1090	14 710, 9806	0 to 16 344	-1090 to 11 986	—
	PAPER (A-size)	80, 320	10 080, 7520	0 to 10 170	0 to 7840	—
	PAPER (B-size)	620, 80	15 820, 10 080	0 to 16 450	0 to 10 170	—
	PAPER (A4-size)	430, 200	10 430, 7400	0 to 10 870	0 to 7600	—
	PAPER (A3-size)	380, 430	15 580, 10 430	0 to 15 970	0 to 10 870	—
	PAPER (8 × 10)	80, 320	10 080, 7520	0 to 10 170	0 to 7840	—
7550A	A-size	80, 320	10 080, 7520	0 to 10 170	0 to 7840	9.97 × 7.68 in.
	B-size	620, 80	15 820, 10 080	0 to 16 450	0 to 10 170	x16.12 × 9.97 in.
	A4-size	430, 200	10 430, 7400	0 to 10 870	0 to 7600	271.75 × 190 mm
	A3-size	380, 430	15 580, 10 430	0 to 15 970	0 to 10 870	399.25 × 271.75 mm

NOTE: Maximum plotting area is not applicable to 7510A.■

7570A	NORMAL (C-size)	-9976, -6956	9976, 6956	±10 576	±7556	20.82 × 14.87 in.	
	NORMAL (D-size)	-15 592, -9976	15 592, 9976	±16 192	±10 576	31.87 × 20.82 in.	
	NORMAL (A2-size)	-10 680, -6720	10 680, 6720	±11 280	±7320	564 × 366 mm	
	NORMAL (A1-size)	-15 140, -10 680	15 140, 10 680	±15 740	±11 280	787 × 564 mm	
	NORMAL (Arch.C-size)	-10 992, -7464	10 992, 7464	±11 592	±8064	22.82 × 15.87 in.	
	NORMAL (Arch.D-size)	-16 608, -10 992	16 608, 10 992	±17 208	±11 592	33.87 × 22.82 in.	
	EXPAND (C-size)	-10 376, -7316	10 376, 7316	±10 976	±7916	21.61 × 15.58 in.	
	EXPAND (D-size)	-15 952, -10 376	15 952, 10 376	±16 552	±10 976	32.58 × 21.61 in.	
	EXPAND (A2-size)	-11 080, -7080	11 080, 7080	±11 680	±7680	584 × 384 mm	
	EXPAND (A1-size)	-15 500, -11 080	15 500, 11 080	±16 100	±11 680	805 × 584 mm	
	EXPAND (Arch.C-size)	-11 392, -7824	11 392, 7824	±11 992	±8424	23.61 × 16.58 in.	
	EXPAND (Arch.D-size)	-16 968, -11 392	16 968, 11 392	±17 568	±11 992	34.58 × 23.61 in.	
	NORMAL (A-size)*	-2638, -4388	2638, 4388	±3238	±4988	6.37 × 9.82 in.	
	NORMAL (B-size)	-6956, -4388	6956, 4388	±7556	±4988	14.87 × 9.82 in.	
7580A,B	NORMAL (C-size)	-9496, -7436	9496, 7436	±10 096	±8036	19.87 × 15.82 in.	
	NORMAL (D-size)	-15 592, -9976	15 592, 9976	±16 192	±10 576	31.87 × 20.82 in.	
	NORMAL (A4-size)*	-2520, -4740	2520, 4740	±3120	±5340	156 × 267 mm	
	NORMAL (A3-size)	-6720, -4740	6720, 4740	±7320	±5340	366 × 267 mm	
	NORMAL (A2-size)	-10 200, -7200	10 200, 7200	±10 800	±7800	540 × 390 mm	
	NORMAL (A1-size)	-15 140, 10 680	15 140, 10 680	±15 740	±11 280	787 × 564 mm	
	EXPAND (A-size)*	-3038, -4788	3038, 4788	±3638	±5388	7.16 × 10.61 in.	
	EXPAND (B-size)	-7356, -4788	7356, 4788	±7956	±5388	15.66 × 10.61 in.	
	EXPAND (C-size)	-9896, -7836	9896, 7836	±10 496	±8436	20.66 × 16.16 in.	
	EXPAND (D-size)	-15 992, -10 376	15 992, 10 376	±16 592	±10 976	32.66 × 21.61 in.	
	7570A	NORMAL (C-size)	-9976, -6956	9976, 6956	±10 576	±7556	20.82 × 14.87 in.
		NORMAL (D-size)	-15 592, -9976	15 592, 9976	±16 192	±10 576	31.87 × 20.82 in.
		NORMAL (A2-size)	-10 680, -6720	10 680, 6720	±11 280	±7320	564 × 366 mm
		NORMAL (A1-size)	-15 140, -10 680	15 140, 10 680	±15 740	±11 280	787 × 564 mm
NORMAL (Arch.C-size)		-10 992, -7464	10 992, 7464	±11 592	±8064	22.82 × 15.87 in.	
NORMAL (Arch.D-size)		-16 608, -10 992	16 608, 10 992	±17 208	±11 592	33.87 × 22.82 in.	
EXPAND (C-size)		-10 376, -7316	10 376, 7316	±10 976	±7916	21.61 × 15.58 in.	
EXPAND (D-size)		-15 952, -10 376	15 952, 10 376	±16 552	±10 976	32.58 × 21.61 in.	
EXPAND (A2-size)		-11 080, -7080	11 080, 7080	±11 680	±7680	584 × 384 mm	
EXPAND (A1-size)		-15 500, -11 080	15 500, 11 080	±16 100	±11 680	805 × 584 mm	
EXPAND (Arch.C-size)		-11 392, -7824	11 392, 7824	±11 992	±8424	23.61 × 16.58 in.	
EXPAND (Arch.D-size)		-16 968, -11 392	16 968, 11 392	±17 568	±11 992	34.58 × 23.61 in.	
NORMAL (A-size)*		-2638, -4388	2638, 4388	±3238	±4988	6.37 × 9.82 in.	
NORMAL (B-size)		-6956, -4388	6956, 4388	±7556	±4988	14.87 × 9.82 in.	
NORMAL (C-size)	-9496, -7436	9496, 7436	±10 096	±8036	19.87 × 15.82 in.		
NORMAL (D-size)	-15 592, -9976	15 592, 9976	±16 192	±10 576	31.87 × 20.82 in.		
NORMAL (A4-size)*	-2520, -4740	2520, 4740	±3120	±5340	156 × 267 mm		
NORMAL (A3-size)	-6720, -4740	6720, 4740	±7320	±5340	366 × 267 mm		
NORMAL (A2-size)	-10 200, -7200	10 200, 7200	±10 800	±7800	540 × 390 mm		
NORMAL (A1-size)	-15 140, 10 680	15 140, 10 680	±15 740	±11 280	787 × 564 mm		
EXPAND (A-size)*	-3038, -4788	3038, 4788	±3638	±5388	7.16 × 10.61 in.		
EXPAND (B-size)	-7356, -4788	7356, 4788	±7956	±5388	15.66 × 10.61 in.		
EXPAND (C-size)	-9896, -7836	9896, 7836	±10 496	±8436	20.66 × 16.16 in.		
EXPAND (D-size)	-15 992, -10 376	15 992, 10 376	±16 592	±10 976	32.66 × 21.61 in.		

NOTE: P1, P2 coordinate values are approximate. ■

NOTE: P1, P2 coordinate values are approximate. ■

*A and A4-sizes are loaded with the longer axis horizontal. All other sizes have long axis vertical.

Plotting Areas and Default P1,P2 Locations (Continued)

HP Plotter	Optional Switch Settings and/or Paper Type/Size	Default Scaling Points		Plotting Range		Maximum Plotting Area (X by Y)
		P1 _x ,P1 _y	P2 _x ,P2 _y	X-axis	Y-axis	
7580A,B (Continued)	EXPAND (A4-size)*	-2920, -5140	2920, 5140	±3520	±5740	176 × 287 mm
	EXPAND (A3-size)	-7120, -5140	7120, 5140	±7720	±5740	386 × 287 mm
	EXPAND (A2-size)	-10600, -7600	10600, 7600	±11200	±8200	560 × 410 mm
	EXPAND (A1-size)	-15540, -11080	15540, 11080	±16140	±11680	807 × 584 mm
7585A,B 7586B	NORMAL (A-size)**	-2638, -4388	2638, 4388	±3238	±4988	6.37 × 9.82 in.
	NORMAL (B-size)	-6956, -4388	6956, 4388	±7556	±4988	14.87 × 9.82 in.
	NORMAL (C-size)**	-6956, -9976	6956, 9976	±7556	±10576	14.87 × 20.82 in.
	NORMAL (D-size)	-15592, -9976	15592, 9976	±16192	±10576	31.87 × 20.82 in.
	NORMAL (E-size)	-20672, -16072	20672, 16072	±21272	±16672	41.87 × 32.82 in.
	NORMAL (A4-size)**	-2520, -4740	2520, 4740	±3120	±5340	156 × 267 mm
	NORMAL (A3-size)	-6720, -4740	6720, 4740	±7320	±5340	366 × 267 mm
	NORMAL (A2-size)**	-6720, -10680	6720, 10680	±7320	±11280	366 × 564 mm
	NORMAL (A1-size)	-15140, -10680	15140, 10680	±15740	±11280	787 × 564 mm
	NORMAL (A0-size)	-22100, -15620	22100, 15620	±22700	±16220	1135 × 811 mm
	EXPAND (A-size)**	-3038, -4788	3038, 4788	±3638	±5388	7.16 × 10.61 in.
	EXPAND (B-size)	-7356, -4788	7356, 4788	±7956	±5388	15.66 × 10.61 in.
	EXPAND (C-size)**	-7356, -10376	7356, 10376	±7956	±10976	15.66 × 21.61 in.
	EXPAND (D-size)	-15992, -10376	15992, 10376	±16592	±10976	32.66 × 21.61 in.
	EXPAND (E-size)	-21072, -16472	21072, 16472	±21672	±17072	42.66 × 33.61 in.
	EXPAND (A4-size)**	-2920, -5140	2920, 5140	±3520	±5740	176 × 287 mm
EXPAND (A3-size)	-7120, -5140	7120, 5140	±7720	±5740	386 × 287 mm	
EXPAND (A2-size)**	-7120, -11080	7120, 11080	±7720	±11680	386 × 584 mm	
EXPAND (A1-size)	-15540, -11080	15540, 11080	±16140	±11680	807 × 584 mm	
EXPAND (A0-size)	-22500, -16020	22500, 16020	±23100	±16620	1155 × 831 mm	

NOTE: P1,P2 coordinate values are approximate. ■

***7586B (Roll Paper)	NORMAL (36 in.)	-23 184, -17 088	23 184, 17 088	±23 784	±17 688	46.82 × 34.82 in.	
	NORMAL (24 in.)	-17 088, -10 992	17 088, 10 992	±17 788	±11 592	35.02 × 22.82 in.	
	NORMAL (11 in.)	-7 436, -4 388	7 436, 4 388	±8 036	±4 988	15.82 × 9.82 in.	
	NORMAL (A-size)**	-4 348, -2 598	4 348, 2 598	±4 948	±3 198	9.74 × 6.3 in.	
	NORMAL (B-size)	-6 916, -4 348	6 916, 4 348	±7 516	±4 948	14.8 × 9.74 in.	
	NORMAL (C-size)**	-9 936, -6 916	9 936, 6 916	±10 536	±7 516	20.74 × 14.8 in.	
	NORMAL (D-size)	-15 552, -9 936	15 552, 9 936	±16 152	±10 536	31.8 × 20.74 in.	
	NORMAL (E-size)	-20 632, -16 032	20 632, 16 032	±21 232	±16 632	41.8 × 32.8 in.	
	NORMAL (A4-size)**	-4 700, -2 480	4 700, 2 480	±5 300	±3 080	265 × 154 mm	
	NORMAL (A3-size)	-6 680, -4 700	6 680, 4 700	±7 280	±5 300	364 × 265 mm	
	NORMAL (A2-size)**	-10 640, -6 680	10 640, 6 680	±11 240	±7 280	562 × 364 mm	
7595A 7596A	NORMAL (A1-size)	-15 100, -10 640	15 100, 10 640	±15 700	±11 240	785 × 562 mm	
	NORMAL (A0-size)	-22 060, -15 580	22 060, 15 580	±22 660	±16 180	1 133 × 809 mm	
	EXPAND (A-size)**	-4 788, -3 038	4 788, 3 038	±5 388	±3 638	10.61 × 7.16 in.	
	EXPAND (B-size)	-7 356, -4 788	7 356, 4 788	±7 956	±5 388	15.66 × 10.61 in.	
	EXPAND (C-size)**	-10 376, -7 356	10 376, 7 356	±10 976	±7 956	21.61 × 15.66 in.	
	EXPAND (D-size)	-15 992, -10 376	15 992, 10 376	±16 592	±10 976	32.66 × 21.61 in.	
	EXPAND (E-size)	-21 072, -16 472	21 072, 16 472	±21 672	±17 072	42.66 × 33.61 in.	
	EXPAND (A4-size)**	-5 140, -2 920	5 140, 2 920	±5 740	±3 520	287 × 176 mm	
	EXPAND (A3-size)	-7 120, -5 140	7 120, 5 140	±7 720	±5 740	386 × 287 mm	
	EXPAND (A2-size)**	-11 080, -7 120	11 080, 7 120	±11 680	±7 720	584 × 386 mm	
	EXPAND (A1-size)	-15 540, -11 080	15 540, 11 080	±16 140	±11 680	807 × 584 mm	
NOTE: P1,P2 coordinate values are ap- proximate. ■	EXPAND (A0-size)	-22 500, -16 020	22 500, 16 020	±23 100	±16 620	1 155 × 831 mm	
	NORMAL (36 in.)	-23 144, -17 048	23 144, 17 048	±23 744	±17 648	45.8 × 34.74 in.	
	NORMAL (24 in.)	-17 048, -10 952	17 048, 10 952	±17 648	±11 552	33.8 × 22.74 in.	
	NORMAL (11 in.)	-7 396, -4 348	7 396, 4 348	±7 996	±4 948	14.8 × 9.74 in.	
	***7596A (Roll Paper)	NORMAL (36 in.)	-23 144, -17 048	23 144, 17 048	±23 744	±17 648	45.8 × 34.74 in.
		NORMAL (24 in.)	-17 048, -10 952	17 048, 10 952	±17 648	±11 552	33.8 × 22.74 in.
		NORMAL (11 in.)	-7 396, -4 348	7 396, 4 348	±7 996	±4 948	14.8 × 9.74 in.

**A, A-4, C, and A-2 sizes are loaded with the long axis horizontal. All other sizes have long axis vertical.

***Applies to roll paper on the 7586B and 7596A. Limits listed are for a single frame on a multi-frame plot. The X-axis default scaling points are fixed; Y-axis scaling points are approximate. Since the paper is continuous in the X-direction, the plotter uses the width of the paper to determine the scaling points for one frame.

Notes

Power-up Initialization

Upon application of power, each plotter performs an initialization cycle to set certain plotting conditions to predefined default values. These default values differ from plotter to plotter, and some functions are not implemented on all plotters. The functions established by each plotter are shown in the following Power-up Default Conditions table.

Power-up Default Conditions

Function	Condition	Equivalent Instruction	Exceptions
Plotting mode	Absolute	PA;	None
Pen state	Up(off)	PU;	None
Automatic pen functions	Activated; functions activated are machine dependent	AP;	1
Pen velocity	Machine dependent	VS;	2
Scaling points (P1,P2)	Machine dependent	IP;	3
Scaling	User-unit scaling off	SC;	None
Input window	Mechanical limits	IW;	4
Chord angle/tolerance	5 degrees	CT;	5
Symbol mode	Off	SM;	None
Digitize clear	On	DC;	6
Tick length	tp and tn = 0.5% of |P2 _x - P1 _x| for Y-tick and 0.5% of |P2 _y - P1 _y| for X-tick	TL;	7
Line type and pattern length	Solid line; 4% of distance from P1 to P2	LT;	None
Mask value	223,0,0	IM;	None
Label origin	Current pen position	—	None
Label direction	Horizontal	DR1,0	8
Character size	Relative: width = 0.75% of |P2 _x - P1 _x|	SR;	9
Character slant	0 degrees height = 1.5% of |P2 _y - P1 _y|	SL0;	None
Extra space	No extra space	ES0,0;	10
Select character set	Standard	SS;	None
Standard set	Set 0	CS0;	None
Alternate set	Set 0	CA0;	None

¹Not applicable to 7090, 7470, 7475, and 7510. Instruction causes an error on 7440.

²Velocity = 73 cm/s on 7090; 40 cm/s on 7440; 38.1 on 7470 and 7475; and 40 cm/s on 7570. On 7550, 7580, 7585, and 7586, default speeds for fiber-tip, roller-ball, and drafting carousels (both refillable and disposable) are 50, 60, and 15 cm/s, respectively; on the 7595 and 7596, 50, 60, and 30 cm/s, respectively. On 758XB plotters with serial prefix number 2444 and higher, the default speed for disposable drafting carousels is 30 cm/s.

³Refer to table of Plotting Areas and Default P1,P2 Locations.

⁴On 7090, limits depend on setting of ISO/ANSI and front-panel switch. On 7440 and 7470, mechanical limits depend on setting of US/A4 switch. On 7475, mechanical limits depend on settings of the US/MET and A4/A3 switches. On 7510, viewable mechanical limits depend on film or paper size selected from front panel. On 7550, mechanical limits depend on paper size loaded. On 7570, 7580, 7585, 7586, 7595, and 7596, mechanical limits depend on paper size and position of EXPAND/NORMAL switch. Refer to table of Plotting Areas and Default P1,P2 Locations.

⁵Not applicable to 7090, 7440, 7470 with HP-IB or HP-IL, and 7475.

⁶Not applicable to 7090.

⁷On 7090, 7470, and 7475, algebraic P1,P2 distances are used.

⁸On 7570, 7595, and 7596, label direction is absolute (DI1,0). On 7580, 7585, and 7586, label direction is relative (DR1,0) in EMULATE or absolute (DI1,0) in NORMAL.

⁹On the 7570, 7595, and 7596, character size defaults to absolute. On 7580, 7585, and 7586, character size is relative in EMULATE and absolute in NORMAL. On 7090, 7470, and 7475, algebraic P1,P2 distances are used. On 7440, 7470, 7475, and 7550, characters are 0.187 cm wide by 0.269 cm high. On 7570, 7580, 7585, 7586, 7595, and 7596, characters are 0.285 cm wide by 0.375 high.

¹⁰Not applicable to 7090, 7440, 7470, and 7475.

Power-up Default Conditions (Continued)

Function	Condition	Equivalent Instruction	Exceptions
Character chord	5 degrees	CC ;	11
Label buffer	Cleared	BL ETX	11
Label terminator	ETX (decimal code 3)	DT ;	None
Fill type, spacing, and angle	<ul style="list-style-type: none"> • Type 1, solid bidirectional fill • 1% of distance between P1 and P2 • 0 degrees 	FT ;	12
Pen Thickness	0.3 mm (fill spacing for solid fill)	PT ;	12, 14
Rotation	0 degrees (default orientation)	RO ;	13
User-defined fill type	Solid bidirectional fill	UF ;	11
Character selection mode	HP 7-bit mode	CM ;	11
Polygon mode	Polygon buffer cleared	PM 0 ; PM 2	15
Downloadable character buffer	Cleared	DL ;	11

¹¹Not applicable to **7090, 7440, 7470, 7475, 7570, 7580A, 7585A, and 7580B and 7585B** (serial prefix numbers under 2402).

¹²Not applicable to **7090, 7470, 7580A, 7585A, and 7580B and 7585B** (serial prefix numbers under 2402).

¹³Not applicable to 7470.

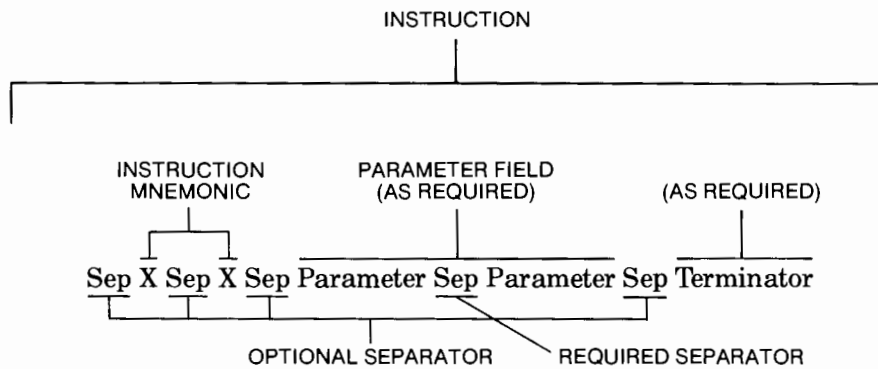
¹⁴Not applicable to **7440** (without **17440**), 7470, and **7510**.

¹⁵Not applicable to **7090, 7440** (without **17440**), 7470, **7475, 7580A, 7585A, and 7580B and 7585B** (serial prefix numbers under 2402).

HP-GL Syntax

In all cases, an HP-GL instruction is a two-letter mnemonic, which may be upper- or lowercase. The mnemonic suggests the instruction's function; for instance, PA is the mnemonic for the plot absolute instruction and LB is the mnemonic for the label instruction. An HP-GL instruction is defined as a mnemonic followed by its parameter field, if any, and a terminator.

If multiple parameters follow the mnemonic, they must be delimited from each other by a required separator. Optional separators may also be used before, after, and between the mnemonic and before the terminator as shown below. Separators and terminators that are recognized by each plotter are listed in the table entitled HP-GL Separators and Terminators.



Each parameter in the parameter field must comply with one of three format types; integer, decimal, or character. The parameter format type as well as the numerical ranges of integers and decimals varies from plotter to plotter. Numerical ranges for each plotter are listed in the table entitled Parameter Ranges. Parameter format types required by each HP-GL instruction are given in the definition column of the table entitled HP-GL Instruction Set.

HP-GL Separators and Terminators

HP Plotter	Required Parameter Separator	Optional Separators	Required Terminator*		
			HP-IB	RS-232-C	HP-IL
7090A	One or more commas and/or spaces, or a + or - sign which may be preceded by commas or spaces	Zero or more commas and/or spaces	; or LF or the next mnemonic	—	—
7440A	One or more commas and/or spaces, or a + or - sign	Zero or more commas and/or spaces	; or LF or the next mnemonic	; or the next mnemonic	—
7470A	One or more commas and/or spaces, or a + or - sign which may be preceded by commas or spaces	Zero or more commas and/or spaces	; or LF or any numeric or nonalphabetic characters such as \$ or #, or the next mnemonic	; or non-numeric or nonalphabetic characters such as \$ or #, or the next mnemonic	; or LF or any nonnumeric or nonalphabetic characters such as \$ or #, or the next mnemonic
7475A	One or more commas and/or spaces, or a + or - sign which may be preceded by commas or spaces	Zero or more commas and/or spaces	; or LF or the next mnemonic	; or the next mnemonic	—
7510A, 7550A** 7580A/B, 7585A/B, 7586B	One or more commas and/or spaces	Zero or more commas and/or spaces	; or LF or the next mnemonic	; or the next mnemonic	—
7550A***, 7570A, 7595A, 7596A	One or more commas and/or spaces, or a + or - sign	Zero or more commas and/or spaces, or a + or - sign	; or LF or the next mnemonic	; or the next mnemonic	—

*In all cases, the control character ETX (ASCII decimal equivalent 3) is the default terminator for HP-GL instructions LB and BL. (The terminator may be redefined by the DT instruction on some plotters.)

**On 7550A plotters with serial prefix numbers under 2631A.

***On 7550A plotters with serial prefix numbers 2631A and higher.

Parameter fields must be specified in the format defined by each respective HP-GL instruction. The format can be either integer or real. (Real format is referred to as decimal format in the 7470A, 7475A, 7550A, and 758X documentation.) The following table lists the acceptable ranges in each format. The decimal portion of the real parameter range indicates the number of significant digits. If no sign is specified the parameter is assumed to be positive. Refer to specific HP-GL instructions for exact parameter ranges.

Parameter Ranges

HP Plotter	Range of Integer Parameter	Range of Real Parameter
7090A	-32 768 to 32 767	-32 768.0000 to 32 767.9999* or subset -128.0000 to 127.9999*
7440A	-32 768 to 32 767	-32 768.0000 to 32 767.9999 or subset -128.0000 to 127.9999
7470A	-32 768 to 32 767	-32 768.0000 to 32 767.9999 or subset -128.0000 to 127.9999
7475A	-32 768 to 32 767	-32 768.0000 to 32 767.9999 or subset -128.0000 to 127.9999
7510A 7550A	-2^{23} to $2^{23} - 1$	-8 388 608.000 000 00 to 8 388 607.999 999 99
7570A	-32 768 to 32 767	-32 768.0000 to 32 767.9999
758XA,B	-2^{26} to $2^{26} - 1$	-67 108 864.000 000 000 0 to 67 108 863.999 999 999 9
759XA	-2^{23} to $2^{23} - 1$	-8 388 608.000 000 000 to 8 388 607.999 999 99

*Certain HP-RL instruction parameter ranges are limited to 3 digits total.

The next table shows how each plotter handles the decimal fraction of a parameter in the following situations: when a parameter must be in integer format; and when scaling is on.

Handling of Decimal Fractions Representing X,Y Coordinates

HP Plotter	When Parameter Must be Integer	When Scaling is On
7090A	truncated	truncated
7440A	truncated*	used
7470A	truncated	used
7475A	truncated*	used
7510A	rounded*	used
7550A	rounded*	used
7570A	rounded*	used
758XA,B	rounded	rounded
759XA	rounded*	used

*Plotter monitors the pen position using the complete decimal number, including decimal fraction. This avoids cumulative round-off error.



HP-GL Instructions

Below is a list of HP-GL instructions common to the 7470A, 7475A, 7550A, 7570A, 758XB, and 759XA plotters.

CA	IN	OO	SL
CP	IP	OP	SM
CS	IW	OS	SP
DC	LB	OW	SR
DF	LT	PA	SS
DI	OA	PD	TL
DP	OC	PR	UC
DR	OD	PU	VS
DT	OE	SA	XT
EC	OF	SC	YT
IM	OI	SI	

The table beginning on the following page contains a comprehensive review of HP-GL. The table is divided into three sections that pertain to the interfacing capability of each plotter.

Plotters listed in the first section of the table can function on either the HP-IB or RS-232-C interface. The 7440A, 7470A, 7475A, and 758XA have a single interface that is specified as an option (001 for RS-232-C and 002 for HP-IB). The 7570A has an optional HP-IB interface cartridge (17570A or 17571A with Kanji). The 7510A, 7550A, 758XB, and 759XA have dual interface capability.

The following legend is a guide to the symbols and abbreviations used in the HP-GL Instruction Set table.

¹Instructions applicable to all plotter models listed.

- (i) = Integer
- (d) = Decimal (or Real)
- (i/d) = Integer if not scaled or decimal if scaled. Unless otherwise noted, the fractional portion of decimal coordinates is accumulated when scaling is off.
- (c) = ASCII character
- () = All items in parentheses are optional.
- c . . . c = Any number of labeling characters.
- (. . .) = Any number of X,Y coordinate pairs.
- * = Normal implementation
- Blank = Instruction not recognized (error 1 set).
- † = Implemented only on RS-232-C plotters with serial prefix number 2312A or higher.
- 8 = Error 8 is set if sheet paper is being used, roll paper is not properly loaded.
- 11 = Implemented on 7550A plotters with serial prefix number 2631A and higher.
- A = Instruction advances film if it has been exposed, then sets the recorder off-line.

(Legend continues)

(Legend Continued)

- B = Implemented only on **7580B/7585B** plotters with serial prefix number 2402 and higher. On earlier B models, error 1 set.
- C = Response is always -1, 255, on **7570A** and 1, 255 on **7510A**.
- D = Draws a cutline across the border between plots.
- E = Instruction executed as an SP instruction.
- F = Equivalent to the AF instruction.
- G = On **7510A**, VS parameters 1-99 are ignored, but **VS100**; and **VS102**; should not be used or throughput and quality of output may be affected.
- H = If decimal parameters have been used, this instruction may return decimal values even when scaling is off.
- N = Instruction recognized, but ignored (NOP).
- NB = NOP'd on **7580B/7585B** plotters with serial prefix number 2402 and higher. On earlier B models, error 1 set.
- O = Instruction outputs zeros for all parameters.
- T = Does not accumulate fraction portions of decimal coordinates when scaling is off.
- Y = Implemented only on 758XB plotters with serial prefix numbers 2309, 2331, 2334, 2335. On B models with serial prefix number 2402 and higher, instruction is NOP'd.

HP-GL Instruction Set

HP-GL Instruction	Definition	HP-IB or RS-232-C												HP-IB	HP-IL	
		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
AA X,Y,arc angle,(chord angle)	Arc absolute X,Y (i/d), arc angle (i), chord angle (i)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
AA X,Y,arc angle,(chord angle)	Arc absolute X,Y (i/d), arc angle (d), chord angle (d)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
AA X,Y,arc angle,(chord tolerance)	Arc absolute X,Y (i), arc angle (d), chord tolerance (d)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
AF	Advance full page	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
AH	Advance half page	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
AP n	Automatic pen operations (i)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
AR X,Y,arc angle,(chord angle)	Arc relative X,Y (i/d), arc angle (i), chord angle (i)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
AR X,Y,arc angle,(chord angle)	Arc relative X,Y (i/d), arc angle (d), chord angle (d)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7

HP-GL Instruction Set (Continued)

HP-GL Instruction	Definition	HP-IB or RS-232-C										HP-IB	HP-IL
		7	4	4	4	0	0	0	7	5	7		
AR X,Y,arc angle(,chord tolerance)	Arc relative X,Y (i), arc angle (d), chord tolerance (d)	7	4	4	4	0	0	0	7	5	7	7	7
AS pen acceleration (,pen number)	Select pen acceleration (i)	*							*			*	
BF	Buffer plot												
BL c . . . c	Buffer label								*				
¹ CA set	Designate alternate character set	*										*	
CC chord angle	Set character chord angle (d)	*											
CI radius(,chord angle)	Circle of radius (i/d); drawn with chord angle (i)												*
CI radius(,chord angle)	Circle of radius (i/d); drawn with chord angle (d)	*											
CI radius(,chord tolerance)	Circle of radius (i); drawn with chord tolerance (d)								*				
CM switch mode (,fallback mode)	Character selection mode (i)												
¹ CP spaces, lines	Character plot (d)	*							*			*	*
¹ CS set	Designate character set	*							*			*	*
CT n	Set chord tolerance mode (i) for AA, AR, CI, EW, WG												
CV n(,input delay)	Enables curved line generator for delay (i)												
DC	Digitize clear	*											*
¹ DF	Set default values	*											*

HP-GL Instruction Set (Continued)

HP-GL Instruction	Definition	HP-IB or RS-232-C										HP-IB	HP-IL											
		7	4	4	4	7	1	0	0	0	0			7	7	7	7	7	7					
FS pen force,(pen number)	Select tip force for pen	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
FT type(,spacing (,angle))	Fill type (i) with spacing (d) and angle (i)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
FT type(,spacing (,angle))	Fill type (i) with spacing (d) and angle (d)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
GC count number	Set count number (i)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
GM		7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
GP (group number,(pen number (,number of pens(,length))))	Designate group (i) starting with pen (i) of specified pens (i) changing at interval (i)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
IC c	Input character for sizing with OB instruction	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
1IM e(s,(p))	Set e-, s-, and p-masks (i)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
1IN	Initialize plotter	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
1IP P1x,P1y,(P2x,P2y)	Input P1 and P2 (i)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
IV slot(,left)	Invoke slot (i) into character table (i)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
1IW Xlo,Ylo,Xhi,Yhi	Input window (i)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
IW X1,Y1,X2,Y2	Input window (i)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
KY key(,function)	Assign function (i) to key (i)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
1LB c . . . c	Label ASCII string (c)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
LO position number	Set label origin (i)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7
1LT pattern number (,pattern length)	Set line type (i) and pattern length (d)	7	4	4	4	7	1	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	7	7

NR	Not ready (View state)	*																	*
¹ OA	Output actual position (i return) and pen status (i return)	*	*																*
OB	Output box dimensions of character from IC (i return)	*		O	N													O	
¹ OC	Output commanded position and pen status (i return)	*	*																*
^H OC	Output commanded position (i/d return) and pen status (i return)	*	*	*														*	
OD	Output digitized point and pen status (i return)	*	*	O														*	
¹ OE	Output error (i return)	*	*	*														*	
¹ OF	Output factors (i return)	*	*	*														*	
OG	Output count number and escape status (i return)	*	*	O														*	
OH	Output hard-clip limits (i return)	*	*	*														*	
¹ OI	Output identification (c return)	*	*	*														*	
OK	Output function key (i return)	*		O													NB		*
OL	Output length of buffered label (d, i, i return)	*	*	*													*	*	*
¹ OO	Output options (i return)	*	*	*														*	*
¹ OP	Output P1 and P2 (i return)	*	*	*														*	*
¹ OS	Output status (i return)	*	*	*														*	*
OT	Output carousel status (i return)	*	*	O														*	*
OW	Output window (i return)	*	*	*														*	*
PA	Plot absolute to X, Y (i)	*	*	*														*	*
PA	Plot absolute to X, Y (i/d)	*	*	*														*	*
PB	Plot label from buffer	*	*	*														*	* ^T

HP-GL Instruction Set (Continued)

HP-GL Instruction	Definition	HP-IB or RS-232-C										HP-IB	HP-IL					
		7	4	4	4	7	7	7	7	7	7			7				
PC	Pen color, r,g,b, width, pen number	*																
PD (X,Y(. . .))	Pen down (i)	*																
PD (X,Y(. . .))	Pen down (i/d)	*																
PG n	Advance page																	
PM n	Enable polygon mode n (i)																	
PR X,Y(X,Y(. . .))	Plot relative from current pen (i)																	
PR X,Y(X,Y(. . .))	Plot relative from current pen (i/d)																	
PS paper size	Select paper size (i)																	
PS l,(w))	Select paper size length (i) and width (i)																	
PT thickness	Select pen thickness (d)																	
PU (X,Y(. . .))	Pen up (i)																	
PU (X,Y(. . .))	Pen up (i/d)																	
RA X,Y	Fill rectangle absolute (i)																	
RA X,Y	Fill rectangle absolute (i/d)																	
RO n	Rotate coordinate system (i)																	
RP n	Replots buffered plot n times (i)																	
RR X,Y	Fill rectangle relative (i)																	
RR X,Y	Fill rectangle relative (i/d)																	
¹ SA	Select alternate character set																	
¹ SC X _{min} ,X _{max} ,Y _{min} ,Y _{max}	User-unit scaling (i)																	

HP-GL Instruction Set (Continued)

HP-GL Instruction	Definition	HP-IB or RS-232-C												HP-IB	HP-IL					
		7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7								
WG radius, start angle, sweep angle, (chord tolerance)	Fill wedge of circle with radius (i), start angle (d), sweep angle (d), chord tolerance (d)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
¹ XT	Draw X-axis tick	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
¹ YT	Draw Y-axis tick	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

Plotter ASCII Code Definitions in Character Sets

The reaction of all plotters to nonprinting ASCII control characters (decimal equivalents 0 through 32 and 127) are listed in the table entitled Plotter Reaction to ASCII Control Characters when in Label Mode.

Decimal Value	ASCII Character	Reaction in All Sets
0	NULL	No Operation (NOP)
1	SOH	NOP
2	STX	NOP
3	ETX	End Label Instruction (Default)
4	ETO	NOP
5	ENQ	¹ NOP
6	ACK	NOP
7	BEL	NOP
8	BS	Backspace
9	HT	² NOP
10	LF	Line Feed
11	VT	Inverse Line Feed
12	FF	NOP
13	CR	Carriage Return
14	SO	Select Alternate Character Set
15	SI	Select Standard Character Set
16	DLE	NOP
17	DC1	NOP
18	DC2	NOP
19	DC3	NOP
20	DC4	NOP
21	NAK	NOP
22	SYN	NOP
23	ETB	NOP
24	CAN	NOP
25	EM	NOP
26	SUB	NOP
27	ESC	NOP
28	FS	NOP
29	GS	NOP
30	RS	NOP
31	US	NOP
32	SP	Space
127	DEL	³ NOP
142	SS2	⁴ Single Shift to Slot G2 (ISO 8-Bit Mode Only)
143	SS3	⁴ Single Shift to Slot G3 (ISO 8-Bit Mode Only)

Plotter Reaction to ASCII Control Characters When in Label Mode

¹Over the RS-232-C interface, plotters will respond with an ACK.

²Decimal 9 generates a ½ backspace (HT, horizontal tab) on all plotters except 7090A, 7470A, 758XA, and 7585B (with serial prefix number under 2402).

³On 7470A, decimal 127 causes the symbol ⊣ to be drawn.

⁴Implemented only on 7510A, 7550A, 7580B, 7585B (with serial prefix number 2402 and higher), 7586B, and 759XA.

All plotters have the capability of labeling with any of at least five internal character sets. These character sets are designated sets 0 through 4, and each set includes characters that correspond with, or are accessed by, ASCII printing characters (decimal codes 33 through 126). Except for minor cosmetic differences, such as a slash through the numeral zero, these five character sets are identical from plotter to plotter. In addition, each character set has identical upper- and lowercase alphabetic characters and identical numerals. They differ only in certain symbols and punctuation marks that are unique to a particular language.

At any time, the plotter can label using either the standard character set or the alternate character set. When default conditions are established, all plotters automatically set both the standard and alternate sets to the ANSI ASCII character set (set 0). The standard character set and the symbols which vary from set to set are shown next for each plotter.

NOTE: The plotters will perform an automatic backspace before drawing any of the shaded symbols. Therefore, when an accented letter is required, the letter should be entered first, followed by the accent.■

7090A

CHARACTER SET 0

! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ `
 a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~

Decimal Value	Set 0	Set 1	Set 2	Set 3	Set 4
35	#	#	£	£	¢
39	,	,	/	/	/
91	[	[	[	Ø	[
92	\	f	φ	Æ	i
93	]	]	]	ø]
94	^	↑	^	æ	^
95	_	—	—	—	—
96	`	`	`	`	`
123	{	π	••	••	~
124	|	|	•	•	~
125	}	→	••	••	~
126	~	~	'	•	~

CHARACTER SET 0

7470A

! "#\$%&' () *+, -. /0123456789: ; <=>?@
 ABCDEFGHIJKLMNOPQRSTUVWXYZ [\] ^ _ `
 abcdefghijklmnopqrstuvwxyz { | } ~ ¯

Decimal Value	Set 0 Standard ASCII	Set 1 9825 Set	Set 2 French/German	Set 3 Scandinavian	Set 4 Spanish/Latin American
35	#	#	£	£	¿
39	,	,	¸	¸	¸
91	[	[	[	Ø	[
92	\	ƒ	ç	Æ	í
93	]	]	]	ø]
94	^	↑	ˆ	æ	ˆ
95	¯	¯	¯	¯	¯
96	¸	¸	¸	¸	¸
123	{	π	•	•	~
124	|	†	•	•	~
125	}	→	•	•	~
126	~	~	•	•	~

CHARACTER SET 0

7440A
7475A

! "#\$%&' () *+, -. /0123456789: ; <=>?@
 ABCDEFGHIJKLMNOPQRSTUVWXYZ [\] ^ _ `
 abcdefghijklmnopqrstuvwxyz { | } ~ ¯

Refer to the 7470A chart for the shaded symbols associated with automatic backspacing. These symbols are the same on the 7440A, 7470A and 7475A plotters.

The 7475A plotter has 19 internal character sets. In addition to the standard five sets, the 7440A/17440A and 7475A plotters also contain the following:

- | | | | |
|--------|---|--------|--------------------------|
| Set 6 | JIS ASCII | Set 33 | ISO German |
| Set 7 | Roman Extensions | Set 34 | ISO French |
| Set 8 | Katakana | Set 35 | ISO British |
| Set 9 | ISO IRV (International Reference Version) | Set 36 | ISO Italian |
| Set 30 | ISO Swedish | Set 37 | ISO Spanish |
| Set 31 | ISO Swedish for Names | Set 38 | ISO Portuguese |
| Set 32 | ISO Norwegian, Version 1 | Set 39 | ISO Norwegian, Version 2 |

Except for minor cosmetic differences, these sets are the same as the corresponding sets pictured in the ASCII Code Definitions in Character Sets table beginning on page 37.

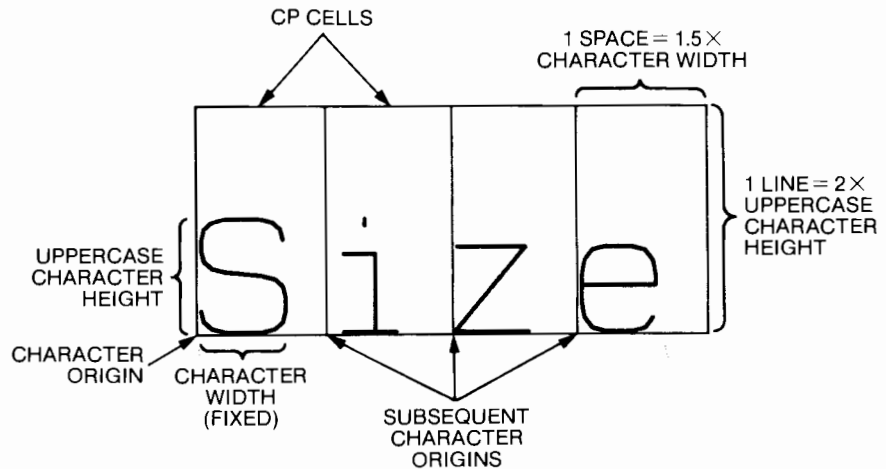
**7510A/7550A/7570A/
7580A,B/7585A,B/7586B/
7595A/7596A**

The **7510A**, **7550A**, **758X**, and **759XA** plotters have the capability of labeling with character sets in each of two character fonts: fixed-space vector font or variable-space arc font. Characters in a fixed-space font all occupy an equal horizontal space (0.67 of a CP cell) and are always drawn using a fixed number of vectors. The **7570A** labels in fixed-space vector font only.

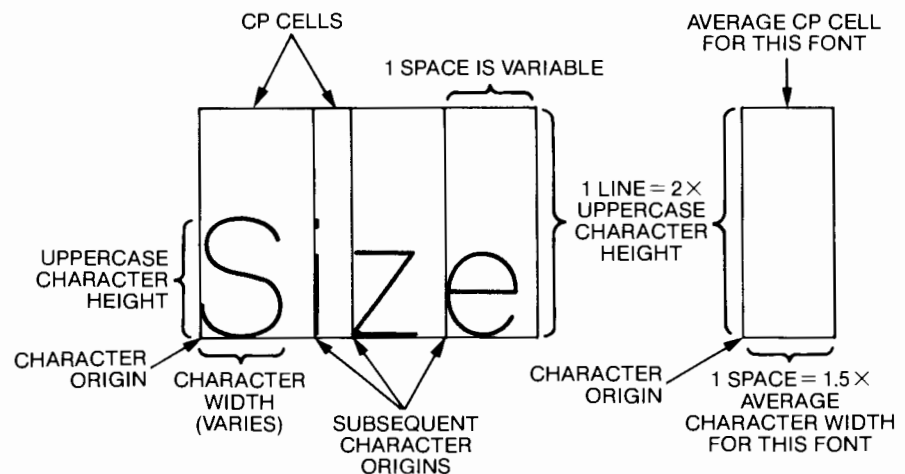
Characters in a variable-space font are proportionately spaced; that is, the amount of space between any two characters depends on the characters used. These "arc" characters also have a contour smoothness that is programmable.

The following diagrams show each font's characters in relation to a character plot (CP) cell.

Fixed-Space Font



Variable-Space Font



All **758XB** (serial prefix number 2402 and above) and **759XA** plotters contain a third font which combines features of the two fonts described above. It is a fixed-space font that contains arc-drawn characters with programmable contour smoothness.

The following table indicates the character sets available on each of the three fonts. The character sets on the same line (such as 0, 10, and 20) have the same characters for each decimal code. These sets are illustrated on the next page.

Character Sets

¹ 7510A/ ¹ 7550A/ ² 7570A/ ³ 7580A,B/ ³ 7585A,B/7586B/759XA		³ 7580B/ ³ 7585B 7586B/759XA	Character Set	ISO Registration Number
Fixed-Space Vector Font	Variable-Space Arc Font	Fixed-Space Arc Font		
0	10	20	ANSI ASCII	006
1	11	21	HP 9825 HPL Character Set	—
2	12	22	French/German	—
3	13	23	Scandinavian	—
4	14	24	Spanish/Latin American	—
5	15	25	Special Symbols	—
6	16	26	JIS ASCII	014
7	17	27	Roman Extensions	—
8	18	28	Katakana	013
9	19	29	ISO IRV (International Reference Version)	002
30	40	50	ISO Swedish	010
31	41	51	ISO Swedish for Names	011
32	42	52	ISO Norwegian Version 1	060
33	43	53	ISO German	021
34	44	54	ISO French	025
35	45	55	ISO British	004
36	46	56	ISO Italian	015
37	47	57	ISO Spanish	017
38	48	58	ISO Portuguese	016
39	49	59	ISO Norwegian Version 2	061
60	70	80	ISO French	069
99	—	—	Drafting	—
100	—	—	Kanji	—
101	—	—	Kanji	—
-1	—	—	Downloadable (user-defined)	—

¹Character sets 60, 70, 99, 100, 101, and -1 not implemented on the 7510A and 7550A.

²Variable-space arc font and character sets 60 and -1 not implemented on the 7570A.

³All 7580A/7585A plotters and 7580B/7585B plotters with serial prefix number 2309, 2331, 2334, and 2335 contain only character sets 0-5 and 10-15. 758XB plotters with serial prefix number 2402 and higher contain all character sets (except 39, 60, 100, and 101) in all three fonts.



Character sets 0, 10, and 20 from the three respective fonts are shown below. The difference in the total space required to plot the sets emphasizes the difference between fixed-space fonts and variable-space fonts.

Fixed-Space Vector Font

CHARACTER SET 0
! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` `
a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~

Variable-Space Arc Font

CHARACTER SET 10
! " # \$ % & ' 0 * + , - . / 0 1 2 3 4 5 6 7 8 9 ; < = > ? @
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` `
a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~

Fixed-Space Arc Font
(Implemented only on
758XB plotters with serial
prefix number 2402 and
above and 759XA.)

CHARACTER SET 20
! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` `
a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~

The table beginning on the following page shows all the character sets. Each of the shaded symbols is automatically backspaced one character before it is drawn.

The special centered symbols in character sets 5, 15, and 25 (ASCII decimal codes 65 through 79) are designed for use in symbol mode with the SM instruction. When used in a label instruction, spacing will be irregular and may produce undesirable results.

ASCII Code Definitions in Character Sets – Fixed-Space Vector Font

Decimal Value	SET																				
	0	1	2	3	4	5	6	7	8	9	30	31	32	33	34	35	36	37	38	39	99
33	!	!	!	!	!	!	!	À	.	!	!	!	!	!	!	!	!	!	!	!	!
34	"	"	"	"	"	"	"	Â	Γ	"	"	"	"	"	"	"	"	"	"	"	"
35	#	#	£	£	¿	#	#	È	∏	#	#	#	#	#	£	£	£	£	#	\$	¢
36	\$	\$	\$	\$	\$	\$	\$	Ê	.	¤	¤	¤	\$	\$	\$	\$	\$	\$	\$	\$	\$
37	%	%	%	%	%	%	%	Ë	·	%	%	%	%	%	%	%	%	%	%	%	%
38	&	&	&	&	&	&	&	Ï	Ɔ	&	&	&	&	&	&	&	&	&	&	&	&
39	,	,	,	,	,	,	,	Î	Ɔ	,	,	,	,	,	,	,	,	,	,	,	,
40	(	(	(	(	(	(	(	´	ı	((((((((((((
41	)	)	)	)	)	)	)	`	ı))))))))))))
42	*	*	*	*	*	*	*	^	ı	*	*	*	*	*	*	*	*	*	*	*	*
43	+	+	+	+	+	+	+	~	ı	+	+	+	+	+	+	+	+	+	+	+	+
44	.	.	.	.	.	.	.	~	ı	.	.	.	.	.	.	.	.	.	.	.	.
45	-	-	-	-	-	-	-	Ù	ı	-	-	-	-	-	-	-	-	-	-	-	-
46	.	.	.	.	.	.	.	Û	ı	.	.	.	.	.	.	.	.	.	.	.	.
47	/	/	/	/	/	/	/	£	ı	/	/	/	/	/	/	/	/	/	/	/	/
48	0	0	0	0	0	0	0	–	–	0	0	0	0	0	0	0	0	0	0	0	0
49	1	1	1	1	1	1	1	Ý	Ɔ	1	1	1	1	1	1	1	1	1	1	1	1
50	2	2	2	2	2	2	2	ý	ı	2	2	2	2	2	2	2	2	2	2	2	2
51	3	3	3	3	3	3	3	•	ı	3	3	3	3	3	3	3	3	3	3	3	3
52	4	4	4	4	4	4	4	Ç	ı	4	4	4	4	4	4	4	4	4	4	4	4
53	5	5	5	5	5	5	5	ç	ı	5	5	5	5	5	5	5	5	5	5	5	5
54	6	6	6	6	6	6	6	Ñ	ı	6	6	6	6	6	6	6	6	6	6	6	6
55	7	7	7	7	7	7	7	ñ	ı	7	7	7	7	7	7	7	7	7	7	7	7
56	8	8	8	8	8	8	8	ı	ı	8	8	8	8	8	8	8	8	8	8	8	8
57	9	9	9	9	9	9	9	¿	ı	9	9	9	9	9	9	9	9	9	9	9	9
58	:	:	:	:	:	:	:	¤	ı	:	:	:	:	:	:	:	:	:	:	:	:
59	:	:	:	:	:	:	:	£	ı	:	:	:	:	:	:	:	:	:	:	:	:
60	<	<	<	<	<	<	<	¥	ı	<	<	<	<	<	<	<	<	<	<	<	<
61	=	=	=	=	=	=	=	\$	ı	=	=	=	=	=	=	=	=	=	=	=	=
62	>	>	>	>	>	>	>	f	ı	>	>	>	>	>	>	>	>	>	>	>	>
63	?	?	?	?	?	?	?	¢	ı	?	?	?	?	?	?	?	?	?	?	?	?
64	@	@	@	@	@	@	@	â	ı	@	@	É	@	\$	à	@	\$	\$	\$	@	@

ASCII Code Definitions in Character Sets — Fixed-Space Vector Font (Continued)

Decimal Value	SET																				
	0	1	2	3	4	5	6	7	8	9	30	31	32	33	34	35	36	37	38	39	99
65	A	A	A	A	A	▣	A	ê	ƒ	A	A	A	A	A	A	A	A	A	A	A	A
66	B	B	B	B	B	◊	B	ô	ƒ	B	B	B	B	B	B	B	B	B	B	B	B
67	C	C	C	C	C	Δ	C	û	ƒ	C	C	C	C	C	C	C	C	C	C	C	C
68	D	D	D	D	D	+	D	á	†	D	D	D	D	D	D	D	D	D	D	D	D
69	E	E	E	E	E	x	E	é	ƒ	E	E	E	E	E	E	E	E	E	E	E	E
70	F	F	F	F	F	◊	F	ó	∩	F	F	F	F	F	F	F	F	F	F	F	F
71	G	G	G	G	G	+	G	ú	ƒ	G	G	G	G	G	G	G	G	G	G	G	G
72	H	H	H	H	H	x	H	à	ƒ	H	H	H	H	H	H	H	H	H	H	H	H
73	I	I	I	I	I	z	I	è	∩	I	I	I	I	I	I	I	I	I	I	I	I
74	J	J	J	J	J	γ	J	ò	∩	J	J	J	J	J	J	J	J	J	J	J	J
75	K	K	K	K	K	x	K	ù	†	K	K	K	K	K	K	K	K	K	K	K	K
76	L	L	L	L	L	*	L	ã	∩	L	L	L	L	L	L	L	L	L	L	L	L
77	M	M	M	M	M	z	M	ë	∩	M	M	M	M	M	M	M	M	M	M	M	M
78	N	N	N	N	N	ı	N	ö	†	N	N	N	N	N	N	N	N	N	N	N	N
79	O	O	O	O	O	+	O	ü	∩	O	O	O	O	O	O	O	O	O	O	O	O
80	P	P	P	P	P	-	P	Å	∩	P	P	P	P	P	P	P	P	P	P	P	P
81	Q	Q	Q	Q	Q	ı	Q	î	∩	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
82	R	R	R	R	R	R	R	Ø	∩	R	R	R	R	R	R	R	R	R	R	R	R
83	S	S	S	S	S	S	S	Æ	†	S	S	S	S	S	S	S	S	S	S	S	S
84	T	T	T	T	T	T	T	à	†	T	T	T	T	T	T	T	T	T	T	T	T
85	U	U	U	U	U	U	U	í	∩	U	U	U	U	U	U	U	U	U	U	U	U
86	V	V	V	V	V	V	V	ø	∩	V	V	V	V	V	V	V	V	V	V	V	V
87	W	W	W	W	W	W	W	æ	∩	W	W	W	W	W	W	W	W	W	W	W	W
88	X	X	X	X	X	X	X	Ä	∩	X	X	X	X	X	X	X	X	X	X	X	X
89	Y	Y	Y	Y	Y	Y	Y	ÿ	∩	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
90	Z	Z	Z	Z	Z	Z	Z	ö	∩	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
91	[	[	[	Ø	[	[	[	Ü	∩	[	Ä	Ä	Æ	Ä	•	[	•	ı	Ä	Æ	[
92	\	√	ç	Æ	ı	\	¥	É	∩	\	ö	ö	Ø	ö	ç	\	ç	Ñ	Ç	Ø	Ø
93	]	]	]	Ø	]	]	]	ı	∩	]	Ä	Ä	Ä	Ü	§	]	é	ı	ö	Ä]
94	^	↑	^	æ	^	^	^	ß	∩	^	^	Ü	^	^	^	^	^	^	^	^	ı
95	-	-	-	-	-	-	-	ô	∩	-	-	-	-	-	-	-	-	-	-	-	-
96	`	`	`	`	`	`	`	Á	∩	`	`	é	`	`	`	`	ù	`	`	`	`

ASCII Code Definitions in Character Sets – Fixed-Space Vector Font (Continued)

Decimal Value	SET																					
	0	1	2	3	4	5	6	7	8	9	30	31	32	33	34	35	36	37	38	39	99	
97	a	a	a	a	a	n	a	Ã			a	a	a	a	a	a	a	a	a	a	a	
98	b	b	b	b	b	o	b	ã			b	b	b	b	b	b	b	b	b	b	b	
99	c	c	c	c	c	c	c	Ð			c	c	c	c	c	c	c	c	c	c	c	
100	d	d	d	d	d	U	d	ð			d	d	d	d	d	d	d	d	d	d	d	
101	e	e	e	e	e		e	Í			e	e	e	e	e	e	e	e	e	e	e	
102	f	f	f	f	f	≡	f	ì			f	f	f	f	f	f	f	f	f	f	f	
103	g	g	g	g	g	≅	g	Ó			g	g	g	g	g	g	g	g	g	g	g	
104	h	h	h	h	h	≈	h	Ò			h	h	h	h	h	h	h	h	h	h	h	
105	i	i	i	i	i	~	i	Õ			i	i	i	i	i	i	i	i	i	i	i	
106	j	j	j	j	j	≤	j	ö			j	j	j	j	j	j	j	j	j	j	j	
107	k	k	k	k	k	≥	k	Š			k	k	k	k	k	k	k	k	k	k	k	
108	l	l	l	l	l	≠	l	š			l	l	l	l	l	l	l	l	l	l	l	
109	m	m	m	m	m	Δ	m	Ú			m	m	m	m	m	m	m	m	m	m	m	
110	n	n	n	n	n	Π	n	ÿ			n	n	n	n	n	n	n	n	n	n	n	
111	o	o	o	o	o	Σ	o	ÿ			o	o	o	o	o	o	o	o	o	o	o	
112	p	p	p	p	p	±	p	þ			p	p	p	p	p	p	p	p	p	p	p	
113	q	q	q	q	q	∓	q	þ			q	q	q	q	q	q	q	q	q	q	q	
114	r	r	r	r	r	-	r	·			r	r	r	r	r	r	r	r	r	r	r	
115	s	s	s	s	s	↑	s	μ			s	s	s	s	s	s	s	s	s	s	s	
116	t	t	t	t	t	-	t	¶			t	t	t	t	t	t	t	t	t	t	t	
117	u	u	u	u	u	↓	u	¾			u	u	u	u	u	u	u	u	u	u	u	
118	v	v	v	v	v	∫	v	-			v	v	v	v	v	v	v	v	v	v	v	
119	w	w	w	w	w	÷	w	¼			w	w	w	w	w	w	w	w	w	w	w	
120	x	x	x	x	x	*	x	½			x	x	x	x	x	x	x	x	x	x	x	
121	y	y	y	y	y	∇	y	æ			y	y	y	y	y	y	y	y	y	y	y	
122	z	z	z	z	z	·	z	ø			z	z	z	z	z	z	z	z	z	z	z	
123	{	π	~	~	~	{	{	«			{	ä	ä	æ	ä	é	{	à	·	ã	æ	μ
124	|	†	·	~	~	|	|	□			|	ö	ö	ø	ö	ù	|	ò	ñ	ç	ø	°
125	}	-	~	~	~	}	}	»			}	ä	ä	ä	ü	è	}	è	ç	ö	ä	°
126	~	~	~	~	~	~	-	±			-	-	ü	-	ß	-	-	ì	~	·	|	~

ASCII Code Definitions in Character Sets – Variable-Space Arc Font

Decimal Value	SET																			
	10	11	12	13	14	15	16	17	18	19	40	41	42	43	44	45	46	47	48	49
33	!	!	!	!	!	!	!	À	.	!	!	!	!	!	!	!	!	!	!	!
34	"	"	"	"	"	"	"	Â	Γ	"	"	"	"	"	"	"	"	"	"	"
35	#	#	£	£	ι	#	#	È	∫	#	#	#	#	#	£	£	£	£	#	§
36	\$	\$	\$	\$	\$	\$	\$	É	,	∩	∩	∩	\$	\$	\$	\$	\$	\$	\$	\$
37	%	%	%	%	%	%	%	Ê	·	%	%	%	%	%	%	%	%	%	%	%
38	&	&	&	&	&	&	&	Ë	∩	&	&	&	&	&	&	&	&	&	&	&
39	'	'	'	'	'	'	'	Ï	∩	'	'	'	'	'	'	'	'	'	'	'
40	(	(	(	(	(	(	(	Í	((((((((((((
41	)	)	)	)	)	)	)	Î))))))))))))
42	*	*	*	*	*	*	*	Ï	∩	*	*	*	*	*	*	*	*	*	*	*
43	+	+	+	+	+	+	+	Ï	∩	+	+	+	+	+	+	+	+	+	+	+
44	,	,	,	,	,	,	,	Ï	∩	,	,	,	,	,	,	,	,	,	,	,
45	-	-	-	-	-	-	-	Ï	∩	-	-	-	-	-	-	-	-	-	-	-
46	.	.	.	.	.	.	.	Ï	∩	.	.	.	.	.	.	.	.	.	.	.
47	/	/	/	/	/	/	/	Ï	∩	/	/	/	/	/	/	/	/	/	/	/
48	0	0	0	0	0	0	0	Ï	∩	0	0	0	0	0	0	0	0	0	0	0
49	1	1	1	1	1	1	1	Ï	∩	1	1	1	1	1	1	1	1	1	1	1
50	2	2	2	2	2	2	2	Ï	∩	2	2	2	2	2	2	2	2	2	2	2
51	3	3	3	3	3	3	3	Ï	∩	3	3	3	3	3	3	3	3	3	3	3
52	4	4	4	4	4	4	4	Ï	∩	4	4	4	4	4	4	4	4	4	4	4
53	5	5	5	5	5	5	5	Ï	∩	5	5	5	5	5	5	5	5	5	5	5
54	6	6	6	6	6	6	6	Ï	∩	6	6	6	6	6	6	6	6	6	6	6
55	7	7	7	7	7	7	7	Ï	∩	7	7	7	7	7	7	7	7	7	7	7
56	8	8	8	8	8	8	8	Ï	∩	8	8	8	8	8	8	8	8	8	8	8
57	9	9	9	9	9	9	9	Ï	∩	9	9	9	9	9	9	9	9	9	9	9
58	:	:	:	:	:	:	:	Ï	∩	:	:	:	:	:	:	:	:	:	:	:
59	;	;	;	;	;	;	;	Ï	∩	;	;	;	;	;	;	;	;	;	;	;
60	<	<	<	<	<	<	<	Ï	∩	<	<	<	<	<	<	<	<	<	<	<
61	=	=	=	=	=	=	=	Ï	∩	=	=	=	=	=	=	=	=	=	=	=
62	>	>	>	>	>	>	>	Ï	∩	>	>	>	>	>	>	>	>	>	>	>
63	?	?	?	?	?	?	?	Ï	∩	?	?	?	?	?	?	?	?	?	?	?
64	@	@	@	@	@	@	@	Ï	∩	@	@	É	@	§	à	@	§	§	§	@

ASCII Code Definitions in Character Sets — Variable Space Arc Font (Continued)

Decimal Value	SET																			
	10	11	12	13	14	15	16	17	18	19	40	41	42	43	44	45	46	47	48	49
65	A	A	A	A	A	▣	A	ê	ƒ	A	A	A	A	A	A	A	A	A	A	A
66	B	B	B	B	B	◊	B	ô	ƴ	B	B	B	B	B	B	B	B	B	B	B
67	C	C	C	C	C	△	C	û	ƚ	C	C	C	C	C	C	C	C	C	C	C
68	D	D	D	D	D	+	D	á	†	D	D	D	D	D	D	D	D	D	D	D
69	E	E	E	E	E	x	E	é	‡	E	E	E	E	E	E	E	E	E	E	E
70	F	F	F	F	F	◊	F	ó	∩	F	F	F	F	F	F	F	F	F	F	F
71	G	G	G	G	G	↑	G	ú	∞	G	G	G	G	G	G	G	G	G	G	G
72	H	H	H	H	H	x	H	à	‡	H	H	H	H	H	H	H	H	H	H	H
73	I	I	I	I	I	z	I	è	∩	I	I	I	I	I	I	I	I	I	I	I
74	J	J	J	J	J	γ	J	ò	∩	J	J	J	J	J	J	J	J	J	J	J
75	K	K	K	K	K	x	K	ù	‡	K	K	K	K	K	K	K	K	K	K	K
76	L	L	L	L	L	*	L	ä	∩	L	L	L	L	L	L	L	L	L	L	L
77	M	M	M	M	M	x	M	ë	∩	M	M	M	M	M	M	M	M	M	M	M
78	N	N	N	N	N	ı	N	ö	‡	N	N	N	N	N	N	N	N	N	N	N
79	O	O	O	O	O	*	O	ü	∩	O	O	O	O	O	O	O	O	O	O	O
80	P	P	P	P	P	-	P	Á	∩	P	P	P	P	P	P	P	P	P	P	P
81	Q	Q	Q	Q	Q	ı	Q	î	∩	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
82	R	R	R	R	R	R	R	ø	∩	R	R	R	R	R	R	R	R	R	R	R
83	S	S	S	S	S	S	S	Æ	‡	S	S	S	S	S	S	S	S	S	S	S
84	T	T	T	T	T	T	T	à	‡	T	T	T	T	T	T	T	T	T	T	T
85	U	U	U	U	U	U	U	í	∩	U	U	U	U	U	U	U	U	U	U	U
86	V	V	V	V	V	V	V	ø	∩	V	V	V	V	V	V	V	V	V	V	V
87	W	W	W	W	W	W	W	æ	∩	W	W	W	W	W	W	W	W	W	W	W
88	X	X	X	X	X	X	X	Ä	∩	X	X	X	X	X	X	X	X	X	X	X
89	Y	Y	Y	Y	Y	Y	Y	ÿ	∩	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
90	Z	Z	Z	Z	Z	Z	Z	Ö	∩	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
91	[	[	[	Ø	[	[	[	Ü	∩	[	Ä	Ä	Æ	Ä	·	[	·	ı	Ä	Æ
92	\	√	ç	Æ	ı	\	¥	É	∩	\	Ö	Ö	ø	Ö	ç	\	ç	Ñ	Ç	ø
93	]	]	]	ø	]	]	]	ï	∩	]	Á	Á	Á	Ü	§	]	é	ı	Ö	Á
94	^	↑	æ	æ	^	^	^	ß	·	^	^	Ü	^	^	^	^	^	^	^	^
95	-	-	-	-	-	-	-	Ô	·	-	-	-	-	-	-	-	-	-	-	-
96	\	\	\	\	\	\	\	Á	·	\	\	é	\	\	\	\	ù	\	\	\

ASCII Code Definitions in Character Sets — Variable-Space Arc Font (Continued)

Decimal Value	SET																			
	10	11	12	13	14	15	16	17	18	19	40	41	42	43	44	45	46	47	48	49
97	a	a	a	a	a	∩	a	Ã	a	a	a	a	a	a	a	a	a	a	a	a
98	b	b	b	b	b	∩	b	ã	b	b	b	b	b	b	b	b	b	b	b	b
99	c	c	c	c	c	∩	c	Ĉ	c	c	c	c	c	c	c	c	c	c	c	c
100	d	d	d	d	d	∩	d	ð	d	d	d	d	d	d	d	d	d	d	d	d
101	e	e	e	e	e	∩	e	é	e	e	e	e	e	e	e	e	e	e	e	e
102	f	f	f	f	f	∩	f	ÿ	f	f	f	f	f	f	f	f	f	f	f	f
103	g	g	g	g	g	∩	g	Ó	g	g	g	g	g	g	g	g	g	g	g	g
104	h	h	h	h	h	∩	h	Ò	h	h	h	h	h	h	h	h	h	h	h	h
105	i	i	i	i	i	∩	i	Ï	i	i	i	i	i	i	i	i	i	i	i	i
106	j	j	j	j	j	∩	j	õ	j	j	j	j	j	j	j	j	j	j	j	j
107	k	k	k	k	k	∩	k	Š	k	k	k	k	k	k	k	k	k	k	k	k
108	l	l	l	l	l	∩	l	š	l	l	l	l	l	l	l	l	l	l	l	l
109	m	m	m	m	m	∩	m	Ú	m	m	m	m	m	m	m	m	m	m	m	m
110	n	n	n	n	n	∩	n	ÿ	n	n	n	n	n	n	n	n	n	n	n	n
111	o	o	o	o	o	∩	o	ÿ	o	o	o	o	o	o	o	o	o	o	o	o
112	p	p	p	p	p	∩	p	þ	p	p	p	p	p	p	p	p	p	p	p	p
113	q	q	q	q	q	∩	q	þ	q	q	q	q	q	q	q	q	q	q	q	q
114	r	r	r	r	r	∩	r	·	r	r	r	r	r	r	r	r	r	r	r	r
115	s	s	s	s	s	∩	s	μ	s	s	s	s	s	s	s	s	s	s	s	s
116	t	t	t	t	t	∩	t	¶	t	t	t	t	t	t	t	t	t	t	t	t
117	u	u	u	u	u	∩	u	¾	u	u	u	u	u	u	u	u	u	u	u	u
118	v	v	v	v	v	∩	v	—	v	v	v	v	v	v	v	v	v	v	v	v
119	w	w	w	w	w	∩	w	¼	w	w	w	w	w	w	w	w	w	w	w	w
120	x	x	x	x	x	∩	x	½	x	x	x	x	x	x	x	x	x	x	x	x
121	y	y	y	y	y	∩	y	â	y	y	y	y	y	y	y	y	y	y	y	y
122	z	z	z	z	z	∩	z	º	z	z	z	z	z	z	z	z	z	z	z	z
123	{	π	∩	∩	∩	{	{	«	{	ä	ä	æ	ä	é	{	à	·	ã	æ	
124	|	†	∩	∩	∩	|	|	□	|	ö	ö	ø	ö	ù	|	ò	ñ	ç	ø	
125	}	→	∩	∩	∩	}	}	»	}	á	á	á	ü	è	}	è	ç	õ	á	
126	~	∩	∩	∩	∩	~	—	±	—	—	ü	—	ß	∩	—	ì	~	·	|	

ASCII Code Definitions in Character Sets — Fixed-Space Arc Font

Decimal Value	SET																			
	20	21	22	23	24	25	26	27	28	29	50	51	52	53	54	55	56	57	58	59
33	!	!	!	!	!	!	!	À	.	!	!	!	!	!	!	!	!	!	!	!
34	"	"	"	"	"	"	"	Â	["	"	"	"	"	"	"	"	"	"	"
35	#	#	£	£	¿	#	#	È]	#	#	#	#	#	£	£	£	£	#	\$
36	\$	\$	\$	\$	\$	\$	\$	É	,	¤	¤	¤	\$	\$	\$	\$	\$	\$	\$	\$
37	%	%	%	%	%	%	%	Ê	·	%	%	%	%	%	%	%	%	%	%	%
38	&	&	&	&	&	&	&	Ë	¸	&	&	&	&	&	&	&	&	&	&	&
39	,	,	,	,	,	,	,	Ï	¸	,	,	,	,	,	,	,	,	,	,	,
40	(	(	(	(	(	(	(	´	ı	(((((((((((
41	)	)	)	)	)	)	)	`	ı)))))))))))
42	*	*	*	*	*	*	*	^	ı	*	*	*	*	*	*	*	*	*	*	*
43	+	+	+	+	+	+	+	ˆ	ı	+	+	+	+	+	+	+	+	+	+	+
44	,	,	,	,	,	,	,	~	ı	,	,	,	,	,	,	,	,	,	,	,
45	-	-	-	-	-	-	-	Ù	ı	-	-	-	-	-	-	-	-	-	-	-
46	.	.	.	.	.	.	.	Ú	ı	.	.	.	.	.	.	.	.	.	.	.
47	/	/	/	/	/	/	/	Û	ı	/	/	/	/	/	/	/	/	/	/	/
48	0	0	0	0	0	0	0	Ü	ı	0	0	0	0	0	0	0	0	0	0	0
49	1	1	1	1	1	1	1	Ý	ı	1	1	1	1	1	1	1	1	1	1	1
50	2	2	2	2	2	2	2	ÿ	ı	2	2	2	2	2	2	2	2	2	2	2
51	3	3	3	3	3	3	3	ı	ı	3	3	3	3	3	3	3	3	3	3	3
52	4	4	4	4	4	4	4	Ç	ı	4	4	4	4	4	4	4	4	4	4	4
53	5	5	5	5	5	5	5	ç	ı	5	5	5	5	5	5	5	5	5	5	5
54	6	6	6	6	6	6	6	Ñ	ı	6	6	6	6	6	6	6	6	6	6	6
55	7	7	7	7	7	7	7	ñ	ı	7	7	7	7	7	7	7	7	7	7	7
56	8	8	8	8	8	8	8	ı	ı	8	8	8	8	8	8	8	8	8	8	8
57	9	9	9	9	9	9	9	¿	ı	9	9	9	9	9	9	9	9	9	9	9
58	:	:	:	:	:	:	:	¤	ı	:	:	:	:	:	:	:	:	:	:	:
59	;	;	;	;	;	;	;	£	ı	;	;	;	;	;	;	;	;	;	;	;
60	<	<	<	<	<	<	<	¥	ı	<	<	<	<	<	<	<	<	<	<	<
61	=	=	=	=	=	=	=	§	ı	=	=	=	=	=	=	=	=	=	=	=
62	>	>	>	>	>	>	>	ƒ	ı	>	>	>	>	>	>	>	>	>	>	>
63	?	?	?	?	?	?	?	¢	ı	?	?	?	?	?	?	?	?	?	?	?
64	@	@	@	@	@	@	@	â	ı	@	@	É	@	§	à	@	§	§	§	@

ASCII Code Definitions in Character Sets — Fixed-Space Arc Font (Continued)

Decimal Value	SET																			
	20	21	22	23	24	25	26	27	28	29	50	51	52	53	54	55	56	57	58	59
65	A	A	A	A	A	▣	A	ê	ƒ	A	A	A	A	A	A	A	A	A	A	A
66	B	B	B	B	B	◊	B	ô	ŧ	B	B	B	B	B	B	B	B	B	B	B
67	C	C	C	C	C	△	C	û	ƚ	C	C	C	C	C	C	C	C	C	C	C
68	D	D	D	D	D	+	D	á	†	D	D	D	D	D	D	D	D	D	D	D
69	E	E	E	E	E	x	E	é	‡	E	E	E	E	E	E	E	E	E	E	E
70	F	F	F	F	F	◊	F	ó	∩	F	F	F	F	F	F	F	F	F	F	F
71	G	G	G	G	G	†	G	ú	λ	G	G	G	G	G	G	G	G	G	G	G
72	H	H	H	H	H	x	H	à	‡	H	H	H	H	H	H	H	H	H	H	H
73	I	I	I	I	I	z	I	è	∩	I	I	I	I	I	I	I	I	I	I	I
74	J	J	J	J	J	γ	J	ò	∩	J	J	J	J	J	J	J	J	J	J	J
75	K	K	K	K	K	x	K	ù	‡	K	K	K	K	K	K	K	K	K	K	K
76	L	L	L	L	L	*	L	ä	∩	L	L	L	L	L	L	L	L	L	L	L
77	M	M	M	M	M	z	M	ë	∩	M	M	M	M	M	M	M	M	M	M	M
78	N	N	N	N	N	∩	N	ö	‡	N	N	N	N	N	N	N	N	N	N	N
79	O	O	O	O	O	*	O	ü	∩	O	O	O	O	O	O	O	O	O	O	O
80	P	P	P	P	P	-	P	Å	∩	P	P	P	P	P	P	P	P	P	P	P
81	Q	Q	Q	Q	Q	∩	Q	î	∩	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
82	R	R	R	R	R	R	R	ø	∩	R	R	R	R	R	R	R	R	R	R	R
83	S	S	S	S	S	S	S	Æ	∩	S	S	S	S	S	S	S	S	S	S	S
84	T	T	T	T	T	T	T	à	‡	T	T	T	T	T	T	T	T	T	T	T
85	U	U	U	U	U	U	U	í	∩	U	U	U	U	U	U	U	U	U	U	U
86	V	V	V	V	V	V	V	ø	∩	V	V	V	V	V	V	V	V	V	V	V
87	W	W	W	W	W	W	W	æ	∩	W	W	W	W	W	W	W	W	W	W	W
88	X	X	X	X	X	X	X	Ä	∩	X	X	X	X	X	X	X	X	X	X	X
89	Y	Y	Y	Y	Y	Y	Y	ì	∩	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
90	Z	Z	Z	Z	Z	Z	Z	ö	∩	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
91	[	[	[	ø	[	[	[	Ü	∩	[	Ä	Ä	Æ	Ä	·	[	·	∩	Ä	Æ
92	\	√	ç	Æ	∩	\	¥	É	∩	\	ø	ø	ø	ø	ç	\	ç	Ñ	ç	ø
93	]	]	]	ø	]	]	]	∩	∩	]	Å	Å	Å	Ü	§	]	é	∩	ø	Å
94	^	↑	∩	æ	∩	∩	∩	β	·	∩	∩	Ü	∩	∩	∩	∩	∩	∩	∩	∩
95	-	-	-	-	-	-	-	ô	°	-	-	-	-	-	-	-	-	-	-	-
96	`	`	`	`	`	`	`	Á	·	`	`	é	`	`	`	`	ù	`	`	`

ASCII Code Definitions in Character Sets — Fixed-Space Arc Font (Continued)

Decimal Value	SET																				
	20	21	22	23	24	25	26	27	28	29	50	51	52	53	54	55	56	57	58	59	
97	a	a	a	a	a	n	a	Ã			a	a	a	a	a	a	a	a	a	a	
98	b	b	b	b	b	o	b	ã			b	b	b	b	b	b	b	b	b	b	
99	c	c	c	c	c	C	c	Ð			c	c	c	c	c	c	c	c	c	c	
100	d	d	d	d	d	U	d	ð			d	d	d	d	d	d	d	d	d	d	
101	e	e	e	e	e	—	e	í			e	e	e	e	e	e	e	e	e	e	
102	f	f	f	f	f	≡	f	ì			f	f	f	f	f	f	f	f	f	f	
103	g	g	g	g	g	≅	g	ó			g	g	g	g	g	g	g	g	g	g	
104	h	h	h	h	h	≈	h	ò			h	h	h	h	h	h	h	h	h	h	
105	i	i	i	i	i	~	i	ï			i	i	i	i	i	i	i	i	i	i	
106	j	j	j	j	j	≤	j	õ			j	j	j	j	j	j	j	j	j	j	
107	k	k	k	k	k	≥	k	š			k	k	k	k	k	k	k	k	k	k	
108	l	l	l	l	l	≠	l	š			l	l	l	l	l	l	l	l	l	l	
109	m	m	m	m	m	Δ	m	ú			m	m	m	m	m	m	m	m	m	m	
110	n	n	n	n	n	Π	n	ÿ			n	n	n	n	n	n	n	n	n	n	
111	o	o	o	o	o	Σ	o	ÿ			o	o	o	o	o	o	o	o	o	o	
112	p	p	p	p	p	±	p	þ			p	p	p	p	p	p	p	p	p	p	
113	q	q	q	q	q	∓	q	þ			q	q	q	q	q	q	q	q	q	q	
114	r	r	r	r	r	→	r	·			r	r	r	r	r	r	r	r	r	r	
115	s	s	s	s	s	↑	s	μ			s	s	s	s	s	s	s	s	s	s	
116	t	t	t	t	t	←	t	¶			t	t	t	t	t	t	t	t	t	t	
117	u	u	u	u	u	↓	u	¾			u	u	u	u	u	u	u	u	u	u	
118	v	v	v	v	v	∫	v	—			v	v	v	v	v	v	v	v	v	v	
119	w	w	w	w	w	÷	w	¼			w	w	w	w	w	w	w	w	w	w	
120	x	x	x	x	x	*	x	½			x	x	x	x	x	x	x	x	x	x	
121	y	y	y	y	y	∇	y	ä			y	y	y	y	y	y	y	y	y	y	
122	z	z	z	z	z	·	z	ö			z	z	z	z	z	z	z	z	z	z	
123	{	π	~	~	~	{	{	«			{	ä	ä	æ	ä	é	{	à	·	ã	æ
124	|	†	·	·	·	|	|	□			|	ö	ö	ø	ö	ù	|	ò	ñ	ç	ø
125	}	→	~	~	~	}	}	»			}	ä	ä	ä	ü	è	}	è	ç	õ	ä
126	~	~	·	·	·	~	—	±			—	—	ü	—	B	·	—	ì	~	·	|



ASCII Code Definitions in Character Sets — Fixed-Space Arc Font (Continued)

Decimal Value	SET		
	60	70	80
33	!	!	!
34	"	"	"
35	£	£	£
36	\$	\$	\$
37	%	%	%
38	&	&	&
39	'	'	'
40	(((
41)))
42	*	*	*
43	+	+	+
44	,	,	,
45	-	-	-
46	.	.	.
47	/	/	/
48	0	0	0
49	1	1	1
50	2	2	2
51	3	3	3
52	4	4	4
53	5	5	5
54	6	6	6
55	7	7	7
56	8	8	8
57	9	9	9
58	:	:	:
59	;	;	;
60	<	<	<
61	=	=	=
62	>	>	>
63	?	?	?
64	à	à	à

ASCII Code Definitions in Character Sets — Fixed-Space Arc Font (Continued)

Decimal Value	SET		
	60	70	80
65	A	A	A
66	B	B	B
67	C	C	C
68	D	D	D
69	E	E	E
70	F	F	F
71	G	G	G
72	H	H	H
73	I	I	I
74	J	J	J
75	K	K	K
76	L	L	L
77	M	M	M
78	N	N	N
79	O	O	O
80	P	P	P
81	Q	Q	Q
82	R	R	R
83	S	S	S
84	T	T	T
85	U	U	U
86	V	V	V
87	W	W	W
88	X	X	X
89	Y	Y	Y
90	Z	Z	Z
91	.	.	.
92	¢	¢	¢
93	§	§	§
94	^	^	^
95	—	—	—
96	μ	μ	μ

ASCII Code Definitions in Character Sets — Fixed-Space Arc Font (Continued)

Decimal Value	SET		
	60	70	80
97	a	a	a
98	b	b	b
99	c	c	c
100	d	d	d
101	e	e	e
102	f	f	f
103	g	g	g
104	h	h	h
105	i	i	i
106	j	j	j
107	k	k	k
108	l	l	l
109	m	m	m
110	n	n	n
111	o	o	o
112	p	p	p
113	q	q	q
114	r	r	r
115	s	s	s
116	t	t	t
117	u	u	u
118	v	v	v
119	w	w	w
120	x	x	x
121	y	y	y
122	z	z	z
123	é	é	é
124	ù	ù	ù
125	è	è	è
126	"	"	"

Notes
