IBM Series/1
Configurator

IBM

Series/1

GA34-0042-1

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IBM Series/1
Configurator

SERIES/1 CONFIGURATOR

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SERIES/1 SYSTEM

A Series/1 *system* is all the units mounted within, or associated with, a single enclosure (whether it is a single or multiple rack enclosure). The system can be either of the following types:

• A single processor system with one processor and the units/features associated with it.

• A multiple processor system with two or more processors with *each* processor having its own associated units/features.

Each processor and associated units/features within a single or multiple processor system *must be independently* configured (see *'Prerequisites'* on page 1). This is required to provide for the following:

• Correct determination of each processor model required.

• Correct configuration and association of features to the units, and the units to the processor.

• Correct determination of power requirements.

• Correct determination of the total number of rack enclosures required.

• Correct entry of each processor and associated units/features on the order form.

Therefore, except where noted, it is assumed that a single processor system is being configured. At those places in the configuration process where it is necessary to consider multiple processor configuration requirements, specific instructions will be given as to what to do.

The multiple processor system instructions will appear during the following configuration steps:

• **STEP 6** Rack enclosure selection.

• **STEP 7** System power selection.

• **STEP 8** Filling out the order form.

PURPOSE

The purpose of this document is to assist in configuring a Series/1. Depending upon user application, the necessary Series/1 units and features are selected by following a step-by-step procedure. The results of these steps are recorded on a summary worksheet which is used to create a Series/1 order.

RELATED PUBLICATIONS

The following are related publications.

GA34-0035	*IBM Series/1 System Summary*
GA34-0021	*IBM Series/1 Model 5 4955 Processor and Processor Features Description*
GA34-0022	*IBM Series/1 Model 3 4953 Processor and Processor Features Description*
GA34-0024	*IBM Series/1 4962 Disk Storage Unit and 4964 Diskette Unit Description*
GA34-0025	*IBM Series/1 4974 Printer Description*
GA34-0026	*IBM Series/1 4979 Display Station Discription*
GA34-0027	*IBM Series/1 4982 Sensor Input/Output Unit Description*
GA34-0028	*IBM Series/1 Communications Features Description*
GA34-0029	*IBM Series/1 Installation Manual–Physical Planning*
GA34-0031	*IBM Series/1 Attachment Features Description*
GA34-0033	*IBM Series/1 User's Attachment Manual*
GA34-0044	*IBM Series/1 4973 Line Printer Description*

PREREQUISITES

It is assumed that the reader has a knowledge of the structure, capability, and function of each Series/1 unit and feature.

If a multiple processor system is being configured, a *Series/1 Configurator Work Pad* (GX34-0045) will be required.

If the work pad is unavailable, a separate *Series/1 Configurator* manual (GA34-0042-1) may be used for each processor and associated units/features within the multiple processor system.

How To Use This Document

INTRODUCTION

A basic system diagram is provided on the next page to serve as a guide in using this document. The numbers on the diagram correspond to the steps used to configure the Series/1. The steps are as follows:

1 Select DP I/O units and features

2 Select communications features

3 Select user access features

4 Select sensor I/O units and features

5 Select processor, I/O expansion, and battery backup units and features

6 Select rack enclosures and features

7 Select system power

8 Fill out the order form

SECTIONS

This document is divided as follows:

Steps 1 through 7

Each of these steps is divided into a left hand page and a right hand page.

- Left hand page — tells how to complete the step in use.

- Right hand page — graphically presents the units and/or features available for that step.

    Steps 1 through 7 have work columns (Columns A, B, C, and D) where information is recorded. The instructions for these steps will tell how and what to record in the columns. (Steps 6 and 7 do not use Column D).

    The horizontal lines that appear on the right hand pages for Steps 1 through 7 and on the summary worksheet are used only as visual aids for working straight across the pages.

Step 8

This step tells how to fill out an order for a Series/1 system, whether it is a single processor or multiple processor system.

Left hand Page

Right hand Page

Fold Out Summary
Worksheet for Steps 1–7
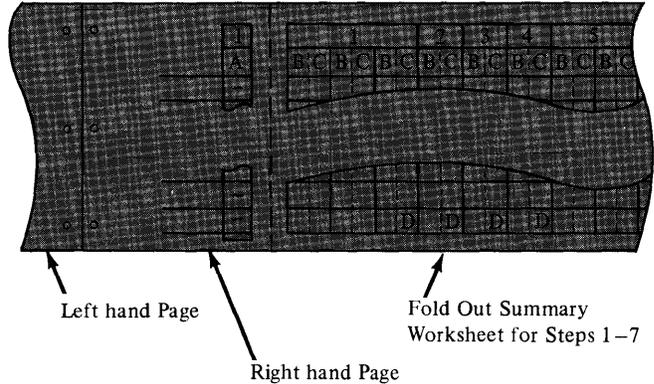
Summary Worksheet

The units and/or features selected in Steps 1 through 7 are recorded here. When filled out, the summary worksheet will be used with Charts A and B (Step 5) to fill out the order form (Step 8).

   If a multiple processor system is being configured, the 2nd, 3rd, etc. processor and associated units/features selected can be recorded by using a *Series/1 Configurator Work Pad* (GX34-0045) or by using a separate Series/1 Configurator manual (GA34-0042-1) for each processor and associated units/features selected.

Appendices

The following appendices are included for reference information only:

- Appendix A—feature location priority assignments

- Appendix B—device address assignment overview

SERIES/1 CONFIGURATOR WORK PAD (GX34-0045)

This is a 11 x 17 pad of summary worksheets (duplicates of page 29) with Charts A and B (duplicates of page 17) printed on the back of each sheet. Also included on the back of each sheet will be a duplicate of the chart on page 24 and its associated instructions.

SPECIAL TERMINOLOGY

The term *Channel Feature* is used in this manual only. The way this manual is formatted and used, it was necessary to "isolate" certain Series/1 features and the storage additions because they each require one card slot in either the processor unit or an I/O expansion unit. (The storage additions can only reside in the processor unit).

I/O Expansion Unit(s) and Feature(s) **5**

PROCESSOR I/O CHANNEL

DP I/O Attachment Feature(s) **1**

DP I/O Unit(s) and Feature(s)

Communications Feature(s) **2**

User Access Feature(s) **3**

6

Rack Enclosure(s) and Features

5

Processor Unit

Sensor I/O Attachment Feature(s) **4**

Sensor I/O Unit(s)

Sensor I/O Feature(s)

Processor Features **5**

7

System Power

8

Order Form
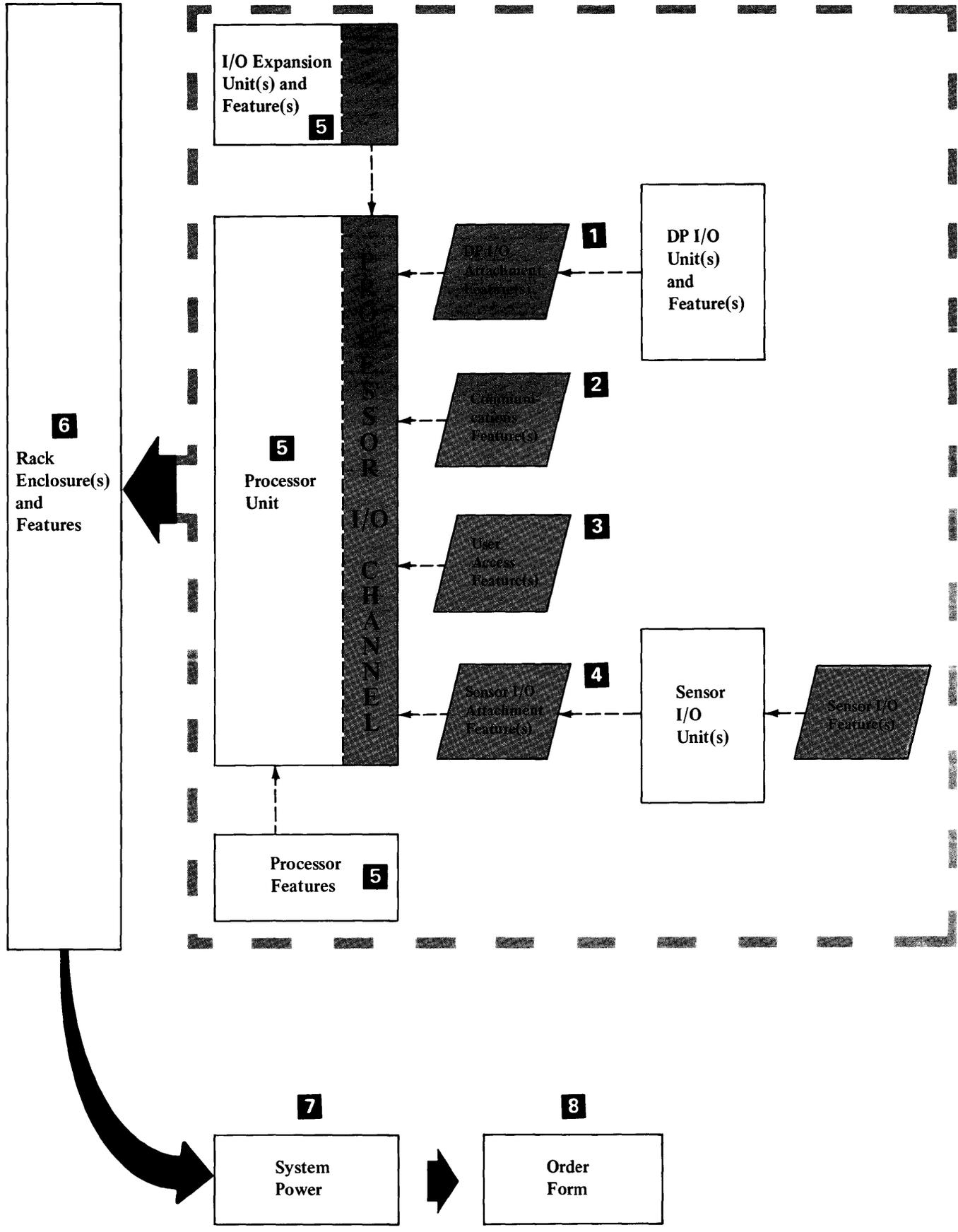
STEP 1 INSTRUCTIONS

The Series/1 DP I/O units and features available are shown on pages 5, 7, and 9.

Special Note: Review page iii for special configuration rules and definitions before beginning Step 1 below.

1. Turn to page 29 and fold out the summary worksheet. The results of **STEPS 1** through **7** will be recorded here. Review the foldout to become familiar with its layout and then proceed to Step 2 below.

2. Proceed to Step 3 below if any of the I/O units on page 5 are desired. If not, go to page 6, Step 1.

3 Record the following information in Columns 1A, 1B, and 1C for each type of I/O unit desired:

   1A The quantity of I/O units desired.

   1B The quantity of I/O units and features selected.

   1C The quantity of I/O channel features required.

4. Go to page 6, Step 1.

Notes: (For text on facing page)

1. For each I/O unit, an I/O channel feature is required (except the 4962-2 and 2F, which require two I/O channel features).

2. Only one primary (#9133, #9136, or #9146) and one alternate (#9134, #9137, or #9147) IPL feature may be selected per processor. When working **STEP 8** (filling out the order form), each IPL code selected *must* be recorded with each associated channel feature selected.

Example:

DP I/O units and features desired:

(1)   4962-1F Disk Storage Unit
       with Primary IPL – Disk

STEP 1		DP I/O	
A		B	C
Unit Quantity		Units, Features	Channel Features
—		4962-1 ——— #9133 △ #9134 △	#3580 ___
1		4962-1F *1* #9133 △ #9134 △	#3580 *1*
—		4962-2 ——— #9133 △ #9134 △ #9136 △ #9137 △	#3580 ___ #3581 ___
—		4962-2F ——— #9133 △ #9134 △ #9136 △ #9137 △	#3580 ___ #3581 ___

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STEP ▉ DP I/O UNITS AND FEATURES

	STEP ▉
	A
	Unit Quantity
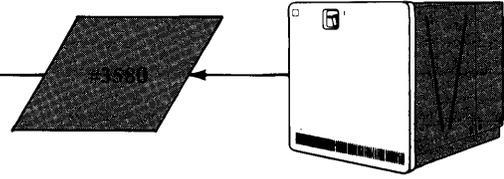
4962-1   Disk Storage Unit (Note 1)
           (9,308,160 bytes)
#3580   4962 Disk Storage Unit Attachment
#9133   Primary IPL – Disk ⎫ Note 2
#9134   Alternate IPL – Disk ⎭

—
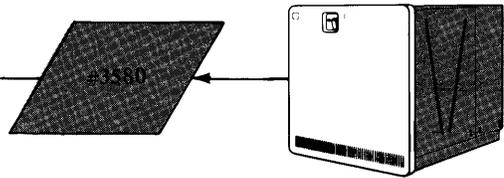
4962-1F Disk Storage Unit (Note 1)
           (9,308,160 bytes plus 122,880 bytes
           under fixed heads)
#3580   4962 Disk Storage Unit Attachment
#9133   Primary IPL – Disk ⎫ Note 2
#9134   Alternate IPL – Disk ⎭

—
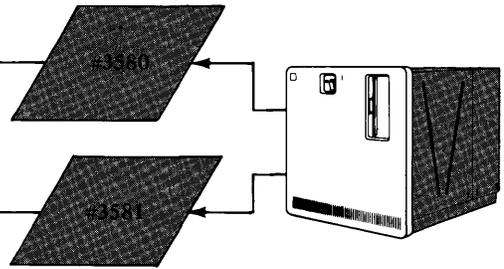
4962-2   Disk Storage Unit (Note 1)
           (9,308,160 bytes plus 492,544 bytes
           on a diskette)
#3580   4962 Disk Storage Unit Attachment
#3581   4964 Diskette Unit Attachment
#9133   Primary IPL – Disk ⎫
#9134   Alternate IPL – Disk ⎬ Note 2
#9136   Primary IPL – Diskette ⎪
#9137   Alternate IPL – Diskette ⎭

—
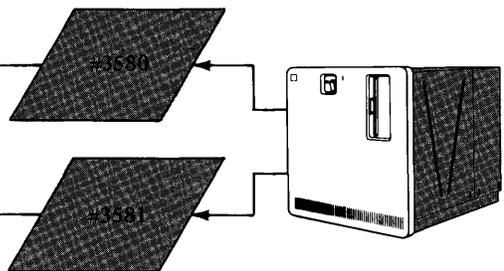
4962-2F Disk Storage Unit (Note 1)
           (9,308,160 bytes plus 122,880 bytes
           under fixed heads, and 492,544
           bytes on a diskette)
#3580   4962 Disk Storage Unit Attachment
#3581   4964 Diskette Unit Attachment
#9133   Primary IPL – Disk ⎫
#9134   Alternate IPL – Disk ⎬ Note 2
#9136   Primary IPL – Diskette ⎪
#9137   Alternate IPL – Diskette ⎭

—

PROCESSOR I/O CHANNEL

#3580

#3580

#3580

#3581

#3580

#3581

STEP ① INSTRUCTIONS (Continued)

1. Proceed to Step 2 below if any of the I/O units on page 7 are desired. If not, go to page 8, Step 1.

2. Record the following information in Columns 1A, 1B, and 1C for each type of I/O unit desired:

   1A The quantity of I/O units desired.

   1B The quantity of I/O units and features selected.

   1B The quantity of printer and/or display station attachment cable increments desired.

   1C The quantity of I/O channel features required.

3. Go to page 8, Step 1.

Notes: (For text on facing page)

1. A basic 6 m (20 ft) attachment cable is included with each 4974 and 4979 unit. To obtain a longer cable, increments of 3 m (10 ft) may be obtained up to a maximum of 45 m (150 ft).
   For example: To obtain a 27 m (90 ft) cable, **seven** increments are required. Therefore, feature code #5720 and/or #5740 must be ordered with a quantity of (7).

2. For each I/O unit, an I/O channel feature is required.

3. Only one primary (#9133, #9136, or #9146) and one alternate (#9134, #9137, or #9147) IPL feature may be selected per processor. When working **STEP** **8** (filling out the order form), each IPL code selected *must* be recorded with each associated channel feature selected.

Example:

DP I/O units and features desired:

(1) 4964-1 Diskette Unit with Alternate IPL – Diskette
(1) 4979-1 Display Station
(1) 45 m (150 ft) attachment cable

STEP ①	STEP ①	
A	DP I/O	
Unit Quantity	**B** Units, Features	**C** Channel Features
1	4964-1 *1* #9136 △ #9137 ⚠	#3581 *1*
—	4974-1 — #5720 __ #4450 __	#5620 __
1	4979-1 *1* #5740 *13*	#3585 *1*

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STEP **1** DP I/O UNITS AND FEATURES

A

Unit
Quantity

4964-1	Diskette Unit (Note 3) (492,544 bytes)	—
#3581	4964 Diskette Unit Attachment	
#9136	Primary IPL – Diskette ⎱ Note 3	
#9137	Alternate IPL – Diskette ⎰	
4974-1	Printer Unit (Notes 1 and 2) (120 characters per second)	—
#5620	4974 Printer Attachment	
#5720	4974 Printer Attachment Cable Increment	
#4450	Forms Stand	
4979-1	Display Station (Notes 1 and 2) (1920 character display)	—
#3585	4979 Display Station Attachment	
#5740	4979 Display Station Attachment Cable Increment	

PROCESSOR – I/O CHANNEL

#3581

#5620

#3585

STEP ■ INSTRUCTIONS (Continued)

1. Proceed to Step 2 below if any of the I/O units on page 9 are desired. If not, skip Step 2 below.

2. Record the following information in Columns 1A, 1B, and 1C for the type of I/O unit desired:

   1A The quantity of I/O units desired.

   1B The quantity of I/O units selected.

   1B The quantity of forms stands (4973-1 only) desired.

   1B The quantity of basic print belts required.

   1B The quantity of any additional print belts required.

   1B The quantity of line printer attachment cable increments desired.

   1C The quantity of I/O channel features required.

3. Add up the quantities (if any) of I/O channel features recorded in Column 1C and enter the total at **1D** .
   Make sure that all three Columns titled 1C on the summary worksheet are examined for possible entries.

4. **STEP 1** is completed. Go to page 10.

Notes: (For text on facing page)

1. A basic 6 m (20 ft) attachment cable is included with the 4973 Line Printer. To obtain a longer cable, increments of 3 m (10 ft) may be obtained up to a maximum of 45 m (150 ft).
   For example: To obtain a 21 m (70 ft) cable, **five** increments are required. Therefore, feature code #5700 must be ordered with a quantity of (5).

2. A print belt is included with the 4973 Line Printer. However, the character size (48, 64, or 96) must be specified for this basic belt.
   If additional print belts are desired, the character size must also be specified.

3. For each I/O unit, an I/O channel feature is required.

Example:

DP I/O units and features desired:

(1)	4973-2 Line Printer
(1)	64 character basic print belt
(1)	96 character additional print belt
(1)	24 m (80 ft) attachment cable

STEP **1**		DP I/O	
A Unit Quantity		**B** Units Features	**C** Channel Features
—		4973-1 —— #5700 __ #4450 __	#5630 __
1		4973-2 *1* #5700 *6*	#5630 *1*
		#9490 __ #9491 *1* #9492 __ #5821 __ #5822 __ #5823 *1*	
			1D *5*

8

STEP ■ DP I/O UNITS AND FEATURES

Vertical sidebar: PROCESSOR I/O CHANNEL

	STEP ■
	A
	Unit Quantity

		Unit Quantity	
4973-1	Line Printer Unit (Notes 1, 2, and 3) (150 lines per minute)	—	
#5630	4973 Line Printer Attachment		
#5700	4973 Line Printer Attachment Cable Increment		
#4450	Forms Stand		
4973-2	Line Printer Unit (Notes 1, 2, and 3) (400 lines per minute)	—	
#5630	4973 Line Printer Attachment		
#5700	4973 Line Printer Attachment Cable Increment		
#9490	48 Character EBCDIC Print Belt (Basic print belt)		
#9491	64 Character EBCDIC Print Belt (Basic print belt)		
#9492	96 Character EBCDIC Print Belt (Basic print belt)		
#5821	48 Character EBCDIC Print Belt (Additional print belt)		
#5822	64 Character EBCDIC Print Belt (Additional print belt)		
#5823	96 Character EBCDIC Print Belt (Additional print belt)		

#5630

#5630

4973 Print Belts

(Common to both the 4973-1 and 4973-2 Line Printers)

STEP **2** INSTRUCTIONS

The Series/1 communications features available are shown on page 11.

1. Proceed to Step 2 below if any of the communications features on page 11 are desired. If not, skip Step 2 below.

2. Record the following information in Columns 2A, 2B, and 2C for each type of communications feature desired:

    2A The quantity of communications lines desired.

    2B The quantity of cables and features desired.

    2C The quantity of I/O channel features required.

    Add up the quantities (if any) of I/O channel features recorded in Column 2C and enter the total at **2D** .

3. **STEP 2** is completed. Go to page 12.

Notes: (For text on facing page)

1. For the #2092 adapter, the #2091 controller is required.

2. For the #2094 adapter, the #2093 controller is required.

3. Only one remote (#9154 or #9155) IPL feature may be selected per processor. When working **STEP 8** (filling out the order form), each IPL code selected *must* be recorded with each associated channel feature selected.

4. For CCITT V.35 interface.

Example:

Communications features desired:

(3) Asynchronous lines
(2) SDLC lines
(5) EIA* data set cables
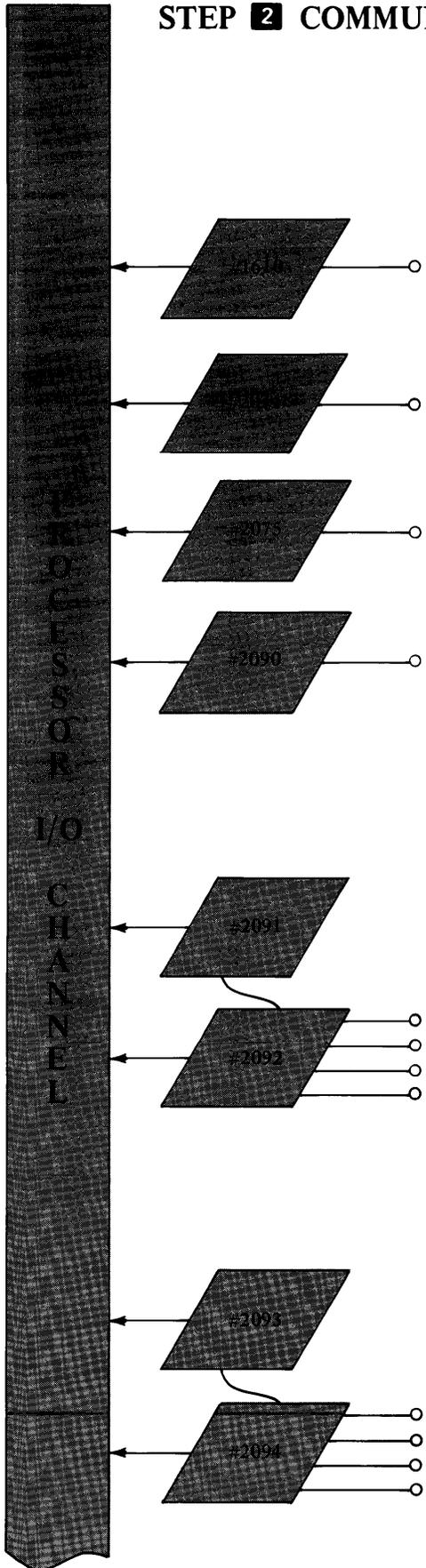
*Electronic Industries Association

STEP **2** A Comm. Lines		STEP **2** Communications	
		B Cables, Features	**C** Channel Features
_3_			#1610 _3_
		#2056 __ #2057 _3_	
__		#2057 __ #9154 △	#2074 __
__		#2058 __ #2060 __ #9155 △	#2075 __
_2_		#2057 _2_	#2090 _2_
			#2091 __
__		#2056 __ #2057 __	#2092 __
			#2093 __
__		#2057 __	#2094 __
			2 D _5_

STEP **2** COMMUNICATIONS FEATURES

Feature	Description	Comm. Lines
#1610	Asynchronous Communications Single Line Control (1 line per feature)	——
#2056	Asynchronous Local Communications Cable	
#2057	EIA Data Set Cable	
#2074	Binary Synchronous Communications Single Line Control (1 line per feature)	——
#2057	EIA Data Set Cable	
#9154	Remote IPL (Note 3)	
#2075	Binary Synchronous Communications Single Line Control – High Speed (1 line per feature)	——
#2058	BSC/High Speed Cable	
#2060	BSC V.35/HS DDN Cable (Note 4)	
#9155	Remote IPL (Note 3)	
#2090	SDLC Single Line Control (1 line per feature)	——
#2057	EIA Data Set Cable	
#2091	Asynchronous Communications 8-Line Control (Controls up to two #2092 adapters) (Notes 1 and 2)	
#2092	Asynchronous Communications 4-Line Adapter (Up to four lines per feature) (Notes 1 and 2)	——
#2056	Asynchronous Local Communications Cable	
#2057	EIA Data Set Cable	
#2093	Binary Synchronous Communications 8-Line Control (Notes 1 and 2) (Controls up to two #2094 adapters)	
#2094	Binary Synchronous Communications 4-Line Adapter (Up to four lines per feature) (Notes 1 and 2)	——
#2057	EIA Data Set Cable	

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STEP ❸ INSTRUCTIONS

The Series/1 user access features available are shown on page 13.

1. Proceed to Step 2 below if any of the user access features on page 13 are desired. If not, skip Step 2 below.

2. Record the following information in Columns 3A, 3B, and 3C for each type of user access feature desired:

   3A The quantity of timers, points, etc. desired.

   3B The quantity of cables and features desired.

   3C The quantity of I/O channel features required.

   Add up the quantities (if any) of I/O channel features recorded in Column 3C and enter the total at **3D** .

3. **STEP ❸** is completed. Go to page 14.

Notes: (For text on facing page)

1. Only one primary (#9133, #9136, or #9146) and one alternate (#9134, #9137, or #9147) IPL feature may be selected per processor. When working **STEP ❽** (filling out the order form), each IPL code selected *must* be recorded with each associated channel feature selected.

2. Converts an IBM card socket to a socket suitable for commercially available connectors. Provides connection function only and *must be* installed as last item in I/O channel sequence.

3. Communications Power (#2010) is required in the 4953-B, 4953-D, 4955-A, 4955-B, 4955-C, 4955-D, or 4959-A for Teletypewriter Adapter (#7850) when EIA voltage interface is used or power is taken from the system for currect loop attachment.

   If Communications Power (#2010) is required, record in Column 5B the quantity required when told to do so by the instructions for **STEP ❺** .
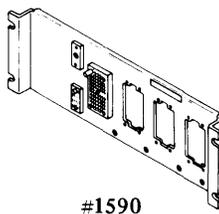

Example:

User access features desired:

(1) Timer
(1) Teletypewriter adapter
(1) Customer access panel

STEP ❸		STEP ❸	
A		**User Access**	
Timers, Points, etc.		**B** Cables, Features	**C** Channel Features
_1_			#7840 _1_
—			#1560 __
		#1593 __	
_1_		#2055 __ #9146 △ #9147 △	#7850 _1_
—		#1594 __	#5430 __
—			#1595 __
_1_		#1590 _1_	
		#2059 _1_	
			3D _2_

STEP ❸ USER ACCESS FEATURES

#1590

	STEP ❸
	A Timers, Points, etc.
#7840 Timers (Two per card; five clock rates, external gate)	—
#1560 Integrated DI/DO Non-isolated (Two groups; each has 16 DI/PI and 16 DO non-isolated points, and each group has ready and sync lines) **#1593** Cust. Acc. Panel – Integrated DI/DO Cable	—
#7850 Teletypewriter Adapter (Note 3) **#2055** Teletypewriter Cable (From Teletypewriter to #7850) **#9146** Primary IPL (Note 1) **#9147** Alternate IPL (Note 1)	—
#5430 Customer Direct Program Control Adapter **#1594** Cust. Acc. Panel – DPC Adapter Cable	—
#1595 Channel Socket Adapter (Note 2)	—
#1590 Customer Access Panel (Provides termination for up to a maximum of four #1593 or #1594 cables in any combination, and provides internal cables for connecting one #7840 and one #7850) **#2059** Teletypewriter – Cust. Acc. Panel Cable	—

STEP ◢4◣ INSTRUCTIONS

The Series/1 sensor I/O unit and features available are shown on page 15.

1. Proceed to Step 2 below if the sensor I/O unit and/or any of the features on page 15 are desired. If not, skip Step 2 below.

2. Record the following information in Columns 4A, 4B, and 4C for each sensor I/O unit and/or feature desired:

   4A The number of points/channels desired.

   4B The quantity of units/features desired.

   4C The quantity of I/O channel features required.

   Add up the quantities (if any) of I/O channel features recorded in Column 4C and enter the total at **4D** .

3. **STEP 4** is completed. Go to page 16.

Notes: (For text on facing page)

1. One #1060 analog input control is required for each 4982 with a #4940 or #4950 analog input multiplexer.

2. A #1060 analog input control is required if a #1070 amplifier multirange is selected.

3. Each sensor I/O feature requires one slot in the sensor I/O unit.

4. For each 4982 Sensor I/O Unit, one #6305 I/O channel feature is required.

Example:

Sensor I/O units and features desired:

(1)   4982-1 Sensor I/O Unit
(25) DI/PI non-isolated lines
(8)   DI/PI isolated lines

STEP 4		STEP 4	
A DI/DO/AO Points, and AI Channels		Sensor I/O	
		B Units, Features	**C** Channel Features
		4982-1 _1_	#6305 _1_
		#1060 __	
		#1070 __	
—		#4940 __	
—		#4950 __	
—		#1065 __ #9174 __ #9175 __ #9176 __ #9177 __ #9178 __ #9179 __	
_25_		#3525 _2_	
_8_		#3530 _1_	
—		#3535 __	
			4D _1_

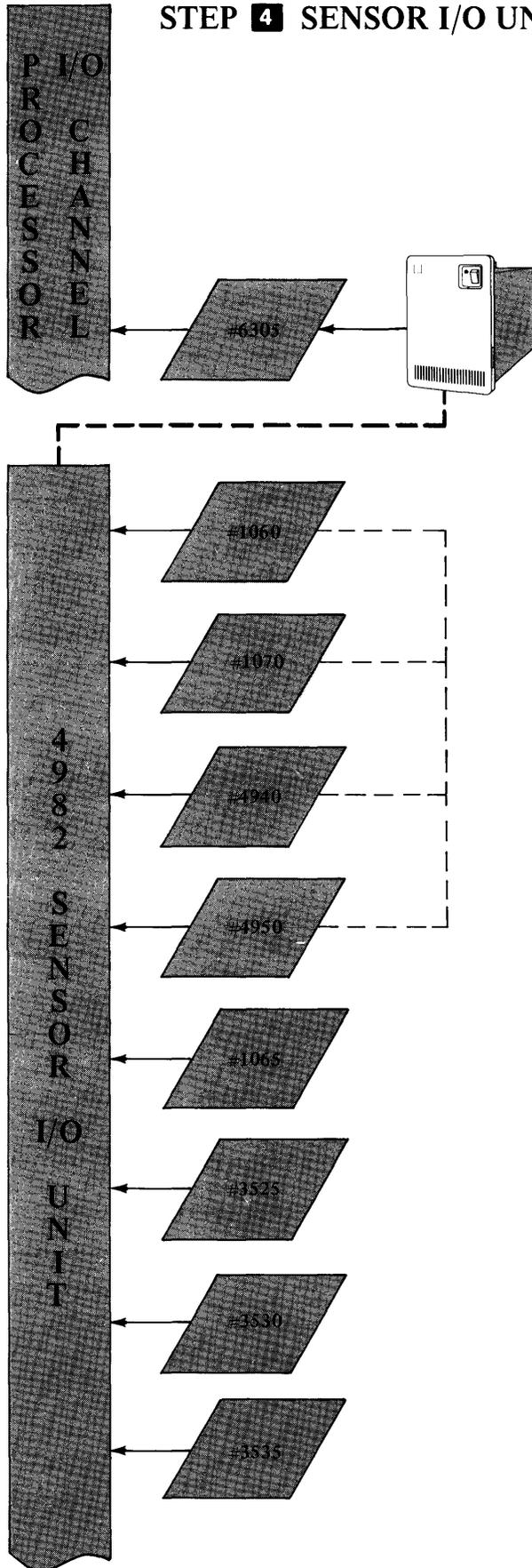# STEP 5 INSTRUCTIONS (Continued)

4953 Processor Units

1. Check on Chart A, the 4953 Processor selected.

2. Record on Chart A, under the processor selected, each Storage Addition (#6315 and/or #6316) needed.

3. Record on Chart A, under the processor selected, each I/O channel feature selected in Columns 1C, 2C, 3C, and 4C. (See Notes 1 through 5.)

   - A 4959-A I/O Expansion Unit will be required if:
     - The number of I/O channel features selected exceeds the number of I/O slots available.
     - The number of I/O channel features selected is the same as the number of I/O slots available and a #7840, #6305, #1560, #5430, or #7850 (see Note 1) I/O channel feature is not one of the I/O channel features selected (4953-B or 4953-D only).

   - Skip Step 4 below if all of the I/O channel features can be recorded in the processor. If not, proceed to Step 4 below.

4. Record on Chart B, under the 1st 4959-A, the overflow of I/O channel features. Continue to the 2nd, 3rd, etc., if necessary.

5. Check in Column **5A** the processor selected.

6. Record in Columns 5B and 5C the following information for the processor checked in Column 5A:

   5B The quantity of (1) for the Processor Unit (4953-A, B, C, or D) selected.

   5B The quantity of (1) each if Programmer Console #5650, Communications Power #2010, and/or Communications Indicator Panel #2000 selected.

   5C The quantity of any Storage Additions (#6315 and/or #6316) selected.

   5C The quantity of (1) if Channel Repower (#1565) required.

7. Go to page 22, Step 1.

Notes: (For text on facing pages)

1. Slot A is limited to one of the following:

#1565 –	Channel Repower
#7840 –	Timers
#6305 –	4982-1 Sensor I/O Unit Attachment
#1560 –	Integrated DI/DO
#5430 –	Customer Direct Program Control Adapter
#7850 –	Teletypewriter Adapter (If system ± 12 volts dc not required)

2. Channel Repower (#1565) is required in 4953 slot A if a 4959-A is required.

3. A maximum of five Channel Repower features may be accommodated with any single processor configuration.

4. No more than 24 communications lines can be assigned to a 4953-B, 4953-D, or a 4959-A. (See Note 9 below.)

5. No more than four #1560 or #5430 I/O channel features can be assigned to any processor or 4959-A.

6. Communications Power (#2010) is required with communications features assigned to 4953-B, 4953-D, or 4959-A. (See Note 3 on page 12.)

7. Channel Repower (#1565) is required in slot B (4959-A) if another 4959-A follows in the chain.

8. Communications Indicator Panel (#2000) cannot be used with the 4953-A or 4953-C.

9. If selected, the following communications features *must* be recorded together, as indicated, in either the processor or I/O expansion unit:

   - #2092 adapters must be adjacent to the #2091 controllers.

   - #2094 adapters must be adjacent to the #2093 controllers.

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	STEP **4**
	A DI/DO/AO Points, and AI Channels
4982-1 Sensor I/O Unit (Note 4) (Capacity for up to eight sensor I/O cards) **#6305** 4982 Sensor I/O Unit Attachment	
#1060 Analog Input Control (Notes 1, 2, and 3) (Required for #1070, #4940, and #4950; one per sensor I/O unit)	
#1070 Amplifier Multirange (Notes 2 and 3) (One per sensor I/O unit)	
#4940 Multiplexer/Reed Relay (Notes 1 and 3) (Eight channels AI per card)	——
#4950 Multiplexer/Solid State (Notes 1 and 3) (16 channels AI per card)	—
#1065 Analog Output (Note 3) (2 points per card) **#9174** −10 volts to +10 volts dc ⎫ **#9175** −5 volts to +5 volts dc ⎬ 1st point **#9176** 0 volts to +10 volts dc ⎭ **#9177** −10 volts to +10 volts dc ⎫ **#9178** −5 volts to +5 volts dc ⎬ 2nd point **#9179** 0 volts to +10 volts dc ⎭	——
#3525 DI/PI Non-isolated (Note 3) (16 points per card)	——
#3530 DI/PI Isolated (Note 3) (16 points per card)	——
#3535 DO Non-isolated (Note 3) (16 points per card)	——

PROCESSOR I/O CHANNEL

#6305

4982 SENSOR I/O UNIT

#1060

#1070

#4940

#4950

#1065

#3525

#3530

#3535

STEP 5 INSTRUCTIONS

The Series/1 processor units and features available are shown on pages 19 and 21. The Series/1 I/O expansion, battery backup units and features are shown on page 23.

1. Select the processor unit needed. To determine the processor needed, the following factors must be considered:
    *   16K or 32K bytes of storage (depending upon model selected) is basic on all processors.
    *   How much additional storage is required? (Depending upon model selected, up to 64K or 128K bytes of storage is available.)
    *   A 4955-B or D Processor and Relocation Translator (#6335) must be selected if storage is to exceed 64K bytes.
    *   How many I/O channel features are selected in Columns 1C, 2C, 3C, and 4C?
    *   Which features (like Communications Indicator Panel #2000) are needed?
    *   A 4955 Processor must be selected if storage protect or Floating Point (#3920) is needed.

2. Review the diagram to the right which gives an overview for completing **STEP 5** .

3. **Fold this page out** and:
    *   Go to page 18, Step 1, if a 4953 Processor is selected.
    *   Go to page 20, Step 1, if a 4955 Processor is selected.
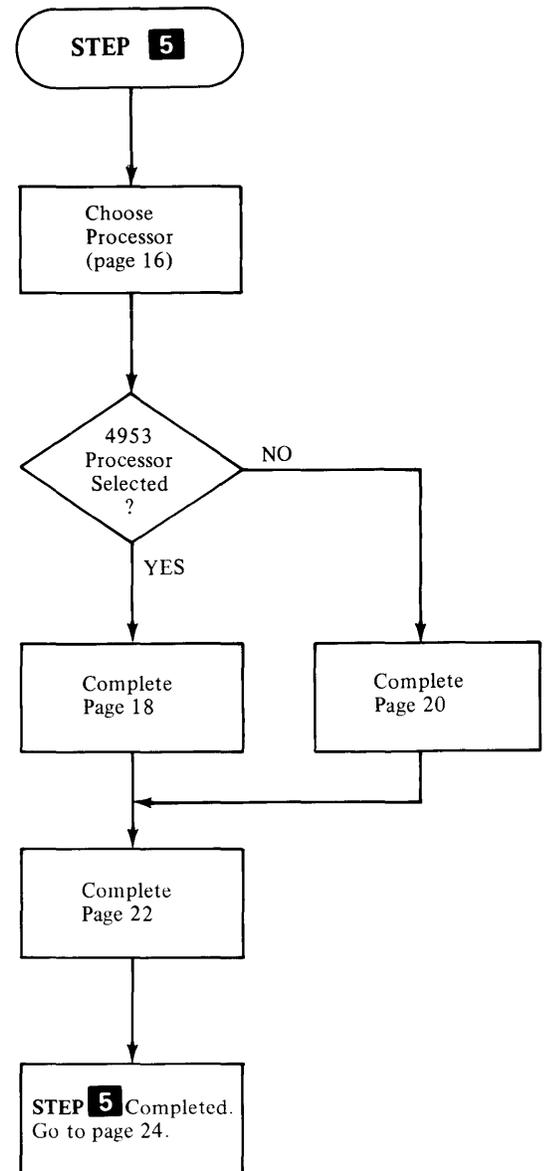
STEP 5 OVERVIEW

STEP 5

Choose
Processor
(page 16)

4953
Processor
Selected
?
— NO —
— YES —

Complete
Page 18

Complete
Page 20

Complete
Page 22

STEP 5 Completed.
Go to page 24.

CHART A – PROCESSOR UNITS

4953-A __
Any I/O See Note 2	# _____
	# _____
	# _____
Any I/O or 16 KB storage	# _____
16 KB Basic Storage	
Processor	

Special Note 1: If you would like to see the guidelines that IBM will follow when assigning features to the processor and I/O expansion units, refer to Appendix A.
To see the guidelines that IBM will follow when assigning device addresses, refer to Appendix B.

Special Note 2: The letters (A, B, C, D, etc.) refer to the card socket positions in the processor and/or I/O expansion card files.

4953-B __
A	Limited I/O See Notes 1, 2	# _____
B		# _____
C		# _____
D		# _____
E		# _____
F		# _____
G		# _____
H		# _____
I		# _____
K	Any I/O	# _____
L		# _____
M		# _____
	Any I/O or 16 KB storage	# _____
	16 KB Basic Storage	
	Processor	

4953-C __
A	Any I/O See Note 2	# _____
B	Any I/O	# _____
	Any I/O or 16 KB storage	# _____
	Any I/O or storage	# _____
C	32 KB Basic Storage	
	Processor	

4953-D __
A	Limited I/O See Notes 1, 2	# _____
B		# _____
C		# _____
D		# _____
E		# _____
F		# _____
G		# _____
H		# _____
I		# _____
K		# _____
L	Any I/O	# _____
	Any I/O or 16 KB storage	# _____
	Any I/O or storage	# _____
	32 KB Basic Storage	
	Processor	

4955-A __
A	Limited I/O See Notes 1, 2	# _____
B		# _____
C		# _____
D		# _____
E		# _____
F		# _____
G	Any I/O	# _____
H	Floating pt. or any I/O	# _____
I	Processor	
K	Processor	
L	Processor	
M	16 KB Basic Storage	
N	Additional storage	# _____
O		# _____
		# _____

4955-B __
A	Limited I/O See Notes 1, 2	# _____
	Any I/O	# _____
	Floating pt. or any I/O	
D	Processor	
E	Processor	
F	Processor	
	16 KB Basic Storage	
	Additional storage	# _____
		# _____
		# _____
		# _____
		# _____
	Relocation translator	# _____

4955-C __
A	Limited I/O See Notes 1, 2	# _____
B		# _____
C		# _____
D		# _____
E		# _____
F		# _____
G	Any I/O	# _____
		# _____
	Any I/O	# _____
K	Floating pt. or any I/O	# _____
L	Processor	
M	Processor	
N	Processor	
P	32 KB Basic Storage	
G	Additional storage	# _____

4955-D __
A	Limited I/O See Notes 1, 2	# _____
B		# _____
C		# _____
D		# _____
E		# _____
F	Any I/O	# _____
G	Floating pt. or any I/O	# _____
H	Processor	
I	Processor	
K	Processor	
	32 KB Basic Storage	
M	Additional storage	# _____
N		# _____
P		# _____
	Relocation translator	# _____

CHART B – I/O EXPANSION UNITS

1st 4959-A
	Reserved for cable to processor	
	See Note 7	# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
	Any I/O	# _____

2nd 4959-A
	Reserved for cable to 1st 4959-A	
	See Note 7	# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
	Any I/O	# _____

3rd 4959-A
	Reserved for cable to 2nd 4959-A	
	See Note 7	# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
	Any I/O	# _____

4th 4959-A
	Reserved for cable to 3rd 4959-A	
	See Note 7	# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
	Any I/O	# _____

5th 4959-A
	Reserved for cable to 4th 4959-A	
	See Note 7	# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
	Any I/O	# _____

6th 4959-A
	Reserved for cable to 5th 4959-A	
	See Note 7	# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
		# _____
	Any I/O	# _____

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STEP 5 PROCESSOR, I/O EXPANSION, AND BATTERY BACKUP UNITS AND FEATURES

4953 Processor Units

4953-A
Processor Unit
(16 KB basic,
maximum of
64 KB)

ABCDEF

Any I/O

Any I/O or 16 KB Storage   Basic Storage (16 KB)
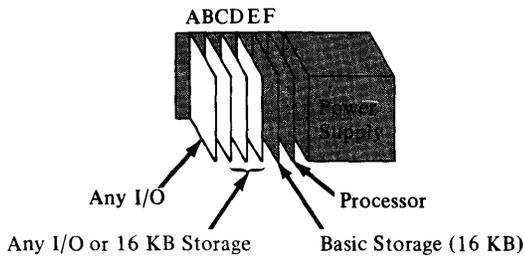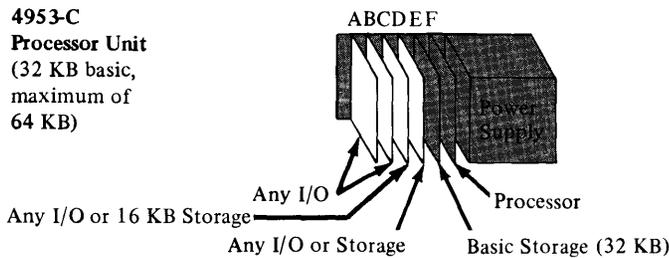
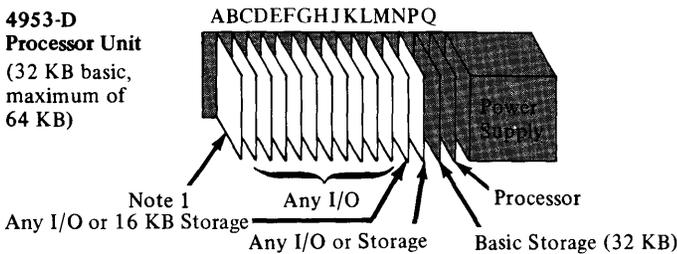Processor

4953-A	Processor Unit (Note 8) (3 additional storage or 4 I/O or any combination of both up to a maximum of 4)	———
#6315	Storage Addition – 16,384 Bytes	
#5650	Programmer Console (Maximum of one)	
#1565	Channel Repower (Note 3)	

4953-B
Processor Unit
(16 KB basic,
maximum of
64 KB)

ABCDEFGHJKLMNPQ

Note 1   Any I/O

Any I/O or 16 KB Storage   Basic Storage (16 KB)
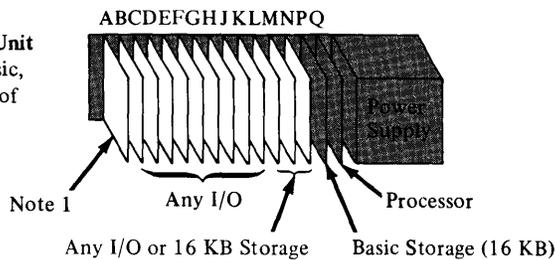
Processor

4953-B	Processor Unit (Note 4) (3 additional storage or 13 I/O or any combination of both up to a maximum of 13)	———
#6315	Storage Addition – 16,384 Bytes	
#5650	Programmer Console (Maximum of one)	
#2010	Communications Power (Note 6)	
#2000	Communications Indicator Panel	
#1565	Channel Repower (Note 3)	

4953-C
Processor Unit
(32 KB basic,
maximum of
64 KB)

ABCDEF

Any I/O

Any I/O or 16 KB Storage

Any I/O or Storage   Basic Storage (32 KB)

Processor

4953-C	Processor Unit (Note 8) (2 additional storage or 4 I/O or any combination of both up to a maximum of 4)	———
#6315	Storage Addition – 16,384 Bytes	
#6316	Storage Addition – 32,768 Bytes	
#5650	Programmer Console (Maximum of one)	
#1565	Channel Repower (Note 3)	

4953-D
Processor Unit
(32 KB basic,
maximum of
64 KB)

ABCDEFGHJKLMNPQ

Note 1   Any I/O

Any I/O or 16 KB Storage

Any I/O or Storage   Basic Storage (32 KB)

Processor

4953-D	Processor Unit (Note 4) (2 additional storage or 13 I/O or any combination of both up to a maximum of 13)	———
#6315	Storage Addition – 16,384 Bytes	
#6316	Storage Addition – 32,768 Bytes	
#5650	Programmer Console (Maximum of one)	
#2010	Communications Power (Note 6)	
#2000	Communications Indicator Panel	
#1565	Channel Repower (Note 3)	

STEP ⑤ INSTRUCTIONS (Continued)

Notes: (For text on facing pages)

4955 Processor Units

1. Check on Chart A the 4955 Processor selected.

2. Record on Chart A, under the processor selected, each Storage Addition (#6325 and/or #6326) needed, and if 64KB is exceeded, the Relocation Translator (#6335).

3. Record on Chart A under the processor selected, Floating Point (#3920) if needed, and each I/O channel feature selected in Columns 1C, 2C, 3C, and 4C. (See Notes 1 through 5.)

   - A 4959-A I/O Expansion Unit will be required if:
     - The number of I/O channel features selected exceeds the number of I/O slots available.
     - The number of I/O channel features selected is the same as the number of I/O slots available and a #7840, #6305, #1560, #5430, or #7850 (see Note 1) I/O channel feature is not one of the I/O channel features selected.
   - Skip Step 4 below if all the I/O channel features can be recorded in the processor. If not, proceed to Step 4 below.

4. Record on Chart B, under the 1st 4959-A, the overflow of I/O channel features. Continue to the 2nd, 3rd, etc., if necessary.

5. Check in Column **5A** the processor selected.

6. Record in Columns 5B and 5C the following information for the processor checked in Column 5A:

   - **5B** The quantity of (1) for the Processor Unit (4955-A, B, C, or D) selected.
   - **5B** The quantity of (1) each if Programmer Console #5650, Communications Power #2010, and/or Communications Indicator Panel #2000 selected.
   - **5C** The quantity of (1) if Floating Point (#3920) selected.
   - **5C** The quantity of any Storage Additions (#6325 and/or #6326) selected.
   - **5C** The quantity of (1) if Relocation Translator (#6335) required.
   - **5C** The quantity of (1) if Channel Repower (#1565) required.
   - **5C** The quantity of (1) if feature #9900 required.

7. Go to page 22, Step 1.

1. Slot A is limited to one of the following:

#1565 –	Channel Repower
#9900 –	Reserves slot A for the 4959-A cables when Channel Repower (#1565) not required. (See Note 2 below.)
#7840 –	Timers
#6305 –	4982-1 Sensor I/O Unit Attachment
#1560 –	Integrated DI/DO
#5430 –	Customer Direct Program Control Adapter
#7850 –	Teletypewriter Adapter (If system ± 12 volts dc not required)

2. If a 4959-A I/O Expansion Unit is required:

   - Channel Repower is required in 4955 slot A when:
     - A Battery Backup Unit (4999-1 or 2) is desired and/or
     - 21 or more I/O channel features have been selected for a 4955-C Processor.
   - Feature #9900 is required in 4955 slot A if Channel Repower (#1565) is not required.

3. A maximum of five Channel Repower features may be accommodated with any single processor configuration.

4. No more than 24 communications lines can be assigned to a 4959-A. (See Note 10 below.)

5. No more than four #1560 or #5430 I/O channel features can be assigned to any processor or 4959-A.

6. Communications Power (#2010) is required with communications features assigned to the processor or 4959-A. (See Note 3 on page 12.)

7. Channel Repower (#1565) is required in slot B (4959-A) if another 4959-A follows in the chain.

8. A maximum of one Storage Addition – 16,384 Bytes (#6325) may be selected for a 4955-C or D Processor.

9. Relocation Translator (#6335) is required if storage exceeds 64KB.

10. If selected, the following communications features *must* be recorded together, as indicated, in either the processor or I/O expansion unit:

    - #2092 adapters must be adjacent to the #2091 controllers.
    - #2094 adapters must be adjacent to the #2093 controllers.

	STEP **5**
	A
	Unit Quantity

4955 Processor Units

4955-A
Processor Unit
(16 KB basic,
maximum of
64 KB)

ABCDEFGHJKLMNPQ

Note 1
Any I/O
Processor
Floating Point or Any I/O
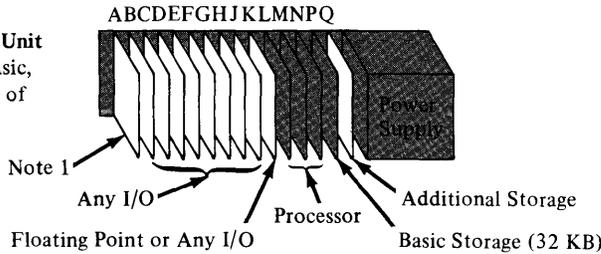Additional Storage
Basic Storage (16 KB)
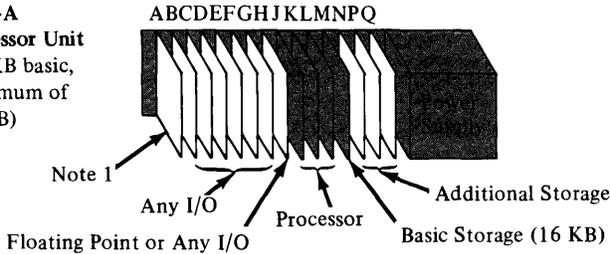
4955-A	Processor Unit (3 additional storage, 8 I/O)	—
#6325	Storage Addition – 16,384 Bytes	
#5650	Programmer Console (Maximum of one)	
#2010	Communications Power (Note 6)	
#2000	Communications Indicator Panel	
#3920	Floating Point (Maximum of one)	
#1565	Channel Repower (Note 3)	
#9900	Reserves Slot A (Note 1)	

4955-B
Processor Unit
(16 KB basic,
maximum of
128 KB)

ABCDEFGHJKLMNPQ

Note 1
Any I/O
Processor
Floating Point or Any I/O
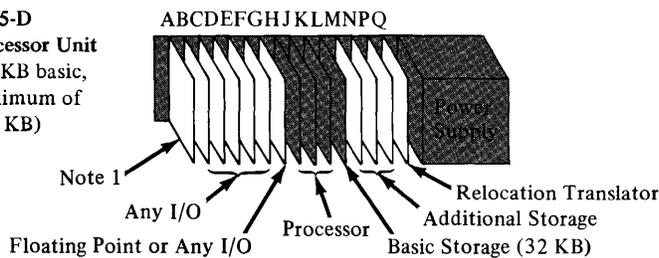Relocation Translator
Additional Storage
Basic Storage (16 KB)
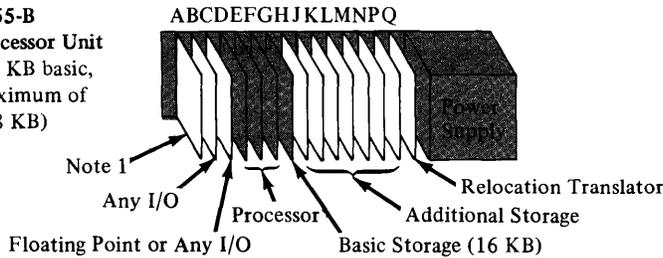
4955-B	Processor Unit (7 additional storage, 3 I/O)	—
#6325	Storage Addition – 16,384 Bytes	
#6335	Relocation Translator (Note 9)	
#5650	Programmer Console (Maximum of one)	
#2010	Communications Power (Note 6)	
#2000	Communications Indicator Panel	
#3920	Floating Point (Maximum of one)	
#1565	Channel Repower (Note 3)	
#9900	Reserves Slot A (Note 1)	

4955-C
Processor Unit
(32 KB basic,
maximum of
64 KB)

ABCDEFGHJKLMNPQ

Note 1
Any I/O
Processor
Floating Point or Any I/O
Additional Storage
Basic Storage (32 KB)

4955-C	Processor Unit (1 additional storage, 10 I/O)	—
#6325	Storage Addition – 16,384 Bytes (Note 8)	
#6326	Storage Addition – 32,768 Bytes	
#5650	Programmer Console (Maximum of one)	
#2010	Communications Power (Note 6)	
#2000	Communications Indicator Panel	
#3920	Floating Point (Maximum of one)	
#1565	Channel Repower (Note 3)	
#9900	Reserves Slot A (Note 1)	

4955-D
Processor Unit
(32 KB basic,
maximum of
128 KB)

ABCDEFGHJKLMNPQ

Note 1
Any I/O
Processor
Floating Point or Any I/O
Relocation Translator
Additional Storage
Basic Storage (32 KB)

4955-D	Processor Unit (3 additional storage, 7 I/O)	—
#6325	Storage Addition – 16,384 Bytes (Note 8)	
#6326	Storage Addition – 32,768 Bytes	
#6335	Relocation Translator (Note 9)	
#5650	Programmer Console (Maximum of one)	
#2010	Communications Power (Note 6)	
#2000	Communications Indicator Panel	
#3920	Floating Point (Maximum of one)	
#1565	Channel Repower (Note 3)	
#9900	Reserves Slot A (Note 1)	

STEP **5** INSTRUCTIONS (Continued)

I/O Expansion and Battery Backup Units

1. Proceed to Step 2 below if an I/O expansion unit is required (Chart B was used). If not, skip Step 2 below.

2. Record in Columns 5B and 5C the following information for the I/O expansion unit:

   5B The quantity of I/O Expansion Units (4959-A) required.

   5B The quantity of (1) each if Communications Power #2010 and/or Communications Indicator Panel #2000 selected. (Per 4959-A selected.)

   5C The quantity of Channel Repower (#1565) features, if required.

3. Proceed to Step 4 below if a battery backup unit is desired. If not, skip Step 4 below.

4. Record in Columns 5A and 5B the following information for the battery backup unit desired.

   5A Check the battery backup unit desired.

   5B The quantity of (1) for the Battery Backup Unit (4999-1 or 2) selected.

5. Add up the quantities (if any) recorded in Column 5C and enter the total at **5D** .

   Make sure that all three Columns titled 5C on the summary worksheet are examined for possible entries.

6. Add up the number of entries *recorded* on Charts A and B (i.e., I/O channel features, channel repower, floating point, relocation translator and storage additions).

   This total *must* equal the sum of the totals recorded at 1D, 2D, 3D, 4D, and 5D on the summary worksheet.

7. **STEP 5** is completed. Go to page 24.

Notes: (For text on facing page)

1. Slot A is reserved (see Chart B).

2. No more than 24 communications lines can be assigned to a 4959-A.

3. No more than four #1560 or #5430 I/O channel features can be assigned to a 4959-A.

4. Communications Power (#2010) is required with any communications features in a 4959-A. (See Note 3 on page 12.)
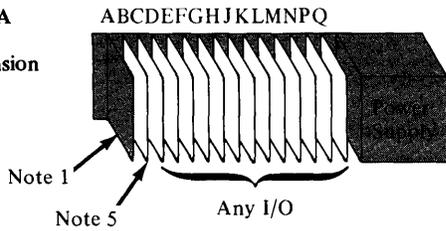
5. Channel Repower (#1565) is required in 4959 slot B if another 4959-A follows in the I/O channel sequence.

STEP ⑤ PROCESSOR, I/O EXPANSION, AND BATTERY BACKUP UNITS AND FEATURES

		STEP ⑤
		A
		Unit Quantity

I/O Expansion and Battery Backup Units

4959-A
I/O
Expansion
Unit

ABCDEFGHJKLMNPQ

Power Supply

Note 1
Note 5   Any I/O

4959-A	I/O Expansion Unit (Notes 2 and 3) (Space for attaching 14 additional I/O)	——
#2010	Communications Power (Note 4)	
#2000	Communications Indicator Panel	
#1565	Channel Repower (Note 5)	

4999-1
Battery
Backup
Unit
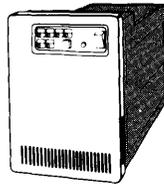
| 4999-1 | Battery Backup Unit (For 100 – 123.5 volt ac systems. Allows one processor to be powered from a user-supplied battery in the event of an ac power failure) | —— |

4999-2
Battery
Backup
Unit
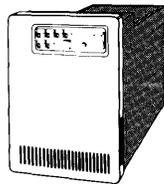
| 4999-2 | Battery Backup Unit (For 200 – 235 volt ac systems. Allows one processor to be powered from a user-supplied battery in the event of an ac power failure) | —— |

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STEP ⬛ INSTRUCTIONS

The Series/1 rack enclosures and features available are shown on page 25. Review page iii for special configuration rules.

1. Proceed to Step 2 below if any of the rack enclosure units/features on page 25 are desired. If not, Step ⬛ is completed. Go to page 26.

2. Record in the chart below, the quantities of units selected in Columns 1B, 4B, and 5B. Calculate the kVA subtotal for each quantity entered, and add for the total kVA requirement.

Unit	Model	Quantity	kVA Per Unit	Sub Total	Notes
4953†	A, C	____ x	0.4	= ____	†Half width units.
4953	B, D	____ x	0.8	= ____	
4955	A, B	____ x	0.8	= ____	
4955	C, D	____ x	0.8	= ____	
4959	A	____ x	0.8	= ____	
4962	1, 1F	____ x	0.65	= ____	
4962	2, 2F	____ x	0.7	= ____	
4964†	1	____ x	0.2	= ____	
4982†	1	____ x	0.2	= ____	
4999†	1, 2	____ x	0.1	= ____	
			Total kVA	= ____	

3. Calculate the following values which will be used in Step 4 below. (Refer to the chart above.)

   A___ = Total number of full width units selected.

   B ___ = Total number of half width units selected divided by 2. Round off to the next higher whole number.

   C ___ = Total number of 4962 units selected.

   D___ = Total kVA requirement for all units selected.

4. Calculate as follows, the value of E4 (the number of 4997 Rack Enclosures required):

   a. $E1$ ___ = $(A$ ___ $+ B$ ___ $) \div 4*$ (Do not round off E1.)

   b. $E2$ ___ = C ___ $\div 2*$ (Do not round off E2.)

   c. $E3$ ___ = D ___ $\div 3.2$ or $1.6**$ (Do not round off E3.)

   d. $E4$ ___ = The larger of E1, E2, or E3. (Round off E4 to the next higher whole number.)

   *Divide by 2 in Step 4a and by 1 in Step 4b, if 4997-1 (1 metre) rack enclosures are desired.

   **Each 4997 (in a single or multiple rack system) is limited to 3.2 kVA @ 200 − 235 volts ac and 1.6 kVA @ 100 − 123.5 volts ac.
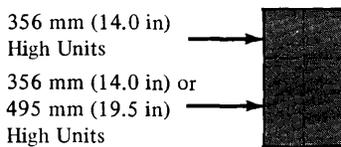
5. Skip Step 6 below if a *multiple processor system* is not being configured.

6. Calculate as follows, the value of E8 (the number of 4997 Rack Enclosures required for a multiple processor system):

   a. For *each* processor and associated units/features in a multiple processor system: (Use work pad)

   • Complete STEPS ⬛ through ⬛ (complete only Steps 2 through 4c for each STEP ⬛).

   • Proceed to (b) below when completed.

   b. Calculate the following, using the results from each STEP ⬛ completed:

   E5 ___ = The sum[1] of all E1s calculated.

   E6 ___ = The sum[1] of all E2s calculated.

   E7 ___ = The sum[1] of all E3s calculated.

   E8 ___ = The larger of E5, E6, or E7.

   [1] Round off to the next higher whole number.

7. Record the following information in Columns 6A, 6B, and 6C:

   6A Check the type of rack enclosure desired.

   6B The quantity (E4, if a single processor system; E8, if a multiple processor system) of rack enclosures required.

   6C The quantity of enclosure features required. If the Rack Mounting Fixture (#4540) is required, divide by 2 the quantity of half width units selected, and round off to the next higher whole number. If this is a multiple processor configuration, the quantity equals the sum of all half width units selected in each independent configuration.

8. STEP ⬛ is completed. Go to page 26.

Notes: (For text on facing page)

1. Specify feature #9197 for the *primary* (first or each free standing) enclosure in any system and feature #9198 for all *subsequent* (additional) enclosures that will be physically connected to the primary enclosure.
   All future orders for the *same physical* system must use feature code #9198 with the 4997 order.

2. All rack mounted units (half or full width) are 356 mm (14.0 in) high except the 4962 Disk Storage Units which are 495 mm (19.5 in) high.

3. All rack enclosures selected per system must be the same size (all 1 metre high or all 1.8 metre high).

STEP **6** RACK ENCLOSURES AND FEATURES

4997-1A
Rack Enclosure

356 mm (14.0 in)
High Units →

356 mm (14.0 in) or
495 mm (19.5 in) →
High Units

4997-1A Rack Enclosure Unit – 1 metre high (Notes 1, 2, and 3)
(Capacity is as shown in diagram to the left. All unused locations are covered with plain metal cover panels.)
#9197 Specifies Primary Rack Enclosure
#9198 Specifies Subsequent Rack Enclosures

_____

4997-1B
Rack Enclosure

356 mm (14.0 in)
High Unit →

356 mm (14.0 in) or
495 mm (19.5 in) →
High Units
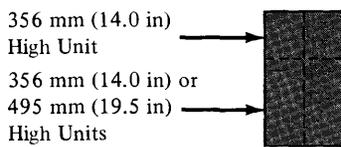
4997-1B Rack Enclosure Unit – 1 metre high (Notes 1, 2, and 3)
(Capacity is as shown in diagram to the left. All unused locations are covered with decorative cover panels.)
#9197 Specifies Primary Rack Enclosure
#9198 Specifies Subsequent Rack Enclosures

_____

4997-2A
Rack Enclosure

356 mm (14.0 in)
High Units

356 mm (14.0 in) or
495 mm (19.5 in)
High Units
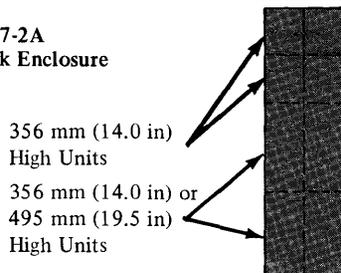
4997-2A Rack Enclosure Unit – 1.8 metre high (Notes 1, 2, and 3)
(Capacity is as shown in diagram to the left. All unused locations are covered with plain metal cover panels.)
#9197 Specifies Primary Rack Enclosure
#9198 Specifies Subsequent Rack Enclosures

_____

4997-2B
Rack Enclosure

356 mm (14.0 in)
High Units

356 mm (14.0 in) or
495 mm (19.5 in)
High Units
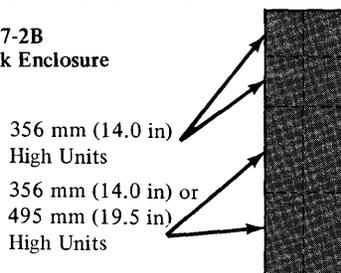
4997-2B Rack Enclosure Unit – 1.8 metre high (Notes 1, 2, and 3)
(Capacity is as shown in diagram to the left. All unused locations are covered with decorative cover panels.)
#9197 Specifies Primary Rack Enclosure
#9198 Specifies Subsequent Rack Enclosures

_____
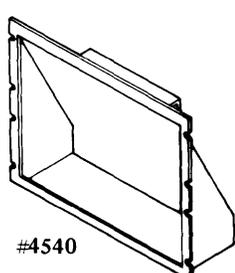
#4540

#4540 Rack Mounting Fixture
(Required for all half width units.
Capacity for two half width units.)

_____

STEP 7 INSTRUCTIONS

The Series/1 primary power specify codes and power features are shown on page 27.

Special Note: The primary power specify codes selected *must* be the same for all the units that mount within a single or multiple rack 4997 enclosure.

1. Record the following information in Columns 7A, 7B, and 7C for each type of unit selected in Columns 1B, 4B, 5B, and 6B:

    7A Check the types of units selected.

    7B The quantity of special line cords (#9986) required.

    7C The primary power specify code required.

2. **STEP 7** is completed. If this is a *single processor system,* go to page 28. If not, proceed to Step 3 below.

3. Proceed to Step 4 below if **STEP 6** *is being worked* (IBM 4997 Rack Enclosures are desired). If not, skip Step 4 below.

4. Repeat **STEP 7** for *each* of the remaining processors and associated units/features (use work pad). When completed, go to page 28.

5. Repeat **STEPS 1** through **7** for *each* processor and associated units/features in a *multiple processor system* (use work pad). When completed, go to page 28.

Notes: (For text on facing page)

1. The line cord lengths for the primary power specify codes described on page 27 are as follows:

    - 1.8 m (6 ft) for all units except the 4997 enclosure.

    - 4.3 m (14 ft) for the 4997 enclosure. However, a special 1.8 m (6 ft) line cord is available (#9986) if required by local electrical codes.

2. The following primary power specify codes are not available for the 4973-1 or 4973-2 Printer:

    - #9902 (60 Hz, 208 volts ac)

    - #9904 (60 Hz, 230 volts ac)

STEP 7 SYSTEM POWER

A

Units

PRIMARY POWER

4973

4974

4979

4997
Rack
Enclosure

4997 POWER DISTRIBUTION

4953

4955

4959

4962

4964

4982

4999

Primary Power

The primary power specify codes described
below are common to all of the units shown
to the left. (See Notes 1 and 2.)

#9901	60 Hz, 115 volts ac
#9902	60 Hz, 208 volts ac
#9904	60 Hz, 230 volts ac

Power Cords
#9986   Special 1.8 m (6 ft) Primary Power Cord (Note 1)

27

STEP **8** DP ORDER GUIDE

INSTRUCTIONS:

The following is entered on the DP Order Guide based on the selections recorded in Charts A and B, and in Columns 1 through 7 on the summary worksheet. Chart C on the next page shows the format to be used.

Special Note: Enter a quantity of (1), except as noted, for each entry on the DP Order Guide.

1. Omit any step or sub-step that does not apply to the configuration being entered on the DP Order Guide.

2. Proceed to Step 3 below if this is a multiple processor configuration. If not, skip Step 3 below.

3. A multiple processor system configuration requires that the following two specify codes be entered after the processor and model numbers have been entered:

   • #92AA – Where AA is the total number of processors in the system being configured.

   • #93BB – Where BB is the sequence number of the individual processor and associated units/features being entered.

4. **Enter the following for the processor unit selected:**
   - From 5B, the unit type and model number.
   - From Step 3, if required, specify code #92AA.
   - From Step 3, if required, specify code #92BB.
   - From 7C, the primary power code.

   Enter the following if selected:
   - From 5B, the feature codes selected (qty of 1 each).
   - From 3B, feature codes #1590, #1593, #1594, #2055, and/or #2059 (x qty each).
   - From 6C, feature code #4540 (x qty).

5. **Enter the following for the processor unit selected:**
   - From Chart A, the I/O channel features, etc., recorded under the processor selected (x qty each).
   - From 1B, any IPL code selected that is associated with a unit (selected in 1B) whose I/O channel feature is recorded in Chart A.
   - From 2B and/or 3B, any IPL code selected that is associated with an I/O channel feature selected in 2C and/or 3C and recorded in Chart A.
   - From 2B, any cable code selected that is associated with an I/O channel feature selected in 2C and recorded in Chart A (x qty each).

6. **Enter the following for the 4999 unit selected:**
   - From 5B, the unit type and model number.
   - From 7C, the primary power code.

7. **Enter the following for the *1st* 4959 unit selected:**
   - From 5B, the unit type and model number.
   - From 7C, the primary power code.

   Enter the following if selected:
   - From 5B, the feature codes selected (qty of 1 each).

8. **Enter the following for the *1st* 4959 unit selected:**
   - From Chart B, the I/O channel features (including Channel Repower #1565 if required) recorded under the *1st* 4959 (x qty each).
   - From 1B, any IPL code selected that is associated with a unit (selected in 1B) whose I/O channel feature is recorded in Chart B under the *1st* 4959.
   - From 2B and/or 3B, any IPL code selected that is associated with an I/O channel feature selected in 2C and/or 3C and recorded in Chart B under the *1st* 4959.
   - From 2B, any cable code selected that is associated with an I/O channel feature selected in 2C and recorded in Chart B under the *1st* 4959 (x qty each).

9. **Repeat Steps 7 and 8 for *each* 4959 selected:**
   - The second time through Steps 7 and 8, the *2nd* 4959 would be used, the third time, the *3rd* 4959, etc.

10. **Enter the following for *each* 4962 and/or 4964 unit selected:**
    - From 1B, the unit type and model number.
    - From 7C, the primary power code.

11. **Enter the following for *each* 4973 unit selected:**
    - From 1B, the unit type and model number.
    - From 1B, the basic print belt.
    - From 7C, the primary power code.

    Enter the following if selected:
    - From 1B, the additional print belt. Repeat for each belt selected.
    - From 1B, the attachment cable increment code (x qty).
    - From 1B, feature code #4450.

12. Enter the following for *each* 4974 unit selected:
    - From 1B, the unit type and model number.
    - From 7C, the primary power code.

    Enter the following if selected:
    - From 1B, the attachment cable increment code (x qty).
    - From 1B, feature code #4450.

13. Enter the following for *each* 4979 unit selected:
    - From 1B, the unit type and model number.
    - From 7C, the primary power code.

    Enter the following if selected:
    - From 1B, the attachment cable increment code (x qty).

14. Enter the following for *each* 4982 unit selected:
    - From 4B, the unit type and model number.
    - From 4B, the feature codes selected (x qty each).
    - From 7C, the primary power code.

15. Enter the following for the *primary* 4997 unit selected:
    - From 6B, the unit type and model number.
    - From 6C, the primary rack code.
    - From 7C, the primary power code.

    Enter the following if selected:
    - From 7B, the special line cord code (#9986).

16. Enter the following for *each subsequent* 4997 unit selected:
    - From 6B, the unit type and model number.
    - From 6C, the subsequent rack code.
    - From 7C, the primary power code.

    Enter the following if selected:
    - From 7B, the special line cord code (#9986).

17. Repeat Steps 1 through 14 for each processor and associated units/features if this is a multiple processor system configuration.

18. STEP 8 and the configuration of the Series/1 system is completed.

Chart C — Example of filling out order form

Product			Feature Code	Qty	Column or Chart Information is From	STEP 8 Instruction Step
Type	Model No.	Qty				
4955	DOO	1			5B	
			#9202	1	(Step 3)	
			#9301	1	(Step 3)	Step 4
			#9902	1	7C	
			#5650	1	5B	
			#4540	1	5B	
			#3581	1	Chart A	
			#3580	2	Chart A	
			#5630	1	Chart A	Step 5
			#9133	1	1B	
			#9137	1	1B	
4962	001	1			1B	
			#9902	1	7C	
4962	001	1			1B	
			#9902	1	7C	Step 10
4964	001	1			1B	
			#9902	1	7C	
4973	002	1			1B	
			#9490	1	1B	
			#9901	1	7C	Step 11
			#5823	1	1B	
			#5700	4	1B	
4997	02B	1			6B	
			#9197	1	6C	Step 15
			#9902	1	7C	
4997	02B	1			6B	
			#9198	1	6C	Step 16
			#9902	1	7C	
4955	DOO	1			5B	
			#9202	1	(Step 3)	
			#9302	1	(Step 3)	Step 4
			#9902	1	7C	
			#2010	1	5B	
			#3580	1	Chart A	
			#2093	1	Chart A	
			#2094	2	Chart A	
			#6325	1	Chart A	Step 5
			#9133	1	1B	
			#2057	8	2B	
4962	001	1			1B	
			#9902	1	7C	Step 10

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Appendix A. Feature Location Priority Assignments

Processor A-slot assignments for 4953-B, 4953-D, 4955-A, 4955-B, 4955-C, and 4955-D

- Processor A-slot assignment is limited to one of the following:

  #1565
  #9900
  #7840
  #6305   (Listed in order of priority)
  #1560
  #5430
  #7850 (If system ± 12 volts dc not required)

Other processor assignments

- #6315, #6316, #6325, #6326, #3920, and #6335 must be in the processor if they are ordered.

- #2074 or #2075 should be in the processor if #9154 or #9155 and 4999-1 or 4999-2 are selected and #2010 is included in the processor.

Units containing communications features

- #2092 adapters must be mounted adjacent to the #2091 controller.

- #2094 adapters must be mounted adjacent to the #2093 controller.

- Up to 24 lines allowed per unit.

- If remote IPL and 4999-1 or 4999-2, all communications should be assigned to the processor.

- If all communications features will not fit in the processor, groups of 24 lines should be assigned to 4959-A. Priority will then be given to remote IPL features #2074 with #9154 or #2075 with #9155 in the processor.

- If no remote IPL, then communications features should be assigned to units in groups of 24 lines.

All other assignments in order of priority

#7850, if 4999, see Slot-A assignments
#3581, all
#2074, if #9154
#2075, if #9155
#1610
#2090
#2092, 2nd or 2N occurrence (lines 4–7)
#2091, 1st or N occurrence
#2092, 1st or 2N-1 occurrence (lines 0–3)
#2094, 2nd or 2M occurrence (lines 4–7)
#2093, 1st or M occurrence
#2094, 1st or 2M-1 occurrence (lines 0–3)
#2074, if not #9154
#2075, if not #9155
#3585
#3580, all
#5620
#5630
#7850, if no 4999, see Slot-A assignments
#5430
#1560
#6305
#7840, if no 4999, must be in processor
#1595

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O

Appendix B. Device Address Assignment Overview

The following chart illustrates the device address assignment
method. The most significant digit of an address is shown
in the column to the left of the chart. The least significant
digit of an address is shown in the row across the top of the
chart. For example, the 2 block starting address is 40.

Notes:

1. Only 1 device can be assigned to an address.

2. For devices with addresses 00 through 3B, when the
    column is full, use the work area (addresses 0C through
    3F).

3. All addresses are shown in HEX.

Fixed Assignment Area (00 to 3F) ——— Work Area

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	#7850	#5620	#3581	#3580	#3585				#1610	#2074 #2075	#2090					
1																
2		#5630														
3																
4	2 Device start address (40)								4 Device start address (48)							
5																
6	8 Device start address (60)															
7																
8																
9	16 Device start address (90)															
A																
B																
C	32 Device start address (C0)															
D																
E																
F																

Variable Assignment Area
(40–FF)

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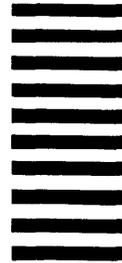Fold   Fold

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