CONTROL DATA CORPORATION
Technical Publications Department
2401 North Fairview Avenue
St. Paul, Minnesota 55113

Date 04-13-81

Publication Title 92451-10 Terminal Subsystem, Volumes 1 and 2, Hardware Maintenance Manual

Publication No. 62961200 **New Revision** H

NOTE

DO NOT INSERT THIS REVISION PACKET UNTIL ALL PREVIOUS REVISIONS HAVE BEEN ADDED TO MANUAL. REFER TO THE LIST OF EFFECTIVE PAGES SHEET (IF PROVIDED) OR TO THE REVISION RECORD TO DETERMINE PREVIOUS REVISION PACKETS ISSUED.

REASON FOR CHANGE	DESCRIPTION OF CHANGE
ECO 13322	Corrects part numbers 66294700 and 66294800 added by previous ECO on spare parts lists.
Memorandum	Adds configuration information to manual describing the conversion of CC6B1-A02 to CC6B1-A52 equipment types per FCO 11735 (selective retrofit).
ECO 13515	Vendor redesign of printer mechanism.
ECO 13647	Prevent failure of focus pot.
ECO 13883	Eliminate intermittent clearing of protected data when clear operation is performed.

(Continued)

EFFECTIVITY: ECO(s) N/A

FCO N/A

PAGES AFFECTED: See List of Effective Pages, page xiii, volume 1; page v, volume 2.

(Change cover sheet information continued)

ECO 13943	Eliminates rework for focus pot resistors, increases spacing between high voltage paths, and standardizes board blank.
ECO 14001	Cost reduction due to future availability of existing parts.
ECO 14045	Makes drawings consistant with sub-assembly drawings and reduces cost.
ECO 14119	Customer engineering request.
ECO 14455	Corrects schematic errors.
SB 4118	Shipping damage to video monitor PC boards.
SB 4293	Paper jamming on top of the platen.

REVISION RECORD

New features, as well as changes, deletions, and additions to information in this manual are indicated by bars in the margins or by a dot near the page number if the entire page is affected. A bar by the page number indicates pagination rather than content has changed.

REVISION	DESCRIPTION
A	Final edition. This printing obsoletes all previous editions and includes the
(08-01-75)	following ECO s: C021, C026, C039, C043, C045, C051, C063, C064,
	C065, C066, C069, C070, C075, C084, C098, C0103, C0105, C0106,
	C0110, C119, C123, C126, C127, C131, C146, C149, C174, C175, C184,
	C190, C193, C210, C212, C213, C214, C215, C220, C227, C237, C240,
	C243, C245, C252, C258, C267, C282, C295, C304, C310, C316,
	CD10653-1, CD10653-2, CD10653-5, CD10653-6, CD10653-7, CD10666,
	CD10733, CD10741, CD10880, and CD10879.
B	Manual revised and reprinted to reflect system integration and evaluation
(10-08-75)	verification. Changed pages: viii, ix, x, xii, xiii, xiv, 3-3 through 3-6,
	6-2, 6-3, 6-9 through 6-19, 6-21 through 6-25, 6-27, 6-28, 6-30 through
	6-44, 6-46 through 6-51, 6-53, 6-55 through 6-69, 6-71 through 6-77,
	6-79 through 6-81, 6-85, 6-88, 7-28, and 7-34. Added pages: 6-89, 6-90,
	and appendix B.
C	Manual revised and reprinted to add nonimpact printer, impact (matrix) printer,
(7-7 -76)	tape cassette unit (both single and dual), answerback, multidrop, autoprint,
	highlighting, edit with wraparound, current loop, and paging features.
	This printing obsoletes all previous editions and includes the following ECOs:
	10756, 10795, 10832, 10836, 10841, 10849, 10893, 10907, 10908, 10913,
	10925, 10930, 10935, 10952, 10971, 10972, 10980, 10986, 10990, 10996,
	11000, 11002, 11007, 11023, 11039, 11040, 11056, 11074, 11107, 11113,
	11120, 11121, 11144, 11150, 11165, 11195, 11206, 11223, 11226, 11250,
	11258, 11277, 11311, 11323, and 11348.

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62961200

REVISION LETTERS I, O, Q AND X ARE NOT USED

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2401 North Fairview Avenue
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or use Comment Sheet in the back of this manual.

REVISION RECORD (CONTD)

REVISION	DESCRIPTION
D	Manual changed to reflect the following ECO s 11142, 11143, 11248, 11280,
(04-07-77)	11302, 11386, 11506, 11547, 11555, 11587, 11602, 11603, 11604, 11614,
	11639, 11673, 11716, 11723, 11747, 11771, 11772, 11790, 11890, 11923,
	11946, 12081, 12107 and 12295. Latest version of video monitor is included
	with this change. Previous versions of video monitor are retained too. Spare
	parts lists, formerly part of Section 8 are now included in Section 7, Parts Data.
E	Manual change to reflect ECOs 12153, 12197, 12351, 12385, and 12492 and
(11-30-77)	information regarding interface adapter cabling. The remainder of changes are
	correctional.
F	Manual changed to reflect the following ECO s 12107, 12629, 12687, 12714,
(07-26-78)	12745, and 12855. Adds Cherry keyboards to CC6B1 and CC614. A thermistor
	is added to the horizontal sweep circuit to extend life of the output transistor.
	Provides hardware changes for retention and cost reductions. Changes pages:
	vi, viii, ix, xiii, xiv, xv, xvi, xxv, 5-10, 5-11, 7-4, 7-5, 7-13, 7-14, 7-15,
	7-16, 7-17, 7-18, 7-19, 7-20, 7-21, 7-22, 7-23, 7-47, 7-49, 7-50, 7-51,
	7-60, 7-61, 7-63, 7-78, 7-79, 7-152, 7-153, 7-154, 7-155, and Comment
	Sheet.
G	Manual changed to reflect the following ECOs: 12225, 12559, 12624, 12827,
(04-04-79)	12995, and 13037. 12225 adds parity switch to NIP printer, 12559 PL
	correction, 12624 replaces cassette AC entry panel, 12827 increases size of
	fuse to 2 A, 12995 corrected SPLs, and 13037 adds support to HV crt lead.
	Added new assemblies to section 7 (new crt socket and HV transformer incor-
	ated by ECO 12855).
H	Manual revised to incorporate ECOs 13322, 13515, 13647, 13883, 13943,
(04-13-81)	14001, 14045, 14119, and 14455; Service Bulletins 4118 and 4293; and a
	memorandum to add configuration information to manual for conversion of
	equipment type CC6B1-A02 to CC6B1-A52 per FCO 11735.

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MANUAL TO EQUIPMENT LEVEL CORRELATION

This manual reflects the equipment configurations listed below.

EXPLANATION: Locate the equipment type and series number, as shown on the equipment FCO log, in the list below. Immediately to the right of the series number is an FCO number. If that number and all of the numbers underneath it match all of the numbers on the equipment FCO log, then this manual accurately reflects the equipment.

EQUIPMENT TYPE	SERIES	WITH FCO'S	COMMENTS
CC6B1-A (unit licensed by FTZ as meeting VDE Standard 0871)	01		ECO's 10756, 10849, 10851, 10879, 10880, and 10894
	02	10972	
	03		ECO 10980
	04	11039	
	05	10935	
	06	11040	
	07	11280	
	08	11142 11302 12155	
	09		ECO 11248. At series code 09 CC6B1-A was made inactive and is replaced with CC6B1-C. Reference CC6B1-C correlation sheet for further updates.
			NOTE: ECO's LISTED ARE ONLY THOSE WHICH CAUSED THE ASSOCIATED SERIES ADVANCE.

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MANUAL TO EQUIPMENT LEVEL CORRELATION (CONTD)

EQUIPMENT TYPE	SERIES	WITH FCO'S	COMMENTS
CC6B1-B (unit licensed by FTZ as meeting VDE Standard 0871)	01		ECO's 10756, 10849, 10851, 10879, 10880, and 10894.
	02	10972 10986	
	03		ECO 10980
	04	11039	
	05	10935	
	06	11040	
	07	11280	
	08	11142 11302	
	09		ECO 11248
	10		ECO 11614
	11		ECO 11386
	12		ECO 11639
	13	12155	ECO 11747
	14		ECO 12687
	15		
			NOTE: ECO'S LISTED ARE ONLY THOSE WHICH CAUSED THE ASSOCIATED SERIES ADVANCE.

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MANUAL TO EQUIPMENT LEVEL CORRELATION (CONTD)

EQUIPMENT TYPE	SERIES	WITH FCO'S	COMMENTS
CC6B1-C (unit licensed by FTZ as meeting VDE Standard 0871)	01		ECO 11386
	02		ECO 11639
	03	12155	ECO 11747
	04		ECO 12687
	05		
			NOTE: ECO'S LISTED ARE ONLY THOSE WHICH CAUSED THE ASSOCIATED SERIES ADVANCE.

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MANUAL TO EQUIPMENT LEVEL CORRELATION (CONTD)

EQUIPMENT TYPE	SERIES	WITH FCO'S	COMMENTS
CC6B1-A	52	11735	CC6B1-A02 equipments were converted to the CC6B1-A52 equipment type per FCO 11735 (selective retrofit).
CC6B1-A	53	11735	CC6B1-A03 equipments were converted to the CC6B1-A53 equipment type per FCO 11735 (selective retrofit).
CC6B1-A	54	11735	CC6B1-A04 equipments were converted to the CC6B1-A54 equipment type per FCO 11735 (selective retrofit).
CC6B1-A	55	11735	CC6B1-A05 equipments were converted to the CC6B1-A55 equipment type per FCO 11735 (selective retrofit).
CC6B1-A	56	11735	CC6B1-A06 equipments were converted to the CC6B1-A56 equipment type per FCO 11735 (selective retrofit).
CC6B1-A	58	11735	CC6B1-A08 equipments were converted to the CC6B1-A58 equipment type per FCO 11735 (selective retrofit).

NOTE: Serial numbers of equipments affected and other necessary information documenting the above configuration material may be found in the pages of FCO 11735.

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MANUAL TO EQUIPMENT LEVEL CORRELATION (CONTD)

EQUIPMENT TYPE	SERIES	WITH FCO'S	COMMENTS
CC6B1-B	52	11735	CC6B1-B02 equipments were converted to the CC6B1-B52 equipment type per FCO 11735 (selective retrofit).
CC6B1-B	53	11735	CC6B1-B03 equipments were converted to the CC6B1-B53 equipment type per FCO 11735 (selective retrofit).
CC6B1-B	54	11735	CC6B1-B04 equipments were converted to the CC6B1-B54 equipment type per FCO11735 (selective retrofit).
CC6B1-B	55	11735	CC6B1-B05 equipments were converted to the CC6B1-B55 equipment type per FCO 11735 (selective retrofit).
CC6B1-B	56	11735	CC6B1-B06 equipments were converted to the CC6B1-B56 equipment type per FCO 11735 (selective retrofit).
CC6B1-B	58	11735	CC6B1-B08 equipments were converted to the CC6B1-B58 equipment type per FCO 11735 (selective retrofit).

NOTE: Serial numbers of equipments affected and other necessary information documenting the above configuration material may be found in the pages of FCO 11735.

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MANUAL TO EQUIPMENT LEVEL CORRELATION (CONTD)

EQUIPMENT TYPE	SERIES	WITH FCO'S	COMMENTS
XA1A7-A	01	10973	
	02		
XA1A8-A	01		ECO 11143
	02	11604	
	03	11771	
	04	12295	
XA1A9-A	01	11790	
	02		
XA1B1-A	01	-	
XA1B2-A	01	11603	
	02	11923	
	03		
XA1B5-A	01	11587	
	02	11772	
	03	12081	
	04		
XA1B6-A	01	11602	
	02	11890	
	03		
XA1B7-A	01		
XA1C1-A	01		

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MANUAL TO EQUIPMENT LEVEL CORRELATION SHEET (CONTD)

EQUIPMENT TYPE	SERIES	WITH FCO'S	COMMENTS
CL1A2-A	01	—	ECO 12225
	02	—	ECO 13515, S/N cut in 320
	03		
CL1A2-B	01	—	ECO 12225
	02	—	ECO 13515, S/N cut in 320
	03		
CL1A2-C	01	—	ECO 12225
	02	—	ECO 13515, S/N cut in 320
	03		
BE6A1-A	01	11723	
	02		
BE6A1-B	01	11723	
	02		ECO 11854
	03		
BE6A1-C	01	11723	
	02		
BE6A1-D	01	11723	
	02		ECO 11854
	03		
CL416-E	—	—	Supplied by Computer Peripherals Inc., Rochester Division. See their manuals, identified in Preface, for series and FCO information NOTE: ECOs LISTED ARE ONLY THOSE WHICH CAUSED THE ASSOCIATED SERIES ADVANCE.

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LIST OF EFFECTIVE PAGES

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B-8	C
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FOREWORD

This manual assists those performing on-site maintenance of the CONTROL DATA® 92450 Terminal Subsystem (referred to in this manual as simply "the terminal"). The terminal is a remote data-communications device that handles online processing in a conversational mode at speeds of 110 to 9600 baud over a standard CCITT V.24 or EIA RS-232-C modem. The terminal operates in duplex or half-duplex communications networks.

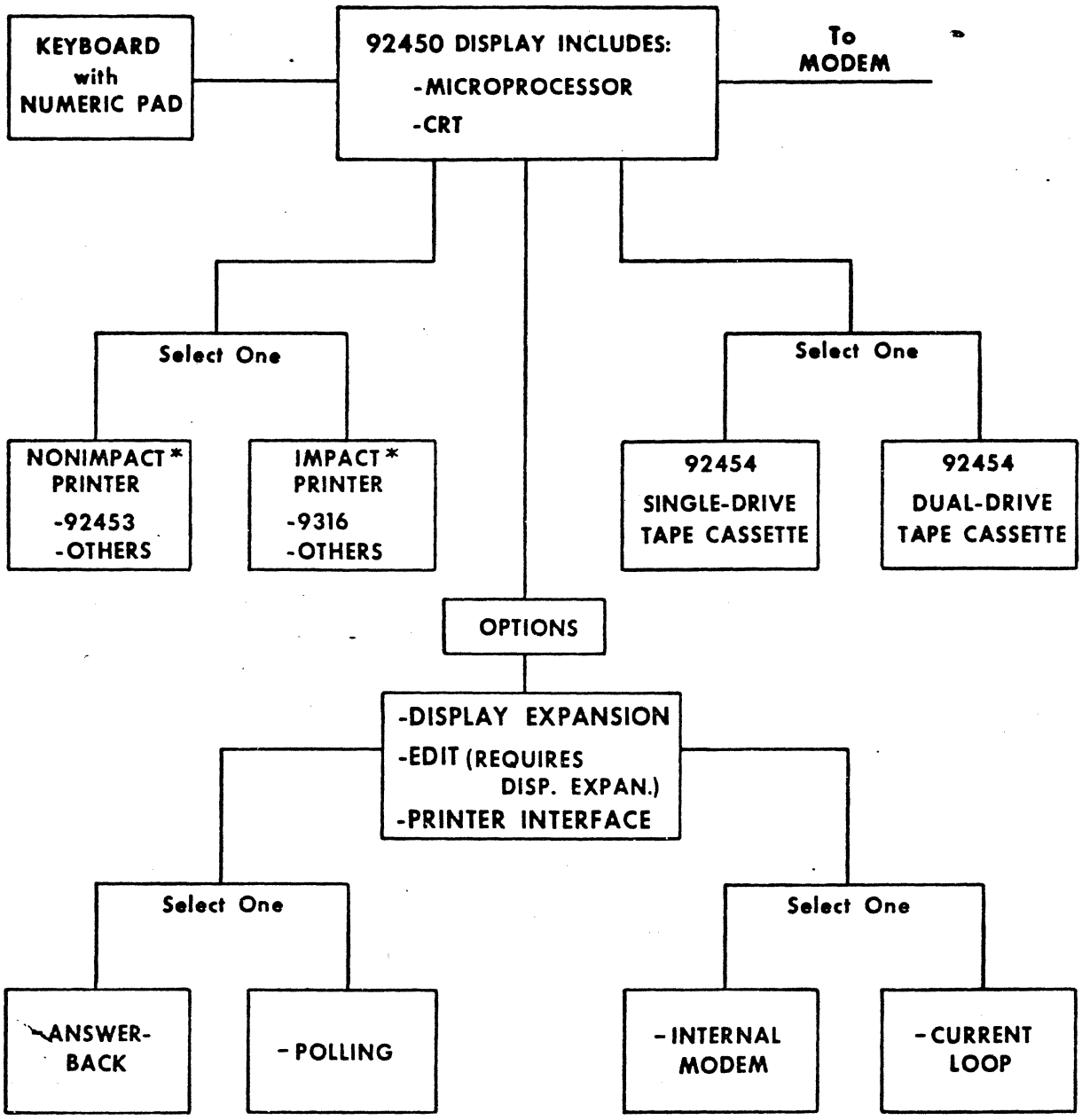
This manual is used to repair the terminal in the field without special tools (a voltmeter/ohmmeter is required). Level of maintenance is restricted to the card and module level, with some modificiations. Certain large components, such as the crt (cathode-ray tube) and high-voltage transformer, are replaceable but smaller circuit components on printed-circuit boards are not.

The following block diagram shows the 92450 Terminal Subsystem in a typical configuration. For additional information pertaining to equipment in the configuration, refer to the following manuals which are listed by device.

GENERAL SUBSYSTEM MANUALS

Manuals in this category describe terminals which are subsystems in a larger system. Such systems typically include a higher-level processor connected to a large number of subsystems by telephone communications lines. Subsystem manuals describe how the terminal communicates with the larger system and also how an operator uses the subsystem to perform tasks at the site and communicate information to the higher-level processor. On-site maintenance, which is the subject of this manual, is also described at the subsystem level.

92450 TERMINAL SUBSYSTEM CONFIGURATION



*PRINTER INTERFACE REQUIRED

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Excluding this manual, the following list provides publication numbers of other subsystem manuals pertaining to the 92450 Terminal Subsystem:

Title	Publication Number
CONTROL DATA® 92450 Terminal Subsystem Operators Guide (describes subsystem operation of the terminal in all modes, whether performing tasks locally or communicating online with processor)	62961400
CONTROL DATA® 92450 Terminal Subsystem Reference Manual (describes message formats related to message handling and communications line protocol and also defines all control codes used to communicate with the subsystem)	62961300

COMPONENTS AND EQUIPMENT

The following manuals describe equipment and components which may be used in a 92450 Terminal Subsystem:

Title	Publication Number
CONTROL DATA® Basic Logic Module Subassemblies Hardware Maintenance Manual (A repair center maintenance manual with detailed theory of operation and circuit analysis for repairing logic modules at the chip level)	62961700
CONTROL DATA® Keyboard Modules Hardware Maintenance Manual (A repair center maintenance manual with detailed theory of operation and circuit descriptions for repairing the keyboard at the chip level)	62961500
CONTROL DATA® Bulk Power Supply Card Hardware Maintenance Manual (A repair center maintenance manual with detailed theory of operation and circuit descriptions for repairing the bulk power supply card at the chip level)	62961600
CONTROL DATA® Video Display Unit Hardware Maintenance Manual (A repair center maintenance manual with detailed theory of operation and circuit descriptions for repairing the video display unit at the circuit component level)	62961800

Title	Publication Number
CONTROL DATA® Random-Access Expanded-Memory Option Repair Center Maintenance Manual (A repair center maintenance manual with detailed theory of operation and circuit descriptions for repairing the expanded memory option at the circuit component level)	62961900
CONTROL DATA® Receive-Only Printer Adapter Hardware Maintenance Manual (A repair center maintenance manual with detailed theory of operation and circuit descriptions for repairing the receive-only printer adapter at the circuit component level)	62962000
CONTROL DATA® LIAT Basic Firmware Support Package (Firmware Listing) Hardware Maintenance Manual (A bit-map listing of firmware program to be used at repair centers for maintenance of the firmware control program)	62962200
CONTROL DATA® Edit Hardware Maintenance Manual (A repair center maintenance manual with detailed theory of operation and circuit descriptions for repairing the edit option board at the circuit component level)	62962400
CONTROL DATA® Tape Cassette Adapter Logic Hardware Maintenance Manual (A repair center maintenance manual with detailed theory of operation and circuit descriptions for repairing the tape cassette logic board at the circuit component level)	62950700
CONTROL DATA® Tape Cassette Mechanism Hardware Maintenance Manual (A repair center maintenance manual for repairing the mechanical drive/read/write unit of tape cassette)	62950800

Title	Publication Number
CONTROL DATA® Tape Cassette Power Supply Hardware Maintenance Manual (A repair center maintenance manual with detailed theory of operation and circuit descriptions for repairing the power supply at the circuit component level)	62950900
CONTROL DATA® Tape Cassette Cabinet Hardware Maintenance Manual (A repair center maintenance manual which describes the cabinet housing for the tape cassette, including its specifications)	62951000
CONTROL DATA® Multidrop Option Hardware Maintenance Manual (A repair center maintenance manual which describes in detail theory of operation and circuit functions — to be used to repair multidrop option at the circuit component level)	62962600
CONTROL DATA® Answerback Option Hardware Maintenance Manual (A repair center maintenance manual which describes theory of operation and circuits at the component level)	62962700
CONTROL DATA® Internal Modem Hardware Maintenance Manual (A repair center manual which describes theory of operation and provides circuit descriptions for repairing the internal modem at the circuit component level)	62962800
CONTROL DATA® Multidrop Option Firmware Support Package Hardware Maintenance Manual (A repair center maintenance manual with added firmware required to support the multidrop option add-on)	62962300
CONTROL DATA® Current Loop Hardware Maintenance Manual (A repair center maintenance manual containing theory of operation and circuit descriptions at the circuit component level)	62962100

Title	Publication Number
CONTROL DATA® New 28-Pak Board Hardware Maintenance Manual	(to be supplied)
CONTROL DATA® Highlighting Hardware Maintenance Manual	(to be supplied)
CONTROL DATA® Nonimpact Printer Hardware Maintenance Manual	(to be supplied)
CONTROL DATA® Matrix Printer Hardware Maintenance Manual	(to be supplied)
CONTROL DATA® Edit Firmware Support Package Hardware Maintenance Manual	62955900
CONTROL DATA® Receive-Only Printer Adapter Firmware Support Package Hardware Maintenance Manual	62956000
CONTROL DATA® Tape Cassette Firmware Support Package Hardware Maintenance Manual	62962500

These manuals may be ordered from:

Control Data Corporation
Technical Publications Department
2401 North Fairview Avenue
St. Paul, Minnesota 55113

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CRT DISPLAY TERMINAL

TABLES

SECTION 1

GENERAL DESCRIPTION

The terminal subsystem includes a display terminal and supporting equipment, including a tape cassette, an impact printer, or a nonimpact printer. The display terminal (figure 1-1) is designed for interactive or remote-data-entry applications. It can communicate as a stand-alone terminal or it can be supported by peripherals. A tape cassette facilitates data input and a printer is used to record output data on hardcopy.

Although physically small, the terminal incorporates a complete processor and various levels of random access and read-only memories for storing data and firmware control programs. The basic terminal (three full boards and one half board) can be expanded to include a total of ten half boards and five full boards.

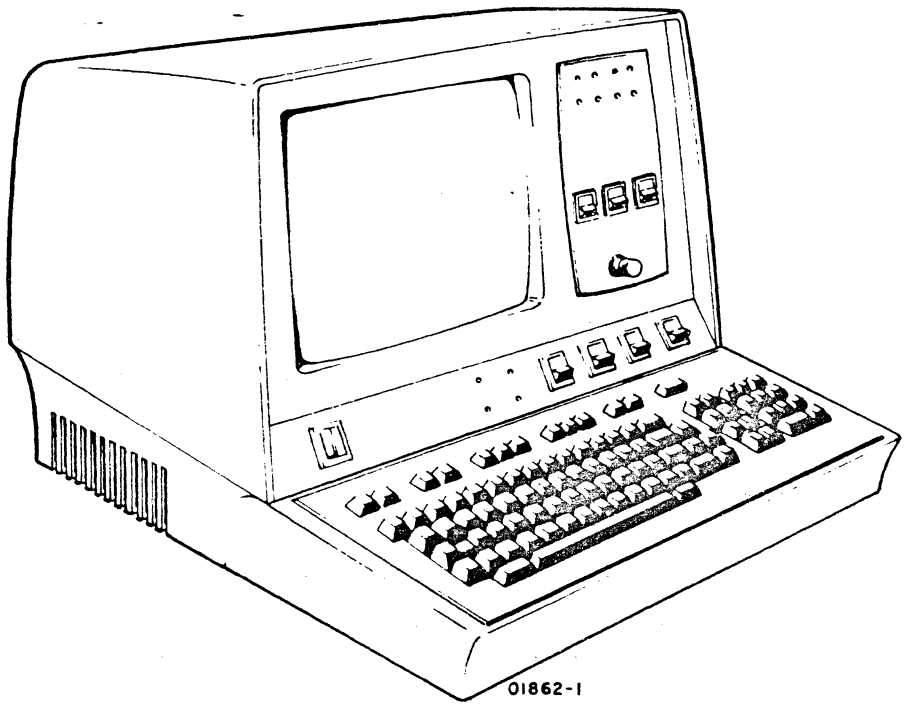


Figure 1-1. Display Terminal

The terminal is offered with the following options:

- 20-ma current loop interface
- Line and block transmission
- Edit capability
- Protected data format
- Internal modem
- External acoustic coupler
- Hardcopy control
- Tape cassette control
- Expanded memory
- Multidrop (polled operation)
- Automatic answerback
- Character highlight

SUBSYSTEM COMMUNICATIONS

The basic terminal is capable of transmitting and receiving messages to and from other terminals in duplex circuits. It is compatible with requirements specified by other KSR (keyboard/send/receive) devices and permits data to be either displayed on its crt (cathode-ray tube) screen or printed in hardcopy at the customer's printer. Communications circuits are in accord with those specified by EIA (Electronic Industries Association) RS-232-C Interface Between Data Terminal Equipment and Data Communication Equipment Employing Serial Binary Data Interchange standard (see Appendix A for pin assignments for the various signals.)

A special board can be included with the basic terminal to meet other communication network requirements.

EQUIPMENT GENERAL DESCRIPTIONS

This section describes the basic display terminal and its optional peripheral equipment, including the following:

- Display Terminal
- Tape Cassette
- Matrix Printer (Impact)
- Nonimpact Printer

DISPLAY TERMINAL

The basic display terminal without options includes the following components:

- Keyboard
- Television Monitor
- Logic Module Assembly
- Power Supply

KEYBOARD

The keyboard permits the operator to compose and send messages over the communications line. As shown in figure 1-2, the keyboard can be separated from the basic cabinet.

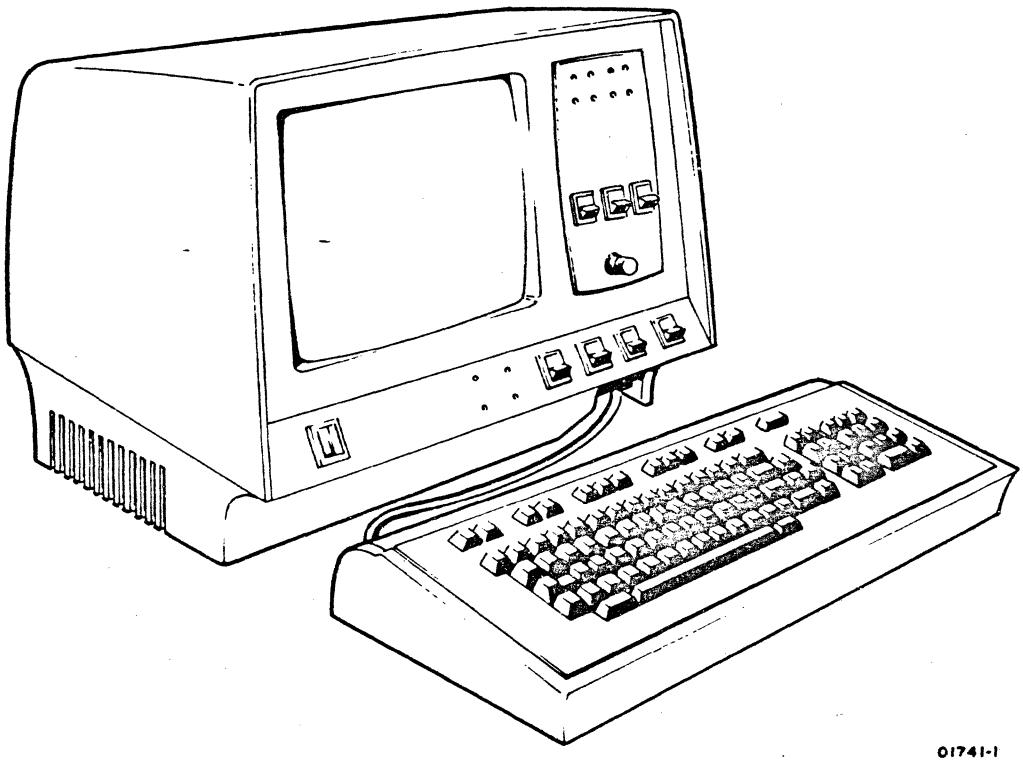


Figure 1-2. Keyboard Arrangement with Cabinet

The keyboard generates 8-bit encoded signals to the logic module in the main cabinet when a key is pressed. (Certain control keys however, are not encoded signal generation keys, such as the PRINT keys.) The keyboard features N-key rollover and permits the 8-bit code to be generated by the key independent of the other keys. Thus, one key does not have to be released to generate another code; and a code will be generated to the interface for each key pressed.

The keyboard can generate codes for lowercase as well as uppercase characters and will do so provided the 96/64 switch is in the 96-character position.

The CONTROL key can be used in conjunction with other keys to generate special character codes. As many as 149 distinct codes can be generated by the keyboard, using the SHIFT and CONTROL keys in conjunction with the other keys. Character codes can be repeated by pressing the REPEAT key in conjunction with the data key.

TV MONITOR

The monitor incorporates a 12-inch (diagonal) crt which is driven by video circuits mounted on a printed-circuit (PC) board. Approximately 12,000 vdc is developed from +15 vdc to drive the electron beam which illuminates the phosphor on the inside of the crt. Horizontal and vertical sweep circuits control the degree of deflection, and an incoming data signal from the logic module assembly (refresh board) causes the beam to be turned on and off sufficiently to create the dot pattern on the screen that constructs a representative character for the viewer.

The dot matrix can display 128 different characters, including a space on the screen. The standard terminal displays 12 lines of 80 characters in a 13 by 20 cm (5-1/2- by 8-inch) area on the screen called the raster. A terminal with expanded memory can display 24 lines of 80 characters (1920 characters).

LOGIC MODULE ASSEMBLY

The logic card rack shown in figure 1-3 is structured to contain all logic required of the listed options and also maintains the basic display unit. Each card is a separate module and each can be removed after the holding arms at top and bottom have been released.

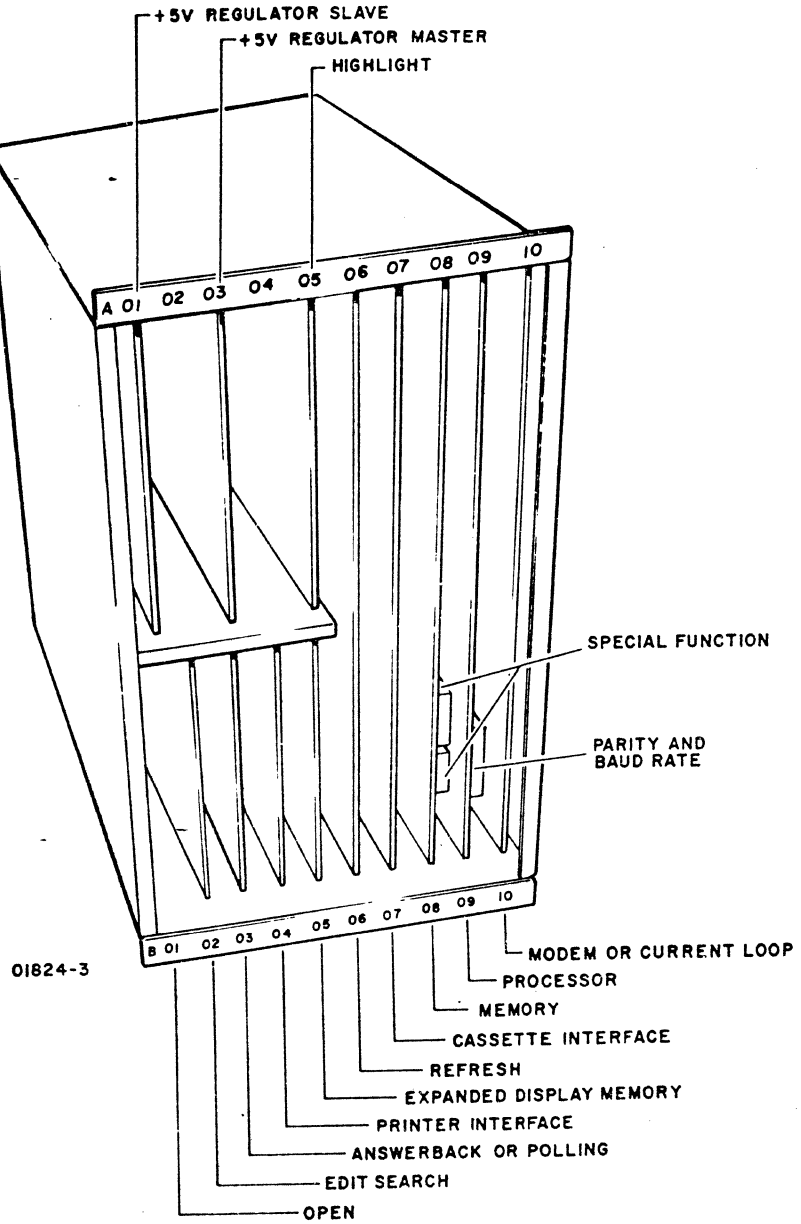


Figure 1-3. Logic Module Assembly

POWER SUPPLY

The basic power supply consists of a bulk power supply board, a transformer and an ac entry panel. These provide four primary voltages: -9 vdc, -12 vdc, +12 vdc, +23 vdc, and -24 vdc. From these voltages, a number of other voltages are created throughout the display terminal. Some of the other voltages include:

- +5-vdc regulators (board in logic module)
- -5-vdc regulators (processor board in logic module)
- +15-vdc regulators (two in video module assembly)
- +5-vdc regulator on video (monitor printed-circuit board)

TAPE CASSETTE

(To be supplied.)

MATRIX PRINTER

(To be supplied.)

NONIMPACT PRINTER

(To be supplied.)

SECTION 2

OPERATION

Operator procedures are discussed in detail in the operators guide. Switches and indicators are described both in the reference manual and the operators guide.

NOTE

When the POWER ON/OFF switch is turned OFF, it should not be turned ON again within 30 seconds or the circuit breaker may trip.

SECTION 3

INSTALLATION AND CHECKOUT

This section provides information concerning crating, uncrating, installation, and checkout of the crt display, impact printer, nonimpact printer, and tape cassette.

CRATING

To protect the crt display, printers, and tape cassette against shipping damage, always prepare these equipments for shipment using only approved procedures and materials. To obtain proper materials, contact the nearest CDC representative or:

Control Data Corporation
Corporate Traffic
8100 34th Avenue South
Minneapolis, Minnesota 55440

To crate the display terminal, refer to figure 3-1. If desired, a template is available for use in cutting out the polystyrene packing material. Order D-size drawing no. 41035301 from CDC Corporate Traffic.

UNCRATING

The following describes procedures for uncrating the crt display, impact printer, nonimpact printer, and tape cassette.

To uncrate the crt display, refer to figure 3-1 and proceed as follows:

MATERIALS REQUIRED	QTY	CDC PART NO.
END FRAME CUSHIONING	2	41035801
3" WHITE REINFORCED BOX SEALING TAPE	A/R	---------
EXTERIOR CONTAINER (SMALL DISPLAY)	1	41035803
OR		
EXTERIOR CONTAINER (LIAT DISPLAY)		41035802

NOTES:
1) INTERLOCK FOAM BASE LEGS WITH END FRAMES
2) PLACE END FRAMES WITH BASE LEGS ON DISPLAY
3) PLACE DISPLAY WITH END FRAMES INTO CONTAINER
4) INTERLOCK "T" BLOCKS WITH END FRAMES
5) LIFT TOP FLAPS ON END FRAMES AND INSTALL KEYBOARD WITH KEYS FACING DOWN
6) SECURE CABLES IN END FRAME SLITS AS SHOWN
7) CLOSE AND SEAL CONTAINER WITH 3" WHITE REINFORCED BOX SEALING TAPE

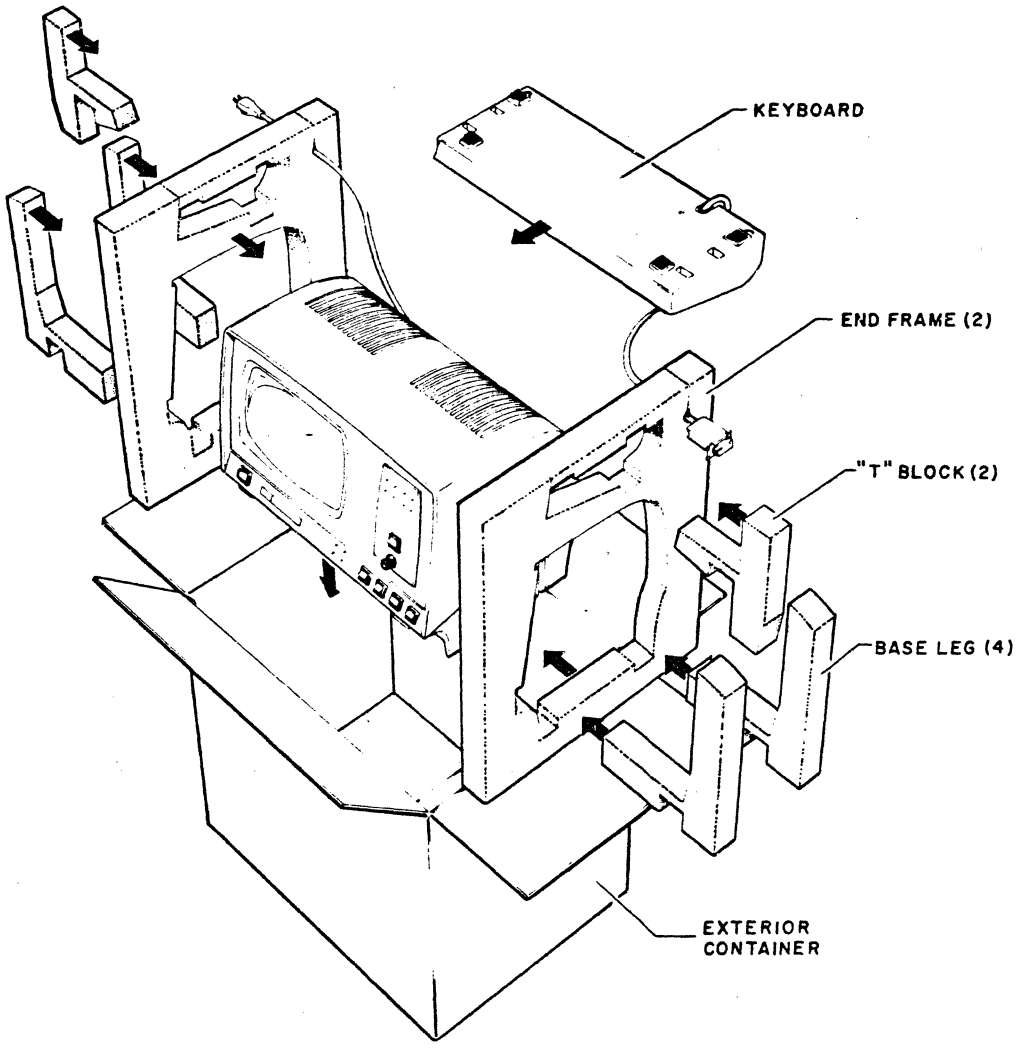


Figure 3-1. Crating and Uncrating the Display Terminal

INSTALLATION

A description of the installation of the display terminal follows.

DISPLAY TERMINAL

To install the display terminal, perform the following:

1) Remove crt display terminal from container (see uncrating procedures).
2) Remove cabinet hood by unscrewing two mounting screws in rear of cabinet hood (figure 3-2), and sliding hood back and up.

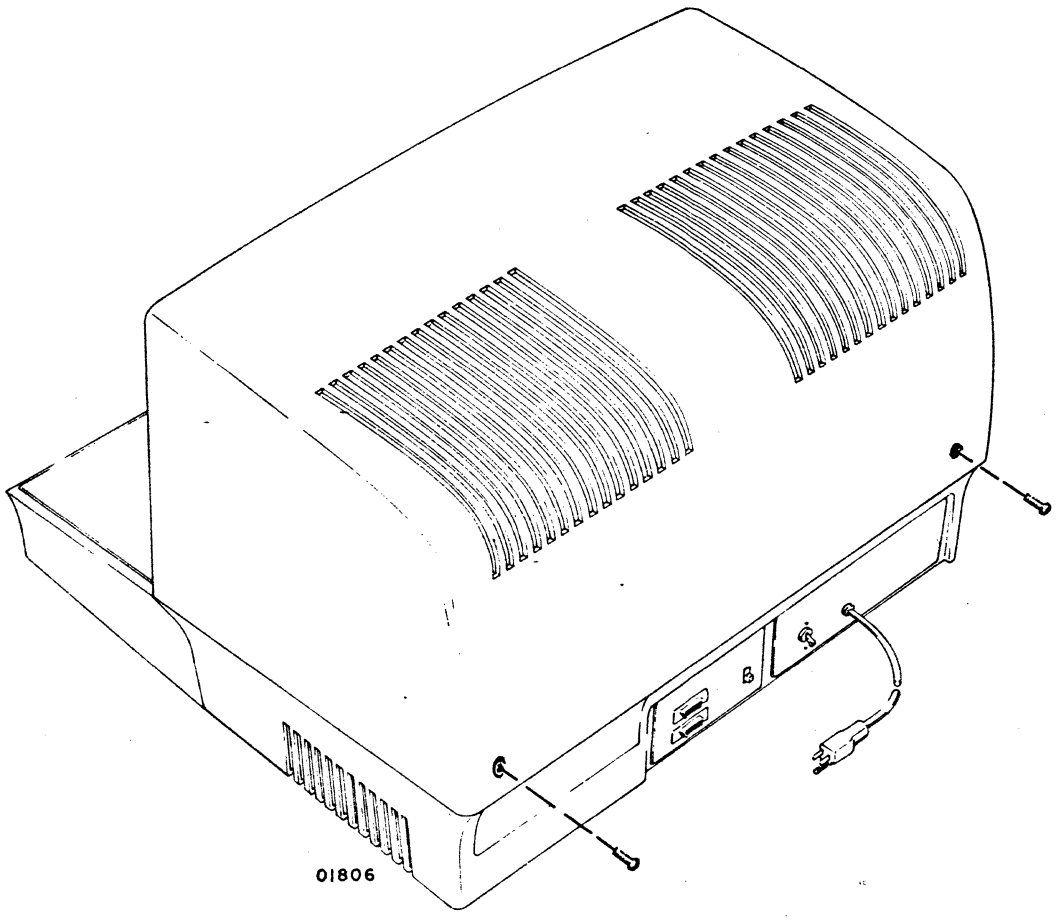


Figure 3-2. Cabinet Hood Removal

3) Check switch settings (figure 3-3) with switch settings shown on decal on side of logic card rack (see figure CRT44 in Section 6 for decal). If baud rate is different than originally planned, refer to procedure CRT24 in Section 6 for instructions.

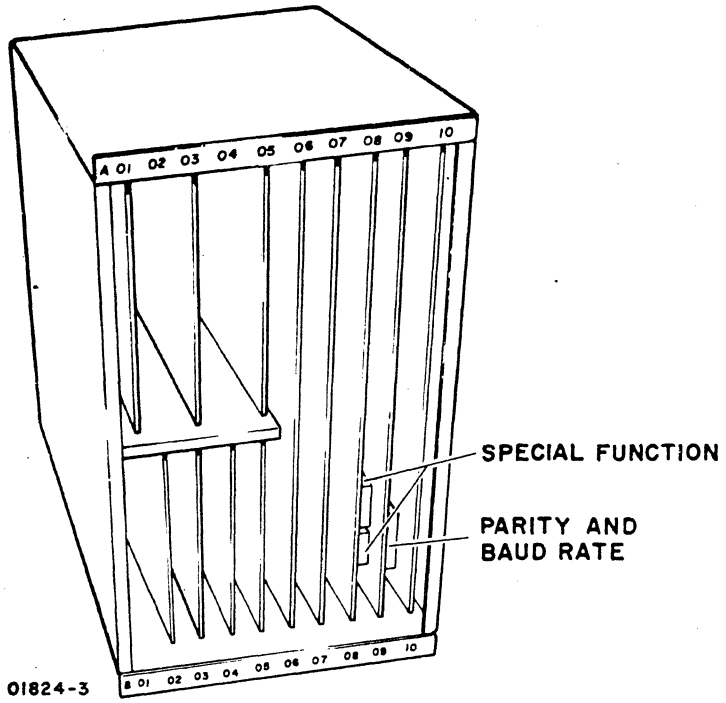


Figure 3-3. Internal Switches

CHECKOUT PROCEDURES

To check operation of the display terminal, perform the following:

1) Install cabinet hood.
2) Plug ac power cord into site ac power outlet.
3) Press POWER ON/OFF switch to ON. Wait 30 seconds.

NOTE

When the POWER ON/OFF switch is turned OFF, it should not be turned ON again within 30 seconds or the circuit breaker may trip.

4) Set TEST/NORMAL switch to TEST (up) and press MASTER CLEAR (see figure 3-4). The following display should appear on the screen:

0F00 00 0E00 00 0D00 00 0C00 00 0B00 00 0A00 00 0900 00 0800 00 0700 00
0600 00 0500 00 0400 00 0300 00 0200 00 0100 00 0000 00

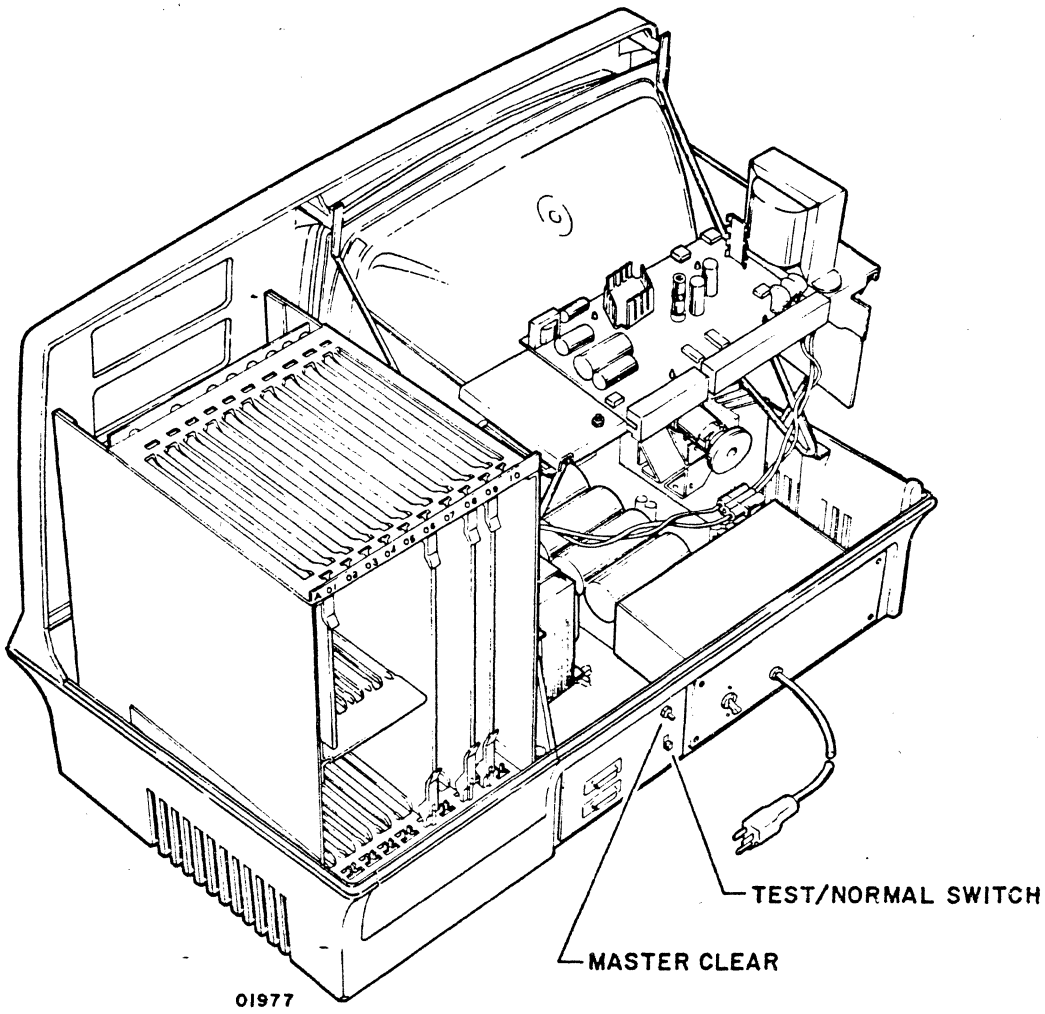


Figure 3-4. TEST/NORMAL and MASTER CLEAR Switches

In addition, the CHAR/LINE/BLOCK TRANSMISSION MODE LEDs on the front panel should all three be extinguished to indicate test section 0. This is because the binary count of these three LEDs indicates the active test section (sections 0 through 7, see table CRT1 in Section 6) when the terminal is in TEST mode (e.g., CHAR and LINE extinguished but BLOCK illuminated indicates test section 1 for RAM as shown by sheet 2 of table CRT1).

5) If preceding display (checksum) does not appear on screen, go to table CRT1, DDLT for Display Terminal (Section 6) to determine trouble.

6) With checksum appearing on screen, press space bar to proceed through various tests. If alarm should sound, an error is detected by test program to proceed under error conditions, press Q key (either uppercase or lowercase to disable alarm tone) and go to table CRT1, DDLT for Display Terminal, for corrective action in Section 6).

NOTE

Except for steps 9 and 10, pressing any displayable character/symbol key will advance the test.

7) Press space bar a second time and program begins writing characters on screen at present setting of baud rate switches. If HIGH RATE/LOW RATE switch is set to LOW RATE and internal low rate setting is 110 baud, it takes approximately 15 seconds for characters to appear on screen (after space bar was pressed second time). If unable to display data, proceed to table CRT1, DDLT for Display Terminal (Section 6).

8) Pressing space bar a third time advances test program to keyboard check. Press any key on keyboard and observe that corresponding character appears on displays.

9) Press space bar again. Screen should go blank.

10) Press space bar again and test program advances to next test. Keep pressing space bar until eight characters appear in upper-left corner of display.

11) Move all following switches and observe first two characters on screen:

- CHARACTER/LINE/BLOCK
- FULL DUPLEX/HALF DUPLEX
- ON LINE/LOCAL
- FORMAT

14) If character on screen changes to another character, switch is functioning properly. If characters do not change as switches are moved, proceed to table CRT1, DDLT for Display Terminal (Section 6).

13) If there is any reason to suspect that unit is not operating correctly, proceed to Section 6 for thorough troubleshooting procedures. In so doing, always enter table CRT1, sheet 1, DDLT for Display Terminal first.

The proceding checkout procedures are designed for quick check of the crt to assure it is working. It is not meant to thoroughly check out every circuit or perform in-depth troubleshooting as the DDLT's in Section 6. However, if the terminal must be put into use immediately, the preceding procedures should be performed as a minimum.

Before placing terminal online, position TEST/NORMAL to NORMAL and press MASTER CLEAR on rear panel. Proceed according to procedures in operators guide. Whenever trouble occurs, return to Section 6 of this manual.

NOTE

Impact printer, nonimpact printer, tape cassette installation, and checkout information will be supplied later.

CRATING NOTES:

1) PRESENCE OF STATIC ELECTRICITY MAY DESTROY SENSITIVE MOS CIRCUITS, E.G., ROM OR STATIC SHIFT REGISTER CIRCUITS.
   ANY CIRCUIT CARD CONTAINING MOS CIRCUITS (STATIC-ELECTRICITY SENSITIVE) REQUIRES SPECIAL HANDLING. USE "MOS CIRCUIT HANDLING PRECAUTIONS" IN APPENDIX C AND WRAP CARD IN STATIC-PROTECTIVE MATERIAL, E.G., ALUMINUM FOIL.
   ALSO REFER, IF DESIRED, TO CDC SPECIFICATION 16033100 WHICH DESCRIBES SPECIAL HANDLING FOR MOS TYPE CIRCUITS.
2) ONLY ONE CARD MAY BE PLACED IN A PADDED BAG.
   SLIDE A CIRCUIT CARD IN A #2 SIZE PADDED SHIPPING BAG.
3) PACK EACH BAGGED CARD, OR SEVERAL BAGS (EACH WITH ONE CARD), IN A CORRUGATED SHIPPING CONTAINER. FILL ANY VOIDS WITH CUSHIONING PACKING MATERIAL.

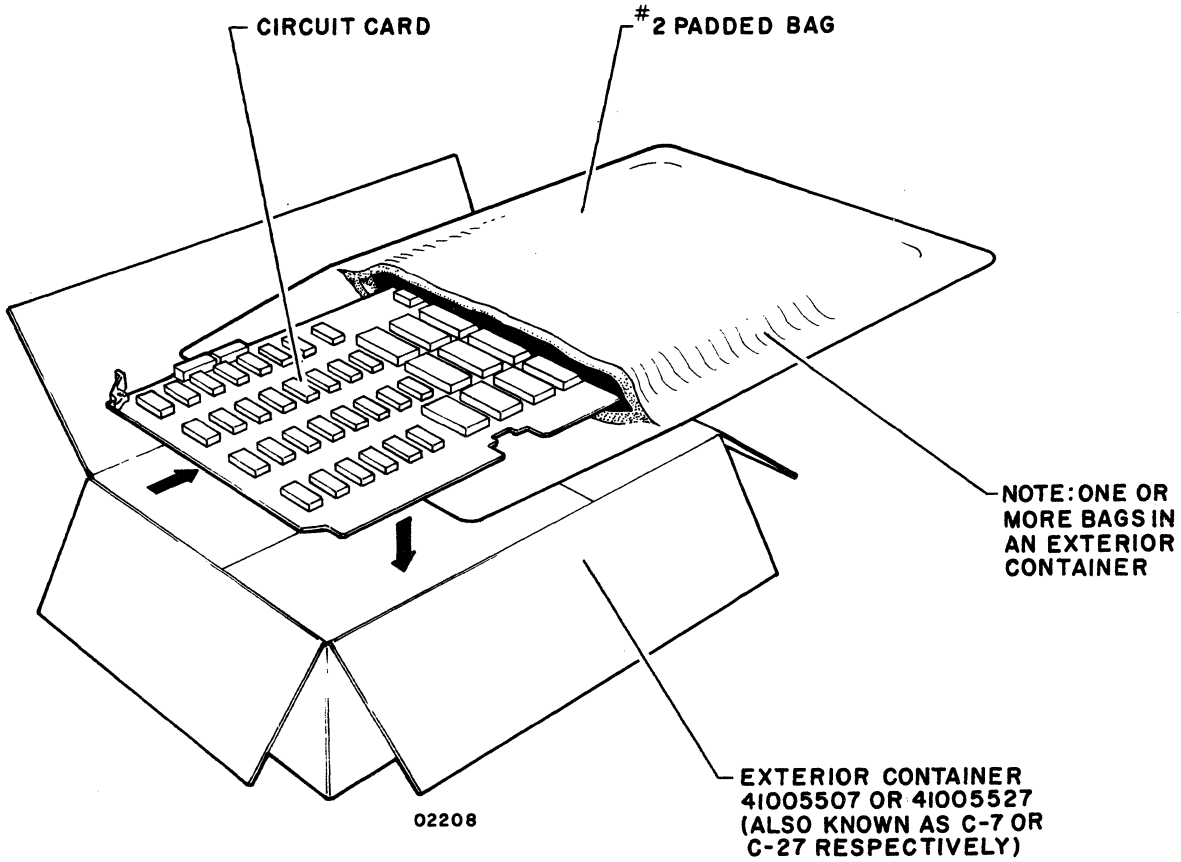


Figure 3-6. Packaging for Circuit Card Modules

NOTE

Shipping the video monitor PC board (6BND) improperly packaged results in damage to the horizontal width adjustment coil. A special shipping container that prevents this damage, part number 41037700, is now available from the parts warehouse. When a video monitor PC board is shipped, this container should be used.

UNCRATING

Following paragraphs describe uncrating for each of the cabinet-level equipments possible in a terminal subsystem. In addition, information is supplied for unpacking lower-level hardware which may reside within the equipments. Save packing material for returning a replaced item (see Crating, earlier in this section, for shipping container requirements).

KEYBOARD DISPLAY

To uncrate the keyboard display, refer to figure 3-1 and proceed as follows:

1) Open top of exterior container and lift cables secured in end frame slits of packaging material.
2) Lift top flaps of end frames and remove keyboard.
3) Remove two "T" blocks interlocked in the end frames.
4) Remove display, with end frames attached, from exterior container.
5) Remove end frames and any remaining packaging material from display.
6) Inspect display and keyboard for any shipping damage.

NONIMPACT PRINTER

To uncrate the nonimpact printer, refer to figure 3-2 and proceed as follows:

1) Open top of shipping carton and remove any packing material.
2) Lift printer, including end caps, from carton.
3) Remove end caps from printer and remove any poly covering.
4) Open paper-access cover and remove restraint from printhead. It may be necessary to remove cabinet top (by unscrewing two retainer-screws at rear of cabinet each 1/4-turn), to reach restraint. This depends on what type of restraint is present and how it is positioned.
5) Inspect printer for possible shipping damage.

IMPACT PRINTER

To uncrate the impact printer, refer to figure 3-3 and proceed as follows:

1) Cut and remove steel strapping and remove pedestal package (optional) from top.
2) Open printer box and remove upper end cushions.

KEYBOARD DISPLAY INSTALLATION

To install a keyboard display, perform the following:

1) Remove unit from shipping/storage container per uncrating procedures.

CAUTION

At no time allow convection to be obstructed around, beside, or above the unit.

2) Place unit on clean, sturdy work surface, e.g., desk top. Leave at least a 4-inch (10.2-cm) clearance on either side and at back of unit for air intake and cooling, and at least 2 feet (61 cm) of nonrestricted airspace above unit. During checkout leave at least 2 feet (61 cm) of work room at back of unit for connecting cables, setting internal switches, etc. Ambient temperature should be per specification in section 1. (Unit may be slid back against wall after other installation procedures are completed, but airspace requirements at sides and top of unit must be maintained.)

3) Refer to figure 3-7 and attach keyboard cable connector to display cabinet where shown. Secure connector with two retaining screws.

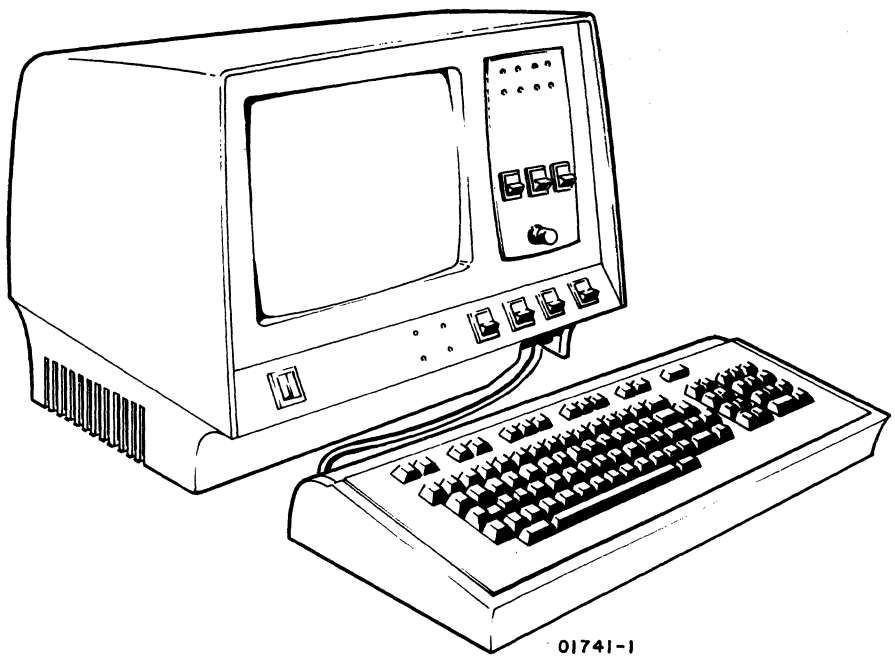


Figure 3-7. Attaching Keyboard to Display Cabinet

4) Remove cabinet hood by unscrewing two mounting screws in rear of cabinet (figure 3-8) and carefully sliding hood back and up.

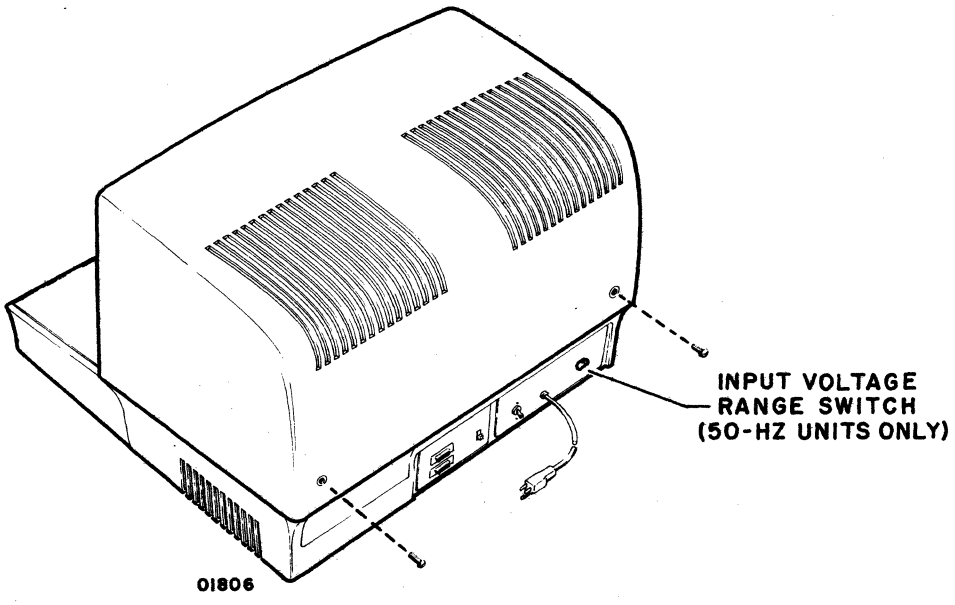


Figure 3-8. Cabinet Hood Removal and 50-Hz Voltage

5) Verify specific site requirements for functions/operations selected via rocker switches provided on logic module circuit cards (figure 3-9). If necessary, question site personnel.

NOTE

Due to the large variety of switch-selectable functions available with this unit, it is important to proceed thoroughly and carefully when setting/checking switches. Most installation/checkout problems encountered involve improper switch settings or misunderstanding of switch operations. Methodically set/check each switch and log each switch setting on the Terminal Subsystem Installation Options Sheet. (Two of these are provided in appendix C of this manual.) When all switch settings are completed, verify that they are properly set for the specific site and application. Copy the switch settings onto a similar sheet in front of the user's operators guide for an on-site record of the functions/operations enabled and disabled.

SECTION 4

THEORY OF OPERATION

The maintenance philosophy for quick field repair requires that all troubleshooting and parts replacement be conducted at the modular level if possible. To help meet this requirement, this section provides identification and descriptions of the replaceable modules and subassemblies in the system. For troubleshooting and remove-and-replace procedures refer to Section 6, Maintenance. For a detailed description of the internal operation of a specific module of any equipment in the terminal, refer to the appropriate manual listed in the foreword.

The following pages define and describe the replaceable modules and subassemblies of the display terminal, matrix printer, nonimpact printer, and tape cassette.

DISPLAY TERMINAL

The display terminal has three major components and a large number of modules within these components. The three major components are:

- Video Monitor
- Logic Module Assembly
- Power Supply

This entire section is devoted to identifying modules and parts of these major components and also related parts necessary for operation of the terminal.

VIDEO MONITOR

The video monitor is composed of the following parts (figure 4-1):

- CRT (cathode-ray tube)
- Video Printed-Circuit Board (or card)
- High-Voltage Transformer

- Vertical Choke
- +15-VDC Regulators
- Yoke (and related parts)

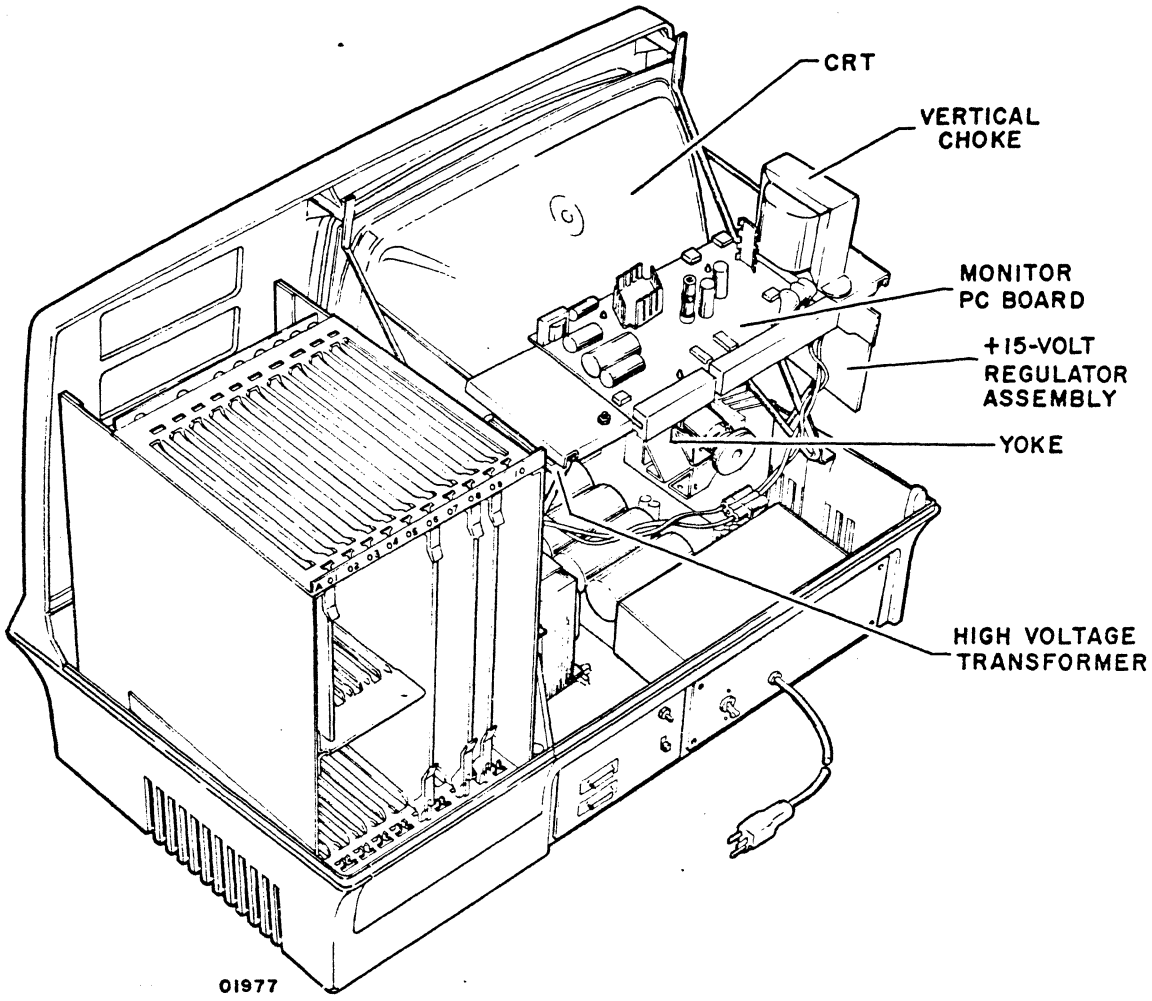


Figure 4-1. Video Monitor Components

Purpose of Video Monitor

The primary purpose of the monitor, of course, is to create a visual display showing graphically information transmitted electrically. It operates similarly to television sets except for certain refinements. The video signal is locked to a display line pattern before it enters the video module; therefore, in the display terminal the "picture" does not "roll" on the screen vertically as it does occasionally on a

television screen. In television, this roll is caused by an out-of-sync condition of the vertical oscillator with the incoming video signal. In the display terminal, the vertical oscillator was eliminated; consequently, the out-of-sync condition cannot occur.

The video signal is created at the logic module and synchronized with the 16-line display pattern. If the video is out-of-sync with the display-line pattern, they can be brought back into synchronization with a screw adjustment (potentiometer) on board 06 in the logic module (see procedure CRT30 in Section 6).

Horizontal drive of the electron beam which creates the images on the screen is accomplished by the monitor circuits, the high-voltage transformer, and a regulated 15-vdc power supply. To provide an extremely high voltage (12,000 vdc) on the anode, the regulated +15 vdc is stepped up considerably (-190 vdc) on the monitor printed-circuit board and, through a rapidly sinking voltage across the primary of the high-voltage transformer, the +12,000-vdc potential is felt on the anode of the crt, thus creating sufficient attraction on the surface of the tube to enable the electron beam to be emitted from the cathode to the phosphor.

Control over light and dark images on the screen is accomplished by the video signal as it acts on the electron beam before it leaves the cathode.

Cathode-Ray Tube

The cathode-ray tube is a replaceable part of the display terminal. Illustrations and procedures for removal are contained in Section 6 (procedure CRT13).

High-Voltage Transformer

The high-voltage transformer is a replaceable component of the monitor (procedure CRT3, Section 6). When the high-voltage transformer is replaced, the anode with the high-voltage diode is replaced also.

WARNING

Never replace high-voltage transformer or touch anode while power is applied. See procedure CRT3 in Section 6.

Video (Monitor) Printed-Circuit Board

The monitor printed-circuit (PC) board is a replaceable item. Procedures are described in Section 6 (procedure CRT11).

The monitor printed-circuit board contains the circuitry required to generate initial high voltages (-190, +46, and +465) required to drive and control the electron beam. The board also contains a +5-vdc regulator and the monitor adjustments used to create clear and distinct characters on the screen (see procedure CRT26).

Vertical Choke

The vertical choke coil is a replaceable item of the video monitor assembly (procedure CRT16). During refresh, the coil plays an important part in directing sweep voltage through the vertical yoke coil and suppressing unwanted oscillations in the vertical output circuit.

Yoke

The yoke assembly is a replaceable item (procedure CRT15). Current flowing through yoke is precisely controlled in both axes to regulate the amount of deflection taken by the electron beam on its course to the crt phosphor. The yoke is not expected to fail unless physically damaged, but adjustment is always required when a new crt is installed (procedure CRT14).

+15-VDC Regulators

There are two +15-vdc regulators mounted on the side of the video module on a heat sink (figure 4-2). The regulators maintain a constant +15-vdc supply to the monitor printed-circuit board, which uses the voltage to create the high voltage required to drive and control the electron beam.

The regulators create a regulated voltage from the +23 vdc ±7 vdc generated by the bulk power supply board (discussed later). Procedures are provided for removing the regulators (transistors) in Section 6 (procedure CRT4). The regulators are replaced when the output measured from the emitter-to-ground is not 15 vdc while +23 vdc is measured from the base-to-ground (input voltage). The collector is not used.

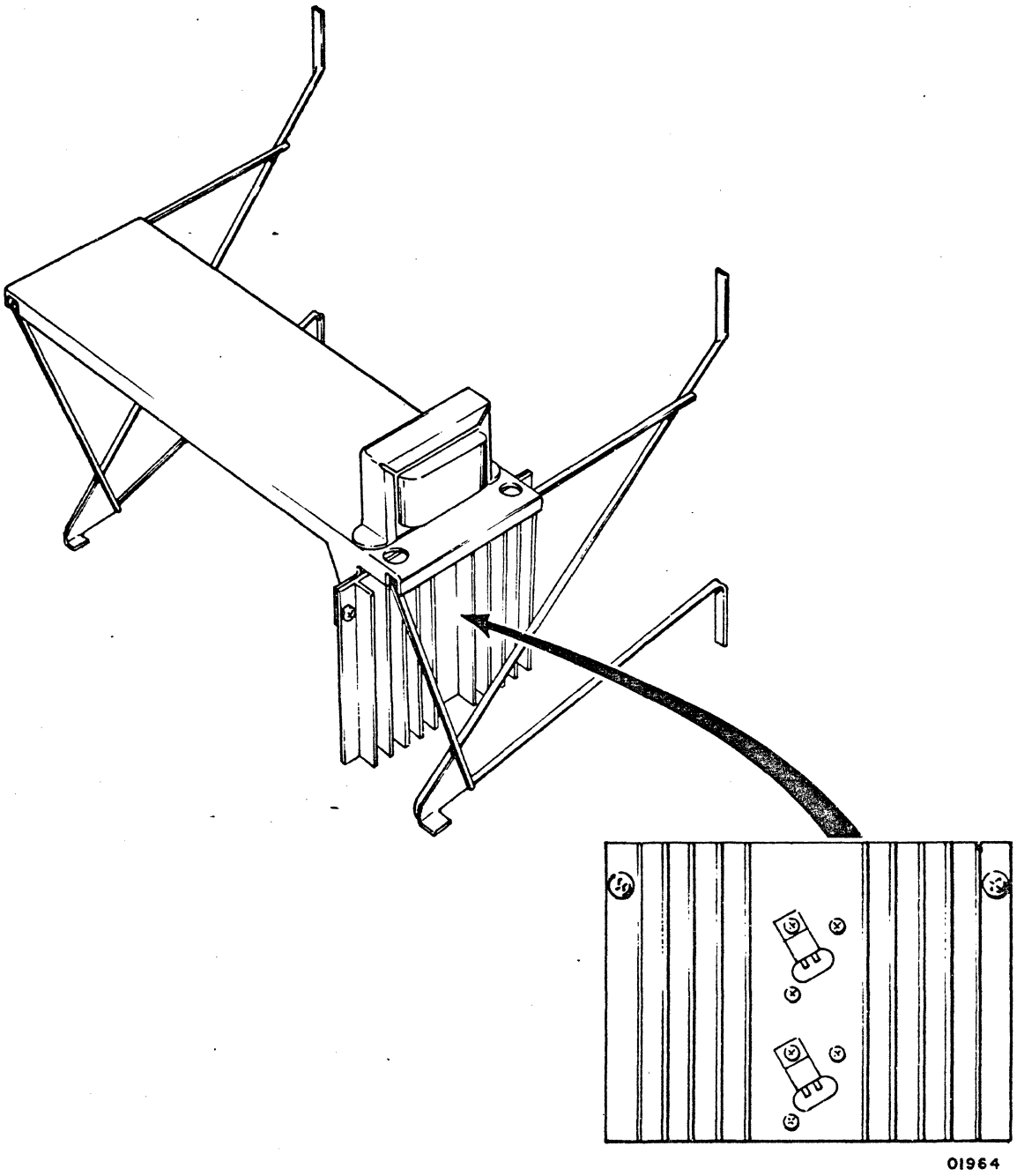


Figure 4-2. Video Monitor +15-VDC Regulators

LOGIC MODULE ASSEMBLY

All options, features, and logic are contained in the logic module card rack. The basic logic includes a processor board (slot 09), a memory board (08), a refresh board (06), and a +5-vdc regulator board (03). Other slots in the card rack are reserved for other options and features (see figure 4-3).

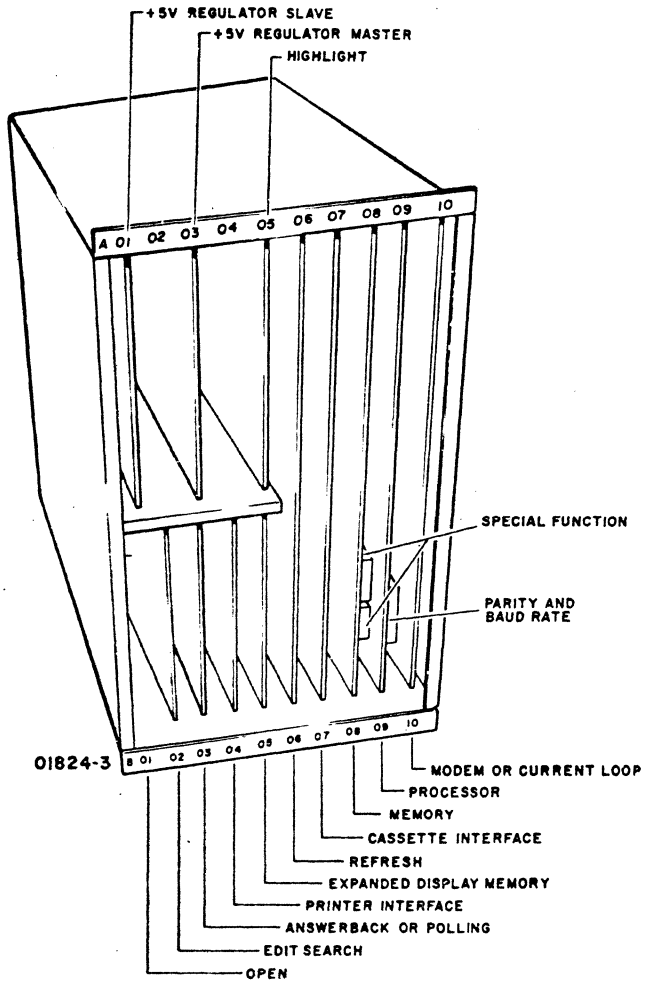


Figure 4-3. Logic Module Assembly/Card Rack

Processor Board

The processor board contains a microprocessor with an instruction repertoire of nearly 100 instructions. It also contains the logic necessary to support the functions of the microprocessor and to generate a regulated -5-vdc supply required on the board.

Memory Board

The memory board contains the read/write memory (RAM) required to hold incoming data for display on the crt. As many as 1028_{10} 8-bit character codes can be stored for display, allowing 12 lines of characters (80 characters per line) to be displayed continually on the basic machine. All this can be doubled by adding extended memory option for a 24-line display (80 characters per line). Other options are provided (paging, etc.) on other boards.

The memory board also contains read-only memory (ROM). ROM is the control program which controls operation of the terminal functions. In this machine, because ROM is neither software nor hardware, it is called firmware. (Another term, controlware, refers to a control program which can be fed into read/write memory, RAM, to change the application of the terminal without burning the program into the logic. Controlware is similar to software, since it can be stored in the same manner as regular software programs, but performs hardware control functions rather than solve problems or manipulate data.)

Refresh Board

The refresh board contains the logic necessary to convert character codes received from RAM (random access memory) into electrical pulses in order to create the correct dot pattern on the display for the various characters. Logic is provided to lock the video signals into sync with the predefined display-line pattern. If the video becomes out-of-sync with the display-line pattern, the entire display expands and contracts (blooms) in a pulsating manner (see procedure CRT30, Section 6).

+5-VDC Regulator Board

The +5-vdc regulator board (03) in the logic card rack maintains the logic voltage level required by most of the logic. It also provides the current which trips the circuit breaker when an overvoltage condition is detected.

Indicators on the board, when illuminated, indicate that various voltages are present. If the red LED indicator is on, current is being passed in the +5-volt circuits. If the yellow LED indicator is on, current is passing in the +23-vdc circuits. If the green LED indicator is on, current is passing in the -24-vdc circuits. (The +23-vdc and -24-vdc voltages originate on the bulk power supply board.) When more features and options are required, another +5-vdc regulator can be added (slot 01).

POWER SUPPLY

The power supply in the display terminal is truly modular in that each unit is replaceable without disturbing other units. The primary supply is the bulk power supply board (figure 4-4) which generates all basic (low) voltages from the ac voltage received from the input ac transformer. The power supply also includes the +5-vdc regulator card in the logic card rack (see previous discussion) and a number of individual voltage regulators. Individual voltage regulators used for special purposes include the +5-volt regulator on the video (monitor) printed-circuit board and the -5-volt regulator on the processor board.

The following power supply components are replaceable individually:

- Bulk Power Supply Board
- AC Entry Transformer
- AC Entry Panel
- +5-VDC Regulator Board (discussed in logic module)

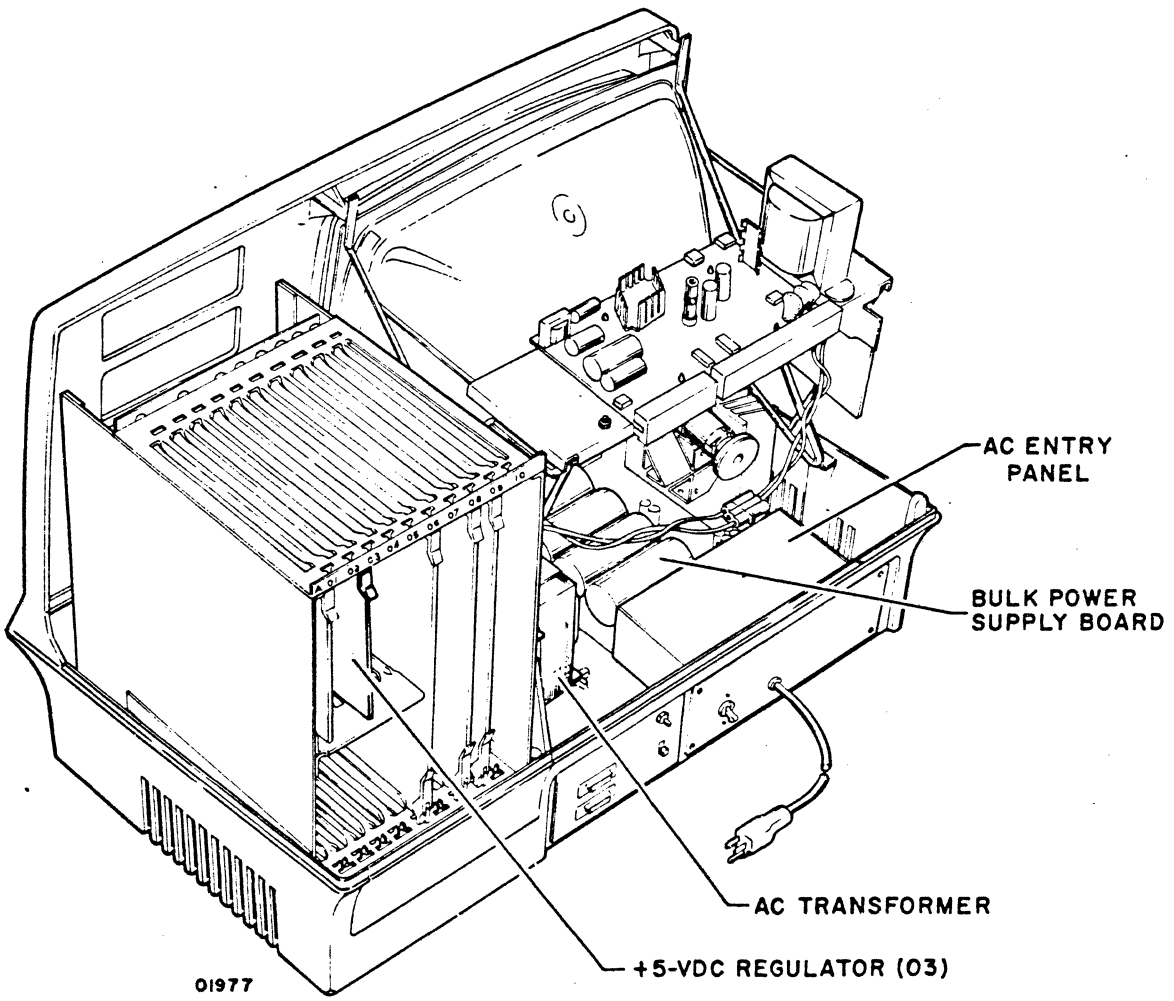


Figure 4-4. Power Supply Components

Bulk Power Supply Board

The bulk power supply board provides -9 vdc, +12 vdc, -12 vdc, +23 vdc, and -24 vdc to the logic module and video monitor.

There are three indicator lights on the bulk power supply board which light when the three basic voltages are present (lights do not indicate correct voltage levels). If two green lights illuminate, the -9-vdc and -12-vdc currents are present. If the yellow indicator illuminates, the +12-vdc current is present. For more detailed descriptions and illustration, refer to Section 6 (procedure CRT17).

AC Entry Transformer

The ac entry transformer receives ac input voltage from the ac entry panel on its primary windings and provides the required ac voltages to the bulk power supply board. It is replaceable (procedure CRT19).

AC Entry Panel

The ac entry panel contains the circuit breaker and the ac entry power cord. When power cord or circuit breaker is faulty, the entire unit (box) is replaced (procedure CRT5, Section 6).

+5-VDC Regulator Board

The +5-vdc regulator board is a module in the logic module assembly (see previous discussion).

MISCELLANEOUS COMPONENTS

The following components are required in addition to the basic components described previously (video, logic, and power supply assemblies). All are replaceable components.

- Test Mode Switch (procedure CRT6, Section 6)
- Master Clear Switch (procedure CRT7, Section 6)
- Switches and Indicator Panel (procedures CRT10, CRT27, and CRT28, Section 6).

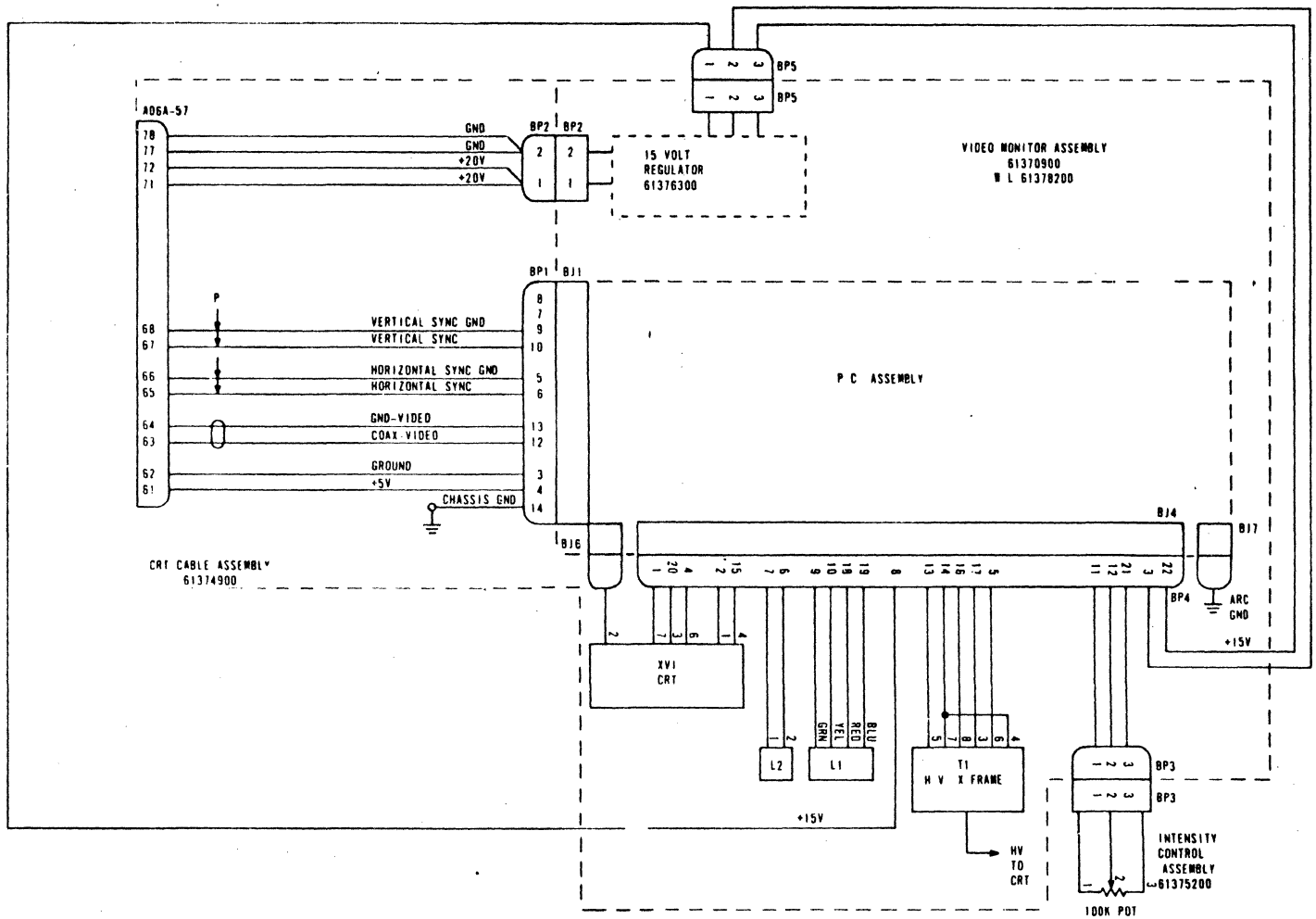
- Keyboard Printed Circuit Board
- Intensity Switch (procedure CRT23, Section 6)
- Audible Alarm (procedure CRT29, Section 6)

SECTION 5

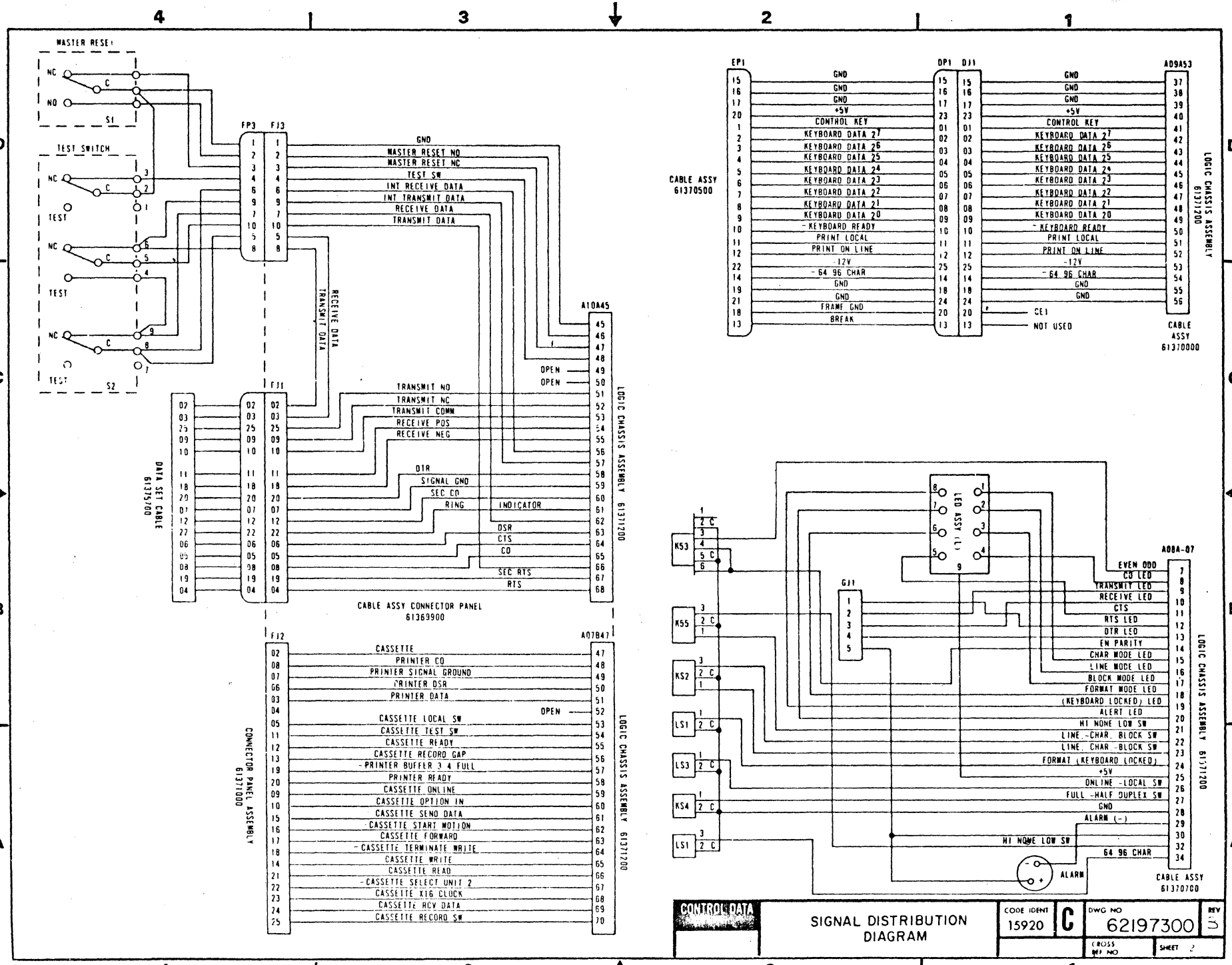
DIAGRAMS

This section contains the signal distribution diagrams for the display terminal. Figure 5-1 shows the cabling for the display terminal. Figure 5-2 shows the card placement chart for the logic module.

SHEET REVISION STATUS			REVISION RECORD						
2	1	REV	CO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	A	A	10653-4	RELEASE CLASS A	—	3/5/75	—	[illegible]
B	B	B	CD10880	REVISED DWG ONLY	JM 7/14/75	9/10/75	[illegible]	[illegible]



REFERENCE DRAWING	CONTROL DATA		TITLE
			SIGNAL DISTRIBUTION DIAGRAM
COMPONENTS EXCEPT AS NOTED	FIRST USED ON	CC6B1	
TOLERANCE / VALUE / RATING	DWN	M. Dietz 4/17/75	CODE IDENT 15920 / C / DRAWING NO 62197300
RES	CHKD	[illegible] 4-22-75	
CAP	ENGR	[illegible] 4-29-75	
	MFG	[illegible] 5-5-75	SCALE / CROSS REF NO / SHEET 1 OF 2
	APPR	[illegible] 9-29-75	



CONTROL DATA

SIGNAL DISTRIBUTION DIAGRAM

CODE IDENT		DWG NO	REV
15920	C	62197300	D
CROSS REF NO		SHEET 2	

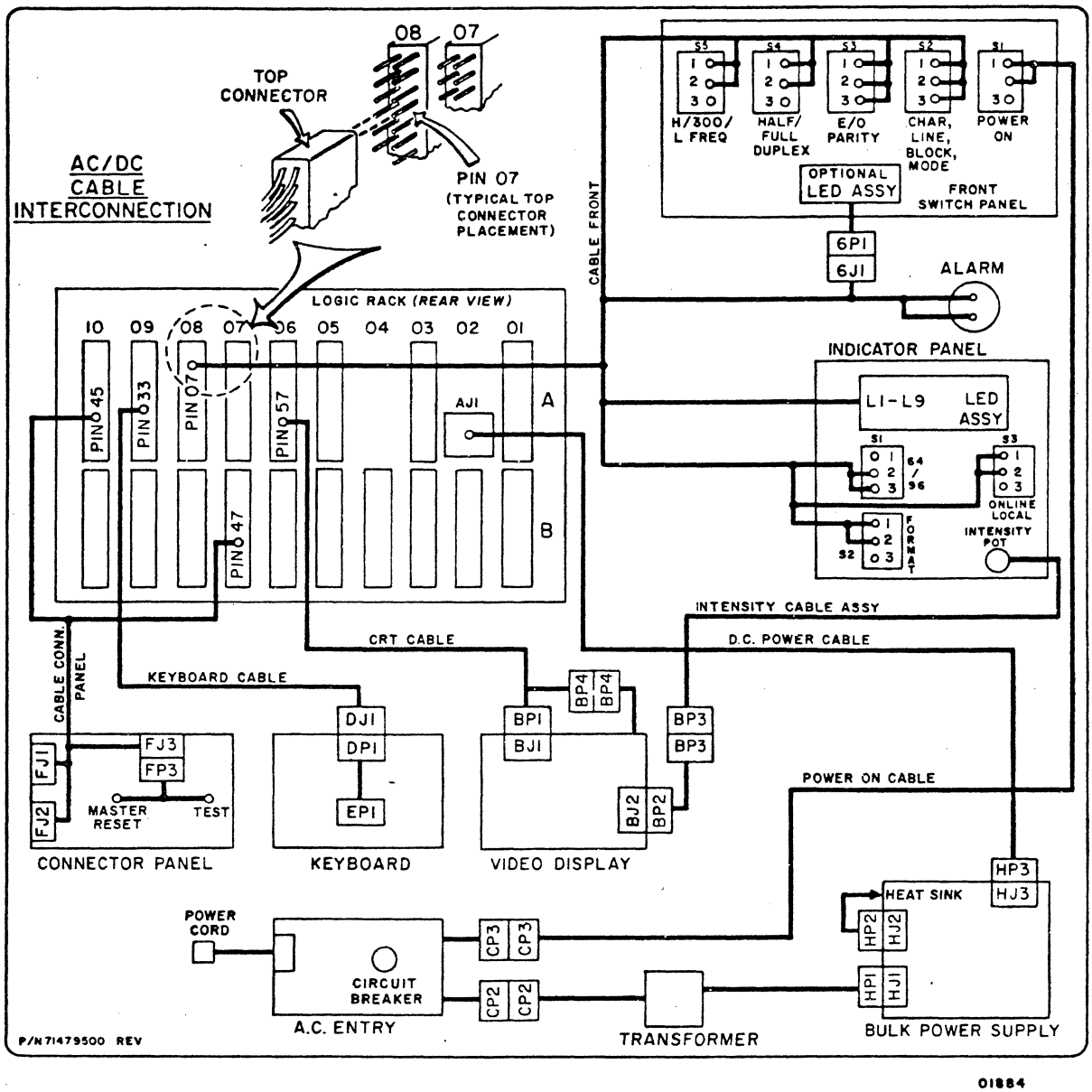


Figure 5-1. Display Terminal Cabling

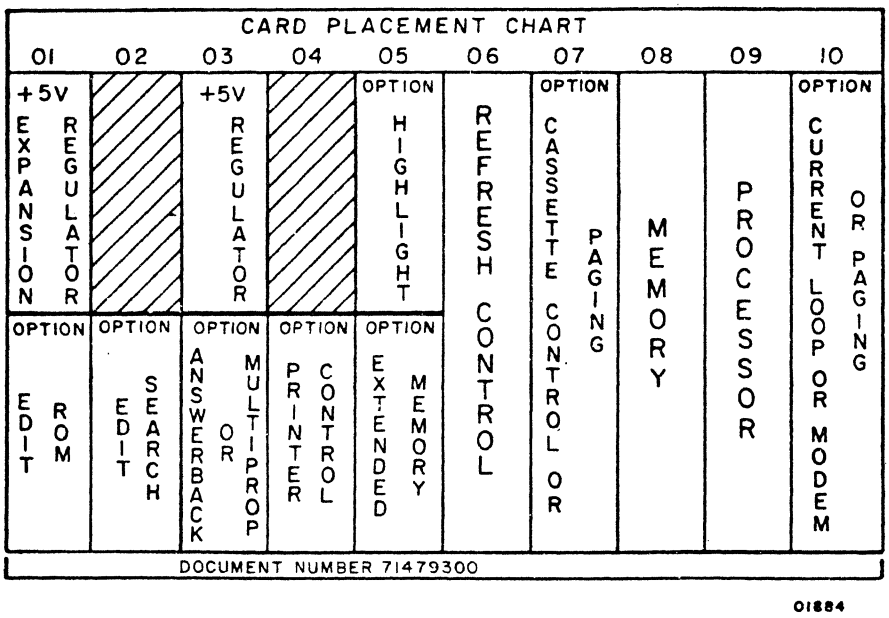
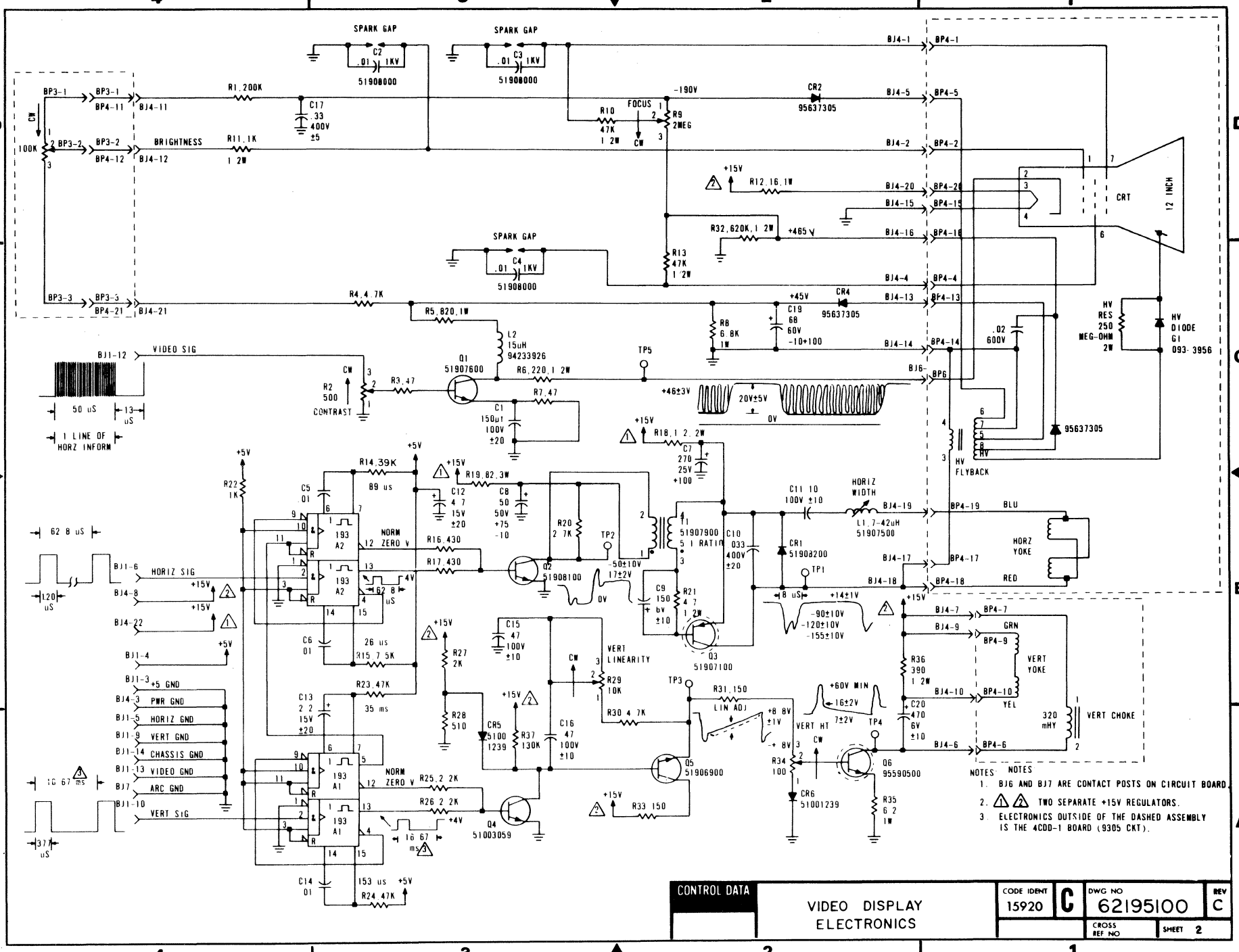


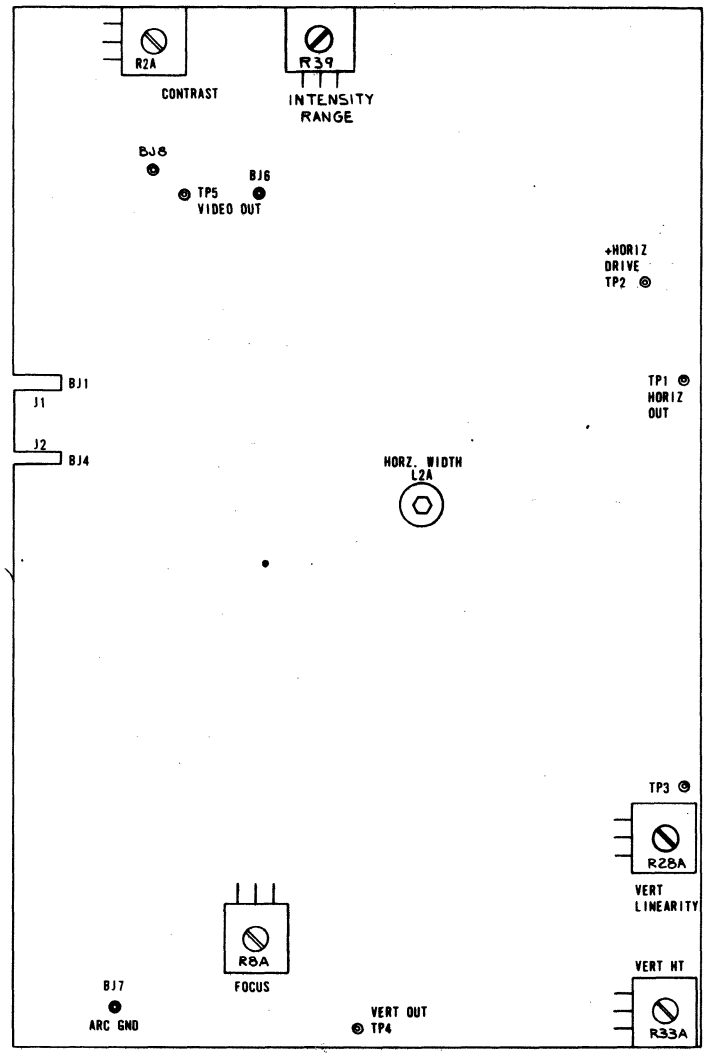
Figure 5-2. Card Placement Chart



NOTES
1. BJ6 AND BJ7 ARE CONTACT POSTS ON CIRCUIT BOARD.
2. ① ② TWO SEPARATE +15V REGULATORS.
3. ELECTRONICS OUTSIDE OF THE DASHED ASSEMBLY IS THE 4CDD-1 BOARD (9305 CKT).

CONTROL DATA	VIDEO DISPLAY ELECTRONICS	CODE IDENT 15920	C	DWG NO 62195100	REV C
				CROSS REF NO	SHEET 2

SHEET REVISION STATUS			REVISION RECORD						
2	1	REV	CO	DESCRIPTION	DRFT	DATE	CHKD	APP
—	—	—	—	RELEASED CLASS "C"	JM	8-30-76		
A	A	A	10653-67	RELEASED CLASS A		11/9/76		
B	B	B	CD11747	REVISED PER ECO		12/7/76		
C	C	C	CD12107	REVISED PER ECO		9-21-77		
D	D	D	CD12492	REVISED PER ECO	JM	10/17/77		
E	E	E	12855	REVISED PER ECO	E.E.	4-21-78		
F	F	F	CD13505	REVISED PER ECO	TG	5-31-79		
G	G	G	13647	REVISED PER ECO	WJH	8-29-79		
H	H	H	14001	REVISED PER ECO	EE	5/5/80		
J	J	J	14455	REVISED PER ECO	EE	1/9/81		



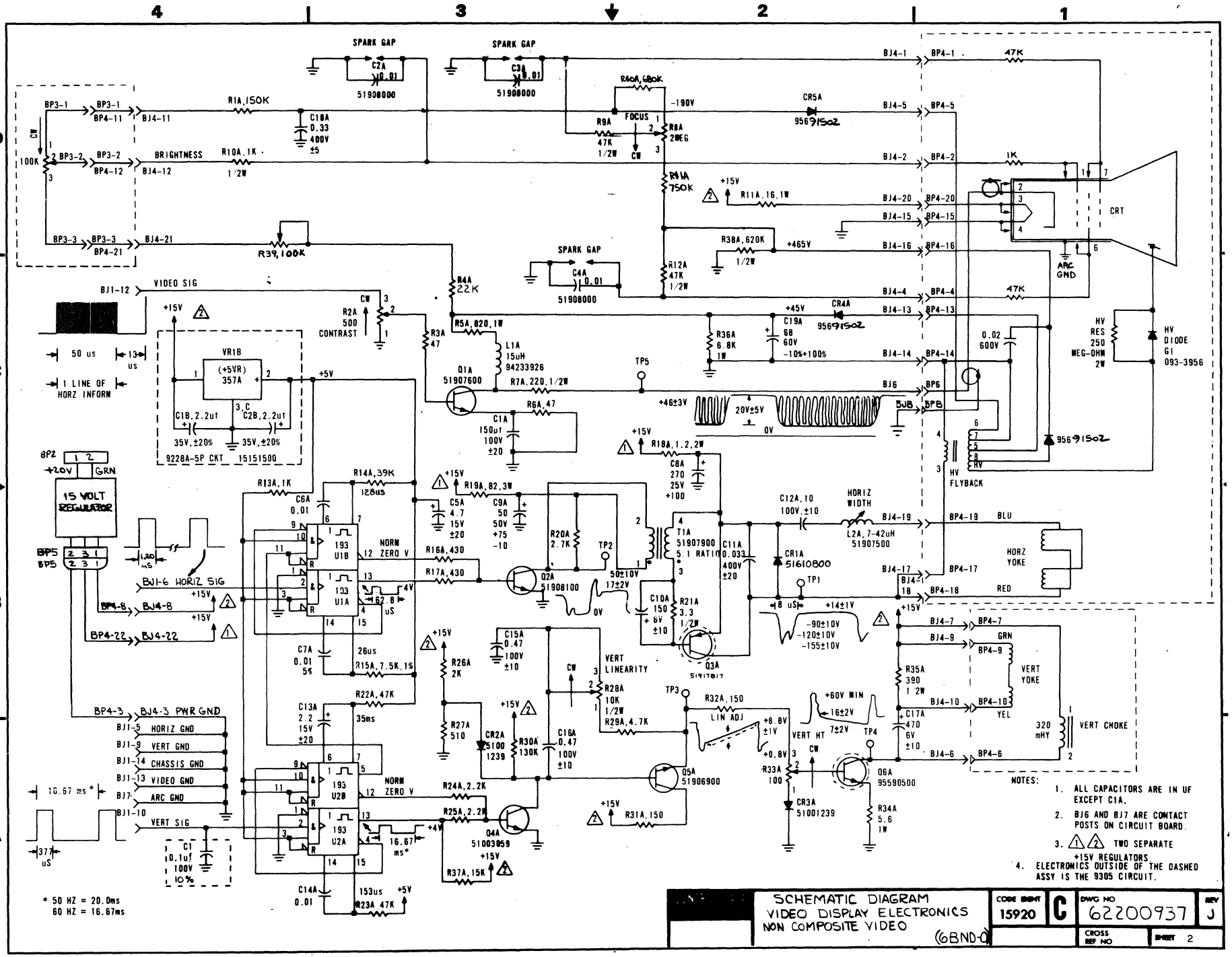
REFERENCE DRAWING			
ASSY 90460619			
COMPONENTS, EXCEPT AS NOTED	TOLERANCE	VALUE	RATING
RES	5%	OHMS	1/4W
CAP			

FIRST USED ON	CC6BI-A	
DWN	J. MALMQUIST	8-30-76
CHKD		10-4-76
ENGR		10-4-76
MFG		
APPR		10-21-76

TITLE SCHEMATIC DIAGRAM
VIDEO DISPLAY ELECTRONICS
NON COMPOSITE VIDEO
(6BND-0)

CODE IDENT 15920 | C | DRAWING NO 62200937

SCALE — | CROSS REF NO | SHEET 1 OF 2


SCHEMATIC DIAGRAM
VIDEO DISPLAY ELECTRONICS
NON COMPOSITE VIDEO
(6BND-0)
CODE IDENT 15920
C
DWG NO 62200937
REV J
CROSS REF NO
SHEET 2
NOTES:
1. ALL CAPACITORS ARE IN UF EXCEPT C1A.
2. BJ6 AND BJ7 ARE CONTACT POSTS ON CIRCUIT BOARD.
3. 1 2 TWO SEPARATE +15V REGULATORS.
4. ELECTRONICS OUTSIDE OF THE DASHED ASSY IS THE 9305 CIRCUIT.
* 50 HZ = 20.0ms
60 HZ = 16.67ms
SPARK GAP
CRT
HV FLYBACK
HV DIODE GI 093-3956
HV RES 250 MEG-OHM 2W
15 VOLT REGULATOR
VERT YOKE
HORZ YOKE
VERT CHOKE
VERT LINEARITY
HORIZ WIDTH
VERT HT
LIN ADJ
CONTRAST
BRIGHTNESS
FOCUS
ARC GND
VIDEO SIG
HORIZ SIG
VERT SIG
HORIZ GND
VERT GND
CHASSIS GND
VIDEO GND
PWR GND

BACK PANEL PIN NO.	5BJD INPUT/OUTPUT CARD 01	5BLD READ WRITE CARD 02	5BKD UNIT CONTROL CARD 03
1	+5	+5	+5
2	+5	+5	+5
3	+5	+5	+5
4	+5	+5	+5
5	+12		
6	+12		
7	-12		
8	-12		
9	START MOTION	-BOT/EOT UNIT 1	-BOT/EOT UNIT 1
10	⚠1 SELECT UNIT 2	READ DATA 1 UNIT 1	READ DATA 1 UNIT 1
11	FORWARD	READ DATA 0 UNIT 1	READ DATA 0 UNIT 1
12	TERMINATE WRITE	-WRITE ENABLE UNIT 1	-WRITE ENABLE UNIT 1
13	BOT/EOT	DRIVE 1 WRITE PROTECT 1	DRIVE 1 WRITE PROTECT 1
14	PLAY	READY UNIT 1	READY UNIT 1
15	LINE/LOCAL	-GO UNIT 1	-GO UNIT 1
16	RECORD	PED TO DECK	PED TO DECK
17	READY		
18	RECORD GAP	-BOT/EOT UNIT 2	-BOT/EOT UNIT 2
19	RECEIVE CLK	READ DATA 1 UNIT 2	READ DATA 1 UNIT 2
20	READ DATA	READ DATA 0 UNIT 2	READ DATA 0 UNIT 2
21	READ	-WRITE ENABLE UNIT 2	-WRITE ENABLE UNIT 2
22	WRITE	DRIVE 2 WRITE PROTECT 2	DRIVE 2 WRITE PROTECT 2
23	WRITE DATA	READY UNIT 2	READY UNIT 2
24	TIMES 16 CLK	-GO UNIT 2	-GO UNIT 2
25	DELAY CNT ENABLE	DELAY CNT ENABLE	
26	SELECTED UNIT READY	SELECTED UNIT READY	⚠3
27	-SELECTED BOT/EOT	-SELECTED BOT/EOT	STOP/GO
28	-STOP READ	-STOP READ	FORWARD/REV
29	RECEIVE CLK	RECEIVE CLK	SLOW/FAST
30	READ NRZ DATA	READ NRZ DATA	WRITE SELECT
31	GO F/F	GO F/F	READ ENABLE
32	-GO F/F	-GO F/F	WRITE DATA
33	WRITE ENABLE	WRITE ENABLE	READ DATA
34	END WRITE	END WRITE	-READ DATA
35	READ ENABLE	READ ENABLE	BOT/EOT
36	DATA FROM DISPLAY	DATA FROM DISPLAY	READY
37	TIMES 16 CLK	TIMES 16 CLK	WRITE ENABLE
38	SELECT DELAY CLK	SELECT DELAY CLK	SIDE A/B
39	-CLR RECORD GAP	-CLR RECORD GAP	
40	-CLR RAMP DOWN	-CLR RAMP DOWN	
41	-READY + BUSY UNIT 1	-READY + BUSY UNIT 1	
42	SELECT UNIT 1	SELECT UNIT 1	
43	-READY + BUSY UNIT 2	-READY + BUSY UNIT 2	
44	SELECT UNIT 2	SELECT UNIT 2	
45	-PU CLR	-PU CLR	-PU CLR
46	RECORD GAP	RECORD GAP	RECORD GAP
47	-OUT OF TAPE UNIT 1		-OUT OF TAPE UNIT 1
48	-OUT OF TAPE UNIT 2		-OUT OF TAPE UNIT 2
49	-REWIND		-REWIND
50	FORWARD		FORWARD
51	WRITE		WRITE
52	UNLOAD UNIT 1		UNLOAD UNIT 1
53	UNLOAD UNIT 2		UNLOAD UNIT 2
54			
55			
56			
57	OUT OF TAPE IND 1		⚠4
58	⚠2 UNLOAD UNIT 1		STOP/GO
59	READY + -BUSY IND 1		FORWARD/REV
60	LINE/LOCAL UNIT 2		SLOW/FAST
61	READ ACTIVE IND		WRITE SELECT
62	PLAY UNIT 1		READ ENABLE
63	WRITE ACTIVE IND		WRITE DATA
64	RECORD UNIT 1		READ DATA
65	UNLOAD UNIT 2		-READ DATA
66	RECORD UNIT 2		BOT/EOT
67	OUT OF TAPE IND 2		READY
68	PLAY UNIT 2		WRITE ENABLE
69	READY + -BUSY IND 2		SIDE A/B
70	LINE/LOCAL UNIT 2		
71			
72			
73			
74			
75			
76			
77	GND	GND	GND
78	GND	GND	GND
79	GND	GND	GND
80	GND	GND	GND

⚠1 I/O CABLE

⚠2 INDICATOR AND SWITCH CABLE

⚠3 TAPE DRIVE #1 CABLE

⚠4 TAPE DRIVE #2 CABLE

CONTROL DATA

SIGNAL DISTRIBUTION

CODE IDENT 15920 | C | DWG NO 62197700 | REV B | SHEET 17 | CROSS REF NO

SECTION 6

MAINTENANCE

This section identifies and isolates a malfunction in the terminal to a replaceable module, or where equipment design does not permit this, to a replaceable subassembly, part, or cable. It also lists corrective actions and, where necessary, includes procedures to carry out a corrective action. This section's main diagnostic tool is the decision logic table, which is described later. First, however, is a discussion of the approach to emergency maintenance, which is followed by the preventive maintenance tasks that the customer engineer must perform during emergency maintenance.

EMERGENCY MAINTENANCE

The following is a suggested procedure that a customer engineer should follow when responding to a customer's complaint or request for service. First, before leaving for the customer's site, he should call the customer contact and determine, if possible, the extent of the problem and whether it concerns the crt display, tape cassette, or printer, and, if the printer, ask which type of printer it is. Then, he should refresh his knowledge of the equipment by reviewing the available documentation on the terminal (see foreword for a list of manuals). He should especially note which parts are provided as spares on site (see Spare Parts List, Section 8) and which tools and equipment he will need (see Maintenance Aids, this section).

Upon arriving at the customer's site, the customer engineer should again talk to the customer contact and ask for directions to and identification of the malfunctioning equipment. If the person who initiated the complaint is available, the customer engineer should interview that person.

Based on what he learns, the customer engineer can then proceed in one of two ways. If he has the knowledge and the familiarity with the terminal to recognize that a specific trouble points to a particular equipment in the system, he could go to the diagnostic decision logic table for that equipment and begin troubleshooting, using the table. Otherwise, he could start from scratch and perform a complete check of the terminal. To do this, he starts with the first diagnostic decision logic table for the crt display, completes the table, and continues with the tables for the line printers, and/or tape cassette in that order until he corrects the fault.

Regardless of which method he chooses, the customer engineer should first walk around the terminal and visually inspect it for loose cables or connectors, damaged cables, burnt or broken insulation, excessive dirt, etc. He should also note whether any component smells burnt or is overheating.

Finally, after correcting the problem, the customer engineer should always perform preventive maintenance as outlined in the following paragraphs. After completing preventive maintenance, he should verify that the system is fully operational by running all diagnostics. Before leaving, he should again talk to the customer contact. And, more importantly, the customer engineer should never leave the site without first receiving assurance that he has satisfied the customer.

PREVENTIVE MAINTENANCE

Preventive maintenance describes those tasks that shall be performed during emergency (corrective) maintenance by the one answering the emergency-maintenance call. A preventive maintenance task (PMT) table and preventive maintenance task procedures (PMTP) describe these tasks. Also, the one answering the emergency-maintenance call must verify that the equipment operator has been performing the preventive-maintenance tasks that are his, or her, responsibility (the operators guide describes these tasks) at least once a month under normal operating conditions in an office environment such as that found in most commercial banks.

PREVENTIVE MAINTENANCE TASKS (PMT)

The listing of preventive maintenance tasks, table 6-1, defines the items to be performed or checked each time the terminal requires repair. Follow this table for best equipment performance and to reduce failures.

CAUTION

Do not use solvents to clean keyboard. Solvents can cause defective key-switch operation.

TABLE 6-1. PREVENTIVE MAINTENANCE TASKS

ITEM	PROCEDURE	APPROXIMATE TIME (MINUTES)
1	Clean keyboard	2
2	Clean exterior surface	2
3	Clean viewing screen	2
4	Visually inspect all cables and wires for insulation breakdown or other damage.	5
5	Check keycaps for signs of wear or breakage.	1
6	Check for foreign objects inside cabinet.	5

PREVENTIVE MAINTENANCE TASK PROCEDURES (PMTP)

The following describes the procedures listed in the preventive maintenance tasks table. However, before working inside the equipment of the terminal, remove power by performing procedure CRT2 (which appears after the diagnostic decision logic tables of this section).

NOTE

When the POWER ON/OFF switch is turned OFF, it should not be turned ON again within 30 seconds or the circuit breaker may trip.

1) Remove dust from keyboard with a soft-bristled brush. Do not use solvents to clean keyboard.

2) Clean exterior surfaces of cabinet with a damp, lint-free cloth.

3) Clean face of viewing screen with a clean, soft cloth and a mild glass-cleaning solution. If a spray is used, do not allow liquid to flow off screen (it is preferable to spray cloth rather than screen).

4) Remove cabinet hood (procedure CRT21), visually inspect all cables and wires for evidence of insulation breakdown and wear. Replace damaged wires if possible. Check electrical connections to ensure they are not loose. Check electronic components for signs of deterioration, such as overheating or aging.

5) Check keycaps for signs of wear or breakage and replace keyboard if necessary (procedure CRT18).

6) Check for foreign objects such as bits of wire or solder.

DIAGNOSTIC AND CORRECTIVE MAINTENANCE

Diagnostic decision logic tables (DDLT's), or simply decision tables, identify and isolate a malfunction in the terminal to a replaceable module or, where equipment design does not permit this, to a replaceable subassembly, part, or cable. The tables include references to test-mode operation and corrective procedures as required. There is a separate set of tables and repair procedures for each equipment of the terminal; the display terminal itself, impact printer, nonimpact printer, and tape cassette.

Anyone totally unfamiliar with the terminal should begin with the first sheet of the DDLT for the display terminal and continue through each DDLT for each peripheral equipment in the order directed by the DDLT's.

What is a diagnostic decision logic table? The diagnostic decision logic table is a specialized format for displaying logic in a way that is superior to the conventional logic flowchart because the logic is more visible. Figure 6-1 is an example of a diagnostic decision logic table (note that the example chosen is for a card reader of a different system. It was selected and used here merely for the purpose of explanation). The value of the DDLT is that it analyzes a situation down to specific conditions and then directs the customer engineer to those actions that will correct the situation, with the most likely action listed first. Basically, the table is arranged in four sections, or quadrants. These quadrants are called Conditions, Situations, Actions, and Sequence of Actions.

CONDITIONS

The upper-left quadrant of a DDLT contains the test conditions, questions to be answered, which are in the form of questions that can be answered yes or no. It also includes any basic assumptions, such as "Power cord is connected to ac outlet."

SITUATIONS

The upper-right quadrant contains vertical columns, called situations, each summarizing a unique set of conditions. Each column allows one to analyze each set of conditions, point-by-point, to find a set that matches the existing situation. Note that each test condition, or question, can be answered with a yes (Y) or a no (N).

VISUAL CHECKS	1	2	3	4	5	6	7	8	9	10	11
Assume:											
Card-reader power cord is connected to ac outlet. Power is on. If power is not on, see procedure 1.											
Conditions:											
Is POWER ON indicator illuminated?	Y	N	N	N	Y	Y	Y	Y	Y	Y	
Cycle rear-panel toggle switch S1. Press READ CHECK indicator/switch. Do all other indicators illuminate?	Y	N	N	Y	N	N	Y	Y	Y	Y	
Do any indicators illuminate?	-	N	N	-	N	Y	-	-	-	-	OTHER
Press and release RESET indicator/switch. Is RESET indicator illuminated?	Y	-	-	-	-	-	N	Y	Y	Y	
Do all three motors start when RESET indicator/switch is pressed (observe card-feed drum and coils of stacker motors)	Y	-	-	-	-	-	-	N	N	Y	
Do any motors start?	-	N	Y	-	-	-	-	Y	N	-	
Did motor power drop within 10 to 30 seconds after releasing RESET indicator/switch?	Y	-	-	-	-	-	-	-	-	N	
Actions:											
Go to sheet 2, Electromechanical Checks.	X	-	-	-	-	-	-	-	-	-	-
Check that toggle switch S1 (rear panel) is up.	-	1	-	-	-	-	-	-	-	-	-
Check that removable power cord is connected securely to card reader.	-	2	-	-	-	-	-	-	-	-	-
Check fuses (rear panel).	-	3	-	-	-	-	-	-	-	-	-
Check switch board and associated cabling (procedure 40). Replace, if required (procedure 41).	-	4	-	2	2	2	3	-	-	-	-
Refer to CB10X manual.	-	5	4	4	3	4	5	3	3	3	-
Check +17-volt power supply (procedure 36).	-	-	1	-	-	-	-	-	-	-	-
Check for +17 vdc between ground and control-board connector P2, pins 2 and 3 and between ground and switchboard connector, pins 2 and 3 (two pins joined by foil).	-	-	2	-	-	-	-	-	-	-	-
Check cable between control board and switch board.	-	-	3	-	-	-	-	-	-	-	-
Replace lamp in failing indicator (procedure 41).	-	-	-	1	-	1	-	-	-	-	-
Check failing indicator and/or switch (procedure 40) and replace, if required (procedure 41).	-	-	-	3	-	3	-	-	-	-	-
Check READ CHECK indicator/switch (procedure 40) and replace, if required (procedure 41).	-	-	-	-	1	-	-	-	-	-	-
Check +5-volt power supply (procedure 35).	-	-	-	-	-	-	1	-	-	-	-
Check RESET indicator/switch (procedure 40) and replace, if required (procedure 41).	-	-	-	-	-	-	2	-	-	-	-
Replace control board (procedure 44).	-	-	-	-	-	-	4	-	2	2	-
Check for ac power at motor connectors (procedure 37).	-	-	-	-	-	-	-	1	-	-	-
Check failing motor. Replace motor, if required (procedure 46 for card-feed motor, or procedure 47 for card-stacker motor).	-	-	-	-	-	-	-	2	-	-	-
Check common cable connections to motors.	-	-	-	-	-	-	-	-	1	-	-
Check that T0 switch (control board) has labeled side, T0, up.	-	-	-	-	-	-	-	-	-	1	-
Call Regional Tech Support.	-	-	-	-	-	-	-	-	-	-	X

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Figure 6-1. Example of a Diagnostic Decision Logic Table

An irrelevant condition has a hyphen (-) in its respective answer block. The example chosen has 11 unique situations, numbered from one to 11, left to right. The shaded area in the example shows the four conditions that define situation number two. That is, the POWER ON indicator does not illuminate; all other indicators do not illuminate when READ CHECK indicator/switch is pressed; no single indicator illuminates; and no motors start.

When one uses the tables, he should search for the vertical column that contains the exact conditions that match the existing situation, beginning at the left and examining all conditions in the first column before moving to the right and the next column. Any overriding condition or situation always appears first. Here, in the example, column 1 identifies an everything-is-normal situation for the tests made. Therefore, the Actions quadrant in the lower left of the table directs the customer engineer to "Go to sheet 2, Electromechanical Checks." The customer engineer then goes to sheet 2 of the table and does not waste time with further examination of sheet 1. (Note that an "X" is used in the Actions quadrant when it is the only action to be taken.)

ACTIONS

The lower-left quadrant lists actions to correct a situation.

SEQUENCE OF ACTIONS

The lower-right quadrant lists the sequence of the actions required to correct a situation with the second, third, fourth, and succeeding actions being performed only if a previous action failed to remedy a problem situation. The sequential numbering of actions reflects the probability of the corresponding action correcting the problem, with the most likely numbered as "1".

Both actions and conditions may refer to specific procedures to follow — for example, when checking and adjusting power-supply voltages. The customer engineer must exit the table to perform the procedure and then return to the same point in the table to answer any questions that are related to the procedure. He also continues from this point in the table if the fault still persists. The same is true if an exit to another table or sheet of the same table does not find the fault and the action that called for the exit is not the last action in the sequence. The customer engineer must return to his original exit point and continue testing from there.

NOTE

When the POWER ON/OFF switch is turned OFF, it should not be turned ON again within 30 seconds or the circuit breaker may trip.

ARRANGEMENT OF DIAGNOSTIC AND CORRECTIVE MAINTENANCE INFORMATION

Figure 6-2 shows the arrangement of the diagnostic and corrective maintenance information.

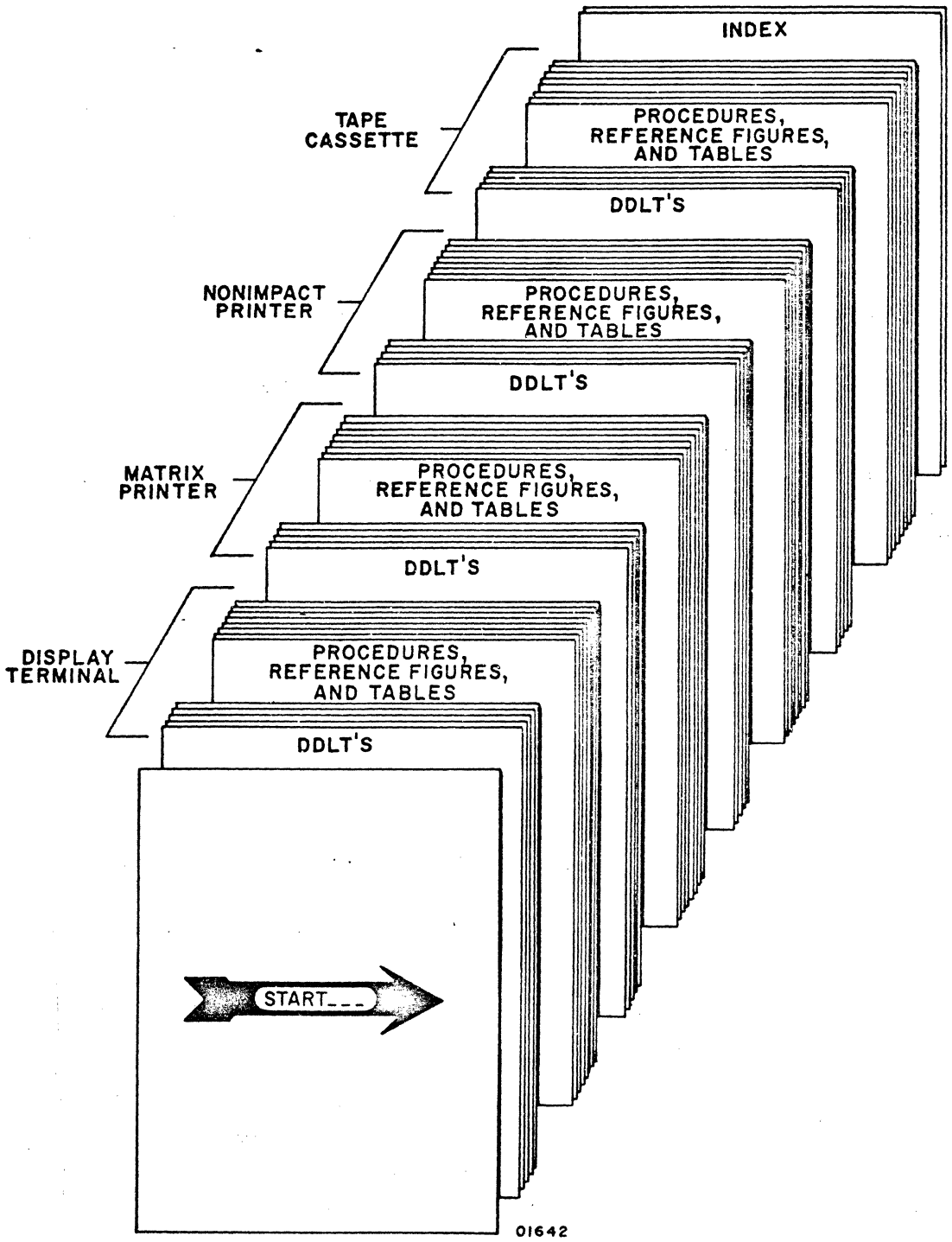

Figure 6-2. Arrangement of Diagnostic and Corrective Maintenance Information

NOTE

If you are unfamiliar with the terminal and the diagnostic decision logic table, read the text (in this section) that precedes this page. Then, start at the beginning of the next page and work your way through to the end of this section until you correct any fault.

NOTE

Because the diagnostic decision logic tables (DDLT's) require much time, money, and effort — you, the user, determine whether they will continue in future manuals as a diagnostic aid.

Please use the comment sheet at the back of this manual to let us know the following: 1) Did you actually use these tables? 2) Do you think they are valuable and why or why not? 3) Did you feel this is the best approach to a "cookbook" troubleshooting manual that you have seen, considering that the DDLT's tie everything together; that is, test-mode operation, procedures, figures, and tables? 4) To you, what is their most serious shortcoming? 5) How would you improve the DDLT's? Remember, the comment sheet is your direct link with the writer.

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CRT DISPLAY TERMINAL

62961200 A

TABLE CRT1. DDLT FOR DISPLAY TERMINAL (SHEET 1 OF 8)

READ-ONLY MEMORY (ROM) TEST (TEST SECTION 0)	1	2	3	4	5	6	7	8	9	10	11
Assumptions:											
Identify normal operating positions for all external/internal switches. Use figure CRT44 for this purpose. Display terminal power cord is connected to ac outlet. Circuit breaker CB1 (rear panel) is up.											
Conditions:											
Does circuit breaker CBJ remain up?	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	OTHER
Press POWER ON/OFF switch to OFF position. Place TEST/NORMAL switch (rear panel) in NORMAL position. Place ON LINE/LOCAL switch in LOCAL position. Press POWER ON/OFF switch to ON position. Wait 30 seconds. Does a normal blinking cursor appear on screen?	Y	Y	Y	Y	Y	Y	N	N	N	-	
Place TEST/NORMAL switch in TEST position. Ready printer option for operation, if available (see operators guide for paper-loading, etc.). Press MASTER CLEAR switch (rear panel). Does checksum display appear as shown in figure CRT45)?	Y	Y	N	N	N	N	-	-	-	-	
Is ALERT indicator illuminated?	Y	N	-	-	-	-	-	-	-	-	
Turn up INTENSITY control. Is normal raster visible (figure CRT46)?	-	-	-	-	-	-	Y	N	N	-	
Do any characters appear on screen?	-	-	Y	Y	Y	N	-	-	-	-	
Is anything visible?	-	-	-	-	-	-	-	Y	N	-	
Is a general checksum display format recognizable?	-	-	Y	Y	N	-	-	-	-	-	
Does one or more of checksum digits have nonzero value (alarm sounds)?	-	-	Y	N	-	-	-	-	-	-	
Actions:											
ROM test ran OK. Go to sheet 2 and run RAM test.	X	-	-	-	-	-	-	-	-	-	
Go to sheet 8 and perform all voltage checks.	-	-	-	-	-	-	-	4	6	-	-
Observe printed-circuit boards for proper seating.	-	1	1	1	1	1	1	1	1	-	-
Perform monitor adjustment and troubleshooting (procedure CRT26). If required, replace monitor board (procedure CRT11).	-	-	-	-	-	-	7	3	7	-	-
Replace refresh board 06 (procedure CRT8).	-	-	3	2	4	-	2	2	4	-	-
Observe crt cables and connections and crt for lighted filament.	-	-	-	-	-	-	-	5	2	-	-
Observe back-panel connections.	-	4	5	5	5	5	5	8	3	-	-
Replace crt (procedure CRT13).	-	-	-	-	-	-	-	7	11	-	-
Check yoke (procedure CRT14). Replace yoke, if required (procedure CRT15).	-	-	-	-	-	-	-	6	8	-	-
Check voltages: +5v, ± 12v, and -9v (procedure CRT22).	-	-	6	6	6	4	6	-	5	-	-
Replace processor board 09 (procedure CRT8).	-	3	4	4	2	3	4	-	-	-	-
Replace ROM/RAM board 08 (procedure CRT8). If same error recurs, replace Extended Memory board 05B (procedure CRT8).	-	2	2	3	3	2	3	-	-	-	-
Replace indicator-panel LED board (procedure CRT10).	-	5	-	-	-	-	-	-	-	-	-
Check TEST/NORMAL and MASTER CLEAR switches and replace if necessary (procedures CRT6 and CRT7).	-	-	-	-	7	6	-	-	-	-	-
Replace high-voltage transformer (procedure CRT3).	-	-	-	-	-	-	-	-	9	-	-
Check INTENSITY control and related cabling (procedure CRT23).	-	-	-	-	-	-	-	-	10	-	-
Check POWER ON/OFF switch (procedure CRT28).	-	-	-	-	-	-	-	-	12	3	-
Replace +5v Regulator board 03A (procedure CRT8).	-	-	-	-	-	-	-	-	-	1	-
Replace circuit breaker (procedure CRT5).	-	-	-	-	-	-	-	-	-	2	-
Call Regional Tech Support.	-	-	-	-	-	-	-	-	-	-	X

NOTE

After completing any repairs and after performing any maintenance, verify that the system is fully operational by rerunning test mode.

TABLE CRT1. DDLT FOR DISPLAY TERMINAL (SHEET 2 OF 8)

RANDOM ACCESS MEMORY (RAM) TEST (TEST SECTION 1)	1	2	3	4	5		
Assumptions:							
ROM Test (Test Section 0) ran OK. Press 9 key.							
Conditions:							
Does ALERT light blink off? (it must blink off to indicate start of RAM test).	Y	Y	Y	Y	Y	N	
Does display cycle through full screen of all 128 displayable characters twice without halting? (Second pass displays blinking underline under alternate character positions.)	Y	N	N	N	N	-	OTHER
Did test halt before two complete passes?	-	Y	Y	N	N	-	
Did alarm sound?	-	Y	N	-	-	-	
Is checksum display from ROM Test (Test Section 0) still being displayed?	-	-	-	Y	N	-	
Actions:							
RAM Test ran OK. Go to sheet 3 and run Shifting Pattern and I/O Test (Test Section 2).	X	-	-	-	-	-	-
Observe for proper printed-circuit board seating.	-	1	1	2	1	1	-
Replace ROM/RAM board 08 (procedure CRT8). If same error recurs, replace Extended Memory board 05B (procedure CRT8).	-	2	2	-	2	-	-
Replace processor board 09 (procedure CRT8).	-	5	3	-	3	2	-
Check voltages: +5v, ± 12v, and -9v (procedure CRT22).	-	3	4	-	4	-	-
Observe back-panel connections.	-	4	5	4	5	4	-
Check keyboard cable and connector.	-	-	-	1	-	3	-
Replace keyboard printed-circuit board (procedure CRT18).	-	-	-	3	-	5	-
Call Regional Tech Support.	-	-	-	-	-	-	X

NOTE

After completing any repairs and after performing any maintenance, verify that the system is fully operational by rerunning test mode.

TABLE CRT1. DDLT FOR DISPLAY TERMINAL (SHEET 3 OF 8)

SHIFTING PATTERN AND I/O TEST (TEST SECTION 2)	1	2	3	4	5	6	7
Assumptions:							
RAM Test (Test Section 1) ran OK. Press 9 key.							
Conditions:							
Is continuously shifting pattern of characters displayed on screen?	Y	Y	Y	N	N	N	OTHER
Did test halt?	-	-	-	Y	Y	N	
Did alarm sound?	-	-	-	Y	N	N	
Are DATA REC and DATA TRANS indicators illuminated and do they blink occasionally?	Y	Y	N	-	-	-	
Check Baud Rate switches (procedure CRT24). Did baud rates change as expected?	Y	N	-	-	-	-	
Actions:							
Shifting Pattern and I/O Test ran OK. Go to sheet 4 and run Keyboard and Display Quality Checks.	X	-	-	-	-	-	-
Observe for proper printed-circuit board seating.	-	1	1	1	1	1	-
Replace ROM/RAM board 08 (procedure CRT8). If same error recurs, replace Extended Memory board 05B (procedure CRT8).	-	-	-	6	3	2	-
Replace processor board 09 (procedure CRT8).	-	2	3	2	2	3	-
Check voltages: +5v, ± 12v, and -9v (procedure CRT22).	-	-	-	3	4	4	-
Observe back-panel connections.	-	-	2	4	5	5	-
Check loop-back contacts and wiring of TEST/NORMAL switch and replace if necessary (procedure CRT6).	-	-	-	5	6	-	-
Replace LED board for indicator/switch panel (procedure CRT10).	-	-	4	-	-	-	-
Check Baud Rate switches and related wiring (procedure CRT24).	-	3	-	-	-	-	-
Call Regional Tech Support.	-	-	-	-	-	-	X

NOTE

After completing any repairs and after performing any maintenance, verify that the system is fully operational by rerunning test mode.

TABLE CRT1. DDLT FOR DISPLAY TERMINAL (SHEET 4 OF 8)

KEYBOARD AND DISPLAY QUALITY CHECKS (TEST SECTION 3)	1	2	3	4	5	6	7	8	9	10	11
Assumptions: Shifting Pattern and I/O Test (Test Section 2) ran OK. Press 9 key.											
Conditions:											
Does shifting pattern of previous test halt?	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	OTHER
Remove hood (procedure CRT21). Perform keyboard checks (procedure CRT25). Was proper character displayed for each keyboard entry?	Y	Y	Y	Y	Y	Y	Y	Y	N	-	
Place 64/96 Character switch in 96 position. Press lowercase "m" key. Are "m's" clear and well-defined over entire screen?	Y	Y	Y	Y	Y	Y	Y	N	-	-	
Press uppercase "H" key. Are all "H's" same height and width?	Y	Y	Y	Y	Y	Y	N	-	-	-	
Are "H's" stable?	Y	Y	Y	Y	Y	N	-	-	-	-	
Are height and width of display approximately 5.25 in. (13.3 cm) and 8 in. (20.3 cm), respectively?	Y	Y	N	-	-	-	-	-	-	-	
Press space bar once. Turn INTENSITY control until raster appears. Is crt phosphor free of any objectionable burn spots or blemishes?	Y	Y	Y	Y	N	-	-	-	-	-	
Are all four sides of raster rectangle straight?	Y	Y	Y	N	-	-	-	-	-	-	
Is printer present and is printer ready?	Y	N	-	-	-	-	-	-	-	-	
Actions:											
Keyboard and Display Quality Checks are OK. Return INTENSITY control to normal. Press space bar twice.	X	-	-	-	-	-	-	-	-	-	-
Keyboard and Display Quality Checks are OK. Return INTENSITY control to normal. Press space bar twice. Go to sheet 5 and run External Switch Checks.	-	X	-	-	-	-	-	-	-	-	-
Observe printed-circuit boards for proper seating.	-	-	-	-	-	-	-	-	4	1	-
Replace ROM/RAM board 08 (procedure CRT8). If same error recurs, replace Extended Memory board 05B (procedure CRT8).	-	-	-	-	-	-	-	-	-	2	-
Replace processor board 09 (procedure CRT8).	-	-	-	-	-	-	-	-	5	3	-
Check voltages: +5v, ±12v, and -9v (procedure CRT22).	-	-	-	-	-	-	-	-	-	4	-
Observe back-panel connections.	-	-	-	-	-	-	-	-	2	5	-
Check keyboard cable and connector.	-	-	-	-	-	-	-	-	1	-	-
Replace keyboard printed-circuit board (procedure CRT18).	-	-	-	-	-	-	-	-	7	-	-
Replace refresh board 06 (procedure CRT8).	-	-	-	-	-	-	-	-	6	-	-
Check 64 CHAR/96 CHAR switch (procedure CRT28).	-	-	-	-	-	-	-	-	3	-	-
Perform monitor adjustment and troubleshooting (procedure CRT26).	-	-	-	-	-	-	X	X	-	-	-
Perform monitor adjustment and troubleshooting (procedures CRT26 and CRT30).	-	-	-	-	-	X	-	-	-	-	-
Replace crt (procedure CRT13) if spot interferes with character display.	-	-	-	-	X	-	-	-	-	-	-
Perform monitor adjustment and troubleshooting (procedure CRT14).	-	-	-	X	-	-	-	-	-	-	-
Perform monitor adjustment and troubleshooting (procedure CRT26, steps 8 and 9).	-	-	X	-	-	-	-	-	-	-	-
Call Regional Tech Support.	-	-	-	-	-	-	-	-	-	-	X

TABLE CRT 1. DDLT FOR DISPLAY TERMINAL (SHEET 5 OF 8)

EXTERNAL SWITCH CHECKS (TEST SECTION 7)	1	2	3	4	5	6	7
Assumptions:							
Previous test sections ran OK.							
Conditions:							
Is terminal configuration code displayed on screen (figure CRT47). NOTE Display shown in referenced figure is an example only and is not necessarily the display that appears.	Y	Y	Y	Y	Y	N	OTHER
Place CHARACTER/LINE/BLOCK switch in each of its positions while observing bits 7 and 8 of display. Did bits 7 and 8 set or clear as defined in figure CRT47?	Y	Y	Y	Y	N	-	
Place ON LINE/LOCAL switch to ON LINE and then to LOCAL while observing bit 1 of display. Was bit 1 set when switch was in ON LINE position and cleared in LOCAL?	Y	Y	Y	N	-	-	
Place FULL DUPLEX/HALF DUPLEX switch to FULL DUPLEX and then to HALF DUPLEX while observing bit 6 of display. Was bit 6 set when switch was in FULL DUPLEX position and cleared in HALF DUPLEX?	Y	Y	N	-	-	-	
Place FORMAT switch in FORMAT position and then to its alternate position while observing bit 2 of display. Was bit 2 set when switch was in FORMAT position and cleared in alternate position?	Y	N	-	-	-	-	
Actions:							
External Switch Checks are OK. Go to sheet 6 and perform Internal Switch and Option Installation Checks.	X	-	-	-	-	-	-
Observe for proper printed-circuit board writing.	-	2	2	2	2	1	-
Replace ROM/RAM board 08 (procedure CRT8). If same error recurs, replace Extended Memory board 05B (procedure CRT8).	-	4	4	4	4	2	-
Replace processor board 09 (procedure CRT8).	-	-	-	-	5	3	-
Check voltages: +5v, ± 12v, and -9v (procedure CRT22).	-	-	-	-	-	4	-
Observe back-panel connections.	-	3	3	3	3	5	-
Check CHARACTER/LINE/BLOCK switch and wiring (procedure CRT27).	-	-	-	-	1	-	-
Check ON LINE/LOCAL switch and wiring (procedure CRT28).	-	-	-	1	-	-	-
Check FULL DUPLEX/HALF DUPLEX switch and wiring (procedure CRT28).	-	-	1	-	-	-	-
Check FORMAT switch and wiring (procedure CRT28).	-	1	-	-	-	-	-
Call Regional Tech Support.	-	-	-	-	-	-	X
NOTE After completing any repairs and after performing any maintenance, verify that the system is fully operational by rerunning test mode.							

TABLE CRT1. DDLT FOR DISPLAY TERMINAL (SHEET 6 OF 8)

INTERNAL SWITCH AND OPTION INSTALLATION CHECKS	1	2	3	4	5	6	7	8
Assumptions:								
External Switch Checks were OK.								
Conditions:								
Remove hood (procedure CRT21). Perform internal switch checks by pressing switches (figure CRT44). Did switches toggle bits as shown in figure CRT47?	Y	Y	Y	Y	Y	Y	N	OTHER
Examine installed-option bits shown in figure CRT52. Are appropriate bits cleared for installed options (figure CRT47).	Y	Y	Y	Y	Y	N	-	
Are appropriate bits set for options not installed?	Y	Y	Y	Y	N	-	-	
Press PRINT ON LINE key while observing bit 32. Is bit 32 set?	Y	Y	Y	N	-	-	-	
Press PRINT LOCAL key while observing bit 31. Is bit 31 set?	Y	Y	N	-	-	-	-	
Slide TEST/NORMAL switch to NORMAL position while observing bit 30. Is bit 30 cleared?	Y	N	-	-	-	-	-	
Actions:								
Test Mode ran OK. Return all switches to their normal operating position (see decals inside crt display for internal switch settings or refer to table used to identify settings earlier).	X	-	-	-	-	-	-	-
Observe printed-circuit boards for proper seating.	-	4	3	3	1	1	1	-
Replace printed-circuit board containing faulty switch (procedure CRT8).	-	-	-	-	-	-	2	-
Replace ROM/RAM board 08 (procedure CRT8). If same error recurs, replace Extended Memory board 05B (procedure CRT8).	-	5	5	5	2	3	3	-
Observe back-panel connections.	-	3	2	2	3	4	-	-
Check keyboard cable and connectors	-	-	1	1	-	-	-	-
Replace appropriate option board (see figure CRT18 for locations).	-	-	-	-	-	2	-	-
Replace keyboard printed-circuit board (procedure CRT18).	-	-	4	4	-	-	-	-
Check TEST/NORMAL switch and related wiring and replace if necessary (procedure CRT6).	-	2	-	-	-	-	-	-
Check for positive positioning of TEST/NORMAL switch and for intermittent operation of switch.	-	1	-	-	-	-	-	-
Call Regional Tech Support.	-	-	-	-	-	-	-	X

NOTE

After completing any repairs and after performing any maintenance, verify that the system is fully operational by rerunning test mode.

TABLE CRT1. DDLT FOR DISPLAY TERMINAL (SHEET 7 OF 8)

MISCELLANEOUS CHECKS	1	2	3	4	5	6	7	8	9	10	11
Assumptions:											
Test Mode ran OK. All switches, including TEST/NORMAL switch, are returned to their normal operating positions.											
Conditions:											
Disable Batch Mode by placing side of rocker switch nearest BATCH MODE label on printed-circuit board up. Place CHARACTER/LINE/BLOCK switch in LINE position. Place FORMAT switch in unlabeled position. Press MASTER CLEAR switch. Press following keys several times each in sequence: →, ↑, ←, ↓ Did cursor move in direction indicated?	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	
While pressing and holding REPEAT key, press one or more alphanumeric keys in succession, filling at least 1-1/2 lines, ending in center of line. Did keys repeat?	Y	Y	Y	Y	Y	Y	Y	Y	N	-	OTHER
Did audible alarm sound near end of first line?	Y	Y	Y	Y	Y	Y	Y	N	-	-	
Press CARRIAGE RETURN key. Did cursor move to left of screen on same line?	Y	Y	Y	Y	Y	Y	N	-	-	-	
Press LINE CLEAR key. Is only line directly above cursor cleared?	Y	Y	Y	Y	Y	N	-	-	-	-	
Press CLEAR key. Is entire display cleared?	Y	Y	Y	Y	N	-	-	-	-	-	
Fill at least one line near center of screen with characters. Place CHARACTER/LINE/BLOCK switch in CHARACTER position. Press LINE FEED. Did cursor move down one line without moving horizontally?	Y	Y	Y	N	-	-	-	-	-	-	
Place CHARACTER/LINE/BLOCK switch in LINE position. Press RESET key. Did cursor move to lower-left corner of display?	Y	Y	N	-	-	-	-	-	-	-	
With SCROLL switch disabled (figure CRT44), place CHARACTER/LINE/BLOCK switch in BLOCK position. Press RESET key. Did cursor move to upper-left corner of display?	Y	N	-	-	-	-	-	-	-	-	
Actions:											
Miscellaneous checks are OK. Return all switches to normal operating positions.	X	-	-	-	-	-	-	-	-	-	-
Recheck positions of switches, including TEST/NORMAL switch.	-	1	1	1	-	-	-	-	-	1	-
Observe printed-circuit boards for proper seating.	-	4	4	4	2	2	2	1	3	3	-
Check keyboard cable and connectors.	-	6	6	6	1	1	1	-	1	2	-
Replace keyboard printed-circuit board (procedure CRT18).	-	7	7	7	3	3	3	-	2	4	-
Replace ROM/RAM board 08 (procedure CRT8). If same error recurs, replace Extended Memory board 05B (procedure CRT8).	-	2	2	2	5	5	5	2	4	5	-
Replace processor board 09 (procedure CRT8).	-	5	5	5	6	6	6	5	5	6	-
Observe back-panel connections.	-	3	3	3	4	4	4	4	6	7	-
Check audible alarm and cabling (procedure CRT29).	-	-	-	-	-	-	-	3	-	-	-
Call Regional Tech Support.	-	-	-	-	-	-	-	-	-	-	X
NOTE After completing any repairs and after performing any maintenance, verify that the system is fully operational by rerunning test mode.											

TABLE CRT1. DDLT FOR DISPLAY TERMINAL (SHEET 8 OF 8)

VOLTAGE CHECKS	1	2	3	4	5	6
Assumptions:						
Perform voltage checks (procedure CRT20).						
Conditions:						
Were all voltage checks OK, steps 1 through 17?	Y	N	N	N	N	OTHER
Were +15v and +5v checks OK, steps 18 through 26?	Y	Y	N	N	N	
Are LED's illuminated on +5v regulator board 03 (figure CRT33)?	Y	Y	Y	N	N	
Are LED's illuminated on bulk-power-supply printed-circuit board (figure CRT53)?	Y	Y	Y	Y	N	
Actions:						
Replace high-voltage transformer (procedure CRT3).	X	-	-	-	-	-
Replace video printed-circuit board (procedure CRT11).	-	X	-	-	-	-
Check for +19 vdc on base of +15v regulator power transistor (figure CRT50). Check for +15 vdc on emitter of +15v regulator power transistor (figure CRT50). If +19 ±2v is found on base of transistor, but +15 ±2v is not found on emitter, replace power transistor (procedure CRT4); If voltages are OK, replace printed-circuit board.	-	-	X	-	-	-
Replace +5v regulator board 03 (procedure CRT8).	-	-	-	X	-	-
Check for 110 vac to 124 vac at wall outlet.	-	-	-	-	1	-
Check input power cabling from ac wall outlet to bulk power supply.	-	-	-	-	2	-
Replace bulk power supply (procedure CRT17).	-	-	-	-	3	-
Call Regional Tech Support.	-	-	-	-	-	X

NOTE

After completing any repairs and after performing any maintenance, verify that the system is fully operational by rerunning test mode.

Procedure CRT1 — Turning On System Power

To turn on system power, perform the following:

1) Check that system is connected to modem (if modem is not internal). If external modem is used and system is not connected to modem, unplug modem ac power cord from site power outlet and connect system to modem. (If the system incorporates internal modem option, there is no modem ac power cord to check.)

At the external modem:

2) Check that modem ac power cord is connected to site power outlet.

At the printer:

3) If printer option is present, check that printer ac power cord is connected to site power outlet.

4) Press POWER ON indicator/switch. POWER ON and STOP indicators illuminate.

5) Wait 5 seconds.

6) Press START indicator/switch. START indicator illuminates.

At the cassette:

7) If cassette option is present, check that cassette ac power cord is connected to site power outlet.

8) Check that correct tape is in place and that plastic door is closed.

At the display terminal:

9) Check that display terminal ac power cord is connected to site power outlet.

10) Place rear-panel white circuit breaker up.

11) Press POWER ON/OFF switch on operator panel to ON.

Procedure CRT2 — Turning Off System Power

To turn off system power, perform the following.

At the printer.

1) Press STOP indicator/switch. STOP indicator illuminates and START indicator extinguishes.

2) Press POWER OFF switch. POWER ON indicator extinguishes.

At the display terminal:

3) Press POWER ON/OFF switch to OFF.

Procedure CRT3 — Replacing High-Voltage Transformer

To remove high-voltage transformer, perform the following:

1) Turn power off per procedure CRT2.

2) Disconnect ac power cord from site power outlet.

WARNING

Be careful not to scratch surface of cathode-ray tube. A scratch weakens the glass substantially and can cause the tube to implode.

3) Connect a heavily insulated wire to ground first and then, while carefully lifting rubber anode cover, discharge surface under rubber cover (including anode terminal end) by sliding end of grounded wire under the rubber cover and into anode hole of cathode-ray tube.

4) Remove high-voltage lead by raising rubber cover and gently compressing spring-loaded anode lead.

5) Remove hex nuts (2) which hold transformer to chassis and carefully withdraw transformer from video module.

6) Unsolder wires from transformer. Tag/mark wires according to pin numbers (figure CRT1).

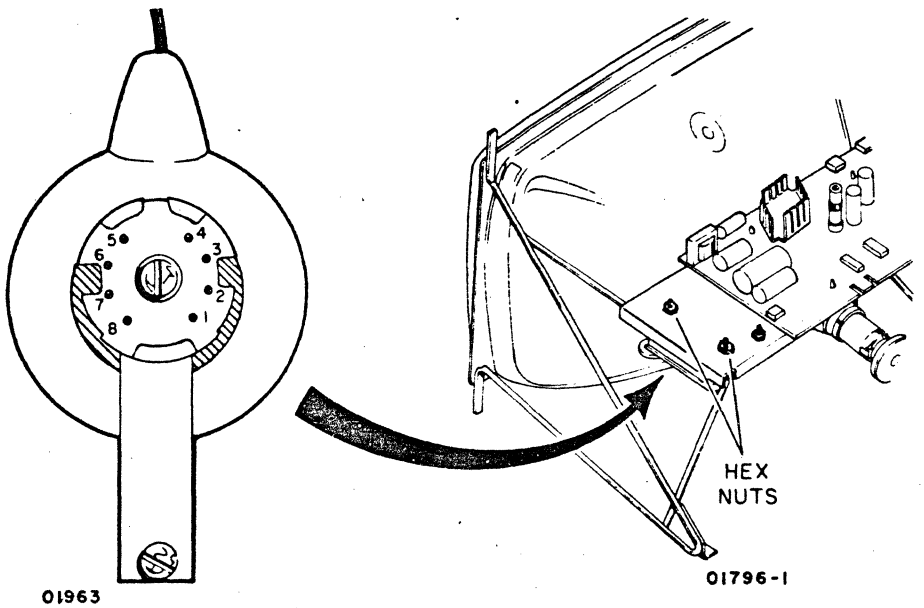


Figure CRT1. High-Voltage Pin Numbers

To replace transformer, perform the following:

7) Solder transformer wires.

8) Connect transformer to chassis as shown in figure CRT2.

9) Connect high-voltage lead to anode of cathode-ray tube.

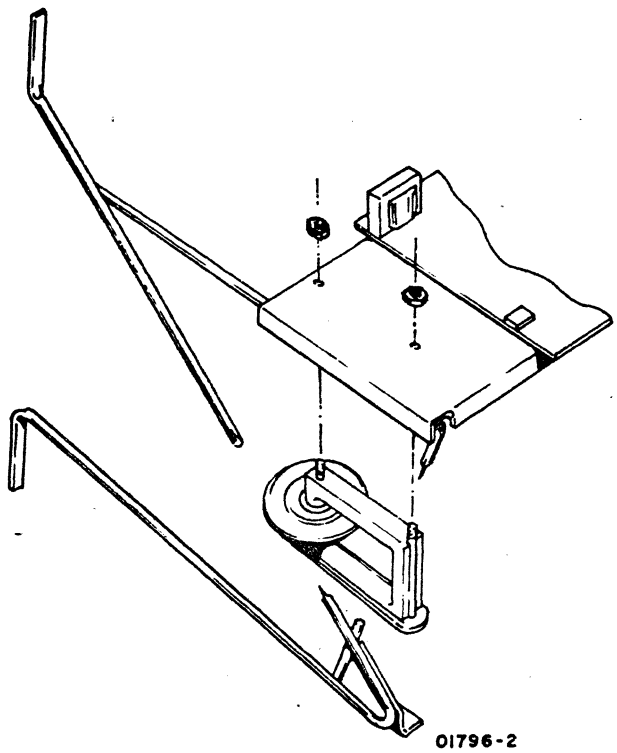


Figure CRT2. High-Voltage Transformer Installation

Procedure CRT4 — Replacing Video Module +15-VDC Regulators

To remove +15-vdc regulators mounted on side of video module (figure CRT3) perform the following:

1) Remove bad transistor by unscrewing screw which holds it to heat sink, grasp transistor firmly, and pull from socket.

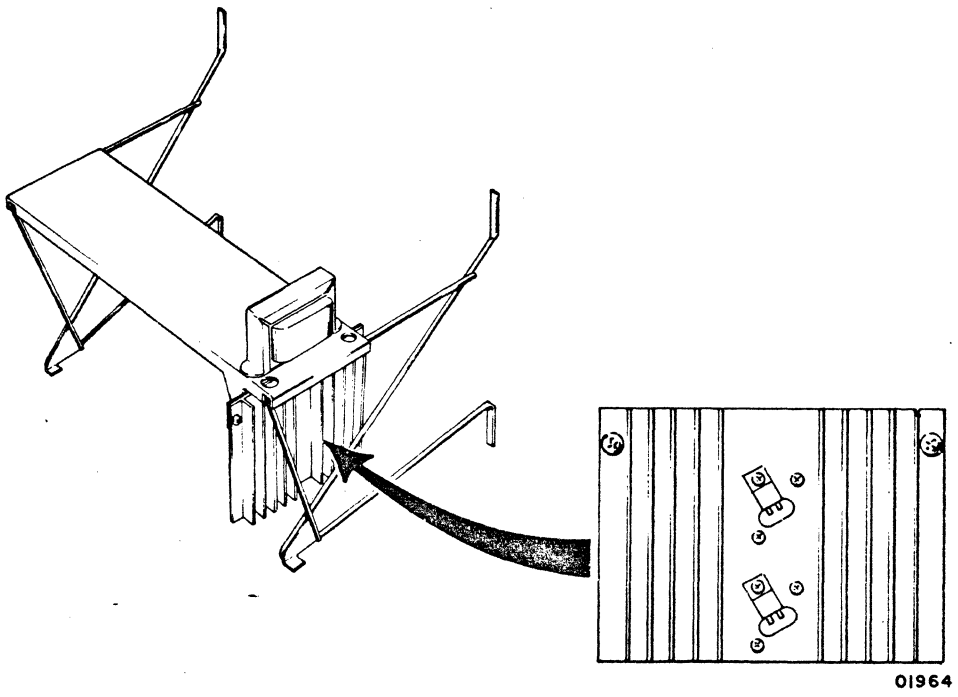


Figure CRT3. 15-Volt Regulator Assembly

To replace +15-vdc regulator, perform the following:

2) Cut center pin of new transistor flush with case (figure CRT4).

3) Clean surface of heat sink where transistor makes contact and apply new thermal compound (CDC 94657900).

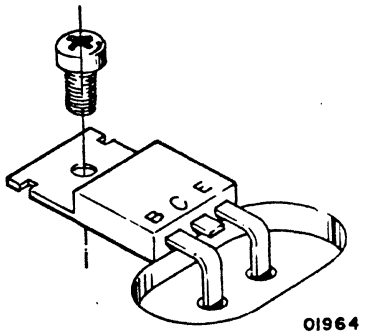
4) Bend remaining pins at right angles so they will fit into socket and still allow transistor to be fastened with mounting screw.

5) Plug transistor in socket and fasten with screw.

6) With BP4 connector removed, test output of emitter-to-ground for +15 vdc (after turning power on). Figure CRT4 shows emitter. If output is not +15 vdc, replace transistor and try again. If +15 vdc is found, go to step 7.

7) Replace BP4 connector (with power off) and then test emitter for +15 vdc (with power on) again.

8) If voltage drops below +14.25 vdc when BP4 is connected, replace video printed-circuit board (procedure CRT11).



1. CUT COLLECTOR (C)
2. BEND BASE (B) AND EMITTER (E) FOR INSERTION INTO SOCKET

Figure CRT4. 15-Volt Regulator

Procedure CRT5 — Replacing Display Terminal AC Entry Panel

To remove ac power panel assembly, refer to figure CRT5 and perform the following:

1) Turn power on per procedure CRT1.
2) Pull ac plug from site power outlet.
3) Remove grounding wires connected to terminals E2, E3, and E4.
4) Disconnect connector CP3 leading to power ON/OFF switch.
5) Disconnect connector CP2 leading to transformer and bulk power supply.
6) Remove four screws which anchor panel box to cabinet chassis.
7) Withdraw entire ac power panel and its connectors from cabinet.

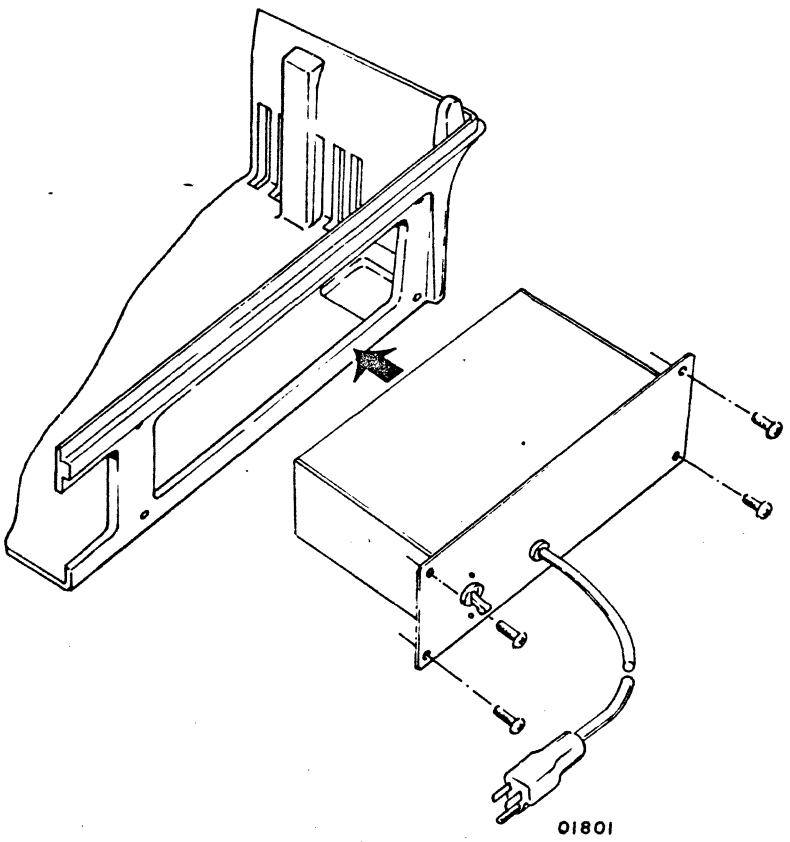


Figure CRT5. AC Entry Panel Removal

To install ac entry panel, perform the following.

8) Feed connectors through chassis hole and insert ac power panel (box) into chassis compartment.

9) Fasten four screws (figure CRT5).

10) Attach grounding wires to E2, E3, and E4.

11) Connect cable connectors (small one, CP3, goes to POWER ON/OFF switch while large one, CP2, leads to bulk power supply).

Procedure CRT6 — Replacing Display Terminal TEST/NORMAL Switch

To remove TEST/NORMAL switch, perform the following:

1) Remove data cables from rear panel.

2) Remove four mounting screws which hold panel to chassis (figure CRT6).

3) Remove the TEST/NORMAL switch (slide switch below MASTER CLEAR push-button switch) from the panel by unscrewing two screws holding the switch to the panel.

4) Unsolder wires and identify them so they can be replaced correctly.

To replace TEST/NORMAL switch, perform the following:

5) Solder wires to pins of test mode switch in the same arrangement they were removed.

6) Attach panel to chassis with four mounting screws.

7) Attach switch to panel with two mounting screws.

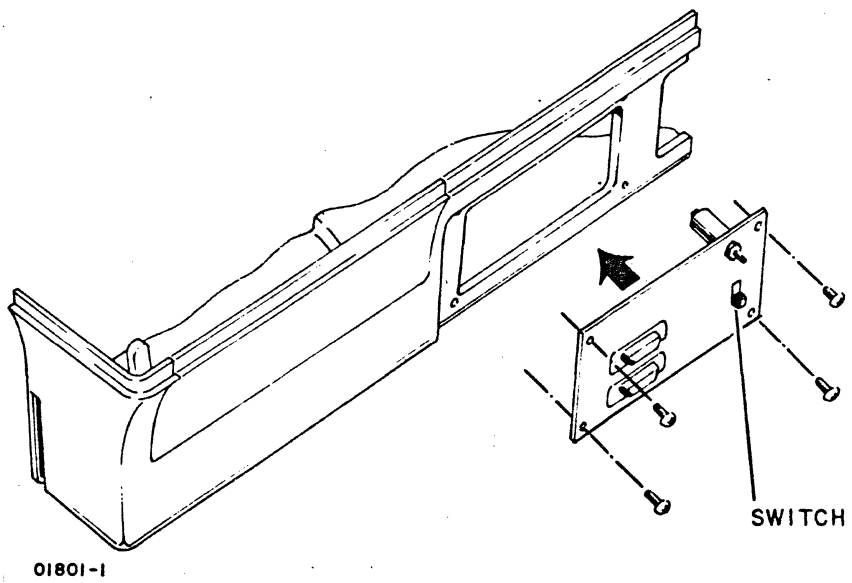


Figure CRT6. TEST/NORMAL Switch Removal

Procedure CRT7 — Replacing Display Terminal MASTER CLEAR Switch

To remove MASTER CLEAR switch, perform the following:

1) Unscrew four mounting screws holding data entry panel to chassis (figure CRT7).

2) Unscrew hex nut holding MASTER CLEAR switch to panel.

3) Unsolder wires and identify them.

To replace MASTER CLEAR switch, perform the following:

4) Solder wires to switch pins. Attach black wire to center pin.

5) Insert switch into panel and attach with hex nut.

6) Attach panel to chassis using four screws shown in figure CRT7.

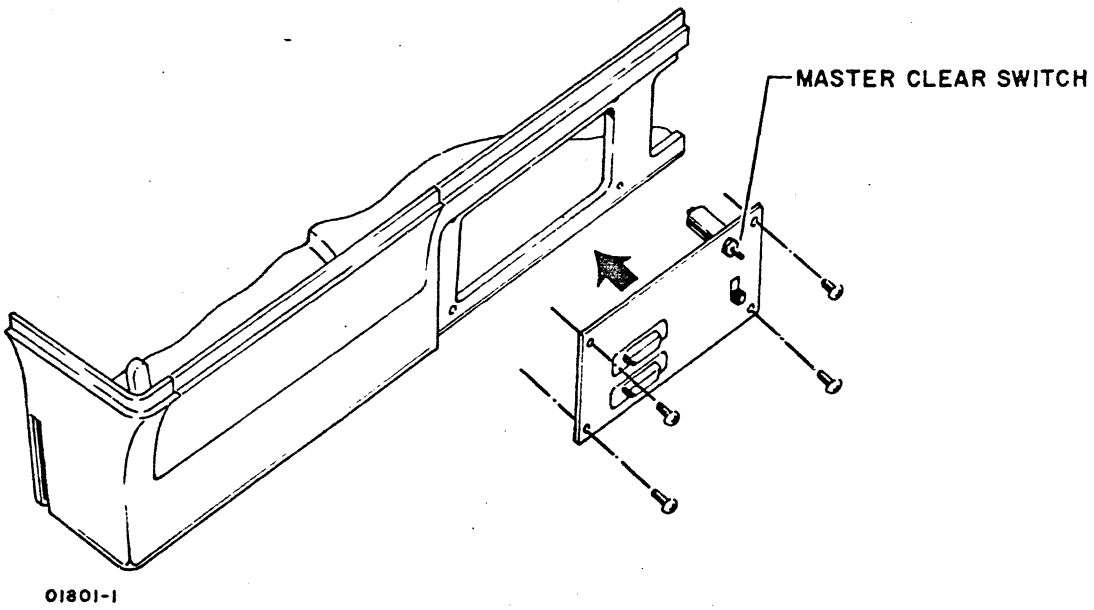


Figure CRT7. MASTER CLEAR Switch

Procedure CRT8 — Replacing Boards In Logic Module Card Cage

To remove boards from card cage, perform the following:

1) Press POWER ON/OFF switch to OFF.
2) Remove two screws holding cabinet hood to chassis and remove cabinet hood.
3) Release friction clamp arms holding board in place.
4) Withdraw board from card cage.

To replace boards in card cage, perform the following:

5) Turn power off by pressing POWER ON/OFF switch to OFF.
6) Place board in correct location (figure CRT8) and slide board in track until board is touching socket at end of track.
7) Carefully draw board into socket by locking friction clamps.
8) If board contains switches, check/set settings of such switches (figure CRT44) per terminal-application requirements.

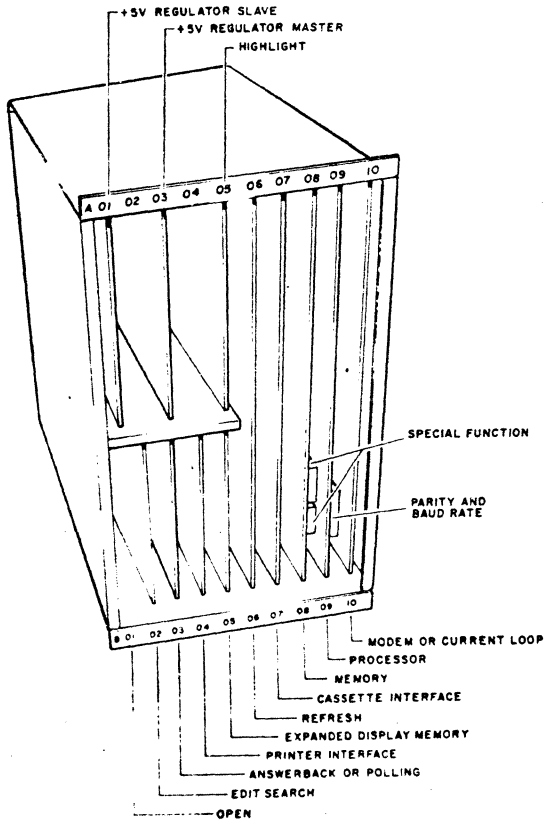


Figure CRT8. Logic Card Cage Board Locations

Procedure CRT9 — Removing/Replacing Logic Module Card Cage

To remove logic module card cage, perform the following:

1) Press POWER ON/OFF switch to OFF.
2) Remove four mounting screws, using 5/16-inch socket and 19-inch by 1/4-inch drive extension.
3) Lift card cage carefully upward and to rear sufficiently to access connectors mounted on bezel side of card cage. When cage is back far enough, label connectors as required to insure proper reconnection, disconnect cables, and remove card cage (figure CRT9).

To replace logic module card cage, reverse the preceding steps. After replacing, be sure to verify settings of all switches (figure CRT44) per terminal-application requirements.

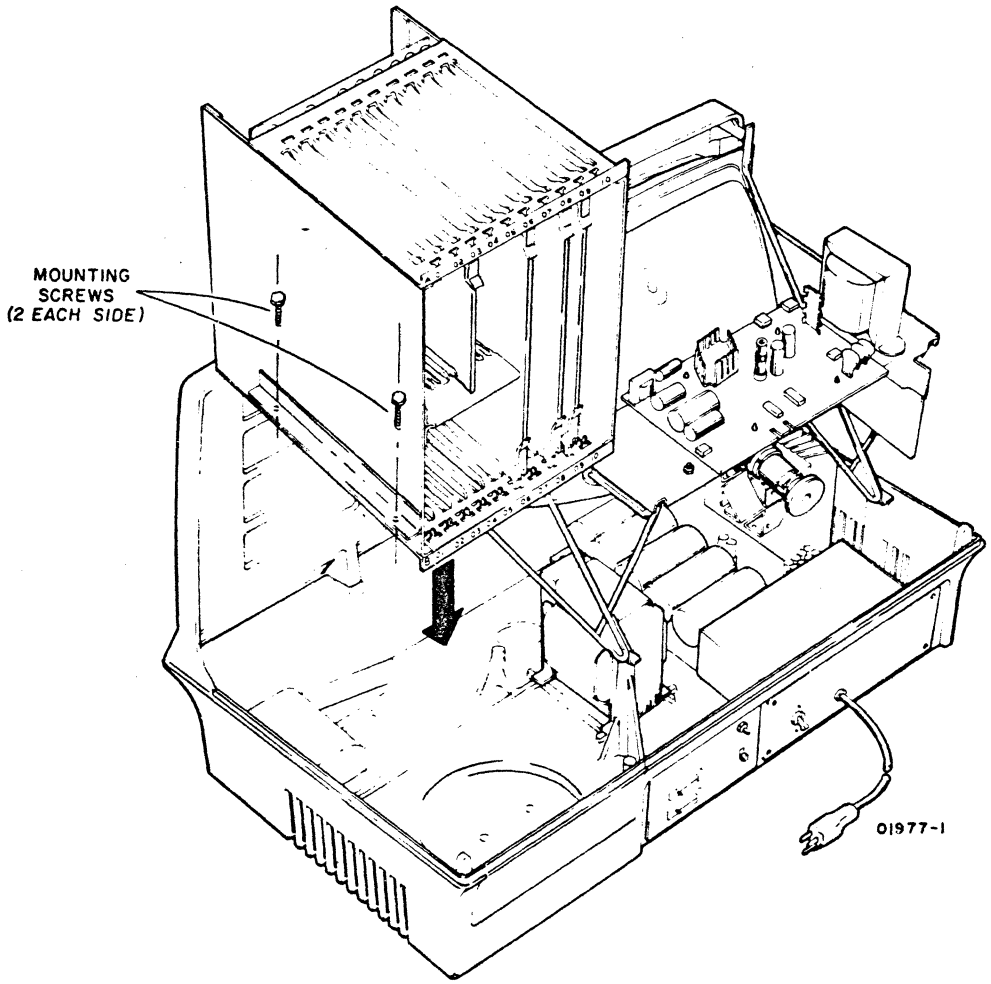


Figure CRT9. Logic Module Card Cage Removal

Procedure CRT10 — Replacing Display Terminal Switches and Indicators

To remove an indicator or switch on front panel, perform the following:

1) Press POWER ON/OFF switch to OFF.

2) Separate panel from bezel by inserting fingers under panel and carefully prying panel from bezel chassis (see arrows in figure CRT10).

3) Disconnect all wires from indicator board or switch by pulling terminals and identify wires.

Replace entire LED board with new board by reversing the preceding procedure.

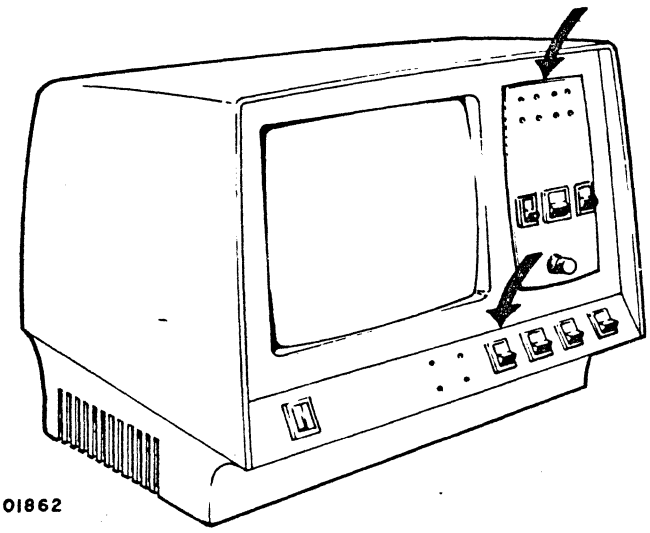


Figure CRT10. LED and Switch Panel Removal

Procedure CRT11 — Replacing Video Printed-Circuit Board

To remove video printed-circuit board, perform the following procedures:

1) Remove power from crt by pressing POWER ON/OFF switch to OFF.

2) Disconnect connector BP1 (see figure CRT11).

3) Disconnect ground strap BJ7 from board.

4) Disconnect connector BJ6 from board.

5) Disconnect connector BP4.

6) Compress retainer clips on mounting pegs and release clips by pressing downward. Do for all four pegs. After releasing printed-circuit board from all four pegs, lift board to remove from video module (see figure CRT11).

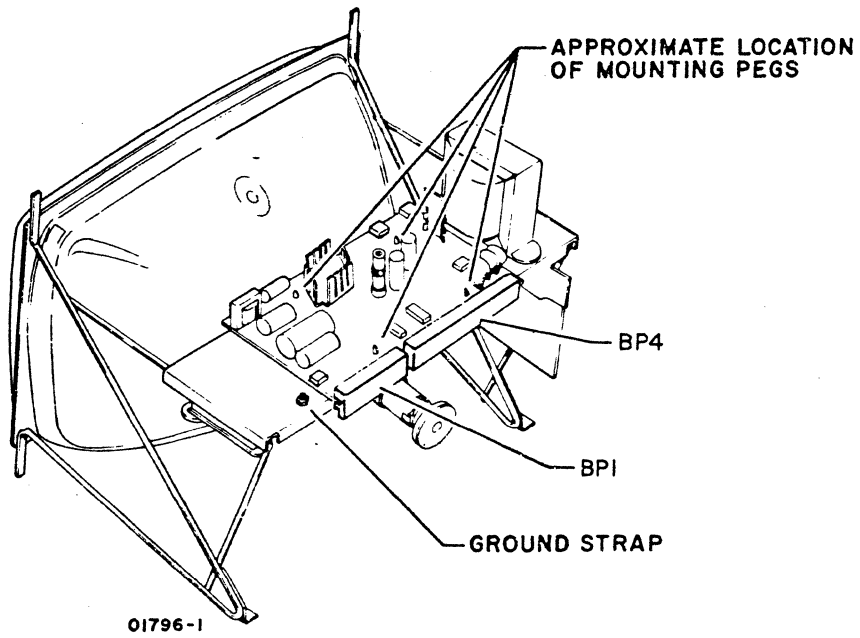


Figure CRT11. Video Module Printed-Circuit Board Connections

7) Install new printed-circuit board by positioning board over mounting pegs (match holes on printed-circuit board with pegs) and gently pressing board down into position (figure CRT12) so that friction clips on pegs pass through holes sufficiently to lock board in place.

8) Replace connectors and ground strap.

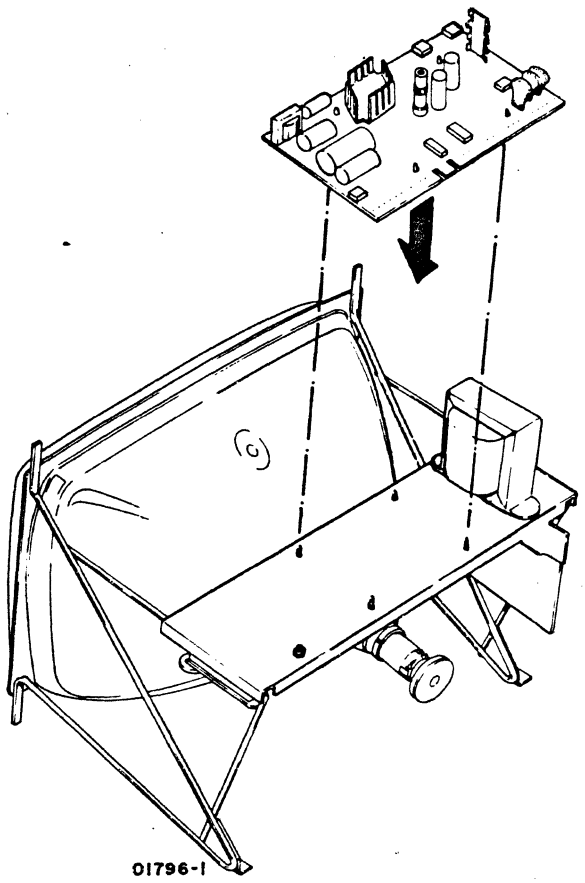


Figure CRT12. Video Printed-Circuit Board Placement

Procedure CRT12 — Replacing Display Terminal Video Module

To remove video module, perform the following:

1) Press POWER ON/OFF switch to OFF and disconnect ac power cord.

2) Disconnect connector (BP1) at BJ1 (smallest connector on video printed-circuit board).

3) Disconnect connector BP5 leading to +15-vdc regulators which are mounted vertically on large heat sink on side of video module (figure CRT13).

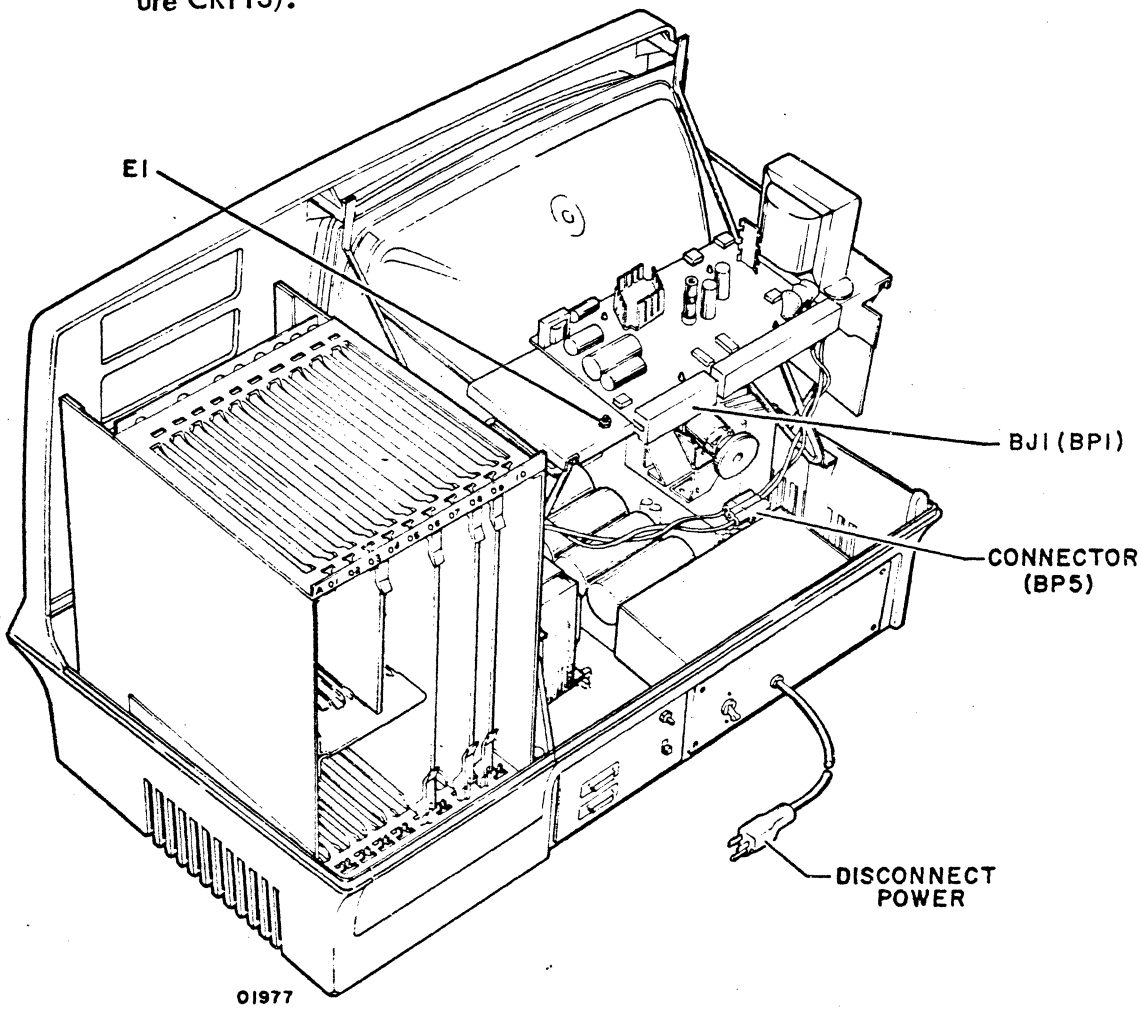


Figure CRT13. Video Module Connector Removal

4) Disconnect connectors BP2 and BP3. Also disconnect ground wire from E1 on video board.

5) Remove six hex screws with a 1/4-inch socket and extension (figure CRT14). Slots in bottom two frame brackets, which mount on bezel, may allow just loosening those two screws.

WARNING

Use extreme care when handling the TV module because rough handling can cause the crt to implode with tremendous force resulting in severe injury. Do not nick or scratch glass or subject it to any undue pressure during replacement. When handling crt, always wear safety goggles and heavy gloves for protection.

6) Grasp video module by mounting frames with both hands and carefully withdraw entire module from cabinet (see figure CRT15). Check to see that neck of crt or mounting frame is not caught on cabling.

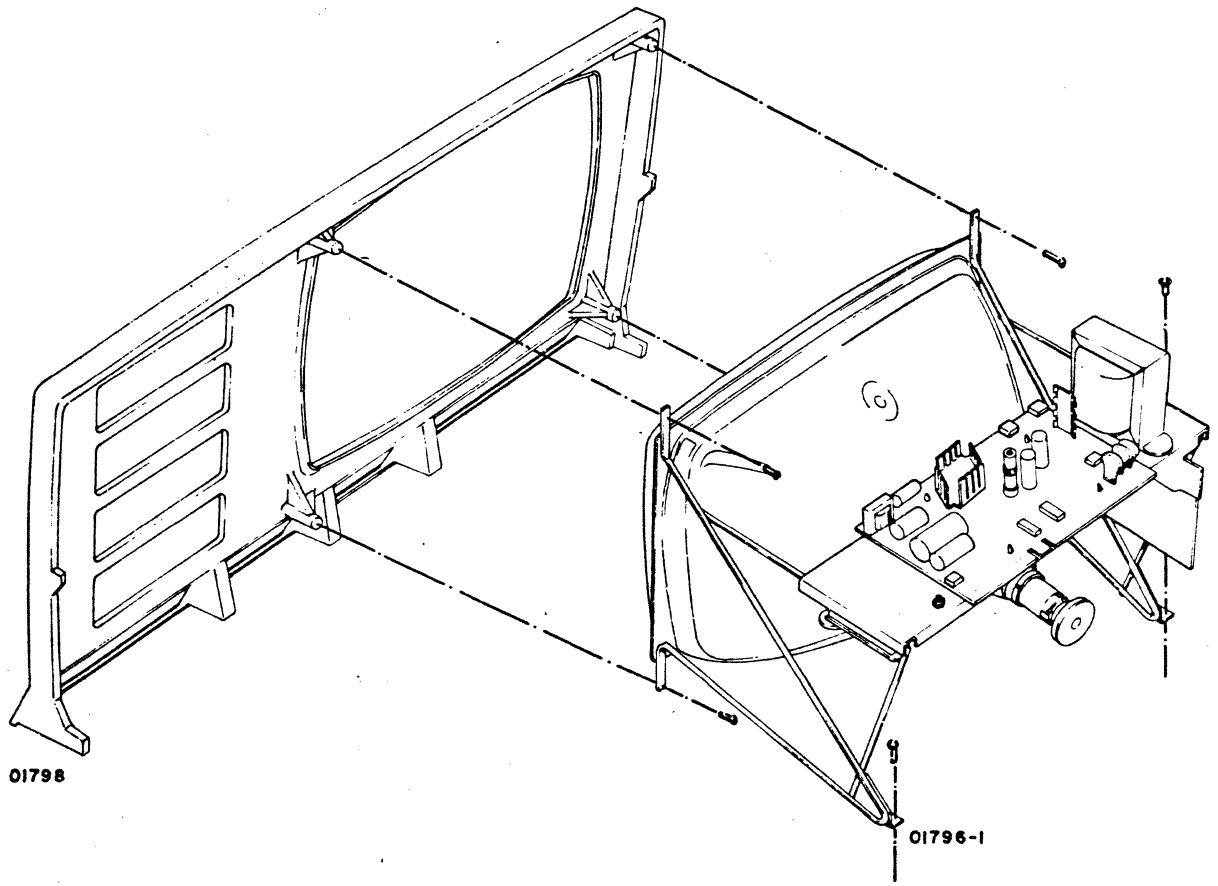


Figure CRT14. Video Module Mounting Screws Removal

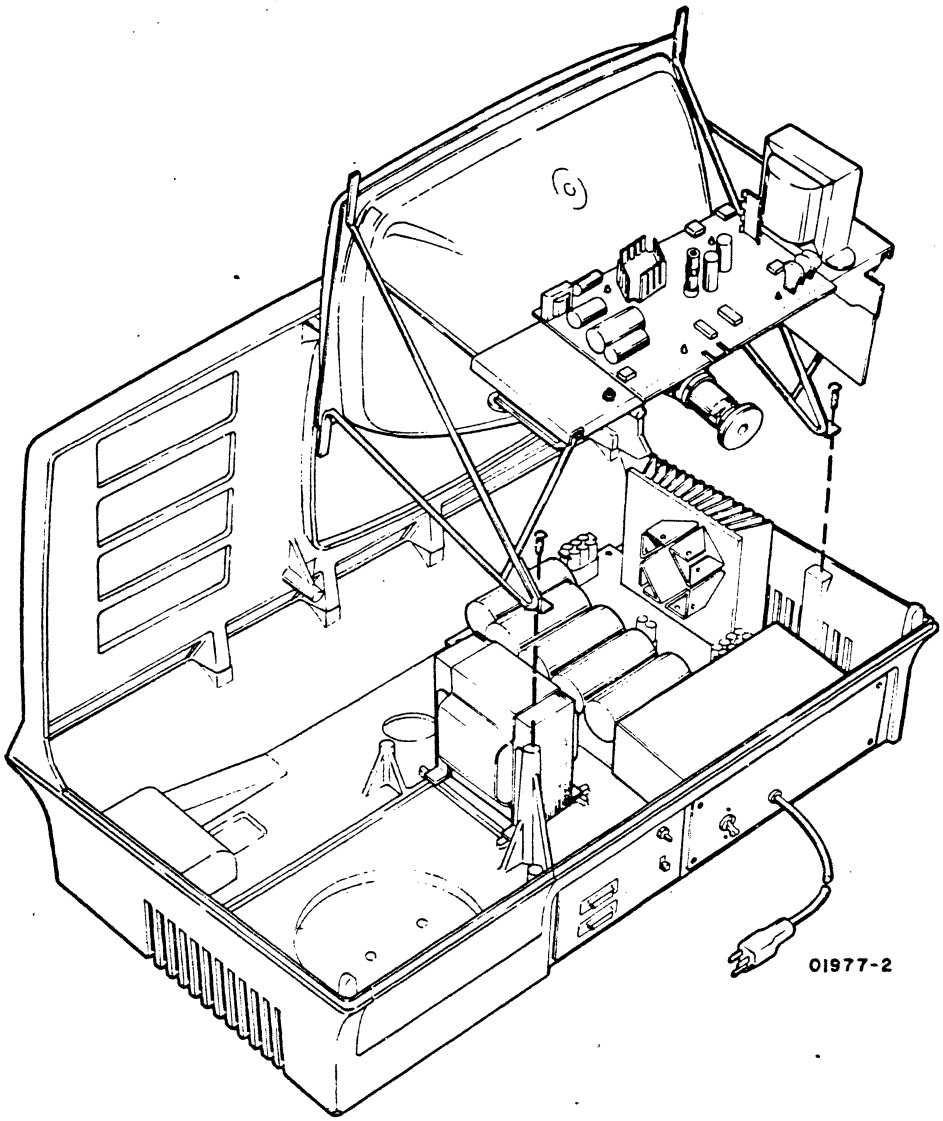


Figure CRT15. Video Module Removal

To install video module, perform the following:

7) Verify left-bottom and right-bottom hex screws are both partially screwed into mounting supports on bezel (figure CRT16).

8) With video module in both hands, lower module into cabinet until slotted support in front fits over screws inserted partially in mounting (step 7).

9) Carefully steady module with one hand and insert top-left and top-right screws with other hand.

10) Tighten two top screws just snug using 1/4-inch socket. Do not overtighten.

11) Insert two cabinet screws which hold back of module in place. Do not tighten.

12) Tighten lower-left and lower-right hex screws just snug using an 18-inch extension with a 1/4-inch socket. Do not overtighten.

13) Tighten back two screws just snug. Do not overtighten.

14) Connect printed-circuit board BP1 connector and plug in connector from logic module back panel to +15-vdc regulator connector. Also connect BP2, BP3, and ground wire to E1.

15) Check that all other connectors (tube socket, BP4, and transformer lead into anode) are plugged in or attached correctly.

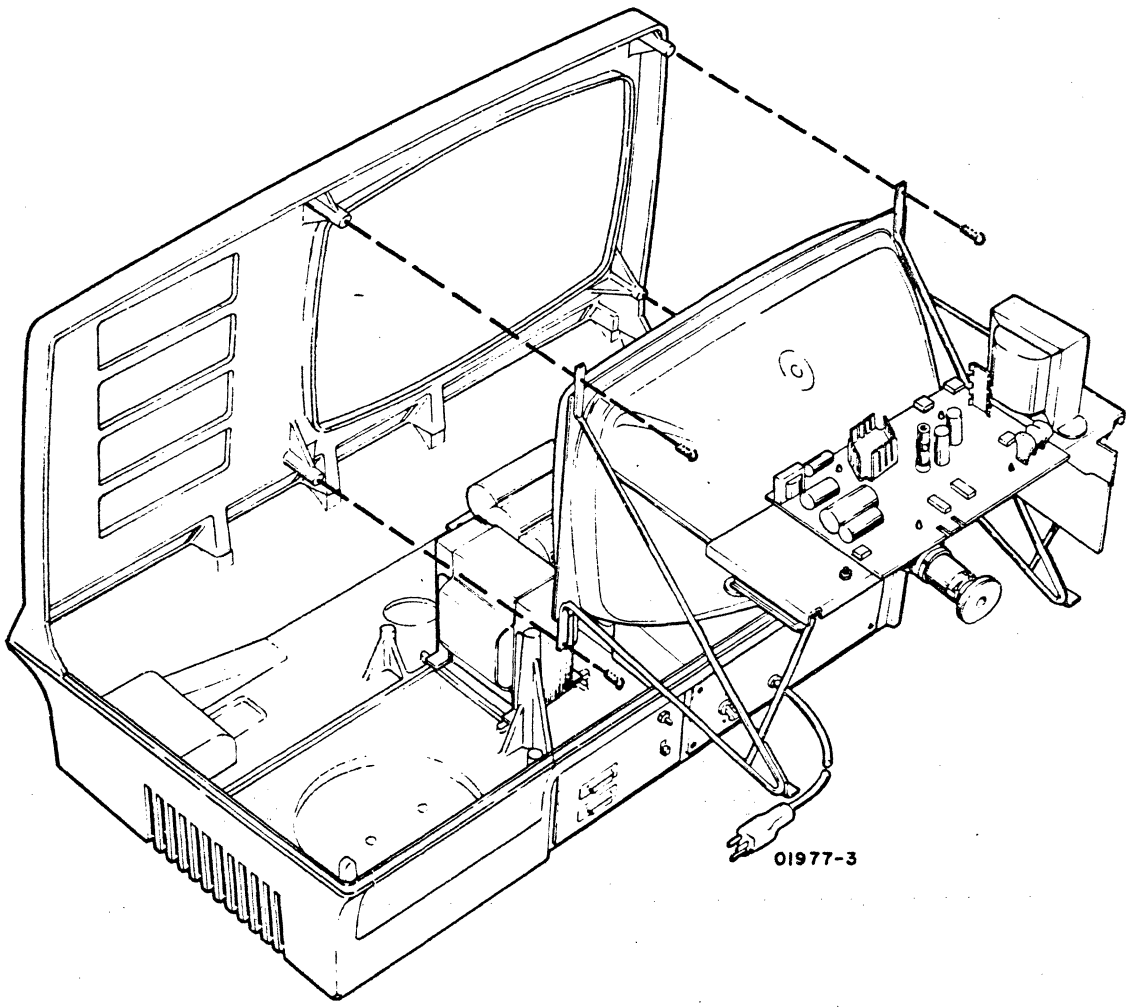


Figure CRT16. Video Module Installation

Procedure CRT13 — Replacing Display Terminal Cathode-Ray Tube

To replace crt, perform the following:

1) Press POWER ON/OFF switch to OFF and disconnect ac power cord from site power outlet.

2) Refer back to procedure CRT3 and perform steps 1, 2, and 3.

3) Remove video module from cabinet (see procedure CRT12, steps 1 through 6).

4) Pull crt tube socket carefully from end of neck of crt (see figure CRT17). Do not remove vinyl keyguide, which should be in position over end of tube for protection when socket is removed. During installation, keyguide assures that socket is correctly positioned.

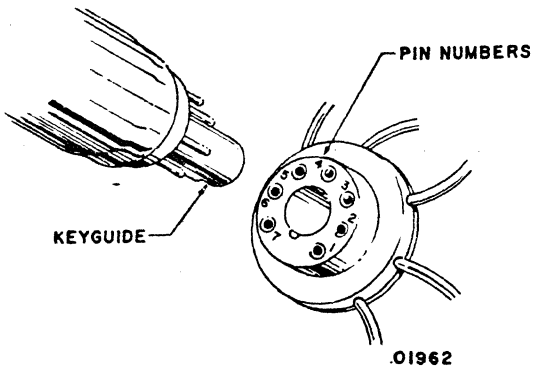


Figure CRT17. CRT Socket Removal

WARNING

Use extreme care when handling TV module because rough handling can cause crt to implode with tremendous force resulting in severe injury. Do not nick or scratch glass or subject it to any undue pressure during replacement. When handling crt, always wear safety goggles and heavy gloves for protection.

5) Using screwdriver, loosen screw in clamp which holds yoke in place (see figure CRT18).

6) After screw is loosened, gently slide yoke and shielding sleeve (which is between crt neck and yoke) back on crt neck to ensure it is loose enough for later removal.

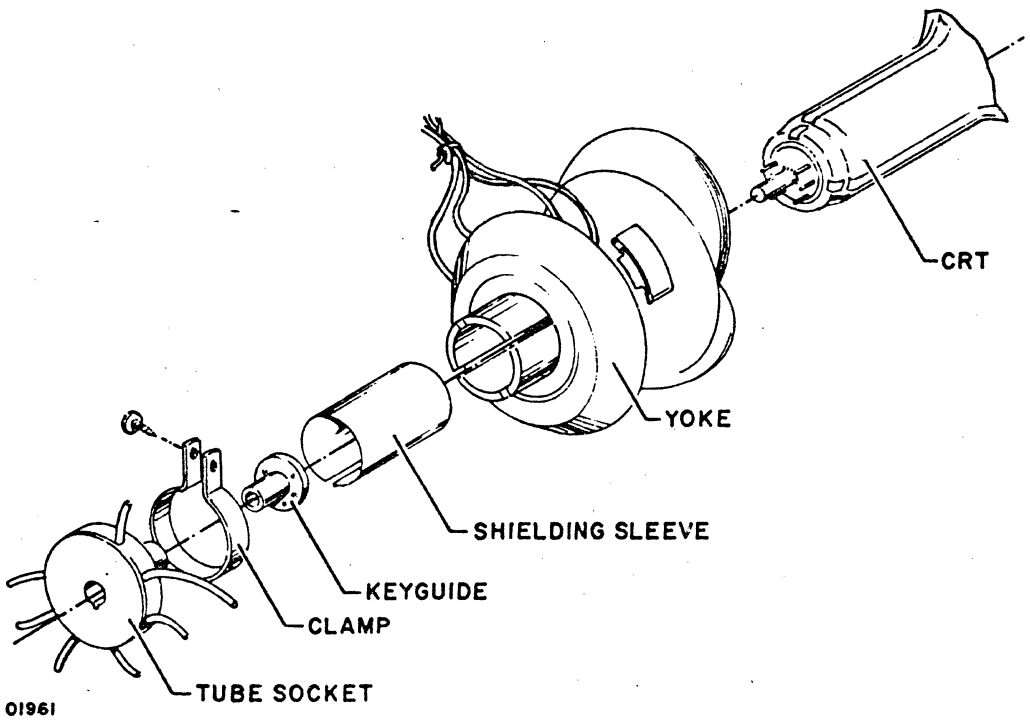


Figure CRT18. CRT Yoke Assembly

7) Remove four Phillips-head screws which hold crt mounting plate to video module chassis, being careful that crt does not slip or fall when last screws are removed.

WARNING

Never allow crt to rest on or be supported by its neck.

8) Support crt neck with one hand and carefully remove yoke with other hand.

9) Withdraw crt carefully from wire chassis of video module. Place crt facedown on clean, soft cloth covering flat, stable surface (bench) with neck of crt pointing upward.

10) Remove replacement crt from shipping carton and place on clean, soft cloth covering flat, stable surface facedown with neck pointing upward.

11) Place bad tube carefully into shipping carton and secure for shipment.

12) Without resting crt on its neck, position crt for mounting on video module chassis (neck is carefully inserted into chassis frame to vicinity of yoke).

13) Fasten crt mounting plate to wire chassis with four Phillips-head screws.

14) Position shielding sleeve (figure CRT18) on neck of crt with one hand and slip yoke over neck and slide forward over sleeve. Sleeve should stick out from back of yoke when yoke is positioned forward.

15) Slip clamp over back tabs of yoke and tighten screws slightly.

16) Assure that keyguide is in place over pins on end of crt. Keyguide is illustrated in figures CRT17 and CRT18.

17) Carefully position tube socket over end of crt and gently push socket into place so pins enter socket without bending.

18) Install video module into terminal display. Refer to steps 6 through 15, procedure CRT12.

19) Before power is applied to device, insert high-voltage lead from high-voltage transformer into crt anode.

20) Check that connectors are attached correctly to BJ1 and BJ4 of video module printed-circuit board.

21) Perform horizontal and vertical alignment, procedure CRT14.

Procedure CRT14 — Horizontal and Vertical Alignment

To align display, perform the following:

1) If this alignment is the result of yoke having been removed or a new crt installed, check that high-voltage lead was reinstalled, printed-circuit board connectors are reconnected, and plug from +15-vdc regulators is attached to socket from logic module.

2) Connect ac power cord and turn power on by pressing POWER ON/OFF switch to ON position.

WARNING

With power applied, severe shock will be received if high-voltage transformer or lead to anode or area of anode on crt is touched. Be careful when following procedures are performed not to touch anything higher than yoke. Keep tools out of area while positioning yoke.

3) Position ON LINE/LOCAL switch to LOCAL.

4) Position TEST/NORMAL switch to NORMAL.

5) Press MASTER RESET (rear panel pushbutton).

6) Enter full display of H characters by momentarily pressing the H character key while pressing REPEAT key. Hold REPEAT key down. If unable to create H character display, proceed to sheet 1 of table CRT1, DDLT for Display Terminal.

7) Check if raster of H characters is centered correctly on screen. If not, turn off power and proceed to step 8. If raster is centered, go directly to step 11.

8) Turn power off and loosen clamp screw which holds yoke in position on neck of crt.

9) Turn power on. Enter a full raster of H characters.

10) If raster of H characters is tilted, rotate yoke both ways until it is centered.

11) Observe raster of H characters on the screen. Are H characters in leftmost column and rightmost column aligned correctly and of sufficient vertical height (similar to H characters in center of screen)? If not, go to step 12; if H characters are of sufficient height on top and bottom, go to step 13.

12) Check that shielding sleeve between yoke and neck of crt is in place approximately as shown in figure CRT19. If shielding sleeve is not correctly positioned, left side of screen will be distorted while right side is not, or right side of screen is distorted while left is not. Pushing shielding sleeve inward toward the yoke has the effect of distorting left portion of screen; if pushed all the way forward, the entire left-half of screen is blacked out. If characters on screen are not uniformly distorted on one side as opposed to the other side, but, instead, H characters are compressed on top and not bottom, or characters are compressed on bottom and not top, the problem is in the adjustment of the vertical linearity potentiometer (figure CRT20). If vertical linearity cannot be improved by adjusting vertical linearity potentiometer, replace vertical choke (procedure CRT16) and try to adjust vertical linearity again.

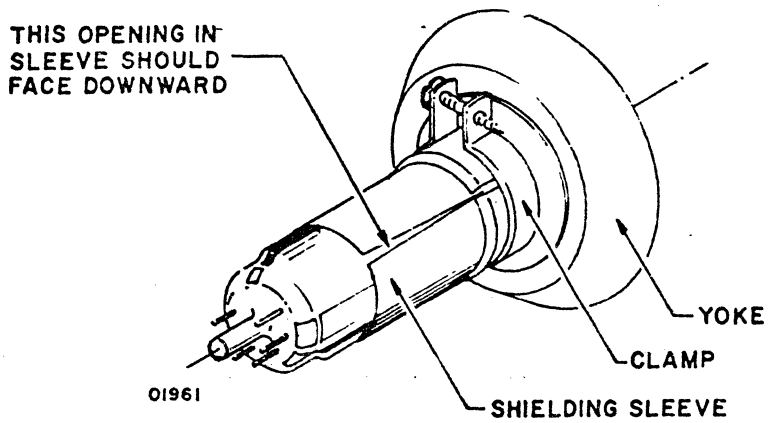


Figure CRT19. Shielding Sleeve Positioning

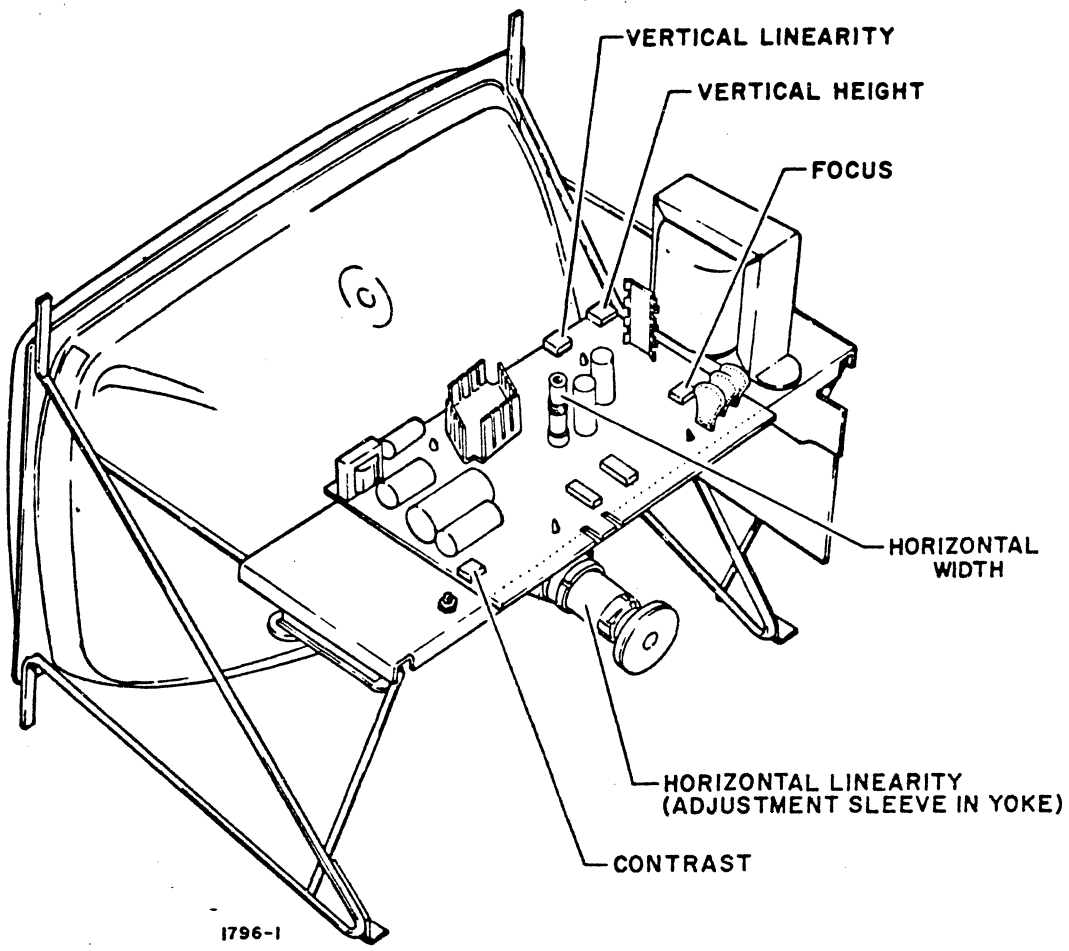


Figure CRT20. Focus, Contrast, and Vertical Linearity

13) After yoke and shielding sleeve are correctly adjusted, carefully position clamp over tabs of yoke and, without using force, tighten clamp screw until clamp is snug over tabs and neck of crt.

14) Perform monitor adjustments (procedure CRT26).

Procedure CRT15 — Replacing Yoke on Display Terminal CRT

To remove yoke from neck of crt, perform the following:

1) Press POWER ON/OFF switch to OFF.

2) Disconnect ac power cord from site power outlet.

WARNING

Use extreme care when handling TV module because rough handling can cause crt to implode with tremendous force resulting in severe injury. Do not nick or scratch glass or subject it to any undue pressure during replacement. When handling crt, always wear safety goggles and heavy gloves for protection.

3) Connect heavily insulated wire to ground first and then, while carefully lifting rubber anode cover, discharge surface under rubber cover (including anode terminal end) by sliding end of grounded wire under rubber cover and into anode hole of cathode-ray tube.

4) Pull connector BP4 off edge of video printed-circuit board. Connector BP4 is largest connector with wires leading to yoke.

5) Disconnect flag terminals 9, 10, 18, and 19 from BP4 connector (four wires leading to yoke) by inserting small end of paper clip into top of connector in space available between flag terminal and insulation (see figure CRT21) and then pulling out wire gently from bottom of connector. (Flag terminal end has a wedge-type spring clip which, when released by paper clip, permits flag terminal to be withdrawn with wire from connector.)

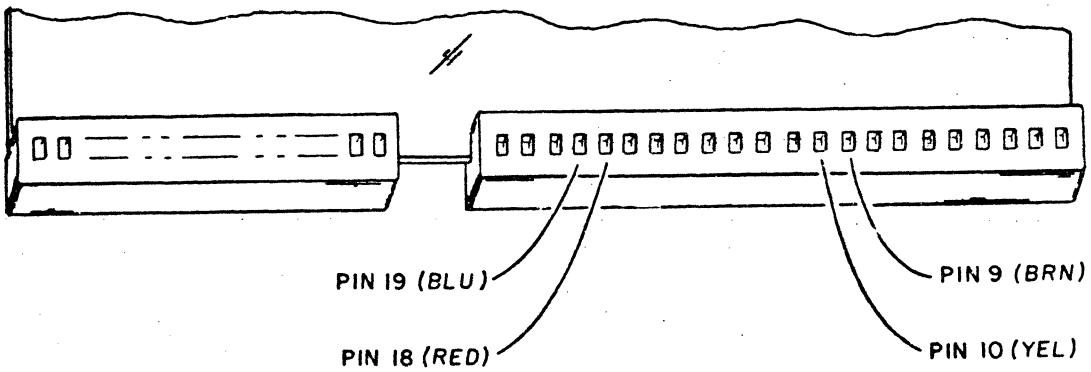


Figure CRT21. Removing Flag Terminals

6) Pull crt tube socket carefully off end of crt (figure CRT22). Do not remove vinyl keyguide.

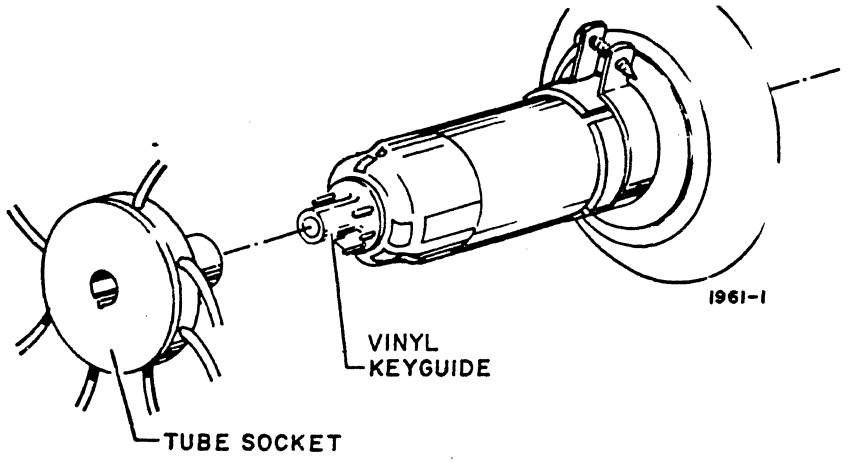


Figure CRT22. CRT Tube-Socket Removal

7) Loosen clamp which holds yoke in place with screwdriver (figure CRT23).

8) After screw is loosened, gently slide yoke and shielding sleeve (which is between crt neck and yoke) back on crt neck until yoke can be removed from device.

WARNING

Never tighten clamp which holds yoke on neck of crt more than enough to hold yoke in place. If tightened excessively, it is possible to break neck of crt. Wear protective goggles and heavy gloves for protection.

9) Position sleeve approximately as shown in figure CRT24, but with opening straight down.

10) Position yoke over sleeve with wires downward.

11) Position clamp over end tabs of yoke and tighten slightly.

12) Plug crt tube socket carefully on pins of crt, making sure guide matches slot in socket.

13) Insert flag terminals into BP4 connector:

a) Push brown wire terminal into slot (pin location 9) until wedge-like clip locks itself in place.

b) Push yellow wire into slot 10.

c) Push red wire into slot 18.

d) Push blue wire into slot 19.

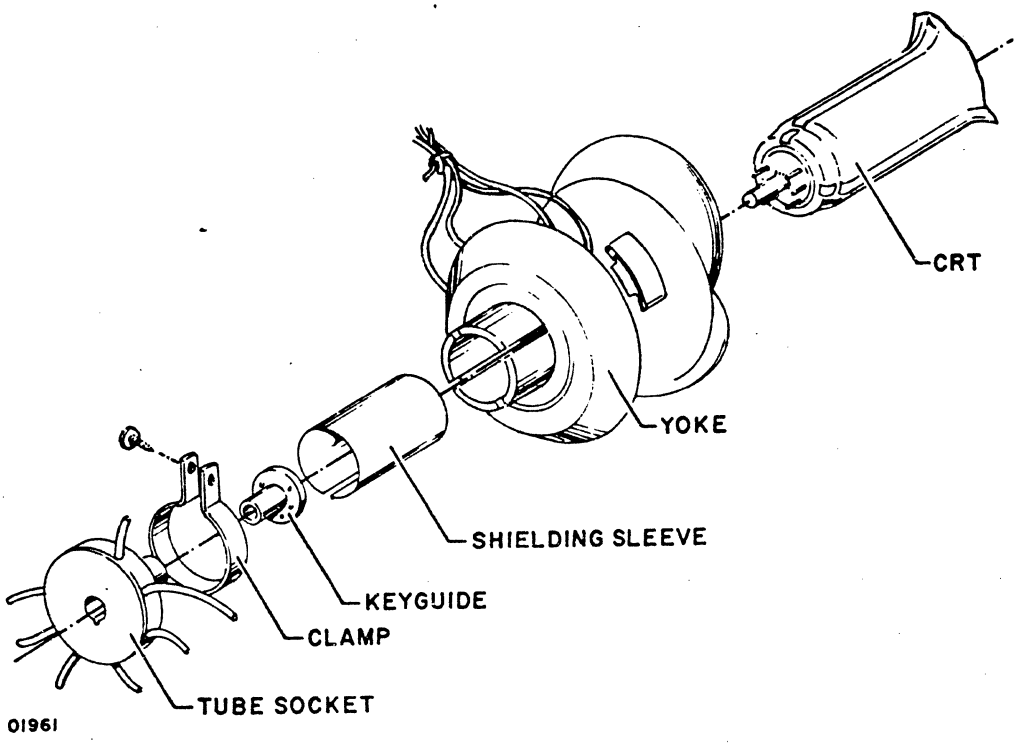


Figure CRT23. Yoke Assembly

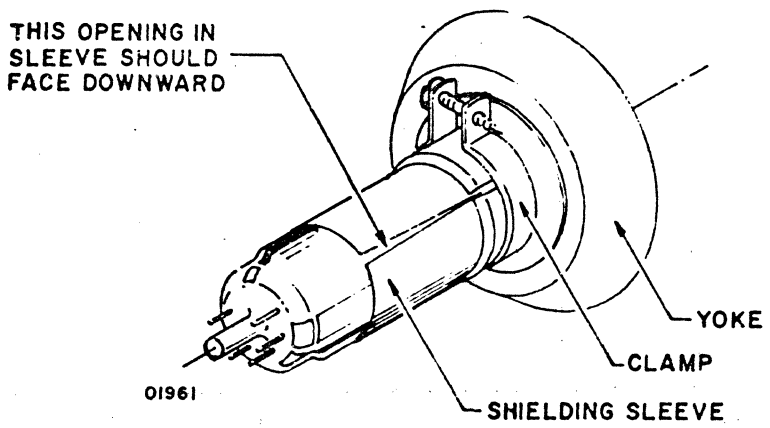


Figure CRT24. Positioning Shielding Sleeve

14) Plug BP4 connector onto edge of video printed-circuit board.

15) Plug ac power cord into site power outlet.

16) Press POWER ON/OFF switch to ON.

17) Check that TEST/NORMAL switch is in NORMAL position on rear panel.

18) Check that circuit breaker on rear panel is up.

19) Check that ON LINE/LOCAL switch is at LOCAL position.

20) Wait 30 seconds.

21) Cursor should appear in lower-left portion of display (unless scroll switch on memory board 08, as shown in figure CRT44, is disabled and CHARACTER/LINE/BLOCK switch on front panel is in BLOCK position — in this case, cursor should appear in upper-left portion of display). If cursor does not appear in either position, go to sheet 1 of table CRT1, DDLT for Display Terminal. After cursor appears, go to step 22.

22) Press REPEAT key after screen is full.

23) Press H character key momentarily while holding REPEAT key down. H characters fill entire screen.

24) Release REPEAT key after screen is full.

25) Is display tilted to right or left? If so, carefully grasp yoke and rotate it slightly. If clamp is too tight, loosen clamp screw. Rotate yoke both directions around neck of crt until picture is centered.

26) Is left edge of display and right edge of display in center of screen horizontally? If not, move sleeve under yoke forward and backward slightly until full display appears centered on screen.

WARNING

Do not overtighten clamp on crt.

27) Tighten screw on crt clamp so yoke cannot move.

Procedure CRT16 — Replacing Display Terminal Vertical Choke

To replace vertical choke (figure CRT25), perform the following:

1) Press POWER ON/OFF switch to OFF.

2) Disconnect BP4 (longest) connector on video printed-circuit board. BP4 connector is on printed-circuit board next to vertical choke and has two flag terminals (pins 6 and 7) attached to wires leading to vertical choke.

3) Remove flag terminals 6 and 7 by inserting end of a small paper clip in space provided between installed flag terminal and connector insulation. Paper clip releases wedge-like friction lock on terminal and permits entire terminal to be removed out from bottom of connector.

3) Remove two hex nuts holding vertical choke to chassis.

4) Lift grounding wire from rear mounting screw, but do not remove from printed-circuit board.

5) Lift vertical choke from chassis.

6) Position new choke in place over two mounting screws so two wires are on side nearest printed-circuit board.

7) Connect grounding wire to rear mounting screw and fasten with hex nut.

8) Fasten other hex nut to front screw.

9) Insert flag terminals into slots 6 and 7 of BP4 connector until wires are locked and secured.

10) Connect BP4 connector to video printed-circuit board.

11) Press POWER ON/OFF switch to ON.

12) Go to sheet 1 of table CRT1, DDLT for Display Terminal.

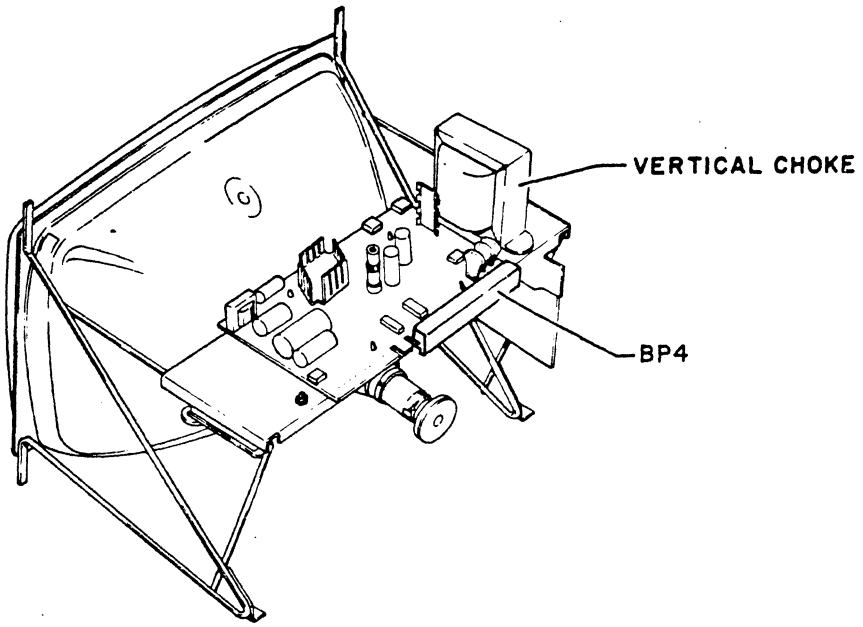


Figure CRT25. Vertical Choke

Procedure CRT17 — Replacing Display Terminal Bulk Power Supply Board

To replace bulk power supply board, perform the following:

1) Press POWER ON/OFF switch to OFF.

2) Disconnect ac power cord from site power outlet.

3) Remove cabinet hood by removing two screws in rear of cabinet.

4) Remove video module (procedure CRT12, steps 1 through 6).

5) Disconnect J1 and J3 connectors (figure CRT26) from bulk power supply board.

6) Disconnect two wires leading from J1 to power-transistor heat sink by pulling quick-disconnect terminals from slide terminals at heat sink.

7) Remove four hex screws holding board to chassis at corners of board.

8) Lift entire assembly out of chassis.

9) Place new board on mounting pegs and fasten with four mounting hex screws.

10) Plug J1 and J3 connectors into sockets (figure CRT26).

11) Connect two ac wires to heat-sink terminal pins (two wires from J1).

12) Replace video module (procedure CRT12).

13) Press POWER ON/OFF to ON and go to sheet 1 of table CRT1, DDLT for Display Terminal.

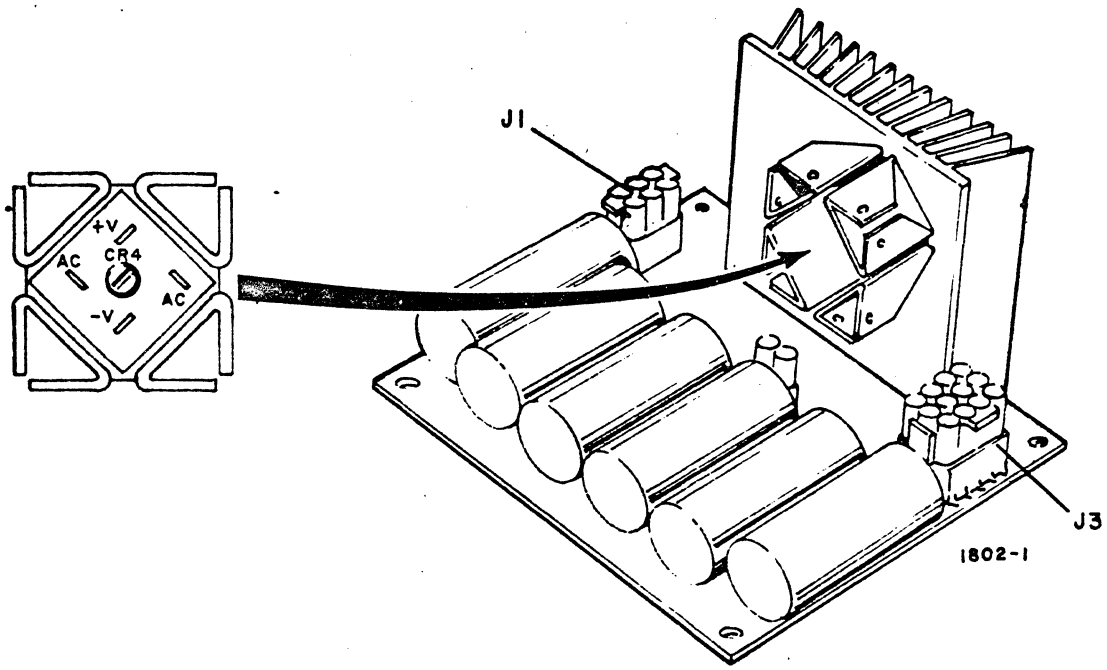


Figure CRT26. Bulk Power Supply Board

Procedure CRT18 — Replacing Keyboard

To replace keyboard, perform the following:

1) Press POWER ON/OFF switch to OFF.
2) If display keyboard is attached to main chassis, lift chassis sufficiently to slide keyboard out of attached position.

CAUTION

If it is necessary to remove keyboard by lifting up main chassis, be careful not to allow chassis to fall backward.

3) Loosen two captive screws which hold keyboard data entry cable connector in display chassis socket at lower-right-front side of display terminal chassis.
4) Disconnect keyboard assembly from terminal by gently pulling data entry cable out of display chassis socket.
5) Turn keyboard assembly over and remove six screws holding keyboard cover to keyboard chassis.
6) Return keyboard to keys-up position and lift cover off (figure CRT27).
7) Remove cable connector from edge of printed-circuit board.
8) Remove two screws which hold printed-circuit board and mask to chassis on one end, loosen other two on other slotted end, and lift out printed-circuit board.
9) Start installing new keyboard by placing mask over new printed-circuit board and position both over four mounting screws in keyboard chassis.
10) Insert and fasten four screws which secure printed-circuit board to chassis.
11) Attach connector to printed-circuit board.
12) Place cover over assembly.
13) Holding cover in place, turn assembly over and insert six screws into bottom of chassis.
14) Complete installing new keyboard by doing steps 4, 3, and 2 in reverse order and reverse action.

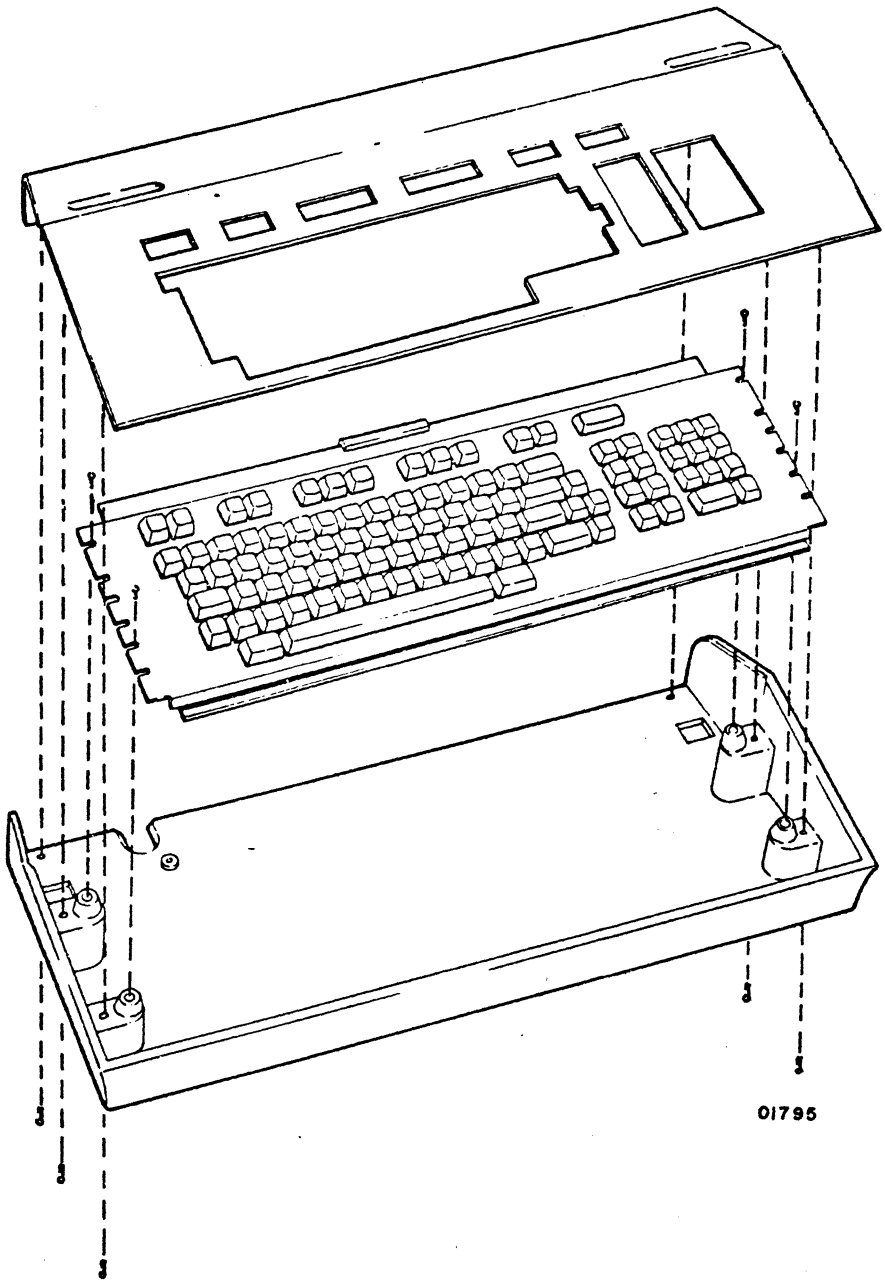


Figure CRT27. Keyboard Assembly

Procedure CRT19 — Replacing Display Terminal AC Entry Transformer

To replace ac entry transformer (figure CRT28), perform the following:

1) Press POWER ON/OFF switch to OFF.
2) Remove cabinet hood by removing two screws at rear of cabinet and sliding cabinet to rear and up.
3) Remove video module (procedure CRT12, steps 1 through 6).
4) Disconnect connector at J1 of bulk power supply (figure CRT26).
5) Disconnect connector leading to ac entry panel.
6) Disconnect single quick-disconnect terminal at transformer.
7) Remove four screws which hold transformer to bottom of chassis.
8) Lift transformer out of chassis.
9) Place new transformer into position vacated by old one.
10) Fasten down transformer with four screws.
11) Connect single quick-disconnect terminal at transformer.
12) Connect J1 connector to bulk power supply board.
13) Connect connector leading to ac entry panel.
14) Replace video module (procedure CRT12, steps 7 through 15).
15) Press POWER ON/OFF switch to ON.
16) Go to sheet 1 of table CRT1, DDLT for Display Terminal.

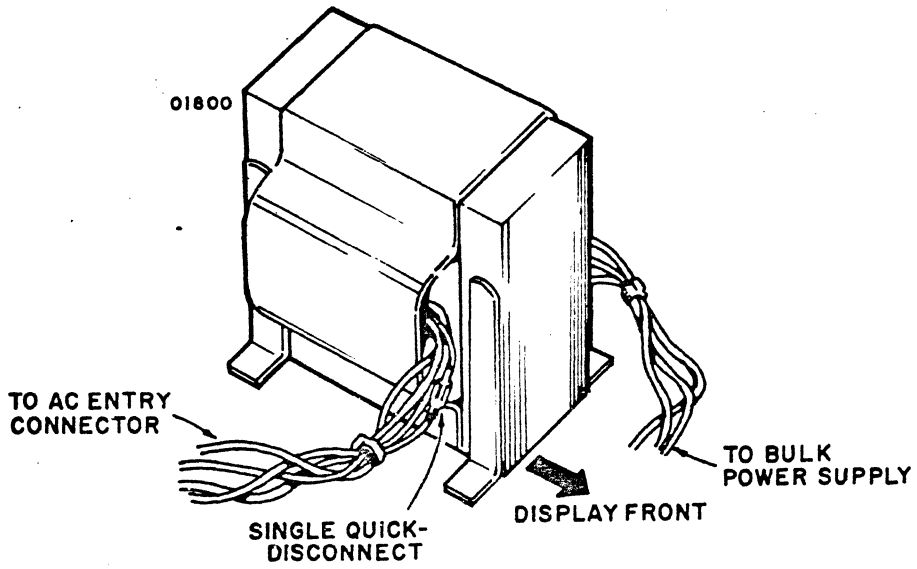


Figure CRT28. AC Entry Transformer

To measure +465 vdc, perform the following:

1) Set voltmeter to measure +465 vdc.
2) Remove cabinet hood (procedure CRT21).
3) Press POWER ON/OFF to ON.
4) Connect black (-) lead from voltmeter to chassis ground.

WARNING

Do not touch anything with hands and use only one hand at a time to connect leads to test points.

5) Connect red (+) lead to resistor R8A (figure CRT29).
6) Check that voltmeter indicates +465 vdc ±47 vdc.
7) If within tolerances, go to step 8; if not, go to sheet 8 of table CRT1, DDLT for Display Terminal.

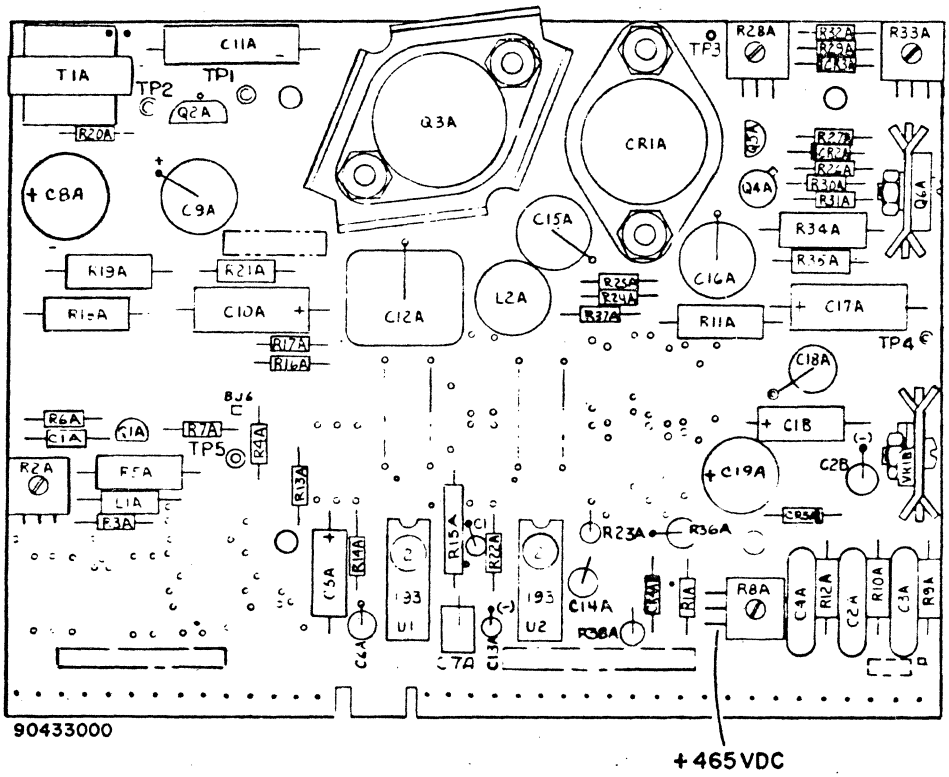


Figure CRT29. Test Point for +465 VDC

To measure - 190 vdc, perform the following:

8) Set voltmeter to measure - 190 vdc.

9) Connect positive (+) lead to chassis ground. If voltmeter has separate switch for selecting -dc, reverse polarity, such as Simpson Model 250, connect common (black lead) to chassis ground and select -dc on meter.

10) Connect negative (-) lead to R1A (figure CRT30).

11) Check that voltmeter indicates - 190 vdc ± 25 vdc.

12) If reading is within tolerances, go to step 13; otherwise, go to sheet 8 of table CRT1, DDLT for Display Terminal.

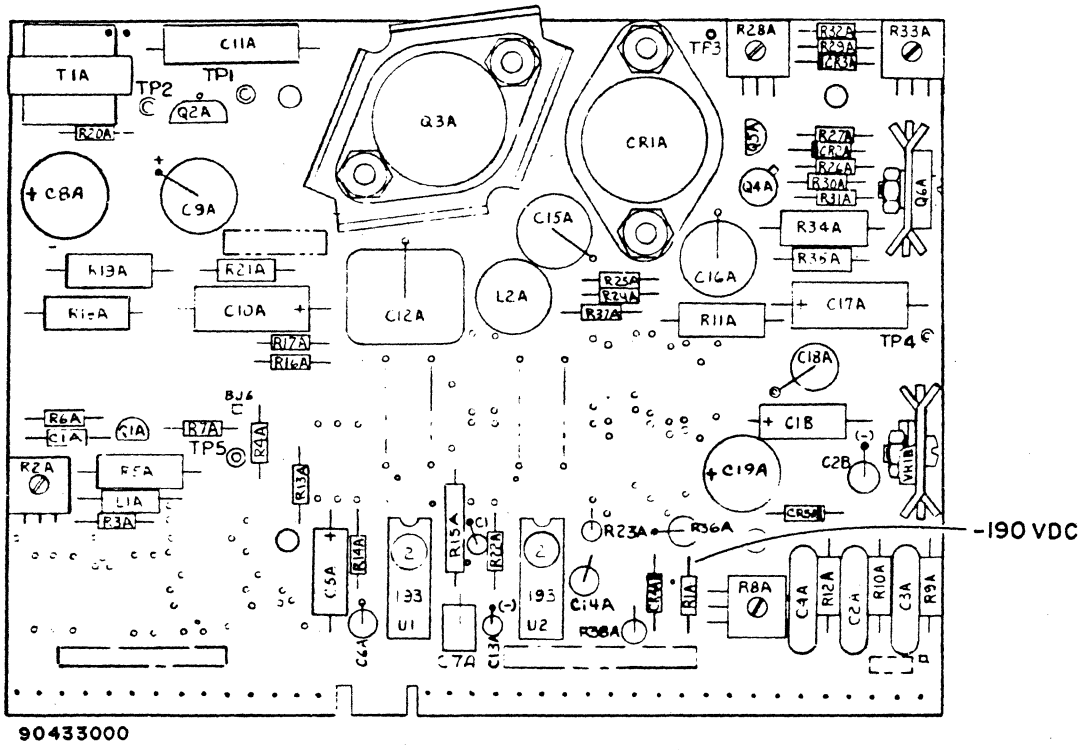


Figure CRT30. Test Point for -190 VDC

To measure +45 vdc, perform the following:

13) Set voltmeter to measure +45 vdc.

14) Connect black lead to chassis ground.

15) Connect red (+) lead to diode CR4A (figure CRT31).

16) Check that meter indicates +45 vdc ±4.5 vdc.

17) If within tolerances, go to step 18; if not, go to sheet 8 of table CRT1, DDLT for Display Terminal.

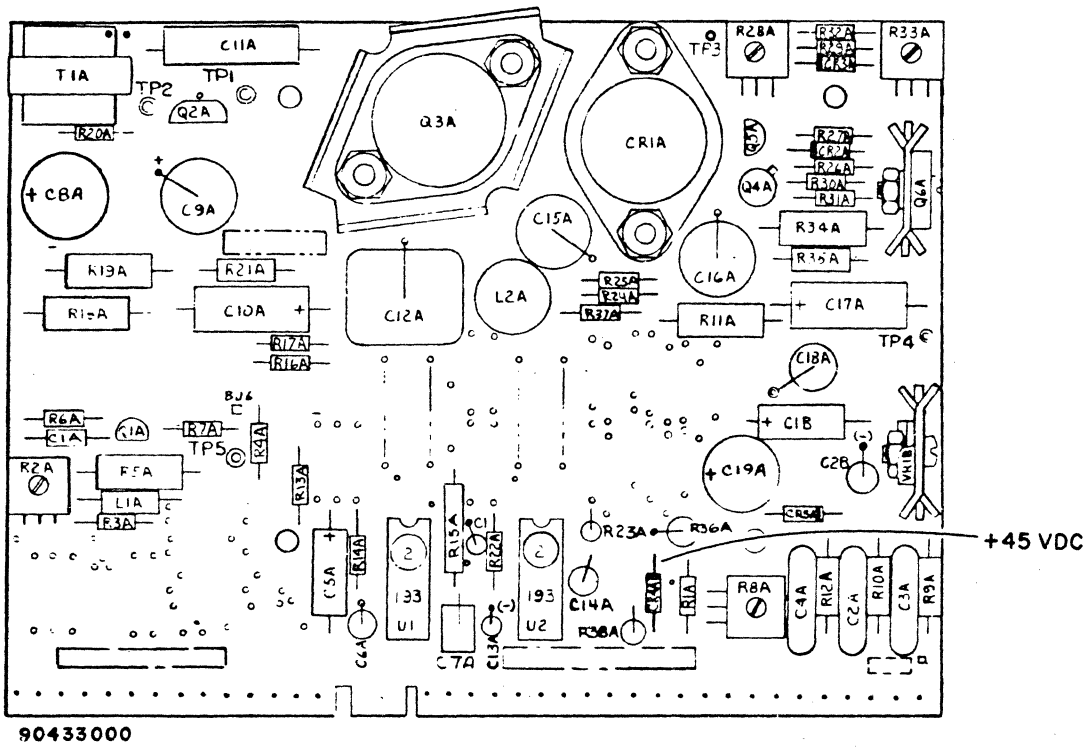


Figure CRT31. Test Point for +45 VDC

To measure +5 vdc and +15 vdc, perform the following:

18) Set voltmeter to measure +15 vdc.

19) Connect black (-) lead to chassis ground.

20) Connect red (+) lead to pin 8 of BJ4 (figure CRT32).

21) Check that meter indicates +15 vdc ±0.75 vdc.

22) Connect red (+) lead to pin 22 of BJ4.

23) Check that meter indicates +15 vdc ±0.75 vdc.

24) Connect red (+) lead to pin 4 of BJ1 (figure CRT32).

25) Check that meter indicates +5 vdc ±0.25 vdc.

26) Go to sheet 8 of table CRT1, DDLT for Display Terminal.

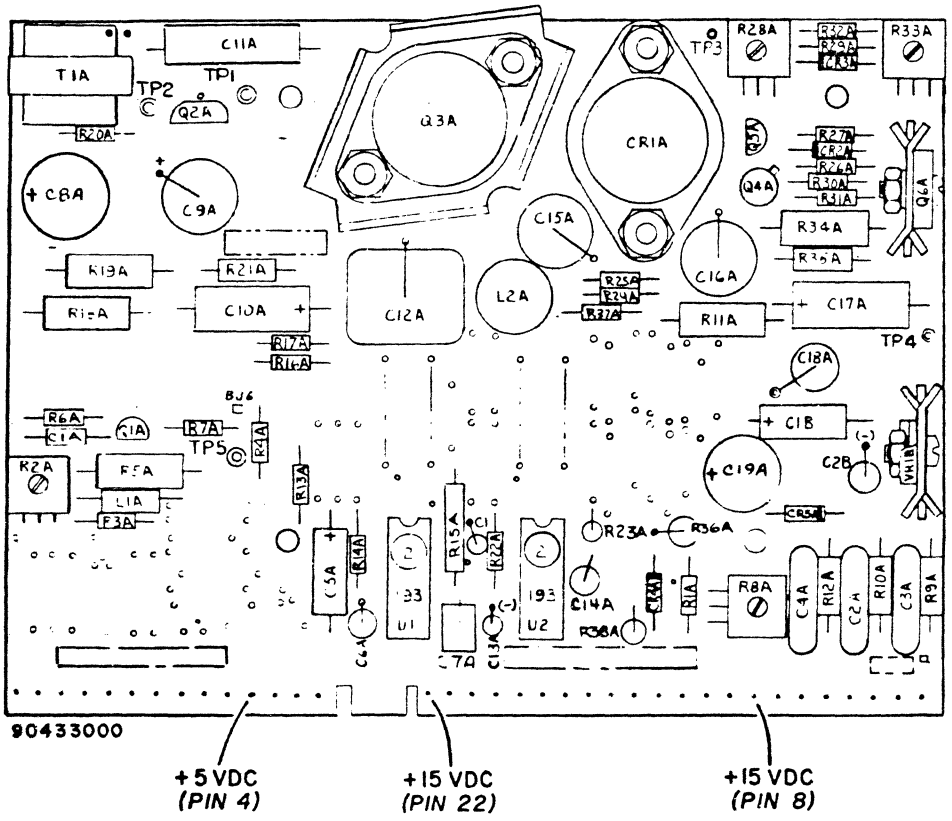


Figure CRT32. Test Pins for +5 and +15 VDC

Procedure CRT21 — Removing Display Terminal Cabinet Hood

To remove cabinet hood, perform the following:

WARNING

Use extreme care when touching TV module because rough handling can cause crt to implode with tremendous force resulting in severe injury. Do not nick or scratch glass or subject it to any undue pressure during replacement. When touching crt, always wear safety goggles and heavy gloves for protection.

WARNING

With power applied, severe shock will be received if high-voltage transformer or lead to anode or area of anode on crt is touched. Be careful when following procedures are performed not to touch anything higher than yoke. Keep tools out of area.

1) Remove two screws in rear of cabinet.
2) Lift cabinet hood back and up from chassis.

To install cabinet hood, perform the following:

3) Position cabinet hood in track of chassis.
4) Fasten two screws in rear of cabinet.

Procedure CRT22 — Measuring Low Voltages (+5 VDC, +12 VDC, -12 VDC, -9 VDC, -23 VDC, and +24 VDC).

To measure +5 vdc, perform the following:

1) Press POWER ON/OFF switch OFF.
2) Remove cabinet hood (procedure CRT21).
3) Press POWER ON/OFF switch ON.
4) Check for power on condition (illuminated LED's) on board A03 in logic card cage. If no LED is illuminated, check that ac power cord is plugged into site ac power outlet. If still unable to get indicators to light, proceed to sheet 1 of table CRT1, DDLT for Display Terminal.
5) Set voltmeter to measure +5 vdc.
6) Apply voltmeter black (-) lead to ground (GND) test point on A03 board (figure CRT33).
7) Apply red (+) lead to +5-vdc test point (figure CRT33).
8) Meter should indicate +5 vdc. If voltage is other than +5, adjust to +5 by turning adjustment screw of potentiometer R12 (figure CRT33). If unable to adjust, replace A03 card.

NOTE

Only potentiometer R12 which faces rear of device (and can be adjusted while card is installed) is adjustable in the field. Do not adjust any other potentiometer on +5-vdc regulator board.

To measure +24 vdc, perform the following:

9) Set meter to measure +24 vdc.
10) Apply red (+) lead to +18-vdc test point (figure CRT33) and black (-) lead to GND (figure CRT33).
11) Check that meter indicates a reading of +24 vdc ±6 vdc.
12) If measurable voltage is less than +17 vdc or more than +30 vdc, replace bulk power supply board (procedure CRT17).

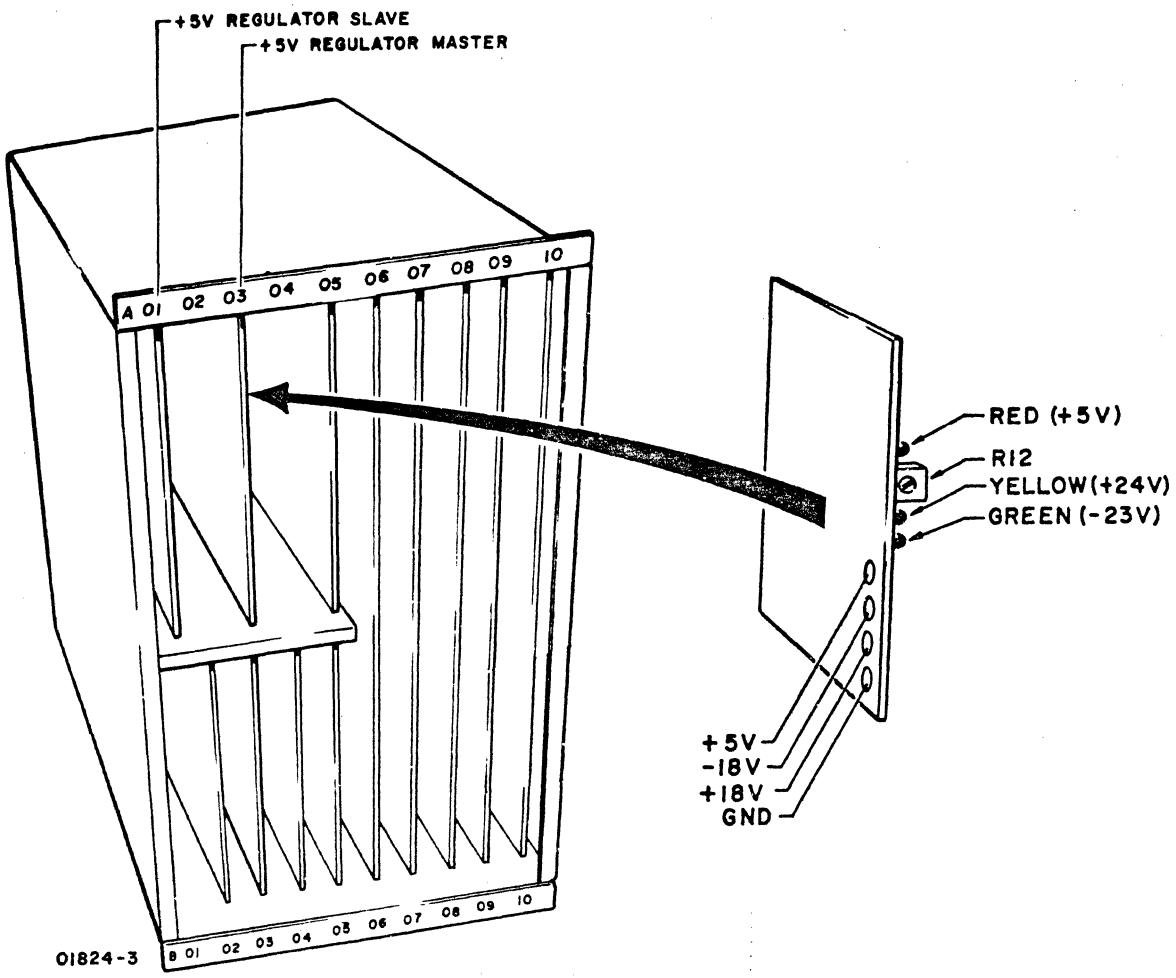


Figure CRT33. +5-VDC Regulator Board Test Points

To measure -23 vdc, perform the following:

13) Set meter to measure -23 vdc.

14) Apply black (-) lead to -18-vdc test point and red (+) lead to GND (figure CRT33).

15) Check meter for -23 vdc ±6 vdc.

16) If unable to obtain measurable voltage reading, replace bulk power supply board (procedure CRT17).

To measure -9 vdc, perform the following:

17) Set meter to measure -9 vdc.

18) Apply red (+) lead to GND (figure CRT 34).

19) Apply black (-) lead to -9-vdc test point on board 08 (figure CRT34).

20) Check that meter indicates reading of -9 vdc ±0.5 vdc. If voltage reading falls outside indicated tolerance, replace bulk power supply board (procedure CRT17).

To measure -12 vdc, perform the following:

21) Set meter to measure -12 vdc.

22) Apply black (-) lead to -12-vdc test point on edge of board 09, just above test point 22, approximately 1-1/4 inch below board midpoint (figure CRT34).

23) Apply red (+) lead to GND (figure CRT34).

24) Check that meter indicates reading of -12 vdc ±0.6 vdc.

25) If voltage is not within tolerances of step 24, replace bulk power supply board (procedure CRT17).

To measure +12 vdc, perform the following:

26) Set meter to measure +12 vdc.

27) Apply red lead to +12 test point on edge of board 09 just below test point 30 (figure CRT34).

28) Apply black (-) lead to GND (figure CRT34).

29) Check that meter indicates reading of +12 vdc ±0.vdc.

30) If voltage reading falls outside acceptable tolerances (step 29), replace bulk power supply board (procedure 17).

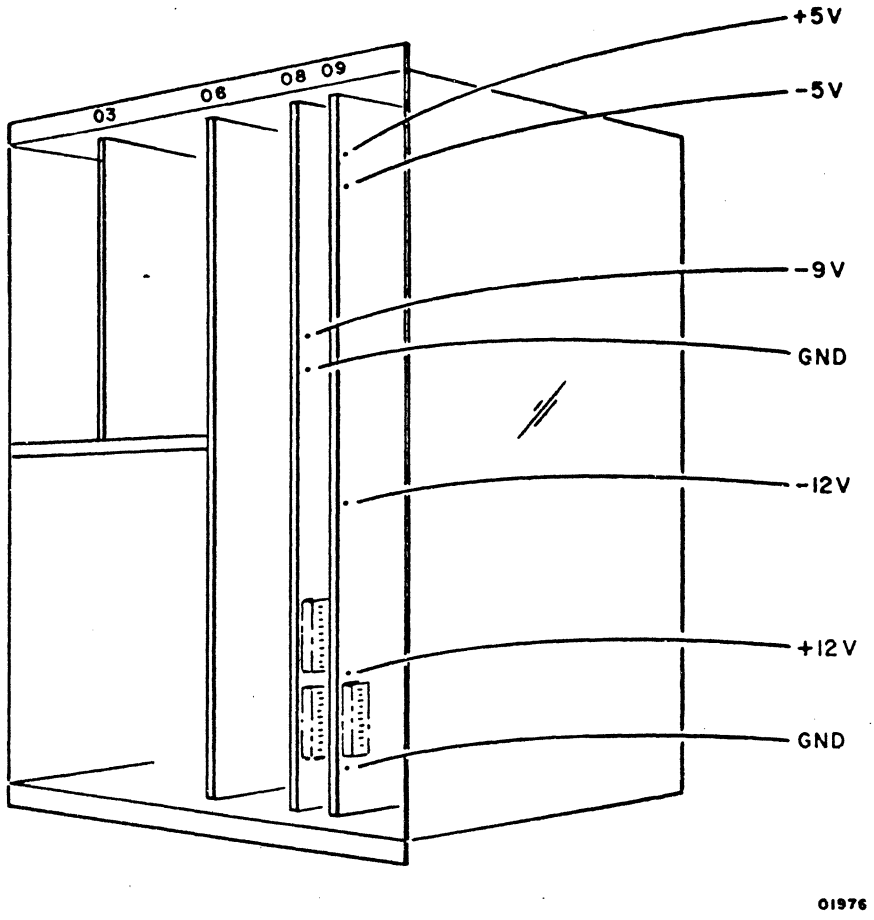


Figure CRT34. Memory and Processor Voltage Test Points

Procedure CRT23 — Checking and Replacing INTENSITY Control on Display Panel

To check INTENSITY control (figure CRT35), perform the following:

1) Press POWER ON/OFF switch OFF.
2) Remove indicator panel on which control is mounted (figure CRT35) by inserting fingers between panel and bezel (CRT10). Carefully pry out panel gradually from one end and then the other to release clips holding panel to bezel.
3) Set ohmmeter to X 1000 setting.
4) Attach one ohmmeter lead to center pin on back of INTENSITY control and the other lead to one of the other two pins.
5) Rotate INTENSITY control knob while holding leads to pins. Check that meter reads 0 ohm when INTENSITY is fully counterclockwise (full right) and 100,000 ohms when fully clockwise (full left). Replace INTENSITY control if unable to obtain correct results (steps 8 through 14 describe replacement).
6) Remove lead on outer pin and attach it to pin on other side of center pin. Keep other lead on center pin.
7) Rotate INTENSITY control knob as described previously (step 5) and observe meter for same readings. If unable to obtain correct results, replace INTENSITY control.

To replace INTENSITY control, perform the following:

8) Test new control with ohmmeter (steps 3 through 7).
9) Unsolder three wires from old control. Identify wires.
10) Pull off knob to gain access to hex ringnut on front side of panel.
11) Remove hex ringnut using a 1/2-inch socket.
12) Remove ground wire on inside of panel and withdraw old control from unit.
13) Solder three wires to new control and attach to panel by inserting control post through hole in panel and screwing on hex ringnut from the front. Before tightening nut fully, attach ground wire between control and panel.
14) Replace panel by inserting bottom edge in bezel opening and pressing panel into place carefully while aligning panel with hole and gently apply pressure down and in. Slight pressure on clips allows them to be inserted easily.

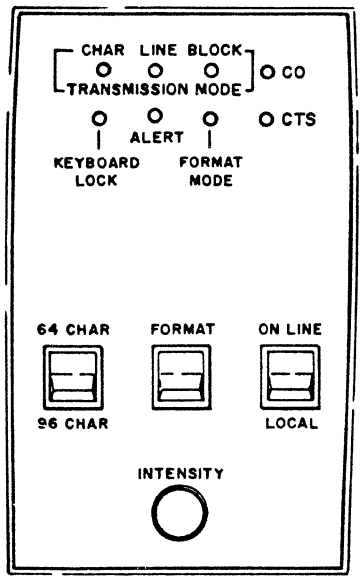


Figure CRT35. Intensity Control

Procedure CRT24 — Checking and Replacing Baud Rate Switches

To check operation of baud rate switches, perform the following:

1) Press POWER ON/OFF switch to OFF.

2) Remove cabinet hood (procedure CRT21).

3) Note setting of baud rate switches on processor board 09 and check their positions with decal on side of card cage (figure CRT44) to verify that low baud rate switch setting is 110 baud (switches set = 1111 on board 09) and high baud rate switch setting is 9600 baud (switches set = 0110 on board 09). Figure CRT36 shows these two basic settings. If system requires any of the other available low and/or high baud rate(s) check switch settings per figures CRT38 and CRT39.

4) Press HIGH RATE/300/LOW RATE switch on front panel to LOW RATE.

5) Position TEST/NORMAL switch (ac power entry panel) to TEST.

6) Press POWER ON/OFF switch to ON.

7) Wait 30 seconds. If checksum pattern (figure CRT45) appears on top two display lines, proceed to step 8 otherwise, proceed to table CRT1 DDLT for Display Terminal, sheet 1.

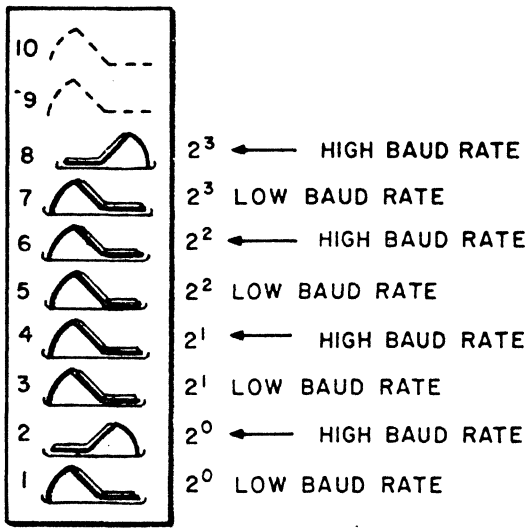
8) Press space bar on keyboard twice.

9) Wait until terminal begins writing characters on screen at bottom line (may take 15 seconds for terminal to reach portion of memory that is displayed). Observe what should be the low rate (110 baud) characters being written on display.

10) Press HIGH RATE/300/LOW RATE switch on front panel to 300 while observing characters being written on screen. Rate of character writing on screen should more than double (from 110 baud to 300 baud).

11) Press HIGH RATE/300/LOW RATE switch on front panel to HIGH RATE while observing characters being written on screen. Rate of character writing on screen should increase by factor of 32 (from 300 baud to 9600 baud).

12) Replace processor board (procedure CRT8) if rate at which characters are written on screen does not speed up appropriately when rate switch is moved from LOW RATE to 300 or from 300 to HIGH RATE. If problem still exists, check HIGH RATE/300/LOW RATE switch (steps 13 through 18).



NOTE: SWITCHES INDICATED BY DOTTED LINES ARE USED FOR OTHER FUNCTIONS.

01968

Figure CRT36. High Baud Rate Set to 9600 — Low Baud Rate Set to 110

13) Press POWER ON/OFF to OFF.

14) Remove front switch-indicator panel by inserting fingers or knife between panel and bezel.

15) Check continuity between center black wire (pin S5-2) and top white/black wire (pin S5-1) with switch pressed to HIGH RATE (up) position. Ohmmeter or continuity tester should indicate no resistance (closed circuit).

16) Keep meter test leads on top and center pins and move switch to 300 (center) position and then to LOW RATE (bottom) position. Meter should indicate an open circuit in both positions.

17) Check continuity between center black wire (pin S5-2) and bottom white/orange wire (pin S5-3) with switch pressed to LOW RATE position. Meter should indicate a closed circuit (continuity). If circuit is open, replace switch (step 19, etc.).

18) With meter leads still attached to center pin and bottom pin, press switch to 300 (center) position and HIGH RATE (top) position. Meter should show an open circuit in both switch positions. If a closed circuit is indicated, replace switch (step 19, etc.).

Figure CRT37. Not Assigned

To remove HIGH RATE/300/LOW RATE switch, perform the following:

19) Press POWER ON/OFF switch to OFF.

20) If panel is not removed from bezel, insert fingers or knife between bezel and panel to remove.

21) Identify wires with masking tape: top white/black wire should be marked S5-1; center black wire should be marked S5-2; and bottom white/orange wire should be marked S5-3.

22) Slide wires from switch terminals.

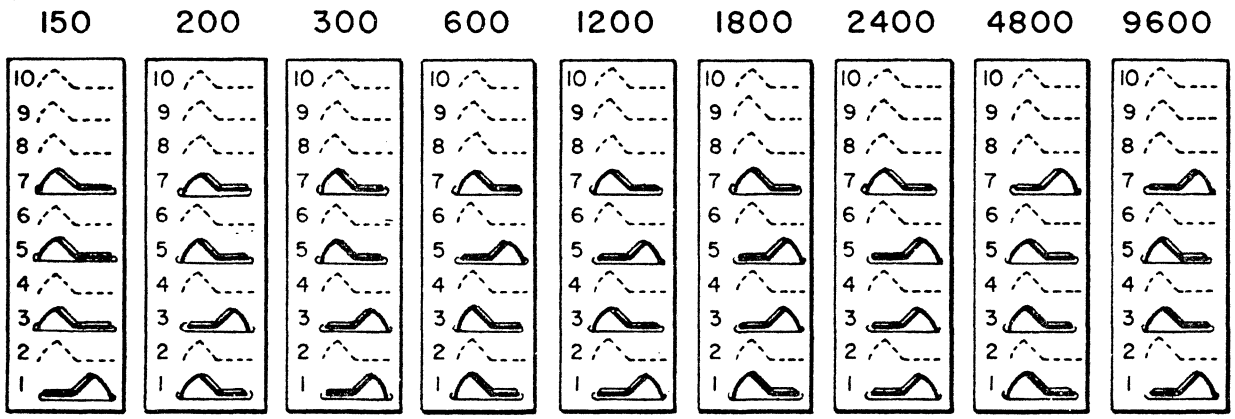
23) Remove switch from panel by pushing it out from pin side of panel.

To install new switch, perform the following:

24) Insert switch into mounting hole in front of panel and press into place, making sure pins are on right (same as other switches).

25) Slide wires on pins; S5-1 on top, S5-2 (black) in center, and S5-3 on bottom.

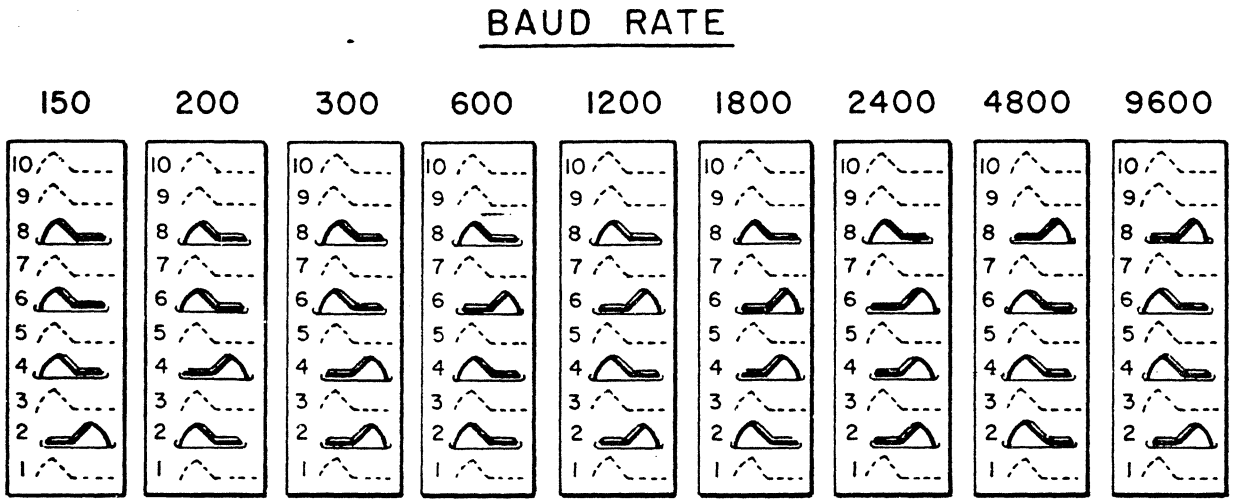
26) Position panel over mounting hole in chassis and press gently into bezel.



NOTE: SWITCHES INDICATED BY DOTTED LINES ARE USED FOR OTHER FUNCTIONS.

01969

Figure CRT38. Setting Low-Baud-Rate Switches



NOTE: SWITCHES INDICATED BY DOTTED LINES ARE USED FOR OTHER FUNCTIONS.

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Figure CRT39. Setting High-Baud-Rate Switches

Procedure CRT25 — Checking Keyboard

To check operation of keyboard, perform the following:

1) Check lowercase keys (96-character set).

   a) Set 64 CHAR/96CHAR switch to 96 CHAR (figure CRT40).

   b) Release SHIFT LOCK key if locked.

   c) Press each black key in turn (excluding REPEAT and CONTROL keys, but including space bar and numeric pad), examining display for proper character.

2) Check uppercase keys (96-character set).

   a) While pressing either SHIFT key, press each black key in turn (excluding REPEAT and CONTROL keys).

   b) Repeat step a) using other SHIFT key (one key is sufficient).

   c) Press SHIFT LOCK key.

   d) Press one or two black keys, examining display for proper character.

3) Check CONTROL keyboard keys.

   a) Release SHIFT LOCK key if locked.

   b) While pressing either CONTROL key, press each of keys shown in figure CRT41, examining display for control code symbols (see Appendix for control code symbols repertoire).

   c) Repeat step b) using other CONTROL key (one key is sufficient).

4) Check alpha keys (64-character set).

   a) Set 64 CHAR/96 CHAR switch to 64 CHAR (figure CRT40).

   b) Release SHIFT LOCK key if locked.

   c) Press any alpha key, examining display for proper uppercase alpha character.

   d) Return 64 CHAR/96 CHAR switch to normal operating position.

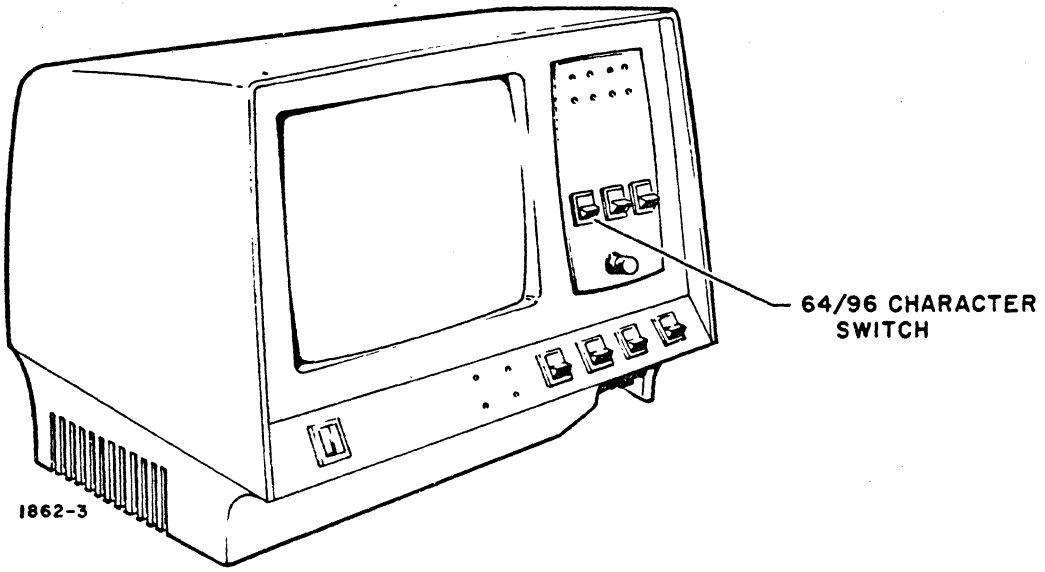

Figure CRT40. 64 CHAR/96 CHAR Switch

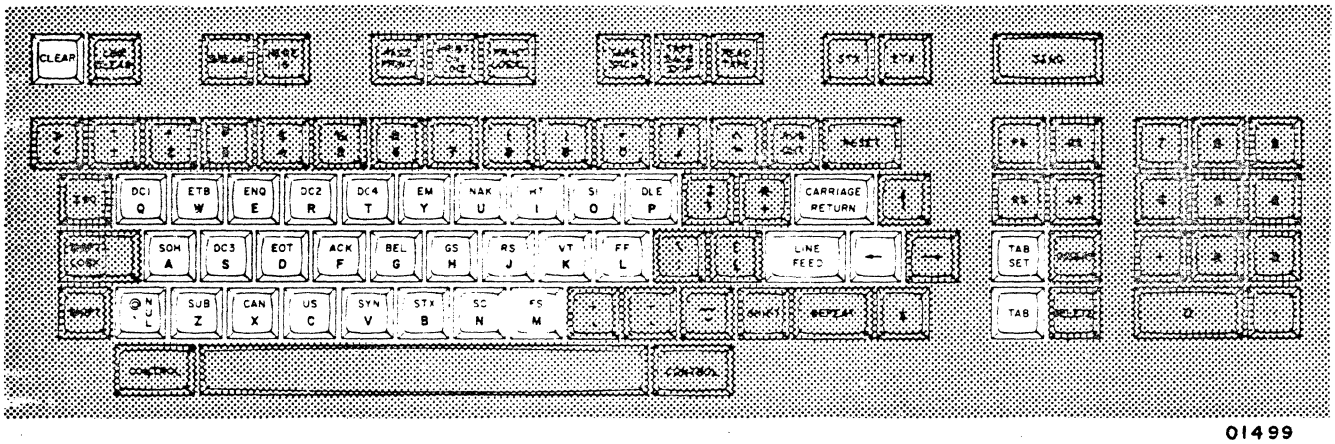

Figure CRT41. Special Control Code Keys

Procedure CRT26 — Adjusting Monitor

If raster/picture is titled or not centered on screen, perform horizontal and vertical alignment (procedure CRT14) before making further video adjustments.

To make video (displayed characters) adjustments, perform the following:

1) Press POWER ON/OFF switch to OFF.
2) Remove cabinet hood (procedure CRT21).
3) Position TEST/NORMAL switch (rear panel) to TEST.
4) Press POWER ON/OFF switch to ON. Wait 30 seconds.
5) If checksum display appears on screen (figure CRT45), proceed with adjustments (step 6); otherwise perform the following:
   a) Turn INTENSITY knob clockwise until raster appears.
   b) If no raster, go to sheet 1, table CRT1, DDLT for Display Terminal.
   c) Increase video gain by turning Contrast control (figure CRT42) clockwise until checksum characters appear on display.
   d) If no video appears, go to sheet 1 of table CRT1, DDLT for Display Terminal.
   e) When checksum appears on display, proceed with adjustments (step 6).
6) ALERT light should be on. If not, replace ALERT indicator (procedure CRT10) as soon as monitor adjustments are made.
7) Press space bar on keyboard three times.
8) Adjust vertical height by turning adjustment screw (figure CRT42) clockwise/counterclockwise until rectangle of displayed characters is 13 cm (5.24 inches) in height.
9) Adjust horizontal width to 20 cm (8.0 inches) by turning adjustment screw clockwise/counterclockwise in coil (figure CRT42) using a 3/32-inch nonmetallic hex driver.
10) Reduce video gain to zero by turning contrast adjustment screw (figure CRT42) fully counterclockwise.
11) Turn INTENSITY control on front panel clockwise until raster appears.
12) Turn INTENSITY control counterclockwise carefully until raster is invisible in normal room lighting but dimly visible in the dark (shaded with hands).
13) Turn contrast adjustment screw clockwise to desired character brightness.

14) Check top line, center line, and bottom line of displayed characters for uniformity. If characters are compressed anywhere on screen, turn vertical linearity adjustment screw (figure CRT42) clockwise or counter-clockwise until character distortion disappears and all lines are equal in vertical size.

15) Insert screwdriver in focus adjustment screw slot (figure CRT42) and adjust while observing characters on screen. Turn focus adjustment screw clockwise until dots (each character dot matrix) elongate toward upper-right corner of display screen. Then turn focus control slowly counter-clockwise until elongated dots pull back to form round dots and entire screen is without fuzziness.

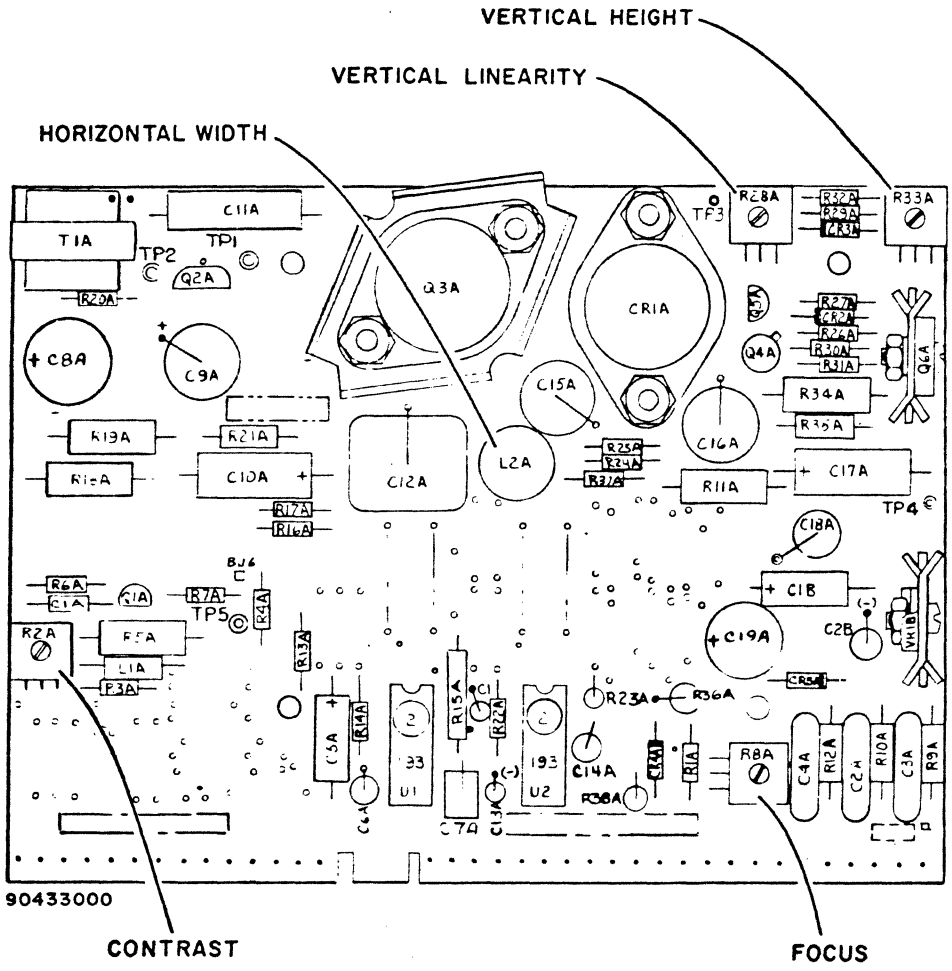

Figure CRT42. Monitor Printed-Circuit Board Adjustments

Procedure CRT27 — Checking and Replacing CHARACTER/LINE/BLOCK Switch

To check operation of switch, perform the following:

1) Press POWER ON/OFF switch to OFF.

2) Remove front switch-indicator panel by inserting fingers or knife between panel and bezel.

3) Check continuity between center black wire (pin S2-2) and top white wire (pin S2-1) with switch pressed to CHARACTER (up) position. Ohmmeter or continuity tester should indicate no resistance (closed circuit).

4) Keep meter test leads on top and center pins and move switch to center (LINE) and bottom (BLOCK) positions. Meter should indicate an open circuit in both positions.

5) Check continuity between black wire (center pin) and bottom white/brown wire (S2-3) with switch pressed to bottom (BLOCK mode) position. Meter should indicate a closed circuit (continuity). If circuit is open, replace switch (step 7, etc.).

6) With leads still attached to two bottom pins, press switch to center position and top position. Meter should show an open circuit in both switch positions. If a closed circuit is indicated, replace switch (step 7, etc.).

To remove switch, perform the following:

7) Press POWER ON/OFF switch to OFF.

8) If panel is not removed from bezel, insert fingers or knife between bezel and panel to remove.

9) Identify wires with masking tape: top white wire should be marked S2-1; center black wire should be marked S2-2; and bottom white/brown wire should be marked S2-3.

10) Slide wires from switch terminals.

11) Remove switch from panel by pushing it out from pin side of panel.

To install new switch, perform the following:

12) Insert switch into mounting hole in front of panel and press into place, making sure pins are on right (same as other switches).

13) Slide wires on pins; S2-1 on top, S2-2 (black) in center, and S2-3 on bottom.

14) Position panel over mounting hole in chassis and press gently into bezel.

Procedure CRT28 — Checking and Replacing Two-Position Switches

To check out two-position switches on front panel, perform the following:

1) Press POWER ON/OFF switch to OFF.
2) Remove panel from chassis by inserting fingers or knife between panel and bezel.
3) Check continuity across two pins of switch as switch is moved to both positions. Meter should move in both directions, indicating open and closed circuits.

To remove two-position switches on front panel, perform the following:

4) With power off and panel separated from chassis, mark wires as necessary for proper reconnection, and slide wires from switch terminals.
5) Press switch out front of panel by pressing switch from inside of panel.

To install new switch, perform the following:

6) Press new switch into position through front of panel.
7) If switch is FULL DUPLEX/HALF DUPLEX, connect white wire to top pin (S4-1).
8) If switch is ON LINE/LOCAL, connect white wire to top pin (S5-1).
9) If switch is 64 CHAR/96 CHAR, connect brown/black/white wire to bottom pin (S1-3).
10) If switch is FORMAT, connect green/white wire to top pin (S2-1).
11) Black wire is always soldered to center pin.
12) If switch is POWER ON/OFF, solder all three yellow wires to appropriate pins as marked.
13) Press panel into hole in bezel carefully until it snaps into place.

Procedure CRT29 — Checking and Replacing Audible Alarm

To check alarm, perform following:

1) Press POWER ON/OFF switch to OFF.
2) Press circuit breaker on rear panel down and unplug ac power cord.
3) Remove front panel strip containing POWER ON/OFF switch on the left side by inserting fingers or knife between panel and bezel near the DTR and REC indicators and then prying gently on panel near CHARACTER/LINE/BLOCK switch. Continue along edge of panel until entire panel is free from bezel.
4) Set ohmmeter to measure resistance at X 1 scale.
5) Insert red (+) probe through hole in bezel and touch Sonalert* alarm pin on right (marked "+"). If Sonalert is not in position shown in figure CRT43, it may be necessary to remove it from its mounting in order to check it (step 7, etc.).
6) While touching right pin with red lead, figure CRT43, insert black lead through hole in bezel and touch it to left lead. Thus touched, Sonalert must sound. If alarm does not sound, replace Sonalert.

To remove Sonalert, perform the following:

7) Remove Sonalert by pushing it free from underside of cabinet base and by gently working it out through the front panel strip slots. If hands are too big to remove Sonalert in this manner, first remove video module (procedure CRT12, steps 1 through 6) and then remove Sonalert by prying it away from floor of cabinet.
8) Pull terminals off Sonalert.

To install Sonalert, perform the following:

9) Press Sonalert into mounting snap.
10) Slide red wire terminal on pin marked "+."
11) Slide black wire terminal on remaining pin.
12) If video module was removed in step 7, replace it (procedure CRT12, steps 7 through 15).

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* Registered trademark of P.R. Mallory & Co. Inc.

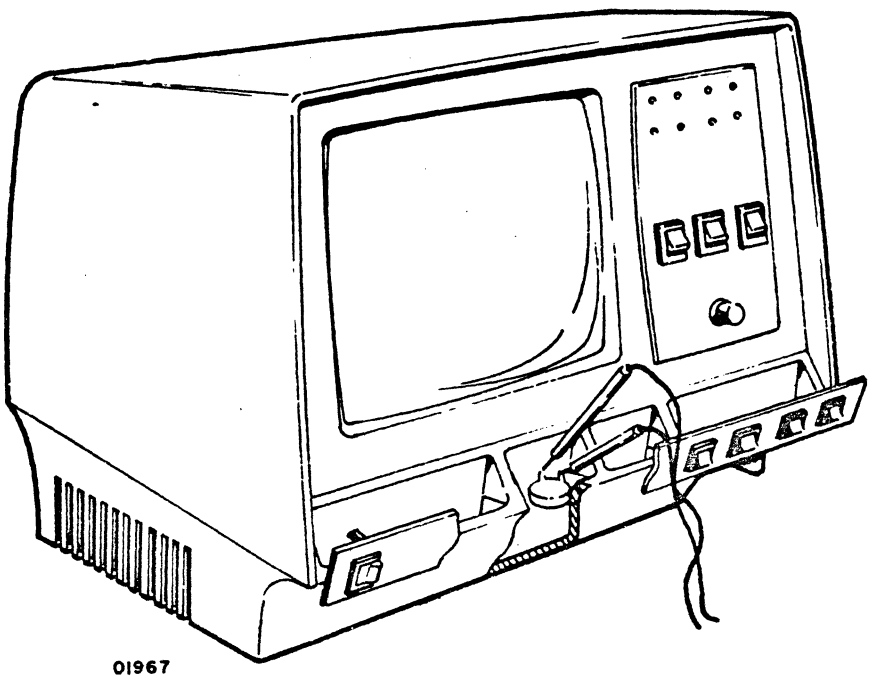


Figure CRT43. Checking Sonalert Alarm

Procedure CRT30 — Adjusting Refresh Stability

If video display is unstable, that is, the entire character display appears to bloom in size in a pulsating fashion, perform the following:

1) Press POWER ON/OFF switch to OFF.
2) Remove cabinet hood (procedure CRT21).
3) Press POWER ON/OFF to ON. Wait 30 seconds.
4) Verify that 60 Hz refresh switch on memory card 08 (figure CRT44) is set to match cycles of input power.
5) With small screwdriver, turn refresh stability adjustment (figure CRT44) counterclockwise/clockwise slowly until character blooming stops. This indicates that video frequency is synchronized to display line frequency. If unable to stop instability, replace refresh board 06 (procedure CRT8).

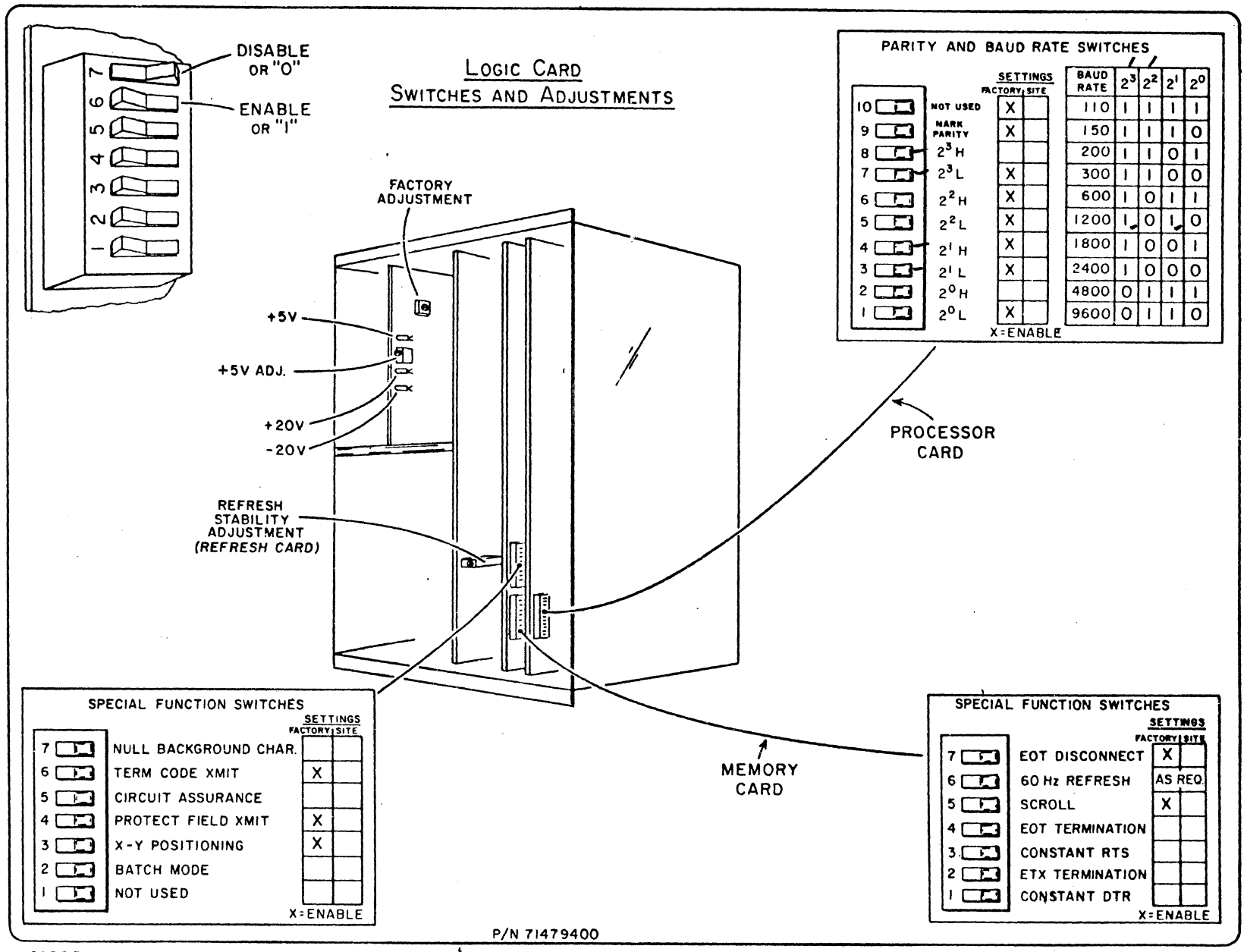


Figure CRT44. Logic Module Decal (Switches and Adjustments)

NOTE: FOR 50 HZ POWER, DISABLE 60 HZ REFRESH SWITCH.

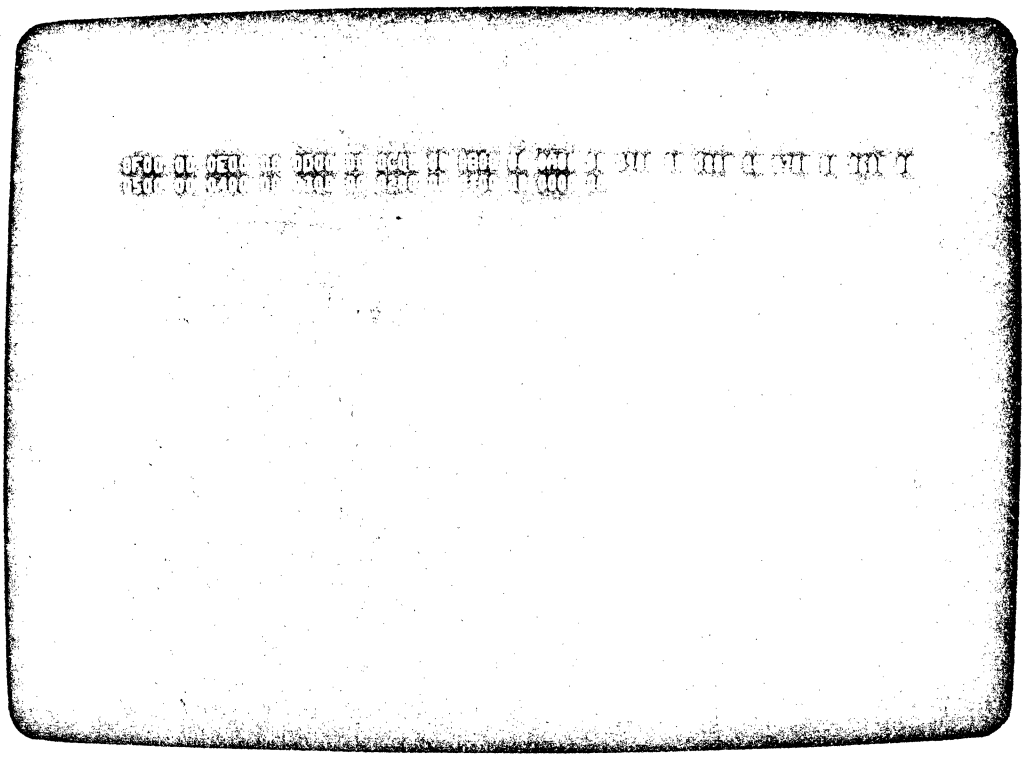


Figure CRT45. Checksum Display

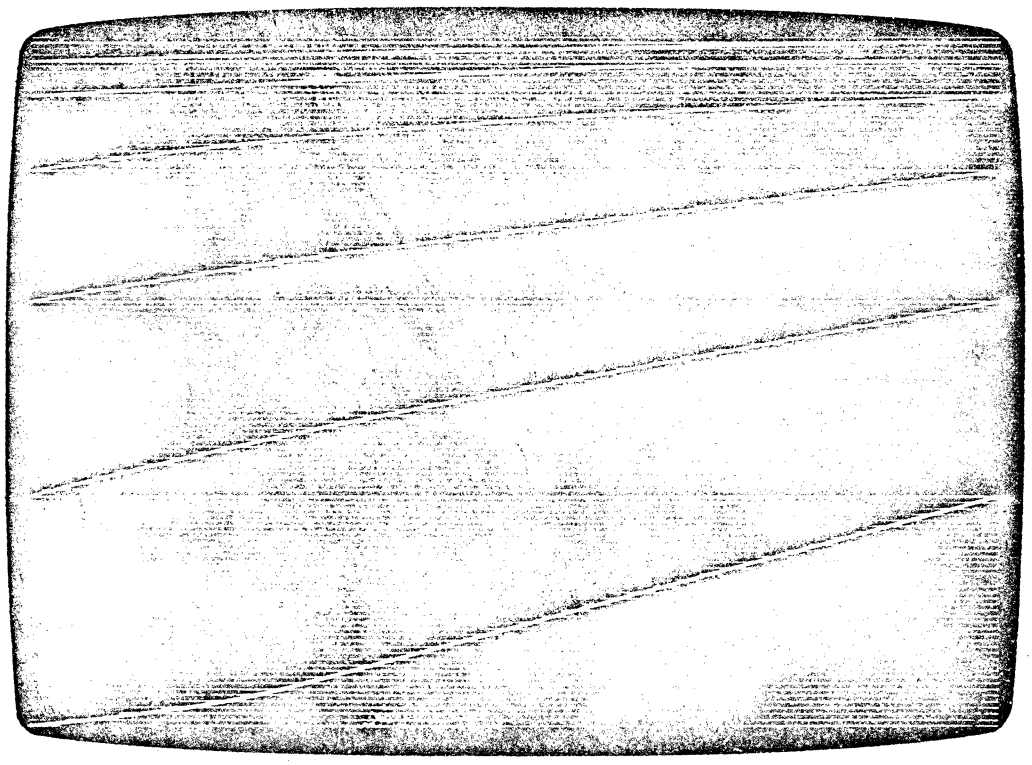


Figure CRT46. Raster Display

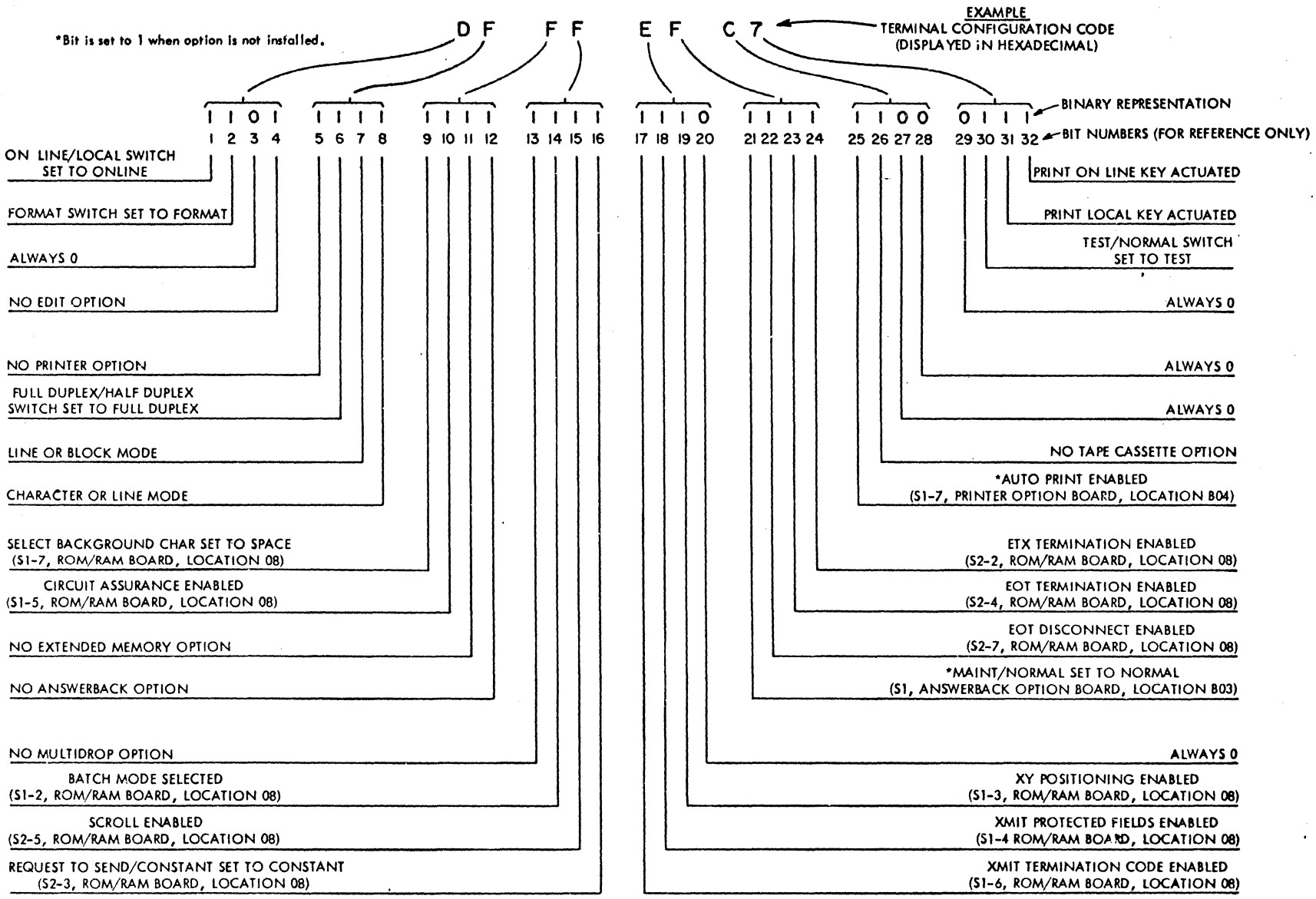


Figure CRT47. Terminal Configuration Display Bit Assignments

01973

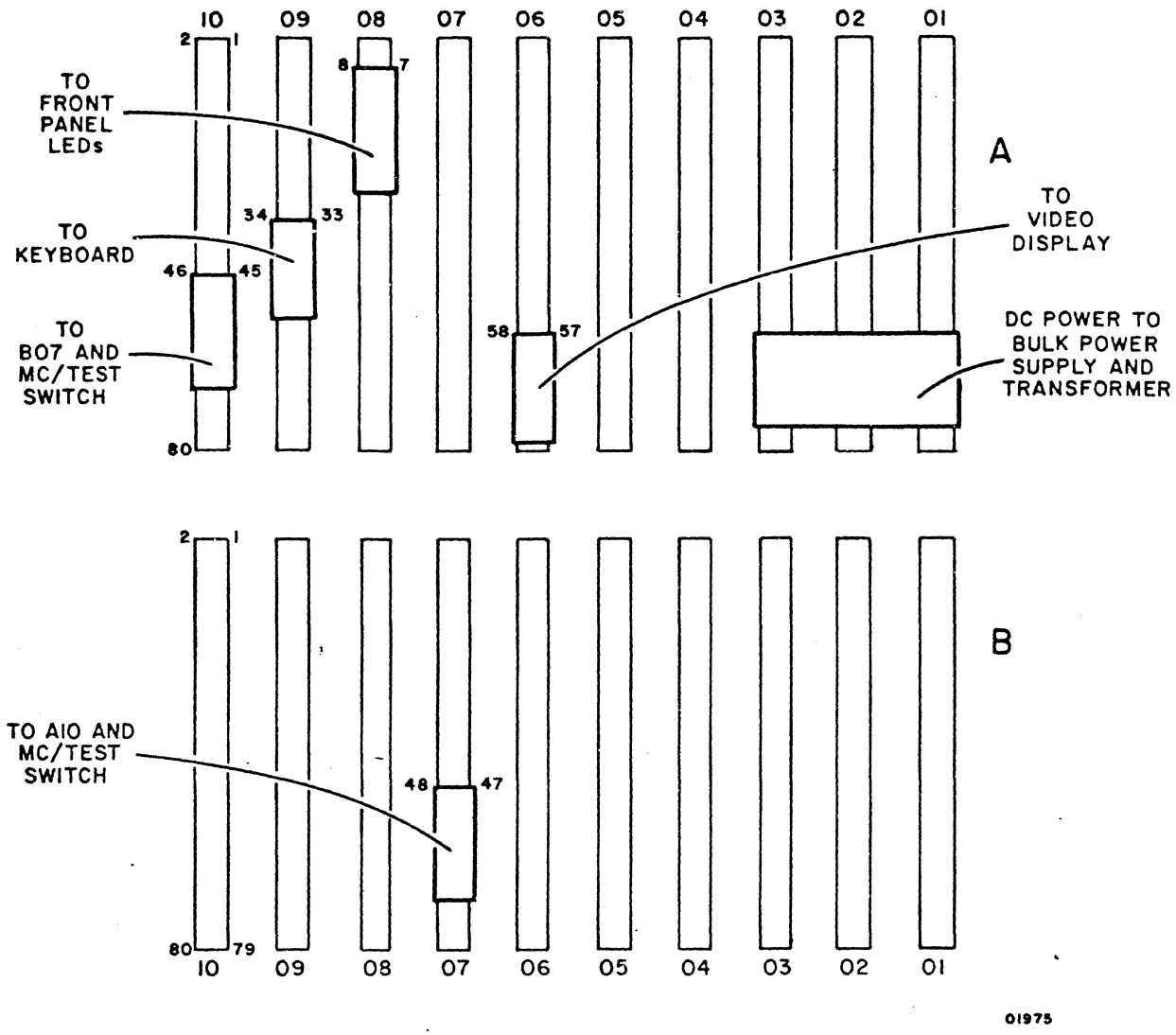


Figure CRT48. Back Panel Cabling of Logic Module

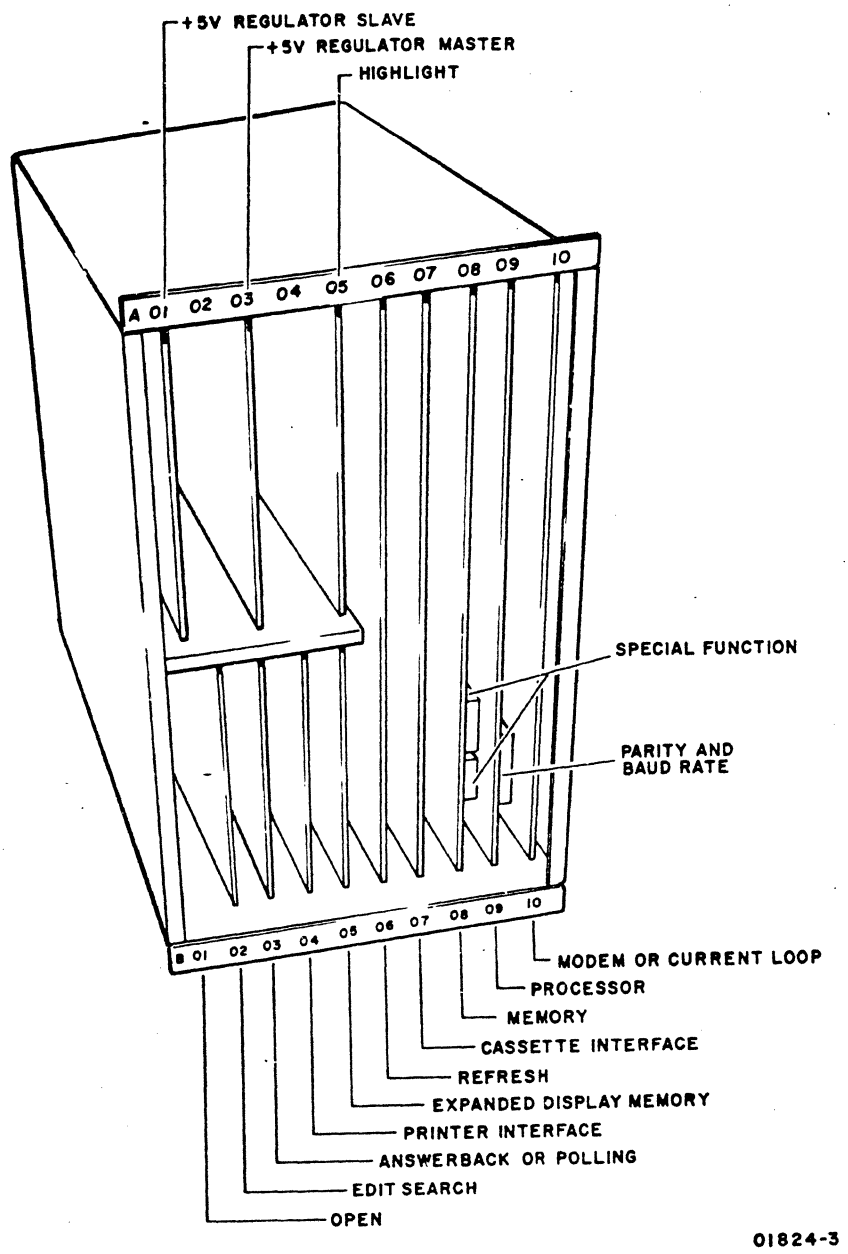
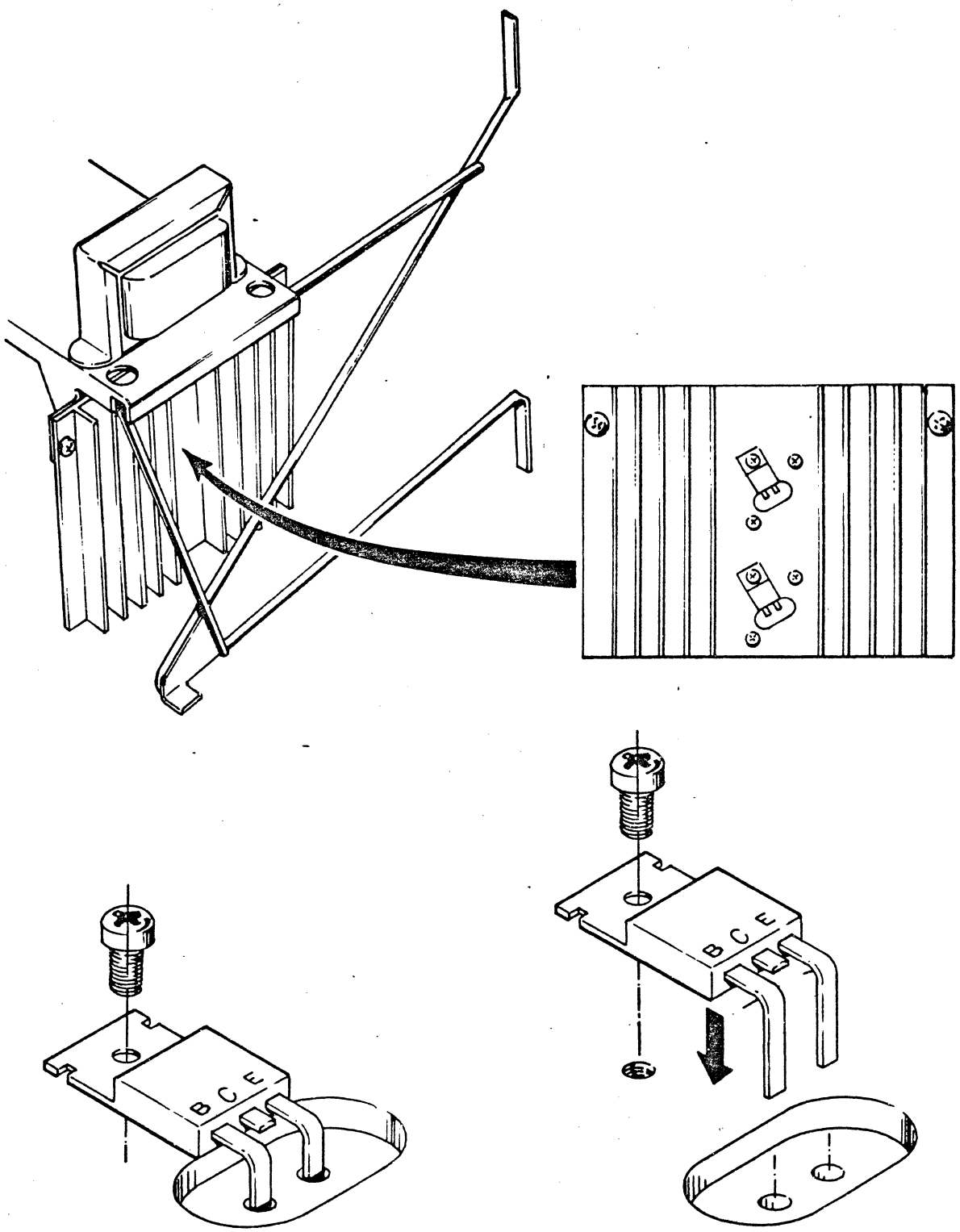


Figure CRT49. Logic Module Board Locations



TO REMOVE:
1. REMOVE SCREW
2. LIFT ON PIN SIDE TO REMOVE TRANSISTOR FROM SOCKET

TO INSTALL:
1. CUT COLLECTOR (C)
2. BEND BASE (B) AND EMITTER (E) FOR INSERTION INTO SOCKET

01964

Figure CRT50. 15-Volt Regulator and Heat Sink

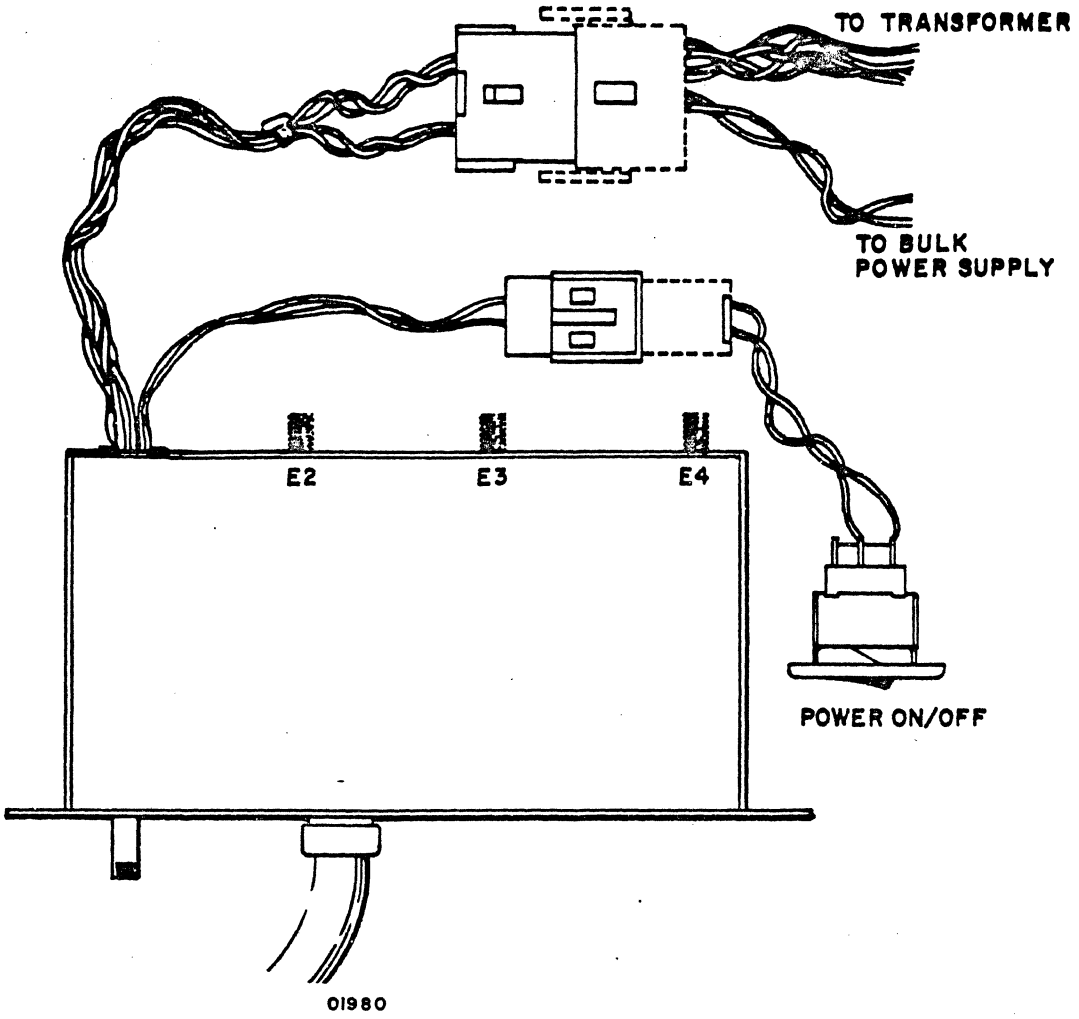


Figure CRT51. AC Power Cabling

(To be supplied.)

Figure CRT52. Installed Options

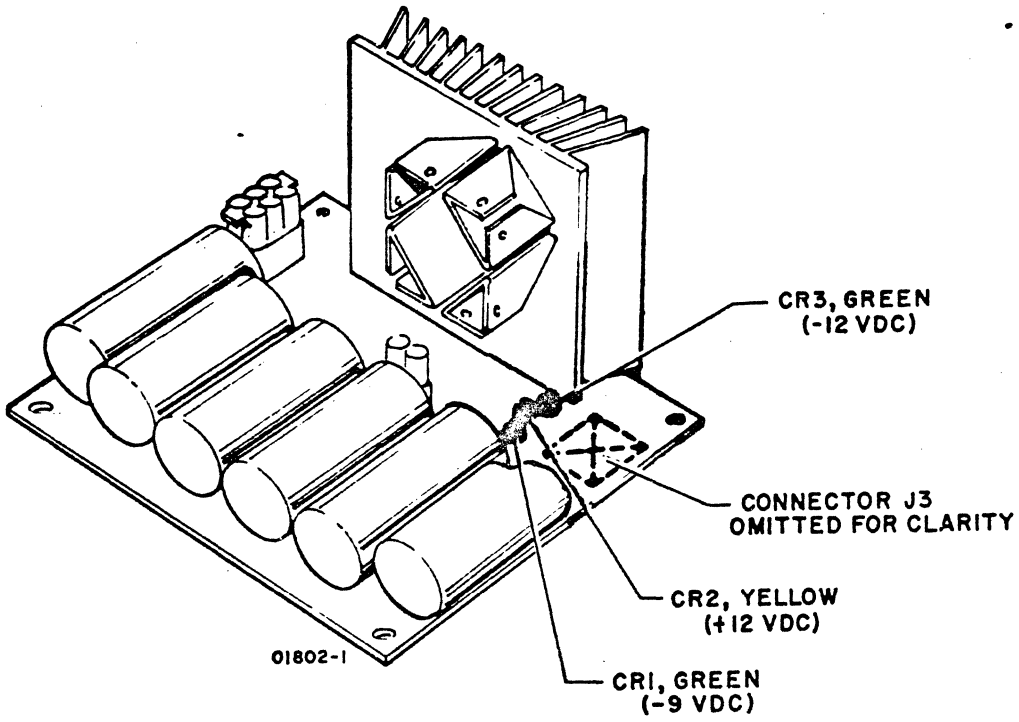


Figure CRT53. Bulk Power Supply Indicator Lights

INDEX

PROCEDURES

FIGURES

TABLES

MAINTENANCE AIDS

The following special tools are required to maintain the crt display.

- 3/32-inch nonmetallic hex driver (CRT Tuning Wand, Part No. 12263292)

SECTION 7

PARTS DATA

This section contains the genealogy charts and parts data for the terminal subsystem.

GENEALOGY CHARTS

The genealogy chart (page 7-4) identifies the display terminal assembly drawings and parts listings.

PARTS DATA

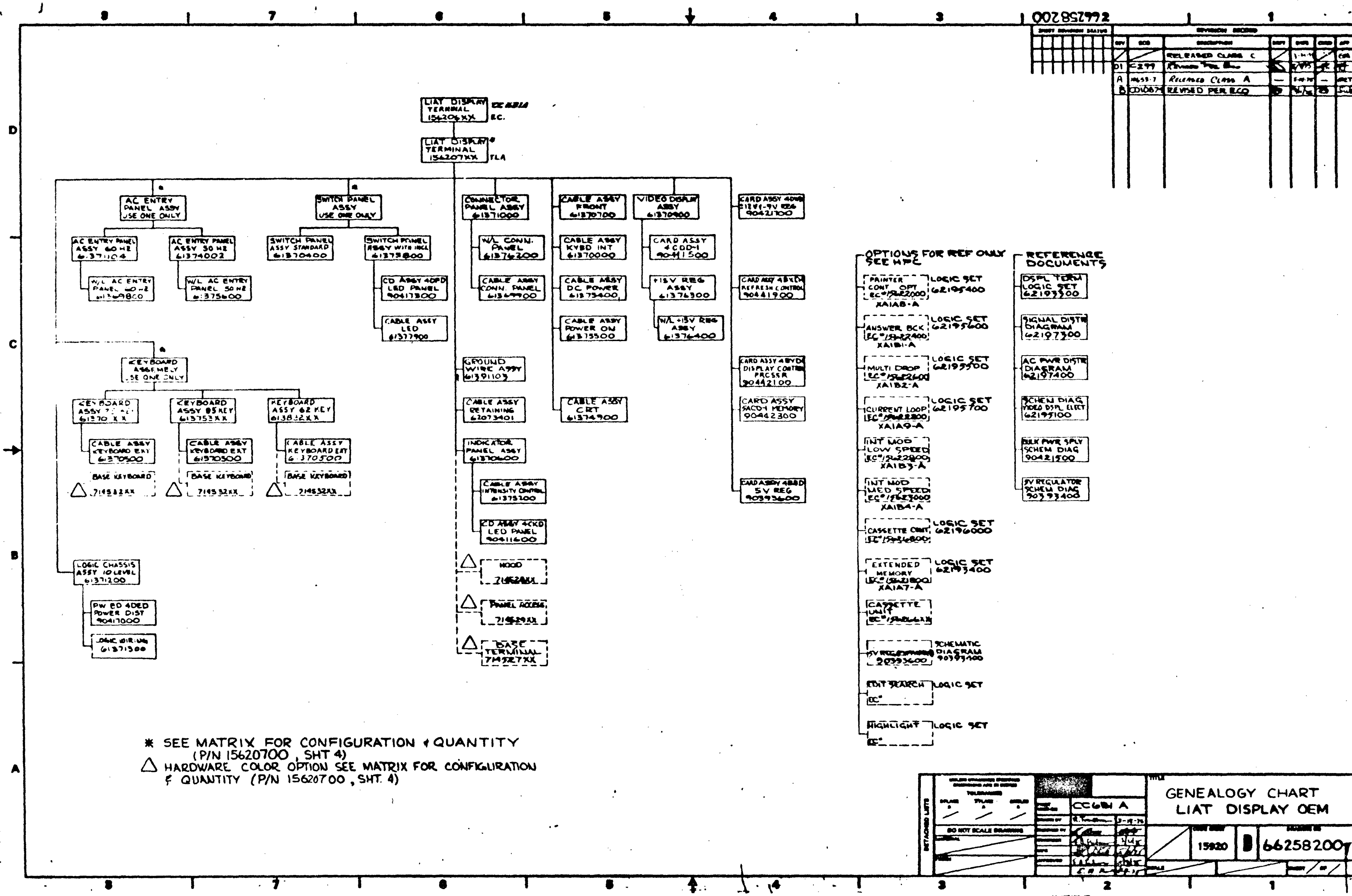
Illustrations and a related list of materials are provided at the module level. For parts data within the module, refer to the hardware maintenance manual for that module.

Table 7-1 defines terms appearing on the parts lists in this section. Drawings and parts data are arranged as follows:

TABLE 7-1. DEFINITION OF TERMS USED IN PARTS LISTS

COLUMN HEADING	EXPLANATION
FIND NO.	Identifies an electrical or mechanical part on an assembly drawing. If more than one listing appears for a find number, refer to LI, WK IN, and WK OUT.
LI (Line Item)	Gives a chronological or historical record of the addition of a new part to a find number. For example, 01 indicates that the part was the first one used, and 02 indicates the second, etc. See also WK IN and WK OUT.
PART NUMBER	Gives the Control Data Corporation part identification. Use this number when ordering replacements.
CD (Check Digit)	Gives the information-control system a means of cross-checking the correctness of a part number.
QUANTITY	Lists the total number of a part required to complete an assembly. The vertical line near the center of the column acts as a decimal point. Numbers to the left of the line are whole numbers. Those to the right of the line are tenths, hundredths, and thousandths.
U/M (Unit of Measure)	Indicates how the information-control system counts or supplies a part.
PART DESCRIPTION	Describes the physical appearance, type, or name of a part.
MC (Material Control Code)	Supplies additional descriptive data to the information-control system.
YLD (Yield)	A 2-digit numeric number that indicates the usable portion of any quantity of parts expressed as a percentage.
ECO NO. IN	Engineering Change Order that adds a new part to an assembly. See also WK IN.
ECO NO. OUT	Engineering Change Order that deletes a part from an assembly. See also WK OUT.
S/N (Serial Number)	Used to specify an ECO's effectivity by serial number.
WK IN (Week In)	Lists the date when manufacturing begins using a new part and when it is available for parts replacement. For example, 7222 means a part is available as of the 22nd week of 1972.
WK OUT (Week Out)	Lists the date when manufacturing no longer uses a part in building an assembly. See also WK IN. Do not order a part after its week-out date.

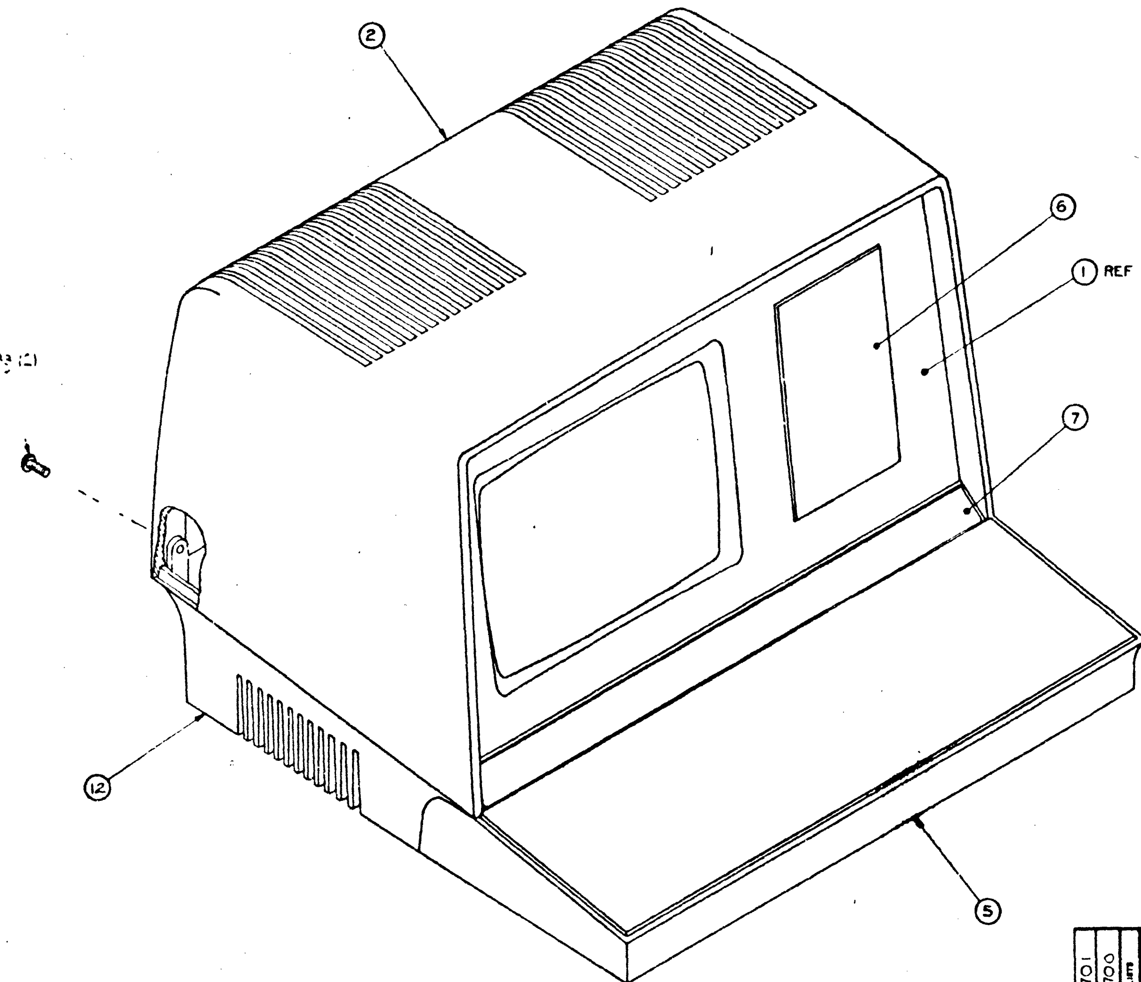
0643


LIAT DISPLAY TERMINAL 154206XX EC.
LIAT DISPLAY TERMINAL 154207XX TLA
AC ENTRY PANEL ASSY USE ONE ONLY
AC ENTRY PANEL ASSY 60 HZ 61371104
W/L AC ENTRY PANEL 60 HZ 61369800
AC ENTRY PANEL ASSY 50 HZ 61374002
W/L AC ENTRY PANEL 50 HZ 61375600
SWITCH PANEL ASSY USE ONE ONLY
SWITCH PANEL ASSY STANDARD 61370400
SWITCH PANEL ASSY WITH INCL 61375800
CD ASSY 40PD LED PANEL 90417300
CABLE ASSY LED 61377900
KEYBOARD ASSEMBLY USE ONE ONLY
KEYBOARD ASSY 7? ?EY 6137?XX
CABLE ASSY KEYBOARD EXT 61370500
BASE KEYBOARD 714532XX
KEYBOARD ASSY 85 KEY 613753XX
CABLE ASSY KEYBOARD EXT 61370500
BASE KEYBOARD 714532XX
KEYBOARD ASSY 62 KEY 613832XX
CABLE ASSY KEYBOARD EXT 61370500
BASE KEYBOARD 714532XX
LOGIC CHASSIS ASSY 10 LEVEL 61371200
PW BD 4DED POWER DIST 90417000
LOGIC WIRING 61371300
CONNECTOR PANEL ASSY 61371000
W/L CONN. PANEL 61376200
CABLE ASSY CONN. PANEL 61369900
GROUND WIRE ASSY 61391103
CABLE ASSY RETAINING 62073401
INDICATOR PANEL ASSY 61370600
CABLE ASSY INTENSITY CONTROL 61375200
CD ASSY 4CKD LED PANEL 90411600
HOOD 714524XX
PANEL ACCESS 714529XX
BASE TERMINAL 714527XX
CABLE ASSY FRONT 61370700
CABLE ASSY KYBD INT 61370000
CABLE ASSY DC POWER 61375400
CABLE ASSY POWER ON 61375500
CABLE ASSY CRT 61374900
VIDEO DISPLAY ASSY 61370900
CARD ASSY 4CDD-1 90411500
+15V REG ASSY 61376300
W/L +15V REG ASSY 61376400
CARD ASSY 4DWB ±12V(-9V) REG 90421700
CARD ASSY 4BXD REFRESH CONTROL 90441900
CARD ASSY 4BYD DISPLAY CONTRL PRCSSR 90442100
CARD ASSY SACD MEMORY 90442300
CARD ASSY 4BBD 5V REG 90393600
OPTIONS FOR REF ONLY SEE HPC
PAINTER CONT OPT EC#/15622000 XAIA8-A LOGIC SET 62195400
ANSWER BCK EC#/15622400 XAIB1-A LOGIC SET 62195600
MULTI DROP EC#/15622600 XAIB2-A LOGIC SET 62195500
CURRENT LOOP EC#/15622800 XAIA9-A LOGIC SET 62195700
INT MOD LOW SPEED EC#/15622900 XAIB3-A
INT MOD MED SPEED EC#/15623000 XAIB4-A
CASSETTE CONT. EC#/15626800 LOGIC SET 62196000
EXTENDED MEMORY EC#/15621800 XAIA7-A LOGIC SET 62193400
CASSETTE UNIT EC#/156266XX
5V REG OPTION 90393600 SCHEMATIC DIAGRAM 90393400
EDIT SEARCH EC# LOGIC SET
HIGHLIGHT EC# LOGIC SET
REFERENCE DOCUMENTS
DSPL TERM LOGIC SET 62193500
SIGNAL DISTR DIAGRAM 62197300
AC PWR DISTR DIAGRAM 62197400
SCHEM DIAG VIDEO DSPL ELECT 62195100
BULK PWR SPLY SCHEM DIAG 90421500
5V REGULATOR SCHEM DIAG 90393400
* SEE MATRIX FOR CONFIGURATION & QUANTITY (P/N 15620700, SHT 4)
△ HARDWARE COLOR OPTION SEE MATRIX FOR CONFIGURATION & QUANTITY (P/N 15620700, SHT. 4)
DO NOT SCALE DRAWING
CC6IN A
GENEALOGY CHART
LIAT DISPLAY OEM
15920
B
66258200

62961200 A

15620700

REV	ECO	DESCRIPTION
		RELEASED CLASS C
01	C299	Revised Per Eng
02	C31K	APL [illegible]
A	[illegible]	Released Class A
B	CD10874	PL CHG ONLY



NOTES:

1. MARK "TOP ASSY 156207_ _" IN AREA SHOWN PER CDC SPEC 10121502.
2. APPLY SERIAL NO. IN THIS AREA PER CDC STD 1.01.025.
3. BRUSH OFF EXCESS PAINT OVER SPRAY AND SOLVENT CLEAN BEFORE APPLYING.
4. SEE ENGRG SPEC 6038800 [illegible] KEYING SPECIFICATION.

APL 15620701
APL 15620700
DETACHED LISTS

DO NOT SCALE DRAWING

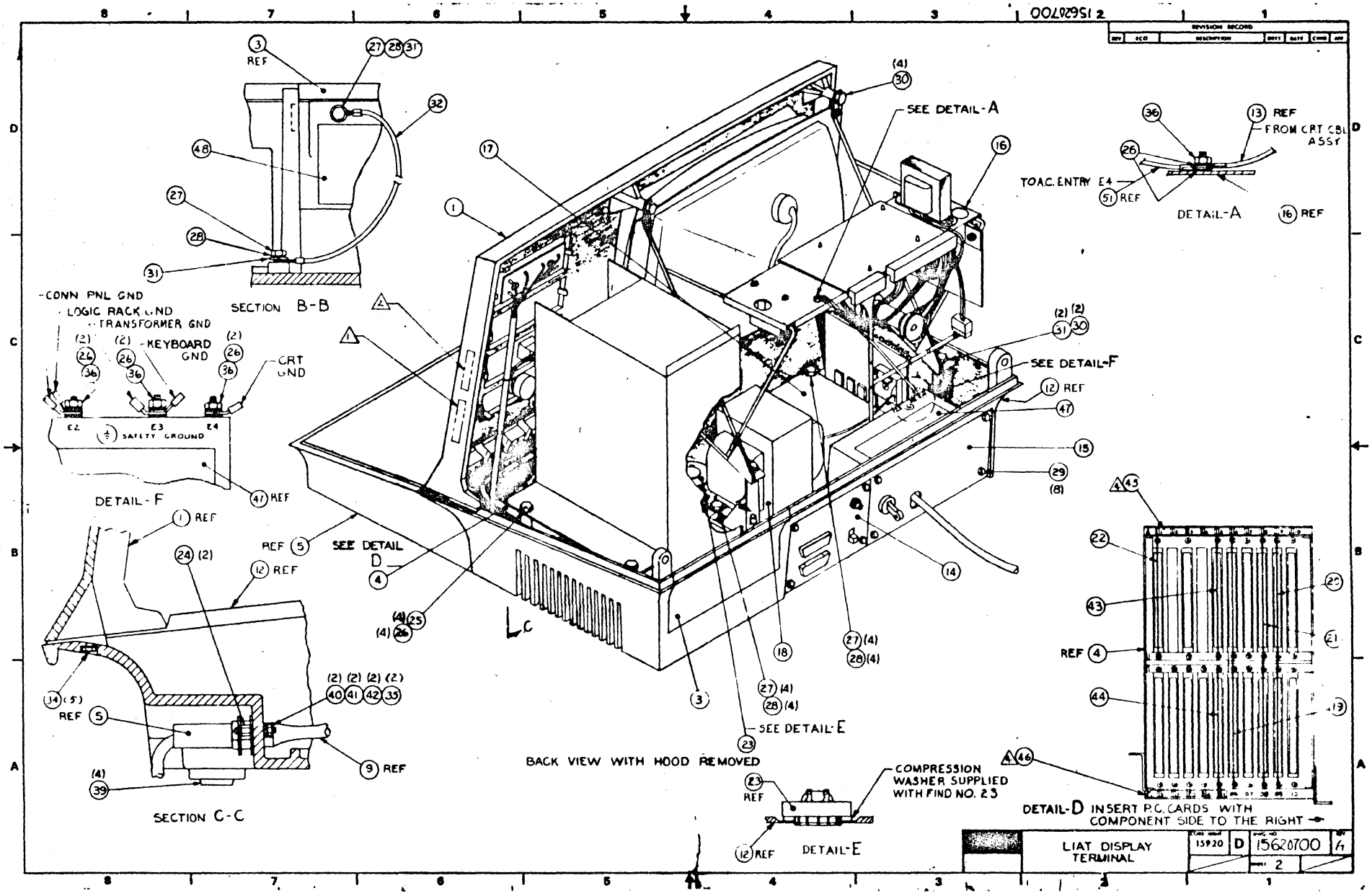
CC6B1A

TITLE: LIAT DISPLAY TERMINAL OEM

CODE IDENT 15920 | B | DRAWING NO 15620700

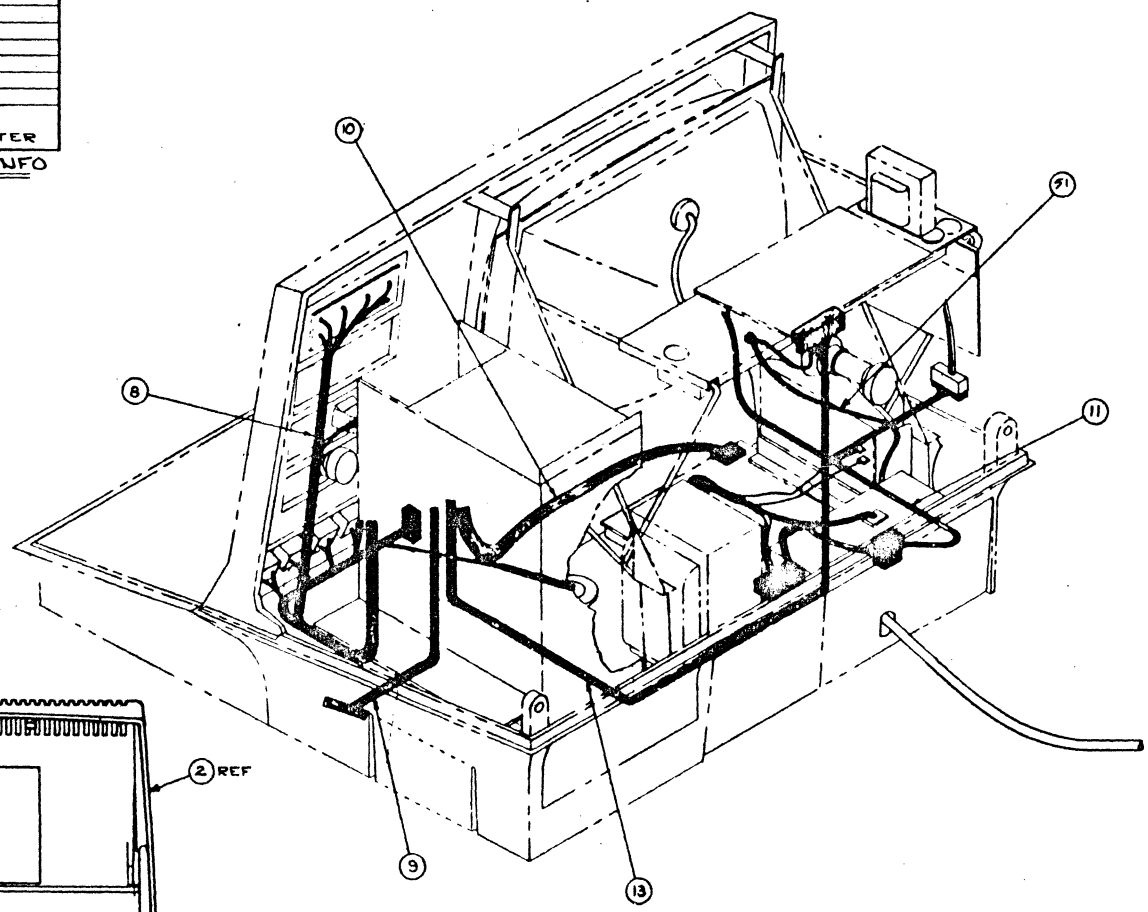
EC 15621600 | SHEET 1 OF 4

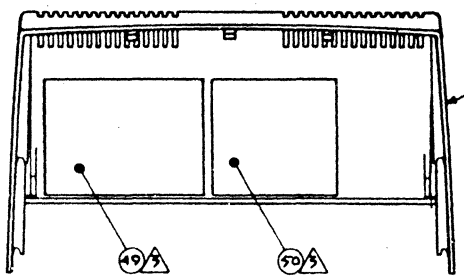
7-5/7-6


15620700
REVISION RECORD
SECTION B-B
SECTION C-C
DETAIL-A
DETAIL-D INSERT P.C. CARDS WITH COMPONENT SIDE TO THE RIGHT
DETAIL-E
DETAIL-F
SEE DETAIL-A
SEE DETAIL-E
SEE DETAIL-F
SEE DETAIL D
BACK VIEW WITH HOOD REMOVED
FROM CRT CBL ASSY
TOAC. ENTRY E4
CONN PNL GND
LOGIC RACK GND
TRANSFORMER GND
KEYBOARD GND
CRT GND
SAFETY GROUND
COMPRESSION WASHER SUPPLIED WITH FIND NO. 23
LIAT DISPLAY TERMINAL
15920
D
15620700
SHEET 2

FIND NO.	SUB ASSY CODE LETTER — DESCRIPTION
6	L - INDICATOR PANEL
7	K - SWITCH PANEL
17 18	H - POWER SUPPLY
NONE	G - OPTIONAL LED ASSY
14	F - CONNECTOR PANEL
5	E - KEYBOARD
12	D - BASE
15	C - A C ENTRY PANEL
16	B - VIDEO DISPLAY
4	A - LOGIC CHASSIS

SUB ASSY CODE LETTER INFO





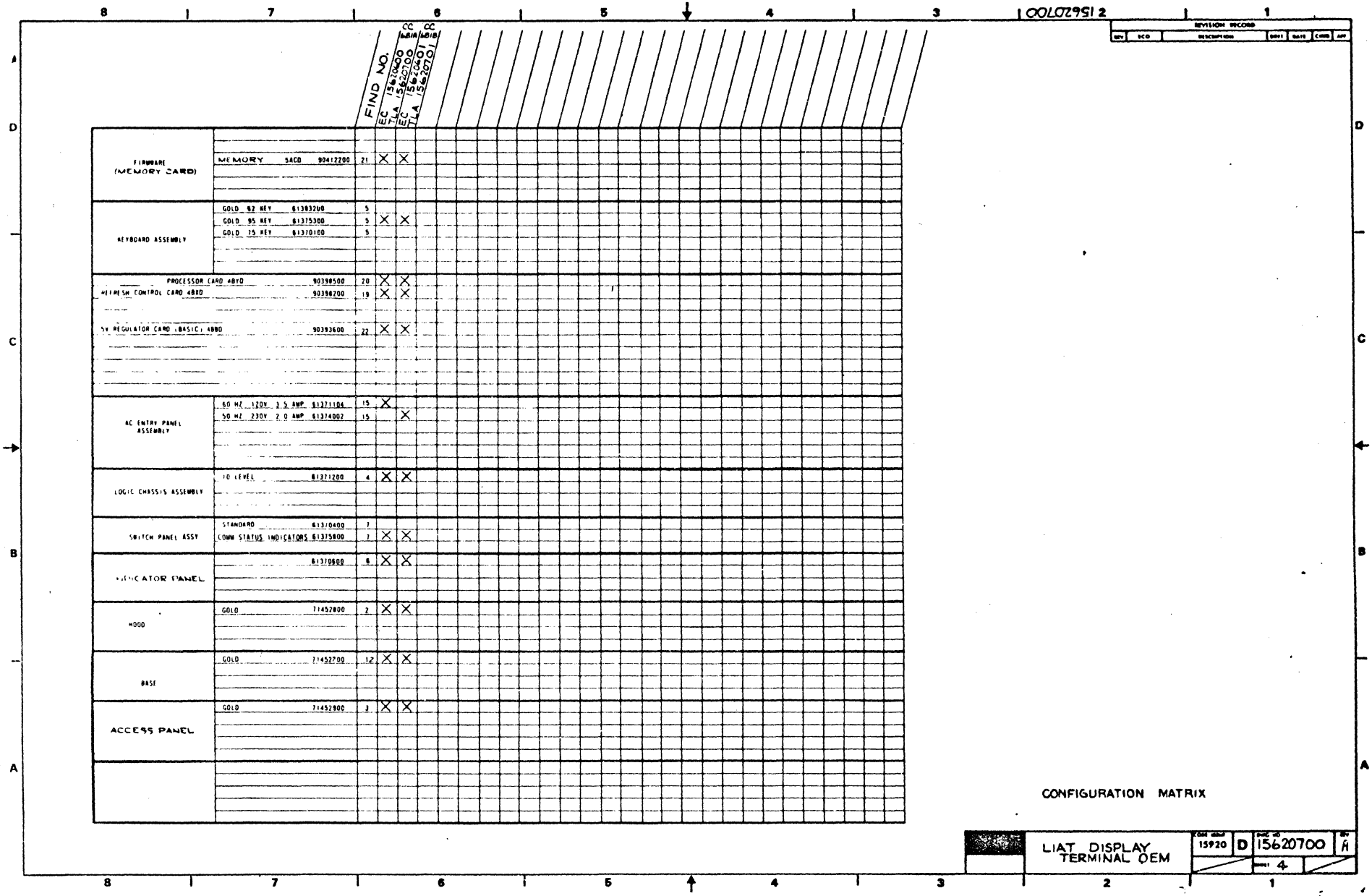
INSIDE VIEW OF HOOD

CABLE ROUTING DIAGRAM

LIAT DISPLAY TERMINAL O.E.M.	15920	D	15620700	A
			SHEET 3	

62961200 A

7-9/7-10



CONFIGURATION MATRIX

LIAT DISPLAY TERMINAL OEM

15920 D 15620700 A

SHEET 4

BUILD ARC 440

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
07-28-75	1	00010879

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	15620700	3	R	A	DISPLAY STA 80X12 60HZ (TA)	N	REL	05-14-75	CC6B1A	07-28-75

T	FIND NO	LI	PART NUMBER	CD	M	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	71452600	1		1	PC	BEZEL 12IN CRT	P						
	002	01	71452800	7		1	PC	HOOD-TERMINAL	P						
	003	01	71452900	5		1	PC	PANEL ACCESS	P						
	004	01	61371200	9		1	PC	CHASSIS ASSY(LOGIC)	A						
	005	01	61375300	3		1	PC	KEYBOARD ASSY 95 KEY	N						
	006	01	61370600	1		1	PC	PANEL ASSY(INDICATOR)	A						
	007	01	61375800	2		1	PC	SWITCH PNL ASSY	A						
	008	01	61370700	9		1	PC	CABLE ASSY (FRONT)	A						
	009	01	61370000	4		1	PC	CABLE ASSY(KEYBOARD-INTERNAL)	A						
	010	01	61375400	1		1	PC	CABLE ASSY (D.C. POWER)	A						
	011	01	61375500	8		1	PC	CABLE ASSY (POWER ON)	A						
	012	01	71452700	9		1	PC	BASE-TERMINAL	P						
	013	01	61374900	2		1	PC	CABLE ASSY (CRT)	A						
	014	01	61371000	3		1	PC	PANEL ASSY (CONNECTOR)	A						
	015	01	61371104	3		1	PC	PANEL ASSY (AC ENTRY) 60 HZ	A						
	016	01	61370900	5		1	PC	VIDEO DISPLAY ASSY	N						
	017	01	98421700	7		1	PC	CD ASSY 4DWD PW SPLY FLTR 9V	A						
	018	01	51905600	8		1	PC	XFORMER POWER	P						
	019	01	98398200	7		1	PC	REPLACED BY 90441908 10879	A			10879			7529
	019	02	98441900	9		1	PC	CD ASSY 4BXD-1 REFRESHER BD	A		10879			7529	
	020	01	98398500	0		1	PC	REPLACED BY 90442109 10879	A			10879			7529

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PRINT DATE	PAGE	FILE CHANGE NO.
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DIV.	ASSEMBLY NUMBER	CD	REV.	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
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T	FIND NO	LI	PART NUMBER	CD	M	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	020	02	90442100	5		1	PC	CD ASSY 4BYD-1 PROCESSOR BD	A		10879			7529	
	021	01	98412200	9		1	PC	REPLACED BY 90442308 10879	A			10879			7529
	021	02	98442300	1		1	PC	CD ASSY 5ACD-1 MEMORY MODULE	A		10879			7529	
	022	01	99393600	3		1	PC	CD ASSY 4BRD +5V 10AMP	A						
	023	01	51908901	5		1	PC	SONALERT	P						
	024	01	71455800	4		2	PC	STANDOFF MALE/FEMALE 4-40 THD	B						
	025	01	18607910	9		4	PC	SCREW SELF TAPPING 10	P						
	026	01	10126403	4		12	PC	WASHER LOCK EXT NO. 10	B						
	027	01	18607908	3		10	PC	SCREW SELF TAPPING 8	P						
	028	01	10126402	6		10	PC	WASHER EXT. 8	B						
	029	01	00860303	7		8	PC	SCR SLF-LKG 6-32X3/8	B						
	030	01	00860312	8		6	PC	SCREW SLF-LK 8-32 1/2 IN	B						
	031	01	10125606	3		2	PC	WASHER FLT NO.8 STL CP	B						
	032	01	62073401	2		1	PC	CABLE ASSY (RETAINING) 8.5IN	A						
	033	01	10127153	4		2	PC	SCRW MACH PH 1/4-20X1/2 CRSHC	B						
	034	01	18607911	7		5	PC	SCREW, THD CTG INDENTED HEX H	B						
	035	01	99125301	2		AR	OZ	LOC TITE SEALANT RED	B						
	036	01	10125108	9		4	PC	NUT MACH HEX STL CP 10-32	B						
	037	01	66258200	6		REF	PC	GENEOLOGY OEM CONV/DSPL	D						
	039	01	51805801	1		4	PC	BUMPER SELF STICKING BLACK	P						
	040	01	10125603	0		2	PC	WASHER FLT NO.4 STL CP	B						

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DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
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TYP	FIND NO.	LI	PART NUMBER	CD	MN	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	041	01	18125801	6		2	PC	WASHER SPRNG LOCK 4	B						
	042	01	18125103	1		2	PC	NUT MACH HEX STL CP 4-40	B						
	045	01	71474100	6		1	PC	STRIP A COLOR CODING CHASSIS	P						
	046	01	71474102	2		1	PC	STRIP B COLOR CODING CHASSIS	P						
	047	01	71479200	9		1	PC	LABEL MONITOR ADJUSTMENT	P						
	048	01	71479300	7		1	PC	LABEL CARD PLACEMENT	P						
	049	01	71479400	5		1	PC	LABEL LOG CD SW AND ADJUST	P						
	050	01	71479500	2		1	PC	LABEL A/C D/C CABLE INTER	P						
	051	01	61391103	1		1	PC	GROUND WIRE ASSY 14 INCH	A						
								8051 TOTAL LINES							

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PRINT DATE	PAGE	FILE CHANGE NO.
07-28-75	1	00010879

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	15020701	1	P	A	DISPLAY STA 80X12 50HZ (TA)	N	REL	05-14-75	CC6811B	07-28-75

TYP	FIND NO.	LI	PART NUMBER	CD	MN	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	71452600	1		1	PC	BEZEL 12IN CRT	P						
	002	01	71452800	7		1	PC	HOOD-TERMINAL	P						
	003	01	71452900	5		1	PC	PANEL ACCESS	P						
	004	01	61371200	9		1	PC	CHASSIS ASSY(LOGIC)	A						
	005	01	61375300	3		1	PC	KEYBOARD ASSY 95 KEY	N						
	006	01	61370600	1		1	PC	PANEL ASSY(INDICATOR)	A						
	007	01	61375800	2		1	PC	SWITCH PNL ASSY	A						
	008	01	61370700	9		1	PC	CABLE ASSY (FRONT)	A						
	009	01	61370000	4		1	PC	CABLE ASSY(KEYBOARD-INTERNAL)	A						
	010	01	61375400	1		1	PC	CABLE ASSY (D.C. POWER)	A						
	011	01	61375500	8		1	PC	CABLE ASSY (POWER ON)	A						
	012	01	71452700	9		1	PC	BASE-TERMINAL	P						
	013	01	61374900	1		1	PC	CABLE ASSY (CRT)	A						
	014	01	61371000	3		1	PC	PANEL ASSY (CONNECTOR)	A						
	015	01	61374002	6		1	PC	PANEL ASSY (AC ENTRY) 50 HZ	A						
	016	01	61370900	5		1	PC	VIDEO DISPLAY ASSY	N						
	017	01	98421700	7		1	PC	CD ASSY 4DWD PW SPLY FLTR 9V	A						
	018	01	51905600	8		1	PC	XFORMER POWER	P						
	019	01	90398200	7		1	PC	REPLACED BY 90441700 10879	A			10879			7529
	019	02	98441900	9		1	PC	CD ASSY 4BXD-1 REPRESMER BD	A		10879			7529	
	020	01	90398500	0		1	PC	REPLACED BY 90442100 10879	A			10879			7529

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ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
07-28-75	2	00010879

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	15020701	1	R	A	DISPLAY STA 80X12 50HZ (TA)	N	REL	05-14-75	CC6818	07-28-75

TYP	IND NO	LI	PART NUMBER	CD	UM	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
	020	02	98442100	5		1	PC	CD ASSY 48YD-1 PROCESSOR BD	A		10879			7529	
	021	01	98412200	9		1	PC	REPLACED BY 90442909 10879	A			10879			7529
	021	02	98442300	1		1	PC	CD ASSY 5ACD-1 MEMORY MODULE	A		10879			7529	
	022	01	98393600	5		1	PC	CD ASSY 488D +5V 104MB	A						
	023	01	51908901	5		1	PC	SONALERT	P						
	024	01	71455800	4		2	PC	STANDOFF MALE/FEMALE 4-40 THD	B						
	025	01	10607910	9		4	PC	SCREW SELF TAPPING 10	P						
	026	01	10126403	4		12	PC	WASHER LOCK EXT NO. 10	B						
	027	01	10607908	3		10	PC	SCREW SELF TAPPING 8	P						
	028	01	10126402	8		10	PC	WASHER EXT. 8	B						
	029	01	00860303	7		8	PC	SCR SLF-LKG 6-32X3/8	B						
	030	01	00860312	8		6	PC	SCREW SLF-LK 8-32 1/2 IN	B						
	031	01	10125606	3		2	PC	WASHER FLT NO.8 STL CP	B						
	032	01	62073401	2		1	PC	CABLE ASSY (RETAINING) 8.5IN	A						
	033	01	10127153	4		2	PC	SCRW MACH PH 1/4-20X1/2 CRSHC	B						
	034	01	10607911	7		5	PC	SCREW, THD CTG INDENTED HEX H	B						
	035	01	95125301	2		AR	OZ	LOC TITE SEALANT RED	B						
	036	01	10125108	9		4	PC	NUT MACH HEX STL CP 10-32	B						
	037	01	66258200	8		REF	PC	GENEOLOGY OEM CONV/DSPL	D						
	039	01	51805801	1		4	PC	BUMPER SELF STICKING BLACK	P						
	040	01	10125603	9		2	PC	WASHER FLT NO.4 STL CP	B						

BUILD ARC 440

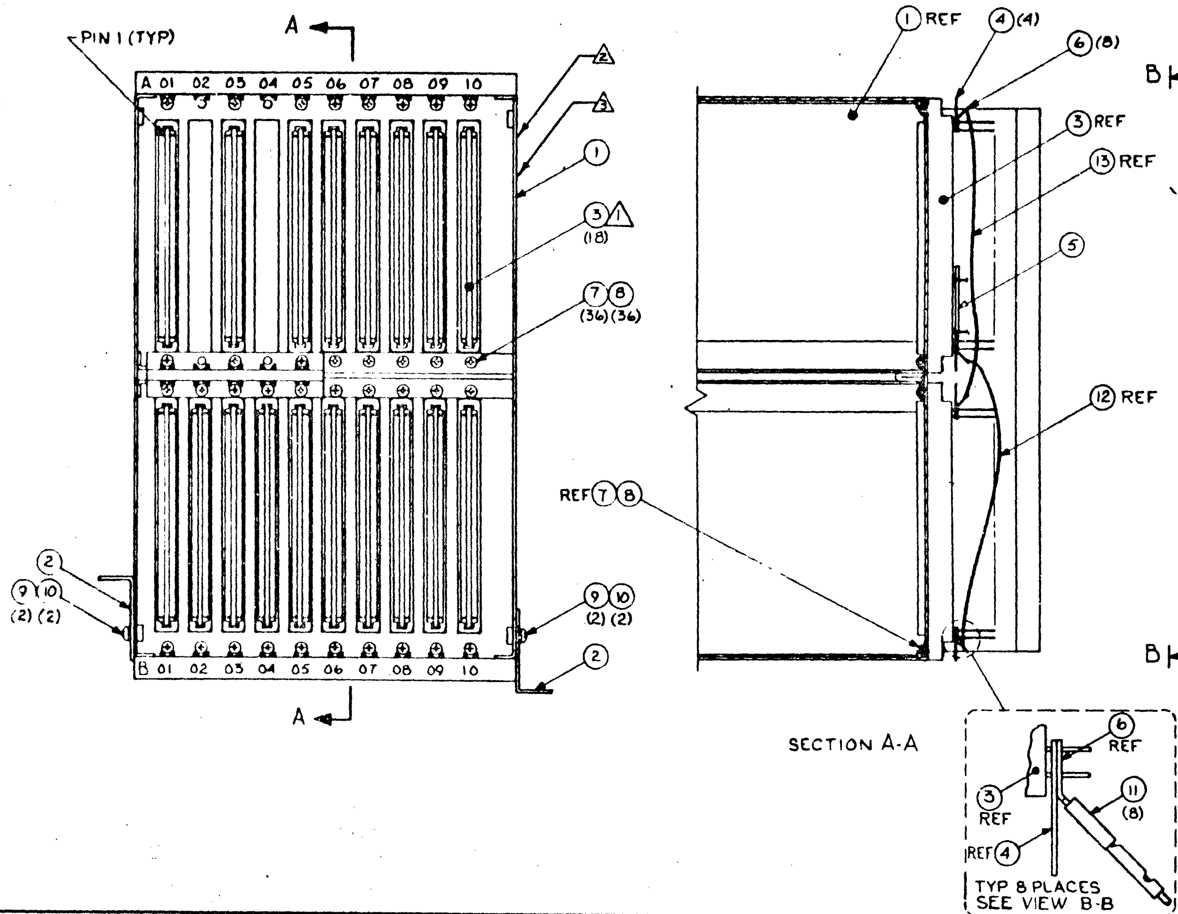
ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
07-28-75	3	00010879

DIV	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	15020701	1	P	A	DISPLAY STA 80x12 50HZ (TA)	N	REL	05-14-75	CC6818	07-28-75

TYP	IND NO	LI	PART NUMBER	CD	UM	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
	041	01	10125801	0		2	PC	WASHER SPRNG LOCK 4	B						
	042	01	10125103	1		2	PC	NUT MACH HEX STL CP 4-40	B						
	045	01	71474100	6		1	PC	STRIP A COLOR CODING CHASSIS	P						
	046	01	71474102	2		1	PC	STRIP B COLOR CODING CHASSIS	P						
	047	01	71479200	9		1	PC	LABEL MONITOR ADJUSTMENT	P						
	048	01	71479300	7		1	PC	LABEL CARD PLACEMENT	P						
	049	01	71479400	5		1	PC	LABEL LOG CD SW AND ADJUST	P						
	050	01	71479500	2		1	PC	LABEL A/C D/C CABLE INTER	P						
	051	01	61391103	1		1	PC	GROUND WIRE ASSY 14 INCH	A						

0051 TOTAL LINES



NOTES:

1. LOCATE CONNECTORS (F.ND. 3) PER FIXTURE 71456200.
2. MARK "ASSY 61371200" IN AREA SHOWN PER CDC SPEC 10121508.
3. APPLY SERIAL NO. IN THIS AREA PER CDC STD. 1.01.025.

LOGIC CHASSIS ASSEMBLY

APL 61371200

CC614

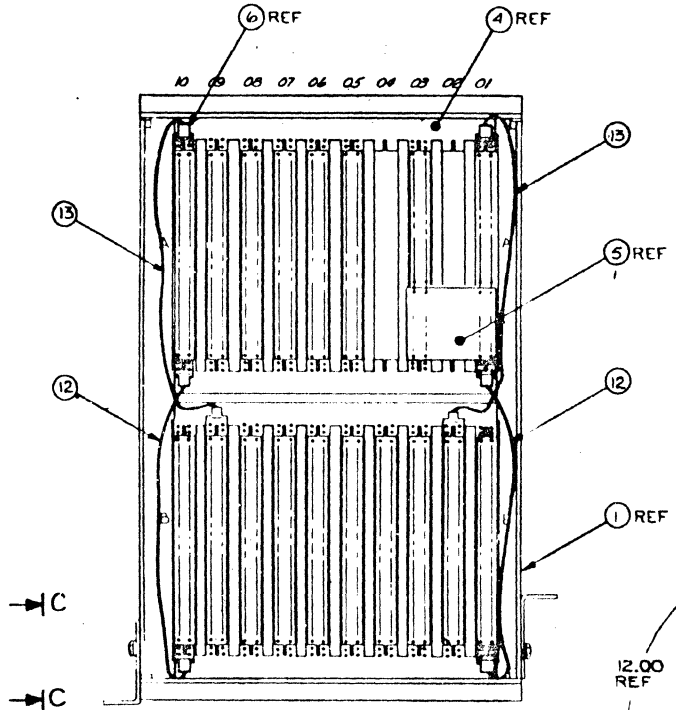
15820 B 61371200

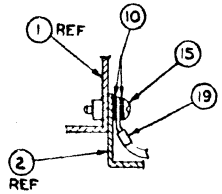
SCALE 1/1 SHEET 1 OF 2

DO NOT SCALE DRAWING

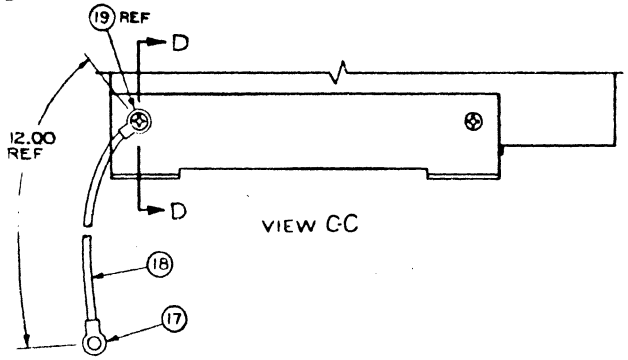
6137120

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP





SECTION D-D



VIEW C-C

7-15/7-16

LOGIC CHASSIS ASSEMBLY		15920	D	6137120 A
				SHEET 2

RUTLD ARC 220

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
05-12-75	1	010653-A

DIV	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	61371200	9	A	4	CHASSIS ASSY(LOGIC)	A	REL	05-09-75	LIAT	05-12-75

T	FIND NO	LI	PART NUMBER	CD	ML	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	61363411	2		1	PC	CARD CAGE WELDMENT	P						
	002	01	71455300	5		2	PC	BRACKET-MOUNT CARD CAGE	P						
	003	01	51900300	8		11	PC	CONN BRD EDGE 40/80 DUAL R/O	P						
	004	01	71454003	6		4	PC	BUS BAR	P						
	005	01	90417100	6		1	PC	CD ASSY 4DED (PWR DIST)	N						
	006	01	71454100	0		4	PC	CONTACT	P						
	007	01	10127103	9		36	PC	SCR MACH PAN HD 4-40X.312	B						
	008	01	10126400	0		36	PC	WASHER LOCK EXT TOOTH 4 STEEL	B						
	009	01	10127121	1		4	PC	SCREW PAN HD 8-32X.312 LG	B						
	010	01	10126402	6		5	PC	WASHER EXT. 8	B						
	011	01	17973615	2		8	PC	TERM CRMP TYPE INSUL 18-14	P						
	012	01	93588000	2		A/R	FT	WIR 14GA STRD BLK 600V UL PVC	W						
	013	01	93588222	2		A/R	FT	WIR 14GA STRD RED 600V UL PVC	W						
	014	01	61371300	7		REF	PC	LOGIC WIRING(LOGIC CHASSIS)	D						
	015	01	10127122	9		1	PC	SCREW MACH 8-32 X 3/8 PAN HD	B						
	017	01	51797217	0		1	PC	TERM LUG RING CRMP 22-18 #10	P						
	018	01	93462555	9		1	FT	WIR 20GA STRD GRN 300V UL PVC	W						
	019	01	51797212	1		1	PC	TERM LUG RING CRIMP 22-18 S46	P						
	020	01	15006509	2		30	FT	WIR 30GA SLD WHT UL TEFZEL	W						

RUTLD ARC 220

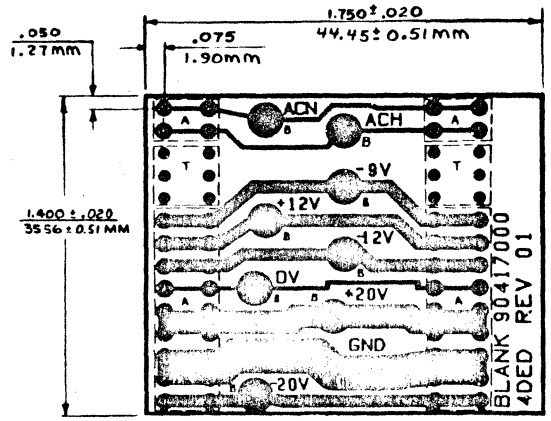
ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
05-12-75	2	010653-A

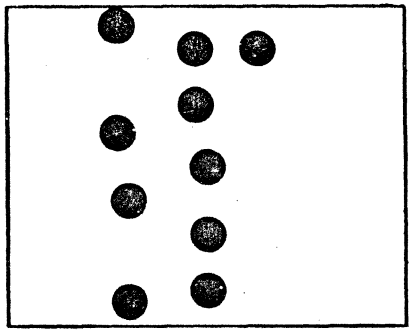
DIV	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	61371200	9	A	4	CHASSIS ASSY(LOGIC)	A	REL	05-09-75	LIAT	05-12-75

T	FIND NO	LI	PART NUMBER	CD	ML	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
								0019 TOTAL LINES							

REVISION STATUS OF DRAWING	ARTWORK REVISION STATUS			REVISION RECORD				
				REV	CO	DESCRIPTION		
01	01			01	C075	RELEASED CLASS "A" REVISED / REDRAWN PER ECA		
02	01			02	CH49	REVISED PER ECO		
A	01			A		RELEASED CLASS A		



LAYER 1
(DRILL THIS SIDE)



LAYER 2

HOLE SCHEDULE				
HOLE DESIG.	HOLE DIA.	NO. OF HOLES	TOLERANCE	CLASS
A	.043 / 1.09mm	44	±.005 / ±0.13mm	B
B	.100 / 2.54mm	10	±.005 / ±0.13mm	A
T	.062 / 1.57MM	12	±.005 / ±0.13MM	B

NOTES:

1. HOLE LOCATION PER REDUCED PRINTED CIRCUIT MASTER. T-90417000.
2. BOARD TO BE FABRICATED PER CDC SPEC 16006500.

MAG. TAPE 90417000
DRILL TAPE 90417000
ART 90417000
DETACHED - 1515

DO NOT SCALE DRAWING

DRAWN	AL SCHAEFER	10-25-79
CHKD		
ENGR		
MFG		
APPD		

TITLE: PRINTED WIRING BOARD 4 DED (POWER DISTRIBUTION)

CODE IDENT 15920 | SIZE B | DRAWING NO 90417000

SCALE 4/1 | 90419411100 | SHEET 1 OF 1

DWN	R.Trautman	9-74	[redacted]	TITLE	PREFIX	DOCUMENT NO.	REV.
CHKD	E.Grana	10-74		L/W LOGIC CHASSIS	LW	61371300	A
ENG	E.Anderson	5-75					
MFG	L.Lenk	5-75		FIRST USED ON	NHA		
APPR	E.Anderson	5-75	CODE IDENT 15920	CC614A	61371200	SHEET 1 of 28	

SHEET REVISION STATUS

18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
02	02	02	02	02	02	02	02	02	02	02	02	02	03	03	03	03	05
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

28	27	26	25	24	23	22	21	20	19
04	02	02	02	02	02	03	03	03	03
A	A	A	A	A	A	A	A	A	A

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
05	C267	RETYPED SHT 1 DELETED PARTS LIST	JW	4/75	DWP
A	106335	RELEASED CLASS A	—	5/75	C.T.

NOTES:

DETACHED LISTS

0 REV. 8-71 PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 2	LW	DOCUMENT NO 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
CTS LED			08-A	7			09-A	7					
CO LED			08-A	8			09-A	8					
CONTROL KEY			06-A	41			09-A	41					
TX LED			08-A	9			09-A	9					
RX LED			08-A	10			09-A	10					
CTS LED			08-A	11			09-A	11					
RTS LED			08-A	12			09-A	12					
DTR LED			08-A	13			09-A	13					
CO LED			08-A	14			09-A	14					
LOW FREQ SW			08-A	21			09-A	21					
LOCAL TO PRINT			08-A	51			09-A	51					
LN TO PRINT			08-A	52			09-A	52					

AA3184 REV. 8-71 PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 3	LW	DOCUMENT NO. 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
LWR CASE ENABLE			08-A	54			09-A	54					
OVER CURRENT			01-A	7			01-A	8					
			01-A	8			03-A	8					
DRIVER		-	01-A	9			01-A	10					
			01-A	10			03-A	10					
CURRENT SHARING			01-A	11			03-A	11					
TEST MODE			08-A	31			09-A	31					
TEST MODE			09-A	31			10-A	48					
MEM DATA 24			05-A	18			06-A	18					
MEM DATA 23			05-A	19			06-A	19					
MEM DATA 22			05-A	20			06-A	20					
MEM DATA 21			05-A	30			06-A	30					
MEM DATA 20			05-A	31			06-A	31					
H-COUNT			05-A	46			06-A	46					

CONTROL DATA		CODE IDENT 15920	SHEET 4	LW	DOCUMENT NO. 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
BLK TCD			05-A	47			06-A	47					
H-SYNC			05-A	48			06-A	48					
LN 10			05-A	49			06-A	49					
V-UNBLANK			05-A	50			06-A	50					
~~MEM 25 & 26~~			05-A	51			06-A	51					
~~PROTECT F/F~~			05-A	53			06-A	53					
$\overline{MR}$			05-A	54			06-A	54					
DTR			09-A	58			10-A	58					
SIG GND			09-A	59			10-A	59					
SEC CO			09-A	60			10-A	60					
RING IND			09-A	61			10-A	61					
RX DATA			09-A	62			10-A	62					
DSR			09-A	63			10-A	63					
CTS			09-A	64			10-A	64					
CO			09-A	65			10-A	65					
TX DATA			09-A	66			10-A	66					
SEC RTS			09-A	67			10-A	67					
RTS			09-A	68			10-A	68					
GND			09-A	28			10-A	45					
MR SW NO			09-A	29			10-A	46					

CONTROL DATA

CODE IDENT 15920 | SHEET 5 | LW | DOCUMENT NO 61371300 | REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
MR SW NC			09-A	30			10-A	47					
DATA BUS 20			01-B	7			02-B	7					
			02-B	7			03-B	7					
			03-B	7			04-B	7					
			04-B	7			05-B	7					
			05-B	7			06-B	7					
			06-B	7			07-B	7					
			07-B	7			08-B	7					
			08-B	7			09-B	7					
			09-B	7			10-B	7					
DATA BUS 21			01-B	8			02-B	8					
			02-B	8			03-B	8					
			03-B	8			04-B	8					
			04-B	8			05-B	8					
			05-B	8			06-B	8					
			06-B	8			07-B	8					
			07-B	8			08-B	8					
			08-B	8			09-B	8					
			09-B	8			10-B	8					
DATA BUS 22			01-B	9			02-B	9					
			02-B	9			03-B	9					
DATA BUS 22			03-B	9			04-B	9					

A43184 REV. B 71 PRINTED IN U.S.A.

CONTROL DATA

CODE IDENT 15920 | SHEET 6 | LW | DOCUMENT NO 61371300 | REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
DATA BUS 22			04-B	9			05-B	9					
			05-B	9			06-B	9					
			06-B	9			07-B	9					
			07-B	9			08-B	9					
			08-B	9			09-B	9					
			09-B	9			10-B	9					
DATA BUS 23			01-B	10			02-B	10					
			02-B	10			03-B	10					
			03-B	10			04-B	10					
			04-B	10			05-B	10					
			05-B	10			06-B	10					
			06-B	10			07-B	10					
			07-B	10			08-B	10					
			08-B	10			09-B	10					
			09-B	10			10-B	10					
DATA BUS 24			01-B	11			02-B	11					
			02-B	11			03-B	11					
			03-B	11			04-B	11					
			04-B	11			05-B	11					
			05-B	11			06-B	11					
			06-B	11			07-B	11					
DATA BUS 24			07-B	11			08-B	11					

A43184 REV. B 71 PRINTED IN U.S.A.

CONTROL DATA

CODE IDENT 15920 | SHEET 8 | LW | DOCUMENT NO 61371300 | REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE - WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
DATA BUS 20			04-8	14			05-8	14					
			05-8	14			06-8	14					
			06-8	14			07-8	14					
			07-8	14			08-8	14					
			08-8	14			09-8	14					
			09-8	14			10-8	14					
MEM ADD BUS 20			~~01-8~~	~~15~~			~~02-8~~	~~15~~					
			~~02-8~~	~~15~~			~~03-8~~	~~15~~					
			03-8	15			04-8	15					
			04-8	15			05-8	15					
			05-8	15			06-8	15					
			06-8	15			07-8	15					
			07-8	15			08-8	15					
			08-8	15			09-8	15					
			09-8	15			10-8	15					
MEM ADD BUS 21			~~01-8~~	~~16~~			~~02-8~~	~~16~~					
			~~02-8~~	~~16~~			~~03-8~~	~~16~~					
			03-8	16			04-8	16					
			04-8	16			05-8	16					
			05-8	16			06-8	16					
			06-8	16			07-8	16					
MEM ADD BUS 21			07-8	16			08-8	16					

AA3184 REV. 8 71 PRINTED IN U.S.A.

CONTROL DATA

CODE IDENT 15920 | SHEET 7 | LW | DOCUMENT NO 61371300 | REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE - WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
DATA BUS 24			08-8	11			09-8	11					
			09-8	11			10-8	11					
DATA BUS 25			~~01-8~~	~~12~~			~~02-8~~	~~12~~					
			~~02-8~~	~~12~~			~~03-8~~	~~12~~					
			03-8	12			04-8	12					
			04-8	12			05-8	12					
			05-8	12			06-8	12					
			06-8	12			07-8	12					
			07-8	12			08-8	12					
			08-8	12			09-8	12					
			09-8	12			10-8	12					
DATA BUS 26			~~01-8~~	~~13~~			~~02-8~~	~~13~~					
			~~02-8~~	~~13~~			~~03-8~~	~~13~~					
			03-8	13			04-8	13					
			04-8	13			05-8	13					
			05-8	13			06-8	13					
			06-8	13			07-8	13					
			07-8	13			08-8	13					
			08-8	13			09-8	13					
			09-8	13			10-8	13					
DATA BUS 27			~~01-8~~	~~14~~			~~02-8~~	~~14~~					
			~~02-8~~	~~14~~			~~03-8~~	~~14~~					
DATA BUS 27			03-8	14			04-8	14					

AA2184 REV. 8 71 PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 9	LW	DOCUMENT NO 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
MEM ADD BUS 21			08-B	16			09-B	16					
			09-B	16			10-B	16					
MEM ADD BUS 22			01-B	17			02-B	17					
			02-B	17			03-B	17					
			03-B	17			04-B	17					
			04-B	17			05-B	17					
			05-B	17			06-B	17					
			06-B	17			07-B	17					
			07-B	17			08-B	17					
			08-B	17			09-B	17					
			09-B	17			10-B	17					
MEM ADD BUS 23			01-B	18			02-B	18					
			02-B	18			03-B	18					
			03-B	18			04-B	18					
			04-B	18			05-B	18					
			05-B	18			06-B	18					
			06-B	18			07-B	18					
			07-B	18			08-B	18					
			08-B	18			09-B	18					
			09-B	18			10-B	18					
MEM ADD BUS 24			01-B	19			02-B	19					
			02-B	19			03-B	19					
MEM ADD BUS 24			03-B	19			04-B	19					

AA3184 REV. B 71 PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 10	LW	DOCUMENT NO 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
MEM ADD BUS 24			04-B	19			05-B	19					
			05-B	19			06-B	19					
			06-B	19			07-B	19					
			07-B	19			08-B	19					
			08-B	19			09-B	19					
			09-B	19			10-B	19					
MEM ADD BUS 25			01-B	20			02-B	20					
			02-B	20			03-B	20					
			03-B	20			04-B	20					
			04-B	20			05-B	20					
			05-B	20			06-B	20					
			06-B	20			07-B	20					
			07-B	20			08-B	20					
			08-B	20			09-B	20					
			09-B	20			10-B	20					
MEM ADD BUS 26			01-B	21			02-B	21					
			02-B	21			03-B	21					
			03-B	21			04-B	21					
			04-B	21			05-B	21					
			05-B	21			06-B	21					
			06-B	21			07-B	21					
MEM ADD BUS 26			07-B	21			08-B	21					

AA3184 REV. B 71 PRINTED IN U.S.A.

[redacted]		CODE IDENT 15920	SHEET 11	LW	DOCUMENT NO 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE - WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
MEM ADD BUS 26			08-B	21			09-B	21					
			09-B	21			10-B	21					
MEM ADD BUS 27			~~01-B~~ ~~02-B~~	~~22~~ ~~22~~			~~02-B~~ ~~03-B~~	~~22~~ ~~22~~					
			03-B	22			04-B	22					
			04-B	22			05-B	22					
			05-B	22			06-B	22					
			06-B	22			07-B	22					
			07-B	22			08-B	22					
			08-B	22			09-B	22					
			09-B	22			10-B	22					
MEM ADD BUS 28			~~01-B~~ ~~02-B~~	~~23~~ ~~23~~			~~02-B~~ ~~03-B~~	~~23~~ ~~23~~					
			03-B	23			04-B	23					
			04-B	23			05-B	23					
			05-B	23			06-B	23					
			06-B	23			07-B	23					
			07-B	23			08-B	23					
			08-B	23			09-B	23					
			09-B	23			10-B	23					
MEM ADD BUS 29			~~01-B~~ ~~02-B~~	~~24~~ ~~24~~			~~02-B~~ ~~03-B~~	~~24~~ ~~24~~					
MEM ADD BUS 29			03-B	24			04-B	24					

AA3184 REV. 8-71 PRINTED IN U.S.A.

[redacted] DATA		CODE IDENT 15920	SHEET 12	LW	DOCUMENT NO 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE - WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
MEM ADD BUS 29			04-B	24			05-B	24					
			05-B	24			06-B	24					
			06-B	24			07-B	24					
			07-B	24			08-B	24					
			08-B	24			09-B	24					
			09-B	24			10-B	24					
MEM ADD BUS 210			~~01-B~~ ~~02-B~~	~~25~~ ~~25~~			~~02-B~~ ~~03-B~~	~~25~~ ~~25~~					
			03-B	25			04-B	25					
			04-B	25			05-B	25					
			05-B	25			06-B	25					
			06-B	25			07-B	25					
			07-B	25			08-B	25					
			08-B	25			09-B	25					
			09-B	25			10-B	25					
MEM ADD BUS 211			~~01-B~~ ~~02-B~~	~~26~~ ~~26~~			~~02-B~~ ~~03-B~~	~~26~~ ~~26~~					
			03-B	26			04-B	26					
			04-B	26			05-B	26					
			05-B	26			06-B	26					
			06-B	26			07-B	26					
MEM ADD BUS 211			07-B	26			08-B	26					

AA3184 REV. 8-71 PRINTED IN U.S.A.

		CODE IDENT	SHEET		LW	DOCUMENT NO	REV.
		15920	13			61371300	A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
MEM ADD BUS 2^{11}			08-B	26			09-B	26					
			09-B	26			10-B	26					
MEM ADD BUS 2^{12}			~~01-B~~	~~27~~			~~02-B~~	~~27~~					
			~~02-B~~	~~27~~			~~03-B~~	~~27~~					
			03-B	27			04-B	27					
			04-B	27			05-B	27					
			05-B	27			06-B	27					
			06-B	27			07-B	27					
			07-B	27			08-B	27					
			08-B	27			09-B	27					
			09-B	27			10-B	27					
MEM ADD BUS 2^{13}			~~01-B~~	~~28~~			~~02-B~~	~~28~~					
			~~02-B~~	~~28~~			~~03-B~~	~~28~~					
			03-B	28			04-B	28					
			04-B	28			05-B	28					
			05-B	28			06-B	28					
			06-B	28			07-B	28					
			07-B	28			08-B	28					
			08-B	28			09-B	28					
			09-B	28			10-B	28					
MEM ADD BUS 2^{14}			~~01-B~~	~~29~~			~~02-B~~	~~29~~					
			~~02-B~~	~~29~~			~~03-B~~	~~29~~					
MEM ADD BUS 2^{14}			03-B	29			04-B	29					

AA3184 REV. B 71

PRINTED IN U.S.A.

		CODE IDENT	SHEET		LW	DOCUMENT NO	REV
		15920	14			61371300	A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
MEM ADD BUS 2^{14}			04-B	29			05-B	29					
			05-B	29			06-B	29					
			06-B	29			07-B	29					
			07-B	29			08-B	29					
			08-B	29			09-B	29					
			09-B	29			10-B	29					
MEM ADD BUS 2^{15}			~~01-B~~	~~30~~			~~02-B~~	~~30~~					
			~~02-B~~	~~30~~			~~03-B~~	~~30~~					
			03-B	30			04-B	30					
			04-B	30			05-B	30					
			05-B	30			06-B	30					
			06-B	30			07-B	30					
			07-B	30			08-B	30					
			08-B	30			09-B	30					
			09-B	30			10-B	30					
$\overline{MR}$			~~01-B~~	~~31~~			~~02-B~~	~~31~~					
			~~02-B~~	~~31~~			~~03-B~~	~~31~~					
			03-B	31			04-B	31					
			04-B	31			05-B	31					
			05-B	31			06-B	31					
			06-B	31			07-B	31					
$\overline{MR}$			07-B	31			08-B	31					

AA3184 REV. B 71

PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 15	LW	DOCUMENT NO 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
$\overline{MR}$			08-8	31			09-8	31					
			09-8	31			10-8	31					
$\overline{READY}$			~~01-8~~	~~32~~			~~02-8~~	~~32~~					
			~~02-8~~	~~32~~			~~03-8~~	~~32~~					
			03-8	32			04-8	32					
			04-8	32			05-8	32					
			05-8	32			06-8	32					
			06-8	32			07-8	32					
			07-8	32			08-8	32					
			08-8	32			09-8	32					
			09-8	32			10-8	32					
$\overline{CPU\ MEM\ READ}$			~~01-8~~	~~33~~			~~02-8~~	~~33~~					
			~~02-8~~	~~33~~			~~03-8~~	~~33~~					
			03-8	33			04-8	33					
			04-8	33			05-8	33					
			05-8	33			06-8	33					
			06-8	33			07-8	33					
			07-8	33			08-8	33					
			08-8	33			09-8	33					
			09-8	33			10-8	33					
$\overline{CPU\ MEM\ WRITE}$			~~01-8~~	~~34~~			~~02-8~~	~~34~~					
			~~02-8~~	~~34~~			~~03-8~~	~~34~~					
$\overline{CPU\ MEM\ WRITE}$			03-8	34			04-8	34					

AA3184 REV. 8-71

PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 16	LW	DOCUMENT NO 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
$\overline{CPU\ MEM\ WRITE}$			04-8	34			05-8	34					
			05-8	34			06-8	34					
			06-8	34			07-8	34					
			07-8	34			08-8	34					
			08-8	34			09-8	34					
			09-8	34			10-8	34					
MEM READ			~~01-8~~	~~35~~			~~02-8~~	~~35~~					
			~~02-8~~	~~35~~			~~03-8~~	~~35~~					
			03-8	35			04-8	35					
			04-8	35			05-8	35					
			05-8	35			06-8	35					
			06-8	35			07-8	35					
			07-8	35			08-8	35					
			08-8	35			09-8	35					
			09-8	35			10-8	35					
$\overline{MEM\ WRITE}$			~~01-8~~	~~36~~			~~02-8~~	~~36~~					
			~~02-8~~	~~36~~			~~03-8~~	~~36~~					
			03-8	36			04-8	36					
			04-8	36			05-8	36					
			05-8	36			06-8	36					
			06-8	36			07-8	36					
$\overline{MEM\ WRITE}$			07-8	36			08-8	36					

AA3184 REV. 8-71

PRINTED IN U.S.A.

CONTROL DATA | CODE IDENT 15920 | SHEET 17 | LW | DOCUMENT NO. 61371300 | REV. A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
MEM WRITE			08-B	36			09-B	36					
			09-B	36			10-B	36					
OUTPUT STROBE			01-B	37			02-B	37					
			02-B	37			03-B	37					
			03-B	37			04-B	37					
			04-B	37			05-B	37					
			05-B	37			06-B	37					
			06-B	37			07-B	37					
			07-B	37			08-B	37					
			08-B	37			09-B	37					
			09-B	37			10-B	37					
INPUT STROBE			01-B	38			02-B	38					
			02-B	38			03-B	38					
			03-B	38			04-B	38					
			04-B	38			05-B	38					
			05-B	38			06-B	38					
			06-B	38			07-B	38					
			07-B	38			08-B	38					
			08-B	38			09-B	38					
			09-B	38			10-B	38					
02			01-B	39			02-B	39					
			02-B	39			03-B	39					
02			03-B	39			04-B	39					

A A3184 REV. B 71 PRINTED IN U.S.A.

CONTROL DATA | CODE IDENT 15920 | SHEET 18 | LW | DOCUMENT NO. 61371300 | REV. A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
02			04-B	39			05-B	39					
			05-B	39			06-B	39					
			06-B	39			07-B	39					
			07-B	39			08-B	39					
			08-B	39			09-B	39					
			09-B	39			10-B	39					
02			01-B	40			02-B	40					
			02-B	40			03-B	40					
			03-B	40			04-B	40					
			04-B	40			05-B	40					
			05-B	40			06-B	40					
			06-B	40			07-B	40					
			07-B	40			08-B	40					
			08-B	40			09-B	40					
			09-B	40			10-B	40					
01			01-B	41			02-B	41					
			02-B	41			03-B	41					
			03-B	41			04-B	41					
			04-B	41			05-B	41					
			05-B	41			06-B	41					
			06-B	41			07-B	41					
01			07-B	41			08-B	41					

A A3184 REV. B 71 PRINTED IN U.S.A.

CONTROL DATA | CODE IDENT 15920 | SHEET 19 | LW | DOCUMENT NO. 61371300 | REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE – WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
01			08-8	41			09-8	41					
			09-8	41			10-8	41					
$\overline{01}$			01-8	42			02-8	42					
			02-8	42			03-8	42					
			03-8	42			04-8	42					
			04-8	42			05-8	42					
			05-8	42			06-8	42					
			06-8	42			07-8	42					
			07-8	42			08-8	42					
			08-8	42			09-8	42					
			09-8	42			10-8	42					
$\overline{04}$			01-8	43			02-8	43					
			02-8	43			03-8	43					
			03-8	43			04-8	43					
			04-8	43			05-8	43					
			05-8	43			06-8	43					
			06-8	43			07-8	43					
			07-8	43			08-8	43					
			08-8	43			09-8	43					
			09-8	43			10-8	43					
$\overline{HOLD}$			06-8	44			07-8	44					
			07-8	44			09-8	44					
$\overline{HOLD}$			09-8	44			10-8	44					

AA3184 REV. 8/71 PRINTED IN U.S.A.

CONTROL DATA | CODE IDENT 15920 | SHEET 20 | LW | DOCUMENT NO 61371300 | REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE – WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
HOLD ACK			06-8	45			07-8	45					
			07-8	45			09-8	45					
			09-8	45			10-8	45					
60 HZ			06-8	53			08-8	53					
$\overline{1420}$ CHAR			05-8	54			06-8	54					
			06-8	54			08-8	54					
REF READ CLK			05-8	59			06-8	59					
REF WRITE CLK			05-8	60			06-8	60					
REC LB 1			05-8	61			06-8	61					
REC LB 2			05-8	62			06-8	62					
LB 2 2^7			05-8	63			06-8	63					
LB 2 2^6			05-8	64			06-8	64					
LB 2 2^5			05-8	65			06-8	65					
LB 2 2^4			05-8	66			06-8	66					
LB 2 2^3			05-8	67			06-8	67					
LB 2 2^2			05-8	68			06-8	68					
LB 2 2^1			05-8	69			06-8	69					
LB 2 2^0			05-8	70			06-8	70					
ANSWER BACK			03-8	46			08-8	46					
$\overline{SYNC}$			09-8	46			10-8	46					
MAINT MODE			03-8	47			08-8	47					

AA3184 REV. 8/71 PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 21	LW	DOCUMENT NO 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE - WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
CPU INPUT			09-B	47			10-B	47					
PRT CO			04-B	48			07-B	48					
PRT SIG GND			04-B	49			07-B	49					
PRT DSR			04-B	50			07-B	50					
PRT DATA			04-B	51			07-B	51					
DISABLE RDY			09-B	48			10-B	48					
GET UPPER ADD			09-B	49			10-B	49					
EXT INT			09-B	50			10-B	50					
PRT CHAR REQ			04-B	53			09-B	53					
PRT DATA			04-B	56			09-B	56					
PRT BUFF 3/4 FULL			07-B	57			09-B	57					
PRT RDY			07-B	58			09-B	58					
PRINTER AUTO			04-B	59			08-B	59					
LOCAL TO CASS			07-B	60			08-B	60					
ACN			01-A	49			06-A	9					
ACN			01-A	51			06-A	7					
-9V			01-A	59			05-A	5					
			05-A	5			06-A	5					
-9V			06-A	5			07-A	5					

AA31M REV. 8-71 PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 22	LW	DOCUMENT NO 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE - WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
-9V			09-A	5			08-A	5					
			08-A	5			09-A	5					
			09-A	5			10-A	5					
-9V			01-A	59			01-B	73					
			01-B	73			02-B	73					
			02-B	73			03-B	73					
			03-B	73			04-B	73					
			04-B	73			05-B	73					
			05-B	73			06-B	73					
			06-B	73			07-B	73					
			07-B	73			08-B	73					
			08-B	73			09-B	73					
			09-B	73			10-B	73					
-9V			01-A	60			05-A	6					
			05-A	6			06-A	6					
			06-A	6			07-A	6					
			07-A	6			08-A	6					
			08-A	6			09-A	6					
			09-A	6			10-A	6					
-9V			01-A	60			01-B	74					

PRINTED IN U.S.A.

CONTROL DATA | CODE IDENT 15920 | SHEET 23 | LW | DOCUMENT NO. 61371300 | REV. A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
-9V			01-B	74			02-B	74					
			02-B	74			03-B	74					
			03-B	74			04-B	74					
			04-B	74			05-B	74					
			05-B	74			06-B	74					
			06-B	74			07-B	74					
			07-B	74			08-B	74					
			08-B	74			09-B	74					
			09-B	74			10-B	74					
+12V			01-A	61			05-A	69					
			05-A	69			06-A	69					
			06-A	69			07-A	69					
			07-A	69			08-A	69					
			08-A	69			09-A	69					
			09-A	69			10-A	69					
+12V			01-A	62			05-A	70					
			05-A	70			06-A	70					
			06-A	70			07-A	70					
			07-A	70			08-A	70					
			08-A	70			09-A	70					
			09-A	70			10-A	70					
+20V			03-A	69			05-A	71					

AA3184 REV. 8/71

PRINTED IN U.S.A.

CONTROL DATA | - | CODE IDENT 15920 | SHEET 24 | LW | DOCUMENT NO 61371300 | REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
+20V			05-A	71			06-A	71					
			06-A	71			07-A	71					
			07-A	71			08-A	71					
			08-A	71			09-A	71					
			09-A	71			10-A	71					
+20V			03-A	70			05-A	72					
			05-A	72			06-A	72					
			06-A	72			07-A	72					
			07-A	72			08-A	72					
			08-A	72			09-A	72					
			09-A	72			10-A	72					
-12V			01-A	63			05-A	73					
			05-A	73			06-A	73					
			06-A	73			07-A	73					
			07-A	73			08-A	73					
			08-A	73			09-A	73					
			09-A	73			10-A	73					
-12V			01-A	64			05-A	74					
			05-A	74			06-A	74					
			06-A	74			07-A	74					
			07-A	74			08-A	74					
-12V			08-A	74			09-A	74					

AA3184 REV. 8/71

PRINTED IN U.S.A.

[redacted] | CODE IDENT 15920 | SHEET 25 | LW | DOCUMENT NO 61371300 | REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
-12V			09-A	74			10-A	74					
-20V			03-A	75			05-A	75					
			05-A	75			06-A	75					
			06-A	75			07-A	75					
			07-A	75			08-A	75					
			08-A	75			09-A	75					
			09-A	75			10-A	75					
-20V			03-A	76			05-A	76					
			05-A	76			06-A	76					
			06-A	76			07-A	76					
			07-A	76			08-A	76					
			08-A	76			09-A	76					
			09-A	76			10-A	76					
-5V			01-B	5			02-B	5					
			02-B	5			03-B	5					
			03-B	5			04-B	5					
			04-B	5			05-B	5					
			05-B	5			06-B	5					
			06-B	5			07-B	5					
-5V			07-B	5			08-B	5					

AA3184 REV. 8/71 PRINTED IN U.S.A.

CONTROL DATA | CODE IDENT 15920 | SHEET 26 | LW | DOCUMENT NO 61371300 | REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
			08-B	5			09-B	5					
			09-B	5			10-B	5					
-5V			01-B	6			02-B	6					
			02-B	6			03-B	6					
			03-B	6			04-B	6					
			04-B	6			05-B	6					
			05-B	6			06-B	6					
			06-B	6			07-B	6					
			07-B	6			08-B	6					
			08-B	6			09-B	6					
			09-B	6			10-B	6					
+12V			~~01-A~~ 01-B	~~71~~ 71			~~01-B~~ 02-B	~~71~~ 71					
			02-B	71			03-B	71					
			03-B	71			04-B	71					
			04-B	71			05-B	71					
			05-B	71			06-B	71					
			06-B	71			07-B	71					
			07-B	71			08-B	71					
			08-B	71			09-B	71					
+12V			09-B	71			10-B	71					

AA3184 REV. 8/71 PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 27	LW	DOCUMENT NO. 61371300	REV. A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
+12V			~~01-A~~ ~~63~~ 01-B 72				~~01-B~~ ~~73~~ 02-B 72						
			02-B	72			03-B	72					
			03-B	72			04-B	72					
			04-B	72			05-B	72					
			05-B	72			06-B	72					
			06-B	72			07-B	72					
			07-B	72			08-B	72					
			08-B	72			09-B	72					
			09-B	72			10-B	72					
-12V			~~01-A~~ ~~63~~ 01-B 75				~~01-B~~ ~~75~~ 02-B 75						
			02-B	75			03-B	75					
			03-B	75			04-B	75					
			04-B	75			05-B	75					
			05-B	75			06-B	75					
			06-B	75			07-B	75					
			07-B	75			08-B	75					
			08-B	75			09-B	75					
			09-B	75			10-B	75					
-12V			~~01-A~~ ~~63~~ 01-B 76				~~01-B~~ ~~75~~ 02-B 76						
-12V			02-B	76			03-B	76					

AA3184 REV. 8.71 PRINTED IN U.S.A.

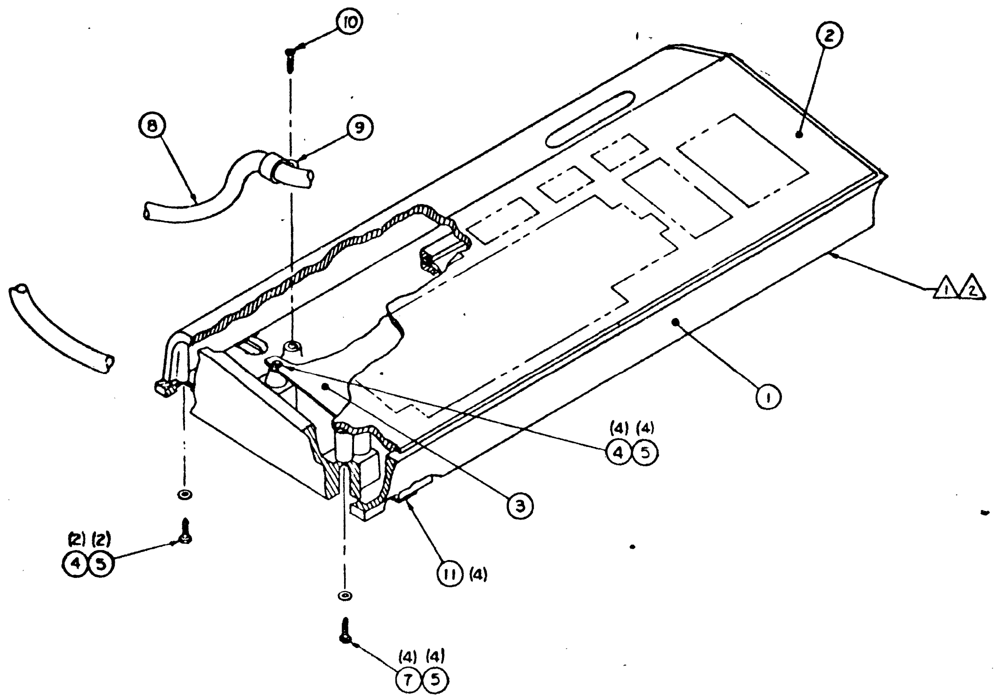
CONTROL DATA		CODE IDENT 15920	SHEET 28	LW	DOCUMENT NO 61371300	REV A

SUBJECT TERM	LENGTH	ORIGIN			SORT	DESTINATION			TYPE-WIRE			ECO NUMBER	ADD OR DELETE
		CHASSIS	ROW	PIN		CHASSIS	ROW	PIN	SIZE		COLOR		
-12V			03-B	76			04-B	76					
			04-B	76			05-B	76					
			05-B	76			06-B	76					
			06-B	76			07-B	76					
			07-B	76			08-B	76					
			08-B	76			09-B	76					
-12V			09-B	76			10-B	76					
MULTIDROP			03-B	52			08-B	52					
6.785MHZ			04-B	52			07-B	52					
6.745MHZ			07-B	52			09-B	52					
6.745MHZ			09-B	52			09-B	51					
PRINTER OPTION			04-B	55			08-B	55					
GND			A09A	37			A09A	77					
GND			A09A	38			A09A	78					
GND			A09A	39			A09A	79					
GND			A09A	55			A09A	80					
SEARCH MEMORY OPTION			A02B	56			A08B	56					
DATA PROTECT OPTION			A05A	33			A09A	33					

AA3184 REV. 8.71 PRINTED IN U.S.A.

61375300

REV	ECO	DESCRIPTION	DFT	DATE	CHK	APP
		RELEASED [illegible]				
01	C084	[illegible]				
02	C048	REVISED PER ECO				
03	C126	REVISED PER ECO				
04	C176	REMOVED [illegible]				
05	C193	[illegible]				
A	8059-7	RELEASED CLASS A	—		—	



NOTES:

1. MARK "ASSY 61375300" ON BOTTOM PER CDC SPEC 10121508.
2. APPLY SERIAL NO. IN THIS AREA PER CDC STD. 1.01.025.

APL 61375300

DO NOT SCALE DRAWING

CC614A

D. WELLS

KEYBOARD ASSEMBLY
95 KEY

15920 D 61375300

BUILD ARC 440

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
05-19-75	1	010653-7

DIV	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	SNG. DISP.	FILE DATE
0860	61375300	3	A	0	KEYBOARD ASSY 95 KEY	N	REL	05-14-75	LIAT	05-19-75

TYP	IND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
	001	01	71493280	9	1	PC	BASE KEYBOARD	P						
	002	01	71493480	5	1	PC	COVER-KEYBOARD (95 KEY)	P						
	003	01	51907402	5	1	PC	KYBD 95 KEY	P						
	004	01	00860303	7	6	PC	SCR SLF-LKG 6-32X3/8	B						
	005	01	10125605	5	10	PC	WASHER FLT NO.6 STL CP	B						
	007	01	00860304	5	4	PC	SCR SLF-LKG 6-32X1/2	A						
	008	01	61370500	3	1	PC	CABLE ASSY(KEYBOARD-EXTERNAL)	A						
	009	01	24869005	6	1	PC	CLAMP, NYLON RL	A						
	010	01	10607908	3	1	PC	SCREW SELF TAPPING 8	P						
	011	01	51805801	1	4	PC	BUMPER SELF STICKING BLACK	P						
							0010 TOTAL LINES							

DWN	D. Wells	10/11/74	CONTROL DATA	TITLE	PREFIX	DOCUMENT NO.	REV
CHKD				CABLE ASSY KEYBOARD EXTERNAL	A	61370500	A
ENG		10/14/74					
MFG		10/23/74	CODE IDENT	FIRST USED ON	NHA	SHEET	
APPR		11-23-74	15920	CC614/CC681	61370100	1 of 4	

SHEET REVISION STATUS

4	3	2	1
-			
-	01	01	01
02	02	02	02
A	A	A	A

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		RELEASED CLASS "C"		10-14-74	DD
01	C039	REVISED CONN VIEW ADDED COND. IDENT NO. 18	RP	" "	DWK
02	C221	ADDED COND IDENT 9 FROM 22 ADDED F/N 11 & 12 ADDED SHT 4	RP	3-27-75	DWB
A	10653-1	RELEASED CLASS A	—	4/24/75	R.K.T.

NOTES:

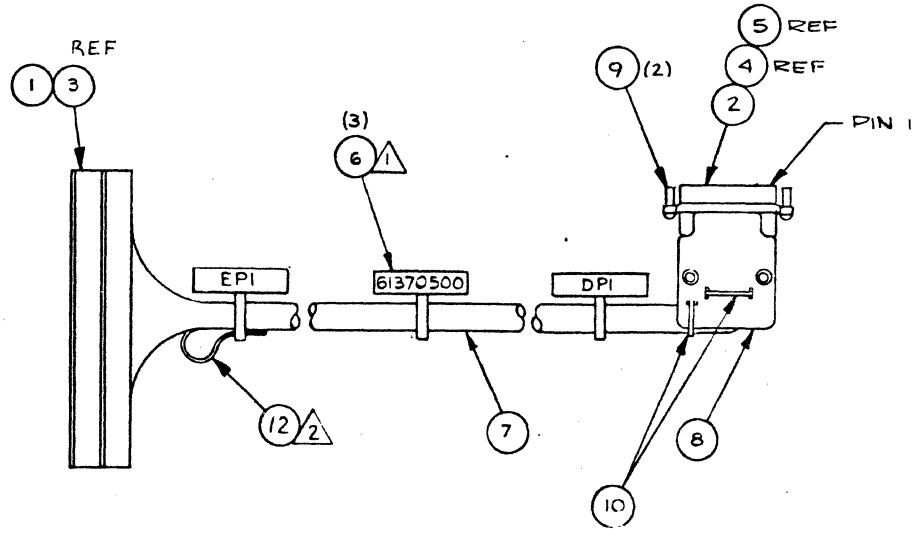
1. Apply label to cable per drawing 82191061, Method 6. Mark as shown. (3 places)
2. Put extra wires in F/N 12 and mount under label as shown.

APL 61370500
DETACHED LISTS

AA3185 REV. B 73

PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT	SHEET		DOCUMENT NO	REV
	-	15920	2	A	61370500	A



AA3185

PRINTED IN U.S.A.

CONTROL DATA

CODE IDENT 15920 | SHEET 3 | WL | DOCUMENT NO 61370500 | REV. A

CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
1	7	26	90	36.0	DP1	1	4	EP1	1	3,11	Control Key
2			91			2			2		Kybd Data 2^7
3			92			3			3		Kybd Data 2^6
4			93			4			4		Kybd Data 2^5
5			94			5			5		Kybd Data 2^4
6			95			6			6		Kybd Data 2^3
7			96			7			7		Kybd Data 2^2
8			97			8			8		Kybd Data 2^1
9			98			9			9		Kybd Data 2^0
10			900			10			10		Kybd Rdy
11			901			11			11		Local To Print
12			902			12			12		Line To Print
13		26	903			14	4		14		Lower Case Enable
14		24	2			23	5		20		+5V
15		24	0			24	5		21		Gnd
16		24	9			25	5		22		-12V
17	7	24		36.0	DP1	20	5	EP1	18	3,11	Safety Gnd Bare Drain Wire
18	7	26	904	36.0	DP1	13	4	EP1	13	3	BREAK
19	7	26	912	36.0	DP1	15	4	EP1	15	3	GND
20	7	26	911	36.0	DP1	16	4	EP1	16	3	GND

A43183 REV.0-70 PRINTED IN U.S.A.

CONTROL DATA

CODE IDENT 15920 | SHEET 4 | WL | DOCUMENT NO 61370500 | REV A

CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
21	7	26	950	36.0	DP1	17	4	EP1	17	3	GND
22	7	26	960	36.0	DP1	18	4	EP1	19	3	GND

BUILD ARC 104

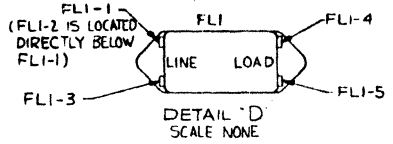
ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
04-28-75	1	810653-1

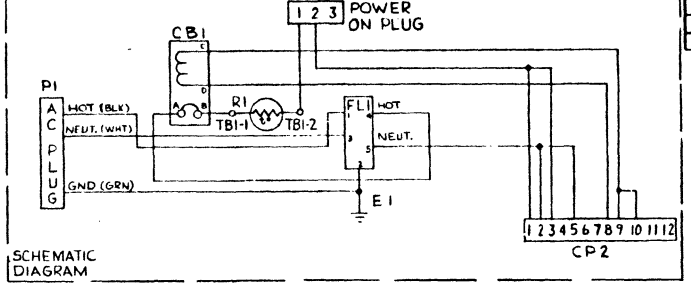
DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	ARC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61370500	3	A	A	CABLE ASSY(KEYBOARD-EXTERNAL)	A	REL	04-24-75	LIAT	04-28-75

TYP	FIND NO.	LI	PART NUMBER	CD	INC	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WT. IN	WT. OUT
	001	01	52652907	0		1	PC	CONN(PC-EDGE) 22 POSITIONS	P						
	002	01	53397814	4		1	PC	CONN 25 POS PLUG ALONE MALE	P						
	003	01	94219902	7		22	PC	CONTACT DUO-TYNE FLAG	P						
	004	01	53397818	5		1	PC	CONN STRIP PINS 26-30GA MALE	P						
	005	01	53397817	7		4	PC	CONN STRIP PIN 20-24 GA MALE	P						
	006	01	94277409	2		3	PC	STRAP,CABLE TIE W.093 LG 4	P						
	007	01	51908500	5		3	FT	CABLE SHIELDED 25 COND	W						
	008	01	51908402	4		1	PC	HOOD CONN	P						
	009	01	94288021	2		2	PC	CONN LOCKING DEVICE	B						
	010	01	94277400	1		2	PC	CABLE TIE STRAP 1/16-5/8 DIA.	P						
	011	01	24528610	9		300	PC	TURING INS SZ 13 BLACK	B						
	012	01	51758103	9		250	FT	INS SLV,CLR,PVC HEAT SHRINK	B						
								0012 TOTAL LINES							

CDC PART NO.	AMPS "A"	AMPS "B"
61371100	5.0	1.5
01	5.0	2.0
02	5.0	2.5
03	5.0	3.0
04	5.0	3.5
05	5.0	4.0
06	10.0	5.0
07	10.0	6.0
08	10.0	7.0
09	10.0	8.0

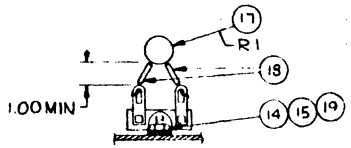


DETAIL "D"
SCALE NONE

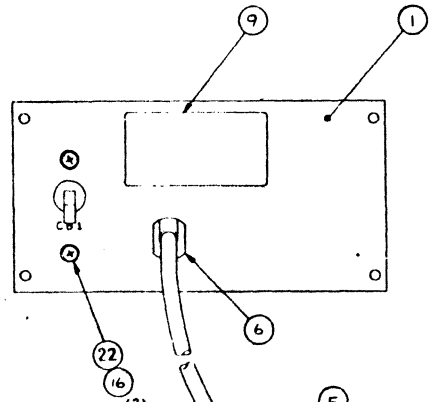


SCHEMATIC DIAGRAM

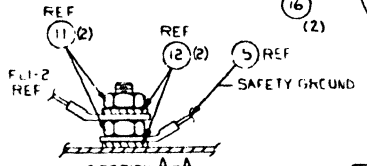
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
		AS RELEASED CLASS				
01	C-041	[illegible]				
02	C129	MOVED GROUND STUD [illegible]				
03	C215	ADDED PARTS FROM [illegible]				
04	C258	[illegible]				
A	10653-2	[illegible]				
B	ED 10733	REVISED PER ECO				



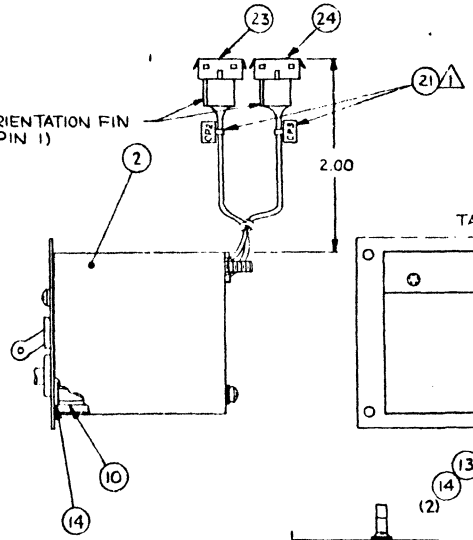
SECTION C-C
ROTATED 90° CCW
SCALE: NONE

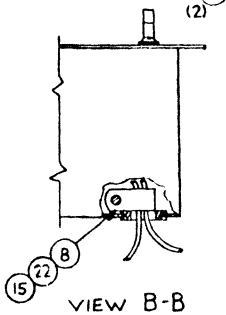


IDENT PLATE INFORMATION

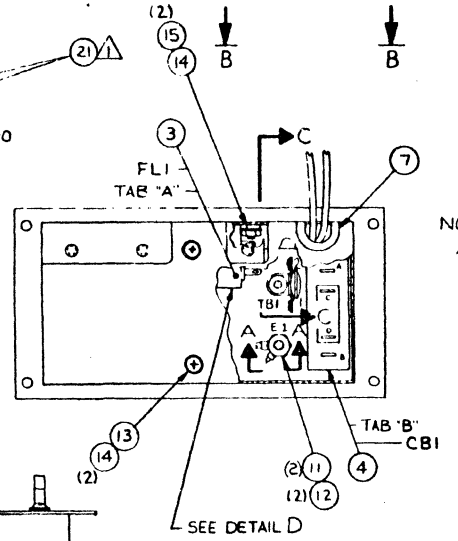


SECTION A-A
SCALE: NONE





VIEW B-B



NOTES:
1. APPLY LABEL TO CABLE PER DRAWING 82191061, METHOD 6. MARK AS INDICATED.

APL 61371109 THRU APL 61371100
DETACHED LISTS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
2 PLACE ± .
3 PLACE ± .
ANGLES ±
DO NOT SCALE DRAWING

CC 614A

TITLE: AC. ENTRY ASSEMBLY 60 HZ

CODE IDENT 15920 | SIZE D | DRAWING NO 61371100

SCALE 1/1 | NHA 15611400 | SHEET / OF /

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE 06-02-75 | PAGE 1 | FILE CHANGE NO. 00010733

DIV.	ASSEMBLY NUMBER	CD	REV	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	DWG. RESP	FILE DATE
0840	61371104	3	B	D	PANEL ASSY (AC ENTRY) 60 HZ	A	REL	04-28-75	LIAT	06-02-75

FIND NO.	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	71485100	0	1	PC	PLATE AC ENTRY 60 HZ	P						
002	01	71485000	1	1	PC	COVER AC ENTRY	P						
003	01	51899703	6	1	PC	FILTER RFI 115-250 VAC	P						
004	01	51907705	2	1	PC	CB TRIP COIL 275V 3.5AMP	P						
005	01	51899900	8	1	PC	POWER CORD UL 3 WIRE 8FT	P						
006	01	36158909	0	1	PC	BUSHING STRAIN RELIEF	P						
007	01	51809821	5	AR	FT	CHANNEL RUBBER EXT U 1/32 SLT	P						
008	01	24565002	5	1	PC	CABLE CLAMP 0.250 DIA	B						
009	01	15016500	5	1	PC	I.D. PLATE CABINET	P						
010	01	36053425	9	1	PC	STANDOFF HEX 6-32 3.000	P						
011	01	10125108	0	1	PC	NUT MACH HEX STL CP 10-32	B			10733			7528
011	02	10125108	0	2	PC	NUT MACH HEX STL CP 10-32	B		10733			7528	
012	01	10126403	4	2	PC	WASHER LOCK EXT NO. 10	B						
013	01	10127113	8	2	PC	SCREW PAN HD 6-32X3/8 CAD PLT	B						
014	01	10126401	8	6	PC	WASHER EXT TOOTH LOCK NO.6	B						
015	01	10125105	6	4	PC	NUT MACH HEX STL CP 6-32	B						
016	01	10127111	2	2	PC	SCREW MACH 6-32X1/4 PAN HD	B						
017	01	51908682	9	1	PC	THERMISTOR 20HM 25C DISC	P						
018	01	51797414	3	167	FT	TUBING INS THIN WALL TFT20014	P						
019	01	30085800	5	1	PC	LUG TERMINAL STRIP	P						
020	01	61369800	0	REF	PC	W/L AC ENTRY PANEL ASSY 60HZ	D						

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE 06-02-75 | PAGE 2 | FILE CHANGE NO. 00010733

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	DWG. RESP	FILE DATE
0840	61371104	3	B	D	PANEL ASSY (AC ENTRY) 60 HZ	A	REL	04-28-75	LIAT	06-02-75

FIND NO.	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
021	01	94277409	2	2	PC	STRAP,CABLE TIE W.093 LG 4	P						
022	01	10126103	8	3	PC	INT TOOTH LK WSHR #6	B						
023	01	51905905	9	1	PC	CONN RECP 12 POS	P						
024	01	51905901	8	1	PC	CONN RECP 3 POS	P						
025	01	51906280	4	9	PC	SOCKET CONTACTS	P						
026	01	62121109	3	4	PC	TERM RECP FSTN 16-14 AWG BLU	B						
027	01	51797236	0	1	PC	TERM LUG RING CRMP 16-14 #10	P						
028	01	93463444	5	500	FT	WIR 18GA STRD YEL 300V UL PVC	W						
029	01	93464222	4	2	FT	WIR 16GA STRD RED 300V UL PVC	W						
030	01	93464444	4	4 250	FT	WIR 16GA STRD YEL 300V UL PVC	W						
031	01	93463555	8	624	FT	WIR 18GA STRD GRN 300V UL PVC	W						
032	01	24528617	4	333	FT	TUBING INS SZ 6 BLACK	B						
033	01	51797217	8	1	PC	TERM LUG RING CRMP 22-18 #10	P						

0034 TOTAL LINES

DWN	R. Trautman	10-10-74
CHKD		
ENG		
MFG		
APPR		

CONTROL DATA

CODE IDENT 15920

TITLE: W/L AC ENTRY PANEL ASSY 60HZ

FIRST USED ON: CCG14/CCGB1

PREFIX	DOCUMENT NO	REV
WL	61369800	A

NHA 61371100 SHEET 1 of 2

SHEET REVISION STATUS

2	1
01	01
02	02
03	03
A	A

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		RELEASED CLASS C		10-15-74	
01	C0110	ADDED CON. IDENT 14		1-9-75	1-14-75
02	C215	MOVED PARTS TO NHA	A	3-28-75	
03	C258	COND. #4 LENGTH WAS 5	E	4-21-75	
A	10653-2	RELEASED CLASS A	—	5/28/75	

NOTES:

1. For find no. identification see APL 61371100 thru 61371109.

DETACHED LISTS

AA3186 REV. B 71

PRINTED IN U.S.

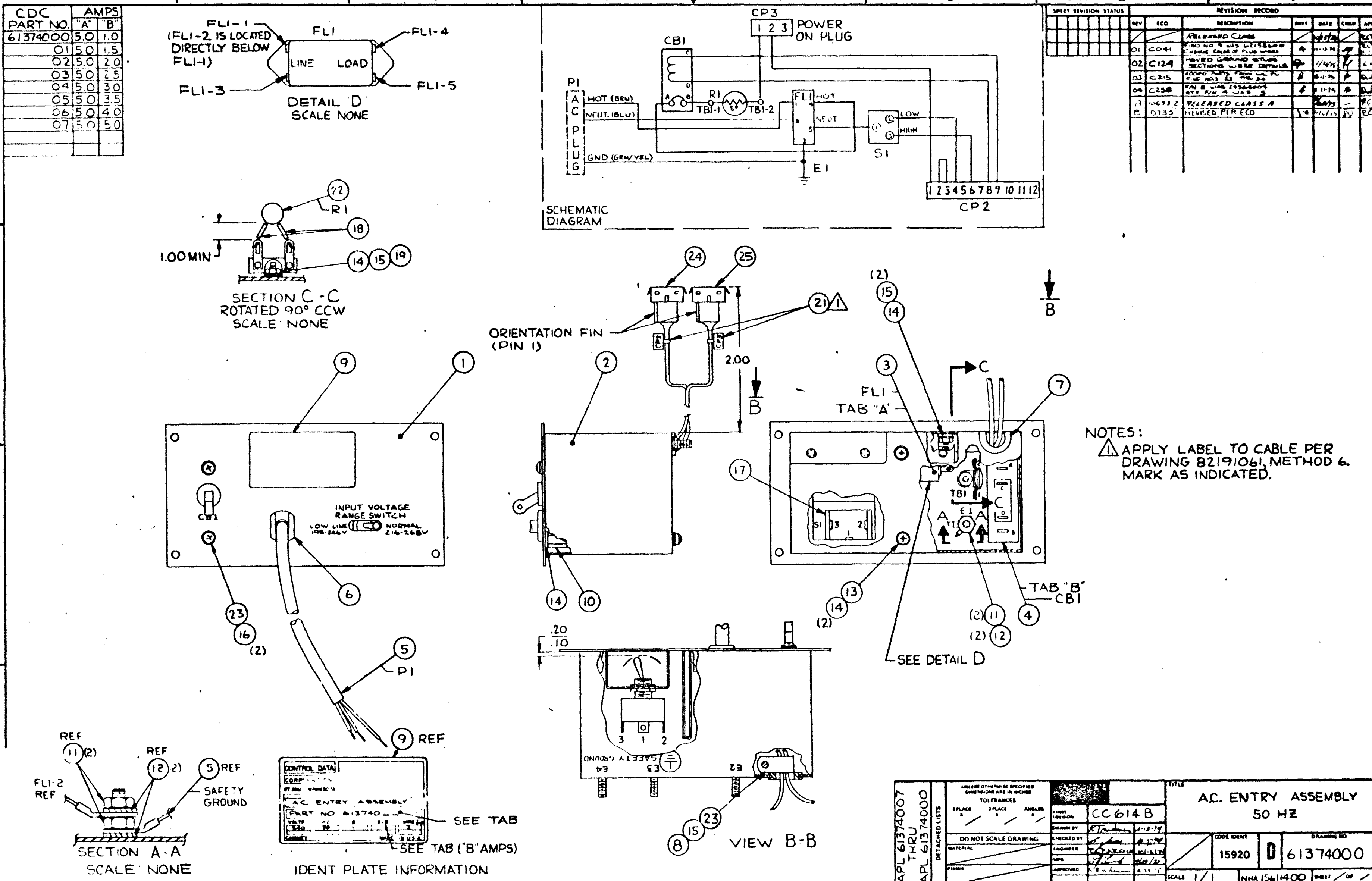
CONTROL DATA — CODE IDENT 15920 — SHEET 2 — WL — DOCUMENT NO 61369800 — REV A

CONDUCTOR IDENT	FIND NO	GAUGE REF	COLOR REF	LENGTH APPROX	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
1			0	6	P1			FL1	1	32	PWR CORD (HOT)
2			9	6	P1			FL1	3	32	PWR CORD (NEUT)
3			5	3	P1			CE1		27	PWR CORD (GND)
4	30	16	4	5	CP3	1	24,25	TB1	2		LINE HOT TO SW
5	30	16	4	4	FL1	4	32	CB1	A	26	HOT TO C.B.
6	30	16	4	4	CB1	B	26	TB1	1		HOT FROM C.B.
7	29	16	2	5	CB1	C	26	CP2	9	23,25	TRIP VOLTAGE
8	28	18	4	3	CP3	9	23,25	CP2	10	23,25	TRIP VOLTAGE
9	29	16	2	5	CB1	D	26	CP2	8	23,25	TRIP RETURN
10	30	16	4	5	CP3	2	24,25	CP2	1	23,25	HOT FROM SW.
11	28	18	4	3	CP3	1	23,25	CP2	3	23,25	HOT FROM SW.
12	30	16	4	4	FL1	3	32	CP2	2	23,25	NEUTRAL
13	28	18	4	3	CP3	2	23,25	CP2	5	23,25	NEUTRAL
14	31	18	5	7.5	FL1	2	32	CE1		33	GROUND

AA3186 REV. B

PRINTED IN U.S.A.

CDC PART NO.	AMPS "A"	AMPS "B"
61374000	5.0	1.0
01	5.0	1.5
02	5.0	2.0
03	5.0	2.5
04	5.0	3.0
05	5.0	3.5
06	5.0	4.0
07	5.0	5.0



NOTES:

1. APPLY LABEL TO CABLE PER DRAWING 82191061, METHOD 6. MARK AS INDICATED.

REVISION RECORD

REV	ECO	DESCRIPTION	DFT	DATE	CHKD	APP
		RELEASED CLASS		[illegible]		[illegible]
01	C041	FIND NO 9 WAS [illegible]; CHANGE COLOR OF PLUG WIRES	[illegible]	[illegible]	[illegible]	[illegible]
02	C124	MOVED GROUND STUDS, SECTIONS WERE DETAILS	[illegible]	1/4/75	[illegible]	[illegible]
03	C215	ADDED PARTS FROM [illegible] FIND NOS 23 THRU 24	[illegible]	[illegible]	[illegible]	[illegible]
04	C258	F/N 8 WAS [illegible] QTY F/N 4 WAS 2	[illegible]	[illegible]	[illegible]	[illegible]
A	10653-2	RELEASED CLASS A		[illegible]		[illegible]
B	10733	REVISED PER ECO	[illegible]	[illegible]	[illegible]	[illegible]

APL 61374007 THRU APL 61374000

DETACHED LISTS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: 3 PLACE ± / 2 PLACE ± / ANGLES ± /

DO NOT SCALE DRAWING

MATERIAL

FINISH

FIRST USED ON: CC614B

DRAWN BY / CHECKED BY / ENGINEER / MFG / APPROVED

TITLE: A.C. ENTRY ASSEMBLY 50 HZ

CODE IDENT: 15920 | D | DRAWING NO: 61374000

SCALE 1/1 | NHA 15611400 | SHEET / OF /

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE 06-02-75 | PAGE 1 | FILE CHANGE NO 00010783

DIV.	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG RESP	FILE DATE
0860	61374002	6	B	D	PANEL ASSY (AC ENTRY) 50 HZ	A	REL	04-28-75	LIAT	06-02-75

TYP	FIND NO	LI	PART NUMBER	CD	MK	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO NO. IN	ECO NO. OUT	S/N	WK IN	WK OUT
	001	01	71455200	7		1	PC	PLATE AC ENTRY 50 HZ	P						
	002	01	71455000	1		1	PC	COVER AC ENTRY	P						
	003	01	51899703	6		1	PC	FILTER RFI 115-250 VAC	P						
	004	01	51907702	8		1	PC	CB TRIP COIL 275V 2.0AMP	P						
	005	01	71446500	2		1	PC	CBL ASSY(AC PWR)WIRE PREP50HZ	N						
	006	01	36158909	6		1	PC	BUSHING STRAIN RELIEF	P			10733			7528
	006	02	36158910	4		1	PC	BUSHING STRAIN RELIEF	P		10733			7528	
	007	01	51809821	5		AR	FT	CHANNEL RUBBER EXT U 1/32 SLT	P						
	008	01	24565002	3		1	PC	CABLE CLAMP 0.250 DIA	B						
	009	01	15010500	3		1	PC	I.D. PLATE CABINET	P						
	010	01	36053425	9		1	PC	STANDOFF HEX 6-32 3.000	P						
	011	01	10125108	0		1	PC	NUT MACH HEX STL CP 10-32	B			10733			7528
	011	02	10125108	0		2	PC	NUT MACH HEX STL CP 10-32	B		10733			7528	
	012	01	10126403	4		1	PC	WASHER LOCK EXT NO. 10	B						
	013	01	10127113	8		2	PC	SCREW PAN HD 6-32X3/8 CAD PLT	B						
	014	01	10126401	8		6	PC	WASHER EXT TOOTH LOCK NO.6	B						
	015	01	10125105	6		4	PC	NUT MACH HEX STL CP 6-32	B						
	016	01	10127111	2		2	PC	SCREW MACH 6-32X1/4 PAN HD	B						
	017	01	51902400	4		1	PC	SWI TOGGLE 10A 250V	P						
	018	01	51797414	3		167	FT	TUBING INS THIN WALL TFT20814	P						
	019	01	36085800	5		1	PC	LUG TERMINAL STRIP	P						
	020	01	61375600	6		REF	PC	W/L AC ENTRY PANEL ASSY 50HZ	D						

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE 06-02-75 | PAGE 2 | FILE CHANGE NO 00010783

DIV.	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG RESP	FILE DATE
0860	61374002	6	B	D	PANEL ASSY (AC ENTRY) 50 HZ	A	REL	04-28-75	LIAT	06-02-75

TYP	FIND NO	LI	PART NUMBER	CD	MK	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO NO. IN	ECO NO. OUT	S/N	WK IN	WK OUT
	021	01	94277409	2		2	PC	STRAP,CABLE TIE W.093 LG 4	P						
	022	01	51908602	9		1	PC	THERMISTOR 20HM 25C DISC	P						
	023	01	10126103	8		3	PC	INT TOOTH LK WSHR #6	B						
	024	01	51905905	9		1	PC	CONN RECP 12 POS	P						
	025	01	51905901	8		1	PC	CONN RECP 3 POS	P						
	026	01	51906200	4		9	PC	SOCKET CONTACTS	P						
	027	01	62121109	3		4	PC	TERM RECP FSTN 16-14 AWG BLU	B						
	028	01	51797236	0		1	PC	TERM LUG RING CRMP 16-14 #10	P						
	029	01	93463444	5		167	FT	WIR 18GA STRD YEL 300V UL PVC	W						
	030	01	93464222	4		2	FT	WIR 16GA STRD RED 300V UL PVC	W						
	031	01	93464444	4		5 500	FT	WIR 16GA STRD YEL 300V UL PVC	W						
	032	01	93463555	8		624	FT	WIR 18GA STRD GRN 300V UL PVC	W						
	033	01	24528617	4		333	FT	TUBING INS SZ 6 BLACK	B						
	034	01	51797217	8		1	PC	TERM LUG RING CRMP 22-18 #10	P						

0036 TOTAL LINES

DWN	R. Trautman	8-4-75
CHKD		10/9/75
ENG		10/14/75
MFG		9/25/75
APPR		8-4-75

CODE IDENT 15920

TITLE: W/L AC ENTRY PANEL ASSY 50 HZ

FIRST USED ON: CC614/CC681

PREFIX	DOCUMENT NO	REV
WL	61375600	B

NHA 61374000 | SHEET 1 of 2

SHEET REVISION STATUS

2	1
01	01
02	02
03	03
A	A
B	B

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		RELEASED CLASS		10-18-74	
01	C0110	ADDED COND IDENT 14		1-14-75	
02	C215	MOVED PARTS TO NHA		3-27-75	
03	C258	LENGTH OF COND #14 WAS 3		4-28-75	
A	10653-2	RELEASED CLASS A	—	7/28/75	
B	CD 10741	WL CHG ONLY	8 Copy 9/2/75		9/4

NOTES:

1. For find no. identification see APL 61374000 thru 61374007.

DETACHED LISTS

AA3180 REV. 8/71

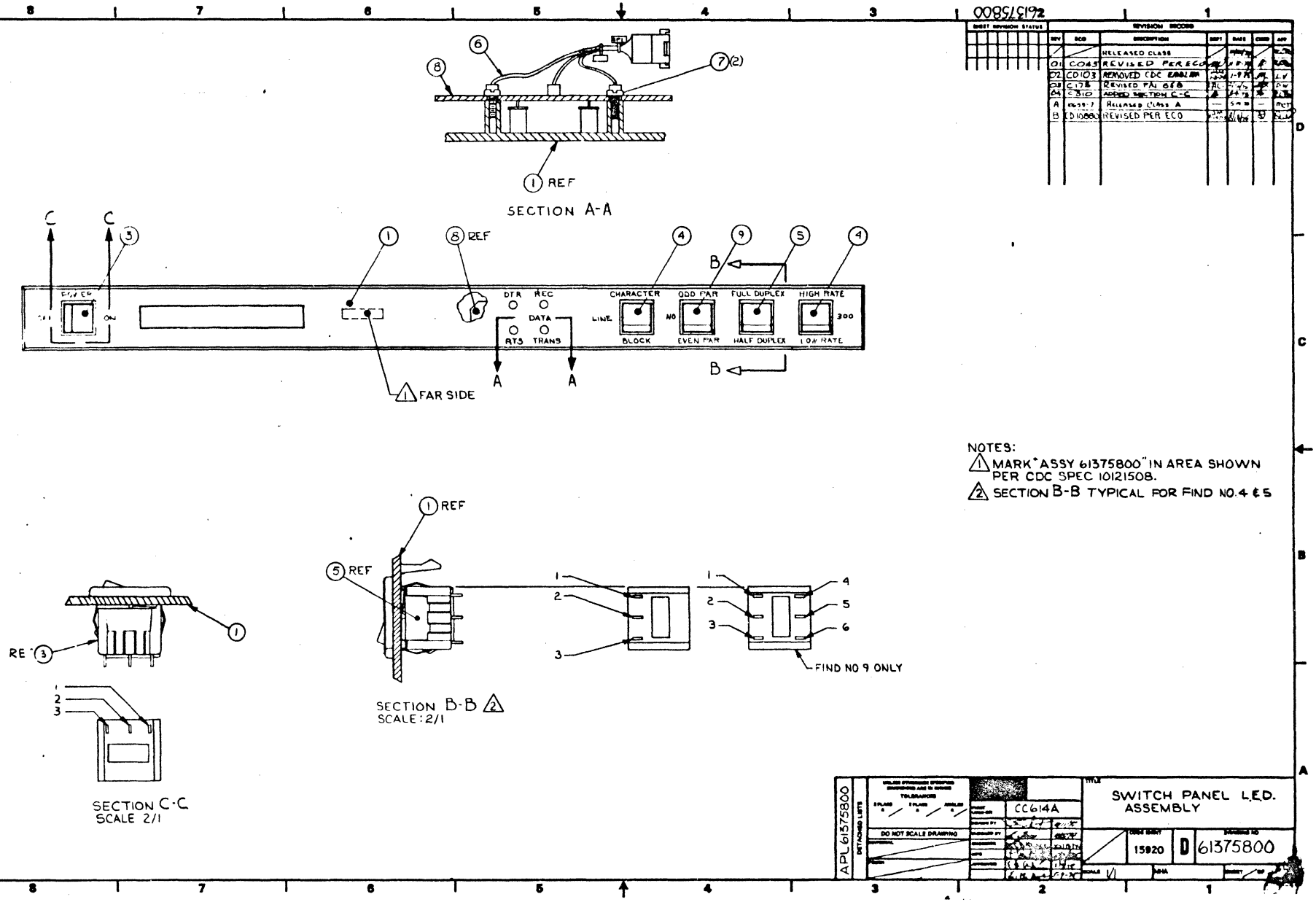
PRINTED IN U.S.A.

CONTINUATION | CODE IDENT 15920 | SHEET 2 | WL | DOCUMENT NO 61375600 | REV B

CONDUCTOR IDENT	FIND NO.	GAUGE (REF.)	COLOR (REF.)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
1			1		P1			FL1	1	27	PWR CORD (HOT)
2			6		P1			FL1	3	33	PWR CORD (NEUT)
3			5/4		P1			CE1		28	PWR CORD (GND)
4	31	16	4	12"	CP3	1	25,26	TB1	2		LINE HOT TO SW
5	31	16	4	12"	FL1	4	33	CB1	A	27	HOT TO C.B.
6	31	16	4	2"	CB1	B	27	TB1	1		HOT FROM C.B.
7	30	16	2	12"	CB1	C	27	CP2	9	24,25	TRIP VOLTAGE
8	30	16	2	12"	CB1	D	27	CP2	8	24,25	TRIP VOLTAGE RETURN
9	31	16	4	12"	CP3	2	34	CP2	1	24,25	HOT FROM SW
10	31	16	4	4"	FL1	5	33	S1	1	33	NEUTRAL TO H/L SW
11	31	16	4	12"	S1	2	33	CP2	4	24,25	NEUTRAL (LOW)
12	31	16	4	12"	S1	3	33	CP2	6	24,25	NEUTRAL (HIGH)
13	29	18	4	2"	CP2	2	24,25	CP2	3	24,25	JUMPER
14	32	18	5	7.5"	FL1	2	33	CE1		34	GROUND

AA3180 REV. 8/71

PRINTED IN U.S.A.



NOTES:
1. MARK "ASSY 61375800" IN AREA SHOWN PER CDC SPEC 10121508.
2. SECTION B-B TYPICAL FOR FIND NO. 4 & 5

REV	ECO	DESCRIPTION
01	C0045	REVISED PER ECO
02	C0103	REMOVED CDC LOGO
03	C178	REVISED PAT 6 & 8
04	C310	ADDED SECTION C-C
A		RELEASED CLASS A
B		REVISED PER ECO

APL 61375800

CC614A

SWITCH PANEL L.E.D. ASSEMBLY

15920 D 61375800

BUILD ARC 220

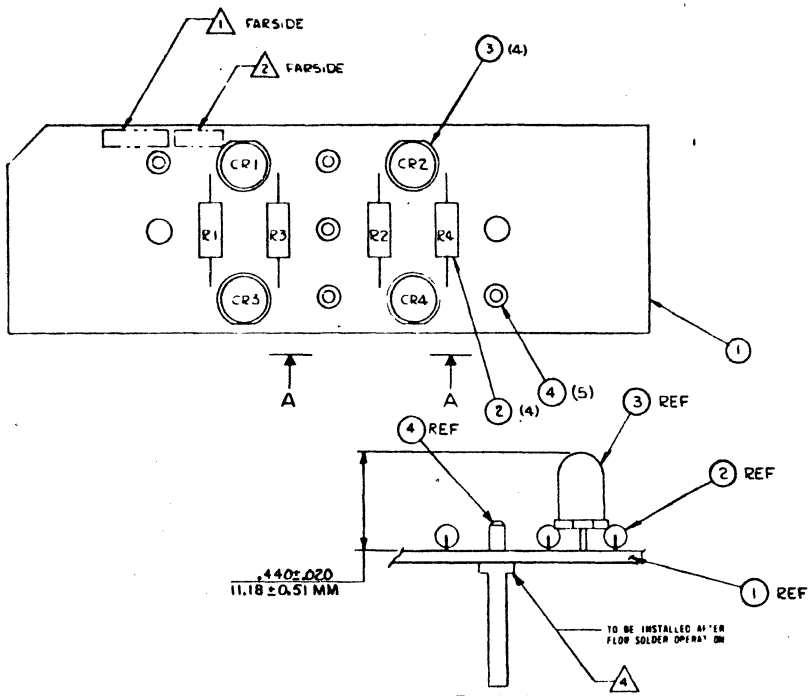
ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
07-24-75	1	00610880

DIV	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	61375800	2	A	D	SWITCH PNL ASSY	A	REL	05-14-75	CC614A	07-24-75

TRANS NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO NO OUT	S/N	WK IN	WK OUT
001	01	71494100	8	1	PC	PANEL SWITCH	P						
003	01	51906412	5	1	PC	SWITCH ROCKER	P						
004	01	51906401	8	1	PC	SWITCH ROCKER	P			10880			7529
004	02	51906401	8	2	PC	SWITCH ROCKER	P		10880			7529	
005	01	51906400	0	3	PC	SWITCH ROCKER	P			10880			7529
005	02	51906400	0	1	PC	SWITCH ROCKER	P		10880			7529	
006	01	61377900	8	1	PC	CABLE ASSY LED	N						
007	01	18607900	0	2	PC	SCREW 4-24X1/4	R						
008	01	90417300	2	1	PC	CD ASSY 4DFD(LED PANEL)	N						
009	01	51906407	5	1	PC	SWITCH ROCKER DPDT GOLD	P		10880			7529	
						0010 TOTAL LINES							

REV	ECO	DESCRIPTION	WRIT	DATE	CHKD	APP
		RELEASED CLASS 'C'	WJH	10-27-74	DL	GG
01	C037	REVISED PER ECO	WJH	11-19-74	DL	GG
02	C069	REVISED PER ECO	EM	4-5-75	DL	GG
03	C184	REVISED PER ECO	PL	5-16-75	DL	GG
A	10453-6	RELEASED CLASS A		5-19-75	DL	GG



VIEW A-A
TYP. INSTALLATION OF TERMINALS

NOTES:

1. APPLY ASSY NO, REV LEVEL, DATE CODE AND LOC CODE IN AREA SHOWN. MARK PER CDC SPEC 10121508, CHARACTER HEIGHT .12 (12PT) COLOR WHITE.
2. APPLY 40FD IN AREA SHOWN. MARK PER CDC SPEC 10121508. CHARACTER HEIGHT .12 (12PT) COLOR WHITE
3. REFERENCE DESIGNATIONS ARE FOR REFERENCE ONLY AND DO NOT APPEAR ON PART.
4. TERMINALS TO BE HAND SOLDERED AS SHOWN

APL 90417300

DETACHED LISTS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
2 PLACE ± / 3 PLACE ± / ANGLES ±
DO NOT SCALE DRAWING
MATERIAL
FINISH

DRAWN BY	R. HERMAN	10-2-74
CHECKED BY		10-22-74
ENGINEER		4-24-75
DATE		5-1-75
APPROVED		5-1-75
MFG. M		5-1-75

TITLE
PC CARD ASSY 40FD
(LED PANEL)

CODE IDENT		DRAWING NO
15920	D	90417300

SCALE 4/1 SHEET / OF /

BUILD ARC 210

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
05-12-75	1	010693-6

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MIC	STATUS	STATUS DATE	DWG. RESP	FILE DATE
0860	90417200	2	J	D	CD ASSY 4DFD(LED PANEL)	N	REL	05-09-75	L/IAT	05-12-75

TYP	IND NO.	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MIC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	90411500	3	1	PC	PW BD MULTI-USE	P						
	002	01	24500043	5	4	PC	RES COMP 150 OHM 1/4W 5P	P						
	003	01	51903803	8	4	PC	DIO LED SLD ST GRN DIFFUSED	P						
	004	01	51912300	4	5	PC	TERMINAL PIN .031X.062	P						
	005	01	16006500	9	REF	PC	FABRICATION SPECIFICATION	D						
	006	01	10121508	5	REF	PC	MARKING METHODS + DWG CALLOUT	D						
	007	01	90417200	4	REF	PC	SCH DIAG 4DFD(LED PANEL)	D						
							0007 TOTAL LINES							

DWN	R. Trautman	4/1/75
CHKD		4/1/75
ENG		4/1/75
MFG		4/15/75
APPR		4-15-75

CONTROL DATA

CODE IDENT 15920

TITLE: CABLE ASSY LED

FIRST USED ON: CC614 / CC681

PREFIX	DOCUMENT NO	REV
A	61377900	A

NHA 61375800 | SHEET 1 of 3

SHEET REVISION STATUS

3	2	1
	01	01
A	A	A

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		RELEASED CLASS C		3-14-75	EOA
01	C258	F/N 3 WAS 93747044	C	4-18-75	
A	10653-1	RELEASED CLASS A	—	7/24/75	M.C.T.

NOTES:

1. Apply Label to Cable per drawing 82191061, Method 6. Mark as shown.

APL 61377900

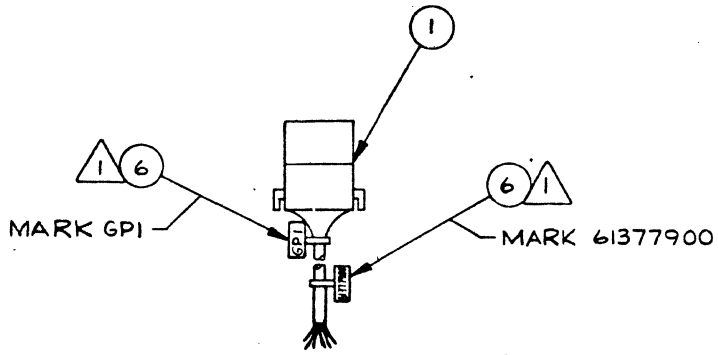
DETACHED LISTS

AA3180 REV. 8/71

PRINTED IN U.S.A.

CONTROL DATA

CODE IDENT 15920 | SHEET 2 | A | DOCUMENT NO 61377900 | REV A



AA3185

PRINTED IN U.S.A.

		CODE IDENT 15920	SHEET 3	WL	DOCUMENT NO 61377900	REV A

CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
1	4	24	9	6	GP1	5	2	E9		3	+5V
2	4	24	9	6	GP1	4	2	E2		3	DTR
3	4	24	9	6	GP1	3	2	E3		3	RCV
4	4	24	9	6	GP1	2	2	E6		3	XMIT
5	4	24	9	6	GP1	1	2	E7		3	RTS

AA 3183 REV. 8-70

PRINTED IN U.S.A.

BUILD ARC 104

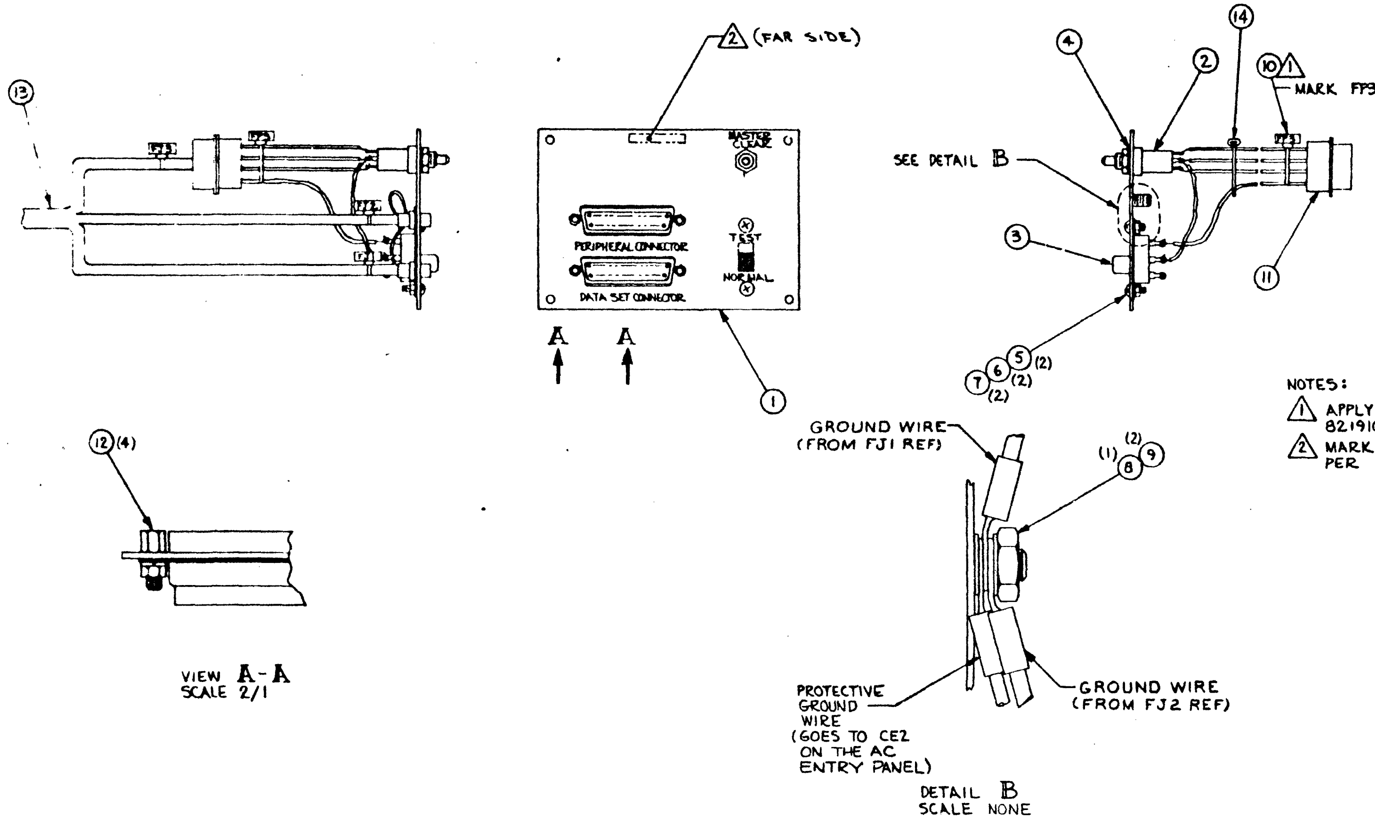
ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
04-28-75	1	010683-1

DIV.	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	61377900	8	A	A	CABLE ASSY LED	N	REL	04-24-75	LIAT	04-28-75

T	FIND NO	AT	PART NUMBER	CD	MK	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO NO. IN	ECO NO. OUT	S/N	WK IN	WK OUT
	001	01	93948005	9		1	PC	CONNECTOR 6 PIN HOUSING	P						
	002	01	93942014	7		5	PC	CONTACT PIN 30-22 STRIP	P						
	003	01	51654700	7		5	PC	CONTACT	P						
	004	01	24548310	2		2.500	FT	WIR 24GA STRD WHT 300V UL PVC	M						
	006	01	94277409	2		2	PC	STRAP•CABLE TIE W;093 LG 4	P						
								0005 TOTAL LINES							

REV	ECO	DESCRIPTION
		RELEASED CLASS
01	C045	REVISED PER ECO
02	C106	ADDED GND WIRE DESCR. FOR CE2 ON DETAIL B
04	C258	ADDED P/N 14 ZONE D5
05	C267	
A		RELEASED CLASS A



NOTES:
1. APPLY LABEL TO CABLE PER CDC DRAWING 82191061, METHOD 6. MARK AS SHOWN.
2. MARK "ASSY 61371000" IN AREA SHOWN PER CDC SPEC 10121508.

APL 61371000

DO NOT SCALE DRAWING

CC614A

CONNECTOR PANEL ASSY

15920 D 61371000

SCALE 1/1 NHA-15611400

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
05-19-75	1	010683-7

DIV.	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61371000	3	A	D	PANEL ASSY (CONNECTOR)	A	REL	05-14-75	LI4T	05-19-75

TYP	IND NO	LI	PART NUMBER	CD	M	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	71455600	0		1	PC	PANEL-CONNECTOR	P						
	002	01	18797101	5		1	PC	SWITCH-PB MOMENTARY CONTACT	P						
	003	01	51781602	1		1	PC	SWITCH SLIDE 3PDT LOCKING	P						
	004	01	10126106	3		1	PC	INT TOOTH LK WSHR .250	B						
	005	01	10127102	1		2	PC	SCREW MACH PAN HD 4-40X1/4 ST	A						
	006	01	10126101	4		2	PC	INT TOOTH LK WSHR #4	B						
	007	01	10125103	1		2	PC	NUT MACH HEX STL CP 4-40	B						
	008	01	10125108	0		1	PC	NUT MACH HEX STL CP 10-32	B						
	009	01	10126105	5		2	PC	INT TOOTH LK WSHER #10	A						
	010	01	94277409	2		1	PC	STRAP,CABLE TIE W.093 L= 4	P						
	011	01	61376200	4		REF	PC	W/L CONNECTOR PANEL	D						
	012	01	942RR024	6		4	PC	SCREW LOCK ASSY	B						
	013	01	61369900	8		1	PC	CABLE ASSY (CONNECTOR PANEL)	N						
	014	01	94277400	1		1	PC	CABLE TIE STRAP 1/10-5/8 DIA.	P						
	015	01	24548301	2		1	FT	WIR 24GA STRD BLK 300V UL PVC	W						
	016	01	24548310	2		4	750 FT	WIR 24GA STRD WHT 300V UL PVC	W						
	017	01	93462555	0			666 FT	WIR 20GA STRD GRN 300V UL PVC	W						
	018	01	93962014	7		12	PC	CONTACT PIN 30-22 STRIP	P						
	019	01	93968002	6		1	PC	CONNECTOR 12 PIN HOUSING	P						
	020	01	51793217	0		2	PC	TERM LUG RING CRMP 22-12 #1	P						

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
05-19-75	2	010653-7

DIV	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG RESP	FILE DATE
0860	61371000	3	A	D	PANEL ASSY (CONNECTOR)	A	REL	05-14-75	LI4T	05-19-75

TYP	IND NO	LI	PART NUMBER	CD	M	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO NO IN	ECO NO OUT	S/N	WK IN	WK OUT
								0020 TOTAL LINES							

DWN	D.A. King	10-10-74	CONTROL DATA	TITLE: W/L CONNECTOR PANEL ASSY	PREFIX: WL	DOCUMENT NO: 61376200	REV: A
CHKD						
ENG		10/18/74				
MFG		10-17-74		FIRST USED ON: CC6K4A	NHA: 61371000	SHEET 1 of 3
APPR		5/6/75	CODE IDENT: 15920			

SHEET REVISION STATUS

3	2	1
		01
		02
		03
A	A	A

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		RELEASED CLASS		10-15-74	
01	C0110	REVISED PER ECO		1-14-75	
02	C258	QTY F/N 4 WAS 11		4-18-75	
03	C267	DELETE PARTS FROM LIST	JW	4-29-75	
A	10653-5	RELEASED CLASS A	—	5/7/75	

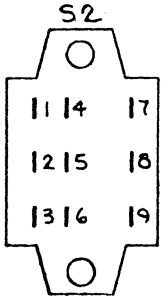
NOTES:
1. For Find No. identification see APL 61371000.

DETACHED LISTS

AA3180 REV. 6.71 PRINTED IN U.S.A.

CONTROL DATA	CODE IDENT: 15920	SHEET 2	WL	DOCUMENT NO: 61376200	REV: A

TEST MODE SWITCH S2



WIRING VIEW

AA3185 PRINTED IN U.S.A.

BUILD ARC 230

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
01-12-78	1	00012559

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61407441	7	C	C	REGULATOR ASSY +15V	A	REL	02-05-76	CC6B1A	01-12-78

T	FIND NO.	LI	PART NUMBER	CD	M	QUANTITY		U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	51906303	6		1		PC	HT SINK, SEMI FIG 5 ALUM BLK	P						
	002	01	51605400	4		2		PC	SOCKET TRANSISTOR TO-3	P						
	003	01	15130504	2		1		PC	IC UA7800+15 355E POS V RGLTR	P						
	004	02	51003962	1			001	OZ	PASTE, HEAT XFR CMPD NON-COND	B		11774			7723	
	005	01	24504333	6		2		PC	CAP FXD TANT 2.2UF 20P 35VDCW	P						
	006	01	94277409	2		1		PC	STRAP CABLE TIE TYPE 6	B						
	007	01	61407442	5		REF		PC	W/L REGULATOR ASSY +15V	D						
	008	01	93463000	5		1	250	FT	WIR 18GA STRD BLK 300V UL PVC	W						
	009	01	93463222	5		1	416	FT	WIR 18GA STRD RED 300V UL PVC	W						
	010	01	51906200	4		2		PC	CONTACT, SKT 20-14GA STRIP T	P						
	011	01	51906000	8		1		PC	CONN PLUG 2 PIN	P						
	012	01	51797420	0			400	FT	TBG, INS .034DIA T/W NAT TEF	B						
	013	01	24501801	5			375	FT	WIRE BUSS 22GA SOLID CU TP	W						
	014	01	51905901	8		1		PC	CONN RECPT 3 CONTACTS	P						
	015	01	51906204	6		3		PC	CONTACT, SKT 20-14GA STRIP G	P						
	016	01	16798719	7		2		PC	WSHR, MICA INSUL TO-3 FIG 4	P						
	017	01	95596544	7		1		PC	RES FXD WW .51 OHM 10P 5WATT	P						
	018	01	95596503	3		1		PC	RES FXD WW 4.3 OHM 10P 5WATT	P						
	019	01	95637304	7		3		PC	DIO SIL 1N4004 400PIV 1.1V/1A	P						
	020	01	58018602	1		1		PC	XSTR 2N4901 POWER PNP STL	P						
	021	01	51828014	4		1		PC	TERMINAL STRIP 4PIN P TYPE	B						

BUILD ARC 230

ASSEMBLY PARTS LIST

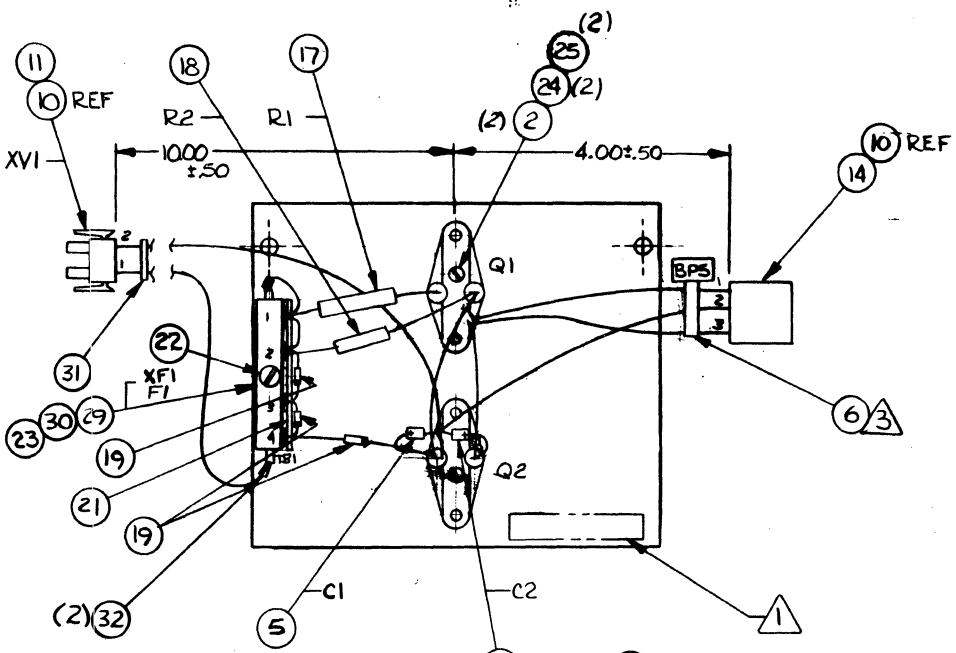
PRINT DATE	PAGE	FILE CHANGE NO.
01-12-78	2	00012559

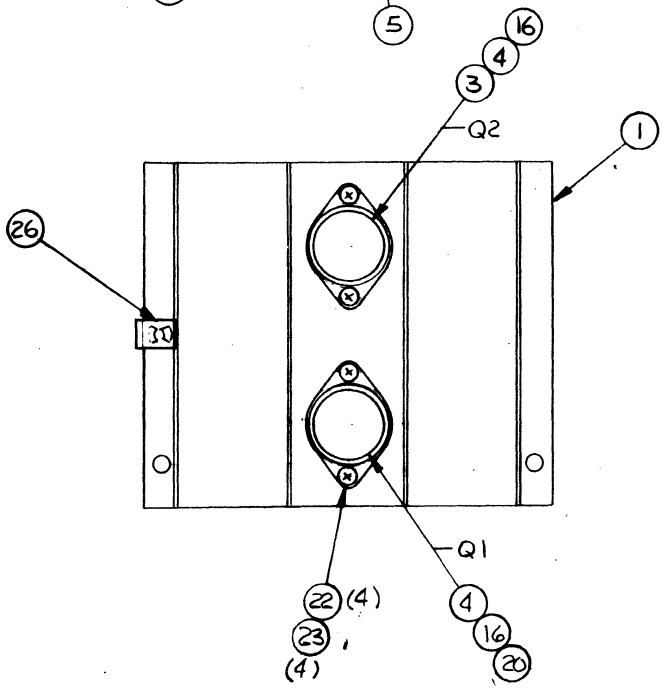
DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61407441	7	C	C	REGULATOR ASSY +15V-	A	REL	02-05-76	CC6B1A	01-12-78

T	FIND NO.	LI	PART NUMBER	CD	M	QUANTITY		U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	022	01	10127115	3		4		PC	MSCR PAN PHL 6-32X 5/8	B						
	023	01	10126401	8		5		PC	WSHR NO.6 EXT TOOTH LK TYP A	B						
	024	02	10127102	1		2		PC	MSCR PAN PHL 4-40X.250	B		11738	12559		7640	7804
	024	03	92745081	7		2		PC	MSCR PAN HD 4-40 7/32	B		12559			7804	
	025	01	10126400	0		2		PC	WSHR NO.4 EXT TOOTH LK TYP A	B						
	026	01	10125105	6		1		PC	NUT HEX MCH 6-32 STL CP OR ZP	B						
	027	01	10127113	8		1		PC	MSCR PAN PHL 6-32X 3/8	B						
	028	01	62200812	6		REF		PC	SCH DIAG REGULATOR ASSY +15V	D						
	029	01	24563704	6			100	FT	INS SLVNG HI TEMP 18AWG	B		12559			7804	
									0030 TOTAL LINES							

SHEET REVISION STATUS										

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
A	10653-67	RELEASED CLASS A	/	10-19-76	/	M.C.T.
B	12559	REVISED PER ECO	WJH	11-9-77	WJH	[illegible]
C	12827	P/L CHANGE ONLY	WJG	5-25-78	EE	[illegible]
D	13723	REVISED PER ECO	WJH	11-7-79	WJH	[illegible]
E	13876	REVISED PER ECO	WJH	2-4-80	[illegible]	[illegible]
F	14455	P/L CHANGE ONLY	EE	1/9/81	EE	[illegible]





NOTES:

1. MARK "ASSY 61407617" IN AREA SHOWN PER CDC SPEC 10121508.
2. REFERENCE DESIGNATIONS ARE SHOWN FOR REFERENCE ONLY AND MAY NOT APPEAR ON PART.
3. APPLY LABEL TO CABLE PER CDC DWG 82191061, (METHOD 6). MARK AS SHOWN.

This regulator used on Video Display P/N 61370905.

APL 61407617 DETACHED LISTS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
3 PLACE ± / 2 PLACE ± / ANGLES ± /
DO NOT SCALE DRAWING
MATERIAL
FINISH

FIRST USED ON	CC6B1C	
DWN	D Garner	10/11/76
CHKD	E Grimm	10/14/76
ENGR	T C Johnson	10/14/76
MFG	M Lund	10/14/76
APPR	E M Nan	10-15-76

TITLE
REGULATOR ASS'Y
(+15 VOLTS)

CODE IDENT 15920 | C | DRAWING NO 61407617

SCALE NONE | NHA61370905 | SHEET / OF /

BUILD ARC 230

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
01-07-81	1	00014455

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61407617	2	F	C	REGULATOR ASSY +15V	A	REL	10-19-76	CC681C	01-07-81

T	FIND NO	LI	PART NUMBER	CD	M	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	51906303	6		1	PC	HT SINK, SEMI FIG 5 ALUM BLK	P						
	002	01	51605400	4		2	PC	SOCKET TRANSISTOR TO-3	P						
	003	01	15130504	2		1	PC	IC UA780[illegible]+15 355E POS V RGLTR	P						
	004	02	51003962	1		.001	OZ	PASTE, HEAT XFR CMPD NON-COND	B		11774			7723	
	005	01	24504333	6		2	PC	CAP FXD TANT 2.2UF 20P 35VDCW	P						
	006	01	94277409	2		1	PC	STRAP, CBL TIE TYP 5 TO 5/8	B						
	007	01	61407618	0		REF	PC	W/L	D						
	008	01	93463000	5		1	250 FT	WIR 18GA STRD BLK 300V UL PVC	W						
	009	01	93463222	5		1	625 FT	WIR 18GA STRD RED 300V UL PVC	W						
	010	01	51906200	4		2	PC	CONT, SKT 20-14GA .130IT STR	P			13876A			8020
	010	02	51906200	4		5	PC	CONT, SKT 20-14GA .130IT STR	P		13876A			8020	
	011	01	51906000	8		1	PC	CONN, 2 SKT PLUG FIG 1 NYLON	P						
	012	01	51797420	0		400	FT	TBG, INS .034DIA T/W NAT TEF	B			13723			8012
	013	01	24501801	5		375	FT	WIRE BUSS 22GA SOLID CU TP	W			13723			8012
	013	02	24501801	5		100	FT	WIRE BUSS 22GA SOLID CU TP	W		13723			8012	
	014	01	51905901	8		1	PC	CONN, 3 POS RCPT 1RX3CAV NAT	P						
	015	01	51906204	6		3	PC	CONT, SKT 20-14GA .130I G STR	P			13876			8020
	016	01	16798719	7		2	PC	WSHR, MICA INSUL TO-3 FIG 4	P						
	017	01	95596544	7		1	PC	RES FXD WW .51 OHM 10P 5WATT	P						
	018	01	95596503	3		1	PC	RES FXD WW 4.3 OHM 10P 5WATT	P						
	019	01	95637304	7		3	PC	DIO IN4004 400PIV SIL 1.1V/1A	P						
	020	01	58018602	1		1	PC	XSTR 2N4901 POWER PNP SIL	P						

BUILD ARC 230

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
01-07-81	2	00014455

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61407617	2	F	C	REGULATOR ASSY +15V	A	REL	10-19-76	CC681C	01-07-81

T	FIND NO	LI	PART NUMBER	CD	M	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	021	01	51828014	4		1	PC	TERMINAL STRIP 4PIN P TYPE	B						
	022	01	10127115	3		4	PC	MSCR PAN PHL 6-32X.625 STL ZP	B			13723			8012
	022	02	10127114	6		5	PC	MSCR PAN PHL 6-32X.500 STL ZP	B		13723			8012	
	023	01	10126401	8		5	PC	WSHR, NO.6 EXT/T LK STL ZP	B						
	024	02	92745081	7		2	PC	MSCR PAN PHL 4-40X7/32 STL I	B		12559			7804	
	025	01	10126400	8		2	PC	WSHR, NO.4 EXT/T LK STL ZP	B			13723			8012
	025	02	10125801	0		2	PC	WSHR, NO.4 SPG LOCK STL ZP	B		13723			8012	
	026	01	10125105	6		1	PC	NUT, HEX 6-32 MSCR STL ZP	B			13723			8012
	026	02	51548700	7		1	PC	NUT SHEET SPRG 6-32 U SHAPED	B		13723			8012	
	027	01	10127113	8		1	PC	MSCR PAN PHL 6-32X.375 STL ZP	B			13723			8012
	028	01	62200812	6		REF	PC	SCH DIAG REGULATOR ASSY +15V	D			14455			8051
	028	02	62200943	9		REF	PC	SCH DIAG REGULATOR + 15V	D		14455			8051	
	029	01	51785402	2		1	PC	FUSE BLOCK 125VAC 10A 3AG	P						
	030	02	93418327	8		1	PC	FUSE 2 AMP 250V FAST	B		12027			7829	
	031	01	94277400	1		1	PC	STRAP, CBL TIE TYP 1 TO 5/8	B						
	032	01	95643212	4		2	PC	LUG, Q-CONN 22-18AWG FIG 2	P						
	033	01	24563704	6		100	FT	INS SLVNG HI TEMP 18AWG	B		12559	13723		7804	8012
	034	01	65449529	0		375	FT	WIRE ELECT 22GA SOLID	W		13723			8012	
								0040 TOTAL LINES							

DWN	D Garner	12/7	CONTROL DATA	TITLE: High Voltage Transformer Assy	PREFIX: A	DOCUMENT NO.: 61407417	REV.: E
CHKD	E Grono	12/7					
ENG	D W Pearson	12/7					
MFG	L J Link	12/7		FIRST USED ON: CC6B1A/B	NHA: 61370900	SHEET 1 of 5	
APPR	E N Noe	12/7	CODE IDENT: 15920				

SHEET REVISION STATUS

5	4	3	2	1
	B	B	B	B
C	C	C	B	C
C	D	C	B	D
E	E	E	E	E

REVISION RECORD

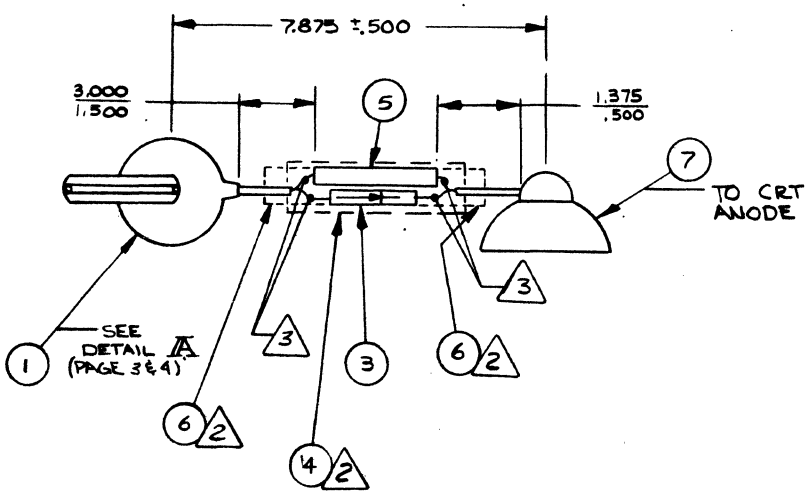
REV	ECO	DESCRIPTION	DRFT	DATE	APP
		Retyped sht 1, last ECO 10653-26, Revised per ECO			
B	CD 11381			3/10/76	
C	CD 11467	ADDED ALT CONST.		9/16/76 DW	
D	CD 11932	ADDED F/N 12			
E	12107	INACTIVE REPLACED BY 61407255			

NOTES:
1. Shown for reference only and may not appear on part.
2. Slip 1.0 inch of .375 dia tubing, F/N 6, over each end of the soldered resistor-diode junctions. At each end the tubing should extend up to the resistor body and over the wire insulation. Shrink tubing. Next slip 3 inches of .50 dia tubing, F/N 4 over resistor-diode and center over this assembly. Shrink tubing.

APL 61407417
DETACHED LISTS

AA3180 REV. 8/71 PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT: 15920	SHEET 2	A	DOCUMENT NO.: 61407417	REV.: E



3. Leads to be soldered so that no sharp points are visible.
4. Bulk identify with CDC part number and revision letter.

A3185 PRINTED IN U.S.A.

CONTINUATION							CODE IDENT 15920	SHEET 5			WL	DOCUMENT NO 61369900	REV A
CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS		
41	12	24	9	20.0	A078	65	8	FJ2	14	9	-Cass Write		
42	12	24	9	20.0	A078	66	8	FJ2	21	9	-Cass Read		
43	12	24	9	20.0	A078	67	8	FJ2	22	9	-Cass Sel. Unit 2		
44	12	24	9	20.0	A078	68	8	FJ2	23	9	Cass x16 Clock		
45	12	24	9	20.0	A078	69	8	FJ2	24	9	Cass Rev Data		
46	12	24	9	20.0	A078	70	8	FJ2	25	9	Cass Record Gap		
47	10	20	5	6.0	FJ1	1	9	FE1		5	Protective Gnd		
48	10	20	5	6.0	FJ2	1	9	FE1		5	Protective Gnd		
49	12	24	9	8.0	FJ1	03	9	FJ3	05	13	RX Data		
50	12	24	9	8.0	FJ1	02	9	FJ3	08	13	TX Data		
51	12	24	9	20.0	A10A	56	8	FJ3	06	13	INT RX Data		
52	12	24	9	20.0	A10A	57	8	FJ3	09	13	INT TX Data		

AA3183 REV.8-70

PRINTED IN U.S.A.

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
04-30-75	1	010653-2

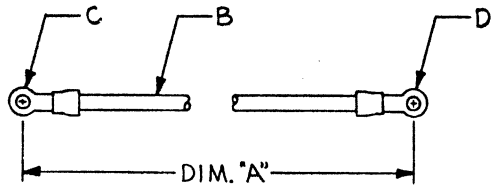
DIV	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	61369900	8	A	A	CABLE ASSY (CONNECTOR PANEL)	N	REL	04-28-75	LIAT	04-30-75

TP	FIND NO	LI	PART NUMBER	CD	M	QUANTITY		U/M	PART DESCRIPTION	MC	YLD	ECO NO. IN	ECO NO OUT	S/N	WK IN	WK OUT
	001	01	51A63012	4		2		PC	CONN HSG(DBL ROW) 24 CAVITY	P						
	003	01	53397914	2		2		PC	CONN 25 POSITION PLUG ALONE	P						
	004	01	93947002	7		1		PC	CONNECTOR 12 SOCKET HOUSING	P						
	005	01	51797217	0		2		PC	TERM LUG RING CRMP 22-18 #10	P						
	006	01	94277409	2		6		PC	STRAP,CABLE TIE W.093 LG 4	P						
	007	01	94277400	1		4		PC	CABLE TIE STRAP 1/16-5/8 DIA	P						
	008	01	94245602	1		49		PC	CONTAGT-CRIMP INSERT SKT	B						
	009	01	53397917	5		41		PC	CONN STRIP SOC 20-24GA	P						
	010	01	93462555	9		1		FT	WIR 20GA STRD GRN 300V UL PVC	W						
	011	01	24548301	1		2		FT	WIR 24GA STRD BLK 300V UL PVC	W						
	012	01	24548310	2		71	500	FT	WIR 24GA STRD WHT 300V UL PVC	W						
	013	01	93943015	3		10		PC	CONTACT SOCKET .090	P						
									0012 TOTAL LINES							

PART NO.	DIM. A	B(WIRE)		C (LUG)		D (LUG)	
		F/N	AWG	F/N	STUD SIZE	F/N	STUD SIZE
61391100	24.0±.5	1	18	2	3/8	3	#8/#10
01	2.5±.5	1	18	2	#8/#10	3	#6
02	21.0±.5	1	N/A	2	#10	3	#1/4
03	14.0±.5	1	18	2	#8/#10	2	#8/#10

SHEET REVISION STATUS

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
		RELEASED CLASS C		3/17/75		MEN
01	C237	ADDED TABS 01 & 02	KP	4-7-75	RT	JES
02	C276	ADDED TAB 03	KP	4-30-75	KP	RCB
A	10653-7	RELEASED CLASS A	—	5-14-75	—	MCT



NOTES:

1. BULK IDENTIFY WITH CDC PART NUMBER AND REVISION LETTER.

APL 61391103
APL 61391102
APL 61391101
APL 61391100
DETACHED LISTS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
2 PLACE ± / 2 PLACE ± / ANGLES ± /
DO NOT SCALE DRAWING
MATERIAL
FINISH

CONTROL DATA

FIRST USED ON	CC114A	
DWN	DAK	3-6-75
CHKD		
ENGR	RC BARUCK	3/17/75
MFG		
APPR		

TITLE: GROUND WIRE ASSY

CODE IDENT 15920 | C | DRAWING NO 61391100

SCALE NONE | WHA 15/19100 | SHEET / OF /

7-62

62961200 A

61391100 B

BUILD ARC 1A4

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
05-19-75	1	810683-7

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	ARC	STATUS	STATUS DATE	ENG. ORAP	FILE DATE
8866	A1391183	3	A	C	GROUND WIRE ASSY 14 INCH	A	REL	05-14-75	CC114A	05-19-75

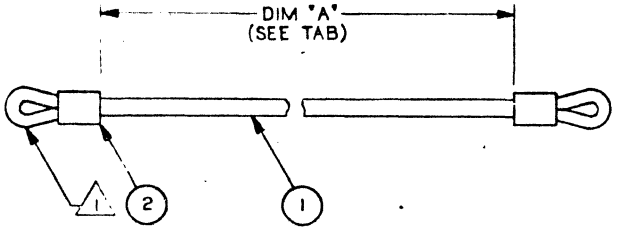
TYP	FIND NO.	LI	PART NUMBER	CD	IN	QUANTITY	U/M	PART DESCRIPTION	ARC	TLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	9395A565	7		1 1A5	PT	WIRE 18GA STRD GREEN 600V UL	M						
	002	01	93541012	8		2	PC	LUG RING RED 18-22 AWG	B						
								0002 TOTAL LINES							

62073400

TABULATION	
PART NO	DIM "A"
62073400	9.50
62073401	8.50
62073402	7.38 $^{+.12}_{-.00}$
62073403	21.25
62073404	4.00
62073405	4.44±.06

SHEET REVISION STATUS

REVISION RECORD						
REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
01	DT00115 -04	RELEASED CLASS "B"	-	9-30-71	-	m.e.s.
02	DT-00501	ADD TAB 03	PS 2/24/72	2-29-72	LL	
A	00115-23	RELEASED CLASS A	—	11/22-72	—	9-(-T.
B	8011	ADDED TAB 04	SC 4/24/73	4/24/73		
C	8819	REVISE PER ECO		4/2/74		
D	9650	REVISED PER ECO	UM 10/9/74	10/9/74		
E	10666	PL CHG ONLY	5/23/75	5/23/75		



NOTES:

1. STRIP 2 INCHES OF COATING FROM END OF ITEM 1, FORM LOOP AND CRIMP ITEM 2, USING APPROPRIATE TOOL (REF: NAT'L. SUPPLY CO. # 51-0-887) TYP BOTH ENDS.
2. IDENTIFY WITH CDC PART NUMBER AND REVISION BY MEANS OF A TAG, LABEL OR SIMILAR METHOD.

APL 62073405 THRU APL 62073400

DETACHED LISTS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
3 PLACE ± — 2 PLACE ±.12 ANGLES ± —
DO NOT SCALE DRAWING
MATERIAL
FINISH

CONTROL DATA

FIRST USED ON	CK III A&B	
DWN	Yatckoske	7-16-71
CHKD		11/9/71
ENGR		2/29/71
MFG		4/17/72
APPR	M E Schaffer	4/17/72

TITLE: CABLE-RETAINING

CODE IDENT 15920 | B | DRAWING NO 62073400

SCALE 1/1 | NHA 62030100 | SHEET — OF —

BUILD ARC 104

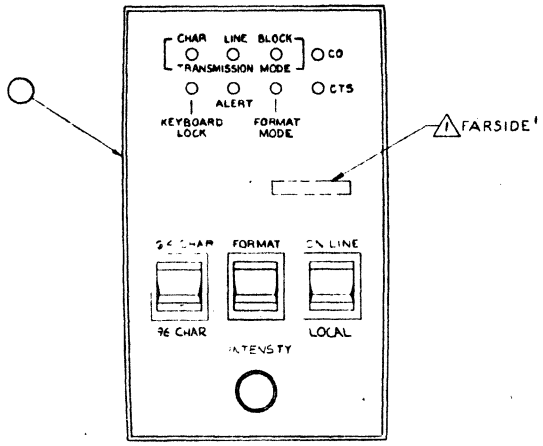
ASSEMBLY PARTS LIST

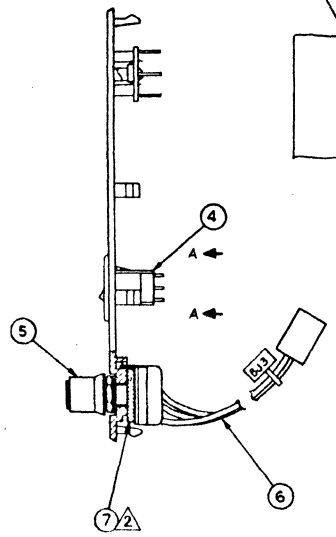
PRINT DATE	PAGE	FILE CHANGE NO.
05-21-75	1	0010666A

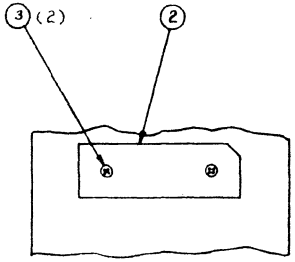
DIV.	ASSEMBLY NUMBER	CD	REV.	SHPD	DESCRIPTION	ARC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0060	62073401	2	F	B	CABLE ASSY (RETAINING) 8.5IN	A	REL	11-22-72	CK111A+B	05-21-75

TYPING NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	ARC	TLB	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
001	01	09040700	0	1.041	FT	CABLE, SPL PURPOSE	M						
002	01	03867102	6	2	PC	SLEEVE, CABLE METAL	B						
						0002 TOTAL LINES							

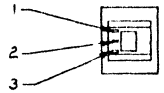
REV	ECO	DESCRIPTION	DRAFT	DATE	CHKD	APP
		RELEASED CLASS				
01	C045	REVISED PER ECO				
02	C295	ADDED FAY & NAME'S				
A	10433-6	RELEASED CLASS A				
B	ED10880	REVISED PER ECO				







NOTES:
1. MARK "ASSY 61370600" IN AREA SHOWN PER CDC SPEC 10121508.



VIEW A-A

APL 61370600 DETACHED LISTS

DO NOT SCALE DRAWING

FIRST USED ON	CC614A	
RELEASED BY	D WELLS	10/6/74
CHECKED BY		
ENGINEER		
QPE		
APPROVED		

TITLE: INDICATOR PANEL ASSEMBLY

CODE IDENT 15920 | D | DRAWING NO 61370600

SCALE | NHA1561400 | SHEET / OF /

BUILD ARC 220

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
07-24-75	1	00010880

DIV	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61370600	1	R	D	PANEL ASSY(INDICATOR)	A	REL	05-09-75	CC614A	07-24-75

FIND NO	LI	PART NUMBER	CD	ML	QUANTITY	U/M	PART DESCRIPTION	MC	VLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
001	01	71453100	1		1	PC	INDICATOR PANEL	P						
002	01	90411600	3		1	PC	CD ASSY 4CKD (LED PANEL)	N						
003	01	18607900	0		2	PC	SCREW 4-24X1/4	B						
004	01	51906400	0		1	PC	SWITCH ROCKER	P			10880			7529
004	02	51906400	0		3	PC	SWITCH ROCKER	P		10880			7529	
005	01	51A60000	2		1	PC	KNOB PLAIN	P						
006	01	61375200	5		1	PC	CONTROL ASSY(INTENSITY)	N						
							0007 TOTAL LINES							

DWN	D. Wells	10/8/74
CHKD		
ENG		10/14/74
MFG		9/24/75
APPR		9-25-75

CONTROL DATA

CODE IDENT 15920

TITLE: INTENSITY CONTROL CABLE ASSY

PREFIX: A | DOCUMENT NO: 61375200 | REV: A

FIRST USED ON: CC614 / CC681

NHA: 61370600 | SHEET 1 of 3

SHEET REVISION STATUS

3	2	1
	01	01
02	01	02
03	03	03
A	A	A

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		RELEASED CLASS "C"		10-14-74	
01	C039	ADDED PIN NOS TO POT		11-8-74	
02	C0110	CHG LENGTH 6.0 TO 15.0		1-14-75	
03	C212	ADDED PIN 6 ADDED PIN VIEW OF CONN		3-27-75	
A	10653-1	RELEASED CLASS A	—	11/24/75	

NOTES:

1. Apply label to cable per drawing 82191061, Method b. Mark as shown.

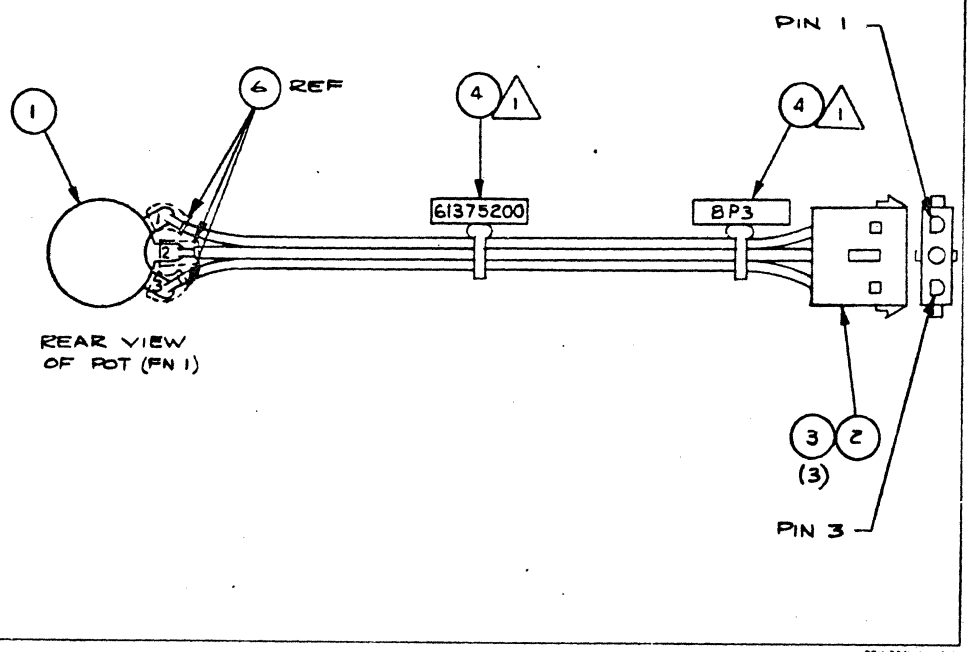
APL 61375200

DETACHED LISTS

A03180 REV. B 71

PRINTED IN U.S.A.

CONTROL DATA | CODE IDENT 15920 | SHEET 2 | A | DOCUMENT NO 61375200 | REV A



A03185

PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 3	WL	DOCUMENT NO. 61407540	REV. B

CONDUCTOR IDENT.	FIND NO.	GAUGE (REF.)	COLOR (REF.)	LENGTH (4)	ORIGIN		ACCESS FIND NO.	DESTINATION		ACCESS FIND NO.	REMARKS
1			3	6.0	XV1	7		BP4	1	2	
2			1	6.0	XV1	3		BP4	20	2	
3			2	5.5	XV1	6		BP4	4	2	
4			4	6.25	XV1	2		BP6		3	
5			5	2.5	Shield		8	BP8		3	Find No. 6 is not connected to XV1-2
6			5	7.5	XV1	1		BP4	2	2	
7			0	5.5	XV1	4		BP4	15	2	

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
08-12-76	1	~~1A18-42~~ 11933

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61407540	6	B	A	CRT CAP ASSY	A	REL	08-06-76		08-12-76

T	FIND NO	LI	PART NUMBER	CD	M	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	51906700	3		1	PC	CRT SOCKET, 7 PIN MINIATURE	P						
	002	01	94219903	5		5	PC	CONTACT,FLAG 22-18AWG STRIP	P						
	003	01	51654700	7		2	PC	CONTACT RECPT ELEC 24-20 AWG	P						
	004	01	24534706	7		250	FT	INS SLEEVE 1/8 BLACK	B			11933			7702
	005	01	94277409	2		2	PC	STRAP CABLE TIE TYPE 6	P						
	006	01	51828108	4		468	FT	SHIELDING CABLE BRAIDED 20A	W						
	007	01	24534707	5		468	FT	INS SLEEVE 3/16 BLACK	B						
	008	01	62022602	7		1	PC	FERRULE PRE-INSUL BROWN	P						
	009	01	93462555	9		208	FT	WIR 20GA STRD GRN 300V UL PVC	W						
								0009 TOTAL LINES							

DWN	R. Trautman 9-22-77	CONTROL DATA	TITLE	PREFIX	DOCUMENT NO	REV
CHKD	[signature] 9/27/77		CRT SOCKET ASSY	A	61407856	C
ENG	[signature] 10/5/77					
MFG	[signature] 10/5/77		FIRST USED ON	NHA	SHEET	
APPR	[signature] 10/7/77	CODE IDENT 15920	CC5B1	61370905	1 of 3	

SHEET REVISION STATUS

3	2	1
A	A	A
A	B	B
C	C	C

REVISION RECORD

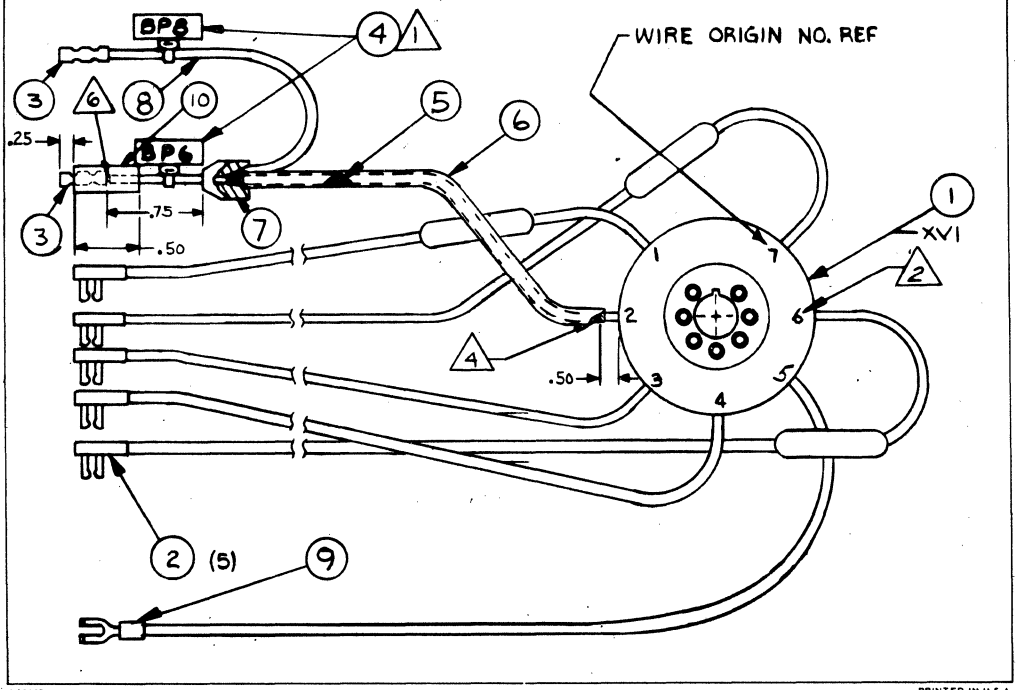
REV	ECO	DESCRIPTION	DRFT	DATE	APP
A	12402-12	RELEASED Class A	/	10-14-77	[signature]
B	CD12620	REVISED PER ECO	JM	11/2	[signature]
C	14045	REVISED PER ECO	D.S	4/28/80	[signature]

NOTES:
1. Apply label to cable per drawing 82191061, method b. Mark as shown.
2. Shown for reference only and may not appear on part.
3. Bulk identify with CDC part number
4. Length indicated is ± .5 and is measured from where lead exits the cap.
5. Do not crimp insulation. Position F/N 10 to cover Approx. Half Of F/N 3.

APL 61407856
DETACHED LISTS

AA3180 Rev. 71 PRINTED IN U.S.A.

CONTROL DATA	CODE IDENT 15920	SHEET 2	A	DOCUMENT NO. 61407856	REV. C



AA2185 PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 3	WL	DOCUMENT NO. 61407856	REV. C

CONDUCTOR IDENT.	FIND NO.	GAUGE (REF.)	COLOR (REF.)	LENGTH 4	ORIGIN		ACCESS FIND NO.	DESTINATION	ACCESS FIND NO.	REMARKS
1				6.0	XV1	7		Flag Contact	2	
2				6.0	XV1	3		Flag Contact	2	
3				5.5	XV1	6		Flag Contact	2	
4				6.25	XV1	2		Contact	3	
5				2.5	Shield			Ferrule	7	
6				7.5	XV1	1		Flag Contact	2	
7				5.5	XV1	4		Flag Contact	2	
8				12.0	XV1	5		Slot Lug	9	
					Ferrule			Contact	3	

AA3183 REV. 8/71 PRINTED IN U.S.A.

BUILD ARC 104

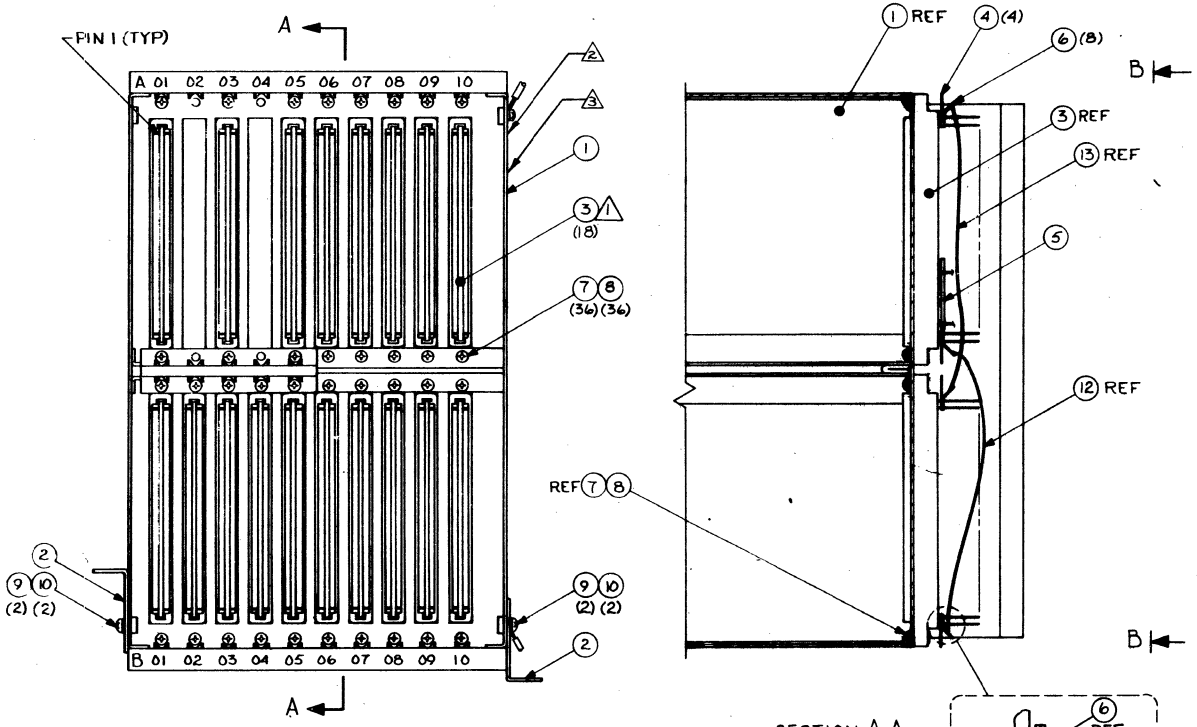
ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
04-23-80	1	00014045

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61407856 6		C	A	CRT SOCKET ASSY	A	REL	10-14-77		04-23-80

T	FIND NO	LI	PART NUMBER	CD	M	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	51906701	1		1	PC	CRT SKT, 7 PIN MINI W/RES LD	P						
	002	01	94219903	5		5	PC	CONTACT,FLAG 22-18AWG STRIP	P			13963			8032
	002	02	94219909	2		5	PC	CONTACT DUO-TYNE FLAG 22-18GA	P		13963			8032	
	003	01	51654700	7		2	PC	CONT, RCPT 24-20GA GOLD FIG 1	P						
	004	01	94277409	2		2	PC	STRAP, CBL TIE TYP 5 TO 5/8	B						
	005	02	51828108	4		468	FT	CBL SHIELDING, CU BRAID 20A	W		12620			7746	
	006	02	24534707	5		541	FT	SLVG, 3/16 HT/SHRINK BLK UL	B		12620			7746	
	007	02	62022602	7		1	PC	FERRULE PRE-INSUL BROWN	P		12620			7746	
	008	01	93462555	9		208	FT	WIR 20GA STRD GRN 300V UL PVC	W						
	009	01	51797110	7		1	PC	TERM LUG SLT CRMP 22-18 NO. 8	B						
	010	01	24534706	7		500	FT	SLVG, 1/8 HT/SHRINK BLK UL	B		12620	14045		7746	8020
	010	02	24534706	7		041	FT	SLVG, 1/8 HT/SHRINK BLK UL	B		14045			8020	
								0012 TOTAL LINES							

SHEET REVISION STATUS			REVISION RECORD					
		21	REV	ECO	DESCRIPTION	DEPT	DATE	CHKD	APP
					RELEASED CLASS				
		01	001	C045	REVISED PER ECO				
		02	002	C106	ADDED GND WIRE DEST. SHT 2 ZONE B1				
		03	003	C0103					
		04	004	C174					
		05	005	C267	ADDED FIND NO 20				
		A	A	106376	RELEASED CLASS A				
		A	A	99001-19	ADD INT DIV LABEL				
		B	B	CD10925	ADD NOTE 4				



NOTES:

1. LOCATE CONNECTORS (FIND NO. 3) PER FIXTURE 71456200.
2. MARK "ASSY 61371200" IN AREA SHOWN PER CDC SPEC 10121508.
3. MARK SERIAL NO. "SN____" IN THIS AREA PER CDC STD 1.01.025 AND CDC SPEC 10121508.
4. REFERENCE DESIGNATIONS ARE SHOWN FOR REF ONLY AND MAY NOT APPEAR ON PART.

At series codes A04 and B04 Logic Chassis Assembly part number changed from 61371200 to 61401000

APL 61371200 DETACHED LISTS

INTER-DIVISIONAL DOCUMENT
This document is subject to change without prior notice. Users will receive copy only of the revised document.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
DO NOT SCALE DRAWING

CC614

TITLE
LOGIC CHASSIS ASSEMBLY

CODE IDENT 15920 | D | DRAWING NO 61371200

SCALE 1/1 | NMA 15611400 | SHEET 1 OF 2

BUILD ARC 270

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
05-12-75	1	010653-6

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	90411600	1	A	C	CD ASSY 4CKD (LED PANEL)	N	REL	05-09-75		05-12-75

TYP	FIND NO.	LI	PART NUMBER	CD	AN	QUANTITY	U/M	PART DESCRIPTION	MC	TLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
	001	01	90411500	3		1	PC	PW BD MULTI-USE	P						
	002	01	24500043	5		8	PC	RES COMP 150 OHM 1/4W 5P	P						
	003	01	51903803	8		4	PC	DIO LED SLD ST GRN DIFFUSED	P						
	004	01	51912300	4		9	PC	TERMINAL PIN .031X.062	P						
	005	01	16006500	9		REF	PC	FABRICATION SPECIFICATION	D						
	006	01	10121508	5		REF	PC	MARKING METHODS + DWG CALLOUT	D						
	007	01	90411400	6		REF	PC	SCH DIAG 4CKD (LED PANEL)	D						
	008	01	51903802	0		1	PC	DIO LED SLD ST RED EPOXY	P						
	009	01	51903804	6		1	PC	DIO LED SLD ST YEL DIFFUSED	P						
								0009 TOTAL LINES							

DWN	D. Wells	10/9/74
CHKD		
ENG		10/14/74
MFG		
APPR		

CONTROL DATA

CODE IDENT 15920

TITLE: CABLE ASSY FRONT

FIRST USED ON: CC614A

PREFIX	DOCUMENT NO	REV
A	61370700	B

NHA 15611400 | SHEET 1 of 4

SHEET REVISION STATUS

4	3	2	1
		01	01
02	02		02
02	02	03	03
04	04	04	04
04	04	05	05
06	06	06	06
A	A	A	A
B	B	B	B

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		RELEASED CLASS "C"		10-14-74	
01	C021	REVISED PER ECO		10/9/74	
02	C039	F/N 4 WAS 93947001 QTY F/N 5 WAS 7 DELETED COND IDENT 518		11-8-74	
03	C064	A08A07 WAS AP2A07		12-9-74	
04	C0110	REVISED PER ECO		1-14-75	
05	C175	A08A07 WAS AP2A07		2-25-75	
06	C243	REVISED PER ECO		4-4-75	
A	106535	RELEASED CLASS A	—	5/1/75	
B	CD 10880	REVISED PER ECO			

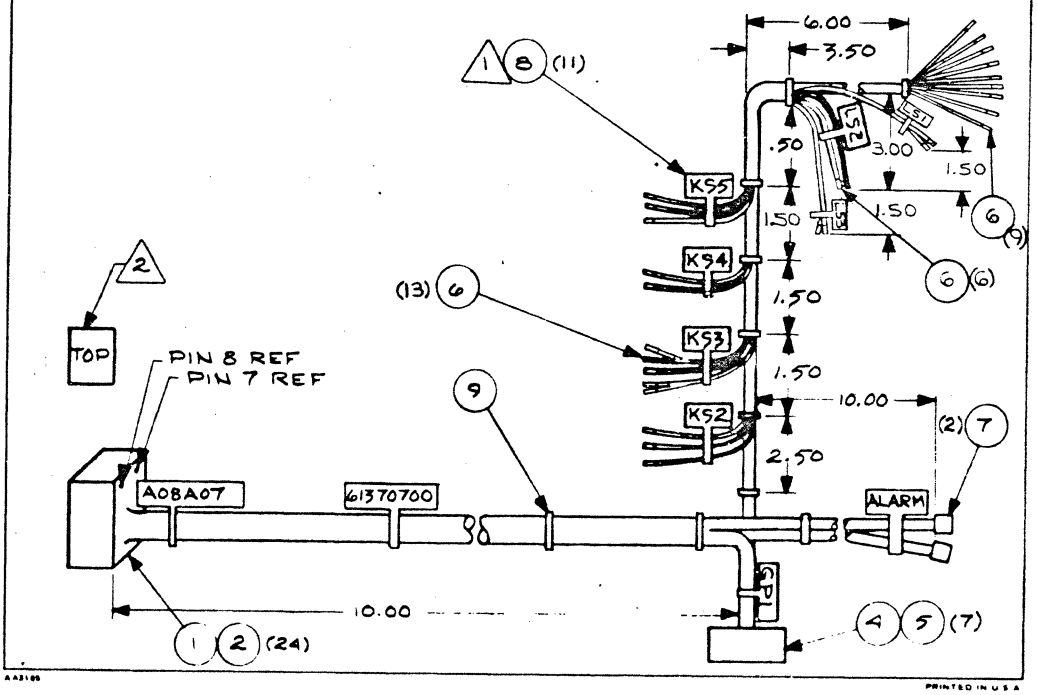
NOTES:

1. Apply label to cable per drawing 82191061, Method 6. Mark as shown.
2. Mark per CDC Spec 10121508, .12 High, White and locate approximately as shown.

APL 61370700
DETACHED LISTS

AA3180 REV. 8-71 PRINTED IN U.S.A.

CONTROL DATA | CODE IDENT 15920 | SHEET 2 | A | DOCUMENT NO 61370700 | REV B



AA3180 PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 3	WL	DOCUMENT NO 61370700	REV B

CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
1	24	24	60	16.5	A08A	07	2	KS3	3	6	Even/None/Odd
2	12		9	26		08		L	4	6	CO
3	12		9	12		09		GP1	2	5	TRANSMIT
4	12		9	12		10		GP1	3	5	RECEIVE
5	27		98	26		11		L	5	6	CTS
6	12		9	12		12		GP1	1	5	RTS
7	12	24	9	12		13		GP1	4	5	DTR
8	30	26	8	16.5		14		KS3	4	6	En Parity
9	13	24	1	26		15		L	1	6	CHAR MODE
10	14		3	26		16		L	2		LINE MODE
11	15		4	26		17		L	3		BLOCK MODE
12	16		5	26		18		L	6		FORMAT MODE
13	17		6	26		19		L	8		KYBD LOCKED
14	18		7	26		20		L	7	6	ALERT
15	21		39	19.5		21		KS5	1	6	LOW FREQ SWITCH
16	20		19	15		22		KS2	3	6	BLOCK MODE SWITCH
17	19		90	15		23		KS2	1	6	LINE MODE SWITCH
18	23	24	59	24		24		LS2	1	6	KYBD LOCKED SWITCH
19	10	24	2	26		25		L	9	6	+5V
20	22	24	49	22.5	A08A	26	2	LS3	1	6	ON LINE SWITCH

AA3103 REV.B-70

PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 4	WL	DOCUMENT NO 61370700	REV B

CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
21	25	24	97	18	A08A	27	2	KS4	1	6	Full/Half Duplex Sw
22	11	26	0	15.5	A08A	28	2	KS2	2	6	GND
23	11	26	0	6	KS2	2		KS3	2	6	GND
24	11	26	0	6	KS3	2		KS3	5	6	GND
25	11	26	0	3	KS3	5		KS4	2	6	GND
26	11	26	0	6	KS4	2		KS5	2	6	GND
27	11	26	0	9	KS5	2		LS1	2	6	GND
28	11	26	0	6	LS1	2		LS2	2	6	GND
29	11	26	0	6	LS2	2		LS3	2	6	GND
30	12	24	9	21	A08A	29	2	Alarm	(-)	7,26	Signal
31	10	24	2	12	A08A	30	2	GP1	5	3	+5V
32	10	24	2	12	GP1	5		Alarm	(+)	7,26	+5V
33	28	24	900	19.5	A08A	32	2	KS5	3	6	H/NO/L Freq Sw
34	29	24	910	25.5	A08A	34	2	LS1	3	6	64/96 Char Sw
35	30	26	8	6	KS3	4		KS3	6	6	En Parity

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
07-28-75	1	00010880

DIV	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG RESP	FILE DATE
0860	61370700	9	P	A	CABLE ASSY (FRONT)	A	REL	05-07-75	LIAT	07-28-75

TP IND NO	LI	PART NUMBER	CD	IM	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO NO OUT	S/N	WK IN	WK OUT
001	01	51863012	4		1	PC	CONN MSG(DBL ROW) 24 CAVITY	P			10880			7529
001	02	51863025	6		1	PC	CONN MSG(DBL ROW) 50 CAVITY	P		10880			7529	
002	01	94245602	1		24	PC	CONTACT SOC 24-26AWG STRIP	P						
003	01	93943017	9		1	PC	CONTACT SKT .090	P						
004	01	93947006	8		1	PC	CONNECTOR 6 SOCKET HOUSING	P						
005	01	93943015	3		4	PC	CONTACT SOCKET .090	P						
006	01	51654700	7		20	PC	CONTACT RECPT ELEC 24-20 AWG	P			10880			7529
006	02	51654700	7		25	PC	CONTACT RECPT ELEC 24-20 AWG	P		10880			7529	
007	01	93747011	6		2	PC	RECPT 24-22GA BRASS ON STRIP	P						
008	01	94277409	2		9	PC	STRAP CABLE TIE TYPE 6	P			10880			7529
008	02	94277409	2		11	PC	STRAP CABLE TIE TYPE 6	P		10880			7529	
009	01	94277400	3		11	PC	STRAP CABLE TIE TYPE 1	P						
010	01	24548303	7		4	100 FT	WIR 24GA STRD RED 300V UL PVC	W						
011	01	18563100	9		2	500 FT	WIRE ELECT 26AWG BLACK CODE 0	W			10880			7529
011	02	18563100	9		4	FT	WIRE ELECT 26AWG BLACK CODE 0	W		10880			7529	
012	01	24548310	2		8	FT	WIR 24GA STRD WHT 300V UL PVC	W						
013	01	24548302	9		2	200 FT	WIR 24GA STRD BRN 300V UL PVC	W						
014	01	24548304	5		2	200 FT	WIR 24GA STRD ORN 300V UL PVC	W						
015	01	24548305	2		2	200 FT	WIR 24GA STRD YEL 300V UL PVC	W						
016	01	24548306	0		2	FT	WIR 24GA STRD GRN 300V UL PVC	W						
017	01	24548307	8		2	FT	WIR 24GA STRD BLU 300V UL PVC	W						
018	01	24548308	6		2	FT	WIR 24GA STRD V10 300V UL PVC	W						
019	01	24548311	0		1	500 FT	WIR 24GA STRD WHT/BLK 300V UL	W						

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
07-28-75	2	00010880

DIV	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG RESP	FILE DATE
0860	61370700	9	P	A	CABLE ASSY (FRONT)	A	REL	05-07-75	LIAT	07-28-75

TP IND NO	LI	PART NUMBER	CD	IM	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO NO OUT	S/N	WK IN	WK OUT
020	01	24548312	8		1	500 FT	WIR 24GA STRD WHT/BRN 300V UL	W						
021	01	24548314	4		1	500 FT	WIR 24GA STRD WHT/ORN 300V UL	W			10880			7529
021	02	24548314	4		1	800 FT	WIR 24GA STRD WHT/ORN 300V UL	W		10880			7529	
022	01	24548315	1		1	800 FT	WIR 24GA STRD WHT/YEL 300V UL	W			10880			7529
022	02	24548315	1		2	FT	WIR 24GA STRD WHT/YEL 300V UL	W		10880			7529	
023	01	24548316	9		2	200 FT	WIR 24GA STRD WHT/GRN 300V UL	W						
024	01	24548317	7		1	300 FT	WIR 24GA STRD WHT/BLU 300V UL	W			10880			7529
024	02	24548317	7		1	500 FT	WIR 24GA STRD WHT/BLU 300V UL	W		10880			7529	
025	01	24548318	5		1	100 FT	WIR 24GA STRD WHT/VIO 300V UL	W						
026	01	24534710	9			200 FT	INS SLEEVE 3/8 BLACK	B						
027	01	24548319	3		2	200 FT	WIR 24GA STRD WHT/GRY 300V UL	W		10880			7529	
028	01	24548320	1		1	800 FT	WIR 24GA STRD WHT/BLK/BLK 300	W		10880			7529	
029	01	24548321	9		2	200 FT	WIR 24GA STRD WHT/BRN/BLK 300	W		10880			7529	
030	01	18563108	2		2	FT	WIRE ELEC 26AWG GRAY CODE 8	W		10880			7529	

0037 TOTAL LINES

DWN	D. Wells	10/2/74	CONTROL DATA	TITLE	PREFIX	DOCUMENT NO	REV
CHKD				CABLE ASSEMBLY KEYBOARD (INTERNAL)	A	61370000	B
ENG		10-14-74					
MFG		4-23-75		FIRST USED ON	NHA	SHEET 1 of 4	
APPR		4-21-75	CODE IDENT 15920	CC614/CC681	15611400		

SHEET REVISION STATUS

4	3	2	1	REV	ECO	DESCRIPTION	DRFT	DATE	APP
						RELEASED CLASS "C"		10-14-74	
			01	01	C021	REVISED PER ECO		10/25/74	
		02	02	02	C065	AP3A33 WAS A09A33			
	03	02	03	03	C105	COND IDENT #25 DEST WAS CEI		1-6-75	
	04	02	04	04	C0110	COND IDENT #25 GA WAS 24 NOW 20		1-9-75	
	04	05	05	05	C175	CABLE TAG WAS AP3A33	DAG	2-28-75	DW
06	06	06	06	06	C210	ADDED COND IDENT 5, 6 & 7 QTY FN 10 WAS 1.5 FT		3-27-75	
A	A	A	A	A	10653-1	RELEASED CLASS A	—	4/24/75	
B	B	A	B	B	CD10880	REVISED PER ECO			

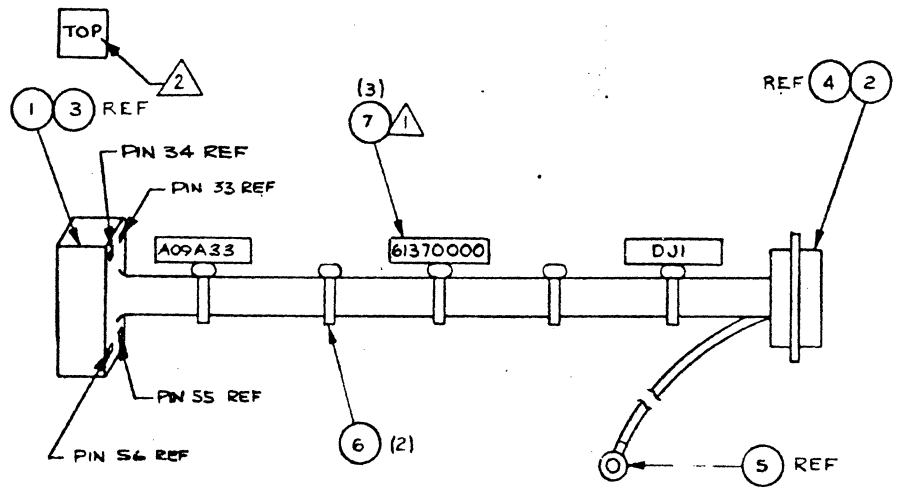
NOTES:

1. Apply label to cable per drawing 82191061, Method b. Mark as shown. (3 places)
2. Mark per CDC Spec 10121508, .12 High, White and locate approx as shown.

APL 61370000

DETACHED LISTS

CONTROL DATA	CODE IDENT 15920	SHEET 2	A	DOCUMENT NO 61370000	REV A



CONTROL DATA | CODE IDENT 15920 | SHEET 3 | WL | DOCUMENT NO 61370000 | REV B

CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
1					AD9A	33	3				Open
2	8	24	9	18.0		34		DJ1	14	4	64/96 Char
3						35					Open
4						36					Open
5	10	24	0	18.0		37		DJ1	15	4	Ground
6	10	24	0	18.0		38		DJ1	16	4	Ground
7	10	24	0	18.0		39		DJ1	17	4	Ground
8	9	24	2	18.0		40		DJ1	23	4	+5V
9	A	24	9	18.0		41			01		Control Key
10						42			02		Kybd Data 2^7
11						43			03		Kybd Data 2^6
12						44			04		Kybd Data 2^5
13						45			05		Kybd Data 2^4
14						46			06		Kybc Data 2^3
15						47			07		Kybd Data 2^2
16						48			08		Kybd Data 2^1
17						49			09		Kybd Data 2^0
18						50			10		Kybc Rdy
19						51			11		Local To Prt
20	8	24	9	18.0	AD9A	52	3	DJ1	12	4	Ln To Prt

AA3183 REV. B-70 PRINTED IN U.S.A.

CONTROL DATA | CODE IDENT 15920 | SHEET 4 | WL | DOCUMENT NO 61370000 | REV B

CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
21	11	24	6	18.0	AD9A	53	3	DJ1	25	4	-12V
22					AD9A	54	3				
23	10	24	0	18.0	AD9A	55	3	DJ1	18	4	Ground
24	10	24	0	18.0	AD9A	56	3	DJ1	24	4	Gnd
25	12	20	5	5.0	DJ1	20	4	CE3		5	Safety Ground

AA3183 REV. B-70 PRINTED IN U.S.A.

BUILD ARC 1^4

ASSEMBLY PARTS LIST

PRINT DATE 07-24-75 | PAGE 1 | FILE CHANGE NO 00010880

DIV	ASSEMBLY NUMBER	CD	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	61370000	4	R	A	CABLE ASSY(KEYBOARD-INTERNAL)	M	REL	04-26-75	LIAT	07-24-75

FIND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO NO. IN	ECO NO. OUT	S/N	WE IN	WE OUT
001	01	51863012	4	1	PC	CONN HSG(DRL ROW) 24 CAVITY	P						
002	01	53397914	2	1	PC	CONN 25 POSITION PLUG ALONE	P						
003	01	94245602	1	24	PC	CONTACT SOC 24-26AWG STRIP	P						
004	01	53397917	5	17	PC	CONN STRIP SOC 20-24GA	P			10880			7929
004	02	53397917	5	21	PC	CONN STRIP SOC 20-24GA	P		10880			7529	
005	01	51797217	0	1	PC	TERM LUG RING CRMP 22-18	10	P					
006	01	94277400	1	2	PC	STRAP CABLE TIE TYPE 1		P					
007	01	94277409	2	3	PC	STRAP CABLE TIE TYPE 6		P					
008	01	24548310	2	19.500	FT	WIR 24GA STRD WHT 300V UL PVC		W					
009	01	24548303	7	1.500	FT	WIR 24GA STRD RED 300V UL PVC		W					
010	01	24548301	1	7.500	FT	WIR 24GA STRD BLK 300V UL PVC		W					
011	01	24548307	8	1.500	FT	WIR 24GA STRD BLU 300V UL PVC		W					
012	01	93462555	9	2.500	FT	WIR 20GA STRD GRN 300V UL PVC		W					

0013 TOTAL LINES

DWN	Plantenberg	10/24	CONTROL DATA	TITLE: CABLE ASSY D.C. POWER	PREFIX: A	DOCUMENT NO: 61375400	REV: A
CHKD							
ENG		10-11-74					
MFG		8/23/74		FIRST USED ON: CC614 / CC681	NHA: 15611400	SHEET 1 of 3	
APPR		9-13-74	CODE IDENT: 15920				

SHEET REVISION STATUS

3	2	1
01		01
02	02	02
03	03	03
A	A	A

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		RELEASED CLASS "C"		10-14-74	
01	C105	GOND IDENT DEST. WAS CE1	ET		
02	C0110	MOVED GND WIRE		1-9-75	
03	C213	ADDED FN'S 16 THRU 22 ADDED DETAILS TO CONN	R	3-27-75	
A	10653-1	RELEASED CLASS A	—	4/24/75	

NOTES:

1. Apply label to cable per drawing 82191061, Method 6. Mark as shown.

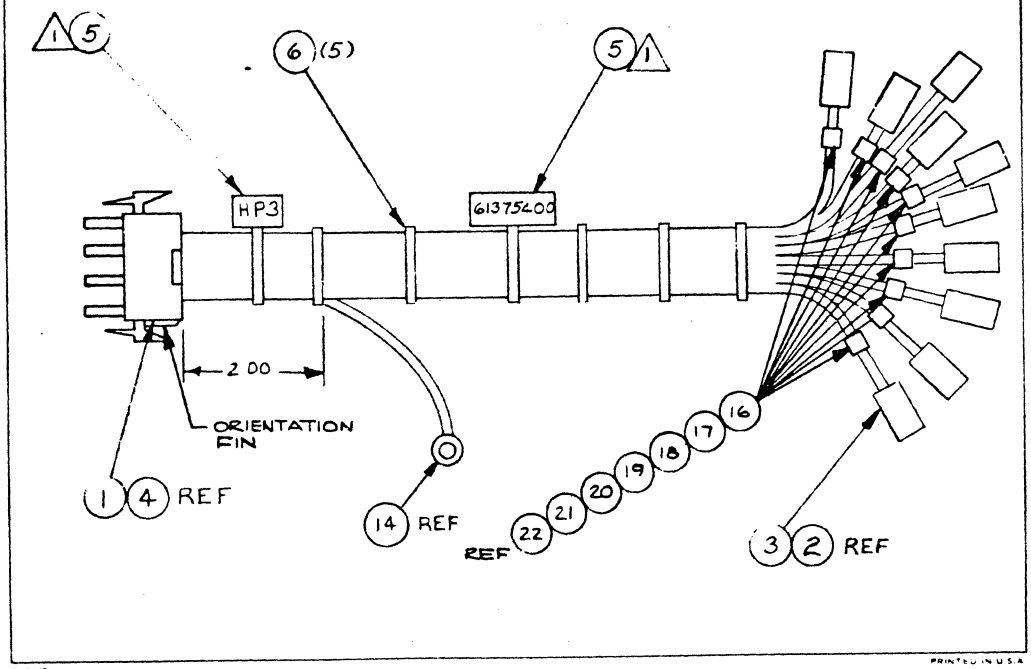
APL 61375400

DETACHED LISTS

AA3186 REV. 8 71

PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 2	A	DOCUMENT NO 61375400	REV A



CONTROL DATA		CODE IDENT 15920	SHEET 3	WL	DOCUMENT NO 61375400	REV A

CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
1	7	16	2	30.0	HP3	3	4	A01A	67	20;21 2	+20V
2	8	16	6		HP3	8	4	A01A	75	21;19 2	-20V
3	9	14	0		HP3	10	4	A01A	71	21;16 2	Ground
4	8	16	6		HP3	2	4	A01A	59	19;22 2	-9V
5	10	18	4		HP3	1	4	A01A	65	20;19 2	Over Voltage Signal
6	11	18	0		HP3	4	4	A01A	51	19;16 2	ACH TWP
7	12	18	8		HP3	7	4	A01A	49	18;22 2	ACN TWP
8	11	18	0	30.0	HP3	12	4	A01A	73	21;17 2	Ground
9	13	16	0	4.0	HP3	11	4	CE3		14	Safety Ground
10	15	18	3	30.0	HP3	6	4	A01A	61	20;16 15	+12V
11	10	18	4	30.0	HP3	9	4	A01A	63	20;17 15	-12V

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
04-28-75	1	010653-1

DIV	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61375400	1	A	A	CABLE ASSY (D.C. POWER)	A	REL	04-24-75	LIAT	04-28-75

TYP	IND NO	LI	PART NUMBER	CD	M	QUANTITY		U/M	PART DESCRIPTION	MC	TLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	51906005	7		1		PC	CONN PLUG 12 POS	P						
	002	01	17973615	2		10		PC	TERM CRMP TYPE INSUL 18-14	P						
	003	01	62020702	7		10		PC	HOUSING RECEPT STRAIGHT STYLE	P						
	004	01	51906201	2		11		PC	SOCKET CONTACTS	P						
	005	01	94277409	2		2		PC	STRAP,CABLE TIE W.093 LG 4	P						
	006	01	94277400	1		5		PC	CABLE TIE STRAP 1/16-5/8 DIA.	P						
	007	01	93464222	4		2	500	FT	WIR 16GA STRD RED 300V UL PVC	W						
	008	01	93464666	2		5		FT	WIR 16GA STRD BLU 300V UL PVC	W						
	009	01	93508000	2		2	500	FT	WIR 14GA STRD BLK 600V UL PVC	W						
	010	01	93463444	5		5		FT	WIR 18GA STRD YEL 300V UL PVC	W						
	011	01	93463000	5		5		FT	WIR 18GA STRD BLK 300V UL PVC	W						
	012	01	93463888	3		2	500	FT	WIR 18GA STRD GRY 300V UL PVC	W						
	013	01	93464000	4		2	500	FT	WIR 16GA STRD BLK 300V UL PVC	W						
	014	01	51797236	0		1		PC	TERM LUG RING CRMP 16-14 #10	P						
	015	01	93463333	0		2	500	FT	WIR 18GA STRD ORN 300V UL PVC	W						
	016	01	51809101	2			200	FT	TAPE-WIRE MARKING CHAR 1	B						
	017	01	51809103	8			150	FT	TAPE-WIRE MARKING CHAR 3	B						
	018	01	51809104	6			100	FT	TAPE-WIRE MARKING CHAR 4	B						
	019	01	51809105	3			250	FT	TAPE-WIRE MARKING CHAR 5	B						
	020	01	51809106	1			250	FT	TAPE-WIRE MARKING CHAR 6	B						
	021	01	51809107	9			250	FT	TAPE-WIRE MARKING CHAR 7	B						

BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
04-28-75	2	010653-1

DIV.	ASSEMBLY NUMBER	CD	REV	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	61375400	1	A	A	CABLE ASSY (D.C. POWER)	A	REL	04-24-75	LIAT	04-28-75

TYP	IND NO	LI	PART NUMBER	CD	M	QUANTITY		U/M	PART DESCRIPTION	MC	TLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	022	01	51809109	5			100	FT	TAPE-WIRE MARKING CHAR 9	B						
									0022 TOTAL LINES							

DWN Plantenberg 10/11/74	CONTROL DATA	TITLE CABLE ASSY PWR ON	PREFIX A	DOCUMENT NO 61375500	REV A
CHKD					
ENG		FIRST USED ON CC614 / CC681	NHA 15611400	SHEET 1 of 3	
MFG		CODE IDENT 15920			
APPR					

SHEET REVISION STATUS

3	2	1
01		01
02		02
03	03	03
A	A	A

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		RELEASED CLASS "C"		10-14-74	
01	C039	F/N 6 WAS 934C4400 GA WAS 20	R	11-8-74	
02	C0110	CHG WIRE LENGHTS		1-9-75	
03	C220	ADDED FNS 7,8,9 ADDED COND IDENT # 3	R	3-27-75	
A	10653-1	RELEASED CLASS A	—	4/29/75	M.C.T.

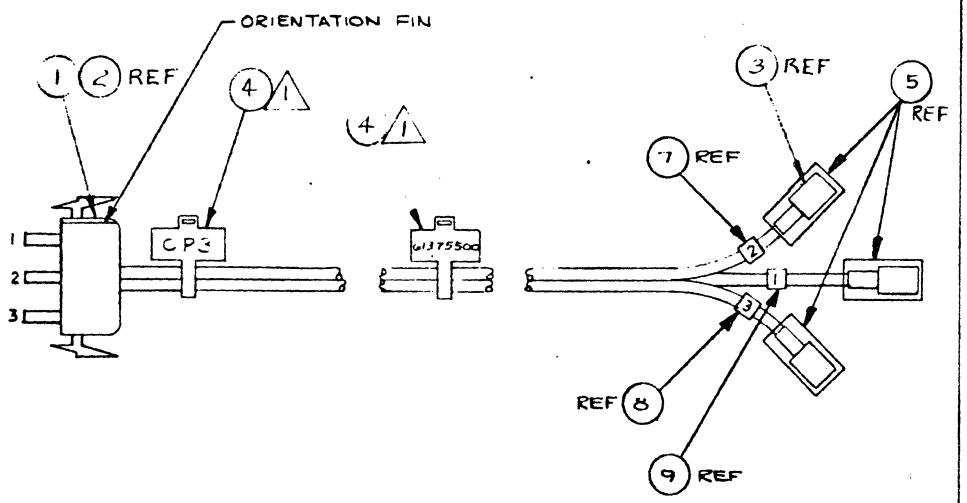
NOTES

1. Apply label to cable per drawing 82191061. Method b. Mark as shown.

APL 61375500

DETACHED LISTS

CONTROL DATA	CODE IDENT 15920	SHEET 2	A	DOCUMENT NO 61375500	REV A



CONTROL DATA		CODE IDENT 15920	SHEET 3	WL	DOCUMENT NO 61375500	REV A

CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
1	6	20	4	13.0	CP3	1	2	KS1	3	8,3,5	
2	6	20	4	13.0	CP3	2	2	KS1	2	7,3,5	
3	6	20	4	13.0	CP3	3	2	KS1	1	9,3,5	

AA3183 REV.8-70 PRINTED IN U.S.A.

BUILD ARC 104 - **ASSEMBLY PARTS LIST**

PRINT DATE	PAGE	FILE CHANGE NO.
04-29-75	1	010653-1

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61375500	8	A	A	CABLE ASSY (POWER ON)	M	REL	04-24-75	LIAT	04-28-75

T	FIND NO	LI	PART NUMBER	CD	IM	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	51906001	6		1	PC	CONN PLUG	P						
	002	01	51905800	2		3	PC	PINS CONTACT	P						
	003	01	51654700	7		3	PC	CONTACT	P						
	004	01	94277409	2		2	PC	STRAP,CABLE TIE W;093 LG 4	P						
	005	01	24534706	7		300	FT	INS SLEEVE 1/8 BLACK	B						
	006	01	93462444	6		6	FT	WIR 20GA STRD YEL 300V UL PVC	W						
	007	01	51809102	0		1	FT	TAPE-WIRE MARKING CHAN 2	B						
	008	01	51809103	8		1	FT	TAPE-WIRE MARKING CHAN 3	B						
	009	01	51809101	2		1	FT	TAPE-WIRE MARKING CHAN 1	B						
								0009 TOTAL LINES							

DWN	R. Trautman 9/27/74	TITLE	PREFIX	DOCUMENT NO	REV
CHKD	[redacted] 10-27	CABLE ASSEMBLY GRT	A	61374900	A
ENG	[redacted] 10-14-74				
MFG	[redacted] 9-24-74	FIRST USED ON	NHA	SHEET 1 of 4	
APPR	[redacted] 9-27-74 CODE IDENT 15920	CC614/CC681	15611400		

SHEET REVISION STATUS				REVISION RECORD					
4	3	2	1	REV	ECO	DESCRIPTION	DRFT	DATE	APP
						RELEASED CLASS "C"		10-4-74	[redacted]
			01	01	C021	REVISED PER ECO	[redacted]	10/25/74	[redacted]
02		02	02	02	C039	LENGTH OF COND IDENT 25, 26, 27 WAS 60 - ADDED COND IDENT 28 - F/N 3 WAS 51905903 - ADDED .250 TO QTY QTY F/N 10, 11, 12 WAS 1500 TO 13	[redacted]	11-8-74	[redacted]
02		03	03	03	C066	AP1A57 WAS A06A57	[redacted]	[redacted]	[redacted]
04	04	04	04	04	C0110	REVISED PER ECO	[redacted]	1-14-75	[redacted]
05	05	04	05	05	C146	REVISED PER ECO	[redacted] 2-12-75	2/14/75	[redacted]
05	05	06	06	06	C175	A06A57 WAS AP1A57	[redacted]	2/26/75	[redacted]
07	07	07	07	07	C214	F/N 3 WAS 51905903, #4 WAS 94245607 #10 WAS 93462222 #11 WAS 9346 2000, #13 WAS 93462999. QTY F/N 5 WAS 12, #6 WAS 5, #9 WAS 9, #12 WAS 36	[redacted]	3-21-75	[redacted]
08	07	07	08	08	C240	CHG'D COND. IDENT 21, 22	[redacted]	4/15/75	[redacted]
08	07	09	09	09	C258	F/N 5 QTY WAS 9 F/N 9 QTY WAS 4	[redacted]	4-18-75	[redacted]
A	A	A	A	A	10453-2	RELEASED CLASS A	—	4/28/75	[redacted]

NOTES:

1. Apply Label to Cable per drawing 82191061, Method b. Mark as indicated.
2. Mark per CDC Spec 10121508, .12 High, white and locate approximately as shown.
3. Cut wire into two 3" pieces to GND each end of coax.

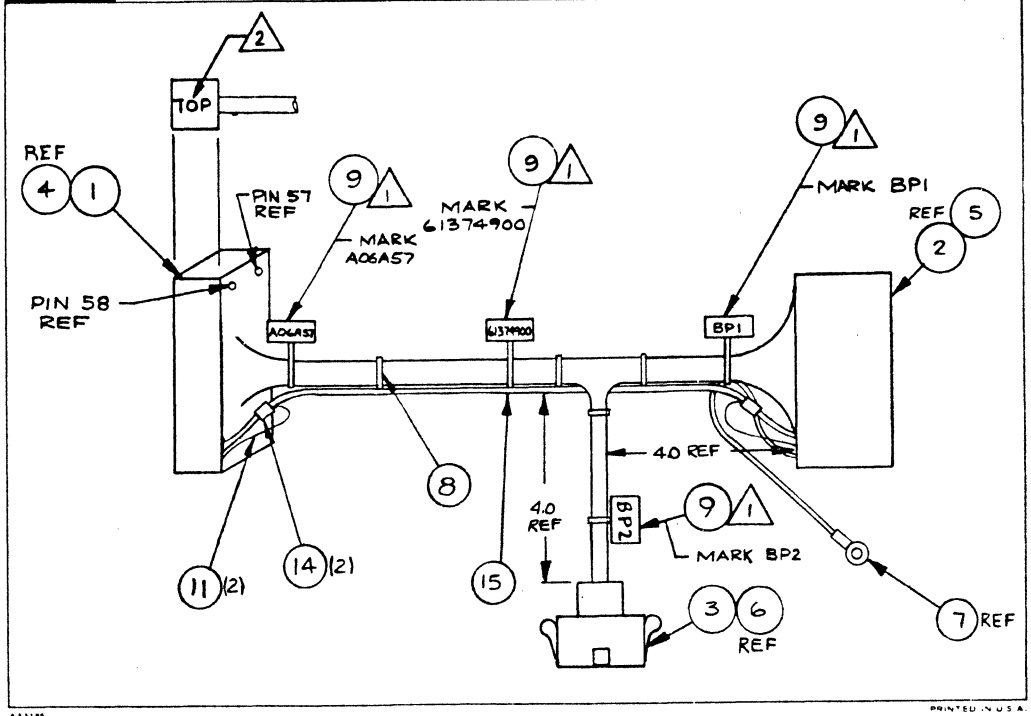
APL 61374900

DETACHED LISTS

AA3180 REV. 8 71

PRINTED IN U.S.A.

CONTROL DATA		CODE IDENT 15920	SHEET 2	A	DOCUMENT NO 61374900	REV A



AA3185 PRINTED IN U.S.A.

CONTROL DATA					CODE IDENT 15920		SHEET 3			WL	DOCUMENT NO 61374900	REV A
CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH APPROX	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS	
1					A06A	57	4				Open	
2					A06A	58	4				Open	
3					A06A	59	4				Open	
4					A06A	60	4				Open	
5	10	24	2	20.0	A06A	61	4	BP1	4	5	+5V	
6	11	24	0	20.0	A06A	62	4	BP1	3	5	Ground	
7	15	COAX	-	20.0	A06A	63	4,14	BP1	12	5,14	VIDEO	
8	11	24	0	6.0	A06A	64	4	BP1	13	5	Ground } SHIELD (3)	
9	13	24	9	20.0	A06A	65	4	BP1	6	5	H - Sync	
10	11	24	0	20.0	A06A	66	4	BP1	5	5	Ground } TW-PR	
11	13	24	9	20.0	A06A	67	4	BP1	10	5	V - Sync	
12	11	24	0	20.0	A06A	68	4	BP1	9	5	Ground } TW-PR	
13				20.0	A06A	69	4				Open	
14				20.0	A06A	70	4				Open	
15	10	24	2	20.0	A06A	71	4	BP2	1	6	+20V } Crimp	
16	10	24	2	20.0	A06A	72	4	BP2	1	6	+20V } Together BP2-1	
17					A06A	73	4				Open	
18					A06A	74	4				Open	
19					A06A	75	4				Open	
20					A06A	76	4				Open	

AA3183 REV 8-70 PRINTED IN U.S.A.

CONFIDENTIAL DATA						CODE IDENT 15920	SHEET 4			WL	DOCUMENT NO 61374900	REV A
CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN	ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS		
21	11	24	0	20.0	A06A	77	4	BP2	2	6	Ground } Crimp	
22	11	24	0	20.0	A06A	78	4	BP2	2	6	Ground } Together BP2-2	
23					A06A	79	4				Open	
24					A06A	80	4				Open	
27	12	18	5	5.0	BP1	14	5	BE1		7	Chassis Ground	

AA 3183 REV. 8-70 PRINTED IN U.S.A.

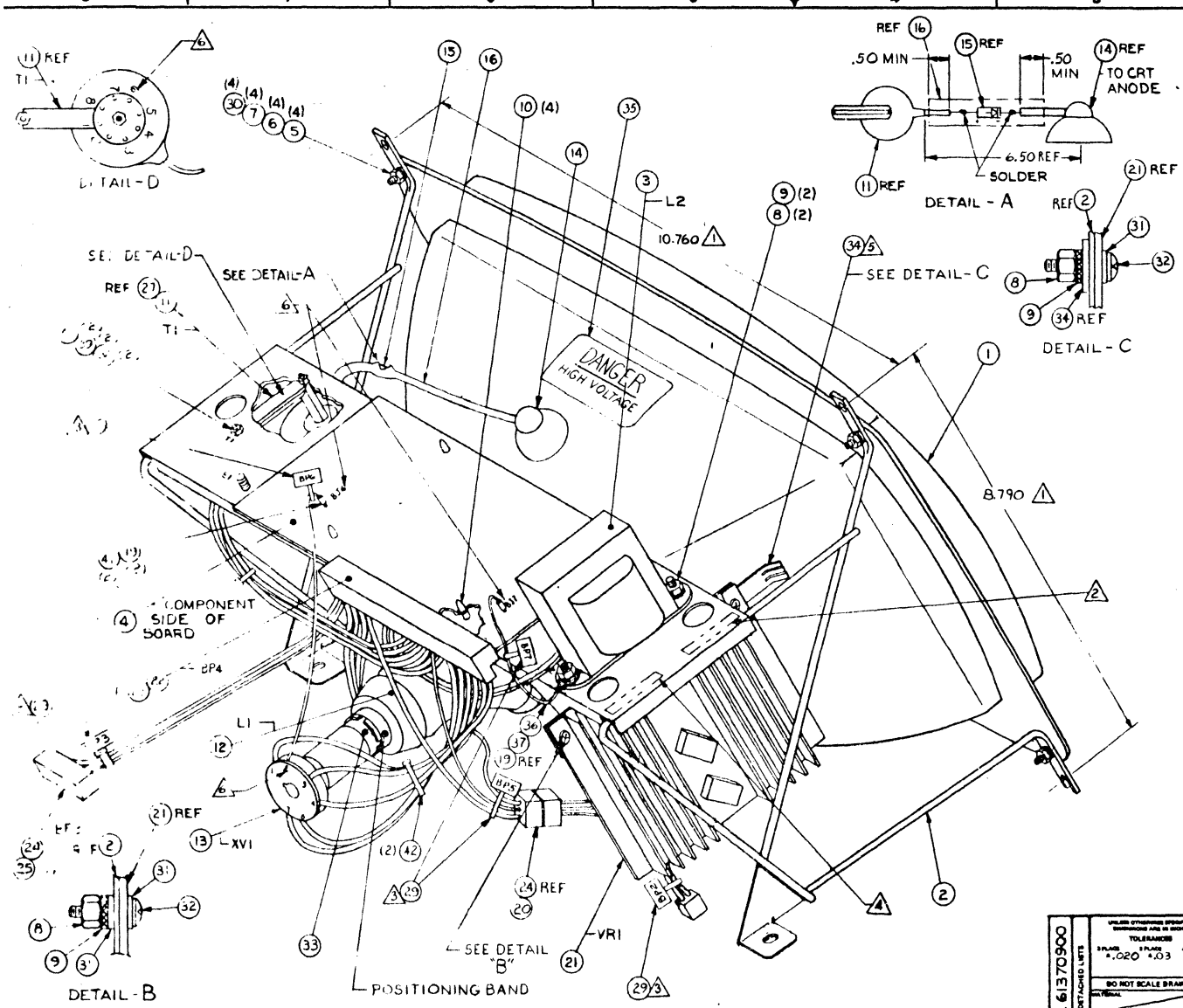
BUILD ARC 104

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
04-30-75	1	010653-2

DIV	ASSEMBLY NUMBER	CD	REV.	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG RESP	FILE DATE
0860	61374900	1	A	A	CABLE ASSY (CPT)	M	REL	04-28-75	LIAT	04-30-75

T	FIND NO	LI	PART NUMBER	CD	M	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
	001	01	51863012	4		1	PC	CONN MSG(DBL ROW) 24 CAVITY	P						
	002	01	51652904	7		1	PC	CONN(PC-EDGE) 14 POSITIONS	P						
	003	01	51905900	0		1	PC	CONN RECP 2 PIN	P						
	004	01	94245602	1		24	PC	CONTAGT-CRIMP INSERT SKT	B						
	005	01	94219903	5		8	PC	CONTACT DUO TYNE FLAG 22 18GA	P						
	006	01	51905800	2		2	PC	PINS CONTACT	P						
	007	01	51797217	9		1	PC	TERM LUG RING CRMP 22-18 #10	P						
	008	01	94277400	1		3	PC	CABLE TIE STRAP 1/16-W/8 DIA.	P						
	009	01	94277409	2		4	PC	STRAP,CABLE TIE W=.093 LG 4	P						
	010	01	24548303	7		5	FT	WIR 24GA STRD RED 300V UL PVC	W						
	011	01	24548301	1		9	FT	WIR 24GA STRD BLK 300V UL PVC	W						
	012	01	93463555	8		500	FT	WIR 18GA STRD GRN 300V UL PVC	W						
	013	01	24548310	2		3 500	FT	WIR 24GA STRD WHT 300V UL PVC	W						
	014	01	62022602	7		2	PC	FERRULES PRE-INSULATED	B						
	015	01	17649400	3		1 666	FT	CABLE R.F. 1 COND COAX STRD	W						
								0015 TOTAL LINES							



REV	ECO	DESCRIPTION	ENGR	DATE	CHKD	APP'D
		RELEASED CLASS				
01	C043	SEE CO				
02	C0103	SEE ECO				
03	C0131	ADDED FIND NO. 34				
04	C146	ADDED FIND NO. 36 & 37				
05	C227	SEE CO				
06	C240	ADDED CBL TIE STRAPS				
07	C282	ADDED FIND NO. 35				
A	10653-7	RELEASED CLASS A				

NOTES:

1. CRT TO BE FIXTURED ON FRAME.
2. MARK "ASSY 61370900" IN AREA SHOWN PER CDC SPEC 10121508.
3. APPLY LABEL TO CABLE PER DRAWING 82191061, METHOD 6. MARK AS SHOWN.
4. APPLY SERIAL NO. IN THIS AREA PER CDC STD 1.01.025.
5. ADJUST FIND NO. 34, GROUND STRAP, TO MAKE MAXIMUM CONTACT AGAINST FIND NO. 1, CRT.
6. SHOWN FOR REFERENCE ONLY AND MAY NOT APPEAR ON PART.

APL 61370900

DO NOT SCALE DRAWING

CC614

D. WELLS

TITLE: VIDEO DISPLAY ASSEMBLY NON-COMPOSITE

CODE IDENT 15920 | SIZE D | DRAWING NO 61370900

NHA 15614400

BUILD ARC 440

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
05-19-75	1	010653-7

DIV	ASSEMBLY NUMBER	CO	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	61370900	5	A	D	VIDEO DISPLAY ASSY	N	REL	05-14-75	LTAT	05-19-75

FIND NO	LI	PART NUMBER	CD	MC	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO NO. IN	ECO NO. OUT	S/N	WE IN	WE OUT
001	01	51967300	1		1	PC	CATHODE RAY TUBE CRT	P						
002	01	71456300	4		1	PC	FRAME VIDEO DISPLAY	P						
003	01	51966800	1		1	PC	COIL 320 MILLIMENRY	P						
004	01	90410000	5		1	PC	PC ASSY 4CDD	A						
005	01	10127123	7		4	PC	SCREW MACH 8-32 X 1/2 PAN HD	B						
006	01	10126402	6		4	PC	WASHER EXT, 8	B						
007	01	10125106	4		4	PC	NUT MACH HEX STL CP 8-32	B						
008	01	10125105	6		4	PC	NUT MACH HEX STL CP 6-32	B						
009	01	10126401	8		4	PC	WASHER EXT TOOTH LOCK NO.6	B						
010	01	51777326	3		4	PC	SUPPORT CIRCUIT BOARD	P						
011	01	51968300	8		1	PC	TRANSFORMER FLYBACK	P						
012	01	51967000	7		1	PC	YOKE DEFL ASSY	P						
013	01	51966700	3		1	PC	SKT CRT 7PIN MIN	P						
014	01	51752300	7		1	PC	LEAD ELEC ANODE 40 KV DC	W						
015	01	51969000	5		1	PC	RECT HI VOLT 15,18,20,25,30KV	P						
016	01	24434710	9		250	FT	INS SLEEVE 3/8 BLACK	R						
017	01	93463222	5		2	FT	WIR 18GA STRD RED 300V UL PVC	W						
018	01	93463000	5		500	FT	WIR 18GA STRD BLK 300V UL PVC	W						
019	01	51654700	7		2	PC	CONTACT	P						
020	01	51905804	4		3	PC	PIN CONT 20-14GA STRIP GOLD	P						
021	01	61376300	2		1	PC	REGULATOR ASSY(+15V)	A						

BUILD ARC 440

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO
05-19-75	2	010653-7

DIV	ASSEMBLY NUMBER	CO	REV	DWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	61370900	5	A	D	VIDEO DISPLAY ASSY	N	REL	05-14-75	LTAT	05-19-75

FIND NO	LI	PART NUMBER	CD	MC	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO NO. IN	ECO NO. OUT	S/N	WE IN	WE OUT
022	01	51452907	8		1	PC	CONN(PC-EDGE) 22 POSITIONS	P						
023	01	94219963	5		22	PC	CONTACT DUO TYNE FLAG 22 18GA	P						
024	01	51966001	6		2	PC	CONN PLUG 3 PIN	P						
025	01	51905R00	2		3	PC	PINS CONTACT	P						
026	01	93462444	8		4	FT	WIR 20GA STRD YEL 300V UL PVC	W						
027	01	93503333	2		4	146 FT	WIR 24GA STRD ORN 600V UL PVC	W						
028	01	61378200	2		REF	PC	W/L VIDEO DISPLAY	D						
029	01	94277409	2		5	PC	STRAP,CABLE TIE W.093 LG 4	P						
030	01	10125606	3		4	PC	WASHER FLT NO.8 STL CP	B						
031	01	10125605	5		3	PC	WASHER FLT NO.6 STL CP	B						
032	01	10127114	6		2	PC	SCREW MACH PAN HD 6-32X1/2 ST	B						
033	01	71468100	4		1	PC	SLEEVE LINEARITY CONTROL	P						
034	01	71447000	7		1	PC	GROUND STRAP	P						
035	01	24547501	7		1	PC	PLATE WARNING DANGER HV	P						
036	01	93462555	0		250	FT	WIR 20GA STRD GRN 300V UL PVC	W						
037	01	51707200	6		1	PC	TERM LUG RING CRMP 22-18 #6	P						
038	01	10125603	8		2	PC	WASHER FLT NO.4 STL CP	B						
039	01	10126101	4		2	PC	INT TOOTH LK WSHR #4	B						
040	01	10125103	1		2	PC	NUT MACH HEX STL CP 4-40	B						
041	01	24534706	7		125	FT	INS SLEEVE 1/8 BLACK	R						
042	01	94277400	1		2	PC	CABLE TIE STRAP 1/16-3/8 DIA.	P						

BUILD ARC 448

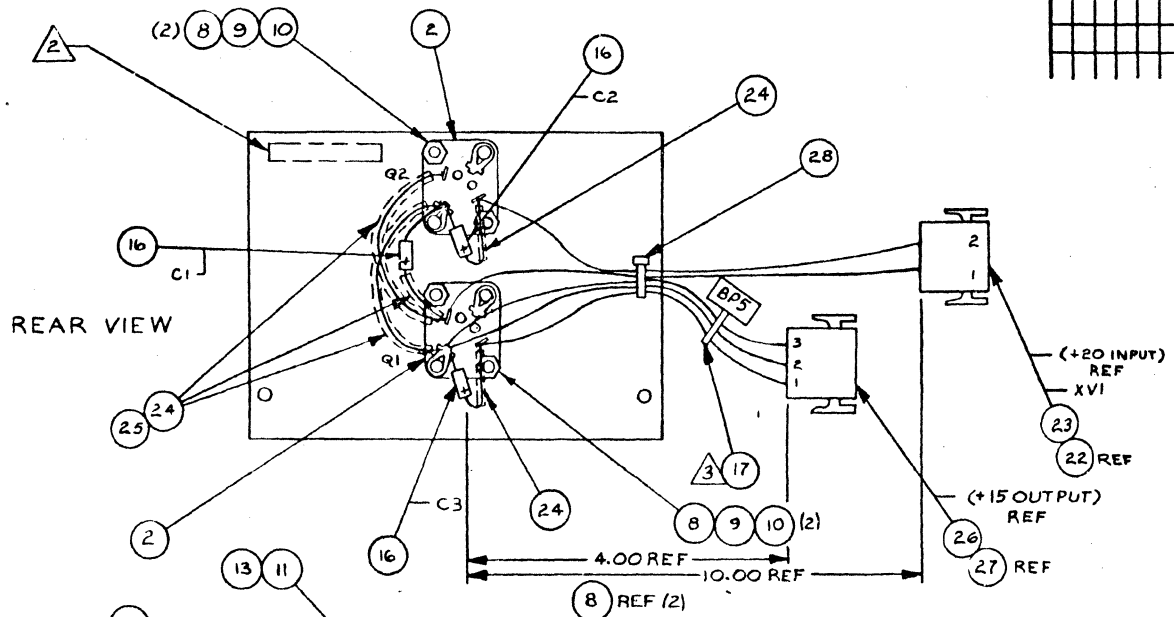
ASSEMBLY PARTS LIST

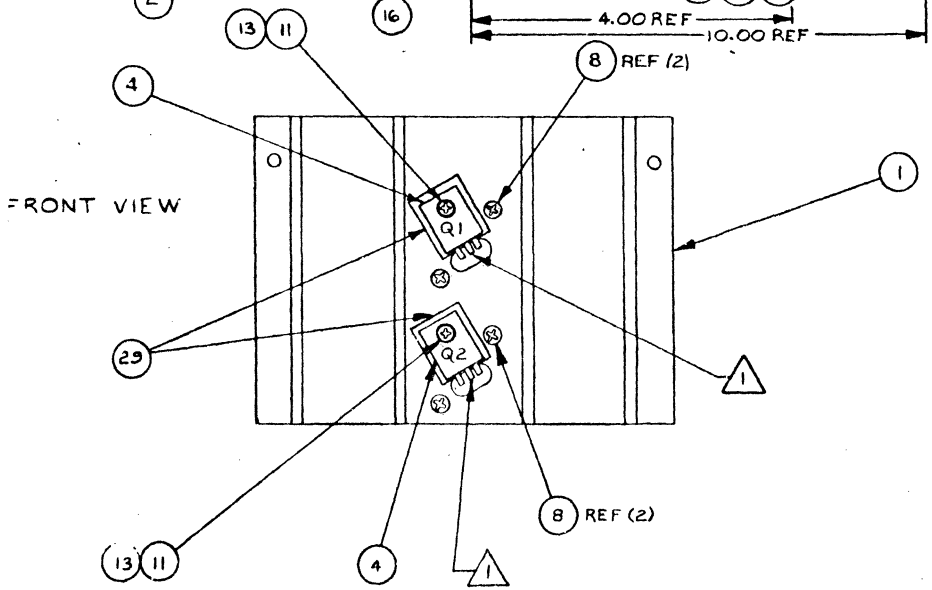
PRINT DATE	PAGE	FILE CHANGE NO.
05-19-75	3	0186B3-Y

DIV	ASSEMBLY NUMBER	CD	REV	PWG	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP	FILE DATE
0860	61370900	5	A	0	VIDEO DISPLAY ASSY	N	REL	05-14-75	LIAT	05-19-75

TRIND NO	LI	PART NUMBER	CD	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WE IN	WE OUT
						0042 TOTAL LINES							

SHEET REVISION STATUS	REVISION RECORD						
	REV	ECO	DESCRIPTION	DRFT	DATE	CHKD	APP
			RELEASED CLASS C				
	01	C026	REVISED REGULATOR		11-12-74		
	02	C227	UPDATE DWG WITH W/L		4-2-75		
	03	C240	ADDED INSULATORS, TIE STRAP		4/14/75		
	04	C252	P/N 4 WAS 15130511		4-16-75		
	A	10653-6	RELEASED CLASS A	—	9/9/75	—	





NOTES;

1. BREAK OFF CENTER PIN BEFORE MOUNTING.
2. MARK "ASSY 61376300" IN AREA SHOWN PER CDC SPEC 10121508.
3. APPLY LABLE TO CABLE PER CDC DWG 82191061, (METHOD 6). MARK AS SHOWN.
4. REFERENCE DESIGNATIONS ARE SHOWN FOR REFERENCE ONLY AND MAY NOT APPEAR ON PART.

61376300 B

62961200 A

L 61376300

DETACHED LISTS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES
3 PLACE ± / 2 PLACE ± / ANGLES ±
DO NOT SCALE DRAWING
MATERIAL
FINISH

CONTROL DATA

FIRST USED ON	CC614A	
DWN	M. Plastino	10/14/74
CHKD	R. Thornton	10-15-74
ENGR	ECO NEEDED	10/15/74
MFG		9/8/75
APPR		9-7-75

TITLE: +15 VOLT REGULATOR ASSY

CODE IDENT		DRAWING NO
15920	C	61376300

1/1 NH 6[illegible]900 / OF

BUILD ARC 220

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
05-12-75	1	010653-6

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61376300	2	A	C	REGULATOR ASSY(+15V)	A	REL	05-09-75	LTAT	05-12-75

T	FIND NO	LI	PART NUMBER	CD	M	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
	001	01	51906301	0		1	PC	HEAT SINK	P						
	002	01	94835100	2		2	PC	SOCKET TRANSISTOR TO-66	P						
	004	01	15151504	6		2	PC	IC +15V REG 35GF 7815	P						
	008	01	10127105	4		4	PC	SCREW MACH PAN HD 4-40X1/2	B						
	009	01	10126101	4		4	PC	INT TOOTH LK WSHR #4	B						
	010	01	10125103	1		4	PC	NUT MACH HEX STL CP 4-40	A						
	011	01	18607914	1		2	PC	SCREW THD/CUTTING 6-20X1/2P/H	P						
	013	01	51003967	1		AR	07	HEAT TRANSFER COMPOUND	B						
	016	01	24504333	6		3	PC	CAP FXD TANT 2.2UF 20P 35VDCW	P						
	017	01	94277409	2		1	PC	STRAP,CABLE TIE W.093 LG 4	P						
	019	01	61376400	0		REF	PC	W/L(REGULATOR ASSY +15V)	D						
	020	01	93463000	5		1	200 FT	WIR 18GA STRD BLK 300V UL PVC	W						
	021	01	93463222	5		1	500 FT	WIR 18GA STRD RED 300V UL PVC	W						
	022	01	51906200	4		2	PC	SOCKET CONTACTS	P						
	023	01	51906000	8		1	PC	CONN PLUG 2 PIN	P						
	024	01	51797420	0			400 FT	TURING INS TFT200/20	P						
	025	01	24501901	5			400 FT	WIRE BUSS 22GA SOLID CU TP	W						
	026	01	51905901	8		1	PC	CONN RECP 3 POS	P						
	027	01	51906204	6		3	PC	SOC CONT 20-14GA GOLD STRIP	P						
	028	01	94277400	1		1	PC	CABLE TIE STRAP 1/16-5/8 DIA.	P						
	029	01	51907804	2		2	PC	INSULATOR,PLASTIC FILM	B						

BUILD ARC 220

ASSEMBLY PARTS LIST

PRINT DATE	PAGE	FILE CHANGE NO.
05-12-75	2	010653-6

DIV.	ASSEMBLY NUMBER	CD	REV.	DWG.	DESCRIPTION	MC	STATUS	STATUS DATE	ENG. RESP.	FILE DATE
0860	61376300	2	A	C	REGULATOR ASSY(+15V)	A	REL	05-09-75	LTAT	05-12-75

T	FIND NO	LI	PART NUMBER	CD	M	QUANTITY	U/M	PART DESCRIPTION	MC	YLD	ECO. NO. IN	ECO. NO. OUT	S/N	WK IN	WK OUT
								0021 TOTAL LINES							

DWN	Plantenberg	10/15/74	CONTROL DATA	TITLE W/L +15 VOLT REGULATOR ASSEMBLY	PREFIX W/L	DOCUMENT NO 61376400	REV A
CHKD		10-15-74					
ENG		10-15-74					
MFG		10-22-74	CODE IDENT 15920	FIRST USED ON CC614A	NHA 61376300	SHEET 1 of 3	
APPR	E.O.G.	5-7-75					

SHEET REVISION STATUS

3	2	1
01	01	01
02	01	02
03	01	03
A	A	A

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		RELEASED CLASS		10-15-74	
01	C026	CHG W/L & REF DES.	11-5-74	11-12-74	ECB
02	C227	DELETED P/L	4-2-75	4-7-75	
03	C240	ADDED NOTE 1.	4-11-75	4/15/75	ECB
A	10653-6	RELEASED CLASS A	—	5/9/75	M.C.T.

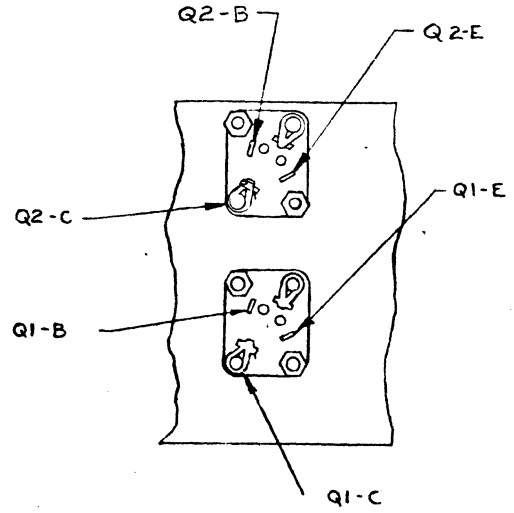
NOTES:
1. For Find Numbers identification, see APL 61376300.

DETACHED LISTS

AA3180 REV. 8-71

PRINTED IN U.S.A.

CONTROL DATA	CODE IDENT 15920	SHEET 2	A	DOCUMENT NO 61376400	REV A



REFERENCE DESIGNATION
WIRING VIEW

AA3185

PRINTED IN U.S.A.

		CODE IDENT 15920	SHEET 3	WL	DOCUMENT NO 61376400	REV A

CONDUCTOR IDENT	FIND NO	GAUGE (REF)	COLOR (REF)	LENGTH (APPROX)	ORIGIN		ACCESS FIND NO	DESTINATION		ACCESS FIND NO	REMARKS
1	21	18	2	10.0	Q1	B		XV1	1	22,23	+20
2	25	22	-	2.0	Q1	B		Q2	B	24,25	JUMPER
3	20	18	0	10.0	Q1	C		XV1	2	22,23	GRD
4	25	22	-	2.0	Q1	C		Q2	C	24,25	JUMPER
5	20	18	0	4.0	Q1	C		BPS	2	26,27	GRD
6	21	18	2	4.0	Q1	E		BPS	1	26,27	+15
7	21	18	2	4.0	Q2	E		BPS	3	26,27	+15

AA3183 REV. 6-70

PRINTED IN U.S.A.

CONTROL DATA	LIAT DISPLAY	CODE IDENT 15920	SHEET 2	SPL	DOCUMENT NO. 66248100	REV. W

FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED	UNIT OF MEAS		NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
1	51905600	1	PC	W	Transformer, Power	
2	51907303	1	PC	W	CRT, 12 inch, P4	
3	51907402	1	PC	S	Keyboard, 95 Key	△4
4	90393600	1	PC	S	P.C. Assy, 4BBD	5V Reg.
5	90445705	1	PC	S	P.C. Assy, 4BXD-4	Refresh
6	90442100	1	PC	S	P.C. Assy, 4BYD-1	Processor
7	90421700	1	PC	W	P.C. Assy, 4DWD	Filter & Reg.
8	90411600	1	PC	W	P.C. Assy, 4CKD	LED Panel
9	90417300	1	PC	W	P.C. Assy, 4DFD	LED Panel
10	90460619	1	PC	S	P.C. Assy, 6BND-0	CRT Monitor △3
11	90444900	1	PC	S	P.C. Assy, 5ACD-3	Memory, 4K
12	61401100	4	PC	S	Switch Rocker	2 Pos. SPDT
13	61401101	1	PC	S	Switch Rocker	3 Pos. SPDT
14	61401102	1	PC	S	Switch Rocker	2 Pos. SPDT Pwer.
15	61375200	1	PC	S	CABLE ASSY INTENSITY CONTROL	
16	61407437	1	PC	W	15V Regulator	T0199 package
17	61407419	1	PC	W	CHOKE ASSY	
18	61407418	1	PC	W	Yoke ASSY	
19	61374003	1	PC	W	AC Entry Panel 50HZ	
20	18797101	1	PC	S	SW Push Button	Momentary

AA3181 REV. 8/71 PRINTED IN U.S.A.

CONTROL DATA	LIAT DISPLAY	CODE IDENT 15920	SHEET 3	SPL	DOCUMENT NO. 66248100	REV W

FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED	UNIT OF MEAS		NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
21	51781602	1	PC	S	SW Slide	DPST
22	61401103	1	PC	S	Switch, Rocker	
23	61408075	1	PC	S	H.V. Xformer Assy	
24	58018602	1	PC	W	Pass Transistor	T03 package
25	15130504	1	PC	W	15V Regulator	T03 package
26	93418327	1	PC	S	FUSE 2.0A 250V	
27	51917050	1	PC	S	MAGNET ORANGE 1.5 GAUSS	
28	51917051	1	PC	S	MAGNET YELLOW 2.0 GAUSS	
29	51917052	1	PC	S	MAGNET SILVER 3.0 GAUSS	
30	51908902	1	PC	W	SONALERT	
31	51777314	4	PC	S	Support, Plastic P.C.	
32	51907405	1	PC	S	Keyboard 95 Key	△4
33	61407856	1	PC	W	CAP ASSY, CRT	
34	51915101	1	PC	W	KNOB PLAIN	
35	51004063	.1	OZ	W	ADHESIVE	
36	95637304	3	PC	S	DIODE, SIL 1N4004	
37	51899703	1	PC	W	FILTER RFI 5 AMP	
38	51907703	1	PC	W	C.B. WITH TRIP COIL	
39	51908602	1	PC	W	THMS, DISC 2.5 OHM	

AA3181 REV. 8/71 PRINTED IN U.S.A.

DWN	G CHURCH	10-14-75	CONTROL DATA	TITLE	PREFIX	DOCUMENT NO.	REV
CHKD				SPL PRINTER, SERIAL, THERMAL 60 Hz	SP	66294800	F
ENG	[illegible]	10/14/75		FIRST USED ON		SHEET 1 of 2	
MFG	P Pragman	10-15-75		CL114			
APPR	R. Ng	10/14/75	CODE IDENT 15920				
E.C.	B. T. Kaye	10/16/75					

SHEET REVISION STATUS

2	1
A	A
B	B
C	C
D	D
E	E
F	F

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
A	10842-26	RELEASED CLASS A	—	10/15/75	M.C.T.
B	CD11311	REVISED PER ECO	L	2/13/76	[illegible]
C	CD12225	REVISED PER ECO	L	6/21/77	[illegible]
D	13322	P/N 66295670 WAS 66295602	WJG 1-30-79	1-31-79	MCH
E	13515	CHG PG. 1 AND 2	MD 7/23/79	7-30-79	MCH
F	14119	REVISED PER ECO	MD 6-11-80	6-11-80	MCH

NOTES:

1. On site spare parts list for 60 Hz printer (CDC Dwg $19093xx) with Parity-Switch selectable.
2. To be used only in series code 03 and above units

DETACHED LISTS

AA3180 REV. 8/71 PRINTED IN U.S.A.

CONTROL DATA — SPARE PARTS LIST OF CL114 — CODE IDENT 15920 — SHEET 2 of 2 — PL — DOCUMENT NO. 66294800 — REV. F

FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED		UNIT OF MEAS	NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
			2			
1	66295666	1	1		Board Plug-In (Signal)	
2	66295670	1			Board Plug-In (Control)	
3	66295667	1			Frame Final Assy.	(Prntr Mech, Par Sw with Logic Bds)
4	66295604	1	1		Power Supply (60 Hz)	
5	66295671		1		Frame final assy with detachable cable	(prntr mech, par sw with logic bds)
6	66295672		1		Cable - interconnect	Detachable cable for prntr mech.
7	66295674		1		Board plug-In (Control)	
8	66295639	1			FUSE HOLDER	BODY AND CAP

AA3181 REV. 8/71 PRINTED IN U.S.A.

DWN	G. CHURCH	10 4 75	CONTROL DATA	TITLE	PREFIX	DOCUMENT NO.	REV
CHKD				SPL PRINTER, SERIAL, THERMAL 50 Hz	SP	66294700	F
ENG		10/4/75		FIRST USED ON		SHEET 1 of 2	
MFG		10-15-75		CL114			
APPR		10/14/75	CODE IDENT 15920				
E.S.							

SHEET REVISION STATUS

/	2
A	A
B	B
C	C
D	D
E	E
F	F

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
A	10842-26	RELEASED CLASS A	—	10/15-75	H.K.T.
B	CD11311	REVISED PER ECO	RC	2/12/76	[illegible]
C	CD12225	REVISED PER ECO	RC	6/21/77	[illegible]
D	13322	PAN 66295670 WAS 66295602	WJG 4-28-79	1-31-79	[illegible]
E	13515	CHG PG IN 2 PER ECO	BR 4/24/79	7-30-79	[illegible]
F	14119	REVISED PER ECO	MD 6-11-80	6-11-80	[illegible]

NOTES:

1. On site spare parts list for 50 Hz printer {CDC Dwg 519093xx} with Parity-Switch selectable.
2. To be used only in series code 03 and above units.

DETACHED LISTS

AA3180 REV. 8/71

PRINTED IN U.S.A.

CONTROL DATA	SPARE PARTS LIST FOR CL114	CODE IDENT 15920	SHEET 2 of 2	PL	DOCUMENT NO. 66294700	REV. F

FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED		UNIT OF MEAS	NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
			2			
1	66295666	1	1		Board Plug-In {Signal}	
2	66295670	1			Board Plug-In {Control}	
3	66295667	1			Frame Final Assy.	{Pntr Mech, Par Sw with logic bds.}
4	66295605	1	1		Power Supply {50 Hz}	
5	66295671		1		Frame final assy with detachable cable	{Pntr. Mech, PAR Sw with logic bds.}
6	66295672		1		Cable- interconnect	Detachable cable for pntr. mech.
7	66295674		1		Board plug-In {Control}	
8	66295639	1			FUSE HOLDER	BODY AND CAP

AA3181 REV. 8/71

PRINTED IN U.S.A.

DWN			CONTROL DATA	TITLE	PREFIX	DOCUMENT NO.	REV.
CHKD				LIAT TAPE CASSETTE	SPL	66266100	F
ENG				FIRST USED ON		SHEET 1 of 2	
MFG			CODE IDENT 15920	BE6A1A/C, BE6D3A/C			
APPR							

SHEET REVISION STATUS

																2	1
																A	A
																B	B
																B	C
																D	D
																E	E
																F	F

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		RELEASED CLASS C		9/2/75	
A	10653-41	RELEASED CLASS A		3/19/76	M.C.T.
B	CD11546	Added F/N's 9 thru 11	rt	5/9/76	
C	11568	REVISED PER ECO		6/2/76	
D	CD11587	Added F/N's 12 & 13	rt	7/24/76	
E	11723	F/N 7 WAS 90430900		9-28-76	
F	CD12624	ADD ITEMS 14,15,16		1-21-78	

NOTES:
1. Equipment Configurator 15627500 , 15627502, 15626600 & 15626602.
2. Top Level Assy 15627600 , 15627602 , 15626700 & 15626702.

DETACHED LISTS

AA3180 REV. 8/71 PRINTED IN U.S.A.

CONTROL DATA	CODE IDENT 15920	SHEET 2	SPL	DOCUMENT NO. 66266100	REV F

FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED	UNIT OF MEAS	NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
1	51915200	1		Cassette Drive	
2	51885400	1		Power Supply	
3	51886600	1		Fan 52 CFM 115 VAC	
4					
5	90432000	1		5BPD-0 P.C. Card	
6	90430600	1		5BJD P.C. Card	
7	90445760	1		5BKD-1 P.C. Card	
8	90431200	1		5BLD P.C. Card	
9	51906400	1		Sw, Rocker SPDT On-None-On	
10	51906401	1		Sw, Rocker SPDT On-Off-On	
11	51906404	1		Sw, Rocker SPDT On-None-(On)	
12	47464400	1		P.C. Board Assy	
13	47373100	1		P.C. Board Assy (+5V)	
14	51899703	1		Filter RFI 5A 115-275V SLD	
15	51908602	1		Thermistor-Disk 2.5 Ohm 10P 14 MW	
16	95587003	1		Circuit Breaker S-P 65 VDC 3 Amp	

AA3181 REV. 8/71 PRINTED IN U.S.A.

DWN	R TRAUTMAN	1/76	CONTROL DATA	TITLE SPL Cassette Option	PREFIX SPL	DOCUMENT NO. 66289200	REV. E
CHKD							
ENG		1/76					
MFG		3-15-76		FIRST USED ON XA185A , XA170A		SHEET 1 of 2	
APPR			CODE IDENT 15920				

SHEET REVISION STATUS

2	1
A	A
A	B
C	C
D	D
E	E

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
		Released Class C		1-22-76	GH
A	10653-39	RELEASED CLASS A		3/4/76	R.C.T.
B	11568	REVISED PER ECO	Mah	6/2/76	HMH
C	CD11587	F/N 1 was 90460000	rt	8/24/76	MD
D	CD11772	F/N 1 was 90445748	DAG	11/16/76	HH
E	CD12081	REVISED PER ECO	JM	3/8/77	DWG

NOTES:

1. Equipment Configurator 15627700,15626800.
2. Top Level Assembly 90445748

DETACHED LISTS

AA3180 REV. 8/71 PRINTED IN U.S.A.

CONTROL DATA	CODE IDENT 15920	SHEET 2	SPL	DOCUMENT NO. 66289200	REV. E

FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED	UNIT OF MEAS	NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
1	90445779			PC ASSY SAPD-4 Cassette Option Interface	

DWN			CONTROL DATA	TITLE	PREFIX	DOCUMENT NO.	REV.
CHKD				Edit Option	SPL	66289100/01	F
ENG				FIRST USED ON XA186A, XA174A, & XA174B		SHEET 1 of 3	
MFG			CODE IDENT 15920				
APPR							

SHEET REVISION STATUS

3	2	1	REV	ECO	DESCRIPTION	DRFT	DATE	APP
-	A	A	A	10653-25	RELEASED CLASS A		1/30/76	W.C.T.
-	A	B	B	CD11567	Revised per ECO	rt	5/	
-	C	C	C	CD11602	REVISED PER ECO	JM	7-22	
-	D	D	D	11890	REVISED PER ECO	EG	12-31-77	
E	E	E	E	CD12655	REVISED PER ECO	JM 1-20-78	WJH 1-24-78	
F	E	F	F	13883	P/N1 WAS 90430300	WJH 2-6-80		

NOTES:

DETACHED LISTS

AA3180 REV. 8/71

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CONTROL DATA	SPARE PARTS LIST XA186A XA174A XA174B	CODE IDENT 15920	SHEET 2	SPL	DOCUMENT NO. 66289100/01	REV. E

EQUIPMENT	SPL PIN
XA186A	66289100
XA174A	66289100
XA174B	66289101

CONTROL DATA	SPARE PART LIST XA186A XA174A	CODE IDENT 15920	SHEET 3	S PL	DOCUMENT NO. 66289100-01	REV. F

FIND NO.	PART IDENTIFICATION	XA174B QUANTITY REQUIRED 00	01	UNIT OF MEAS	NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
1	90446211	1	1	PC	CARD ASSY 5BHD	
2	90445769	1		PC	CARD ASSY 5CED-2	
3	90460827		1	PC	CARD ASSY 7B@D	

SECTION 8

SPARE PARTS LIST

This section contains the listing of parts which are to be maintained at the site as spares, and which are to be used in the repair of the terminal in the field.

DWN	R. Trautman	6.10.75	CONTROL DATA	TITLE: DISPLAY STATION 80 X 12 60HZ	PREFIX: SPL	DOCUMENT NO: 66248200
CHKD		6.11.75				REV: B
ENG		6/11/75		FIRST USED ON: CC6B1A		SHEET 1 of 3
MFG		6/11/75				
APPR		6/11/75	CODE IDENT 15920			
ES.		6/11/75				

SHEET REVISION STATUS

3	2	1
A	A	A
A	B	B

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
A	10653-B	RELEASED CLASS A	—	6/13/75	D.C.T.
B	CD10879	REVISED PER ECO	⊗	9/11/75	

NOTES:

SP LOC. CODES; W = WAREHOUSE; S = SITE.

DETACHED LISTS

AA3180 REV. B 71

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CONTROL DATA	LIAT DISPLAY	CODE IDENT 15920	SHEET 2	SPL	DOCUMENT NO 66248200	REV B

FIND NO	PART IDENTIFICATION	QUANTITY REQUIRED	UNIT OF MEAS		NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
1	51905600		1	W	Transformer, Power	
2	51907300		1	W	CRT, 12 inch, P4	
3	51907402		1	S	Keyboard, 95 Key	
4	90393600		1	S	P.C. Assy, 4B8D	5V Reg.
5	90441900		1	S	P.C. Assy, 4BXD-1	Refresh
6	90442100		1	S	P.C. Assy, 4BYD-1	Processor
7	90421700		1	W	P.C. Assy, 4DWD	Filter and Reg.
8	90411600		1	W	P.C. Assy, 4CKD	LED Panel
9	90417300		1	W	P.C. Assy, 4DFD	LED Panel
10	90410000		1	S	P.C. Assy, 4CDD	CRT Monitor
11	90442300		1	S	P.C. Assy, 5ACD-1	Memory
12	51906400		4	S	Switch Rocker	2 Pos. SPDT
13	51906401		1	S	Switch Rocker	3 Pos. SPDT
14	51906412		1	S	Switch Rocker	2 Pos. SPDT Pwr.
15	51899042		1	S	Bar Intensity Control	1 Meg.
16	61376300		1	W	15V Regulator	
17	51906800		1	W	Coil 320 MH	
18	51907000		1	W	Yoke Deflection	
19	61371104		1	W	AC Entry Panel 60 Cycle	
20	1A797101		1	S	SW Push Button	Momentary

AA3181 REV. B 71

PRINTED IN U.S.A.

	LIAT DISPLAY	CODE IDENT 15920	SHEET 3	SPL	DOCUMENT NO. 66248200	REV. A

FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED	UNIT OF MEAS		NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
21	51781602		1	S	SW Slide	DPST

AA2181 REV. 8/71

PRINTED IN U.S.A.

DWN	R. Trautman	6/10/75	CONTROL DATA	TITLE: DISPLAY STATION 80 X 12 50HZ	PREFIX: SPL	DOCUMENT NO: 66248100	REV: B
CHKD							
ENG							
MFG							
APPR			CODE IDENT 15920	FIRST USED ON: CC6B1B		SHEET 1 of 3	

SHEET REVISION STATUS

3	2	1
A	A	A
A	B	B

REVISION RECORD

REV	ECO	DESCRIPTION	DRFT	DATE	APP
A	10653-B	RELEASED CLASS A	—	6/13/75	M.T
B	CD10879	REVISED ITEMS 5, 6, & 11	⊗	9/11/75	DWB

NOTES:

SP LOC. CODES: W = Warehouse; S = SITE.

DETACHED LISTS

AA3182 REV. B 71

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CONTROL DATA	LIAT DISPLAY	CODE IDENT 15920	SHEET 2	SPL	DOCUMENT NO 66248100	REV B

FIND NO	PART IDENTIFICATION	QUANTITY REQUIRED	UNIT OF MEAS		NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
1	51905600		1	W	Transformer, Power	
2	51907300		1	W	CRT, 12 inch, P4	
3	51907402		1	S	Keyboard, 95 Key	
4	90393600		1	S	P.C. Assy. 4BBD	5V Reg.
5	90441900		1	S	P.C. Assy. 4BXD-1	Refresh
6	90442100		1	S	P.C. Assy. 4BYD-1	Processor
7	90421700		1	W	P.C. Assy. 4DWD	Filter & Reg.
8	90411600		1	W	P.C. Assy. 4CKD	LED Panel
9	90417300		1	W	P.C. Assy. 4DFD	LED Panel
10	90410000		1	S	P.C. Assy. 4CDD	CRT Monitor
11	90442300		1	S	P.C. Assy. 5ACD-1	Memory, 1K
12	51906400		4	S	Switch Rocker	2 Pos. SPDT
13	51906401		1	S	Switch Rocker	3 Pos. SPDT
14	51906412		1	S	Switch Rocker	2 Pos. SPDT Pwr.
15	51899042		1	S	Pot Intensity Control	1 Meg.
16	61376300		1	W	15V Regulator	
17	51906800		1	W	Coil 320 MH	
18	51907000		1	W	Yoke Deflection	
19	61374002		1	W	AC Entry Panel 50HZ	
20	18793101		1	S	SW Push B...	Momentary

AA3181 REV. B 71

PRINTED IN U.S.A.

[redacted]	LIAT DISPLAY	CODE IDENT 15920	SHEET 3	SPL	DOCUMENT NO. 66248100	REV. A

FIND NO.	PART IDENTIFICATION	QUANTITY REQUIRED	UNIT OF MEAS		NOMENCLATURE OR DESCRIPTION	SPECIFICATIONS, NOTES, OR MATERIAL
21	51781602		1	S	SW Slide	DPST

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TABLE A-1. COMMUNICATIONS LINE SIGNALS

DATA SET CONNECTOR PIN NUMBER	CCITT MODEM CIRCUIT	EIA MODEM CIRCUIT	SIGNAL NAME	ORIGIN
1	101	AA	Protective Ground	Modem/Terminal
2	103	BA	Transmitted Data	Terminal
3	104	BB	Received Data	Modem
4	105	CA	Request To Send (RTS)	Terminal
5	106	CB	Clear To Send (CTS)	Modem
6	107	CC	Data Set Ready (DSR)	Modem
7	102	AB	Signal Ground	Modem/Terminal
8	109	CF	Received Line Signal Detector (CO)	Modem
9			Unused	
10			Unused	
11			Unused	
12	122	SCF	Secondary Received Line Signal Detector (SCO)	Modem
13	121	SCB	Secondary Clear To Send (SCTS)	Not Used
14	118	SBA	Secondary Transmitted Data	Not Used
15	114	DB	Transmission Signal Element Timing	Not Used
16	119	SBB	Secondary Received Data	Not Used
17	115	DD	Receiver Signal Element Timing	Not Used
18			Unused	
19	120	SCA	Secondary Request To Send (SRTS)	Terminal
20	108	CD	Data Terminal Ready (DTR)	Terminal
21	110	CG	Signal Quality Detector	Not Used
22	135	CE	Ring Indicator	Not Used
23	111/112	CH/CI	Data Signal Rate Indicator	Not Used
24	113	DA	Transmit Signal Element Timing	Not Used
25			Unused	

TABLE B-1. CONTROL FUNCTION REPERTOIRE

MNEMONIC	HEXADECIMAL CODE	KEYBOARD OPERATION	DISPLAYED SYMBOL①	FUNCTION
NUL	00	CONTROL + @	N_U	Null background character. Transmitted in character mode. Stored in line or block modes.
SOH	01	CONTROL + A	S_H	Transmitted in character mode. Stored in line or block modes.
STX	02	CONTROL + B or STX key	S_X	Refer to the description of the STX key under Transmission Control Keys.
ETX	03	ETX key or SEND④ key	E_X	Refer to the description of the ETX key under Transmission Control Keys and to the description of the SEND key under Transmission Control Keys.
EOT	04	CONTROL + D	E_T	Transmitted in character mode. Stored in line or block modes.
ENQ	05	CONTROL + E	E_Q	Transmitted in character mode. Stored in line or block modes.
ACK	06	CONTROL + F	A_K	Transmitted in character mode. Stored in line or block modes.
BEL	07	CONTROL + G	B_L	Alarm sounds and code is transmitted in character mode. Code is stored in line or block modes.
BS	08	CONTROL + ← ② or ← key③	B_S	Refer to the description of the Backspace (←) key under Cursor Control Keys.
HT	09	CONTROL + I	H_T	Transmitted in character mode. Stored in line or block modes.
LF	0A	CONTROL + ↓ ③ or CONTROL + LINE FEED② or ↓ ③ or LINE FEED key③	N_L	Refer to the description of the LINE FEED key under Transmission Control Keys and to the description of the Cursor Down (↓) key under Cursor Control Keys.
VT	0B	CONTROL + K	V_T	Transmitted in character mode. Stored in line or block modes.
FF	0C	CONTROL + L	F_F	Transmitted in character mode. Stored in line or block modes.
CR	0D	CONTROL + CARRIAGE RETURN or CARRIAGE RETURN key	C_R	Refer to the descriptions of the CARRIAGE RETURN key under Cursor Control Keys and under Transmission Control Keys.

Notes:

① Displayed in line or block modes when the CONTROL key is pressed.

② Line, block, or format modes.

③ Character or batch modes.

④ Batch mode.

TABLE B-1. CONTROL FUNCTION REPERTOIRE (CONTD)

MNEMONIC	HEXADECIMAL CODE	KEYBOARD OPERATION	DISPLAYED SYMBOL①	FUNCTION
SO	0E	CONTROL + N or TAB SET +-SHIFT key	S_O	Transmitted in character mode. Stored in character, line, and block modes when highlighting option is installed. Refer to the description of the Highlighting Control Keys.
SI	0F	CONTROL + O or TAB SET + CONTROL or TAB SET key	S_I	Transmitted in character mode. Stored in character, line, and block modes when highlighting option is installed. Refer to the description of the Highlighting Control Keys.
DLE	10	CONTROL + P	D_L	Transmitted in character mode. Stored in line or block modes.
DC1	11	CONTROL + Q	D_1	Transmitted in character mode. Stored in line and block modes. Used as a Device Control key when the tape cassette option in installed. Refer to the description of the Device Control Keys.
DC2	12	CONTROL + R	D_2	Transmitted in character mode. Stored in line and block modes. Used as a Device Control key when the tape cassette option is installed. Refer to the description of the Device Control Keys.
DC3	13	CONTROL + S	D_3	Transmitted in character mode. Stored in line and block modes. Used as a Device Control key when the tape cassette option is installed. Refer to the description of the Device Control Keys.
DC4	14	CONTROL + T	D_4	Transmitted in character mode. Stored in line and block modes. Used as a Device Control key when the tape cassette option is installed. Refer to the description of the Device Control Keys.

Notes:

① Displayed in line or block modes when the CONTROL key is pressed.

② Line, block, or format modes.

③ Character or batch modes.

④ Batch mode.

TABLE B-1. CONTROL FUNCTION REPERTOIRE (CONTD)

MNEMONIC	HEXADECIMAL CODE	KEYBOARD OPERATION	DISPLAY SYMBOL①	FUNCTION
NAK	15	CONTROL + U or CONTROL + →③ or →key③	N_K	Refer to the description of the Skip (→) key under Cursor Control Keys.
SYN	16	CONTROL + V or CONTROL + LINE CLEAR or LINE CLEAR key④	S_Y	Refer to the description of the LINE CLEAR key under Clear Control Keys.
ETB	17	CONTROL + W	E_B	Transmitted in character mode. Stored in character, line, and block modes when highlighting option is installed. Refer to the description of the Highlighting Control Keys.
CAN	18	CONTROL + X or CONTROL + CLEAR② or CLEAR key③	C_N	Refer to the description of the CLEAR key under Clear Control Keys.
EM	19	CONTROL + Y or CONTROL + RESET③ or RESET key③	E_M	Refer to the description of the RESET key under Cursor Control Keys.
SUB	1A	CONTROL + Z or CONTROL + ↑③ or ↑ key③	S_B	Refer to the description of the Cursor Up (↑) key under Cursor Control Keys.
ESC	1B	ESC key	E_C	Transmitted in character mode. Stored in line or block modes.
FS	1C	CONTROL + M or FS key	F_S	Transmitted in character mode. Stored in line or block modes.
GS	1D	CONTROL + H or GS key	G_S	Transmitted in character mode. Stored in line or block modes.
RS	1E	CONTROL + J or RS key	R_S	Transmitted in character mode. Stored in line or block modes.
US	1F	CONTROL + C or US key	U_S	Transmitted in character mode. Stored in line or block modes.

Notes:

① Displayed in line or block modes when the CONTROL key is pressed.

② Line, block, or format modes.

③ Character or batch modes.

④ Batch mode.

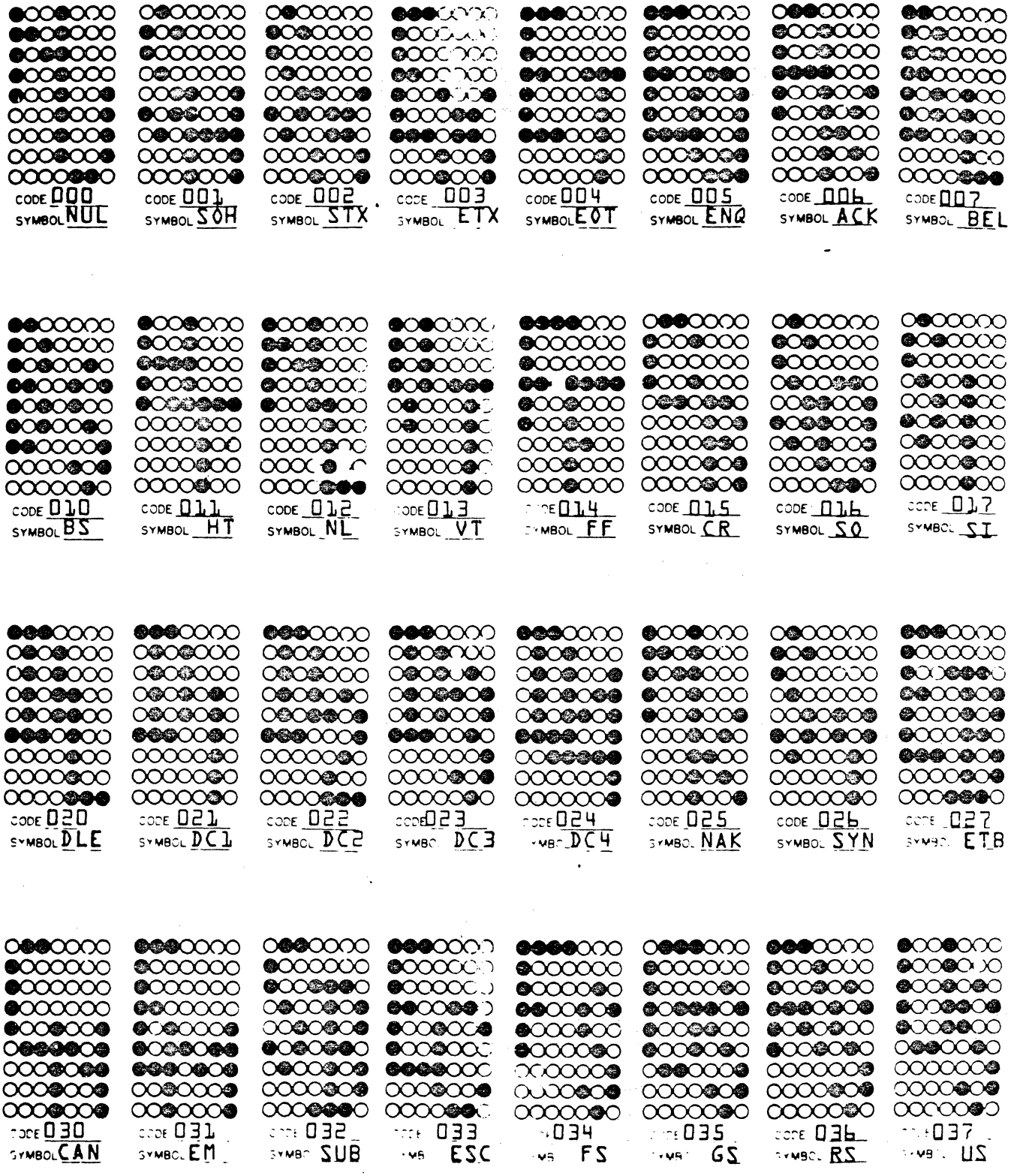

Figure B-1. Control Code Symbols

COMMENT SHEET

MANUAL TITLE: 92451-1 Terminal Subsystem, Volume 1 of 2 Hardware Maintenance Manual

PUBLICATION NO.: 62961200 REVISION: H

NAME:_____

COMPANY:_____

STREET ADDRESS:_____

CITY:_____ STATE:_____ ZIP CODE:_____

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