Manual 325-077
January 1982

TELETYPEWRITER COMPATIBLE

dataspeed® 40/2 TERMINALS

SERVICE MANUAL

SERVICE MANUAL

FOR

TELETYPEWRITER COMPATIBLE "DATASPEED*" 40/2

For DATASPEED 40 components refer to Service Manual 325-073.

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Printed in U.S.A.

TELETYPEWRITER COMPATIBLE "DATASPEED*" 40/2

DESCRIPTION AND OPERATION

CONTENTS

1. GENERAL

1.01 This practice covers the Teletypewriter Compatible DATASPEED 40 (DATASPEED 40/2) Station Arrangements, and provides the information necessary to identify DATASPEED 40/2 and associated equipment (supplemental information is referenced and necessary).

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 Before installation, determine the station configuration.

1.04 When ordering or referring to components, unless otherwise specified, prefix each part number with the letters "TP" (ie, TP410055).

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Prepared for American Telephone and Telegraph Company by Teletype Corporation

2. SUPPLEMENTAL INFORMATION

BSP Sections

582-200-202 Installation (40/2)
582-200-402 Wiring (40/2)
582-200-502 Testing and Troubleshooting (40/2)
582-200-702 Disassembly/Reassembly and Parts (40/2)
582-200-752 Routine Maintenance (40/2)
582-210-Series 80-Column and 132-Column Printer
582-211-Series DATASPEED 40 Operator Console
582-213-Series DATASPEED 40 Display Monitor
582-214 Series DATASPEED 40 PSU101 Power Supply
999-300-121 How To Operate Manual (DATASPEED 40/1, 40/2 and 40/3)
999-301-121 How To Operate Manual (DATASPEED 40 Printer)

3. AC POWER AND ENVIRONMENTAL REQUIREMENTS

3.01 Currents and power shown are maximum values based on power company supplied voltages within the limits:

115 ±10% volts ac 60 Hz ±0.45 Hz

3.02 The starting current for the DATASPEED 40/2 is as follows (see Note 1):

KD Terminal	20 amp (see Note 2)
KDP Terminal	25 amp (see Note 2)

Note 1: A single circuit, fused at 10 amps, has been found capable of withstanding the starting load of a KD without data sets.

Note 2: Worst case conditions; for up to 3 cycles.

3.03 The following are the requirements for operating power and heat generation:

	Running Current	Watts	BTU
KD Terminal	2.7 amp	260	885
KDP Terminal — Printer Idle	2.9 amp	275	940
KDP Terminal — Printer Operating	4.5 amp	360	1230

3.04 Environmental conditions should be maintained within the following limits to avoid damage and provide proper operation.

ENVIRONMENTAL CONDITION	STORAGE OR TRANSPORTATION MIN	STORAGE OR TRANSPORTATION MAX	OPERATION MIN	OPERATION MAX
Temperature	-40°F	+150°F	+40°F	+110°F
Humidity	2%	95%	2%	95%
Altitude	Sea Level	50,000 ft	Sea Level	10,000 ft

Note: As with any device that can be damaged by water, sudden temperature changes that can cause condensation should be avoided.

Example: A device stored in subzero temperatures will collect frost when unpacked in a warm humid room.

4. STATION IDENTIFICATION

4.01 The DATASPEED 40/2 consists of four basic station arrangements:

KD (Keyboard Display)
KDP (Keyboard Display With Printer)
KD-ROP (Keyboard Display With Receive-Only Printer) (See Note 2)
ROP (Receive-Only Printer) (See Note 1)

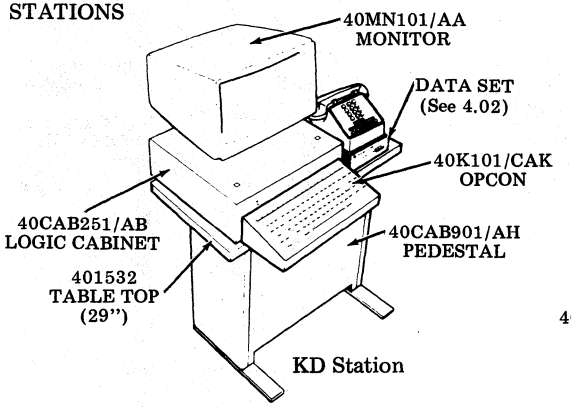
Note 1: The stand-alone ROP used in DATASPEED 40/2 applications is the Integrated ROP Station. Information on the Intergrated ROP Station is found in the following BSPs (until these BSPs are available, use FIMP Section 579-505-350):

582-200-104 General Description
582-200-204 Installation
582-200-404 Wiring Diagrams
582-200-504 Testing and Troubleshooting
582-200-704 Component Access and Parts
582-200-754 Routine Maintenance
999-301-121 How To Operate Manual (DATASPEED 40 Printer)

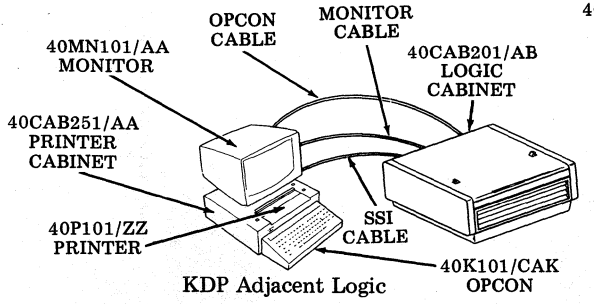
Note 2: The ROP used in the KD-ROP Station arrangement may be either the Integrated ROP referred to in Note 1, or the ROP equipped with a 40C103/AD or 40C103/AE controller which can only be used at 1200 baud in a DATASPEED 40/2 KD-ROP Station. Information on this ROP can be found in the following BSPs:

579-505-350 FIMP (DATASPEED 40/1 Terminals)
582-200-100 General Description
582-200-200 Installation
582-200-400 Wiring Diagrams
582-200-500 Testing and Troubleshooting
582-200-700 Component Access and Parts
582-200-750 Routine Maintenance
999-301-121 How To Operate Manual (DATASPEED 40 Printer)

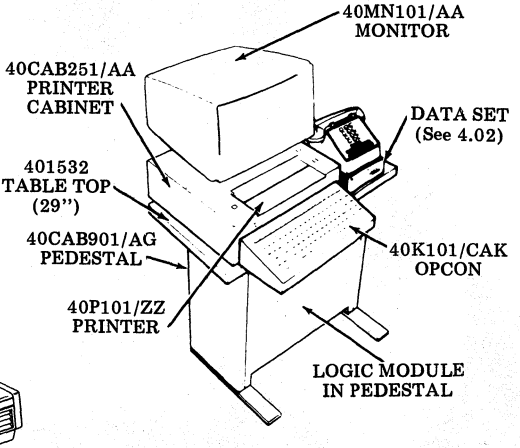
STATIONS



KD Station

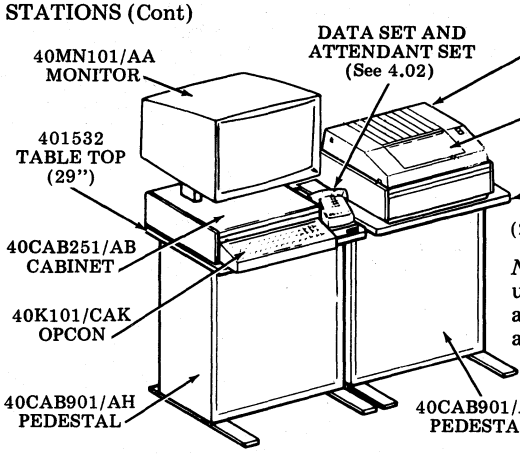


KDP Adjacent Logic



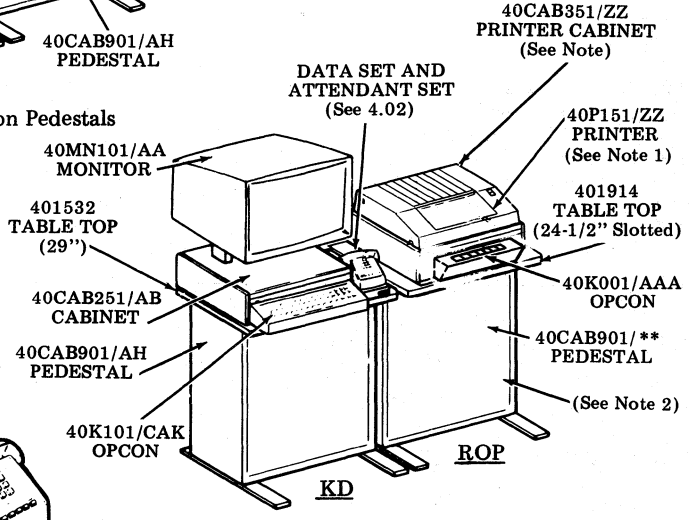
KDP Station

STATIONS (Cont)



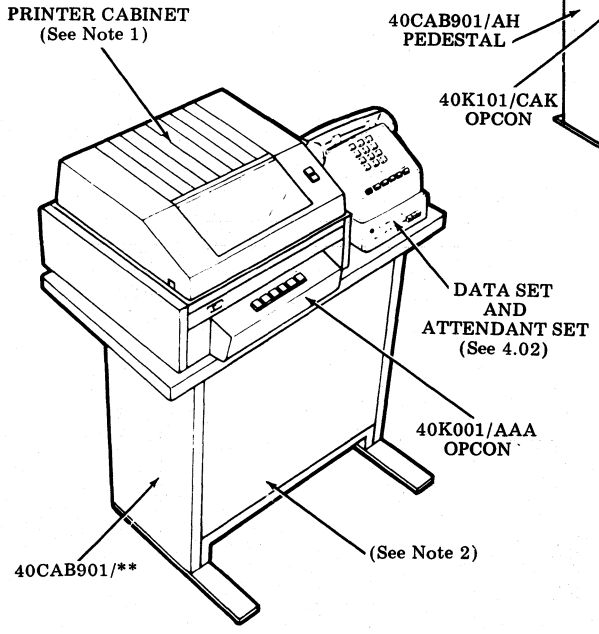
Note 1: This arrangement may also use friction feed or 132-column printer and cabinets. (Codes will vary for each arrangement.)

KDP Station W/Tractor Printer on Pedestals



KD-ROP Station

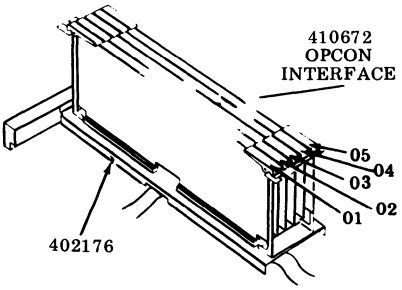
Note 2: The controller of an ROP may be a 40C103/AD, 40C103/AE, or integrated controller (see Note 2 after 4.01).



ROP Station

CIRCUIT CARD ARRANGEMENTS

A. Controller Logic



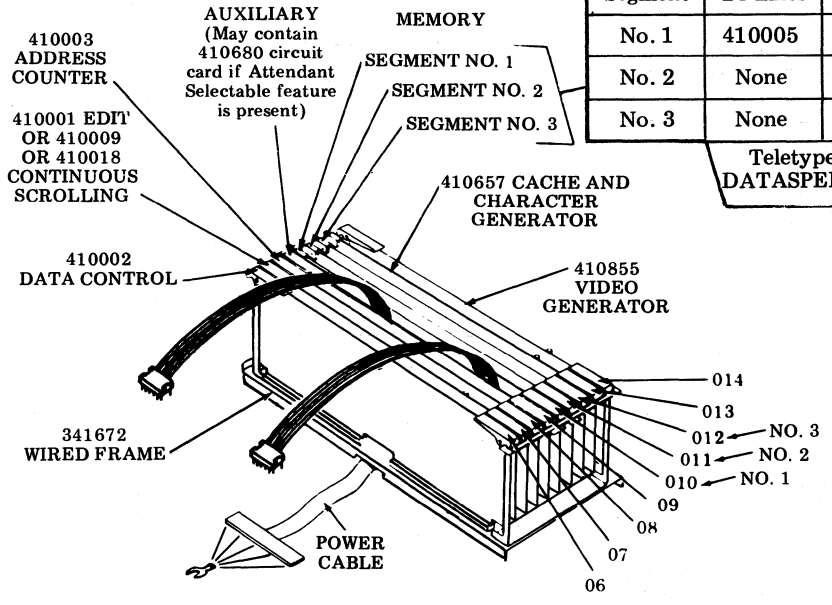
Full Editing — Teletypewriter Compatible — EIA (Electronic Industries Association)

Position Number	KD/KDP Controller Arrangements 40C204/BA	Circuit Card Description
01	410770**	Printer Access
02	410679	Full Duplex Interface
03	410676	Send Variations
04	410675	Message Control
05	410674	Data Bus and Decode
Frame Number	402176*	

*This wired frame together with the proper circuit cards, can be used to make up the controller arrangement for replacement purposes.

**Not present on sets without printer or conversational (S/R) mode. 410770 card is not part of 40C204/BA, but is part of USOC ordering codes for DATASPEED 40/2.

B. Display Logic



DISPLAY LOGIC ARRANGEMENTS (40DL291/ZZ)			
Memory Segment	Full Edit 24 Lines	Full Edit 48 Lines	Full Edit 72 Lines
No. 1	410005	410005	410005
No. 2	None	410005	410005
No. 3	None	None	410005

Teletypewriter Compatible DATASPEED 40/2 (40C204/BA)

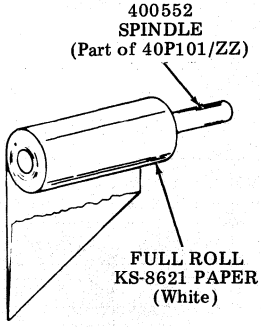
DATA SETS

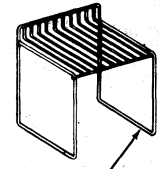
4.02 The following data sets are used in DATASPEED 40/2 applications.

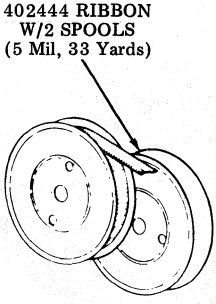
DATA SET	MAXIMUM BAUD RATE	HOW TO OPERATE MANUAL
103G	300	999-311-121
103J	300	999-312-121
103A3	300	999-313-121
113A	300	999-314-121
202C	1200	999-316-121
202R	1200	999-318-121
202S	1200	999-319-121
202T	1200	999-320-121
201C (See Note)	2400	999-315-121
208A (See Note)	4800	999-317-121

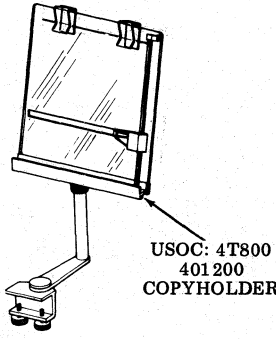
Note: Use of Data Sets 201C and 208A require use of the 402320 modification kit.

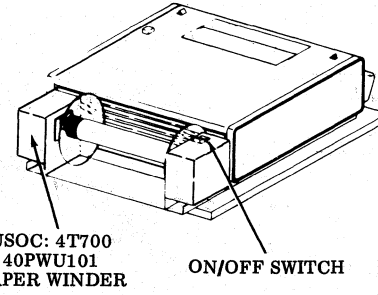
5. DEVICES AND ACCESSORIES











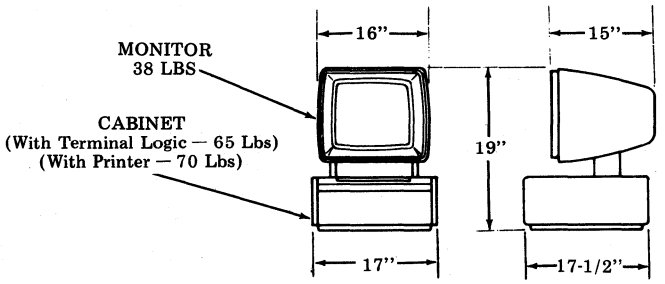
5.01 Modification kits and accessories that may be used with the DATASPEED 40/2 are listed in Table A, along with references to BSPs and 50,000 specifications. The 50,000 specifications are supplied with the modification kit or may be ordered from Teletype Corporation.

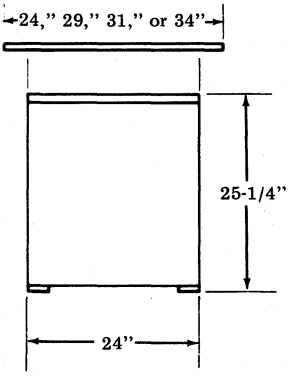
TABLE A

MODIFICATION KITS AND ACCESSORIES

DESCRIPTION	REFERENCE
345630 EIA Switch Assembly	582-001-100
402178 Modification Kit — Data Set 113A or 113D Interfacing	50822S
402180 Modification Kit — 20/60 mA Interface	50835S
402231 Modification Kit — 115 V Output — 100 V Input	50837S
402307 Modification Kit — Video Blanking of Control Characters	50855S
402310 Modification Kit — Preparatory Send Mode and Even Parity Generation/Detection	50845S
402315 Modification Kit — 410018 Circuit Card Operation With 410001	50851S
402316 Modification Kit — 410018 Circuit Card Operation With 410009	50851S
402320 Modification Kit — Isochronous Operation With Synchronous Data Sets	50848S
402325 Modification Kit — Alteration of Line Disconnect, Reverse Channel, and Printer Motor Control Features	50849S
402850 Modification Kit — Multiple Form Printing Without Ink Ribbon	50847S
403378 Modification Kit — Connector Adapter for Current Loop Interface	582-200-402
403380 Modification Kit — Multicopy or Fanfold Paper (Friction Feed)	50815S
403399 Modification Kit — Attendant Selectable Features (Pedestal Mount)	50847S
403400 Modification Kit — Attendant Selectable Options	50825S
403570 Modification Kit — Lagging Power Factor Correction	9555WD
407414 Modification Kit — DC1, DC3, and EOT Features (410674 Card)	50843S
408045 Modification Kit — Cable Mounting and Storage in Cabinet	50802S
408050 Modification Kit — Beltless Ventilation Assembly	50820S
40AB101/AA — Answer-Back Unit	582-001-101

6. COMPONENT SPACE REQUIREMENTS AND WEIGHTS

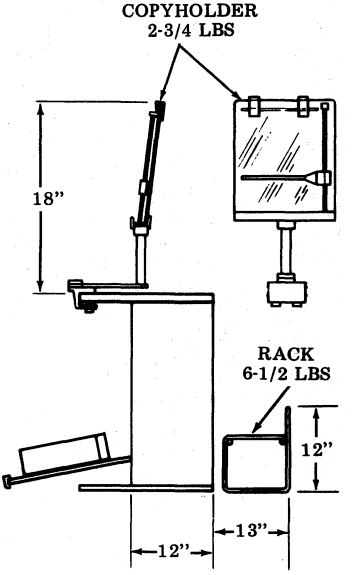


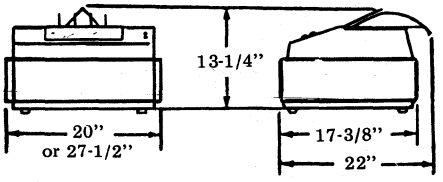


PEDESTAL (No Controller)

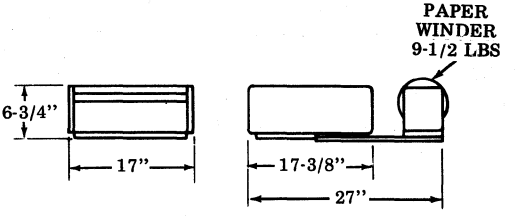
WITH 24" TOP — 53 LBS
WITH 29" TOP — 54 LBS
WITH 31" TOP — 54 LBS
WITH 34" TOP — 55 LBS

PEDESTAL
(With Terminal Logic — Add 50 Lbs)

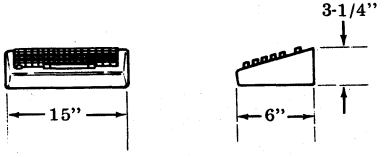




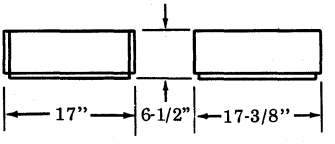
PRINTER IN CABINET
(80- or 132-Column Tractor Feed)
85 LBS OR 108 LBS



PRINTER IN CABINET
(Friction Feed)
55 LBS



OPCON
7-1/2 LBS



LOGIC (Table Top) — 65 LBS

7. THEORY OF OPERATION

7.01 The DATASPEED 40/2 contains several functional components which combine to form a KD or KDP. The 40C204 controller is the central unit which interfaces with the opcon, display logic, printer and the input/output port (data set or current loop).

CONTROLLER INTERFACES

7.02 The basic function of the controller is to provide the proper interface between the various devices that comprise the terminal and between the terminal and a data set or current loop. Therefore, the following interfaces are supplied by the controller.

A. Data Set Interface

7.03 Two data set interface options are available in the controller. The 202-type data set option interfaces medium and high speed data sets, and is shown in Table B for 202-type data sets and Table C for 201C and 208A Data Sets. The 103-type data set option interfaces with low speed data sets and is shown in Table D for 103-type data sets and Table E for 113-type data sets. Operating speed, however, is independent of the type of data set interface selected, ie, separate options must be selected to establish operating speed and data set signaling protocol.

7.04 The controller interface to a data set is made at connector JC3 on the rear apron of the controller. Interface signaling is compatible with EIA Standard RS-232-C. All output signals in this interface will be +5 V dc to +12 V dc to represent and "on" condition for control signals and a "space" condition for data signals. An "off" condition or a "mark" will be represented by a voltage level of -5 V dc to -12 V dc with respect to signal ground.

7.05 The pin assignment in the data set connector deviates from the RS-232-C standard in that both pin 11 and 19 are tied together within the controller to accommodate data sets equipped with the STD signal on either pin. On pin 23, an additional lead has been added to the interface to provide a control signal to be used when a Teletype Model 4210 Magnetic Tape Terminal is being used with the DATASPEED 40/2.

B. Current Loop Interface

7.06 An interface is provided in the controller to allow the terminal to communicate on a 20 or 60 milliampere current loop circuit (see 5.13). The controller can be optioned to allow the current loop to be the sole interface or to use it in conjunction with the Data Set 103 interface if provision is made to prevent simultaneous transmissions to the terminal. As with the data set interfaces, the current loop interface is independent of operating speed provided the transmission line will not greatly degrade the signal.

7.07 The interface between the controller and a current loop is available at the JC4 connector located at the rear apron of the controller's module.

7.08 Since the keyer circuitry is referenced to the controller's frame ground, it is necessary that both the dc current source and all other devices attached to the loop be isolated from earth ground.

7.09 The current loop interface circuits can be used in loops with potentials up to 125 V dc and currents of up to a maximum of 100 milliamperes.

7.10 If the current loop is not used simultaneously with a data set interface, a 403378 connector adapter plug must be inserted into the JC3 data set connector. (See 5-17.)

TABLE B

202-TYPE DATA SET INTERFACE

Pin No.	Lead Designations
1	Protective Ground (AA)
2	Transmitted Data (BA)
3	Receive Data (BB)
4	Request to Send (CA)
5	Clear to Send (CB)
6	Data Set Ready (CC)
7	Signal Ground (AB)
8	Data Carrier Detector (CF)
9	Spare
10	Spare
11	Supervisory Transmitted Data (SA)*
12	Supervisory Received Data (SB)
13	Spare
14	Spare
15	Spare
16	Spare
17	Spare
18	Spare
19	Spare
20	Data Terminal Ready (CD)
21	Spare
22	Ring Indicator (CE)
23	Spare
24	Spare
25	Spare

*RS-232-C uses pin 19 as STD. Controller internally connects pin 11 and pin 19.

Data and Control Circuits in Accordance With EIA RS-232-C

Voltage	Control	Line Signal	Binary State
-5 V to -25 V	Off	Mark	1
+5 V to +25 V	On	Space	0

TABLE C

201C AND 208A DATA SET INTERFACE
(See Note)

Pin No.	Lead Designations
1	Protective Ground (AA)
2	Transmitted Data (BA)
3	Receive Data (BB)
4	Request to Send (CA)
5	Clear to Send (CB)
6	Data Set Ready (CC)
7	Signal Ground (AB)
8	Data Carrier Detector (CF)
9	Spare
10	Spare
11†	Equalizer Mode (QM)
12	Spare
13	Spare
14	New Synch (SBA)
15	Transmit Timing (DB)
16	Divided Transmit Timing (DCT)
17	Receive Timing (DD)
18	Divided Receive Timing (SBB)
19‡	Remote Release (RR)
20‡	Data Terminal Ready (CD)
21	Signal Quality Detector (CQ)
22	Ring Indicator (CE)
23	Spare
24	Trans. Timing, External Source (DA)
25	Spare

†Not on 201-type data set.
‡Not on 208-type data set.

Note: Requires 402320 modification kit for isochronous operation.

Data and Control Circuits in Accordance With EIA RS-232-C

Voltage	Control	Line Signal	Binary State
-5 V to -25 V	Off	Mark	1
+5 V to +25 V	On	Space	0

TABLE D

103-TYPE DATA SET INTERFACE

Pin No.	Lead Designations
1	Protective Ground (AA)
2	Transmitted Data (BA)
3	Receive Data (BB)
4	Request to Send (CA)
5	Clear to Send (CB)
6	Data Set Ready (CC)
7	Signal Ground (AB)
8	Data Carrier Detector (CF)
9	Reserved for Testing
10	Reserved for Testing
11	Spare
12	Spare
13	Spare
14	Spare
15	Spare
16	Spare
17	Spare
18	Spare
19	Spare
20	Data Terminal Ready (CD)
21	Spare
22	Ring Indicator (CE)
23	Spare
24	Spare
25	Spare

Data and Control Circuits in Accordance With EIA RS-232-C.

Voltage	Control	Line Signal	Binary State
-5 V to -25 V	Off	Mark	1
+5 V to +25 V	On	Space	0

TABLE E

113-TYPE DATA SET INTERFACE

Pin No.	Lead Designations	
1	Protective Ground (AA)	
2	Transmitted Data (BA)	
3	Receive Data (BB)	See Note
4	Request to Send (CA)	
5	Clear to Send (CB)	
6	Data Set Ready (CC)	
7	Signal Ground (AB)	
8	Data Carrier Detector (CF) (Data Set 113A Only)	
9	Not to be Used	
10	Not to be Used	
11	Spare	
12	Spare	
13	Spare	
14	Spare	
15	Spare	
16	Spare	
17	Spare	
18	Spare	
19	Spare	
20	Data Terminal Ready (CD)	
21	Spare	
22	Ring Indicator (CE)	
23	Spare	
24	Spare	
25	Spare	

Note: Pins 4 and 5 may be strapped together in data set.

Data and Control Circuits in Accordance With EIA RS-232-C.

Voltage	Control	Line Signal	Binary State
-5 V to -25 V	Off	Mark	1
+5 V to +25 V	On	Space	0

The 402178 modification kit must be used with the 113-type data set.

C. Opcon Interface

7.11 The controller interface with the opcon allows the terminal operator to either enter data locally into the display logic or to type data directly onto the output interface in the S/R mode.

7.12 The interface between the opcon and the controller is in the form of Teletype's Standard Serial Interface (SSI). With this system, all information is transmitted on two pairs of signal leads. The receive pair is designated as INFORMATION TO CONTROLLER, ITC, and its complementary signal INFORMATION TO CONTROLLER, $\overline{\text{ITC}}$. Similarly, the send pair is INFORMATION TO DEVICE, ITD, and INFORMATION TO DEVICE, $\overline{\text{ITD}}$. All information is transmitted in the form of 18 bit words. Each word consists of a start bit, steering bit, 7 ASCII information bits, a flag bit and a parity bit. The remaining 7 bits that form the word are sent as MARKS.

7.13 The send pair, ITD and $\overline{\text{ITD}}$, is constantly transmitting either lamp or status (alarm) information from the CL to the opcon. Again, the information is in the form of an 18 bit word composed of a start bit, steering bit, 6 bits for the lamp address and two bits for the lamp condition (lamp on or off). The remaining bits are transmitted as MARKS.

7.14 As stated above, the serial data information is present on a pair of leads, a true and a complement. Together these leads form a 1 volt P-P signal level between the signal pair. These signals are transformer isolated at each end of the cable. Transmission is at a rate of 56 kilobits/second, resulting in a bit time of 17.9 microseconds and a word time of 321 microseconds. To indicate a SPACE, or ON condition for control bits, the data leads change state during the midpoint of a bit time. The absence of a transition during this time would be interpreted as a MARK for data or an OFF condition for control bits.

D. Display Logic Interface

7.15 The input/output port and the opcon are interfaced to the Display Logic (DL) through the controller. The display logic functions as a receiver for data from the opcon in the local mode and as a sender or receiver for data in the on-line operating modes.

7.16 The interface between the controller and DL consists of 20 leads. All signals are DTL (Diode Transistor Logic) levels. Data and character control signals are bidirectional while mode control signals are inputs to the display logic. Signals are transported by a 341740 cable between the 410674 circuit card in the controller and the 410002 circuit card in the display logic.

E. Printer Interface

7.17 A DATASPEED 40/2 printer may be interfaced to the controller when the optional 410770 independent printer access circuit card is used. Interfacing can be either EIA in a KD-ROP combination or SSI in a KDP arrangement. Use of the EIA interface (KD-ROP) restricts the terminal operating speed to that of the RO printer, whereas the SSI interface allows the full range of operating speeds provided incoming data to the terminal is properly formatted with regard to the printer's line feed rate.

7.18 The controller can interface with a printer using either an SSI interface or an EIA type interface. Either interface is available at the JC4 connector on the rear apron of the controller.

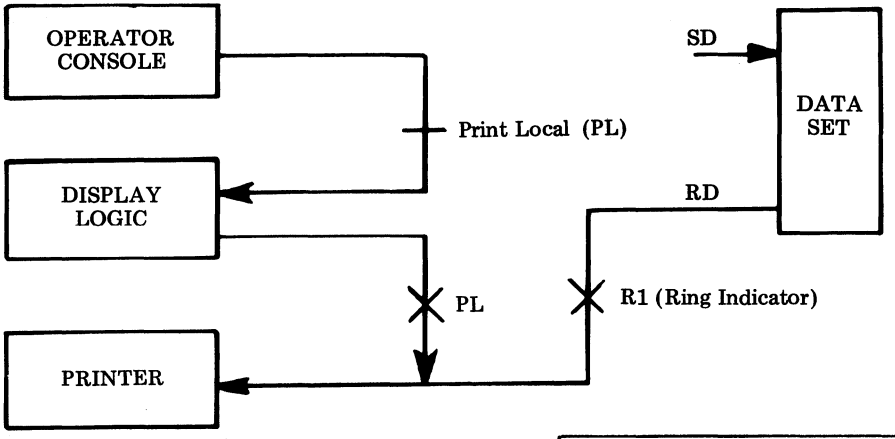
7.19 The SSI interface operates in a manner similar to that described for the opcon interface. Character transfer is on a demand-response basis.

7.20 When the EIA printer interface is used, the controller simulates a data set interface to the printer. The controller would supply the printer with the Data Set Ready, Data Carrier Detect and Receive Data signals while the printer would present the Data Terminal Ready and Supervisory Transmitted Data signals to the controller. Character transfer can be controlled by the printer through the use of the Reverse Channel (STD) lead provided the data input source to the controller is capable of responding to a reverse channel signal. Transmission speed is at the rate selected as the controller's input/output transfer rate. In the print local mode, transfer is at a rate of 1200 baud (see 7.32).

DESCRIPTION OF STATION OPERATING MODES

A. Local Mode

7.21 In the local mode (Fig. 1), the controller interfaces the opcon to the display logic. This "off-line" mode allows the terminal operator to prepare or edit information to be stored in the display logic and displayed on the monitor prior to transmission to the the line or a local printer. The terminal is in the local mode when the lamp is lighted in the LOCAL switch keytop on the opcon. Printer access in the local mode is discussed in 7.32.



OPERATOR CONSOLE INDICATORS "ON"			
SEND	REC.	LOCAL	S/R
—	—	X	—

Fig. 1—Local Mode

B. Receive Mode

7.22 In the receive mode (Fig. 2), the controller interfaces the input data line to the display logic. In this mode, the opcon is blinded except for the mode select keys. All data received from the line will appear on the monitor, unless one of the "Reject" options is being used. See Section 582-200-202 for descriptions of available options.

Note: S/R Operation, as described in 7.25, may allow the opcon to be active even though the receive mode lamp is on.

C. Send Mode

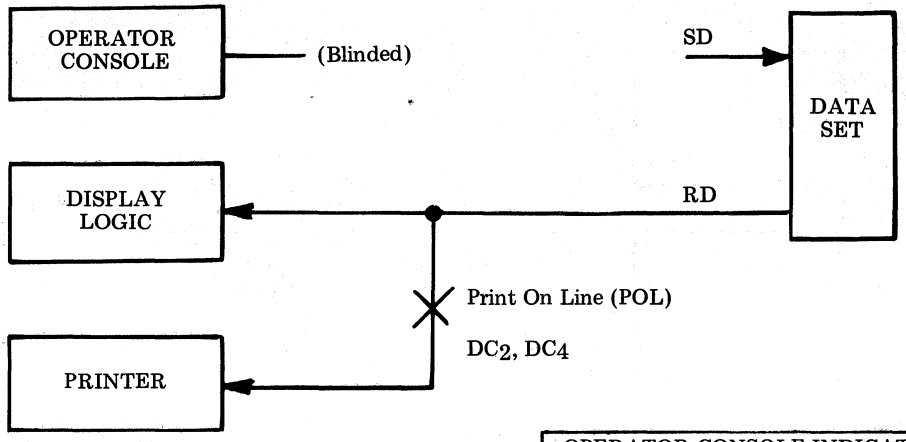
7.23 The send mode (Fig. 3), allows the information stored in the display logic to be transmitted to the output interface. The controller regulates the transfer of characters out of the DL to match the transmission rate. Further, data may be modified enroute to the output interface to provide optional transmission features, or send variations, such as special treatment of protected or highlighted data fields, horizontal tabbing operation and line ending sequences. (Refer to Section 582-200-202 for descriptions of controller options.)

D. Form Send Mode

7.24 This mode is similar in operation to the send mode described above with the exception that the send variation options are defeated and all information from the DL is transmitted as displayed including the field delimiters. This mode is indicated by the lamp in the FORM SEND keytop on the opcon. Operation of the FORM SEND and SEND keyswitches are required to initiate the form send mode. After the message has been transmitted, the form send mode will automatically be terminated when the terminal is placed into the local mode.

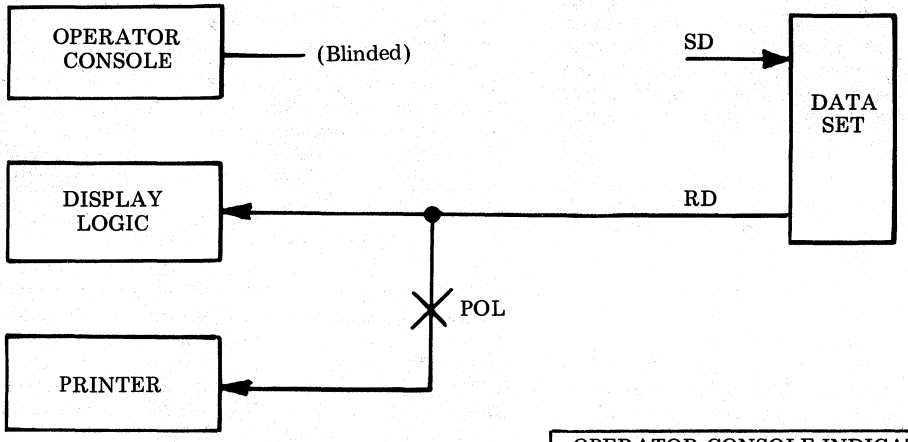
E. S/R Mode (Conversational Mode)

7.25 The S/R mode (Fig. 4) is a send-receive or conversational mode in that the terminal operator may communicate, on-line, on a character-at-a-time basis rather than in the send mode as previously described where communication is on a "batch" basis for mass transmission of previously prepared data. This mode provides Full Duplex (simultaneous two way communications) or Half-Duplex (alternate two-way communication) operation thereby making the terminal compatible with most existing teletypewriter systems. Full or Half-Duplex operation is selectable as a terminal operation. The S/R mode is selected either by the terminal operator or by transmission on-line in the batch send mode of the ASCII Control Character DC3.



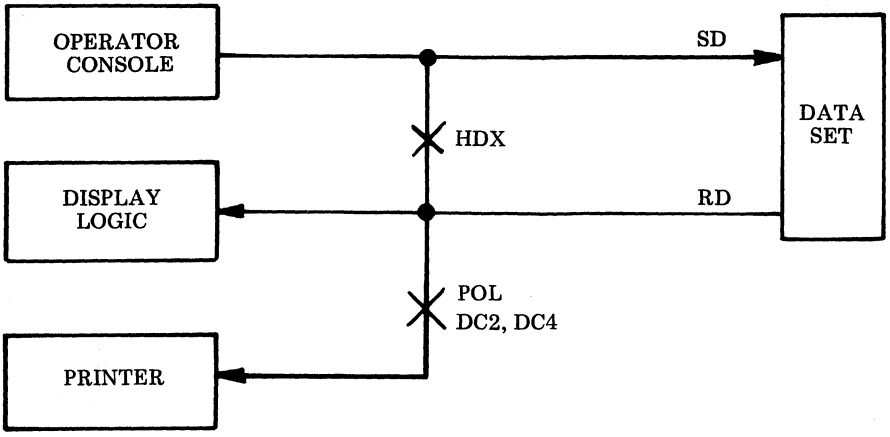
OPERATOR CONSOLE INDICATORS "ON"			
SEND	REC.	LOCAL	S/R
—	X	—	—

Fig. 2—Receive Mode



OPERATOR CONSOLE INDICATORS "ON"			
SEND	REC.	LOCAL	S/R
X	—	—	—

Fig. 3—Send Mode



	OPERATOR CONSOLE INDICATORS "ON"			
MODE	SEND	REC.	LOCAL	S/R
HDX — 202-TYPE DATA SET	SEND OR REC.		—	X
HDX — 103-TYPE DATA SET	X	X	—	X
FDX — 103-TYPE DATA SET	X	X	—	X

Fig. 4—S/R (Conversational) Mode

7.26 When the terminal is operated in the S/R mode with the Full Duplex option, the controller is used to interface the received data input line to the display logic while at the same time interfacing the opcon to the send data output line. In this arrangement, the receive portion of the controller performs identically as if the terminal were in the conventional (non S/R) receive mode. All receive data options remain active (ie, reject characters, etc).

7.27 The S/R mode with the Full Duplex option (ie, operation with a Data Set 103 interface) is indicated by the S/R, SEND and RECEIVE keyswitches all being lighted.

7.28 The opcon operation is similar to the operation in the local mode. However, the terminal operator will not see the typed character appear on the monitor, since data is sent only to the output data line. An exception is the case of "Echo" operation which is a Full Duplex System in which the outgoing character is echoed back by the distant end back to the originating terminal. All opcon keyswitches associated with local editing or mode control will not produce a character on-line as they are suppressed by the controller. The mode control switches will, however, remain active to allow operator control.

7.29 When the terminal is operated in the S/R mode with the Half-Duplex option, the received data input line is interfaced with the display logic during the receive portion of this mode (ie, S/R and receive). This operation is the same as the conventional (non S/R) receive mode. The opcon is blinded and the set will only respond to the mode control keyswitches. The S/R mode with the Half-Duplex option (ie, operation with a Data Set 202 interface) is indicated by the S/R and either the SEND or RECEIVE keyswitches being lighted. (The SEND and RECEIVE indicators are also dependent on the data set interface signal Request To Send.)

7.30 In the send portion of the S/R mode with Half-Duplex, the opcon is interfaced by the controller to the send data output line. In addition, the controller internally wraps the send data output signals back into the received data circuitry resulting in the transmitted character

being entered into the the display logic and presented on the monitor. The local editing keyswitches are blinded, however, it is possible to do editing through the use of escape sequences (eg, if the operator types the sequence ESCAPE H, and the 410674 is optioned to respond to escape sequence, then the cursor will be positioned to the HOME position on the display monitor).

7.31 Mode control keyswitches remain active to allow operator control of the terminal. Beyond this, the mode is controlled by use of the EOT character (ASCII End Of Transmission).

F. Print Local Mode

7.32 The print local mode is intended to be an off-line operation wherein an operator may obtain a hard copy record of the information present on the display monitor. In this mode, the controller provides an interface between a printer and the display logic. The printer interface is optionally selected as either an SSI or EIA signaling format. Transmission speed is fixed at a transfer rate of 1200 wpm for selected on-line speeds up to 1200 baud (except that the SSI printer interface may reduce the transfer rate in cases where the message format would cause the line rate of the printer to be exceeded). Print local will be at the on-line transmission rate if that rate is in excess of 1200 baud.

G. Print On Line Mode

7.33 The Print On Line (POL) mode may exist either as a unique on-line mode or in conjunction with one of the other on-line modes. When the opcon and display logic are in the local mode, the POL mode may be used to provide an accessible receiver for input data on the receive line. With the data set disconnected and the terminal in local, a Ring Indicator from the data set would cause a POL and enable the data set interface. In this manner, the terminal operator may prepare and edit information off-line on the display without interruption or being required to take the terminal out of service. The POL mode, when used in conjunction with on-line modes, provides a hard copy record of outgoing and/or incoming data at that terminal. The POL mode and the data set connection can be maintained when switching to local from an on-line mode as follows:

(a) From send (batch) to local by operating the LOCAL keyswitch.

(b) From S/R to local by depressing the S/R keyswitch.

(c) From S/R to local by depressing LOCAL provided carrier is being received.

(d) From REC to local by depressing LOCAL provided carrier is being received.

All information transmitted to the printer will be at the line transmission rate.

7.34 The POL mode may be selected either by the terminal operator or controlled from the distant end sender by use of the DC2 (POL mode ON) and DC4 (POL mode OFF) ASCII control characters. The PRINT ON LINE keytop is lighted to indicate that the mode has been selected.

CONTROLLER OPTIONS

7.35 A large number of selectable options are available in the 40C204 controller to accommodate the variety of applications in which a terminal of this type may be used. These options are implemented through the selection of the appropriate switches located on the circuit cards located within the controller module. (Refer to Section 582-200-202 for descriptions of options and optioning information.)

THEORY OF STATION OPERATION

7.36 Operating mode diagrams of the DATA-SPEED 40/2 stations are shown in Table F for 103-type data set interface and Table G for 202-type data set interface. The mode diagrams cover operation in the conversational mode (S/R on) and batch mode (S/R off). The following paragraphs provide a further description of the operation shown in Tables F and G.

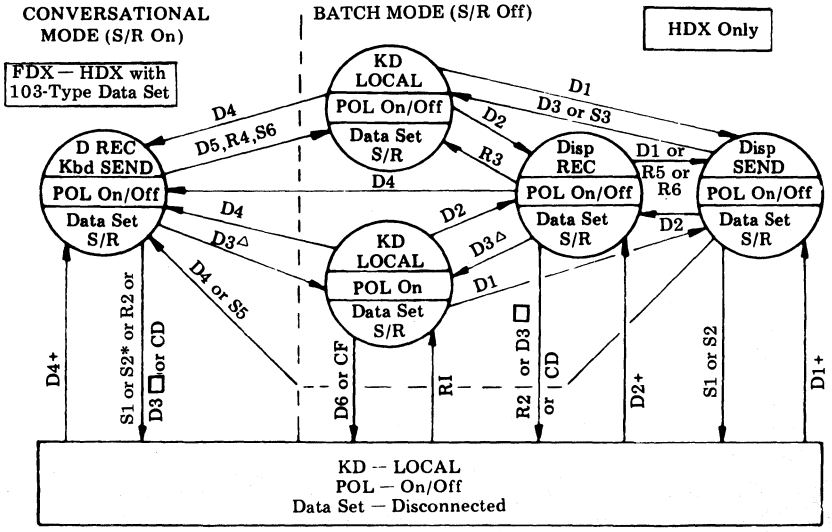
A. Initializing

7.37 When power is applied to the 40C204 controller, the LOCAL lamp lights on the opcon. When the display monitor is turned on by rotating the switch on the lower left-hand portion of the monitor, a raster and cursor appear on the monitor, permitting mode selection, and character transfer from the opcon to the controller logic. Character transfer is also allowed between the display logic and the controller logic.

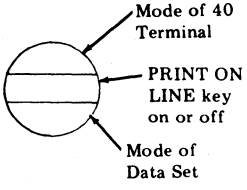
7.38 Turning off the display monitor switch allows all previously lit lamps on the opcon to remain on, but character transfer to the display is suppressed. All previously stored data is retained, however, as the power to the controller logic, display logic, and opcon is maintained.

TABLE F

OPERATING MODES (103-TYPE DATA SET)



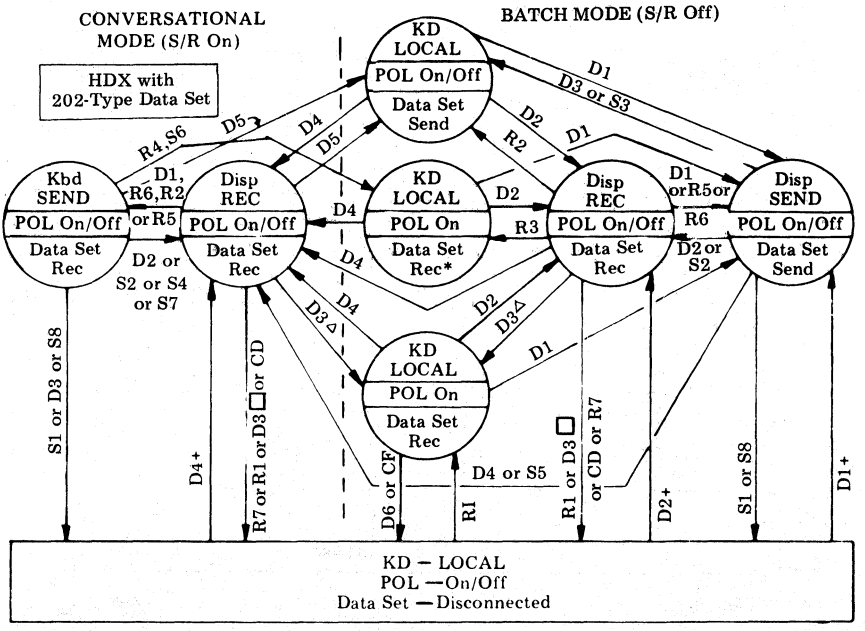
DEPRESS	SEND	RECEIVE
D1 SEND key	S1 DLE EOT	R1 DLE EOT
D2 REC key	S2 EOT	R2 EOT
D3 LOCAL key	S3 ETX or GS or FF	R3 ETX or GS or FF
D4 S/R key (on)		R4 DLE ETX, FF, GS
D5 S/R key (off)	S5 DC3	R5 ESCf (1)
D6 INTRPT key (on) or PRINT ON LINE key (off) (DC4)	S6 DLE ETX, FF, GS (HDX, or Echoplex Only)	R6 DC1 (2)



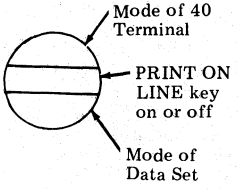
(1) — Applies to Issue 4B and later 410674 Circuit Card.
* — HDX Only
RI — Detection of ring indicator from the data set with PRINT LOCAL off, INTRPT off and KD in LOCAL.
CD — No carrier detected for 45 seconds.
↗ — Change in mode.
\+ — Then make connection or auto-answer.
△ — If PRINT ON LINE is on.
□ — If PRINT ON LINE is off.
CF — Loss of Carrier Detect
(2) — Requires 407414 modification kit.

TABLE G

OPERATING MODES (202-TYPE DATA SET)



DEPRESS		SEND		RECEIVE	
D1	SEND key	S1	DLE EOT	R1	DLE EOT
D2	REC key	S2	EOT	R2	EOT
D3	LOCAL key	S3	ETX or GS or FF	R3	ETX or GS or FF
D4	S/R key (on)	S4	DC3 (2)	R4	DLE ETX, FF, GS
D5	S/R key (off)	S5	DC3	R5	ESCf (1)
D6	INTRPT key (on) or PRINT ON LINE key (off) (DC4)	S6	DLE ETX, GS, FF	R6	DC1 (2)
		S7	RETURN (←) (1)	R7	EOT (2)
		S8	EOT (2)		



(1) — Applies to Issue 4B and later 410674 circuit card.
* — STD off.
RI — Detection of ring indicator from the data set with PRINT LOCAL off, INTRPT off and KD in LOCAL.
CD — No carrier detected for 45 seconds.
↗ — Change in mode.
\+ — Then make connection or auto-answer.
△ — If PRINT ON LINE is on.
□ — If PRINT ON LINE is off.
CF — Loss of Carrier Detect
(2) — Requires 407414 modification kit.

B. Local Mode

7.39 When the DATASPEED 40/2 is in the local mode (LOCAL lamp lit), the set control is transferred to the opcon. The operator may enter data on the monitor, select display functions, or change modes from the opcon.

7.40 The local mode can be established by any of the following methods:

(a) The initializing procedure.

(b) From Send, Receive, or S/R by means of an end character.

(c) From the operation of the S/R switch while in the S/R mode, or the LOCAL switch on the opcon.

(d) From the time-out and disconnect sequence.

C. Data in the Local Mode

7.41 When in the local mode, depressing a keytop on the opcon allows that character to be displayed on the monitor. If the keytop is not for a character to be displayed, but instead indicates a mode change such as Send, Receive, Print Local, Local, Interrupt, Send/Receive, Print On Line, or Form Send, the information from that keytop to perform the appropriate action is passed to the controller logic, allowing the controller logic to enter the appropriate mode. The form enter and highlight modes are similarly turned on and off by keytops on the opcon.

7.42 If the keytop on the opcon is not a character for which an action is taken by the controller logic, that character will simply be passed on to the display logic to be displayed on the monitor.

D. Decoded Characters in the Local Mode

7.43 As previously noted, in 7.40, depressing some keytops causes an action to be taken by the controller logic. Depression of these keytops causes an internal character to be generated which is decoded by the controller logic. Of these decoded characters, only Form Enter, Highlight, and Form Send are blinded from operator access when the DATASPEED 40/2 is in the send or receive mode.

7.44 When the FORM ENTER switch on the opcon is operated with the station in the local mode, the FORM ENTER lamp turns on. During the time the FORM ENTER lamp is lit, all characters entered into the display logic will be "protected". A protected character is one which may not be altered, moved, or in any way changed except when in the form enter mode. While in local, the form enter mode may be terminated by again depressing the FORM ENTER switch on the opcon.

7.45 When the HIGHLIGHT switch on the opcon is operated with the station in the local mode, the HIGHLIGHT lamp turns on. During the time the HIGHLIGHT lamp is lit, all characters entered into the display logic will appear highlighted on the display monitor. Highlighted characters appear to blink by changing between half and full intensity at a rate of approximately one cycle per second. Highlighting may be terminated in the local mode by operating the HIGHLIGHT switch again to extinguish the lamp.

7.46 The local mode may be terminated by depressing either the SEND, RECEIVE, SEND/RECEIVE (S/R), or PRINT LOCAL keys on the opcon.

E. Receive Mode

7.47 The receive mode and S/R-receive mode allows data from an external EIA or current loop sending device to be entered into the set and be displayed on the monitor. Optional features in this mode include the ability to reject characters and perform on-line editing.

7.48 Several methods are available for placing the set into the receive mode:

(a) Operation of the RECEIVE keyswitch on the opcon (7.49).

(b) From the send mode to the receive mode on EOT or other ending characters (7.50).

(c) Receive mode as part of the S/R operation (7.51).

7.49 The operator may place the DATASPEED 40/2 into the receive mode by operating the RECEIVE switch on the opcon. The RECEIVE key lights when the set is in the receive mode.

7.50 An option on the 410675 circuit card allows the terminal to switch from the batch send mode to the receive mode each time an end character is sent. Any or all of the end characters EOT, ETX, FF, and GS may be selected with option switches on the 410674 circuit card.

7.51 The transmitted EOT characters will cause the terminal to go to the receive mode from send, even if the 410675 card is optioned to go to the local mode after send. This will occur only if the EOT character is selected as an ending character on the 410674 circuit card.

7.52 The S/R mode may be established either by operating the S/R keyswitch on the opcon or by sending a DC_3 character in the batch send mode. The S/R and RECEIVE lamps both light when the terminal enters the S/R-receive mode. If the terminal is optioned for 103-type modem interface, the SEND key is also lit.

7.53 Once the receive mode has been established, incoming data signals are routed from the data set through the controller logic to the display logic, for display on the monitor.

7.54 As received characters pass through the controller logic, they are decoded. The following characters that are decoded may result in an action performed by the controller:

(a) End Characters (see 7.55)

(b) Reject Characters (see 7.56)

(c) Bell (see 7.57)

(d) Escape Sequences (see 7.58)

(e) DC_2 or DC_4 (see 7.59)

7.55 The characters EOT, ETX, FF, or GS will cause the mode to switch from receive to local, if it is optioned to do so. The DLE EOT sequence acts as a disconnect sequence, in addition to changing modes from receive to local.

7.56 The characters Carriage Return, Null, Delete, DC_1 and DC_3 are rejected by the controller logic if optioned to do so. These characters will not be presented to the display logic if they are rejected by the controller logic.

7.57 In the receive mode, the ASCII character Bell is decoded and causes an audible signal to be generated at the opcon. If there are more than one Bell characters, and they are relatively close together, the audible signal at the opcon will sound like a steady alarm.

7.58 The option for "Escape not displayed, function performed" is similar to the reject characters option mentioned previously. In this case, the ASCII character Escape is decoded and the character Escape and the following character are rejected from data being presented to the display logic. In addition, the function of the two-character Escape sequence is performed. For example, the Escape 3 sequence will cause the HIGHLIGHT lamp to turn on, and all succeeding characters will be highlighted by the display monitor.

7.59 The received characters DC_2 and DC_4 will cause the PRINT ON LINE function in the KDP to turn on and off, respectively. The PRINT ON LINE lamp on the opcon also turns on with a received DC_2 and off with a received DC_4.

7.60 A parity detection circuit in the controller logic detects even vertical parity on incoming data, and replaces errored characters with the ASCII character Substitute (displayed on the monitor as S_B). An option disables this feature and allows data to enter the display logic as received. In DATASPEED 40/2 operation, this parity detection circuitry is normally disabled.

7.61 The receive mode may be terminated by operation of the LOCAL, S/R, or SEND keyswitches on the opcon, or by detection of an ending character. Operation of the LOCAL keyswitch, or operation of the S/R keyswitch while in the S/R mode causes the receive mode to end and the terminal to go to local.

7.62 The end character option for changing from receive to local is selectable as an option by optioning switches on the 410674 circuit card. One or more of the end characters must be selected by closing switches on the circuit card. After the end character has been accepted by the display logic, the terminal switches from receive to local.

7.63 If the Data Set 202 interface option is used, a received EOT causes a Request to Send signal to be turned on to the data set interface, so the data set interface is not dropped. A received ETX, FF, or GS character will not cause Request to Send to be turned on, therefore, the distant end may time-out and disconnect due to loss of data set carrier.

7.64 If the Data Set 103 interface option is used, a received EOT turns off Data Terminal Ready, which causes a disconnect, in addition to the terminal switching from receive to local. A received ETX, FF, or GS character causes the terminal to go local.

7.65 In the S/R mode, when the Data Set 202 interface option is used, a received EOT causes the terminal to go from S/R-receive to S/R-send. If the Data Set 103 interface option is used, a received EOT causes the terminal to go local and disconnect. Received ETX, FF, or GS characters in the S/R mode have no effect on the mode in either 103-type or 202-type data set operation. However, the sequence DLE ETX, DLE FF, or DLE GS will cause the terminal to go to the local mode if the Data Set 103 option is being used. Reception of a DLE EOT sequence causes the terminal to go local and disconnect if the Data Set 202 option is being used.

F. Send Mode

7.66 Data may be transmitted from the DATASPEED 40/2 to external receiving equipment in either the batch send mode or the SR-send mode. The S/R-send mode operation consists of transmitting data, on-line one character at-a-time from the opcon. The S/R-send mode operation is described starting with 7.88.

7.67 The batch send mode is used to transmit any data on the monitor, which may have been prepared by the operator while in the local mode, or which may have been received from an external source while in the receive mode.

7.68 The batch send mode is selected by either operating the SEND keyswitch on the opcon or by reception of the sequence "Escape f" (only on Issue 4B and higher of the 410674 circuit card). The SEND lamp on the opcon is lighted whenever the terminal is in the batch send mode. If an "Escape F" sequence is received, an internal signal in the controller logic places the terminal in the send mode and illuminates the SEND keyswitch on the opcon the same as if it had been manually operated.

7.69 Once the send mode has been established, the terminal turns on the Data Terminal Ready signal on the data set interface. The data set responds with a Data Set Ready signal when the data channel is established. The Data Set Ready being on, along with the send mode, causes the terminal to generate the Request to Send signal to the data set. The data set responds to the Request to Send signal by turning on Clear to Send, allowing the terminal to send the message on-line.

7.70 Transmission speed is derived from an internal crystal oscillator located on the 410679 circuit card. The oscillator drives a counter circuit which is preset by the speed select option switches.

7.71 Three options exist for processing the ASCII character Line Feed when sending from the DATASPEED 40/2 to a receiver. The Line Feed may be sent as displayed; it may be preceded by an internally generated Carriage Return, or it may be preceded by two generated Carriage Return characters. If a Line Feed character was not present in the line on the display monitor, the display logic will automatically generate and send a Line Feed at the end of a line.

7.72 The send variations options allow the terminal user to select the format of transmitted messages in the batch send mode that provide the most efficient system operation. All of the options are chosen via option switches on circuit cards within the controller logic module.

7.73 The send variations options consist of the following:

(a) Disable Sending Highlight Delimiters (see 7.74)

(b) Send Unprotected Data Only (see 7.75)

(c) Send Protected Data as Space, Send Protected Data as Delete (see 7.76)

(d) Send All Data Without Delimiters Except for Highlight (see 7.77)

(e) Convert HT to Space (see 7.78)

(f) HT and Skip (see 7.79)

7.74 This option to disable sending highlight delimiters is implemented by closing switch 5 on switch pack C12 located on the 410674 circuit card. This option prevents the highlight delimiters from being sent when there is highlighted data on the display monitor.

7.75 In the option to send unprotected data only, all protected characters are removed from the transmitted text. Switches 1 and 3 must be open on switch pack A4 located on the 410676 circuit card. If highlighted characters are within the protected field of characters, they will be transmitted, unless "Disable Sending Highlight Delimiters" (7.74) is utilized.

7.76 Protected Data may be sent as either Space characters or Delete characters. These options are similar to "Send Unprotected Data Only" (7.75), but instead of stripping the protected characters from the text, either Space or Delete characters are transmitted instead. Switches 1, 3, 4, and 6 must be open, and 2 and 7 closed on switch pack A4 on the 410676 circuit card. In addition, the "Delete" option requires that 5 be open, while the "Space" option requires 5 be closed.

7.77 All data can be sent without delimiters except for highlight. All switches must be closed except switch 2 on switch pack A4 on the 410676 circuit card. All data will be sent as displayed on the display monitor, but without delimiters for highlighted and protected data. Horizontal tabs are sent as a space character.

7.78 The "Horizontal Tab to Space" option is obtained by closing switches 7 and 8 on switch pack A4 on the 410676 circuit card. Horizontal tabs that are displayed are transmitted as space characters.

7.79 The "Horizontal Tab and Skip" option is selected by closing switches 2, 4, 5, and 8 on switch pack A4 on the 410676 circuit card. Remaining switches on the pack are open. With this option, protected data is not transmitted, but an H_T character is internally generated and transmitted in its place. When an unprotected H_T appears in the text, it is transmitted, and skip operation begins. Data following an unprotected H_T character is skipped, until a tab mark or unprotected line feed character is encountered. If the skip passes through a protected field, the H_T character is not generated again, and the skip proceeds to the first character after the protected field, where transmission resumes.

7.80 The form send feature overrides any of these send variations that may have been selected. Form send is selected by depressing the FORM SEND keyswitch on the opcon before entering the send mode. When form send is used, all data contained in the display logic memory is transmitted to the external receiver. All delimiters for highlighting, tabs, and protected data are converted to the corresponding two-character escape sequence and transmitted with the message.

7.81 The form send mode is terminated when the terminal switches from send to local. The FORM SEND lamp on the opcon turns off upon entering the local mode.

7.82 The send mode can be terminated in any of the following ways:

(a) Sending an ending character (7.83)

(b) Sending a DC_3 character (7.84)

(c) Sending a disconnect sequence (7.85)

(d) Disconnect generation (7.86)

(e) Mode switching from the opcon (7.87).

7.83 If the controller logic is optioned to recognize ETX, FF, or GS as an ending character, the mode switches from send to local. If the controller recognizes EOT as an ending character, the mode switches from send to receive.

7.84 When a DC_3 character is sent to the line, the terminal switches from the send mode to the S/R mode. The S/R keyswitch on the opcon lights, along with the RECEIVE keyswitch for Data Set 202 operation, and the SEND and RECEIVE keyswitches for Data Set 103 operation.

7.85 A disconnect to data set interface is generated by the controller logic when a DLE EOT sequence is transmitted with Data Set 202 operation. With Data Set 103 operation, a transmitted EOT character causes a disconnect.

7.86 The send mode may be terminated by generation of a disconnect signal from the 410770 circuit card. This results in a disconnect at the data set interface and the set goes to local. This disconnect is the result of a loss of SSI interface if the Print On Line operation is selected, and the 410770 circuit card is optioned to go local on loss of SSI.

7.87 Operation of the RECEIVE, LOCAL, or S/R keyswitches on the opcon while in the send mode will cause that mode to be terminated and switch the controller to the selected mode.

G. S/R Send Mode

7.88 The S/R mode is established by either operating the S/R keyswitch on the opcon (while not in the S/R mode) or by sending a DC_3 character in the batch send mode.

7.89 In Data Set 103 operation, entering the S/R mode also lights the SEND and RECEIVE lamps on the opcon. In Data Set 202 operation, the SEND keyswitch must be depressed after entering the S/R mode.

7.90 The send portion of the S/R mode blinds the send circuitry used in the batch send mode and instead interfaces the opcon to the 410679 circuit card for on-line character-at-a-time transmission from the opcon. If the Reverse Channel option is selected, it is necessary for the Supervisory Received Data signal to be turned on before data may be transmitted.

7.91 Characters are transmitted one-at-a-time, on-line, from the opcon. When the Half-Duplex option is selected, the transmitted data is tied internally to the receiving distributor. The data is then processed by the controller as if that data had been received on-line.

7.92 The send portion of the S/R mode may be terminated in the following ways:

(a) Sending a "turnaround" character (7.93)

(b) Operation of LOCAL keyswitch (7.94)

(c) Operation of S/R keyswitch (7.95)

(d) Sending a Disconnect character or sequence (7.96).

7.93 The controller can be changed from the send to the receive portion of the S/R mode when operating with the Data Set 202 option only, by sending an EOT character or a Carriage Return (Issue 4B or later of 410674 circuit card). The S/R keyswitch remains lighted, SEND turns off, and RECEIVE lights.

7.94 S/R send can be terminated by operating the LOCAL keyswitch. This causes the mode to change to local, and also causes a disconnect if the PRINT ON LINE keyswitch is not lighted.

7.95 Operation of the S/R keyswitch while in the S/R mode causes the mode to change from S/R to local. No disconnect is caused.

7.96 Sending a disconnect character or sequence will cause the terminal to change from S/R-send mode to local, and disconnect. In Data Set 103 operation, EOT causes local and disconnect. In Data Set 202 operation, DLE EOT causes local and disconnect.

H. Printer Operation

7.97 The controller logic in the DATASPEED 40/2 can provide an optional interface to either an SSI or EIA printer by the addition of a 410770 circuit card in module position Z101. This card provides functions for:

(a) Selection of either SSI or EIA interface to a printer.

(b) A disconnect timer.

(c) Options for Print On Line operation.

(d) Inhibiting the character following Escape when generating with an SSI printer.

(e) Circuitry to provide an Interrupt signal.

(f) Circuitry for the Print Local operation.

7.98 When the PRINT LOCAL keyswitch on the opcon is operated, data appearing on the monitor and stored in the display logic is transmitted to the printer without allowing that data to be transmitted to either the data set or current loop interfaces. While transmitting data to the printer in the print local mode, the PRINT LOCAL and SEND keyswitches are lighted on the opcon. When the operation is completed, these lamps turn off and the LOCAL lamp lights.

Note: The Print Local operation should only be implemented while the set is in the local mode to avoid unwanted data set turnaround, data set blinding, and in some instances invalid modes.

7.99 The Print On Line operation allows incoming data, outgoing data, or both, to be sent to an associated printer. The print on line mode is established by either operating the PRINT ON LINE keyswitch on the opcon, by reception of a DC_2 character from the line, or by "Automatic Answer" of an incoming call.

7.100 The Automatic Answer operation allows an incoming data call to be completed while the terminal is in the local mode provided a printer is available to accept data. The associated data set responds to an incoming call by applying a pulse to the Ring Indicator EIA interface lead, which turns on the print on line mode, allowing the call to be answered.

Note: Some data sets may have an option by which the ring indicator signal remains on constantly during a data connection. This option must not be used or improper controller operation will result.

I. Interrupt

7.101 The INTERRUPT keyswitch on the opcon is used to provide a method of signaling back to a distant sender or to inhibit the controller from automatically answering a data call. The use of Interrupt operation to signal a distant sender requires the use of Reverse Channel operation.

TELETYPEWRITER COMPATIBLE "DATASPEED*" 40/2

INSTALLATION

1. GENERAL

1.001 This addendum supplements Section 582-200-202, Issue 2. Place this pink sheet ahead of Page 1 of the section.

1.002 This addendum is issued to correct copyright dates.

2. CHANGES TO SECTION

2.001 On the bottom of Page 1, change the copyright notice dates to read as follows:

*Registered Trademark of AT&TCo.

TELETYPEWRITER COMPATIBLE "DATASPEED*" 40/2

INSTALLATION

CONTENTS PAGE

CONTENTS PAGE

*Registered Trademark of AT&TCo.

Prepared for American Telephone and Telegraph Company by Teletype Corporation

1. GENERAL

1.01 This section provides the installation procedures and methods for a Teletypewriter Compatible DATASPEED 40/2 Station.

1.02 This section is reissued to include the following:

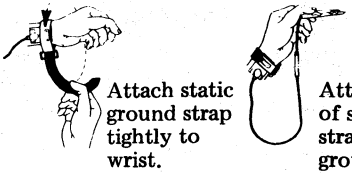
- Free standing stations
- New printer circuit cards (410071, 410072 and 410076)
- Data sets options for 108F and G, 113C and D, 212A, 408B, and all registered sets.
- This is a general revision, arrows ordinarily used to indicate changes have been omitted.

Note: When ordering replaceable components, unless otherwise specified, prefix each part number with the letters "TP" (ie, TP410055).

1.03 The following Warnings and Danger are to be used as safety measures for the apparatus and the craftsperson.

Warning 1: Turn off all power and signal sources before removing or replacing any component.

Warning 2: To avoid possible internal damage to circuitry, wear a 346392 static discharge strap connected to ground to allow static discharge before handling circuit cards for removal or replacement. Avoid touching circuit lands or components as much as possible.



Attach static ground strap tightly to wrist.

Attach clip end of static discharge strap to frame ground.

Fig. 1

Danger: Safety glasses must be worn whenever monitor cover is removed or whenever monitor is replaced.

Warning 3: Place listed card in an RM150592 static bag immediately after removal from unit. Do not place any printer paper in the bag with the card. Keep the card in the static bag at all times. Never handle the card outside the bag without wearing a properly grounded 346392 static ground strap.

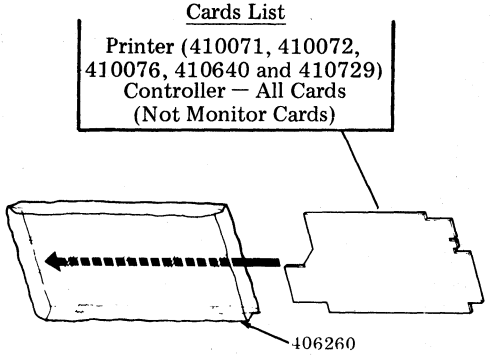


Fig. 2

2. IDENTIFICATION

GENERAL

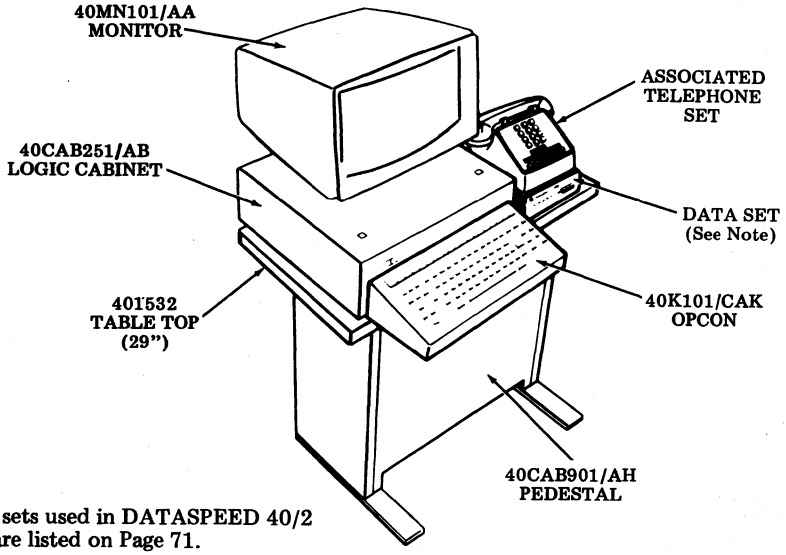
2.01 Identification of the DATASPEED 40/2 terminal and its features is important to the Service Center or field craftsperson. Knowing what features are provided and how those features are programmed to operate provide the basic understanding necessary for installation, operational checkout, or "in the field" service call routines. Several methods are presented in the following paragraphs for determining terminal features and optioning.

2.02 Features included in a terminal can be identified by observing if certain keytops are provided on the operator console, or if a certain type or quantity of printed circuit cards are present in the display controller and display logic circuitry.

2.03 Service Center optioning or optioning in the field by a craftsperson must be recorded on the Station Features and Options Record W-4DIXB. Features and options must be recorded by checking ☒ on the variable number (ie, Option 17.d.) in the appropriate square. Features and modifications on the terminal that are not listed on the Station Features and Options Record W-Plan should be written in. This plan should stay with the station.

KD (Keyboard Display)

2.04 The KD consists of a keyboard (opcon) and monitor, with the terminal logic mounted under the monitor. The KD may be mounted on a pedestal top or on the customer's own office furniture.

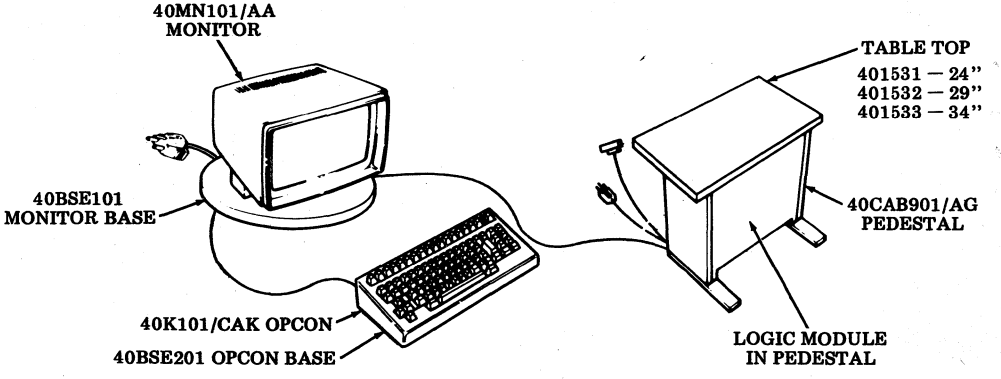


Note: Data sets used in DATASPEED 40/2 applications are listed on Page 71.

Fig. 3—KD Station

KD (Remote Opcon and Monitor) (Ref 50907S)

2.05 The KD consists of an opcon, opcon base, monitor and monitor base, with the logic module mounted in the pedestal.

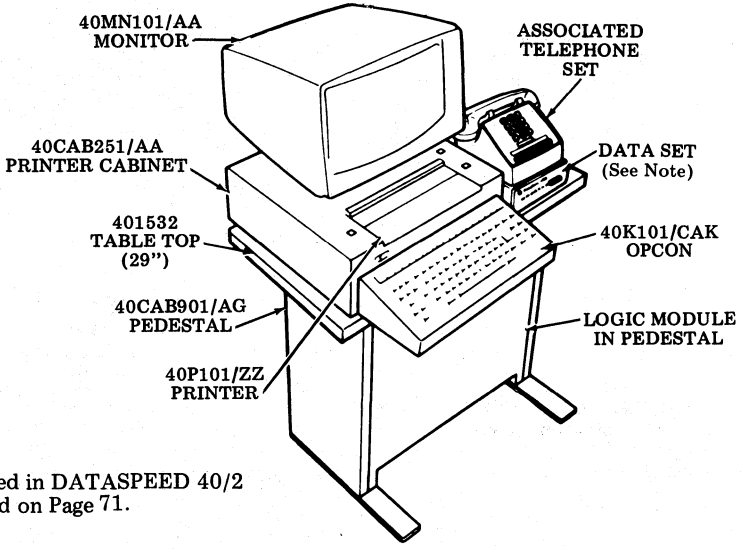


Note: Data set is not shown but can be placed on either the pedestal top or the customer provided furniture.

Fig. 4—KD Station (Remote)

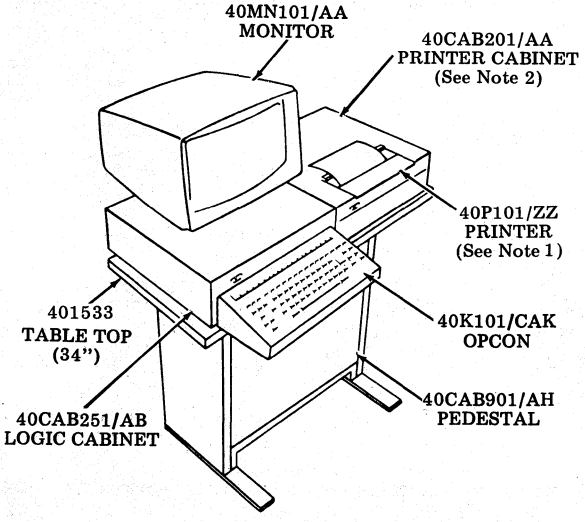
KDP (Keyboard Display With Printer)

2.06 The KDP consists of a KD terminal with a printer mounted either under the monitor or adjacent to the KD. The adjacent printer may be either tractor or friction feed. Tractor feed printers may be either 80- or 132-column printers.



Note: Data sets used in DATASPEED 40/2 applications are listed on Page 71.

Fig. 5—KDP Station (Printer Under Monitor)



Note 1: When printer is adjacent, may be either friction feed, 80-column tractor feed (40P151/ZZ), or 132-column tractor feed (40P201/ZZ). Tractor feed printers require a separate pedestal.

Note 2: Printer cabinet for 80-column tractor feed is 40CAB351/AA. 132-column tractor feed printer cabinet is 40CAB353/AA.

Note 3: When printer is adjacent, other provisions must be made for mounting data set and attendant set; there is no space allowed on the table top.

Fig. 6—KDP Adjacent Printer on Same Top and Pedestal (See Note 3)

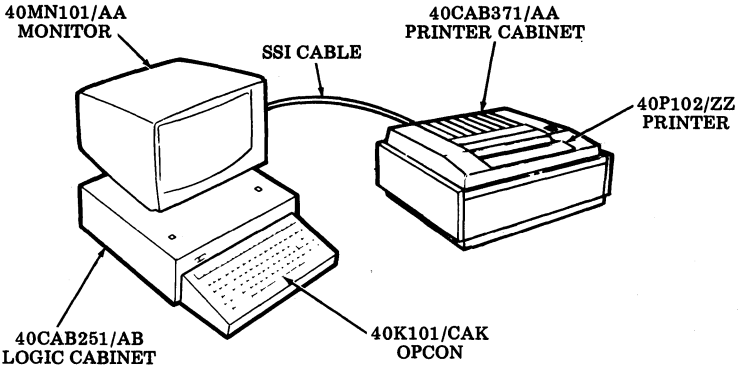
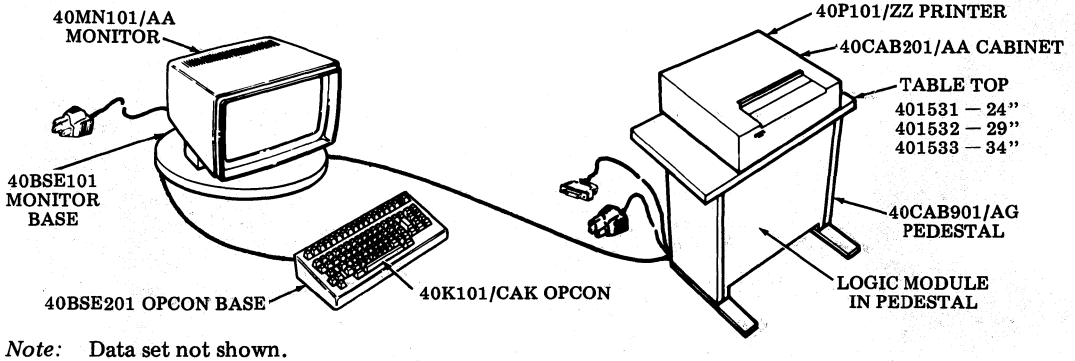


Fig. 7—KDP With Adjacent Noise Reduced Friction Feed Printer

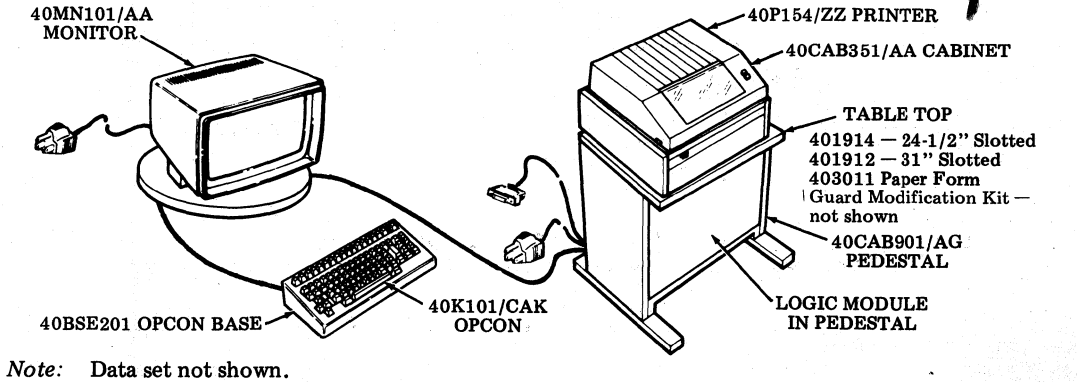
KDP (Remote Opcon and Monitor With Printer) (Ref 50907S)

2.07 The KDP consists of a KD terminal (with remote opcon and monitor) and a printer. The printer may be 80-column friction feed or 80- or 132-column tractor feed.



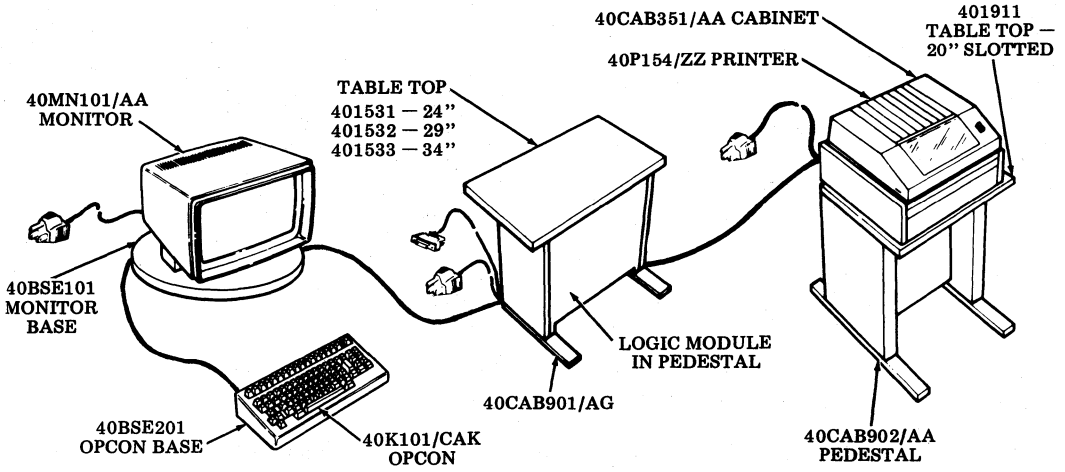
Note: Data set not shown.

Fig. 8—KDP Station (Remote) With 80-Column Friction Feed Printer



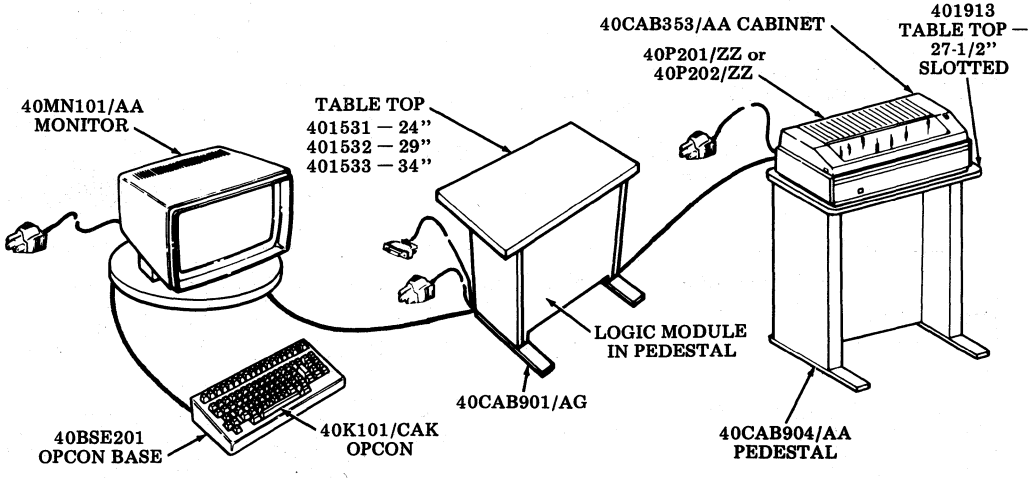
Note: Data set not shown.

Fig. 9—KDP Station (Remote) With 80-Column Tractor Feed Printer



Note: Data set not shown.

Fig. 10—KDP Station (Remote) With Pedestal for 80-Column Tractor Feed Printer



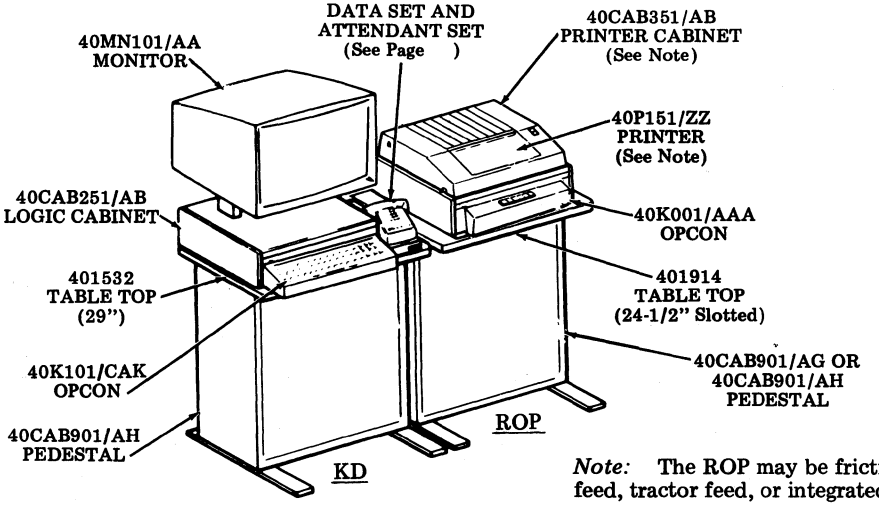
Note: Data set not shown.

Fig. 11—KDP Station (Remote) With Pedestal for 132-Column Tractor Feed Printer

KD-ROP (Keyboard Display With Receive-Only Printer)

2.08 The KD-ROP consists of a KD terminal, using a ROP as an adjacent printer. The ROP may be friction feed, tractor feed, or integrated controller. For installation information on ROP terminals, refer to the following:

582-200-200 Installation (DATASPEED 40/1 ROP Used in DATASPEED 40/2 KD-ROP Applications)
582-200-204 Installation (Integrated Controller)



Note: The ROP may be friction feed, tractor feed, or integrated controller. (Codes will vary for each arrangement.)

Fig. 12—KD-ROP Station

ROP (Receive-Only Printer)

2.09 The ROP consists of either an 80-column or 132-column printer and either an integrated controller (40C303AA/001) mounted under the printer in the printer cabinet or a 40C103 controller mounted in the pedestal. Information for installing the integrated controller ROP is found in 582-200-204.

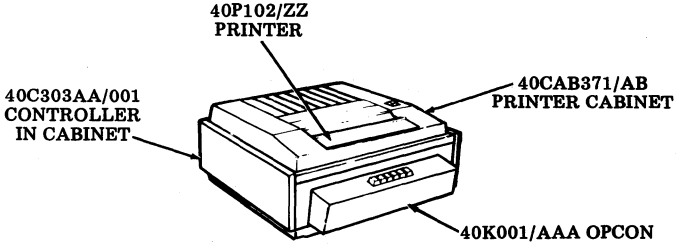


Fig. 13—Integrated ROP Station With Friction Feed Printer 40P102 (Noise Reduced)

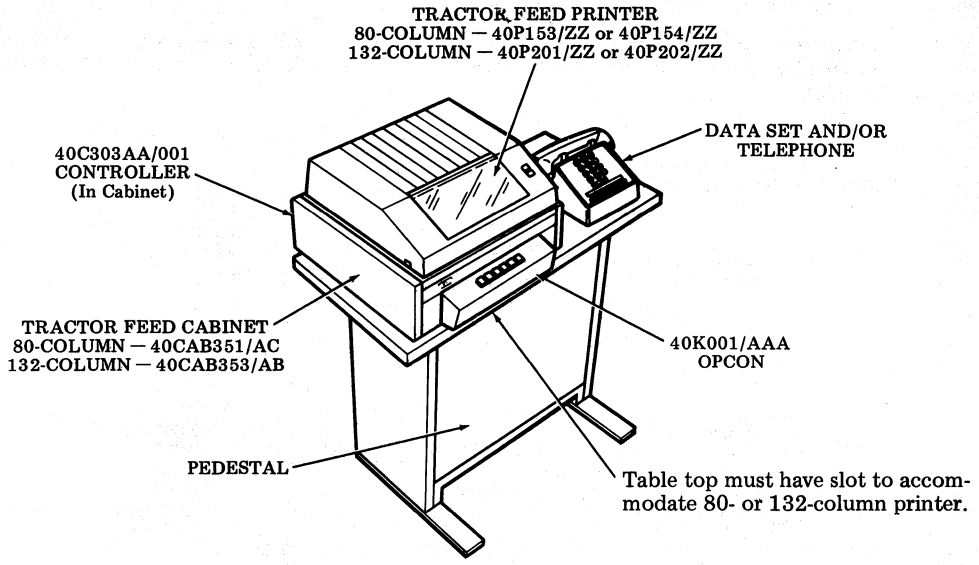


Fig. 14—Integrated ROP Station With 80- or 132-Column Tractor Feed Printer

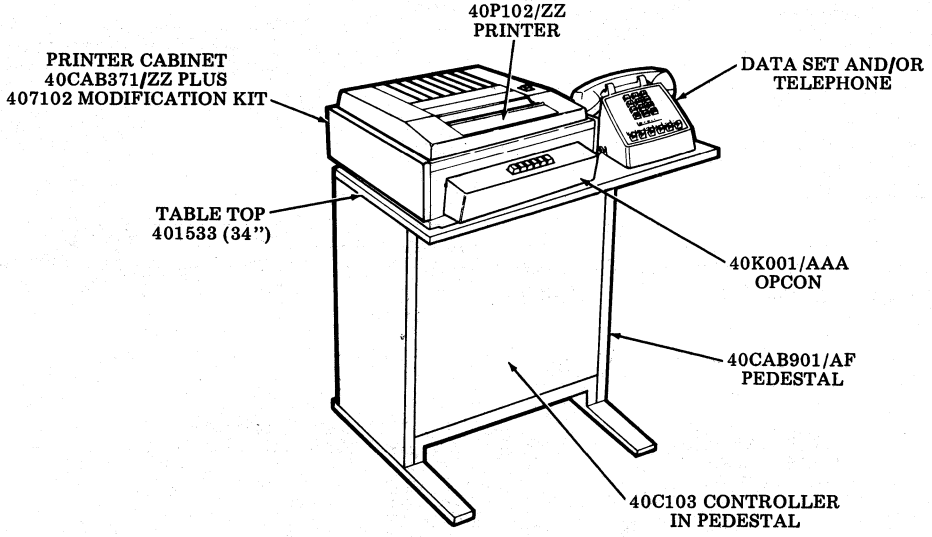


Fig. 15—40P102 Friction Feed Printer (Noise Reduced)

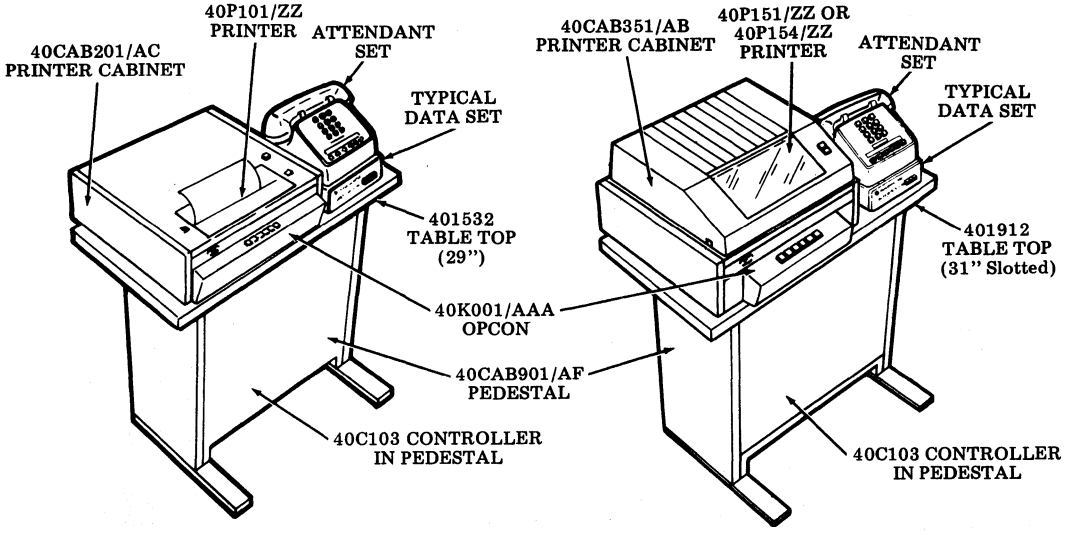


Fig. 16—ROP Station Equipped With 40C103/AD or /AE Controller

ACCESSORIES

2.10 Section 582-200-102 includes a listing of modification kits and accessories used in DATASPEED 40/2 applications. References are also given where applicable to appropriate 50,000 Specifications and BSPs for installation information.

CIRCUIT CARD ARRANGEMENTS

A. Controller Logic

Full Editing — Teletypewriter Compatible — EIA (Electronic Industries Association)

KD/KDP Controller Arrangements

Position Number	40C204/BA	Circuit Card Description
01	410770†	Printer Access
02	410679	Full Duplex Interface
03	410672	Opcon Interface
	410676	Send Variations
04	410675	Message Control
05	410674	Data Bus and Decode
Frame Number	402176*	

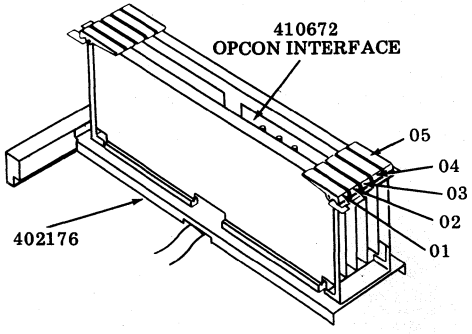


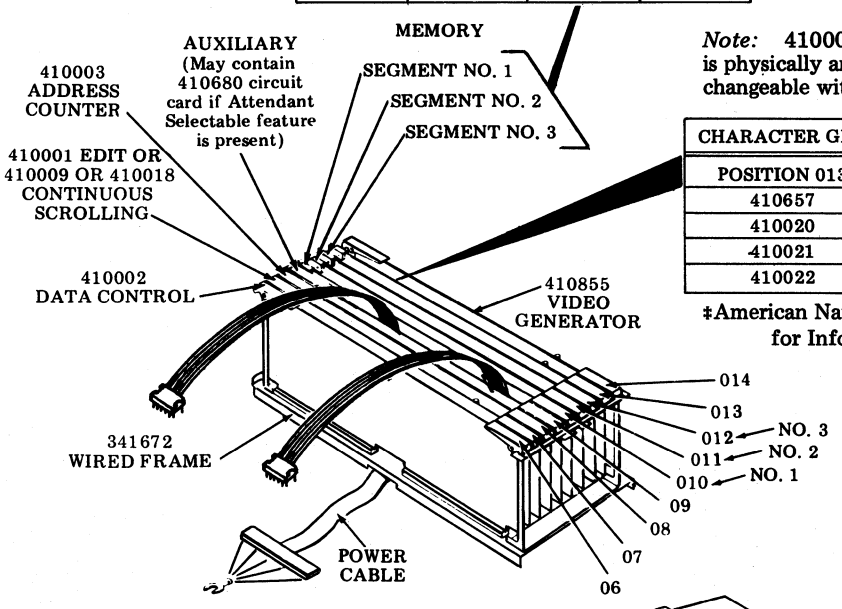
Fig. 17

*This wired frame, together with the proper circuit cards, can be used to make up the controller arrangement for replacement purposes.

†Not present on sets without printer or conversational (S/R) mode. The 410770 card is not part of 40C204/BA but is part of USOC ordering codes for DATASPEED 40/2.

B. Display Logic

DISPLAY LOGIC ARRANGEMENTS (40DL291)			
Memory Segment	Full Edit 24 Lines	Full Edit 48 Lines	Full Edit 72 Lines
No. 1	410015	410015	410015
No. 2	None	410015	410015
No. 3	None	None	410015



Note: 410005 card (early design) is physically and functionally interchangeable with 410015 card.

CHARACTER GENERATOR OPTIONS	
POSITION 013	DISPLAY TYPE
410657	Standard ASCII‡
410020	Line Drawing
410021	Fractions
410022	Weather

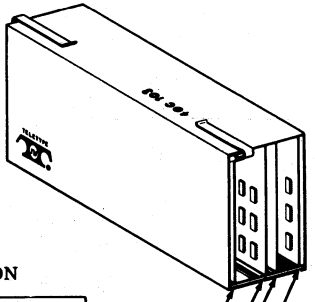
‡American National Standard Code for Information Interchange

Fig. 18

C. ROP Controller Logic

Note 1: 40C103/AD ROP controller includes a buffer (character storage).

Note 2: 40C103/AE ROP controller does not include a buffer.



CIRCUIT CARD LOCATION

40C103/AD	40C103/AE	POSITION
410582	410582	JA
410581 or 410585	410587	JB
410580	410580	JC
410583	410583	JD

410581 and 410585 are interchangeable.

Fig. 19

KEYSWITCH AND KEYTOP IDENTIFICATION

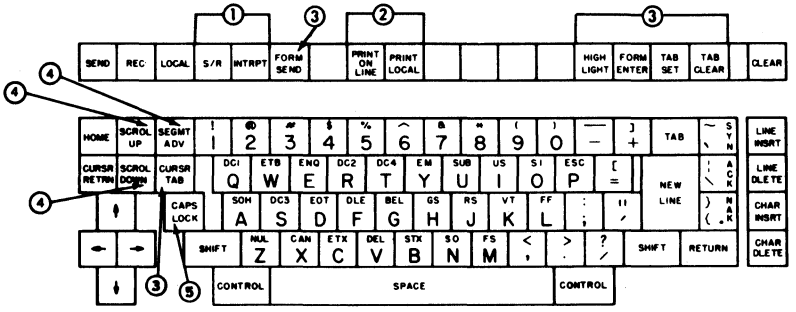


Fig. 20

① Keytops present for S/R (expanded conversation mode).

② Keytops present when terminal is equipped with page printer (see Notes 1 and 2).

③ Keytops are present with full edit feature (see Note 1).

④ Keytops present only if terminal has 48 or 72 line display memory (see Note 1).

⑤ If CAPS LOCK keytop is not present, keyswitch plunger is latched (down) for monocase — all caps — operation; blocking type keytop is installed over switch housing. First depression latches keyswitch (down); second depression unlatches keyswitch (up).

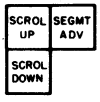
Warning: If keytop is present and removal is required, do not remove keytop from switch shaft unless switch plunger is operated into unlatched up position.

Note 1: If keytop is not provided within console arrangement, a blocking type keytop (unmarked) is installed over housing of keyswitch. Keytops are not present under blocking cap.

Note 2: Some console arrangements may have the PRINT ON LINE and PRINT LOCAL keytops replaced by BLOCKING keytops, respectively.

ADDITIONAL FEATURES

Expanded Memory



These edit controls are provided when terminal display memory is expanded to either 48 or 72 lines.

48 LINE expanded memory terminals have two 410014 or 410015 circuit cards (in Segment 1 and Segment 2 positions) in the display logic module.

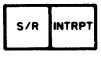
72 LINE expanded memory terminals have three 410014 or 410015 circuit cards (in Segment 1, 2, and 3 positions) in the display logic module.

Note: The 410004 or 410005 circuit card (early design) is physically and functionally interchangeable with the 410014 or 410015 circuit card, respectively.

Full Edit

These edit controls are provided when a terminal has a complete edit complement.

Conversation Mode



Provided on operator console for "line-at-a-time" or "multiple line" operation except with 40/2 Stations where S/R operation is a character-at-a-time.

Page Printer

Provided in operator console arrangement when 40/2 page printer is provided with terminal.

STANDARD FEATURES FOR 40-TYPE ROP/ STATIONS

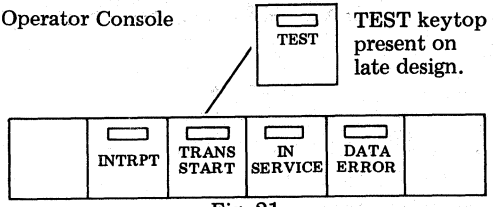


Fig. 21

ROP stations with a 40C103/AD Controller have a 1000-character storage unit. ROP stations with a 40C103/AE Controller do not have the storage capability. ROP stations with a 40C303AA/001 Integrated Controller have a 825-character storage unit.

3. INSTALLATION

INSTALLATION OUTLINE

- ☐ Review service order.
- ☐ Unpack equipment (3.01).
- ☐ Assemble components for station.
- ☐ Install options in controller (see 4. OPTIONS).
- ☐ Install and option printer if KDP.
- ☐ Install and option data set (or modem).
- ☐ Perform operational checkout; refer to Section 582-200-502.
- ☐ Have customer try out station arrangement.
- ☐ Complete the installation:
  - (a) Give How to Operate Manual to customer.
  - (b) Clean up.
  - (c) Complete service order.

UNPACKING INSTRUCTIONS

3.01 Any special instructions necessary to open a box will be affixed to the top of the box. A sample instruction label is shown.

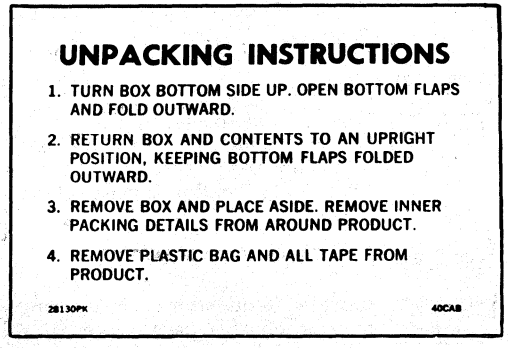


Fig. 22

3.02 Follow these procedures when unpacking.

(a) Before unpacking the cartons, confirm order with unit codes marked on the cartons.

(b) Select an assembly area to unpack the cartons so that damage to the components will not occur.

(c) When unpacking, be sure to wear approved safety glasses.

(d) Unpack each carton — refer to instructions on the container.

Note: Observe all "caution" notes printed on the carton.

(e) The pedestal should be unpacked first so that the printer and operator console can be placed on it.

(f) Suitable quantities of packing containers can be saved and reused for reshipment.

(g) Check option requirements against factory programmed options. If option changes are to be made, refer to the procedures in 4. OPTIONS.

(h) Assembly station or set.

STATION ASSEMBLY

A. Pedestal Assembly

Step 1. Unpack all cartons following the unpacking instructions on the individual cartons.

Step 2. Mount pedestal top to pedestal (four screws with lockwashers).

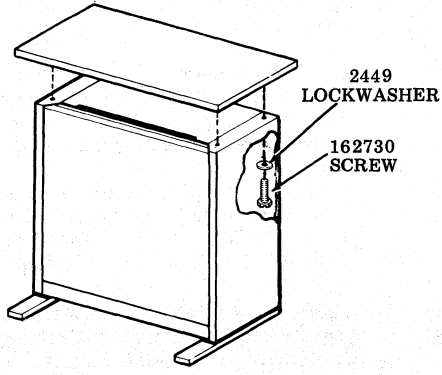


Fig. 23

B. Electronics Package Assembly (Electronics Under Monitor or Adjacent for KD and KDPs)

If display logic and controller logic are already assembled in the electronics package, proceed with the power supply assembly, Step 19.

Step 1. Tilt up cabinet or place over edge of table and remove mounting hardware.

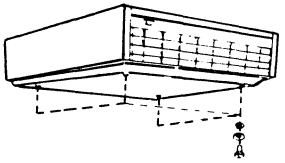


Fig. 24

Step 2. Open lid.

Step 3. Insert fingers as shown and lift. Then pull module forward until it engages the stop.

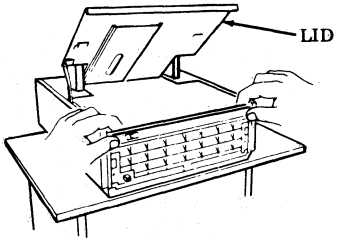


Fig. 25

Step 4. Insert screwdriver under latch and lift up on latch. Lift up on module and slide forward.

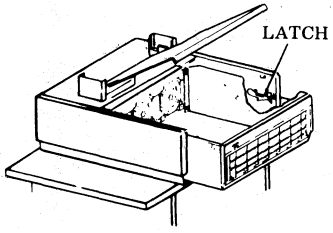


Fig. 26

Step 5. Reach in and disconnect ac power cable. Slide module completely out of cabinet.

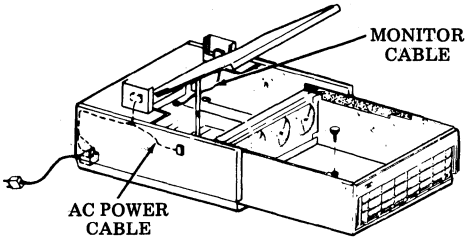


Fig. 27

Step 6. Remove 408050 ventilation assembly by removing three screws and the flat washer, lockwasher, and nut.

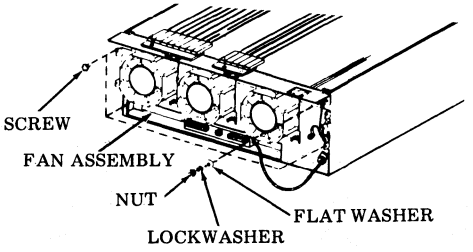


Fig. 28

Step 7. Check the display logic making sure the cards are seated and properly positioned for called arrangement.

Memory Segment	Full Edit 24 Lines	Full Edit 48 Lines	Full Edit 72 Lines
No. 1	410015	410015	410015
No. 2	None	410015	410015
No. 3	None	None	410015

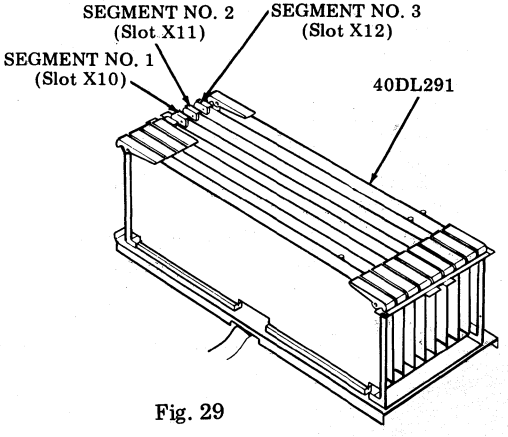


Fig. 29

Step 8. Remove muslin bag containing 341819 shoulder screw and 181204 flat washer used to mount the display logic into the frame and retain for later assembly.

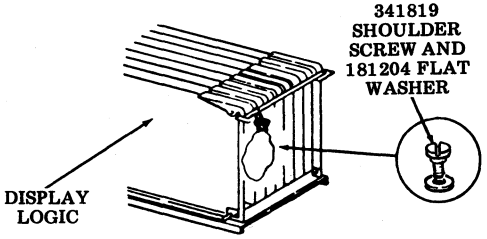


Fig. 30

Step 9. Install display logic into frame.

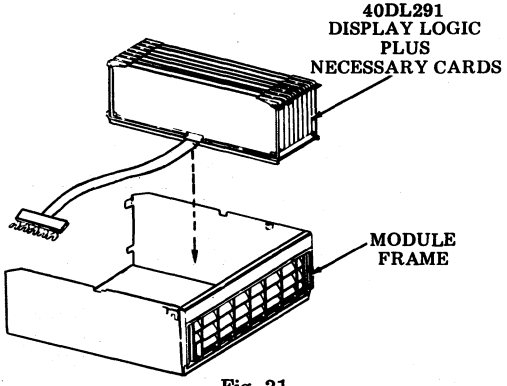


Fig. 31

Step 10. Position the display logic over the guide in the module frame and route power ribbon cable flat against bottom of module frame to the opposite side.

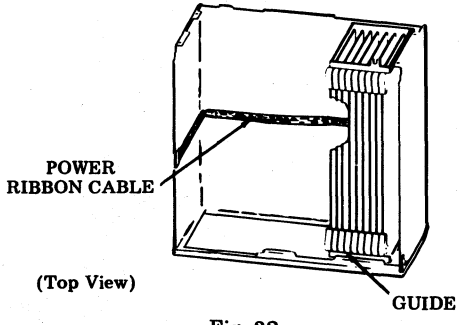


Fig. 32

Step 11. Remove muslin bag containing 341819 shoulder screw and 181204 flat washer used to mount the controller logic into the frame and retain for later assembly.

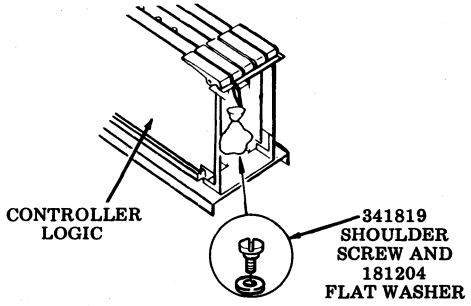


Fig. 33

Step 12. Install the controller logic into module frame.

Note: In terminals with adjacent logic, make sure unused opcon cable and connector are tied back under wired frame.

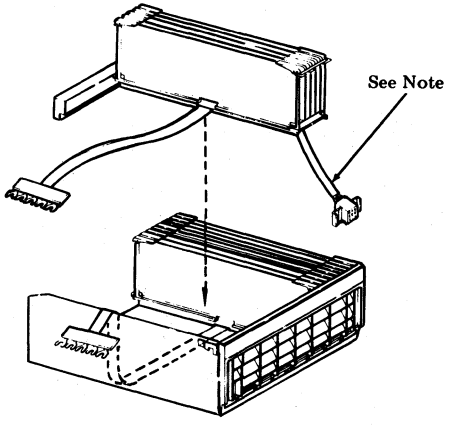


Fig. 34

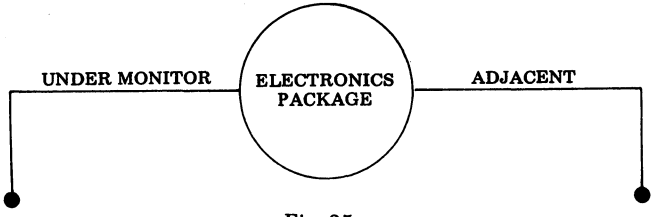


Fig. 35

Step 13 Position controller bracket over guide in the frame. Route cables as shown (flat cable in center and opcon cable near front of cabinet). Slots in controller must fit over ribbon cable from the display logic.

Position controller bracket over guide in the frame. Route flat cable in center as shown. Slots in controller must fit over ribbon cable from the display logic.

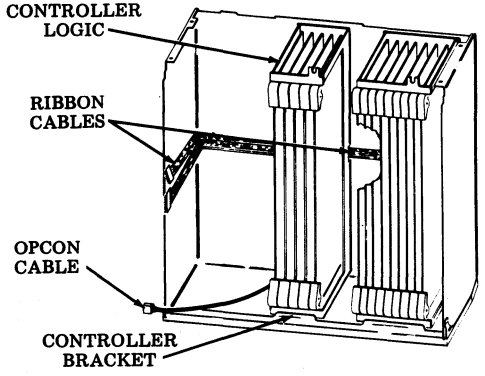


Fig. 36

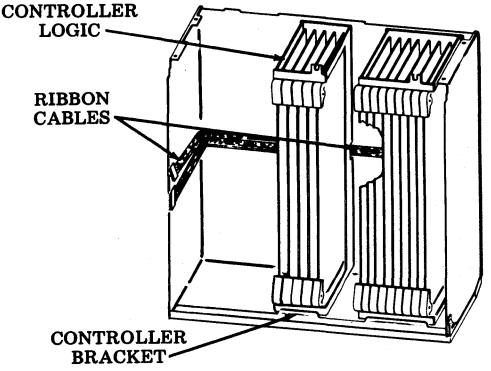


Fig. 37

Step 14. Install 341740 ribbon cable.

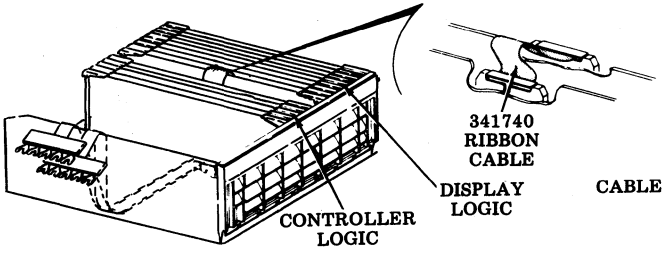
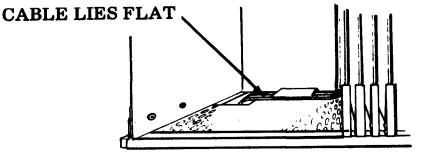


Fig. 38

Step 15. Route opcon cable in the module so that the cable lies flat against front of the module.

Omit Steps 15 and 16; continue with Step 17.



(Top View)

Fig. 39

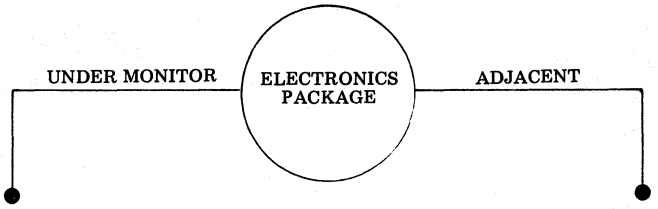


Fig. 40

Step 16a. Remove front panel Ⓐ. Insert opcon connector through the frame opening. Attach 402166 retainer plate and hardware (tied in muslin bag to the frame) to clamp opcon cable.

Step 16b. Insert opcon connector (keys up) into the front panel. Install panel back onto frame.

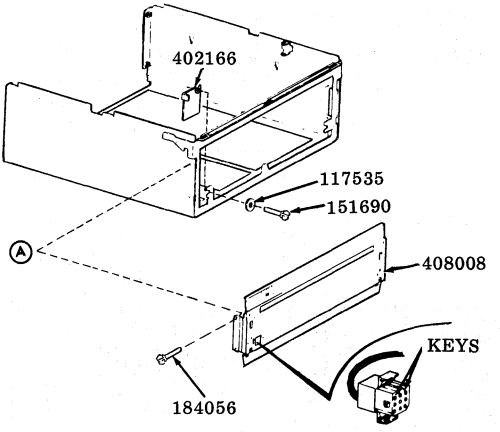


Fig. 41

Step 17. Install ventilation assembly on the frame using the hardware removed in Step 6. Use notches on logic frames as a guide for alignment. Route ac cable along the inside of frame.

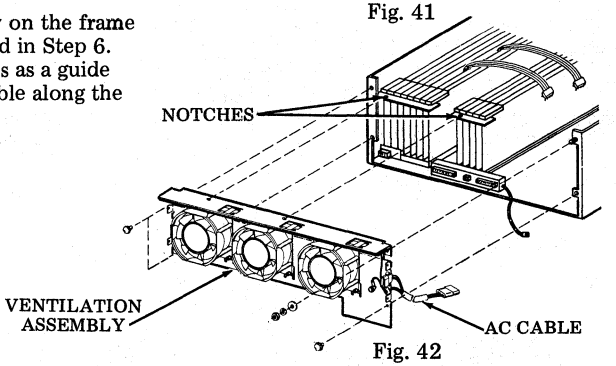


Fig. 42

Step 18. Attach braided ground strap to the slip-on terminal on the ventilation assembly. Align the controllers and tighten screws retained in Steps 8 and 11.

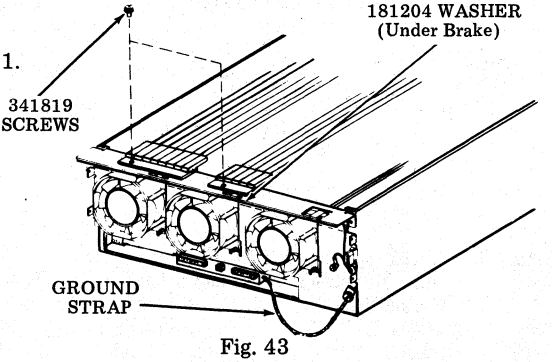


Fig. 43

Step 19. Mounting the PSU101 power supply into module frame:

① Loosen clamp screw and move clamp aside.
② Install power supply through slot and seat onto guide pins.
③ Drop handle.
④ Connect ac plug from ventilation assembly.
⑤ Loosen rear insulator screw and swing insulator aside. Loosen terminal block screws.
⑥ Place display logic cable on terminal strip (flat terminals) and then controller cable (formed terminals) on top. Tighten terminal screws.
⑦ Replace insulator.
⑧ Attach clamp in place over handle and tighten clamp screw.

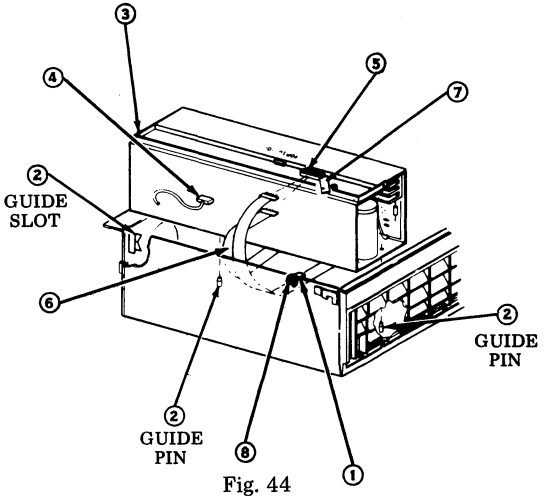


Fig. 44

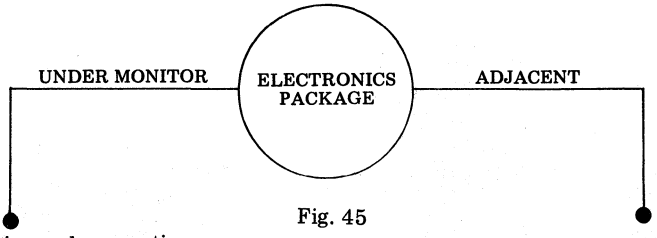


Fig. 45

Step 20. Cable routing and connections:

① Slide module back into the cabinet far enough to engage the latch on the right side of the cabinet.
② Reach in and connect the ac power cable to the base of ventilation assembly.

Slide electronics package half way into the cabinet. Connect cable from display logic. Connect power cable at rear of the ventilation assembly.

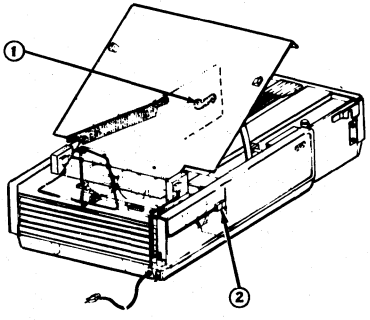


Fig. 46

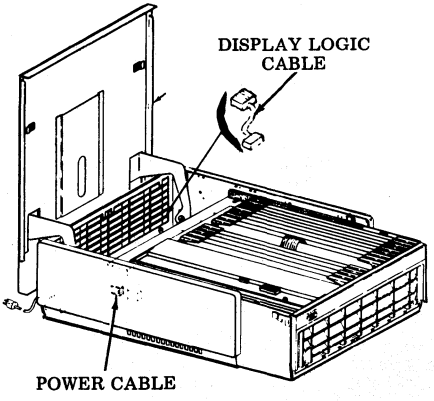


Fig. 47

Loosen shoulder screw. Slip clip on monitor cable under screw and tighten screws.
④Connect monitor cable.

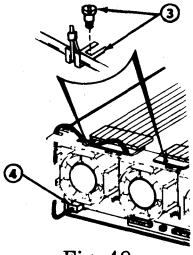


Fig. 48

Step 21. Slide module back into position. Lift up slightly on module to seat in position.

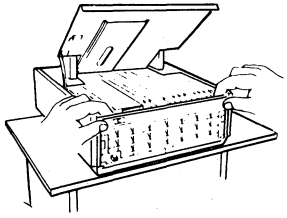


Fig. 49

C. Electronics Package Assembly (Electronics in Pedestal for KDPs)

If display logic and controller logic are already installed in the electronics package, proceed with the power supply assembly, Step 15.

Step 1. Slide tabs inward and open panel carefully. Remove two screws and slide module out.

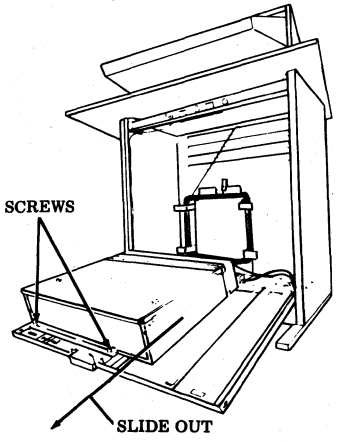


Fig. 50

Step 2. Loosen two captive screws and remove four rear screws.

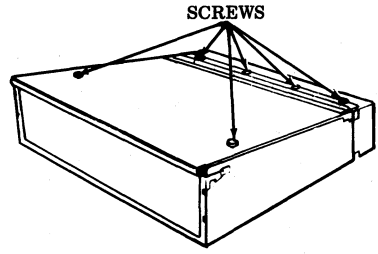


Fig. 51

Step 3. Remove guard from back of module by removing four screws, flat washers and lockwashers.

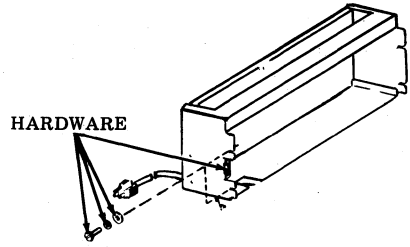


Fig. 52

Step 4. Remove 408050 ventilation assembly by removing three screws, nut, lockwasher, and flat washer.

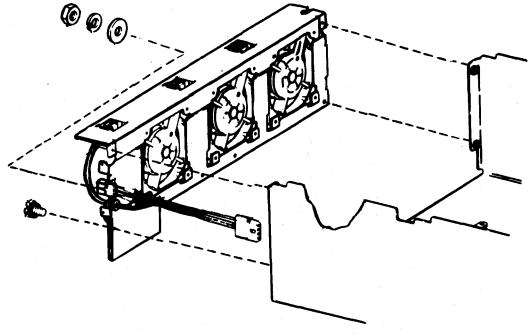


Fig. 53

Step 5. Check the display logic making sure the cards are seated and properly positioned for called arrangement.

Memory Segment	Full Edit 24 Lines	Full Edit 48 Lines	Full Edit 72 Lines
No. 1	410015	410015	410015
No. 2	None	410015	410015
No. 3	None	None	410015

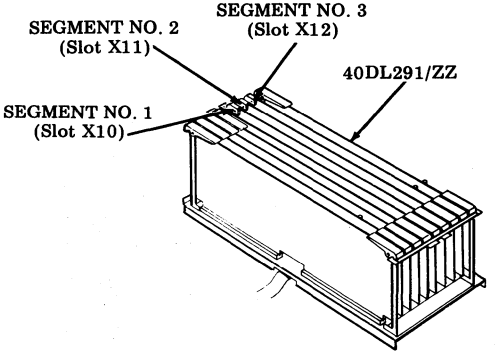


Fig. 54

Step 6. Remove the muslin bag containing the 341819 shoulder screw used to mount the display logic into frame and retain for later assembly.

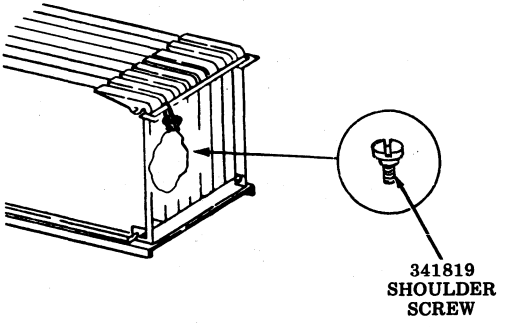


Fig. 55

Step 7. Install display logic into frame.

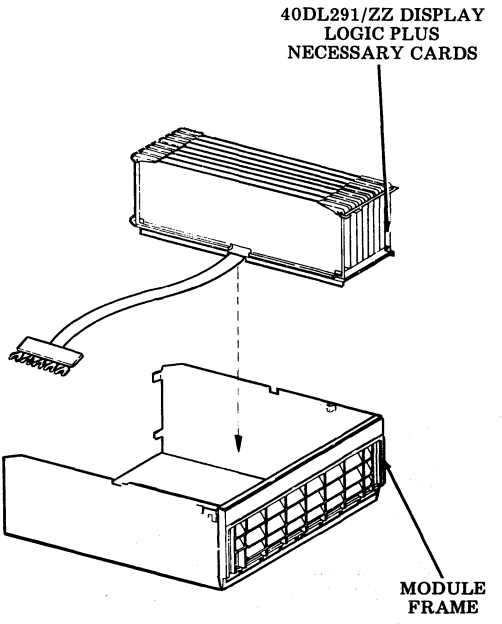
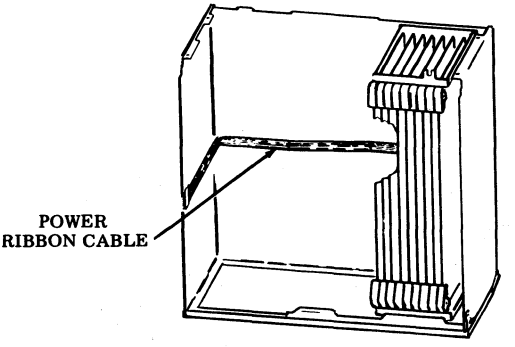


Fig. 56

Step 8. Route power ribbon cable flat against bottom of the module frame to the opposite side.



(Top View)

Fig. 57

Step 9. Remove muslin bag containing 341819 shoulder screw used to mount the controller logic into frame and retain for later assembly.

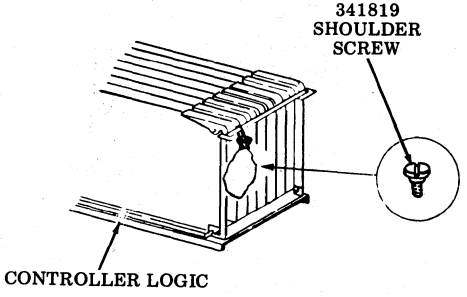


Fig. 58

Step 10. Install controller logic into module frame.

Note: Make sure unused cable and connector at front of controller are tied back under frame.

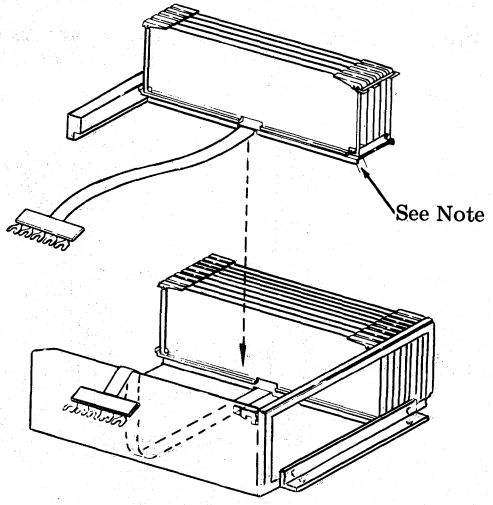


Fig. 59

Step 11. Route cables as shown. Slots in controller must fit over ribbon cable from display logic.

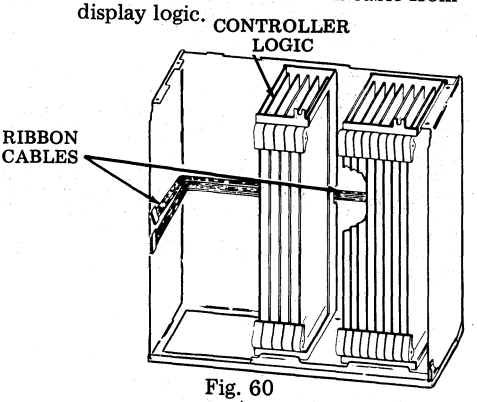


Fig. 60

Step 12. Install 341740 ribbon cable.

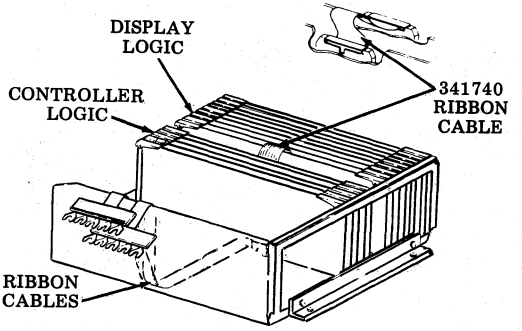


Fig. 61

Step 13. Install ventilation assembly on the frame using the hardware removed in Step 4. Use notches on logic frames as a guide for alignment. Route ac cable along the inside of frame.

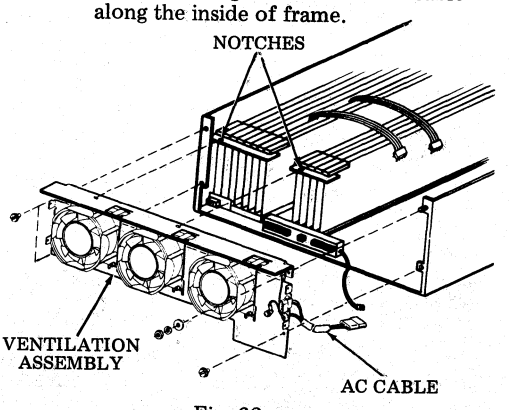


Fig. 62

Step 14. Attach the braided ground strap to the slip-on terminal on the ventilation assembly. Align controllers and tighten screws retained in Steps 6 and 9.

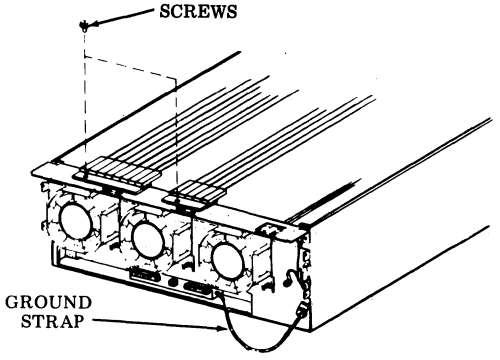


Fig. 63

Step 15. Mounting the PSU101 power supply into module frame:

① Loosen clamp screw and move clamp aside.
② Install power supply through slot and seat onto guide pins.
③ Drop handle.
④ Connect ac plug from ventilation assembly.
⑤ Loosen rear insulator screw and swing insulator aside. Loosen terminal block screws.
⑥ Place display logic cable on terminal strip (flat terminals) and then controller cable (formed terminals) on top. Tighten terminal screws.
⑦ Replace insulator.
⑧ Attach clamp in place over handle and tighten clamp screw.

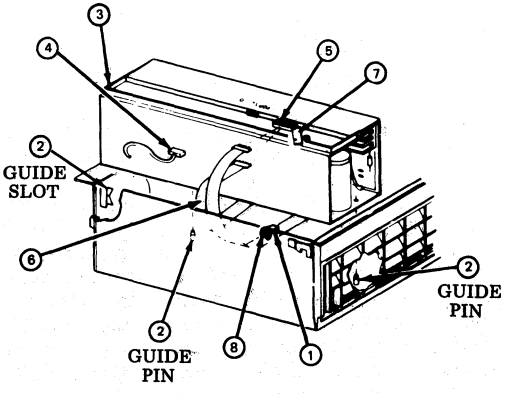


Fig. 64

Step 16. Complete installation by reversing Steps 3, 2 and 1.

D. Electronics Package — ROP with 40C103 Controller

Step 1. Slide tabs inward and open panel carefully. Remove two screws and slide module out.

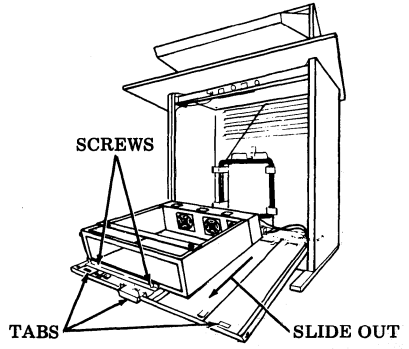


Fig. 65

Step 2. Loosen 401676 screw, remove 401688 thumbscrew and swing bar aside out of the way.

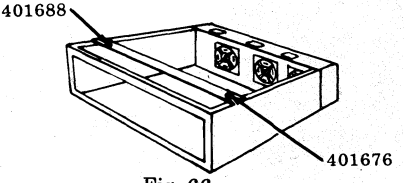


Fig. 66

Step 3. Install 401643 controller cable to bottom of module using two 119648 retaining rings. Install cable bracket to ventilation assembly with two 198670 screws. Route cables as shown.

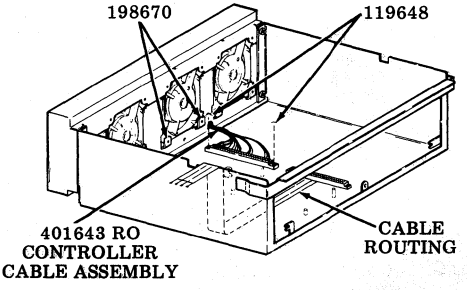


Fig. 67

Step 4. Locate the controller logic and power supply over their locator pins and seat. Connect ac plug from ventilation assembly.

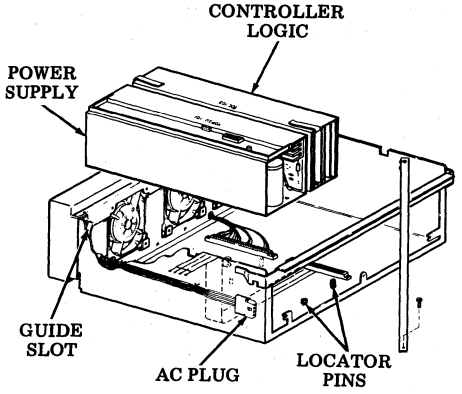


Fig. 68

Step 5. Loosen insulator screw and swing insulator aside. Mount ribbon cables and strap to terminal block. Replace insulator. Tighten screw.

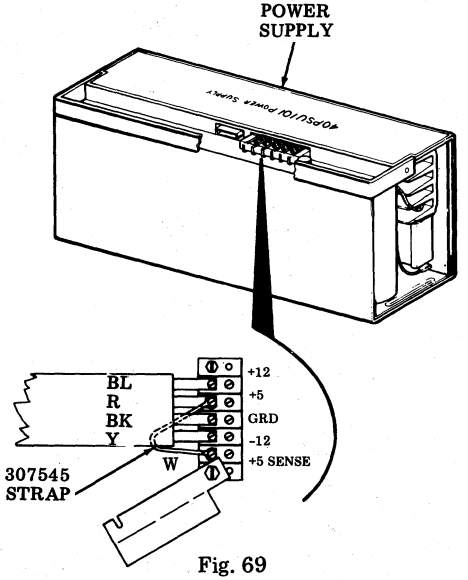


Fig. 69

Step 6. Complete installation by reversing Step 2 and then Step 1.

E. Opcon Assembly

Remove packing clips before assembly.

Step 1. Assembly procedures for RO, KD and KDP opcon are the same:

- Align connectors.
- Engage latches.
- Slide latches all the way up.
- Check that opcon is secure before releasing it.

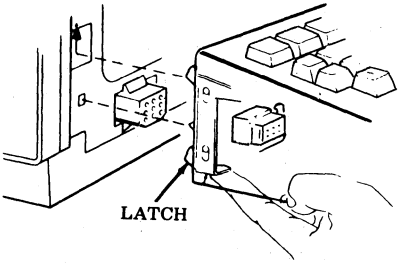


Fig. 70—RO, KD, and KDP Opcon

Step 2. Install CAPS LOCK or the blocking keytop (both provided in plastic bag) on KD or KDP opcon:

- If all caps are required, depress plunger and install blocking keytop.
- If upper and lower case are being used, install CAPS LOCK key.

Warning: The CAPS LOCK keytop must be in the fully extended, unlatched position before attempting to remove the keytop. Failure to observe this precaution will result in a damaged keyswitch.

F. Monitor Assembly

Note: Frame grounding of circuit common is provided physically in the set power supply for display monitors with serial numbers 10,000 and up and in lower serial numbered monitors which have 403594 modification kit installed. Display monitors and 40PSU101 power supplies with serial numbers below 10,000 were originally manufactured to provide frame ground in the display monitor. The two grounding arrangements are not compatible and should not be mixed within a set. Refer to Service Manuals 401 and 402 if incompatibility exists.

Step 1.

Place monitor upside down. Remove packing clip. (Retain for possible future repacking.)

Monitors With . . .

Remove corrugated packing detail taped to tilt lever (if present). To disengage the tilt lever immobilization latch spring (if present), slide the spring toward the front of the unit until it clears the tilt lever, and move the tilt lever to the right and up into any detent position beyond the first or second.

Wheel Type Tilt Mechanism

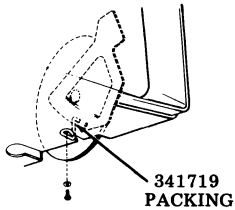


Fig. 71

Lever Type Tilt Mechanism

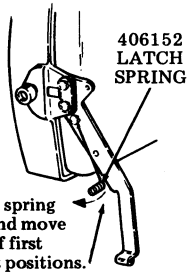


Fig. 72

Step 2. Install bottom plate to underside of monitor:

- Push studs until they snap into place.

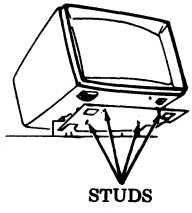


Fig. 73

Step 3. Grasp monitor securely from the rear and mount it into the two cabinet posts:

- Monitor slides over the posts freely — there is no locking device.
- Make sure connectors inside the posts are positioned fully.

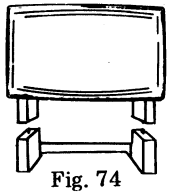


Fig. 74

G. Friction Feed Printer Assembly

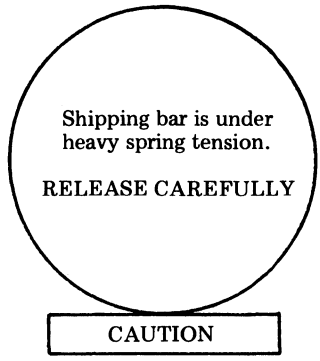


Fig. 75

Step 1. Remove shipping latch and bar. Discard. If printer is to be shipped at a later date, retain bar and latch.

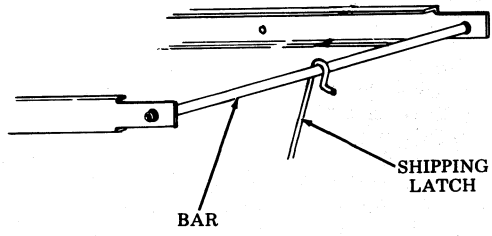


Fig. 76

Step 2. Slide printer into track:

- Make sure ac and SSI cables are not pinched.
- Make sure detents snap into place.

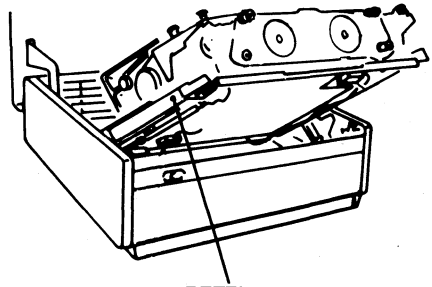


Fig. 77

Step 3. Connect ac power cable and SSI cable.

Step 4. Connect interlock cable at right rear corner of cabinet.

Step 5. Install carrier.

Step 6. Install ribbon.

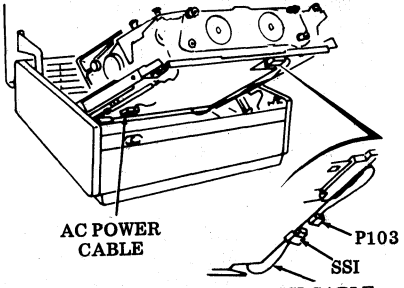


Fig. 78

Step 7. Option the 410640 card or 410076 card.

- Remove card.
- To avoid damage to the card, wear the approved 346392 static discharge strap before handling it.
- Avoid touching components on the card as much as possible.
- Option 410640 circuit card (see Pages 52 and 53) or 410076 card (see Pages 62 and 63).
- Reinstall card.

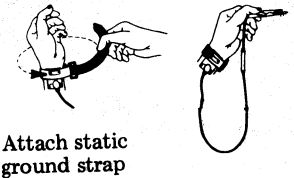


Fig. 79

Step 8. Lower printer and install paper.

- Before inserting paper in paper chute, make a sharp crease on the paper as shown.

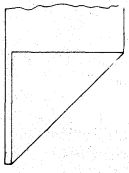


Fig. 80

H. Tractor Feed Printer (80- and 132-Column) Assembly

Step 1. Loosen four immobilizing screws a minimum of four turns until base rides freely on the shock mounts.

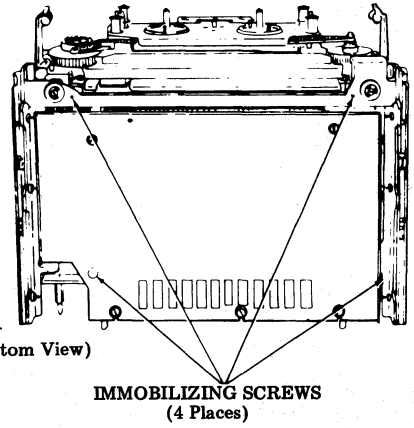


Fig. 81

Step 2. Option printer card per system requirements:

80-Column

- Remove card.
- Install ground strap as shown.
- Option 410640 circuit card (see Pages 52 and 53) or 410076 circuit card (see Pages 62 and 63).
- Reinstall card.

132-Column

- Option card by positioning appropriate 410729 circuit card (see Pages 54 and 55) or 410072 circuit card (see Pages 59, 60, and 61.)
(It is not necessary to remove 410729 or 410072 card.)

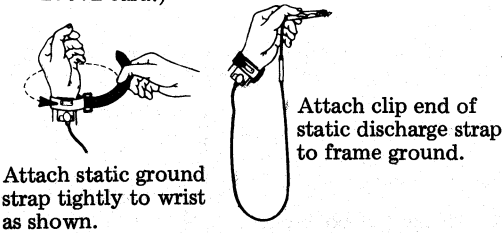


Fig. 82

Step 3. Slide printer in place:

- Make sure two latches on either side are fully engaged.
- Make sure three connectors at rear of printer are fully seated.

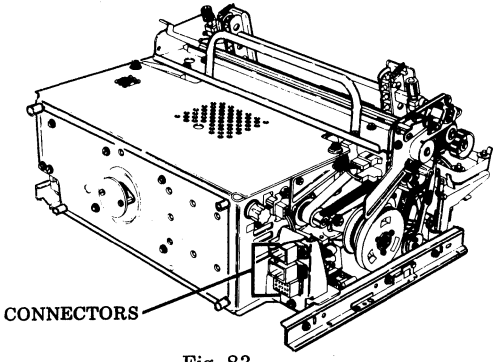


Fig. 83

Step 4. Install paper forms:

- Make sure forms are loaded in front of mylar strips on both sides.
- Position form-out lever for proper form out.
- Do not position the form into the tractors at this point. Ribbon has to be installed first.

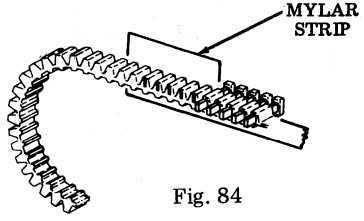


Fig. 84

Step 5. Install ribbon. See decal on printer cover for proper routing.

I. Cabling

INDEX OF FIGURES

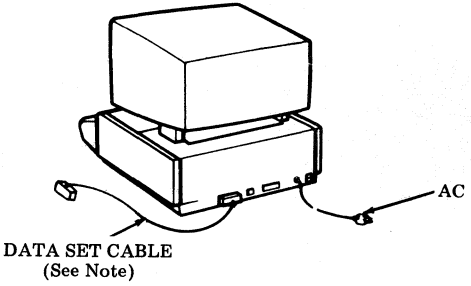


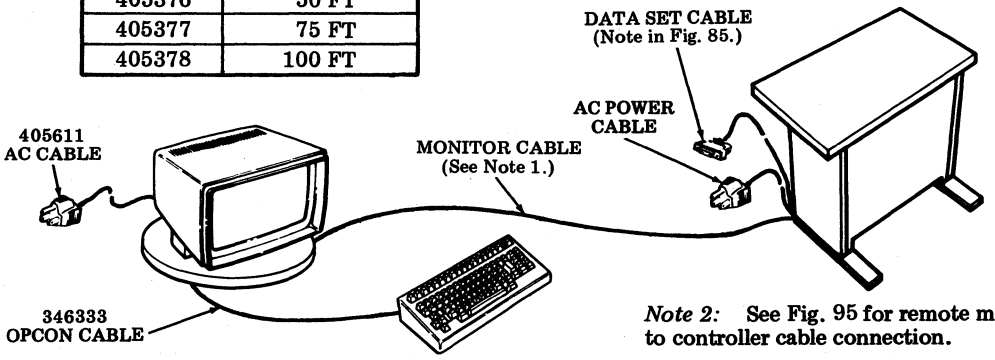
Fig. 85—KD

Note: The following shielded cables of various lengths are preferred. In certain applications where shielding is not a consideration, the 341896 nonshielded cable (7 ft.) may be used.

DATA SET INTERFACE	
SHIELDED CABLES	
CABLE PART NO.	TOTAL CABLE LENGTH
408065	7 FT
408066	12 FT
408067	25 FT
408068	50 FT
430569	3 FT

Note 1: Monitor cables of various lengths may be used.

MONITOR CABLES	
CABLE PART NO.	TOTAL CABLE LENGTH
405373	6 FT
405374	12 FT
405375	25 FT
405376	50 FT
405377	75 FT
405378	100 FT



Note 2: See Fig. 95 for remote monitor to controller cable connection.

Fig. 86—KD Remote Opcon and Monitor

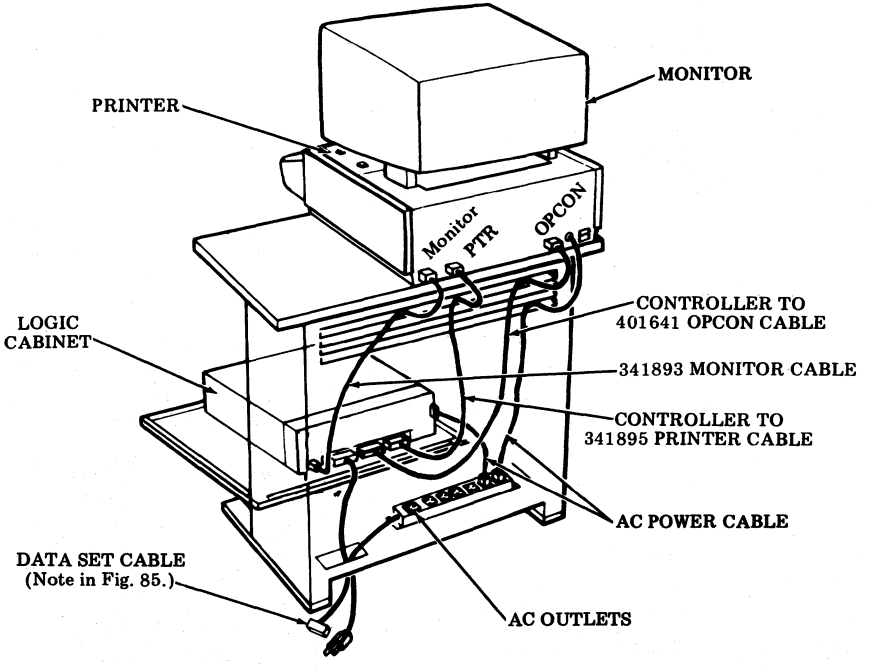


Fig. 87—KDP Pedestal-Mounted, Friction Feed Printer Under Monitor

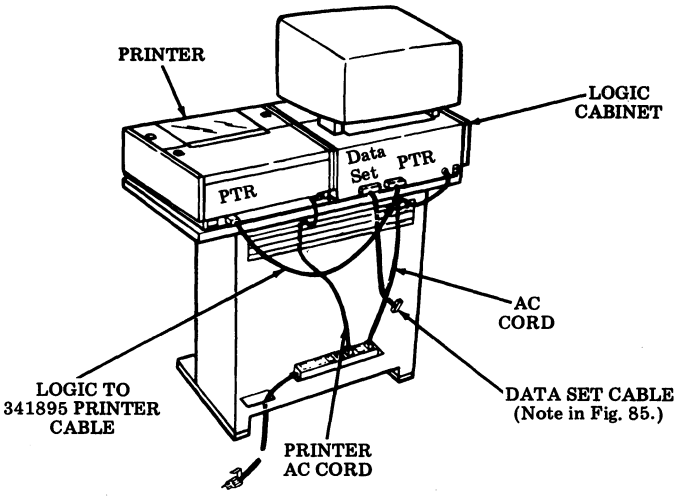
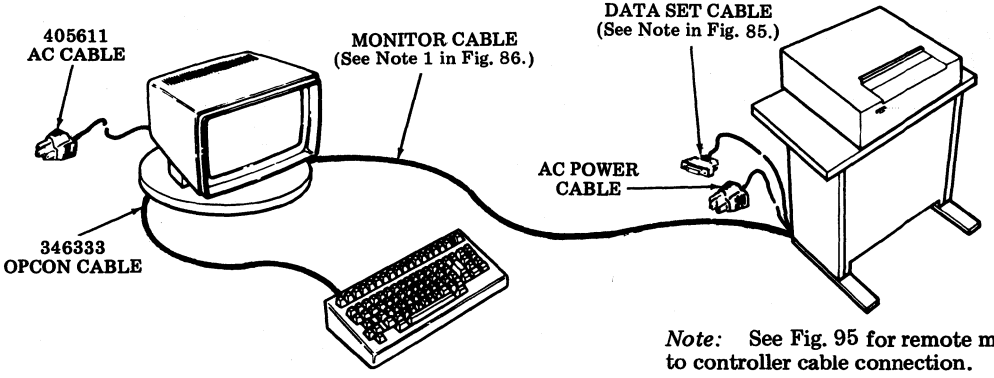


Fig. 88—KDP Pedestal-Mounted, Friction Feed Printer



Note: See Fig. 95 for remote monitor to controller cable connection.

Fig. 89—KDP Remote Opcon and Monitor 80-Column Friction or Tractor Feed Printer

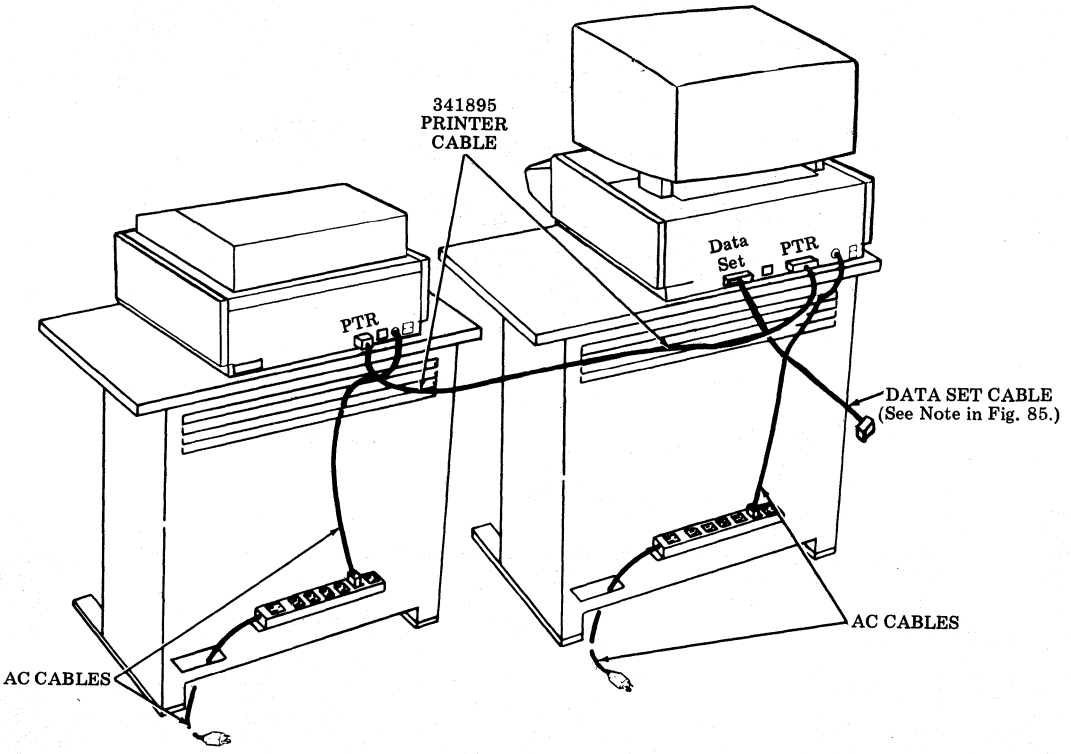


Fig. 90—KDP Pedestal-Mounted, 80-Column or 132-Column Tractor Feed Printer Adjacent

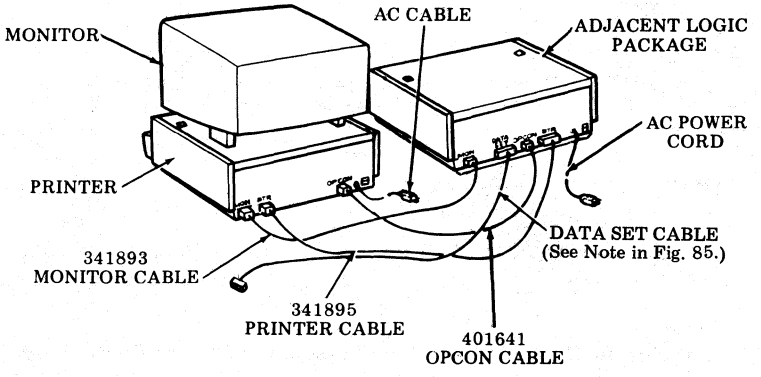


Fig. 91—KDP Table-Mounted, Adjacent Logic, Friction Feed Printer Under Monitor

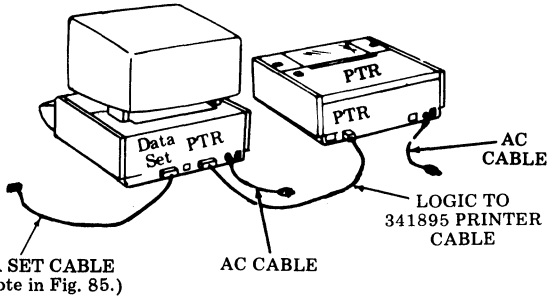


Fig. 92—KDP Table-Mounted, Adjacent Friction Feed Printer

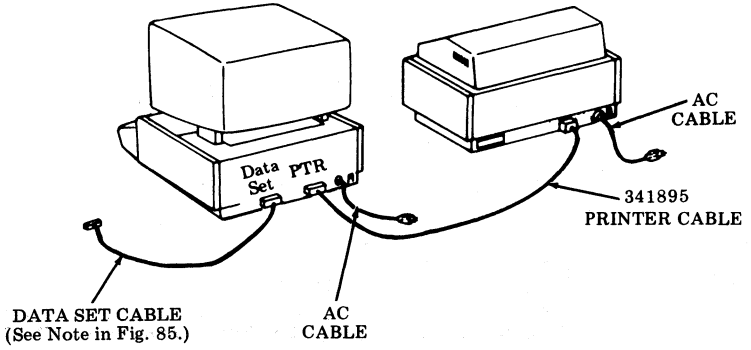
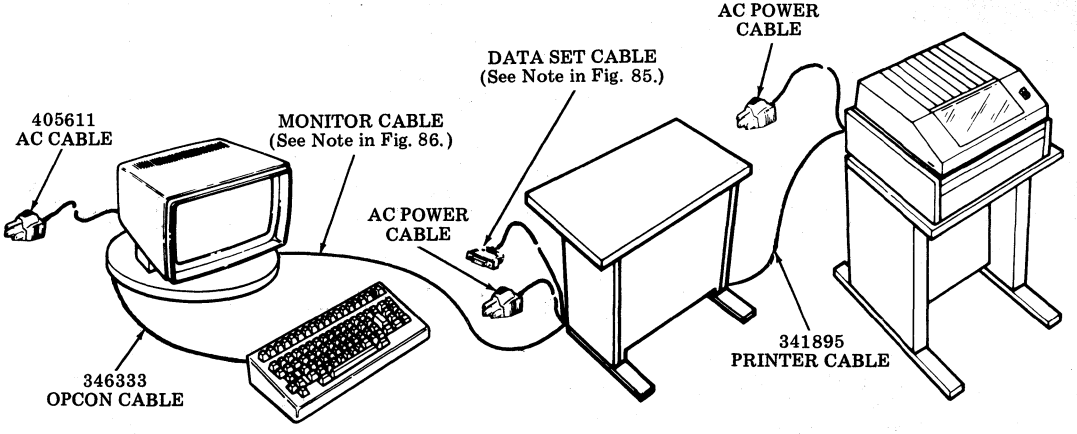


Fig. 93—KDP Table-Mounted, Adjacent Tractor Feed Printer (80-Column or 132-Column)



Note: See Fig. 95 for remote monitor to controller cable connection.

Fig. 94—KDP Remote Opcon and Monitor With Pedestal for 80- or 132-Column Tractor Feed Printer

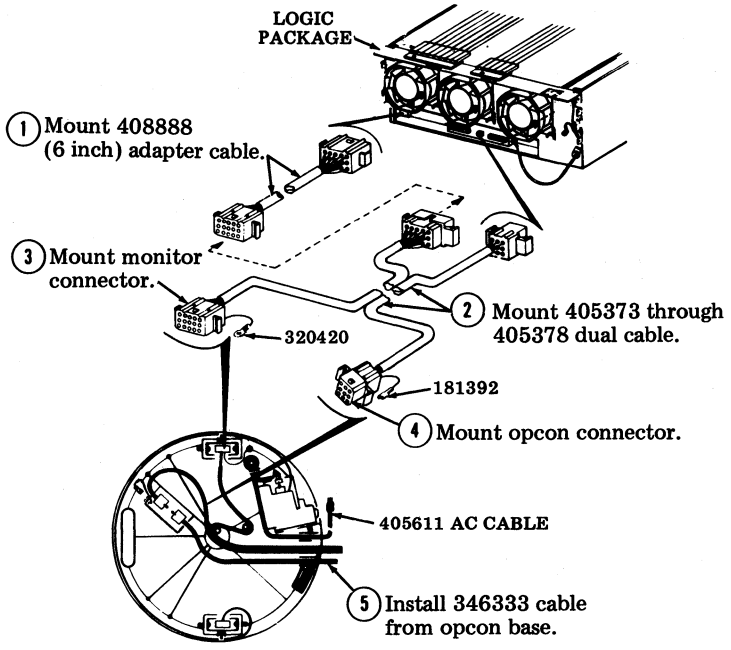


Fig. 95–Remote Monitor to Controller Cable Connection

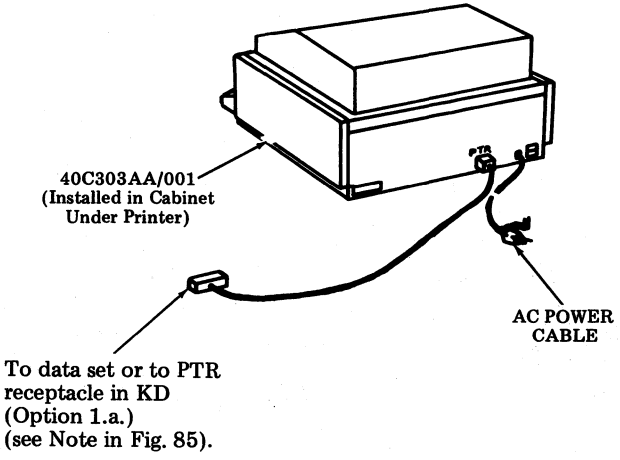
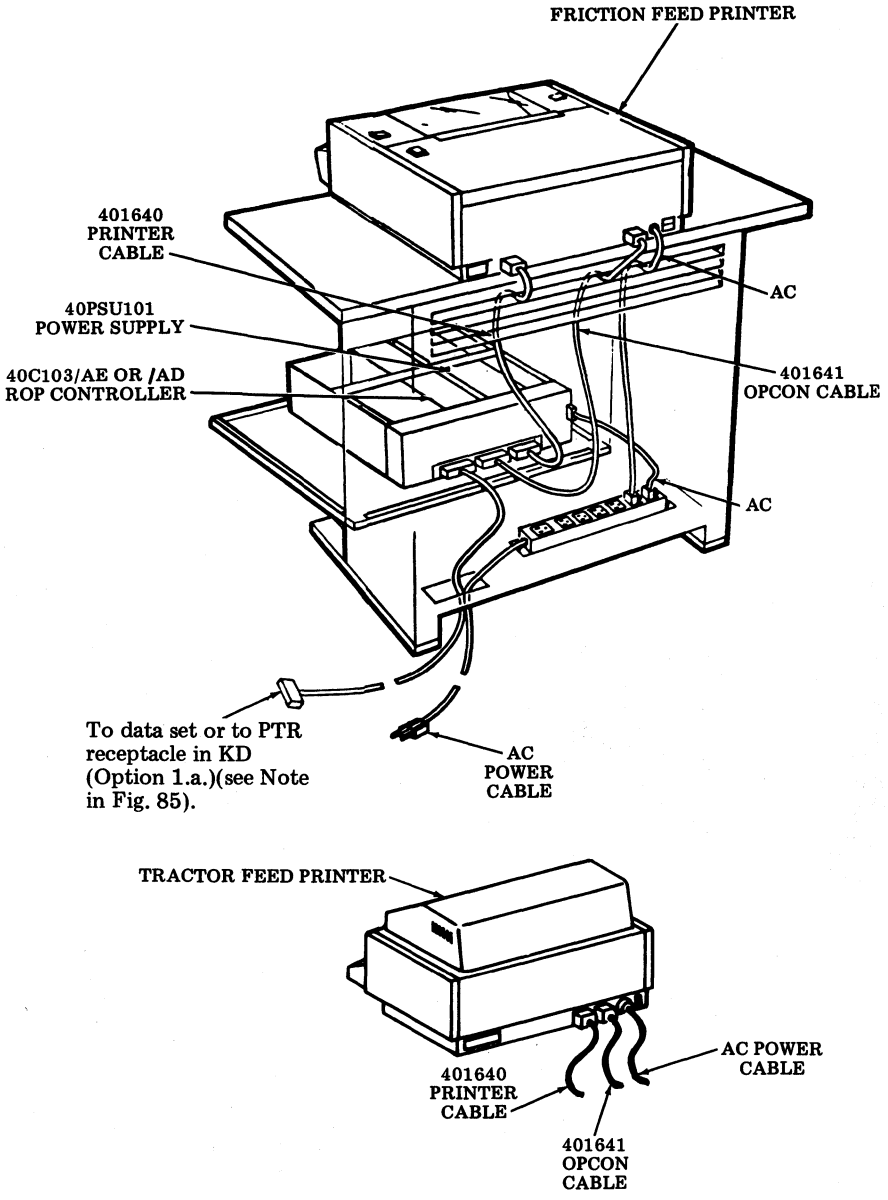


Fig. 96–ROP (40C303AA/001 Integrated Controller, 80- or 132-Column Printer)



Note: Connection of cables is the same with tractor feed or friction feed printer.

Fig. 97—ROP for KD-ROP (40C103/AD or 40C103/AE Controller, Friction Feed or Tractor Feed 80-Column Printer)

J. Data Set Installation

3.03 Option the data set using options given on Pages 71-93. Further information on data set installation may be found in the following BSPs:

Data Set 103G Installation — Section 591-026-200
Data Set 103J Installation — Section 591-039-200
Data Set 103JR Installation — Section 591-044-200
Data Set 108F Installation — Section 591-042-100
Data Set 108G Installation — Section 591-042-100
Data Set 113A Installation — Section 591-033-200
Data Set 113C Installation — Section 591-041-200
Data Set 113CR Installation— Section 591-046-200
Data Set 113D Installlation — Section 591-040-200
Data Set 113DR Installation —Section 591-047-200
Data Set 201C Installation — Section 592-029-200
Data Set 201CR Installation— Section 592-036-200
Data Set 202C Installation — Section 592-015-200
Data Set 202R Installation — Section 592-025-200
Data Set 202S Installation — Section 592-028-200
Data Set 202SR Installation— Section 592-037-200
Data Set 202T Installation — Section 592-031-200
Data Set 208A Installation — Section 592-027-200
Data Set 208B Installation — Section 592-030-200
Data Set 208BR Installation— Section 592-038-200
Data Set 212A Installation — Section 592-034-200
Data Set 212AR Installation—Section 592-039-200
829 Data Auxiliary Set Installation — Section 598-082-200

3.04 Data Set Mounting (202D, 202R, 202S, 202T)

① Remove data set cover by loosening four screws.

② Separate the pan from the electrical assembly by removing four screws from the bottom (retain screws).

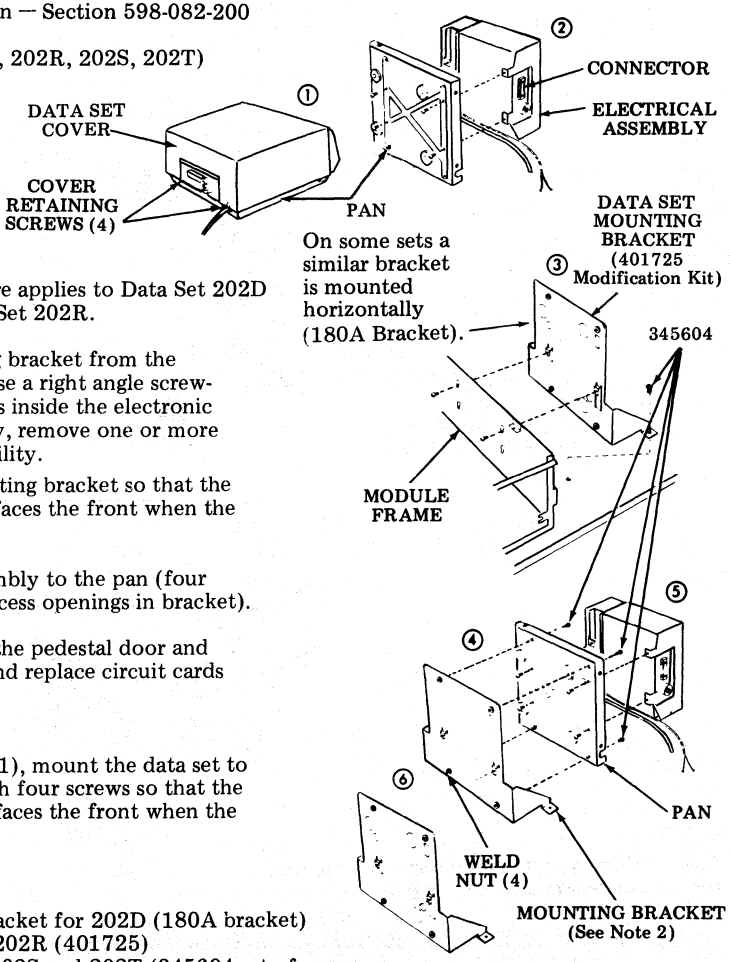


Fig. 98

Note 1: The following procedure applies to Data Set 202D only. Proceed to Step 7 for Data Set 202R.

③ Remove the data set mounting bracket from the pedestal door (four screws). Use a right angle screwdriver to loosen the two screws inside the electronic package enclosure. If necessary, remove one or more circuit cards to create accessibility.

④ Assemble the pan to the mounting bracket so that the connector end of the data set faces the front when the pedestal front panel is opened.

⑤ Reassemble the electrical assembly to the pan (four screws from Step 2 through access openings in bracket).

⑥ Mount the entire assembly to the pedestal door and module frame (four screws), and replace circuit cards (if removed earlier — Step 3).

⑦ Data Set 202R only:
With the cover removed (Step 1), mount the data set to the bracket in the pedestal with four screws so that the connector end of the data set faces the front when the pedestal front panel is opened.

⑧ Reinstall data set cover.

Note 2: WES63 — mounting bracket for 202D (180A bracket)
WES6X — mounting bracket for 202R (401725)
WES64 — mounting bracket for 202S and 202T (345604 set of parts, 193A mounting bracket).

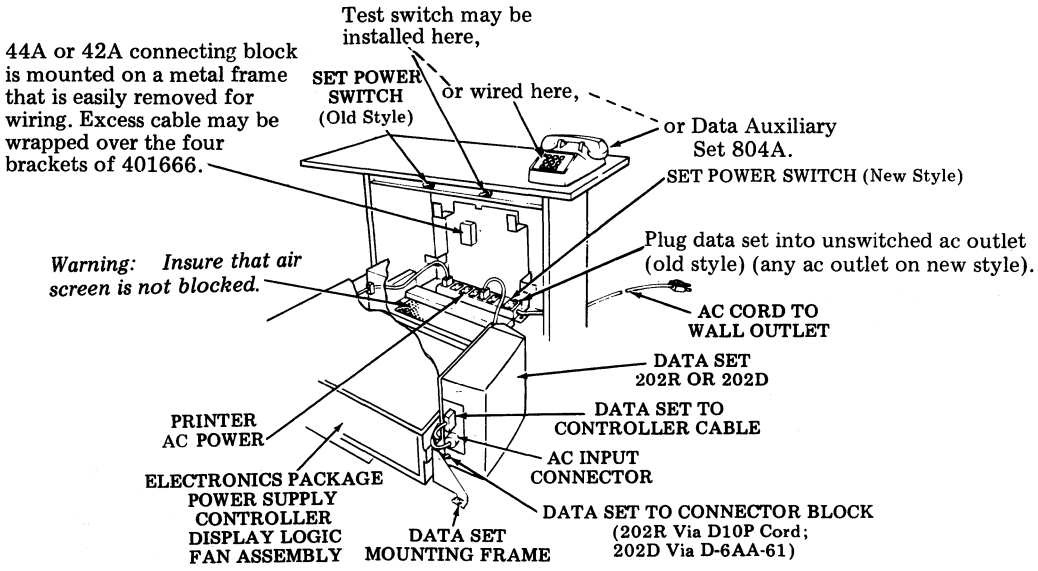


Fig. 99

3.05 The following is the EIA interface for the 40/2:

PIN NO.	EIA LEAD DESIGNATIONS
1	Protective Ground (AA)
2	Transmitted Data (BA)
3	Received Data (BB)
4	Request to Send (CA)
5	Clear to Send (CB)
6	Data Set Ready (CC)
7	Signal Ground (AB)
8	Data Carrier Detector (CF)
11	Secondary Request to Send (SCA) - See Note 2.
12	Secondary Received Line Signal Detector (SCF)
20	Data Terminal Ready (CD)
22	Ring Indicator (CE)
23	Alarm (ROP with Integrated Controller) or Speed Selection

Cinch or Cannon Plug — DB-19604-432

Note 1: On an ROP with an Integrated Controller, the following leads are used for current applications:

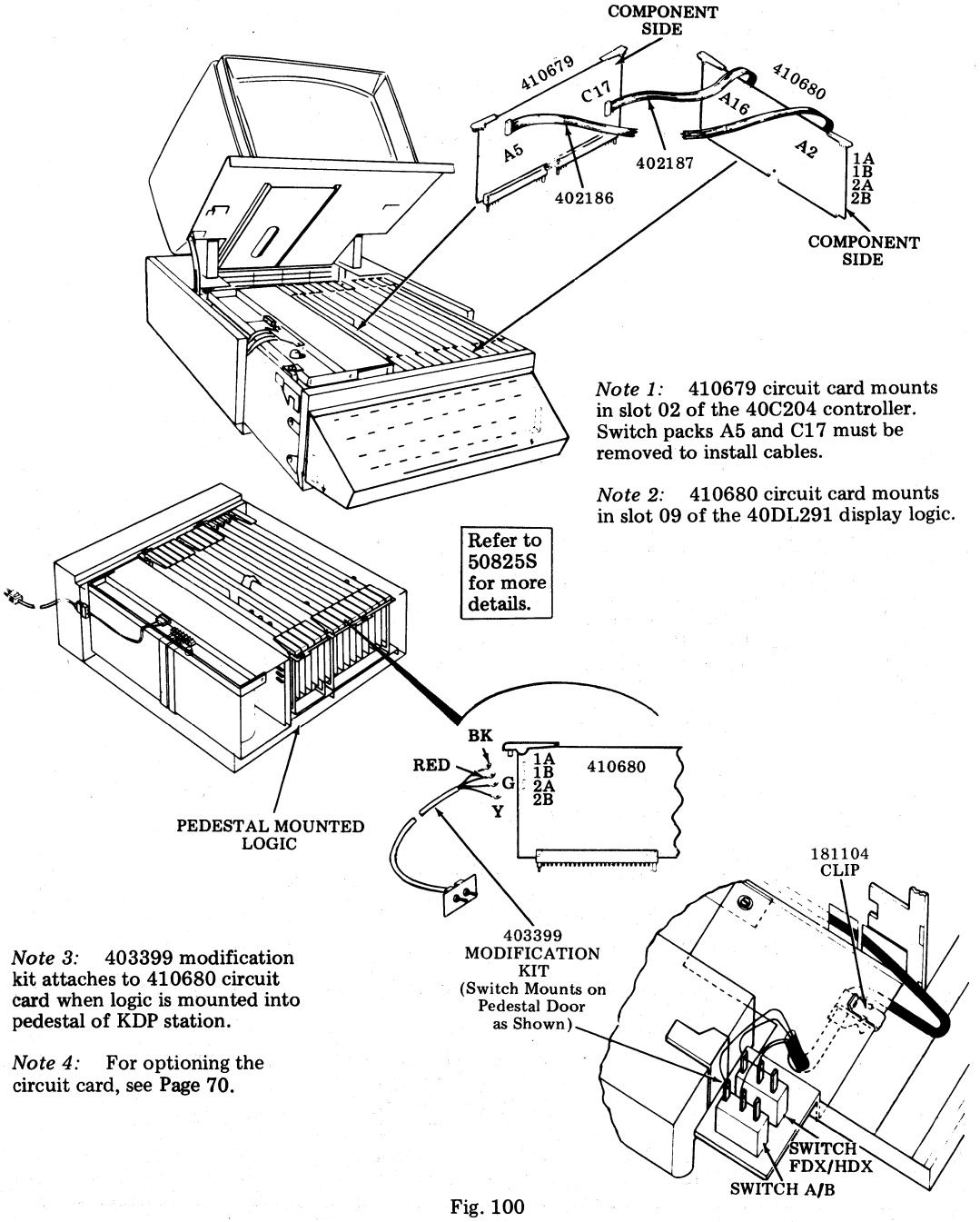
Pin 14 — 20/60 mA Transmit+ with respect to pin 7 (lead not present in EIA cable)
Pin 15 — 20/60 mA Receive+
Pin 17 — 20/60 mA Receive-

Note 2: Some customer interfaces use pin 19 as Secondary Request to Send (SCA).

Data and control circuits in accordance with EIA RS-232-C.

Voltage	Control	Line Signal	Binary State
-5 V to -25 V	Off	Mark	1
+5 V to +25 V	On	Space	0

K. Attendant Selectable Features (403400 and 403399 Modification Kits)



Note 1: 410679 circuit card mounts in slot 02 of the 40C204 controller. Switch packs A5 and C17 must be removed to install cables.

Note 2: 410680 circuit card mounts in slot 09 of the 40DL291 display logic.

Note 3: 403399 modification kit attaches to 410680 circuit card when logic is mounted into pedestal of KDP station.

Note 4: For optioning the circuit card, see Page 70.

Fig. 100

4. OPTIONS

GENERAL

4.01 This part includes all options that are utilized in the DATASPEED 40/2 Station and associated data sets. It also covers handling of circuit cards, location of circuit card switch packs, and information on how to activate or change switch positions.

4.02 The controller and printer option switches are enabled per service order request. The options enabled should be checked on the Station Features and Options Record, W-4DIXB (see 4.26).

4.03 If any field options are to be changed, turn off power and remove cards using the following procedures. Check card to see that pins are not bent before reinserting card.

Warning: Wear 346392 ground strap. See 1.03 of this section.

EXTRACTING CIRCUIT CARDS FROM THE CONTROLLER

4.04 To extract circuit cards from the controller:

(a) Lift up on the extractor handles of the circuit card.

(b) Lift circuit card straight up.

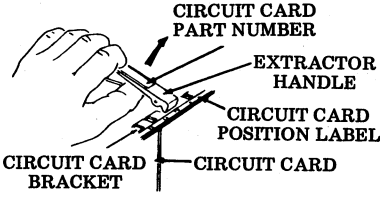


Fig. 101

EXTRACTING CIRCUIT CARDS FROM THE PRINTER

4.05 Friction Feed Printer

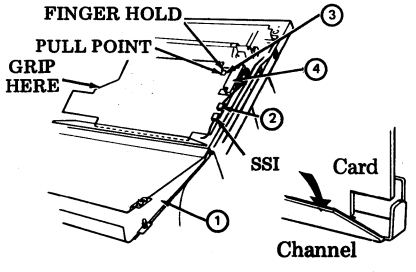


Fig. 102

① With the printer in the "ribbon changing or maintenance position," remove two screws that secure paper chute to bottom of printer and allow the chute to hinge down.
② Disconnect P103 printer cable connector from the 400921 SSI connector.
③ Using finger hold and a firm grip of card edge on opposite side as shown, use an even pulling force and unplug 410640 card from two rows of magnet assembly contacts.
④ Carefully lift bottom edge of card out from metal channel and unplug J3 connector from edge contacts of card. Remove card.

Note: During reassembly, make certain that the J3 connector is plugged onto the card and that the card is located within the channel before plugging it into the two rows of magnet assembly contacts. Apply slight pressure at both ends and middle of card to fully seat it on magnet contacts.

4.06 Tractor Feed Printers

① Remove two screws.
② Loosen three screws.
③ Slide plate out.
④ Remove connector from 410640 or 410076 card, and using pull points, pull card down and out.

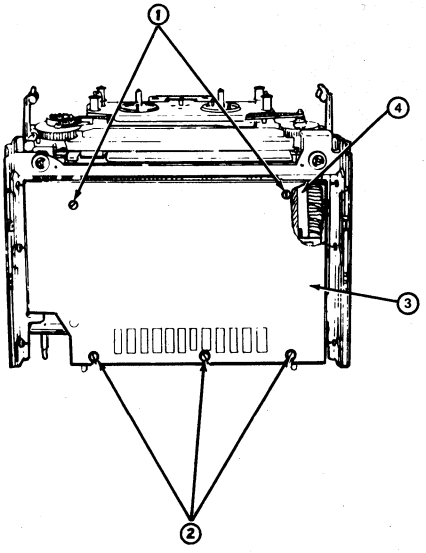


Fig. 103

Note: It is <u>not necessary</u> to remove the 410071, 410072, or 410729 card to activate or change switch positions.

ACTIVATING SET OR STATION OPTIONS

4.07 To activate or change options on the 40/2 circuit cards, perform the following procedures.

(a) Turn off all power to the station.

(b) Locate the circuit card that contains the option to be activated. (A complete list of options available can be found on Table A.)

(c) Remove circuit card.

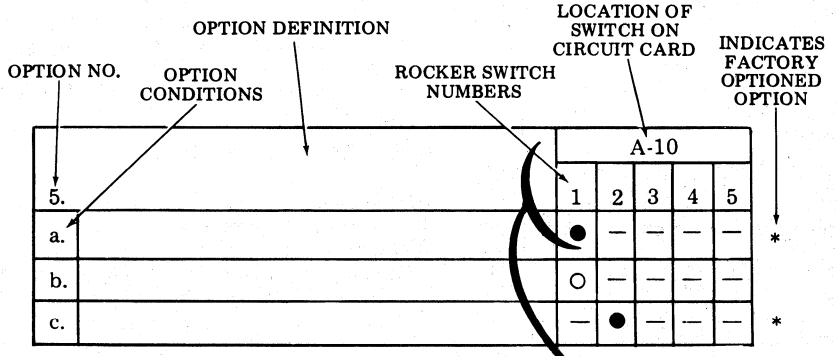
Warning: To avoid possible damage to MOS circuitry, attach 346392 static ground strap to wrist and frame ground before handling circuit cards.

(d) Locate the proper option switch or screw and activate as required.

(e) Return the circuit card to its proper location.

(f) Turn on station power.

(g) Perform a checkout of the station to verify proper operation of the option.

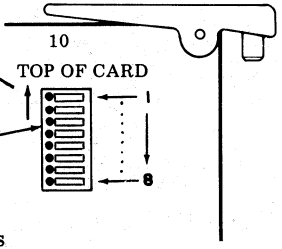


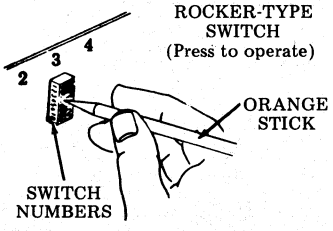
Legend:

- ● Indicates dot end of rocker switch depressed.
- O Indicates blank end of rocker switch depressed.
- – Switch position does not affect option.
- * Factory optioned.

Switch OFF = O (Depress or flip right)
Switch ON = ● (Depress or flip left)

Option switches on circuit cards in the controller and display logic are addressed with the Number "1" switch being towards the board top. Printer card option switches are addressed as in the illustrations accompanying the specific option activation information.





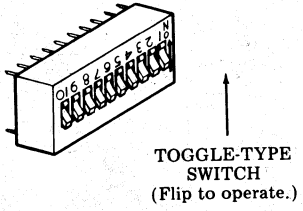


Fig. 104

FIELD OPTIONS AND DESCRIPTIONS

4.08 The options listed below are numbered, and provide brief descriptions to facilitate choices available. A list of suggested data sets and data set options is provided in 4.30.

4.09 Options marked with an asterisk (*) are factory options (shipped with set unless otherwise ordered) for 40/2 Stations.

4.10 The factory options may have been changed by the Service Center according to the service order, and should be entered on the Station Features and Options Record, W-4DIXB.

4.11 Option Listings:

1. Interface to Printer
   a. EIA
   b. SSI*] Choose 1

2. Not Used on DATASPEED 40/2 Stations

3. EIA Send/Receive Data Baud Rate

	(KD)		(ROP)
a.	1050	Not Applicable on DATASPEED 40/2 KD or KDP Stations	a. 1050
b.	1200*		b. 1200*
c.	2400		
d.	1800	Not Applicable on DATASPEED 40/2 KD or KDP Stations	
e.	2100		
f.	4800		
g.	600		
h.	300		
i.	150		
j.	110		

4. EIA Reverse Channel (see Note 1)
   a. Reverse Channel Required to Send* (see Note 2)
   b. Reverse Channel Not Required to Send] Choose 1

Note 1: If using integrated ROP, Option 143.b. must be used to operate in print local mode.

Note 2: Applies to 202-type data set interface only for DATASPEED 40/2 Stations.

5. Response to Received Characters
   a. Reject Null*
   b. Accept Null] Choose 1
   c. Reject CR*
   d. Accept CR] Choose 1
   e. Reject Delete*
   f. Accept Delete] Choose 1
   g. Reject DC1*
   h. Accept DC1] Choose 1
   i. Reject DC3*
   j. Accept DC3] Choose 1] Applies to Issues 4B and later of the 410674 Circuit Card Only

6. Functions Receive
   a. All ESC Seq Displayed as Received (Function Not Performed)
   b. All ESC Seq Are Performed as Received But Not Displayed*] Choose 1

*Factory Installed Option

7. Errored Character on Receive (See Note)
   a. Not Displayed on Vertical Parity Error* — Required for DATASPEED 40/2 Stations
   b. Displayed on Vertical Parity Error — Not Used on DATASPEED 40/2 Stations

Note: Controllers used in DATASPEED 40/1 and 40/3 have Option 7.b. factory optioned.

8. Page (Message) Ending Character Functions on Send
   a. End on FF
   b. Do Not End on FF* — Choose 1
   c. End on ETX*
   d. Do Not End on ETX — Choose 1
   e. End on EOT* (Required)
   f. Do Not End on EOT — (Not Optional on DATASPEED 40/2 Stations) (see Note)
   g. End on GS*
   h. Do Not End on GS — Choose 1

Note: End on EOT must be optioned for DATASPEED 40/2 Stations. In 202-type data set operation, a received EOT causes RTS to turn on even through set is in local. If station is in local with PRINT ON LINE lighted, a received DLE-EOT is not a disconnect sequence. Received carrier must be dropped to cause a disconnect.

9. Highlight
   a. Delimiters Not Sent (Except in Form Send Mode)
   b. Delimiters Sent (Modifies 13.)* — Choose 1

10. Line Ending Sequence (Batch mode only)
    a. CR LF
    b. CR CR LF* — Choose 1
    c. LF

11. Mode After Send
    a. Local*
    b. Receive (See Note) — Choose 1
    c. EXT Mode — Not Used on DATASPEED 40/2 Stations

Note: If DLE-EOT is used as a sent disconnect sequence, Option 11.b. will cause REC to light, DTR stays on, and disconnect will not occur.

12. Form Enter
    a. Disable in Local
    b. Enabled in Local* — Choose 1

13. Send Variations (All Without Delimiters Except as Modified by 9.b.). In Form Send, Protect and Unprotect Sent as Displayed With Delimiters.
    a. Send All as Displayed
    b. Send All as Displayed With Unprotected HT to Space*
    c. Send Protect as Space and Unprotected as Displayed
    d. Send Protect as Space and Unprotected as Displayed, HT to Space
    e. Send Protect as Delete, Unprotected as Displayed
    f. Send Unprotected Only as Displayed
    g. Send Unprotected Only and HT at End of Field
    h. Send Unprotected Only With Unprotected HT to Space — Choose 1

14. Not Used on DATASPEED 40/2 Stations

*Factory Installed Option

15. Not Used on DATASPEED 40/2 Stations

16. Not Used on DATASPEED 40/2 Stations

17. Printer Margin and Form Width — Choose 1
    - c. Last Character on 80th Column*
    - d. Last Character on 79th Column
    - d. Last Character on 78th Column
    - d. Last Character on 77th Column
    - d. Last Character on 76th Column
    - d. Last Character on 75th Column
    - d. Last Character on 74th Column
    - d. Last Character on 73rd Column

Note: Options 17.a. and 17.b. are not used on DATASPEED 40/2 Stations.

18. Printer Paper Feed Out — Choose 1
    - a. No Paper Feed Out
    - b. Paper Feed Out on DSR Loss — 16 Lines
    - c. Paper Feed Out on DSR Loss and ETX*

Note: Option 18.c. is not recommended for tractor feed printers.

19. Printer Errored Character Symbol — Choose 1 (Must match type carrier ordered)
    - a. Printed on Even Parity Error
    - b. Printed on Odd Parity Error
    - c. Not Printed on Parity Error* — Required for DATASPEED 40/2 Stations
    - d. Printers With 96 Character Set
    - e. Printers With 64 Character Set
    - f. Printers With Extended ASCII Character Set

20. Line Feed on Printer — Choose 1
    - a. Single*
    - b. Double

21. Foldover on Up-Low Printer — Choose 1 (Per type carrier ordered)
    - a. Lower Case and Upper Case Print*
    - b. Lower Case Prints as Upper Case

22. Foldover on Monocase Printer
    - a. Lower Case Prints as Error Symbol
    - b. Lower Case Prints as Upper Case*

23. Extended ASCII on Printer (Extended ASCII) — For future use — do not change.
    - a. Prints Extended ASCII Characters
    - b. Does Not Print Extended ASCII (See 19.a., b., or c.).*

24. ROP — Odd/Even Character Parity Check — Choose 1
    - a. Even Vertical Parity (Response for Odd Parity)*
    - b. Odd Vertical Parity (Response for Even Parity)

25. ROP — Response to Receive Parity Error — Choose 1
    - a. Printer Receives Odd Parity Null
    - b. Printer Receives Character Even Though it has Parity Error*
    - c. DATA ERROR Key Lights — Choose 1
    - d. DATA ERROR Key Does Not Light*

26. Not Used on DATASPEED 40/2 Station.

*Factory Installed Option

27. Message Start
    a. Home on Transmit (Local Mode Only)
    b. Send From Cursor*

    Choose 1

28. Disconnect on Loss of Carrier
    a. Disconnect After 45 Seconds*
    b. Does Not Disconnect — Timer Disabled

    Choose 1

29. Printer Message Mode
    a. When in Print On-Line Mode, Copies Display in Send or Copies the Line in Receive or Local*
    b. Not Used on DATASPEED 40/2 Stations
    c. Permanent Print On-Line Received Data Only (See Note)
    d. When in Print On-Line Mode, Copies Received Data when in Receive or Local (See Note)

    Choose 1

Note: Not recommended for DATASPEED 40/2 applications.

30. Not Used on DATASPEED 40/2 Stations.

31. Not Used on DATASPEED 40/2 Stations.

32. Not Used on DATASPEED 40/2 Stations.

33. Not Used on DATASPEED 40/2 Stations.

34. Not Used on DATASPEED 40/2 Stations.

35. Printer Motor Control
    a. "Data Set Ready" Controls Printer Motor*
    b. "Carrier Detect" Controls Printer Motor

    Choose 1

36. Printer Paper Alarm
    a. Paper Alarm Affects DTR at End of Call. DTR Off Until Paper is Restored.*
    b. Paper Alarm Affects DTR Immediately. DTR Off Until Paper is Restored.

    Choose 1

37. Not Used on DATASPEED 40/2 Stations.

38. Data Stacking
    a. Enable Data Stacking
    b. Disable Data Stacking*

    Choose 1

39. Forms (Tractor Feed Only)
    a. On
    b. Off*

    Choose 1

40. Go Receive on CR, S/R Mode Only (See Note 1)
    a. Go Receive on Sending CR (See Note 2)
    b. Do Not Go Receive on Sending of CR*

    Choose 1

Note 1: Applies to Issues 4B and later of the 410674 circuit card only.

Note 2: Applies to HDX Operation With Data Set 202 on DATASPEED 40/2 Stations Only.

*Factory Installed Option

41. Mode of Operation (See Notes 1 and 2)
    a. Half-Duplex
    b. Full Duplex*] Choose 1

Note 1: 202-type data sets which have a local copy feature provided, require the full duplex option to be selected for proper operation.

Note 2: If Interrupt is used with 202-type data set, Option 41.a. must be chosen.

42. Parity Generation
    a. Send Even Parity*
    b. Send Odd Parity
    c. Send 8th Bit as Mark
    d. Send 8th Bit as Space] Choose 1

43. Stop Bit Generation
    a. Send One Stop Bit*] Choose 1
    b. Send Two Stop Bits

44. EIA Receive Data
    a. Enable EIA Receive Data*] Choose 1
    b. Disable EIA Receive Data

45. Current Loop Data
    a. Enable Receive Data From Current Loop] Choose 1
    b. Disable Receive Data From Current Loop*

46. Interface Select (See Note)
    a. 103-Type Data Set Interface] Choose 1
    b. 202-Type Data Set Interface*

Note: If option 46.a. is selected, EOT will cause a disconnect (recommend for low speed station). If option 46.b. is selected, EOT will cause a mode change (recommend for high speed station).

47. Printer Interface (See Note)
    a. Enable Printer Interface] Choose 1
    b. Disable Printer Interface*

Note: Option 47 affects operation only when LOCAL is lighted. With 47.a., Ring Indicator automatically turns on PRINT ON LINE, and allows automatic answer of calls. With 47.b., POL turns on but call will not be answered automatically. If REC is lighted, POL turns on with either 47.a. or 47.b., the call is answered, and the printer and display copy.

48. Incomplete Form Suppresses Paper Alarm
    a. No (Paper Out Not Gated With Form Feed)
    b. Yes (Paper Out Gated With Form Out)*(See Note)] Choose 1

Note: Option 48.b. delays paper alarm until end of form out.

49. Interrupt Feature (See Note 1)
    a. Enable Interrupt Feature* (See Note 2)] Choose 1 for KD Station
    b. Disable Interrupt Feature

Note 1: This option applies to KD sets only. KDP sets with 202-type data sets contain the interrupt feature without enabling an option (providing reverse channel is used).

Note 2: Applies to Issues 2A and later of the 410770 circuit card when used in a KD station arrangement with 202-type data sets.

*Factory Installed Option

50. Action Upon Printer SSI Loss (See Notes 1 and 2)
    a. Go Local and Hold
    b. Go Local and Release
    c. No Mode Change*

    Choose 1

Note 1: PRINT ON LINE is turned off in Options 50.a., 50.b., or 50.c.

Note 2: Card issues before 3A will not change mode if SSI fails, PRINT ON LINE also stays on with card Issue 1 and turns off with card Issue 2.

51. Remote Control (See Note)
    a. 4210 character control*
    b. Not Used on DATASPEED 40/2
    c. Data Set 212A Operation (See Note 2)

    Choose 1

Note 1: Card issues before 3A are permanently equipped with Option 51.a.

Note 2: The DATASPEED 40/2 will not control Pin 23 going to the 212A Data Set. The HS button must be operated manually.

52. Print On Line Control (See Note)
    a. Copy All Sent Data
    b. Printer Copies as Option 29*

    Choose 1

Note: PRINT ON LINE is automatically turned on when SEND is lighted for Option 52.a. (either Batch or S/R mode). Card issues before 3A are permanently equipped with Option 52.b. Selection of 52.a. still allows use of DC2 and DC4 printer motor control when the RECEIVE is lighted (either Batch or S/R mode).

53. Printer Motor Hold Timer (See Note 1)
    a. Enabled (See Note 2)
    b. Disabled*

    Choose 1

Note 1: With Option 53.a., printer motor is held on for two minutes following end of message (useful for messages less than 2 minutes apart). Card issues before 3A are permanently equipped with Option 53.b.

Note 2: If both 52.a. and 53.a. Options are selected, cut strap A on the 410770 card.

54. Printing of Escape Sequences Suppressed (See Note)
    a. Not Suppressed (Required)*
    b. Suppressed

    Choose 1

Note: Option 54.a. must be used in 40/2 KDP arrangement and Option 54.b. is recommended in 40/2 KD-ROP arrangement.

55. Shift In/Shift Out Detection
    a. Not used*
    b. Enables Printing Additional Characters

    Choose 1

*Factory Installed Option

56. Friction Feed/Tractor Feed Printers
    a. Friction — Motor Held On After Paper Alarm*
    b. Tractor — Motor Turned Off After Paper Alarm
    ] Choose 1

57. SSI/OEM Interface
    a. SSI*
    b. OEM — Not Used on DATASPEED 40/2
    ] Choose 1

58. Idle Line Motor Control
    a. Disabled — Motor Held On During Idle Line*
    b. Enabled — Motor Turned Off After 40 Second Idle Line
    ] Choose 1

59. Not Used on DATASPEED 40/2 Stations

60. Aux Alarm
    a. Enable
    b. Disable (or Alarm Mechanism Not Present)*
    ] Choose 1

61. Regulator Grounding
    a. SSI (Circuit and Frame Ground at PTR)
    b. SSI/OEM (Circuit and Frame Ground at PTR, +12 V)*
    c. OEM (Circuit Ground EXT to PTR, +12 V)
    ] Choose 1

*Factory Installed Option

TABLE A

40/2 OPTION LOCATION

Option Number	Location	Page No.	Option Number	Location	Page No.
1.	410770	45	27.	410675	49
2.	Does Not Apply	—	28.	410770	45
3.	410580	68	29.	410770	45
	410679	47	30. - 34.	Does Not Apply	—
	410680	70	35.	410580	68
4.	410679	47	36.	410580	69
	410680	70	37.	Does Not Apply	—
5.	410674	50	38.	410582	69
6.	410674	50	39.	Printer	67
7.	410674	50	40.	410674	51
8.	410674	51	41.	410679	47
9.	410674	51		410680	70
10.	410675	49	42.	410679	48
11.	410675	49		410680	70
12.	410675	49	43.	410679	48
13.	410676	48		410680	70
14. - 16.	Does Not Apply	—	44.	410679	48
17.	410640	52		410680	70
	410729	54	45.	410679	48
	410071	56		410680	70
	410072	59	46.	410679	48
	410076	62		410680	70
18.	410640	52	47.	410679	48
	410729	54	48.	410729	55
	410071	57		410071	57
	410072	60		410072	60
	410076	63		410076	63
19.	410640	53	49.	410770	46
	410729	55	50.	410770	46
	410071	57	51.	410770	46
	410072	60	52.	410770	46
	410076	63	53.	410770	46
20.	Printer	66	54.	410071	58
21.	410640	53		410072	61
	410729	55		410076	64
	410071	57	55.	410071	58
	410072	60		410072	61
	410076	63		410076	64
22.	410640	53	56.	410076	64
	410729	55	57.	410071	58
	410071	57		410072	61
	410072	60		410076	64
	410076	63	58.	410071	58
23.	410640	53		410072	61
	410729	55		410076	64
	410071	57	59.	410071	58
	410072	60		410072	61
	410076	63		410085	65
24.	410580	68	60.	410071	58
25.	410580	68		410072	61
26.	Does Not Apply	—	61.	410151	65

CONTROLLER OPTIONS (KD)

4.12 410770 Circuit Card (Independent Printer Access) — Card Position X101

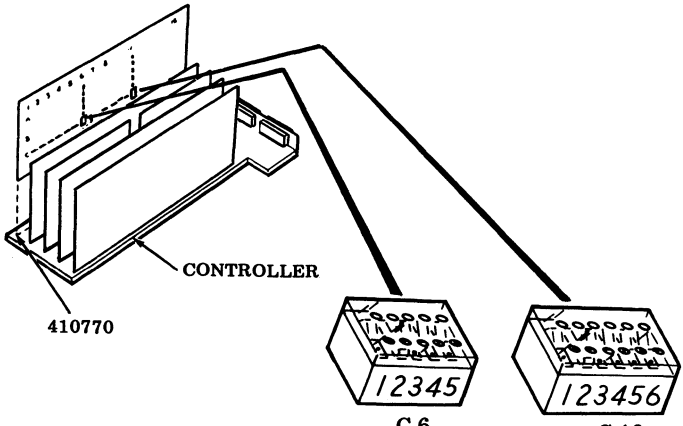


Fig. 105

		C-6 (Note 3)					
1.	Interface to Printer	1	2	3	4	5	
a.	EIA (Use for KD-ROP)	O	●	—	—	—	
b.	SSI (Use for KDP or KD)	●	O	—	—	—	*

		C-6					
28.	Disconnect on Loss of Carrier	1	2	3	4	5	
a.	Disconnect After 45 Seconds	—	—	O	—	—	*
b.	Does Not Disconnect — Timer Disables	—	—	●	—	—	

		C-6					
29.	Printer Message Mode	1	2	3	4	5	
a.	When in Print On-Line Mode, Copies Display in Send or Copies Line in Receive or Local.	—	—	—	O	●	*
b.	Not used on DATASPEED 40/2 stations	—	—	—	—	—	
c.	Permanent Print On-Line, Received Data Only.(See Notes 1&2)	—	—	—	●	O	
d.	When in Print-On-Line, Copies Received Data When in Receive or Local. (See Notes 1&2)	—	—	—	O	O	

Note 1: Not recommended for DATASPEED 40/2 applications.

Note 2: Applies to 202-type data set operation only.

Note 3: The switch pack shown in position C-6 was in position C-7 on Issue 2A and earlier circuit cards.

(See Legend for ●, O, —, and * on Page 36.)

410770 Circuit Card (Contd)

49.	Interrupt Feature (for KD Stations Only)	C-6					C-10					
		1	2	3	4	5	1	2	3	4	5	6
a.	Enable KD Interrupt Feature (See Note)	●	O	—	—	—	O	O	—	—	—	—
b.	To Disable Interrupt Feature on KD or KDP Stations, Place a Blocking Keytop Over the Interrupt Key on the Operator Console											

Note: Issue 2A or earlier 410770 circuit card assemblies require the circuit path (component side) between MLB6-1 and the plated through hole be cut in addition to optioning C-6 switches. (The C-10 switch pack is not present on Issue 2A or earlier.) Issue 3A and later cards require optioning of C-6 and C-10 option switches only (land cut is not required).

50.	Action upon Ptr. SSI Loss (See Note below) (Issue 3A and Later)	C-10						
		1	2	3	4	5	6	
a.	Go Local and hold	●	O	—	—	—	—	
b.	Go Local and release	O	●	—	—	—	—	
c.	No mode change	O	O	—	—	—	—	*

Note: Print On Line (POL) turned off in 50.a., b., and c. Card Issue 1 will not change mode (and POL stays on) if SSI fails. Card Issue 2 will not change mode (but POL goes off) if SSI fails.

51.	Remote Control (See Note below)	C-10						
		1	2	3	4	5	6	
a.	4210 Character Control	—	—	●	O	—	—	*
b.	Not used on DATASPEED 40/2	—	—	—	—	—	—	
c.	Data Set 212A Operation (For Future Use)	—	—	O	O	—	—	

Note: Card Issues 1 and 2 are permanently equipped with Option 51.a. Switch pack C-10 is only present on Issue 3A and later.

52.	PRINT ON LINE Control (See Note below)	C-10						
		1	2	3	4	5	6	
a.	Copy all sent data	—	—	—	—	●	—	
b.	POL as determined by Option 29	—	—	—	—	O	—	*

Note: POL is automatically turned on when SEND is lighted for Option 52.a. (either Batch or S/R mode). Card Issues 1 and 2 are permanently equipped with Option 52.b. Switch pack C-10 is only present on Issue 3A or later circuit card. Selection of Option 52.a. will allow use of DC2 and DC4 printer motor control when RECEIVE is lighted (either Batch or S/R mode).

53.	Ptr. Motor Hold Timer (See Notes below.)	C-10						
		1	2	3	4	5	6	
a.	Enabled	—	—	—	—	—	●	
b.	Disabled	—	—	—	—	—	O	*

Note 1: Switch pack C-10 is only present on Issue 3A or later circuit card. If Option 53.a. is selected, printer motor is held on for two minutes following end of message. This is useful if messages are ever less than 2 minutes apart. Card Issue 1 is equipped with Option 53.b. Card Issue 2, labeled "Motor hold option," is equipped with Option 53.a. Card Issue 2 not labeled "Motor hold option" is equipped with Option 53.b.

Note 2: If both Options 53.a. and 52.a. are selected, cut strap A (land between coordinates B1 and B2). Otherwise strap A must be left intact on 410770 card.

(See Legend for ●, O, —, and * on Page 36.)

4.13 410679 Circuit Card (Full Duplex Interface) — Card Position X02

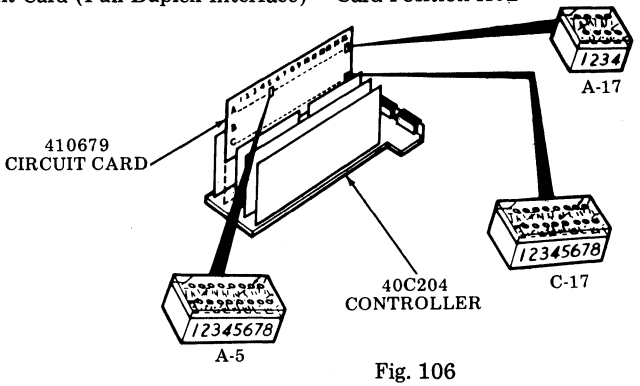


Fig. 106

3.	EIA Send/Receive Data Baud Rate	C-17 1	2	3	4	5	6	7	8	A-17 1	2	3	4	
a.	1050 Baud (Do Not Use)	—	—	—	—	—	—	—	—	—	—	—	—	
b.	1200 Baud	—	●	●	●	O	O	O	O	—	—	●	—	*
c.	2400 Baud	—	●	●	O	O	O	O	O	—	—	●	—	
d.	1800 (Do Not Use)	—	—	—	—	—	—	—	—	—	—	—	—	
e.	2100 (Do Not Use)	—	—	—	—	—	—	—	—	—	—	—	—	
f.	4800 Baud	—	●	O	O	O	O	O	O	—	—	●	—	
g.	600 Baud	—	●	●	●	●	O	O	O	—	—	●	—	
h.	300 Baud	—	●	●	●	●	●	O	O	—	—	●	—	
i.	150 Baud	—	●	●	●	●	●	●	O	—	—	●	—	
j.	110 Baud (See Note)	—	●	●	●	O	●	O	●	—	—	O	—	
k.	9600 Baud (w/209A)	—	O	O	O	O	O	O	O	—	—	●	—	

Note: Switch A-17 Number 3 is normally open for Option 3.j., except when an ROP is being used in a KD-ROP arrangement EIA, then this switch should be closed.

4.	EIA Reverse Channel	A-5 1	2	3	4	5	6	7	8	C-17 1	2	3	4	5	6	7	8	A-17 1	2	3	4	
a.	Reverse Channel Required to Send (202-Type Data Set)	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*
b.	Reverse Channel Not Required to Send (202, 212, 108 or 103-Type Data Set)	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

41.	Mode of Operation	A-5 1	2	3	4	5	6	7	8	C-17 1	2	3	4	5	6	7	8	A-17 1	2	3	4	
a.	Half-Duplex (See Note)	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
b.	Full Duplex	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*

Note: Don't use "41.a." and "local copy on primary channel" data set option.

(See Legend for ●, O, —, and * on Page 36.)

410679 Circuit Card (Contd)

42.	Parity Generation	A-5 1	2	3	4	5	6	7	8	C-17 1	2	3	4	5	6	7	8	A-17 1	2	3	4	
a.	Send Even Parity	—	—	O	●	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*
b.	Send Odd Parity	—	—	●	●	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
c.	Send 8th Bit as Mark	—	—	O	O	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
d.	Send 8th Bit as Space	—	—	O	O	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

43.	Stop Bit Generation	A-5 1	2	3	4	5	6	7	8	C-17 1	2	3	4	5	6	7	8	A-17 1	2	3	4	
a.	Send One Stop Bit	—	—	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*
b.	Send Two Stop Bits	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

44.	EIA Received Data	A-5 1	2	3	4	5	6	7	8	C-17 1	2	3	4	5	6	7	8	A-17 1	2	3	4	
a.	Enable EIA Receive Data	—	—	—	—	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	*
b.	Disable EIA Receive Data	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	—	

45.	Current Loop Data	A-5 1	2	3	4	5	6	7	8	C-17 1	2	3	4	5	6	7	8	A-17 1	2	3	4	
a.	Enable Receive Data From Current Loop	—	—	—	—	—	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	
b.	Disable Receive Data From Current Loop	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	—	*

46.	Interface Select	A-5 1	2	3	4	5	6	7	8	C-17 1	2	3	4	5	6	7	8	A-17 1	2	3	4	
a.	103-Type Modem Interface or 20/60 Milliampere Interface (also 113A)	—	—	—	—	—	—	—	—	O	—	—	—	—	—	—	—	—	—	—	—	
b.	202-Type Modem Interface	—	—	—	—	—	—	—	—	●	—	—	—	—	—	—	—	—	—	—	—	*

47.	Printer Interface (See Note Page 32)	A-5 1	2	3	4	5	6	7	8	C-17 1	2	3	4	5	6	7	8	A-17 1	2	3	4	
a.	Enable Printer Interface	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	O	—	—	
b.	Disable Printer Interface	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	●	—	—	*

4.14 410676 Circuit Card (Send Variations) — Card Position X03

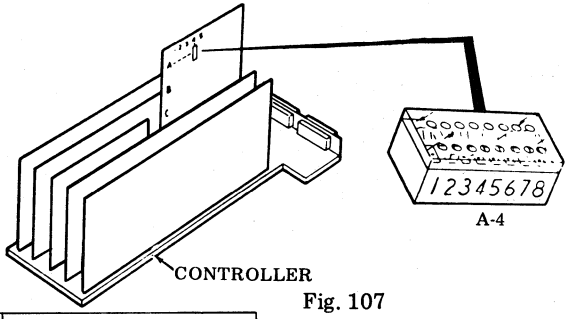


Fig. 107

13.	Send Variations (All Without Delimiters Except as Modified by Option 9.b.)	A-4 1	2	3	4	5	6	7	8	
a.	Send All as Displayed	●	O	●	●	●	●	●	O	
b.	Send All as Displayed With Unprotected HT to Space	●	O	●	●	●	●	●	●	*
c.	Send Protect as Space and Unprotected as Displayed	O	●	O	O	●	O	●	O	
d.	Send Protect as Space, Unprotected as Displayed and HT to Space	O	●	O	O	●	O	●	●	
e.	Send Protect as Delete, Unprotected as Displayed	O	●	O	O	O	O	●	O	
f.	Send Unprotected Only as Displayed	O	●	O	●	●	●	●	O	
g	Send Unprotected Only and HT at End of Field	O	●	O	●	●	O	O	●	
h.	Send Unprotected Only With Unprotect HT to Space	O	●	O	●	●	●	●	●	

(See Legend for ●, O, —, and * on Page 36.)

4.15 410675 Circuit Card (Message Control) — Card Position X04

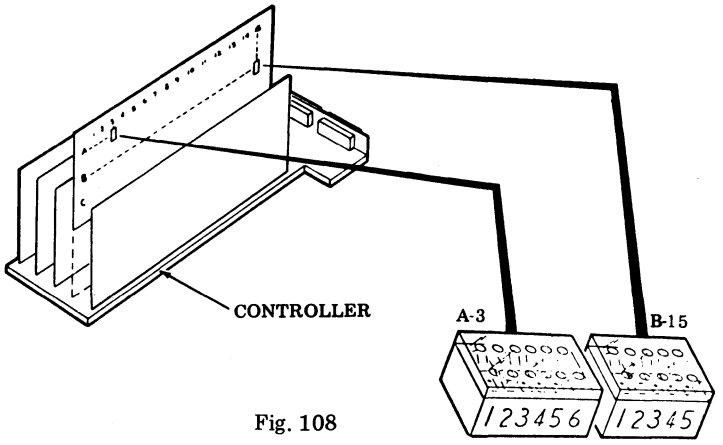


Fig. 108

10. Line Ending Sequence (Bath Mode Only)		A-3						B-15					
		1	2	3	4	5	6	1	2	3	4	5	
a.	CR LF	—	—	—	—	O	—	●	●	O	O	O	
b.	CR CR LF	—	—	—	—	O	—	O	O	●	●	●	*
c.	LF	—	—	—	—	●	—	●	●	O	O	O	

11. Mode After Send		A-3						B-15					
		1	2	3	4	5	6	1	2	3	4	5	
a.	Local (Goes REC on Sent EOT)	—	O	●	●	—	—	—	—	—	—	—	*
b.	Receive (See Note)	—	●	O	●	—	—	—	—	—	—	—	
c.	Not used in DATASPEED 40/2 Stations	—	O	●	O	—	—	—	—	—	—	—	

Note: If DLE EOT is used as a sent disconnect sequence, Option 11.b. will cause REC to light, DTR stays on, and disconnect will not occur.

12. Form Enter		A-3						B-15					
		1	2	3	4	5	6	1	2	3	4	5	
a.	Disabled in Local	●	—	—	—	—	—	—	—	—	—	—	
b.	Enabled in Local	O	—	—	—	—	—	—	—	—	—	—	*

27. Message Start		A-3						
		1	2	3	4	5	6	
a.	Home on Transmit (Local Mode Only)	—	—	—	—	—	●	
b.	Send From Cursor	—	—	—	—	—	O	*

(See Legend for ●, O, —, and * on Page 36.)

4.16 410674 Circuit Card (Data Bus and Decode) — Card Position X05

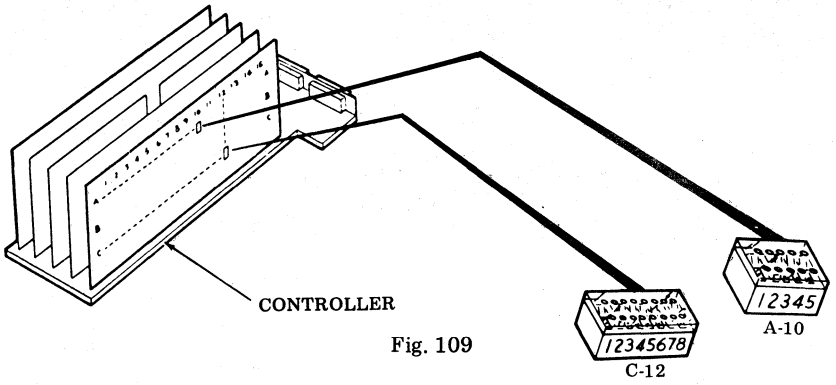


Fig. 109

5.	Response to Received Characters	A-10 1	2	3	4	5	C-12 1	2	3	4	5	6	7	8	
a.	Reject Null	●	—	—	—	—	—	—	—	—	—	—	—	—	*
b.	Accept Null	O	—	—	—	—	—	—	—	—	—	—	—	—	
c.	Reject CR	—	●	—	—	—	—	—	—	—	—	—	—	—	*
d.	Accept CR	—	O	—	—	—	—	—	—	—	—	—	—	—	
e.	Reject Delete	—	—	●	—	—	—	—	—	—	—	—	—	—	*
f.	Accept Delete	—	—	O	—	—	—	—	—	—	—	—	—	—	
g.	Reject DC_1 (See Note)	—	—	—	—	—	—	—	—	—	—	●	—	—	*
h.	Accept DC_1 (See Note)	—	—	—	—	—	—	—	—	—	—	O	—	—	
i.	Reject DC_3 (See Note)	—	—	—	—	—	—	—	—	—	—	—	●	—	*
j.	Accept DC_3 (See Note)	—	—	—	—	—	—	—	—	—	—	—	O	—	

Note: Applies to Issues 4B and later of the 410674 circuit card.

6.	Functions on Receive	A-10 1	2	3	4	5	C-12 —	—	—	—	—	—	—	—	
a.	All Escape Sequences Displayed as Received (Function not Performed)	—	—	—	O	—	—	—	—	—	—	—	—	—	
b.	All Escape Sequences are Performed as Received but Not Displayed	—	—	—	●	—	—	—	—	—	—	—	—	—	*

7.	Errored Character on Receive (See Note)	A-10 1	2	3	4	5	C-12 —	—	—	—	—	—	—	—	
a.	Not Displayed on Vertical Parity Error (Required for Standard 40/2)	—	—	—	—	●	—	—	—	—	—	—	—	—	*
b.	Displayed on Vertical Parity Error	—	—	—	—	O	—	—	—	—	—	—	—	—	

Note: Controllers used in DATASPEED 40/1 and 40/3 have Option 7.b. factory optioned.

(See Legend for ●, O, —, and * on Page 36.)

410674 Circuit Card (Contd)

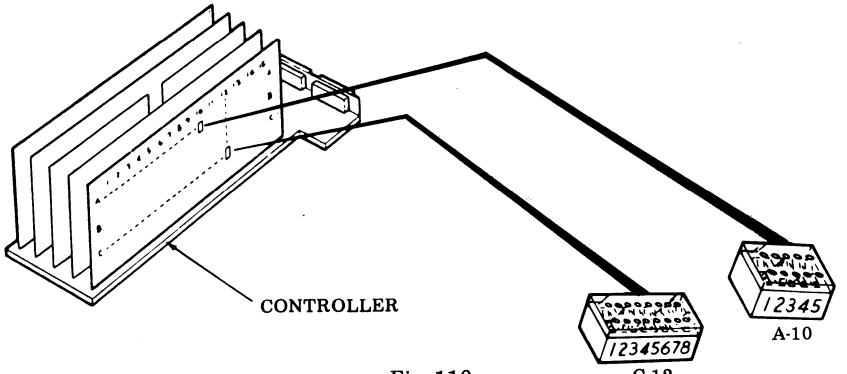


Fig. 110

8. Send Message Ending Character		A-10					C-12								
		1	2	3	4	5	1	2	3	4	5	6	7	8	
a.	**End on FF**	—	—	—	—	—	—	—	●	—	—	—	—	—	
b.	Do Not End on FF	—	—	—	—	—	—	—	O	—	—	—	—	—	*
c.	End on ETX	—	—	—	—	—	●	—	—	—	—	—	—	—	*
d.	Do Not End on ETX	—	—	—	—	—	O	—	—	—	—	—	—	—	
e.	End on EOT (Required) (See Note)	—	—	—	—	—	—	●	—	—	—	—	—	—	*
f.	Do Not End on EOT	—	—	—	—	—	—	O	—	—	—	—	—	—	
g.	End on GS	—	—	—	—	—	—	—	—	●	—	—	—	—	*
h.	Do Not End on GS	—	—	—	—	—	—	—	—	O	—	—	—	—	

Note: In 202-type data set operation, a received EOT causes RTS to turn on even though set is in local. No further messages can then be received even if PRINT ON LINE is on. If station is in local with PRINT ON LINE lighted, a received DLE EOT is not a disconnect sequence. Received carrier must be dropped to cause a disconnect.

9. Highlight (See Note)		A-10					C-12								
		1	2	3	4	5	1	2	3	4	5	6	7	8	
a.	Delimiters Not Sent (Except in Form Send Mode)	—	—	—	—	—	—	—	—	—	●	—	—	—	
b.	Delimiters Sent (Modifies Option 13)	—	—	—	—	—	—	—	—	—	O	—	—	—	*

Note: Highlight delimiters are ESC 3 (on) and ESC 4 (off).

40. Go Receive on Sending CR (←) (S/R Mode Only) (See Note)		C-12								
		1	2	3	4	5	6	7	8	
a.	Go Receive on Sending CR	—	—	—	—	—	—	—	●	++
b.	Do Not Go Receive on Sending CR	—	—	—	—	—	—	—	O	*

Note: Applies to Issues 4B and later of the 410674 circuit card.

(See Legend for ●, O, —, and * on Page 36.)

++Applies to operation with 202-type data set — HDX.

PRINTER OPTIONS

4.17 410640 Circuit Card (Printer Logic)

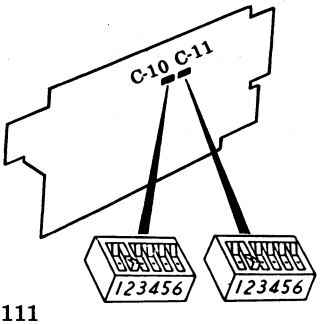


Fig. 111

17. Printer Margin and Form Width		C-10						C-11						
		1	2	3	4	5	6	1	2	3	4	5	6	
c.	Last Character on 80th Column	—	—	—	—	—	—	O	●	●	O	—	—	*
d.	Last Character on 79th Column	—	—	—	—	—	—	O	●	●	●	—	—	
d.	Last Character on 78th Column	—	—	—	—	—	—	●	O	O	●	—	—	
d.	Last Character on 77th Column	—	—	—	—	—	—	●	O	●	O	—	—	
d.	Last Character on 76th Column	—	—	—	—	—	—	●	O	●	●	—	—	
d.	Last Character on 75th Column	—	—	—	—	—	—	●	●	O	●	—	—	
d.	Last Character on 74th Column	—	—	—	—	—	—	●	●	●	O	—	—	
d.	Last Character on 73rd Column	—	—	—	—	—	—	●	●	●	●	—	—	

Note: Option 17.a. and 17.b. are not used on DATASPEED 40/2 Stations.

18. Printer Paper Feed Out		C-10						C-11						
		1	2	3	4	5	6	1	2	3	4	5	6	
a.	No Paper Feed Out	●	—	—	—	—	—	—	—	—	—	—	O	
b.	Paper Feed Out on DSR Loss — 16 Lines (See Note)	O	—	—	—	—	—	—	—	—	—	—	O	
c.	Paper Feed Out on DSR Loss or ETX	O	—	—	—	—	—	—	—	—	—	—	●	*

Note: "DSR Loss" assumes that data set operation is used; the actual controlling SSI signal is loss of Receive Message. The feed out will be 16 lines, as stated, only if Option 39.b. (Forms switch Off) is selected; if Option 39.a. (Forms switch On) is selected, the printer will feed out paper to the next form feed position.

19. Printer Errored Character Symbol (Option 19.c. is required for Standard 40/2)		C-10						C-11						
		1	2	3	4	5	6	1	2	3	4	5	6	
a.	Printed on Even Parity Error	—	—	—	●	O	—	—	—	—	—	—	—	
b.	Printed on Odd Parity Error	—	—	—	O	●	—	—	—	—	—	—	—	
c.	Not Printed on Parity Error	—	—	—	●	●	—	—	—	—	—	—	—	*
d.	Printers With 96 Character Set	—	●	O	—	—	—	—	—	—	—	—	—	
e.	Printers With 64 Character Set	—	O	●	—	—	—	—	—	—	—	—	—	
f.	Printers With Extended ASCII Character Set	—	O	O	—	—	—	—	—	—	—	—	—	

(See Legend for ●, O, —, and * on Page 36.)

410640 Circuit Card (Contd)

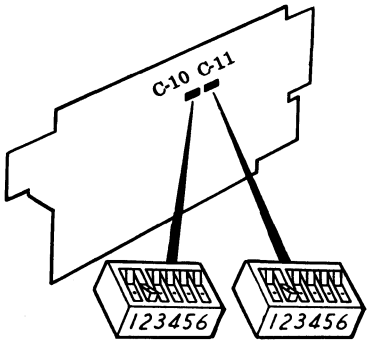


Fig. 112

21. Foldover on Up-Low Printer		C-10						C-11						
		1	2	3	4	5	6	1	2	3	4	5	6	
a.	Lower Case and Upper Case Print	—	—	—	—	—	—	—	—	—	—	O	—	*
b.	Lower Case Prints as Upper Case	—	—	—	—	—	—	—	—	—	—	●	—	

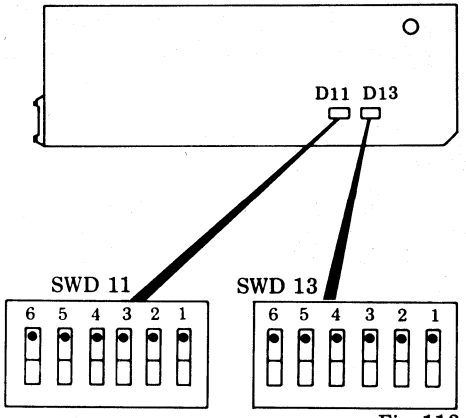
22. Foldover on Monocase Printer		C-10						C-11						
		1	2	3	4	5	6	1	2	3	4	5	6	
a.	Lower Case Not Folded Over	—	—	—	—	—	—	—	—	—	—	O	—	
b.	Lower Case Printed as Upper Case	—	—	—	—	—	—	—	—	—	—	●	—	*

23. Extended ASCII on Printer (Option 23.b. is Required)		C-10						C-11						
		1	2	3	4	5	6	1	2	3	4	5	6	
a.	†Prints Extended ASCII Characters (No Parity Check)	—	—	—	O	O	—	—	—	—	—	—	—	
b.	Does Not Print Extended Characters (See Option 19.a., b., or c.)	—	—	—	—	—	—	—	—	—	—	—	—	*

(See Legend for ●, O, —, and * on Page 36.)

† Option 23.a. requires local engineering.

4.18 410729 Circuit Card (Printer Logic)



(Printer Circuit Card Viewed From Beneath Printer — Access to Switches is Through a Cutout in Bottom Pan of Printer.)

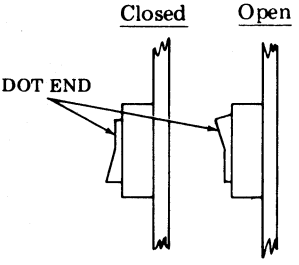


Fig. 113

17. Printer Margin and Form Width		D-11 6	5	4	3	2	1	D-13 6	5	4	3	2	1	
e.	Last Character on Column 132	—	—	—	—	—	—	○	○	○	●	—	—	*
f.	Last Character on Column 131	—	—	—	—	—	—	○	○	●	○	—	—	
g.	Last Character on Column 130	—	—	—	—	—	—	○	○	●	●	—	—	
h.	Last Character on Column 129	—	—	—	—	—	—	○	●	○	●	—	—	
i.	Last Character on Column 128	—	—	—	—	—	—	○	●	●	○	—	—	
j.	Last Character on Column 127	—	—	—	—	—	—	○	●	●	●	—	—	
k.	Last Character on Column 126	—	—	—	—	—	—	●	○	○	●	—	—	
l.	Last Character on Column 125	—	—	—	—	—	—	●	○	●	○	—	—	
m.	Last Character on Column 124	—	—	—	—	—	—	●	○	●	●	—	—	
n.	Last Character on Column 123	—	—	—	—	—	—	●	●	○	●	—	—	
o.	Last Character on Column 122	—	—	—	—	—	—	●	●	●	○	—	—	
p.	Last Character on Column 121	—	—	—	—	—	—	●	●	●	●	—	—	

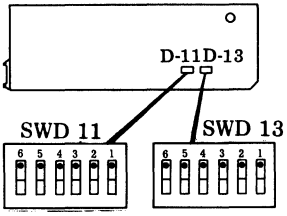
Note: Options 17.a., 17.b., 17.c., and 17.d. are not used.

18. Printer Paper Feed Out		D-11 6	5	4	3	2	1	D-13 6	5	4	3	2	1	
a.	No Paper Feed Out	—	—	●	—	—	—	—	—	—	—	—	○	
b.	Paper Feed Out on DSR Loss — 16 Lines (See Note)	—	—	○	—	—	—	—	—	—	—	—	○	
c.	Paper Feed Out on DSR Loss or ETX	—	—	○	—	—	—	—	—	—	—	—	●	*

Note: "DSR Loss" assumes that data set operation is used; the actual controlling SSI signal is loss of Receive Message. The feed out will be 16 lines, as stated, only if Option 39.b. (Forms switch Off) is selected; if Option 39.a. (Forms switch On) is selected, the printer will feed out paper to the next form feed position.

(See Legend for ●, ○, —, and * on Page 36.)

410729 Circuit Card (Contd)



(Printer Circuit Card Viewed From Beneath Printer — Access to Switches is Through a Cutout in Bottom Pan of Printer.)

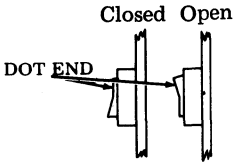


Fig. 114

19. Printer Errored Character Symbol (Option 19.c. is Required for Standard 40/2)		D-11						D-13						
		6	5	4	3	2	1	6	5	4	3	2	1	
a.	Printed on Even Parity Error	–	–	–	●	O	–	–	–	–	–	–	–	
b.	Printed on Odd Parity Error	–	–	–	O	●	–	–	–	–	–	–	–	
c.	Not Printed on Parity Error	–	–	–	●	●	–	–	–	–	–	–	–	*
d.	Printers With 96-Character Set	●	O	–	–	–	–	–	–	–	–	–	–	
e.	Printers With 64-Character Set	O	●	–	–	–	–	–	–	–	–	–	–	
f.	Printers With Extended ASCII Character Set	O	O	–	–	–	–	–	–	–	–	–	–	
g.	Printers With Longest Character Set Having Less Than 64 Characters	O	●	–	–	–	–	–	–	–	–	–	–	

21. Foldover on Up-Low Printer		D-11						D-13						
		6	5	4	3	2	1	6	5	4	3	2	1	
a.	Lower Case and Upper Case Print	–	–	–	–	–	–	–	–	–	–	O	–	*
b.	Lower Case Prints as Upper Case	–	–	–	–	–	–	–	–	–	–	●	–	

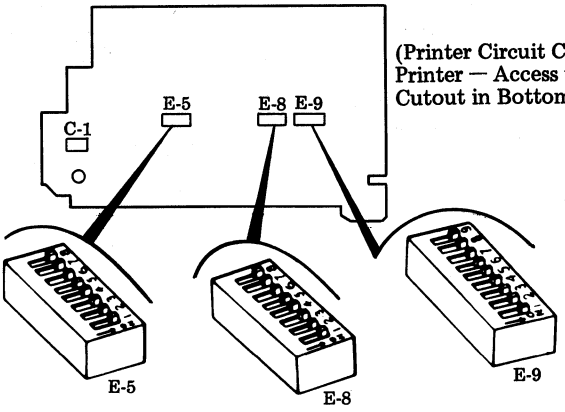
22. Foldover on Monocase Printer		D-11						D13						
		6	5	4	3	2	1	6	5	4	3	2	1	
a.	Lower Case Prints as Error Symbol	–	–	–	–	–	–	–	–	–	–	O	–	
b.	Lower Case Prints as Upper Case	–	–	–	–	–	–	–	–	–	–	●	–	*

23. Extended ASCII on Printer (Extended ASCII)		D-11						D-13						
		6	5	4	3	2	1	6	5	4	3	2	1	
a.	Prints Extended ASCII Characters (No Parity Check)	–	–	–	O	O	–	–	–	–	–	–	–	
b.	Does Not Print Extended ASCII (See 19.a., b., or c.)	–	–	–	(As in 19.)			–	–	–	–	–	–	*

48. Incomplete Form Suppresses Paper Alarm		D11						D13						
		6	5	4	3	2	1	6	5	4	3	2	1	
a.	No (Paper Out Not Gated With Form Out)	–	–	–	–	–	●	–	–	–	–	–	–	
b.	Yes (Paper Out Gated With Form Out)	–	–	–	–	–	O	–	–	–	–	–	–	*

(See Legend for ●, O, –, and * on Page 36.)

4.19 410071 Circuit Card (Printer Logic)



(Printer Circuit Card Viewed From Beneath Printer — Access to Switches is Through a Cutout in Bottom Pan of Printer.)

Fig. 115

410071 — 80-Column Tractor Feed Printer Logic Circuit Card

17.	Printer Left Margin and Form Width	E-5								
		1	2	3	4	5	6	7	8	
a.	First Printed Column — Column 1	—	—	●	●	●	●	—	—	*
b.2.	First Printed Column — Column 2	—	—	●	●	○	●	—	—	
b.3.	First Printed Column — Column 3	—	—	●	●	○	○	—	—	
b.4.	First Printed Column — Column 4	—	—	●	○	○	○	—	—	
b.5.	First Printed Column — Column 5	—	—	○	○	●	○	—	—	
b.6.	First Printed Column — Column 6	—	—	○	○	○	●	—	—	
b.7.	First Printed Column — Column 7	—	—	○	●	○	○	—	—	
b.8.	First Printed Column — Column 8	—	—	●	○	●	○	—	—	
b.9.	First Printed Column — Column 9	—	—	○	○	●	●	—	—	
b.10.	First Printed Column — Column 10	—	—	○	●	○	●	—	—	
b.11.	First Printed Column — Column 11	—	—	●	●	●	○	—	—	
b.12.	First Printed Column — Column 12	—	—	●	○	○	●	—	—	
b.13.	First Printed Column — Column 13	—	—	○	●	●	○	—	—	

410071 — 80-Column Tractor Feed Printer Logic Circuit Card

17.	Printer Right Margin and Form Width																										
	Last Char Printed Column Number	E-9									E-5								E-8								
		1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
c.	80	○	●	—	●	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	*
d. (X)	73 61 49 37 25	●	●	—	●	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	
	74 62 50 38 26	○	●	—	●	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	
	75 63 51 39 27	●	○	—	●	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	
	76 64 52 40 28	●	●	—	○	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	
	77 65 53 41 29	○	●	—	○	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	
	78 66 54 42 30	●	○	—	○	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	
	79 67 55 43 31	●	●	—	●	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	
	68 56 44 32	○	●	—	●	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	
	69 57 45 33	●	○	—	●	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	
	70 58 46 34	●	●	—	○	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	
	71 59 47 35	○	●	—	○	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	
	72 60 48 36	●	○	—	○	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	●	

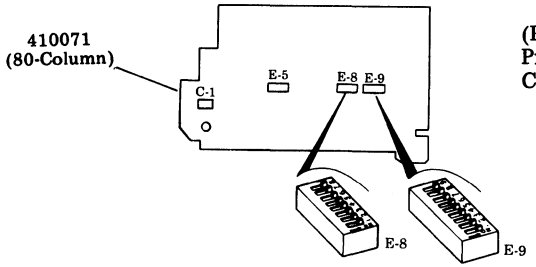
To obtain counts:

73 through 80 program as shown.
61 through 72 program as shown, then operate E-8 position 8 to OFF.
49 through 60 program as shown, then operate E-5 position 1 to OFF.
37 through 48 program as shown, then operate E-5 position 7 to OFF.
25 through 36 program as shown, then operate E-5 position 8 to OFF.

(X) Indicates desired column number.

(See Legend for ●, ○, —, and * on Page 36.)

410071 Circuit Card (Contd)



(Printer Circuit Card Viewed From Beneath Printer — Access to Switches is Through a Cutout in Bottom Pan of Printer.)

Fig. 116

18. Printer Paper Feedout	E-8 1	2	3	4	5	6	7	8	
a. No Paper Feedout	—	—	●	—	—	—	—	—	
b. Paper Feedout on DSR or RM Loss — 16 Lines or One Form	—	O	O	—	—	—	—	—	
c. Paper Feedout on DSR or RM Loss or ETX — 16 Lines or One Form	—	●	O	—	—	—	—	—	*

19. Printer Errored Character Symbol	E-9 1	2	3	4	5	6	7	8	9	E-8 1	2	3	4	5	6	7	8
a. Printed on Even Parity Error	—	—	—	—	—		●	—	—	—	—	—	—	—	—	—	—
b. Printed on Odd Parity Error	—	—	—	—	—	●	O	—	—	—	—	—	—	—	—	—	—
c. Not Printed on Parity Error	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	—	—
d. Printers With 96-Character Set	—	—	—	—	—	—	—	—	—	—	—	—	—	●	O	—	—
e. Printers With 64-Character Set	—	—	—	—	—	—	—	—	—	—	—	—	—	O	●	—	—
f. Printers With Extended ASCII Character Set	—	—	—	—	—	—	—	—	—	—	—	—	—	O	O	—	—
g. Printers With Longest Character Set Having Less Than 64 Characters	—	—	—	—	—	—	—	—	—	—	—	—	—	O	O	—	—

21. Foldover on Printers With 96-Character Set	E-8 1	2	3	4	5	6	7	8	
a. Lower Case and Upper Case Print	O	—	—	—	—	—	—	—	*
b. Lower Case Prints as Upper Case	●	—	—	—	—	—	—	—	

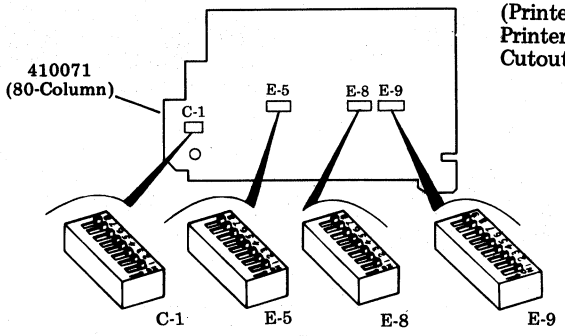
22. Foldover on Printers With 64-Character Set	E-8 1	2	3	4	5	6	7	8	
a. Lower Case Prints as Error Symbol	O	—	—	—	—	—	—	—	
b. Lower Case Prints as Upper Case	●	—	—	—	—	—	—	—	*

23. Extended ASCII on Printer (Extended ASCII)	E-9 1	2	3	4	5	6	7	8	9	
a. Prints Extended ASCII Characters (No Parity Check)	—	—	—	—	—	O	O	—	—	
b. Does Not Print Extended ASCII (See Option 19.a., b. or c.)	—	—	—	(As in 19.)		—	—	—	—	*

48. Incomplete Form Suppresses Paper Alarm	E-9 1	2	3	4	5	6	7	8	9	
a. No (Paper Out Not Gated With Formout)	—	—	—	—	—	—	—	—	●	
b. Yes (Paper Out Gated With Formout)	—	—	—	—	—	—	—	—	O	*

(See Legend for ●, O, —, and * on Page 36.)

410771 Circuit Card (Contd)



(Printer Circuit Card Viewed From Beneath Printer — Access to Switches is Through a Cutout in Bottom Pan of Printer.)

Fig. 117

		E-9									
		1	2	3	4	5	6	7	8	9	
54.	Printing of Escape Sequences Suppressed										
a.	Character After ESC Printed as Received	—	—	—	—	—	—	—	O	—	*
b.	Printing of Character After ESC Suppressed (Not used in 40/2 KDP application.)	—	—	—	—	—	—	—	●	—	+++

		E-9									
		1	2	3	4	5	6	7	8	9	
55.	SI/SO Detection										
a.	SI/SO Detection Not Used	—	—	O	—	—	—	—	—	—	*
b.	SI/SO Detection Enables Printing Additional Characters	—	—	●	—	—	—	—	—	—	

		E-8								
		1	2	3	4	5	6	7	8	
57.	SSI/OEM Interface									
a.	SSI	—	—	—	—	—	—	●	—	*
b.	OEM†	—	—	—	—	—	—	O	—	

†An option screw change may be required on 410151 circuit card in power module. If Option 57.b. is selected, option screw B on 410151 must be installed from the component side.

		E-8								
		1	2	3	4	5	6	7	8	
58.	Idle Line Motor Control									
a.	Disabled — Motor Held On Indefinitely During Idle Line	—	—	—	O	—	—	—	—	*
b.	Enabled — Motor Turned Off After 40-Second Idle Line	—	—	—	●	—	—	—	—	

		C-1								
		1	2	3	4	5	6	7	8	
59.	Speed Selection (Applies only if Option 57.b. is selected)									
a.	75 Baud	●	O	O	O	O	O	O	O	
b.	150 Baud	O	●	O	O	O	O	O	O	
c.	300 Baud	O	O	O	O	O	O	O	●	
d.	600 Baud	O	O	●	O	O	O	O	O	
e.	1200 Baud	O	O	O	O	O	●	O	O	
f.	2400 Baud	O	O	O	●	O	O	O	O	*
g.	4800 Baud	O	O	O	O	●	O	O	O	
h.	9600 Baud	O	O	O	O	O	O	●	O	

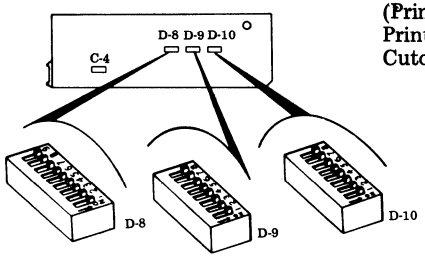
		E-5								
		1	2	3	4	5	6	7	8	
60.	Aux Alarm (See Note)									
a.	Enable	—	O	—	—	—	—	—	—	
b.	Disable	—	●	—	—	—	—	—	—	*

Note: Switch must be closed when paper jam alarm mechanism is not present. Switch must be opened when 402920 paper jam alarm modification kit is present.

+++ Option 54.b. should not be used on a 40/2 KDP (SSI interface). The character after escape is already suppressed by the KD. This option is recommended on a 40/2 KD-ROP or a ROP (EIA interface).

(See Legend for ●, O, —, and * on Page 36.)

4.20 410072 Circuit Card (Printer Logic)



(Printer Circuit Card Viewed From Beneath Printer — Access to Switches is Through a Cutout in Bottom Pan of Printer.)

Fig. 118

410072 — 132-Column Printer Logic Circuit Card

17.	Printer Left Margin and Form Width	D-8									
		1	2	3	4	5	6	7	8	9	
a.	First Printed Column — Column 1	—	—	●	●	●	●	—	—	—	*
b.2.	First Printed Column — Column 2	—	—	●	●	○	●	—	—	—	
b.3.	First Printed Column — Column 3	—	—	●	●	○	○	—	—	—	
b.4.	First Printed Column — Column 4	—	—	●	○	○	○	—	—	—	
b.5.	First Printed Column — Column 5	—	—	○	○	●	○	—	—	—	
b.6.	First Printed Column — Column 6	—	—	○	○	○	●	—	—	—	
b.7.	First Printed Column — Column 7	—	—	○	●	○	○	—	—	—	
b.8.	First Printed Column — Column 8	—	—	●	○	●	○	—	—	—	
b.9.	First Printed Column — Column 9	—	—	○	○	●	●	—	—	—	
b.10.	First Printed Column — Column 10	—	—	○	●	○	●	—	—	—	
b.11.	First Printed Column — Column 11	—	—	●	●	●	○	—	—	—	
b.12.	First Printed Column — Column 12	—	—	●	○	○	●	—	—	—	
b.13.	First Printed Column — Column 13	—	—	○	●	●	○	—	—	—	

410072 — 132-Column Printer Logic Circuit Card

17.	Printer Right Margin and Form Width																												
	Last Char Printed	D-8									D-9								D-10										
	Column Number	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8			
e.	132	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	●	○	—	○	○	—	—	—	*			
f.(X)	121 109 97 85 73	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	●	●	—	●	—	—	—	—				
	122 110 98 86 74	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	○	●	—	●	●	—	—	—				
	123 111 99 87 75	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	●	○	—	●	●	—	—	—				
	124 112 100 88 76	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	●	●	—	○	●	—	—	—				
	125 113 101 89 77	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	○	●	—	○	●	—	—	—				
	126 114 102 90 78	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	●	○	—	○	●	—	—	—				
	127 115 103 91 79	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	●	●	—	●	○	—	—	—				
	128 116 104 92 80	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	○	●	—	●	○	—	—	—				
	129 117 105 93 81	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	●	○	—	●	○	—	—	—				
	130 118 106 94 82	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	●	●	—	○	○	—	—	—				
	131 119 107 95 83	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	○	●	—	○	○	—	—	—				
	120 108 96 84	—	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	●	●	○	—	○	○	—	—	—				

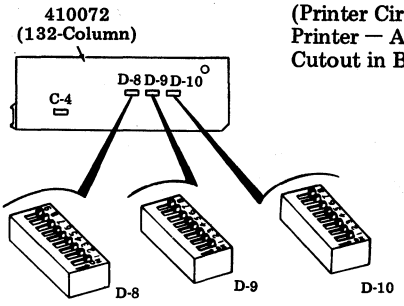
To obtain counts:

121 through 132 program as shown.
109 through 120 program as shown, then operate D-9 position 7 OFF.
97 through 108 program as shown, then operate D-9 position 8 OFF.
85 through 96 program as shown, then operate D-8 position 7 OFF.
73 through 84 program as shown, then operate D-8 position 8 OFF.

(X) Indicates desired column number.

(See Legend for ●, ○, —, and * on Page 36.)

410072 Circuit Card (Contd)



(Printer Circuit Card Viewed From Beneath Printer — Access to Switches is Through a Cutout in Bottom Pan of Printer.)

Fig. 119

18. Printer Paper Feedout	D-9 1	2	3	4	5	6	7	8
a. No Paper Feedout	—	—	●	—	—	—	—	—
b. Paper Feedout on DSR or RM Loss — 16 Lines or One Form	—	○	○	—	—	—	—	—
c. Paper Feedout on DSR or RM Loss or ETX — 16 Lines or One Form	—	●	○	—	—	—	—	— *

19. Printer Errored Character Symbol	D-10 1	2	3	4	5	6	7	8	D-8 1	2	3	4	5	6	7	8	9
a. Printed on Even Parity Error	—	—	—	—	—	○	●	—	—	—	—	—	—	—	—	—	—
b. Printed on Odd Parity Error	—	—	—	—	—	●	○	—	—	—	—	—	—	—	—	—	—
c. Printed on Parity Error	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	—	—
d. Printers With 96-Character Set	—	—	—	—	—	—	—	—	●	○	—	—	—	—	—	—	—
e. Printers With 64-Character Set	—	—	—	—	—	—	—	—	○	●	—	—	—	—	—	—	—
f. Printers With Extended ASCII Character Set	—	—	—	—	—	—	—	—	○	○	—	—	—	—	—	—	—
g. Printers With Longest Character Set Having Less Than 64 Characters	—	—	—	—	—	—	—	—	○	○	—	—	—	—	—	—	—

*

21. Foldover on Printers With 96-Character Set	D-9 1	2	3	4	5	6	7	8
a. Lower Case and Upper Case	○	—	—	—	—	—	—	— *
b. Lower Case Prints as Upper Case	●	—	—	—	—	—	—	—

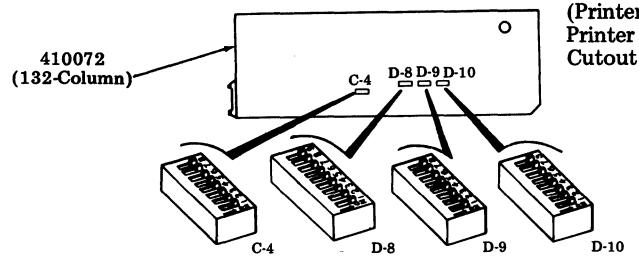
22. Foldover on Printers With 64-Character Set	D-9 1	2	3	4	5	6	7	8
a. Lower Case Prints as Error Symbol	○	—	—	—	—	—	—	—
b. Lower Case Prints as Upper Case	●	—	—	—	—	—	—	— *

23. Extended ASCII on Printer (Extended ASCII)	D-10 1	2	3	4	5	6	7	8
a. Prints Extended ASCII Characters (No Parity Check)	—	—	—	—	—	○	○	—
b. Does Not Print Extended ASCII (See Option 19.a., b. or c.)	—	—	—	(As in 19.)		—	—	— *

48. Incomplete Form Suppresses Paper Alarm	D-9 1	2	3	4	5	6	7	8
a. No (Paper Out Not Gated With Formout)	—	—	—	●	—	—	—	—
b. Yes (Paper Out Gated With Formout)	—	—	—	○	—	—	—	— *

(See Legend for ●, ○, —, and * on Page 36.)

410072 Circuit Card (Contd)



(Printer Circuit Card Viewed From Beneath Printer — Access to Switches is Through a Cutout in Bottom Pan of Printer.)

Fig. 120

54.	Printing of Escape Sequences Suppressed	D-10								
		1	2	3	4	5	6	7	8	
a.	Character After ESC Printed as Received	—	—	—	—	—	—	—	○	*
b.	Printing of Character After ESC Suppressed (Not used in 40/2 KDP application.)	—	—	—	—	—	—	—	●	+++

55.	SI/SO Detection	D-10								
		1	2	3	4	5	6	7	8	
a.	SI/SO Detection Not Used	—	—	○	—	—	—	—	—	*
b.	SI/SO Detection Enables Printing Additional Characters	—	—	●	—	—	—	—	—	

57.	SSI/OEM Detection	D-8									
		1	2	3	4	5	6	7	8	9	
a.	SSI	—	—	—	—	—	—	—	—	●	*
b.	OEM †	—	—	—	—	—	—	—	—	○	

†An option screw change may be required on 410151 circuit card in power module. If Option 57.b. is selected, option screw B on 410151 must be installed from the component side.

58.	Idle Line Motor Control	D-9								
		1	2	3	4	5	6	7	8	
a.	Disabled — Motor Held On Indenfinitely During Idle Line	—	—	—	—	—	○	—	—	*
b.	Enabled — Motor Turned Off After 40-Second Idle Line	—	—	—	—	—	●	—	—	

59.	Speed Selection (Applies Only if Option 57.b. is Selected)	C-4								
		1	2	3	4	5	6	7	8	
a.	75 Baud	●	○	○	○	○	○	○	○	
b.	150 Baud	○	●	○	○	○	○	○	○	
c.	300 Baud	○	○	○	●	○	○	○	○	
d.	600 Baud	○	○	●	○	○	○	○	○	
e.	1200 Baud	○	○	○	○	○	○	●	○	
f.	2400 Baud	○	○	○	○	●	○	○	○	*
g.	4800 Baud	○	○	○	○	○	●	○	○	
h.	9600 Baud	○	○	○	○	○	○	○	●	

60.	Aux Alarm (See Note)	D-9								
		1	2	3	4	5	6	7	8	
a.	Enable	—	—	—	—	○	—	—	—	
b.	Disable	—	—	—	—	●	—	—	—	*

Note: Switch must be closed when paper jam alarm mechanism is not present. Switch must be opened when 402920 paper jam alarm modification kit is present.

+++Option 54.b. should not be used on a 40/2 KDP (SSI interface). The character after escape is already suppressed by the KD. This option is recommended on a 40/2 KD-ROP or a ROP (EIA interface).

(See Legend for ●, ○, —, and * on Page 36.)

4.21 410076 Circuit Card (Printer Logic)

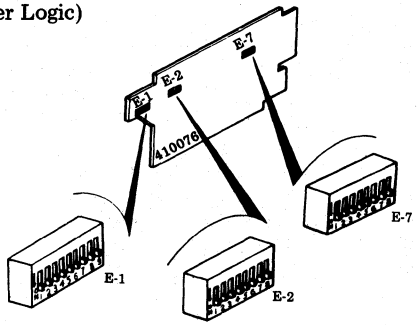


Fig. 121

410076 — 80-Column Printer Logic Circuit Card

17.	Printer Left Margin and Form Width	E-7								
		1	2	3	4	5	6	7	8	
a.	First Printed Column — Column 1	—	—	●	●	●	●	—	—	*
b.2.	First Printed Column — Column 2	—	—	●	●	O	●	—	—	
b.3.	First Printed Column — Column 3	—	—	●	●	O	O	—	—	
b.4.	First Printed Column — Column 4	—	—	●	O	O	O	—	—	
b.5.	First Printed Column — Column 5	—	—	O	O	●	O	—	—	
b.6.	First Printed Column — Column 6	—	—	O	O	O	●	—	—	
b.7.	First Printed Column — Column 7	—	—	O	●	O	O	—	—	
b.8.	First Printed Column — Column 8	—	—	●	O	●	O	—	—	
b.9.	First Printed Column — Column 9	—	—	O	O	●	●	—	—	
b.10.	First Printed Column — Column 10	—	—	O	●	O	●	—	—	
b.11.	First Printed Column — Column 11	—	—	●	●	●	O	—	—	
b.12.	First Printed Column — Column 12	—	—	●	O	O	●	—	—	
b.13.	First Printed Column — Column 13	—	—	O	●	●	O	—	—	

410076 — 80-Column Printer Logic Circuit Card

17.	Printer Right Margin and Form Width																											
	Last Char Printed Column Number	E-1									E-2								E-7									
		1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
c.	80	—	—	—	—	O	●	—	●	O	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	*
d. (X)	73 61 49 37 25	—	—	—	—	●	●	—	●	●	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	
	74 62 50 38 26	—	—	—	—	●	●	—	●	O	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	
	75 63 51 39 27	—	—	—	—	●	●	—	O	●	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	
	76 64 52 40 28	—	—	—	—	●	O	—	●	●	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	
	77 65 53 41 29	—	—	—	—	●	O	—	●	O	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	
	78 66 54 42 30	—	—	—	—	●	O	—	O	●	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	
	79 67 55 43 31	—	—	—	—	O	●	—	●	●	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	
	68 56 44 32	—	—	—	—	O	●	—	●	O	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	
	69 57 45 33	—	—	—	—	O	●	—	O	●	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	
	70 58 46 34	—	—	—	—	O	O	—	●	●	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	
	71 59 47 35	—	—	—	—	O	O	—	●	O	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	
	72 60 48 36	—	—	—	—	O	O	—	O	●	—	—	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	

To obtain counts:

73 through 80 program as shown.
61 through 72 program as shown, then operate E-7 position 2 to OFF.
49 through 60 program as shown, then operate E-7 position 1 to OFF.
37 through 48 program as shown, then operate E-2 position 7 to OFF.
25 through 36 program as shown, then operate E-2 position 8 to OFF.

(X) Indicates desired column number.

(See Legend for ●, O, —, and * on Page 36.)

410076 Circuit Card (Contd)

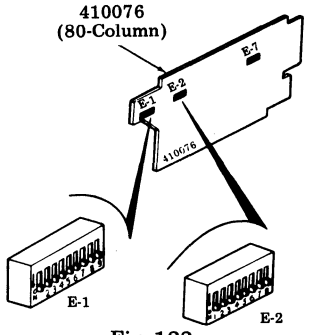


Fig. 122

18. Printer Paper Feedout	E-1									E-2								
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	
a. No Paper Feedout	●	–	–	–	–	–	–	–	–	–	–	–	–	–	O	–	–	
b. Paper Feedout on DSR or RM Loss – 16 Lines or One Form	O	–	–	–	–	–	–	–	–	–	–	–	–	–	O	–	–	
c. Paper Feedout on DSR or RM Loss or ETX – 16 Lines or One Form	O	–	–	–	–	–	–	–	–	–	–	–	–	–	●	–	–	*

19. Printer Errored Character Symbol	E-1									E-2								
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	
a. Printed on Even Parity Error	–	–	●	O	–	–	–	–	–	–	–	–	–	–	–	–	–	
b. Printed on Odd Parity Error	–	–	O	●	–	–	–	–	–	–	–	–	–	–	–	–	–	
c. Not Printed on Parity Error	–	–	●	●	–	–	–	–	–	–	–	–	–	–	–	–	–	*
d. Printers With 96-Character Set	–	–	–	–	–	–	–	–	–	–	–	–	O	●	–	–	–	
e. Printers With 64-Character Set	–	–	–	–	–	–	–	–	–	–	–	–	●	O	–	–	–	
f. Printers With Extended ASCII Character Set	–	–	–	–	–	–	–	–	–	–	–	–	O	O	–	–	–	
g. Printers With Longest Character Set Having Less Than 64 Characters	–	–	–	–	–	–	–	–	–	–	–	–	O	O	–	–	–	

21. Foldover on Up-Low Printer	E-2								
	1	2	3	4	5	6	7	8	
a. Lower Case and Upper Case Print	–	–	O	–	–	–	–	–	*
b. Lower Case Prints as Upper Case	–	–	●	–	–	–	–	–	

22. Foldover on Monocase Printer	E-2								
	1	2	3	4	5	6	7	8	
a. Lower Case Prints as Error Symbol	–	–	O	–	–	–	–	–	
b. Lower Case Prints as Upper Case	–	–	●	–	–	–	–	–	*

23. Extended ASCII on Printer (Extended ASCII)	E-1								
	1	2	3	4	5	6	7	8	9
a. Prints Extended ASCII Characters (No Parity Check)	–	–	O	O	–	–	–	–	–
b. Does Not Print Extended ASCII (See Option 19.a., b. or c.)	–	–	–	(As in 19.)	–	–	–	–	*

48. Incomplete Form Suppresses Paper Alarm	E-2								
	1	2	3	4	5	6	7	8	
a. No (Paper Out Not Gated With Formout)	–	●	–	–	–	–	–	–	
b. Yes (Paper Out Gated With Formout)	–	O	–	–	–	–	–	–	*

(See Legend for ●, O, –, and * on Page 36.)

410076 Circuit Card (Contd)

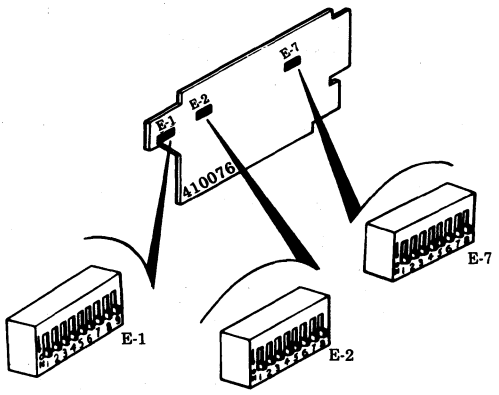


Fig. 123

54.	Printing of Escape Sequences Suppressed	E-1									
		1	2	3	4	5	6	7	8	9	
a.	Character After ESC Printed as Received	—	O	—	—	—	—	—	—	—	*
b.	Printing of Character After ESC Suppressed (Not used in 40/2 KDP application.)	—	●	—	—	—	—	—	—	—	+++

55.	Shift In/Shift Out Detection	E-1									
		1	2	3	4	5	6	7	8	9	
a.	SI/SO Detection Not Used	—	—	—	—	—	—	O	—	—	*
b.	SI/SO Detection Enables Printing Additional Characters	—	—	—	—	—	—	●	—	—	

56.	Friction Feed/Tractor Feed Printer	E-2								
		1	2	3	4	5	6	7	8	
a.	Friction Feed Printer — Motor Held On After Paper Alarm	O	—	—	—	—	—	—	—	*
b.	Tractor Feed Printer — Motor Turned Off After Paper Alarm	●	—	—	—	—	—	—	—	

57.	SSI/OEM Interface	E-7								
		1	2	3	4	5	6	7	8	
a.	SSI	—	—	—	—	—	—	●	—	*
b.	OEM	—	—	—	—	—	—	O	—	++

58.	Idle Line Motor Control	E-7								
		1	2	3	4	5	6	7	8	
a.	Disabled — Motor Held On Indefinitely During Idle Line	—	—	—	—	—	—	—	O	*
b.	Enabled — Motor Turned Off After 40-Second Idle Line	—	—	—	—	—	—	—	●	

++Requires use of 410085 OEM card and selection of Option 61.b. or 61.c.

+++Option 54.b. should not be used on a 40/2 KDP (SSI interface). The character after escape is already suppressed by the KD. This option is recommended on a 40/2 KD-ROP or a ROP (EIA interface).

(See Legend for ●, O, —, and * on Page 36.)

4.22 410151 Circuit Card (Located in Printer Module or Power Supply)

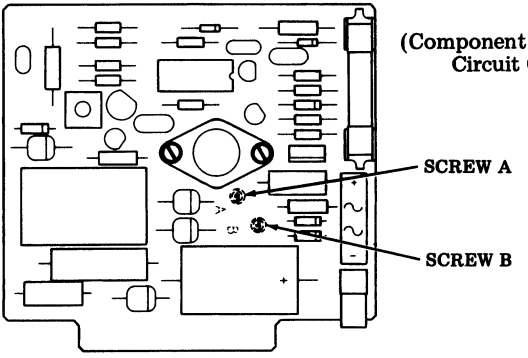


Fig. 124

61. Regulator Grounding		Screw A		Screw B		
		Component	Noncomponent	Component	Noncomponent	
a.	SSI (CKT and Fr Gnd at PTR)	In	—	—	In	
b.	SSI/OEM (CKT and Fr Gnd at PTR, +12 V)	In	—	In	—	*
c.	OEM (CKT Gnd EXT to PTR, +12 V)	—	In	In	—	

4.23 410085 Circuit Card (OEM)

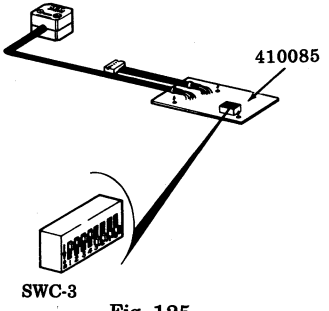


Fig. 125

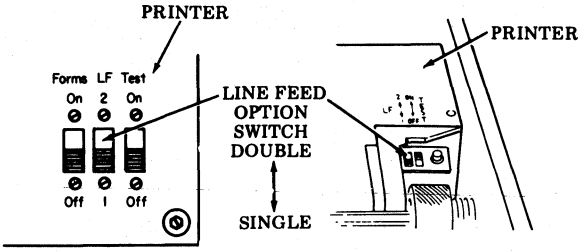
59. Speed Selection (Applies Only if Option 57.b. is Selected)		SWC-3							
		1	2	3	4	5	6	7	8
a.	75 Baud	●	O	O	O	O	O	O	O	
b.	150 Baud	O	●	O	O	O	O	O	O	
c.	300 Baud	O	O	O	O	O	O	O	●	
d.	600 Baud	O	O	●	O	O	O	O	O	
e.	1200 Baud	O	O	O	O	O	●	O	O	
f.	2400 Baud	O	O	O	●	O	O	O	O	*
g.	4800 Baud	O	O	O	O	●	O	O	O	
h.	9600 Baud	O	O	O	O	O	O	●	O	

Note: The 410085 circuit card (part of 346745 modification kit) is mounted on the 410076 printer logic circuit card in OEM applications. (The installation specification for 346745 modification kit is 50906S.)

(See Legend for ●, O, —, and * on Page 36.)

4.24 Line Feed Switch (on Printer)

20.	Line Feed on 80-Column Printer (See adjacent figure.)
a.	Single
b.	Double



80-Column Tractor Feed

80-Column Friction Feed

Fig. 126

20.	Line Feed on 132-Column Printer (See figure below.)
a.	Single
b.	Double

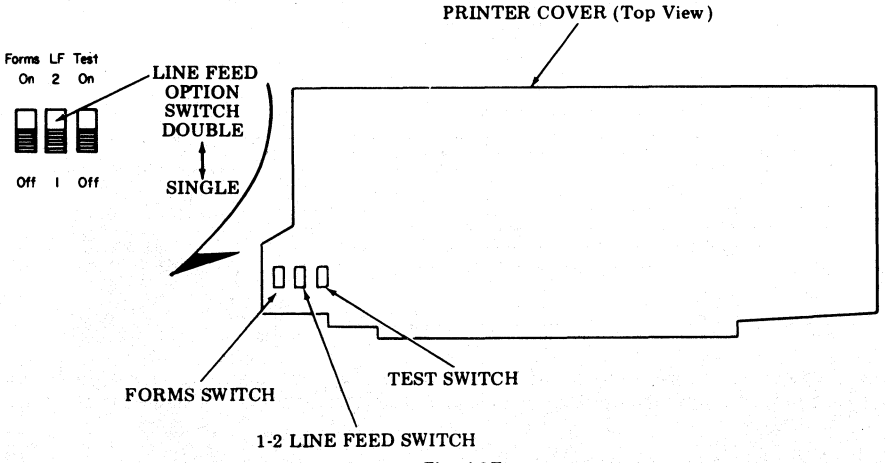


Fig. 127

4.25 Form Switch (on Printer)

Forms Switch (Under Tractor Feed Printer Cover)
(80-Column Printer)

39. Forms (Tractor Feed Printer Only)	
a.	On
b.	Off *

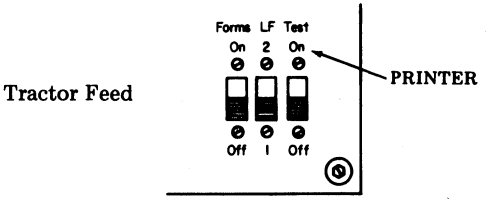


Fig. 128

Forms Switch (132-Column Printer)

39. Forms	
a.	On
b.	Off *

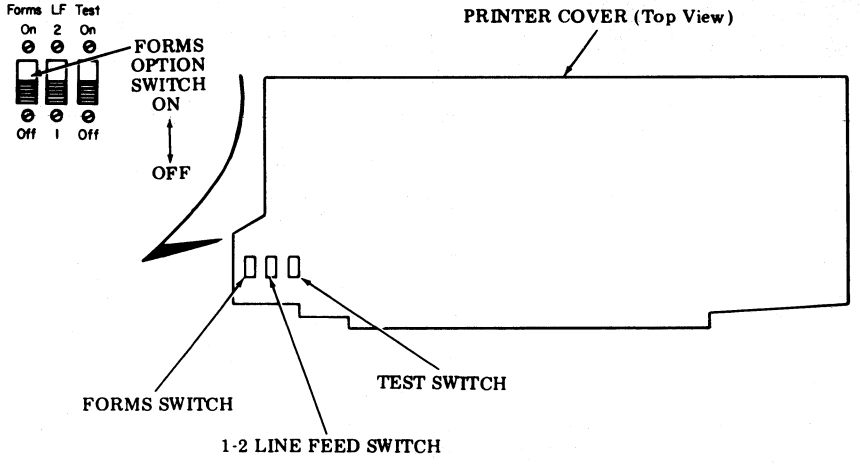
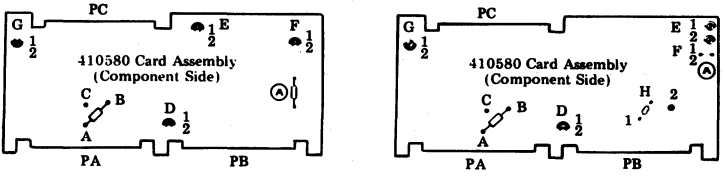


Fig. 129

*Factory Installed Option

4.26 Controller Options (ROP)

410580 Circuit Card (EIA Interface) Card Position JC in ROP 40C103/ — Controller



Early Issue 7A Late Issue 7B

Fig. 130

	3. EIA/Send/Receive Data Baud Rate	Insulator D Position	Insulator E Position	
a.	1050	1	2	
b.	1200	1	1	*

	24. Odd/Even Character Parity Check	Strap Condition	
a.	Even Vertical Parity (Response for Odd Parity)	Strap A to B	*
b.	Odd Vertical Parity (Response for Even Parity)	Strap A to C	

	25. Response to Receiving Parity Error	Insulator F Position	Strap Ⓐ Condition	
a.	Printer Receives Odd Parity Null (1-7 Bits Spacing, 8 Bit Marking)	2	—	
b.	Printer Receives Character Even Though it has Parity Error.	1	—	*
c.	DATA ERROR Key Lights.	—	Removed	
d.	DATA ERROR Key Does Not Light.	—	Installed	*

	35. Printer Motor Control (See Note 1)	Strap Condition	
a.	"Data Set Ready" Controls Printer Motor	Strap H to 1	*
b.	"Carrier Detect" Controls Printer Motor (See Note 2)	Strap H to 2	

Note 1: H strap location is on component side at coordinates D-11. Strap H position present only on Issue 7B (and higher) 410580 circuit card.

Note 2: Normally used on private line applications.

*Factory Installed Option

410580 Circuit Card (Contd)

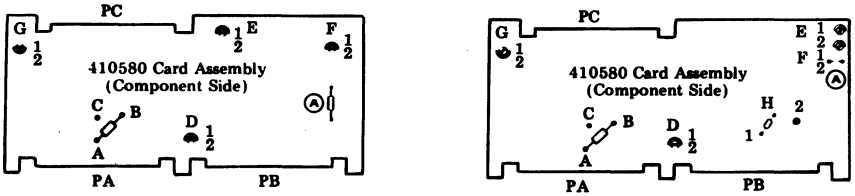


Fig. 131

36. Printer Paper Alarm		Insulator G Position	
a.	Paper Alarm Affects "Data Terminal Ready" at End of Call. DTR Held Off Until Paper is Restored.	2	*
b.	Paper Alarm Affects "Data Terminal Ready" Immediately. DTR Held Off Until Paper is Restored.	1	

4.28 410582 Circuit Card (SSI I/O) — Card Position JA in ROP 40C103/ — Controller

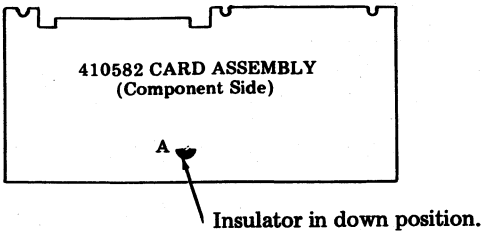


Fig. 132

38. Data Stacking		Insulator Position	
a.	Enable Data Stacking	Insulator Up	
b.	Disable Data Stacking	Insulator Down	*

Note 1: When using a 40C103/AE ROP controller (without a buffer) Option 38.a. is to be enabled. Select Option 38.b. when using 40C103/AD (with buffer).

Note 2: The following strapping is required on Issue 1 of the 410587 circuit card used in 40C103/AE. Issue 2A of the 410587 circuit card has these straps incorporated in the board layout.

PC — Pin 20 to MLB1 Pin 1
MLB1 Pin 2 to MLB1 Pin 3
MLB1 Pin 4 to MLA1 Pin 2
(Connector PC-22)

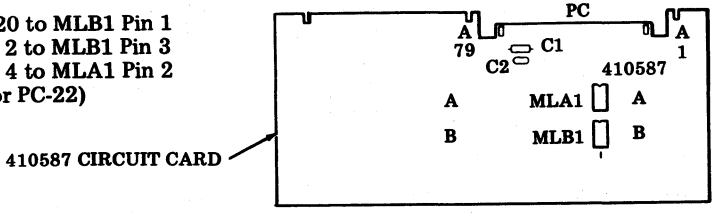


Fig. 133

*Factory Installed Option

403400 MODIFICATION KIT OPTIONS (Attendant Selectable Features)

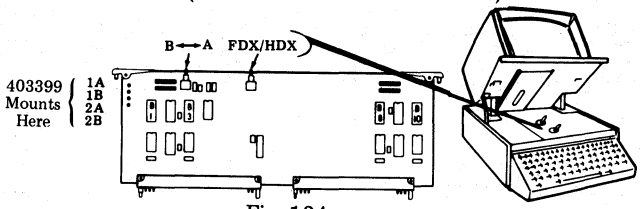


Fig. 134

410680 Circuit Card (In Position 09 of Display Logic)

		Switch Position "B" B-1 1 2 3 4 5 6 7 8	Switch Position "B" B-8 1 2 3 4 5 6 7 8	Switch Position "A" B-3 1 2 3 4 5 6 7 8	Switch Position "A" B-10 1 2 3 4 5 6 7 8	
4. EIA Reverse Channel	4.			4.		
Requires Reverse Channel to Send (202)	a.	●		a.	●	
Ignore Reverse Channel to Send (202 or 103)	b.	○		b.	○	*
41. Mode of Operation	41.			41.		
Half Duplex } See Notes 1 and 2.	a.	●		a.	●	
Full Duplex } See Notes 1 and 2.	b.	○		b.	○	*
42. Parity Generation	42.			42.		
Send Even Parity	a.	○● ○		a.	○● ○	*
Send Odd Parity	b.	●● ○		b.	●● ○	
Send 8th Bit as Mark	c.	○○ ○		c.	○○ ○	
Send 8th Bit as Space	d.	○○ ●		d.	○○ ●	
43. Stop Bit Generation	43.			43.		
Send One Stop Bit	a.	●		a.	●	*
Send Two Stop Bits	b.	○		b.	○	
44. EIA Received Data	44.			44.		
Enable EIA Receive Data	a.	●		a.	●	*
Disable EIA Receive Data	b.	○		b.	○	
45. Current Loop Data	45.			45.		
Enable Receive Data From Current Loop	a.	●		a.	●	
Disable Receive Data From Current Loop	b.	○		b.	○	*
46. Interface Sheet	46.			46.		
103-Type Modem or 20/60 mA Loop	a.	○		a.	○	
202-Type Modem Interface	b.	●		b.	●	*
3. EIA S/R Data Baud Rate	3.			3.		
110 Baud	j.		●●●○●○●	j.		●●●○●○●
150 Baud	i.		●●●●●●○	i.		●●●●●●○
300 Baud	h.		●●●●●○○	h.		●●●●●○○
600 Baud	g.		●●●●○○○	g.		●●●●○○○
1200 Baud	b.		●●●○○○○	b.		●●●○○○○ *
2400 Baud	c.		●●○○○○○	c.		●●○○○○○
4800 Baud	f.		●○○○○○○	f.		●○○○○○○
9600 Baud	k.		○○○○○○○	k.		○○○○○○○

410679 Circuit Card of 40C204 Controller	A-17 1 2 3 4	
Clock Divide	– – ● –	See Note 3.

(See Legend on Page 36.)

Note 1: When the 403400 modification kit is used, this option may be optioned one of two ways:

(a) When the A/B switch is to be used to determine FDX or HDX operation, the attendant selectable FDX/HDX switch must be in "HDX" position.

(b) When the HDX/FDX switch is to be used to determine FDX or HDX operation, then switch B1-2 and B3-2 must both have the dot end of the rocker switch depressed (closed position).

Note 2: When the 403399 and 403400 modification kits are used, the station is optioned as follows:

(a) When the A/B switch (on pedestal door) is to control half- and full duplex operation, the HDX/FDX switch (on 410680 card) must be permanently positioned to HDX. The H/F switch (on pedestal door) operation is then ignored by the circuit logic (the switch is dead).

(b) When the H/F switch (on pedestal door) is to control half- and full duplex operation, both miniature switches B1-2 and B3-2 (on 410680 card) must have the dot end of each rocker switch depressed (closed position). The FDX/HDX switch (on 410680 card) must be permanently positioned to FDX.

(c) The OPTION A/OPTION B switch (on 410680 card) must be permanently positioned to OPTION B.

Note 3: To use the 403400 modification kit, the switch (A17-3) on 410679 circuit card must have the dot end of the rocker switch depressed.

STATION FEATURES AND OPTIONS RECORD

4.29 The Station Features and Options Record provides a means by which the options and special features in the DATASPEED 40/2 can be recorded and kept with the station for later servicing or maintenance purposes. The Station Features and Options Record is contained in the wiring plan W-4D1XB, and should be left with the station after the options have been recorded in pencil.

DATA SET OPTIONS

4.30 The following data sets are used in the DATASPEED 40/2. The Table associated with each data set lists the options for that data set.

DATA SET	MAXIMUM BAUD RATE	TABLE	PAGE NUMBER
103G	300	B	72
103J	300	C	73
103JR	300	C	73
108F	300	D	74
108G	300	D	74
113A	300	E	76
113C	300	F	78
113CR	300	F	78
113D	300	G	79
113DR	300	G	79
201C	2400	H	80
201C-LIC	2400	I	82
201CR-LIC	1200	I	82
202C	1200	J	83
202R	1200	K	85
202S-LI or LIA	1200	L	86
202S-LIC	1200	M	88
202SR-LIC	1200	M	88
202T-LI	1800	N	89
202T-LIA	1800	O	90
208A	4800	P	92
208B	4800	Q	93
208BR	4800	Q	93
212A-LI	1200	R	94
212A-LIA	1200	S	95
212AR-LIA	1200	S	95

TABLE B

DATA SET 103G OPTIONS

FEATURE OR OPTION		DESIG	CP NO.	SCREW SETTING	
				LOOSEN	TIGHTEN
Answer mode indication	CE ON	X*	CJ9 or CJ14	1	2
	CE OFF	W†		2	1
Space disconnect	LONG	V*†	CJ10	3	8
	SHORT	H			3 and 8
	NONE	W/O V, H		3 and 8	
Send disconnect	YES	T*	CJ10		1
	NO	W/O T		1	
Loss of carrier disconnect	YES	S	CJ10		4
	NO	W/O S*†		4	
Common grounds	YES	Q*†	CJ9 or CJ14		10
	NO	W/O Q		10	
Originate only test	YES	G	CJ10		12
	NO	W/O G*		12	
ANS/ORG transfer	WITHOUT	N*†	CJ10		10
	WITH	W/O N		10	
Answer Control	COMBINED	M*†	CJ9		9
	SEPARATE	W/O M		9	
CB and CF indications	COMMON	A†	CJ9 or CJ14	5 and 7	4 and 6
	SEPARATE	B*		4 and 6	5 and 7
CC Indication Early	YES	ZD	CJ14		12
	NO	W/O ZD*		12	

*Factory furnished options.
†Service equivalent to 103A.

TABLE C

DATA SET 103J and 103JR OPTIONS

FEATURE		OPTION	FACTORY FURNISHED OPTION	SWITCH SETTING S2 SWITCH ON CM1 CONTACT SETTING 1	2	3	4	5	6	7
Receive Space Disconnect	YES	V	√	—	—	O	—	—	—	—
	NO	Y		—	—	X	—	—	—	—
Send Space Disconnect	YES	T	√	X	—	—	—	—	—	—
	NO	U		O	—	—	—	—	—	—
Loss of Carrier Disconnect	YES	S	√	—	—	—	O	—	—	—
	NO	R		—	—	—	X	—	—	—
CC Indication	EARLY	ZD	√	—	—	—	—	—	—	O
	DELAYED	ZC		—	—	—	—	—	—	X
CB and CF Indications	COMMON	A	√	—	X	—	—	—	—	—
	SEPARATE	B		—	O	—	—	—	—	—
CC Indication for Analog Loop	ON	ZF	√	—	—	—	—	O	—	—
	OFF	ZE		—	—	—	—	X	—	—
Automatic Answer	YES	ZH	√	—	—	—	—	—	O	—
	NO	ZG		—	—	—	—	—	X	—
				S3 SWITCH ON CP1 CONTACT SETTING 1	2	3	4	5	6	7
Fail Safe State of CN Circuit	ON	K		—	X	—	—	—	—	—
	OFF	J	√	—	O	—	—	—	—	—
Common Ringer	YES	ZB*		X	—	—	—	—	—	—
	NO	ZA†	√	O	—	—	—	—	—	—
Tip-Ring Make Busy	YES	F		—	—	X	—	—	—	—
	NO	E	√	—	—	O	—	—	—	—
Contact to Ground Make Busy Floating Contact Make Busy	For use with 40A-type data mounting			Not available when option ZB is used						
Common Grounds	YES	Q	√	Close S1 screw switch on 47C1 DM						
	NO	P		Open S1 screw switch on 47C1 DM						

X = Contact closed O = Contact open — = Contact not applicable

* Strap C to B on CP1. † = Strap C to A on CP1.

TABLE D

DATA SET 108F OR G OPTIONS

FEATURE		OPTION	SWITCH SETTING (S1-)	
			OPEN	CLOSED
Facility	4-Wire	Z	4	3
	2-Wire	Y*	3	4
Mark or Space Hold	Mark	U*	2	1
	Space	V	1	2
			SWITCH SETTING (S2-)	
CB Internally Connected to	None	E	5,6	—
	RS	W	6	5
	CA	X*	7	6
Carrier Control	Via CA	D	2,4,6	7
	Via RS	T	2,7	4
	Always on in Data Mode	S*	4,7	2
	Always off in Data Mode	H	2,4,7	—
Remote Test Connection via J1	Yes	P	—	1
	No	N*	1	—
Local Copy in Test Mode	Yes	G	—	3
	No	F*	3	—
			OPTION STRAP	
Receiver dB Gain Reduction	6	K*	E2—E3	
	0	J	E1—E2	
			SCR SWITCH (S4-)	
Ground Wire (GRD) Connected to Signal Ground (SG)	Yes	M*	—	B
	No	L	B	—
Resistor Bypass for Negative Voltage (-P) on J1	Yes	R	—	A
	No	Q*	A	—

* Factory furnished option.

TABLE E

DS 108F OR G TRANSMIT LEVEL SETTING

TRANSMIT LEVEL (IN dBm)	SWITCH SETTING (S1 –)	
	OPEN	CLOSED
–1	5, 6, 7, 8	–
–3	5, 7, 8	6
–5	5, 6, 8	7
–7	5, 6, 7	8
–9*	6, 7, 8	5
–11	7, 8	5, 6
–13	6, 8	5, 7
–15	6, 7	5, 8

* Factory furnished option.

TABLE F

WIRE CONNECTIONS TO IMPLEMENT DATA SET 113A — L1(A)/2 OPTIONS

STEP	COLOR CODE	CONNECT	DISCONNECT	FROM	TO
Option X — Data Lamp and CD Lead Control (Factory Provided)					
1	Strap		√	APP Unit — Term. L1	ER1 CP — Term. E6
2	SL	√		Data Key — Term. 2	ER1 CP — Term. E6
3	R-3W	√		HH1 CP — Term. 10	ER1 CP — Term. E6
4	BR	√		Data Key — Term. 1	APP Unit — Term. L1
5	G-3R	√		HH1 CP — Term. 11	APP Unit — Term. L1
6	Strap		√	Lamp Strip — Term. HL	HH1 CP — Term. 7
7	W	√		Test Key — Term. 4	HH1 CP — Term. 7
8	0-3W	√		ER1 CP — Term. E14	HH1 CP — Term. 8
9	BL-3W	√		ER1 CP — Term. E1	HH1 CP — Term. 9
10	R (Note 1)	√		D4BJ-61 Cord	HH1 CP — Term. 1
11	Y	√		D4BJ-61 Cord	One side of 2012B Trans.
12	BK	√		D4BJ-61 Cord	Other side of 2012B Trans.
Option V — Data Lamp and Disabled CD Lead Control					
1	Strap		√	APP Unit — Term. L1	ER1 CP — Term. E6
2	G-3R	√		HH1 CP — Term. 11	APP Unit — Term. L1
3	BR	√		Data Key — Term. 1	APP Unit — Term. L1
4	R-3W	√		HH1 CP — Term. 10	ER1 CP — Term. E6
5	SL	√		Data Key — Term. 2	ER1 CP — Term. E6
6	W (Note 2)		√	HH1 CP — Term. 7	Test Key — Term. 4
7	Strap	√		Lamp Strip — Term. HL	HH1 CP — Term. 7
8	0-3W	√		ER1 CP — Term. E14	HH1 CP — Term. 8
9	BL-3W	√		ER1 CP — Term. 1	HH1 CP — Term. 9
10	R (Note 1)	√		D4BJ-61 Cord	HH1 CP — Term. 1

TABLE F (Contd)

WIRE CONNECTIONS TO IMPLEMENT DATA SET 113A — L1(A)/2 OPTIONS

STEP	COLOR CODE	CONNECT	DISCONNECT	FROM	TO
Option V — Data Lamp and Disabled CD Lead Control (Cont)					
11	Y	√		D4BJ-61 Cord	One side of 2012B Trans.
12	BK	√		D4BJ-61 Cord	Other side of 2012B Trans.
Option W — Disabled Data Lamp and Disabled CD Lead Control					
1	Y		√	D4BJ-61 Cord	One side of 2012B Trans.
2	BK		√	D4BJ-61 Cord	Other side of 2012B Trans.
3	G-3R (Note 3)		√	APP Unit — Term. L1	HH1 CP — Term. 11
4	BR (Note 3)		√	APP Unit — Term. L1	Data Key — Term. 1
5	SL (Note 4)		√	ER1 CP — Term. E6	Data Key — Term. 2
6	R-3W (Note 4)		√	ER1 CP — Term. E6	HH1 CP — Term. 10
7	R		√	D4BJ-61 Cord	HH1 CP — Term. 1
8	R	√		D4BJ-61 Cord	ER1 CP — Term. E6
9	Strap	√		APP Unit — Term. L1	ER1 CP — Term. E6
10	0-3W (Note 5)		√	HH1 CP — Term. 8	ER1 CP — Term. E14
11	BL-3W (Note 6)		√	HH1 CP — Term. 9	ER1 CP — Term. E1
12	Strap		√	Lamp Strip — Term. HL	HH1 CP — Term. 7
13	W	√		Test Key — Term. 4	HH1 CP — Term. 7

Note 1: If Option W is presently in data set, R wire must be disconnected from ER1 CP — Terminal E6.

Note 2: Disconnect from HH1 CP — Terminal 7; tape, and store.

Note 3: Disconnect from APP Unit — Terminal L1; tape, and store.

Note 4: Disconnect from ER1 CP — Terminal E6; tape, and store.

Note 5: Disconnect from HH1 CP - Terminal 8; tape, and store.

Note 6: Disconnect from HH1 CP — Terminal 9; tape, and store.

TABLE G

DATA SET 113C and 113CR OPTIONS

FEATURE		OPTION	FACTORY FURNISHED OPTION	SWITCH SETTING S2 SWITCH ON CM1 CONTACT SETTING						
				1	2	3	4	5	6	7
Receive Space Disconnect	YES	V	√	—	—	—	—	O	—	—
	NO	Y		—	—	—	—	X	—	—
Send Space Disconnect	YES	T	√	—	—	—	—	—	X	—
	NO	U		—	—	—	—	—	O	—
Loss of Carrier Disconnect	YES	S	√	—	O	—	—	—	—	—
	NO	R		—	X	—	—	—	—	—
CC Indication	EARLY	ZD	√	X	—	—	—	—	—	—
	DELAYED	ZC		O	—	—	—	—	—	—
CB and CF Indications	COMMON	A	√	—	—	—	X	—	—	—
	SEPARATE	B		—	—	—	O	—	—	—
CC Indication for Analog Loop	ON	ZF	√	—	—	O	—	—	—	—
	OFF	ZE		—	—	X	—	—	—	—
Common Grounds	YES	Q	√	Close S1 screw switch on 47F1 DM						
	NO	P		Open S1 screw switch on 47F1 DM						

X = Contact closed O = Contact open — = Contact not applicable

TABLE H

DATA SET 113D AND 113DR OPTIONS

FEATURE		OPTION	FACTORY FURNISHED OPTION	SWITCH SETTING S2 SWITCH CONTACT SETTING						
				1	2	3	4	5	6	7
Receive Space Disconnect	YES	V	√	—	—	O	—	—	—	—
	NO	Y		—	—	X	—	—	—	—
Send Space Disconnect	YES	T	√	—	—	—	—	—	—	X
	NO	U		—	—	—	—	—	—	O
Loss of Carrier Disconnect	YES	S	√	—	—	—	—	O	—	—
	NO	R		—	—	—	—	X	—	—
CB and CF Indications	COMMON	A	√	—	X	—	—	—	—	—
	SEPARATE	B		—	O	—	—	—	—	—
CC Indication for Analog Loop	ON	ZF	√	—	—	—	O	—	—	—
	OFF	ZE		—	—	—	X	—	—	—
Automatic Answer	YES	ZH	√	—	—	—	—	—	O	—
	NO	ZG		—	—	—	—	—	X	—
Fail Safe State of CN Circuit	ON	K		X	—	—	—	—	—	—
	OFF	J	√	O	—	—	—	—	—	—
				S3 SWITCH CONTACT SETTING						
Tip-Ring Make Busy	YES	F		X	—					
	NO	E	√	O	—					
Contact to Ground Make Busy Floating Contact Make Busy	For use with 40A-type data mounting			Not available when option ZB is used						
Common Grounds	YES	Q	√	Close S1 screw switch on 47E1 DM						
	NO	P		Open S1 screw switch on 47E1 DM						

X = Contact closed O = Contact open — = Contact not applicable

TABLE I

DATA SET 201C-OPTIONS

FEATURE	OPTION			STRAPPING ON ANALOG BOARD (CP JB1)		STRAPPING ON DIGITAL BOARD (CP JB2)		PROVIDE
				INSTALL RED STRAPS	REMOVE RED STRAPS	INSTALL RED STRAPS	REMOVE RED STRAPS	
Transmit Line Signal Level	0 dBm	For Private Line	ZA	27-28, 29-30, 31-32, 33-34	19-20, 21-22, 23-24, 25-26			One Per Set
	−1 dBm	For Switched Network	ZB	19-20, 29-30, 31-32, 33-34	27-28, 21-22, 23-24, 25-26			
	−2 dBm		ZC	27-28, 21-22, 31-32, 33-34	19-20, 29-30, 23-24, 25-26			
	−3 dBm		ZD	19-20, 21-22, 31-32, 33-34	27-28, 29-30, 23-24, 25-26			
	−4 dBm		ZE	27-28, 29-30, 23-24, 33-34	19-20, 21-22, 31-32, 25-26			
	−5 dBm		ZF	19-20, 29-30, 23-24, 33-34	27-28, 21-22, 31-32, 25-26			
	−6 dBm		ZG	27-28, 21-22, 23-24, 33-34	19-20, 29-30, 31-32, 25-26			
	−7 dBm		ZH	19-20, 21-22, 23-24, 33-34	27-28, 29-30, 31-32, 25-26			
	−8 dBm		ZI	27-28, 29-30, 31-32, 25-26	19-20, 21-22, 23-24, 33-34			
	−9 dBm		ZJ	19-20, 29-30, 31-32, 25-26	27-28, 21-22, 23-24, 33-34			
	−10 dBm		ZK	27-28, 21-22, 31-32, 25-26	19-20, 29-30, 23-24, 33-34			
	−11 dBm		ZL	19-20, 21-22, 31-32, 25-26	27-28, 29-30, 23-24, 33-34			
	−12 dBm		ZM	27-28, 29-30, 23-24, 25-26	19-20, 21-22, 31-32, 33-34			
	−13 dBm		ZN	19-20, 29-30, 23-24, 25-26	27-28, 21-22, 31-32, 33-34			
	−14 dBm		ZO	27-28, 21-22, 23-24, 25-26	19-20, 29-30, 31-32, 33-34			
	−15 dBm		ZP	19-20, 21-22, 23-24, 25-26	27-28, 29-30, 31-32, 33-34			
Line Impedance	600 ohms		ZQ	16-17	17-18			One Per Set
	900 ohms		ZR	17-18	16-17			
Compromise Equalizer (Note 2)	In		ZS	8-9, 11-12	9-10, 12-13			One Per Set
	Out		ZT	9-10, 12-13	8-9, 11-12			
Carrier On Sensitivity	−24 dBm for Private Line		ZU		1-2			One Per Set
	−44 dBm for Switched Network		ZV	1-2				
New Sync	Not Used		YA			20-21	19-20	One Per Set
	Under Customer Control		YB			19-20	20-21	
Transmitter Timing	Internal		YC				13-14	One Per Set
	External		YD			13-14		
Automatic Answer	Not Provided or Provided Under Control of Customer Interface Circuits RDY and DTR		YE				17-18	One Per Set
	Provided Under Control of DTR Only		YF			17-18		
Ring Indication on Customer Interface	EIA Interface on Terminal 22		YG			22-24	22-23	One Per Set
	Contact Interface Between Terminals 22 and 23		YH			22-23	22-24	

TABLE I (Contd)

DATA SET 201C OPTIONS

FEATURE	OPTION			STRAPPING ON ANALOG BOARD (CP JB1)		STRAPPING ON DIGITAL BOARD (CP JB2)		PROVIDE
				INSTALL RED STRAPS	REMOVE RED STRAPS	INSTALL RED STRAPS	REMOVE RED STRAPS	
External Control of DSR	Yes		YI				15-16	One Per Set
	No		YJ			15-16		
Grounding	Signal Ground Connected to Frame Ground		YK			25-26		One Per Set
	Signal Ground Not Connected to Frame Ground		YL				25-26	
Type of Operation and Clear-to-Send Delay	4-Wire Private Line	Switched Carrier, 7-ms CS Delay	XA	35-36	4-5	1-3, 4-6, 28-29, 11-12	2-3, 5-6, 27-28, 133-134	One Per Set
		Continuous Carrier, 7-ms CS Delay	XB	35-36	4-5	1-3, 5-6, 28-29, 11-12	2-3, 4-6, 27-28, 133-134	
		Continuous Carrier, 0-ms CS Delay	XC	35-36	4-5	2-3, 5-6, 28-29, 11-12	1-3, 4-6, 27-28, 133-134	
	2-Wire Switched Network	Switched Carrier, 150-ms CS Delay	XD	4-5	35-36	1-3, 4-6, 27-28	2-3, 5-6, 11-12, 28-29, 133-134	
	2-Wire Private Line	Switched Carrier, 150-ms CS Delay	XE	4-5, 35-36		1-3, 4-6, 11-12, 133-134	2-3, 5-6, 27-28, 28-29	

Note 1: DO NOT REMOVE ANY BLACK TEST STRAPS.

Note 2: Use Option ZS for all installations.

TABLE J
DATA SET 201C-L1C AND 201CR-L1C OPTIONS

FEATURE		OPTION	LINE CONTROL BOARD (TP1) STRAP IN (VERTICAL)	LINE CONTROL BOARD (TP1) STRAP OUT (HORIZONTAL)	PROVIDE
Transmit Line Signal Level	0 dBm	ZA		1, 2, 4, 8	One Per Station
	−1 dBm	ZB	1	2, 4, 8	
	−2 dBm	ZC	2	1, 4, 8	
	−3 dBm	ZD	1, 2	4, 8	
	−4 dBm	ZE	4	1, 2, 8	
	−5 dBm	ZF	1, 4	2, 8	
	−6 dBm	ZG	2, 4	1, 8	
	−7 dBm	ZH	1, 2, 4	8	
	−8 dBm	ZI	8	1, 2, 4	
	−9 dBm	ZJ*	1, 8	2, 4	
	−10 dBm	ZK	2, 8	1, 4	
	−11 dBm	ZL	1, 2, 8	4	
	−12 dBm	ZM	4, 8	1, 2	
	−13 dBm	ZN	1, 4, 8	2	
	−14 dBm	ZO	2, 4, 8	1	
	−15 dBm	ZP	1, 2, 4, 8		

FEATURE		OPTION	SWITCH SETTING 1	2	3	4	5	6	7	8	DIGITAL BOARD (JB4)	PROVIDE
Transmitter Timing	INTERNAL	YC*					X					One Per Station
	EXTERNAL	YD					O					
Automatic Answer	RDY & DTR CONTROLLED OR NOT PROVIDED	YE								O		One Per Station
	DTR CONTROLLED ONLY	YF*								X		
Grounding Option	SIGNAL GRD CONNECTED TO FRAME GRD	YK*									Install E1-E1	
	SIGNAL GRD NOT CONNECTED TO FRAME GRD	YL									Remove E1-E2	
Function of EIA Interface Pin 18	INITIATES LOCAL ANALOG LOOPBACK	YS				X					Install E3-E4	One Per Station
	PROVIDES RECEIVE SYMBOL CLOCK	YT*				O					Install E4-E5	
Cont Receiver Bit Clock	IN	YO							O			One Per Station
	OUT	YP*							X			
Satellite Option	IN	YQ*			X							One Per Station
	OUT	YR			O							

* Factory-furnished option

X - Closed

O = Open

TABLE K

DATA SET 202C OPTIONS AND CONNECTIONS

FEATURE OR OPTION			WIRING OPTION	STRAP TERMINALS ON TB2	PROVIDE
Automatic Answering Feature	Key Controlled (Voltage Interface)		ZE	48-49	1 Per Station (Note 1)
	Permanent (Voltage Interface)		Q*	59-60	
	Key Controlled (Contact Interface)		ZC	49-50	
	Permanent (Contact Interface)		ZD	50-51	
	Not Provided		—	Remove ZE, Q, ZC, and ZD wiring.	
Bit Rate	900 or less bps		ZA	14-15	1 Per Station (Note 2)
	Greater than 900 bps		ZB*	15-16	
Amplitude Equalizer		IN	F*	18-19	1 Per Station
		OUT	E	17-18	
Delay Equalizer		IN	B*	61-62, 64-65	1 Per Station
		OUT	A	62-63, 63-64	
Interface	Voltage (EIA)		N*	1-2, 4-5, 6-7, 8-9	1 Per Station
	Contact		M	2-3, 5-6, 9-10, 12-13	
Squelch		IN	R*	46-47	1 Per Station
		OUT	ZM†	47-55 (Remove R wiring.)	
Demodulator Clamp		ON	V*	20-21	1 Per Station
		OFF	U	21-22	
2-Wire Operation			Z*	~~27-28~~, ~~31-32~~, ~~33-34~~, ~~35-36~~, 38-39, 41-42, 53-54, 56-57	1 Per Station (Note 3)
4-Wire Operation			Y	30-31, 36-37, 37-38, 40-41, 54-55, 57-58	
Termination	600-ohm		X	44-45	1 Per Station
	900-ohm		W*	43-44	
Data Transmit Levels	0 dBm		K	11-12	1 Per Station (Note 4)
	−3 dBm		J	24-25	
	−6 dBm		H*	22-23	
	−9 dBm		G	23-24	

*Factory-furnished option.
†Wiring furnished by installer.

TABLE K (Contd)

DATA SET 202C OPTIONS AND CONNECTIONS

FEATURE OR OPTION		WIRING OPTION	STRAP TERMINALS		PROVIDE
			TERMINAL NUMBERS	TERMINAL BOARD	
Reverse Channel	IN	T	1-2, 6-7	TB3	1 Per Station (Note 5)
	OUT	S	2-3, 7-8		
Reverse-Channel Transmit Level	−3 dBm	ZF	White lead to 1	TB4	1 Per Station (Note 4)
	−6 dBm	ZG*	White lead to 2	TB4	
	−9 dBm	ZH	White lead to 3	TB4	
801-Type ACU	Provided	ZJ	19-23 (Note 6)	TB1	1 Per Station
	Not Provided	—	17-20	TB1	
6017 AP Key	Provided	—	Remove ZV Wiring		1 Per Station
	Not Provided	ZV*	7-9	TB1	
Carrier Soft Turn-Off	IN	ZY*	1-2	AS87 CP	1 Per Station (Note 7)
	OUT	ZZ	3-4	AS87 CP	

*Factory-furnished option.
†Wiring furnished by installer.

Note 1: When automatic answer is specified and data set is wired for voltage interface (Option N), provide Option ZE or Q as required. If data set is wired for contact interface (Option M) and automatic answer is specified, provide Option ZC or ZD as required.

Note 2: Option ZB must be used for all applications.

Note 3: In addition to strapping arrangements on TB2, the following arrangements must be made on telephone circuit (11C apparatus unit):

(a) 2-wire (Option Z) — white conductor of handset cord to GN of 4010B network, other white conductor of handset cord to R of 4010B network.

(b) 4-wire (Option Y) — white conductor of handset cord to terminal 1 of TB6, other white conductor of handset cord to terminal 2 of TB6.

Note 4: Equipped only on early series data sets.

Note 5: 202C-1, C-3, C-5, C-7, C-9, C-11 — Factory furnished with Option S. 202C-2, C-4, C-6, C-8, C-10, C-12 — Factory furnished with Option T. Install Option T only if Option Z is used.

Note 6: Install Options in DAS 801 as directed in Table B in Section 592-015-200.

Note 7: Available only on 202C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12.

TABLE L

DATA SET 202R OPTIONS

REQUIRES	OPTION DESIG.	DESCRIPTION OF OPTION		CLOSE SWITCH	OPEN SWITCH	CIRCUIT PACK
One per station	Z	2-wire	Jumpers S4 and S5 and slide switch S1 (See *Note*)	S1 to "2-wire" S4, S5 *Note*	—	AR593
	Y	4-wire		S1 to "4-wire"	S4, S5 *Note*	
One per station	X	Data set carrier under control of customer request-to-send lead		S3B	S3A	
	W	Continuous carrier (4-wire point-to-point or 2-wire transmit-only service)		S3A	S3B	
	V	No carrier (receive-only service)		—	S3A, S3B	
	T	Fast carrier turn-off		—	S2	AR591
	S	Soft carrier turn-off		S2	—	
One per station	R	Squelch of carrier detector		S3	—	
	Q	No squelch of carrier detector		—	S3	
One per station	N	20-ms carrier acquisition timer		S1	—	
	M	40-ms carrier acquisition timer		—	S1	
One per station	K	Carrier detector "OFF" clamps received data lead		S5	—	
	J	No clamp of received data lead		—	S5	
One per station	G	200-ms clear-to-send timer		—	S4A, S4B	
	F	60-ms clear-to-send timer		S4A	S4B	
	E	30-ms clear-to-send timer		S4B	S4A	

Note: AR593 CPs, series 6 and later, contain jumpers which are used as switches S4 and S5. The "open switch" condition is obtained by plugging one end of the jumper into the other end of the same jumper. The "closed switch" condition is obtained by plugging the jumper into two adjacent posts on the circuit board. The "open switch" condition allows digital loop-back test. To perform the "beeper" 4-wire loop-back test, close switches S4 and S5. All data sets with AR593, series 6 and later, are factory furnished in the "open switch" condition.

TABLE M

DATA SET 202S — L1 OR L1A OPTIONS

FEATURE	OPTION	DESCRIPTION		SWITCH SETTING										PROVIDE
		WITHOUT REVERSE CHANNEL	WITH REVERSE CHANNEL	S3 SWITCH CONTACT SETTING ON TRANSMITTER-RECEIVER										
				1	2	3	4	5	6	7	8	9	0	
Transmit Line Signal Level	ZK	0	−1	—	X	—	X	X	X	X	X	X	—	One Per Set
	ZL	−1	−2	—	X	—	0	X	X	X	X	X	—	
	ZM	−2	−3	—	X	—	X	0	X	X	X	X	—	
	ZN	−3	−4	—	X	—	X	X	0	X	X	X	—	
	ZO	−4	−5	—	X	—	X	X	X	0	X	X	—	
	ZP	−5	−6	—	X	—	X	0	X	0	X	X	—	
	ZQ*	−6	−7	—	X	—	0	X	0	0	X	X	—	
	ZR	−7	−8	—	0	—	0	X	X	X	0	X	—	
	ZS	−8	−9	—	0	—	0	X	0	X	0	X	—	
	ZT	−9	−10	—	0	—	X	X	X	X	X	0	—	
	ZU	−10	−11	—	0	—	0	X	X	0	X	0	—	
	ZV	−11	−12	—	0	—	X	0	X	X	0	0	—	
	ZW	−12	−13	—	0	—	0	0	0	0	0	0	—	
Reverse Channel†	ZC‡	In		0	—	0	—	—	—	—	—	—	—	One Per Set
	ZD*	Out (Remove CP)		X	—	X	—	—	—	—	—	—	—	
Transmit Only	YG	IN		—	—	—	—	—	—	—	—	—	X	One Per Set**
	YH*	OUT		—	—	—	—	—	—	—	—	—	0	
		SOFT TURNOFF	SQUELCH	S2 SWITCH CONTACT SETTING ON TRANSMITTER-RECEIVER										
				1	2	3	4	5	6	7	8	9	0	
Soft Turnoff and Squelch Intervals	Z	0	0	—	—	0	X	—	—	—	—	0	X	One Per Set
	Y	8 ms	0	—	—	0	X	—	—	—	—	0	0	
	X	24 ms	0	—	—	0	X	—	—	—	—	X	0	
	W	0	9 ms	—	—	0	0	—	—	—	—	0	X	
	V	0	156 ms	—	—	X	0	—	—	—	—	0	X	
	T	8 ms	9 ms	—	—	0	0	—	—	—	—	0	0	
	S	8 ms	156 ms	—	—	X	0	—	—	—	—	0	0	
	R*	24 ms	156 ms	—	—	X	0	—	—	—	—	X	0	
Fast Carrier Detection§	Q	In (7 ms)		—	—	—	—	0	—	—	—	—	—	One Per Set
	N*	Out (23 ms)		—	—	—	—	X	—	—	—	—	—	

(See Legend on Page 87.)

TABLE M (Contd)

DATA SET 202S — L1 OR L1A OPTIONS

FEATURE		OPTION	DESCRIPTION	SWITCH SETTING										PROVIDE
				S2 SWITCH CONTACT SETTING ON TRANSMITTER-RECEIVER										
				1	2	3	4	5	6	7	8	9	0	
Clear-to-Send Interval		M	8 ms	—	—	—	—	—	0	0	—	—	—	One Per Set
		K	30 ms	—	—	—	—	—	0	X	—	—	—	
		J	60 ms	—	—	—	—	—	X	0	—	—	—	
		G*	180 ms	—	—	—	—	—	X	X	—	—	—	
Automatic Answer		B*	In	—	—	—	—	—	—	—	X	—	—	One Per Set
		A	Out	—	—	—	—	—	—	—	0	—	—	
Local Copy On Primary Channel	202S-L1	ZA	In	X	—	—	—	—	—	—	—	—	—	One Per Set
		ZB*	Out	0	—	—	—	—	—	—	—	—	—	
	202S-L1A	ZA	In	0	—	—	—	—	—	—	—	—	—	
		ZB*	Out	X	—	—	—	—	—	—	—	—	—	
Clamp (202S-L1 Only)		F*	In	—	0	—	—	—	—	—	—	—	—	Must be Provided
Condition of CC (DSR) During Analog Loop-Back (202S-L1A Only)		YI	On	—	X	—	—	—	—	—	—	—	—	One Per Set
		YJ*	Off	—	0	—	—	—	—	—	—	—	—	
Local Copy on Reverse Channel				STRAPPING ON REVERSE CHANNEL										One Per JY1 or JY2 CP†
		ZE	In	Install E21-E22										
		ZF*	Out	Install E21-E23										
Grounding Option				SCREW SWITCH SETTING ON INTERFACE CIRCUIT										One Per 47A1 Data Mounting
		ZG*	Signal Ground Connected to Frame Ground	Screw Switch S1 Closed										
		ZH	Signal Ground Not Connected to Frame Ground	Screw Switch S1 Open										

X Rocker down on side adjacent to numbers.
0 Rocker up on side adjacent to numbers.
— Rocker may be in either position.
* Factory Furnished.
† DS 202S-L1A operates with JY2 only.
‡ Factory furnished instead of Option ZD when reversed channel board is installed.
§ Same as carrier acquisition timing in earlier model DS 202-type.
Note that IN or OUT status of option requires the opposite position for contact 1 of switch S2 between models L1 and L1A.
** The transmit-only out Option (YH) must be selected.
CP Circuit Pack.

TABLE N

DATA SET 202S-L1C AND 202SR-L1C OPTIONS

FEATURE	OPTIONS	OUTPUT LEVEL	SWITCH SETTING													PROVIDE
			S4 SWITCH CONTACT SETTING ON TRANSMITTER-RECEIVER (CPIC)													
			WITHOUT REVERSE CHANNEL							WITH REVERSE CHANNEL						
			1	2	3	4	5	6	7	1	2	3	4	5	6	7	
TRANSMIT LINE SIGNAL LEVEL	* ZO	–4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	ONE PER SET
	ZP	–5	O	X	X	X	X	X	X	O	X	X	X	X	X	X	
	ZQ	–6	X	O	X	X	X	X	X	O	O	X	X	X	X	X	
	ZR	–7	O	O	X	X	X	X	O	X	X	O	X	X	X	O	
	ZS	–8	X	X	O	X	X	X	O	X	O	O	X	X	X	O	
	ZT	–9	X	O	O	X	X	X	O	X	O	X	O	X	X	O	
	ZU	–10	X	X	X	O	X	X	O	O	O	O	O	X	X	O	
	ZV	–11	O	O	X	O	X	X	O	O	O	O	O	O	X	O	
	ZW	–12	O	O	O	O	X	X	O	O	O	O	O	O	O	O	

FEATURE	OPTIONS	SOFT TURN–OFF	SQUELCH	S2 SWITCH CONTACT SETTING ON TRANSMITTER-RECEIVER (CP C)										PROVIDE
				1	2	3	4	5	6	7	8	9	0	
SOFT TURN–OFF AND SQUELCH INTERVALS	Z	0	0	–			–	–	–	–	X	–	X	ONE PER SET
	Y	8 MSEC	0	–			–	–	–	–		–	X	
	X	24 MSEC	0	–	X		–	–	–	–		–	X	
	W	0	9 MSEC	–			–	–	–	–	X	–		
	V	0	156 MSEC	–		X	–	–	–	–	X	–		
	T	8 MSEC	9 MSEC	–			–	–	–	–		–		
	S	8 MSEC	156 MSEC	–	X	X	–	–	–	–		–		
	* R	24 MSEC	156 MSEC	–	X	X	–	–	–	–		–		

FEATURE	OPTIONS		SWITCH SETTING										PROVIDE
FAST CARRIER DETECTION	Q	IN (7 MSEC)	–	–	–	–	–	–		–	–	–	ONE PER SET
	* N	OUT (23 MSEC)	–	–	–	–	–	–	X	–	–	–	
CLEAR TO SEND INTERVAL	M	8 MSEC	–	–	–				–	–	–	–	ONE PER SET
	K	30 MSEC	–	–	–		X	–	–	–	–	–	
	J	60 MSEC	–	–	–	X		–	–	–	–	–	
	* G	180 MSEC	–	–	–	X	X	–	–	–	–	–	
AUTOMATIC ANSWER	* B	IN	X	–	–	–	–	–	–	–	–	–	ONE PER SET
	A	OUT		–	–	–	–	–	–	–	–	–	
LOCAL COPY ON PRIMARY CHANNEL	ZA	IN	–	–	–	–	–		–	–	–	–	ONE PER SET
	* ZB	OUT	–	–	–	–	–	X	–	–	–	–	
CONDITION OF CC (DSR) DURING ANALOG LOOPBACK	YI	ON	–	–	–	–	–	–	–	–	X	–	ONE PER SET
	* YJ	OFF	–	–	–	–	–	–	–	–		–	

FEATURE	OPTIONS		S3 SWITCH CONTACT SETTING ON TRANSMITTER-RECEIVER (CP1C)						PROVIDE
			1	2	3	4	5	6	
REVERSE CHANNEL	** ZC	IN			–	–	–	–	ONE PER SET
	** ZD	OUT	X	X	–	–	–	–	
TRANSMIT ONLY	YG	IN	–	–	X	–	–	–	ONE PER SET
	* YH	OUT	–	–		–	–	–	
ECHO SUPPRESSOR ENABLE	YQ	IN	–	–	–		–	–	ONE PER SET
	* YR	OUT	–	–	–	X	–	–	
CARRIER CONTROLLED TURNAROUND	* YS	IN	–	–	–	–	–		ONE PER SET
	YT	OUT	–	–	–	–	–	X	
EARLY CC (DSR) INDICATION	YU	IN	–	–	–	–		–	ONE PER SET
	* YV	OUT	–	–	–	–	X	–	

LOCAL COPY ON REVERSE CHANNEL, GROUNDING, AND LINE HUNTING OPTIONS ARE SAME AS FOR 202S–L1 AND 202S–L1A

[X] CONTACT CLOSED
[–] CONTACT NOT APPLICABLE
[O] CONTACT OPEN

* FACTORY FURNISHED
** FACTORY FURNISHED INSTEAD OF OPTION ZD WHEN REVERSE CHANNEL BOARD IS INSTALLED.

TABLE O

DATA SET 202T-L1 OPTIONS

FEATURE	OPTIONS	DESCRIPTION		SWITCH SETTING										PROVIDE
				S3 Switch Contact Setting On Transmitter-Receiver										
				1	2	3	4	5	6	7	8	9	0	One Per Data Set
4-Wire Operation	ZK*			0	0	X	X	0	0	0	X	X	X	
2-Wire Operation w/o Reverse Channel	ZD			X	0	X	0	0	X	X	0	0	0	
2-Wire Operation With Reverse Channel	ZC†			X	X	0	0	X	0	X	0	0	0	
				S2 Switch Contact Setting On Transmitter-Receiver										
				1	2	3	4	5	6	7	8	9	0	One Per Data Set
4-Wire Operation	ZK*			X	–	–	–	–	–	–	–	–	–	
Local Copy on Primary Channel in 2-Wire	ZA	IN		X	–	–	–	–	–	–	–	–	–	
	ZB†	OUT		0	–	–	–	–	–	–	–	–	–	
Soft Turnoff and Squelch Intervals		Soft Turnoff	Squelch											
	Z	0	0	–	–	0	X	–	–	–	–	0	X	One Per Data Set
	Y*	8 ms	0	–	–	0	X	–	–	–	–	0	0	
	X	24 ms	0	–	–	0	X	–	–	–	–	X	0	
	W	0	9 ms	–	–	0	0	–	–	–	–	0	X	
	V	0	156 ms	–	–	X	0	–	–	–	–	0	X	
	T	8 ms	9 ms	–	–	0	0	–	–	–	–	0	0	
	S	8 ms	156 ms	–	–	X	0	–	–	–	–	0	0	
	R	24 ms	156 ms	–	–	X	0	–	–	–	–	X	0	
Fast Carrier Detection	Q*	IN		–	–	–	–	0	–	–	–	–	–	One Per Data Set
	N	OUT		–	–	–	–	X	–	–	–	–	–	
Clear-to-Send Interval	M*	8 ms		–	–	–	–	–	0	0	–	–	–	One Per Data Set
	K	30 ms		–	–	–	–	–	0	X	–	–	–	
	J	60 ms		–	–	–	–	–	X	0	–	–	–	
	G	180 ms		–	–	–	–	–	X	X	–	–	–	
Control by DAS 828- or 829-Type	B*	IN		–	–	–	–	–	–	–	0	–	–	One Per Data Set
	A	OUT		–	–	–	–	–	–	–	X	–	–	
Clamp	F*	IN		–	0	–	–	–	–	–	–	–	–	One Per Data Set
	E	OUT		–	X	–	–	–	–	–	–	–	–	
Carrier Detector Reset				Strapping on Transmitter-Receiver CP										One Per Data Set
	ZL	IN		Install E21-E23										
	ZM*	OUT		Install E22-E23										
Continuous Carrier	ZN	IN		Install E24-E25										One Per Data Set
	ZO*	OUT		Install E25-E26										
Compromise Equalization	ZU	Maximum		Install E27										One Per Data Set
	ZV	Minimum		Install E28										
Local Copy on Reverse Channel				Strapping on Reverse Channel CP										One Per Data Set
	ZE	IN		Install E21-E22										
	ZF*	OUT		Install E21-E23										
Grounding Option				Screw Switch S1 Setting on Interface Circuit										One Per Data Set
	ZG*	Signal Ground Connected to Frame Ground		S1 Closed										
	ZH	Signal Ground Not Connected to Frame Ground		S1 Open										

X Rocker down on side adjacent to numbers.
0 Rocker up on side adjacent to numbers.
— Rocker may be in either position.

* Factory furnished.
† Factory furnished instead to 4-wire option when reverse channel CP is installed.

TABLE P

DATA SET 202T-L1A OPTIONS

FEATURE	OPTION	DESCRIPTION		SWITCH SETTING										PROVIDE
				S3 Switch Contact Setting On Transmitter-Receiver										
				1	2	3	4	5	6	7	8	9	0	
4-Wire Operation	ZK*			0	–	–	0	–	X	X	X	X	X	One Per Data Set
2-Wire Operation w/o Reverse Channel	ZD			X	–	–	X	–	X	0	0	0	0	
2-Wire Operation With Reverse Channel	ZC†			X	–	–	X	–	0	0	0	0	0	
Compromise Delay Equalization	ZV	Minimum		–	X	–	–	–	–	–	–	–	–	One Per Data Set
	ZU*	Maximum		–	0	–	–	–	–	–	–	–	–	
Compromise Amplitude Equalization	ZX	Minimum		–	–	–	–	X	–	–	–	–	–	One Per Data Set
	ZW*	Maximum		–	–	–	–	0	–	–	–	–	–	
Channel Condition	ZZ	C2		–	–	X	–	–	–	–	–	–	–	One Per Data Set
	ZY*	Basic		–	–	0	–	–	–	–	–	–	–	
				S2 Switch Contact Setting On Transmitter-Receiver										
				1	2	3	4	5	6	7	8	9	0	
4-Wire Operation	ZK*			X	–	–	–	–	–	–	–	–	–	One Per Data Set
Local Copy on Primary Channel in 2-Wire	ZA	IN		X	–	–	–	–	–	–	–	–	–	
	ZB†	OUT		0	–	–	–	–	–	–	–	–	–	
Soft Turnoff and Squelch Intervals		Soft Turnoff	Squelch											One Per Data Set
	Z	0	0	–	X	–	–	–	0	X	0	–	–	
	Y*	8 ms	0	–	X	–	–	–	0	0	0	–	–	
	X	24 ms	0	–	X	–	–	–	0	0	X	–	–	
	W	0	9 ms	–	0	–	–	–	0	X	0	–	–	
	V	0	156 ms	–	0	–	–	–	X	X	0	–	–	
	T	8 ms	9 ms	–	0	–	–	–	0	0	0	–	–	
	S	8 ms	156 ms	–	0	–	–	–	X	0	0	–	–	
	R	24 ms	156 ms	–	0	–	–	–	X	0	X	–	–	
Fast Carrier Detection	Q*	IN		–	–	0	–	–	–	–	–	–	–	One Per Data Set
	N	OUT		–	–	X	–	–	–	–	–	–	–	
Clear-to-Send Interval	M*	8 ms		–	–	–	0	–	–	–	–	–	0	One Per Data Set
	K	30 ms		–	–	–	0	–	–	–	–	–	X	
	J	60 ms		–	–	–	X	–	–	–	–	–	0	
	G	180 ms		–	–	–	X	–	–	–	–	–	X	

TABLE P (Contd)

DATA SET 202T-L1A OPTIONS

FEATURE	OPTION	DESCRIPTION	SWITCH SETTING	PROVIDE
External Control of CC (Data Set Ready)	B*	IN	– – – – – – – – 0 –	One Per Data Set
	A	OUT	– – – – – – – – X –	
Clamp	F*	IN	– – – – 0 – – – – –	One Per Data Set
	E	OUT	– – – – X – – – – –	
			S4 Switch Contact Setting on Transmitter-Receiver	
			1 2 3	
Carrier Detector Reset	ZL	IN	– X –	One Per Data Set
	ZM*	OUT	– 0 –	
Continous Carrier	ZN	IN	X – –	One Per Data Set
	ZO*	OUT	0 – –	
State of CC (Data Set Ready) During Analog Loopback	YB	ON	– – X	One Per Data Set
	YA*	OFF	– – 0	
Local Copy on Reverse Channel			Strapping on Reverse Channel CP	One Per Data Set
	ZE	IN	Install E21-E22	
	ZF†	OUT	Install E23-E23	
Grounding Option (Data Set)			Screw Switch S1 Setting on Interface Circuit	One Per Data Set
	ZG*	Signal Ground Connected to Frame Ground	S1 Closed	
	ZH	Signal Ground Not Connected to Frame Ground	S1 Open	
Grounding Option (Data Mounting)			Strapping on 39A1 or 40B1 Data Mounting	
	ZI*	~~Signal Ground~~ Connected to Frame Ground	~~Wire Strap of Power~~ Supply In	
	ZJ	Signal Ground Not Connected to Frame Ground	Wire Strap if Power Supply Out	

X Rocker down on side adjacent to numbers.
0 Rocker up on side adjacent to numbers.
-- Rocker may be in either position.
* Factory furnished.
† Factory furnished instead of 4-wire option when reverse channel CP is installed.

TABLE Q

DATA SET 208A OPTIONS

SWITCH	SWITCH POSITION	FEATURE
S1A (SEE NOTE)	UP	DSR ON IN AL MODE
	DOWN *	DSR OFF IN AL MODE
S1B (SEE NOTE)	UP *	NO COMP EQUALIZER TEST
	DOWN	COMP EQUALIZER TEST ENABLED
S1C	UP	CONTINUOUS REQUEST-TO-SEND
	DOWN *	SWITCHED REQUEST-TO-SEND
S3A	UP	XMIT EXTERNALLY TIMED
	DOWN *	XMIT INTERNALLY TIMED
S3B	UP *	RETRAIN AUTOMATICALLY
	DOWN	RETRAIN NOT USED
S3C	UP	DATA AUXILIARY SET IS USED
	DOWN *	DATA AUXILIARY SET NOT USED
S4A	UP *	1-SEC HOLDOVER DISABLE
	DOWN	1-SEC HOLDOVER
S4B	UP	CONTINUOUS CARRIER
	DOWN *	SWITCHED CARRIER
S4C	UP	NEW SYNCH USED BY CUSTOMER
	DOWN *	NEW SYNCH NOT USED BY CUSTOMER

Note: This option available on Data Set 208A-L1A only (CP HG23).

EQUALIZER ADJUSTMENT

SWITCH			EQUALIZATION PROVIDED
S2A	S2B	S2C	
†	†	DOWN	NONE
†	Up	UP	AMP AND DELAY (SYM) *
UP	DOWN	UP	AMP AND DELAY (HI END)
DOWN	DOWN	UP	AMP AND DELAY (SYM + HI END)

*Factory installed.
†Switch may be in either position.

TABLE R

DATA SET 208B-L1, 208B-L1A, 208B-L1B AND 208BR-L1B OPTIONS

TRANSMIT LEVEL

LEVEL (DBM)	SWITCH				OPTION
	S1A	S1B	S1C	S2A	
0 *	DOWN	UP	DOWN	UP	ZA
-1	DOWN	UP	DOWN	DOWN	ZB
-2	DOWN	UP	UP	UP	ZC
-3	DOWN	UP	UP	DOWN	ZD
-4	DOWN	DOWN	DOWN	UP	ZE
-5	DOWN	DOWN	DOWN	DOWN	ZF
-6	DOWN	DOWN	UP	UP	ZG
-7	DOWN	DOWN	UP	DOWN	ZH
-8	UP	UP	DOWN	UP	ZI
-9	UP	UP	DOWN	DOWN	ZJ
-10	UP	UP	UP	UP	ZK
-11	UP	UP	UP	DOWN	ZL
-12	UP	DOWN	DOWN	UP	ZM
-13	UP	DOWN	DOWN	DOWN	ZN
-14	UP	DOWN	UP	UP	ZO
-15	UP	DOWN	UP	DOWN	ZP

* FACTORY INSTALLED

208B-L1A DATA SET

208B-L1A DATA SET OPTIONS (HG24)

SWITCH		COMPROMISE EQUALIZER SLOPE	OPTION
S2B	S2C		
§	DOWN	NONE (0DB)	ZT
UP	UP	4DB SLOPE & SYMMETRIC DELAY	WU *
DOWN	UP	8DB SLOPE & SYMMETRIC DELAY	ZS
OPTIONS FOR S3 AND 50 SWITCHES SAME AS 208B-L1			

208B-L1 DATA SET

SWITCH	SWITCH POSITION	FEATURE	OPTION
S2C†	UP *	COMPROMISE EQUALIZER IN	ZS
	DOWN	COMPROMISE EQUALIZER OUT	ZT
S3A	UP	CC ON IN ANALOG LOOP MODE	YM
	DOWN *	CC OFF IN ANALOG LOOP MODE	YN
S3B	UP	MANUAL ANSWER	YO
	DOWN *	AUTOMATIC ANSWER	YP
S3C	UP	TRANSMITTER EXTERNALLY TIMED	YD
	DOWN *	TRANSMITTER INTERNALLY TIMED	YC
50††	IN	CA-CB INTERVAL OF 50 MSEC	
	OUT	CA-CB INTERVAL OF 150 MSEC	

* FACTORY INSTALLED
† COMPROMISE EQUALIZER SHOULD ALWAYS BE IN
†† IF NOT SPECIFIED ON SERVICE ORDER, INSTALL 50 INTERVAL
§ SWITCH MAY BE IN EITHER POSITION

208B-L1B DATA SET

SWITCH	OPTION STRAP POSITION	OPTION FEATURE	OPTION DESIGNATION
S2B	†	Compromise Equalizer Out	ZT
S2C	Down		
S2B	Up	Compromise Equalizer (4-dB Slope)	WU*
S2C	Up		
S2B	Down	Compromise Equalizer (8-dB Slope)	ZS
S2C	Up		
S3A	Up	DSR *on* in Analog Loop Mode	YM
	Down	DSR *off* in Analog Loop Mode	YN*
S3B	Up	Manual Answer	YO
	Down	Automatic Answer	YP*
S3C	Up	Transmitter Externally Timed	YD
	Down	Transmitter Internally Timed	YC*
S4A‡	Up		
	Down*		
S4B‡	Up		
	Down*		
"50"	In	RS-CS Interval of 50 ms	(Customer Switch)
	Out	RS-CS Interval of 150 ms	

* Factory installed.
† Strap may be up or down.
‡ Down position must be selected.

TABLE S
DATA SET 212-L1 OPTIONS

FEATURE	OPTION	DESCRIPTION	SWITCH SETTING											PROVIDE
			S1 SWITCH CONTACTS											
			1	2	3	4								
Tip, Ring Make Busy	F	IN	X	–	–	–								One per set
	E*	OUT	O	–	–	–								
CC Indication for Analog Loop	ZF*	ON	–	–	–	X								One per set
	ZE	OFF	–	–	–	O								
			SWITCH CONTACTS											
			S2									S5		
			1	2	3	4	5	6	7	8	9	1	2	
CN Circuit	YE	IN	–	O	–	–	–	–	–	–	–			One per set
	YF*	OUT	–	X	–	–	–	–	–	–	–			
Transmitter Timing	YC*	INTERNAL	–	–	O	O	–	–	–	–	–			One per set
	YD	EXTERNAL	–	–	O	X	–	–	–	–	–			
	WI	SLAVE	–	–	X	O	–	–	–	–	–			
1200-bps Operation	YG*	ASYNC/START-STOP	X	–	–	–	O	–	–	O	O	O	O	One per set
	YH	SYNC	X	–	–	–	X	–	–	O	O	X	X	
Character Length (Use With YG)	YI	9-BIT	–	–	–	–	–	O	–	–	–			One per set
	YJ*	10-BIT	–	–	–	–	–	X	–	–	–			
Receiver Respond to Digital Loop	YK*	IN	–	–	–	–	–	–	O	–	–			One per set
	YL	OUT	–	–	–	–	–	–	X	–	–			
			S3 SWITCH SETTINGS											
			1	2	3	4	5	6	7	8				
Loss of Carrier Disconnect	S*	IN	X	–	–	–	–	–	–	–				One per set
	R	OUT	O	–	–	–	–	–	–	–				
Receive Space Disconnect	V*	IN	–	X	–	–	–	–	–	–				One per set
	Y	OUT	–	O	–	–	–	–	–	–				
CB and CF Indications	A*	COMMON	–	–	X	–	–	–	–	–				One per set
	B	SEPARATE	–	–	O	–	–	–	–	–				
Send Space Disconnect	T*	IN	–	–	–	X	–	–	–	–				One per set
	U	OUT	–	–	–	O	–	–	–	–				
Automatic Answer	ZH*	IN	–	–	–	–	O	–	–	–				One per set
	ZG	OUT	–	–	–	–	X	–	–	–				
Answer Mode Indication	X	ON	–	–	–	–	–	X	–	–				One per set
	W*	OFF	–	–	–	–	–	O	–	–				
Speed Mode	YO	HIGH	–	–	–	–	–	–	X	–				One per set
	YP*	DUAL	–	–	–	–	–	–	O	–				
Interface Speed Indication – CI	YQ	IN	–	–	–	–	–	–	–	X				One per set
	YR*	OUT	–	–	–	–	–	–	–	O				
Signal Ground to Frame Connection	Q*	IN	S1 CLOSED											One per 47D1 DM
	P	OUT	S1 OPEN											

X = Contact Closed – = Contact Not Applicable O = Contact Open * = Factory-Provided

Note: Do not use Option X if used with a DATASPEED 40/2 Terminal.

TABLE T

DATA SET 212A-L1A AND 212AR-L1A OPTIONS

FEATURE			OPTION	SWITCH SETTINGS											PROVIDE
				SI SWITCH											
				1	2	3									
TIP RING MAKE BUSY		IN	F	X											ONE PER SET
		OUT	E	O											
CC INDICATION FOR ANALOG LOOP		ON	ZF			X									ONE PER SET
		OFF	ZE			O									
				S2 SWITCH									S5		
				1	2	3	4	5	6	7	8	9	1	2	
SPEED CONTROL	INTERFACE		XJ	O								X			ONE PER SET
	HS BUTTON		XK	X								O			
INTERFACE CONTROL MB/AL - CN LEAD		IN	YE		O										ONE PER SET
		OUT	YF		X										
TRANSMITTER TIMING		INT.	YC			O	O								ONE PER SET
		EXT.	YD			O	X								
		SLAVE	WI			X	O								
1200 BPS OPERATION	ASYNC / START STOP		YG					O					O	O	ONE PER SET
	SYNC		YH					X					X	X	
CHAR. LENGTH (USE WITH YG)		9 BIT	YI						O						ONE PER SET
		10 BIT	YJ						X						
RCVR RESPONDS TO DIGITAL LOOP		IN	YK							O					ONE PER SET
		OUT	YL							X					
INTERFACE CONTROL RDL LEAD		IN	XL								X				ONE PER SET
		OUT	XM								O				
				S3 SWITCH											
				1	2	3	4	5	6	7	8				
LOSS OF CARRIER DISCONNECT		IN	S	X											ONE PER SET
		OUT	R	O											
RCV SPACE DISCONNECT		IN	V		X										ONE PER SET
		OUT	Y		O										
CB AND CF INDICATIONS		COM	A			X									ONE PER SET
		SEP	B			O									
SEND SPACE DISCONNECT		IN	T				X								ONE PER SET
		OUT	U				O								
AUTOMATIC ANSWER		IN	ZH					O							ONE PER SET
		OUT	ZG					X							
ANSWER MODE INDICATION		CE ON	X						X						ONE PER SET
		CE OFF	W						O						
SPEED MODE		HIGH	YO							X					ONE PER SET
		DUAL	YP							O					
INTERFACE SPEED INDICATION-CI		IN	YQ								X				ONE PER SET
		OUT	YR								O				
				STRAP PLUGS											
CN AND TM INTERFACE ASSIGNMENT	CN 25, TM NC		XQ	E3-E4, E1-E2											ONE PER SET
	CN 18, TM NC		XN	E4-E5, E1-E2											
	CN 18, TM 25		XR	E4-E5, E2-E3											
SIG. GROUND TO FG. CONNECTION		IN	O	SI CLOSED											ONE PER 47D MTG.
		OUT	P	SI OPEN											

X CONTACT CLOSED

O CONTACT OPEN

FACTORY FURNISHED OPTION

CONTACT NOT USED

Note: Do not use Option X or XJ if used with a DATASPEED 40/2 Terminal.

5. ADJUSTMENTS

5.01 The only adjustments in the station are in printer and monitor.

5.02 Monitor adjustments are given in BSP 582-213-700.

5.03 The printer adjustments are given in BSP 582-210-700.

6. TOOLS AND SUPPLIES

6.01 The following tools and supplies may be required for installation or servicing of DATASPEED 40/2 apparatus. Most of these items should normally be present in standard maintenance tool kits.

6.02 Tools

Wrench	3/16" socket	125752
Wrench, open end	3/8"	125765
Wrench, open end	3/16" and 1/4"	129534
Wrench, open end	5/16" and 3/8"	152835
Wrench, open end	3/4"	129537
Nut driver	Handle	135676
Nut driver	1/4"	89954
Nut driver	5/16"	89955
Nut driver	1/4"	135677
Nut driver	5/16"	135678
Screwdriver	1/8", 2" blade	95368
Screwdriver	1/4", 6" blade	100982
Screwdriver	(blade less than 5/32")	94647
Allen wrench	0.062	124682
Tweezers		151392
Spring hook (pull)		142554
Spring hook (pull)		75675
Spring hook (push)		75503
Static ground strap		346392
Scales, spring (802)		110443
Ruler, 6"		95960
Cleaning brush (type face)		151394
Long-nose pliers		108285
Cutting pliers		108286
Terminal extractor		182697
Retaining ring pliers		160396
Terminal extractor		341983
Keyswitch extractor		346257
Keytop extractor		346260
Gauge (80-column friction and tractor feed printer)		402617
Gauge (132-column tractor feed printer)		402716
Gauge (132-column tractor feed printer)		402717
Dynamic backup bar gauge		402868
Type carrier alignment gauge		402878
Terminal extractor		402840

6.03 Supplies

Grease — Mobil No. 2 (1 lb can)	143484
Grease — Mobile No. 2 (4 oz tube)	145867
Grease — Beacon 325 (5 lb can)	195298
Oil — (1 qt can)	88970
Ribbon	402444
Paper (friction feed) — standard 8-1/2" wide, 5" dia roll	
Paper (tractor feed)	
Freon TF Degreaser — (6 oz aerosol can)	337449
Thermal joint compound (obtained locally)	

"DATASPEED*" 40 STATION AND COMPONENT REMOVAL

CONTENTS

*Registered Trademark of AT&TCo.
†Issue 1 Did Not Receive Standard Distribution

Prepared for American Telephone and Telegraph Company by Teletype Corporation

1. GENERAL

1.01 This section provides station and component removal (station disconnect) information for DATASPEED 40/0, 40/1, 40/2, 40/3, and 40/4. Packing instructions and illustrations are provided to insure proper handling and packing for service disconnects.

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 Station and component removal should be performed under the direction of a service disconnect order indicating the packing materials required, date, and location.

1.04 Do not pack "used" printer ribbon when printers are removed from service (remove and discard). For reference the appropriate packing procedure is shown in this section for packing new ribbon when printer is packed for shipment to service.

1.05 ALL STATIONS AND COMPONENTS REMOVED SHOULD BE RETURNED TO WESTERN ELECTRIC SERVICE CENTER WITHOUT INCURRING DAMAGE. THE PACKING METHODS SPECIFIED HEREIN REPRESENT ONE WAY TO HELP ASSURE SAFE TRANSPORT. A RETURNED MATERIAL TAG SHOULD BE AFFIXED TO EACH ITEM. (SEE 4. WORKING STATION)

1.06 Pressure sensitive tape, tissue paper, glue, or sealing tape may be obtained locally.

1.07 Factory-type packing may be duplicated by ordering the required PK materials from Teletype Corporation. All other packing materials may be obtained from your local Western Electric Service Center.

2. TOOLS REQUIRED

2.01 The tools required for service disconnects of DATASPEED 40 apparatus are standard and should be present in standard maintenance tools kits.

3. STATION AND COMPONENT REMOVAL

3.01 Reverse the procedures in Part 2 of 579-505-352 for 40/0, Part 7 of 582-200-200 for 40/0 and 40/l, Part 3 of 582-200-202 for 40/2, Part 3 of 582-200-203 for 40/3, and Part 3 of 582-200-201 for 40/4, to remove the station from service (service disconnect).

3.02 When equipment is removed from service, use suitable quantities of packing containers for reshipment of station arrangements or components.

3.03 The following illustrations show some of the recommended packing procedures for reshipment.

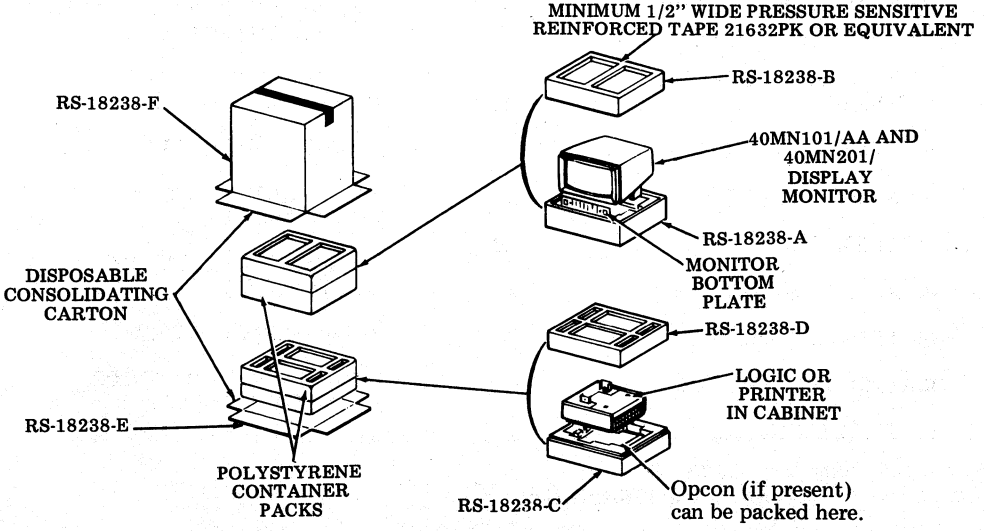


Fig. 1

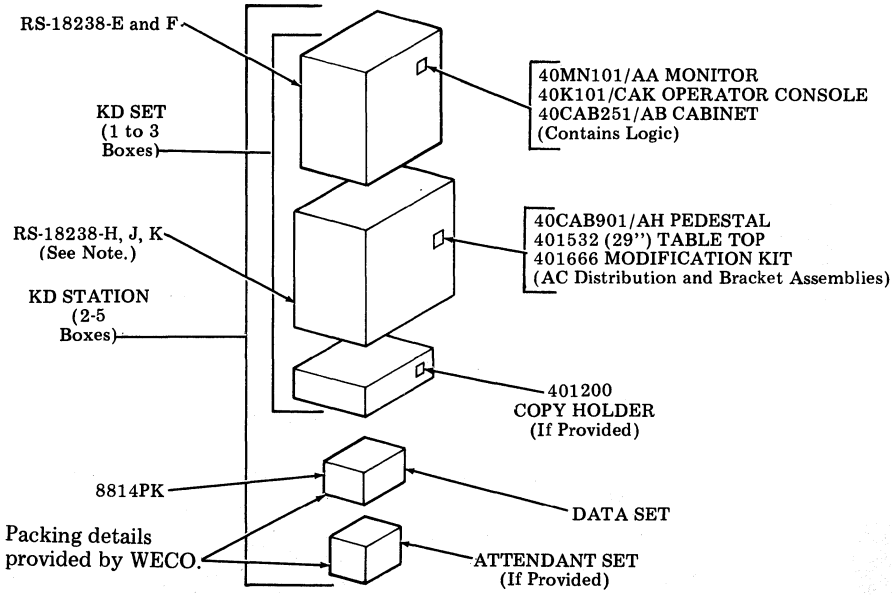


Fig. 2—Typical Packing Details for DATASPEED 40 Station Arrangements

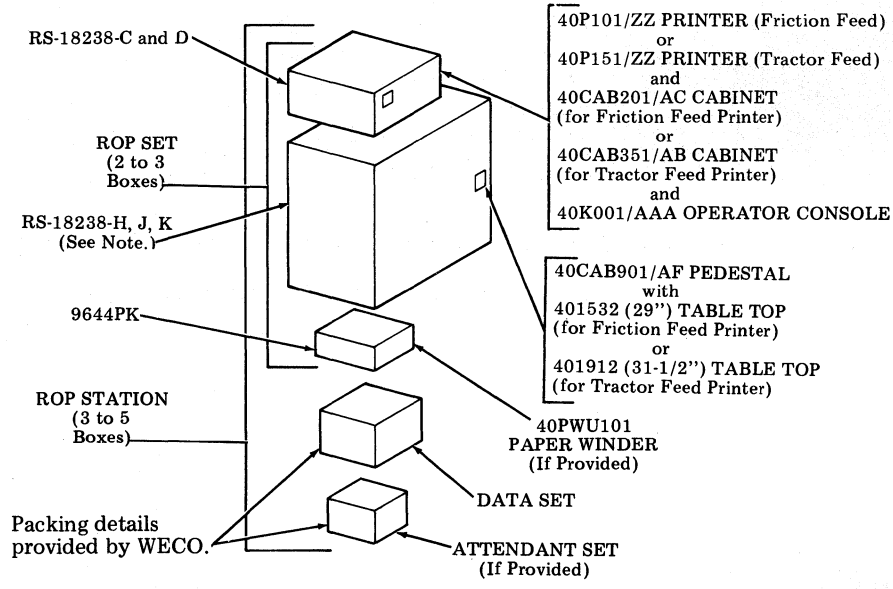
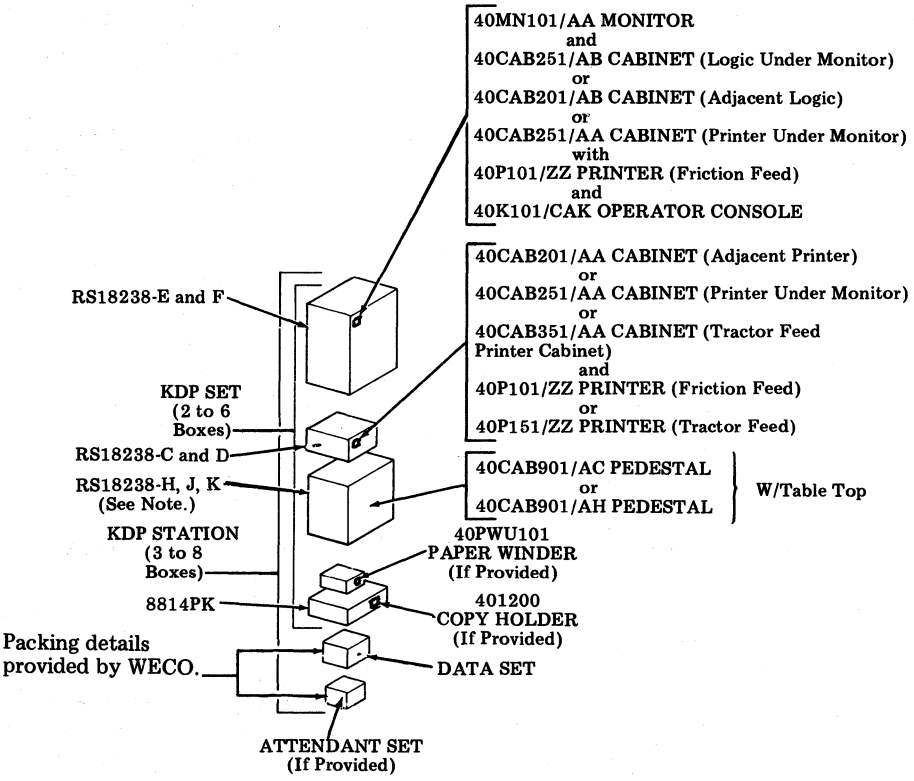


Fig. 3— Typical Packing Details for DATASPEED 40 Station Arrangements (Cont)

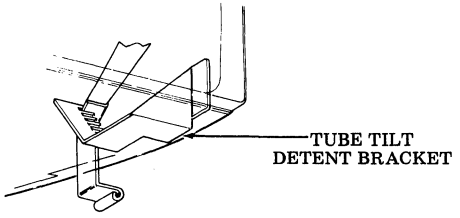
Note: Use two RS-18238-K blocking details when packing the pedestal (see Fig. 27).



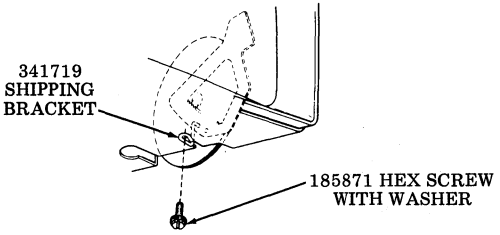
Note: In a KDP w/tractor feed printer on pedestal, two 40CAB901/AH pedestals must be packed.

Fig. 4—Typical Packing Details for DATASPEED 40 Station Arrangements (Cont)

DISPLAY MONITOR



(Late Design)



(Early Design)

Fig. 5

Step 1. Remove the 401108 bottom plate from monitor.

Step 2. Move the tilt lever to the front of monitor and engage the lever in the first or second detent position.

Step 1. Remove the 401108 bottom plate from monitor.

Step 2. Immobilize tube tilt mechanism with 341719 shipping bracket as illustrated in Fig. 5.

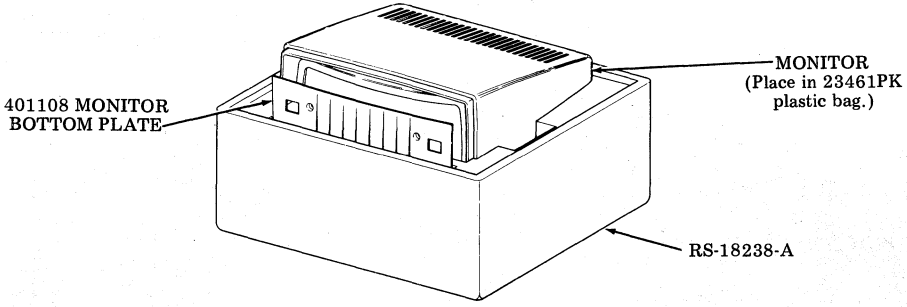


Fig. 6

Step 3. Position monitor and bottom plate in position shown in Fig. 6. Position cover and secure with a band of pressure sensitive reinforced tape, as illustrated in Fig. 7.

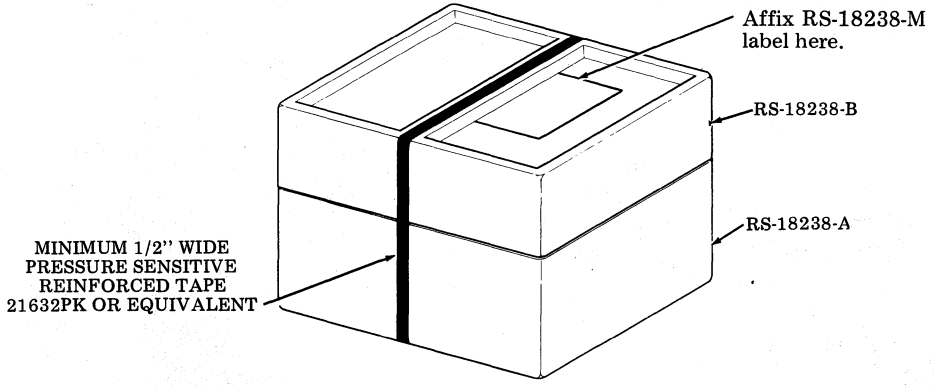


Fig. 7

MONITOR (Alternate Packing Procedure)

Step 1. Preassemble all parts to bottom of main frame. Mount assembly to a 28381PK pallet with two 28051PK spacers, four 71699RM screws, four 72316RM lockwashers and four 72296RM flat washers. Tighten screws securely. (See Fig. 8.)

Step 2. Complete assembly of monitor less cover. Invert monitor.

Step 3. Mount and latch cover. Secure monitor support covers in place with 21632PK tape.

Step 4. Form 10603PK carton. Close and seal bottom flaps with a strip of 21719PK tape applied along the center seam. The tape should extend approximately three inches down the ends of the carton.

Step 5. Place unit in carton. Place a 23457PK plastic bag around unit.

Step 6. Form a 28365PK detail and place in carton at front of unit as illustrated in Fig. 8.

Step 7. Wrap the bottom plate assembly in a sheet of 21298PK tissue paper. Form a 28364PK detail and secure the wrapped bottom plate to the detail with two bands of 21632PK tape.

Step 8. Position the detail and bottom plate in the carton.

Step 9. Close and seal the top flaps of the carton as outlined in Step 4.

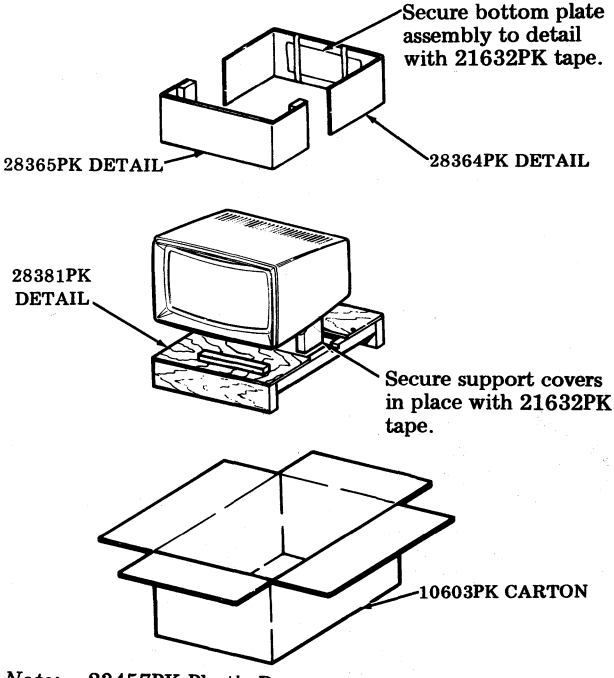
Step 10. Form a 11322PK carton and with bottom flaps down and outward, place around the inner carton.

Step 11. Position a 27442PK plastic corner on each of the four corners of the inner carton.

Step 12. Close and seal the top flaps of the carton with 21719PK tape as outlines in Step 4.

Step 13. Carefully invert carton and contents. Position a 27442PK plastic corner on each of the four corners of the inner carton.

Step 14. Close and seal bottom flaps of carton as outlined in Step 4. Invert carton.



Note: 23457PK Plastic Bag deleted for clarity.

Fig. 8

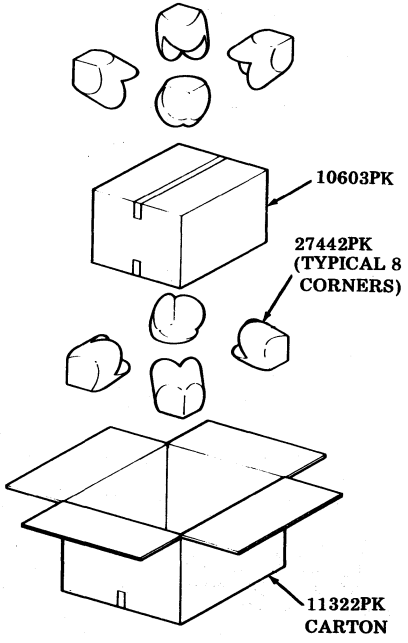


Fig. 9

LOGIC, PRINTER, AND PRINTER CABINET

Step 1. Position logic or printer cabinet in position shown in Fig. 10.

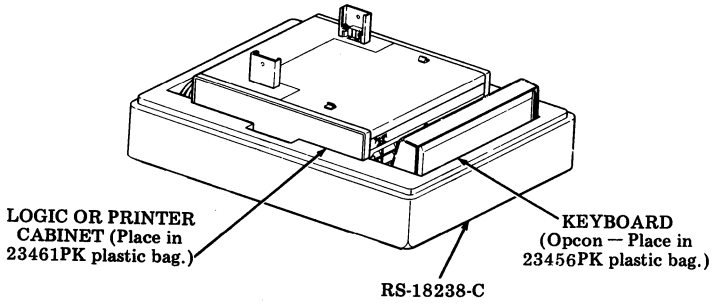
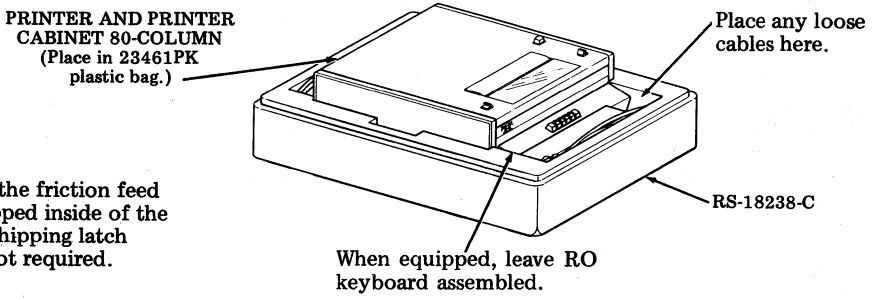


Fig. 10

Step 2. Insert keyboard and any loose cables in space provided in the RS-18238-C detail. See Fig. 11.



Note: When the friction feed printer is shipped inside of the cabinet, the shipping latch and bar are not required.

Fig. 11

Step 3. Position cover and secure with two bands of pressure sensitive reinforced tape. See Fig. 12.

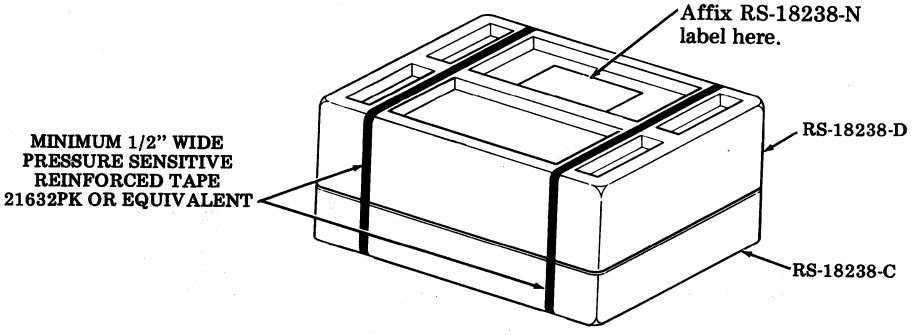


Fig. 12

Note: When available, use consolidating container body RS-18238-F, container base RS-18238-E, along with 1/2 inch wide steel strapping around the base of container. Nylon tape may be used to secure the container base during removal operation.

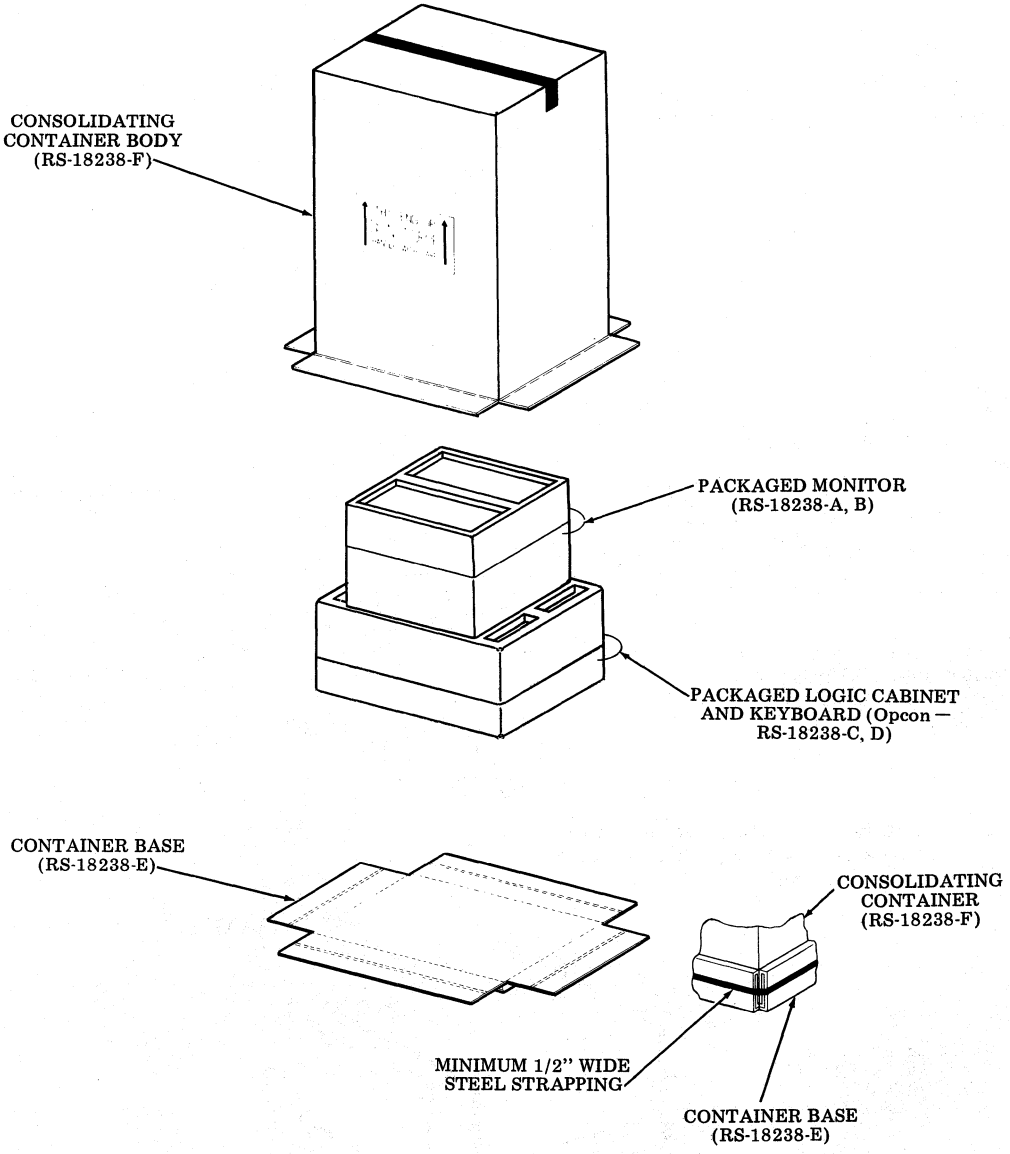


Fig. 13—Packing Logic, Printer, and Printer Cabinet

FRICTION FEED PRINTER (80-COLUMN)

Packing Procedure for 40P101 and 40P102 Printers

Step 1. Remove printer from printer cabinet.

Step 2. Remove ribbon spools from printer and discard.

Step 3. Place paper spindle in position on unit with ribbon spools positioned down.

Step 4. Form shipping container 10160PK. Close and seal bottom flaps with glue or sealing tape.

Step 5. Place a plastic detail 28249PK Detail A in the container as illustrated in Fig. 14.

Step 6. Position unit in plastic base (see Fig. 14).

Step 7. Position a plastic cover 28249PK Detail B over top of unit (see Fig. 14).

Step 8. Close and seal top flaps of container as outlined in Step 4.

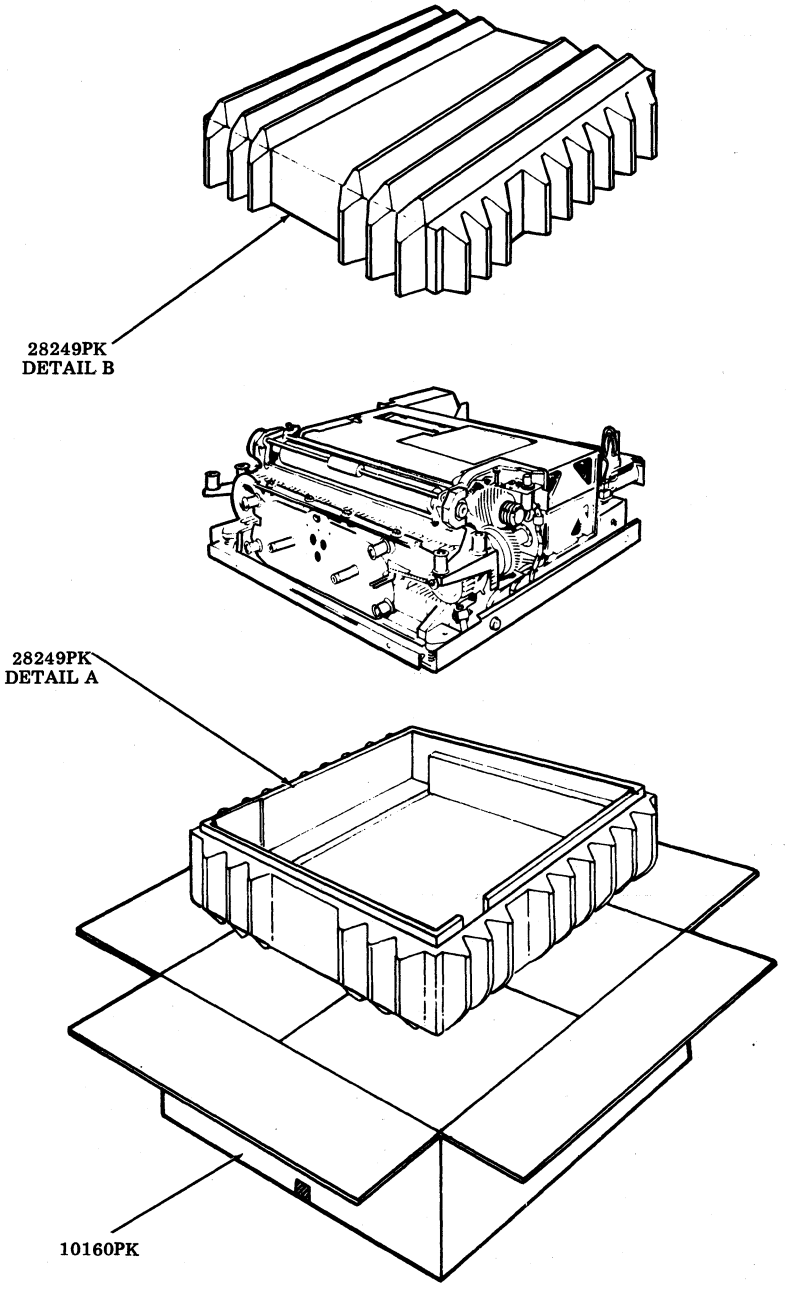


Fig. 14

TRACTOR FEED PRINTER (80-COLUMN)

Packing Procedure for 40P150, 40P151, 40P152, 40P153, and 40P154 Printers

Step 1. Remove printer from printer cabinet.

Step 2. Position printer on its back. Immobilize unit vibration mounts by tightening the four immobilizing screws. See Fig. 15.

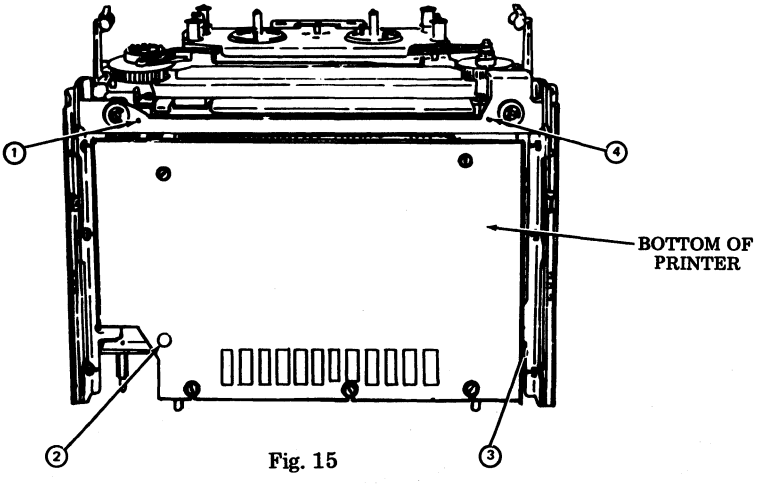


Fig. 15

Step 3. Set unit upright, secure each of the two ribbon tensioning arms in latched position with 50136PK twist ties as illustrated in Fig. 16.

Caution: Do not tightly apply twist ties. Damage to tensioning arms may result.

Step 4. Place a plastic base (28279PK Detail A) on work bench as illustrated in Fig. 16. Place printer in base.

Step 5. Position a 28279PK Detail C along the side of mounting rail at left side of printer and a 28279PK Detail D along the side of the mounting rail at right side of printer. See Fig. 16.

Step 6. Position a plastic cover (28279PK Detail B) over printer as illustrated in Fig. 16.

Step 7. Secure details A and B together by applying a band of 21632PK tape around the details as shown in Fig. 16.

Step 8. Form a 10523PK shipping container. Close and seal bottom flaps with glue or sealing tape.

Step 9. Place prepacked printer in container. Close and seal top flaps of container as outlined in Step 8.

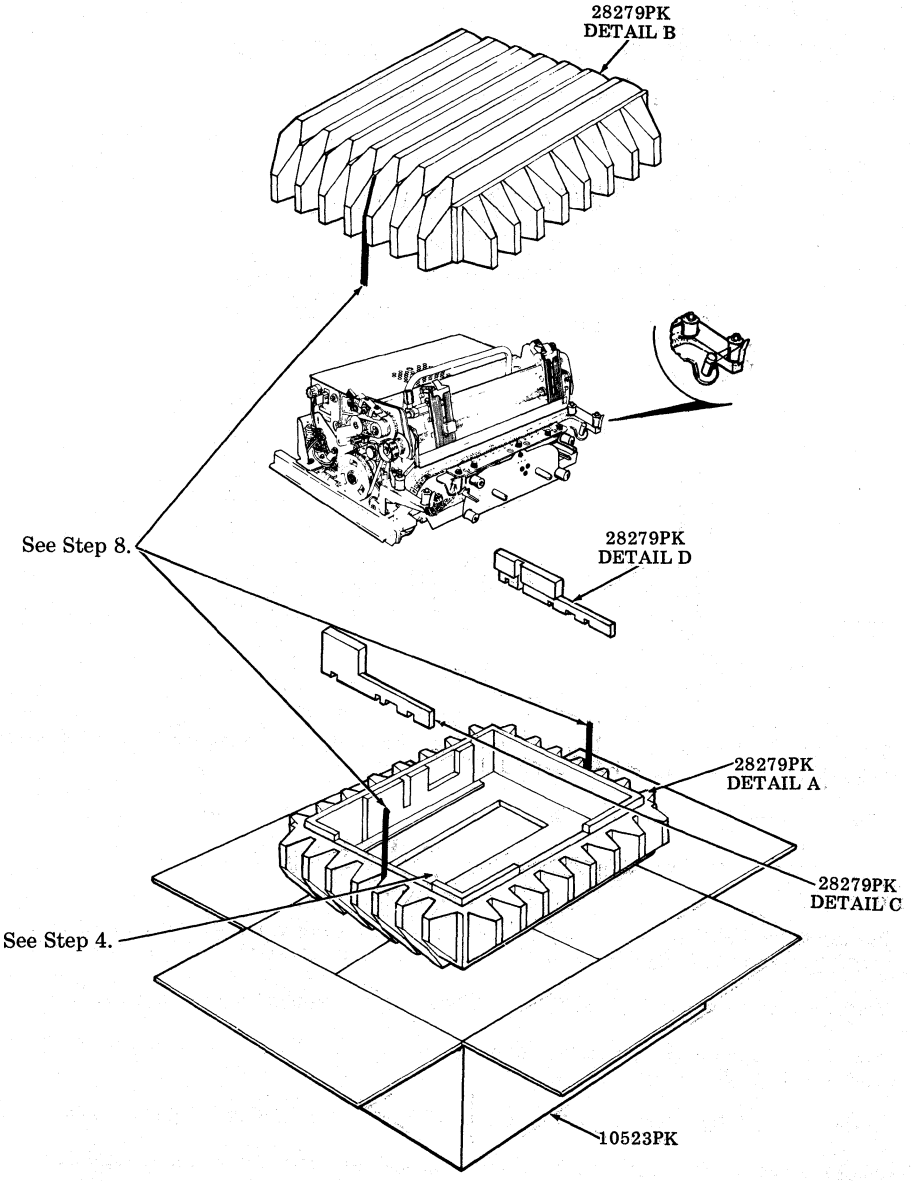

28279PK
DETAIL B
See Step 8.
28279PK
DETAIL D
28279PK
DETAIL A
28279PK
DETAIL C
See Step 4.
10523PK

Fig. 16

TRACTOR FEED PRINTER (132-COLUMN)

Packing Procedure for 40P200, 40P201, 40P202, 40P203 and 40P204 Printers

Step 1. Remove printer from printer cabinet.

Step 2. Remove ribbon spools from printer and discard.

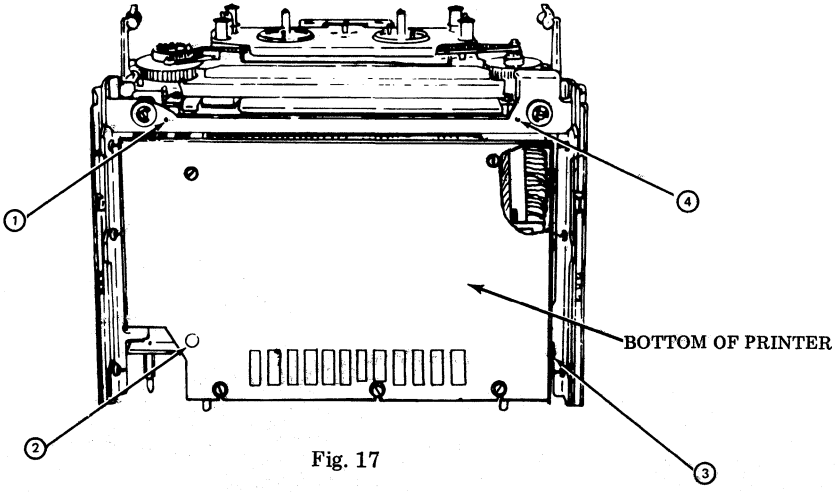


Fig. 17

Step 3. Position printer on its back. Immobilize unit vibration mounts by tightening the four immobilizing screws. See Fig. 17.

Step 4. Set unit upright. Secure each of the two ribbon tensioning arms in latched position with 50136PK twist ties.

Caution: Do not tightly apply twist ties. Damage to tensioning arms may result.

Step 5. Position wood details 28250PK A and B against bottom of unit. Secure in place with two bands of tape 21632PK. See Fig. 18.

Step 6. Form shipping container 10634PK. Close and seal bottom flaps with glue or sealing tape.

Step 7. Position a plastic corner 27442PK against each of the four corners of the container. See Fig. 18.

Step 8. Form carton 9902PK. Close and seal bottom flap as outlined in Step 6. Position carton in shipping container so bottom corners of carton fit in the corner details. See Fig. 18.

Step 9. Carefully position the prepackaged printer in the carton-container assembly. See Fig. 18.

Step 10. Position a wood top detail 28252PK over top of printer. See Fig. 18.

Step 11. Close and seal top flaps of carton, as outlined in Step 6.

Step 12. Position a 27442PK plastic corner on each of the four corners of the carton. See Fig. 18.

Step 13. Close and seal top flaps of carton as outlined in Step 6.

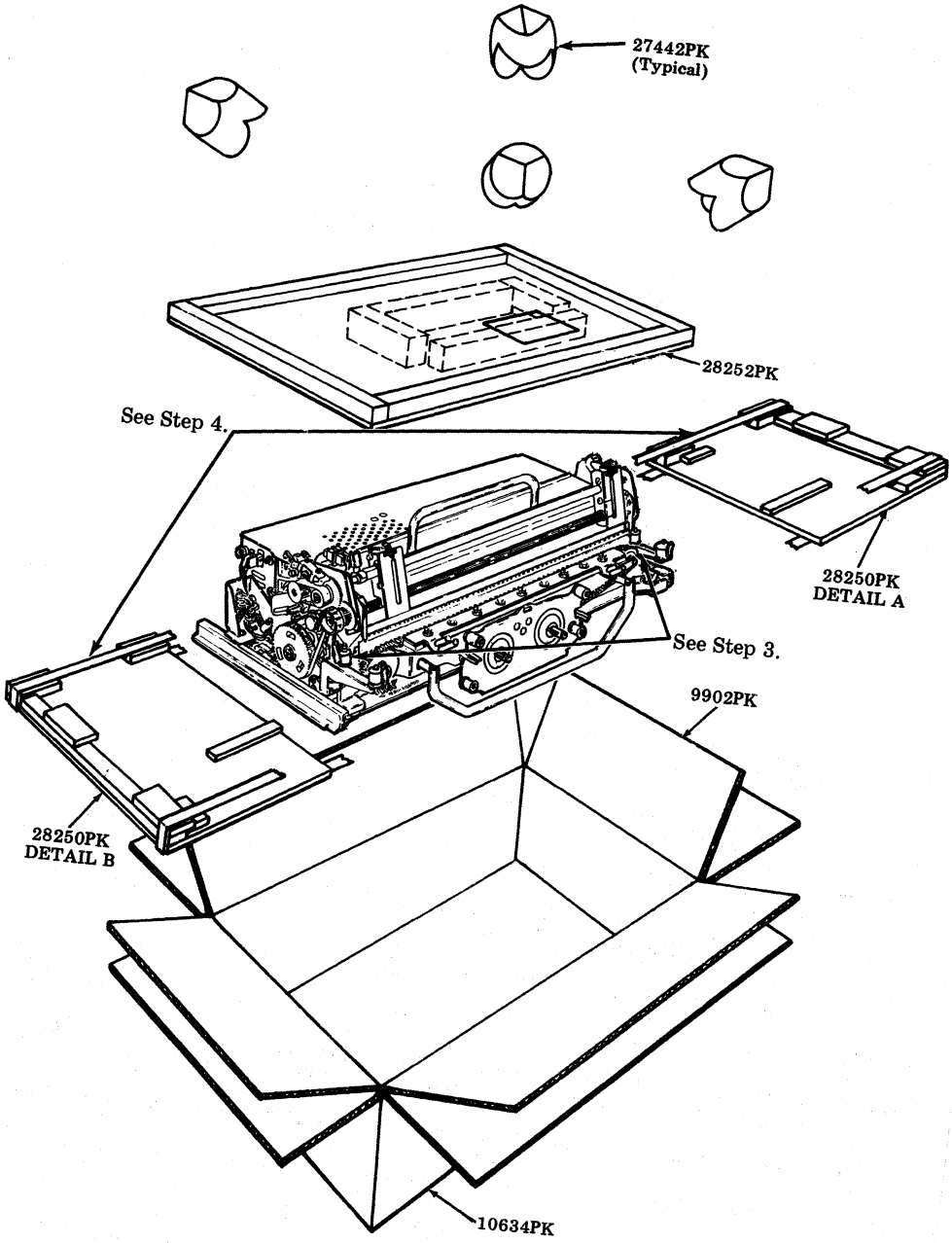

27442PK
(Typical)
28252PK
See Step 4.
28250PK
DETAIL A
See Step 3.
9902PK
28250PK
DETAIL B
10634PK

Fig. 16

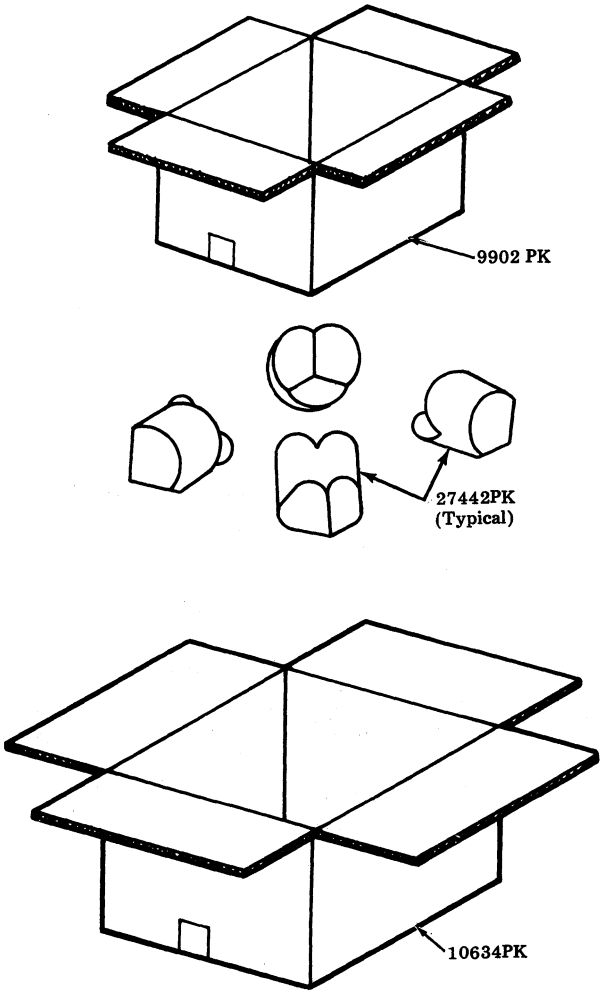


Fig. 19

TRACTOR FEED PRINTER (72-COLUMN)

Packing Procedure for 40P250 (Forms Access) Printer

Step 1. Remove printer from printer cabinet.

Step 2. Remove ribbon spools from printer and discard.

Step 3. Position printer on its back. Immobilize unit vibration mounts by tightening the four immobilizing screws.

Step 4. Position wood details 28283PK A and B against bottom of unit. Secure in place with two bands of 21632PK tape at front and rear of details.

Step 5. Form a 10762PK carton. Close bottom flaps and seal center seam with a strip of 21719PK tape. The tape should extend approximately three inches down the ends of the carton.

Step 6. Place one 27442PK plastic corner in each of the four corners of the bottom of the carton. See Fig. 20.

Step 7. Form a 10305PK carton. Close and seal bottom flaps as indicated in Step 5.

Step 8. Carefully place the 10305PK carton in the 10762PK carton so the plastic corners fit in the corners of the 10305PK carton. See Fig. 20.

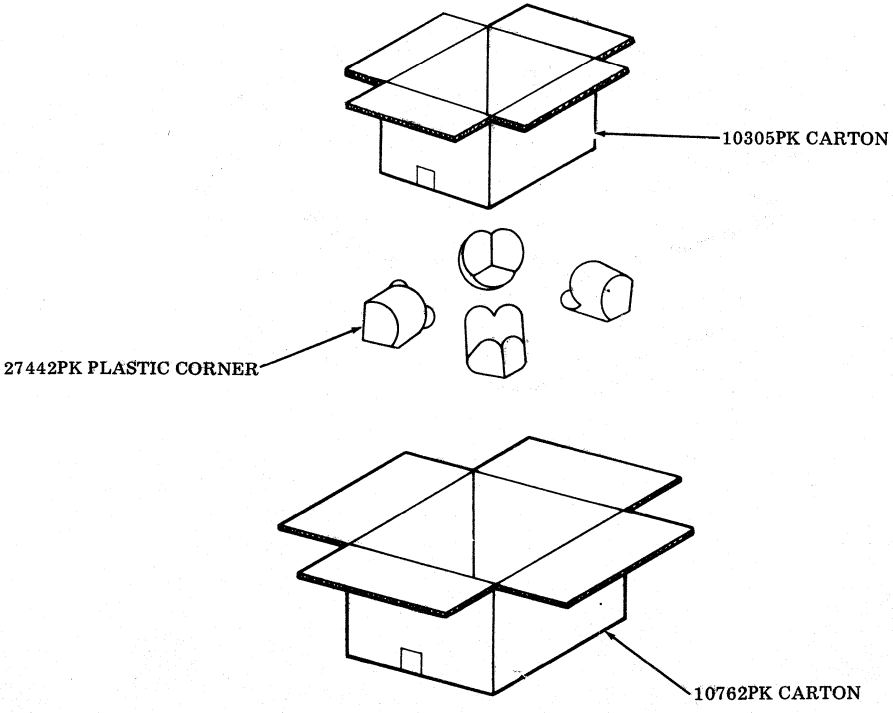


Fig. 20

Step 9. Place the printer with pallets in the inner carton. See Fig. 21.

Step 10. Place one 28284PK wood detail in carton on top of printer. See Fig. 21.

Step 11. Close and seal top flaps of inner carton as indicated in Step 5.

Step 12. Position a 27442PK plastic corner on each of the four corners of the inner carton. See Fig. 21.

Step 13. Close top flaps of outer carton and seal center seam with a strip of 21719PK tape as indicated in Step 5.

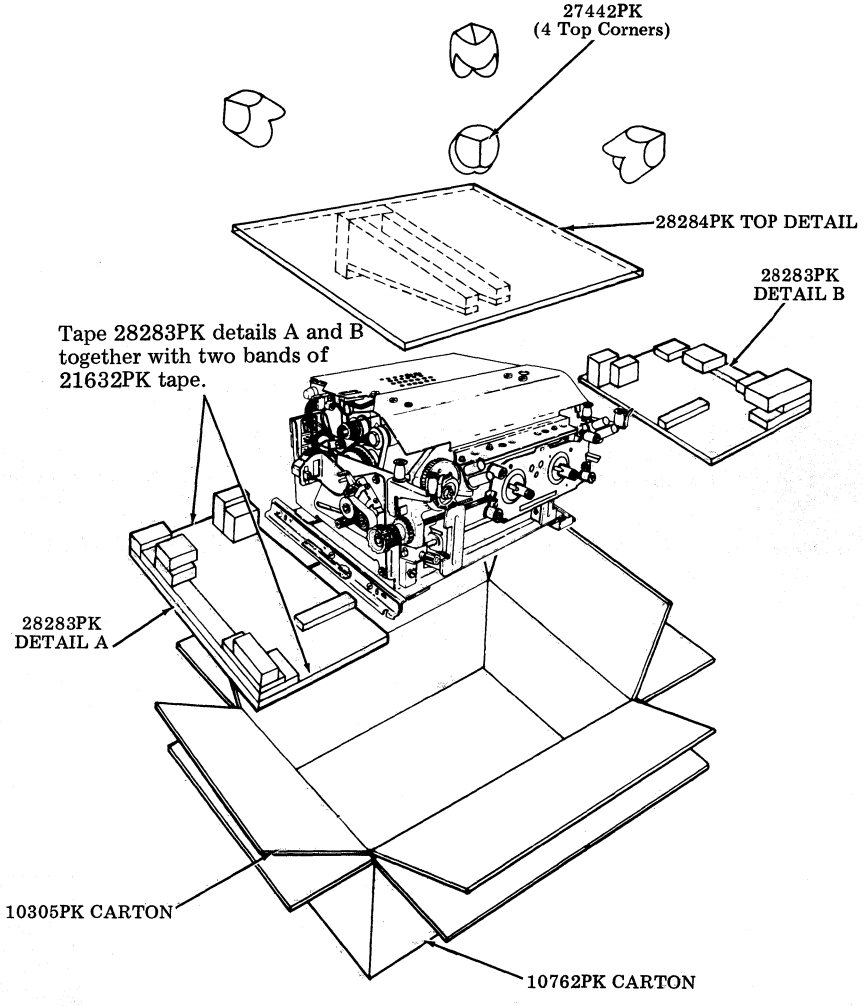


Fig. 21

TRACTOR FEED PRINTER (80-COLUMN, FORMS ACCESS)

Packing Procedure for 40P252, 40P253, and 40P255 (Forms Access) Printers

Step 1. Remove printer from printer cabinet.

Step 2. Remove the ribbon spools and discard.

Step 3. Position printer on its back. Immobilize unit vibration mounts by tightening the four immobilizing screws.

Step 4. Position wood details 28283PK A and B against bottom of unit. Secure in place with two bands of 21632PK tape at front and rear of details.

Step 5. Form a 10770PK carton. Close bottom flaps and seal center seam with a strip of 21719PK tape. The tape should extend approximately three inches down the ends of the carton.

Step 6. Form and place one 28366PK cushion detail in each of two sides of the bottom of the carton. See Fig. 22.

Step 7. Form a 10305PK carton. Close and seal bottom flaps as indicated in Step 5.

Step 8. Carefully place the 10305PK carton in the 10770PK carton so the cushion details fit in the corners of the 10305PK carton. See Fig. 22.

Step 9. Place the printer with pallets in the inner carton.

Step 10. Place a 28284PK wood detail in carton on top of printer. See Fig. 23.

Step 11. Close and seal top flaps in inner carton as indicated in Step 5.

Step 12. Form and place a 28366PK cushion detail on each of two sides of the inner carton. See Fig. 22.

Step 13. Close top flaps of outer carton and seal center seam with a strip of 21719PK tape as indicated in Step 5.

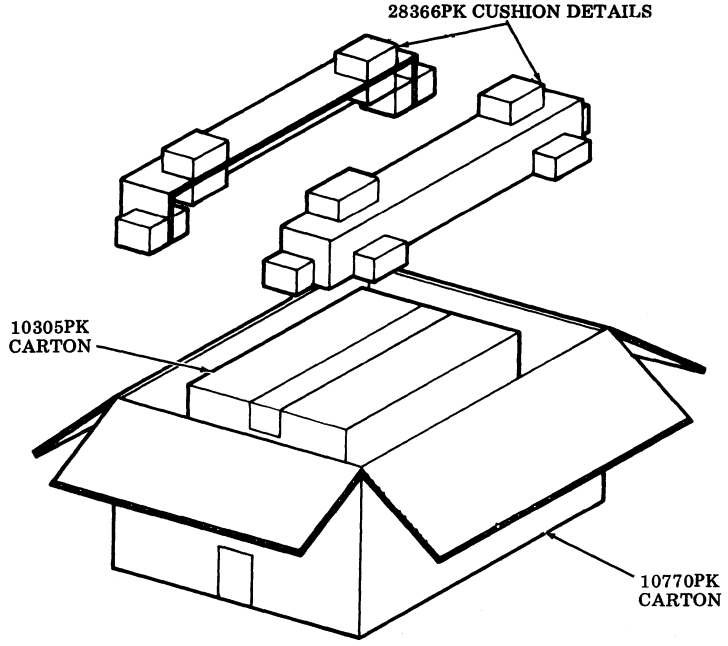
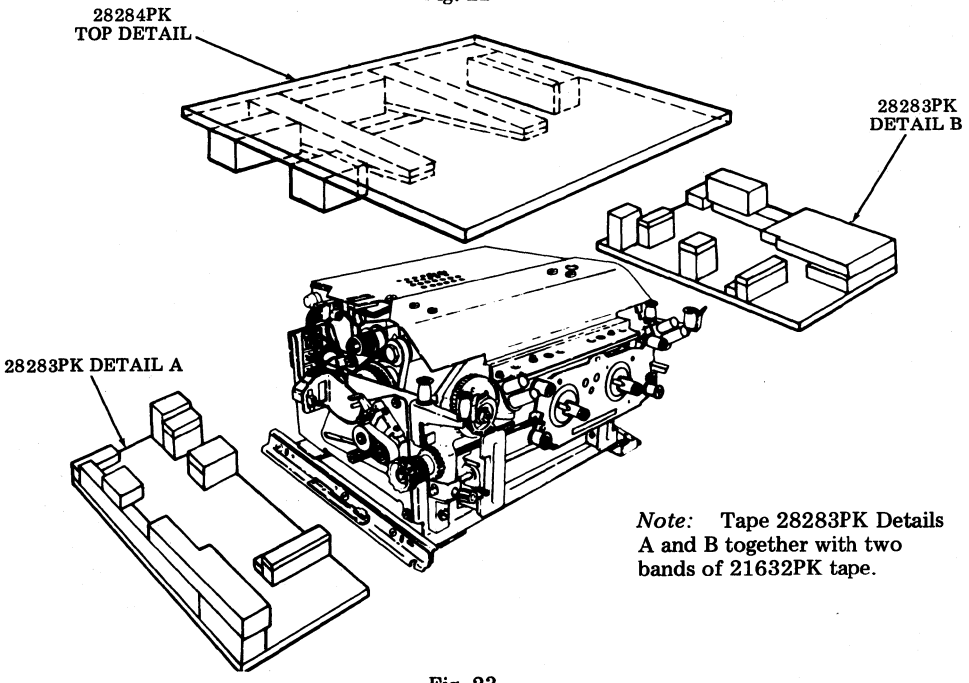


Fig. 22



Note: Tape 28283PK Details A and B together with two bands of 21632PK tape.

Fig. 23

40CAB201 AND 40CAB251 CABINETS

Packing Procedures

Step 1. Form a 9867PK carton. Close and seal bottom flaps with glue or sealing tape.

Step 2. Make certain shipping latches and bar on cabinet are properly installed. Cover cabinet with 23457PK plastic bag.

Step 3. Position a plastic 28218PK Detail A on right side of cabinet. (See Fig. 24).

Step 4. Position a plastic 28218PK Detail B on left side of cabinet. (See Fig. 24).

Step 5. Coil cable on top of cabinet and position prepacked cabinet in shipping container. (See Fig. 24).

Step 6. Close and seal top flaps of shipping container as outlined in Step 1.

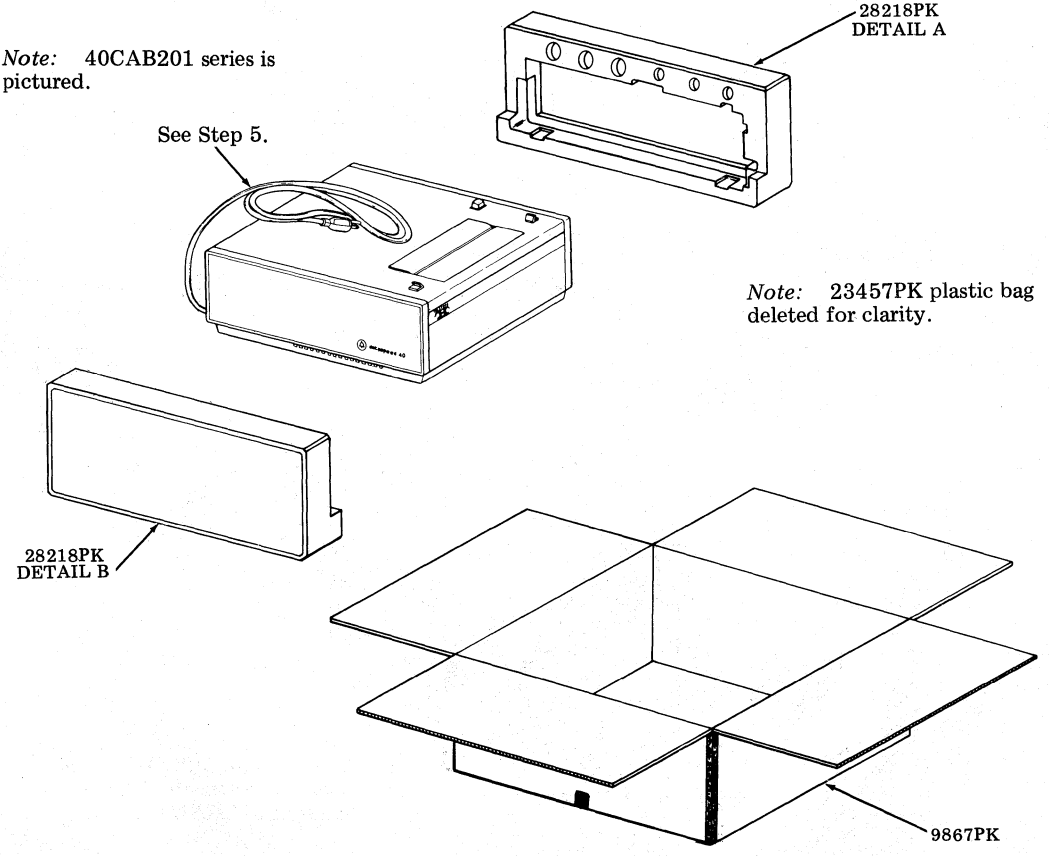


Fig. 24

40CAB351 AND 40CAB371 CABINETS

Packing Procedure for 40CAB351 Cabinet and 40CAB371 Cabinet

Step 1. Place a 28186PK detail on work bench. Position cabinet on detail as illustrated in Fig. 25. The end of the detail that has the largest blocks must be to the front of the cabinet.

Step 2. Secure cover of cabinet with two bands of 21632PK tape applied around cover and body of cabinet. See Fig. 25.

Step 3. Place a 23457PK plastic bag over cabinet. Leave cable extending outside of bag. Place cable on top of cabinet.

Step 4. Fold flaps on 28186PK detail up against sides of cabinet. Secure in place with a strip of 21480PK tape applied to flaps at diagonally opposite corners.

Step 5. Form a 10532PK carton. With bottom flaps down and outward, place carton around cabinet and detail. Drape cable outside of carton.

Step 6. Form a 28187PK detail and place in carton around cabinet dome. See Fig. 25. Coil cable and place between side of carton and 28187PK detail. See Fig. 25.

Step 7. Place a 28188PK detail in carton as illustrated in Fig. 25.

Step 8. Close top flaps of carton and seal center seam with 21719PK tape. Invert carton.

Step 9. Close bottom flaps of carton and seal as outlined in Step 8. Invert carton.

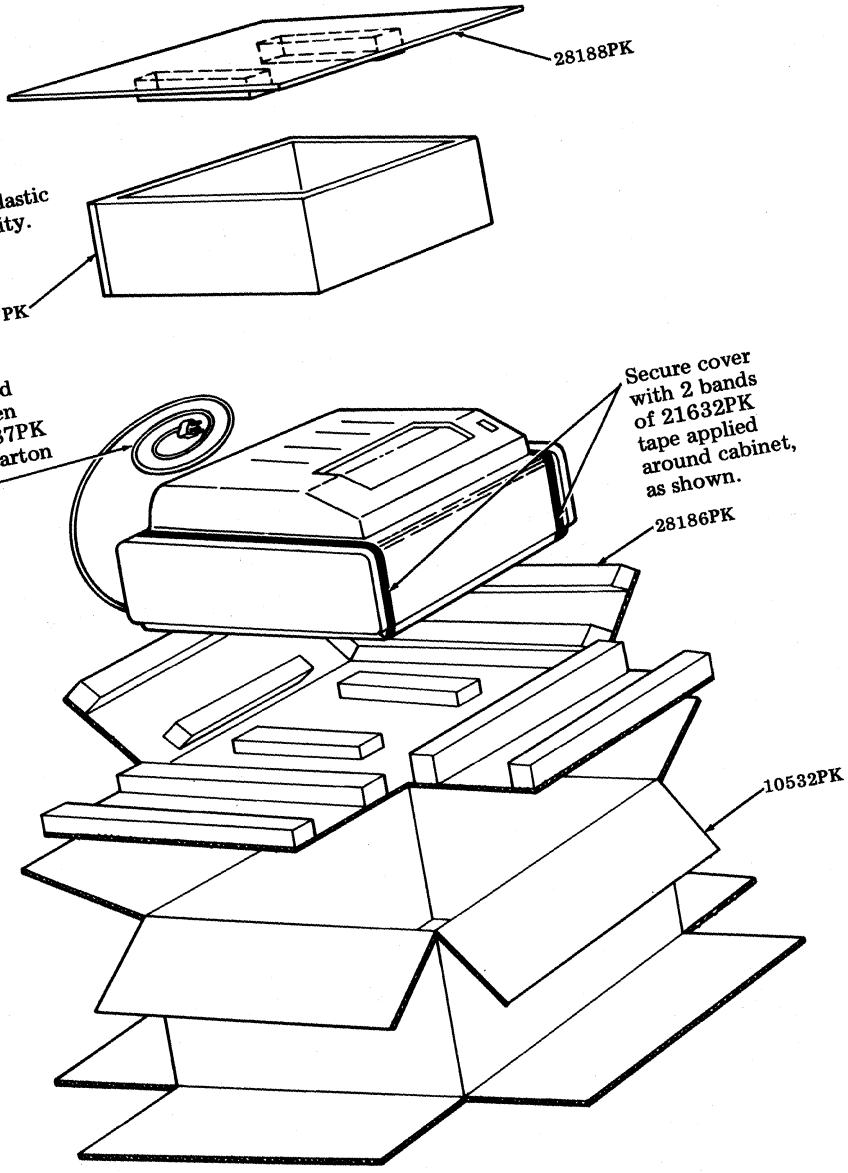

28188PK
Note: 23457PK plastic bag deleted for clarity.
28187PK
Coil cable and place between side of 28187PK detail and carton wall.
Secure cover with 2 bands of 21632PK tape applied around cabinet, as shown.
28186PK
10532PK

Fig. 25

40CAB353 CABINET

Packing Procedure for 40CAB353 Cabinet

Step 1. Secure cover of cabinet with two strips of 21632PK tape. Follow contour of cabinet. (See Fig. 26).

Step 2. Place a 23461PK plastic bag over cabinet. Leave cable extending outside of bag. Place cable on top of cabinet.

Step 3. Form a 10672PK carton. Close and seal bottom flaps with 21719PK tape. Apply one strip on the center seam and a strip on each of the end seams.

Step 4. Form a 28224PK detail and place in carton. See Fig. 26.

Step 5. Center cabinet in carton left to right. Butt back of cabinet against the plastic blocks.

Step 6. Position a 28225PK detail along each side and front of cabinet. See Fig. 26.

Step 7. Extend cable outside of cabinet. Form and place a 28227PK liner on cabinet dome. See Fig. 26.

Step 8. Coil cable and place in recess formed by the 28227PK liner and carton wall.

Step 9. Place a 28226PK detail in carton as illustrated in Fig. 26.

Step 10. Close and seal top flaps of carton as outlined in Step 3.

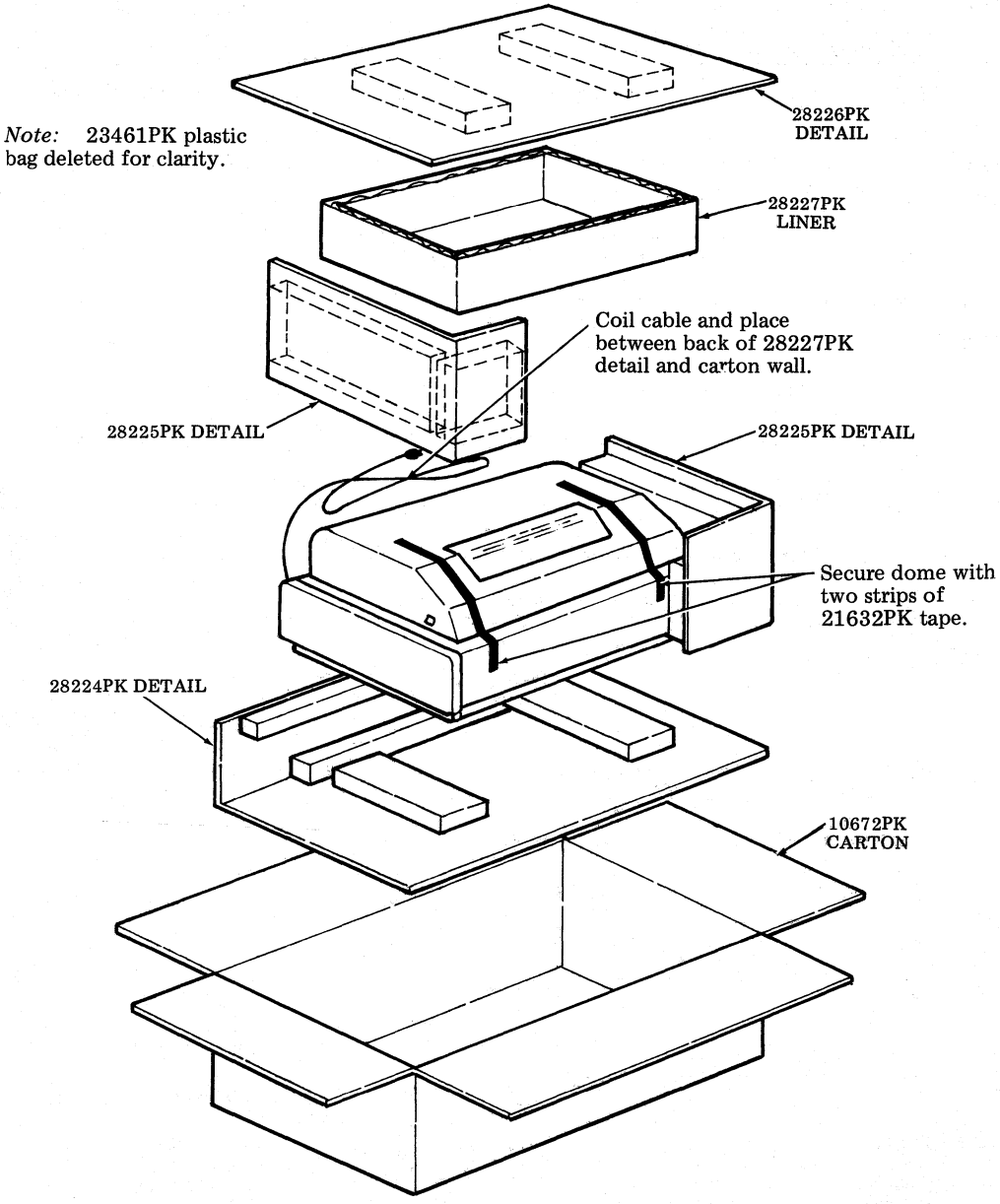

Note: 23461PK plastic bag deleted for clarity.
28226PK DETAIL
28227PK LINER
Coil cable and place between back of 28227PK detail and carton wall.
28225PK DETAIL
28225PK DETAIL
Secure dome with two strips of 21632PK tape.
28224PK DETAIL
10672PK CARTON

Fig. 26

40CAB901 CABINET

Packing Procedure for 40CAB901 Pedestal With Table Top

Step 1. Open door in bottom of pedestal (when equipped). Secure line cord (if equipped) to line cord holding brackets with 50136PK twist ties. Place cord in bottom of pedestal.

Step 2. Close door. Close latches located at either end on top of door.

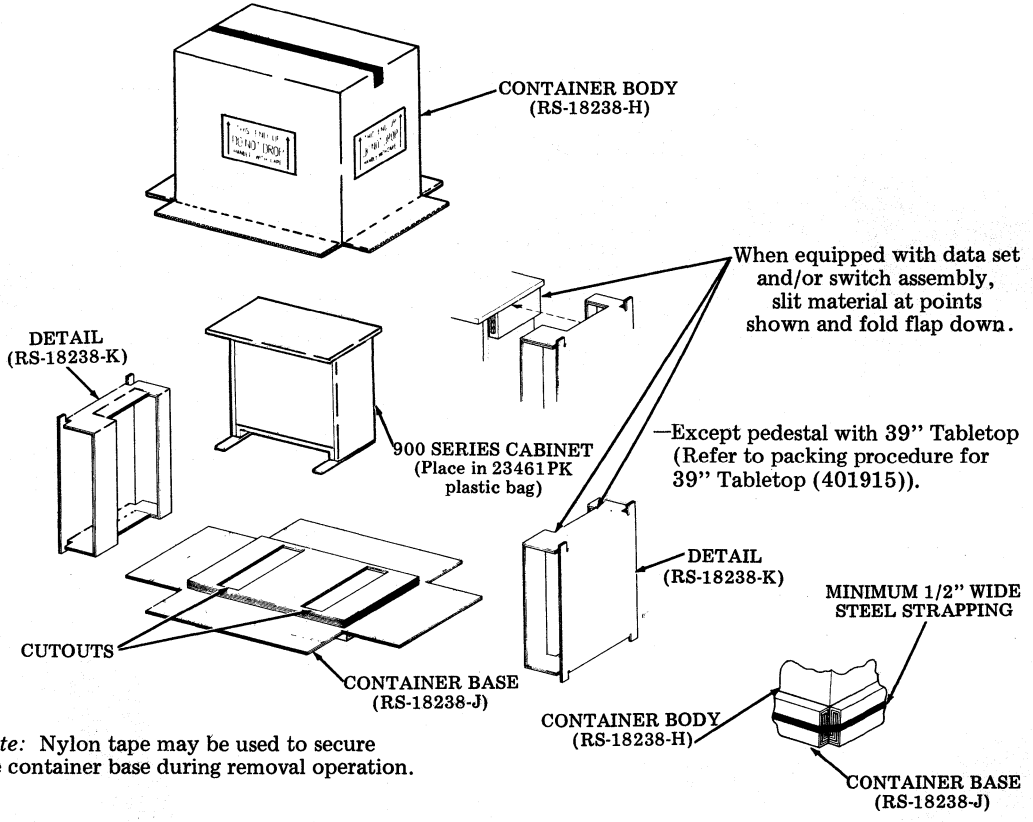
Step 3. Place a 23461PK plastic bag around unit.

Step 4. Place container base (RS-18238-J) on floor as shown.

Step 5. Position pedestal in container base cutouts.

Step 6. Form and position side details (RS-18238-K left and right) to pedestal.

Step 7. Form a RS-18238-H container body and position over pedestal. Secure base with nylon reinforced tape. Standard procedure is to apply a band of steel strapping around the base of the container.



Note: Nylon tape may be used to secure the container base during removal operation.

Fig. 27

Packing Procedure for 20 inch Tabletop (401911)

Step 1. Place tabletop in a 23457PK plastic bag.

Step 2. Form a 8565PK folder. Center top in folder. Place a 28214 wood detail at either end of top as illustrated.

Step 3. Fold tabs on inner flaps of folder as illustrated.

Step 4. Close flaps and seal center seam with 21719PK tape.

Note: Packing procedure and packing materials for 24 inch tabletops (401531 and 401914) are indentical to (401911) except that 28214PK wood details are not required in (401531 and 401914).

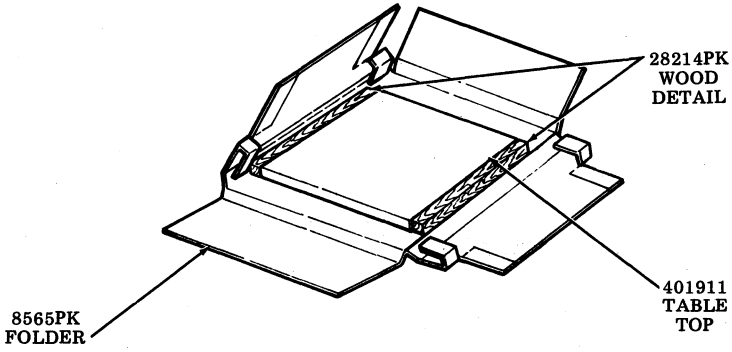


Fig. 28

Packing Procedure for 27 1/2 inch Tabletop (401913)

Step 1. Place tabletop in a 23451PK plastic bag.

Step 2. Form a 8564PK folder. Center top and a 28254PK wood detail in folder. Fold tabs on inner flaps of folder as illustrated.

Step 3. Close flaps and seal center seam with 21719PK tape.

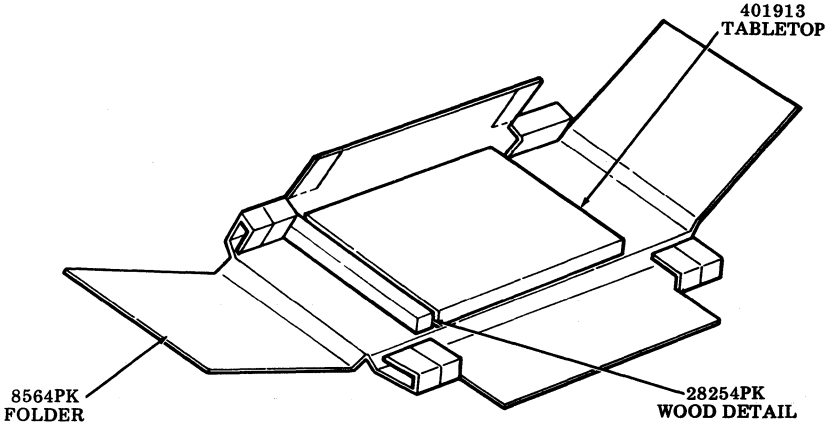


Fig. 29

Packing Procedure for 29 inch Tabletops (401532 and 411035)

Step 1. Place tabletop in a 23451PK plastic bag.

Step 2. Form a 8564PK folder. Center top in folder. Fold tabs on inner flaps of folder as illustrated.

Step 3. Close flaps and seal center seam with 21719PK tape.

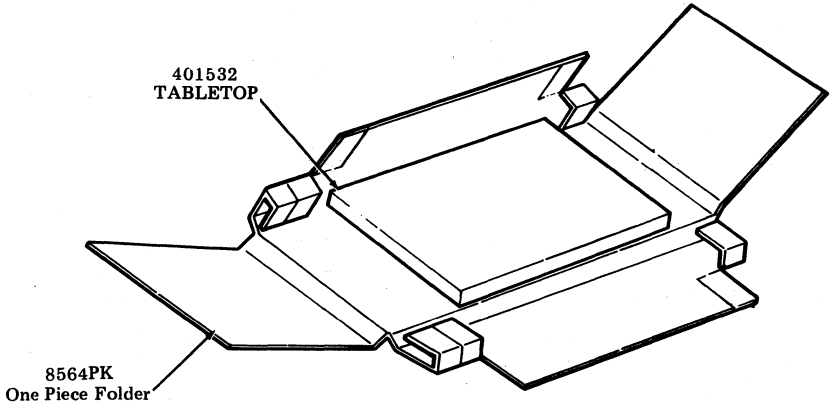


Fig. 30

Packing Procedure for 31 inch Tabletop (401912)

Step 1. Place tabletop in a 23451PK plastic bag.

Step 2. Form a 8564PK folder. Position top in folder. Fold tabs on inner flaps of folder as illustrated.

Step 3. Close flaps and seal center seam with 21719PK tape.

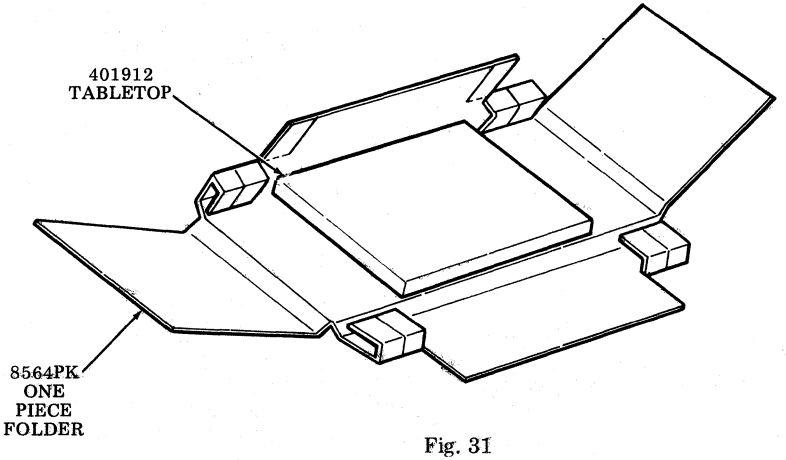


Fig. 31

Packing Procedure for 34 inch Tabletop (401533)

Step 1. Place tabletop in a 23451PK plastic bag.

Step 2. Form a 8564PK folder. Center top in folder. Fold tabs on inner flaps of folder as illustrated.

Step 3. Close flaps and seal center seam with 21719PK tape.

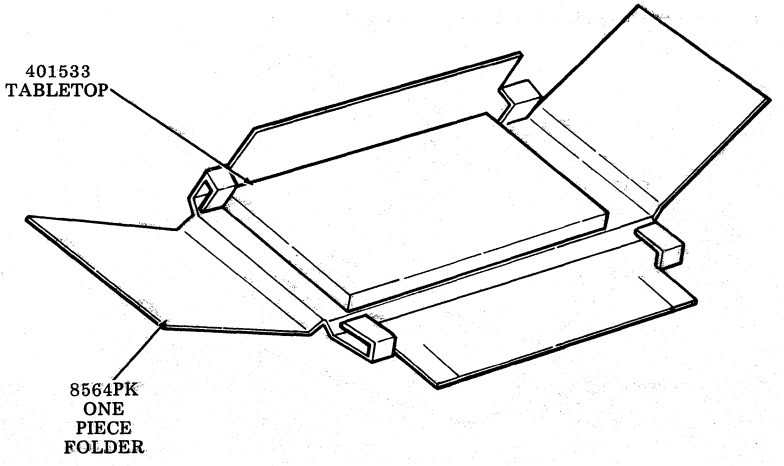


Fig. 32

Packing Procedure for 39 inch Tabletop (401915)

Step 1. Place tabletop in a 23464PK plastic bag.

Step 2. Form a 8573PK two piece folder. Center top upside down in folder. Place a 28214PK wood detail at either end of top as illustrated.

Step 3. Close flaps and seal center seam with 21719PK tape.

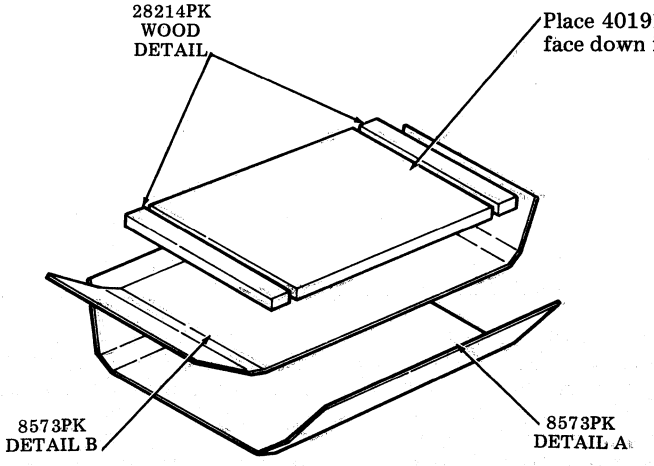


Fig. 33

Packing Procedure for 40CAB901 Pedestal Without Tabletop

Step 1. Open door in bottom of table (when equipped). Secure line cord (if equipped) to line cord holding brackets with 50136PK twist ties.

Step 2. Close door. Close latches located at either end at top of door.

Step 3. Secure bag of parts in recess at upper right front corner of cabinet with a strip of 21632PK tape. Cover cabinet with a 23461PK plastic bag.

Step 4. Place a 70133PK Detail B end cap on floor.

Step 5. Position cabinet on top of bottom end cap.

Step 6. Lift left side of cabinet and place a 28253PK Detail A onto the left foot. Set cabinet with detail back down on end cap.

Step 7. Lift right side of cabinet and place a 28253PK Detail B onto right foot as indicated in Step 6.

Step 8. Place a 28253PK Detail C on left top corner of the cabinet. See Fig. 34.

Step 9. Place a 28253PK Detail C on right top corner of the cabinet. See Fig. 34.

Step 10. Form one 70133PK Detail A and with bottom flanges down and outward, place over top of cabinet and details and slide to bottom.

Step 11. Interlock flanges of bottom end cap with corrugated carton flanges. Apply a band of 21207PK strapping around the center of flanges of end cap. Seal strapping with one 21431PK clip seal. The tension of strapping should be sufficiently tight to bite into corners so that strapping will not shift.

Step 12. Close top flaps of carton and seal center seam with a strip of 21719PK tape. The tape should extend approximately three inches down the sides of the carton.

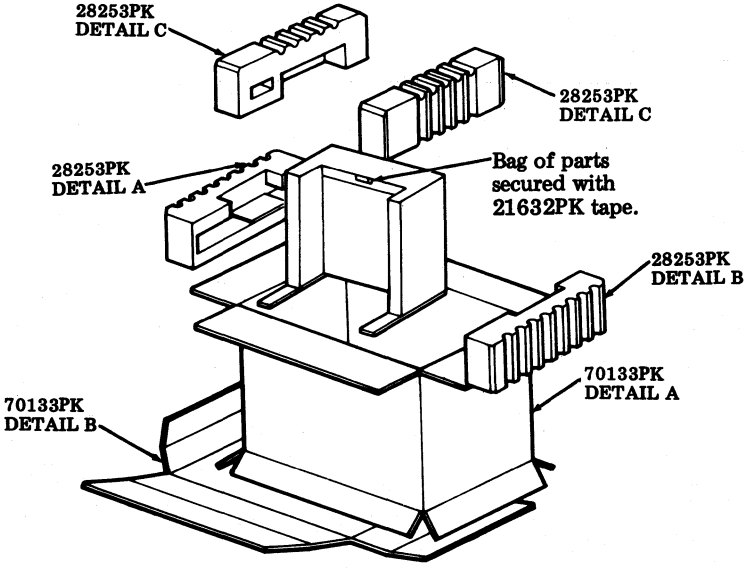


Fig. 34

Packing Procedure for 40CAB901 Pedestal Without Table Top and Feet

Step 1. Open door in bottom of table (when equipped). Secure line cord (if equipped) to line cord holding brackets with 50136PK twist ties.

Step 2. Close door. Close latches located at either end at top of door.

Step 3. Secure muslin bag of parts to top of cabinet with two strips of 21632PK tape. Cover cabinet with a 23461PK plastic bag.

Step 4. Form a 11946PK carton. With bottom flaps down and outward, place carton around cabinet.

Step 5. Place a 27442PK plastic corner on each of the four corners of the cabinet top. See Fig. 35.

Step 6. Close and seal top flaps of carton. Seal the center seam with a strip of 21719PK tape. The tape should extend approximately three inches down the ends of the carton. Invert carton.

Step 7. Place a 27442PK plastic corner on each of the four corners of the cabinet bottom.

Step 8. Close and seal the bottom flaps of the carton as outlined in Step 6. Invert carton.

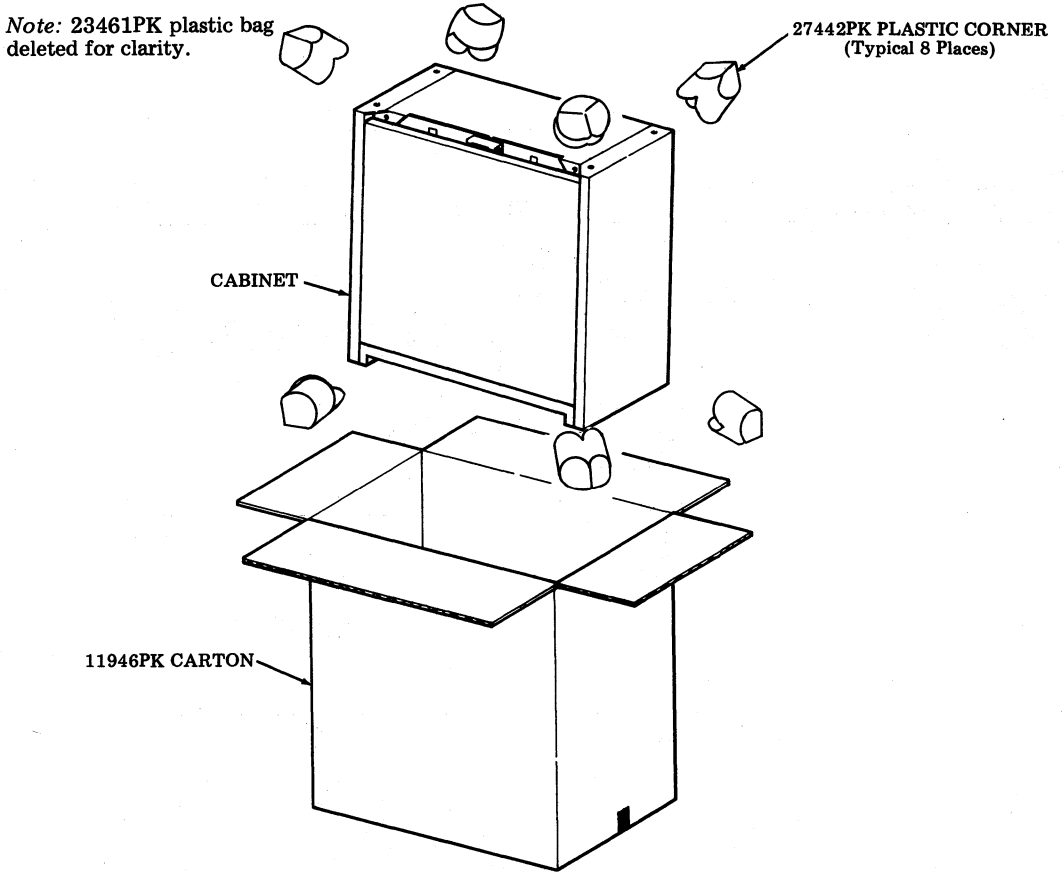


Fig. 35

40CAB902 CABINET

Packing Procedure for 40CAB902 Cabinet

Step 1. Open door in bottom of table (when equipped). Secure line cord (if equipped) to the line cord holding brackets with 50136PK twist ties. Close door. Close latch located at either end at top of door.

Step 2. Cover cabinet with a 23461PK plastic bag (not shown).

Step 3. Place one 70144PK Detail B end cap on floor.

Step 4. Position cabinet on top of bottom end cap.

Step 5. Lift left side of cabinet and place a 28253PK Detail A onto the left foot. Set cabinet with detail back down on end cap.

Step 6. Lift right side of cabinet and place a 28253PK Detail B onto the right foot as indicated in Step 5.

Step 7. Place a 28253PK detail on left and right top corner of the cabinet. See Fig. 36.

Step 8. Form a 70144PK carton Detail A and with bottom flanges down and outward, place carton over top of cabinet and details and slide to bottom.

Step 9. Interlock flanges of bottom end cap with corrugated carton flanges. Standard procedure is to apply a band of 21207PK strapping around center of flanges of end cap. For standard removal, use nylon reinforced tape.

Step 10. Close top flaps of carton and seal center seam with a strip of 21719PK tape. The tape should extend approximately three inches down the sides of the carton.

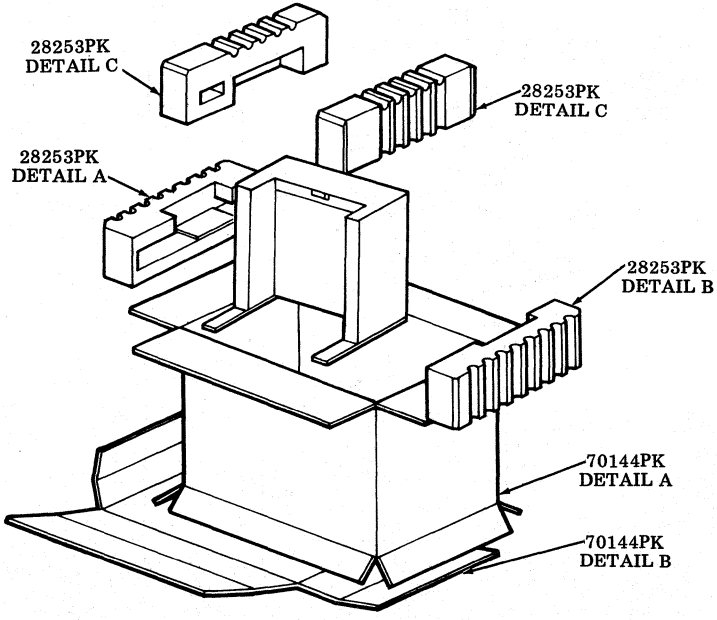


Fig. 36

40CAB904 CABINET

Packing Procedure for 40CAB904 Cabinet

Step 1. Open door in bottom of pedestal (when equipped). Secure line cord (if equipped) to line cord holding brackets with 50136PK twist ties.

Step 2. Close door. Close latches located at either end of top of door.

Step 3. Secure bag of parts in recess at upper right front corner of cabinet with a strip of 21632PK tape (see Fig. 37). Cover cabinet with a 23461PK plastic bag.

Step 4. Form a 28223PK detail. Tape folds of detail together with two strips of 21719PK tape. Secure to cabinet legs with a strip of 21632PK tape. See Fig. 37.

Step 5. Position a 28185PK Detail A on left leg and a 28185PK Detail B on right leg of pedestal. See Fig. 37.

Step 6. Form details against sides and back of pedestal and secure in place with a strip of 21632PK tape. See Fig. 37.

Step 7. Form a 12005PK carton, and with bottom flaps down and outward, place around cabinet and details.

Step 8. Form a 28185PK Detail B and place it on left top corner of the cabinet. See Fig. 37.

Step 9. Form a 28185PK Detail A and place it on right top corner of the cabinet. See Fig. 37.

Step 10. Close top flaps of carton and seal center seam with a strip of 21719PK tape. The tape should extend approximately three inches down the sides of the carton. Carefully invert carton.

Step 11. Close bottom flaps of carton and seal as outlined in Step 10. Carefully invert carton.

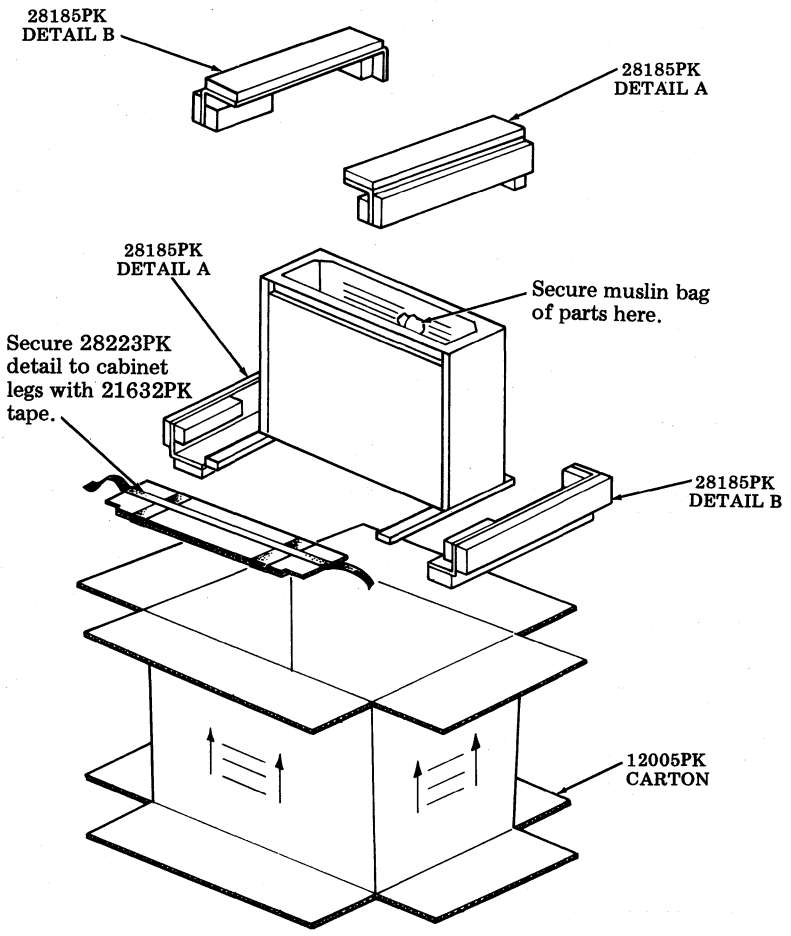

28185PK
DETAIL B
28185PK
DETAIL A
28185PK
DETAIL A
Secure muslin bag
of parts here.
Secure 28223PK
detail to cabinet
legs with 21632PK
tape.
28185PK
DETAIL B
12005PK
CARTON

Fig. 37

40CAB302 CABINET

Packing Procedure for 40CAB302 Cabinet

Step 1. Place skidded bottom end cap Detail A of 16937PK details on floor. See Fig. 38.

Step 2. Place and center the bottom cushion cap Detail B of 16937PK details on top of A. See Fig. 38.

Step 3. Place the cabinet on Detail B with the rear edge of the legs in line with the rear edge of the built up pads.

Step 4. Place a 23461PK plastic bag over top of cabinet. Cover bottom of cabinet with sheets of 21298PK tissue and tape to cabinet with 21480PK tape.

Step 5. Coil cable at bottom of cabinet and tape to cabinet with 21632PK tape.

Step 6. Fold the flaps of the bottom cushion cap Detail B against the plastic enclosed cabinet. Tape the flaps against the cabinet with a complete band of 21632PK tape. Make sure cable is not pinched between flap and cabinet.

Step 7. Form a 16937PK carton Detail D and with bottom flanges down and outward, place over top of cabinet and detail and slide to bottom. See Fig. 38.

Step 8. Form and place one top cushion cap Detail C of 16937PK within carton on top of cabinet. The portion of the detail without a corrugated block must be placed to the front of the cabinet. See Fig. 38.

Step 9. Interlock flanges of bottom end cap with corrugated carton flanges. Standard procedure is to apply a band of 21207PK strapping around center of flanges of end cap. For standard removal, use nylon reinforced tape.

Step 10. Close top flaps of carton and seal center seam with a strip of 21719PK tape. The tape should extend approximately three inches down the sides of the carton.

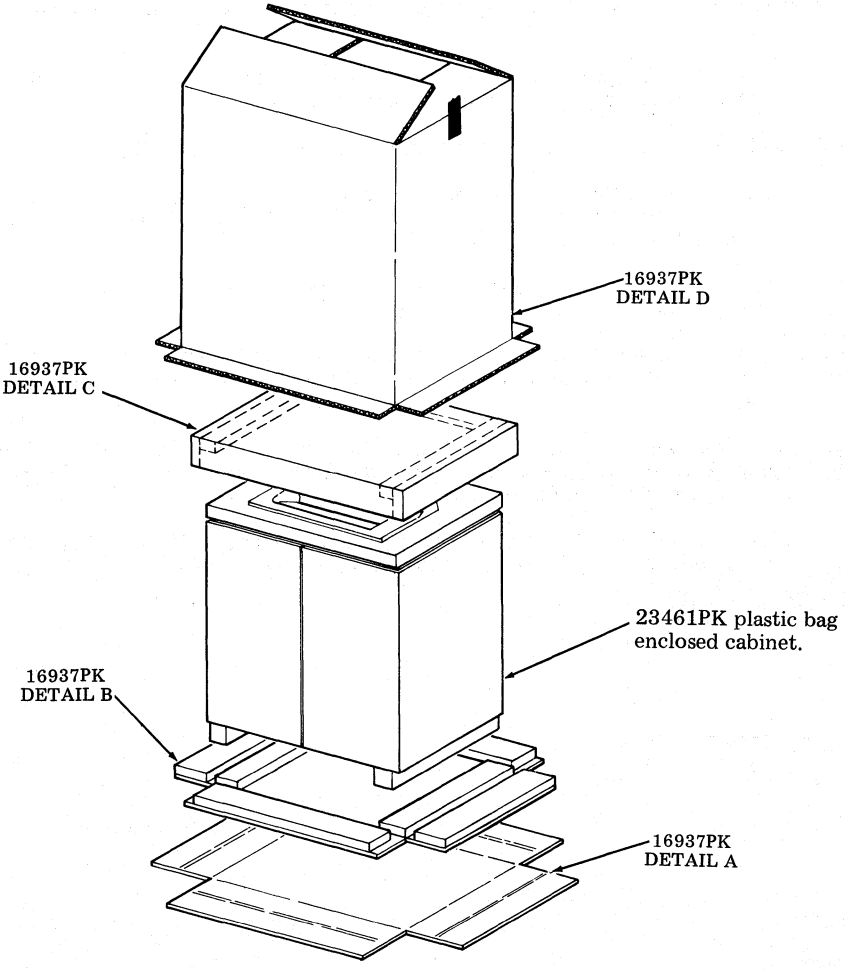

16937PK
DETAIL D
16937PK
DETAIL C
23461PK plastic bag
enclosed cabinet.
16937PK
DETAIL B
16937PK
DETAIL A

Fig. 38

40AB101 ANSWER-BACK

Packing Procedure for 40AB101 Answer-Back

Step 1. Remove answer-back from station.

Step 2. Form a 28203PK corrugated detail and position against answer-back as illustrated in Fig. 39. The tabs on the ends of the detail must be positioned in the slots on either end of the answer-back.

Step 3. Place answer-back with detail in a 23465PK plastic bag (not shown in illustration).

Step 4. Form a 9022PK carton. Close bottom flaps and seal with a strip of 21719PK tape applied to the center seam. The tape should extend approximately three inches down the ends of the carton.

Step 5. Center prepacked answer-back unit in carton as shown.

Step 6. Form a 28204PK detail and place in carton on top and sides of unit as illustrated.

Step 7. Coil the cable in the void formed by the 28204PK detail. Fill void space with 21298PK tissue paper (not shown in illustration).

Step 8. Close and seal top flaps of carton as outlined in Step 4.

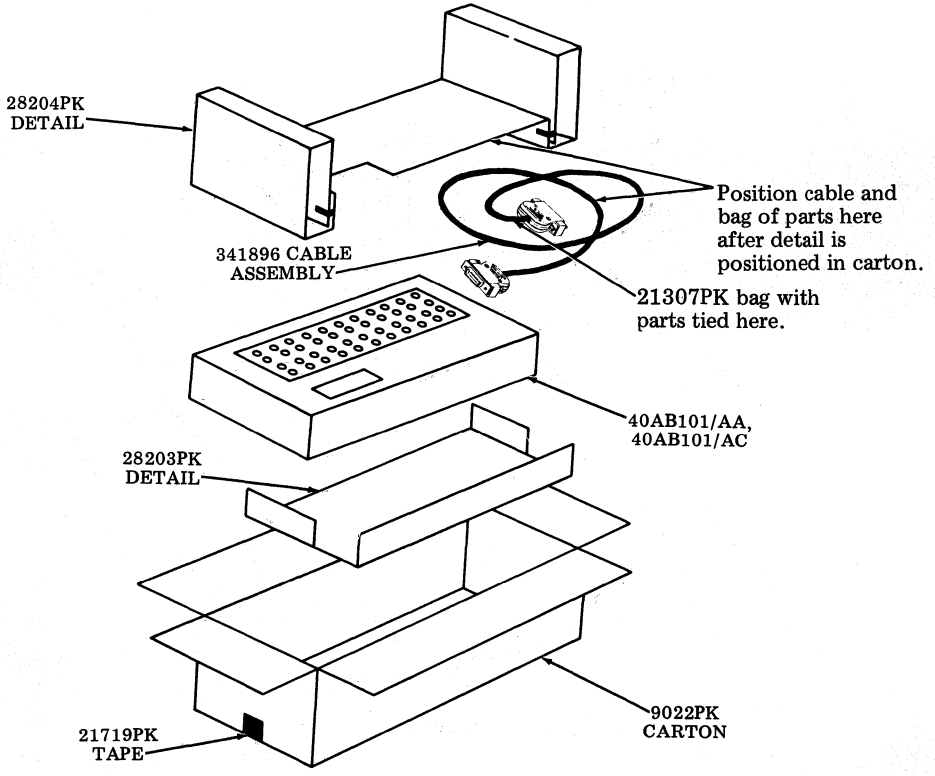


Fig. 39

40BSE101 CIRCULAR BASE

Packing Instructions for 40BSE101 Circular Base

Step 1. Form shipping container 8956PK. Close and seal bottom flaps with glue or 2 inch minimum width sealing tape.

Step 2. Place unit in a 23457PK plastic bag.

Step 3. Form 28206PK detail around unit as illustrated in Fig. 40.

Step 4. Place unit and detail in carton. See Fig. 40.

Step 5. Close and seal top flaps of container as outlined in Step 1.

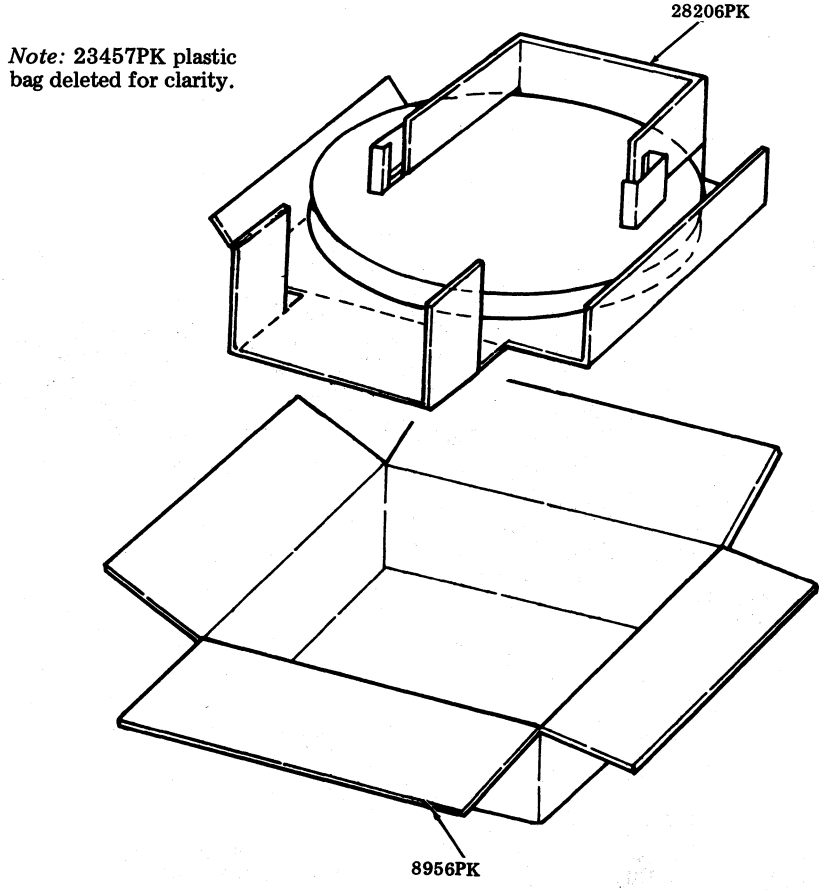


Fig. 40

40BSE201 OPERATOR CONSOLE BASE

Packing Instructions for 40BSE201 Operator Console Base

Step 1. Form 9022PK shipping container. Close and seal bottom flaps with glue or 2 inch minimum width sealing tape.

Step 2. Place unit in a 23456PK plastic bag (not shown).

Step 3. Form detail 28208PK around unit as illustrated in Fig. 41.

Step 4. Place unit and detail in carton. See Fig. 41.

Step 5. Close and seal top flaps of container as outlined in Step 1.

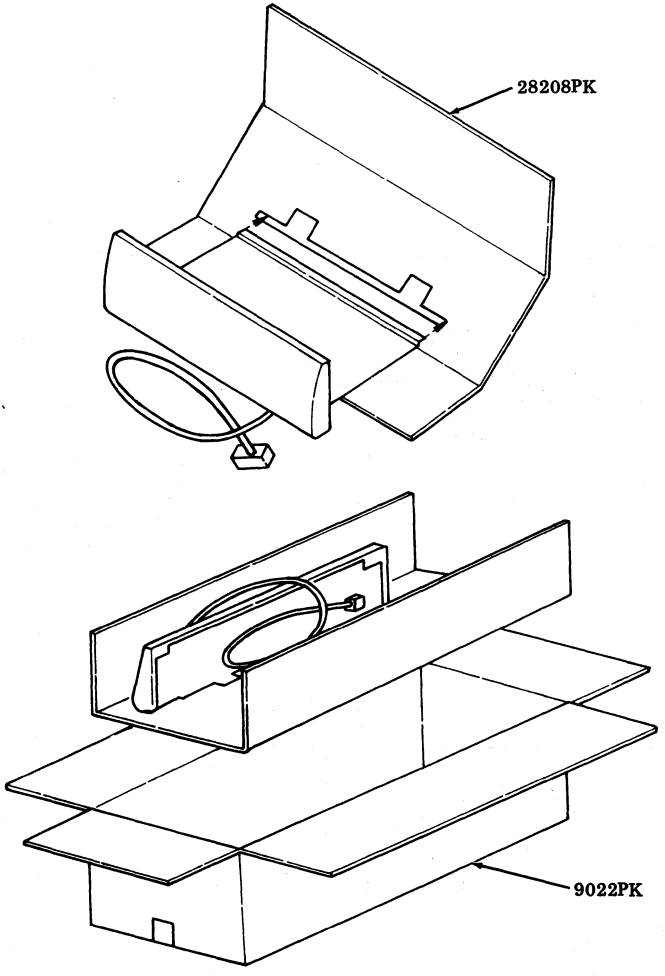


Fig. 41

40BSE202 OPERATOR CONSOLE BASE

Packing Instructions For 40BSE202 Operator Console Base

Step 1. Form a 28329PK detail. Slide unit base in slot in detail as illustrated in Fig. 42. Secure base of unit to bottom of detail with two strips of 21632PK tape. Buff tape firmly.

Step 2. Form a 9255PK carton. Close and seal bottom flaps with a strip of 21719PK tape. The tape should extend approximately three inches down the ends of the cartons.

Step 3. Position unit and detail in carton. Nest cable in 21298PK tissue. Fill all void space with tissue.

Step 4. Fold detail over to form tray at top. Wrap cover assembly in 21298PK tissue and place in tray. Fill void space with tissue.

Step 5. Close and seal top flaps of carton as outlined in Step 3.

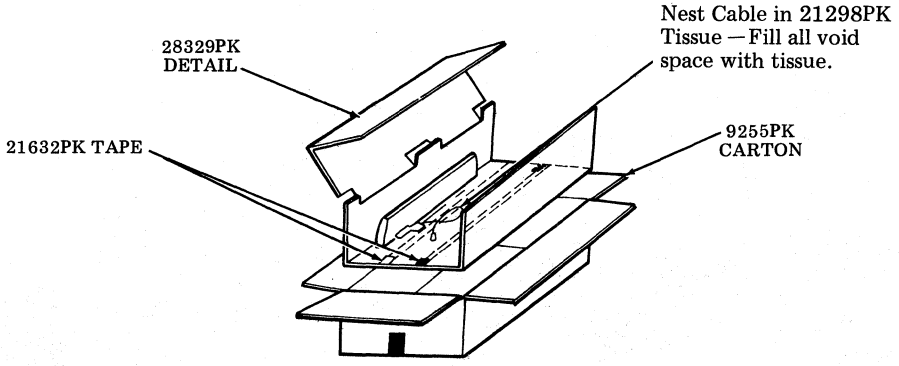


Fig. 42

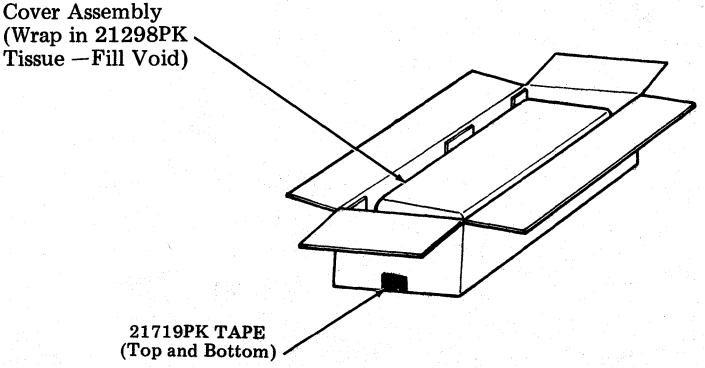


Fig. 43

40/9140 STATION CONTROLLER

Packing Procedure for 9140 Station Controller

Step 1. Remove 9140 station controller from unit.

Step 2. Place loose parts in a RM652472 cloth bag. Tie securely.

Step 3. Position the unit on a 27708PK plywood pallet. Secure unit to pallet with four 28055PK wood screws. (See illustration.)

Step 4. Coil cable. Place bag of parts in center of coil and secure to end of unit with 21632PK tape.

Step 5. Form a 9785PK shipping container. Close and seal bottom flaps with glue or sealing tape.

Step 6. Place a polystyrene 21690PK corner on each of the four corners of the shipping container.

Step 7. Place a palletized unit in container between the plastic details.

Step 8. Position a 27711PK liner over the palletized unit.

Step 9. Form and position a corrugated 28161PK detail in container as illustrated in Fig. 44.

Step 10. Close and seal top flaps of shipping container as outlined in Step 5.

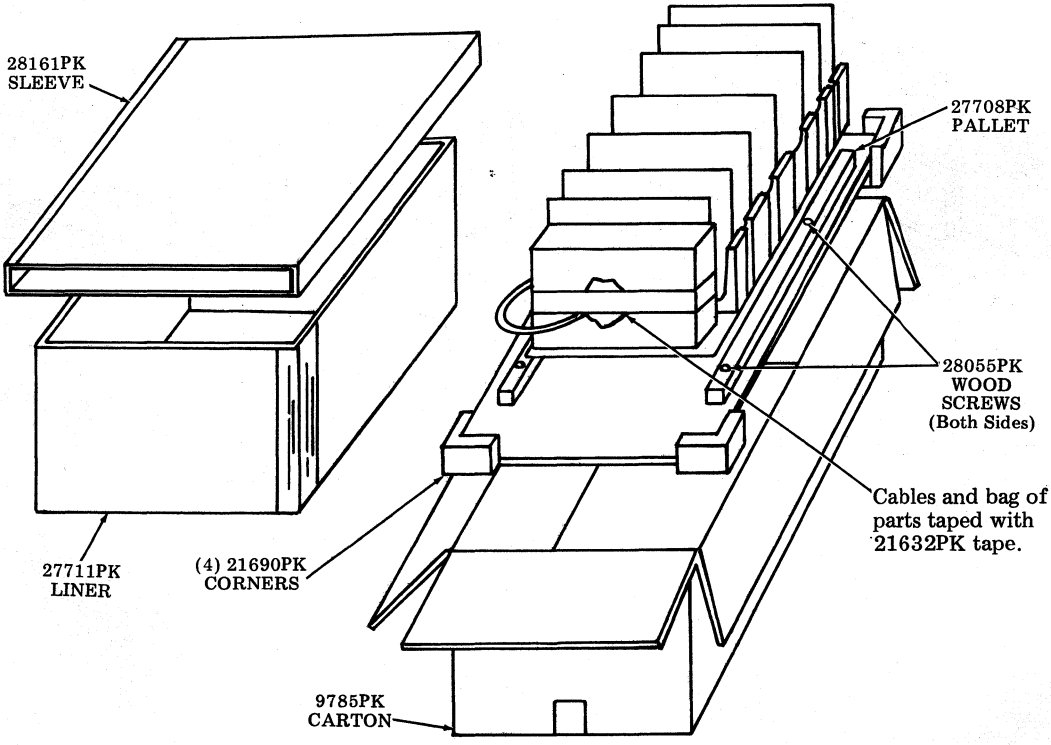


Fig. 44

Packing Procedure for 345605 Mounting Frame

Step 1. Form 9292PK shipping container. Close and seal bottom flaps with glue or sealing tape.

Step 2. Insert a 28158PK detail inside the 9292PK shipping container.

Step 3. Position the mounting frame in the 9292PK shipping container.

Step 4. Form a 28159PK detail and place it over the raised portion of the mounting frame.

Step 5. Form a 28160PK detail and place it in the void area as shown in Fig. 45.

Step 6. Close top flaps of carton and seal center seam with glue or sealing tape.

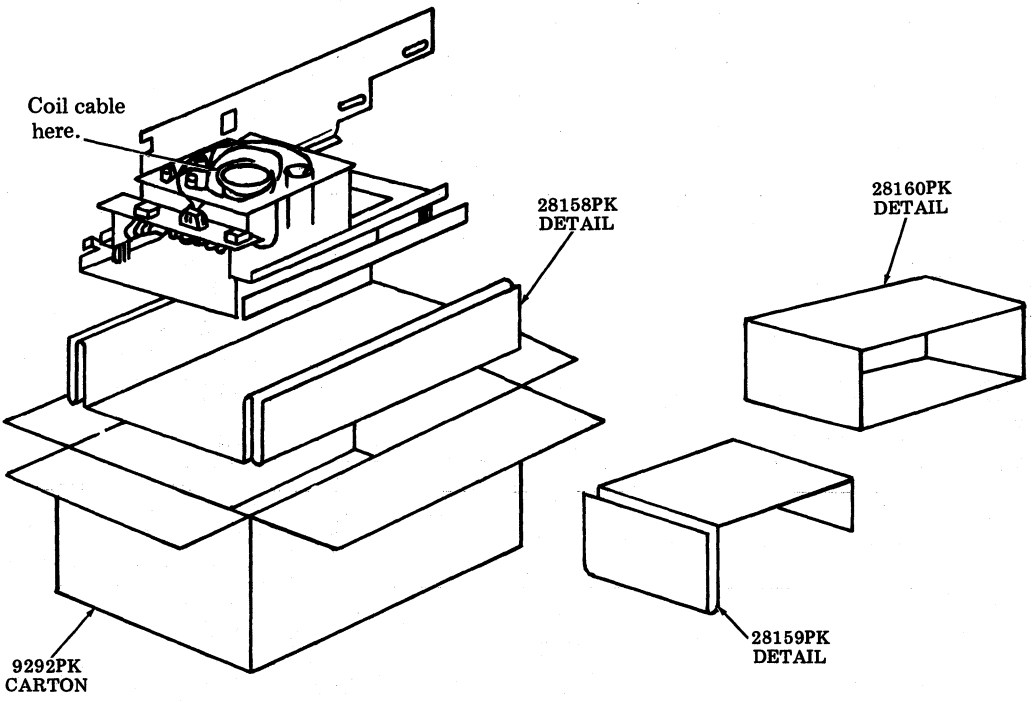


Fig. 45

EIA SWITCH

Packing Procedure for EIA Switch

Step 1. Immobilize the three switches in the following manner: With the switches in their unoperated position, apply a piece of 21480PK tape approximately six inches long to the front bottom half of the buttons and tape to the cover.

Step 2. Apply a piece of 21480PK tape approximately six inches long to the front upper half of the buttons and tape to the cover.

Step 3. Wrap the switch assembly in triple thickness of 21298PK tissue paper.

Step 4. Coil the 341986 cable assembly and wrap it in a double thickness of 21298PK tissue paper.

Step 5. Tape the cable assembly to the top of the switch assembly with two wraps of 21480PK tape.

Step 6. Wrap the switch and cable package in a four or five layer continuous length of 27951PK air cap packing. The switch front and rear surfaces should be equidistant from the 27951PK air cap front and rear edges, respectively.

Step 7. Form 9030PK carton. Close bottom flaps and seal center seam with 21719PK tape. Extend tape three inches down carton sides.

Step 8. Fold in open ends of the wrapped package of Step 6 so as to protect the switch front and rear surfaces. Insert wrapped package into 9030PK carton. The package should fit snuggly in the carton. If loose, remove package and add additional wrap of 27951PK air cap packing.

Step 9. Close top flaps of 9030PK carton and seal center seam with 21719PK tape as indicated in Step 7.

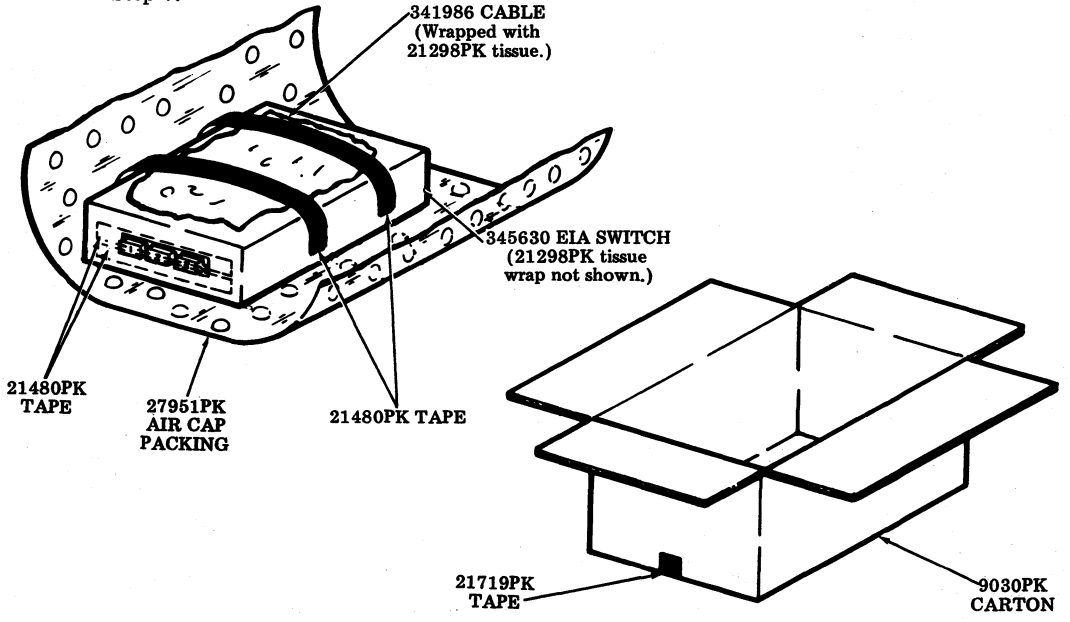


Fig. 46

KEYBOARD DISPLAY AMPLIFIER (KDA)

Packing Procedure for KDA

Step 1. Place unit in a 23465PK plastic bag (not shown in illustration).

Step 2. Form a 8889PK carton. Close and seal bottom flaps of carton with a strip of 21719PK tape.

Step 3. Form a 28258PK detail and place in carton as shown in Fig. 47.

Step 4. Place unit in carton between folds in detail.

Step 5. Form a 28257PK detail and place in carton over and against sides of unit.

Step 6. Close and seal top flaps of carton as outlined in Step 2.

Step 7. Form a 9064PK carton as shown in Fig. 48. Close and seal bottom flaps as outlined in Step 2.

Step 8. Place a 28153PK plastic corner in each of the four corners of the carton.

Step 9. Place prepacked unit inside the plastic corners.

Step 10. Place a 28153PK plastic corner on each of the four corners of the carton.

Step 11. Close and seal top flaps of carton.

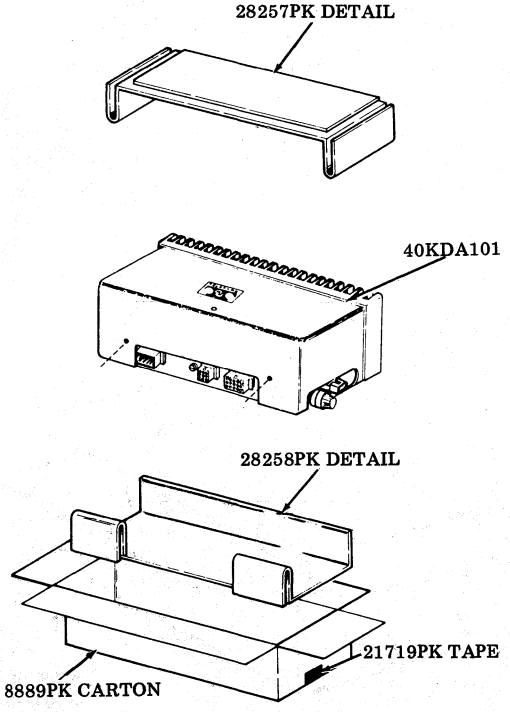


Fig. 47

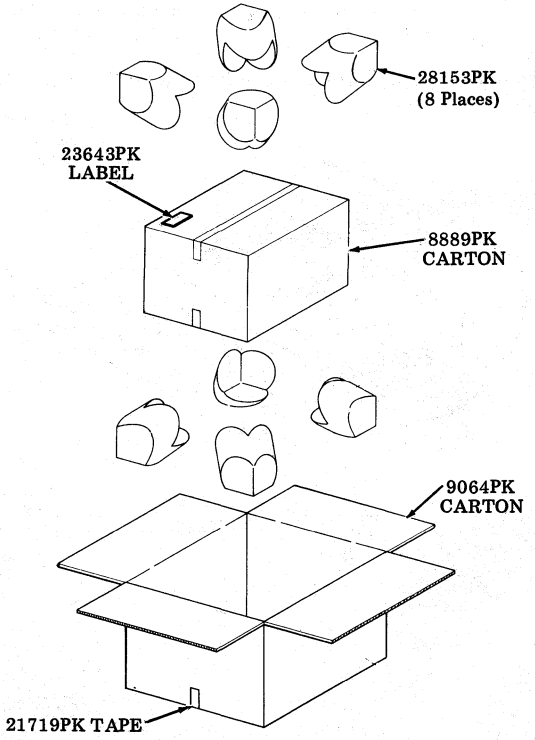


Fig. 48

40K00X OPERATOR CONSOLE

Packing Procedure for ROP Opcon

Step 1. Form an 8762PK carton. Close and seal bottom flaps with a strip of 21719PK tape applied to the center seam and extending three inches down the ends of the carton.

Step 2. Place one 28327PK corrugated pad on top of the keytops. Tape securely to keyboard with two pieces of 21632PK tape (one piece across the length and one piece across the width of the pad). (See Fig. 39.)

Step 3. Cut a seventy six inch long piece of 27952PK air cap and place on bench.

Step 4. Place unit with open end down lengthwise on center of air cap approximately six inches from the end.

Step 5. Wrap the unit lengthwise and tape end of air cap with a strip of 21480PK tape.

Step 6. With manufacturers joint on the carton to the right side, place the unit into the carton with the keytops to the side of the carton. (See Fig. 49).

Step 7. Close and seal top flaps of carton as indicated in Step 1.

Note: 27952PK air cap deleted for clarity.

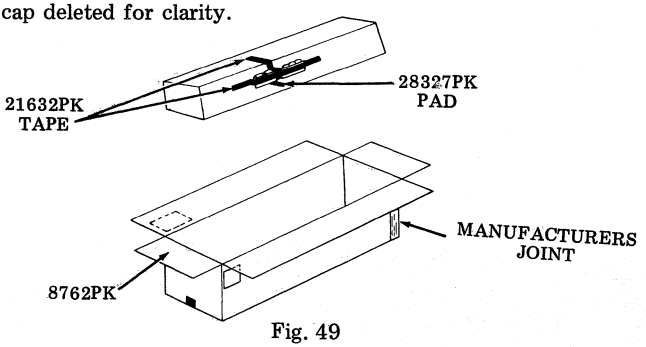


Fig. 49

40K100 OPERATOR CONSOLE

Packing Procedure for Opcon

Step 1. Place spare keytops in a 21307PK muslin bag and set aside.

Step 2. Place a 28164PK Detail A base on work bench. Place muslin bag containing keytops in cavity provided.

Step 3. Remove KD opcon cover; if late design, 2816PK packing details are used.

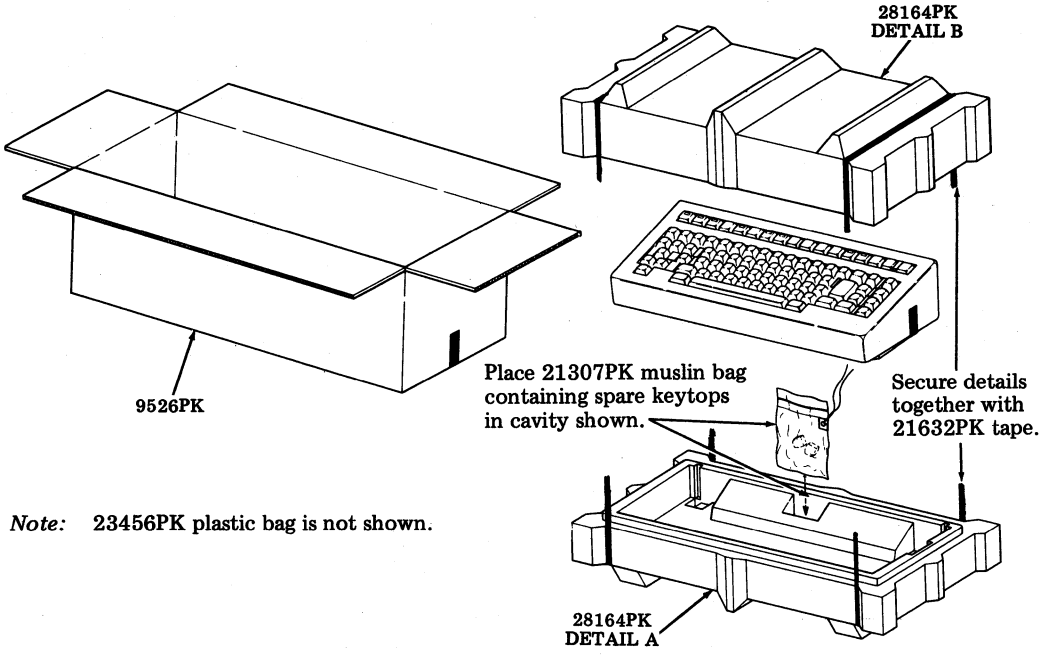
Step 4. Place unit in a 23456PK plastic bag. Close open end of bag and secure with a strip of 21480PK tape.

Step 5. Place a 28164PK Detail B cover over keyboard and place KD opcon cover in cavity provided in late design 28164PK Detail B.

Step 6. Secure 28164PK Detail A base to Detail B cover with a band of 21632PK tape applied around each end of plastic details.

Step 7. Form a 9526PK carton. Close bottom flaps and seal center seam with a strip of 21719PK tape. The tape should extend approximately three inches down ends of carton. (See Figs. 50 and 51.)

Step 8. Place prepacked until in carton. Close top flaps of carton and seal as outlined in Step 7.



Note: 23456PK plastic bag is not shown.

Fig. 50—Early Design Packing Detail

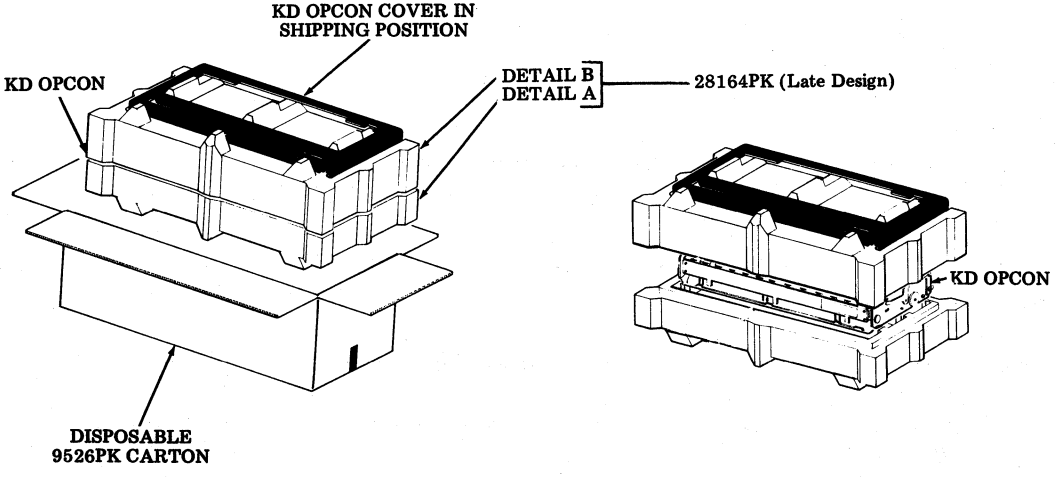


Fig. 51—Late Design Packing Detail

40K200 OPERATOR CONSOLE

Packing Procedure for Opcon

Step 1. Place spare keytops in a 21307PK muslin bag and secure in cavity of 28335PK Detail B, as shown in Fig. 52.

Step 2. Place a 28335PK Detail A base on work bench.

Step 3. Remove opcon cover and secure in top cavity of 28335 Detail B.

Step 4. Place unit in a 23457PK plastic bag. Plastic bag is deleted from illustration for clarity. Close open end of bag and secure with a strip of 21480PK tape.

Step 5. Place a 28335PK Detail B cover over opcon as shown in Fig. 52.

Step 6. Secure 28335PK Detail A base to Detail B cover with a band of 21632PK tape applied around each end of plastic details.

Step 7. Form a 9403PK carton. Close bottom flaps and seal center seam with a strip of 21719PK tape. The tape should extend approximately three inches down ends of carton.

Step 8. Place prepacked unit in carton. Close top flaps of carton and seal as outlined in Step 7.

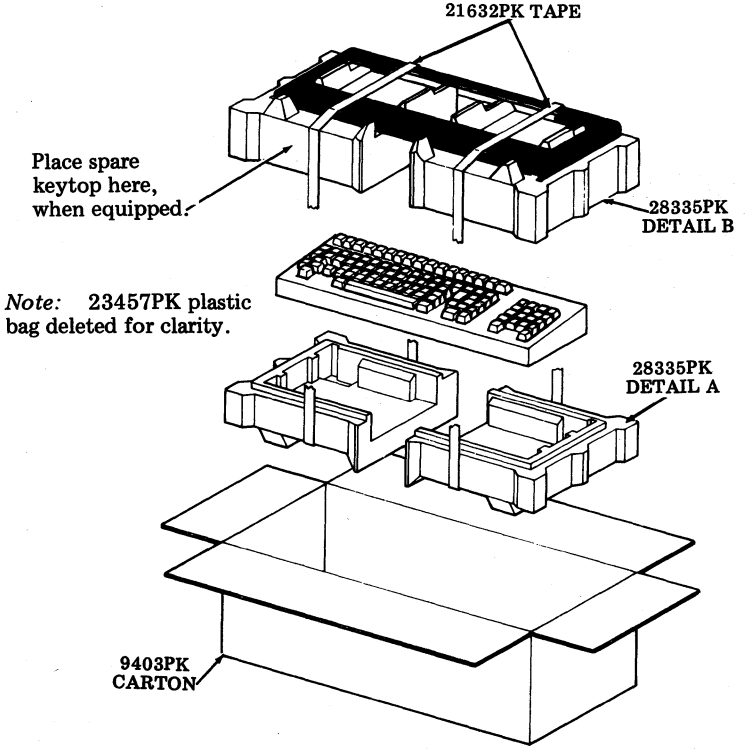


Fig. 52

40PSU101 POWER SUPPLY

Packing Procedure for 40PSU101 Power Supply

Step 1. Form a 28210PK corrugated detail. Position detail in end of unit as illustrated in Fig. 43. The edge on short end of detail must butt against transformer, and the edge on long end of detail must butt against the inside of power supply cover. Secure detail in place with two strips of 21632PK tape as shown in Fig. 53.

Step 2. Form a 9229PK carton. Close and seal bottom flaps with a strip of 21719PK tape. The tape should extend approximately three inches down ends of carton.

Step 3. Form a 28211PK Detail A and place in carton as illustrated in Fig. 53. Center detail in carton.

Step 4. Position a 28211PK Detail B in either end of carton as illustrated in Fig. 53.

Step 5. Place unit in a 23456PK plastic bag. Position unit in carton as illustrated in Fig. 53.

Step 6. Fold the 28211PK Detail A flap over top of unit. Close and seal top flaps of carton as outlined in Step 2.

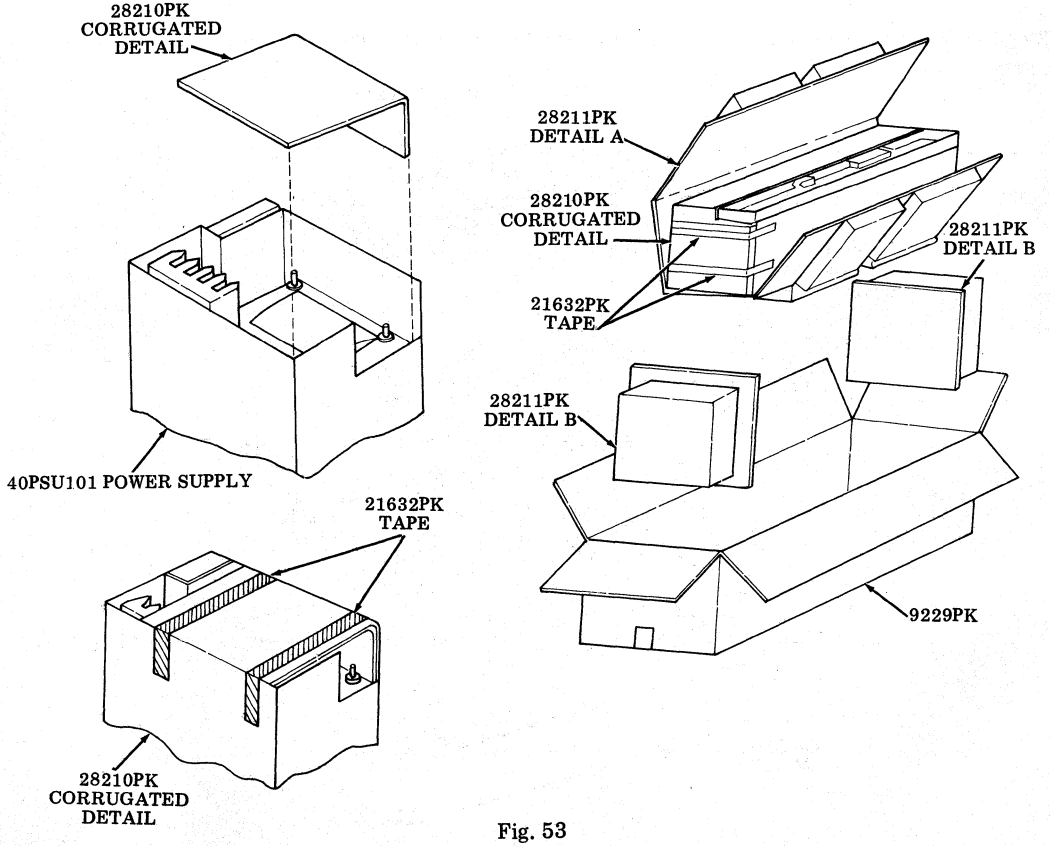


Fig. 53

40PSU102 POWER SUPPLY

Packing Procedure for 40PSU102 Power Supply

Step 1. Assemble pallet No. 28212PK to bottom of power supply with one 71692RM screw, one 72295RM flat washer, and one 2669 lockwasher, as illustrated in Fig. 54.

Step 2. Form a 9362PK corrugated detail. Close and seal bottom flaps with a strip of 21719PK tape. The tape should extend approximately three inches down ends of carton.

Step 3. Place palletized unit in carton. Form a 28213PK detail and place in carton as illustrated in Fig. 54.

Step 4. Close and seal top flaps of carton as outlined in Step 2.

Step 5. Form a 9822PK shipping container. Form bottom flaps outward and place over inner container as illustrated in Fig. 55.

Step 6. Position a 28153PK corner detail on each of the four corners of the inner container as illustrated in Fig. 55.

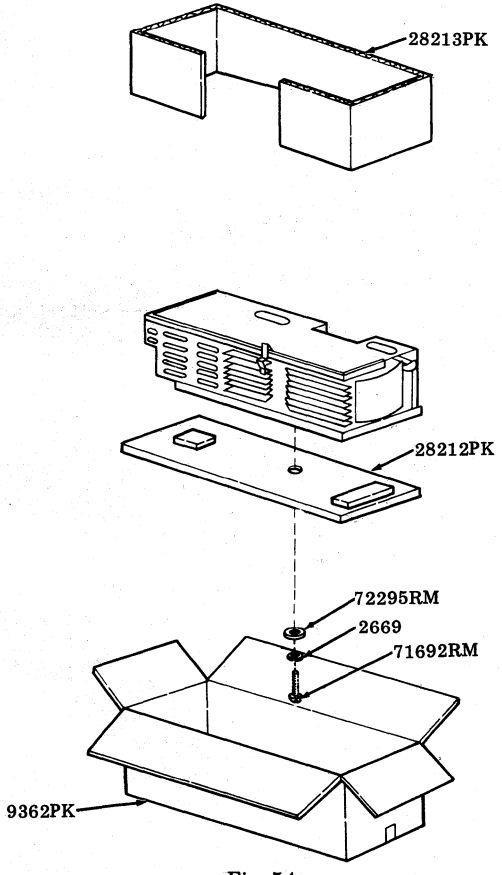


Fig. 54

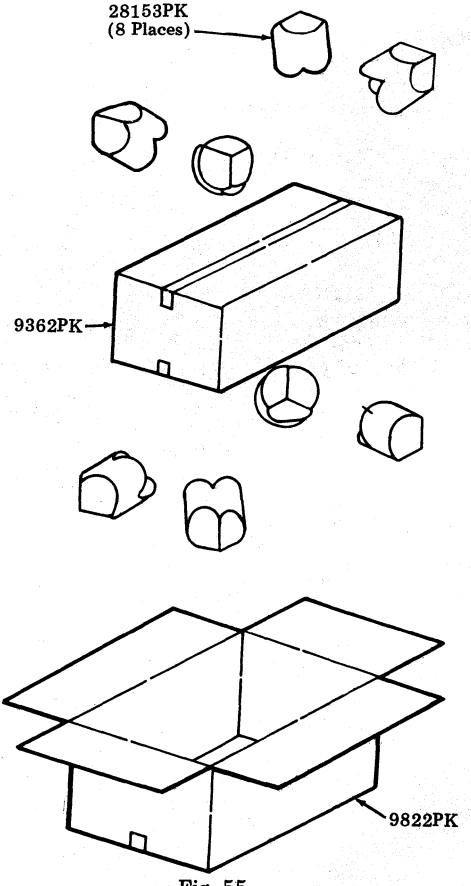


Fig. 55

40DL291 DISPLAY LOGIC

Packing Procedure for 40DL291 Display Logic

Step 1. Form 9504PK carton. Close and seal bottom flaps with glue or 2 inch minimum width sealing tape.

Step 2. Form detail 28141PK and position in carton as illustrated in Fig. 56.

Step 3. Place unit in 23456PK plastic bag. Position unit in carton. Let cable extend outside of carton.

Step 4. Form 28142PK detail and position in carton on top of unit as illustrated in Fig. 56. Position cable in void formed by detail.

Step 5. Close top flaps of carton and seal as outlined in Step 1.

Step 6. Form 10188PK shipping container. Form bottom flaps outward and place over inner container as illustrated in Fig. 56.

Step 7. Position a 21690PK corner detail on each of the four corners of the inner container as illustrated in Fig. 57.

Step 8. Close and seal top flaps as outlined in Step 1. Invert shipping container and contents.

Step 9. Position a 21690PK corner detail on each of the four corners of the inner container as illustrated in Fig. 57.

Step 10. Close and seal bottom flaps as outlined in Step 1. Invert shipping container and contents.

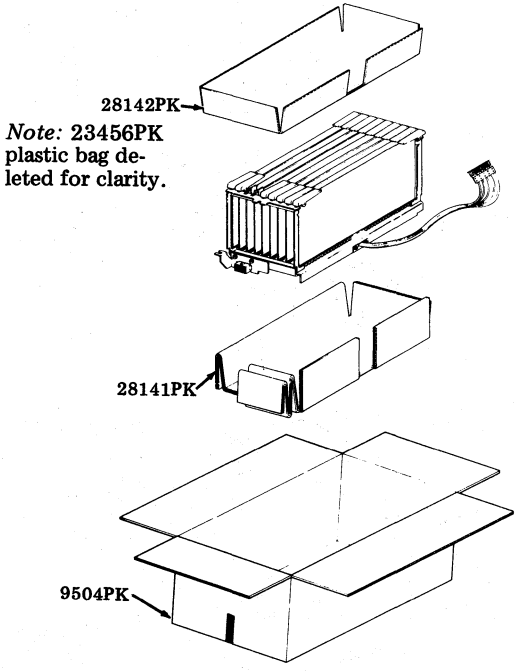


Fig. 56

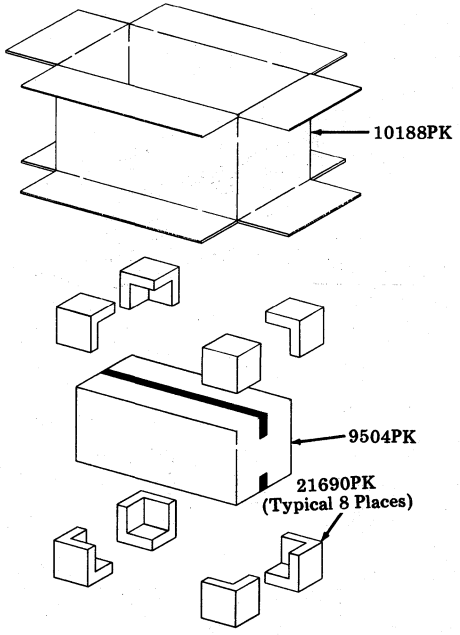


Fig. 57

40C101, 40C102, 40C201, 40C202, AND 40C204 CONTROLLERS

Packing Procedure for Controllers

Step 1. Form a 9039PK carton. Fold bottom flaps closed and seal center seam with 21719PK tape. The tape should extend approximately three inches down the ends at the center seam.

Step 2. Form a 28144PK detail. Position flap over top of connectors on end of controller and secure at ends with strips of 21632PK tape. See Fig. 58.

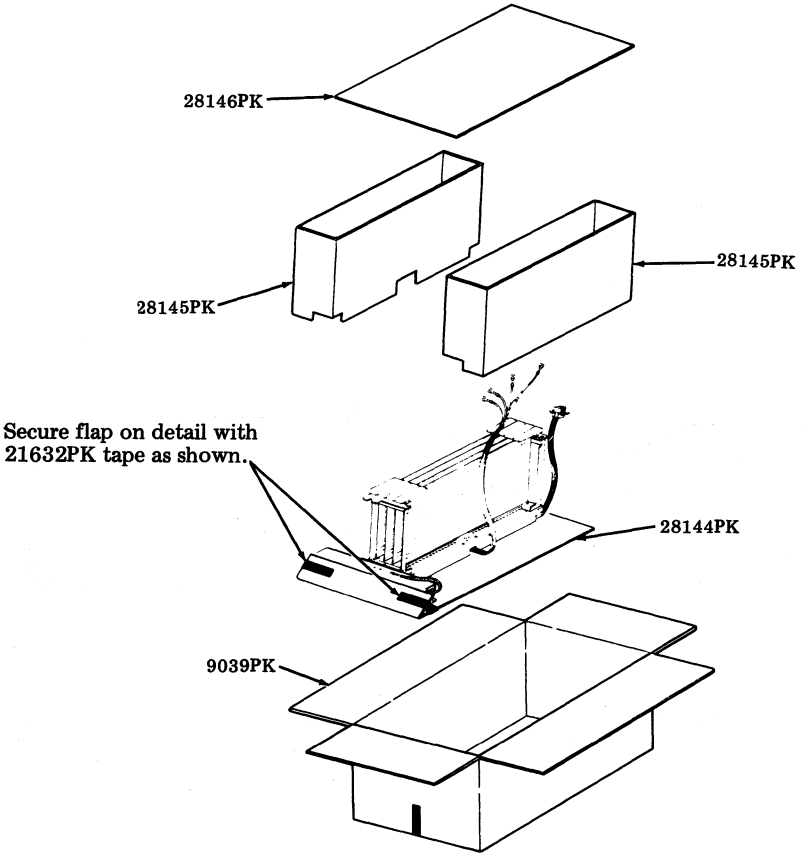


Fig. 58

Step 3. Place unit and detail in carton.

Step 4. Form two 28145PK details and position on either side of unit as illustrated in Fig. 58. The cable with connector must be positioned in the void formed by the 28145PK detail. See Fig. 58.

Step 5. Place a 28146PK pad on top of the unit and details.

Step 6. Close and seal top flaps of carton as indicated in Step 2.

Step 7. Form a 9640PK carton and with bottom of flaps outward place carton around prepacked unit. See Fig. 59.

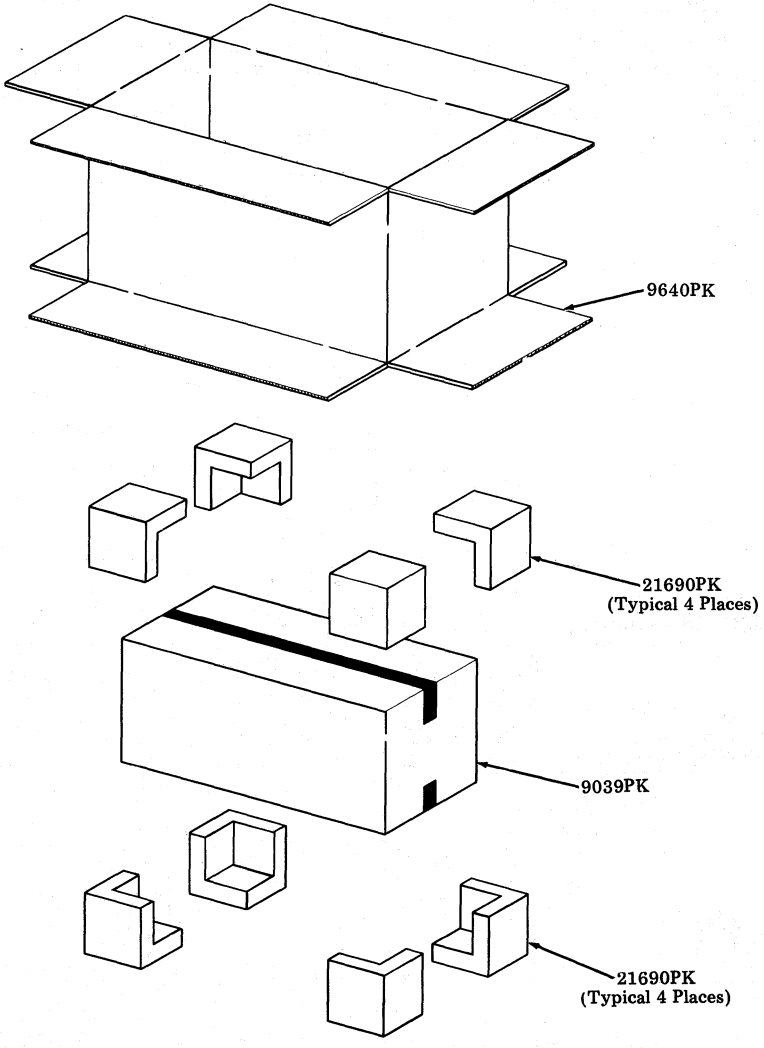


Fig. 59

Step 8. Place a 21690PK plastic corner on each of the four corners of the inner carton. See Fig. 59.

Step 9. Close and seal top flaps of carton as outlined in Step 2. Invert carton and contents.

Step 10. Place a 21690PK plastic corner on each of the four corners of the inner carton. See Fig. 59.

Step 11. Close and seal bottom flaps of carton as outlined in Step 2. Invert carton and contents.

40C103 CONTROLLER

Packing Procedure for Controller

Step 1. Form a 8759PK carton. Close and seal top flaps with 21719PK tape. Apply the tape to the center seam and extend three inches down the ends of the carton.

Step 2. Place two 28147PK details in carton as illustrated in Fig. 60.

Step 3. Place unit in a 23465PK plastic bag.

Step 4. Invert unit and place in carton so handles at top of unit fit in the cutout in the details. (See Fig. 60.)

Step 5. Form a 28148PK detail and position around end of unit as illustrated in Fig. 60.

Step 6. Form a second 28148PK detail and position around other end of unit as illustrated in Fig. 60.

Step 7. Close and seal bottom flaps of carton as outlined in Step 1.

Note: 23465PK plastic bag deleted for clarity.

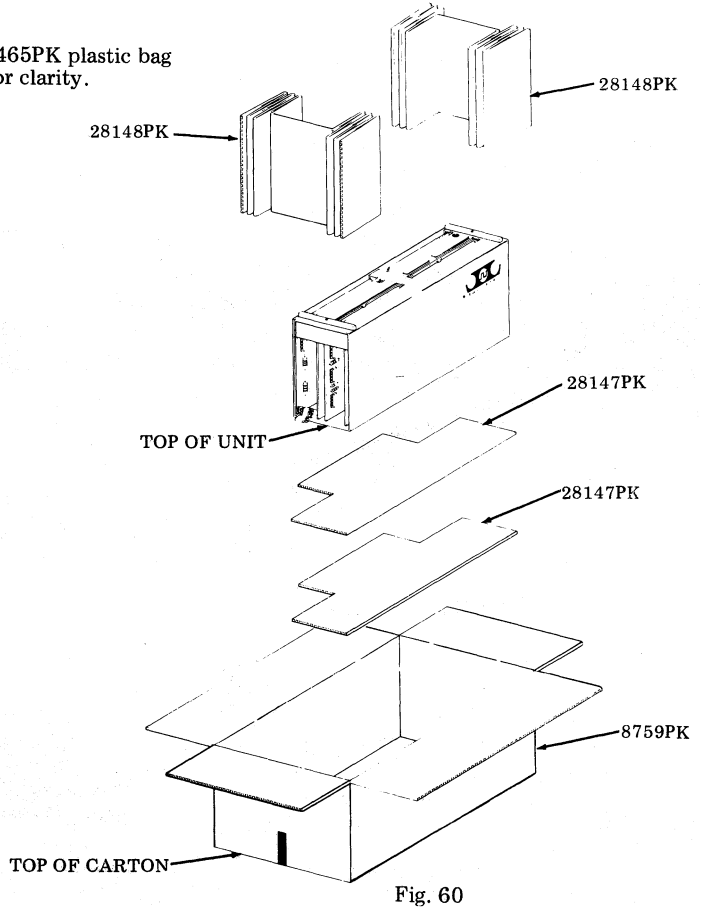


Fig. 60

Step 8. Form a 9136PK carton. Fold top flaps outward and place around packed unit. See Fig. 61.

Step 9. Place a 21690PK plastic detail on each of the four corners of the inner carton. See Fig. 61.

Step 10. Close and seal bottom of flaps of carton as outlined in Step 1. Invert carton.

Step 11. Place a 21690PK plastic detail on each of the four corners of the inner carton. See Fig. 61.

Step 12. Close top flaps of carton and seal as outlined in Step 1.

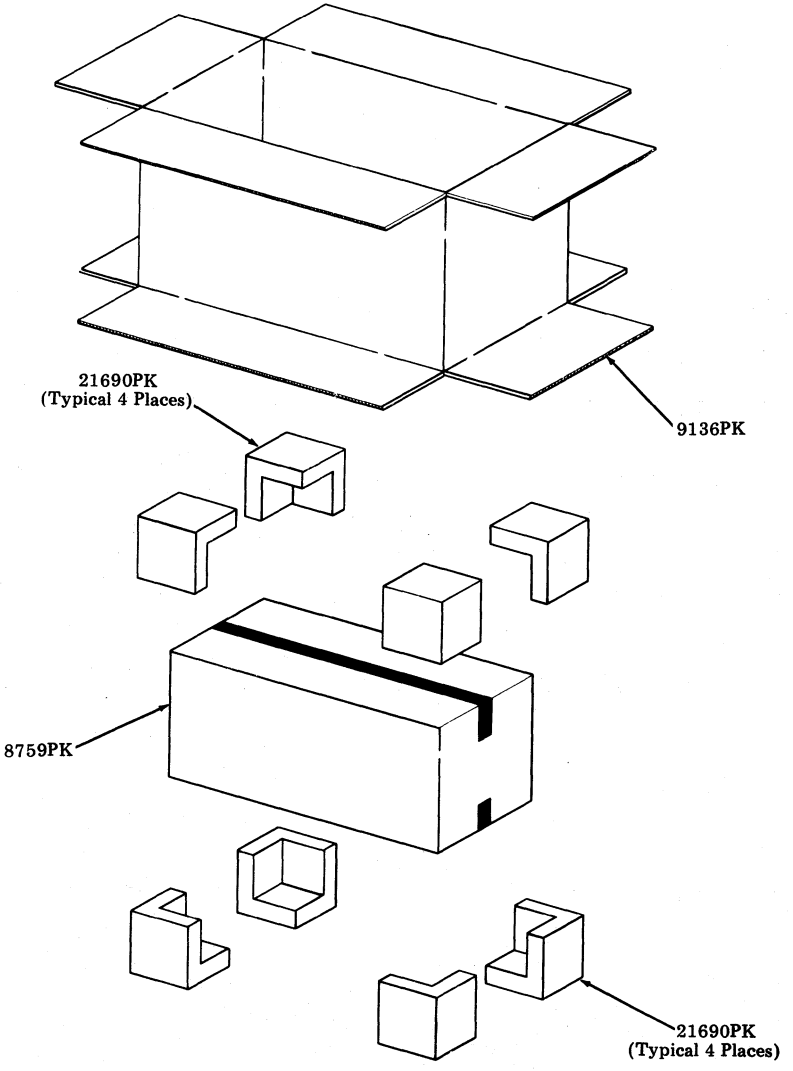


Fig. 61

40C400, 40C401, 40C402, AND 40C403 CONTROLLERS

Packing Procedure for Controller

Step 1. Mount unit frame to a 28219PK plywood pallet with four 71676RM screws, four 2669 lockwashers and four 72295RM washers as illustrated in Fig. 62. The large hole in the pallet must be in line with the hole used to mount the PSU in the base.

Step 2. Open cover of unit. Position a 28260PK pad on back surface of circuit cards. Close cover and secure in place. (See Fig. 62.)

Step 3. Form a 9713PK carton. Close and seal bottom flaps with a strip of 21719PK tape. The tape should be applied to the center seam and extend approximately three inches down the ends of the carton.

Step 4. Coil unit cable and secure with a 50136PK twist tie. Place palletized unit in carton. (See Fig. 62.)

Step 5. Form a 28220PK liner and place in carton around unit. (See Fig. 62.)

Step 6. Position cable at back of unit. Fill void space with 21298PK tissue to keep cable from shifting. (See Fig. 62.)

Step 7. Close and seal top flaps of carton as outlined in Step 3.

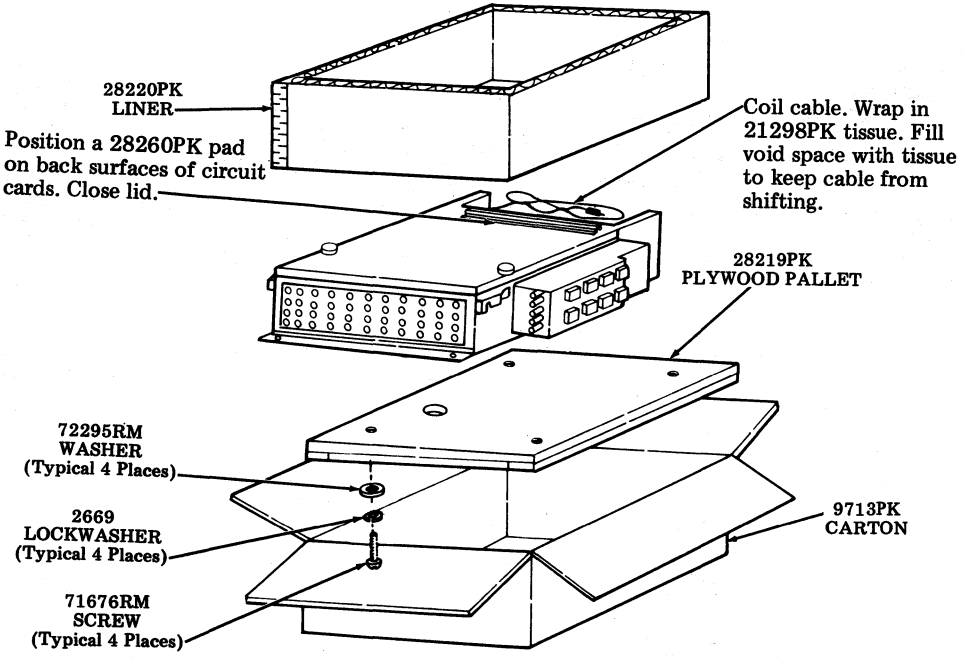


Fig. 62

Step 8. Form a 10392PK carton. Fold bottom flaps outward and place around sealed carton. (See Fig. 63.)

Step 9. Position a 27442PK plastic corner on each of the four corners of the inner carton.

Step 10. Close top flaps and seal center seam with 21719PK tape as outlined in Step 3. Carefully invert carton and contents.

Step 11. Position a 27442PK plastic corner on each of the four corners of the inner carton.

Step 12. Close bottom flaps and seal center seam with 21719PK tape as outlined in Step 3. Carefully invert carton and contents.

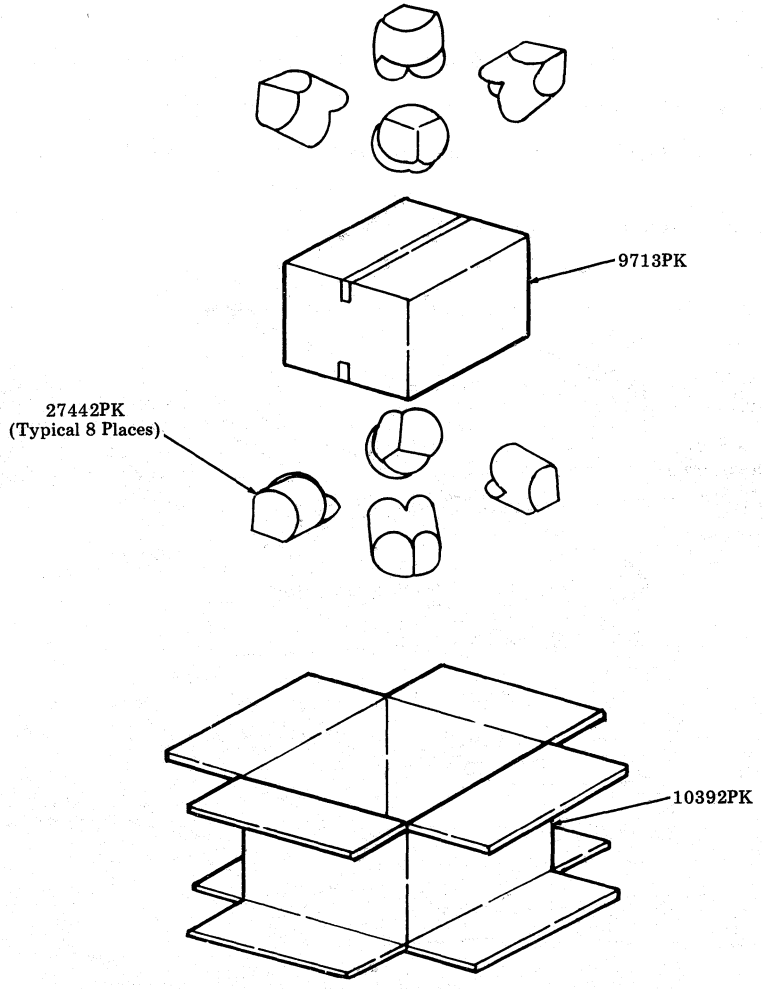


Fig. 63

40C430, 40C431, AND 40C432 CONTROLLERS

Packing Procedure for Controller

Step 1. Position a 28235PK plywood detail against each end of controller. Securely tape details to unit with a band of 21632PK tape. See Fig. 64. Drape cables over top of unit.

Step 2. Form a 10392PK carton. Close and seal bottom of flaps with a strip of 21719PK tape.

Step 3. Position a 27442PK plastic corner in each of the four bottom corners of the carton. See Fig. 64.

Step 4. Form a 9713PK carton. Close and seal bottom flaps with a strip of 21719PK tape.

Step 5. Carefully place the 9713PK carton in the four plastic corners positioned in the 10392PK carton. (See Fig. 64.)

Step 6. Place a 28236PK plywood detail in the 9713PK carton. (See Fig. 64.)

Step 7. Grasp the front and rear of the controller and place in carton. (See Fig. 64.)

Step 8. Wrap cables in 21298PK tissue paper. Fill void space with tissue.

Step 9. Position a 28236PK plywood detail in the carton.

Step 10. Close and seal top flaps of the 9713PK carton with a strip of 21719PK tape.

Step 11. Position a 27442PK plastic corner on each of the four corners of the inner carton.

Step 12. Close and seal top flaps of outer carton with a strip of 21719PK tape.

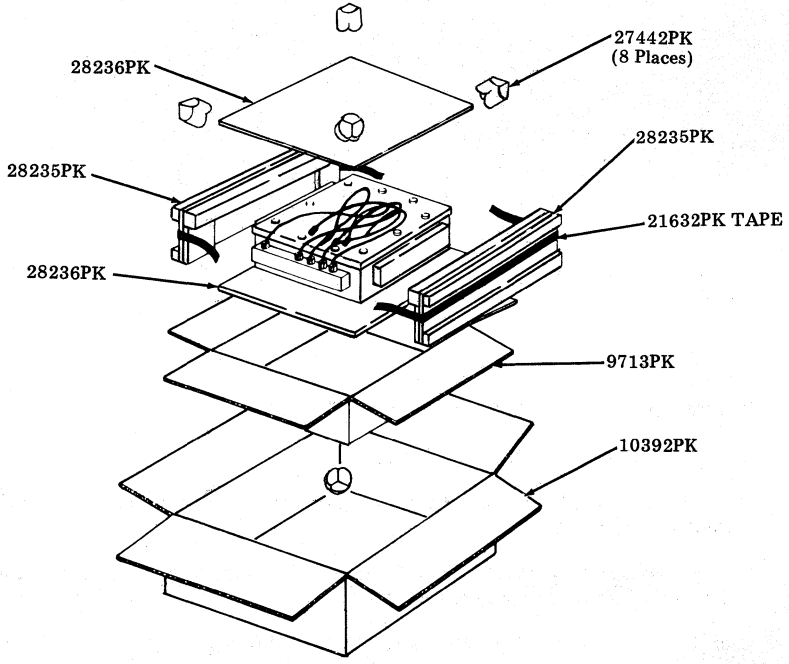
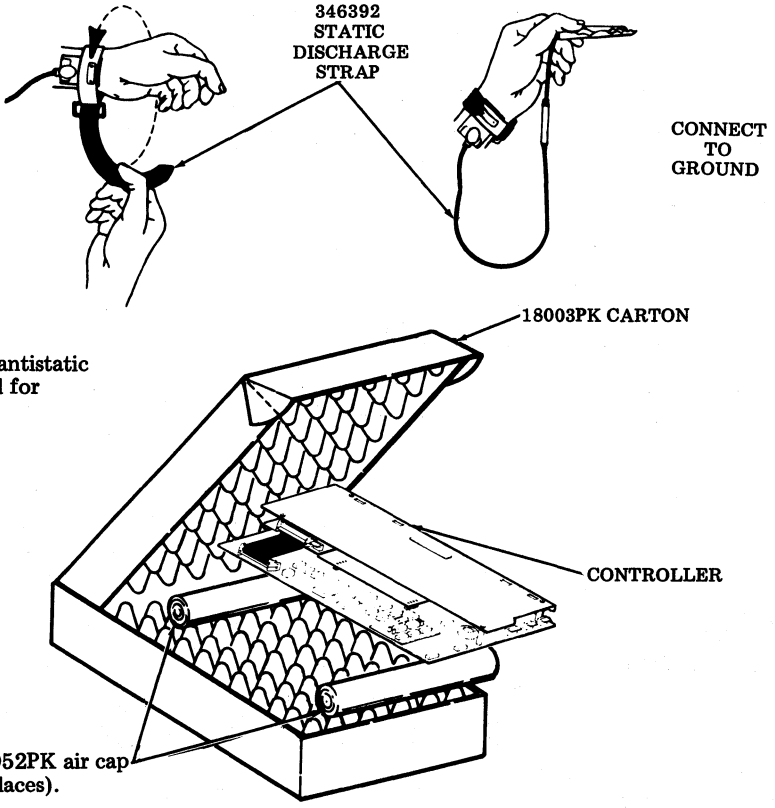


Fig. 64

40C303 CONTROLLER

Packing procedure for Controller

Caution: To avoid possible internal damage to circuitry, wear a 346392 static discharge strap connected to ground to allow static discharge before handling circuit cards for removal or replacement. Avoid touching circuit lands and card components as much as possible.



Note: 79157RM antistatic plastic bag deleted for clarity.

Fig. 65

Step 1. Place controller in a 79157RM antistatic plastic bag.

Step 2. Open one 18003PK carton with inserts.

Step 3. Place the integrated controller into the carton on top of the foam, approximately centrally located. (See Fig. 65.)

Step 4. Cut two 24 inch lengths of 27952PK air cap. Roll each length into a cylinder, position at either end of controller, and close carton.

Step 5. Seal the bottom front flap with a strip of 21720PK tape.

40C304 AND 40C305 CONTROLLERS

Packing Procedure for Controller

Step 1. Mount unit frame to a 28219PK plywood pallet with four 71676RM screws, four 2669 lockwashers and four 72295RM washers as illustrated in Fig. 55. The large hole in the pallet must be in line with the hole used to mount the PSU in the base. (See Fig. 66.)

Step 2. After unit is completed, position a 28307PK plywood detail on top of the three circuit card grouping. Form and position a 28289PK corrugated detail over circuit cards and plywood detail as illustrated in Fig. 67.

Step 3. Tightly secure the corrugated detail in place with four strips of 21632PK tape tightly applied over top of detail and extending down to bottom of unit at front and rear of unit. Pull tape firmly for good adhesion. (See Fig. 67.)

Step 4. At power supply side of unit, remove front and rear screws holding unit to pallet. Loosen remaining two screws, two turns.

Step 5. Separate unit and pallet on power supply side by wedging a 28308PK plywood detail between unit and pallet.

Step 6. Tightly secure a 28308PK plywood detail to top of power supply with three double bands of 21632PK tape, applied over top of plywood detail and around front, bottom, and rear of unit. Tape should be in approximate position on plywood detail as shown in Fig. 67.

Step 7. Remove 28308PK detail from between unit and pallet. Replace screw, washer, and lockwasher assemblies previously removed. Tighten all screws mounting unit to pallet.

Step 8. Form a 9713PK carton. Close and seal bottom flaps with a strip of 21719PK tape. The tape should be applied to the center seam and extend approximately three inches down the ends of the carton.

Step 9. Coil unit cable (when equipped) and secure to side of unit with 21632PK tape. Place palletized unit in carton. (See Fig. 66.)

Step 10. Form a 28220PK liner and place in carton around unit. (See Fig. 66.)

Note: Special Operations Step 12, 13, and 14 are for 40C305 controller only.

Step 11. Coil the following cables in a circle approximately 14 inches to 15 inches in diameter: two 406073, one 406074, and one 406075.

Step 12. Tape each cable around the connectors with one strip of 21632PK tape.

Step 13. Place cables between controller and 28220PK liner on side adjacent to fans. (See Fig. 66.)

Step 14. Close and seal top flaps of carton as outlined in Step 8.

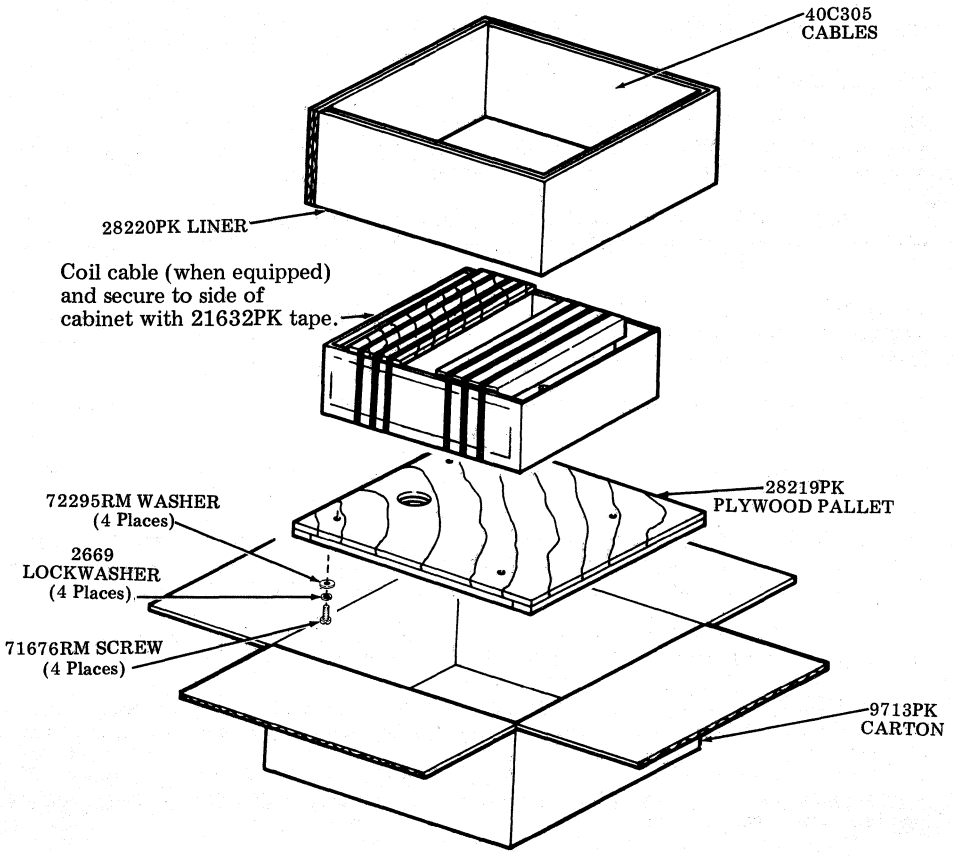

40C305
CABLES
28220PK LINER
Coil cable (when equipped)
and secure to side of
cabinet with 21632PK tape.
72295RM WASHER
(4 Places)
2669
LOCKWASHER
(4 Places)
71676RM SCREW
(4 Places)
28219PK
PLYWOOD PALLET
9713PK
CARTON

Fig. 66

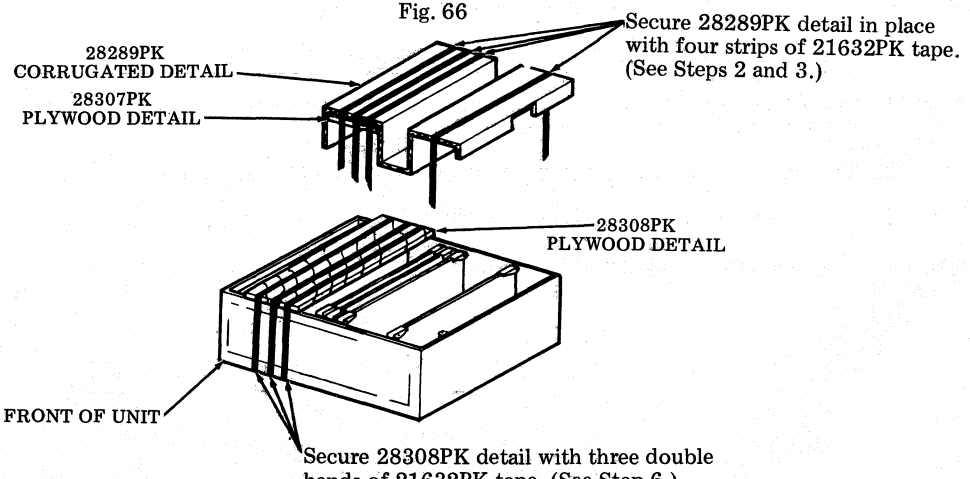

28289PK
CORRUGATED DETAIL
28307PK
PLYWOOD DETAIL
Secure 28289PK detail in place
with four strips of 21632PK tape.
(See Steps 2 and 3.)
28308PK
PLYWOOD DETAIL
FRONT OF UNIT
Secure 28308PK detail with three double
bands of 21632PK tape. (See Step 6.)

Fig. 67

Step 15. Form a 10392PK carton. Fold bottom flaps outward and place around sealed carton. (See Fig. 68.)

Step 16. Position a 27442PK plastic corner on each of the four corners of the inner carton. (See Fig. 68.)

Step 17. Close top flaps and seal center seam with 21719PK tape as outlined in Step 8. Carefully invert carton and contents.

Step 18. Position a 27442PK plastic corner on each of the four corners of the inner carton. (See Fig. 68.)

Step 19. Close bottom flaps and seal center seam with 21719PK tape as outlined in Step 8. Carefully invert carton and contents.

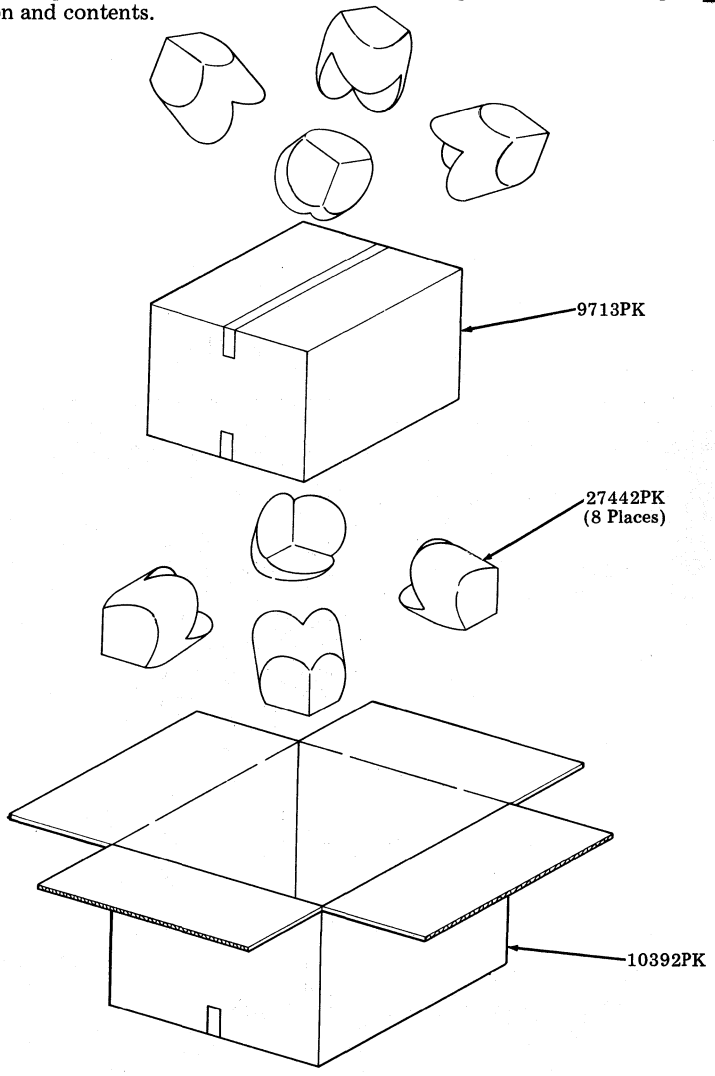


Fig. 68

40C434, 40C435, AND 40C436 CONTROLLERS

Packing Procedure for Controller

Step 1. Position a 28293PK Detail A plywood detail against end of controller.

Step 2. Position a 28293PK Detail B against opposite end of controller. See Fig. 69. Drape cables over top of unit.

Step 3. Form a 10392PK carton. Close and seal bottom of flaps with a strip of 21719PK tape.

Step 4. Position a 27442PK plastic corner in each of the four bottom corners of the carton. See Fig. 69.

Step 5. Form a 9713PK carton. Close and seal bottom flaps with a strip of 21719PK tape.

Step 6. Carefully place the 9713PK carton in the four plastic corners positioned in the 10392PK carton. (See Fig. 69.)

Step 7. Place a 28236PK plywood detail in the 9713PK carton (See Fig. 69.)

Step 8. Grasp the front and rear of the controller and place in carton. (See Fig. 69.)

Step 9. Wrap cables in 21298PK tissue paper. Fill void space with tissue.

Step 10. Position a 28236PK plywood detail in the carton.

Step 11. Close and seal top flaps of the 9713PK carton with a strip of 21719PK tape.

Step 12. Position a 27442PK plastic corner on each of the four corners of the inner carton.

Step 13. Close and seal top flaps of outer carton with a strip of 21719PK tape.

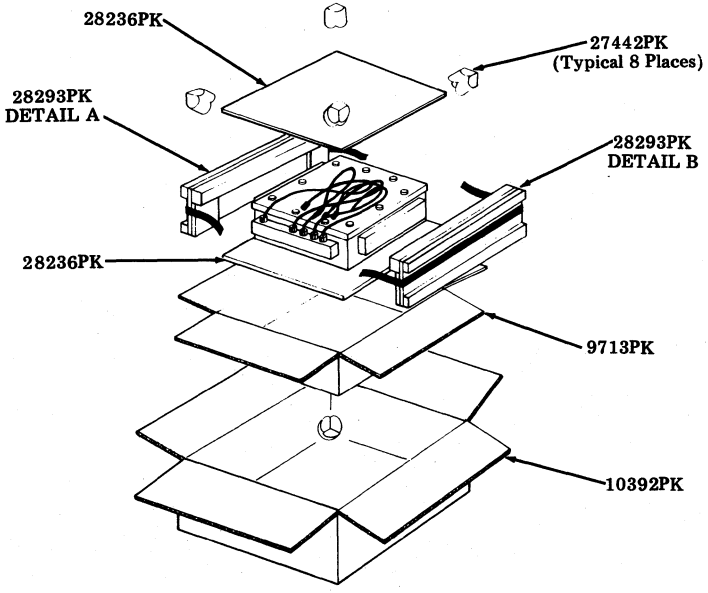


Fig. 69

401200 COPY HOLDER

Packing Procedure for Copy Holder

Step 1. Form 8814PK shipping container. Close and seal bottom flaps with glue or sealing tape.

Step 2. Insert copy holder in container, close and seal top flaps with glue or sealing tape.

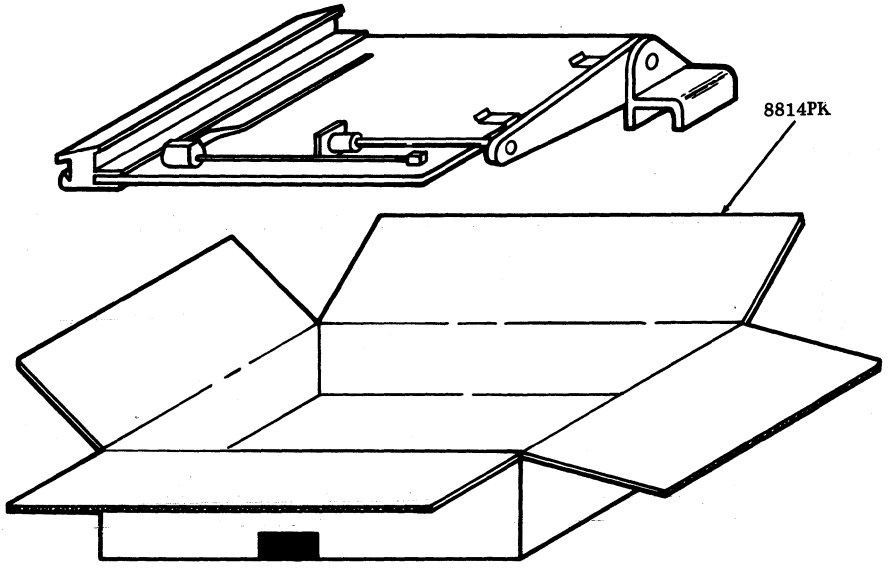


Fig. 70

40PWU101 AND 40PWU102 PAPER WINDERS

Packing Procedure for Paper Winders

Step 1. Place loose parts in 652472RM cloth bag. Close bag and tie to hole in base plate as illustrated in Fig. 71.

Step 2. Form 8563PK folder. Wrap base plate in tissue paper and place in folder.

Step 3. Fold flaps of folder closed and seal with glue or sealing tape.

Step 4. Form 9644PK shipping container. Close and seal bottom flaps with glue or sealing tape.

Step 5. Place folder in container. Form 28193PK detail and place in container as illustrated in Fig. 71.

Step 6. Remove paper spindle from unit. Place unit in a 23457PK plastic bag. Let cable extend outside of bag. Position unit in cutouts in detail as shown.

Step 7. Form 28192PK detail. Position reel in detail. Secure flaps of detail in position (as shown in Fig. 71) with four strips of reinforced pressure sensitive tape.

Step 8. Position prepacked reel in container as illustrated.

Step 9. Coil line cord in void space formed by packing detail and the carton.

Step 10. Secure the top of the shipping container (9644PK) with reinforced pressure sensitive tape.

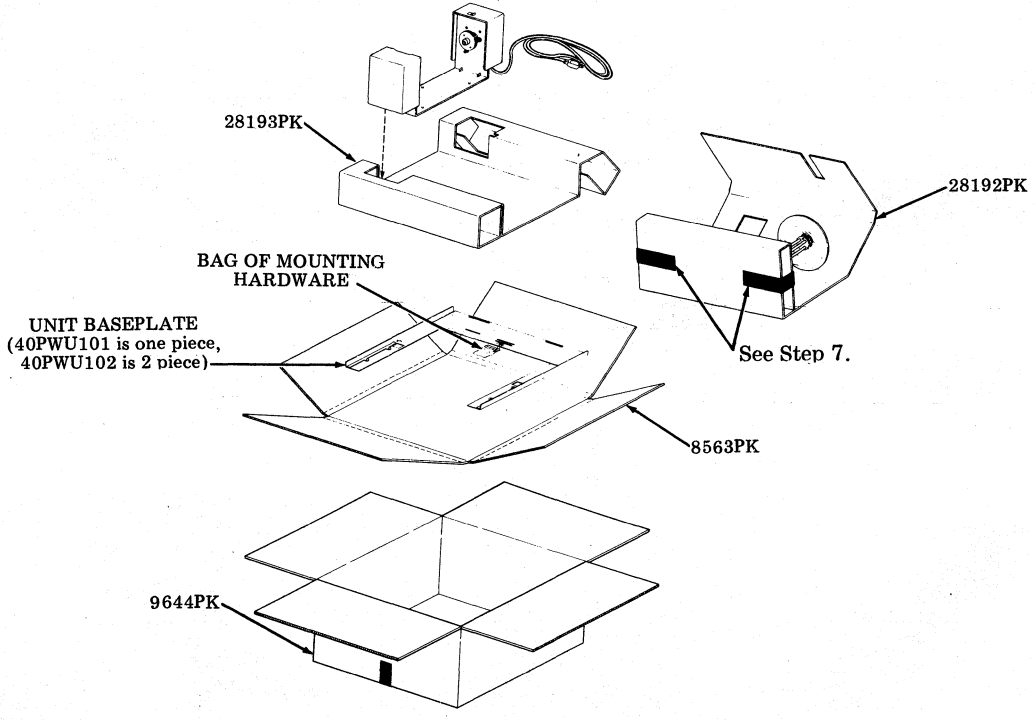


Fig. 71

4. WORKING STATION

4.01 The Working Station (WS) plan should be considered in returning DATASPEED 40 terminal equipment which is functional to Western Electric. Qualified apparatus submitted via the WS plan will result in reduced shop repair costs.

4.02 Criteria for qualification for Working Station (WS) processing are listed below. A Returned Material Tag (see Fig. 72) affixed to each station/terminal/component should be completed to designate (WS) plan if appropriate.

CRITERIA FOR QUALIFICATION

4.03 Apparatus should be completely operable such that it is functionally acceptable as is for reinstallation.

4.04 Apparatus should have had normal routine maintenance throughout service.

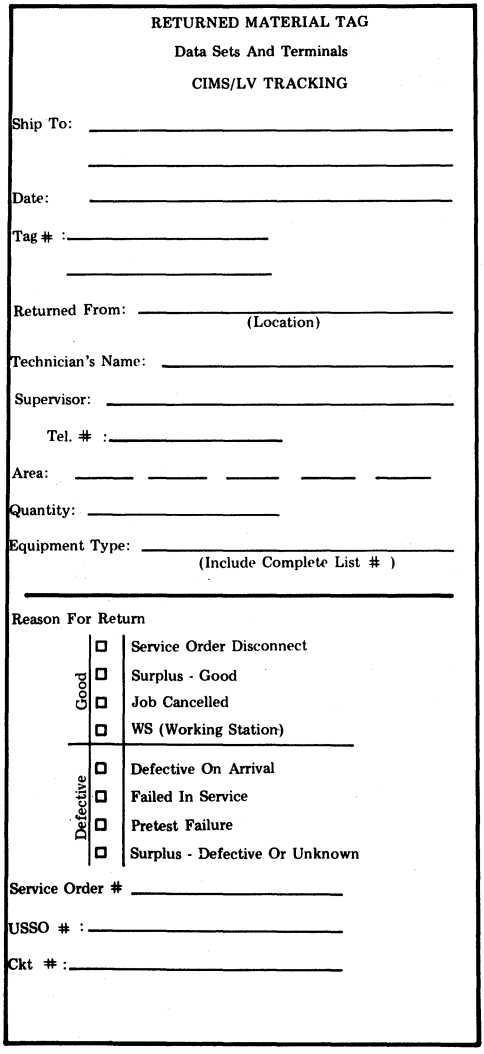
4.05 Apparatus returned to service center should meet appearance standards (required minor cleanup permissable).

4.06 Apparatus returned to service center should be undamaged.

4.07 Apparatus returned to service center should have a Returned Material Tag designating Working Station (WS) affixed to each component.

4.08 A material list (or service order or station/apparatus disconnect order) identifying the Working Station components shall be included with the returned equipment.

4.09 Apparatus which is not or cannot be broken down to defined M-List items without adding components or rework does not qualify as a candidate for Working Station processing. Examples of nonqualifying candidates for Working Station processing are as follows: Damaged apparatus, apparatus with missing components or parts, and apparatus modified such that extensive rework is necessary to restore it to conform to defined USOC M-List items as stocked at the Service Centers in repaired class "C" stock.



RETURNED MATERIAL TAG

Data Sets And Terminals

CIMS/LV TRACKING

Ship To: _____

_____

Date: _____

Tag # : _____

_____

Returned From: _____
(Location)

Technician's Name: _____

Supervisor: _____

Tel. # : _____

Area: _____ _____ _____ _____ _____

Quantity: _____

Equipment Type: _____
(Include Complete List #)

Reason For Return

Good
- ☐ Service Order Disconnect
- ☐ Surplus - Good
- ☐ Job Cancelled
- ☐ WS (Working Station)

Defective
- ☐ Defective On Arrival
- ☐ Failed In Service
- ☐ Pretest Failure
- ☐ Surplus - Defective Or Unknown

Service Order # _____

USSO # : _____

Ckt # : _____

Fig. 72—Returned Material Tag (Obtain Locally)

TELETYPEWRITER COMPATIBLE "DATASPEED*" 40/2

WIRING DIAGRAMS

CONTENTS

CONTENTS

*Registered Trademark of AT&TCo

Prepared for American Telephone and Telegraph Company by Teletype Corporation

1. GENERAL

1.01 This section provides wiring diagrams and cable components referred to in Section 582-200-502.

1.02 The reasons for reissuing this section are:

(1) To add information on wiring diagrams 40P102, 40P153, 40P154, 40P201, 40P202, 40P203, and 40P253 Printers and 401640 Printer Cable Assembly.

(2) To add wiring information on late design 40PSU101 Power Supply.

(3) To correct wiring diagrams on KDP Arrangements.

Since this reissue is a general revision, no revision arrows have been used to denote significant changes.

1.03 The KD and KDP drawings give the complete wiring between the various components. The components are shown as blocks and are labeled accordingly. If it becomes necessary to check the wiring of one of the above listed components, the page number for that drawing will be given in the appropriate block on the station drawing on which it appears. Drawings of the wired frames for the controller(s) and display logic are not given.

1.04 Where possible, small notes indicating voltage levels have been added to aid in trouble locating. The location of any plug or cable can be attained by referring to Section 582-200-702.

Danger: Whenever work on the monitor is to be done, safety glasses should be worn. Also the high voltage lead to the CRT should never be probed.

1.05 The wiring of the data set to the phone line (and to the telephone set, if applicable) is not given in this section. Refer to the applicable data set 9-digit sections.

103G	—	591-026-200
103J	—	591-039-200
103JR	—	591-044-200
108F	—	591-042-100
108G	—	591-042-100
113A	—	591-033-200
113C	—	591-041-200
113CR	—	591-046-200
113D	—	591-040-200
113DR	—	591-047-200
201C	—	592-029-200
201CR	—	592-036-200
202C	—	592-015-200
202R	—	592-025-200
202S	—	592-028-200
202SR	—	592-037-200
202T	—	592-031-200
208A	—	592-027-200
208B	—	592-030-200
208BR	—	592-038-200
209A	—	592-032-200
212A	—	592-034-200
212AR	—	592-039-200

829 DATA AUXILIARY SET — 598-082-200

1.06 The wiring of ROP set (40C103 type controller) is in Section 582-200-102 references. The integrated ROP wiring (40C303 type controller) is in Section 582-200-404.

1.07 When ordering replaceable components, unless otherwise specified, prefix each part number with the letters "TP" (ie, TP410055).

2. WIRING DIAGRAMS

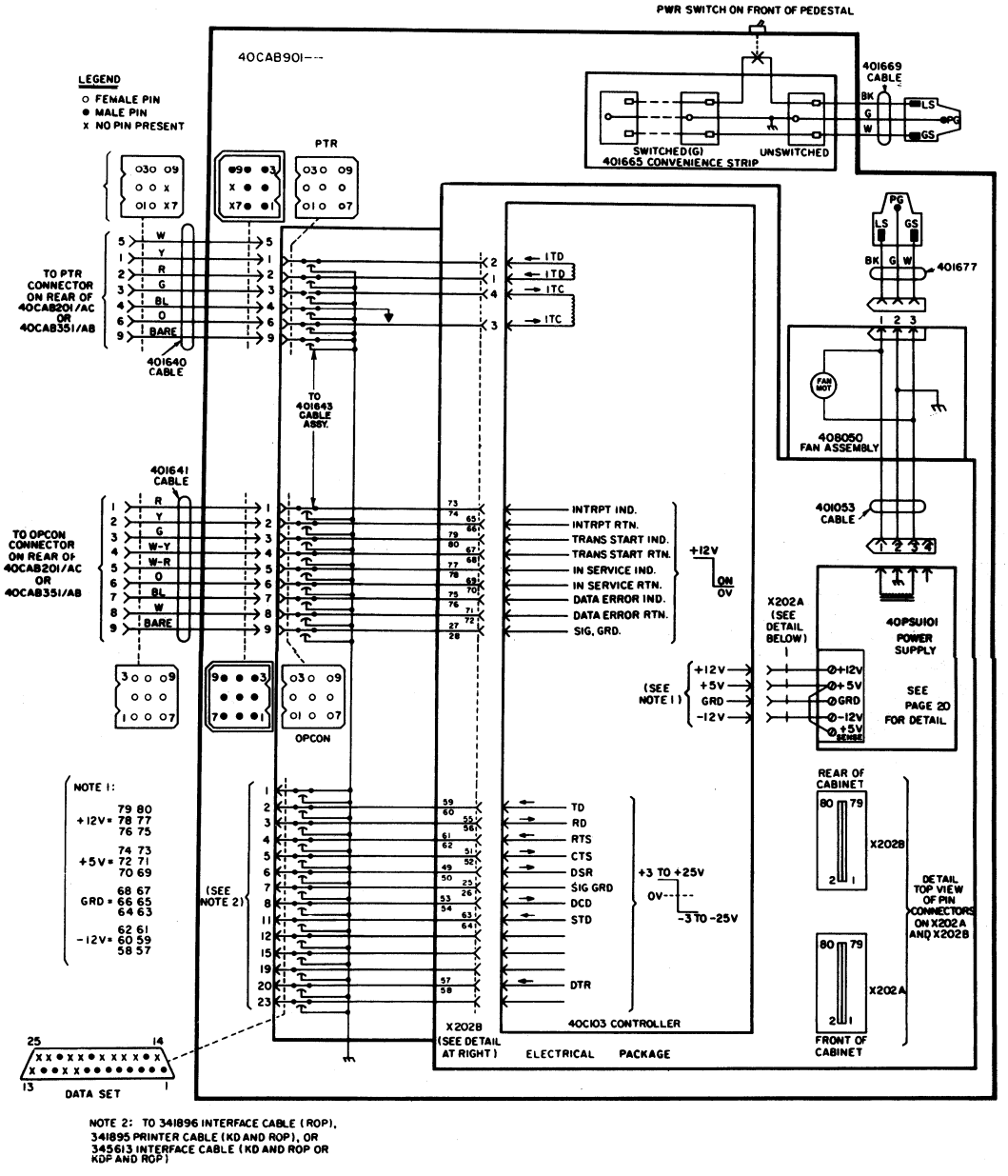


Fig. 1—ROP Cabinet

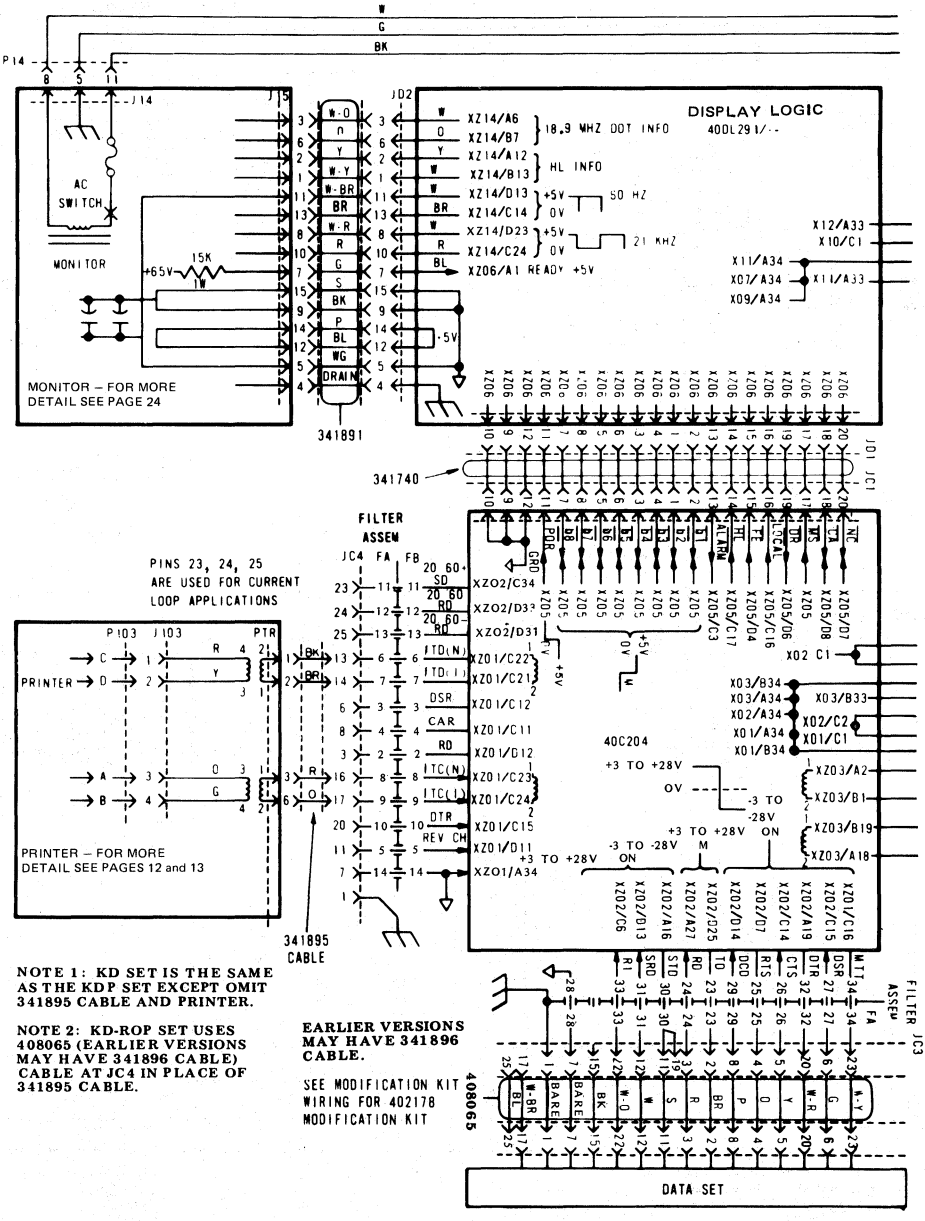


Fig. 2—KDP Set — Adjacent Printer

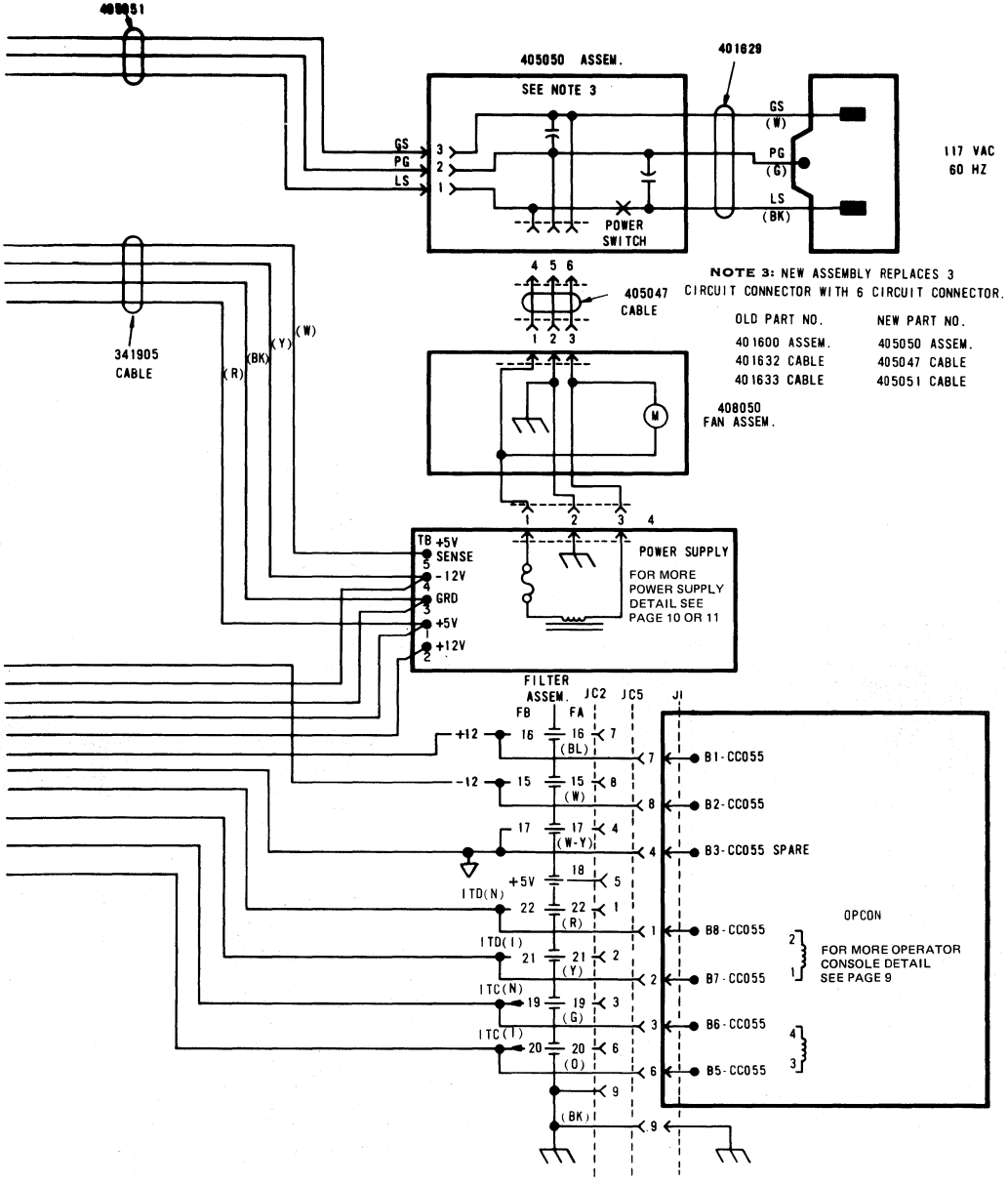

405050 ASSEM.
SEE NOTE 3
401629
GS
PG
LS
GS (W)
PG (G)
LS (BK)
POWER SWITCH
117 VAC 60 HZ
4 5 6
405047 CABLE
1 2 3
NOTE 3: NEW ASSEMBLY REPLACES 3 CIRCUIT CONNECTOR WITH 6 CIRCUIT CONNECTOR.
OLD PART NO. NEW PART NO.
401600 ASSEM. 405050 ASSEM.
401632 CABLE 405047 CABLE
401633 CABLE 405051 CABLE
341905 CABLE
(R) (BK) (Y) (W)
M
408050 FAN ASSEM.
1 2 3 4
TB +5V SENSE
-12V
GRD
+5V
+12V
POWER SUPPLY
FOR MORE POWER SUPPLY DETAIL SEE PAGE 10 OR 11
FILTER ASSEM.
FB FA
JC2 JC5 J1
+12
-12
+5V
ITD(N)
ITD(I)
ITC(N)
ITC(I)
(BL) (W) (W-Y) (R) (Y) (G) (O) (BK)
B1-CC055
B2-CC055
B3-CC055 SPARE
B8-CC055
B7-CC055
B6-CC055
B5-CC055
OPCON
FOR MORE OPERATOR CONSOLE DETAIL SEE PAGE 9

Fig. 2 (Cont)

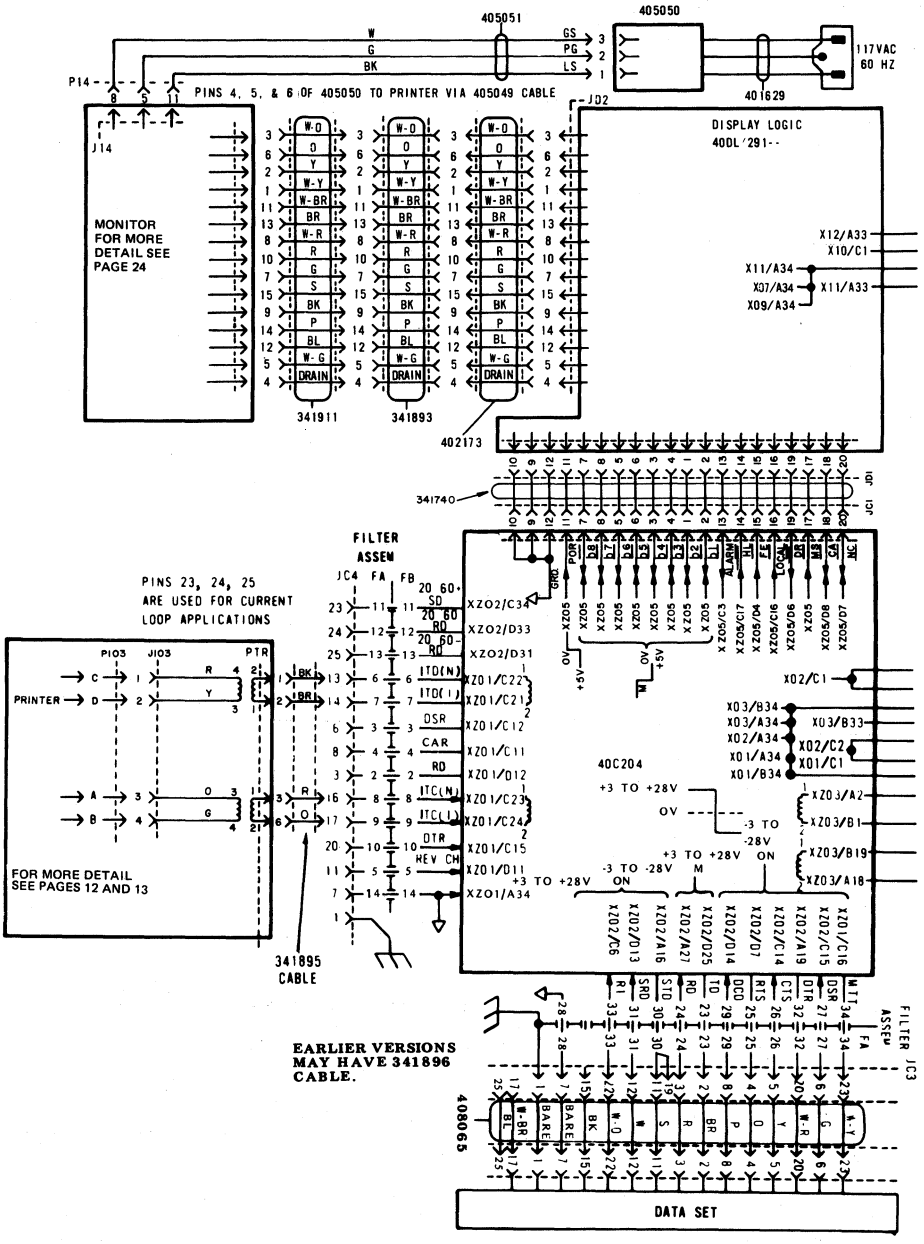


Fig. 3—KDP Set — Printer Under Monitor

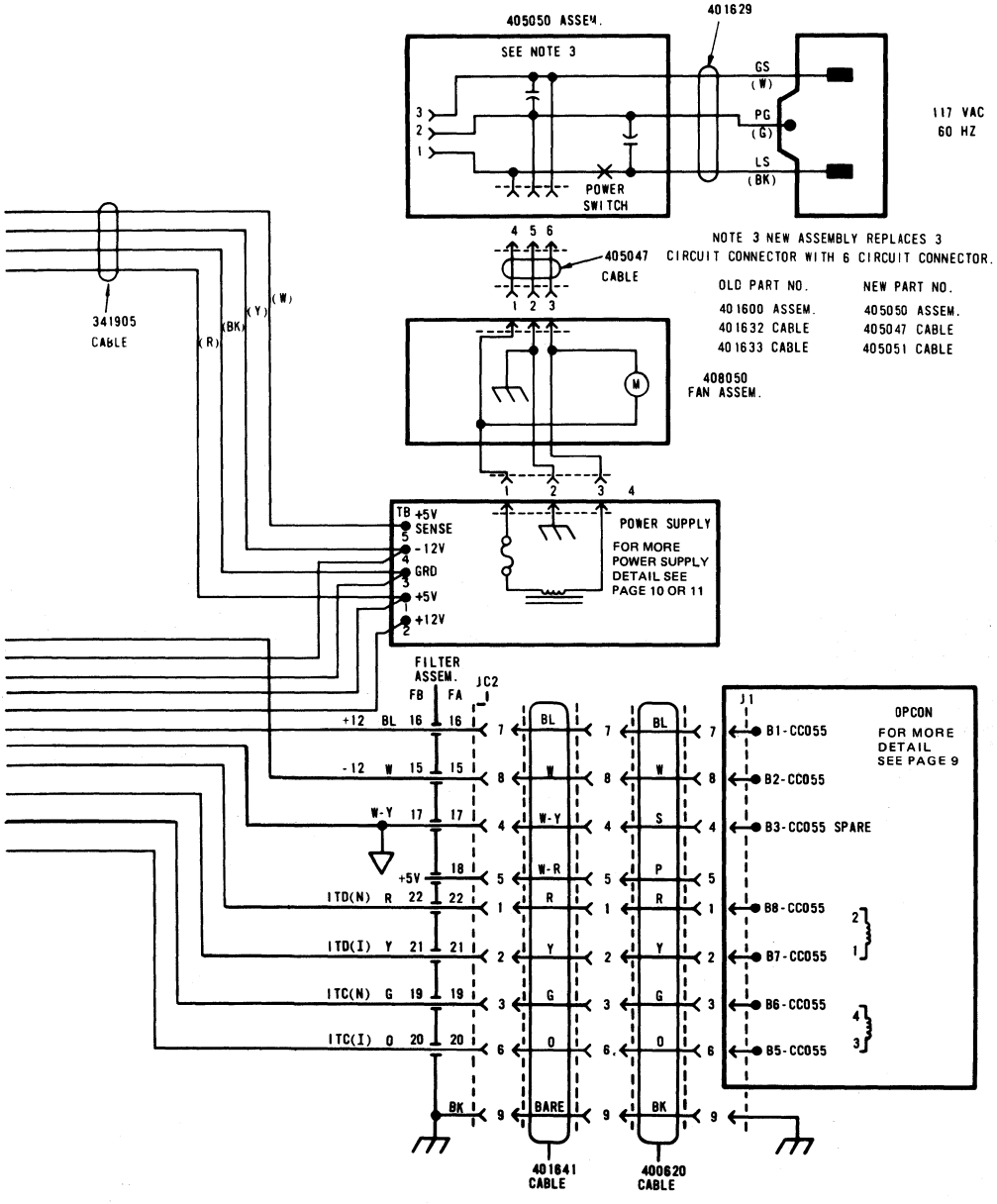

405050 ASSEM.
SEE NOTE 3
401629
GS
(W)
PG
(G)
LS
(BK)
117 VAC
60 HZ
POWER
SWITCH
4 5 6
405047
CABLE
1 2 3
NOTE 3 NEW ASSEMBLY REPLACES 3
CIRCUIT CONNECTOR WITH 6 CIRCUIT CONNECTOR.
OLD PART NO.
NEW PART NO.
401600 ASSEM.
405050 ASSEM.
401632 CABLE
405047 CABLE
401633 CABLE
405051 CABLE
341905
CABLE
(BK)
(R)
(Y)
(W)
408050
FAN ASSEM.
M
1 2 3 4
TB +5V
SENSE
-12V
GRD
+5V
+12V
POWER SUPPLY
FOR MORE
POWER SUPPLY
DETAIL SEE
PAGE 10 OR 11
FILTER
ASSEM.
FB
FA
JC2
J1
OPCON
FOR MORE
DETAIL
SEE PAGE 9
+12 BL 16 16
-12 W 15 15
W-Y 17 17
+5V 18
ITD(N) R 22 22
ITD(I) Y 21 21
ITC(N) G 19 19
ITC(I) O 20 20
BK
BL
W
W-Y
W-R
R
Y
G
O
BARE
S
P
BK
B1-CC055
B2-CC055
B3-CC055 SPARE
B8-CC055
B7-CC055
B6-CC055
B5-CC055
401641
CABLE
400620
CABLE

Fig. 3 (Cont)

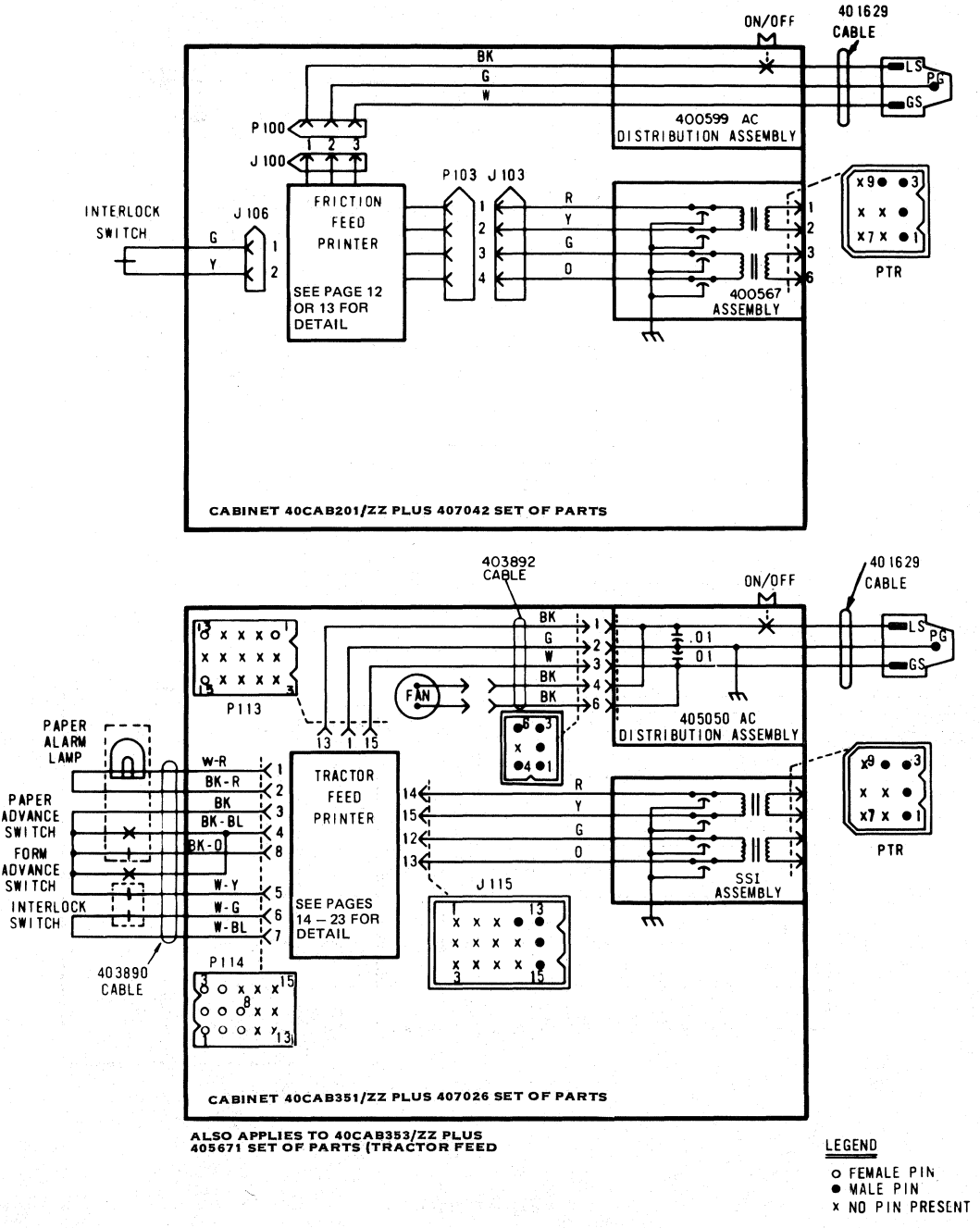
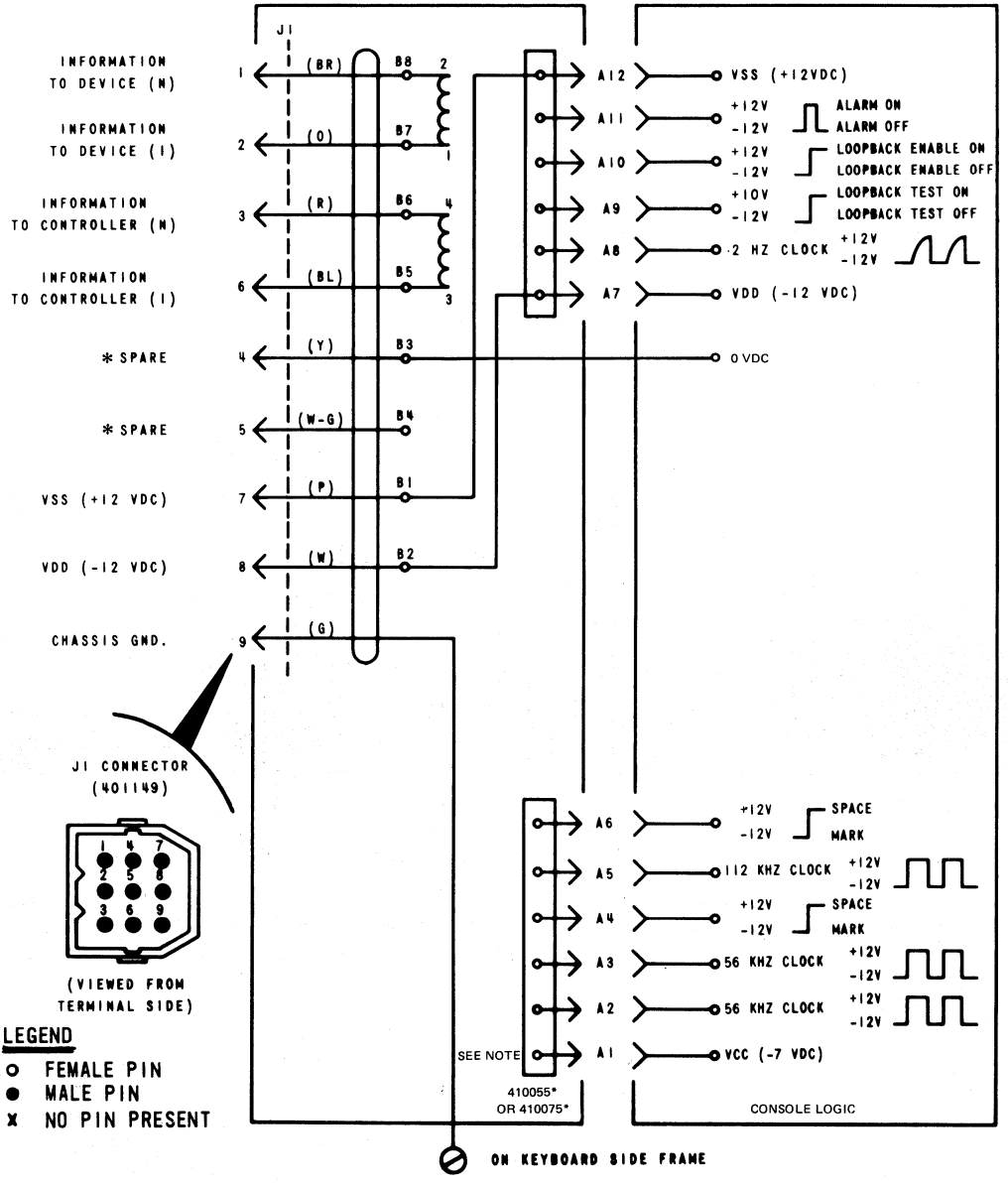


Fig. 4—Printer Cabinets



* PRESENT ONLY ON EARLY UNITS.

Note: Connector A1 is present only on early units.

Fig. 5—40K101/CAK Operator Console

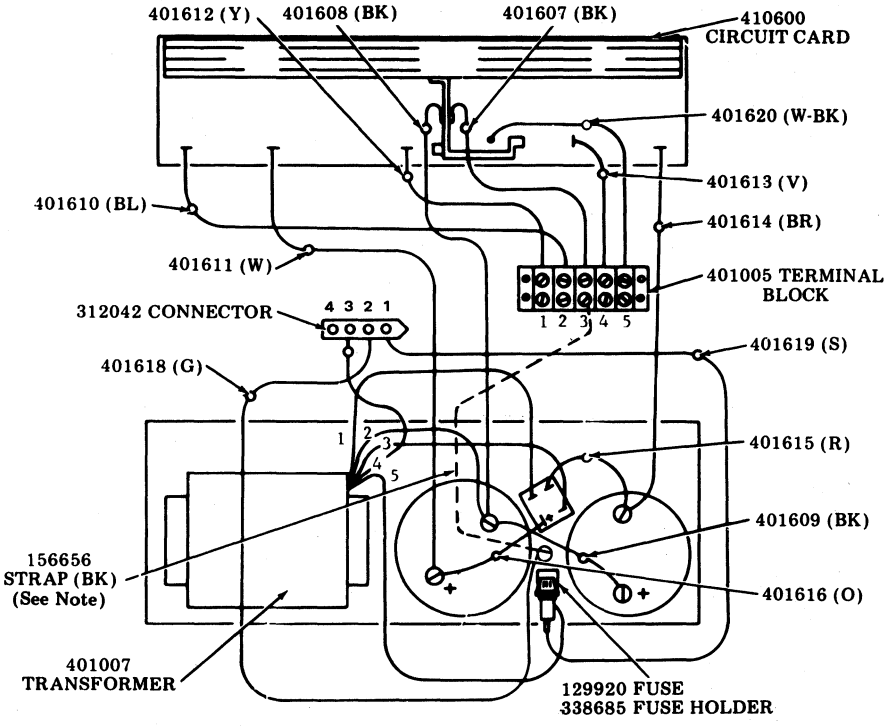


Fig. 6—40PSU101 Power Supply (Early Design)

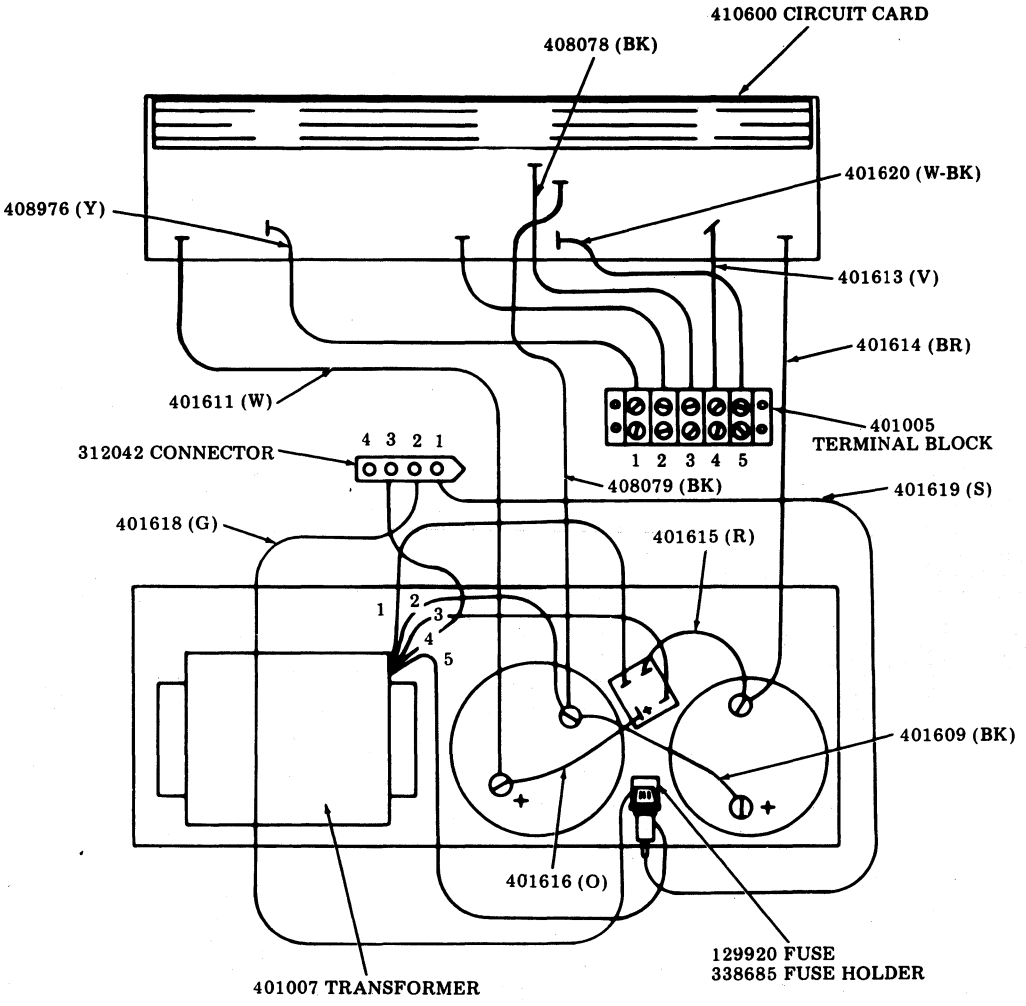


Fig. 6—40PSU101 Power Supply (Late Design) (Cont)

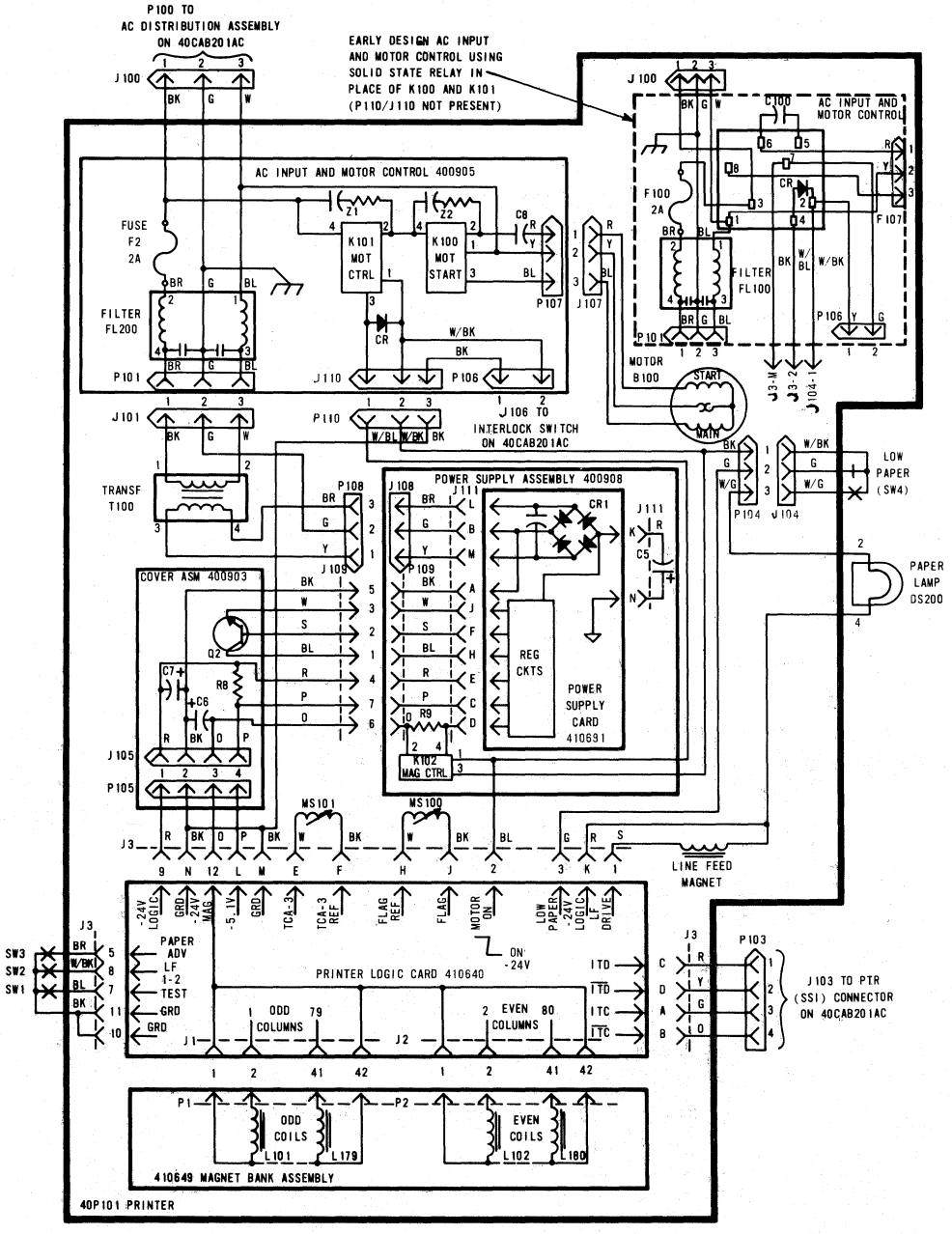


Fig. 7—40P101/ZZ Friction Feed Printer

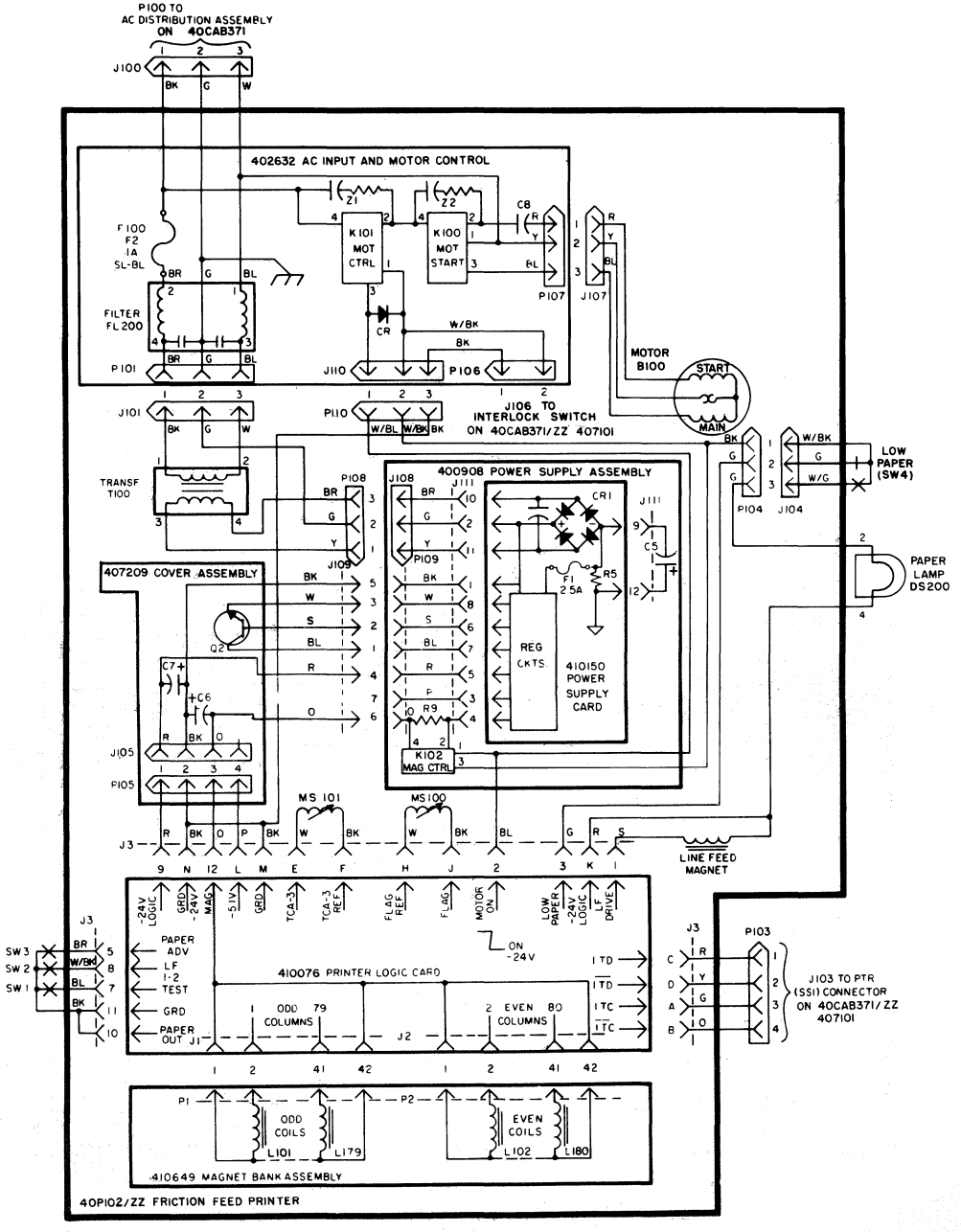


Fig. 8—40P102/ZZ Friction Feed Printer

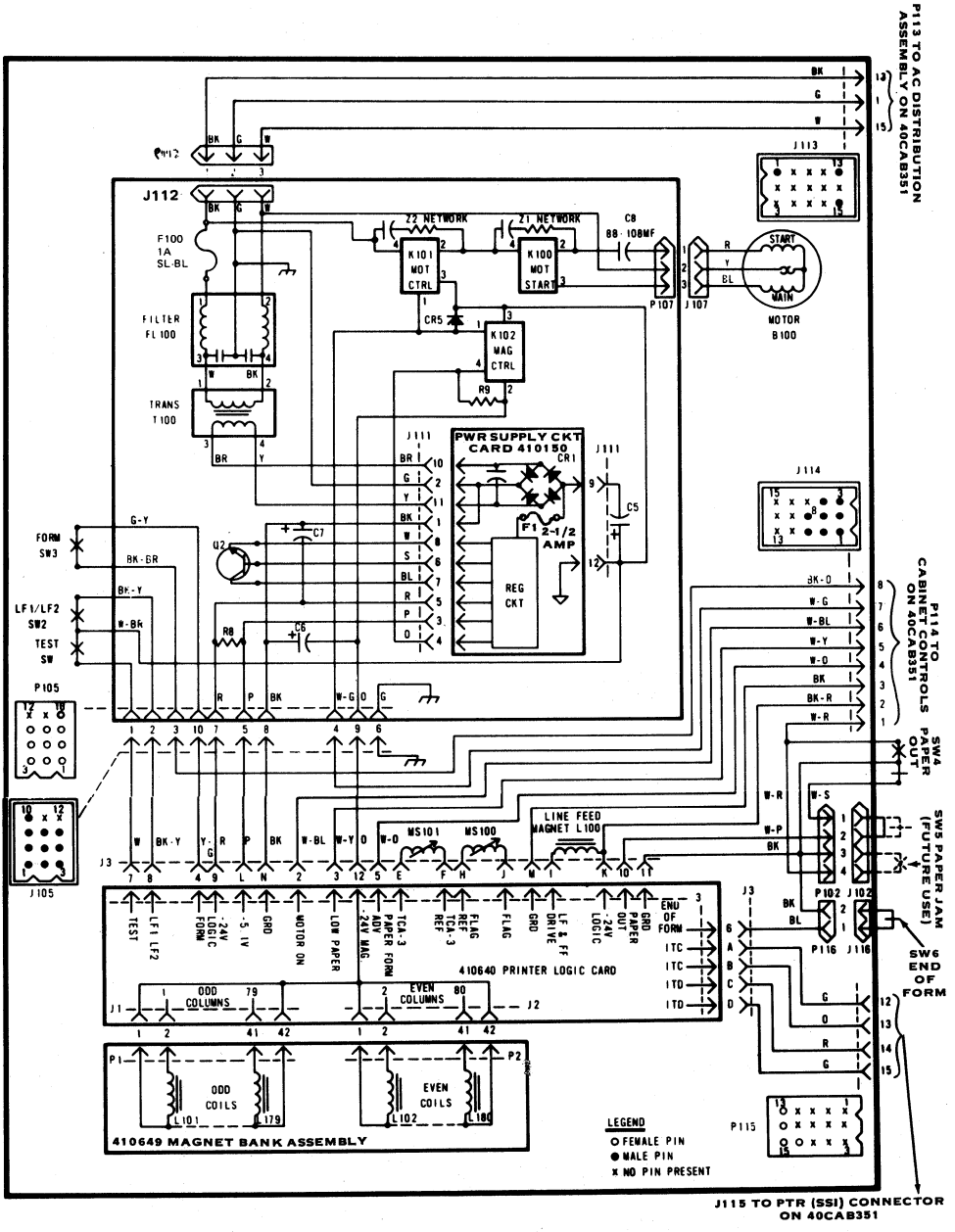


Fig. 9—40P151/ZZ 80-Column Tractor Feed Printer
(Without 410082 Circuit Card)

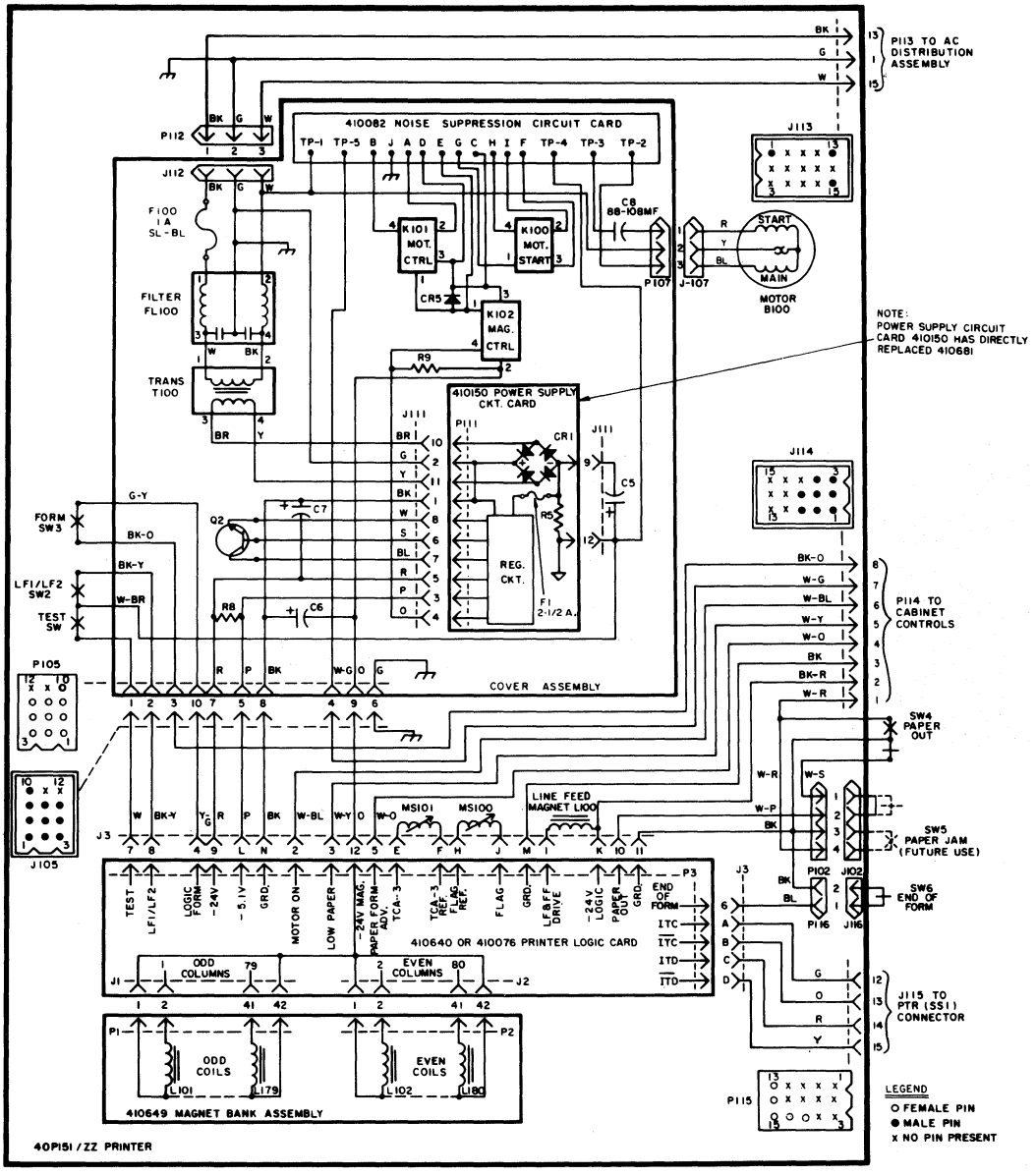


Fig. 10—40P151/ZZ 80-Column Tractor Feed Printer
(With 410082 Circuit Card)

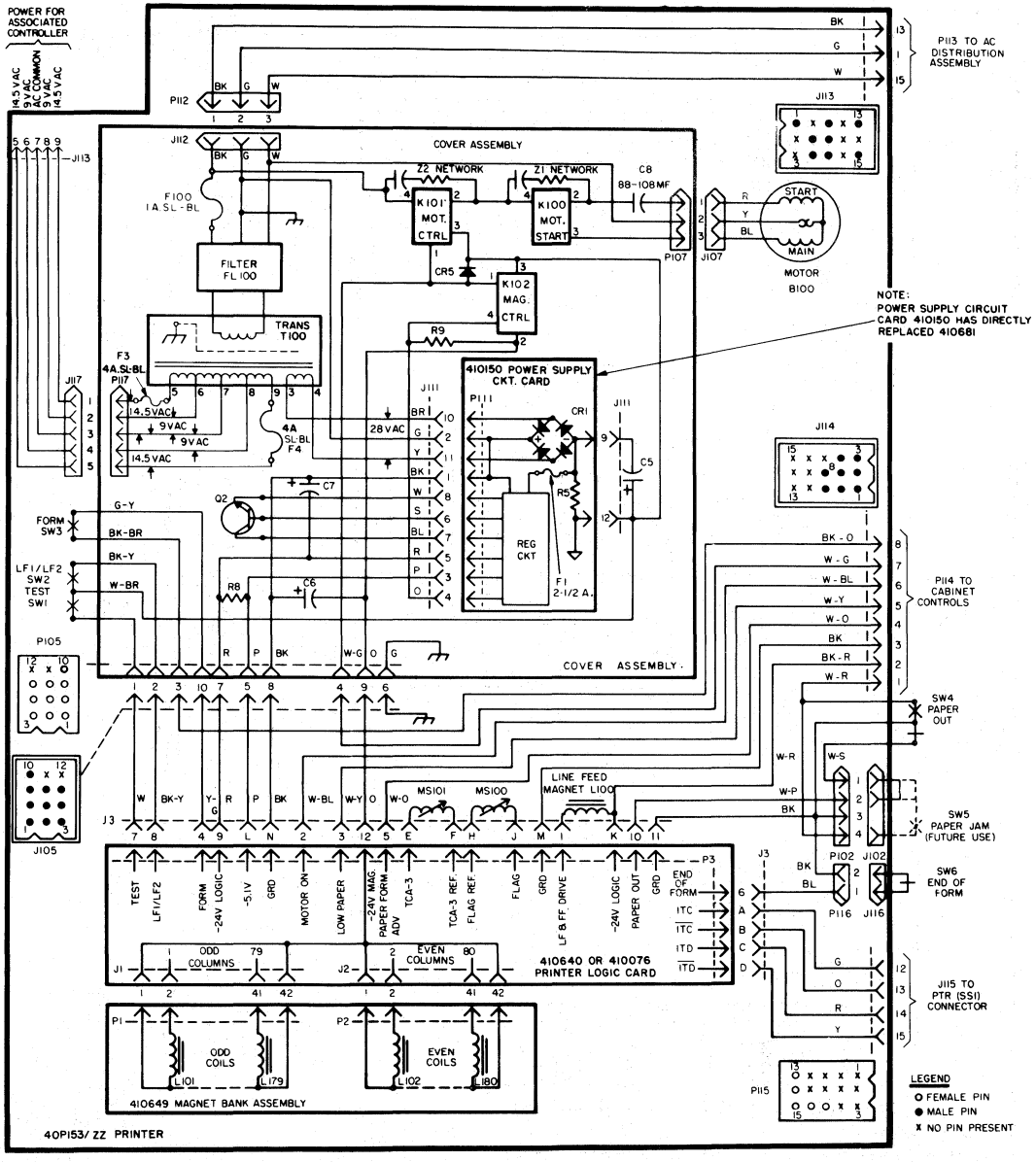


Fig. 11—40P153 Tractor Feed Printer
(Without Circuit Card 410082)

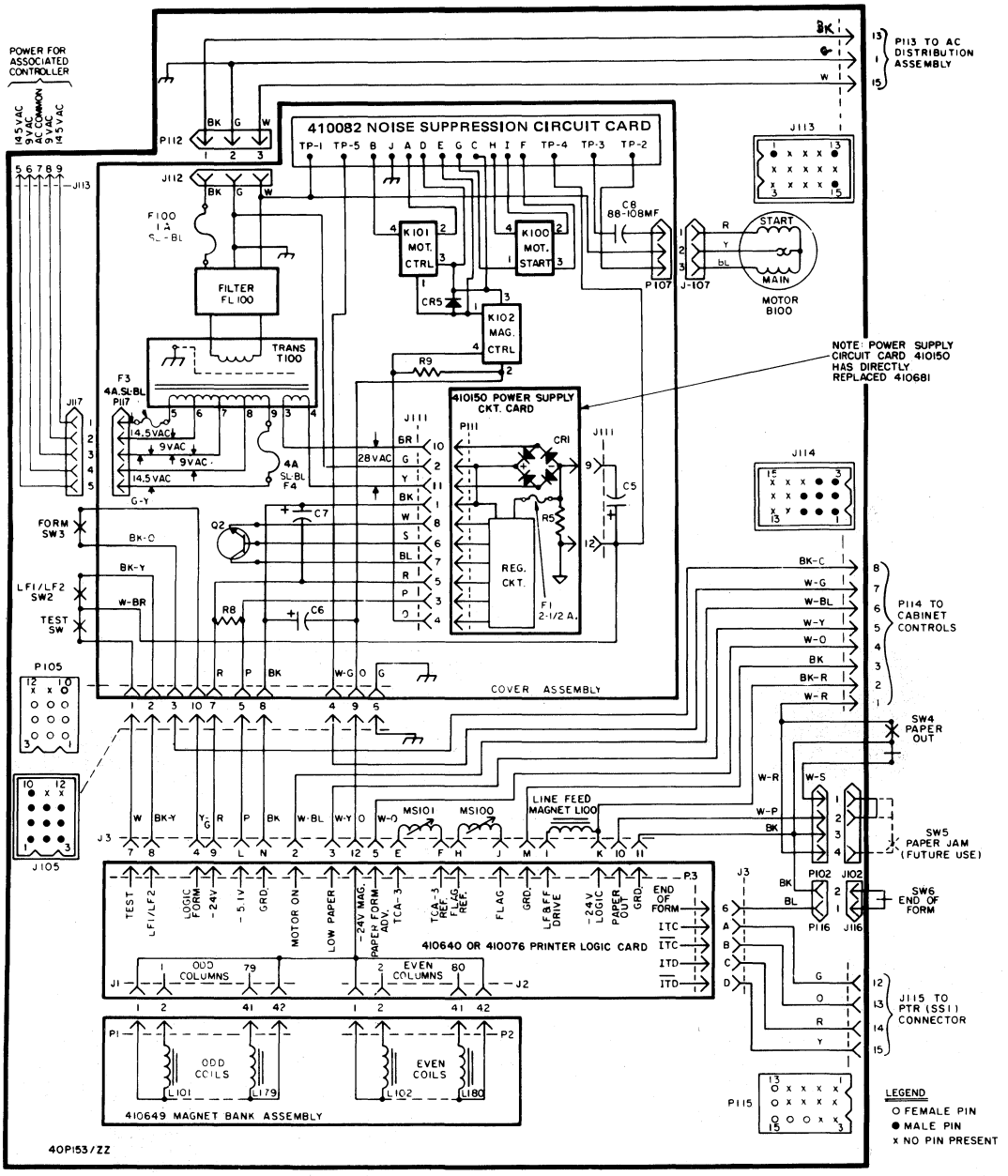


Fig. 12—40P153 Tractor Feed Printer
(With Circuit Card 410082)

Note: Grounding Option — Inserting Option Screw A on component side of 410151 circuit card connects -24 V dc circuit common to chassis. Inserting Option Screw B on component side of 410151 circuit card connects -24 V dc circuit common to +11.3 V dc circuit common. Inserting Option Screw A or B into noncomponent side of card leaves connection open. Refer to Option 61.

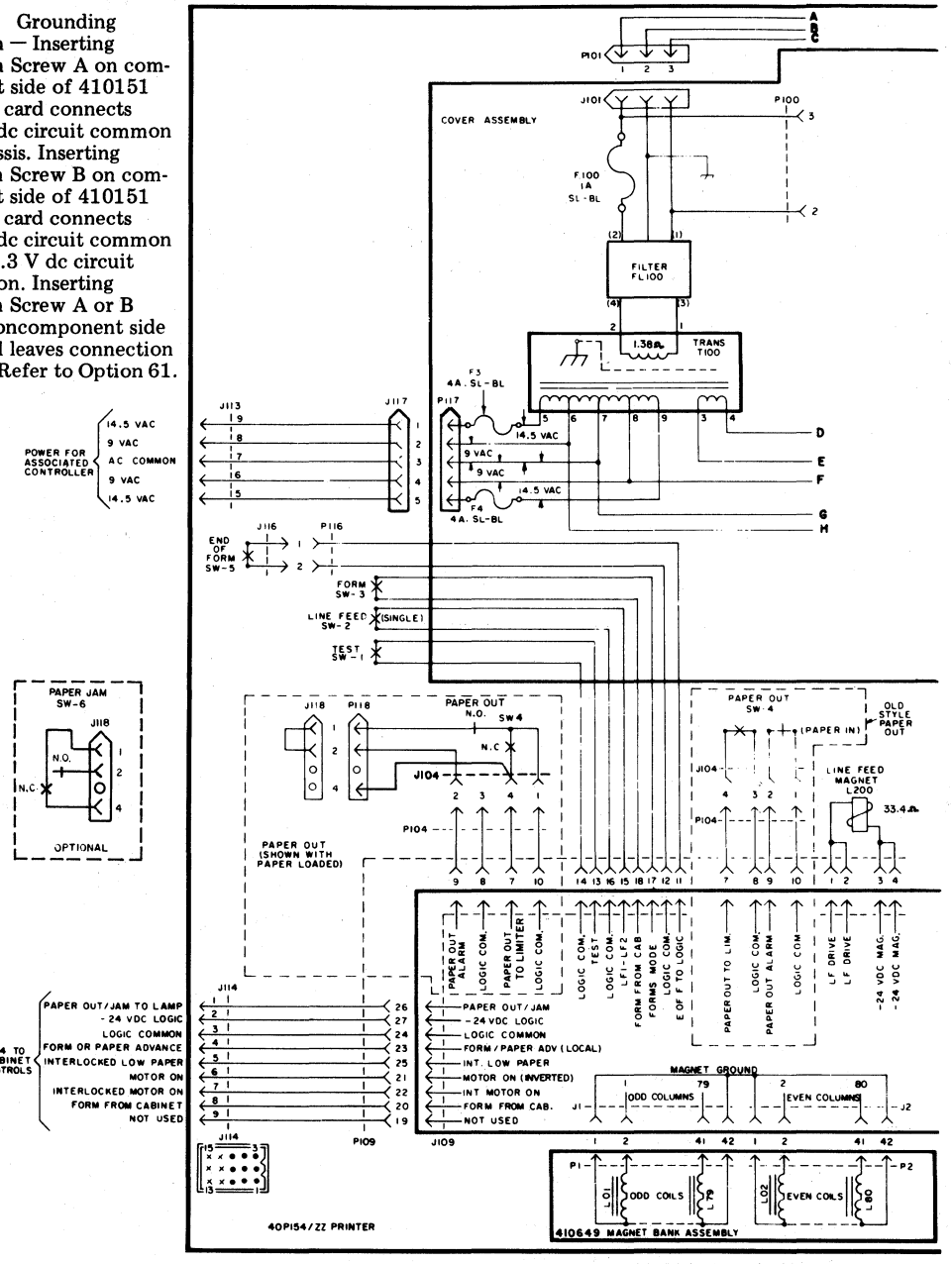


Fig. 13—40P154 Tractor Feed Printer

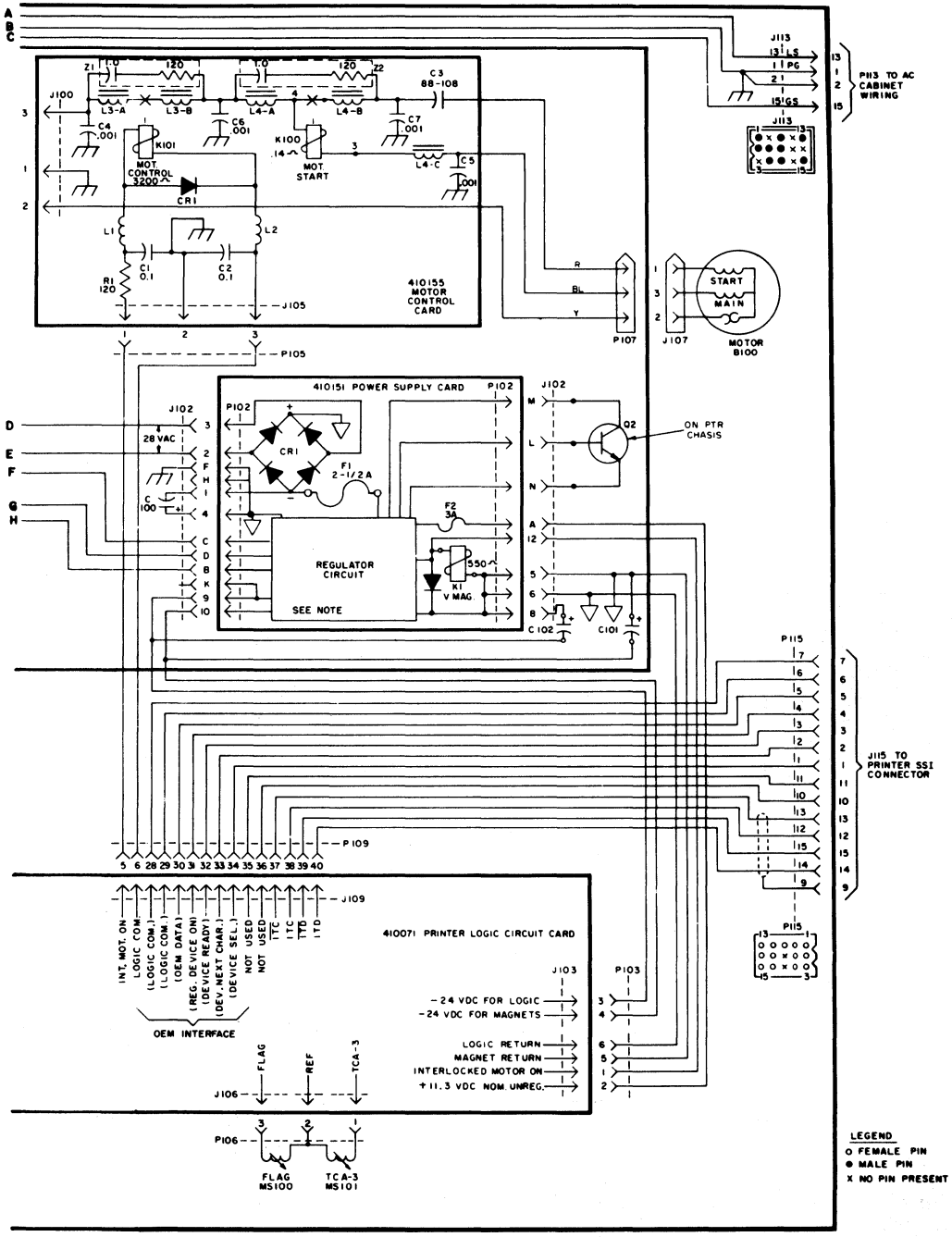

410155 MOTOR CONTROL CARD
MOT CONTROL 3200
MOT START
410151 POWER SUPPLY CARD
REGULATOR CIRCUIT
SEE NOTE
28 VAC
ON PTR CHASIS
J113 TO AC CABINET WIRING
J115 TO PRINTER SSI CONNECTOR
START
MAIN
MOTOR B100
410071 PRINTER LOGIC CIRCUIT CARD
OEM INTERFACE
INT. MOT. ON
LOGIC COM.
(LOGIC COM.)
(LOGIC COM.)
(OEM DATA)
(REG. DEVICE ON)
(DEVICE READY)
(DEV. NEXT CHAR.)
(DEVICE SEL.)
NOT USED
NOT USED
ITC
ITC
ITD
ITD
-24 VDC FOR LOGIC
-24 VDC FOR MAGNETS
LOGIC RETURN
MAGNET RETURN
INTERLOCKED MOTOR ON
+11.3 VDC NOM. UNREG.
FLAG
REF
TCA-3
FLAG MS100
TCA-3 MS101
LEGEND
FEMALE PIN
MALE PIN
NO PIN PRESENT

Fig. 13 (Cont)

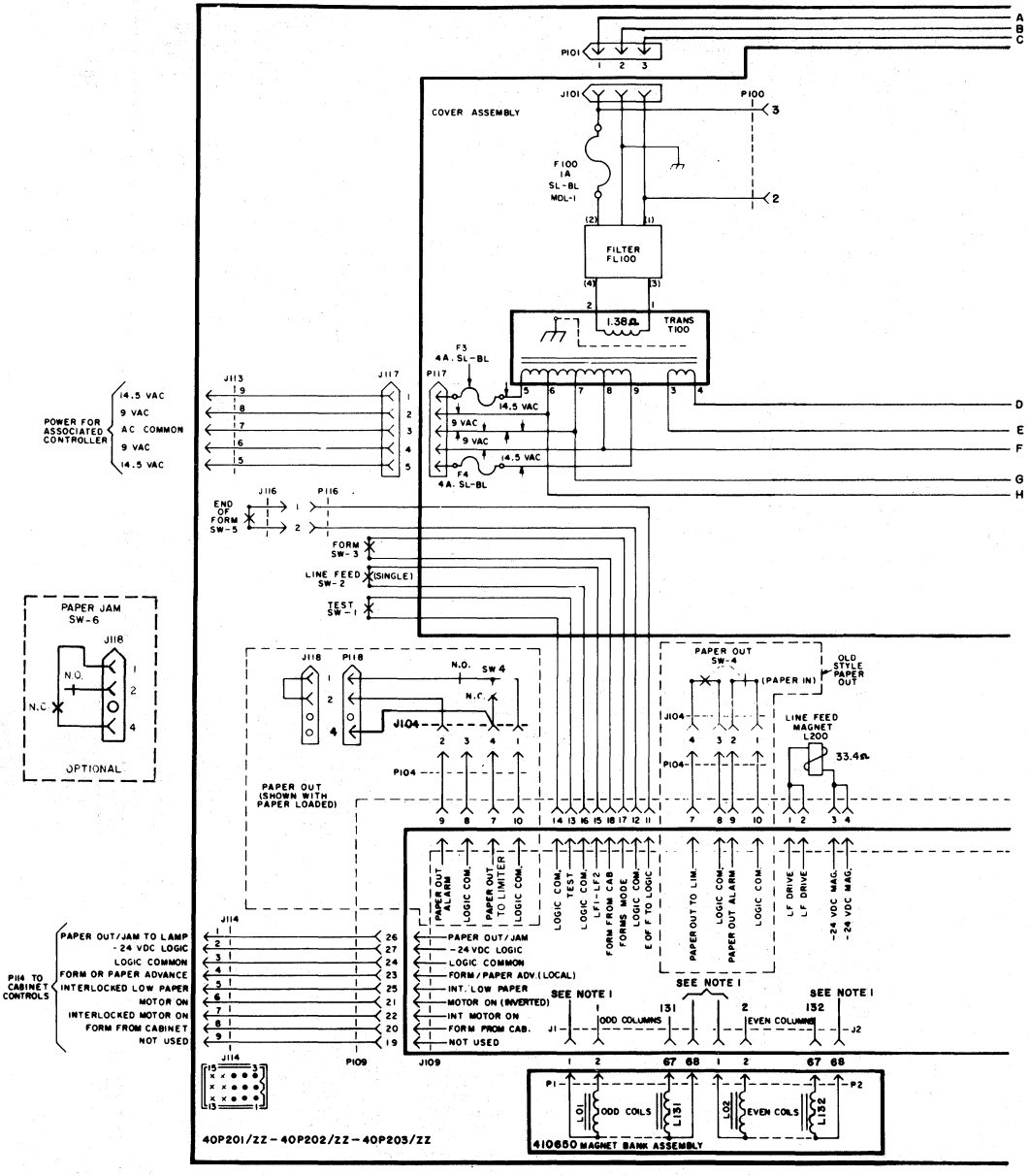


Fig. 14—40P201, 40P202 and 40P203 Tractor Feed Printers

Note 1: If the printer is equipped with a 410729 logic card, pins 1 and 68 of the 410650 magnet bank assemblies will be connected to the -24 V magnet supply voltage. If the printer is equipped with a 410072 logic card, pins 1 and 68 of the 410650 magnet bank assemblies will be connected to magnet ground.

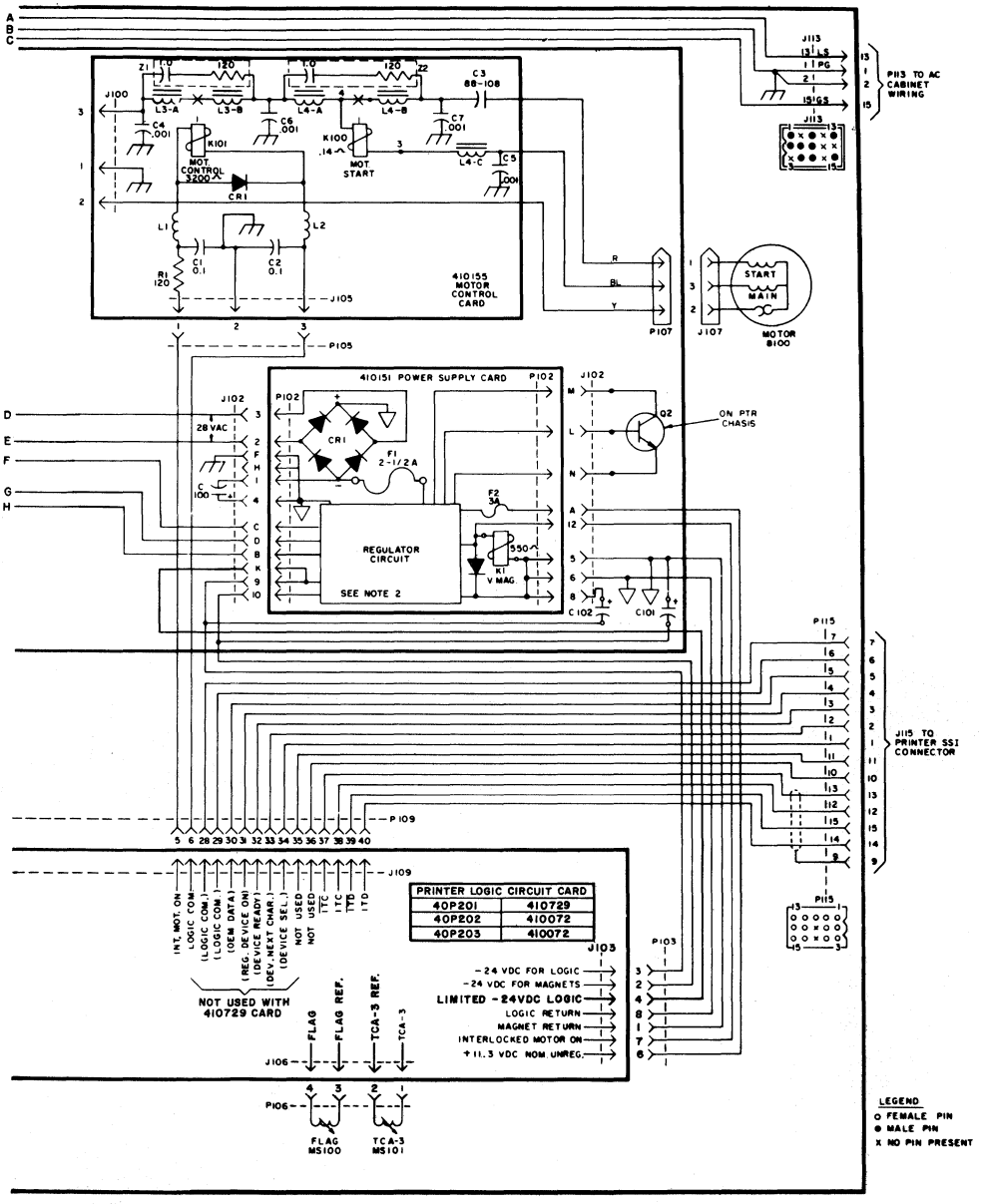


Fig. 14 (Cont)

Note 2: Grounding Option — Inserting Option Screw A on component side of 410151 circuit card connects -24 V dc circuit common to chassis. Inserting Option Screw B on component side of 410151 circuit card connects -24 V dc circuit common to +11.3 V dc circuit common. Inserting either screw into noncomponent side of card leaves connection open.

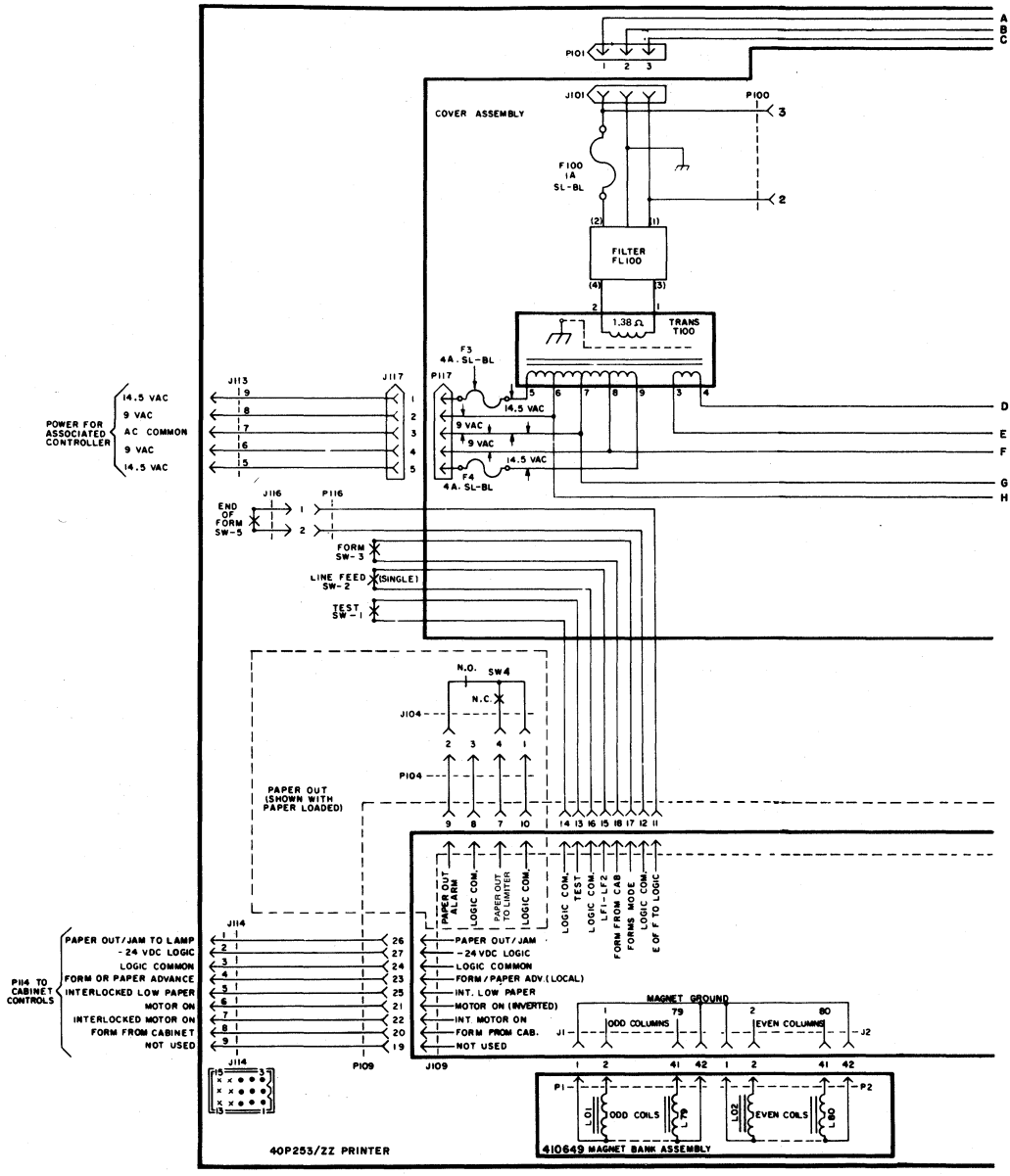


Fig. 15—40P253 Forms Access Tractor Feed Printer

Note: Grounding Option — Inserting Option Screw A on component side of 410151 circuit card connects -24 V dc circuit common to chassis. Inserting Option Screw B on component side of 410151 circuit card connects -24 V dc circuit common to +11.3 V dc circuit common. Inserting Option Screw A or B into noncomponent side of card leaves connection open. Refer to Option 61.

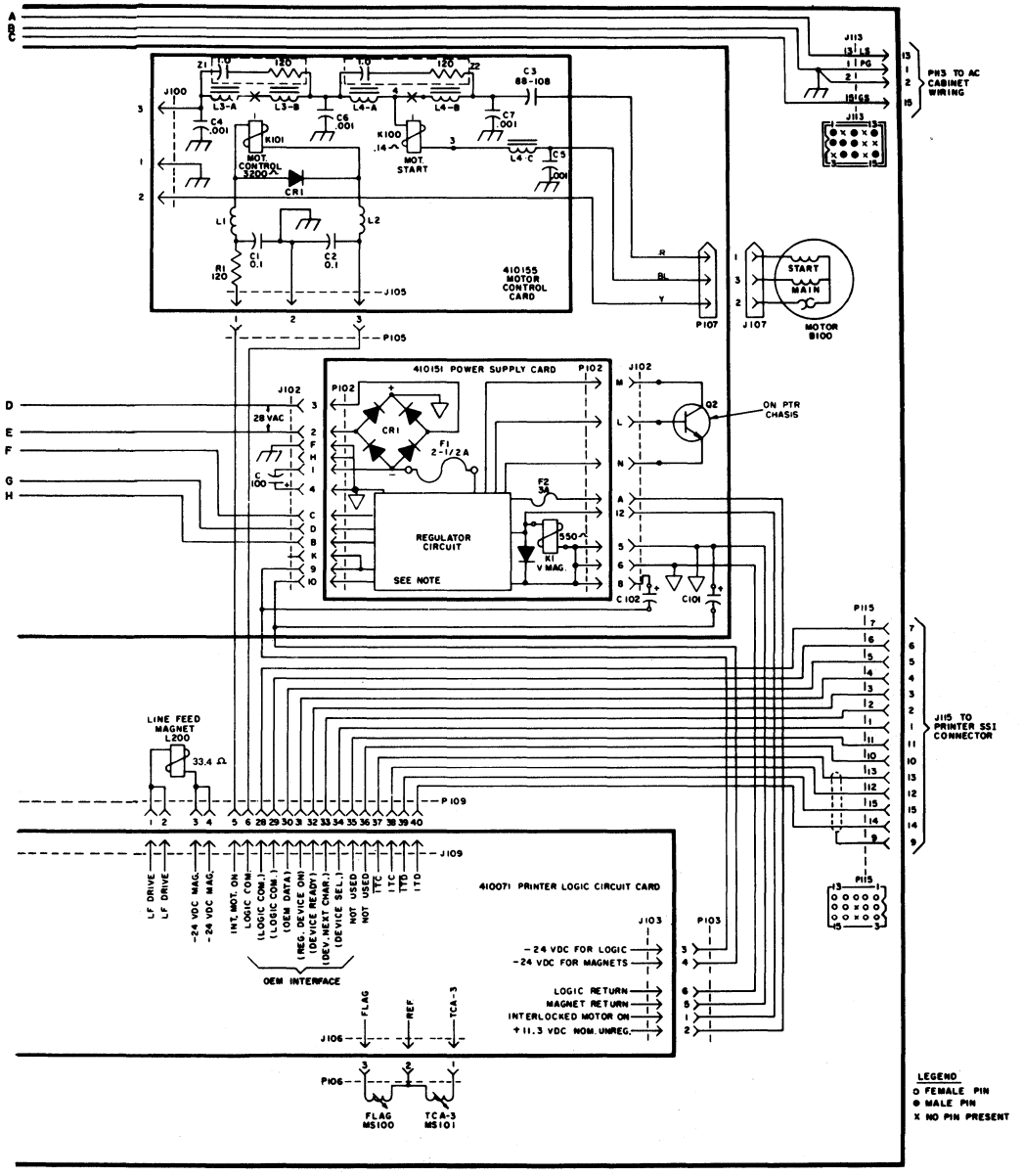

410155 MOTOR CONTROL CARD
MOT. CONTROL 3200Δ
MOT. START
CR1
K101
K100
L1
L2
L3-A
L3-B
L4-A
L4-B
L4-C
C1 0.1
C2 0.1
C3 88-108
C4 .001
C5 .001
C6 .001
C7 .001
R1 120
J100
J105
P105
J107
P107
START
MAIN
MOTOR B100
410151 POWER SUPPLY CARD
P102
J102
28 VAC
CR1
F1 2-1/2A
F2 3A
C100
REGULATOR CIRCUIT
SEE NOTE
K1 V MAG.
Q2
ON PTR CHASIS
C102
C101
J113
PH3 TO AC CABINET WIRING
P115
J115 TO PRINTER SSI CONNECTOR
LINE FEED MAGNET L200
33.4 Ω
P109
J109
410071 PRINTER LOGIC CIRCUIT CARD
LF DRIVE
LF DRIVE
-24 VDC MAG.
-24 VDC MAG.
INT. MOT. ON
LOGIC COM.
(LOGIC COM.)
(LOGIC COM.)
(OEM DATA)
(REG. DEVICE ON)
(DEVICE READY)
(DEV. NEXT CHAR.)
(DEVICE SEL.)
NOT USED
NOT USED
ITC
ITC
ITD
ITD
OEM INTERFACE
J103
P103
-24 VDC FOR LOGIC
-24 VDC FOR MAGNETS
LOGIC RETURN
MAGNET RETURN
INTERLOCKED MOTOR ON
+11.3 VDC NOM. UNREG.
FLAG
REF
TCA-3
J106
P106
FLAG MS100
TCA-3 MS101
LEGEND
O FEMALE PIN
● MALE PIN
X NO PIN PRESENT

Fig. 15 (Cont)

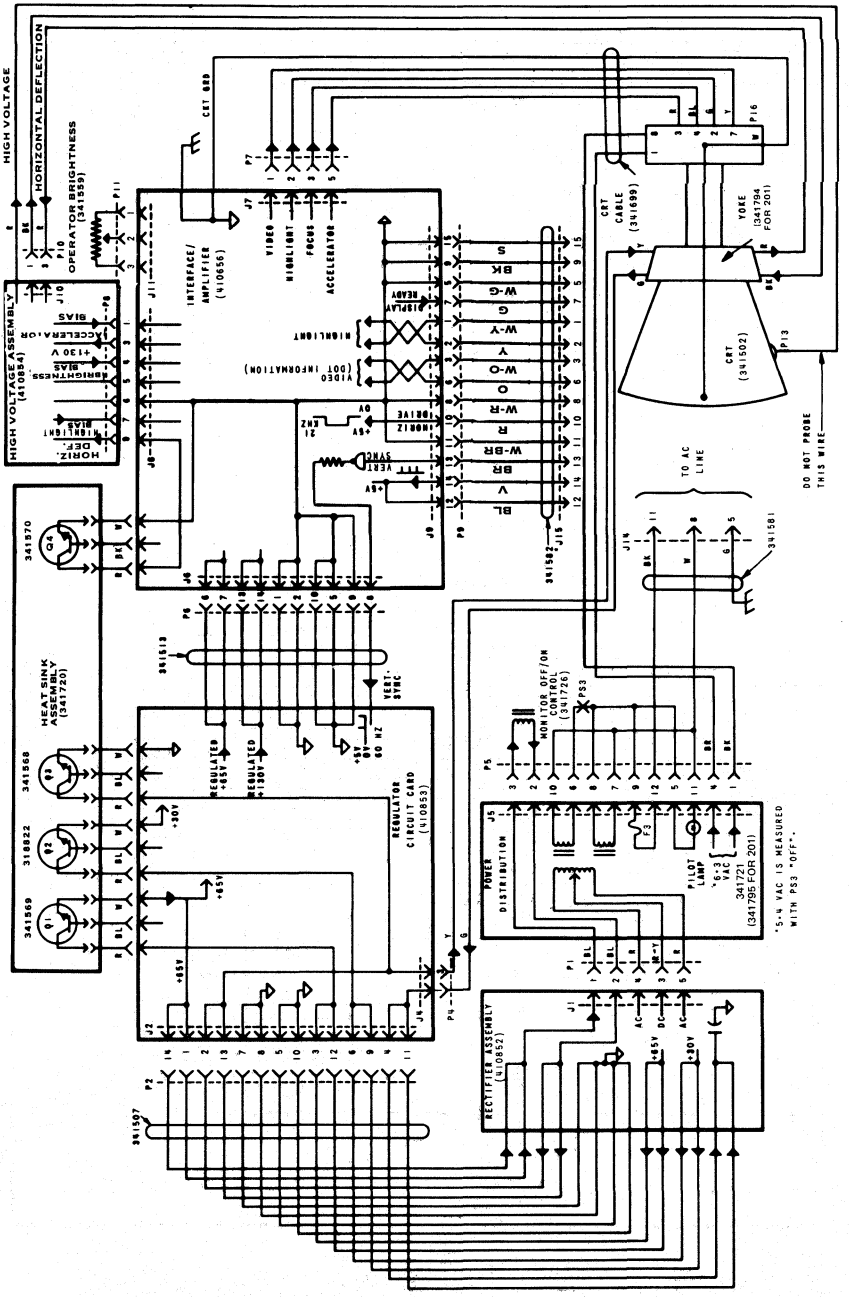


Fig. 16—40MN101 and 40MN201 Display Monitors

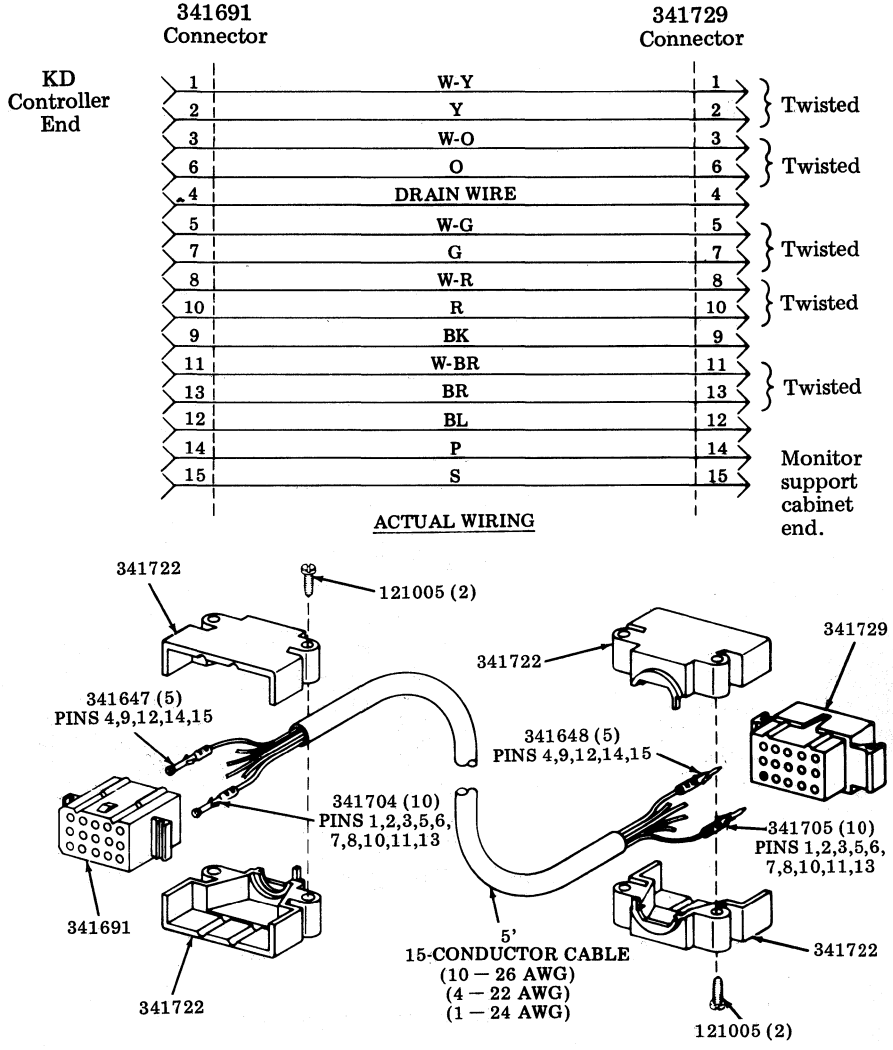
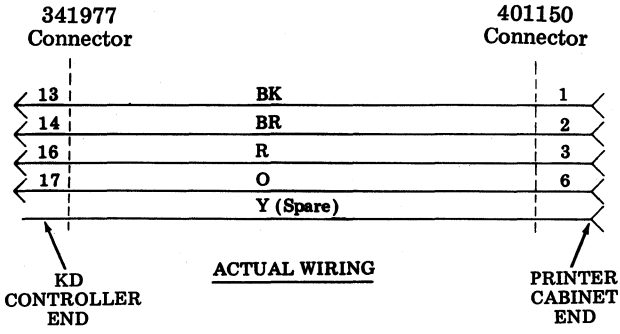


Fig. 17—341893 Monitor Extension Cable Assembly



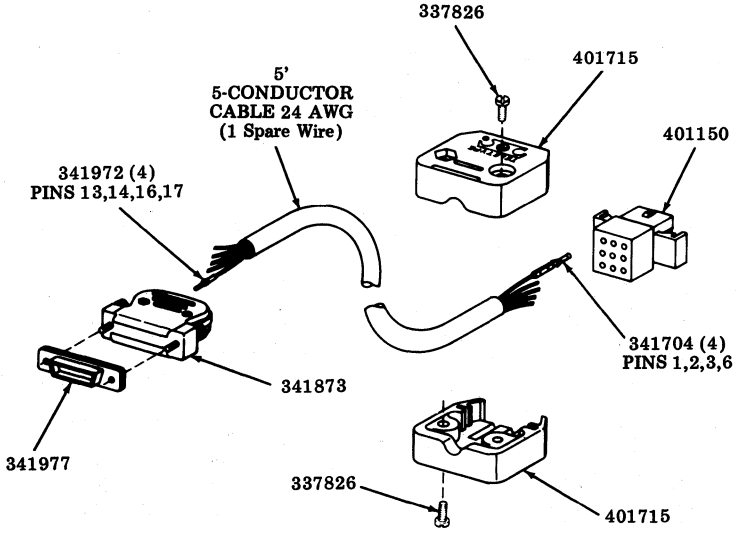


Fig. 18—341895 Printer Extension Cable Assembly (SSI)

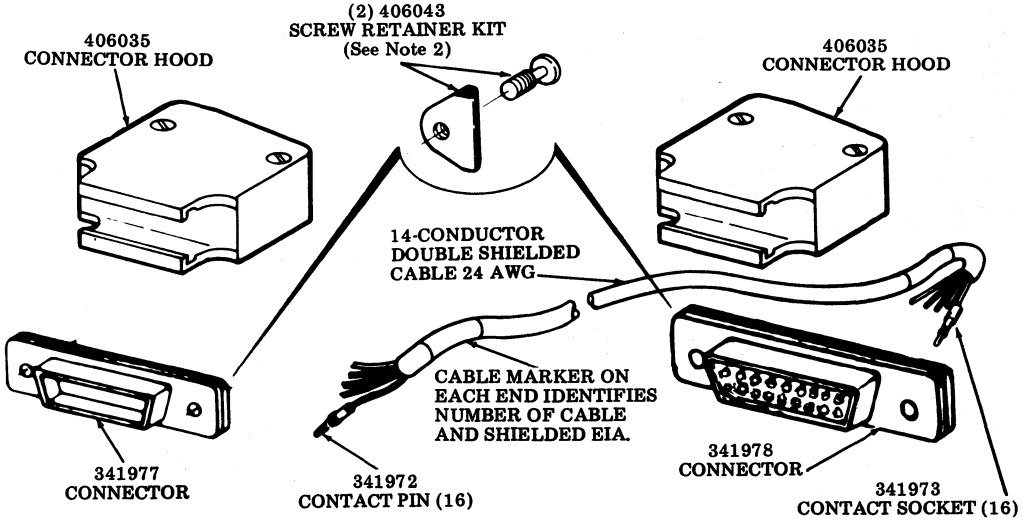
341977 Connector		341978 Connector
1	OUTER DRAIN	1
2	BR	2
3	R	3
4	O	4
5	Y	5
6	G	6
7	INNER DRAIN	7
8	P	8
11	S	11
12	W	12
15	W-BK	15
17	W-BR	17
20	W-R	20
22	W-O	22
23	W-Y	23
25	BL	25

Data Set End (See Note 1)

Note 1: ROP end in KD-ROP applications.

Mates to KD

ACTUAL WIRING

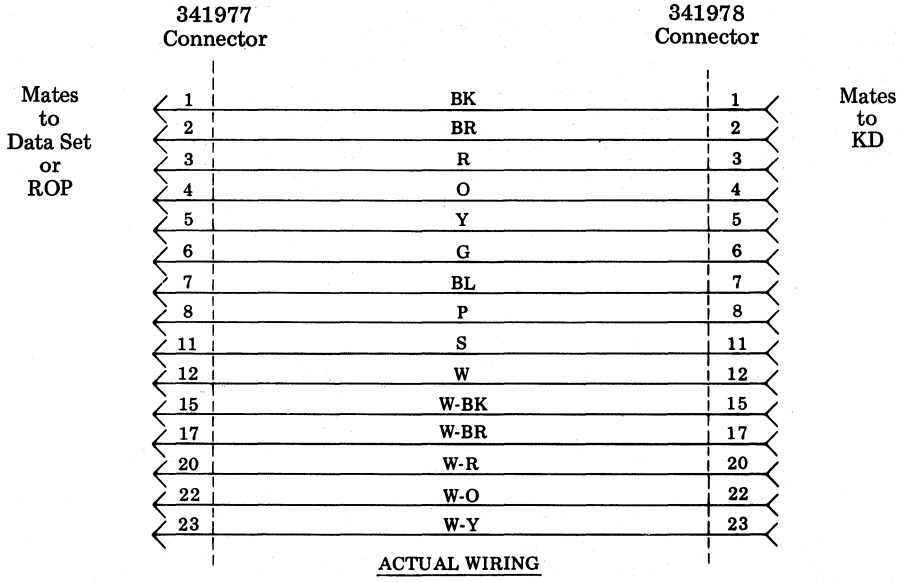


CABLE	LENGTH
408065	7 FT
408066	12 FT
408067	25 FT
408068	50 FT
430569	3 FT

Note 2: Each 406043 screw retainer kit contains (2) screws and (2) retainers.

Note 3: The 341896 cable assembly is replaced by the 408065 shielded cable assembly in the 40/2 KD, KDP, and KD-ROP.

Fig. 19—430569, 408065, 408066, 408067, or 408068 EIA Data Set Cable Assembly



Note 1: 341896 cable is replaced by 408065 shielded cable assembly in 40/2.

Note 2: 341896 cable is also used in KD-ROP to connect KD to ROP.

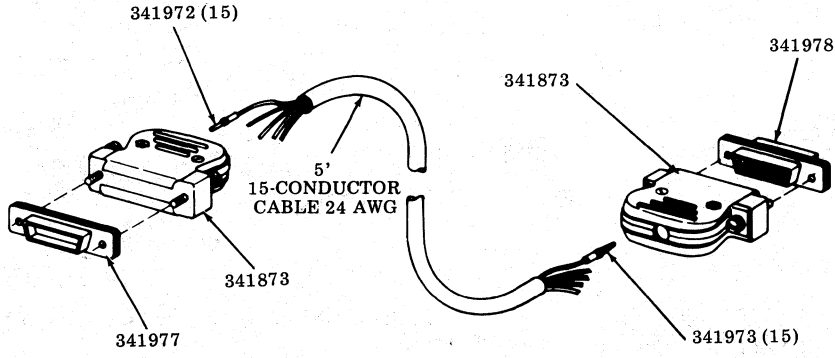


Fig. 20—341896 Data Set Cable Assembly

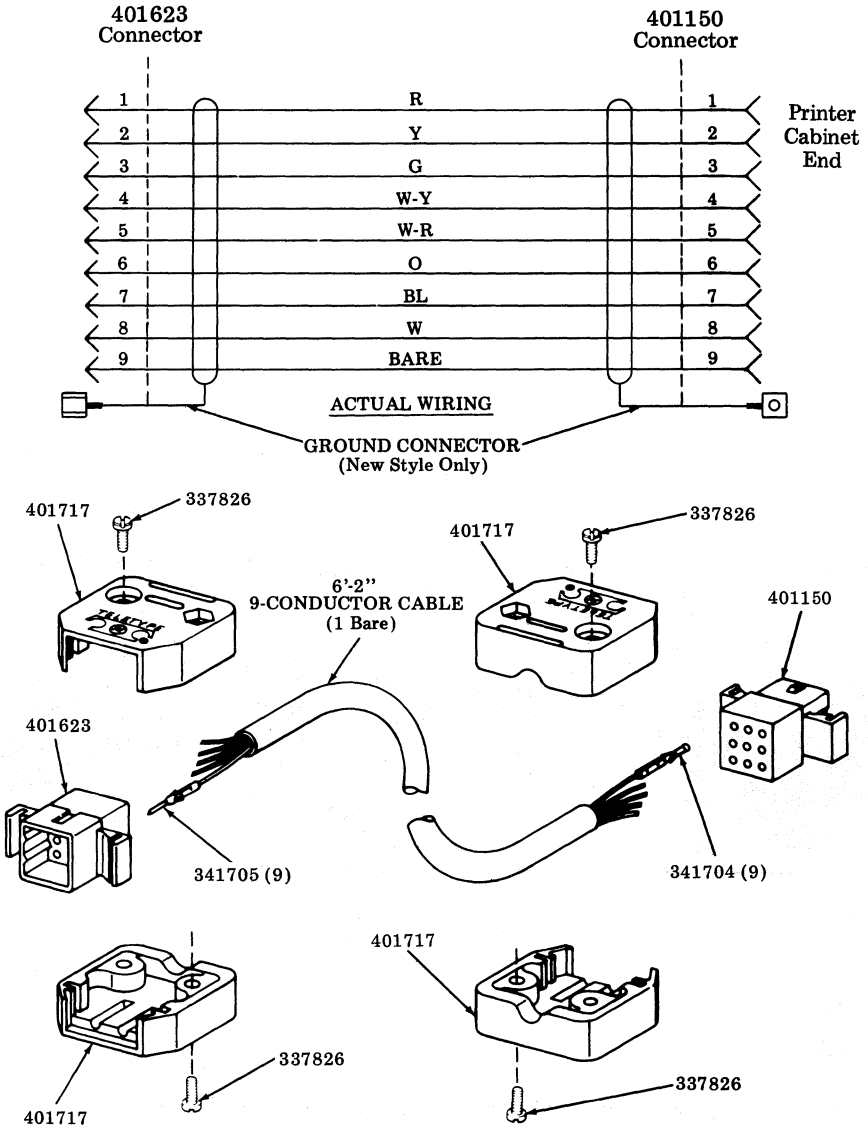


Fig. 21—401641 Opcon Extension Cable Assembly

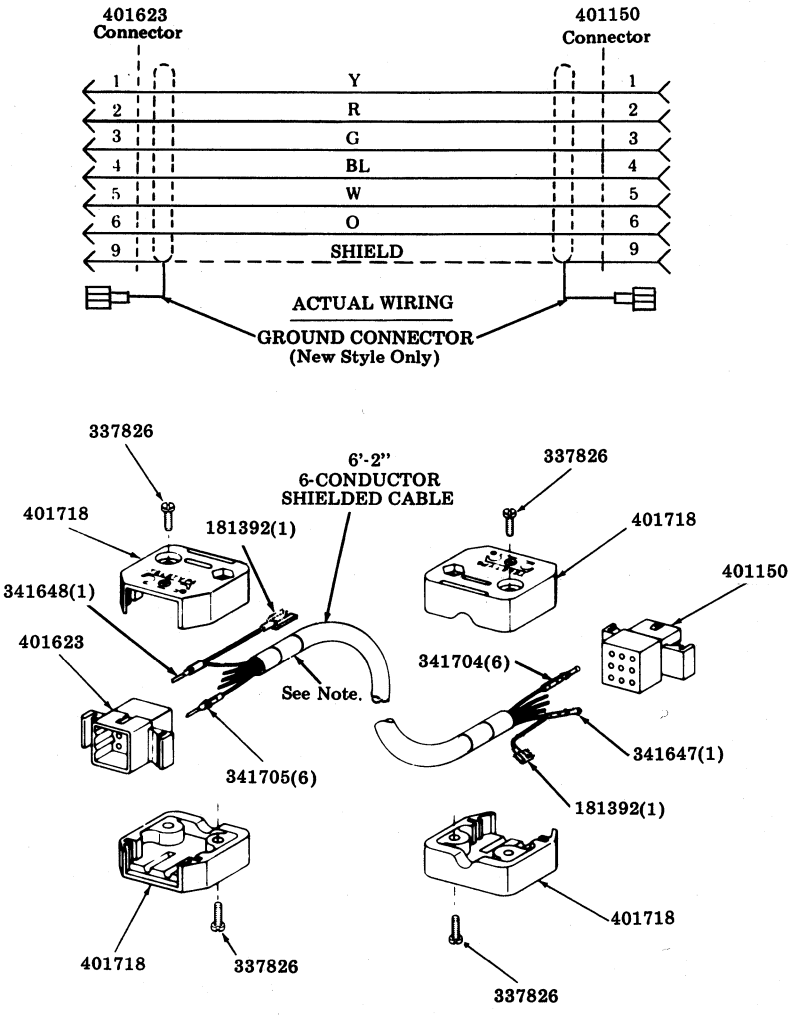
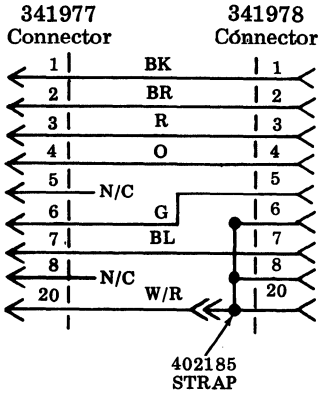


Fig. 22—401640 Printer Extension Cable Assembly (EIA)

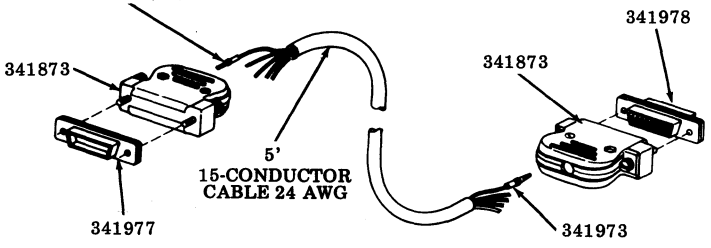
Note: Cable marker at each end identifies part number of cable.



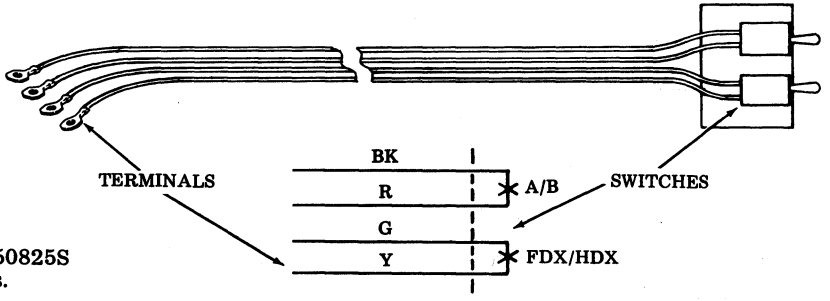
Refer to 50822S for details.

N/C = No Connection

Note: Other required one-to-one connections are pins: 11, 12, 15, 17, 22, 23.



402178
(Use with 113A Data Set requires 402178.)



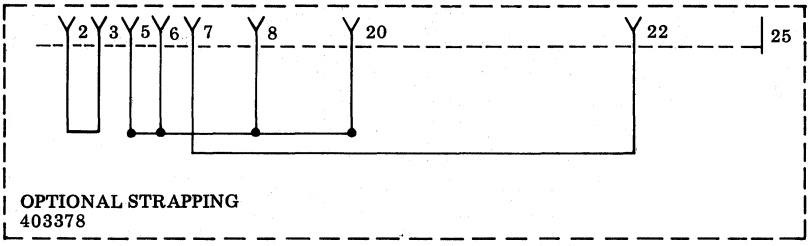
Refer to 50825S for details.

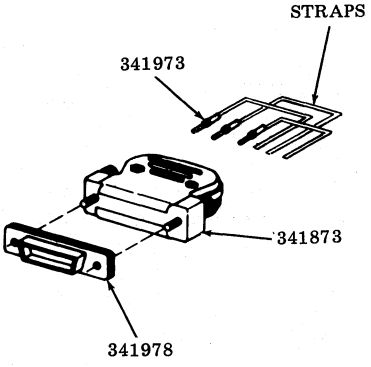
403399

The switches mount to pedestal door, see Section 582-200-202. Terminals mount to 410680.

Fig. 23—Modification Kits

Note: Refer to Section 582-200-102 for a list of other modification kits. The related 50000 specifications include wiring information.





403378 (For Use With
Current Loop Applications)
Place in data set connector on rear of KD cabinet.

Fig. 23 (Cont)

Note: This connector is required when using the 402180 20/60 mA Current Loop Modification Kit per Specification 50835S if not using a data set.

TELETYPEWRITER COMPATIBLE "DATASPEED*"40/2

TESTING AND TROUBLESHOOTING

1. GENERAL

1.001 This addendum supplements Section 582-200-502, Issue 2. Place this pink sheet ahead of Page 1 of the section.

1.002 This addendum is used to correct copyright dates.

2. CHANGES TO SECTION

2.001 On the bottom of Page 1, change the copyright notice dates to read as follows:

*Registered Trademark of AT&TCo.

TELETYPEWRITER COMPATIBLE "DATASPEED*" 40/2

TESTING AND TROUBLESHOOTING

CONTENTS

1. GENERAL

1.01 This section provides the testing and troubleshooting procedures for the Teletypewriter Compatible DATASPEED 40/2 Station arrangements. This section does not provide information on testing associated modification kits. Refer to the appropriate 50000 Specification for information on testing the modification kits.

1.02 This section is reissued to add list of BSPs for additional Data Set Test Procedures. Revision arrows are used to indicate the changes.

1.03 When ordering or referring to replaceable components, unless otherwise specified, prefix each part number with the letters "TP" (ie, TP410055).

1.04 An operational checkout should be performed after installation or on trouble calls. It may be a brief checkout to make sure the station is operable, or a complete checkout to exercise all features and options. Both types of checkout are provided. Since off-line checkout procedures do not check the interface or send and receive capabilities, an on-line checkout is also required to completely test the DATASPEED 40/2.

1.05 With the station arrangement properly interfaced to the system where it will be used, conduct a complete checkout of send and receive capabilities taking into account all option and feature variables. Check all operational modes in sending to or receiving from another station in the system.

1.06 Use the brief checkout upon installation, if a complete checkout has been performed prior to installation. Continue with a complete checkout, if needed, to check all features and options.

1.07 On maintenance or trouble calls at a location, confine the checkout to the specified trouble area. Use the brief checkout to isolate poorly defined trouble areas. Perform a complete checkout after an extensive repair.

1.08 The checkout routines are presented in tables. Each table is identified as to the type of station under test, and the nature of the checkout procedures.

1.09 If the indicated response is not obtained in any step of a checkout procedure, repeat the step to make sure that the procedure has been performed correctly. If the results are still unsatisfactory, perform the indicated trouble analysis. Always perform the checkout in the order given in the table. The trouble analysis steps are based on satisfactory results of all previous steps.

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Prepared for American Telephone and Telegraph Company by Teletye Corporation

1.10 As a further aid to troubleshooting, refer to the wiring diagrams for the DATASPEED 40/2 in Section 582-200-402. For help in identifying components, refer to Section 582-200-702, Disassembly/Reassembly and Parts.

2. PRELIMINARY CHECK

2.01 Before turning on any equipment, check the following:

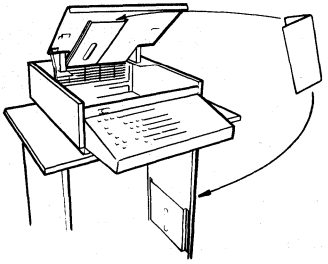
(a) Is station connected to a properly grounded ac service?

(b) Are all circuit cards and cable connectors fully seated?

(c) Are all cabinet lids and pedestal doors closed?

(d) In KDP, are printer paper and ribbon properly installed?

2.02 ♦ In addition to the above, check the Station Feature and Option Record (stored in lid of logic module cabinet or in pedestal) or W-4D1XB to determine the options and features present in the station. ♦ In cases where the results are affected by options, alternate results for each option are provided in the charts.



Located in pedestal when logic is mounted in pedestal.

3. OFF-LINE CHECKOUT

3.01 Off-line checkout provides a check of the operating condition of the DATASPEED 40/2 terminal. Table A provides a brief checkout for KD or KDP terminals. Table B provides a complete off-line checkout for KD or KDP terminals. The off-line checkout should be performed before attempting any on-line procedures.

BRIEF OFF-LINE CHECKOUT

3.02 The brief off-line checkout is provided in Table A. Use the brief checkout just to make sure that the station is operable. The brief checkout does not exercise all the features and options. If these should also be checked, perform Complete Off-Line Checkout in Table B.

TABLE A

BRIEF OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
1	Turn on power switches.	LOCAL indicator lights. Fans operate.	Terminal Analysis (Page 55)
2	Turn on power to monitor and set brightness to maximum.	Within 10 seconds, raster appears with No. 1 segment marker and cursor as in Fig. 1. *Note:* If random characters appear or if cursor is not at home position, depress HOME and CLEAR keys.	Terminal Analysis (Page 55) 40MN101 Display Monitor (Section 582-213-500)
3	Adjust brightness and tube tilt to personal preference.	Cursor and segment marker clearly displayed, with raster barely visible. Glare from external light on screen should be minimal.	Section 582-213-700, Display Monitor Adjustments
4	Lightly depress cursor right (→), down (↓), left (←), and up (↑), in that order.	Cursor moves one position in the direction indicated for each depression.	Terminal Analysis (Page 55)
5	Repeat Step 4, but depress cursor controls fully and hold depressed until cursor stops moving.	Cursor traces outer perimeter of display, stopping at each corner, and ends at home position.	Display Logic (Page 58)
6	If keyboard has CAPS LOCK keytop, depress CAPS LOCK key. Enter a line of Es at top and bottom of display, then HOME cursor.	Display appears as in Fig. 2, with all requirements as indicated.	Terminal Analysis (Page 55) Refer to adjustments of monitor to meet requirements (Section 582-213-700).
STEPS 7 THROUGH 14 APPLY TO KDP TERMINALS ONLY.			
7	Preliminary requirements of printer: a. Ribbon and paper loaded. b. Switches (top right of printer, cabinet cover raised) set as in Fig. 3. LF-1 Test-Off Forms (Tractor Feed Only) — On. c. Cabinet cover closed.		

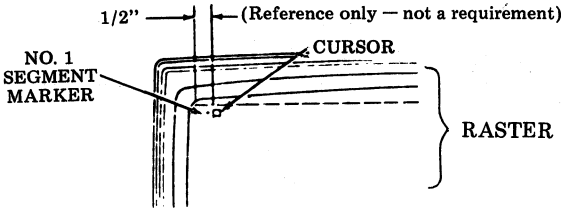
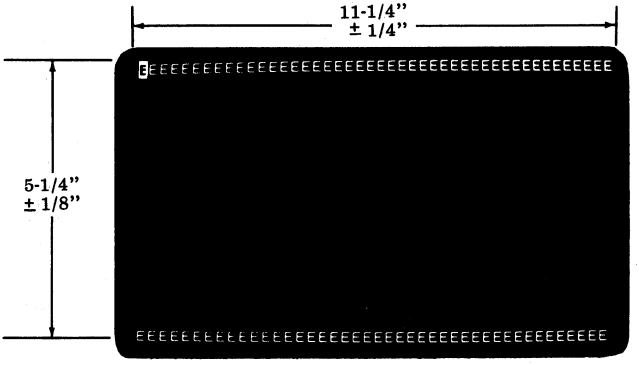


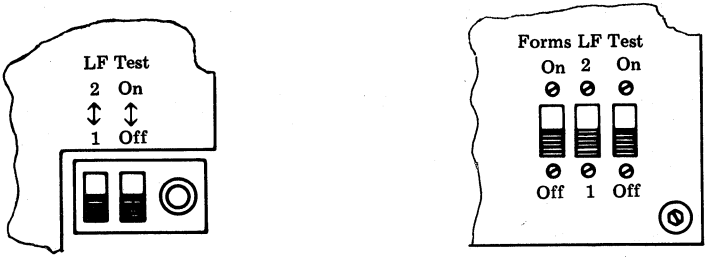
Fig. 1—Raster



Requirements:

- Raster aligned vertically and horizontally.
- All Es sharply defined.
- Height and width of display as indicated.
- Es uniform across full width.
- Height of Es same at top and bottom lines.

Fig. 2—Display Monitor



FRICTION FEED

TRACTOR FEED

Fig. 3— Printer Switches

Note: Fig. 1, 2 and 3 refer to Procedures in Table A.

TABLE A (Cont)

BRIEF OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
8	Momentarily depress PAPER button (red) on cover of printer cabinet.	Paper feeds out as long as button is depressed.	Printer (Section 582-210-500)
9	TRACTOR FEED PRINTER ONLY Depress and release FORMS ADVANCE button (black) on printer cabinet cover.	 Paper feeds out until first line of next form is reached, then stops.	
10	Unlatch and raise printer cabinet cover.		
11	Raise cover interlock switch to maintenance position.		
12	Set test switch (Fig. 3) to ON, allow printer to print several lines, then turn test switch OFF.	Printer turns on and prints one of the font identifica- symbols such as repeat- edly until switch is turned off.	Printer (Section 582-210-500)
13	FRICTION FEED PRINTER Lift paper roll to simulate a paper alarm. Lower paper roll, guide paper through window, and close cabinet cover. TRACTOR FEED PRINTER Tear off next form under pedestal top, then depress PAPER button on cabinet top until last form passes through printer. Reload forms, guide first form through window, and close cabinet cover.	 LOW PAPER indicator lights. LOW PAPER indicator goes out. PAPER indicator lights. PAPER indicator goes out.	Printer (Section 582-210-500)
14	Depress PRINT LOCAL key, and while cursor is moving through third or fourth line of display, depress LOCAL key. 	LOCAL indicator goes out. PRINT LOCAL and SEND indicators light. Cursor moves through line of Es at top of display, returns to left, and moves through lines of spaces (blank lines).	Terminal Analysis (Page 55)

TABLE A (Cont)

BRIEF OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
14 (Cont)		Printer prints line of Es. *Note:* Printing may occur in all 80 character positions or some Es may be carried over to next line, depending on Option 17. Printer line feeds but does not print for each line of spaces. When LOCAL key is depressed, SEND and PRINT LOCAL indicators go out and LOCAL indicator lights. Printer turns off. *Note:* Printer may or may not feed out 16 lines of paper before turning off, depending on Option 18. Tractor printer may form-out depending on Option 18 and Forms switch.	Printer (Section 582-210-500)
This ends BRIEF OFF-LINE CHECKOUT — KD AND KDP TERMINALS.			

COMPLETE OFF-LINE CHECKOUT

3.03 The Complete Off-Line Checkout in Table B exercises all the features of the KD or KDP terminal off-line. These procedures do not check the interface or send and receive capabilities, therefore, an on-line checkout is also required to completely test the DATASPEED 40/2.

TABLE B

COMPLETE OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
1	Power on. Monitor brightness adjusted for desired viewing level. LOCAL key depressed. Depress HOME and CLEAR keys. Put CAPS LOCK key in down position.	Cursor goes to home position and all data is cleared from screen.	Terminal Analysis (Page 55) Display Logic (Page 58)
2	Starting with top row and moving from left to right, depress each unshaded key in Fig. 4. Depress RETURN and NEW LINE keys.	Characters displayed as in Fig. 7. Cursor goes to beginning of next line.	Terminal Analysis (Page 55)
3	If keyboard has CAPS LOCK keytop, depress and release CAPS LOCK key so it returns to upper position, then repeat Step 2.	Characters displayed as in Fig. 7. Cursor goes to beginning of next line.	
4	Hold left SHIFT key depressed. Starting with top row and moving from left to right, depress each unshaded key in Fig. 5. Hold right SHIFT key depressed and depress [?/] key. Depress NEW LINE key.	Characters displayed as in Fig. 7. Cursor moves to beginning of next line.	
5	Hold left CONTROL key depressed. Depress all unshaded keys of Fig. 6 in sequence shown by circled numbers. Hold right CONTROL key depressed and depress [FS / M] key. Depress NEW LINE key.	Characters displayed (Page 10). Cursor moves to beginning of next line.	

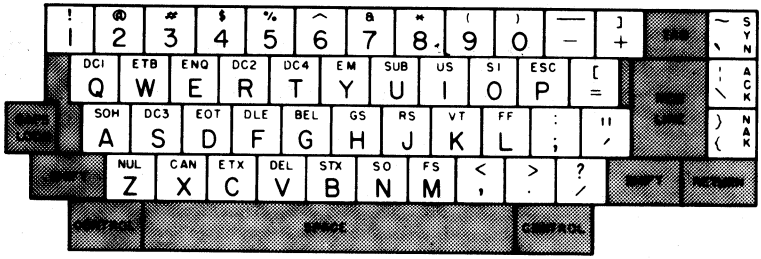


Fig. 4

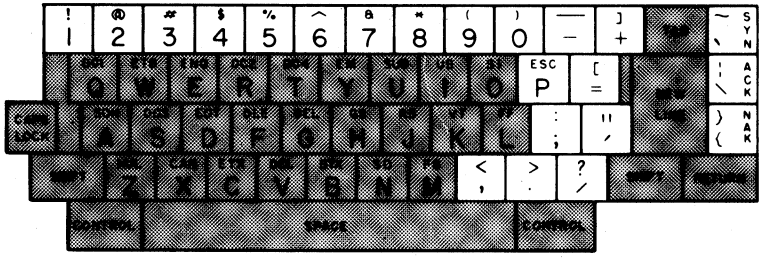


Fig. 5

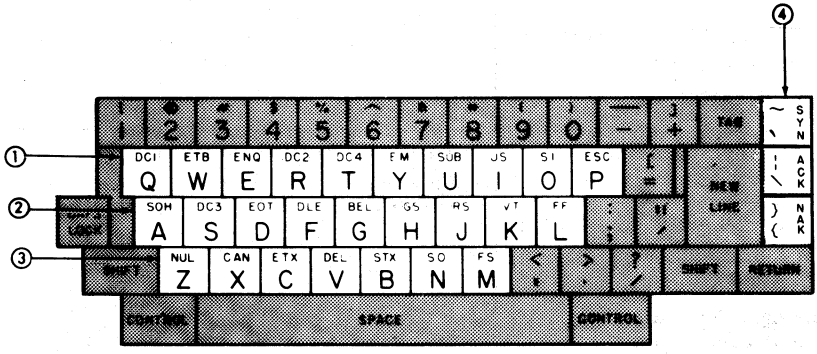
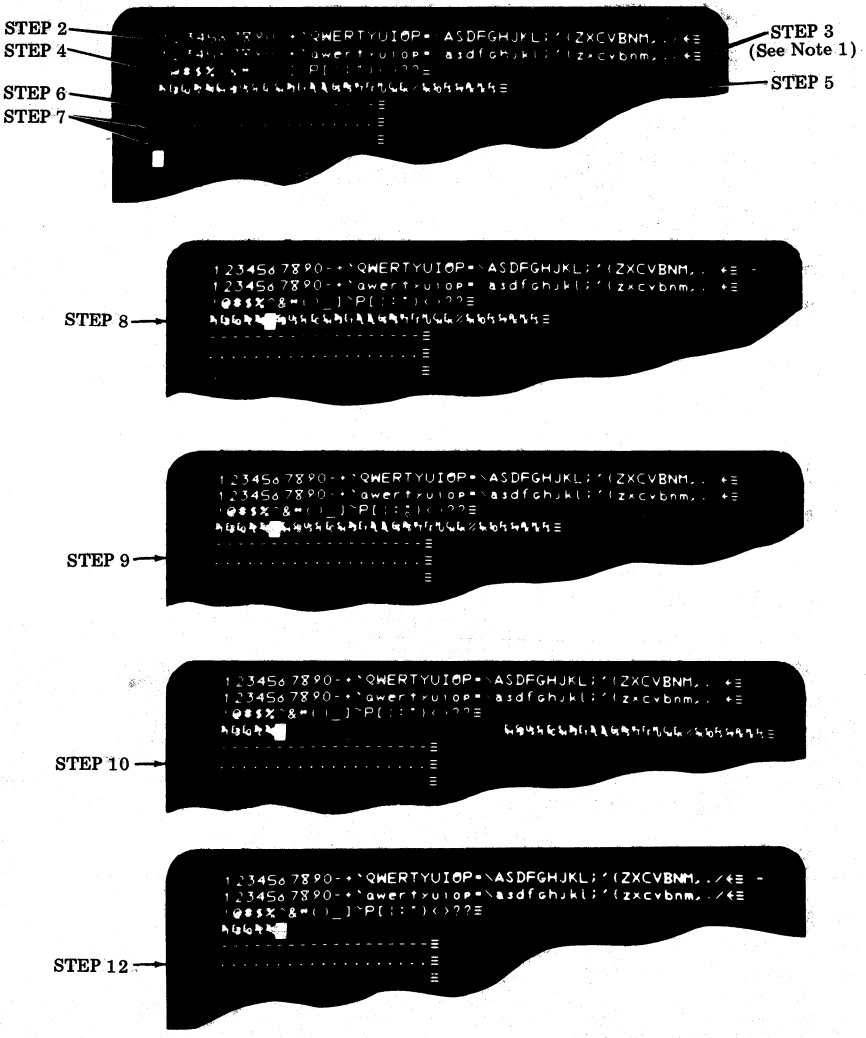


Fig. 6

TABLE B (Cont)

COMPLETE OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
6	Fully depress and hold [— _] key until about half line of characters are displayed. Depress NEW LINE key.	Repeated - characters and ≡ symbol displayed as in Fig. 7. Cursor moves to beginning of next line.	Terminal Analysis (Page 55) Operator Console (Opcon) (Section 582-211-500)
7	Repeat Step 6 using [> .] key, and then again using Spacebar.	Repeated . characters followed by ≡ symbol, and repeated spaces followed by ≡ symbol, displayed as in Fig. 7. Cursor moves to beginning of next line.	Controller Logic (Page 62)
8	Depress cursor keys as necessary to position cursor over E_M character in line of control characters.		
9	Lightly depress CHAR INSRT key.	All characters to right of and including E_M move one position to right as in Fig. 7.	
10	Fully depress and hold CHAR INSRT key until characters stop moving.	All characters to right of and including E_M move right continuously until ≡ symbol reaches right edge as in Fig. 7.	
11	Lightly depress CHAR DLETE key.	E_M and all subsequent characters move one position to left.	
12	Fully depress and hold CHAR DLETE key until characters stop moving.	E_M and subsequent characters move left continuously and are deleted from display as they reach cursor position as if Fig. 7.	
13	THIS STEP APPLIES ONLY TO KDP WITH TRACTOR FEED PRINTER Hold CONTROL key depressed and depress [FF L] key three times. *Note:* Make sure forms switch of printer is on.	Three F_F characters are entered in display to the right of the D4.	



Note 1: Step 3 applies only if keyboard has CAPS LOCK key.

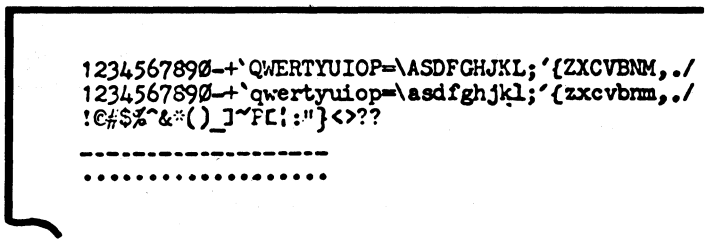
Note 2: Figures shown are for opcons which have monocase and up-low ASCII (American National Standard Code for Information Interchange).

Fig. 7

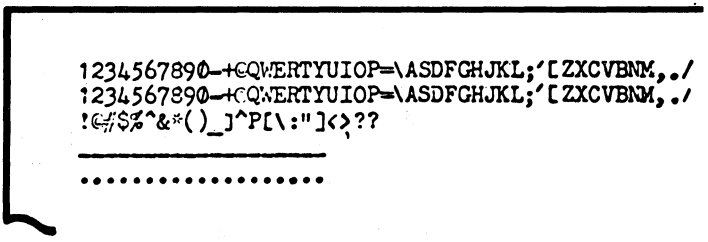
TABLE B (Cont)

COMPLETE OFF-LINE CHECKOUT — KD AND KDP TERMINALS

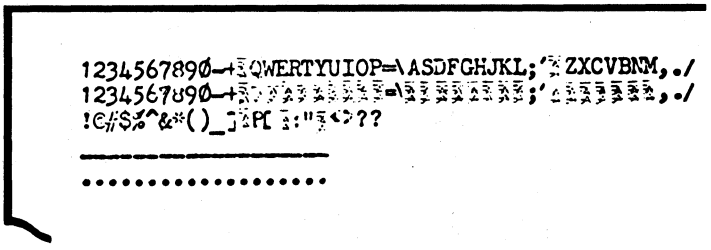
STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
14	Depress HOME.	Cursor goes to home position.	
15	KDP ONLY Depress PRINT LOCAL key. When complete message on monitor has been sent to printer, depress LOCAL key.	LOCAL indicator goes out; PRINT LOCAL and SEND indicators light. Cursor moves through display and printer prints according to features and options as in Fig. 8. When LOCAL key is depressed, SEND and PRINT LOCAL indicators go out, printer turns off, and LOCAL indicator lights. TRACTOR PRINTER Form-out occurs when first F_F character is sent from display. Lines of - and . characters print on next form. (Only one form-out occurs — second and third F_F characters have no effect.) Spacing from first line of first form to line of - characters on next form equals form length selected by form belt and form selector setting.	Terminal Analysis (Page 55) Printer (Section 582-210-500)



Up-Low Printer w/o Foldover — Option 21.a.



Up-Low Printer w/Foldover — Option 21.b.
or
Monocase Printer — Option 22.b.



Monocase Printer w/o Foldover — Option 22.a.

Note 1: Line 2 in all three figures present only if opcon keyboard has CAPS LOCK key.

Note 2: Characters shown are for basic type carrier.

Note 3: For tractor feed printers with form-out mechanism, lines of - and . characters appear on next form.

Note 4: Figures shown are for monocase and up-low ASCII.

Fig. 8

TABLE B (Cont)

COMPLETE OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
16	Depress HOME, then CLEAR key.	Cursor goes to home position and all information is cleared from display.	Terminal Analysis (Page 55)
17	Enter a line of 80 *s across top of display.	*s are displayed, and cursor remains at right of line.	
18	Depress LINE INSRT key, then enter a line of 80 Us across top of display.	Cursor returns to home position and *s move down one line. Us are displayed above *s.	Display Logic (Page 58)
STEPS 19 THROUGH 22 APPLY ONLY TO TERMINALS WITH ONE SEGMENT. IF TERMINAL IS EQUIPPED WITH TWO OR THREE SEGMENT DISPLAY, GO TO STEP 23.			
19	Repeatedly depress LINE INSRT key until *s move to to last line of display.	Cursor returns to home position and *s and Us both move down one line each time LINE INSRT key is depressed. Movement stops when *s reach bottom of display. Cursor stays at home position.	Terminal Analysis (Page 55) Display Logic (Page 58)
20	Depress cursor down (↓) and then cursor right (→) to move cursor to about the middle of the line of Us.		Terminal Analysis (Page 55)
21	Depress LINE DLETE key.	Cursor returns to left margin, and Us are removed. *s move up one line to replace Us.	
22	Depress LINE INSRT key several times.	*s move down one line to bottom of display and stop. Cursor does not move.	
STEPS 23 THROUGH 36 APPLY ONLY TO TERMINALS EQUIPPED WITH TWO OR THREE SEGMENT DISPLAY.			
23	Depress HOME.	Cursor goes to home position.	Terminal Analysis (Page 55)

TABLE B (Cont)

COMPLETE OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
24	Depress SEGMT ADV key twice for terminals with two segments, or three times for terminals with three segments.	Segment marker changes from segment 1 marker (·) to segment 2 (:), and on terminals with three segments to segment 3 marker (⁝), and back to segment 1 marker. *s and Us disappear as segment changes, and reappear at top of display when segment 1 marker reappears. Cursor does not move.	
25	Depress SCROL UP key one time.	◗Segment 1 marker and Us disappear from top of display.◖ ◗*s move to top of display, and segment 2 marker appears at bottom left of display.◖ Cursor does not move.	
26	Depress SCROL UP key fully. *Note:* Operation with 410009 or 410018 continuous scrolling circuit card.	Segment 2 marker (then 3 marker if terminal has three segments) moves up the display. ◗*s disappear from top of display.◖ Scrolling stops when segment marker of last segment reaches top line of display. Cursor does not move (see Note). Scrolling will not stop when segment marker of last segment reaches top line of display, but will continue while key is fully depressed.	

TABLE B (Cont)

COMPLETE OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
27	Depress SCROL DOWN key once, then fully. *Note:* Operation with 410009 or 410018 continuous scrolling circuit card.	Segment marker at upper left moves down one line, then moves down continuously and disappears as segment marker of previous segment appears at top left. When segment 1 marker appears at top left of display, scrolling stops. *s and Us reappear in original position at top of display when segment 1 returns to display. Cursor does not move (see Note). Scrolling will not stop when segment marker of last segment reaches top line of display, but will continue while key is fully depressed.	Terminal Analysis (Page 55) Display Logic (Page 58)
28	Repeatedly depress LINE INSRT key until *s move to last line of segment.	*s and Us both move down one line each time LINE INSRT key is depressed. Cursor does not move.	Terminal Analysis (Page 55) Display Logic (Page 58)
29	Depress cursor down (↓), and then cursor right (→) to position cursor at about the middle of the line of Us.		
30	Depress LINE DLETE key.	Cursor returns to left margin and Us are removed. *s move up one line to replace Us.	
31	Depress LINE INSRT key several times.	*s move down one line to bottom of display on first depression, then disappear from display on second depression. Cursor does not move.	

TABLE B (Cont)

COMPLETE OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
32	Depress SEGMT ADV key.	Segment 2 marker appears at top left of display. *s appear a few lines down from top in segment 2. Cursor does not move.	
33	Depress HOME and CLEAR.	Cursor goes to home position. Segment 1 is displayed.	
34	Depress SEGMT ADV key to display last segment of page.	Segment marker of last segment appears at upper left of display. *s have been cleared from segment 2. Cursor remains in home position.	Terminal Analysis (Page 55)
35	Depress cursor down (↓) to position cursor at about next to last line of display, then enter a few Us in this line.		
36	Depress LINE INSRT key several times.	Cursor returns to left margin and Us move to bottom of display, then stop.	
IF TERMINAL IS EQUIPPED WITH FULL EDIT FEATURE, GO TO STEP 37. IF NOT, THIS COMPLETES OFF-LINE CHECKOUT.			
37	Depress HOME, then CLEAR.	Cursor goes to home position and display is cleared.	Terminal Analysis (Page 55)
38	Alternately depress TAB SET key and Spacebar until cursor reaches end of line.	Column of tab marks is displayed in every character position of page. Alarm sounds at 73rd and 80th character positions. (On terminals with more than one segment, depress SEGMT ADV key as necessary to view tab columns on other segment(s), then return to segment 1.)	Controller Logic (Page 62) Display Logic (Page 58) Operator Console (Opcon) (Section 582-211-500)

TABLE B (Cont)

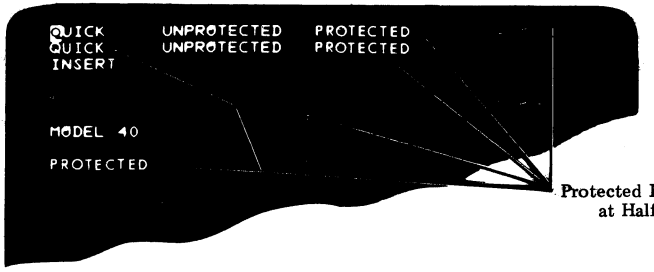
COMPLETE OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
39	Home cursor and depress TAB CLEAR.	All tab marks (on all segments) are cleared.	Terminal Analysis (Page 55)
40	Depress HIGH LIGHT key.	HIGH LIGHT indicator lights.	
41	Enter a full line of *s at top of display.	*s continuously flash between half- and full intensity. Alarm sounds at 73rd and 80th character positions. Cursor remains at right end of line.	
42	Depress HIGH LIGHT key again.	HIGH LIGHT indicator goes out.	
43	Depress LINE INSRT key.	Cursor moves to left margin, and highlighted *s move down one line.	Terminal Analysis (Page 55)
IF OPTION 12.a. IS ENABLED ON 410675 CARD (SEE STATION FEATURES AND OPTION RECORD), TEMPORARILY CHANGE TO OPTION 12.b. UNTIL CHECKOUT IS COMPLETE.			
44	Depress FORM ENTER key.	FORM ENTER indicator lights.	Controller Logic (Page 62)
45	Enter a full line of Us at top of display.	Us are displayed at half intensity (protected). Alarm sounds at 73rd and 80th character positions. Cursor remains at right end of line.	Terminal Analysis (Page 55) Display Logic (Page 58)
46	Depress LINE INSRT key.	Cursor moves to left margin and lines of *s and Us both move down one position. Cursor remains in home position.	
47	Depress CLEAR.	Screen is cleared.	
48	Depress FORM ENTER key.	FORM ENTER indicator goes out.	

TABLE B (Cont)

COMPLETE OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
49	Enter message of Fig. 9 in lines 1 through 9 of display.	Message appears as in Fig. 9. (To observe protected spaces, increase monitor brightness and note that all protected data has darker background than unprotected data.)	
50	Depress CHAR INSRT key fully and hold until movement stops.	Word QUICK in line 1 moves to tab column and stops. No other characters affected.	Terminal Analysis (Page 55)
51	Depress CHAR DLETE key twice.	Word QUICK in line 1 moves two positions left. No other characters affected.	
52	Depress TAB.	Cursor moves to tab column. Tab symbol (▶) appears at original position of cursor. All characters passed over by cursor are erased from display.	
53	Depress CHAR INSRT key fully and hold until movement stops.	Word UNPROTECTED moves three positions to right, stopping when it reaches word PROTECTED. No other characters affected.	
54	Depress CHAR DLETE key fully and hold until movement stops.	Word UNPROTECTED is moved left and completely erased. No other characters affected.	
55	Depress TAB.	Cursor moves to first character position after word PROTECTED. Tab symbol (▶) appears at original position of cursor.	
56	Depress Spacebar once, then depress it fully.	Alarm sounds once when Spacebar is depress first time. Cursor moves to character position preceding protected New Line symbol. Alarm sounds continuously, and cursor does not advance beyond this position.	



Note: Depress each key once unless number of depressions is indicated in parentheses.

LINE 1

Type QUICK
Depress Space (5)
Depress TAB SET
Type UNPROTECTED
Depress Space (3)
Depress FORM ENTER
Type PROTECTED
Depress FORM ENTER
Depress Space (8)
Depress FORM ENTER
Depress NEW LINE

LINE 2

Type QUICK
Depress FORM ENTER
Depress Space (5)
Type UNPROTECTED
Depress Space (3)
Depress FORM ENTER
Type PROTECTED
Depress FORM ENTER
Depress Space (8)
Depress FORM ENTER
Depress NEW LINE
Depress FORM ENTER

LINE 3

Type INSERT
Depress Space until
cursor is under
NEW LINE symbol.
Depress FORM ENTER
Depress NEW LINE

LINE 4 AND 5

Depress Cursor
Right (→) until
cursor is under
NEW LINE symbol.
Depress NEW LINE

(Repeat for Line 5)

LINE 6

Depress Cursor
Right (→) until
cursor is at about
23rd character
position.
Depress NEW LINE.
Depress FORM ENTER.

LINE 7

Type MODEL
Depress Space
Type 40

LINE 8

Depress CURSR RTRN
Depress Cursor
down (↓) twice

LINE 9

Depress FORM ENTER
Type PROTECTED
Depress FORM ENTER
Depress HOME

Fig. 9

TABLE B (Cont)

COMPLETE OFF-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
57	Depress TAB.	Cursor moves to end of protected word QUICK in line 2.	
58	Depress CURSOR TAB three times.	Cursor moves to tab mark on first depression. Cursor moves to space following word PROTECTED on second depression. Cursor moves to beginning of word INSERT in line 3 on third depression. No characters altered in any way.	Terminal Analysis (Page 55) Operator Console (Opcon) (Section 582-211-500) Display Logic (Page 58)
59	Depress LINE INSRT three times.	Word INSERT moves down two lines and stops. Rest of display does not change.	
60	Position cursor over M in word MODEL, then depress LINE INSRT twice.	Words MODEL 40 move down one position and stop.	
61	Move cursor over P at beginning of line 9, and type some miscellaneous characters.	Alarm sounds each time a key is depressed. (No characters can overwrite a protected character.)	
62	Depress HOME, CLEAR, then TAB CLEAR.	Cursor goes to home position. All unprotected characters and tab columns are cleared. Protected characters remain on display.	
63	Depress FORM ENTER.	FORM ENTER indicator lights.	
64	Depress CLEAR.	All characters are cleared from display.	
65	Depress FORM ENTER.	FORM ENTER indicator goes out.	
66	If Option 12.a. was originally present on 410675 card, restore this option (unless further checkout is to be performed).	With Option 12.a. selected, FORM ENTER indicator will no longer light when FORM ENTER is depressed in local mode.	
THIS COMPLETES OFF-LINE CHECK OF KD OR KDP.			

4. ON-LINE CHECKOUT

4.01 On-line checkout is performed between the DATASPEED 40/2 Station under test and a Data Test Center equipped with a DATASPEED 40/2 Test Set. The Data Test Center operator controls the checkout using standard test messages generated by the test set. Table C provides a brief on-line checkout for KD or KDP terminals. Table D provides a complete on-line checkout for KD or KDP terminals. The off-line checkout procedures should be performed before attempting any on-line procedures.

4.02 Instructions are provided in Tables C and D for establishing a data connection with a switched network data set. If a Private Line Data Set (202T) is used, different line connection procedures are performed.

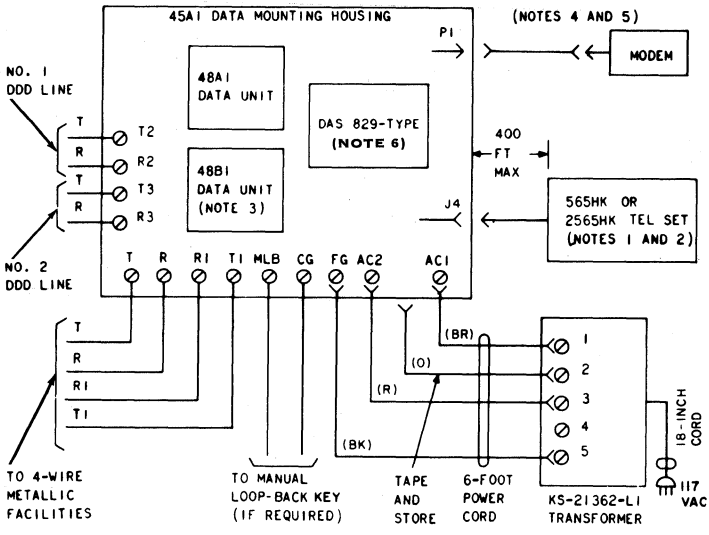
4.03 If station is equipped with a private line data set and private line(s) is (are) available, use those lines for on-line testing with the Test Center. If private lines are not available between the station and Test Center, switched network lines may be used by following the procedures in 4.04.

4.04 The Private Line Data Set (202T, 201C, or 208A) can be connected to switched network lines by using the equipment and connections shown in Fig. 10. Cable length restrictions are shown in Fig. 11.

4.05 Once line connections have been completed for a station using a Private Line Data Set 202T, test the station using the procedures in Table C for brief on-line checkout or Table D for complete on-line checkout. With a Data Set 202T, however, the station does not disconnect and drop the line as in switched network service. Disregard disconnect information when testing with Private Line Data Sets 202T.

BRIEF ON-LINE CHECKOUT

4.06 The brief on-line checkout is provided in Table C. Use the brief on-line checkout for a quick check of the ability of the DATASPEED 40/2 KD or KDP to send and receive data on-line. The brief checkout does not test all features of the station.



NOTES:

1. DESIGNATE KEY STRIP AS SHOWN. CONVERT REL BUTTON TO NON-LOCKING.

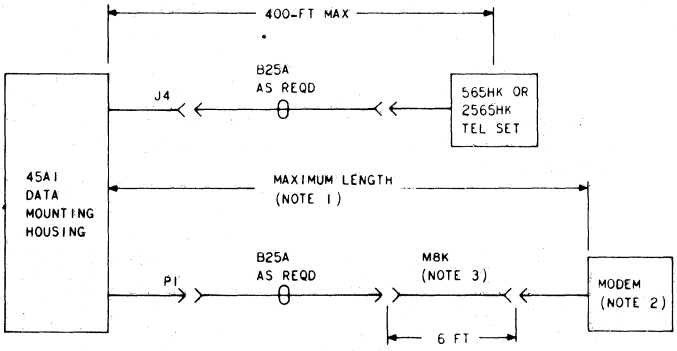
HOLD	DDD1	DDD2	PL TALK	RING	REL

2. MODIFY TEL SET AS FOLLOWS:

636A KEY LEADS		
COLOR	REMOVE FROM	CONNECT TO
BR	M	X
S-R	M	N
Y	M	TAPE AND STORE
O-BK	N	M

3. INSTALL REQUIRED "SLOPE EQUAL" OPTION.
4. SEE FIGURE 3 FOR B25A CABLE LENGTH RESTRICTIONS.
5. ALL MODEM INTERCONNECTION ARRANGEMENTS SHOWN IN SECTION 598-082-200 FOR THE 44A1 DATA MOUNTING APPLY TO THE 45A1 DATA MOUNTING (WITH THE EXCEPTION THAT MODEMS REQUIRING THE ADDITIONAL INTERFACE PAIR INDICATING DIAL BACKUP CANNOT USE THE KS-21253 ADAPTERS).
6. REQUIRED ONLY WHEN PRIVATE LINES ARE USED IN ADDITION TO DDD LINES.

Fig. 10—Connection Diagram for Full Data—Dial Backup of Station



NOTES:

1. DATA SET — MAX LENGTH IN FT.

DATA SET	MAX LENGTH IN FT.
201C	1400
202D	500
202T	200
208A	1400
209A	1400

2. ALL MODEM INTERCONNECTION ARRANGEMENTS SHOWN IN SECTION 598-082-200 FOR THE 44A1 DATA MOUNTING APPLY TO THE 45A1 DATA MOUNTING (WITH THE EXCEPTION THAT MODEMS REQUIRING THE ADDITIONAL INTERFACE PAIR INDICATING DIAL BACKUP CANNOT USE THE KS-21253 ADAPTERS).
3. THE M8K CORD IS NOT USED WITH DATA SET 202D. USE D50AA-3 IN PLACE OF D6AA-61 SUPPLIED WITH DATA SET 202D.

Fig. 11—Connection Diagram Showing Cable Length Restrictions

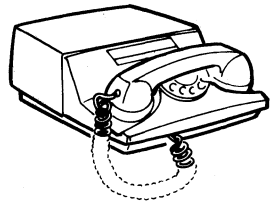
TABLE C

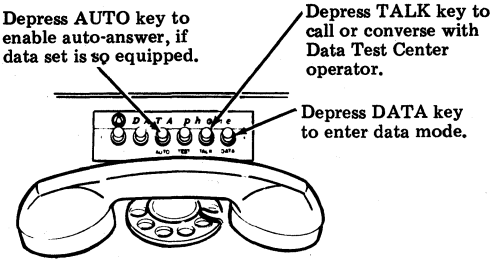
BRIEF ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
1	With power ON and local mode selected, depress HOME and CLEAR.	LOCAL lit. Cursor goes home and all data is cleared from screen.	Terminal Analysis (Page 55) Controller Logic (Page 62) Operator Console (Opcon) (Section 582-211-500)
2	Depress REC. For KDP, also depress PRINT ON LINE. *Note:* Print-on-line mode for Teletypewriter Compatible DATASPEED 40/2 is determined by Option 29. This step is for Option 29.a. only.	REC lights (LOCAL goes out). For KDP, PRINT ON LINE also lights.	
3	Place data set in talk mode and call Data Test Center to request on-line checkout (see Fig. 13 for data set configurations). Data Set 202C Depress TALK key, lift handset, and dial Data Test Center. Data Set 202R Lift handset, and dial Data Test Center. Data Set 202S Depress appropriate line key, lift handset, and dial Data Test Center. Data Set 103A3 Depress CLEAR/TALK key, lift handset, dial Data Test Center.	*Note 1:* To establish proper line protocol, Data Test Center will normally request station requesting test to hang up and wait for return call. When Data Test Center calls back, answer call in talk mode and follow instructions of Data Test Center operator. *Note 2:* If Private Line Data Set 202T is used, follow line connections procedures given in 4.06.	

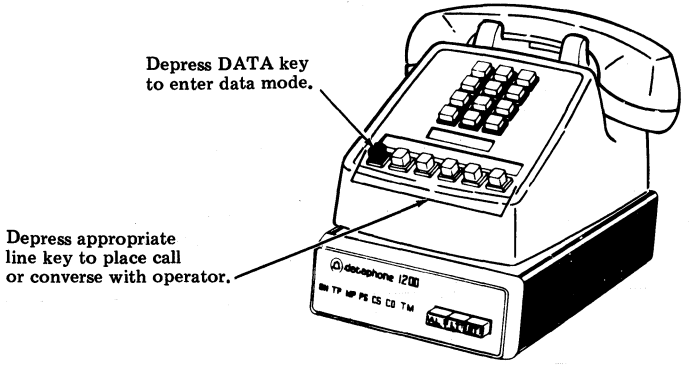
FOX TEST

In this test, the Data Test Center will send the FOX test message. Station under test will receive message, then send it back to the Data Test Center for comparison with original. Both operators will go to talk mode for evaluation of test.

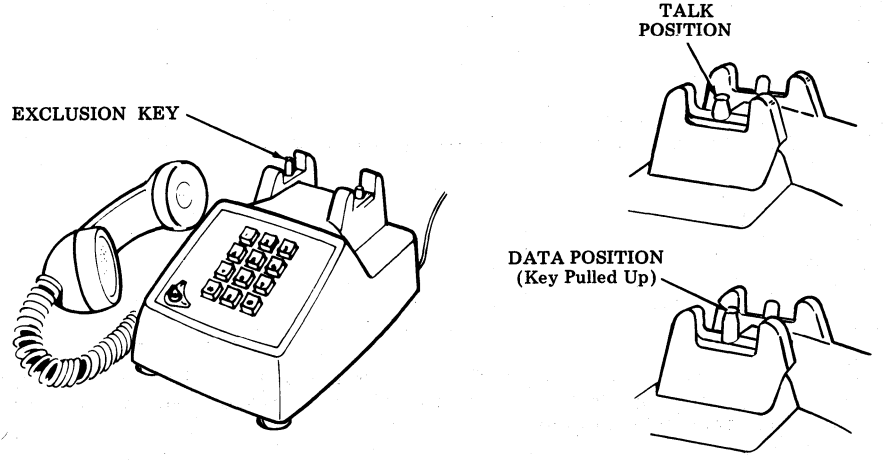




Data Set 202C



Data Set 202S and Attendant Set



Data Set 202R

Fig. 12

TABLE C (Cont)

BRIEF ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
4	When instructed by Data Test Center, go to data mode per standard procedure for data set used:	FOX message displayed on screen (and printed on printer, if KDP) as below:	Controller Logic (Page 62)
			
	Data Set 202C or 202S Depress DATA key and place handset on switchhook. Data Set 202R Lift exlcusion key. Do not place handset on switchhook. Data Set 103A3 (or 113A) Depress DATA key and place handset on switchhook.	*Note:* One or more CR (Carriage Return) symbols (←) may appear as above if Option 5.d. enabled. CR rejected if Option 5.c. enabled.	Operator Console (Opcon) (Section 582-211-500) Data Set Problem (Page 57)
	THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890	Revert to local, if Option 8.c. is enabled. For KDP, printer feeds out 16 lines of paper on receipt of ETX if Option 18.c. enabled.	
5	*Note 1:* If Option 8.c. is enabled, do not perform Step 5; go to Step 6. If Option 8.d. is enabled, go to local mode and change ETX at end of message to EOT. *Note 2:* Do not go from receive to local manually in switched network service. Depress SEND, first, then LOCAL, to prevent a disconnect.	Display appears as in Step 4, but but E_X replaced by E_T. For KDP, printer motor stops immediately (Option 53.b.) or after a two minute delay (Option 53.a.).	
6	Home cursor and depress SEND. *Note:* 103A3 equipped stations will disconnect when EOT is sent. If disconnect occurs, call Data Test Center.	SEND lights (LOCAL goes out). Cursor moves through message and stops after end character. Printer prints message if KDP. Revert to local if Option 11.a. is enabled.	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62) Display Logic (Page 58)

TABLE C (Cont)

BRIEF ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
6 (Cont)		For KDP, printer feeds out 16 lines of paper if Option 18.c. enabled.	Data Set Problem (Page 57)
7	Go to talk mode and evaluate results of test with Data Test Center operator: Data Set 202C, 103A3, or 113A Lift handset and depress TALK key. Data Set 202R Lower exclusion key to talk position. Do not depress all the way or call will disconnect. Data Set 202S Lift handset and depress appropriate line key.	Returned message should compare with message transmitted originally by Data Test Center (except for change in end character if Option 8.d. is enabled).	
This ends the BRIEF ON-LINE CHECKOUT — TELETYPEWRITER COMPATIBLE "DATASPEED" 40/2 KD AND KDP STATIONS IN "DATAPHONE**" SERVICE. For futher on-line checkout go to Table D.			

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COMPLETE ON-LINE CHECKOUT

4.07 The complete on-line checkout is provided in Table D. These procedures provide a complete check of the receiving options and send variations on the DATASPEED 40/2 KD or KDP.

TABLE D

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

This table provides a complete checkout of options and variable features of Teletypewriter Compatible DATASPEED 40/2 KD and KDP stations.

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
1	Proceed to Step 50 for Teletypewriter Compatible DATASPEED 40/2 using 103-type modem interface. For a complete on-line checkout using a 202-series data set, perform the following steps. If no options are given, option the DATASPEED 40/2 as follows: OPTION TITLE 4.a. — Reverse Channel Required to Send (only if data set is equipped with reverse channel, otherwise choose 4.b.) 41.b. — Full Duplex (if local copy feature is provided in data set, HDX if not) 42.a. — Even Parity 44.a. — Enable EIA Rec Data 45.b. — Disable Rec Data From Current Loop 47.a. — Enable PTR Interface (KDP only) 43.a. — Send One Stop Bit 3.b. — 1200 Baud 29.a. — PRINT ON LINE Normal 1.b. — SSI to Printer (KDP only) 8.a.,c.,e.,g. — End on EOT, ETX, GS, FF 7.a. — Disable Vertical Parity Detection 10.b. — Line Ending Sequence CR, CR LF (←← ☰) 11.a. — Go Local After Send 46.b. — 202-Type Modem Interface 19.c. — PTR Errored Character Symbol Not Printed on Parity Error		

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
2	With power on and local mode selected, depress FORM ENTER, HOME, CLEAR, TAB CLEAR, and FORM ENTER.	LOCAL lit Cursor goes home and all data is cleared from screen.	Terminal Analysis (Page 55)
3	Depress REC. For KDP depress PRINT ON LINE.	REC lights. (LOCAL goes out). For KDP, PRINT ON LINE lights.	Controller Logic (Page 62)
4	If call is not already established as a result of Brief On-Line Checkout (Table C), call Data Test Center in talk mode and request complete on-line checkout: Data Set 202C Depress TALK key, lift handset, and dial Data Test Center. Data Set 202R Lift handset and dial Data Test Center. Data Set 202S Depress appropriate Line key, lift handset, and dial Data Test Center.	*Note:* If this is original call, Data Test Center will normally request station requesting test to hang up and wait for return call. When Data Test Center calls back, answer call in talk mode and follow instructions of Data Test Center operator.	
REPEATED FOX TEST In this test, Data Test Center will send a repeating FOX message. Station under test will receive message, then send it back to Data Test Center for comparison with original message. Both operators will go to talk mode for evaluation of test.			
5	When instructed by Data Test Center operator, go to data mode per standard procedure for data set used: Data Set 202C or 202S Depress DATA key and place handset on switchhook.	Repeated FOX message displayed on screen (and printed on printer, if KDP) as below: %<= THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 1234567890%<= THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 1234567890	Terminal Analysis (Page 55) Data Set Problem (Page 57)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
5 (Cont)	Data Set 202R Lift exclusion key. Do not place handset on switchhook.	*Note 1:* One or more CR (Carriage Return) symbols (←) may appear as shown on Page 28 if Option 5.d. enabled. CR rejected if Option 5.c. enabled.	
	THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890		
	If terminal is equipped for interrupt feature, depress INTRPT key while message is being received, then depress again to release.	If terminal is equipped with interrupt feature, reception will stop when INTRPT key is depressed first time (indicator lights), and will resume when key is depressed second time (indicator goes out). *Note 2:* KD stations must have an Issue 2A or later of 410770 circuit card to have the interrupt feature. KD/KDP goes to local if Option 8.c. is used.	
6	Go to local mode and type EOT over the ETX at end of message. *Note:* If terminal is in Receive, depressing LOCAL will disconnect call. Depress SEND first, then LOCAL, to prevent call from disconnecting.	Display appears as in Step 5, but E_X is replaced by E_T.	
7	Home cursor and depress SEND. If KDP, also depress PRINT ON LINE. If Option 27.a. is enabled, cursor will go home on depressing SEND. Try it when cursor is not in the home position.	SEND lights (LOCAL goes out). Cursor moves through message. Printer prints message, if KDP, and Option 29.a. enabled.	Operator Console Opcon (Section 582-211-500) Controller Logic (Page 62)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
7 (Cont)		If reverse channel Option 4.a. enabled, Data Test Center may produce interrupt during message transfer, causing transmission to pause, then resume. KD/KDP reverts to receive.	
8	Go to talk mode per standard procedure for data set used and evaluate results with Data Test Center. Data Set 202C Lift handset and depress TALK key. Data Set 202R Lower exclusion key to talk position. Do not depress exclusion key all the way or call will disconnect. Data Set 202S Lift handset and depress line key.		
9	If results of fox test are satisfactroy, home cursor and clear screen (local mode), then depress REC.		
MODIFIED FOX TEST ONE In this test, the Data Test Center will send FOX message again, this time with Form Feed (FF) as the ending character. Both operators will go to talk mode for evaluation of test.			
10	For KDP with tractor feed printer, make sure the FORMS switch is on. Depress PRINT ON LINE if KDP.		
11	When instructed by Data Test Center, go to data mode per standard procedure for data set used.	FOX message displayed on screen (and printed if KDP).	Terminal Analysis (Page 55)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
11 (Cont)		*Note:* One or more CR (Carriage Return) symbols (←) may precede New Line symbol (≡) if Option 5.d. enabled. CR rejected if Option 5.c. enabled. If KDP has tractor feed printer, form out occurs on receipt of F_F at end-of-message (FORM switch on). Check for proper form out length. Upon receipt of F_F at end-of-message, terminal reverts to local, if Option 8.a. is enabled.	Controller Logic (Page 62) Printer (Section 582-210-500) Controller Logic (Page 62)
12	Go to talk mode per standard procedure for data set used and evaluate results of test with Data Test Center operator. If results of test are satisfactory, home cursor and clear screen then depress REC.		
MODIFIED FOX TEST TWO In this test, Data Test Center will send FOX message again, this time with G_S (Group Separator) as the ending character. Both operators will go to talk mode for evaluation of test.			
13	When instructed by Data Test Center, enter data mode per standard procedure for data set being used.	FOX message is received and displayed on screen with G_S (Group Separator) as end character. *Note:* One or more CR (←) symbols may be displayed preceding New Line symbol (≡) if Option 5.d. enabled. CR (←) rejected if Option 5.c. enabled. Revert to local, if Option 8.g. is enabled.	Terminal Analysis (Page 55) Controller Logic (Page 62)
14	Home cursor, depress SEND. Go to talk mode per standard procedure for data set being used to evaluate results with Data Test Center operation.	Message is sent. Revert to local (goes to receive if Option 11.b. is enabled).	Terminal Analysis (Page 55) Controller Logic (Page 62)

TABLE D (Cont)

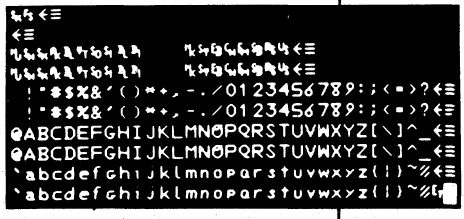
COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
15	If results are satisfactory, enter local mode, home cursor, and clear screen. Depress REC.	All data is cleared, REC lights.	Controller Logic (Page 62)
MODIFIED FOX TEST THREE In this test, Data Test Center will send FOX message again, this time with DLE-EOT sequence at end-of-message. If data set has auto-answer capability, the auto-answer operation will be checked during this test.			
16	If data set is arranged for auto-answer, hang up to disconnect call and set station for auto-answer per standard procedure for data set used: Data Set 202C Depress AUTO key on data set. Place handset on switch-hook. Depress REC on KD, or PRINT ON LINE on KDP if Option 29.a. present (indicator lights). Data Set 202S Depress appropriate Line key. Place handset on switchhook. Depress REC on KD, or PRINT ON LINE on KDP (indicator lights). Data Set 202R Auto-answer not available. If not equipped for auto-answer, depress REC on terminal, and go to data mode manually when instructed by Data Test Center operator.	For auto-answer operation (Data Set 202S equipped with auto-answer), DATA button or indicator lights automatically when Data Test Center calls station. Printer of KDP may copy message with KDP in local mode if PRINT ON LINE key lit. KD copies message. Characters (D_L) and (E_T) are not printed on printer at station under test. Station will disconnect on receipt of DLE-EOT. Terminal goes to local mode. (Data Set 202C or 202S drops out of data mode and disconnects from line. On Data Set 202R handset must be placed on switchhook.)	Terminal Analysis (Page 55) Controller Logic (Page 62)
17	Call Data Test Center in talk mode and evaluate results of test. If results are satisfactory, home cursor and clear screen. Depress REC.		

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
MODIFIED FULL ASCII TEST ONE In this test, Data Test Center will send a test message containing all ASCII code characters except D_2, D_3, and D_4 should be removed. Station under test will receive message, then send it back to Data Test Center for comparison with original message. Both operators will go to talk mode for evaluation of test.			
18	For KDP equipped with tractor feed printer, set FORMS switch on printer to OFF. Depress PRINT ON LINE if KDP. When instructed by Data Test Center, enter data mode.	Full ASCII message displayed on screen (and suitable characters printed if KDP and PRINT ON LINE selected).	Terminal Analysis (Page 55) Controller Logic (Page 62)



Note 1: CR symbols (←) appear if Option 5.d. enabled; do not appear if Option 5.c. enabled. NULL symbols (NU) appear if Option 5.b. enabled; do not appear if Option 5.a. enabled. DEL symbols (▨) appear if Option 5.f. enabled; do not appear if Option 5.e. enabled.

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

Note 2: Illustration shows printout for up-low printer with Option 21.b. enabled or monocase printer with Option 22.b. enabled.

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

Note 3: Illustration shows printout for up-low printer with Option 21.a. enabled, last two lines will print lower case. For monocase printer printer with Option 22.a. enabled, last two lines will print as errored character symbols (▒).

Terminal reverts to local mode.

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
19	Home cursor; depress PRINT ON LINE for KDP and depress SEND. *Note:* Print on line function will be determined by Option 29.a. Go to talk mode and evaluate results of test with Data Test Center. If results are satisfactory, enter local mode, home cursor, clear screen. Depress REC.	Cursor moves through message. Printer prints if KDP and Option 29.a. enabled. Transmission stops, terminal reverts to receive upon sending EOT.	Terminal Analysis (Page 55)
MODIFIED FULL ASCII TEST TWO In this test, Data Test Center will send a test message containing all ASCII code characters except D_2 and D_4. Station under test will receive message, then send it back to Data Test Center. If terminal has Issue 4B or later of 410674 circuit card, make sure Option 5.j. is used.			
20	For KDP, depress PRINT ON LINE. Depress REC. When instructed by the Data Test Center, enter data mode.	Full ASCII message is displayed minus the characters D_2 and D_4. Message will be displayed as in Step 18 except for absence of D_2 and D_4 characters. Revert to LOCAL.	Terminal Analysis (Page 55) Controller Logic (Page 62)
21	Home cursor, depress PRINT ON LINE for KDP, depress SEND. *Note:* Terminal is now in expanded conversational mode. Keyboard on-line, a character at-a-time.	Cursor moves through message and stops on D_3 character. Data Test Center receives all data through D_3. SEND goes out. S/R lights. REC lights. Opcon is now active for expanded conversational mode testing.	Terminal Analysis (Page 55) Controller Logic (Page 62) Operator Console (Opcon) (Section 582-211-500).
22	Test Center send E_C f character sequence.	SEND key lights. REC key goes out. S/R still lighted. *Note:* If 410674 circuit card is earlier than Issue 4B, you must manually depress SEND key to light it.	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
23	Type several U*U* characters on operator console.	U*U* characters should appear on display monitor as characters are typed on operator console. The Data Test Center should have received U*U*.	Controller Logic (Page 62) Display Logic (Page 58)
24	Type the following escape sequences and characters on the operator console. Characters are sent on-line while being typed. *Note:* "E_C" is "ESC" key on opcon.	The display monitor of station under test should display the data and functions performed. *Note:* If FDX is selected as an option (Option 41.b.), display will not follow sequences sent if no local copy is provided in data set. Escape sequences will be performed if Option 6.b. is enabled and displayed if 6.a. is enabled.	Terminal Analysis (Page 55) Controller Logic (Page 62) Display Logic (Page 58)
	D_2 RYRY D_4	KDP only: PRINT ON LINE turns on, printer copies RYRY, then PRINT ON LINE turns off.	
	E_C3 FOX E_C4	FOX should be displayed as highlighted characters.	
	E_C1	⧫ Tab (Column) Set ⧫	
	E_C2	Tab Clear	
	E_C0	Single Tab Set	
	E_CB	Cursor Down	
	E_CC	Cursor Right	
	E_C7	Cursor Up	
	E_CG	Cursor Return	
	E_CJ	Clear (Single tab does not clear).	
	U*U*	U*U* is displayed.	
	E_CB	Cursor Down	
	U*U	U*U is displayed.	
(Cursor left)	(←)	Backspace is sent.	
	E_CL	Line Insert	
	E_CM	Line Delete	
	E_CW FOX E_CX	FOX should be displayed as protected characters.	
	E_CH	Cursor Home	
	E_CT	Scroll Down	
	E_CS	Scroll Up	

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

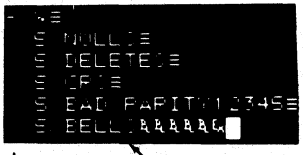
STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
24 (Cont)			
Note: Enter $E_C U$ for each memory segment present in station.	$E_C U$	Seg Adv (to 2nd segment)	For two or three segment terminals only.
	$E_C U$	Seg Adv (to 3rd segment)	For three segment terminals only.
	$E_C U$	Seg Adv (to 1st segment)	
	$E_C @$	Cursor Tab	
	$E_C R$	Clear ALL, Cursor Home	
	U*U*	U*U* is displayed.	
	$E_C G$	Cursor Return	
	$E_C P$	Character Delete	
	$E_C \wedge$	Character Insert	
	$D_L E_X$	Station should revert to local mode and data set should remain in data mode.	
25	Depress S/R. Depress SEND and send (by typing) following characters: U*U* E_T from operator console. If Issue 4B of 410674 circuit card is present and Option 40.a. is enabled, depress SEND and repeat this step, ending with ← instead of E_T.	S/R and REC light. S/R and SEND light. U*U* is received at Data Test Center. Station should revert to S/R receive mode.	Terminal Analysis (Page 55) Controller Logic (Page 62)
OPTIONS TEST In this test, Data Test Center will send a test message to check the on-line options in the terminal under test. Station under test will receive message, then send it back to Data Test Center for comparison with original message. Both operators will go to talk mode for evaluation of test.			
26	When instructed by the Data Test Center, depress RECEIVE and PRINT ON LINE, and enter data mode per standard procedures from data set being used.	Option test message displayed on screen (printed if KDP as follows:  Display shows factory programmed options — Reject NULs (Option 5.a.) DEL (Option 5.e.), and CR (Option 5.c.).	Controller Logic (Page 62)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
26 (Cont)		 Exceptions to factory programmed options — NUL displayed as N_U (Option 5.b.), DEL displayed as // (Option 5.f.), and CR displayed as ← (Option 5.d.). Print-out for Option 19.c.: 5 NULLS 5 DELETES 5 CRS 5 BAD PARITY 12345 5 BELLS *Note:* Message received on printer may "data stack" (carriage returns inserted during line of data, data "stacked" together, no missing characters). Printer will feed out 16 lines on receipt of ETX, if Option 18.c. is enabled. Upon receipt of E_X at end-of-message, station will revert to local mode, if Option 8.c. is enabled. Data set does not disconnect. Option 18.c. should not be used with tractor feed printers.	Printer (Section 582-210-500)
27	Change ETX at end-of-message to EOT. Home cursor and depress SEND. *Note:* If Option 27.a. is enabled, cursor automatically homes on depressing SEND. Check Option 27.a. when cursor is not in home positon.	E_X is replaced by E_T. SEND lights and cursor moves through message. Printer prints if KDP. Station reverts to receive after sending EOT. For KDP, printer stops immediately (Option 53.b.) or after a two minute delay (Option 53.a.).	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62) Display Logic (Page 58)

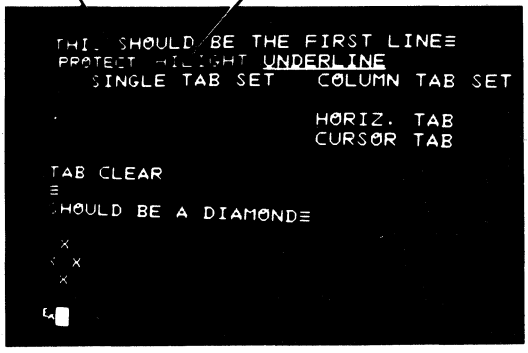
TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
28	Go to talk mode and evaluate results of test with Data Test Center operator. If results are satisfactory, home cursor and clear screen (local mode).		
STEPS 29 THROUGH 36. APPLY ONLY TO FULL-EDIT KD OR KDP WITH OPTION 6.b. ENABLED. FOR FULL-EDIT TERMINALS WITH OPTION 6.a. ENABLED, GO TO STEP 37. EDIT TEST In this test, Data Test Center will send a test message to check the response to escape sequences of the terminal under test. Station under test will receive message, then send it back to Data Test Center for comparison with original message. Both operators will go to talk mode for evaluation of test.			
29	When instructed by Data Test Center operator, depress RECEIVE, PRINT ON LINE, and enter data mode.	REC and PRINT ON LINE light. Cursor automatically goes home. Edit test message displayed on screen (and printed, if KDP) as below:	Terminal Analysis (Page 55) Controller Logic (Page 62) Printer (Section 582-210-500)
		Upon receipt of ETX at end-of-message, station should revert to the local mode if Option 8.c. is enabled.	

HALF INTENSITY

FLASHING



Note: Printed message should NOT contain suffixes of escape sequences sent by Data Test Center.

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
29 (Cont)		For KDP, friction feed printer feeds out 16 lines of paper on receipt of ETX, if Option 18.c. is enabled. *Note:* Option 18.c. should not be used with tractor feed printers.	
30	Change ETX at end-of-message to EOT.	E_X is replaced by E_T.	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62)
31	Depress PRINT ON LINE if KDP. Depress FORM SEND.	PRINT ON LINE and FORM SEND keys light.	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62)
32	Home cursor, depress SEND. *Note 1:* If Option 27.a. is enabled, cursor will automatically home on depressing SEND.	SEND lights and cursor moves through message. Printer prints if KDP. Upon sending EOT, station reverts to receive mode. *Note 2:* Option 18.c. should not be used with tractor feed printers.	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62)
33	Go to talk mode and evaluate results of test with Data Test Center operator.		
34	Depress LOCAL, HOME, and SEND. *Note:* If Option 27.a. is enabled, cursor will automatically home on depressing SEND.	Cursor goes home and SEND lights.	Controller Logic (Page 62)
35	When instructed by Data Test Center operator, go to data mode.	Cursor moves through message. Printer prints if KDP. After sending EOT, station reverts to receive mode.	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
36	Go to talk mode and evaluate results of test with Data Test Center operator. If results are satisfactory, depress LOCAL, home cursor (local mode) and depress FORM ENTER, TAB CLEAR, and CLEAR, then depress FORM ENTER again. *Note:* Option 12.b. must be enabled to clear or change protected data.		
STEPS 37 THROUGH 49 APPLY ONLY TO FULL-EDIT KD OR KDP WITH OPTION 6.a. ENABLED. FOR FULL-EDIT TERMINALS WITH OPTION 6.b. ENABLED, PERFORM STEP 29 THROUGH STEP 36. EDIT TEST In this test, Data Test Center will send a test message to check the response to escape sequences of the terminal under test. Both operators will go to talk mode for evaluation of test. Stations will then disconnect while message is prepared manually on terminal under test. Station under test will call Data Test Center and send prepared message. Both operators will go to talk mode to evaluate results.			
37	When instructed by Data Test Center operator, depress PRINT ON LINE of KDP, depress REC, go to data mode.	Edit test message displayed on screen (and printed, if KDP) as below:	Terminal Analysis (Page 55) Controller Logic (Page 62)
		Upon receipt of ETX at end-of-message, terminal will go to local mode, if Option 8.c. is enabled. For KDP, friction feed printer feeds out 16 lines of paper on receipt of ETX if Option 18.c. is enabled. Option 18.c. should not be used with tractor feed printers.	
38	Go to talk mode and evaluate results of test with Data Test Center operator.		

THIS SHOULD BE THE FIRST LINE
PROTECT HILIGHT U N D E R L I N E SINGLE TAB SET COLUMN TAB SET
HORIZ. TABCURSOR TABTAB CLEAR
SHOULD BE A DIAMOND
XXXXSHOULD NOT REMAIN ON DISPLAY

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

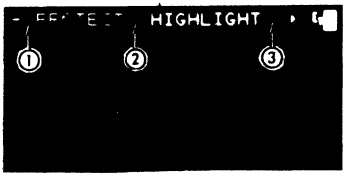
STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
39	When instructed by Data Test Center operator, hang up to disconnect call.		
40	With terminal in local mode, enter following message on display: (Procedure is indicated in message.)  ① — FORM ENTER on ② — FORM ENTER off; HIGHLIGHT on, one space ③ — HIGHLIGHT off, then Depress spacebar three times Depress TAB SET Depress cursor left (←) once Depress TAB Depress spacebar once Depress CONTROL and EOT.		
41	Home cursor, depress FORM SEND, depress PRINT ON LINE if KDP, depress REC.	FORM SEND, PRINT ON LINE, and REC keys light.	Operator Console (Opcon) (Section 582-211-500)
42	Place call to Data Test Center in talk mode and advise operator that message has been prepared for transmission.		
43	When instructed by Data Test Center operator, go to data mode, and depress SEND.	SEND lights and cursor moves through message. Printer prints if KDP. Printing depends upon Option 29. Transmission stops and terminal reverts to receive mode upon transmitting EOT at end-of-message.	
44	Go to talk mode and evaluate results of test with Data Test Center operator.		

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
45	Depress LOCAL and HOME.	LOCAL lights, FORM SEND goes out. Cursor goes to home position.	Terminal Analysis (Page 55) Controller Logic (Page 62) Operator Console (Opcon) (Section 582-211-500)
46	Depress PRINT ON LINE if KDP, depress REC.	PRINT ON LINE lights. LOCAL goes out and REC lights.	
47	When instructed by Data Test Center operator, go to data mode, then depress SEND.	SEND lights and cursor moves through message as before. Printer prints if KDP. Transmission stops and terminal reverts to receive mode upon transmission of EOT at end-of-message.	
48	Go to talk mode and evaluate results of test with Data Test Center operator.		
49	Depress LOCAL, HOME, then TAB CLEAR. Depress FORM ENTER, then CLEAR. Depress FORM ENTER.	LOCAL lights, cursor goes home, and tab marks are cleared. FORM ENTER lights, and all data is cleared from screen. FORM ENTER goes out.	
THIS COMPLETES ON-LINE CHECKOUT PROCEDURES FOR KD/KDP STATIONS USING 202-TYPE DATA SETS. FOR CHECKOUT OF KD/KDP STATIONS OPERATING WITH 103-TYPE DATA SETS, REFER TO STEP 50.			
50	For complete on-line checkout of KD/KDP stations, utilizing 103-type modem interface, if no options are given, option Teletypewriter Compatible DATASPEED 40/2 as follows: 3.h. — 300 Baud 4.b. — Reverse Channel Not Required to Send 5.a., c.,e., g.,i. — Reject Null, Delete, CR, DC_1, and DC_3.	*Note:* This checkout can be used for stations operating with 113-A type data sets provided all calls are placed from station, not Data Test Center.	

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
50 (Cont)	6.b. — Perform Escape Sequences 7.b. — Disable Vertical Parity Detection 8.a., c.,e.,g. — End on E_X, E_T, F_F, G_S 9.b. — Send Highlight Delimiters 11.a. — Go Local After Sending 19.c. — Not Printed on Parity Error (KDP is being checked out) 40.a. — Go Rec on Sending CR (if Issue 4B of 410674 circuit card is present) 41.a. — Half-Duplex 42.a. — Send Even Parity 43.a. — Send One Stop Bit 44.a. — Enable EIA Rec Data 45.b. — Disable Rec Data From Current Loop 46.a. — 103-Type Modem Interface 47.a — Enable PTR Interface (if KDP only) 49.a. — Enable Interrupt Feature (if KD only)		
51	With power on and local mode selected, depress FORM ENTER, HOME, CLEAR, TAB CLEAR, and FORM ENTER.	LOCAL lit. Cursor goes home and all data is cleared from screen.	Terminal Analysis (Page 55)
52	Depress REC. For KDP, depress PRINT ON LINE. If call is not already established as a result of Brief On-Line Checkout (Table C), call Data Test Center in talk mode and request complete on-line checkout: For Data Set 103A3: Depress CLEAR/TALK key, lift handset, and dial Data Test Center.	REC lights (LOCAL goes out). For KDP, PRINT ON LINE lights. *Note:* If this is original call, Data Test Center will normally request station requesting test to hang up and wait for return call. When Data Test Center calls back, answer call in talk mode and follow instructions of Data Test Center operator.	Controller Logic (Page 62)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
REPEATED FOX TEST In this test, Data Test Center will send a repeating FOX message. Station under test will receive message, then send it back to Data Test Center for comparison with original message.			
53	When instructed by Data Test Center, go to data mode per standard procedure.	Repeated FOX messsage displayed on screen (and printed on printer, if KDP) as below:  *Note:* One or more CR (Carriage Return) symbols (←—) may appear as above if Option 5.d. enabled. CR rejected if Option 5.c. enabled. THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 KD/KDP goes to local if Option 8.c. is enabled.	Data Set Problem (Page 57) Terminal Analysis (Page 55)
54	Go to local mode and type EOT over the ETX at the end of the message.	Display appears as in Step 53, but E_X is replaced by E_T.	
55	Home cursor and depress SEND. If KDP, also depress PRINT ON LINE. If Option 27.a. is enabled, cursor will go home on depressing SEND. Try it when cursor is not in home position.	SEND lights (Local goes out). Cursor moves through message. Printer prints message if KDP, and Option 29.a. enabled. KD and KDP revert to local upon sending EOT. Data Set Disconnects.	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62) Data Set Problem (Page 57)
56	If results of fox test are satisfactory, home cursor and clear screen (local mode). Depress REC.	Cursor goes home, screen clears. LOCAL goes out. REC lights.	Terminal Analysis (Page 55)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
MODIFIED FOX TEST ONE In this test, the Data Test Center will send FOX message again, this time with Form Feed (FF) as the ending character. Both operators will go to talk mode for evaluation of test.			
57	For KDP with tractor feed printer, make sure the FORMS switch is on. Depress PRINT ON LINE if KDP.		
58	Depress CLEAR/TALK key, lift handset, and dial Data Test Center. When instructed by Data Test Center, go to data mode per standard procedure for data set used.	FOX message displayed on screen (and printed if KDP). *Note:* One or more CR (carriage Return) symbols (←) may precede New Line symbol (≡) if Option 5.d. enabled. CR rejected if Option 5.c. enabled. If KDP has tractor feed printer, form out occurs on receipt of F_F at end-of-message (FORM switch on). Check for proper form out length. Upon receipt of F_F at end-of-message, terminal reverts to local, if Option 8.a. is enabled.	Terminal Analysis (Page 55) Controller Logic (Page 62) Printer (Section 582-210-500)
59	Go to talk mode per standard procedure for data set used and evaluate results of test with Data Test Center operator. If results of test are satisfactory, home cursor and clear screen then depress REC.		
MODIFIED FOX TEST TWO In this test, Data Test Center will send FOX message again, this time with G_S (Group Separator) as the ending character. Both operators will go to talk mode for evaluation of test.			
60	When instructed by the Data Test Center, enter the data mode per standard procedure for the data set being used.	FOX message is received and displayed on screeen with G_S (Group Separator) as end character.	Terminal Analysis (Page 55) Controller Logic (Page 62)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

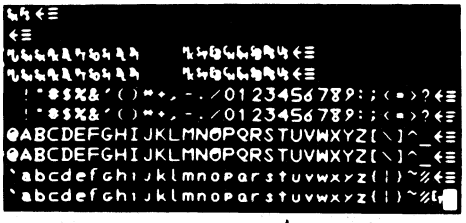
STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
60 (Cont)		*Note:* One or more CR (←—) symbols may be displayed preceding New Line symbol (≡) if Option 5.d. enabled. CR (←—) rejected if Option 5.c. enabled. At end-of-message, the terminal will revert to local, if Option 8.g. is enabled.	
61	Home cursor, depress SEND. After cursor stops at ending character, go to talk mode per standard procedure for data set being used to evaluate results with Data Test Center operator.	Message is sent. Revert to local (goes to receive, if Option 11.b. is enabled.)	Terminal Analysis (Page 55) Controller Logic (Page 62)
62	If the results are satisfactory, enter local mode, home cursor and clear screen. Depress REC.	All data is cleared. REC lights.	Controller Logic (Page 62)
MODIFIED FULL ASCII TEST In this test, Data Test Center will send a test message containing all ASCII code characters except, D_2, D_3, and D_4 should be removed. Station under test will receive message, then send it back to Data Test Center for comparison with original message. Both operators will go to talk mode for evaluation of test.			
63	For KDP equipped with tractor feed printer, set FORMS switch on printer to OFF. Depress PRINT ON LINE if KDP. Depress REC. When instructed by Data Test Center, enter data mode per standard procedures for data set being used. 	Full ASCII message displayed on screen (and suitable characters printed if KDP and PRINT ON LINE selected).	Terminal Analysis (Page 55) Controller Logic (Page 62)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
63 (Cont)		*Note 1:* CR symbols (←—) appear if Option 5.d. enabled; do not appear if Option 5.c. enabled. NULL symbols (NU) appear if Option 5.b. enabled; do not appear if Option 5.a. enabled. DEL symbols (//) appear if Option 5.f. enabled; do not appear if Option 5.e. enabled. !"#$%&'()*+,-./0123456789:;<=>? !"#$%&'()*+,-./0123456789:;<=>? @ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^ @ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^ _ @ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^ _ @ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^ *Note 2:* Illustration shows print-out for up-low printer with Option 21.b. enabled or monocase printer with Option 22.b. enabled. For up-low printer with Option 21.a. enabled, last two lines will print lower case. For monocase printer with Option 22.a. enabled, last two lines will print as errored characters symbols (Ξ▲Ξ). Terminal reverts to local mode. Data set disconnects.	
64	Enter local mode and change EOT at end-of-message to ETX. Home cursor, depress PRINT ON LINE for KDP. Depress REC. Recall Data Test Center, and when instructed, enter data per standard procedure for data set being used. Test Center sends E_{cf} character sequence.	EOT is replaced by ETX in message. REC lights. SEND lights (see Note) and cursor moves through message. Printer prints if KDP and Option 29.a. enabled. Transmission stops after ETX is sent. Station now reverts to local (goes to receive, if Option 11.b. is enabled). *Note:* If 410674 circuit card is earlier than Issue 4a, you must manually depress SEND key to light it.	Terminal Analysis (Page 55)
65	Go to talk mode and evaulate results of test with Data Test Center. If results are satisfactory, home cursor and clear screen.	LOCAL lights, screen clears.	Terminal Analysis (Page 55)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
MODIFIED FULL ASCII TEST TWO In this test, Data Test Center will send a test message containing all ASCII code characters except D_2 and D_4. Station under test will receive message, then send it back to Data Test Center.			
66	For KDP, depress PRINT ON LINE. Depress REC. When instructed by Data Test Center, enter data mode.	Full ASCII message is displayed minus characters D_2 and D_4. Message will be displayed as in Step 18, except for absence of D_2 and D_4 characters. Station goes to local data set disconnects.	Terminal Analysis (Page 55) Controller Logic (Page 62)
67	Recall Test Center. Home cursor, depress REC. Depress PRINT ON LINE for KDP. Enter data mode per standard procedure when instructed then depress SEND. *Note:* Terminal is now in expanded conversational mode. Keyboard on-line, a character at-a-time. Receipt of DLE ETX, DLE GS or DLE FF will force station to local mode. Sending DLE ETX, DLE FF, DLE GS will force the station to local mode, but the data set will not disconnect.	SEND lights PRINT ON LINE lights. Cursor moves through message and stops on D_3 character. Data Test Center receives all data up to D_3. S/R, SEND, and RECEIVE light. Opcon is now active for expanded conversational mode testing.	Terminal Analysis (Page 55) Controller Logic (Page 62) Operator Console (Opcon) (Section 582-211-500)
68	Type several U*U* characters on operator console.	U*U* characters should appear on display monitor as characters are typed on operator console. The Data Test Center should have received U*U*.	Controller Logic (Page 62) Display Logic (Page 58)
69	Type the following escape sequences and characters on the operator console. Characters are sent on-line while being typed. *Note:* "E_C" is "ESC" key on opcon.	The display monitor of station under test should display the data and functions performed. *Note:* If FDX is selected as an option (Option 41.b.), display will not follow sequences sent. Escape sequences will be performed if Option 6.b. is enabled and displayed if 6.a. is enabled.	Terminal Analysis (Page 55) Controller Logic (Page 62) Display Logic (Page 58)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
69 (Cont)	D_2 RYRY D_4	KDP only: PRINT ON LINE turns on, printer copies RYRY, then PRINT ON LINE turns off.	
	E_C3 FOX E_C4	FOX should be displayed as highlighted characters.	
	E_C1	♦ Tab (Column) Set ♦	
	E_C2	Tab Clear	
	E_C0	Single Tab Set	
	E_CB	Cursor Down	
	E_CC	Cursor Right	
	E_C7	Cursor Up	
	E_CG	Cursor Return	
	E_CJ	Clear (single tab does not clear).	
	U*U*	U*U* is displayed.	
	E_CB	Cursor Down	
	U*U	U*U is displayed.	
	CURSOR left (←)	Backspace is sent.	
	E_CL	Line Insert	
	E_CM	Line Delete	
	E_CW FOX E_CX	FOX should be displayed as protected characters.	
	E_CH	Cursor Home	
	E_CT	Scroll Down	
	E_CS	Scroll Up	
Note: Enter E_CU for each memory segment present in station.	E_CU	Seg Adv (to 2nd segment) ←	For two or three segment terminals only.
	E_CU	Seg Adv (to 3rd segment) ←	For three segment terminals only.
	E_CU	Seg Adv (to 1st segment)	
	$E_C@$	Cursor Tab	
	E_CR	Clear ALL, Cursor Home	
	U*U*	Cursor Return	
	E_CG	Character Delete	
	E_CP	Character Insert	
	E_C ^	Station should revert to local mode and data set should remain in data mode.	
	DLE E_X		
70	Depress S/R.	S/R, REC, and SEND light.	Terminal Analysis (Page 55)
	Send (by typing) the following characters: U*U* from operator console.	U*U* is received at Data Test Center and displayed on display monitor.	Controller Logic (Page 62)
	Send E_T.	Station reverts to local mode. Data set disconnects.	

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
OPTIONS TEST In this test, Data Test Center will send a test message to check the on-line options in the terminal under test. Station under test will receive message, then send it back to Data Test Center for comparison with original message. Both operators will go to talk mode for evaluation of test.			
71	Depress CLEAR/TALK key, lift handset, and dial Data Test Center. When instructed by Data Test Center, depress RECEIVE, PRINT ON LINE, and enter the data mode per standard procedures from the data set being used.	Option test message displayed on screen (printed if KDP) as follows:  Display shows factory programmed options — rejects NULs (Option 5.a.) DEL (Option 5.e.), and CR (Option 5.c.).  Exceptions to factory programmed options — NUL displayed as N_U (Option 5.b.), DEL displayed as // (Option 5.f.), and CR displayed as ← (Option 5.d.). Print-out for Option 19.c.: 5 NULLS 5 DELETES 5 CRs 5 BAD PARITY 12345 5 BELLS *Note:* Message received on printer may "data stack" (carriage returns inserted during line of data, data "stacked" together, no missing characters).	Controller Logic (Page 62) Printer (Section 582-210-500)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
71 (Cont)		Printer will feed out 16 lines on receipt of ETX if Option 18.c. is enabled. Option 18.c. should not be used with tractor feed printers. Station will revert to local mode if Option 8.c. is enabled. Data set does not disconnect.	
72	Change ETX at end-of-message to EOT. Home cursor and depress SEND. *Note:* If Option 27.a. is enabled, cursor automatically homes on depressing SEND. Try when cursor is not in home position.	E_X is replaced by E_T. SEND lights and cursor moves through message. Printer prints if KDP. Station reverts to local after sending EOT. Data set disconnects. *Note:* Data Set 113A does not disconnect although data set at Data Test Center does.	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62) Display Logic (Page 58)
73	Depress CLEAR/TALK key, lift handset, and dial Data Test Center. Evaluate results of test with Data Test Center operator. If results are satisfactory, home cursor and clear screen (local mode.		
STEPS 74 THROUGH 78. APPLY ONLY TO FULL-EDIT KD OR KDP WITH OPTION 6.b. ENABLED. FOR FULL-EDIT TERMINALS WITH OPTION 6.a. ENABLED, GO TO STEP 79. EDIT TEST In this test, Data Test Center will send a test message to check the response to escape sequences of the terminal under test. Station under test will receive message, then send it back to Data Test Center for comparison with original message. Both operators will go to talk mode for evaluation of test.			
74	When instructed by Data Test Center operator, depress RECEIVE, PRINT ON LINE, and enter data mode.	REC and PRINT ON LINE light. Cursor automatically goes home. Edit test message displayed on screen (and printed, if KDP) as follows:	Terminal Analysis (Page 55) Controller Logic (Page 62) Printer (Section 582-210-500)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

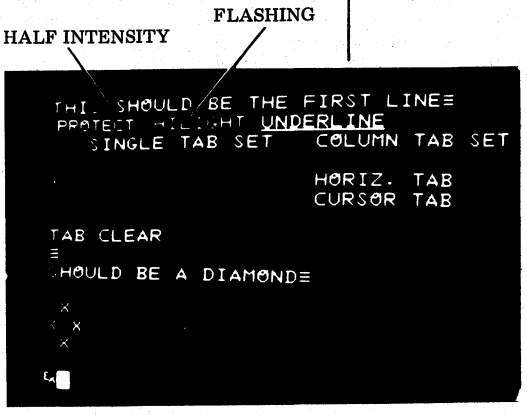
STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
74 (Cont)	 *Note:* KDP printed message should NOT contain suffixes of escape sequences sent by Data Test Center.	Upon receipt of ETX at end-of-message, station should revert to the local mode, if Option 8.c. is enabled. For KDP, friction feed printer feeds out 16 lines of paper on receipt of ETX if Option 18.c. is enabled. *Note:* Option 18.c. should not be used with tractor feed printers.	
75	Depress PRINT ON LINE if KDP. Depress FORM SEND.	PRINT ON LINE and FORM SEND keys light.	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62)
76	Home cursor, depress SEND. *Note 1:* If Option 27.a. is enabled, cursor will automatically home on depressing SEND.	SEND lights and cursor moves through message. Printer prints if KDP. Upon sending ETX, station reverts to local mode, if Option 8.c. is enabled. FORM SEND light goes out. *Note 2:* Option 18.c. should not be used with tractor feed printers.	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
77	Home cursor, depress SEND. *Note:* If Option 27.a. is enabled, cursor will automatically home on depressing SEND.	SEND lights and cursor moves through message. After sending ETX, station reverts to local mode.	Operator Console (Opcon) (Section 582-211-500) Controller Logic (Page 62)
78	Go to talk mode and evaluate results of test with Data Test Center operator. If results are satisfactory, home cursor (local mode) and depress FORM ENTER, TAB CLEAR, and CLEAR, then depress FORM ENTER again. *Note:* Option 12.b. must be enabled to clear or change protected data.		

STEPS 79 THROUGH 81 APPLY ONLY TO FULL-EDIT KD OR KDP WITH OPTION 6.a. ENABLED. FOR FULL-EDIT TERMINALS WITH OPTION 6.b. ENABLED, PERFORM STEPS 74 THROUGH 78.

EDIT TEST

In this test, Data Test Center will send a test message to check the response to escape sequences of the terminal under test. Both operators will go to talk mode for evaluation of test. Stations will then disconnect while message is prepared manually on terminal under test. Station under test will call Data Test Center and send prepared message. Both operators will go to talk mode to evaluate results.

79	When instructed by Data Test Center operator, depress PRINT ON LINE of KDP, depress REC, go to data mode.  THIS SHOULD BE THE FIRST LINE PROTECT HILIGHT U N D E R L I N E SINGLE TAB SET COLUMN TAB SET HORIZ. TABCURSOR TABTAB CLEAR SHOULD BE A DIAMOND XXXXSHOULD NOT REMAIN ON DISPLAY	Edit test message displayed on screen (and printed, if KDP) as below: Upon receipt of ETX at end-of-message, terminal will go to local mode, if Option 8.c. is enabled. For KDP, friction feed printer feeds out 16 lines of paper on receipt of ETX if Option 18.c. is enabled. Option 18.c. should not be used with tractor feed printers.	Terminal Analysis (Page 55) Controller Logic (Page 62)

TABLE D (Cont)

COMPLETE ON-LINE CHECKOUT — KD AND KDP TERMINALS

STEP	PROCEDURE	RESULTS	TROUBLE ANALYSIS
80	Home cursor. Depress SEND.	SEND lights. Message is sent. Upon sending ETX, station reverts to local.	Terminal Analysis (Page 55)
81	Go to talk mode and evaluate results with Data Test Center.		
THIS COMPLETES THE ON-LINE CHECKOUT OF A TELETYPEWRITER COMPATIBLE DATASPEED 40 KD OR KDP USING A 103-TYPE DATA SET.			

5. TROUBLESHOOTING

5.01 The troubleshooting information contained herein is divided into two parts:

(a) Terminal Analysis — A step-by-step procedure to determine which component of the Teletypewriter Compatible DATASPEED 40 Station or Set is failing.

(b) Component Analysis — A step-by-step procedure to determine which subcomponent or part (or related adjustment) of the component (display logic, controller logic, etc) is causing failure.

5.02 To use the troubleshooting information, always start with Analysis Question 1 of the Terminal Analysis, and follow the indicated procedure to the directive which specifies jumping into the Component Analysis section. Then follow the specific Component Analysis indicated (ie, display logic, controller logic, etc) starting with Analysis Question 1 to isolate and correct the trouble by replacing the indicated defective component.

5.03 To locate components, circuit cards, connectors, test switches, indicator lamps and other elements indicated in the troubleshooting information, refer to Section 582-200-702, Disassembly/Reassembly, and Parts.

5.04 For wire color codes, cable, connector, and other wiring indicated for continuity checks etc, in troubleshooting, refer to Section 582-200-402, Wiring Diagrams.

5.05 If replacement of the part or subcomponent indicated in the Component Analysis does not correct the trouble, replace the next higher order of component (ie, fuse, power distribution assembly, display monitor, or entire terminal).

5.06 When installing a replacment component, make certain that all options (if present) in this component are implemented for proper set operation.

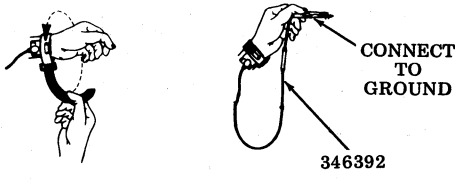
5.07 Where more than one component is specified for replacement, they shall be substituted one at a time in the order specified. The original component shall be replaced if the trouble is not corrected before making the next indicated substitution.

5.08 Once the trouble has been corrected, the terminal should be checked out to be sure that it is performing properly. Refer to the apropriate On-Line or Off-Line Checkout procedures.

5.09 The following caution procedures must be observed when troubleshooting the DATASPEED 40:

Warning 1: Turn off all power or signal sources before removing or replacing any component.

Warning 2: Personnel working with the Model 40 must wear a static protection ground strap when handling circuit cards with MOS devices. The strap must be worn so as to make firm contact with the skin at all times.



Note: Service personnel are never to be connected directly to ground but rather through a high resistance discharge path of a minimum of one megohm where 115 V ac is present.

TABLE E

TERMINAL ANALYSIS

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
1. Do the fans turn when power is ON?	Go to 2.	Check ac to fan. Ref: Section 582-200-402, Wiring Diagrams Section 582-200-702, Disassembly/Reassembly, and Parts. Fan cable connected. Power switch(es) ON. AC present at fan assembly connector.
2. Does the LOCAL lamp on the opcon turn ON when power is turned ON?	Go to 4.	Go to 3.
3. Are all three LED indicators in the power supply ON?	Go to Section 582-211-500, Operator Console (Opcon). Go to Page 62, Controller Logic.	Go to Section 582-214-500, 40PSU101 Power Supply.
4. Is the red drive lamp I5 (in display monitor) ON?	Go to 5.	Go to Page 58, Display Logic. Go to Section 582-213-500, 40MN101 Display Monitor.
5. Is the red pilot lamp I7 (next to fuse on power distribution assembly in display monitor) ON?	Go to 6.	Go to Section 582-213-500, 40MN101 Display Monitor.
6. With the monitor OFF/ON control switch ON (CCW) and the operator brightness control to full intensity (CCW), is the raster visible?	Go to 8.	Go to 7.
7. Is the I6 high voltage lamp in the display monitor ON?	Check Master Brightness adjustment (Section 582-213-700, Display Monitor adjustments). Go to 8.	Go to Section 582-213-500, 40MN101 Display Monitor.
8. Is the cursor displayed on the monitor?	Go to 10.	Go to 9.

TABLE E (Cont)

TERMINAL ANALYSIS

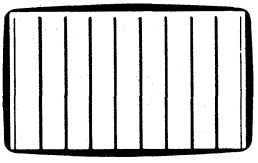
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
9. Turn operator brightness to full intensity (CCW). Depress test switch No. 1 (TS1) in display logic. Does a flashing vertical black bar pattern appear in the raster with no white pattern? 	Go to Section 582-213-500, 40MN101 Display Monitor. Go to Page 58, Display Logic.	Go to Page 58, Display Logic.
10. In the local mode, can all data (including editing functions) be input from the opcon to the display monitor on all segments?	Go to 11.	Go to Section 582-211-500, Operator Console (Opcon). Go to Page 58, Display Logic. Go to Page 62, Controller Logic
11. Are the characters displayed on the display monitor distorted?	Go to Section 582-213-500, 40MN101 Display Monitor. Go to Page 58, Display Logic.	Go to 12.
12. Do characters displayed on the display monitor correspond to those generated from the opcon?	Go to 13.	Go to Page 58, Display Logic Go to Page 62, Controller Logic. Go to Section 582-211-500, Operator Console (Opcon).
13. Does the terminal have a printer?	Go to 14.	Go to 18.
14. Does the printer respond properly when the PRINT LOCAL key on the opcon is depressed?	Go to 18.	Go to 15.

TABLE E (Cont)

TERMINAL ANALYSIS

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
15. Does the PRINT LOCAL key on the opcon light?	Go to 16.	Go to Local Loop-Back Tests (Section 582-211-500). If PRINT LOCAL lamp fails test, replace opcon. If PRINT LOCAL lamp passes test, remove opcon from loop-back mode and go to 16.
16. Does the type carrier symbol (or) print in every column when the printer TEST switch TS9 is ON and the printer cover is closed or the interlock switch is in the maintenance up position?	Go to 17.	Go to Section 582-210-500, Printer.
17. Does the printer feed paper when PAPER ADVANCE is depressed?	Go to Page 62, Controller Logic. Go to Section 582-210-500, Printer.	Replace 341895 printer cable. Go to Page 62, Controller Logic. Go to Section 582-210-500, Printer.
18. Does the station perform on-line tests properly?	Place in service.	Go to Page 62, Controller Logic.

COMPONENT ANALYSIS

5.10 The following tables contain the Trouble Analysis for the logic in the DATASPEED 40/2 Station. Table F contains analysis for the Display Logic, and Table G contains analysis for the Controller Logic.

5.11 Trouble Analysis for components other than the Display Logic and Controller Logic can be found in the following BSPs:

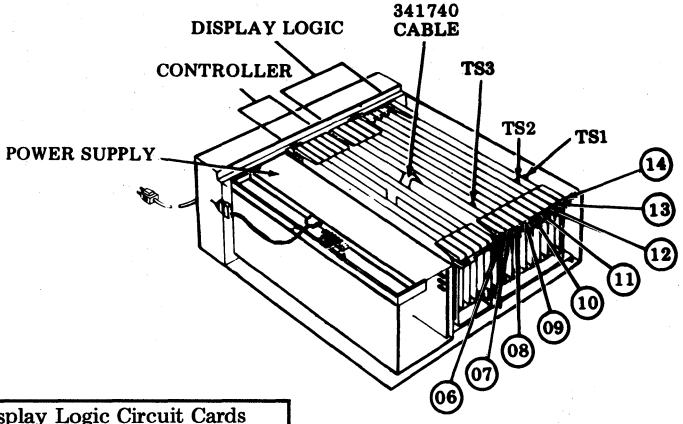
582-210-500	Printer
582-211-500	Operator Console (Opcon)
♦ 582-213-500	40MN101 or 40MN201 Display Monitor ♦
582-214-500	40PSU101 Power Supply

♦ 5.12 If Data Set problems are suspected, refer to the following BSPs for Data Set Test Procedures:

103G — 591-026-200
103J — 591-039-200
103JR — 591-044-200
108F — 591-042-100
108G — 591-042-100
113A — 591-033-200
113C — 591-041-200
113CR — 591-046-200
113D — 591-040-200
113DR — 591-047-200
201C — 592-029-200
201CR — 592-036-200
202C — 592-015-200
202R — 592-025-200
202S — 592-028-200
202SR — 592-037-200
202T — 592-031-200
208A — 592-027-200
208B — 592-030-200
208BR — 592-038-200
209A — 592-032-200
212A — 592-034-200
212AR — 592-039-200
829 DATA AUXILIARY SET — 598-082-200 ♦

TABLE F

DISPLAY LOGIC



Display Logic Circuit Cards	
Pos.	
06	410002
07	410001, 410009 or 410018
08	410003
09	AUX
10	410005 (See Note 1.)
11	410005 (See Note 1.)
12	410005 (See Note 1.)
13	410657, 410020, 410021, 410022
14	410855
Wired Frame	341672 (See Note 2.)

Note 1: For 1 segment (24 lines), card is in position 10. For 2 segments (48 lines), cards are in position 10 and 11. For 3 segments (72 lines), cards are in positions 10, 11, and 12.

Note 2: If trouble is not cleared after replacing all components listed, check or replace wired frame.

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
1. Depress TS1 test switch on 410855 circuit card. Is the following pattern generated on the display? Are all of the elements shown in enlarged view I and II present?	Go to 2.	Replace 410855 circuit card.

TABLE F (Cont)

DISPLAY LOGIC

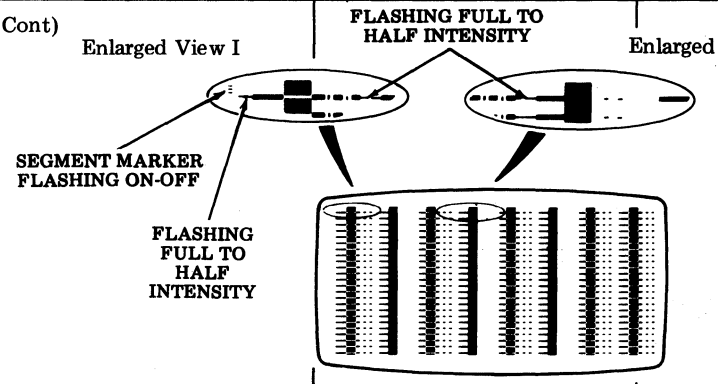
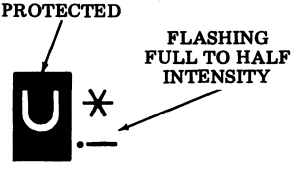
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
1. (Cont) Enlarged View I  TS1 Test Pattern		
2. Depress TS2 test switch on 410657, 410020, 410021, or 410022 circuit card. Is the U* (or *U) pattern, with protected and high-lighted elements as indicated below, generated across all lines of the display?  TS2 Test Pattern (Generated across all lines of the display.)	Go to 3.	Replace 410657, 410020, 410021, or 410022 circuit card.
3. Depress and hold down TS3 test switch on 410001, 410009, or 410018 circuit card. Is the * character generated across all lines of the display in all character positions? Also check segments 2 and 3 (if present) by scrolling.	If data appears on screen that is not sent from opcon: Replace 410005 circuit card for segment affected. Replace 410002 circuit card. Go to 8.	Go to 4.

TABLE F (Cont)

DISPLAY LOGIC

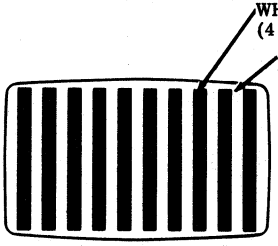
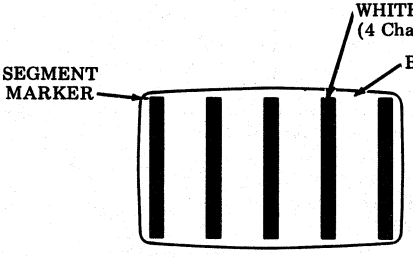
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
4. With TS3 depressed, is a black and white bar pattern generated on the display with bars that are 4 character positions wide as shown below?  TS3 Test Pattern	Go to 5. *Note:* Pattern is not necessarily centered on the display as illustrated.	Go to 6.
5. Remove 341740 cable. Depress TS3. Is the test pattern from Question 4 still generated on the display?	Replace 410002 circuit card.	Trouble is in controller. Go to Controller Logic (Page 62).
6. With TS3 depressed, is a black an white bar pattern generated on the display with white bars 4 character positions wide and black bars 12 characters positions wide as shown below?  TS3 Test Pattern	Replace 410005 circuit card. for the segment indicated by the segment marker displayed in the test pattern. *Note:* Pattern is not necessarily centered on the display as illustrated.	Go to 7.

TABLE F (Cont)

DISPLAY LOGIC

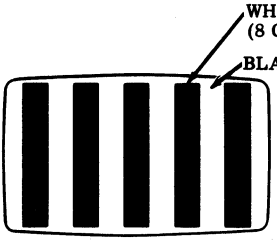
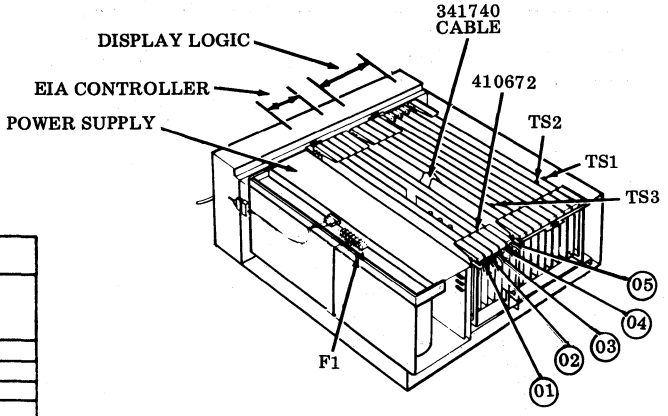
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
7. With TS3 depressed, is a black and white bar pattern generated on the display with bars that are 8 character positions wide as shown below?  TS3 Test Pattern	Replace 410003 circuit card. *Note:* Pattern is not necessarily centered on the display as illustrated.	Replace 410001, 410009, or 410018 circuit card.
8. With TS3 depressed, does the cursor and first segment marker come to rest in a stationary condition at the HOME position?	Display logic is good. Trouble is elsewhere.	Replace 410003 circuit card.

TABLE G

CONTROLLER LOGIC



*410770 required for KDP or S/R operation.

Controller Circuit Cards	
Pos	Full Edit W/P or S/R
01	410770*
02	410679
03	410672
03	410676
04	410675
05	410674
Wired Frame	402176

Note: If trouble is not cleared after replacing all components listed, check or replace wired frame.

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
1. Can characters be entered from the opcon to the display in the local mode?	Go to 2.	Refer to Operator Console (Opcon) (Section 582-211-500) Replace 410672 circuit card. Replace 410674 circuit card. Replace 410675 circuit card.
2. Can the characters be entered and displayed properly?	Go to 3.	Replace 410672 circuit card. Replace 410674 circuit card. Replace 410002 circuit card. Check 341740 display logic interface cable.
3. Do any keys fail to light on the opcon when depressed?	Replace 410672 circuit card. Go to Operator Console (Opcon) (Section 582-211-500).	Go to 4.
4. Do all mode selection and editing features operate properly (ie send lamp lights with 202 modem and HDX)? (Refer to Mode Charts, Pages 65,66).	Go to 5.	Replace 410672 circuit card. Replace 410674 circuit card. Replace 410675 circuit card.

TABLE G (Cont)

CONTROLLER LOGIC

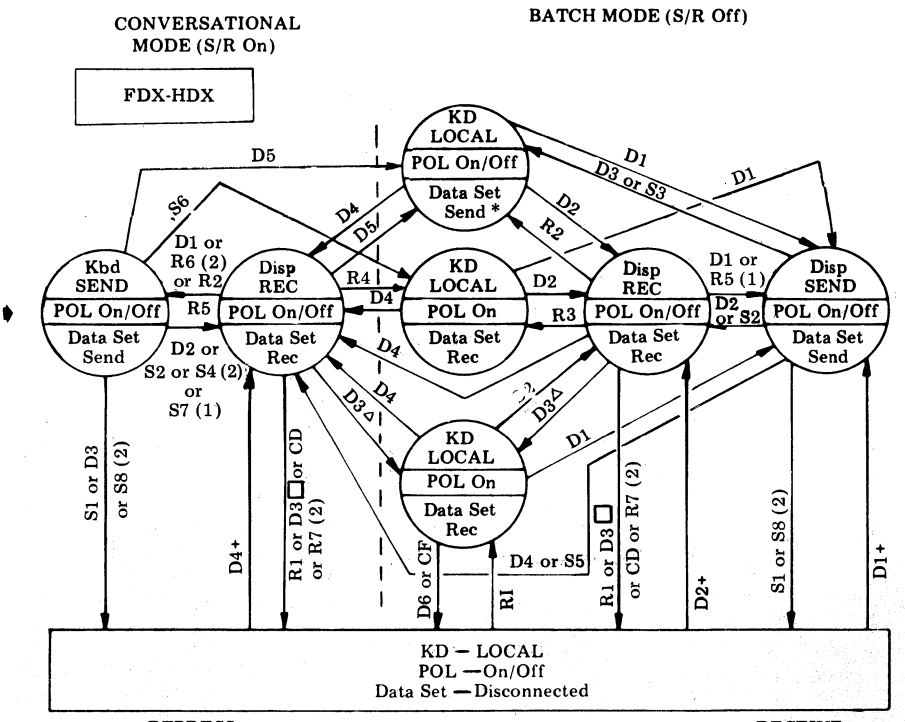
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
4. (Cont)		Replace 410679 circuit card. Check CTS lead (pin 5) of EIA interface for "on" condition with data set in data mode, station in send mode. Replace 410002 circuit card. Go to Operator Console (Opcon) (Section 582-211-500).
5. Can the station send and receive properly on line?	Go to 8.	Replace 410679 circuit card. Check data set, 408065 data set cable or transmission line facilities. Go to 6.
6. With the 410676 circuit card removed, is the station able to send properly — excluding Send Variations (Option 13.) responses?	Replace with new 410676 circuit card.	◆ Reinsert 410676 card and: ◆ Replace 410679 circuit card. Replace 410675 circuit card. Replace 410674 circuit card. Replace 410002 circuit card. Go to Display Logic (Page 58). Go to 7.
7. Does the station respond properly to control characters and sequences?	Go to 8.	Replace 410674 circuit card. Replace 410675 circuit card. Replace 410679 circuit card. Replace 410770 circuit card.
8. Does the terminal have a printer?	Enter U*U* across the first two lines of the display. Go to 9.	Go to 10.
9. Does the terminal respond properly to the PRINT LOCAL function and the PRINT ON LINE function?	Go to 10.	Replace 410770 circuit card. Replace 410674 circuit card. Replace 410679 circuit card.
10. Can the proper escape sequences be sent on line? (Refer to Mode Charts Pages 65,66).	Go to 11.	Replace 410676 circuit card. Replace 410675 circuit card.

TABLE G (Cont)

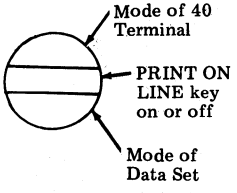
CONTROLLER LOGIC

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
10. (Cont)		Replace 410674 circuit card. Replace 410002 circuit card.
11. Are the proper line ending sequences (LF, CR LF, CR CR LF) sent on line?	Go to 12.	Replace 410675 circuit card. Replace 410674 circuit card.
12. Does the S/R mode operate properly?	Controller is good. Trouble is elsewhere.	Replace 410679 circuit card. Replace 410674 circuit card. Replace 410770 circuit card.

MODE CHART 1
202-TYPE MODEM INTERFACE

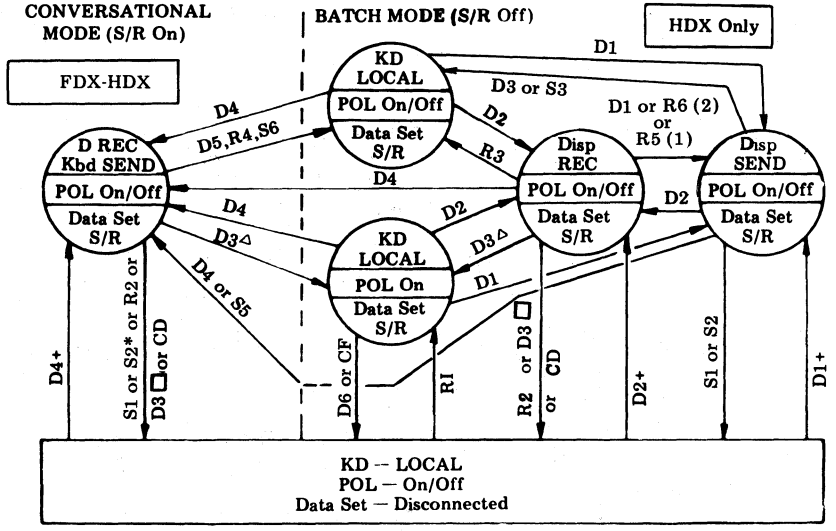


DEPRESS		SEND		RECEIVE	
D1	SEND key	S1	DLE EOT	R1	DLE EOT
D2	REC key	S2	EOT	R2	EOT
D3	LOCAL key	S3	ETX or GS or FF	R3	ETX or GS or FF
D4	S/R key (on)	S4	DC3 (2)	R4	DLE ETX, FF, GS
D5	S/R key (off)	S5	DC3	R5	ESCf (1)
D6	INTRPT key (on) or PRINT ON LINE key (off) (DC4)	S6	DLE ETX, GS, FF	R6	DC1 (2)
		S7	RETURN (←) (1)	R7	EOT (2)
		S8	EOT (2)		



(1) — Applies to Issue 4B and later 410674 circuit card.
* — STD (Reverse Channel) off.
RI — Detection of ring indicator from the data set with PRINT LOCAL off, INTRPT off and KD in LOCAL.
CD — No carrier detected for 45 seconds.
↗ — Change in mode.
\+ — Then make connection or auto-answer.
△ — If PRINT ON LINE is on.
□ — If PRINT ON LINE is off.
(2) — Requires 407414 modification kit.
CF — Loss of Carrier Detect.

MODE CHART 2
103-TYPE MODEM INTERFACE



DEPRESS

D1 SEND key
D2 REC key
D3 LOCAL key
D4 S/R key (on)
D5 S/R key (off)
D6 INTRPT key (on) or PRINT ON LINE key (off) (DC4)

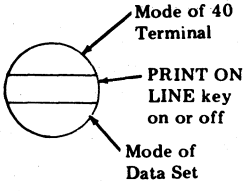
SEND

S1 DLE EOT
S2 EOT
S3 ETX or GS or FF

S5 DC3
S6 DLE ETX, FF, GS (HDX, or Echoplex Only)

RECEIVE

R1 DLE EOT
R2 EOT
R3 ETX or GS or FF
R4 DLE ETX, FF, GS
R5 ESCf (1)
R6 DC1 (2)



(1) — Applies to Issue 4B and later 410674 Circuit Card.
* — HDX Only
RI — Detection of ring indicator from the data set with PRINT LOCAL off, INTRPT off and KD in LOCAL.
CD — No carrier detected for 45 seconds.
↗ — Change in mode.
\+ — Then make connection or auto-answer.
△ — If PRINT ON LINE is on.
□ — If PRINT ON LINE is off.
(2) — Requires 407414 modification kit.
CF — Loss of Carrier Detect.

TELETYPEWRITER COMPATIBLE "DATASPEED*"40/2

DISASSEMBLY/REASSEMBLY AND PARTS

1. GENERAL

1.001 This addendum supplements Section 582-200-702, Issue 2. Place this pink sheet ahead of Page 1 of the section.

1.002 This addendum is used to correct copyright dates.

2. CHANGES TO SECTION

2.001 On the bottom of Page 1, change the copyright notice dates to read as follows:

*Registered Trademark of AT&TCo.

TELETYPEWRITER COMPATIBLE "DATASPEED*" 40/2

DISASSEMBLY/REASSEMBLY AND PARTS

CONTENTS

1. GENERAL

1.01 This practice covers the Teletypewriter Compatible DATASPEED 40/2 Station Arrangements, and provides the information necessary to disassemble and reassemble DATASPEED 40/2 and associated equipment.

1.02 This section is reissued, to add detailed information on Display Logic. Revision arrows are used to indicate the changes.

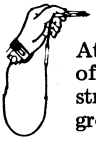
1.03 When ordering replaceable components, unless otherwise specified, prefix each part number with the letters "TP" (ie; TP410055).

1.04 The following Warnings and Danger are to be used as safety measures for the apparatus and the craftsperson.

Warning 1: Turn off all the power and signal sources before removing or replacing any component.

Warning 2: To avoid possible internal damage to circuitry, wear a 346392 static discharge strap connected to ground to allow static discharge before handling circuit cards for removal or replacement. Avoid touching circuit lands or components as much as possible.

Attach static ground strap tightly to wrist.

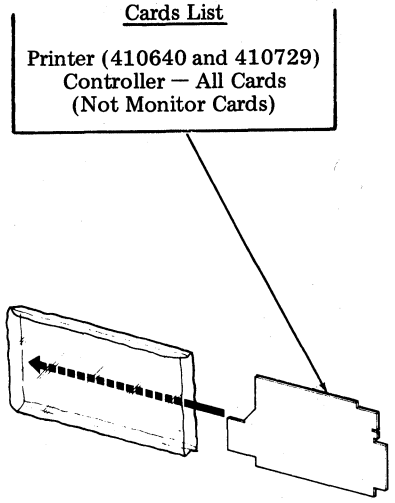


Attach clip end of static discharge strap to frame ground.

Danger: Safety glasses must be worn whenever monitor cover is removed or whenever monitor is replaced.

*Registered Trademark of AT&TCo.

Prepared for American Telephone and Telegraph Company by Teletype Corporation



Warning 3: Place listed card in an RM150592 static bag immediately after removal from unit. Do not place any printer paper in the bag with the card. Keep the card in the static bag at all times. Never handle the card outside the bag without wearing a properly grounded 346392 static ground strap.

1.05 Disassembly and parts information for individual components in the DATASPEED 40 Station can be found in the following BSPs:

582-210-702 DATASPEED 40 Printer
582-211-700 DATASPEED 40 Operator Console
582-212-700 DATASPEED 40 Cabinets
582-213-701 DATASPEED 40 Display Monitor
582-214-700 DATASPEED 40 Power Supplies

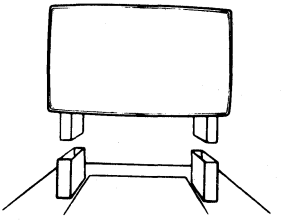
1.06 Reverse the disassembly instructions in order to reassemble the station components.

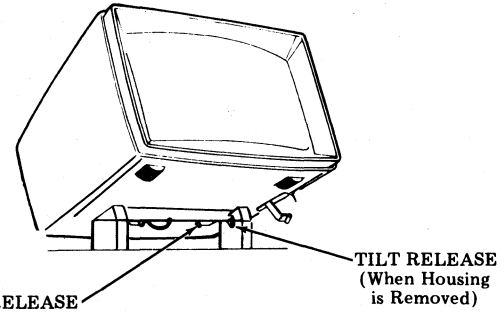
2. KD AND KDP

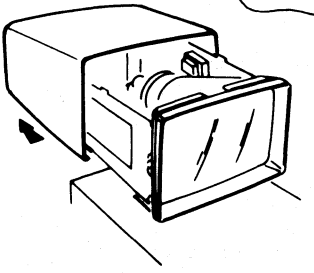
Warning: Remove all power from the set before performing any component replacement or conversions. This does not apply to cover removal for access to test switches, or to power on adjustments of the monitor.

MONITOR

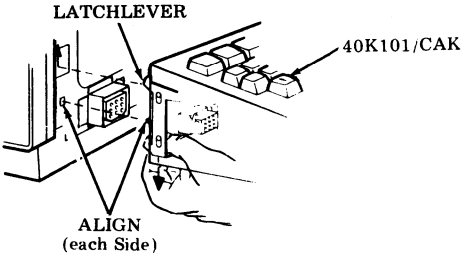
①Removal of entire monitor unit from set:
Grasp monitor by sides near supports and simply lift up. Electrical cable connectors are part of support assembly.
②Removal of monitor housing:
Tilt monitor back and disengage latch.
Slide housing back partially.
Position monitor to its normal position making sure it locks in that position.
Remove housing completely.







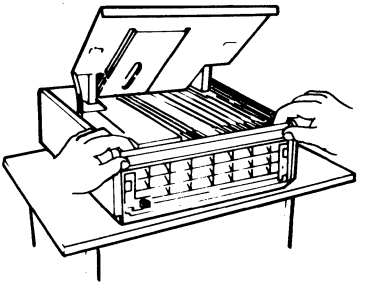
OPERATOR CONSOLE



① Place thumb on inward tab of console (both sides).
② Press downward into unlatched position (each side).
③ Remove console. (When replacing console, make sure locating pins are fully engaged before pushing latchlevers upward into locked position.)

ELECTRONICS PACKAGE AND POWER SUPPLY

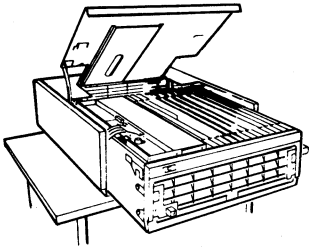
A. KD or KDP (Logic Under Monitor)



To remove cards or power supply:

① Open lid.
② Insert fingers as shown and lift then pull module forward.

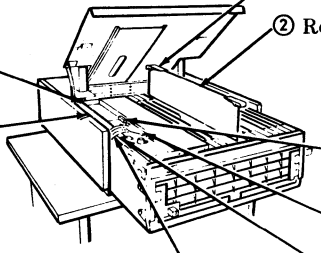
Note: Do not attempt to lift at opcon (if present).



③ Move module forward until blocked by latch to provide sufficient clearance for card removal.

To remove circuit cards:

① Lift handle(s) carefully.
② Remove circuit card.



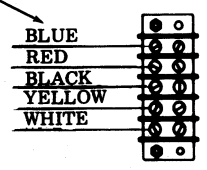
⑤ Use handle to lift out power supply.

⑥ Replace power supply making sure to seat on locating pins.

To remove and replace power supply:

① Disconnect ac power cord.
② Remove insulator.
③ Remove 5 screws. Remove cable and wires from terminal strip.

⑦ Replace wires and just start screws. Then slip in cable terminals and tighten screws.



⑧ Replace insulator and plug in ac power cord and reposition retainer bracket.

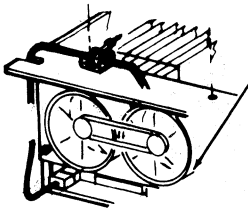
POWER SUPPLY RETAINER BRACKET

④ Loosen screw sufficient to raise and turn retaining bracket away from handle.

Early Design Only
④ Raise 401783 bracket enough to slide 341891 monitor cable underneath.

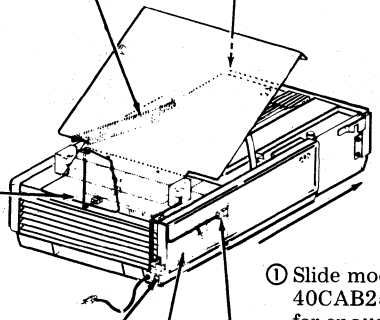
⑥ Release latch on right side of cabinet and slide module out of cabinet.

⑤ Remove *341891 monitor cable from grooves in fan assembly frame and display logic frame. Lower 401783 bracket and engage clip to side of module.



Belted Fan Assembly

*Supplied with cabinet

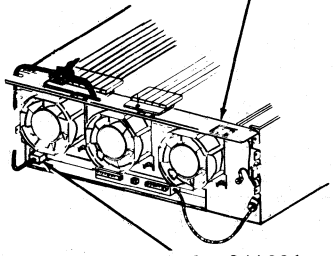


① Slide module out of 40CAB251/AB cabinet far enough to engage latch on right side of cabinet.

*400599
AC DISTRIBUTION
ASSEMBLY

② Reach in and disconnect *401633 ac power cable attached to back of fan assembly.

40CAB251/AB
LOGIC CABINET



Receptacle for 341891 cable plug.

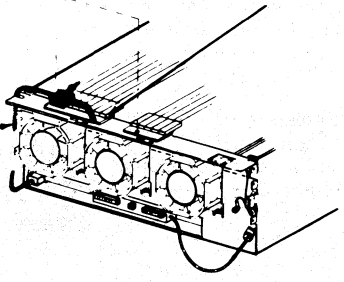
Beltless Fan Assembly

③ Loosen 341819 shoulder screw attached to fan assembly frame where the guide in the display logic aligns with tapped hole in fan assembly. Slide clip attached to 341891 cable out from under lip of display logic frame. Remove cable.

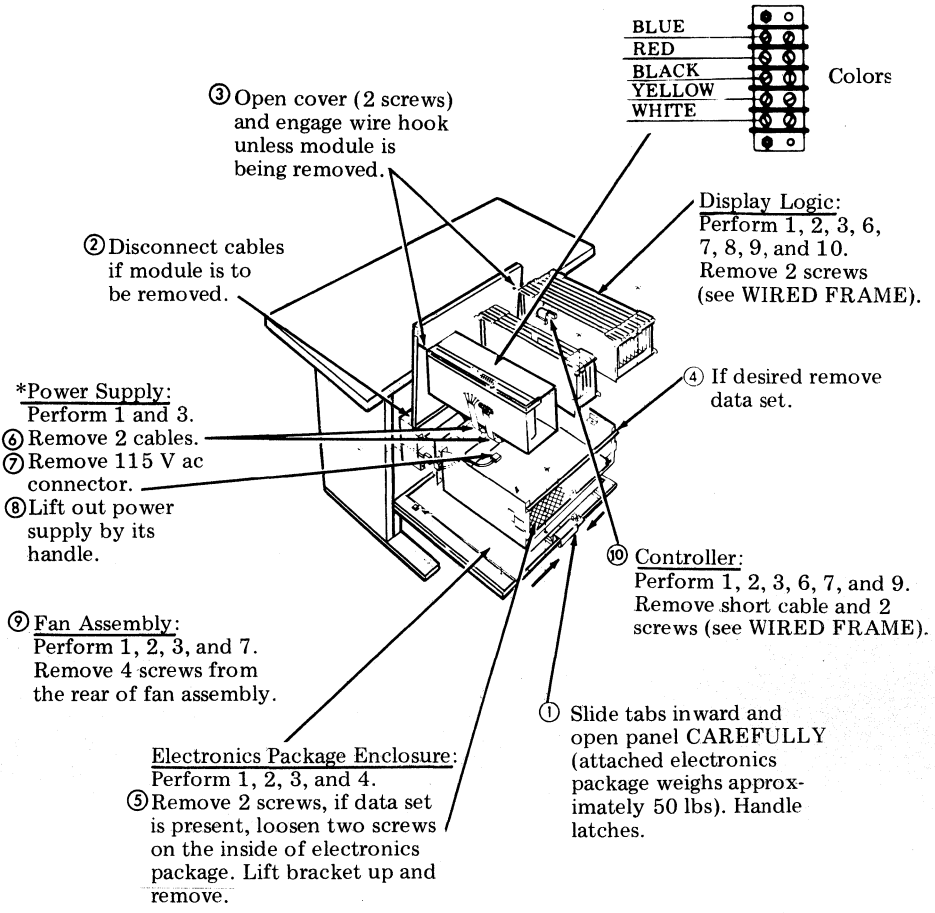
341819

DISPLAY LOGIC
FRAME

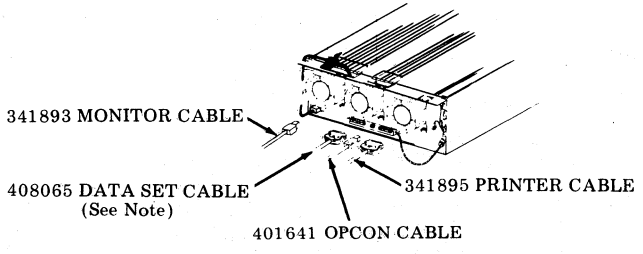
341891 CABLE
TO MONITOR



B. KDP (Logic in Pedestal)

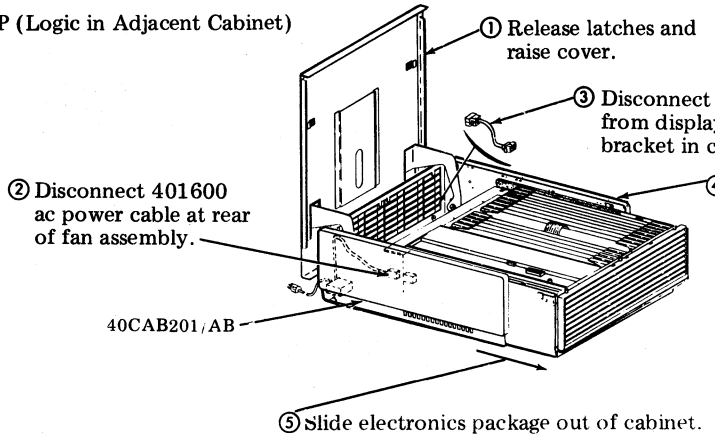


*To reinstall power supply, seat it on locating pins in the base of the enclosure. Cables are routed over handle.



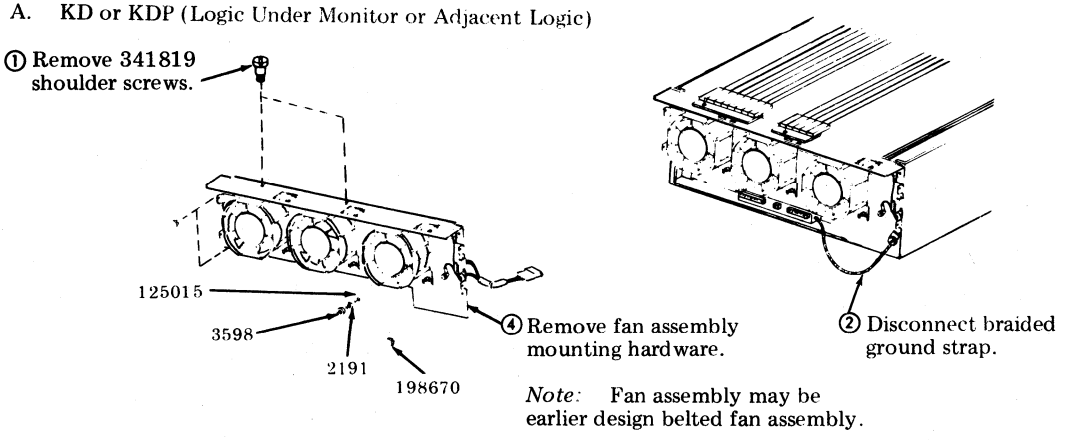
Note: 408066, 408067, 408068 or 341896 cable may be used instead of 408065.

C. KDP (Logic in Adjacent Cabinet)

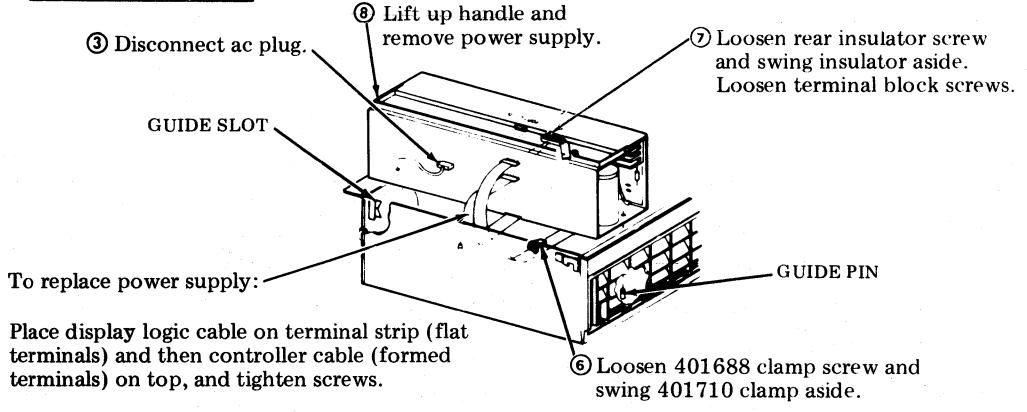


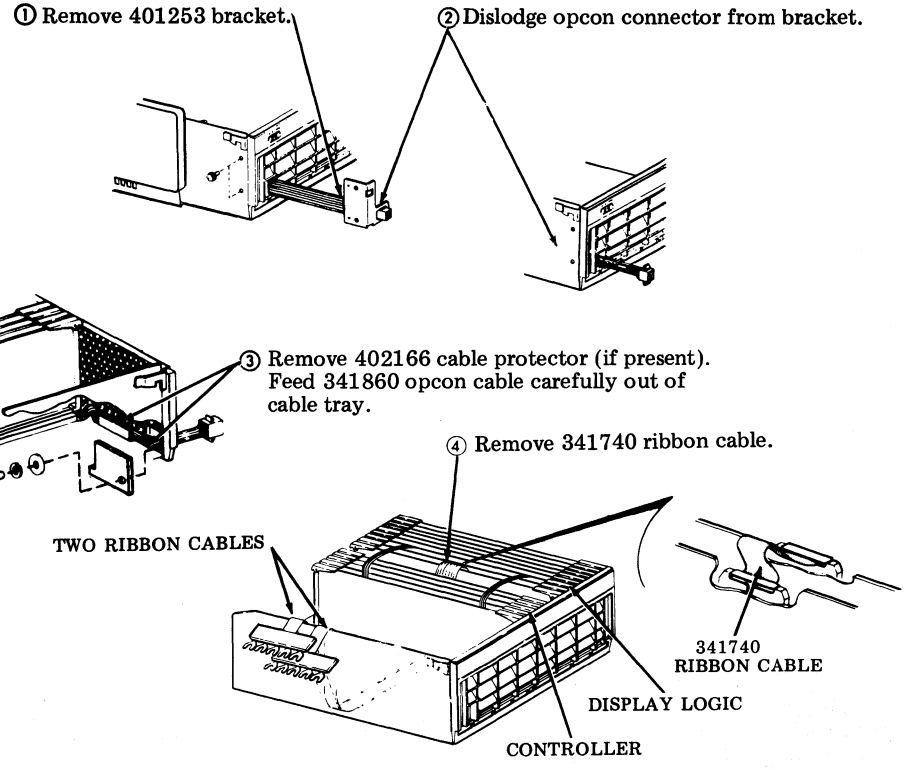
WIRED FRAME

A. KD or KDP (Logic Under Monitor or Adjacent Logic)

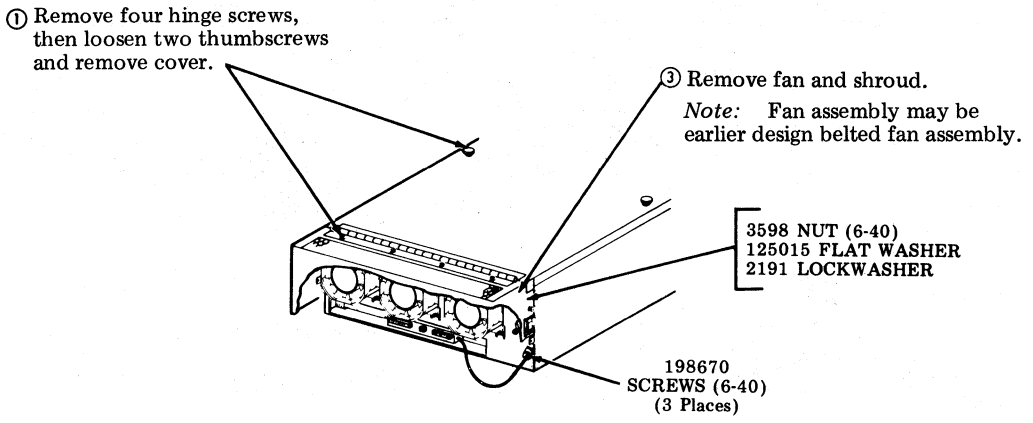


⑤ Remove power supply.

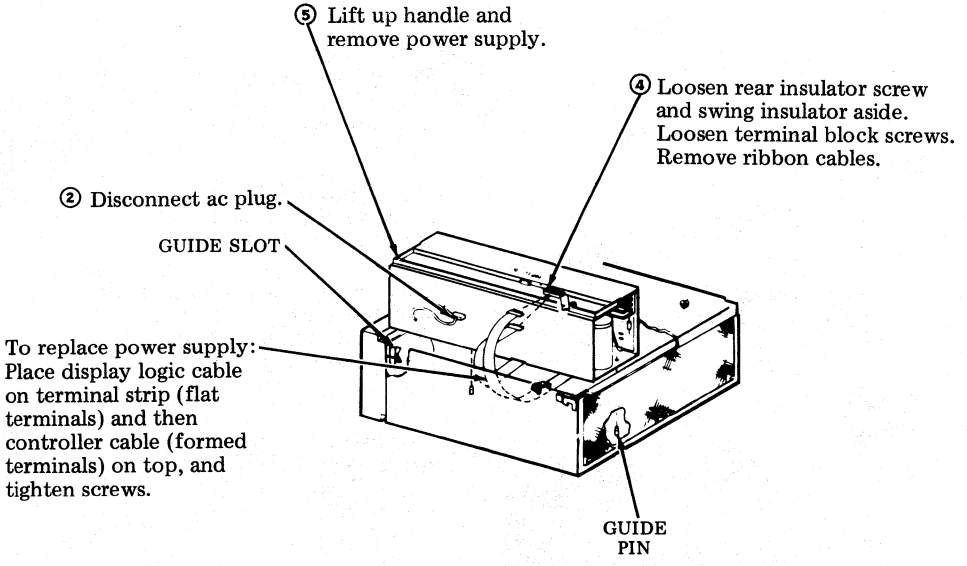



① Remove 401253 bracket.
② Dislodge opcon connector from bracket.
③ Remove 402166 cable protector (if present). Feed 341860 opcon cable carefully out of cable tray.
④ Remove 341740 ribbon cable.
TWO RIBBON CABLES
341740 RIBBON CABLE
DISPLAY LOGIC
CONTROLLER
⑤ Remove controller wired frame. (Frame may still have cards mounted.)
Note: If attendant selectable features 403400 modification kit is used, disconnect cables from 410679 circuit card.
⑥ Remove display logic wired frame. (Frame may still have cards mounted.)
40CAB251/AB

B. KDP (Logic in Pedestal)



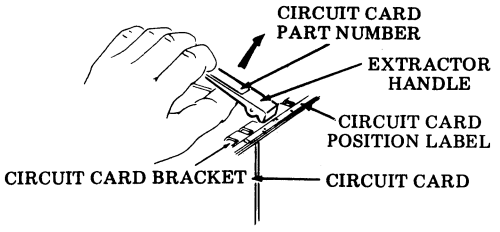
(Rear of Fan Assembly)



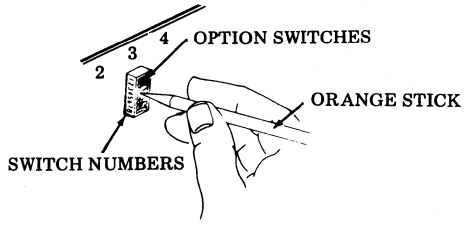
CIRCUIT CARDS

If any field options are to be changed or checked for proper position, turn off power and remove cards using the following procedures.

The station feature and option record should be marked to show any options that differ from factory furnished (*) and should be filled in to indicate what features have been provided in the set or station.

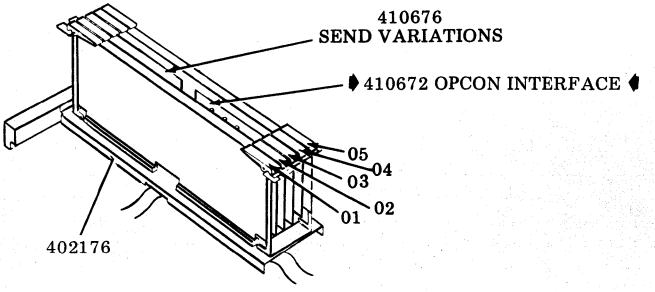


① Extracting circuit card.



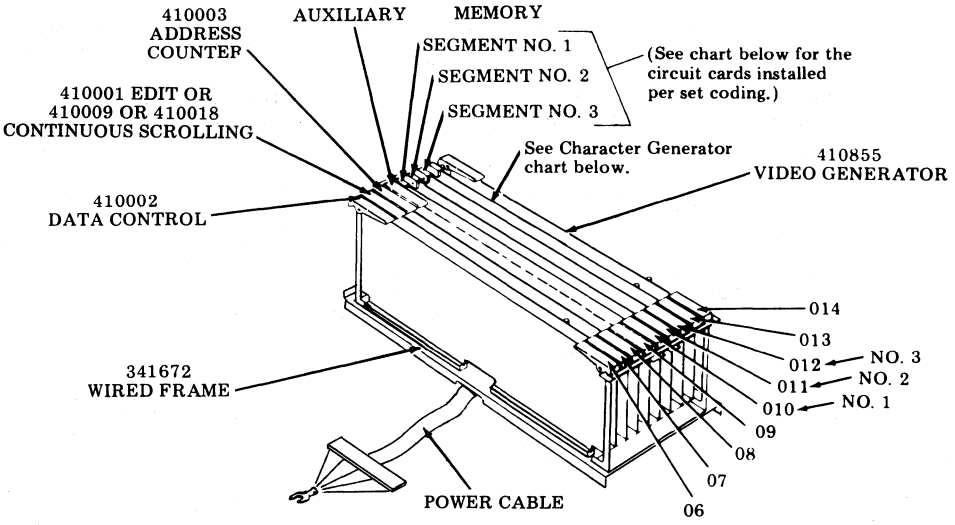
② Activating options.

A. Controller



Position	40C204/BA	40C204/BB	Card Description
01		410770	Printer Interface
02	410679	410679	Full Duplex Interface
03	410672	410672	Opcon Interface
	410676	410676	Send Variations
04	410675	410675	Message Control
05	410674	410674	Data Bus and Decode
Wired Frame	402176	402176	

♦B. Display Logic♦



POSITION NUMBER	40DL291/ZZ	40DL291/BR	40DL291/BS	CIRCUIT CARD DESCRIPTION
06	410002	410002	410002	Data Control
07	410001	410018	¶	Edit
08	410003	410003	410003	Address Counter
09	—	—	—	—
010	—	—	—	Memory Segment No. 1§
011	—	—	—	Memory Segment No. 2§
012	—	—	—	Memory Segment No. 3§
013	410657	410657	410657	Cache and Character Generator
014	410855	410855	410855	Video Generator
Wired Frame	341672	341672	341672	—

§ Memory circuit cards (410014 or 410004 — basic edit, 410015 or 410005 — full edit) are ordered separately. The 410014 and 410004 circuit cards are physically and functionally interchangeable, and similarly 410015 and 410005 are physically and functionally interchangeable.

¶ Edit circuit cards (410001 or 410018 which also provides continuous scrolling features) are ordered separately for 40DL291/BS display logic. The 410009 circuit card is manufacture discontinued.

Various cache and character generator circuit cards are available as indicated in the following chart.

CHARACTER GENERATOR OPTIONS	
POSITION 013	DISPLAY TYPE
410657	Standard ASCII
410020	Line Drawing
410021	Fractions
410022	Weather

PRINTER

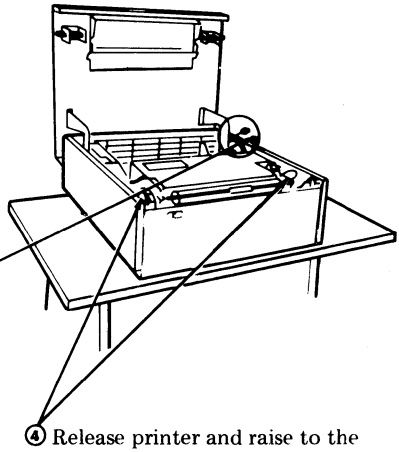
A. KDP (Adjacent Printer)

Friction Feed Printer

To remove and replace entire printer assembly:

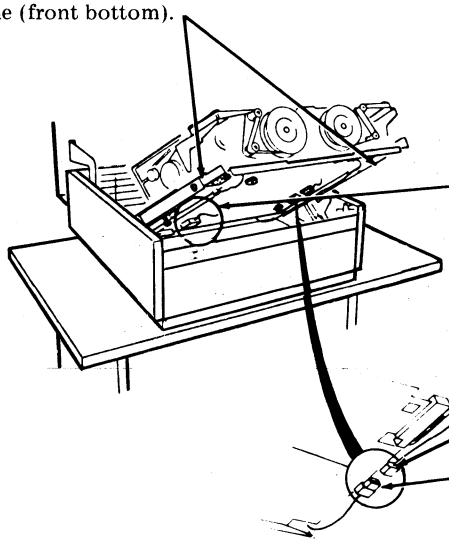
Note: The circuit card can be removed after step 4 of disassembly. If printer is not being removed, omit steps 2 and 3.

① Turn power off. Open cover.
② Disconnect the interlock cable (P106) connector.
③ Remove paper roll.



④ Release printer and raise to the tilt position by depressing the left and right release levers and lifting printer.

⑦ Release (push in) the printer slide detents and pull the printer out by grasping it by the frame (front bottom).

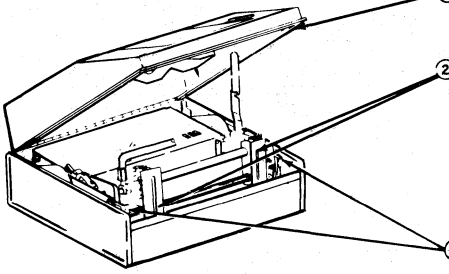


⑤ Disconnect the 115 V ac connector.

P103

⑥ Disconnect SSI cable (P103) from printer cable.

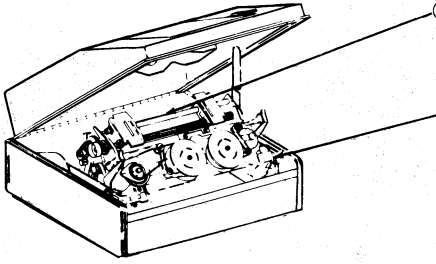
Tractor Feed Printer — 80- and 132-Column Printers (Printer shown is 80-Column.)



① Turn power off. Open cover.

② Remove paper by releasing paper guide and opening forms tractors.

③ Release printer to tilt position by pressing left and right latchlevers to rear.



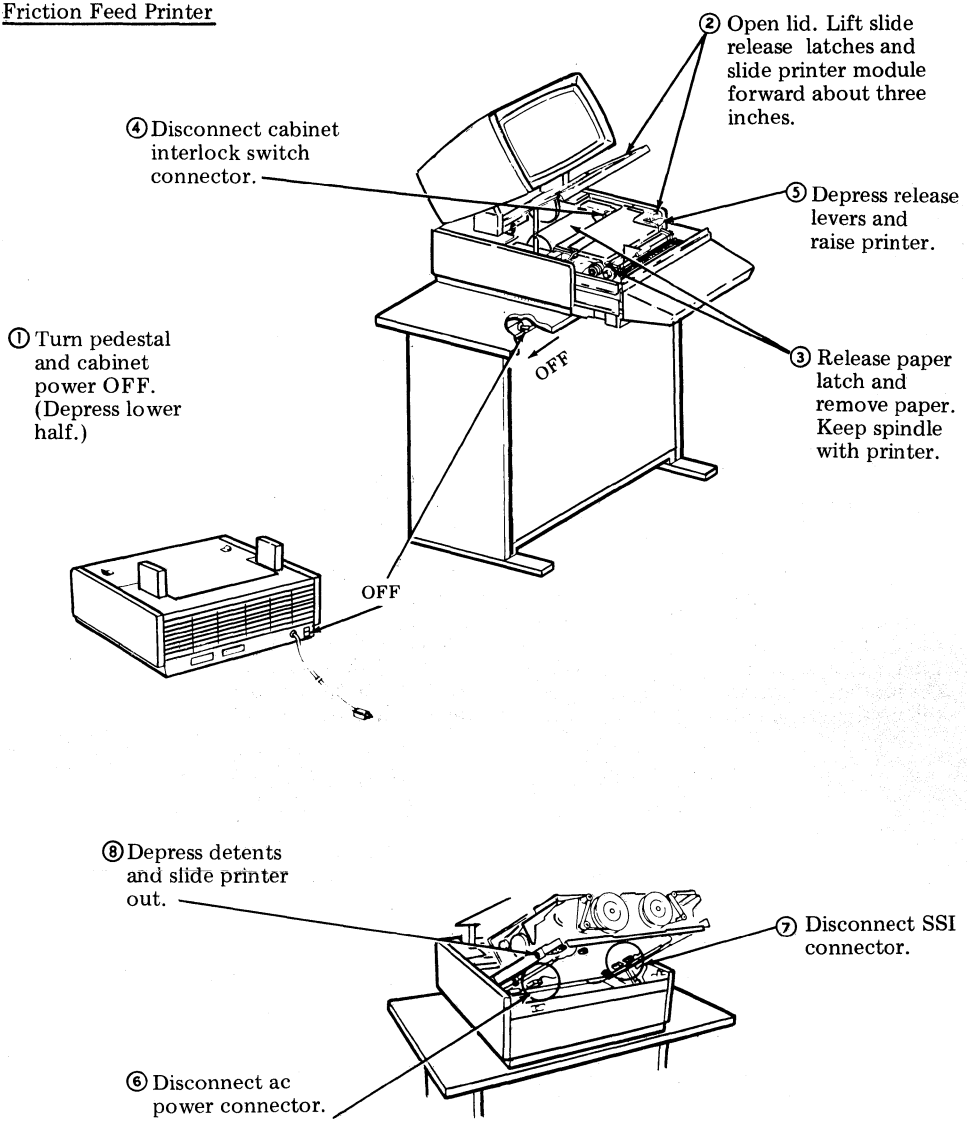
⑤ Pull printer forward by grasping handle at top, and slide off mounting tracks.

④ Insert screwdriver in right mounting track and pry up detent.

In reassembly, make sure connectors at rear are fully connected.

B. KDP (Printer Under Monitor)

Friction Feed Printer



3. PARTS

GENERAL

3.01 Field replacement components of the controller and its cables are listed in the following index, showing the page number in the section where they are illustrated.

3.02 Parts for the other station components are listed in the following BSPs:

582-210-702 DATASPEED 40 Printer
582-211-700 DATASPEED 40 Operator Console
582-212-700 DATASPEED 40 Cabinets
582-213-701 DATASPEED 40 Display Monitor
582-214-700 DATASPEED 40 Power Supplies

REPLACEMENT PARTS LIST

A. Display Logic

		Ref. Page
341672	Wired Frame	10
341740	Cable, Controller/Display	7
410001	Circuit Card Assembly	10
410002	Circuit Card Assembly	10
410003	Circuit Card Assembly	10
◗410004	Circuit Card Assembly	10 ◖
410005	Circuit Card Assembly	10
410009	Circuit Card Assembly	10
◗410014	Circuit Card Assembly	10 ◖
◗410015	Circuit Card Assembly	10 ◖
410018	Circuit Card Assembly	10
◗410020	Circuit Card Assembly	10 ◖
◗410021	Circuit Card Assembly	10 ◖
◗410022	Circuit Card Assembly	10 ◖
410657	Circuit Card Assembly	10
410855	Circuit Card Assembly	10

B. Controller Logic

		Ref. Page
402176	Wired Frame	9
410672	Circuit Card Assembly	9
410674	Circuit Card Assembly	9
410675	Circuit Card Assembly	9
410676	Circuit Card Assembly	9
410679	Circuit Card Assembly	9
410770	Circuit Card Assembly	9

C. Cables

		Ref. Page
341891	Cable, Monitor	4
341893	Cable, Monitor	5
341895	Cable, Printer	5
341896	Cable, Data Set	5
401600	Cable, Fan ac	6
401633	Cable, Power ac	4
401641	Cable, Opcon	5
402173	Cable, Display Logic	6
408065	Cable, Data Set	5
408066	Cable, Data Set	5
408067	Cable, Data Set	5
408068	Cable, Data Set	5

TELETYPEWRITER COMPATIBLE "DATASPEED*"40/2

ROUTINE MAINTENANCE

1. GENERAL

1.001 This addendum supplements Section 582-200-752, Issue 2. Place this pink sheet ahead of Page 1 of the section.

1.002 This addendum is used to correct copyright dates.

2. CHANGES TO SECTION

2.001 On the bottom of Page 1, change the copyright notice dates to read as follows:

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TELETYPEWRITER COMPATIBLE "DATASPEED*" 40/2

ROUTINE MAINTENANCE

CONTENTS PAGE

1. GENERAL

1.01 This section provides the routine maintenance procedures and methods for a DATASPEED 40/2 Station.

1.02 This section is reissued to include additions to terminal gound straps. Revision arrows are used to indicate the change.

1.03 When ordering replaceable components, unless otherwise specified, prefix each part number with letters "TP" (ie, TP410055).

1.04 The following dangers and warnings are to be used as safety measures for the apparatus and the craftsperson.

Danger 1: Turn off all power and signal sources before removing or replacing any component.

Danger 2: Wear approved safety glasses when the housing of the monitor is removed, as the display tube is fragile in the neck area and is subject to implosion if broken. Be careful not to strike the glass of the tube with tools or components when working in its vicinity (Fig. 1).

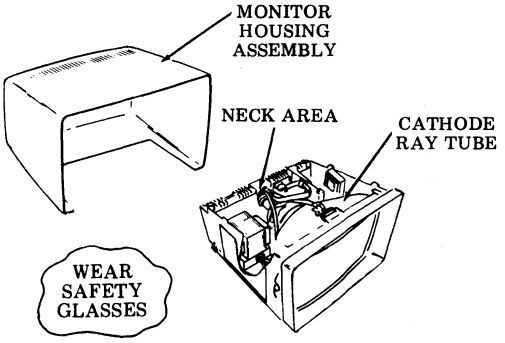

Fig. 1

Warning: To avoid possible internal damage to circuitry, wear a 346392 static discharge strap connected to ground to allow static discharge before handling circuit cards for removal or replacement. Avoid touching circuit lands or components as much as possible (Fig. 2).

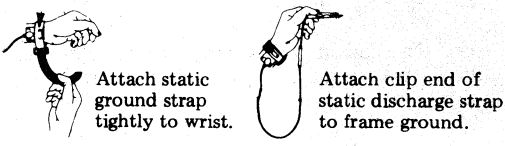

Fig. 2

1.05 Perform the routine maintenance at the customer's convenience. Consider any special maintenance or corrective action requested by the customer or operator.

1.06 This routine is for field use only. Do not attempt repairs without notifying the customer and your supervisor.

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Prepared for American Telephone and Telegraph Company by Teletype Corporation

2. TOOLS AND SUPPLIES

2.01 Tools required for routine maintenance:

- Static discharge strap (346392)
- Safety glasses or goggles (approved)
- Soft bristled brush (1/2 inch collar)
- Vacuum, hand-held (battery or ac type).

2.02 Supplies required for routine maintenance:

- Soft wiping cloths (lint-free)
- Mild detergent (household)
- Container for detergent solution.

3. ROUTINE MAINTENANCE

3.01 The routine required is primarily for the mechanical facilities of each device. This routine is to be performed on each device of a station arrangement, after 2000 hours or one year of service by the station arrangement (whichever occurs first).

3.02 Obtain a station release from attendant, test board, or customer's communication center (give the approximate length of time the station will be out of service). Turn off all power.

3.03 Cleaning routine

Note: On customer location, avoid cleaning methods that spread dust and debris to surrounding areas.

Cabinets, Pedestals and Opcon

(a) Clean all ventilating screens; use a soft bristled brush to remove debris, while vacuuming, see Fig. 3.

(b) Clean exterior surfaces:

(1) Wash with mild detergent solution.

(2) Rinse with damp cloth.

(3) Buff dry with soft cloth.

Monitor

(a) Clean all ventilating slots (top, bottom and sides).

(b) Clean exterior surfaces — wash, rinse and buff.

Warning: Do not use sharp objects, harsh abrasive cleaning agents or solvents which could scratch or damage plastic surfaces.

(c) Interior — brush and vacuum. (See 3.06 for fuse check.)

Note: Dismantling for cleaning shall be kept to a minimum. For monitor disassembly/reassembly procedures, refer to Section 582-213-701.

Fan Assembly — brush and vacuum.

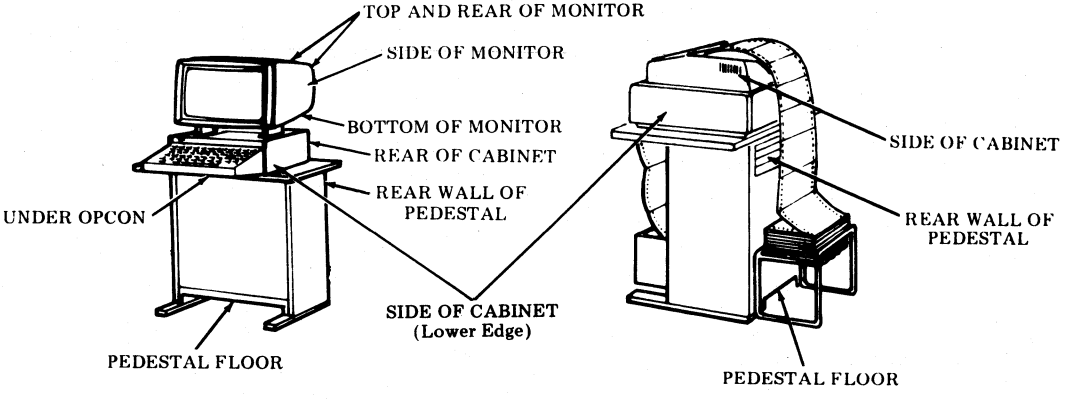


Fig. 3—Ventilating Screen Locations

3.04 Cabinet, pedestals, monitors and opcons do not require routine lubrication.

3.05 Check for and correct any defects in the general appearance of the station:

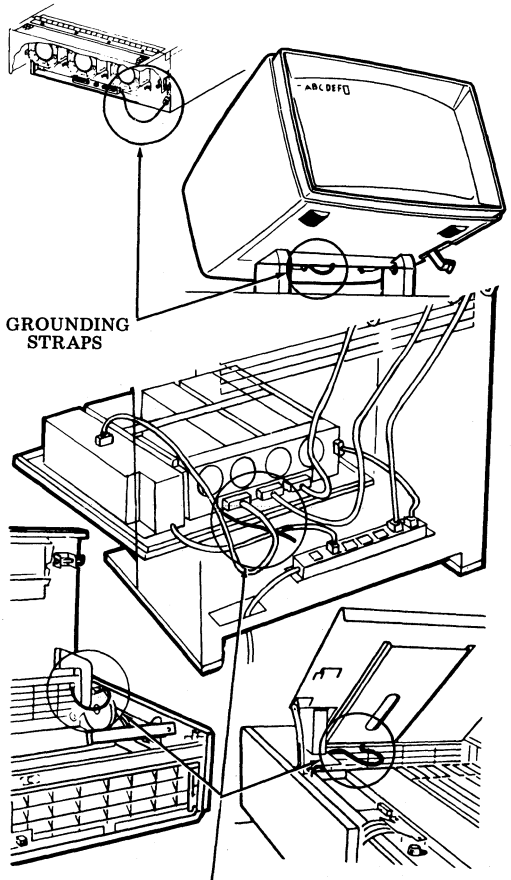
- All connectors are seated properly and securely.
- Look for pinched or crimped wires or cables.
- Doors and panels open and close properly.
- Latches open easily and close securely.
- Covers are secure.
- Grounding straps.

During servicing or prior to operational checkout, make sure all grounding straps are connected. For ground strap locations, see Fig. 4.

3.06 Check fuses, condition and ratings (fuse ratings are critical, no higher rating than specified shall be used). Refer to Fig. 4 for locations:

Printer = 1 Amp SL-BL MDL-1 (143306)
Monitor = 1.4 Amp (Special fuse must be marked number 341578).
Power Supply = 5 Amp SL-BL (129920)

3.07 For printer maintenance routine, see Section 582-210-750.



♦ Fig. 4—Grounding Strap Locations ♦

4. OPERATIONAL CHECKOUT

4.01 After servicing a KD or KDP, perform the BRIEF OFF-LINE and BRIEF ON-LINE CHECKOUTS of Section 582-200-502, Testing and Troubleshooting.

4.02 Check the monitor display for

- Brightness
- Size
- Distortion
- Proper message.

Note: For monitor adjustments see Section 582-213-700.

4.03 Checkouts for printers are covered in Section 582-210-750.

4.04 If checkout was successful, routine is complete. If checkout responses indicate a need for more testing, refer to Section 582-200-502.

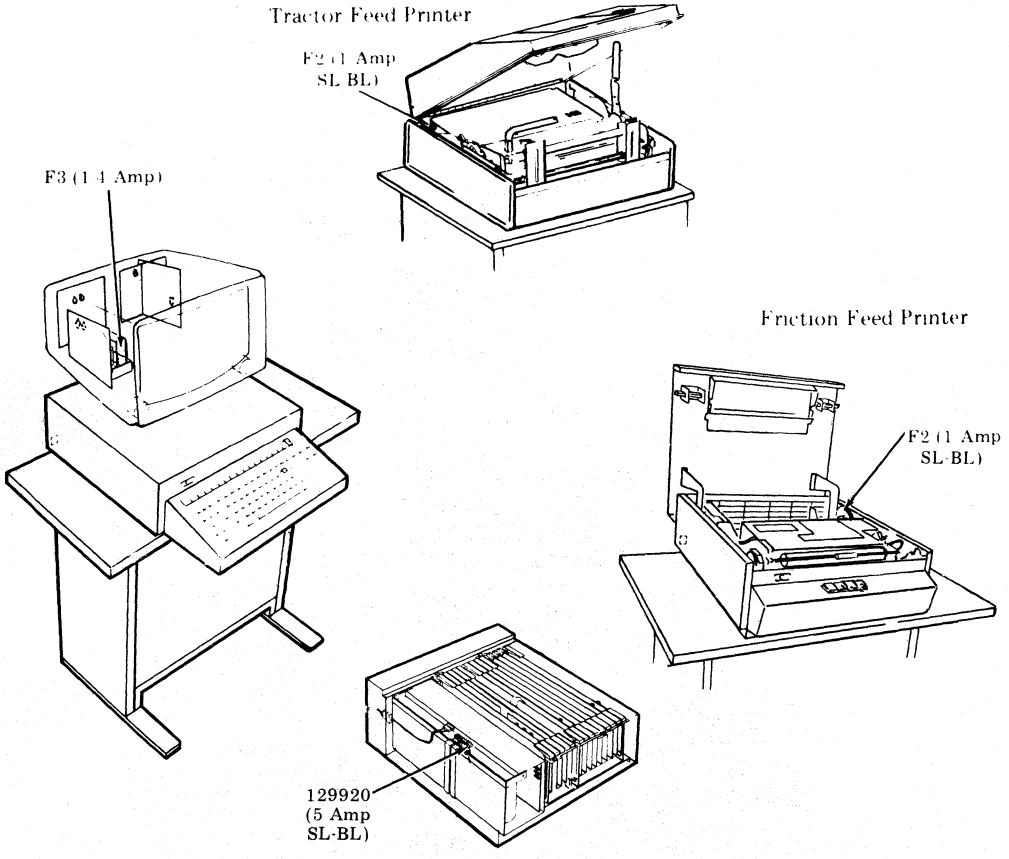


Fig. 5—Fuse Location


Bell System