

Manual 1916 6164

B2500
B3500

**Data Processing Systems
Configuration Manual**

Burroughs Corporation



BUSINESS MACHINES GROUP
MEDIUM SYSTEMS PLANT

Burroughs
B2500 and B3500
Data Processing Systems
Configuration Manual

Burroughs Corporation



BUSINESS MACHINES GROUP
MEDIUM SYSTEMS PLANT

PASADENA, CALIFORNIA 91109

DECEMBER 1969

CONTENTS

	Page
I. INTRODUCTION	I-1
A. Identification	I-1
B. Purpose	I-1
II. SYSTEM DESCRIPTION	II-1
A. General.	II-1
B. Auxiliary Cabinet	II-3
C. Auxiliary Cabinet, Independent	II-3
D. Central Control B	II-5
E. Central Control and Memory Base	II-5
F. Memory Base B	II-8
G. Processor	II-10
III. CONFIGURATION REQUIREMENTS	III-1
A. General	III-1
B. Auxiliary Cabinet	III-1
1. Kits	III-1
2. Module, AC Power	III-1
C. Auxiliary Cabinet, Independent	III-3
1. Kits	III-3
D. Central Control B	III-3
1. Adapters	III-3
2. Extender, CCB	III-6
3. Kits	III-6
4. Module, AC Power	III-7

CONTENTS (cont'd)

III.	CONFIGURATION REQUIREMENTS (cont'd)	Page
E.	Central Control and Memory Base	III-7
	1. Adapters	III-7
	2. Core Memory	III-7
	3. Extenders	III-9
	4. Kits	III-9
F.	Memory Base B	III-10
	1. Adapters	III-10
	2. Core Memory	III-10
	3. Kits	III-10
	4. Modules	III-12
G.	Processor	III-12
	1. Adapters	III-12
	2. Driver, Multiline Extension	
	Address Memory	III-14
	3. Kit, Leg	III-14
	4. Meters, Operating Time	III-14
	5. Processor, Multiline Control	III-14
	6. Set, Processor Maintenance	III-14
	7. Shelf	III-14
	8. Unit, Read-Only Memory Indicator	III-14
H.	Controls	III-16
I.	Exchanges and Extensions	III-25
J.	File Protect Memory	III-29
K.	Line Adapter Charts	III-29

CONTENTS (cont'd)

		Page
Appendix	A. Glossary	A-1
Appendix	B. Abbreviations	B-1
Appendix	C. Item Description-to-M & E Number	
	Cross-Reference	C-1
Appendix	D. M & E Number-to-Item Description	
	Cross-Reference	D-1
Figures		
I-1	B2500/B3500 Four-Cabinet System	iv
II-1	Diagram of a Minimum System	II-1
II-2	Exterior Appearance of Typical System Cabinet	II-2
II-3	Auxiliary Cabinet, Independent	II-4
II-4	Central Control B Cabinet	II-6
II-5	Central Control and Memory Base Cabinet . . .	II-7
II-6	Memory Base B Cabinet	II-9
II-7	Processor Cabinet and Shelf	II-11
II-8	Processor Cabinet	II-12
III-1	Cutaway Views of Auxiliary Cabinet	III-2
III-2	Cutaway Views of Central Control B Cabinet . .	III-4
III-3	Adapter Requirements Terminate/Driver	
	Cards and Cables	III-5
III-4	Cutaway Views of Central Control and	
	Memory Base Cabinet	III-8
III-5	Cutaway Views of Memory Base B Cabinet	III-11
III-6	Cutaway Views of Processor Cabinet	III-13
III-7	Stand-Up and Sit-Down Skins	
	and Shelves for Processor Cabinet . . .	III-15



Figure I-1. B2500/3500 Four-Cabinet System

SECTION I.

INTRODUCTION

A. IDENTIFICATION

The system covered by this manual is identified as the Central System of the B2500 and B3500 Data Processing Systems, manufactured by Burroughs Corporation, Pasadena, California. None of the related peripheral equipment is covered.

Speed of operation, memory capacity, and peripheral component capacity are the essential differences between the B2500 and B3500 systems. Other differences have been so labeled throughout the text, as they occur.

A central system configuration will consist of two or more of the following major modules, otherwise referred to as cabinets:

- (1) Auxiliary Cabinet
- (2) Auxiliary Cabinet, Independent
- (3) Central Control B (CCB)
- (4) Central Control and Memory Base (CC & MB)
- (5) Memory Base B (MBB)
- (6) Processor

The central system is the hub of all operations. It may consist of any number of cabinet configurations ranging from a two-cabinet to an eight-cabinet configuration.

The size or capacity of the central system will depend on the peripheral equipment (input/output equipment) and memory needs of the user. For example, the three-cabinet system has a capacity of ten control units and 150K bytes of memory. Additional control units require an additional control cabinet and memory. A typical four-cabinet system is shown in Figure I-1.

B. PURPOSE

This manual is designed for use as a reference source for the selection of the various controls, exchanges, kits, and

adapters needed to integrate the many types of central system cabinet configurations into a unified system. The factory requisitioning 8-digit Manufacturing and Engineering (M & E) numbers have been listed for all items in the system.

Section II of this manual contains a physical and functional description of each cabinet, along with whatever differences may exist among like cabinets resulting from the type of system configuration. Section III lists the controls, exchanges, kits, and adapters required to interconnect the modules for any type of system configuration.

To extend the usefulness of this manual, the Appendixes include such material as a glossary of terms, a list of abbreviations, an alphabetized list of component nomenclature giving the associated M & E numbers, and a numerical-sequence listing of M & E numbers giving the associated component nomenclature.

Either updated copies or revised pages will be distributed whenever necessary to keep the manual current with equipment changes.

SECTION II.

SYSTEM DESCRIPTION

A. GENERAL

The B2500 and B3500 systems comprise a total of six major elements: auxiliary cabinet; independent auxiliary cabinet; central control B; central control and memory base; memory base B; and processor. Each system may be composed of different combinations of these cabinets. A minimum two-cabinet system configuration, Figure II-1, consists of a processor cabinet, and a central control and memory base cabinet. Similarly, a maximum system consists of a processor cabinet, two central control B cabinets, four memory base B cabinets, and one auxiliary cabinet.

The physical dimensions are identical for all cabinets used in the basic system; see Figure II-2. The cabinets are 16.125 inches wide, 74.62 inches long, 60 inches high without legs, and 63 inches high when a leg kit is attached.

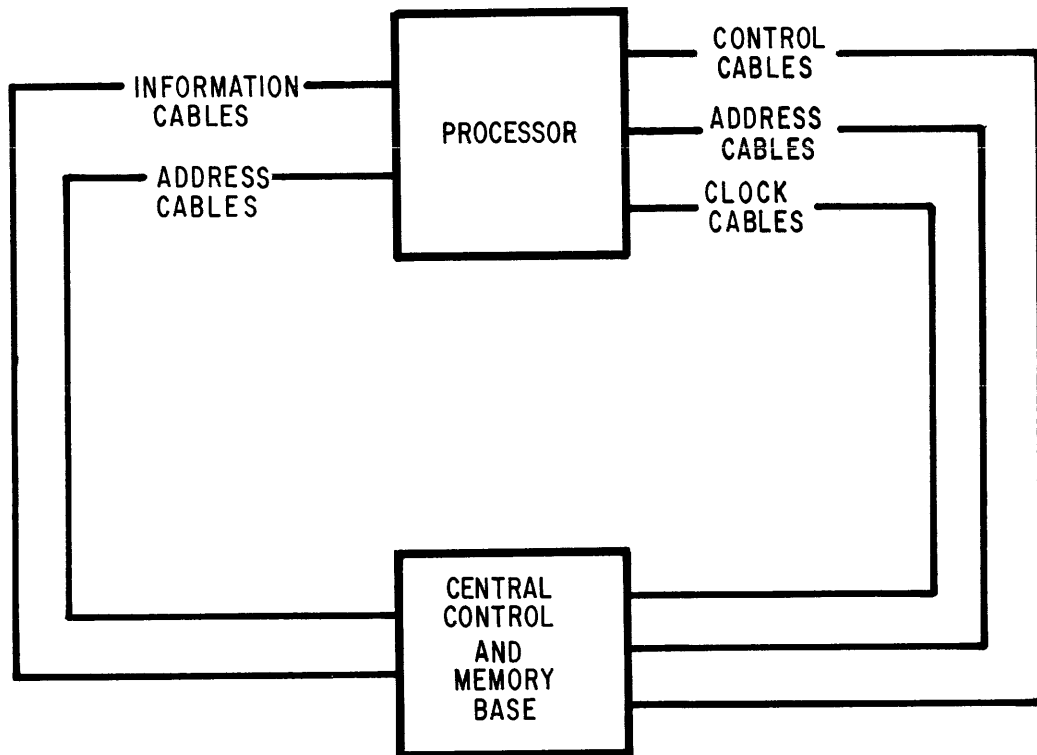


Figure II-1. Diagram of a Minimum System

M2

A leg kit is required when there is no provision for installing cables under the floor. One cabinet occupies approximately 8.35 square feet of floor space. Each cabinet weighs approximately 1000 pounds and has an approximate 250-pound per corner floor loading distribution. A shelf, for use by the operator who stands or sits at the console, attaches to the processor cabinet and requires approximately 11 square feet of additional floor space. Either a stand-up shelf and skin or a sit-down shelf and skin are required for the processor operator. The stand-up shelf is 39 inches above the floor, and the sit-down shelf is 27 inches above the floor.

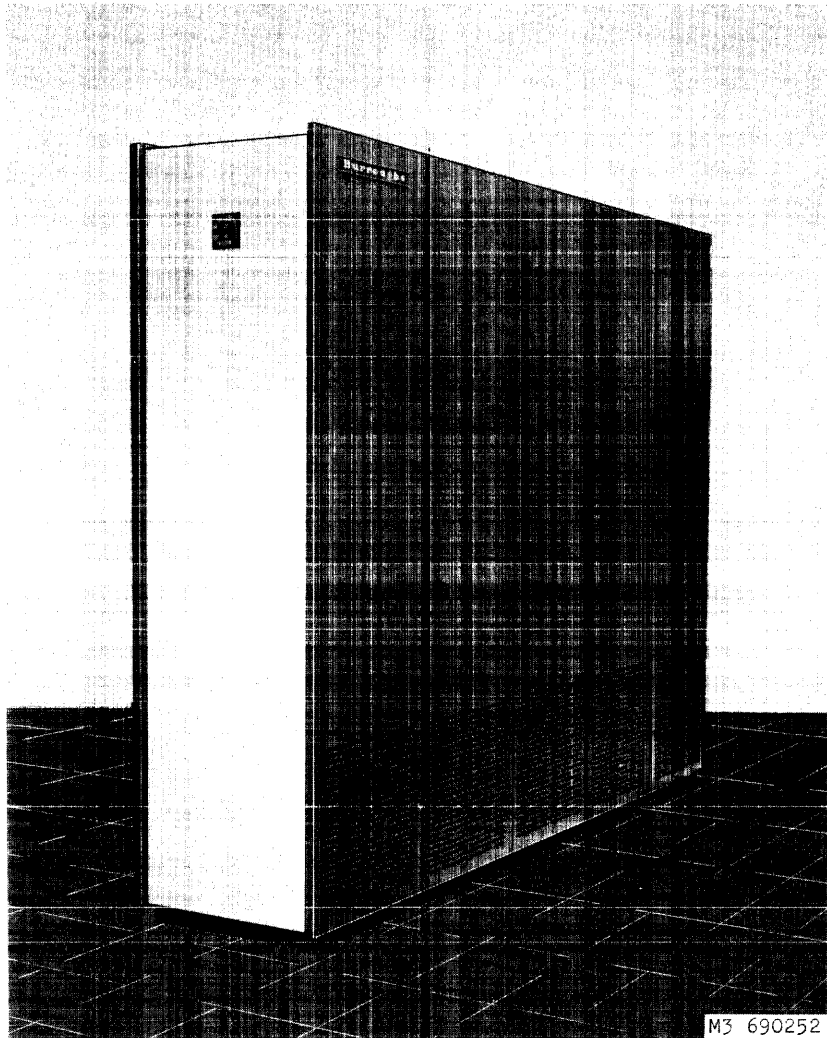


Figure II-2. Exterior Appearance of Typical System Cabinet

B. AUXILIARY CABINET (1141 9041)

The auxiliary cabinet is designed to provide housing space for extensions, exchanges, and the file protect memory when no space is available in the memory base B cabinet.

The auxiliary cabinet houses exchanges or extensions or both, but it has no inherent backplane panels. When an auxiliary cabinet is designated as the fourth or seventh cabinet in a system an AC power module must be added. A power compatibility kit is required to connect Design Level 1 auxiliary cabinets to Design Level 2 memory base B or central control B cabinets.

The auxiliary cabinet contains five positions, numbered 1 through 5 from left to right as the observer faces the pin side. An unused area separates Positions 3 and 4. A terminal unit exchange or a magnetic tape (MT) exchange can be placed in Position 5 only. A file protect memory or a multiline (ML) extension may be placed in any position from 1 through 5. A disk file (DF) exchange is preferably placed in either Position 1 or Position 5; however, it may be placed in other positions if the cabinet is not full. A multiline extension in an auxiliary cabinet requires a multiline extension clock adapter.

C. AUXILIARY CABINET, INDEPENDENT (1906 0276)

The independent auxiliary cabinet, Figure II-3, is used when the exchanges, extensions, or the protect memory must operate independently from central systems power. It has its own (independent) power source and will also house the same modules as the standard auxiliary cabinet. Except for an operator's control panel, this cabinet looks like the auxiliary cabinet.

With the exception of an AC source, no external power cables or power control cables leading to other cabinets are connected to the independent auxiliary cabinet. The cabinet may contain modules that interface with two or more processing systems. Only the independent auxiliary cabinet is recommended to house items belonging to more than one B2500/B3500 system.

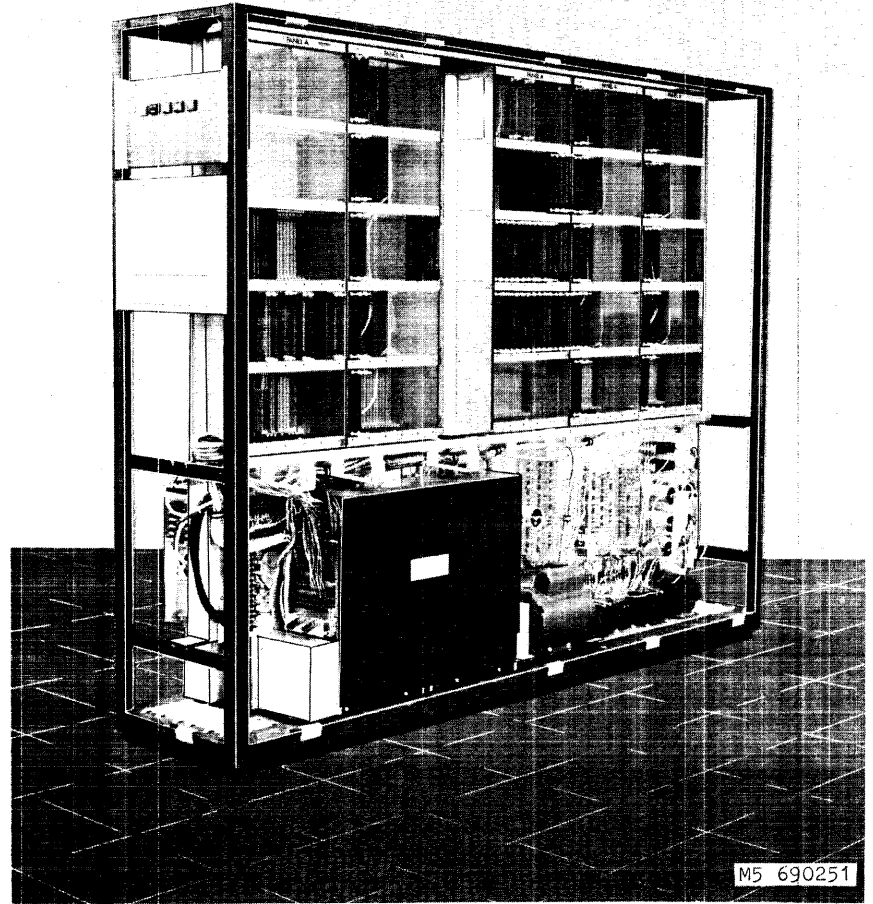
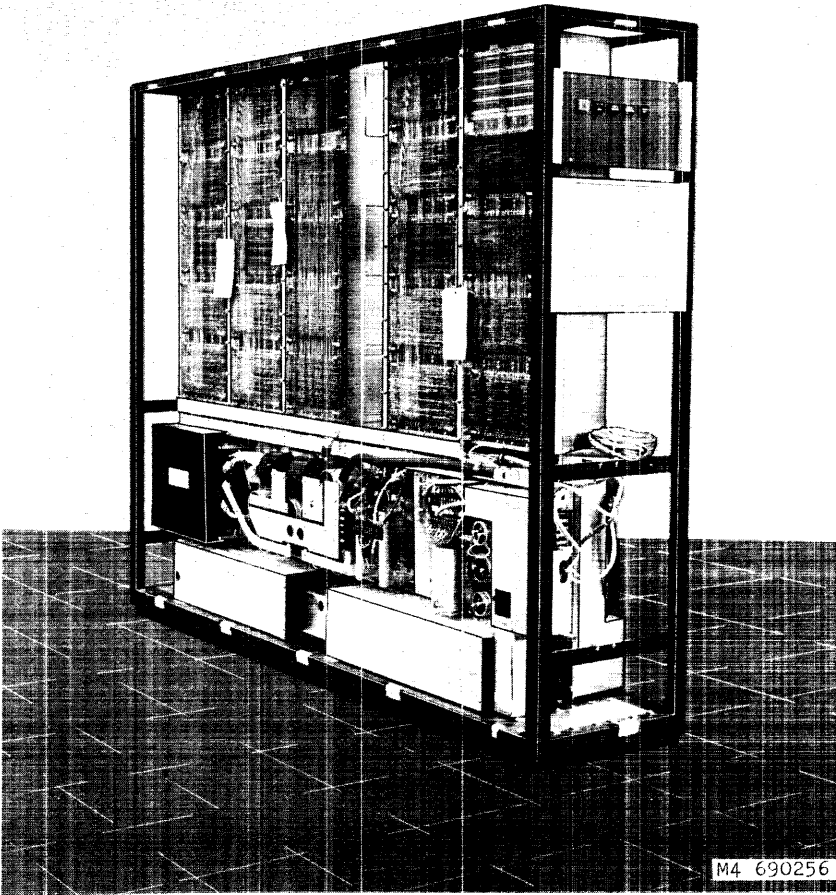


Figure II-3. Auxiliary Cabinet, Independent
Left, Pin Side View; Right, Card Side View

D. CENTRAL CONTROL B (1141 9017)

This cabinet contains the logic which, when initiated by the processor, distributes information between the peripheral controls and the memory. See Figure II-4.

The central control B (CCB) is used when more than three large (Type B) and three small (Type A) controls and two memory modules are required. This unit is also required for either a B2502 or a B3501 system. Only one CCB is permitted with a B2502 system. A B3501 system can employ either one or two CCB cabinets, depending on the number and type of controls; but no more than two can be used in a system.

A maximum of five large (Type B) channels and five small (Type A) channels are available in one CCB cabinet. If no Type B channels are used, the cabinet can hold a maximum of five left-hand (LH) and five right-hand (RH) Type A channels. A Type B channel position can hold either a Type B or a LH Type A Control, through the use of the CCB extender.

The five Type B cabinet positions are referred to as 0 through 4 in the first CCB cabinet and as 10 through 14 in the second CCB cabinet. The five Type A cabinet positions are referred to as 5 through 9 in the first CC cabinet and as 15 through 19 in the second CCB cabinet.

When the CCB cabinet is either the fourth or seventh cabinet in the system, an AC power module must be used.

E. CENTRAL CONTROL AND MEMORY BASE (1141 9033)

For smaller system configurations, the central control and memory base (CC & MB) functions are combined in one cabinet. See Figure II-5. The CC & MB cabinet can be internally arranged so that all functions, other than those of the processor, can be handled by this unit for a minimum system. A maximum of three Type B channels, two LH Type A channels, and one RH Type A channel is available in the CC & MB cabinet. The Type B cabinet positions are referred to as 0 through 2. The LH Type A positions are 3 and 4. The RH Type A channel is Position 5. An LH Type A control can be used in a Type B channel position, through the use of the CC & MB extender.

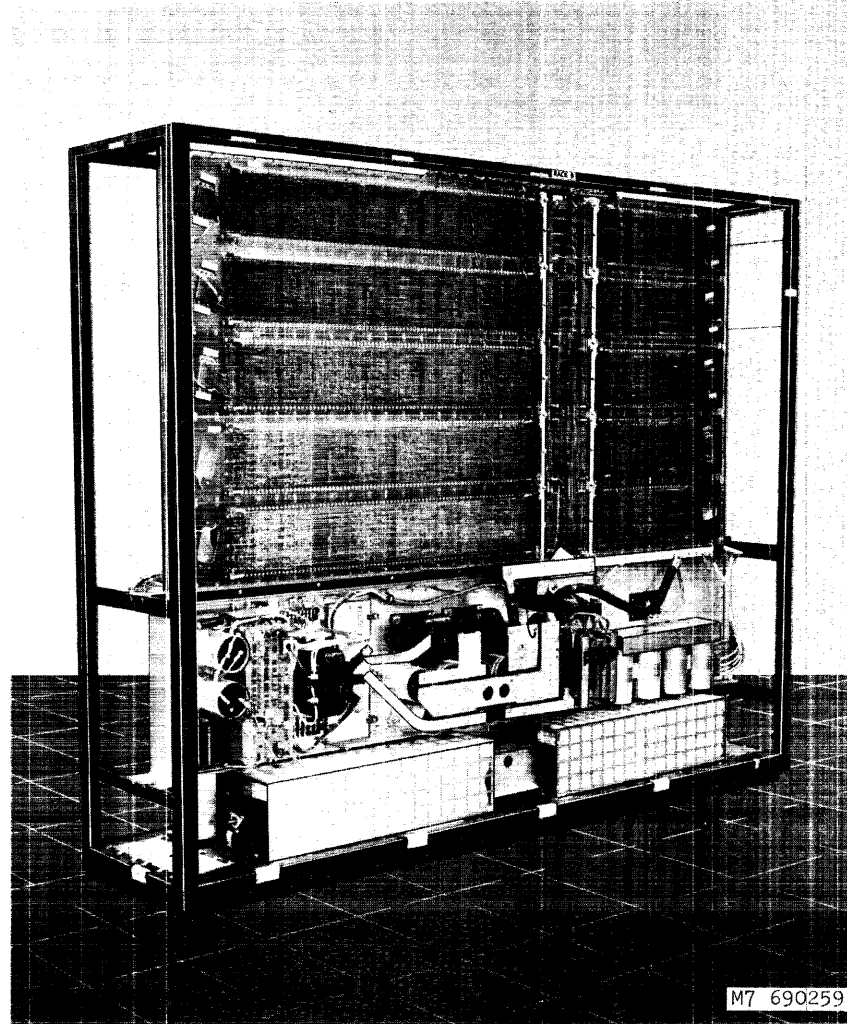
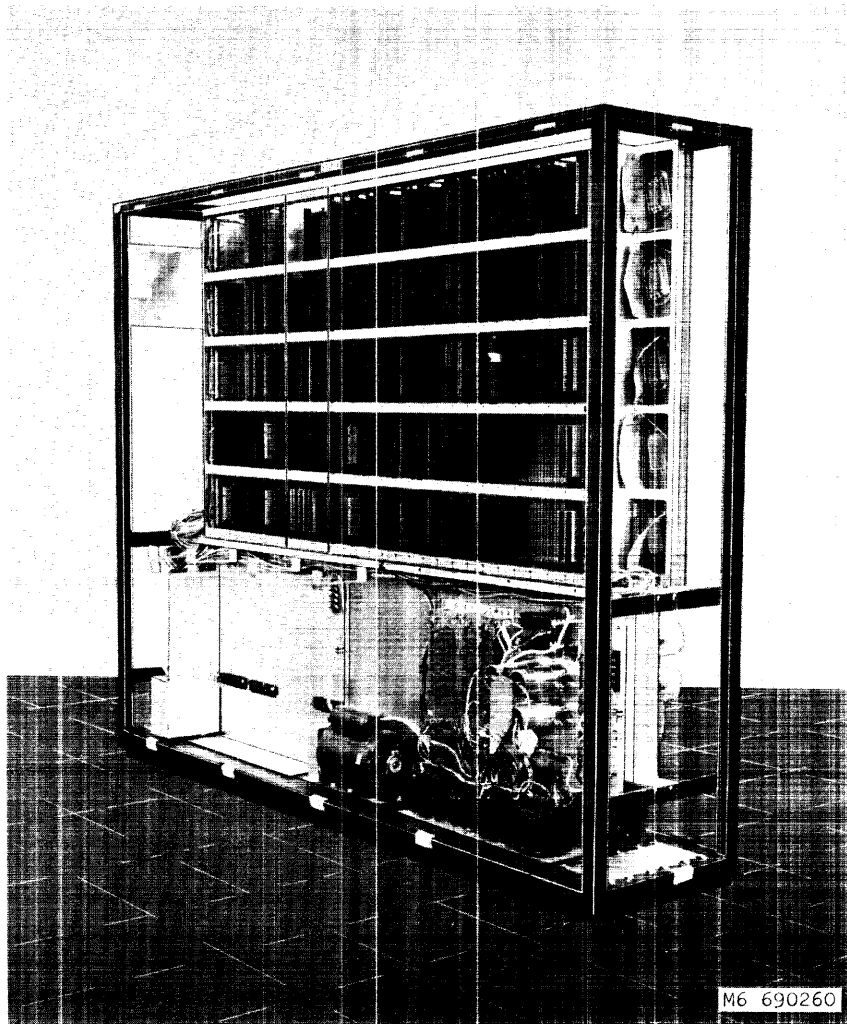


Figure II-4. Central Control B Cabinet
Left, Card Side View; Right, Pin Side View

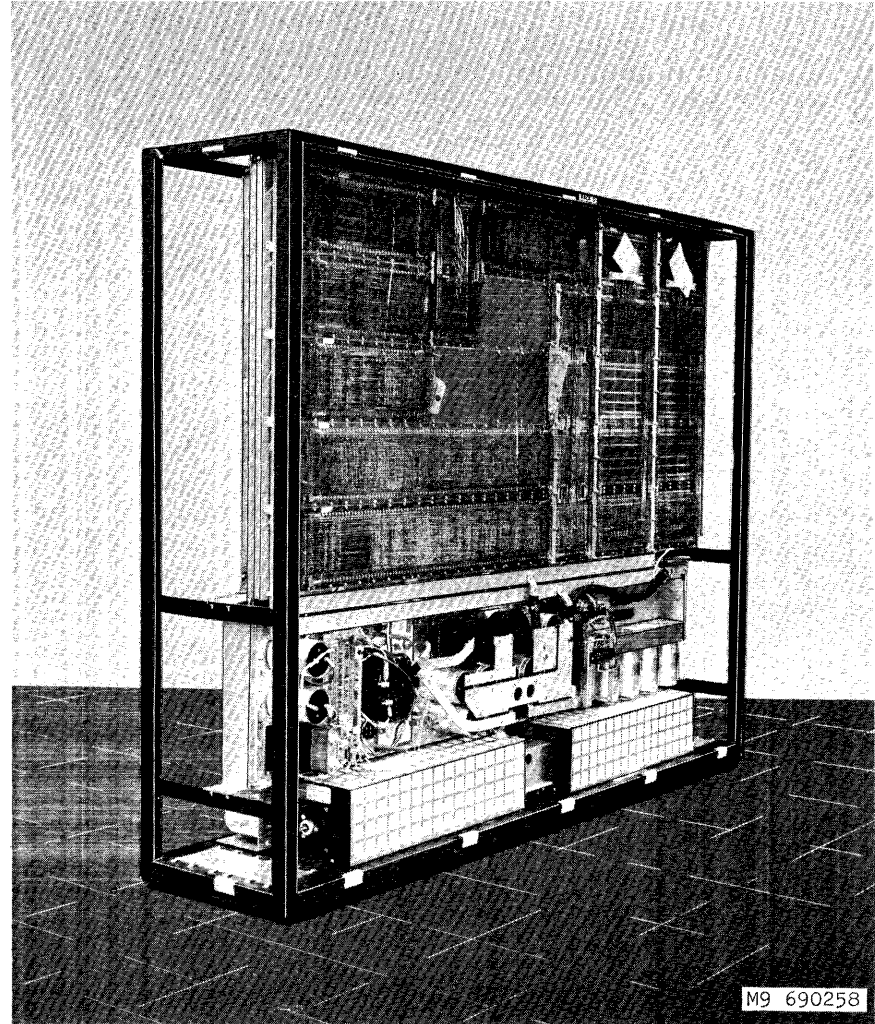
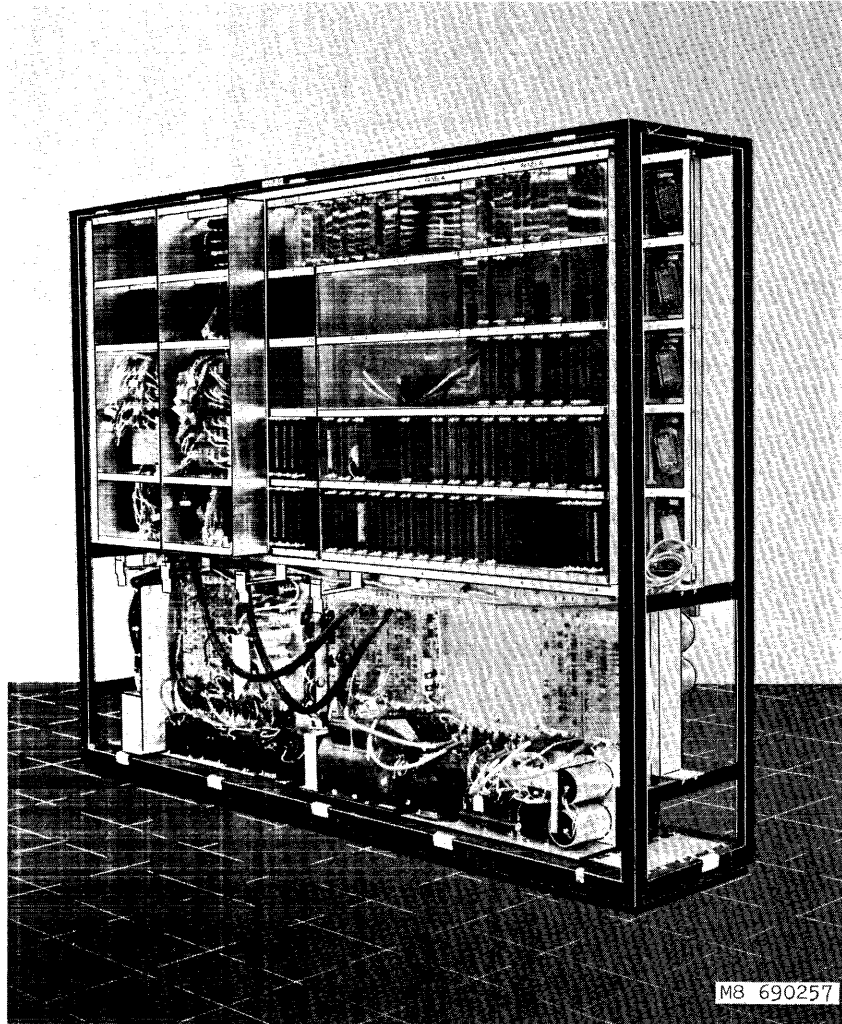


Figure II-5. Central Control and Memory Base Cabinet
Left, Card Side View; Right, Pin Side View

Two memory termination cards always accompany a unit; their positions are determined as core memories are added to the right of the memory control section. Intraframe jumpers (IFJ) are basic in core memory modules and are placed in positions adjacent to the memory control and other memory modules. A magnetic tape exchange or a terminal unit exchange may be accommodated in place of the second core memory module.

A power compatibility kit is required in a Design Level 2 cabinet when it is to be connected to a Design Level 1 cabinet. A Design Level 2 central control and memory base can be connected to a Design Level 1 or (with retiming) Model 2A processor, but one terminate/driver No. 2 adapter, one terminate/driver No. 3 adapter, and one channel read adapter are required to be added in the processor.

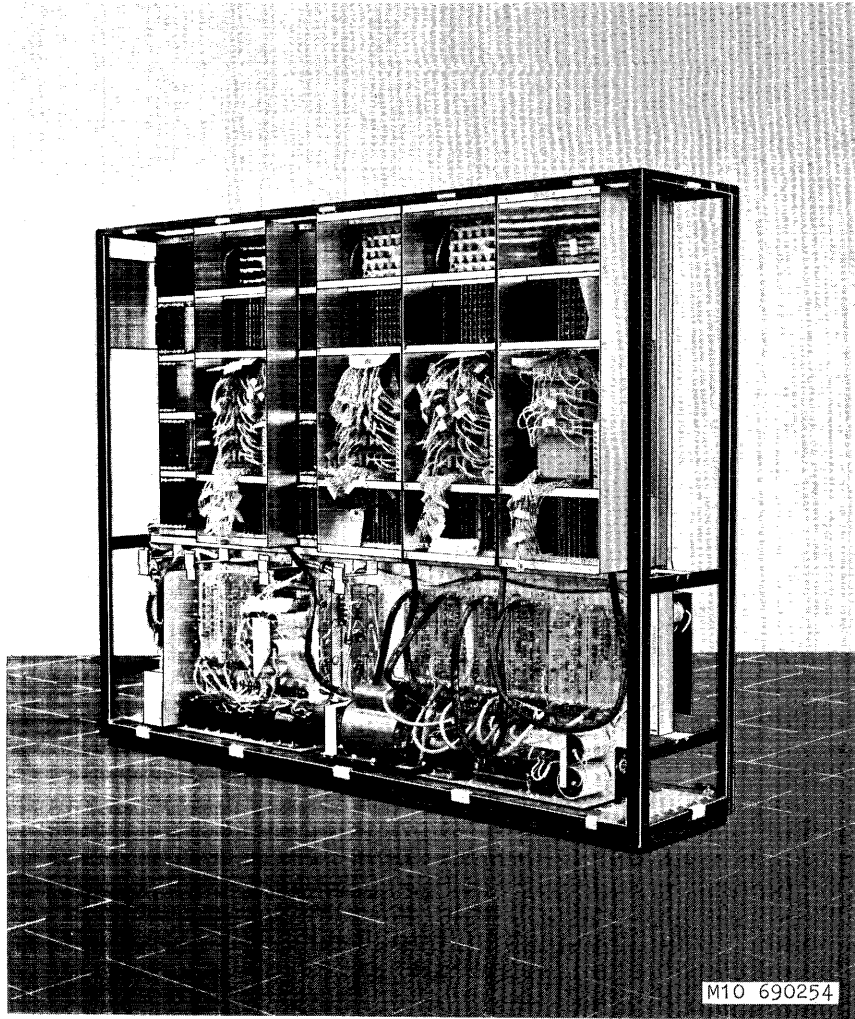
F. MEMORY BASE B (1141 9025)

The memory base B (MBB) cabinet contains the logic that directs information into the core memory and allows the READ/WRITE function to be carried out. The MBB houses all the memory modules in a system containing three or more cabinets. See Figure II-6.

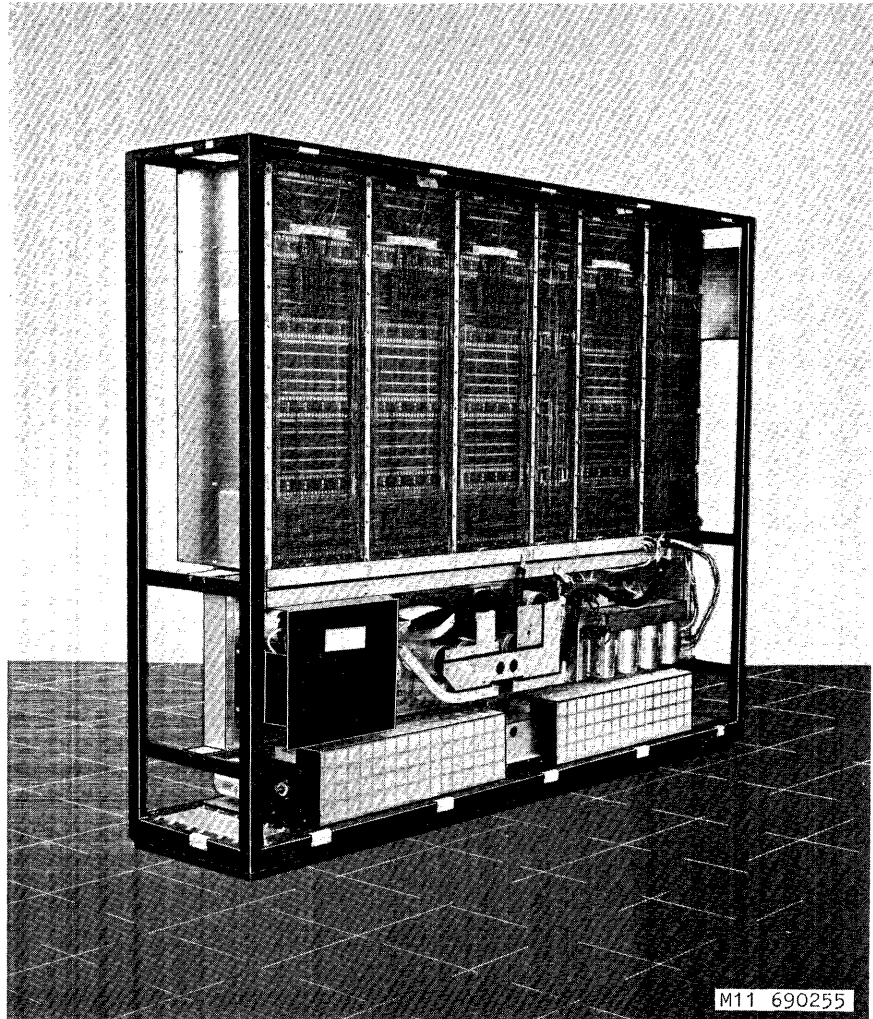
The MBB cabinet is used with the B2502 and B3501 systems. The B2502 can use only one MBB cabinet; the B3501 can use up to four MBB cabinets. In a maximum system the cabinets are numbered 0, 3, 6, and 9.

Each memory base cabinet contains a memory control B and memory Positions 1 through 5. The sequence of positions is 4, 2, 1, 3, 5 from left to right as the observer faces the pin side. The lowest-numbered memory positions must be consecutively filled by modules containing 30,000 characters (30K) before an additional (10K, 20K, or 30K) memory module can be installed. A cabinet must be completely filled by 30K modules before a subsequent cabinet is used for memory.

Position 1 must always contain a memory module. Position 2 may contain a memory module, a disk file exchange, a file protect memory, or a multiline extension. If this position contains a memory module, Position 1 must contain a 30K memory module. Position 3 may contain a memory module, a disk file control, a file protect memory, a 4 x 20 disk file exchange extension, or a multiline extension. If a memory module is used in this position, a 30K memory module must fill Position 2.



M10 690254



M11 690255

Figure II-6. Memory Base B Cabinet
Left, Card Side View; Right, Pin Side View

Position 4 may contain a memory module, a multiline extension, a file protect memory, a 4 x 20 disk file exchange extension, or a disk file exchange. If this position contains a memory module, Position 3 must contain a 30K memory module. Position 5 may contain a memory module, a multiline extension, a file protect memory, a disk file exchange, a 2 x 10 magnetic tape exchange, or a terminal unit exchange. If this position contains a memory module, a 30K memory module must fill Position 4.

If a memory base B is to contain more than one 60K memory module, it must also contain a memory extension adapter. Two memory termination cards always accompany a memory base B. Their positions are determined as core memories are added to the left of the memory control section.

If the MBB is the fourth or seventh cabinet, an AC power module must be ordered. Normally, if there are more than three cabinets (for example, processor, two central control B's, and one memory base B), the AC power module is located in the second central control B cabinet instead of in the memory base B cabinet.

G. PROCESSOR (1638 4109)

This cabinet coordinates the functions of the other units in the system through the use of program codes. See Figure II-7.

The basic processor provides a load information card and a memory size card tailored to each customer's requirements. Card configuration depends on total memory serving the processor. See Figure II-8.

A basic processor provides address memory for input/output (I/O) control channels 0 through 7. Additional adapters are based on a proportion of one per six I/O control channels or six multiline adapters. The basic processor provides the terminate/driver and channel read cards necessary to accommodate one central control and memory base cabinet or one central control B and one memory base B.

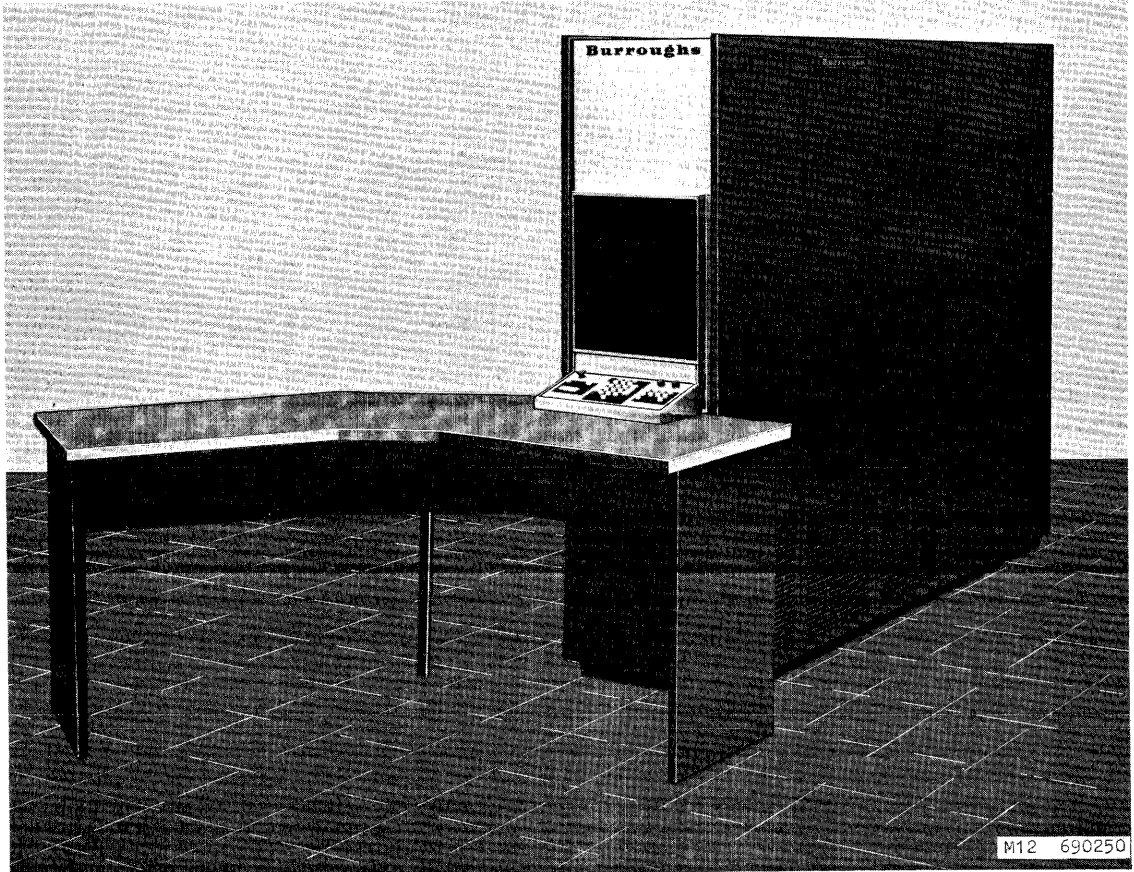


Figure II-7. Processor Cabinet and Shelf

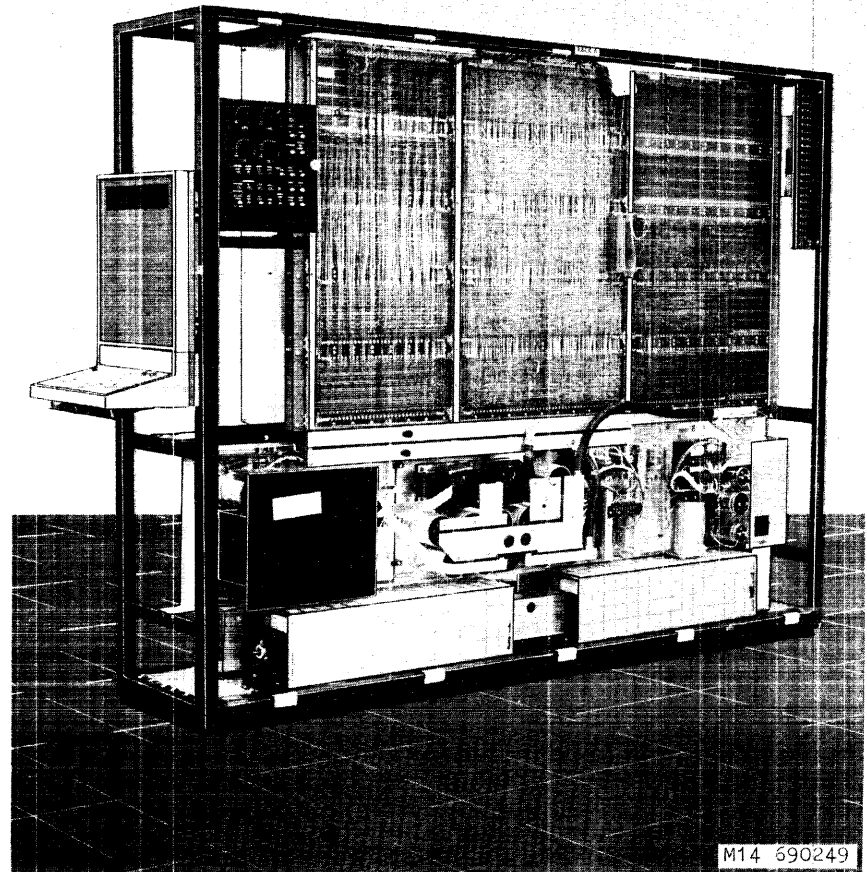
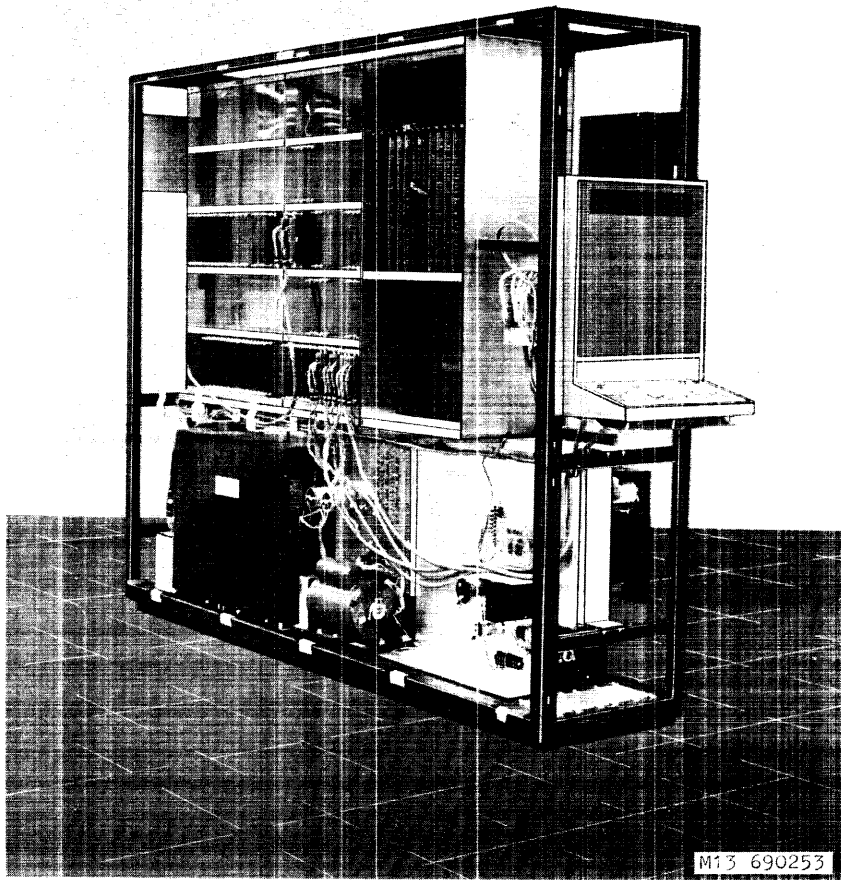


Figure II-8. Processor Cabinet
Left, Card Side View; Right, Pin Side View

SECTION III.

CONFIGURATION REQUIREMENTS

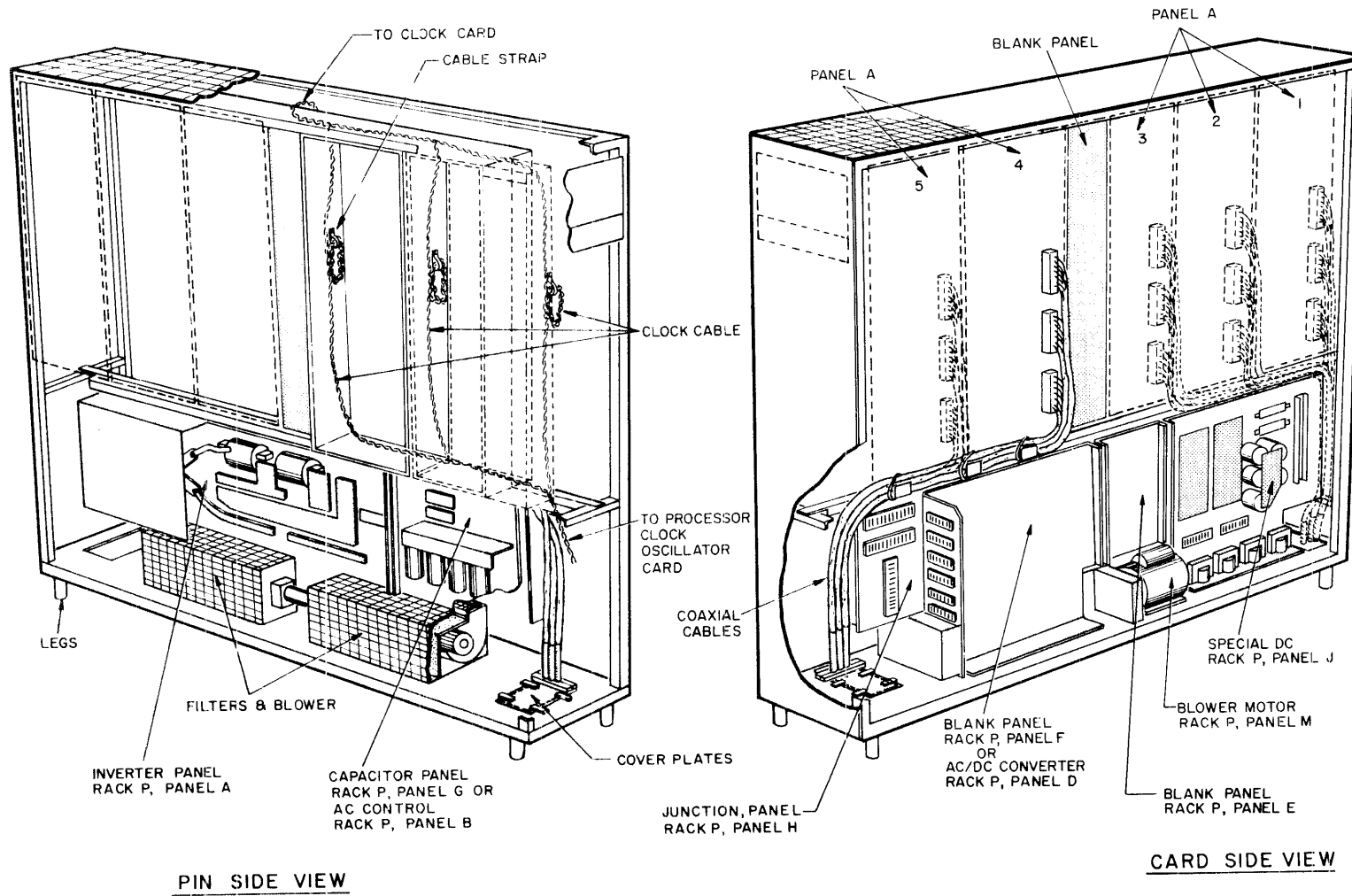
A. GENERAL

In this section the system configuration requirements and options for items ordered from the factory (adapters, extenders, kits, etc) are listed under the applicable cabinet title for each of the six cabinets. It will be noted that each cabinet has some factory-orderable item requirements that are peculiar to it. Other configuration requirements are common to all cabinets. The items, with their respective Manufacturing and Engineering numbers, are listed in alphabetical sequence to enable the configuration engineer to quickly determine requirements for any given installation.

For practical purposes, information on controls, extensions, and exchanges is grouped under separate headings in Paragraphs H and I. These paragraphs are referenced within the section concerning the related cabinets.

B. AUXILIARY CABINET (1141 9041) (See Figure III-1)

1. Kits. The required kits are as follows:
 - a. High Voltage Distribution (1914 6463). For single systems, if power wiring to a central complex cabinet is not in conduit a high voltage distribution kit is required for the cabinet.
 - b. Leg (1128 9832). A leg kit is required to install the cabinet on a solid (not false) floor. One kit provides legs for one cabinet.
2. Module, AC Power (1144 5061). An AC power module is required when an auxiliary cabinet is designated as either the fourth or the seventh cabinet in a system. This module is accepted by all cabinets except the processor and independent auxiliary cabinets.



PIN SIDE VIEW

CARD SIDE VIEW

Figure III-1. Cutaway Views of Auxiliary Cabinet

NOTE

For information regarding exchanges and extensions refer to Paragraph I.

C. AUXILIARY CABINET, INDEPENDENT (1906 0276)

1. Kits. The required kits are as follows:
 - a. Frame Ground (1906 0573). One frame ground kit is required for each system connected to an independent auxiliary cabinet.
 - b. Leg (1128 9832). A leg kit is required to install the cabinet on a solid (not false) floor. One kit provides legs for one cabinet.

NOTE

For information regarding exchanges and extensions refer to Paragraph I.

D. CENTRAL CONTROL B (1141 9017) (See Figure III-2)

1. Adapters. The required adapters are as follows:
 - a. Extended Binary Coded Decimal Interchange Code, Burroughs Common Language, Jumper (EBCDIC BCL JMP) (1141 6104). The need for an EBCDIC BCL adapter is determined by the controls used. A jumper adapter is required only when a translator adapter is not used in the system. One per CCB cabinet is the maximum that can be used.
 - b. EBCDIC BCL XLT (1123 3186). Required if any peripheral equipment requires a BCL code; it must also be ordered if a 7-track tape is used. One per CCB cabinet is the maximum number that can be used.
 - c. Terminate/Driver. Terminate/driver adapters are not required for a two-cabinet system nor are they required for a

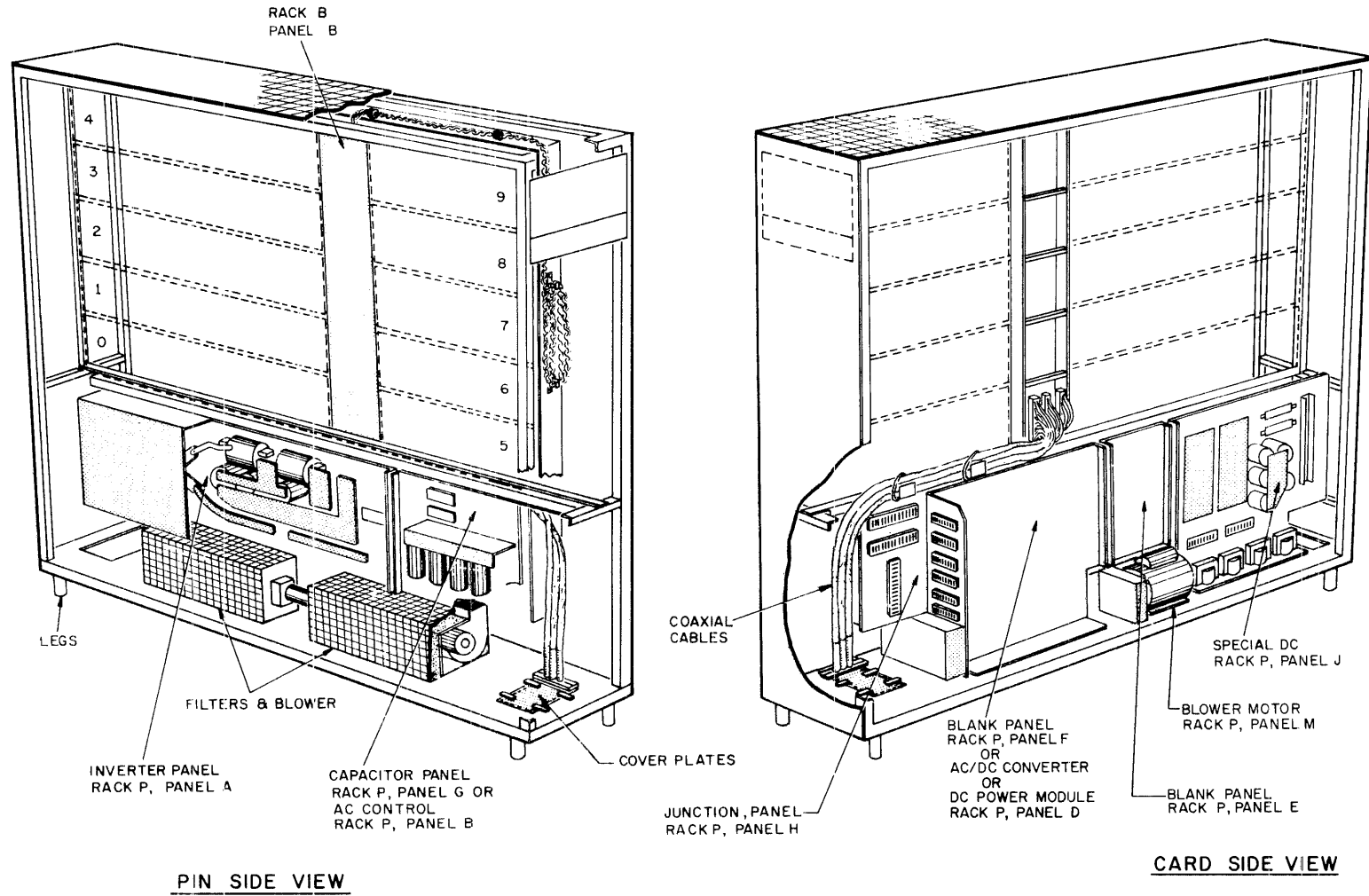


Figure III-2. Cutaway Views of Central Control B Cabinet

three-cabinet system comprising a processor, a memory base B, and a central control B. See Figure III-3.

- (1) Terminate/Driver No. 1 Adapter (1901 5395). When a second central control B cabinet is included in a system, one terminate/driver adapter No. 1 is required for each memory base B cabinet in the system. This adapter is physically mounted in the memory base B.

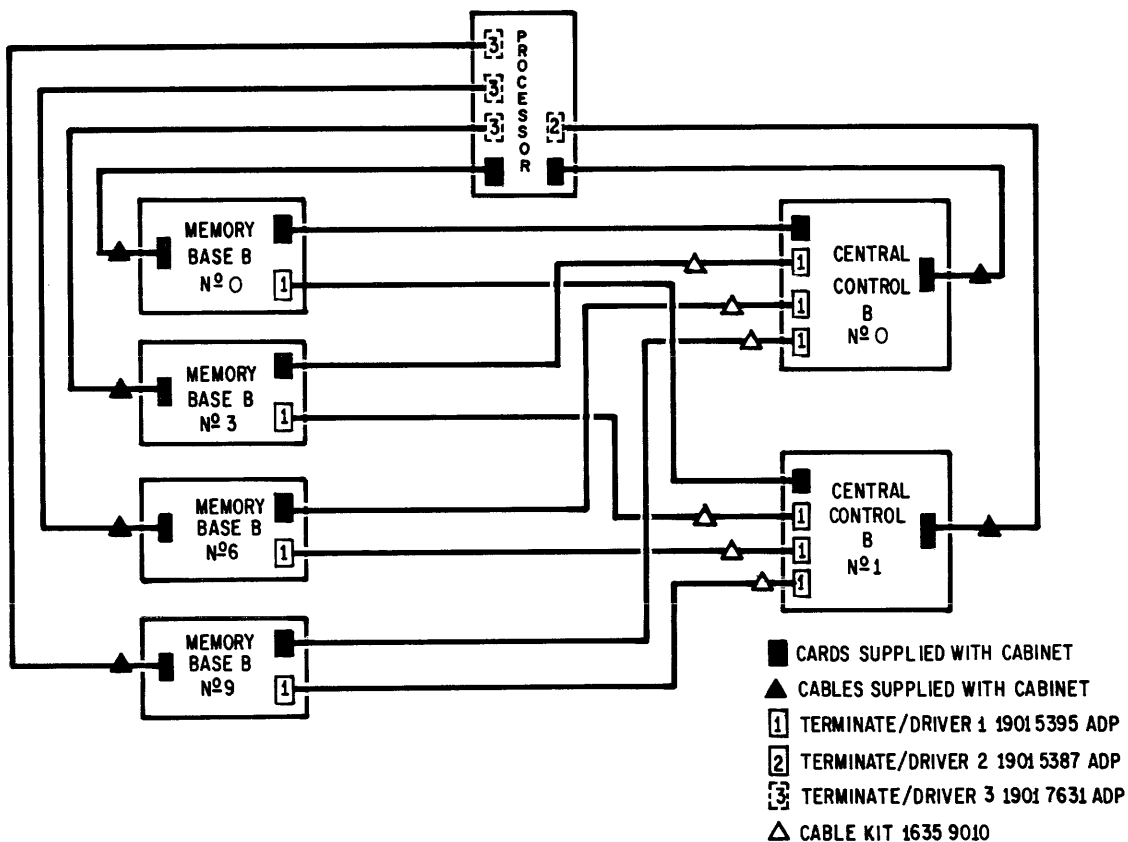


Figure III - 3. Terminate/Driver Adapter Requirements
Cards and Cables

M17

When the second, third, and fourth memory base B cabinets are included in a system with only one central control B, a terminate/driver adapter No. 1 is required for each cabinet. If the system includes two central control B cabinets, two adapters are required for each of the second, third, and fourth memory base B cabinets.

When a magnetic tape exchange is used, one terminate/driver adapter No. 1 is required in each of the magnetic tape controls cabled to the exchange. When a terminal unit exchange is used, one terminate/driver No. 1 adapter is required in the terminal unit control (Figure III-3).

- (2) Terminate/Driver No. 2 Adapter (1901 5387). When a second central control B cabinet is included in the system, one terminate/driver No. 2 adapter is required to be mounted in the processor cabinet (Figure III-3).
- (3) Terminate/Driver No. 3 Adapter (1901 7631). When a second, third, or fourth memory base B cabinet is included in a system, one terminate/driver No. 3 adapter per cabinet is required to be mounted in the processor (Figure III-3).

2. Extender, CCB (1142 4140). A CCB extender is required when a 1 x 36 LH control is placed in a Type B I/O channel in the CCB cabinet.

3. Kits. The required kits are as follows:

a. Cable. Unless the unit is directly connected to an exchange or magnetic tape cluster, the following cables are required.

- (1) 75-Pin (P) (1146 4047). Must be ordered if Position 0, 5, 10, or 15 is filled by one of the following controls: sorter-reader, card reader, card punch, unbuffered printer, paper tape reader, paper tape punch, terminal unit.
- (2) 104-P (1146 4039). Must be ordered if Position 0, 5, 10, or 15 is filled by one of the following controls: buffered printer, 7-track magnetic tape control No. 1, 9-track magnetic tape control No. 2, lister.

For controls with Winchester connectors, one of the above cables (containing the same number of pins as the control connector) is required whenever that control is mounted in the bottommost position of a central control cabinet. Bottom positions are Positions 0, 5, 10, or 15 in the CCB cabinets. One kit provides a cable for one such control.

b. High Voltage Distribution (1914 6463). Required if power wiring to the cabinet is not in conduit, unless an AC power module is installed in the cabinet.

c. Leg (1128 9832). A leg kit is required to install the cabinet on a solid (not false) floor. One kit provides legs for one cabinet.

4. Module, AC Power (1144 5061). An AC power module is required when a cabinet is designated as either the fourth or the seventh cabinet in a system. This module is accepted by all cabinets except the processor and the independent auxiliary cabinets.

NOTE

For information regarding controls, refer to Paragraph H.

E. CENTRAL CONTROL AND MEMORY BASE (1141 9033) (See Figure III-4)

1. Adapters. Adapters are required as follows:

a. EBCDIC BCL JMP (1141 6104). The need for an EBCDIC BCL adapter is determined by the controls used. A jumper adapter is required only when a translator adapter is not used in the system. One per CC and MB cabinet is the maximum number that can be used.

b. EBCDIC BCL XLT (1123 3186). The EBCDIC BCL translator is required if any peripheral equipment requires a BCL code; it must also be ordered if a 7-track magnetic tape is used. One per CC and MB cabinet is the maximum number that can be used.

2. Core Memory. At least one of the following core memory modules must be ordered.

a. 10K Characters (1141 8613). Memory word size and capacity: 16 bits plus 1 parity; 5,000 16-bit words; 10,000 8-bit characters; 20,000 4-bit digits.

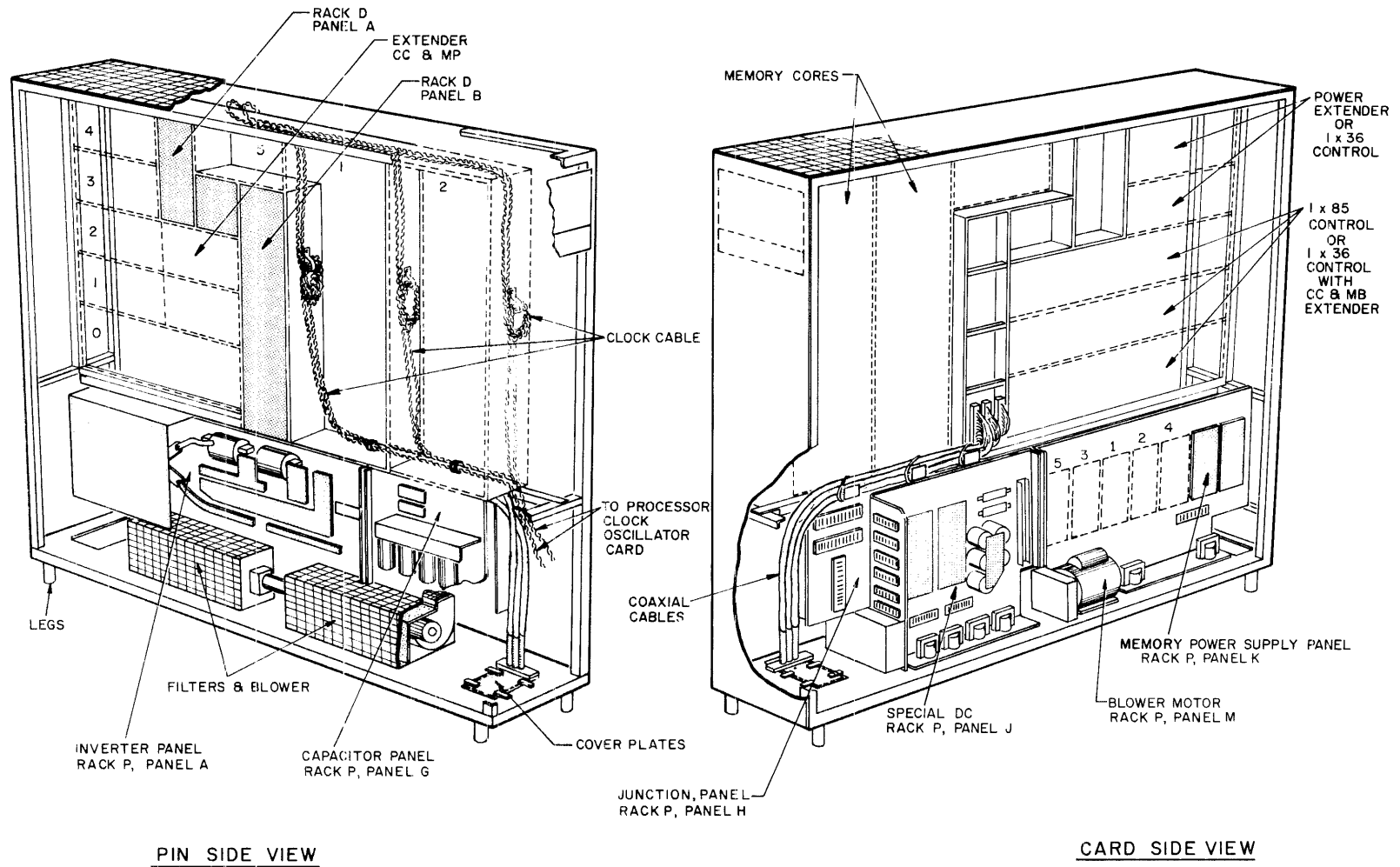


Figure III-4. Cutaway Views of Central Control and Memory Base Cabinet

b. 20K Characters (1141 8621). Memory word size and capacity: 16 bits plus 1 parity; 10,000 16-bit words; 20,000 8-bit characters; 40,000 4-bit digits.

c. 30K Characters (1141 8605). Memory word size and capacity: 16 bits plus 1 parity; 15,000 16 bit words; 30,000 8 bit characters; 60,000 4-bit digits.

3. Extenders. Extenders are required as follows:

a. Central Control and Memory Base (1142 4157). An extender is required when a LH control is used in a large I/O channel.

b. Power (1633 8873). If a control is not used in Positions 3 and 4, this part must be ordered for those positions.

4. Kits. The following cable kits are required.

a. Cables.

(1) 75-P (1143 5039). This cable kit is required when a control with a 75-P Winchester connector, is installed in a bottommost position (Channels 0, 5, 10, or 15) of the central control B cabinet, or in Channel 0 of the central control and memory base cabinet.

(2) 104-P (1143 5021). This cable kit is required when a control with a 104-P Winchester connector is installed in a bottommost position (Channels 0, 5, 10, or 15) of the central control B cabinet, or in Channel 0 of the central control and memory base cabinet.

Cable kits are not required when controls are connected to an exchange or to a magnetic tape cluster.

NOTE

For information regarding controls, refer to Paragraph H.

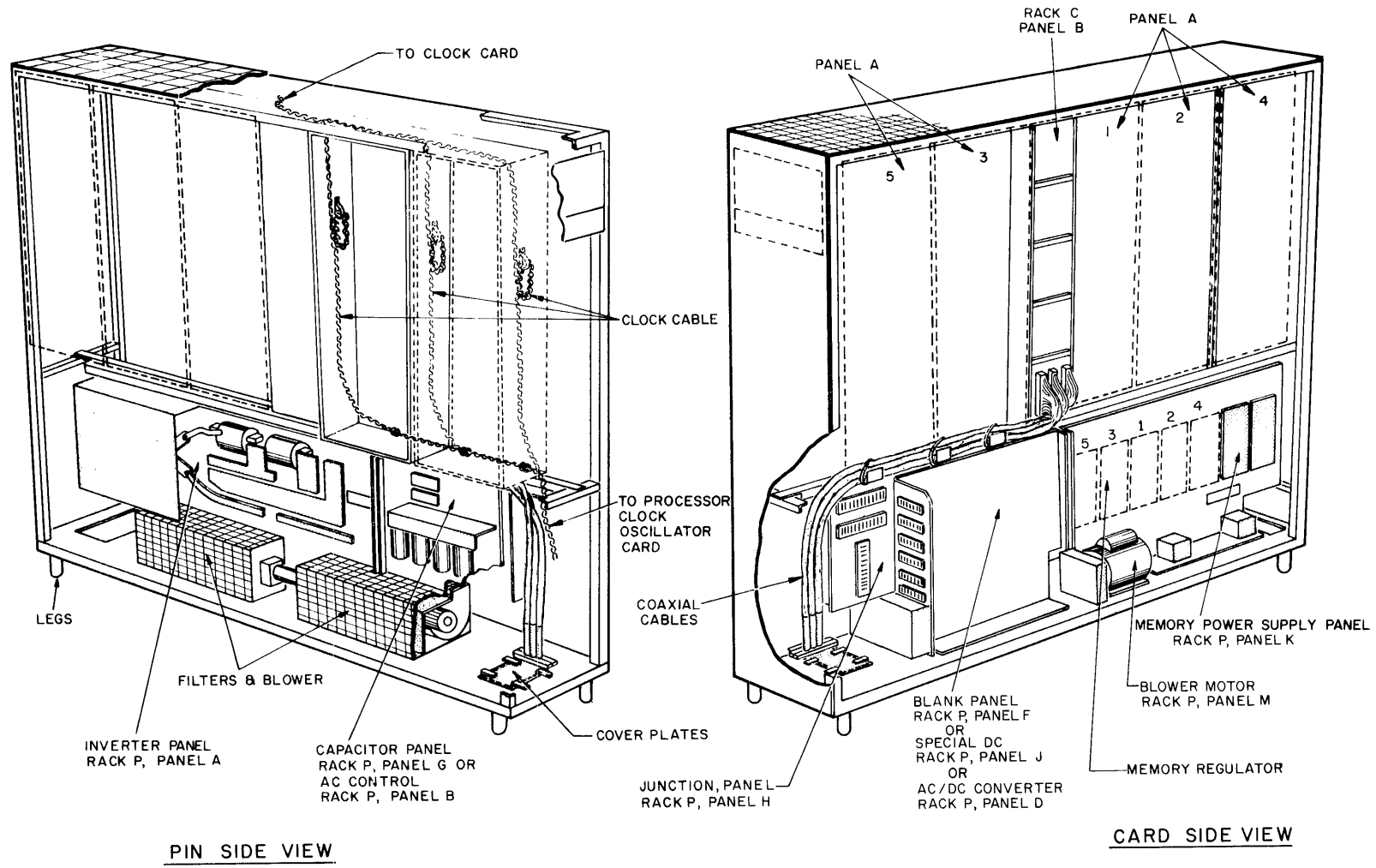
F. MEMORY BASE B (1141 9025) (See Figure III-5)

1. Adapters. The required adapters are as follows:
 - a. Memory Extender (1125 8621). One memory extension adapter is required in each cabinet containing three or more memory modules. Two memory termination cards are provided with this adapter.
 - b. Terminate/Driver No. 1 (1901 5395). When a second, third, or fourth memory base B cabinet is included or added to a system, one terminate/driver No. 1 adapter is required for each memory base B cabinet. Installation is in the central control B cabinet.

2. Core Memory. At least one of the following core memory modules must be ordered.
 - a. 10K Characters (1141 8613). Memory word size and capacity: 16 bits plus 1 parity; 5,000 16-bit words; 10,000 8-bit characters; 20,000 4-bit digits.
 - b. 20K Characters (1141 8621). Memory word size and capacity: 16 bits plus 1 parity; 10,000 16-bit words; 20,000 8-bit characters; 40,000 4-bit digits.
 - c. 30K Characters (1141 8605). Memory word size and capacity: 16 bits plus 1 parity; 15,000 16-bit words; 30,000 8-bit characters; 60,000 4-bit digits.

Maximum memory capacity of a multicabinet system is sixteen 30K stacks plus one 20K stack for a total of 500K bytes.

3. Kits. The following kits are used in the memory base B cabinets, as specified:
 - a. Exchange 25-Foot Cable (1635 9010). Each additional memory base B cabinet (second, third, or fourth) requires one or two cable kits for connection to one or two CCB cabinets.
 - b. High Voltage Distribution (1914 6463). In single systems a high voltage distribution kit is required by the



PIN SIDE VIEW

CARD SIDE VIEW

Figure III-5. Cutaway Views of Memory Base B Cabinet

central complex cabinet if the power wiring to it is not in conduit. However, cabinets containing an AC module do not require this kit. Reference Paragraph D.

c. Leg (1128 9832). A leg kit is required to install the cabinet on a solid (not false) floor. One kit provides legs for one cabinet.

d. Power Compatibility (1639 3365). A power compatibility kit is required to connect a Design Level 2 memory base B cabinet to a Design Level 1 memory base B, a central control B, or an auxiliary cabinet.

4. Modules.

a. AC Power (1144 5061). An AC power module is required when a cabinet is designated as the fourth or the seventh cabinet in a system. This module is accepted by all cabinets except the processor and the independent auxiliary cabinet.

b. Special DC Power (1146 4237-M1) or (1639 3373-M3). required when exchanges, file protect memories, or multiline extensions are installed in a memory base B cabinet. Both an AC and a DC power module cannot be installed in the same cabinet.

G. PROCESSOR (1638 4109) (See Figure III-6)

1. Adapters. Adapters are required as follows:

a. B2500 Speed Adapter (1149 5538). This unit is ordered if the system is a B2501 or B2502.

b. B3500 Speed Adapter (1149 5546). This unit is ordered if the system is a B3501.

c. Channel Read Adapter (1901 5403). One is required for the second central control B.

d. 12-Word Address Memory Extension (1121 3204). The basic processor provides an address memory for I/O control

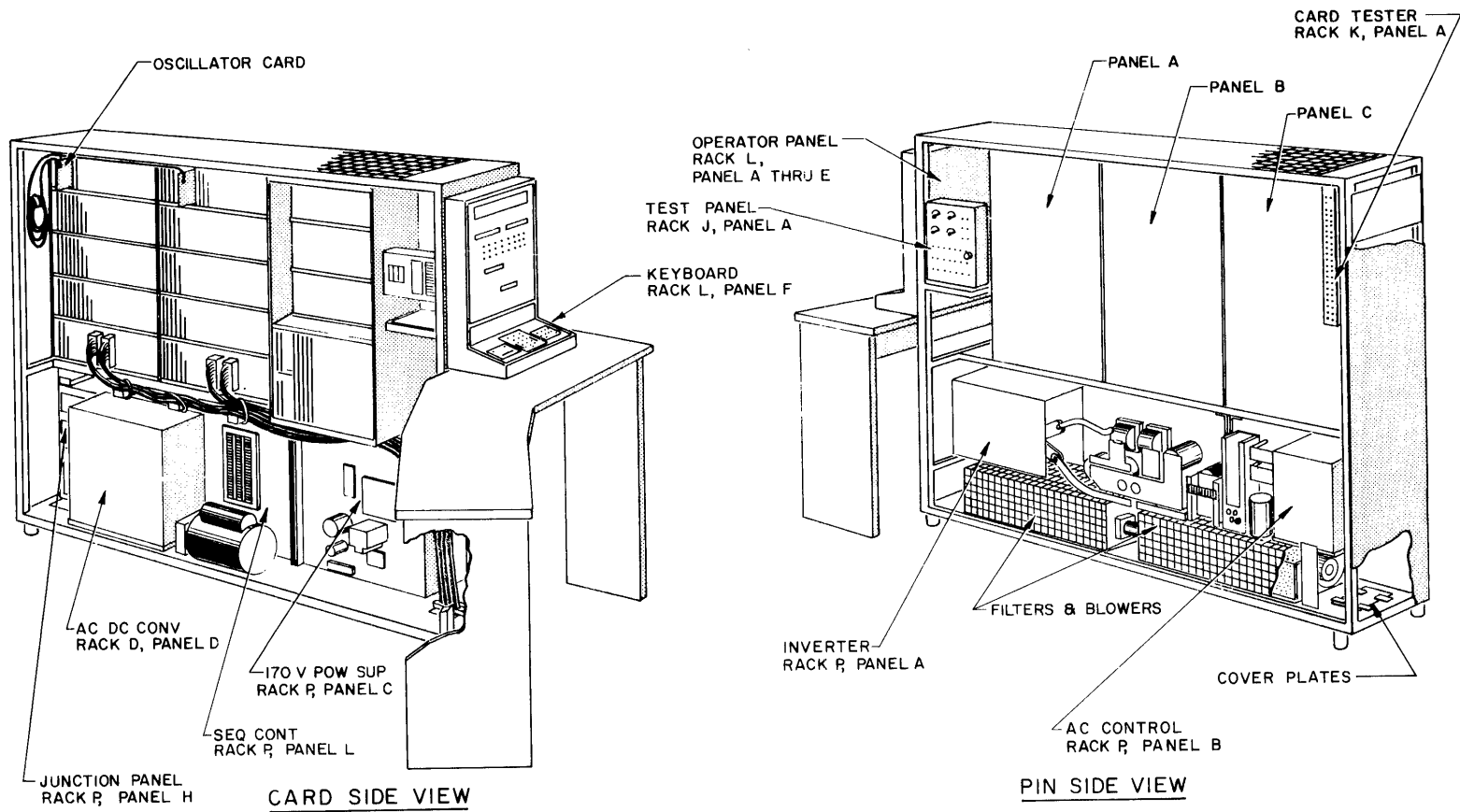


Figure III-6. Cutaway Views of Processor Cabinet

channels 0 through 7 (8 locations). Requirements for additional adapters are based on one per six I/O control channels. A maximum of two adapters is permitted.

The basic processor does not provide an address memory for data communication adapters. Each 12-word address memory extension adapter provides an address memory for six data communication line adapters. A minimum of one and a maximum of six are allowed.

2. Driver, Multiline Extension Address Memory (1638 4372). One memory driver adapter is required in the processor for each multiline extension in the system. A maximum of four is permitted.

3. Kit, Leg (1128 9832). One leg kit is required for installation on a solid (not false) floor. One kit provides legs for one cabinet.

4. Meters, Operating Time: 50-Cycle (1148 2981) and 60-Cycle (1148 2973). An optional operating time meter can be located on the face of the keyboard panel. The meter has a register capacity of 9999.9 hours, which cannot be reset.

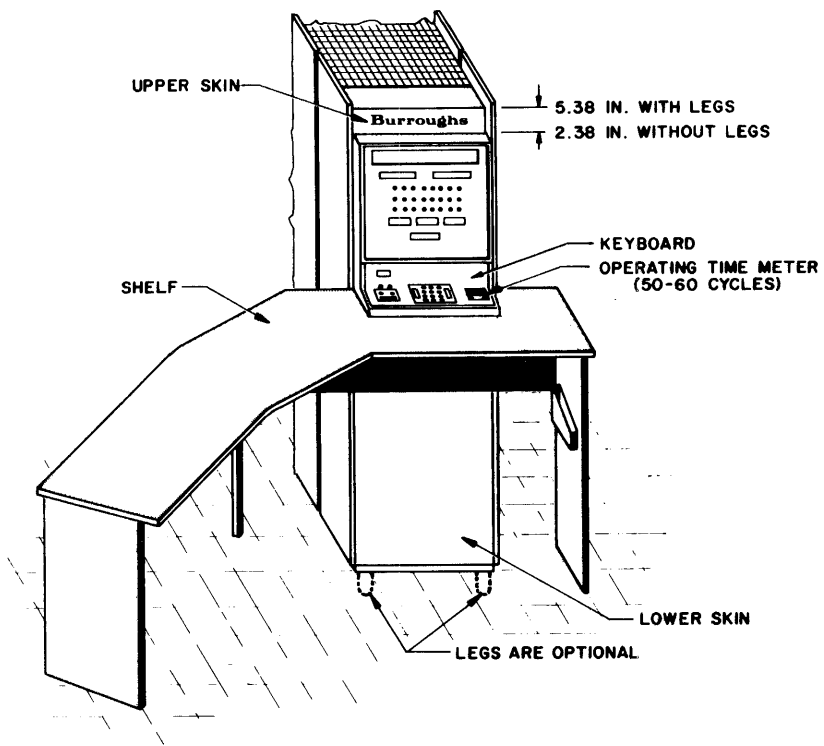
5. Processor, Multiline Control (1638 4364). One multiline processor adapter is required in the processor when a multiline control is installed.

6. Set, Processor Maintenance (1914 6265). This unit is a maintenance aid; one is required for each system.

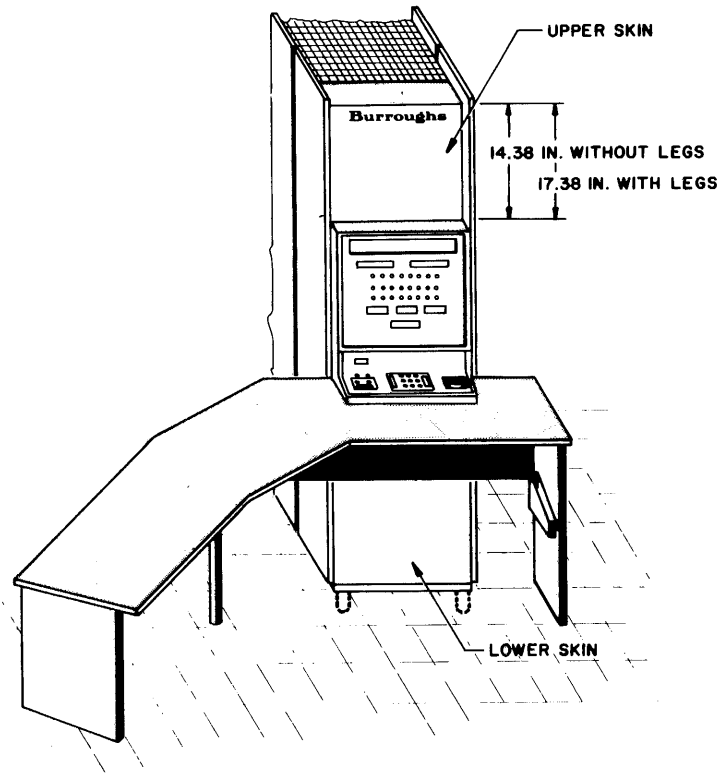
7. Shelf. One shelf is required per processor; see Figure III-7. Shelf kits labeled "L" are used with cabinets employing leg kits. Four types of shelves are available, as follows:

- (1) Sit-down shelf and skin (1142 2912); sit-down shelf and skin when leg kit is used (1144 8040).
- (2) Stand-up shelf and skin (1142 2920); stand-up shelf and skin when leg kit is used (1144 8032).

8. Unit, Read-Only Memory Indicator (1146 6273). This item is a maintenance aid used to test the read-only memory portion of the processor. One is required per system.



STAND-UP SKIN AND SHELF



SIT-DOWN SKIN AND SHELF

NOTE

KEYBOARD IS ADJUSTED FOR STAND-UP OR SIT-DOWN SHELF AND SKIN

Figure III-7. Stand-Up and Sit-Down Skins and Shelves for Processor Cabinet

H. CONTROLS

All controls used in the systems are listed below in alphabetical sequence. Following this, each control is listed again along with the related adapters, with reference to the peripheral equipment it is used to control.

- (1) Buffered Printer Control.
Buffered Printer LH Control.
- (2) Card Punch Control No. 1.
Card Punch LH Control No. 1.
- (3) Card Punch Control No. 2.
Card Punch LH Control No. 2.
- (4) Card Reader Control No. 1.
Card Reader LH Control No. 1.
- (5) Card Reader Control No. 3.
Card Reader LH Control No. 3.
- (6) Console Printer Control No. 1.
Console Printer LH Control No. 1.
- (7) Console Printer Control No. 2.
Console Printer LH Control No. 2.
- (8) Data Communication Controls
Single-Line Controls
Multiline Controls
- (9) Disk File Control No. 2.
- (10) Disk File Control No. 2.5.
Disk File Control No. 3.
- (11) Lister Control.
- (12) Magnetic Tape 7-Track Control No. 1.
Magnetic Tape 9-Track Control No. 1.
- (13) Magnetic Tape Phase Encoded Control No. 5.
- (14) Paper Tape Punch Control.
- (15) Paper Tape Reader Control
Paper Tape LH Reader Control.
- (16) Sorter-Reader Control No. 1.
Sorter-Reader LH Control No. 1.

- (17) Sorter-Reader Control No. 2.
Sorter-Reader LH Control No. 2.
- (18) Terminal Unit Control.
- (19) Unbuffered Printer Control.
Unbuffered Printer LH Control.

1. Buffered Printer Control (1142 3340) and Buffered Printer LH Control (1142 3357). These controls operate with the following printers:

- (1) 315 lines per minute (LPM) Original Equipment Manufacturer(OEM) Printer (Buff) (1064 9788)
- (2) 700 LPM BCL Printer (Buff) 60 CPS (1009 9364)
- (3) 700 LPM BCL Printer (Buff) 50 CPS (1009 9372)
- (4) 860 LPM Printer (with Buff option) 50 and 60 CPS (1630 3265)

An EBCDIC BCL translator adapter (1123 3186) is required for installation in the cabinet housing these controls.

2. Card Punch Control No. 1 (1142 3324) and Card Punch LH Control No. 1 (1142 3332). These controls are used with the following card punches. (For adapter requirements, refer to subparagraph 3a below.)

- (1) 50 CPS, 100 Cards per Minute (CPM) Punch (1184 5195)
- (2) 50 CPS, 300 CPM Punch (78118)
- (3) 60 CPS, 100 CPM Punch (78502)
- (4) 60 CPS, 300 CPM Punch (77242)

An EBCDIC BCL translator adapter (1123 3186) is required for installation in the cabinet housing these controls.

3. Card Punch Control No. 2 (1142 3498) and Card Punch LH Control No. 2 (1637 5289). These controls are used with 50 and 60 CPS, 300 CPM (Model 2) Punch (1141 9934).

a. Adapters. Certain adapters are required for each of the punch controls, depending upon which of the three card codes (CC) is to be punched (ICT, BULL, or BCL). Only one adapter can be used with each control.

- (1) With ICT card code: BCL ICT CC Translator Adapter (1123 0307)
- (2) With BULL card code: BCL BULL CC Translator Adapter (1123 0315)
- (3) With BCL card code: BCL-BCL CC Translator (1123 7906)

Without the adapter, only the binary or extended binary coded decimal interchange code (EBCDIC) card codes, which are standard in the controls, can be punched.

An EBCDIC BCL translator adapter (1133 3186) is required for installation in the cabinet housing these controls.

4. Card Reader Control No. 1 (1142 3183) and Card Reader LH Control No. 1 (1142 3175). These controls are used with the following card readers:

- (1) 50 CPS 200 CPM Reader (78114)
- (2) 50 CPS BULL Reader (475, 800, 1400 CPM options) (1630 1277)
- (3) 50 CPS ICT Reader (475, 800, 1400 CPM options) (1630 1285)
- (4) 50 CPS Reader (475, 800, 1400 CPM options) (1630 1269)
- (5) 60 CPS BULL Reader (475, 800, 1400 CPM options) (1630 1798)
- (6) 60 CPS, 200 CPM Reader (1198 0539)
- (7) 60 CPS Reader (475, 800, 1400 CPM options) (1630 1251)

An EBCDIC BCL translator adapter (1123 3186) is required for installation in the cabinet housing these controls.

5. Card Reader Control No. 3 (1907 0227) and Card Reader LH Control No. 3 (1906 0235). These controls are used with the 100 CPM reader (1141 9926). Operation requires the installation of BCL translator adapter (1906 0243). Additional adapters for the ICT and BULL card codes may be available at a future date.

An EBCDIC BCL translator adapter (1123 3186) is required for installation in the cabinet housing these controls.

6. Console Printer Control No. 1 (1142 3365) and Console Printer LH Control No. 1 (1142 3373). These controls operate with the following console printers:

- (1) 50 CPS Console Printer (1142 2714)
- (2) 60 CPS Console Printer (1124 7798)

7. Console Printer Control No. 2 (1636 4422) and Console Printer LH Control No. 2 (1638 4554). These controls operate with the following console printers:

- (1) 50 CPS Console Printer (1638 4414)
- (2) 50 CPS Console Printer (1638 4406)

8. Data Communication Controls. Data Communication (Data Comm) controls are used to interface data processing equipment with telephone and telegraph line equipment. There are two types of controls: (1) single-line and (2) multiline. One single-line control will provide a backplane for one adapter, and one multiline control will provide a backplane for a maximum of four adapters.

a. Single-Line Control. A single-line control is an input/output control which services one communication line. One line adapter is required in this control to interface the desired remote terminal device. This control mounts in a central control B cabinet or a central control and memory base cabinet. Two models of single-line controls are available. Refer to the line adapter charts and notations at the end of this section for the available line adapters and their associated code, station, and parameter adapters.

b. Multiline Control. The multiline control is an input/output control. It will accept four line adapters of any

type or mixture of types, except for the 83B3 and Touchtone line adapters. It will accept a maximum of three 83B3 line adapters but no Touchtone adapters. The multiline control will service eight additional communication lines with the addition of one multiline extension. Four multiline extensions may be employed to provide a maximum of 36 communication lines. Refer to Paragraph I3 for further information regarding multiline extensions.

The multiline control physically mounts in the central control B cabinet and occupies two channels (Channels 0 and 1). The following adapters must be ordered with this control:

- (1) Multiline control processor adapter (1638 4364). This adapter includes cables and cards to connect the control with the processor. It is located in the processor.
- (2) Control scratchpad extension adapter (1123 3269). This adapter is used with:
 - (a) Multiline control (1142 3167)
 - (b) Multiline control 3 (1908 4466)
- (3) Control scratchpad extension adapter 2 (1910 5717). This adapter is used with multiline control 5.

Each line adapter requires one word of scratchpad memory. The basic multiline control provides 12 words. If more than 12 line adapters are used a scratchpad extension adapter is required, each of which provides 12 additional words of scratchpad memory. A maximum of two extension adapters can be employed for a total of 36 words.

- (4) The basic processor does not provide an address memory for data communication adapters. Each 12-word address memory extension adapter provides an address memory for six data communication line adapters. A minimum of one and a maximum of six are allowed.

There are three models of multiline controls available. Refer to Charts III-1 through III-8 and the notations at the end of this section for the available line adapters and their associated code, station, and parameter adapters.

9. Disk File Control No. 2 (1635 5422). This control operates with the following disk files and disk file storage units:

- (1) Disk File Electronics Unit 1A (1633 4559) and Disk File Storage Unit 1A (1633 4583)
- (2) Systems Memory (1123 2931)

The 1 x 2 disk file control No. 2 Adapter (1635 5430) is associated with this control.

NOTE

One adapter is required to connect the second disk file electronics unit or system memory to this control. Refer to 4 x 20 Disk File Exchange (1142 4124) if a larger configuration is desired.

10. Disk File Control 2.5 (1912 2944) and Disk File Control 3 (1633 4786). These controls operate with the following disk files and disk file storage units:

- (1) Disk File Electronics Unit 1A (1633 4559) and Disk File Storage Unit 1A (1633 4583)
- (2) Systems Memory (1123 2931)
- (3) Disk File Electronics Unit 1C (1144 7208), Disk File Storage Unit 1C-1 (1144 0245), and Disk File Storage Unit 2C-2 (1901 3416)

The 1 x 2 disk file control No. 2 Adapter (1635 5430) is associated with this control.

NOTE

One adapter is required to connect the second disk file electronics unit or systems memory to this control.

Disk file control file protect memory adapter (1914 6497) may be used only with disk file control 3 (1638 4786). It provides for the addition of the file protect memory module to the system.

Refer to 4 x 10 Disk File Exchange (1142 4124) information if more than two disk files are required to connect with one control. Refer to File Protect Memory (1635 5539) for further information concerning the use of the file protect memory.

11. Lister Control (1142 3423). This control operates with the following listers:

- (1) 1565 LPM, 50 CPS Lister (1630 1095)
- (2) 1565 LPM, 60 CPS Lister (1630 1087)

An EBCDIC BCL translator adapter (1123 3186) is required for installation in the cabinet housing these controls.

12. Magnetic Tape 7-Track Control No. 1 (1142 3191) and Magnetic Tape 9-Track Control No. 2 (1142 3449). These controls operate with the following 7- and 9-track magnetic tape units:

- (1) Magnetic Tape Cluster 45, nonreturn to zero (NRZ), 800 (BPI), 50 and 60 CPS (1146 4161)
- (2) Magnetic Tape Cluster 45, NRZ, 800 BPI, 50 and 60 CPS (1123 0919)
- (3) Magnetic Tape Transport, NRZ, 800 BPI, 50 CPS (1128 5350)
- (4) Magnetic Tape Transport, NRZ 800 BPI, 60 CPS, (1128 5343)

The following adapters are also associated with these controls:

- (1) Magnetic Tape Cluster Adapter (1630 7431). Required for use with magnetic tape cluster units.
- (2) Magnetic Tape Unit 7-Track Adapter (1630 7449). Required for use with upright magnetic tape

transports. Not required when the control connects to a magnetic tape exchange.

- (3) 45 Inches per Second (IPS) Adapter No. 1 (1126 8810). Required for use with a magnetic tape cluster.
- (4) 90 IPS Adapter No. 1 (1126 8828). Required for use with the magnetic tape cluster 90 IPS subsystem.
- (5) 120 IPS Adapter No. 1 (1126 8836). Required for use with the magnetic tape unit 120 IPS subsystem.
- (6) Cyclic Redundancy Check Adapter (1124 1635). Required for use with the 9-track control.
- (7) Terminate/Driver Adapter No. 1 (1901 5395). Required for use with a magnetic tape exchange. Refer to 2 x 10 Magnetic Tape Exchange below.

An EBCDIC BCL translator adapter is required for installation in the cabinet housing these controls.

13. Magnetic Tape 5-Phase Encoded (PE) Control No. 5 (1904 6507). This control operates with the following magnetic tape transports.

- (1) Magnetic Tape Transport PE, 1600 BPI, 50 and 60 CPS (2005 6685).
- (2) Magnetic Tape Cluster PE, 1600 BPI, 50 and 60 CPS, (1146 4161). No adapters are required.

14. Paper Tape Punch Control (1142 3431). This control operates with the following punches.

- (1) 50 CPS Paper Tape Punch (1189 9093)
- (2) 60 CPS Paper Tape Punch (1189 9085)

15. Paper Tape Reader Control (1142 3407) and Paper Tape LH Reader Control (1142 3415). These controls operate with the following paper tape readers:

- (1) 50 CPS Paper Tape Reader (1189 9077)
- (2) 60 CPS Paper Tape Reader (1189 9069)

16. Sorter-Reader Control No. 1 (1142 3381) and Sorter Reader LH Control No. 1 (1142 3399). These controls operate with the following sorter-readers:

- (1) 1560 DPM, 50 CPS Sorter-Reader, 16-Pocket (1630 0980)
- (2) 1560 DPM, 60 CPS Sorter-Reader, 16-Pocket (1630 0972)

The following adapters are also associated with these controls.

- (1) 50 CPS Adapter (1910 5535) (for 50-cycle sorter-reader)
- (2) 60 CPS Adapter (1910 5543) (for 60-cycle sorter-reader)

An EBCDIC BCL translator adapter is required for installation in the cabinet housing these controls.

17. Sorter-Reader Control No. 2 (1902 9925) and Sorter-Reader Control No. 2 (1903 0188). These controls operate with the 50- and 60-cycle, 1625 DPM modular (4 - 32 pocket) 4-pocket sorter-reader (1149 5470).

An EBCDIC BCL translator adapter is required for installation in the cabinet housing these controls.

18. Terminal Unit Control (1142 4447). This control operates with the central terminal unit (1114 2817). No adapters are required for a direct one-to-one connection. Refer to Terminal Unit Exchange (1142 3472) for information regarding communication with more than one terminal unit.

19. Unbuffered Printer Control (1142 4108) and Unbuffered Printer LH Control (1142 4116). These controls operate with the 860 LPM printer, 50 and 60 cycles (1630 3265).

I. EXCHANGES AND EXTENSIONS

All exchanges and extensions used in the system are listed below.

- (1) 2 x 10 Magnetic Tape Exchange
- (2) 2 x 10 Magnetic Tape Exchange 2
- (3) 4 x 10 Disk File Exchange
- (4) 4 x 20 Disk File Extension
- (5) Multiline Extension
- (6) Multiline Extension 3
- (7) Multiline Extension 4
- (8) Terminal Unit Exchange

1. 2 x 10 Magnetic Tape (MT) Exchange (1142 3308) and 2 x 10 Magnetic Tape Exchange 2 (1908 4375). These exchanges will connect with:

- (1) MT 7-Track Control 1 (1142 3191)
- (2) MT 9-Track Control 2 (1142 3449)

A 2 x 10 exchange will allow a maximum of two controls to operate with 10 magnetic tape transports of the following types:

- (1) MT Transport NRZ, 800 BPI, 50 CPS (1128 5350)
- (2) MT Transport NRZ, 800 BPI, 60 CPS (1128 5343)

At least one magnetic tape extension adapter (1129 0673) is required in the exchanges. One adapter will service two magnetic tape transports. A maximum of five adapters is allowed.

Three different cable kits are available for connecting the controls with the exchanges. Each kit consists of two 20-conductor cables.

- (1) 25-Foot Cable Kit (1635 9010)
- (2) 35-Foot Cable Kit (1635 9028)
- (3) 50-Foot Cable Kit (1635 9036)

One cable kit is required for each magnetic tape control connected to the exchange.

2. 4 x 10 Disk File Exchange (1142 4124). This exchange provides the capability of interfacing up to ten system memories or disk file electronic units with up to four disk file controls. It can be housed either in a memory base B cabinet or an auxiliary cabinet. When a 4 x 20 disk file extension is employed, both exchange and extension must be mounted adjacent to each other in one cabinet. The extension must be located to the left of the exchange, as the operator faces the pin side.

The following disk file controls can be connected to this exchange:

- (1) Control 2 (1635 5422)
- (2) Control 2.5 (1912 2944)
- (3) Control 3 (1638 4786)
- (4) Control 4 (1904 0930)

The 4 x 10 disk file exchange, the 4 x 20 disk file extension, and the four disk file controls referenced immediately above are compatible with the 1A and 1C disk file electronic units.

The following adapters are associated with the 4 x 10 disk file exchange:

- (1) 2 x N Disk File Exchange Adapter (1635 5554). One adapter is required in the exchange; a maximum of two is allowed. Each adapter provides connections for two disk file controls.
- (2) 2 x 2 Disk File Exchange Adapter (1635 5463). One adapter is required in the exchange; a maximum of ten is allowed. Each adapter provides connections

for interfacing two controls with two peripheral units.

- (3) N x 2 Disk File Exchange Adapter (1635 5455). One adapter is required in the exchange; a maximum of five is allowed. Each adapter provides connections for two peripheral units.
- (4) Disk File Exchange 4 x 20 Adapter (1904 6325). This adapter is required in the exchange when a 4 x 20 disk file extension is attached.

One of the following cable kits must be selected for each control connected to the exchange:

- (1) Exchange 25-Foot Cable Kit (1635 5505)
- (2) Exchange 35-Foot Cable Kit (1635 5513)
- (3) Exchange 50-Foot Cable Kit (1635 5521)

a. 4 x 20 Disk File Exchange Extension (1635 5448). This extension will allow ten additional peripheral units to operate with up to four disk file controls, extending the maximum configuration to 4 x 20.

The following adapters are required with this extension:

- (1) 2 x 2 Disk File Exchange Adapter (1635 5463)
- (2) N x 2 Disk File Exchange Adapter (1635 5455)

These adapters have the same usage as those described under 4 x 10 Disk File Exchange.

3. Multiline Extensions. The multiline extension will accept eight line adapters of any type or mixture of types to provide eight additional communication lines. A maximum of four can be used in a system. The extensions physically mount in a memory base B cabinet or in an auxiliary cabinet. The following kits and adapter must be ordered with the extensions:

- (1) Multiline Extension 25-Foot Cable Kit (1638 4398). This kit is used with multiline control (1142 3167) and multiline extension (1142 3290).
- (2) Multiline Extension 25-Foot Cable Kit (1910 5725). This kit is used with multiline control 3 (1908

4466), multiline extension 3 (1908 4474), multiline control 5 (1917 0851), and multiline extension 5 (1917 0869). One of these kits is required for each extension connected to the multiline control.

- (3) Multiline Extension Address Memory Driver Adapter (1638 4372). One adapter is required for each multiline extension. This adapter is physically located in the processor.

NOTE

Three models of multiline extensions are available. Refer to the line adapter charts and notations at the end of this section for the available line adapters and the associated code, station, and parameter adapters.

4. Terminal Unit Exchange (1142 3472). This exchange provides the capability of interfacing one terminal unit control with a maximum of nine central terminal units (1114 2817). It can be housed in either a memory base B or an auxiliary cabinet.

The following adapters are required with this exchange.

- (1) Terminal Unit Exchange Adapter (1123 0356). One adapter is required for each terminal unit attached to the exchange.
- (2) Terminal Unit Exchange Extension Adapter (1143 5013). One adapter is required for each three terminal units attached to the exchange.

One of the following cable kits must be selected to connect the control to the exchange:

- (1) Exchange 25-foot cable kit (1635 9010)
- (2) Exchange 35-foot cable kit (1635 9028)
- (3) Exchange 50-foot cable kit (1635 9036)

The following adapters must also be ordered with this exchange:

- (1) Terminate/driver No. 1 adapter (1901 5395)
- (2) Terminate unit scan adapter (1638 4380)

These adapters mount in the terminal unit control.

J. FILE PROTECT MEMORY (1635 5539)

The file protect memory (FPM) module may be housed in a memory base B cabinet or in an auxiliary cabinet. This module permits separate systems to access and update files in disk storage space shared by two systems. It will alert the user if a record is in the process of update by another system. The file protect memory module operates with the following disk file controls:

- (1) Disk File Control 3 (1638 4786)
- (2) Disk File Control 4 (1904 0930)

The following adapter and cable kits are associated with this module:

- (1) FPM Adapter (1635 5547). This adapter provides sixteen 40-bit words of file protect memory. At least one adapter is required, and a maximum of eight is allowed.
- (2) FPM 25-Foot Cable Kit (1904 0971); FPM 35-Foot Cable Kit (1904 0989); and FPM 50-Foot Cable Kit (1904 0997).

One cable kit of the length necessary for the system configuration is required for each control connected to the file protect memory module.

K. LINE ADAPTER CHARTS

To complete the installation of each control adapter, a number of auxiliary items are required, such as code, station, and timer card adapters, and cable kits. All available line adapters for single-line controls, multiline controls, and

multiline extensions are listed in Charts III-1 through III-8, with their corresponding auxiliary items. The line adapters are listed in the left-hand column of the chart, and the corresponding cables and adapters are marked with a "●" in the coordinate columns. For an example of the use of the charts, refer to Single-Line Control Chart III-1. Complete installation of an IBM 1030 telephone line adapter will require an asynch B/B maintenance cable, an IBM PTTC/6 code adapter, a parameter C station adapter, and a WE data set cable.

For additional instructions regarding the telephone line adapters and auxiliary items, refer to the notes listed under the applicable chart title.

The single-line and multiline controls can be adapted to accommodate various data sets and remote terminals. Refer to Chart III-9, Line Adapter Usage.

1. Charts III-1 and III-2: Single-Line Control Adapters and Single-Line Control 3 Adapters. The following notes apply to both tables.

- (1) One code adapter must be used with the line adapter. Only one code adapter of a type is required.
- (2) One station adapter must be used with the line adapter.
- (3) Either the ACU-A or the ACU-B adapter is optional, as indicated in the chart. (The ACU-A adapts to the Bell Telephone system. The ACU-B adapts to the General Telephone system and other independents. The ACU-A and ACU-B may be used simultaneously, if required.)
- (4) An additional WE data set cable is required for each ACU adapter used with a line adapter.
- (5) One typewriter inquiry station coupler is required when the indicated line adapter is installed at a remote typewriter station.
- (6) One asynchronous or synchronous back-to-back maintenance cable is necessary for maintenance purposes between like line adapters in two single-line controls.

	MAINT CABLES	CODE ADAPTERS	STA ADPS	DATA CABLES	TIMER CARD ADAPTERS
LINE ADAPTERS	SYNCH B/B 1634 5753 ASYNCH B/B 1634 5746	ERBDCIC 1910 5733 ASCTI A & B 1124 3847 ASCTI C & D 1913 1432 IBM PTTG/6 1124 3888 BAUDOT A & B 1148 8764	AUTO CU A 1125 2343 AUTO CU B 1631 3173 TYPWTR CPLR 1128 6002	PARMTR A 3 1913 1440 PARMTR B 3 1913 1457 PARMTR C 3 1913 1465 TWO-WIRE 1904 0674	WE DATA SET 1904 0625 1030 DIRECT 1904 0633 1030 DTU 1904 0641 ASYNCH 1800 1902 3381 ASYNCH 2400 1902 3399 ASYNCH 4800 1913 1630 ASYNCH 9600 1913 1648
STD SYN SW/LL 1902 3308	●	●	●	●	●
STD ASYNCH SW/LL 1902 3290	●	●	●	●	●
STD DIRECT 1902 3274		●	●	●	●
IBM 1030 LEASE 1149 6924	●	●		●	●
8A1 STATION LEASE 1123 8409	●	●		●	●
83B3 LEASE 1148 8723		●		●	●
7311 LEASE 1145 6266	●	●		●	●
TC-500 LEASE (CITT) 1634 5738	●	●		●	●
7311 RS232 1145 6266	●	●		●	●
IBM 1050 SW/LL 1123 0364	●	●	●	●	●
B2500/3500 SW/LL 1123 0406	●		●	●	●
9350 SW/LL 1145 3719	●	●	●	●	●
DCT 2000 SW/LL 1149 6916	●	●	●	●	●
B300/5500 SW/LL 1638 4695	●	●	●	●	●
TWX SWITCH 1123 3244	●	●	●		●
9350 DIRECT 1123 8391		●		●	
DTU 1030 DIRECT 1634 6694		●		●	
IBM 1030 DIRECT 1634 6686		●		●	

Chart III - 2
Single-Line Control 3
Adapters

2. Charts III-3, III-4, and III-5: Multiline Control Adapters, Multiline Control 3 Adapters, and Multiline Control 4 Adapters. The following notes apply to the three tables.

- (1) One to four of the line adapters may be used with each control except for the 83B3, which is limited to a maximum of three.
- (2) Each line adapter has a code adapter associated with it. One code adapter will service all line adapters requiring this particular type of code adapter.
- (3) Each line adapter has a station parameter adapter associated with it. One station adapter will service all line adapters requiring this particular type of station parameter adapter.
- (4) The ACU adapters are optional. The ACU-A adapts to the Bell Telephone System. The ACU-B adapts to the General Telephone System and other independents. ACU-A and ACU-B may be used simultaneously, if required.
- (5) An additional WE data set cable is required for each ACU adapter used with a line adapter
- (6) One typewriter inquiry station coupler is required when the indicated line adapter is installed at a remote typewriter station.
- (7) One asynchronous or synchronous back-to-back maintenance cable is necessary for maintenance purposes between like line adapters in multi-use line controls and multiline extensions.

3. Charts III-6, III-7, and III-8: Multiline Extension Adapters, Multiline Extension 3 Adapters, and Multiline Extension 4 Adapters. The following notes apply to the three tables.

- (1) One to eight of the listed line adapters may be used in this module. A special cable is required to interface the TC-500 with international data sets.
- (2) Each line adapter has a code adapter associated with it. One code adapter will service all line adapters requiring this particular type of code adapter. The code adapters are installed in the multiline control.

- (3) Each line adapter has a station parameter adapter associated with it. One station adapter will service all line adapters requiring this particular type of station parameter adapter. The station parameter adapters are installed in the multiline control.
- (4) The ACU adapters are optional. The ACU-A adapts to the Bell Telephone System. The ACU-B adapts to the General Telephone System and other independents. ACU-A and ACU-B may be used simultaneously if required.
- (5) Four multiline extensions may be used with a multiline control.
- (6) One additional WE data set cable is required for each ACU adapter that is used with a line adapter.
- (7) Up to four voice response extension adapters may be used with each multiline extension. One voice response extension adapter will accommodate two Touchtone SW/LL adapters (applies to Multiline Extension 3 only).
- (8) One typewriter inquiry station coupler is required when the indicated line adapter is installed at a remote station.
- (9) One asynchronous or synchronous back-to-back maintenance cable is necessary for maintenance purposes between like line adapters in multiline extensions and multiline controls.
- (10) The multiline extension clock adapter is required for the first multiline extension module located in an auxiliary cabinet. This adapter provides the clock source. It is not required if the multiline extension is located in a memory base B cabinet.
- (11) One voice response extension cable is required with each voice response extension adapter.

4. Chart III-9, Line Adapter Usage. This chart lists all the line adapters along with their related terminals and data sets.

	MAINT CABLES	CODE ADAPTERS	STA ADPS	DATA CABLES	TIMER CARD ADAPTERS
LINE ADAPTERS	SYNCH B/B 1634 5753 ASYNCH B/B 1634 5746	ASCTI A & B 1124 3847 ASCTI C & D 1124 8820 IBM PTTG/6 1124 3888 BAUDOT A & B 1148 8764	AUTO CU A 1125 2343 AUTO CU B 1631 3173 PARMTR A 1124 3904 PARMTR B 1124 3912 PARMTR C 1145 6274 TYPWTR CPLR 1128 6002	WE DATA SET 1904 0625 1030 DIRECT 1904 0635 1030 DTU 1904 0641 TWO-WIRE 1904 0674	SYNCH TIMER 1904 8404 ASYNCH 110 1902 3324 ASYNCH 150 1902 3340 ASYNCH 300 1902 3357 ASYNCH 600 1902 3365 ASYNCH 1200 1902 3373 ASYNCH 1800 1902 3381 ASYNCH 2400 1902 3390 ASYNCH 4800 1913 1630 ASYNCH 9600 1913 1648
STD SYN SW/LL 1902 3308	●	●	●	●	●
STD ASYNCH SW/LL 1902 3290	●	●	●	●	●
STD DIRECT 1902 3274		●	●	●	●
IBM 1030 LEASE 1149 6924	●	●	●	●	
8A1 STATION LEASE 1123 8409	●	●	●	●	
83B3 LEASE 1148 8723	●	●	●	●	
7311 LEASE 1145 6266	●	●	●	●	
TC-500 LEASE (CCITT) 1634 5738	●	●	●	●	
7311 RS232 1145 6266	●	●	●	●	
IBM 1050 SW/LL 1123 0364	●	●	●	●	
9350 SW/LL 1145 3719	●	●	●	●	
B300/5500 SW/LL 1638 4695	●	●	●	●	
TWX SWITCH 1123 3244	●	●	●	●	
9350 DIRECT 1123 8391		●	●	●	
DTU 1030 DIRECT 1634 6694		●	●	●	
IBM 1030 DIRECT 1634 6686		●	●	●	

Chart III - 3
Multiline Control
Adapters

	MAINT CABLES		CODE ADAPTERS					STATION ADAPTERS			DATA CABLES		TIMER CARD ADAPTERS												
	SYNCH B/B	ASYNCH B/B	ASCII A	ASCII B	ASCII C	ASCII D	AUTO CU A	AUTO CU B	TYPWTR	PARMTR A	PARMTR B	PARMTR C	WE DATA SET	1030 DIRECT	1030 DTU	TWO-WIRE	ASYNCH 110	ASYNCH 150	ASYNCH 300	ASYNCH 600	ASYNCH 1200	ASYNCH 1800	ASYNCH 2400	ASYNCH 4800	ASYNCH 9600
LINE ADAPTERS																									
STD SYN SW/LL 1902 3308																									
STD ASYNCH SW/LL 1902 3290																									
STD DIRECT 1902 3274																									
IBM 1030 LEASE 1149 6924																									
8A1 STATION LEASE 1123 8409																									
83B3 LEASE 1148 8723																									
7311 LEASE 1145 6266																									
TC-500 LEASE (CCITT) 1634 5738																									
7311 RS232 1145 6266																									
B606/TC700 LEASE 1910 5758																									
IBM 1050 SW/LL 1123 0364																									
B2500/3500 SW/LL 1123 0406																									
9350 SW/LL 1145 3719																									
DCT 2000 SW/LL 1149 6916																									
B300/5500 SW/LL 1638 4695																									
TWX SWITCH 1123 3244																									
9350 DIRECT 1123 8391																									
DTU 1030 DIRECT 1634 6694																									
IBM 1030 DIRECT 1634 6686																									

Chart III - 4
Multiline Control 5
Adapters

MAINT CABLES CODE ADAPTERS STA ADPS DATA CABLES TIMER CARD ADAPTERS

	SYNCH B/B 1634 5753	ASYNCH B/B 1634 5746	ASCII A & B 1124 3847	ASCII C & D 1124 8820	IBM PTT/6 1124 3888	BAUDOT A & B 1148 8764	ASCII - B606 1910 5741	AUTO CU A 1125 2343	AUTO CU B 1631 3173	TYPWTR CPLR 1128 6002	PARMTR A 1124 3904	PARMTR B 1124 3912	PARMTR C 1145 6274	TWO-WIRE 1904 0678	1030 DTU 1904 0641	1030 DIRECT 1904 0635	WE DATA SET 1904 0625	ASYNCH 9600 1913 1648	ASYNCH 4800 1913 1630	ASYNCH 2400 1902 3390	ASYNCH 1800 1902 3381	ASYNCH 1200 1902 3373	ASYNCH 600 1902 3365	ASYNCH 300 1902 3357	ASYNCH 150 1902 3340	ASYNCH 110 1902 3324	SYNCH TIMER 1904 8404	
LINE ADAPTERS																												
STD SYN SW/LL 1902 3308	●			●				●	●			●					●											●
STD ASYNCH SW/LL 1902 3290		●		●				●	●			●					●	●	●	●	●	●	●	●	●	●	●	
STD DIRECT 1902 3274				●								●		●				●	●	●	●	●	●	●	●	●	●	
IBM 1030 LEASE 1149 6924	●			●								●					●											
8A1 STATION LEASE 1123 8409	●			●								●					●											
83B3 LEASE 1148 8723					●							●		●														
7311 LEASE 1145 6266	●			●								●					●											
TC-500 LEASE (CCITT) 1634 5738	●			●								●					●											
7311 RS232 1145 6266	●			●								●					●											
B606/TC700 LEASE 1910 5758	●				●							●					●											
IBM 1050 SW/LL 1123 0364	●			●				●	●			●					●											
9350 SW/LL 1145 3719	●			●				●	●	●		●					●											
B300/5500 SW/LL 1638 4695	●			●				●	●			●					●											
TWX SWITCH 1123 3244	●			●				●	●			●					●											
9350 DIRECT 1123 8391								●				●		●														
DTU 1030 DIRECT 1634 6694				●								●			●													
IBM 1030 DIRECT 1634 6686				●								●			●													

Chart III - 5
Multiline Control 5
Adapters

III-37

TIMER CARD ADAPTERS							
SYNCH TIMER 1904 8404							
ASYNCH 110 1902 3324							
ASYNCH 150 1902 3340							
ASYNCH 300 1902 3357							
ASYNCH 600 1902 3365							
ASYNCH 1200 1902 3373							
ASYNCH 1800 1902 3381							
ASYNCH 2400 1902 3399							
ASYNCH 4800 1913 1630							
ASYNCH 9600 1913 1648							

Chart III - 6
Multiline Extension
Adapters

DATA CABLES				STA ADPS		CODE ADAPTERS		MAINT CABLES	
WE DATA SET 1904 0625									
1030 DIRECT 1904 0633									
1030 DTU 1904 0641									
TWO-WIRE 1904 0674									

LINE ADAPTERS	MAINT CABLES		CODE ADAPTERS		STA ADPS		DATA CABLES	
	SYNCH B/B 1634 5753	ASYNCH B/B 1634 5746	ASCII A & B 1124 3847	ASCII C & D 1124 8820	IBM P/T/C/6 1124 3888	BAUDOT A & B 1148 8764	AUTO CU A 1125 2343	AUTO CU B 1631 3173
STD SYN SW/LL 1902 3308								
STD ASYNCH SW/LL 1902 3290								
STD DIRECT 1902 3274								
IBM 1030 LEASE 1149 6924								
8A1 STATION LEASE 1123 8409								
83B3 LEASE 1148 8723								
7311 LEASE 1145 6266								
TC-500 LEASE (CCITT) 1434 5738								
7311 RS232 1145 6266								
IBM 1050 SW/LL 1123 0364								
9350 SW/LL 1145 3719								
B300/5500 SW/LL 1638 4695								
TWX SWITCH 1123 3244								
9350 DIRECT 1123 8391								
DTU 1030 DIRECT 1634 6694								
IBM 1030 DIRECT 1634 6686								

TIMER CARD ADAPTERS	
SYNCH TIMER	1904 8404
ASYNCH 110	1902 3324
ASYNCH 150	1902 3340
ASYNCH 300	1902 3357
ASYNCH 600	1902 3365
ASYNCH 1200	1902 3373
ASYNCH 1800	1902 3381
ASYNCH 2400	1902 3399
ASYNCH 4800	1913 1630
ASYNCH 9600	1913 1648

DATA CABLES	
WE DATA SET	1904 0625
1030 DIRECT	1904 0633
1030 DTU	1904 0641
TOUCHTONE	1904 0658
VR EXTENSION	1904 0666
TWO-WIRE	1904 0674

STA ADPS	
PARMTR A 3	1913 1440
PARMTR B 3	1913 1457
PARMTR C 5	
TYPWTR CPLR	1128 6002
VR EXT ADP	1142 3845

CODE ADAPTERS	
AUTO CU A	1125 2343
AUTO CU B	1631 3173
ASCII A & B	1124 3847
ASCII C & D	3 1913 1432
IBM PTT/6	1124 3888
BAUDOT A & B	1148 8764
EBCDIC	1910 5733
ASCII B606	5

MAINT CABLES	
SYNCH B/B	1634 5753
ASYNCH B/B	1634 5746

LINE ADAPTERS	
STD SYN SW/LL	1902 3308
STD ASYNCH SW/LL	1902 3290
STD DIRECT	1902 3274

IBM 1030 LEASE	1149 6924
8A1 STATION LEASE	1123 8409
83B3 LEASE	1148 8723
7311 LEASE	1145 6266
TC-500 LEASE (CCITT)	1634 5738
7311 RS232	1145 6266
B606/TC700 LEASE	1910 5758

IBM 1050 SW/LL	1123 0364
B2500/3500 SW/LL	1123 0406
9350 SW/LL	1145 3719
DCT 2000 SW/LL	1149 6916
B300/5500 SW/LL	1638 4695
TOUCHTONE SW/LL	1145 2281

TWX SWITCH	1123 3244
------------	-----------

9350 DIRECT	1123 8391
DTU 1030 DIRECT	1634 6644
IBM 1030 DIRECT	1634 6686

Chart III - 7
Multiline Extension 5
Adapters

111-39

	MAINT CABLES	CODE ADAPTERS	STA ADPS	DATA CABLES	TIMER CARD ADAPTERS	
LINE ADAPTERS	SYNCH B/B 1634 5753 ASYNCH B/B 1634 5746	ASCII A & B 1124 3847 ASCII C & D 1124 8820 IBM PTC/6 1124 3888 BAUDOT A & B 1148 8764 ASCII B606 1910 5741	AUTO CU A 1125 2343 AUTO CU B 1631 3173 TYPMTR CPLR 1128 6002	PARMTR A 1124 3904 PARMTR B 1124 3912 PARMTR C 1145 6274	WE DATA SET 1904 0625 1030 DIRECT 1904 0633 1030 DTU 1904 0641 TWO-WIRE 1904 0674	SYNCH TIMER 1904 8404 ASYNCH 110 1902 3324 ASYNCH 150 1902 3340 ASYNCH 300 1902 3357 ASYNCH 600 1902 3365 ASYNCH 1200 1902 3373 ASYNCH 1800 1902 3381 ASYNCH 2400 1902 3399 ASYNCH 4800 1913 1630 ASYNCH 9600 1913 1648
STD SYN SW/LL 1902 3308	●	●	●	●	●	
STD ASYNCH SW/LL 1902 3290	●	●	●	●	●	
STD DIRECT 1902 3274		●		●	●	
IBM 1030 LEASE 1149 6924	●	●		●	●	
8A1 STATION LEASE 1123 8409	●	●		●	●	
83B3 LEASE 1148 8723		●		●	●	
7311 LEASE 1145 6266	●	●		●	●	
TC-500 LEASE (CCITT) 1634 5738	●	●		●	●	
7311 RS232 1145 6266	●	●		●	●	
B606/TC700 LEASE 1910 5758	●	●		●	●	
IBM 1050 SW/LL 1123 0364	●	●	●	●	●	
9350 SW/LL 1145 3719	●	●	●	●	●	
B300/5500 SW/LL 1638 4695	●	●	●	●	●	
TWX SWITCH 1123 3244	●	●	●	●	●	
9350 DIRECT 1123 8391		●		●	●	
DTU 1030 DIRECT 1634 6694		●		●	●	
IBM 1030 DIRECT 1634 6686		●		●	●	

Chart III - 8
Multiline Extension 4
Adapters

Chart III - 9, Line Adapter Usage.

LINE ADAPTER M & E NUMBERS	REMOTE TERMINALS	DATA SETS
1145 2281	TOUCHTONE INSTRUMENT ON DIALED OR LEASED LINES	WE 403E3-D5 (DIAL) WE 403E3-D5 (LEASE)
1123 0406	B2500/3500 ON DIALED OR LEASED LINES	WE 201A3 (DIAL) WE 201B1 (LEASE)
1638 4695	B300/5500 ON DIALED OR LEASED LINES	WE 201A3 (DIAL) WE 201B1 (LEASE)
1634 5738	BURROUGHS TC-500 ON LEASED LINES (CCITT VERSION)	BRITISH PO DATEL 1C5 SEL GH-2011 MODEL 5
1902 3290	BURROUGHS TC-500 ON DIALED OR LEASED LINES (ASYNC)	WE 202C (DIAL) WE 202D (LEASE)
1902 3308	BURROUGHS TC-500 ON DIALED OR LEASED LINES (SYNC)	WE 201A3 (DIAL) WE 201B1 (LEASE)
1902 3274	BURROUGHS TC-500 ON DIRECT LINES	NONE
1902 3290	BURROUGHS INPUT DISPLAY SYSTEM ON DIALED OR LEASED LINES (ASYNC)	WE 202C (DIAL) WE 202D (LEASE)
1902 3308	BURROUGHS INPUT DISPLAY SYSTEM ON DIALED OR LEASED LINES (SYNC)	WE 201A3 (DIAL) WE 201B1 (LEASE)
1902 3274	BURROUGHS INPUT DISPLAY SYSTEM ON DIRECT LINES	NONE
1902 3290	CONRAC DISPLAY SYSTEM ON DIALED OR LEASED LINES (ASYNC)	WE 202C (DIAL) WE 202D (LEASE)
1902 3308	CONRAC DISPLAY SYSTEM ON DIALED OR LEASED LINES (SYNC)	WE 201A3 (DIAL) WE 201B1 (LEASE)
1902 3274	CONRAC DISPLAY SYSTEM ON DIRECT LINES	NONE
1145 3719	9350 TYPEWRITER (MODEL 33) ON DIALED OR LEASED LINES	WE 103A (DIAL) WE 103F (LEASE)
1123 8391	9350 TYPEWRITER (MODEL 33) ON DIRECT LINES	NONE
1123 8409	AT&T 8A1 SELECTIVE CALLING STATION (MODEL 35) ON LEASED LINES	WE 816A
1148 8723	AT&T 83B3 SELECTIVE CALLING STATION (MODEL 28) ON LEASED LINES	NONE

Chart III - 9 (cont'd)

LINE ADAPTER M & E NUMBERS	REMOTE TERMINALS	DATA SETS
1123 3244	TELETYPEWRITER MODEL 33 OR 35 ON TWX NETWORK	WE 811B
1123 0364	IBM 1050 ON TWX, DIALED OR LEASED LINES	WE 103A (DIAL) WE 103F (LEASE)
1149 6924	IBM 1030 ON LEASED LINES	WE 202D
1634 6686	IBM 1030 ON DIRECT LINES	NONE
1634 6694	IBM 1030 DIGITAL TIME UNIT ON DIRECT LINES	WE 202D
1149 6916	UNIVAC DCT-2000 ON DIALED OR LEASED LINES	WE 201A3 (DIAL) WE 201B1 (LEASE)
1904 6283	FRIDEN 7311 ON LEASED LINES	STELMA 1BRS/1BRS-1 WE 103F
1910 5758	BURROUGHS TC-700 & B606 ON LEASED LINES	WE 202D
1145 6266	FRIDEN 7311 ON LEASED LINES	STELMA 1CRS/1CRS-1

III-42

Manual 1916 6164

Appendix A. Glossary

Adapter	A card or group of cards providing a discrete function within a control, exchange, or extension.
Backplane	A panel containing the logic wiring with connectors. The logic cards plug into the backplane connector.
Connector	A device used to join together temporarily one or more wires, boards, or units to complete a single path.
Control	A device containing the logic that distributes information between the central system and a peripheral unit.
Exchange	A device allowing one or more controls to interface a number of peripherals.
Extension	A backplane module used to extend the capacity of an exchange or control.
Frame	The supporting structure of a cabinet.
Jumper	A wire or device employed to close or to cut out part of a circuit; may be used to provide a new signal path from one circuit to another.
Kit	A collection of parts and material packaged for installation in the field.
Module	An item containing components; an incremental block of storage or other building block for expanding the computer capability.
Pluggable Card	A printed circuit board with mounted components which plugs into a backplane connector.
Skin	The removable cover(s) of a cabinet.
System	An assembly of devices regulated by some form of control unit to operate as a unit.
Translator	A device permitting translation from one representation or code to another

Appendix B. Abbreviations

ACU	Automatic Calling Unit
ADP	Adapter
ASCII	United States American Standard Code Information Interchange
ASYNCH	Asynchronous
BCL	Burroughs Common Language
BPI	Bits per Inch
BUFF	Buffered
CC	Card Code
CCB	Central Control B
CC & MB	Central Control and Memory Base
CCITT	Card Code, International Telephone and Telegraph
DF	Disk File
DL	Data Link
DPM	Documents per Minute
DTU	Digital Time Unit
EBCDIC	Extended Binary Coded Decimal Interchange Code
FPM	File Protect Memory
ICT	International Calculator and Tabulator
IFJ	Intraframe Jumper
I/O	Input/Output
ISP	Inches per Second
JMP	Jumper
LH	Left Hand
LPM	Lines per Minute
M	Model
MBB	Memory Base B
M & E	Manufacturing and Engineering
ML	Multiline
Mt	Magnetic Tape
NRZ	Nonreturn to Zero
OEM	Original Equipment Manufacturer
P	Pin
PARMTR	Parameter
PE	Phase Encoded
PTTC	Perforated Tape and Transmission Code

RH	Right Hand
SCHPD	Scratchpad
SEL	Standard Electric Lorenz
STD	Standard
SW/LL	Switched/Lease Line
SYNCH	Synchronous
TP	Tape Punch
TU	Terminator Unit
VR	Voice Response
WE	Western Electric
XLT	Translator

Appendix C

Item Description-to-M and E Number Cross-Reference

AC POWER MODULE	1144 5061	ADP-CHANNEL READ	1901 5403
ADP 1-TERM DRIVER	1901 5395	ADP-CTRL SCHPD EXT	1123 3269
ADP 2-CTRL SCHPD EXT	1910 5717	ADP-CYC REDUND CHK	1124 1635
ADP 2-TERM DRIVER	1901 5387	ADP-D F EXCH 6500	1914 5887
ADP 3-ASCII C&D CODE	1913 1432	ADP-D F 1A CTRL	1148 3070
ADP 3-PARAMTR A STA	1913 1440	ADP-DCT 2000 S/L L	1149 6916
ADP 3-PARAMTR B STA	1913 1457	ADP-DF CONT FPM	1908 4235
ADP 3-PARAMTR C STA	1913 1465	ADP-DF CTRL 5 EXCH	1910 5774
ADP 3-TERM DRIVER	1901 7631	ADP-DF EXCH 4 X 20	1904 6325
ADP-ASCII A&B CODE	1124 3847	ADP-DTU 1030 DIR L	1634 6694
ADP-ASCII B606 CDE	1910 5741	ADP-EBCDIC BCL JMP	1141 6104
ADP-ASCII C&D CODE	1124 8820	ADP-EBCDIC BCL XLT	1123 3186
ADP-ASYN T 110 BPS	1902 3324	ADP-EBCDIC CODE	1910 5733
ADP-ASYN T 1200BPS	1902 3373	ADP-EXT VOICE RESP	1142 3645
ADP-ASYN T 150 BPS	1902 3340	ADP-FILE PROT MEM	1635 5547
ADP-ASYN T 1800BPS	1902 3381	ADP-FLTNG PT (M3&M4)	1914 6471
ADP-ASYN T 2400BPS	1902 3399	ADP-IBM PTT/6 CDE	1124 3888
ADP-ASYN T 300 BPS	1902 3357	ADP-IBM 1030 LL	1149 6924
ADP-ASYN T 4800BPS	1913 1630	ADP-IBM 1050 S/L L	1123 0364
ADP-ASYN T 600 BPS	1902 3365	ADP-ICT TRANS	1906 0250
ADP-ASYN T 9600BPS	1913 1648	ADP-M T UNIT 7TRK	1630 7449
ADP-AUTO CALLING A	1125 2343	ADP-M T UNIT 9TRK	1631 3165
ADP-AUTO CALLING B	1631 3173	ADP-MEM EXTENSION	1125 8621
ADP-B 2500	1149 5538	ADP-MG TP CLUSTER	1630 7431
ADP-B 3500	1149 5546	ADP-ML CTRL PROC	1638 4364
ADP-BAUDOT A&B CDE	1148 8764	ADP-ML EXT AM DR	1638 4372
ADP-BCL BCL CC XLT	1123 7906	ADP-ML EXT CLOCK	1638 2152
ADP-BCL BUL CC XLT	1123 0315	ADP-MT EXCH B6500	1908 4417
ADP-BCL ICT CC XLT	1123 0307	ADP-MT EXCH EXT	1129 0673
ADP-BCL TRANS	1906 0243	ADP-NX2 D F EXCH	1635 5455
ADP-BULL TRANS	1906 0268	ADP-PARAMTR A STA	1124 3904
ADP-B25/3500 S/L L	1123 0406	ADP-PARAMTR B STA	1124 3912
ADP-B5500 FPM	1904 3264	ADP-PARAMTR C STA	1145 6274
ADP-B606/TC 700 LL	1910 5758	ADP-STD ASYN DIR	1902 3274

Appendix C cont'd)

ADP-STD ASYN SW/LL	1902 3290	ADP-9350 DIRECT L	1123 8391
ADP-STD SYN SW/LL	1902 3308	ADP-9350 S/L L	1145 3719
ADP-SYNC TIMER CD	1904 8404	AUX CAB-INDEPENDNT	1906 0276
ADP-SYS MEM CTRL	1128 6200	AUXILIARY CABINET	1141 9041
ADP-T U EXCH EXT	1143 5013	CABLE-ASYN BCK/BCK	1634 5746
ADP-T U EXCHANGE	1123 0356	CABLE-SYNC BCK/BCK	1634 5753
ADP-TC 500 LL	1634 5738	CABLE-TOUCHTONE	1904 0658
ADP-TERM UNIT SCAN	1638 4380	CABLE-TWO WIRE	1904 0674
ADP-TOUCHTNE S/L L	1145 2281	CABLE-VR EXTENSION	1904 0666
ADP-TWX SW L	1123 3244	CABLE-WE DATA SET	1904 0625
ADP-1A2 DF CTRL	1910 5303	CABLE-1030 DIRECT	1904 0633
ADP-1C3 DF CTRL 4	1904 0948	CABLE-1030 DTU	1904 0641
ADP-1C4 DF CTRL 4	1904 0955	CENT CTRL MEM BASE	1141 9033
ADP-1X2 D F CTRL	1128 6184	CENTRAL CONTROL B	1141 9017
ADP-1X2 D F CTRL 2	1635 5430	CORE MEM-10K CHAR	1141 8613
ADP-1X2 DF CTRL 4	1910 5550	CORE MEM-20K CHAR	1141 8621
ADP-1X2 DF CTRL 5	1910 5345	CORE MEM-30K CHAR	1141 8605
ADP-1030 DIRECT L	1634 6686	CPLR-TYPWTR INQ ST	1128 6002
ADP-12W ADD MEM EX	1121 3204	CTRL 2.5-DISK FILE	1912 2944
ADP-120 IPS 1	1126 8836	CTRL 2-BFRD PRT LH	1638 5510
ADP-2B1 DF CTRL 5	1910 5329	CTRL 2-BFRD PRTR	1638 5668
ADP-2B2 DF CTRL 5	1910 5337	CTRL 2-CARD PCH LH	1637 5289
ADP-2XN D F EXCH	1635 5554	CTRL 2-CARD PUNCH	1142 3498
ADP-2X10 D F EXCH	1141 4273	CTRL 2-CARD RDR LH	1900 6170
ADP-2X2 D F EXCH	1635 5463	CTRL 2-CARD READER	1900 6162
ADP-300/5500 S/L L	1638 4695	CTRL 2-CONS PRT LH	1638 4554
ADP-45 IPS 1	1126 8810	CTRL 2-CONS PRTR	1638 4422
ADP-50 CPS	1910 5535	CTRL 2-DISK FILE	1635 5422
ADP-60 CPS	1910 5543	CTRL 2-MG TP 7TRK	1638 4919
ADP-7311 LL	1145 6266	CTRL 2-P T PUNCH	1901 0180
ADP-7311 RS 232 B	1904 6283	CTRL 2-P T RDR LH	1901 0487
ADP-8A1 STATION LL	1123 8409	CTRL 2-P T READER	1901 0339
ADP-83 B3 LL	1148 8723	CTRL 2-SORT RDR LH	1903 0188
ADP-90 IPS 1	1126 8828	CTRL 2-SORTER RDR	1902 9925

Appendix C (cont'd)

CTRL 2-UNBFD PR LH	1638 5213	CTRL-SINGLE LINE	1142 3464
CTRL 2-UNBFD PRTR	1638 5361	CTRL-SORTER RDR LH	1142 3399
CTRL 3-CARD PCH LH	1638 6112	CTRL-SORTER READER	1142 3381
CTRL 3-CARD PUNCH	1638 6120	CTRL-TERMINAL UNIT	1142 4447
CTRL 3-CARD RDR LH	1906 0235	CTRL-UNBFD PRINTER	1142 4108
CTRL 3-CARD READER	1906 0227	CTRL-UNBFD PRTR LH	1142 4116
CTRL 3-DISK FILE	1638 4786	EXCH 2-2X10 MAG TP	1908 4375
CTRL 3-MULTI LINE	1908 4466	EXCH 2-4X10 DF	1910 5352
CTRL 3-PRINTER	1907 5704	EXCH-TERMINAL UNIT	1142 3472
CTRL 3-PRINTER LH	1907 5712	EXCH-2X10 DSK FILE	1142 3480
CTRL 3-SINGLE LINE	1908 4458	EXCH-2X10 MAG TAPE	1142 3308
CTRL 4-CARD PCH LH	1638 5817	EXCH-4X10 DSK FILE	1142 4124
CTRL 4-CARD PUNCH	1638 5965	EXT 2-4X20 DF EXCH	1910 5360
CTRL 4-DISK FILE	1904 0930	EXT 3-MULTI LINE	1908 4474
CTRL 4-MG TP 9TRK	1638 5064	EXT 4-MULTI LINE	1910 5709
CTRL 4-MULTI LINE	1910 5691	EXT-MULTI LINE	1142 3290
CTRL 5-DISK FILE	1910 5311	EXT-4X20 DF EXCH	1635 5448
CTRL-BFRD PRTR LH	1142 3357	EXTENDER-CC & MB	1142 4157
CTRL-BUFRD PRINTER	1142 3340	EXTENDER-CC B	1142 4140
CTRL-CARD PCH 1 LH	1142 3332	EXTENDER-POWER	1633 8873
CTRL-CARD PUNCH 1	1142 3324	KIT 3-MLEXT 25FT CBL	1910 5725
CTRL-CARD RDR 1 LH	1142 3175	KIT-CABLE	1143 2028
CTRL-CARD READER 1	1142 3183	KIT-EXCH 25FT CBL	1635 5505
CTRL-CONS PRINTER	1142 3365	KIT-EXCH 25FT CBL	1635 8988
CTRL-CONS PRTR LH	1142 3373	KIT-EXCH 25FT CBL	1635 9010
CTRL-DISK FILE	1142 3456	KIT-EXCH 35FT CBL	1635 5513
CTRL-LISTER	1142 3423	KIT-EXCH 35FT CBL	1635 8996
CTRL-MG TP 5 PE	1904 6507	KIT-EXCH 35FT CBL	1635 9028
CTRL-MG TP 7TRK 1	1142 3191	KIT-EXCH 50FT CBL	1635 5521
CTRL-MG TP 9TRK 2	1142 3449	KIT-EXCH 50FT CBL	1635 9002
CTRL-MULTI LINE	1142 3167	KIT-EXCH 50FT CBL	1635 9036
CTRL-P T PUNCH	1142 3431	KIT-FPM 35FT CABLE	1904 0989
CTRL-P T READER	1142 3407	KIT-FPM 50FT CABLE	1904 0997
CTRL-P T READER LH	1142 3415	KIT-FRAME GROUND	1906 0573

Appendix C (cont'd)

KIT-HI VOLT DISTR	1914 6463	PROCESSOR	1638 4109
KIT-LEG	1128 9832	PROCESSOR	1914 6273
KIT-MLEXT 25FT CBL	1638 4398	PRTR=50CY CONSOLE	1142 2714
KIT-POWER COMPAT	1639 3365	PRTR=60CY CONSOLE	1124 7798
KIT-STAT CHG COAX	1909 3475	PRTR=60CY CONSOLE	1638 4406
KIT-104P CABLE	1143 5021	ROM INDICATOR UNIT	1146 6273
KIT-104P CABLE	1146 4039	SET-MAINT PLUG-ON	1631 8156
KIT-75P CABLE	1143 5039	SET-PROC MAINT	1914 6265
KIT-75P CABLE	1146 4047	SHELF-S/D SKIN	1142 2912
MEMORY BASE B	1141 9025	SHELF-S/D SKIN(LG)	1144 8040
MEMORY-FILE PROTCT	1635 5539	SHELF-S/U SKIN	1142 2920
OPER TIME METER 50	1148 2981	SHELF-S/U SKIN(LG)	1144 8032
OPER TIME METER 60	1148 2973	SPECIAL DC MODULE	1146 4237
PROCESSUR	1146 4021	SPECIAL DC MODULE	1639 3373

Appendix D

M and E Number-to-Item Description Cross-Reference

1121	3204	ADP-12W ADD MEM EX	1141	9017	CENTRAL CONTROL B
1123	0307	ADP-BCL ICT CC XLT	1141	9025	MEMORY BASE B
1123	0315	ADP-BCL BUL CC XLT	1141	9033	CENT CTRL MEM BASE
1123	0356	ADP-T U EXCHANGE	1141	9041	AUXILIARY CABINET
1123	0364	ADP-IBM 1050 S/L L	1142	2714	PRTR-50CY CONSOLE
1123	0406	ADP-B25/3500 S/L L	1142	2912	SHELF-S/D SKIN
1123	3186	ADP-EBCDIC BCL XLT	1142	2920	SHELF-S/U SKIN
1123	3244	ADP-TWX SW L	1142	3167	CTRL-MULTI LINE
1123	3269	ADP-CTRL SCHPD EXT	1142	3175	CTRL-CARD RDR 1 LH
1123	7906	ADP-BCL BCL CC XLT	1142	3183	CTRL-CARD READER 1
1123	8391	ADP-9350 DIRECT L	1142	3191	CTRL-MG TP 7TRK 1
1123	8409	ADP-BA1 STATION LL	1142	3290	EXT-MULTI LINE
1124	1635	ADP-CYC REDUND CHK	1142	3308	EXCH-2X10 MAG TAPE
1124	3847	ADP-ASCII A&B CODE	1142	3324	CTRL-CARD PUNCH 1
1124	3888	ADP-IBM PTTG/6 CDE	1142	3332	CTRL-CARD PCH 1 LH
1124	3904	ADP-PARAMTR A STA	1142	3340	CTRL-BUFRD PRINTER
1124	3912	ADP-PARAMTR B STA	1142	3357	CTRL-BFRD PRTR LH
1124	7798	PRTR-60CY CONSOLE	1142	3365	CTRL-CONS PRINTER
1124	8620	ADP-ASCII C&D CODE	1142	3373	CTRL-CONS PRTR LH
1125	2343	ADP-AUTO CALLING A	1142	3381	CTRL-SORTER READER
1125	8621	ADP-MEM EXTENSION	1142	3399	CTRL-SORTER RDR LH
1126	8810	ADP-45 IPS 1	1142	3407	CTRL-P T READER
1126	8828	ADP-90 IPS 1	1142	3415	CTRL-P T READER LH
1126	8836	ADP-120 IPS 1	1142	3423	CTRL-LISTER
1128	6002	CPLR-TYPWTR INQ ST	1142	3431	CTRL-P T PUNCH
1128	6184	ADP-1X2 D F CTRL	1142	3449	CTRL-MG TP 9TRK 2
1128	6200	ADP-SYS MEM CTRL	1142	3456	CTRL-DISK FILE
1128	9832	KIT-LEG	1142	3464	CTRL-SINGLE LINE
1129	0673	ADP-MT EXCH EXT	1142	3472	EXCH-TERMINAL UNIT
1141	4273	ADP-2X10 D F EXCH	1142	3480	EXCH-2X10 DSK FILE
1141	6104	ADP-EBCDIC BCL JMP	1142	3498	CTRL 2-CARD PUNCH
1141	8605	CORE MEM-30K CHAR	1142	3845	ADP-EXT VOICE RESP
1141	8613	CORE MEM-10K CHAR	1142	4108	CTRL-UNBFD PRINTER
1141	8621	CORE MEM-20K CHAR	1142	4116	CTRL-UNBFD PRTR LH

Appendix D (cont'd)

1142 4124	EXCH-4X10 DSK FILE	1633 8873	EXTENDER-POWER
1142 4140	EXTENDER-CC B	1634 5738	ADP-TC 500 LL
1142 4157	EXTENDER-CC & MB	1634 5746	CABLE-ASYN BCK/BCK
1142 4447	CTRL-TERMINAL UNIT	1634 5753	CABLE-SYNC BCK/BCK
1143 2028	KIT-CABLE	1634 6686	ADP-1030 DIRECT L
1143 5013	ADP-T U EXCH EXT	1634 6694	ADP-DTU 1030 DIR L
1143 5021	KIT-104P CABLE	1635 5422	CTRL 2-DISK FILE
1143 5039	KIT-75P CABLE	1635 5430	ADP-1X2 D F CTRL 2
1144 5061	AC POWER MODULE	1635 5448	EXT-4X20 DF EXCH
1144 8032	SHELF-S/U SKIN(LG)	1635 5455	ADP-NX2 D F EXCH
1144 8040	SHELF-S/D SKIN(LG)	1635 5463	ADP-2X2 D F EXCH
1145 2281	ADP-TOUCHTNE S/L L	1635 5505	KIT-EXCH 25FT CBL
1145 3719	ADP-9350 S/L L	1635 5513	KIT-EXCH 35FT CBL
1145 6266	ADP-7311 LL	1635 5521	KIT-EXCH 50FT CBL
1145 6274	ADP-PARAMTR C STA	1635 5539	MEMORY-FILE PROTCT
1146 4021	PROCESSOR	1635 5547	ADP-FILE PROT MEM
1146 4039	KIT-104P CABLE	1635 5554	ADP-2XN D F EXCH
1146 4047	KIT-75P CABLE	1635 8988	KIT-EXCH 25FT CBL
1146 4237	SPECIAL DC MODULE	1635 8996	KIT-EXCH 35FT CBL
1146 6273	ROM INDICATOR UNIT	1635 9002	KIT-EXCH 50FT CBL
1148 2973	OPER TIME METER 60	1635 9010	KIT-EXCH 25FT CBL
1148 2981	OPER TIME METER 50	1635 9028	KIT-EXCH 35FT CBL
1148 3070	ADP-D F 1A CTRL	1635 9036	KIT-EXCH 50FT CBL
1148 8723	ADP-83 H3 LL	1637 5289	CTRL 2-CARD PCH LH
1148 8764	ADP-BAUDOT A&B CDE	1638 2152	ADP-ML EXT CLOCK
1149 5538	ADP-B 2500	1638 4109	PROCESSOR
1149 5546	ADP-B 3500	1638 4364	ADP-ML CTRL PROC
1149 6916	ADP-DCT 2000 S/L L	1638 4372	ADP-ML EXT AM DR
1149 6924	ADP-IBM 1030 LL	1638 4380	ADP-TERM UNIT SCAN
1630 7431	ADP-MG TP CLUSTER	1638 4398	KIT-MLEXT 25FT CBL
1630 7449	ADP-M T UNIT 7TRK	1638 4406	PRTR-60CY CONSOLE
1631 3165	ADP-M T UNIT 9TRK	1638 4422	CTRL 2-CONS PRTR
1631 3173	ADP-AUTO CALLING B	1638 4554	CTRL 2-CONS PRT LH
1631 8156	SET-MAINT PLUG-ON	1638 4695	ADP-300/5500 S/L L

Appendix D (cont'd)

1638 4786	CTRL 3-DISK FILE	1904 0625	CABLE-WE DATA SET
1638 4919	CTRL 2-MG TP 7TRK	1904 0633	CABLE-1030 DIRECT
1638 5064	CTRL 4-MG TP 9TRK	1904 0641	CABLE-1030 DTU
1638 5213	CTRL 2-UNBFD PR LH	1904 0658	CABLE-TOUCHTONE
1638 5361	CTRL 2-UNBFD PRTR	1904 0666	CABLE-VR EXTENSION
1638 5510	CTRL 2-BFRD PRT LH	1904 0674	CABLE-TWO WIRE
1638 5668	CTRL 2-BFRD PRTR	1904 0930	CTRL 4-DISK FILE
1638 5817	CTRL 4-CARD PCH LH	1904 0948	ADP-103 DF CTRL 4
1638 5965	CTRL 4-CARD PUNCH	1904 0955	ADP-104 DF CTRL 4
1638 6112	CTRL 3-CARD PCH LH	1904 0989	KIT-FPM 35FT CABLE
1638 6120	CTRL 3-CARD PUNCH	1904 0997	KIT-FPM 50FT CABLE
1639 3365	KIT-POWER COMPAT	1904 3264	ADP-B5500 FPM
1639 3373	SPECIAL DC MODULE	1904 6283	ADP-7311 RS 232 B
1900 6162	CTRL 2-CARD READER	1904 6325	ADP-DF EXCH 4 X 20
1900 6170	CTRL 2-CARD RDR LH	1904 6507	CTRL-MG TP 5 PE
1901 0180	CTRL 2-P T PUNCH	1904 8404	ADP-SYNC TIMER CD
1901 0339	CTRL 2-P T READER	1906 0227	CTRL 3-CARD READER
1901 0487	CTRL 2-P T RDR LH	1906 0235	CTRL 3-CARD RDR LH
1901 5387	ADP 2-TERM DRIVER	1906 0243	ADP-BCL TRANS
1901 5395	ADP 1-TERM DRIVER	1906 0250	ADP-ICT TRANS
1901 5403	ADP-CHANNEL READ	1906 0268	ADP-BULL TRANS
1901 7631	ADP 3-TERM DRIVER	1906 0276	AUX CAB-INDEPENDNT
1902 3274	ADP-STD ASYN DIR	1906 0573	KIT-FRAME GROUND
1902 3290	ADP-STD ASYN SW/LL	1907 5704	CTRL 3-PRINTER
1902 3308	ADP-STD SYN SW/LL	1907 5712	CTRL 3-PRINTER LH
1902 3324	ADP-ASYN T 110 BPS	1908 4235	ADP-DF CONT FPM
1902 3340	ADP-ASYN T 150 BPS	1908 4375	EXCH 2-2X10 MAG TP
1902 3357	ADP-ASYN T 300 BPS	1908 4417	ADP-MT EXCH B6500
1902 3365	ADP-ASYN T 600 BPS	1908 4458	CTRL 3-SINGLE LINE
1902 3373	ADP-ASYN T 1200BPS	1908 4466	CTRL 3-MULTI LINE
1902 3381	ADP-ASYN T 1800BPS	1908 4474	EXT 3-MULTI LINE
1902 3399	ADP-ASYN T 2400BPS	1909 3475	KIT-STAT CHG COAX
1902 9925	CTRL 2-SORTER RDR	1910 5303	ADP-1A2 DF CTRL
1903 0188	CTRL 2-SORT RDR LH	1910 5311	CTRL 5-DISK FILE

Appendix D (cont'd)

1910 5329	ADP-2B1 DF CTRL 5	1910 5758	ADP-B606/TC 700 LL
1910 5337	ADP-2B2 DF CTRL 5	1910 5774	ADP-DF CTRL 5 EXCH
1910 5345	ADP-1X2 DF CTRL 5	1912 2944	CTRL 2.5-DISK FILE
1910 5352	EXCH 2-4X10 DF	1913 1432	ADP 3-ASCII C&D CODE
1910 5360	EXT 2-4X20 DF EXCH	1913 1440	ADP 3-PARAMTR A STA
1910 5535	ADP-50 CPS	1913 1457	ADP 3-PARAMTR B STA
1910 5543	ADP-60 CPS	1913 1465	ADP 3-PARAMTR C STA
1910 5550	ADP-1X2 DF CTRL 4	1913 1630	ADP-ASYN T 4800BPS
1910 5691	CTRL 4-MULTI LINE	1913 1648	ADP-ASYN T 9600BPS
1910 5709	EXT 4-MULTI LINE	1914 5887	ADP-D F EXCH 6500
1910 5717	ADP 2-CTRL SCHPD EXT	1914 6265	SET-PROC MAINT
1910 5725	KIT 3-MLEXT 25FT CRL	1914 6273	PROCESSOR
1910 5733	ADP-EBCDIC CODE	1914 6463	KIT-HI VOLT DISTR
1910 5741	ADP-ASCII B606 CDE	1914 6471	ADP-FLTING PT (M3&M4)