"DATASPEED*" 40/3

WITH 9140 STATION CONTROLLER

INSTALLATION

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Prepared for American Telephone and Telegraph Company by Teletype Corporation

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1. GENERAL

1.01 This section provides the installation procedures and methods for a Teletypewriter DATASPEED 40/3 Station, hereafter referred to as 40/3-type.

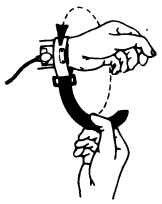
1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

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.

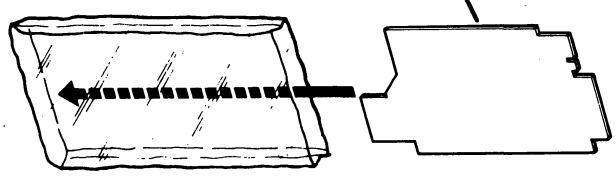
Attach clip end of static discharge strap to frame ground.

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.

Cards List

Printer (410640 and 410729)
Controller — All Cards
(Not Monitor Cards)



2. IDENTIFICATION

GENERAL

2.01 Identification of the 40/3-type 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-DJOAC. Features and options must be recorded by checking ☒ on the variable number (ie, Option 4-7. for KD or KDP option "error character on receive" and Option 9-7 for 9140 Controller option "local copy on ROP of KD sent data.") in the appropriate square. Features and modifications on the terminal that are not listed on the W-Plan should be written in. This W-Plan should stay with the station.

TYPICAL EQUIPMENT CONFIGURATIONS

A. KD (Keyboard Display)

2.04 The station consists of a keyboard (opcon), a monitor and a logic cabinet all mounted on a pedestal containing the 9140 Station Controller (Fig. 1). The data set may be placed on the table top or in the pedestal. See Page 97 for a list of data sets used in 40/3-type stations.

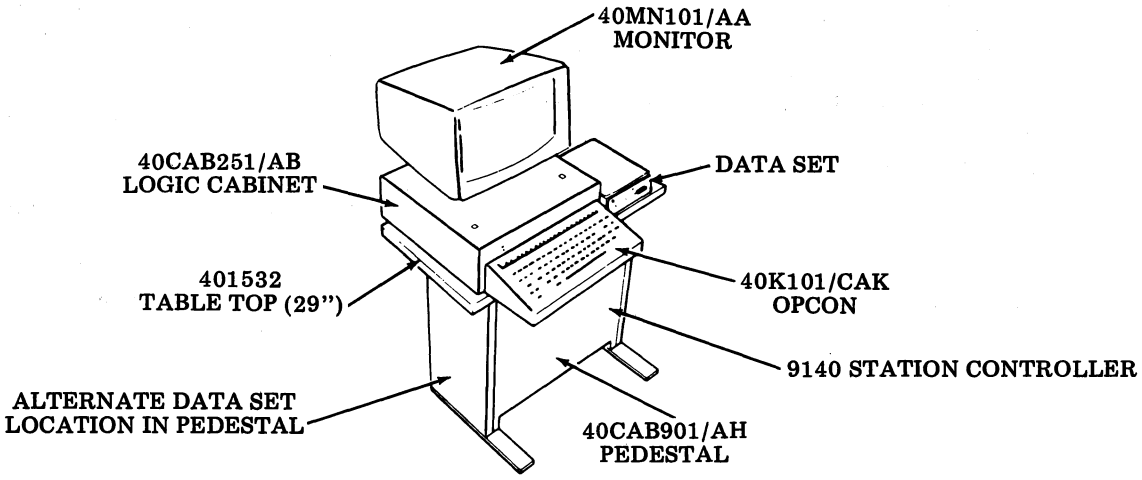


Fig. 1—KD Station

2.05 The station consists of a keyboard (opcon) and monitor on a customer-provided table, a set logic package and 9140 Station Controller in a pedestal. 408890 modification kit is required for this arrangement.

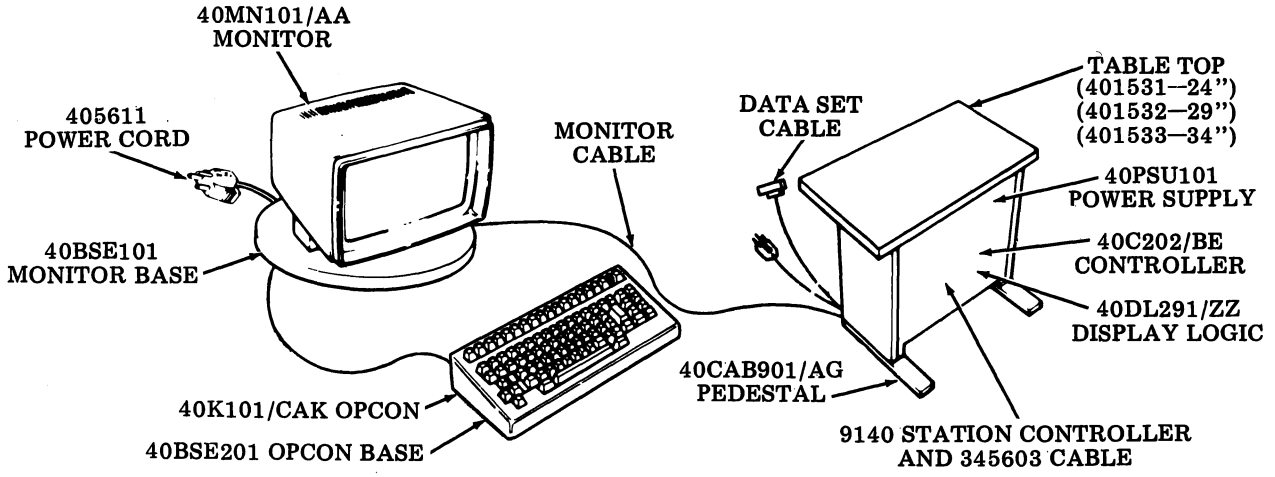


Fig. 2—KD Station

Note: This free-standing arrangement can be used in other configurations such as KD-ROP, KD&ROP and with the Individual Receiver Selection modification kit.

B. KDP (Keyboard Display With Printer on Same Top and Pedestal)

2.06 The station is similar to a KD, except a wider table top is required for the printer and its cabinet. The data set must be housed in the pedestal.

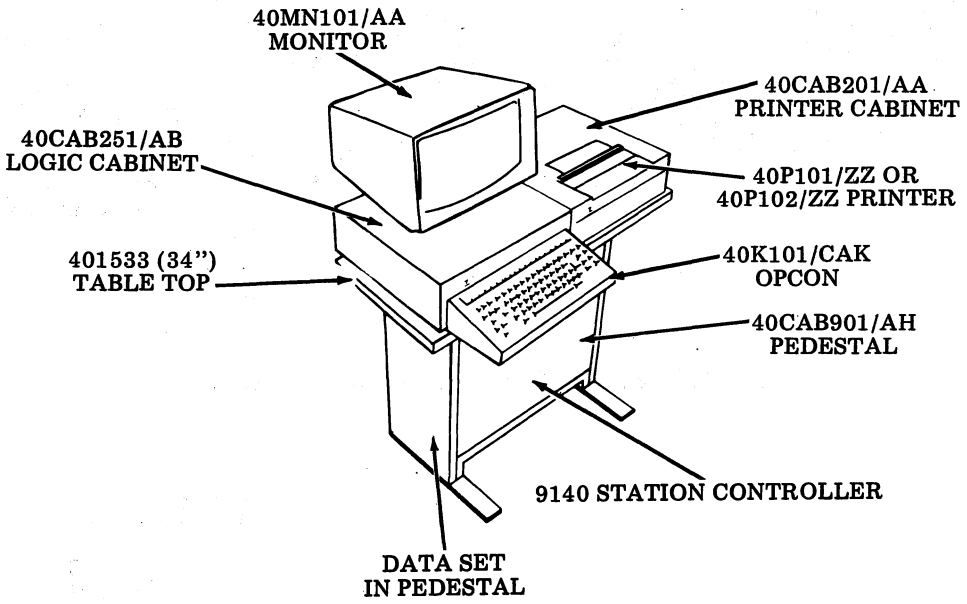


Fig. 3—KDP Station (Friction Feed)

2.07 Free-standing KDP stations with the printer on the pedestal are shown (Fig. 4 and 5). 408890 modification kit is required for these arrangements. 403011 modification kit (enclosure around form supply box) is required for the 80-column tractor feed printer.

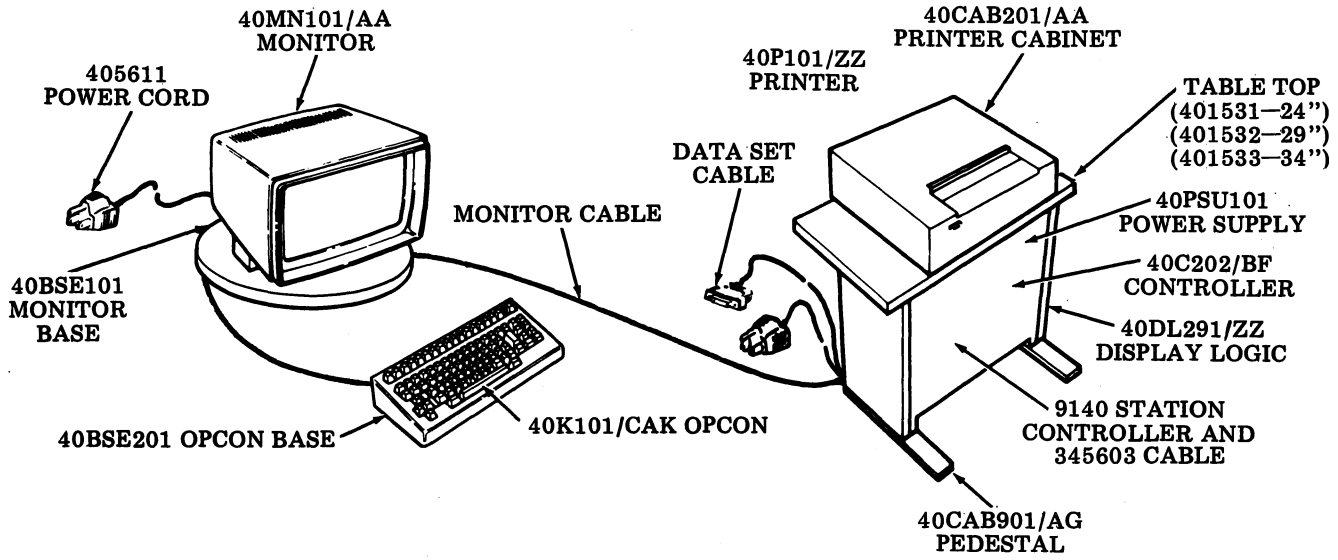


Fig. 4—KDP Station (80-Column Friction Feed)

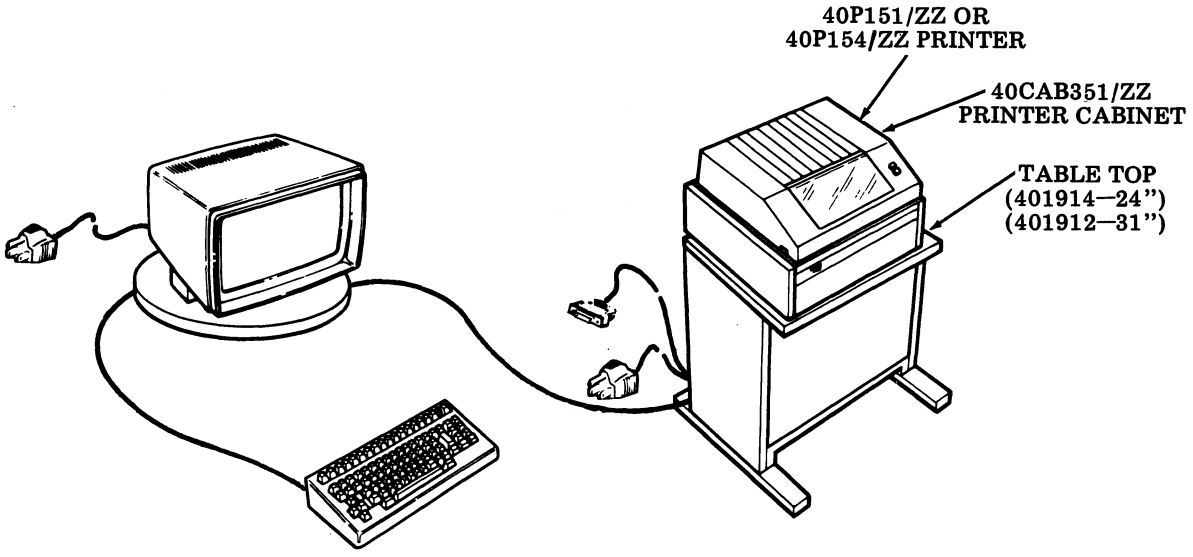


Fig. 5—KDP Station (80-Column Tractor Feed)

C. KDP (Keyboard Display With Printer Under Display)

2.08 The station is similar to a KD, except the printer is mounted under the monitor. In this station the printer must be an 80-column friction feed unit.

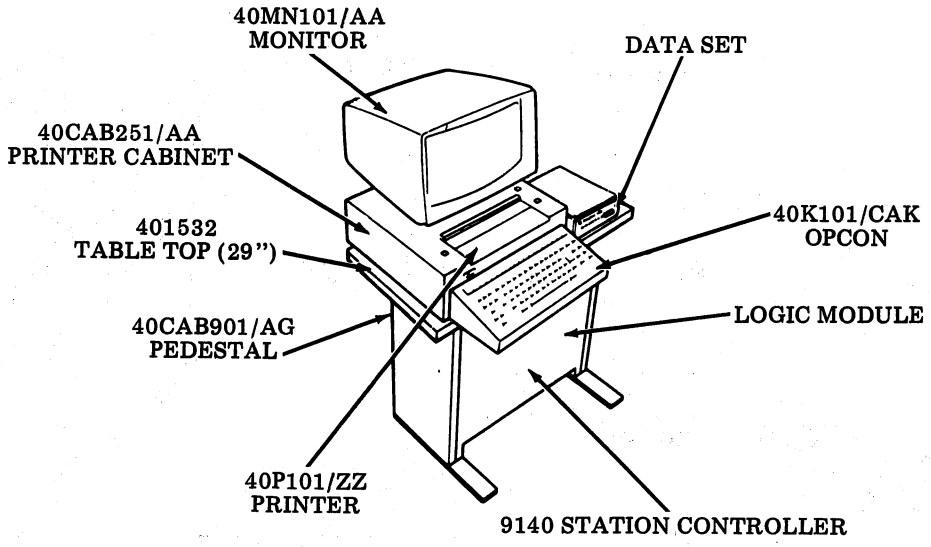
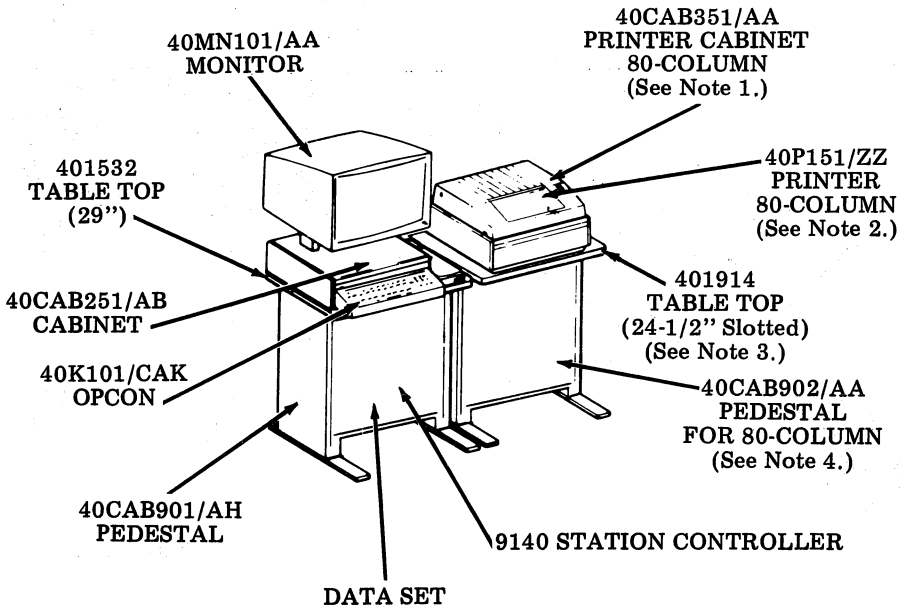


Fig. 6—KDP Station (Friction Feed)

D. KDP (Keyboard Display With Tractor Feed Printer on Separate Pedestal)

2.09 This station allows the printer to be placed on an adjacent pedestal and is most commonly used for tractor feed printers.



Note 1: If 132-column printer, use 40CAB353/ZZ printer cabinet.

Note 2: If 132-column printer, use either 40P201/ZZ or 40P202/ZZ printer.

Note 3: If 132-column printer, use 401913 table top (27" Slotted).

Note 4: If 132-column printer, use 40CAB904/AA pedestal.

Fig. 7—KDP Station (Tractor Feed)

2.10 Free-standing KDP Stations with a separate pedestal for tractor feed printers are shown (Fig. 8 and 9). 408890 modification kit is required for these arrangements.

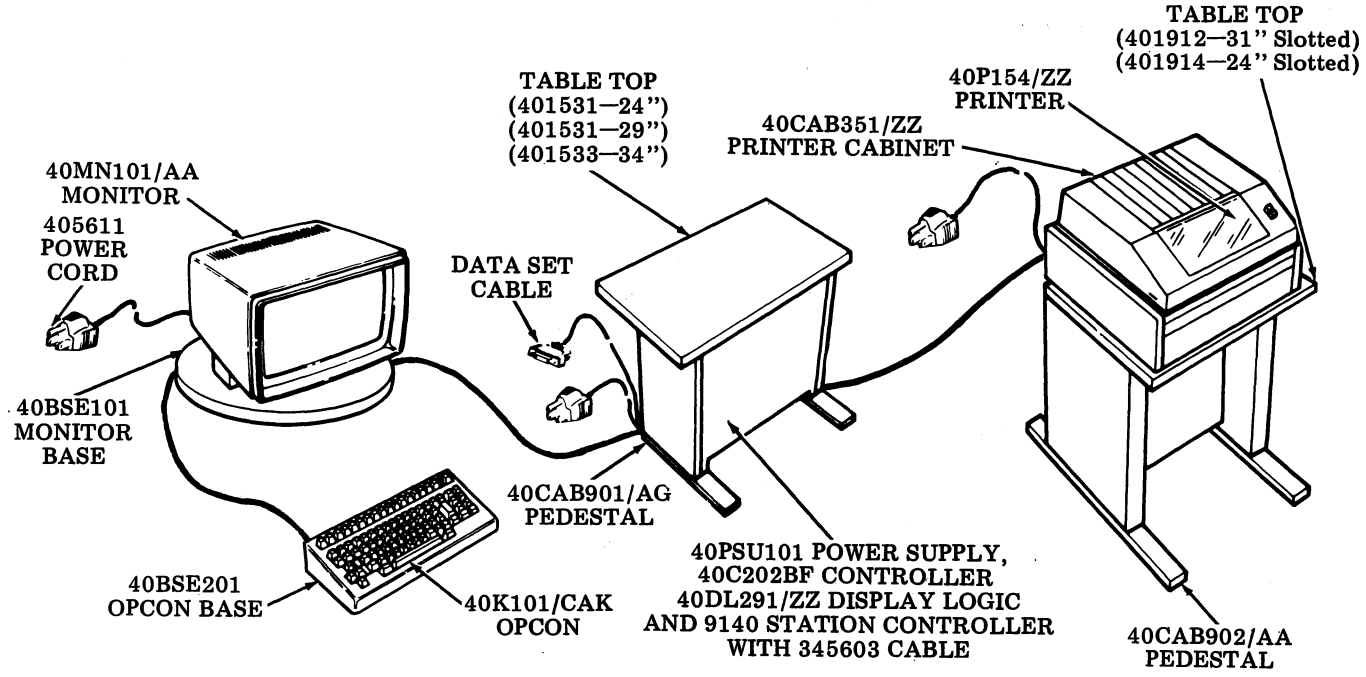


Fig. 8—KDP Station (80-Column Tractor Feed)

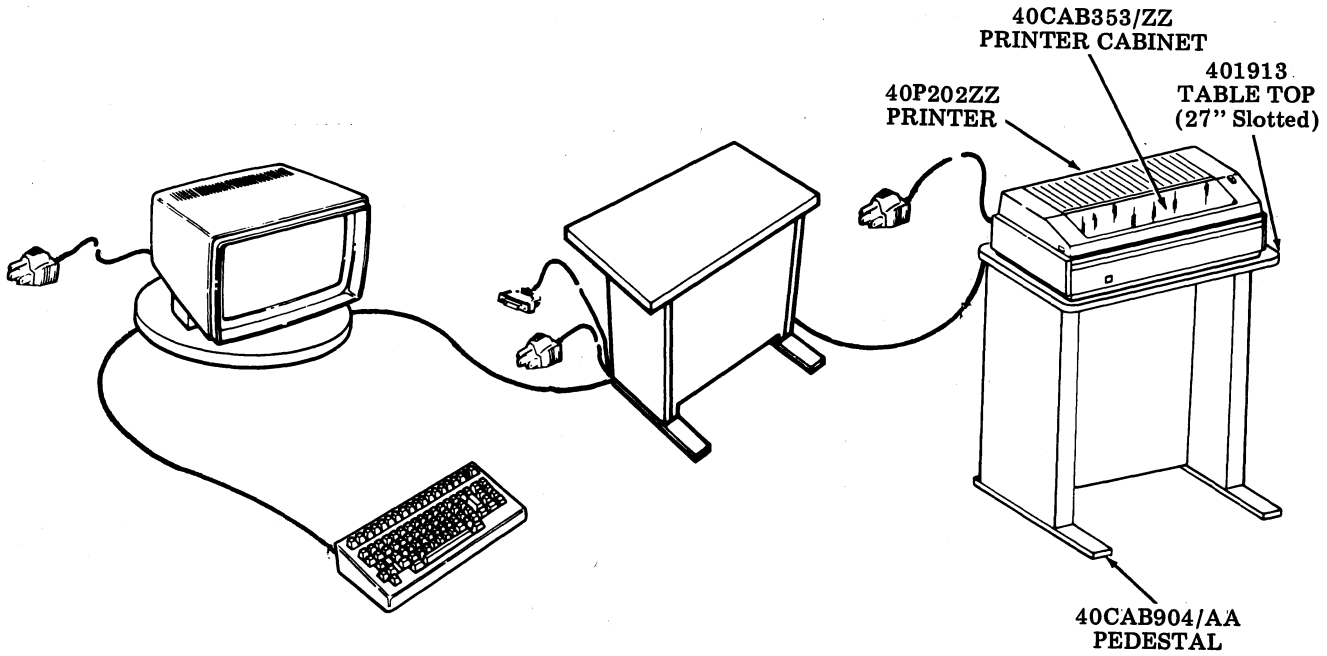


Fig. 9—KDP (132-Column Tractor Feed)

E. ROP (Receive-Only Printer)

2.11 The station consists of a printer and cabinet with opcon on a single pedestal. The pedestal contains the logic controller and the 9140 controller.

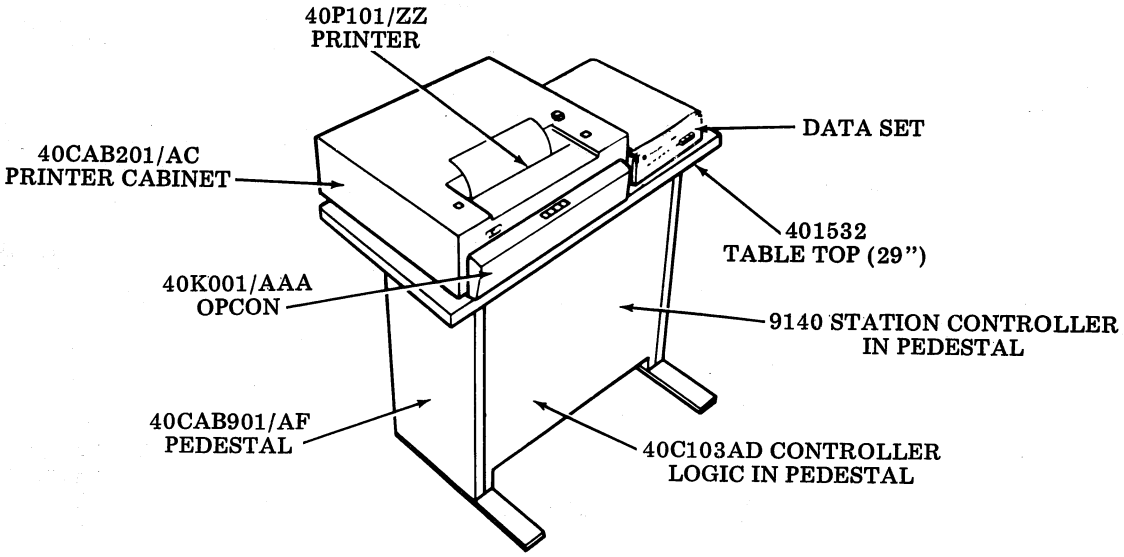


Fig. 10—ROP Station (Friction Feed)

2.12 This station is similar to the friction feed ROP, except it requires a large table top to accommodate the tractor feed printer.

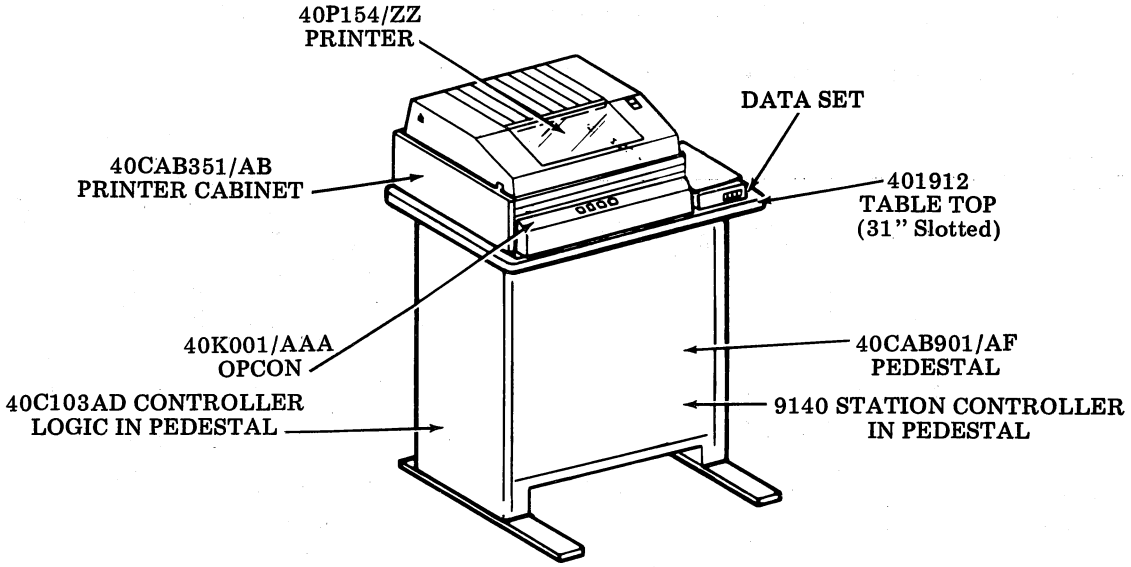


Fig. 11—ROP Station (80-Column Tractor Feed)

Note: The ROP could consist of an 40C303 Integrated Controller with a friction feed or either an 80- or 132-column tractor feed printer. See Section 582-200-204.

F. KD-ROP (Keyboard Display With Receive-Only Friction Feed Printer)

2.13 With this arrangement data can be received by the monitor, printer, or both.

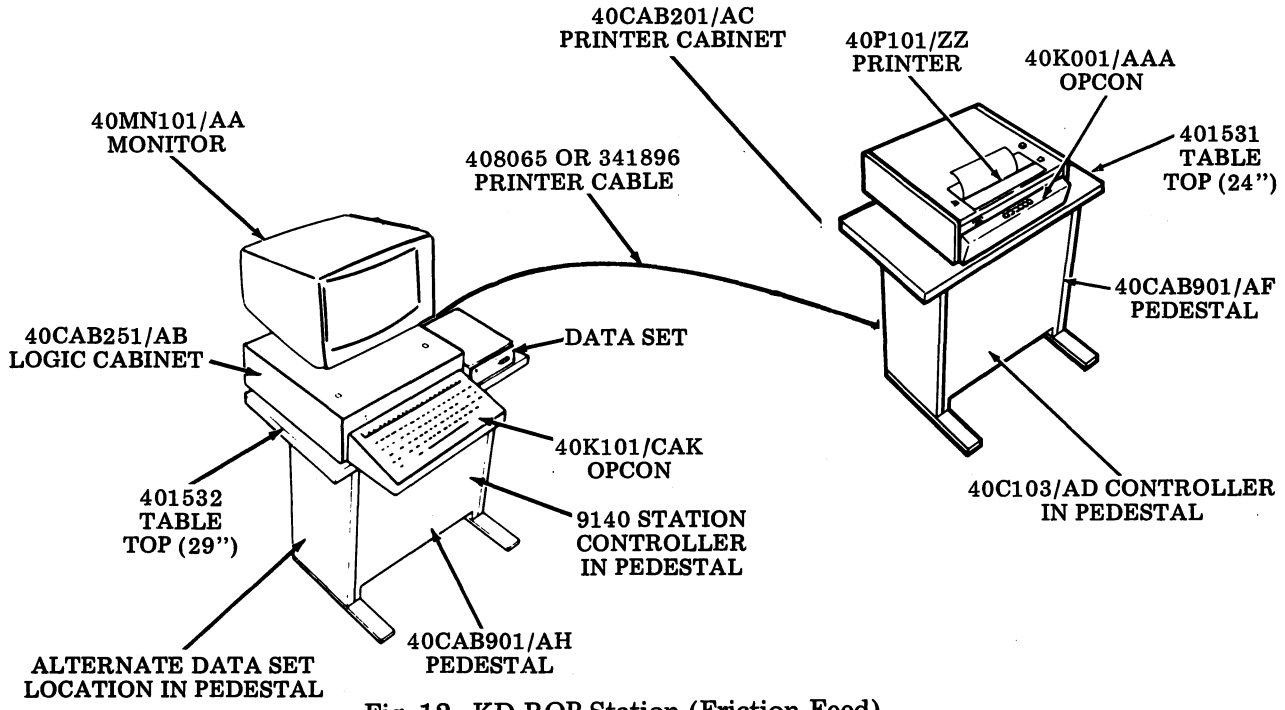


Fig. 12—KD-ROP Station (Friction Feed)

G. KD-ROP (Keyboard Display With Receive-Only 80-Column Tractor Feed Printer)

2.14 With this arrangement data can be received by the monitor, printer, or both.

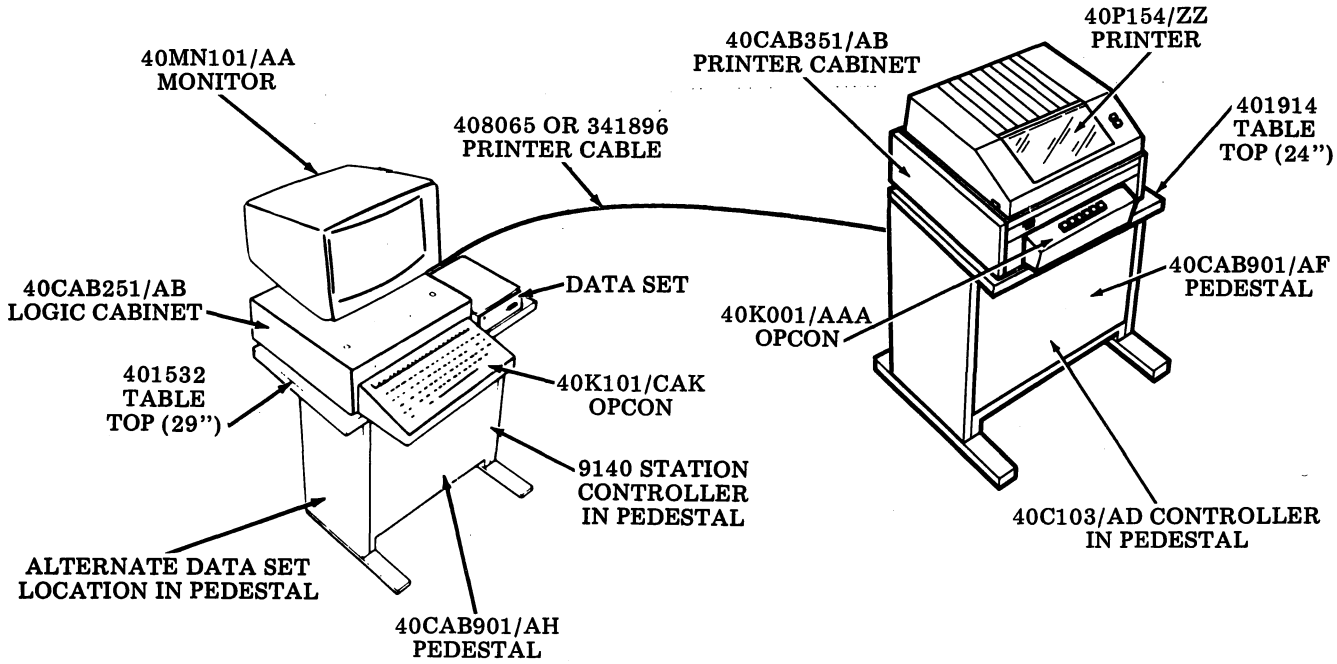


Fig. 13— KD-ROP Station (80-Column Tractor Feed)

H. KD-ROP (Keyboard Display With 132-Column Receive-Only Tractor Feed Printer)

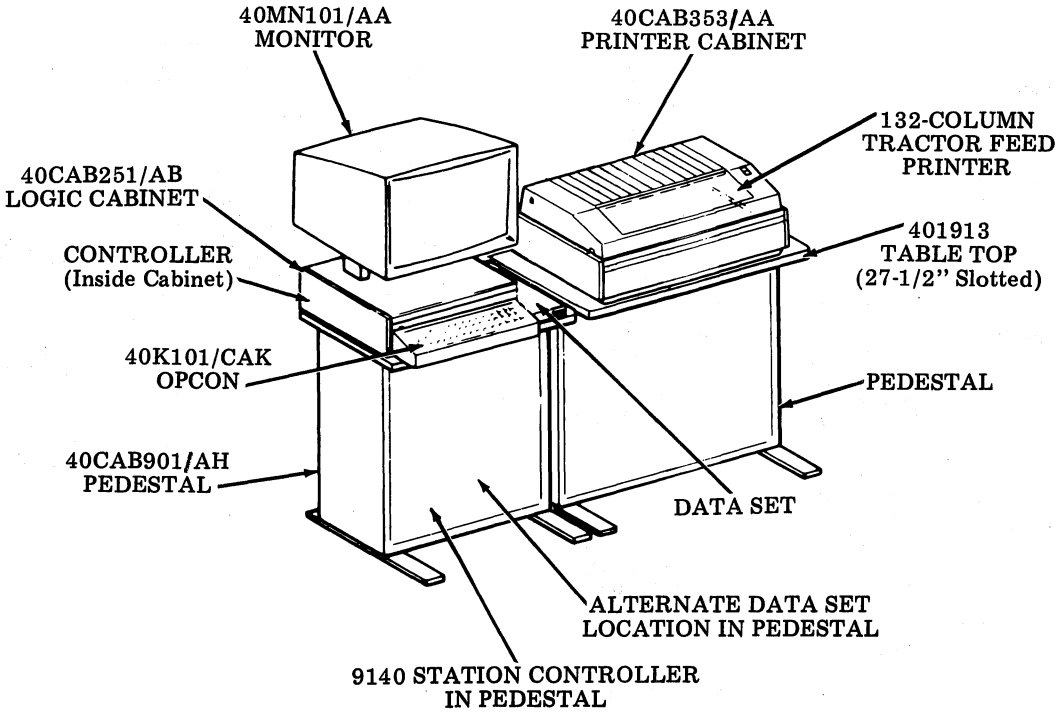
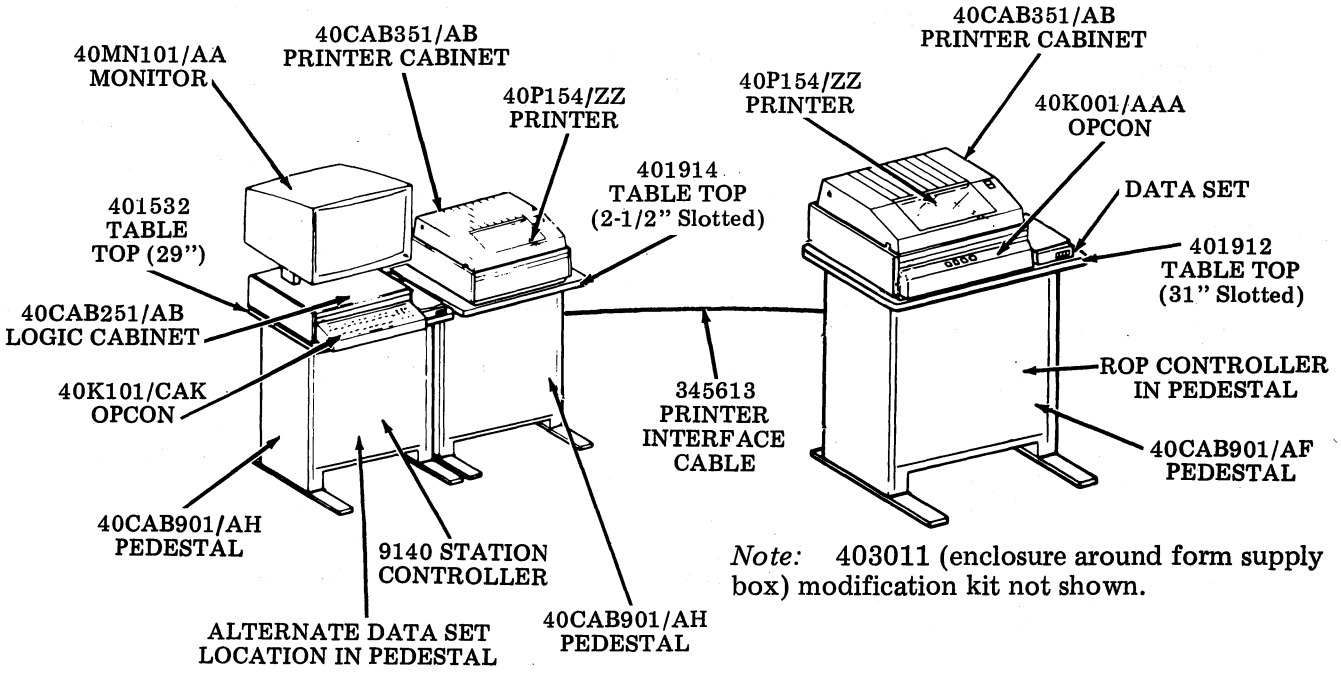


Fig. 14—KD-ROP Station (Tractor Feed)

I. KDP & ROP (Keyboard Display Printer and Receive-Only Tractor Feed Printer)

2.15 With this arrangement data is received by the ROP and sent by the KDP.



Note: 403011 (enclosure around form supply box) modification kit not shown.

Fig. 15—KDP & ROP Station (Tractor Feed)

J. KDP & ROP (Keyboard Display With Printer Under Display And Receive-Only Friction Feed Printer

2.16 With this arrangement data is received by the ROP and sent by the KDP.

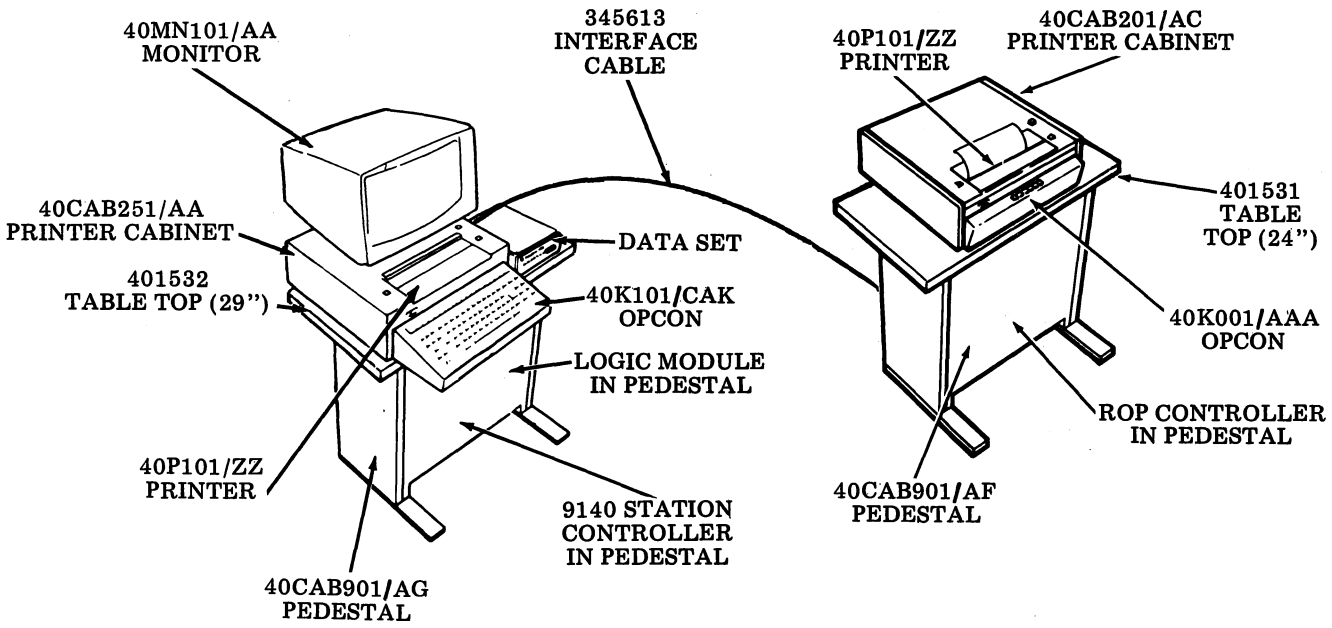


Fig. 16—KDP & ROP Station (Friction Feed)

K. KDP & ROP (Keyboard Display Printer and Receive-Only Friction Feed Printer

2.17 With this arrangement data is received by the ROP and sent by the KDP.

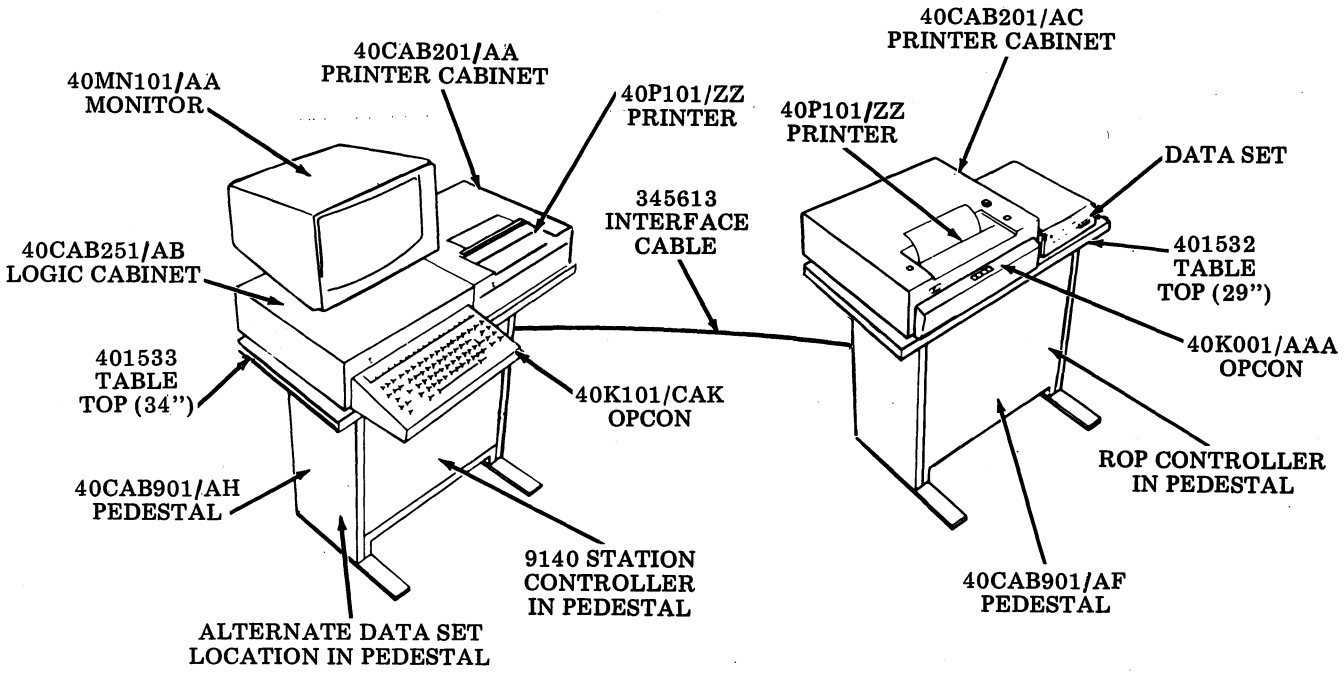


Fig. 17—KDP & ROP Station (Friction Feed)

L. KD & ROP (Keyboard Display and Receive-Only Friction Feed Printer)

2.18 With this arrangement data can be received only by the printer — data cannot be received by the KD, only sent.

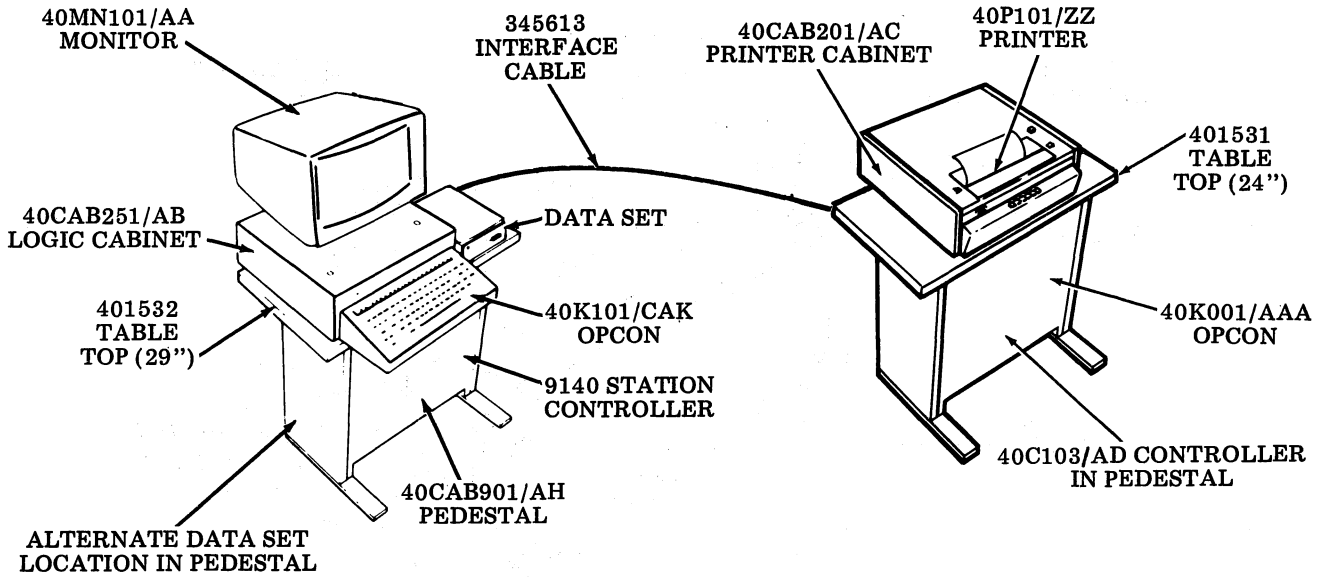
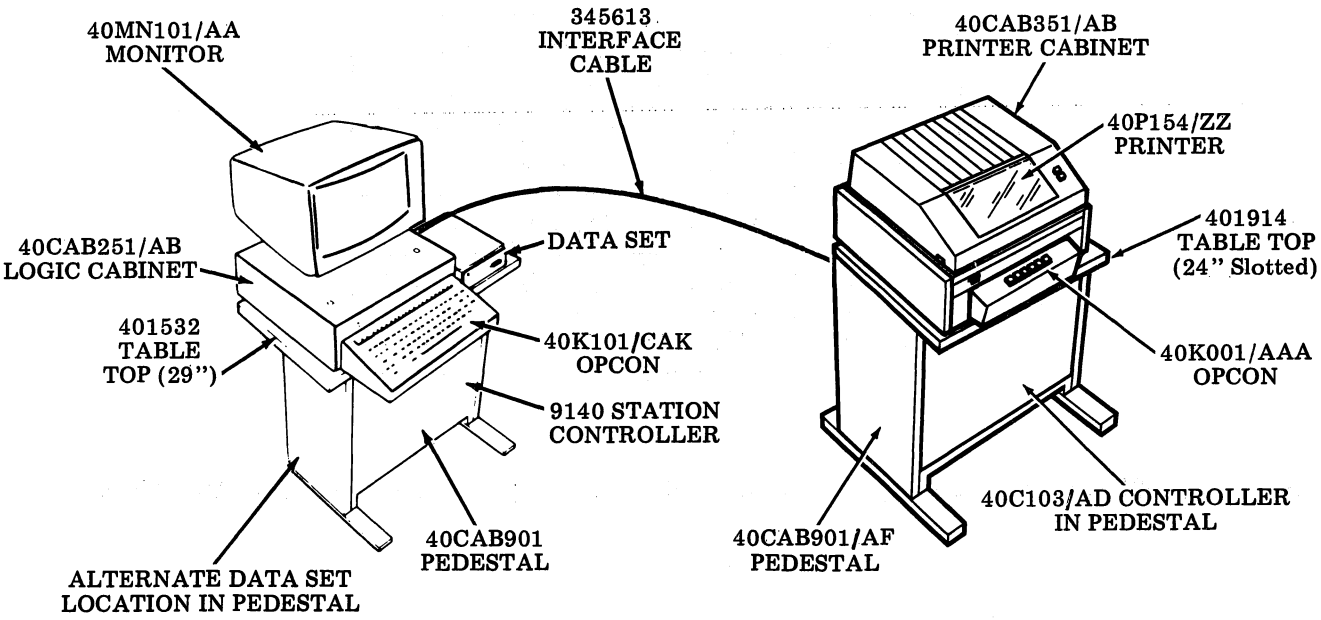


Fig. 18—KD & ROP Station (Friction Feed)

M. KD & ROP (Keyboard Display and Receive-Only Tractor Feed Printer).

2.19 With this arrangement data can be received only by the printer — data cannot be received by the KD, only sent.

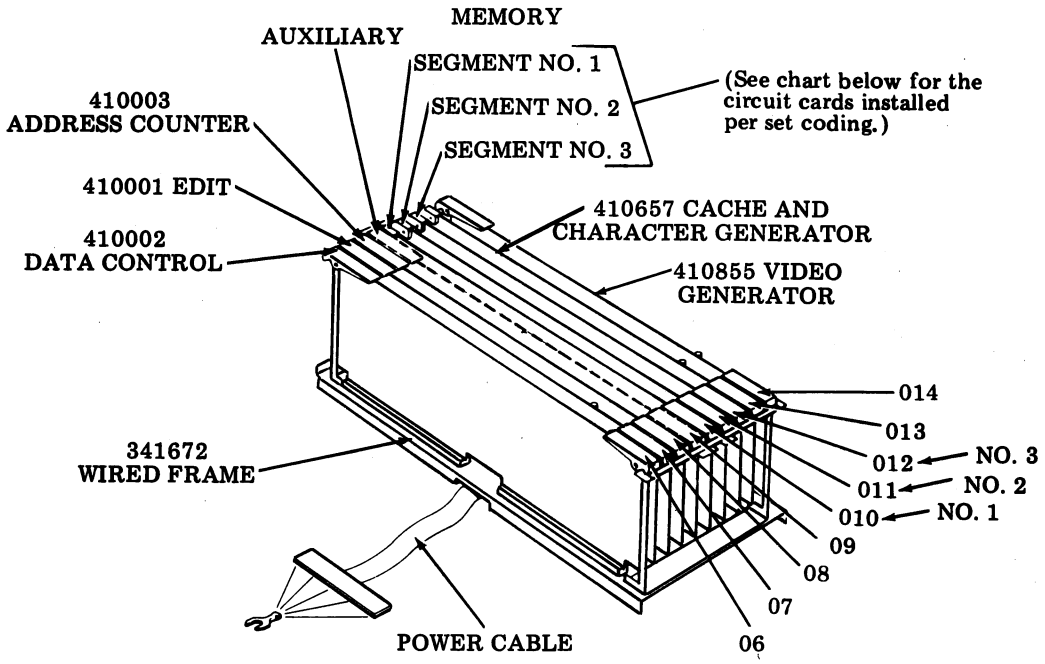


Note: 403011 (enclosure around form supply box) modification kit not shown.

Fig. 19—KD & ROP Station (Tractor Feed)

CIRCUIT CARD ARRANGEMENTS

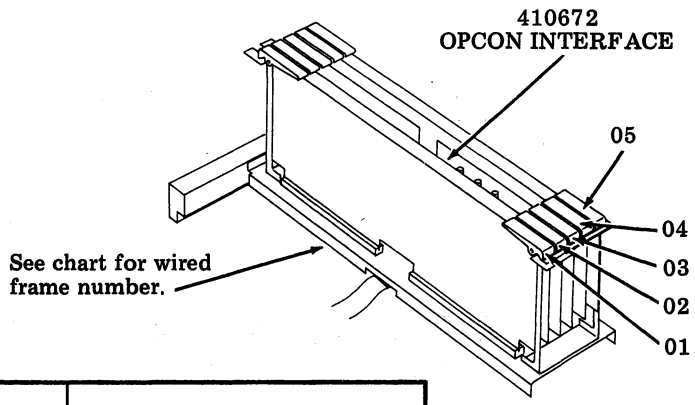
A. Display Logic



DISPLAY LOGIC ARRANGEMENTS (40DL291/ZZ)			
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 400015 card.

B. Controller Logic (KD or KDP)

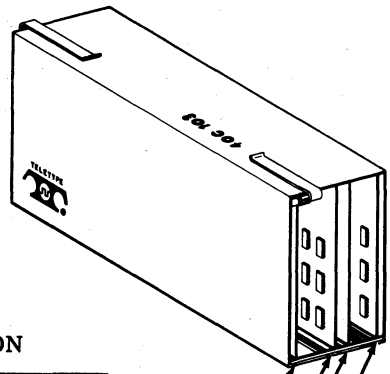


POSITION	40C202/BE	40C202/BF	CARD DESCRIPTION
01	None	410770	Printer Interface
02	410771	410771	Modified EIA Interface
03	410672	410672	Opcon Interface
	410676	410676	Send Variations
04	410675	410675	Message Control
05	410674	410674	Data Bus and Decode
WIRED FRAME	341909	341909	Metal Frame With Cable

C. 40C103 Controller Logic (ROP)

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

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

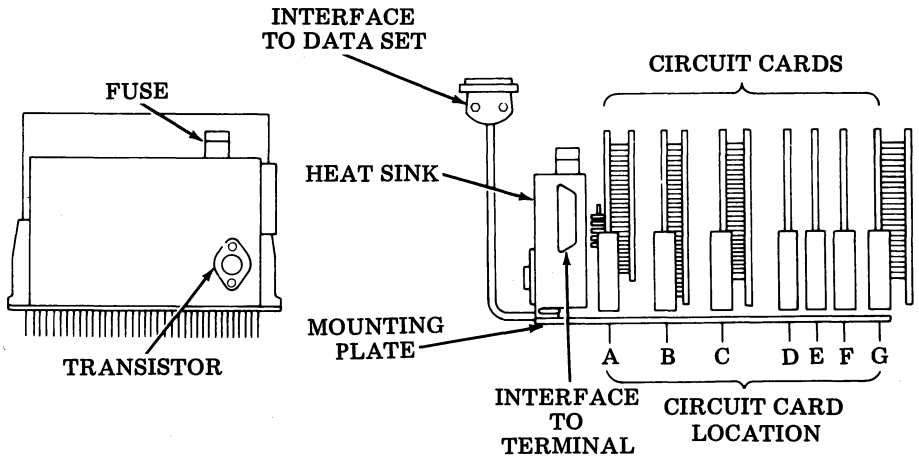


CIRCUIT CARD LOCATION

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

410581 and 410585 are interchangeable.

D. 9140 Controller Logic



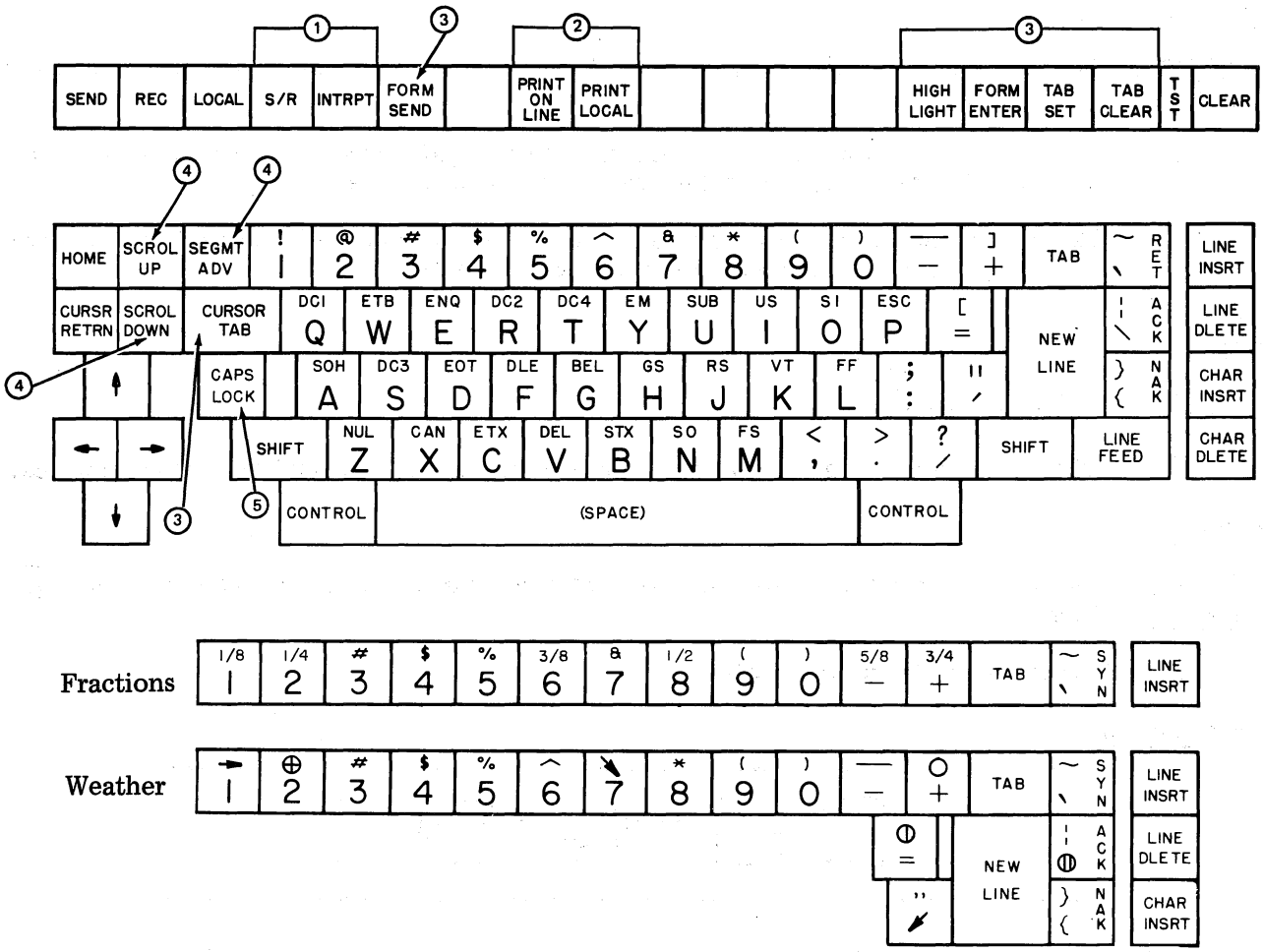
CIRCUIT CARDS	CIRCUIT CARD LOCATION	PART NO.	FUNCTION
A or A2	A	322010 322685	DCD Detector CDC Detector — 1800 and 2400 Baud Timer
‡ A-1	Mounted on Card A	322409	Third CDC Detector
A-3C or A-3E or § A-3G	Mounted on Card A	303805 or 303839 or 303864	1050 Baud Timer 1200 Baud Timer 2400 Baud Timer
B	B	322011	R/T Distributor
B-1	Mounted on Card B	322411	Parity Error Detection
C2	C	322013	REC Control Logic
C2-2	Mounted on Card C2	322442	A/B and Motor Control (Selected)
D1 or D2	D	322014 303734	Send/Receive Logic Receive Only Logic
E2	E	322451	EIA Interface
F1 or F2	F	322017 322018	Character Recognition Substitute Character
G3	G	322083	Channel Control Store and Forward
†MC641 or §MC642	Mounted on Card G3	322641 322642	Alarm/Parity Error Response 2400 Baud, Isochronous, Parity Detect and Alarm
R	Under Heat Sink	303808	Voltage Regulator

† Part of 345625 alarm modification kit which is optional. The other parts of 345625 modification kit are the 345626 alarm assembly and mounting hardware.

‡ 322409 third CDC circuit card assembly which is optional.

§ 402326 modification kit updates a 9140 Station Controller to operate at 2400 baud isochronous operation with a parity detect and alarm feature.

KEYSWITCH AND KEYTOP IDENTIFICATION



① These keys are not used in 40/3-type arrangements and are covered with a blocking keytop.

② Keytops present when terminal is equipped with page printer (see Note).

③ Keytops are present only if terminal has full edit feature (see Note).

④ Keytops present only if terminal has 40 or 72 line display memory (see Note).

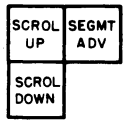
⑤ If CAPS LOCK keytop is not present, keyswitch plunger is latched (down) for monocase — all caps — operation; blocking type keytop is installed over switch housing. First depression latches keyswitch (down); second depression unlatches keyswitch (up).

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

A. Add-On 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.

Full Edit

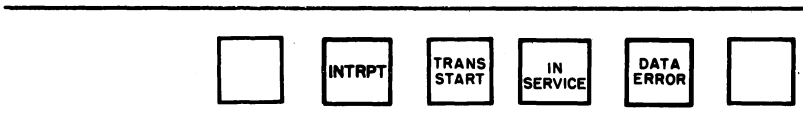
These edit controls are provided when a terminal has a complete edit complement.

Page Printer

Provided in operator console arrangement when 40-type page printer is provided with terminal.

B. Standard Features For 40-Type ROP Stations

Operator Console



Note: 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.

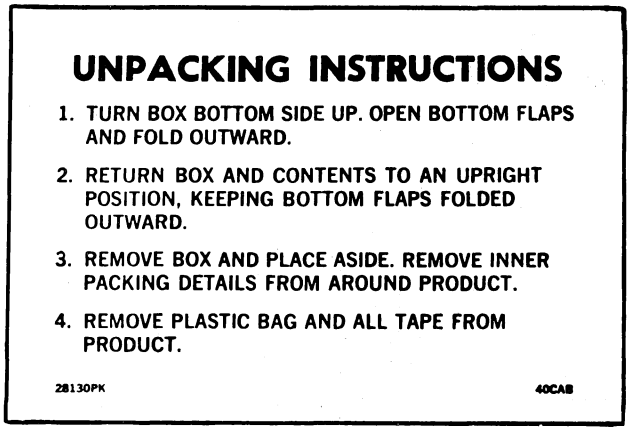
3. INSTALLATION

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.
- ☐ Perform operational checkout; refer to Section 582-200-503.
- ☐ 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.



3.02 Follow these procedures when unpacking.

(a) Before unpacking the cartons, confirm customer's 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) The polystyrene containers are to be saved and reused (refer to local procedures).

(g) Check customer's option requirements with the Station Features and Option Record, W-DJOAC. If option changes are to be made, refer to the procedures in 4. OPTIONS.

(h) Assemble station or set.

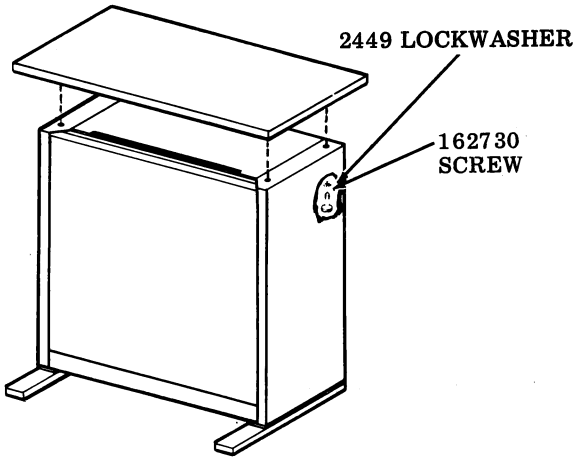
Service Center and Field Locations can reuse cartons and polystyrene containers to facilitate movement of partially dismantled sets or stations.

STATION ASSEMBLY

A. Pedestal Assembly

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

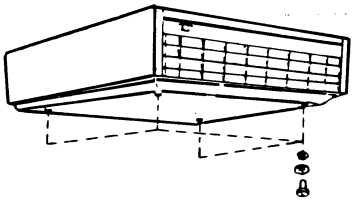
Step 2. Mount pedestal top to pedestal (four screws with lockwashers).



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

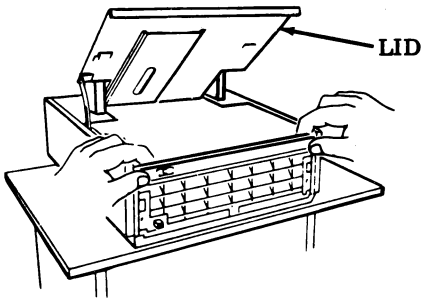
If display logic and controller logic are already assembled in the electronics package, proceed with the power supply assembly, Step 19.

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

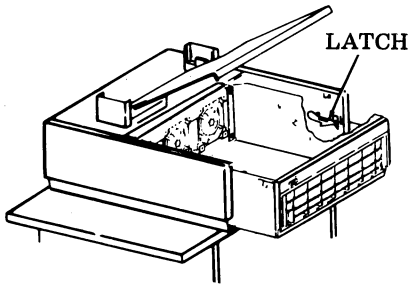


Step 2. Open lid.

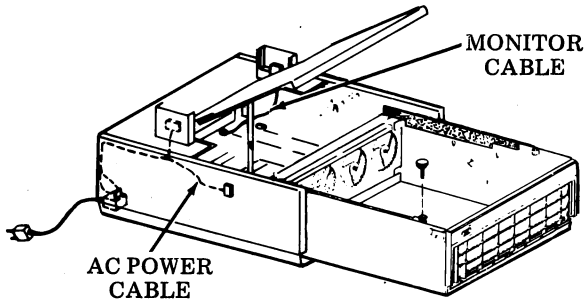
Step 3. Insert fingers as shown and lift. Then pull module forward until it engages the stop.



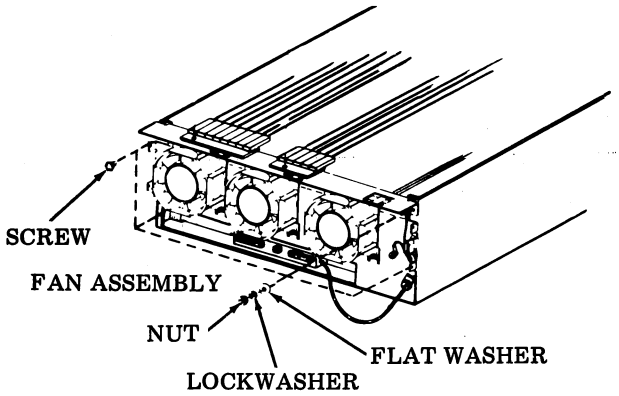
Step 4. Insert screwdriver under latch and lift up on latch. Lift up on module and slide forward.



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

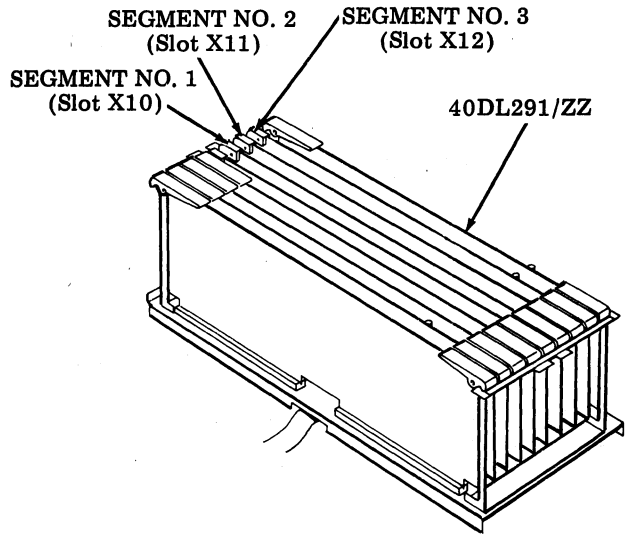


Step 6. Remove 408050 ventilation assembly by removing three screws and the flat washer, lockwasher, and nut.

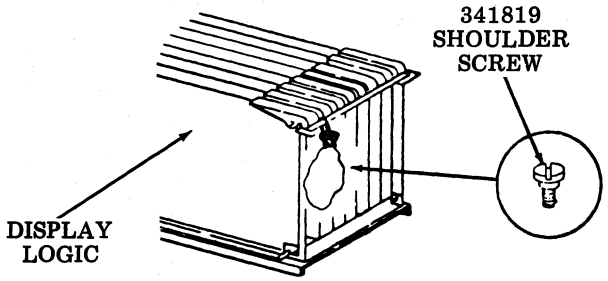


Step 7. Check the display logic making sure the cards are seated and properly positioned for called arrangement.

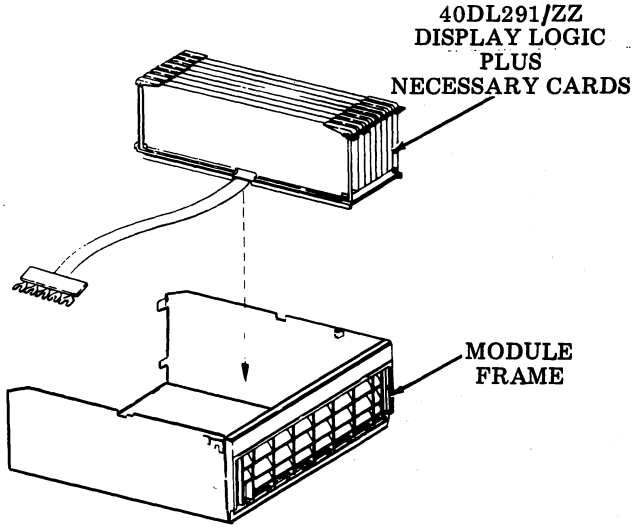
Memory Segment	Full Edit 24 Lines	Full Edit 48 Lines	Full Edit 72 Lines
No. 1	410015	410015	410015
No. 2	None	410015	410015
No. 3	None	None	410015



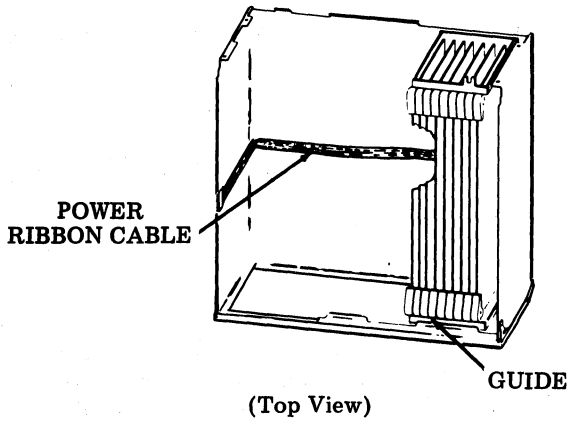
Step 8. Remove muslin bag containing 341819 shoulder screw used to mount the display logic into the frame and retain for later assembly.



Step 9. Install display logic into frame.

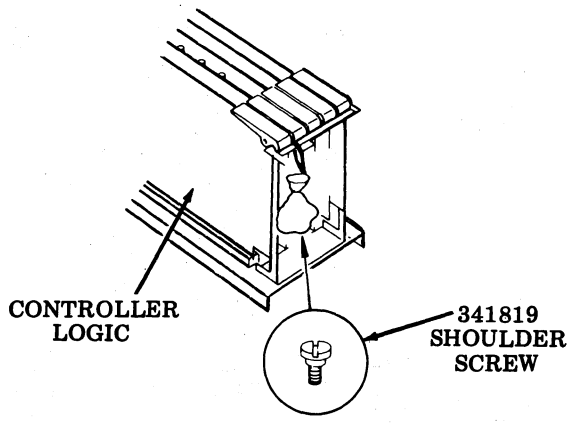


Step 10. Position the display logic over the guide in the module frame and route power ribbon cable flat against bottom of module frame to the opposite side.



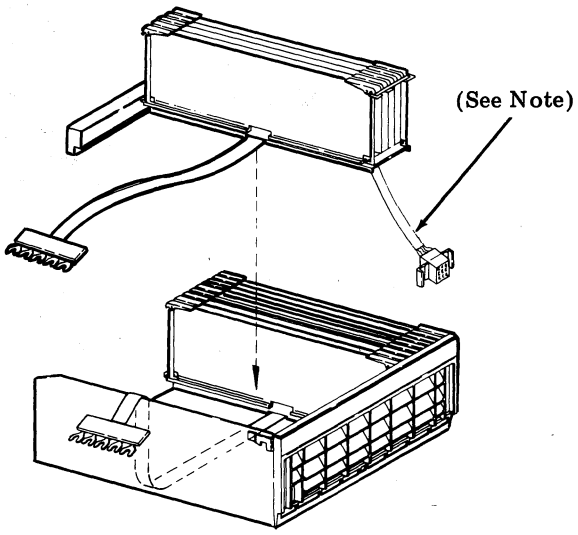
(Top View)

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

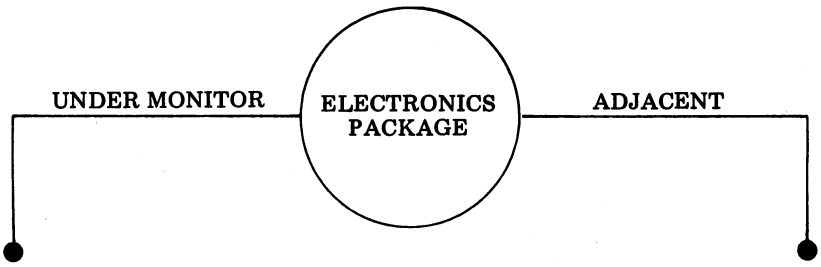


Step 12. Install the controller logic into module frame.

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

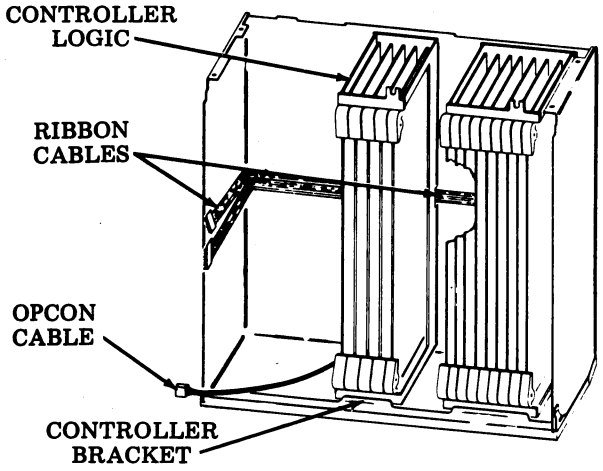


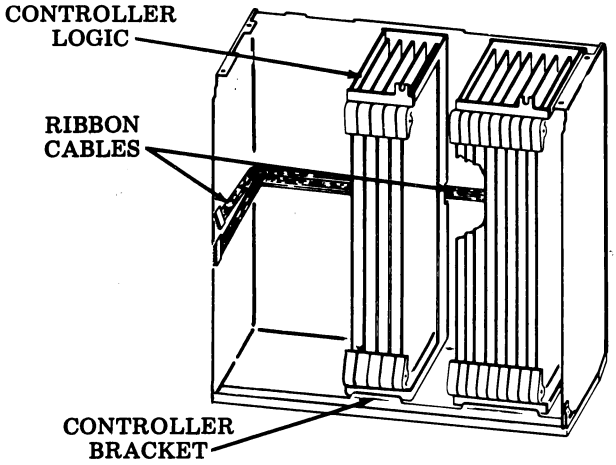
B. Electronics Package Assembly (Electronics Under Monitor or Adjacent for KD and KDPs) (Cont)



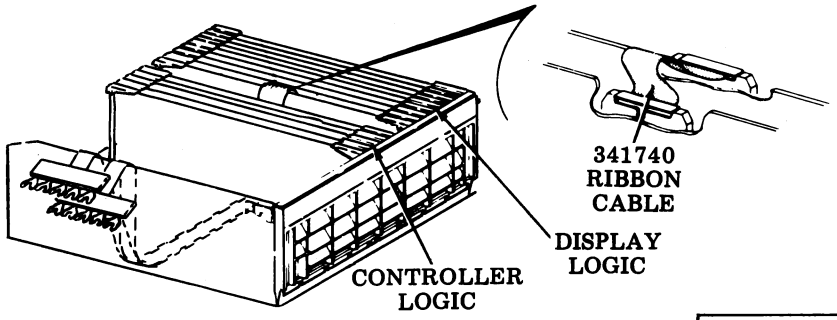
Step 13 Position controller bracket over guide in the frame. Route cables as shown (flat cable in center and opcon cable near front of cabinet). Slots in controller must fit over ribbon cable from the display logic.

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.



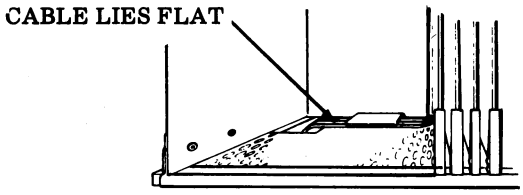


Step 14. Install 341740 ribbon cable.

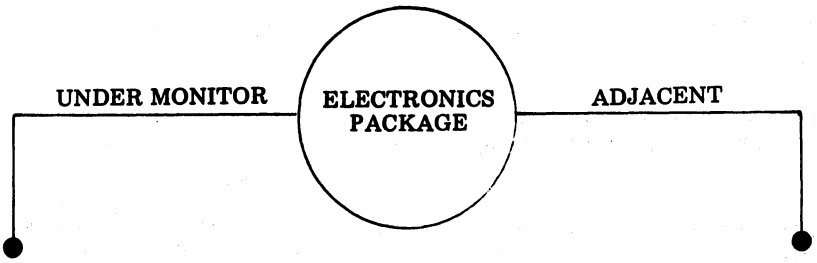


Step 15. Route opcon cable in the module so that the cable lies flat against front of the module in protective channel.

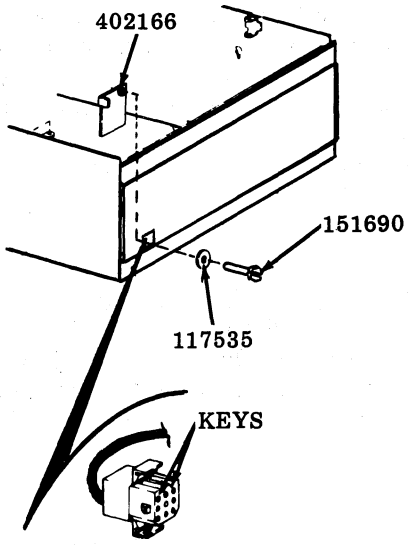
Omit Steps 15 and 16; continue with Step 17.



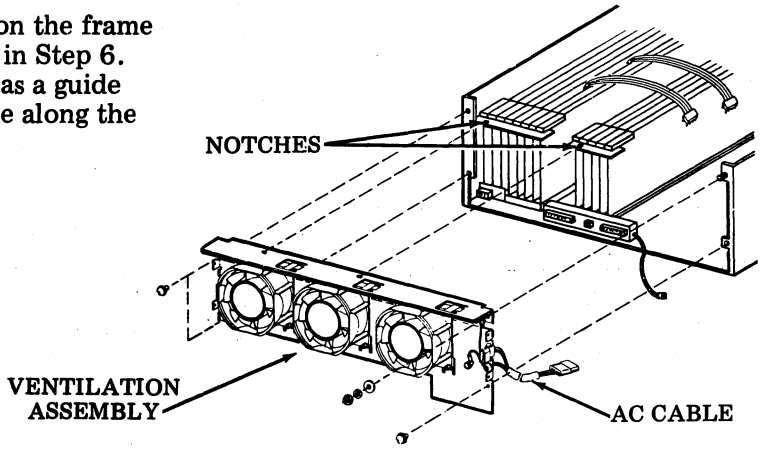
(Top View)



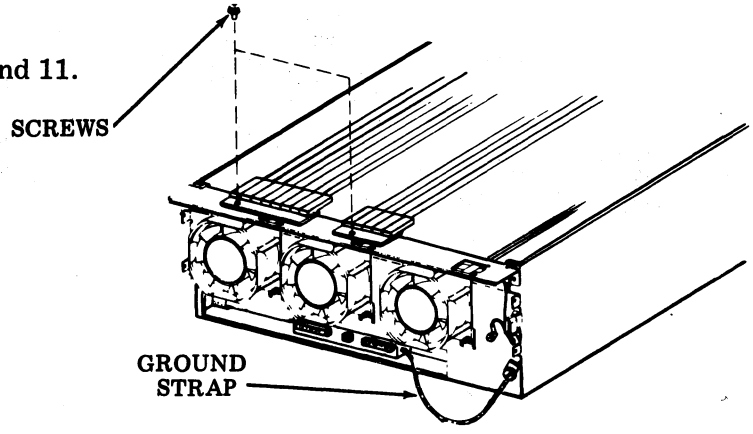
Step 16. Insert opcon connector (keys up) into frame. Use retainer plate and hardware (tied in muslin bag to the frame) to clamp opcon cable.



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.

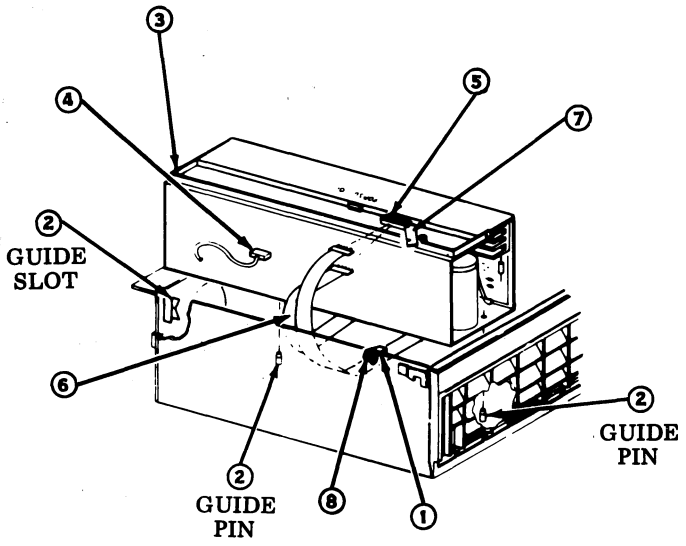


Step 18. Attach braided ground strap to the slip-on terminal on the ventilation assembly. Align the controllers and tighten screws retained in Steps 8 and 11.

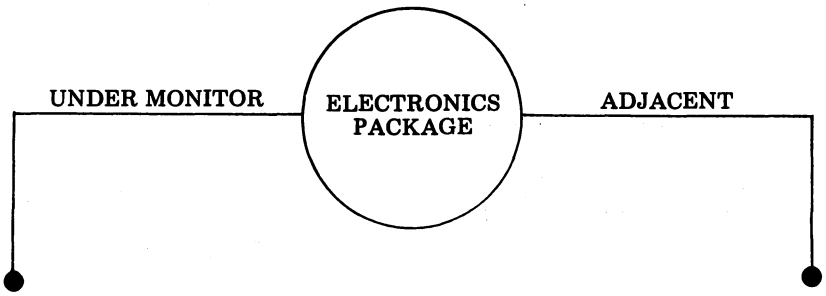


Step 19. Mounting the 40PSU101 Power Supply into module frame.

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.



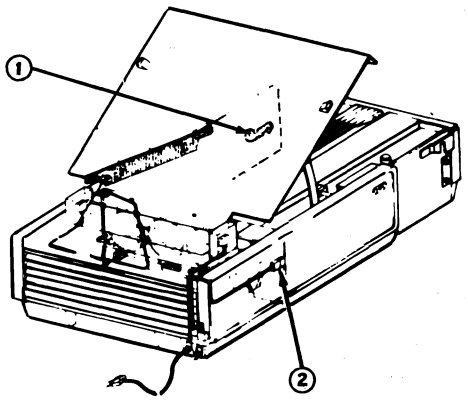
Note: Frame grounding of circuit common is provided physically in the set power supply for display monitors with serial no. 10,000 and up and in lower serial numbered monitors which have 403594 modification kit installed. Display monitors and 40PSU101 Power Supplies with serial numbers below 10,000 were 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.

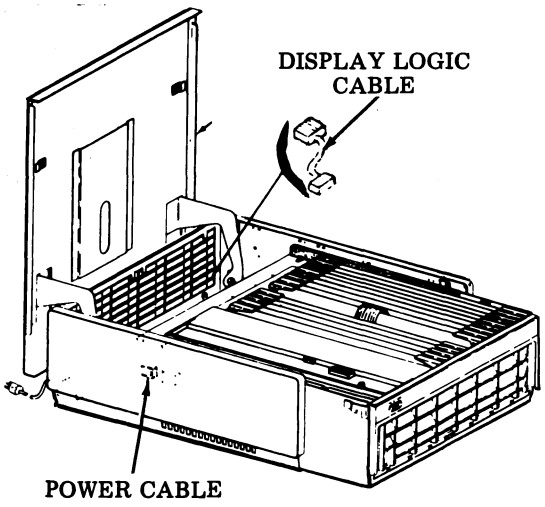


Step 20. Cable routing and connections:

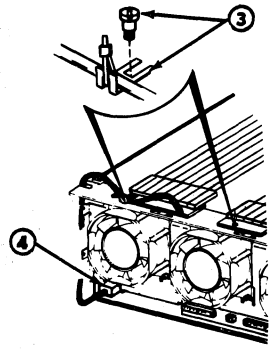
① Slide module back into the cabinet far enough to engage the latch on the right side of the cabinet.
② Reach in and connect the ac power cable to the base of ventilation assembly.

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

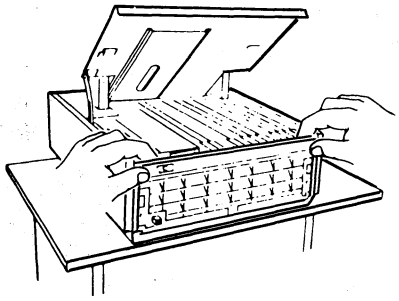




③Loosen shoulder screw. Slip clip on monitor cable under screw and tighten screws.
④Connect monitor cable.



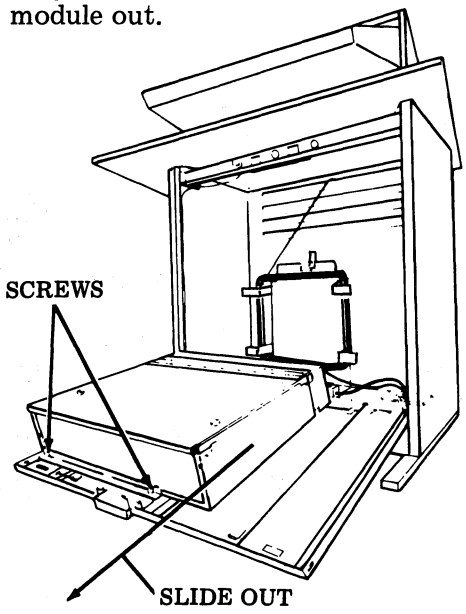
Step 21. Slide module back into position. Lift up slightly on module to seat in position.



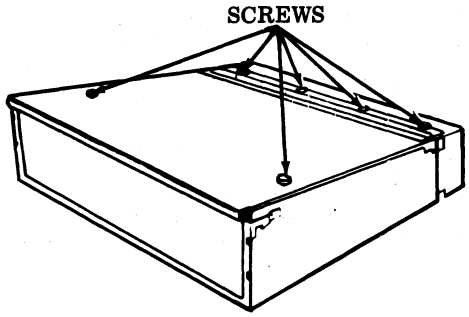
C. Electronics Package Assembly (Electronics in Pedestal for KDPs)

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

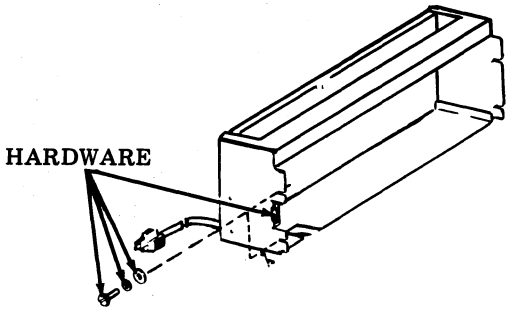
Step 1. Slide tabs inward and open panel carefully. Remove two screws and slide module out.



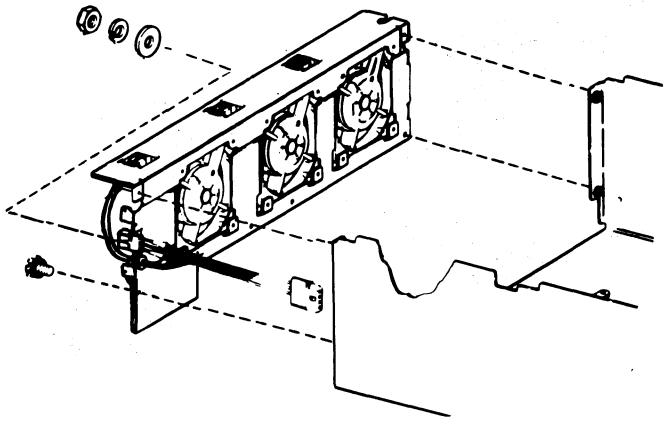
Step 2. Loosen two captive screws and remove four rear screws.



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

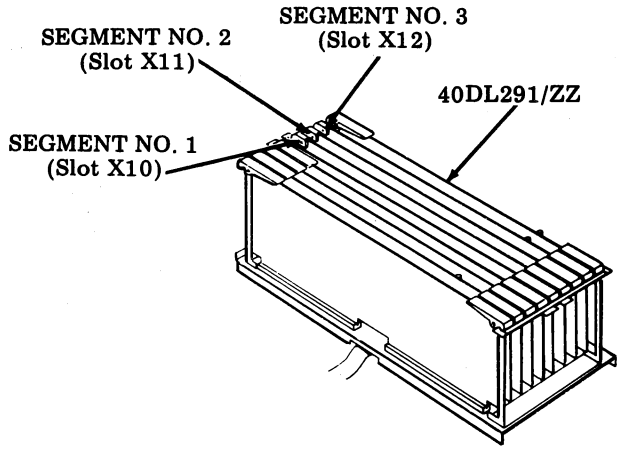


Step 4. Remove 408050 ventilation assembly by removing three screws, nut, lockwasher, and flat washer.

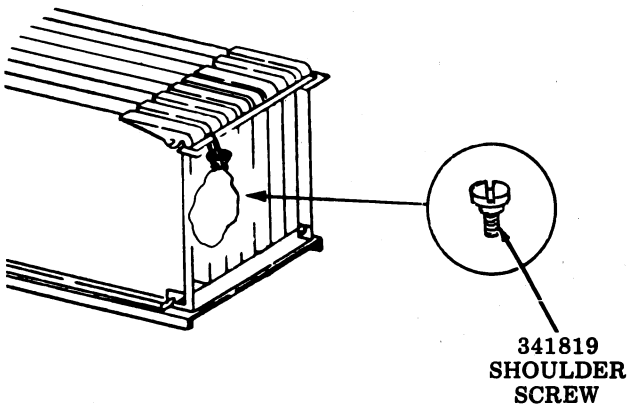


Step 5. Check the display logic making sure the cards are seated and properly positioned for called arrangement.

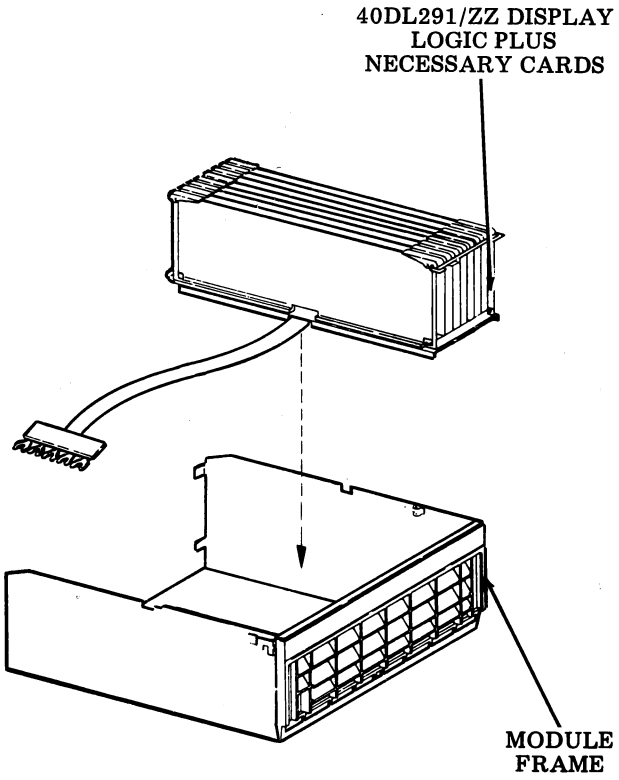
Memory Segment	Full Edit 24 Lines	Full Edit 48 Lines	Full Edit 72 Lines
No. 1	410015	410015	410015
No. 2	None	410015	410015
No. 3	None	None	410015



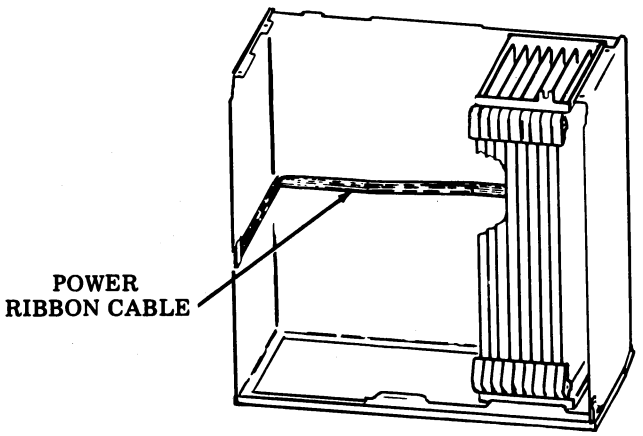
Step 6. Remove the muslin bag containing the 341819 shoulder screw used to mount the display logic into frame and retain for later assembly.



Step 7. Install display logic into frame.

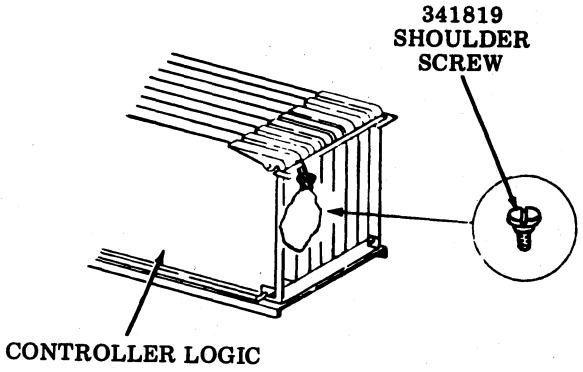


Step 8. Route power ribbon cable flat against bottom of the module frame to the opposite side.



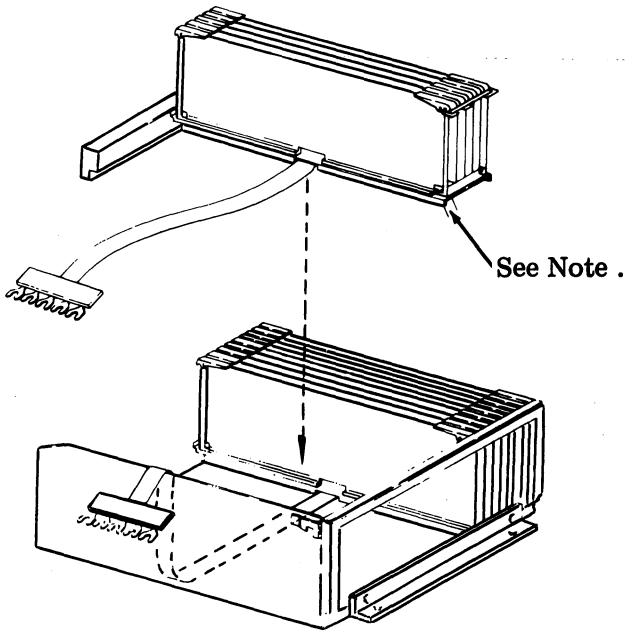
(Top View)

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

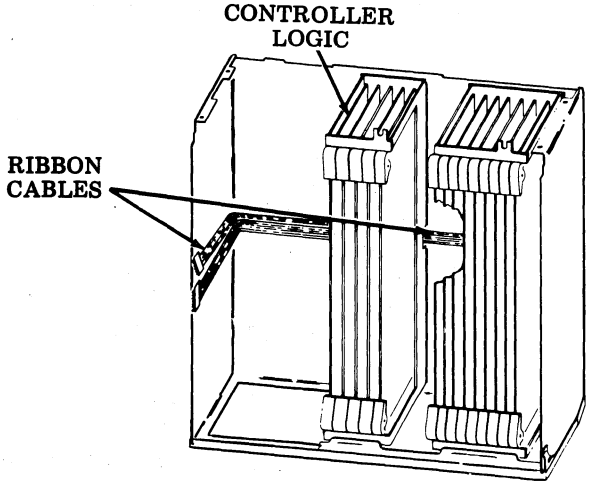


Step 10. Install controller logic into module frame.

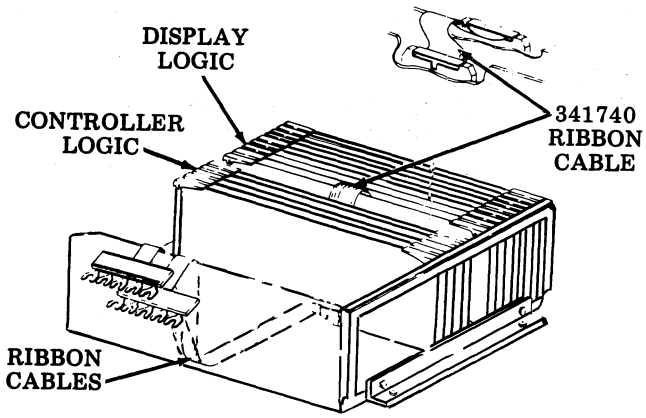
Note: Make sure unused cable and connector at front of controller are tied back under frame.



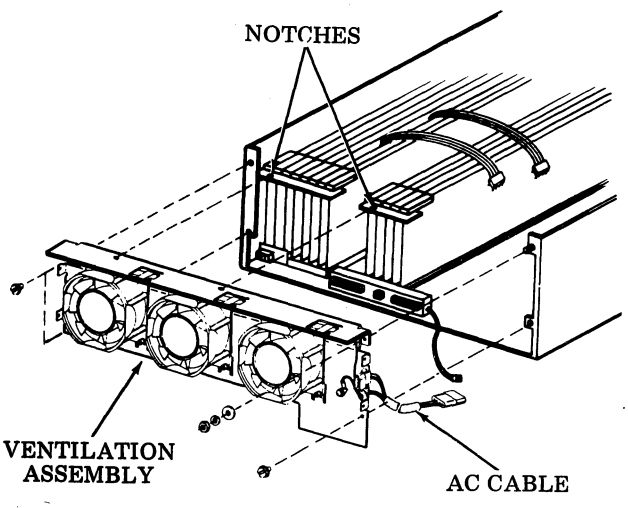
Step 11. Route cables as shown. Slots in controller must fit over ribbon cable from display logic.



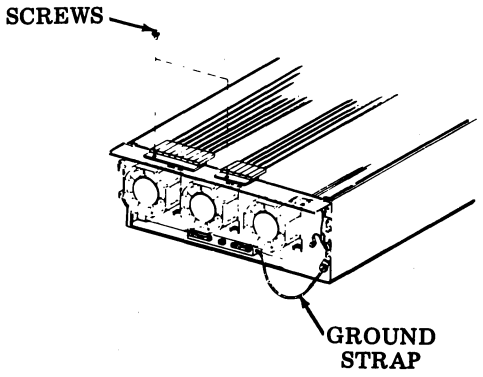
Step 12. Install 341740 ribbon cable.



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.

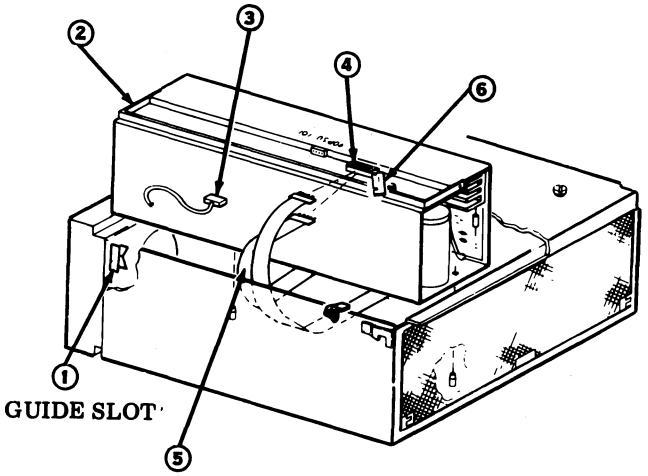


Step 14. Attach the braided ground strap to the slip-on terminal on the ventilation assembly. Align controllers and tighten screws retained in Steps 6 and 9.



Step 15. Mounting the 40PSU101 Power Supply into module frame.

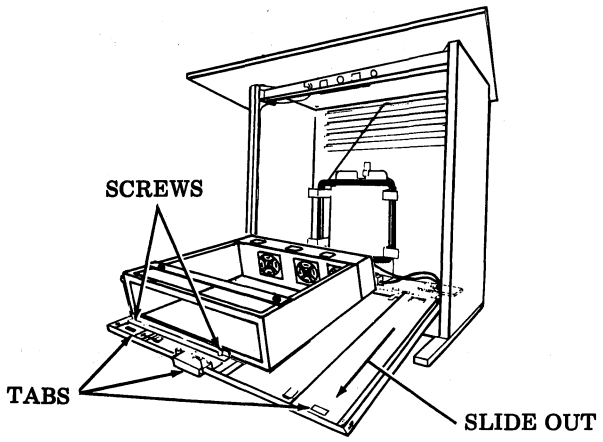
① Install power supply through slot and seat onto guide pins.
② Drop handle.
③ Connect plug from ventilation assembly.
④ Loosen rear insulator screw and swing insulator aside. Loosen terminal block screws.
⑤ Place display logic on terminal strip (flat terminals) and then controller cable (formed terminals)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



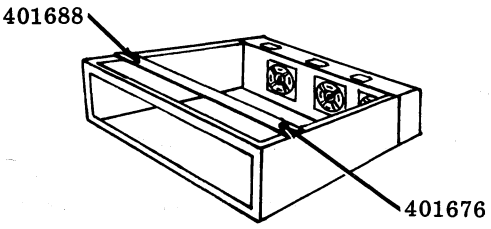
Step 16. Complete installation by reversing Steps 3, 2 and 1.

D. Electronics Package Assembly (ROP)

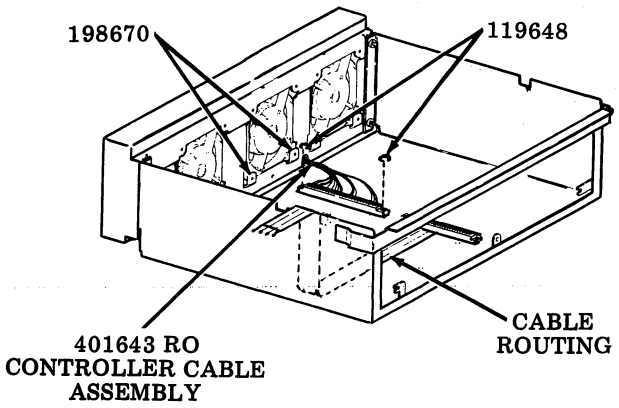
Step 1. Slide tabs inward and open panel carefully. Remove two screws and slide module out.



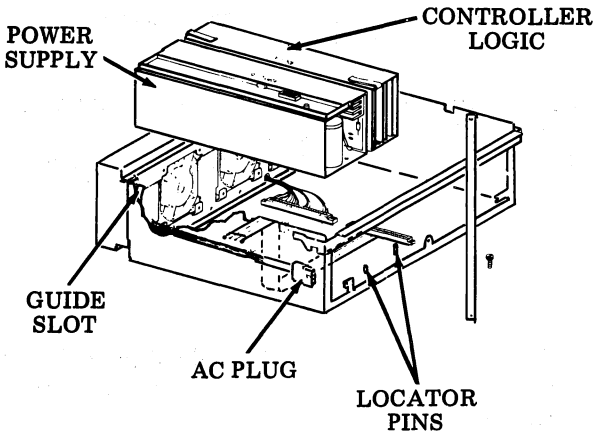
Step 2. Loosen 401676 screw, remove 401688 thumbscrew and swing bar aside out of the way.



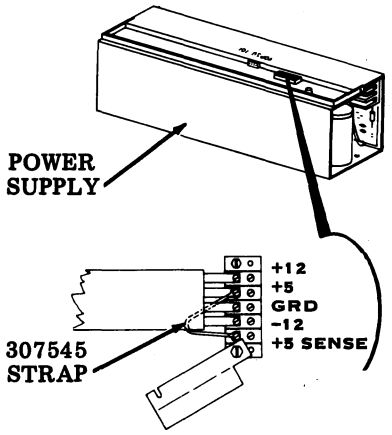
Step 3. Install 401643 controller cable to bottom of module using two 119648 retaining rings. Install cable bracket to ventilation assembly with two 198670 screws. Route cables as shown.



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



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



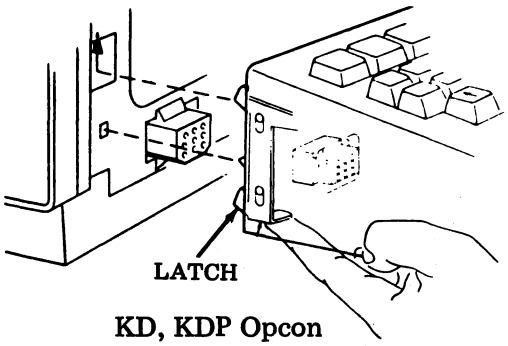
Step 6. Complete installation by reversing Step 2 and then Step 1.

E. Opcon Assembly

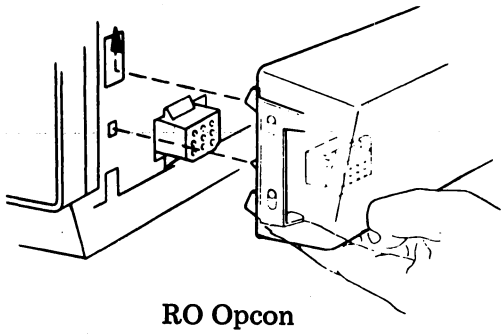
Remove packing clip before assembly.

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.



KD, KDP Opcon



RO Opcon

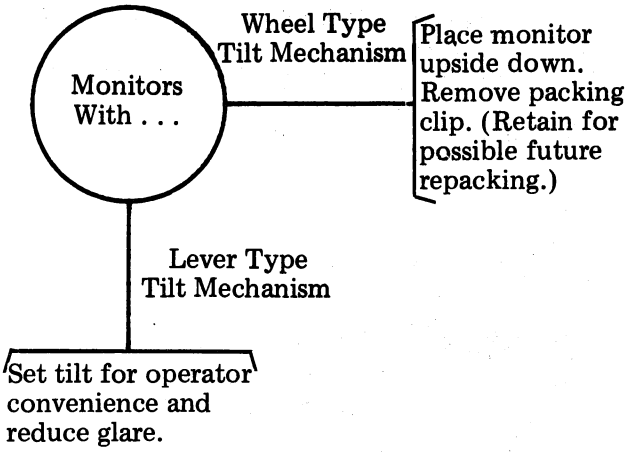
Step 2. Install CAPS LOCK or the blocking keytop (both provided in plastic bag) on opcon:

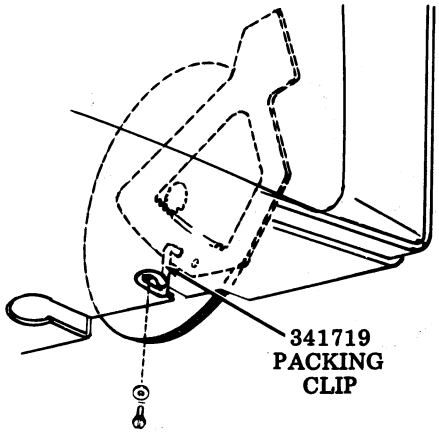
- If all caps are required, depress plunger and install blocking keytop.
- If upper and lower case is being used, install CAPS LOCK key.

Caution: If CAPS LOCK KEY is to be removed, the 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

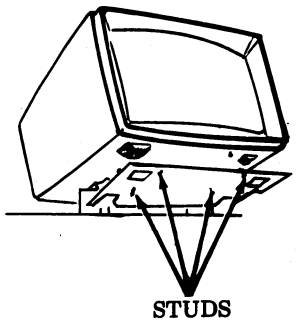
Step 1.





Step 2. Install bottom plate to underside of monitor:

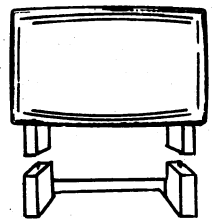
- Push studs until they snap into place.



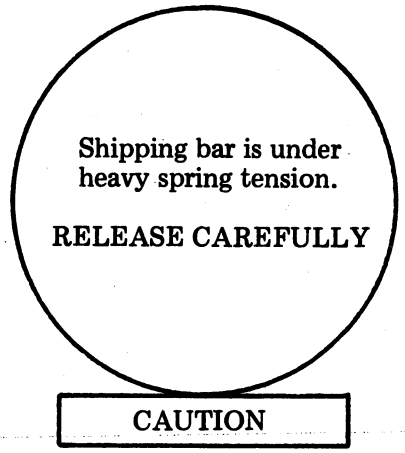
Note: If assembling a station with components of different vintages, then power supply/monitor compatibility must be checked (Page 24, see note, 403594 modification kit).

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

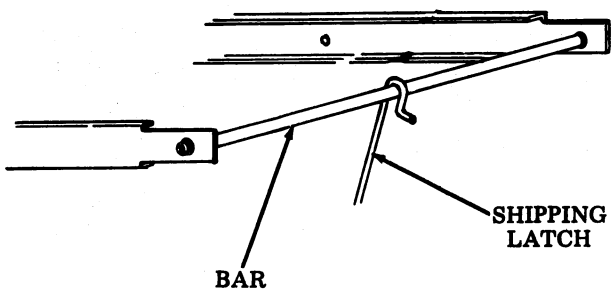
- Monitor slides over the posts freely — there is no locking device.
- Make sure connectors inside the posts are positioned fully.



G. Friction Feed Printer Assembly

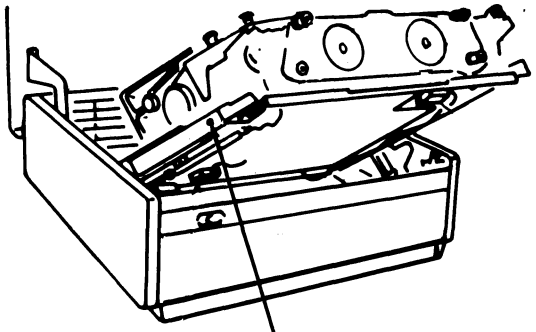


Step 1. Remove shipping latch and bar. Discard. If printer is to be shipped at a later date, retain bar and latch.



Step 2. Slide printer into track:

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

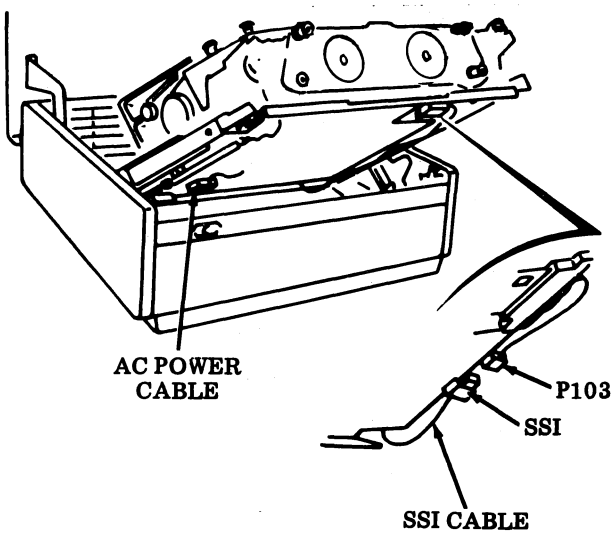


Step 3. Connect ac power cable and SSI cable.

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

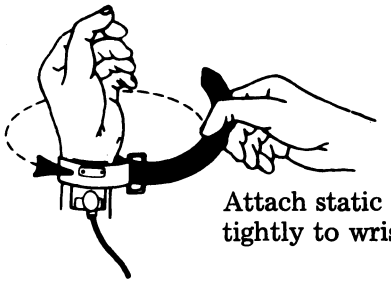
Step 5. Install carrier.

Step 6. Install ribbon.

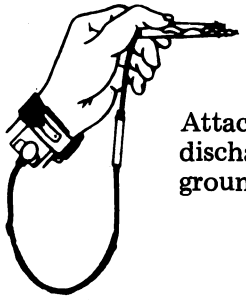


Step 7. Option the printer logic circuit card:

- 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 or 410076 circuit card per W-DJOAC.
- Reinstall card after optioning.



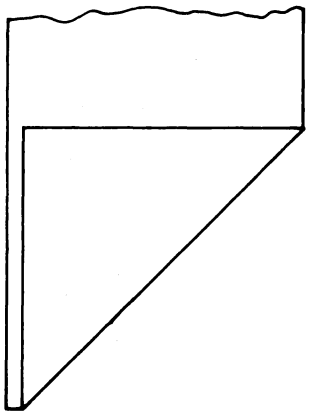
Attach static ground strap tightly to wrist as shown.



Attach clip end of static discharge strap to frame ground.

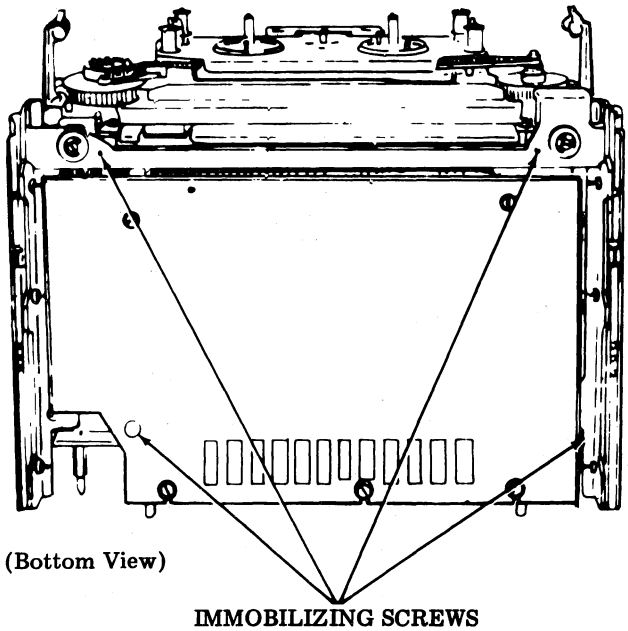
Step 8. Lower printer and install paper.

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



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.



(Bottom View)

IMMOBILIZING SCREWS
(4 Places)

Step 2. Option printer card per system requirements:

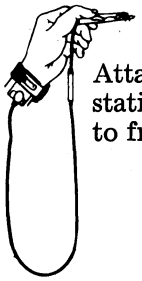
80-Column

- Install ground strap as shown.
- Remove 410640 or 410076 circuit card and option it per W-DJOAC.
- Reinstall card.
- Option 410071 card by positioning appropriate switches at bottom of printer. (It is not necessary to remove 410071 card.)

132-Column

- Option card by positioning appropriate switches at bottom of printer (per W-DJOAC for option information.)
  (It is not necessary to remove 410729 or 410072 card.)

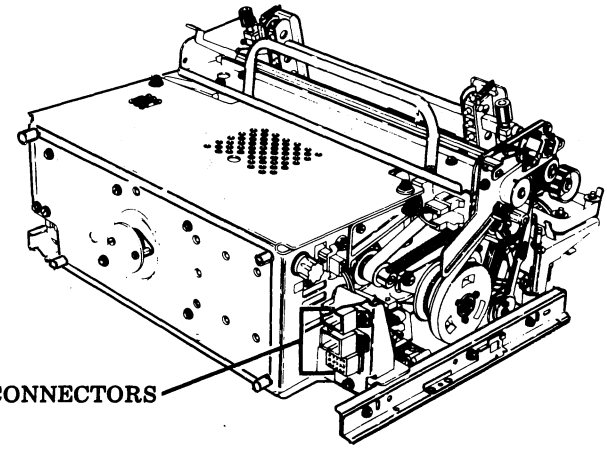
Attach static ground strap tightly to wrist as shown.



Attach clip end of static discharge strap to frame ground.

Step 3. Slide printer in place:

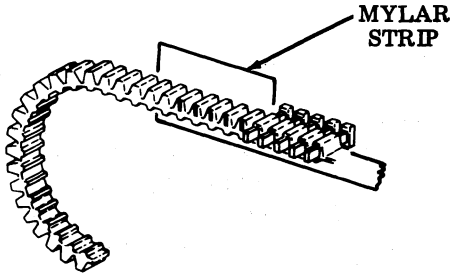
- Make sure two latches on either side are fully engaged.
- Make sure three connectors at rear of printer are fully seated.



CONNECTORS

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.

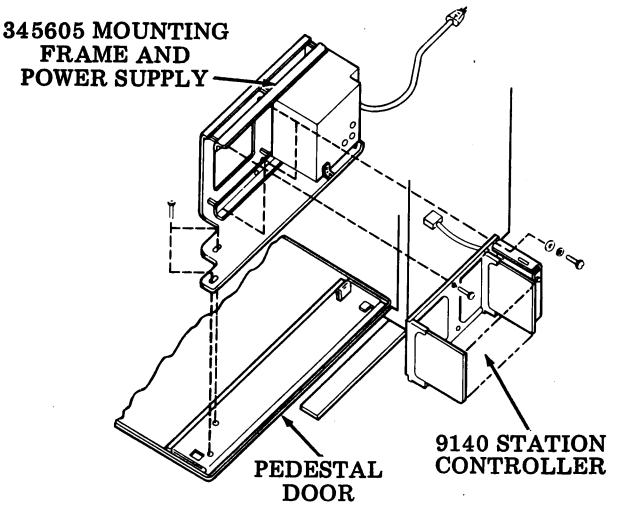


MYLAR STRIP

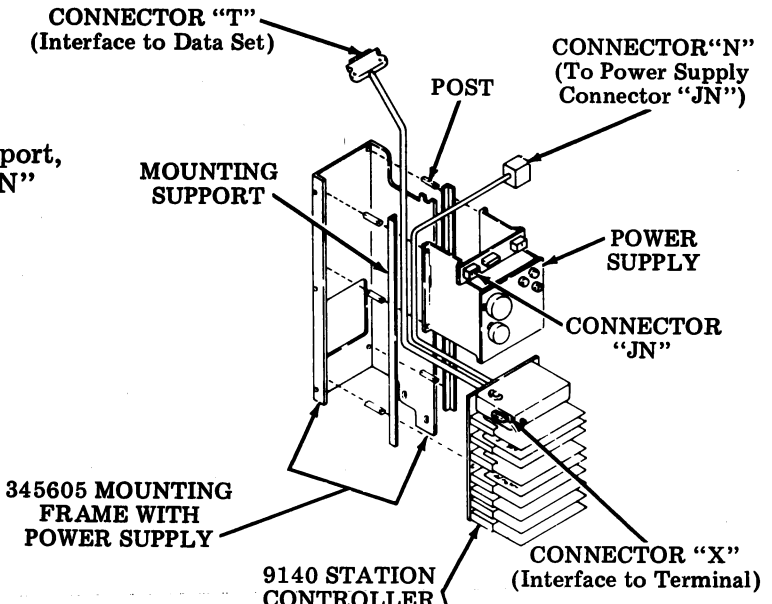
Step 5. Install ribbon. See decal on printer cover for proper routing.

I. 9140 Station Controller Assembly

Step 1. Assembly 345605 mounting frame and and power supply, and the 9140 Station Controller.

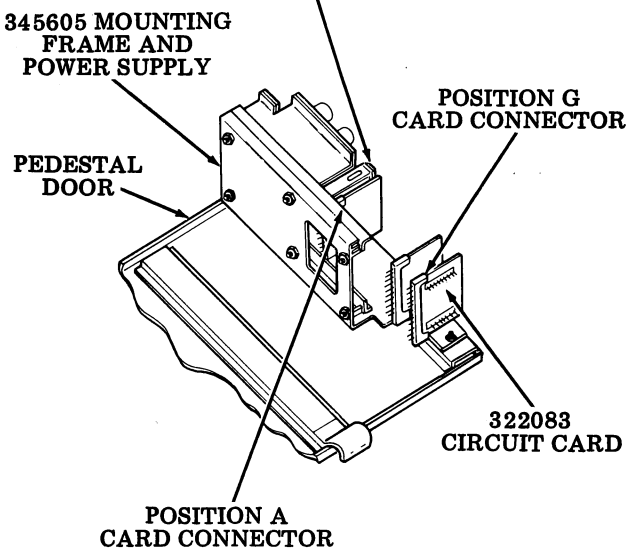


Step 2. Route the cables along mounting support, and plug the "N" connector into "JN" connector on power supply.



Step 3. Install 322083 circuit card in position G.

Step 4. Remove circuit card in position A. Install either 1200 baud timer (303839) or 1050 baud timer (303805) on circuit card removed from position A. Install circuit card back into position A.

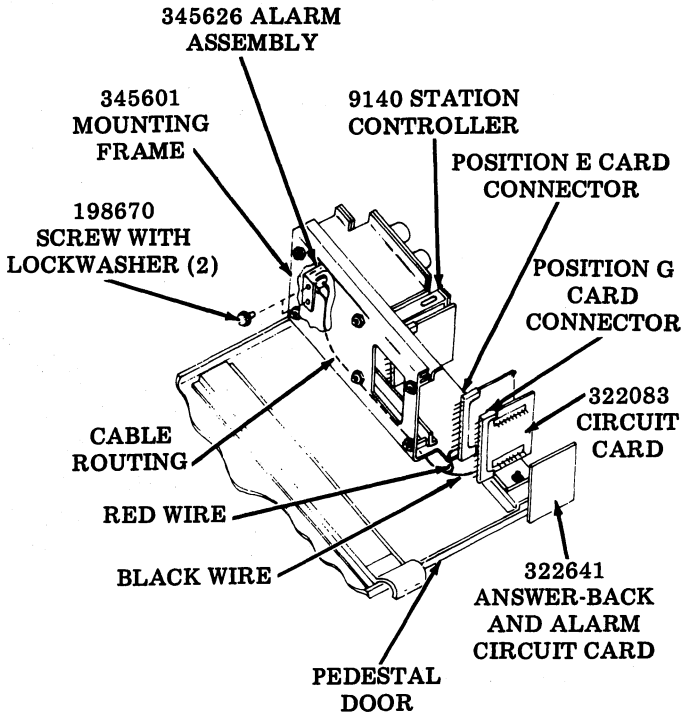


Perform Steps 5 through 7 only if 345625 alarm/parity response modification kit is used.

Step 5. Install 345626 alarm assembly to 345601 mouting frame with two 198670 screws with lockwashers.

Step 6. Install 322641 answer-back and alarm circuit card on 322083 circuit card in position G.

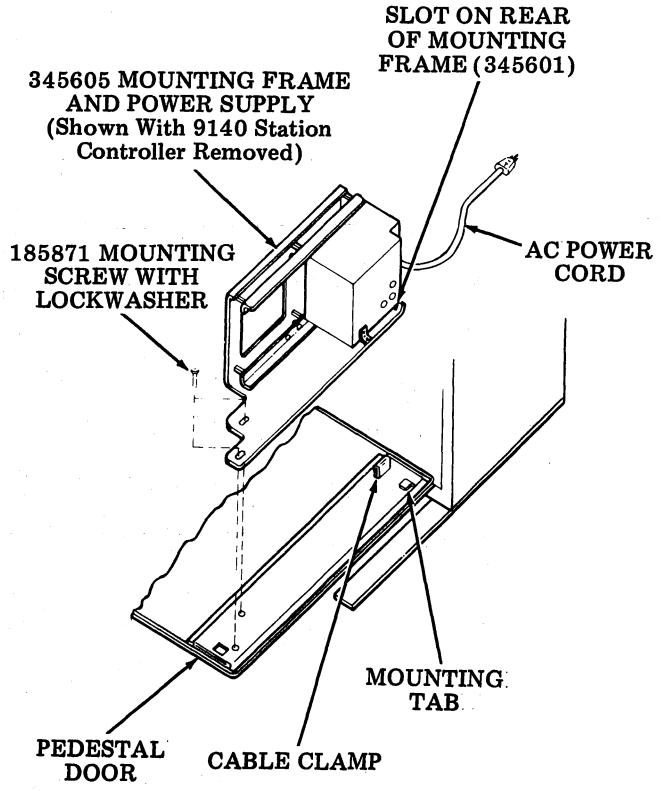
Step 7. Route the cable of 345626 alarm assembly between mounting posts and 345601 mounting frame. Slip the terminal of the red wire on pin B35 of card connector in position E. Slip the terminal of the black wire on pin B33 of card connector in position G.



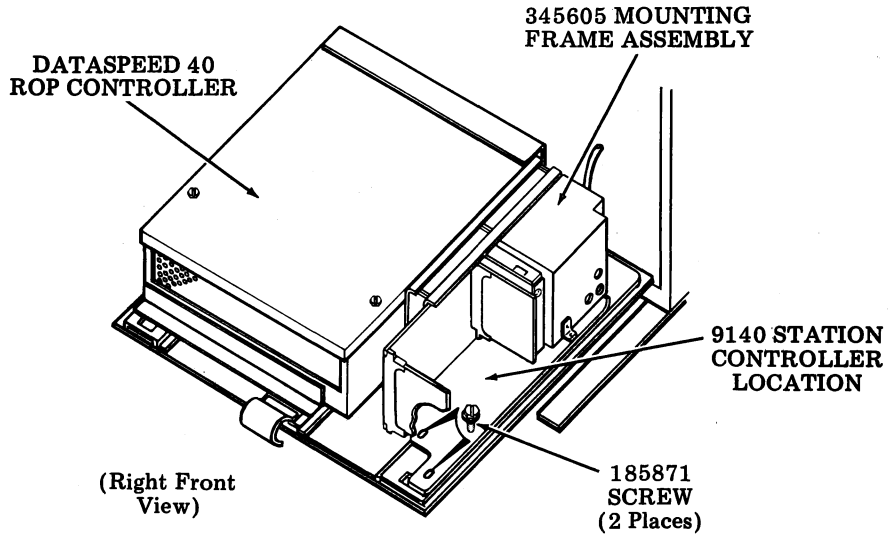
Step 8. Remove cable clamp, if present, from right side of pedestal door.

Step 9. Install entire 9140 Station Controller assembly with 345605 mounting frame and power supply on pedestal door. Slide the slot at rear of 345601 mounting frame under the mounting tab on the door. Secure the frame with two 185871 screws with lockwashers. (Circuit cards in positions G and F may have to be removed to gain access to one of the holes.)

Step 10. Connect ac power cord to an unswitched receptacle.



Step 11. 9140 Station Controller and ROP Controller Mounting



Note: The 401643 ROP controller cable must be mounted in electronics package on the pedestal door.

J. Cabling (Fig. 20 through 29)

KD Station

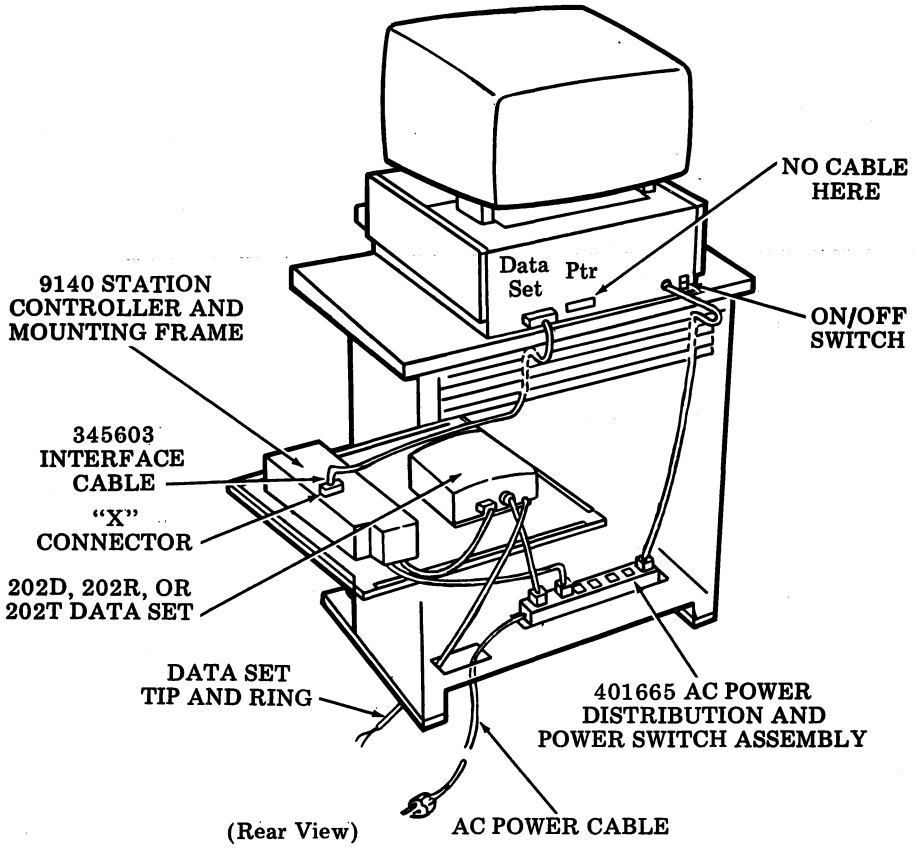


Fig. 20

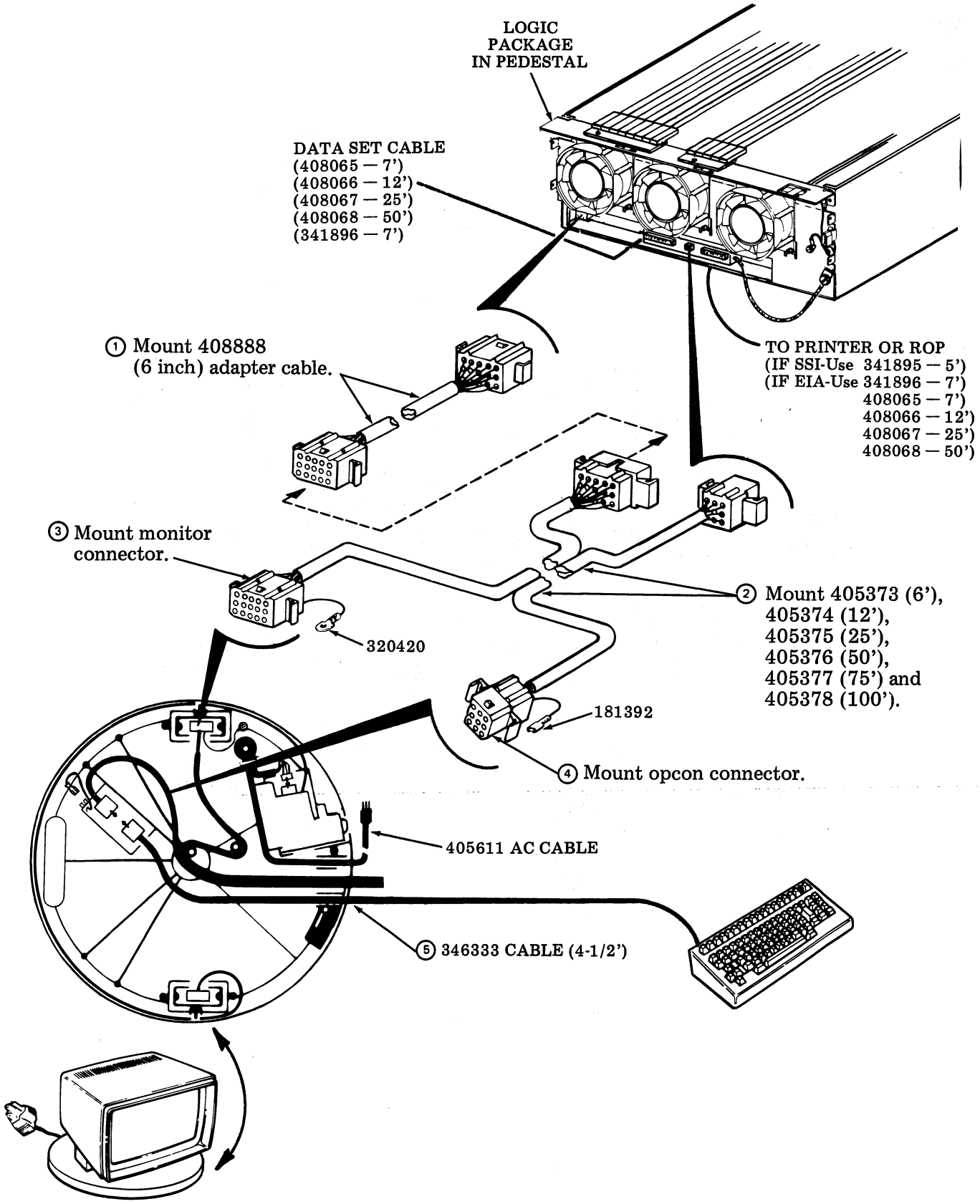


Fig. 21 — Free-Standing Monitor Base to Logic Assembly

KDP Station

Friction or Tractor Feed

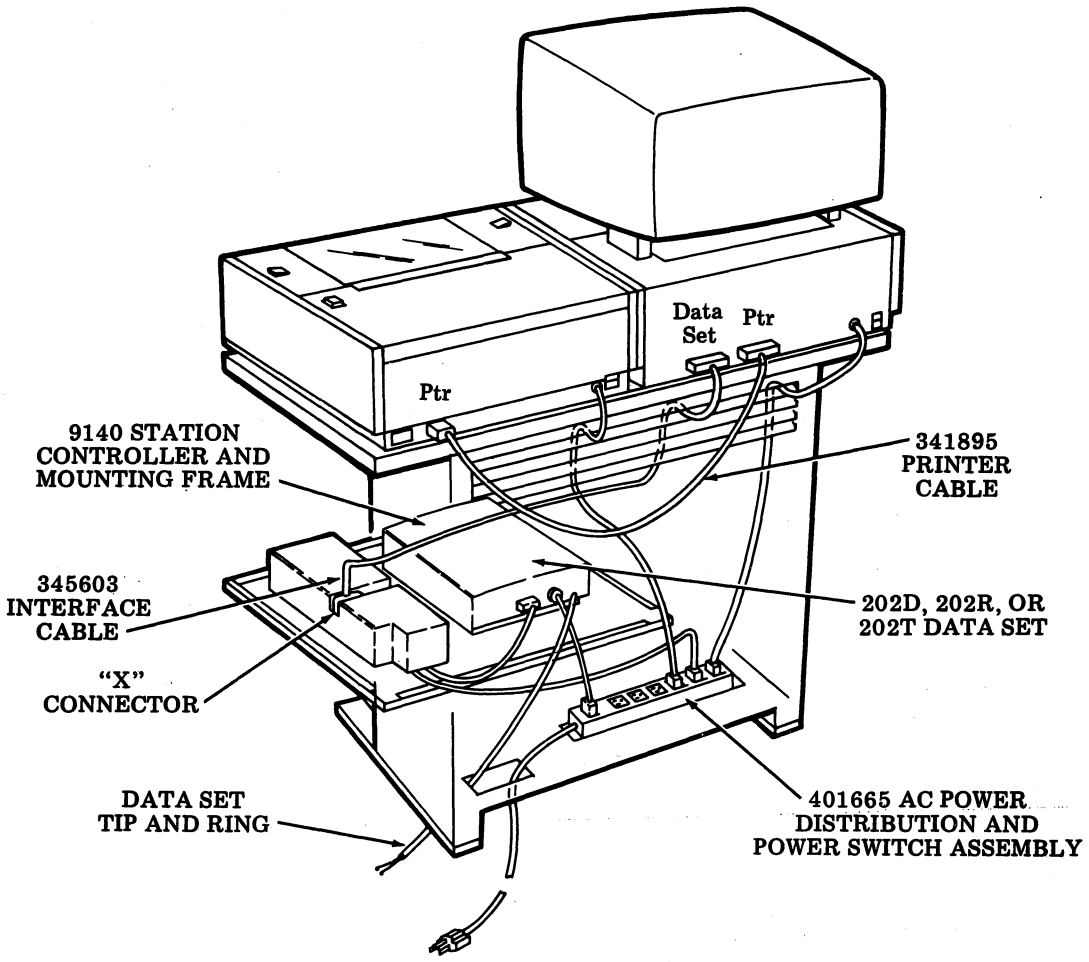
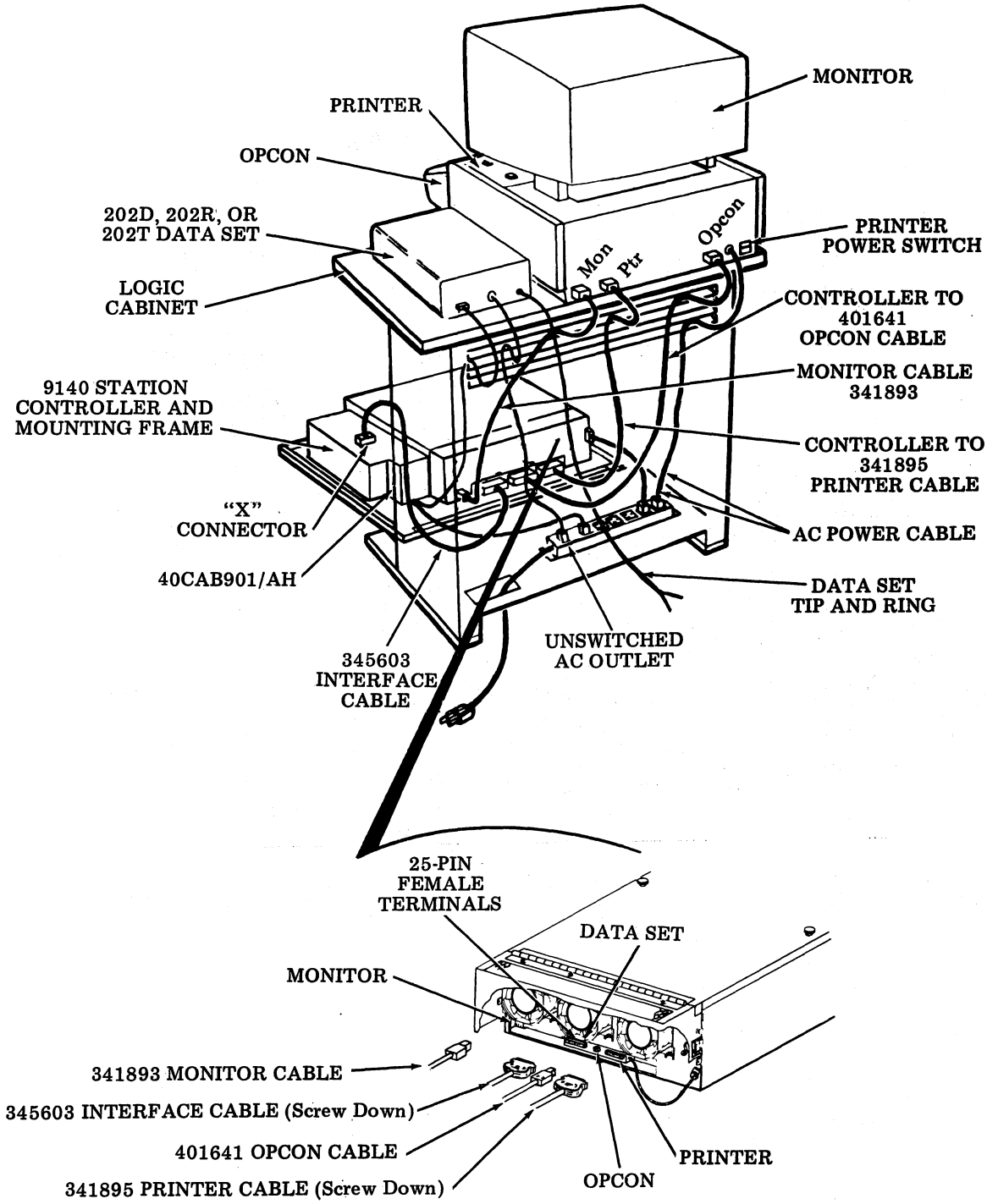


Fig. 22—Printer Adjacent

Friction Feed

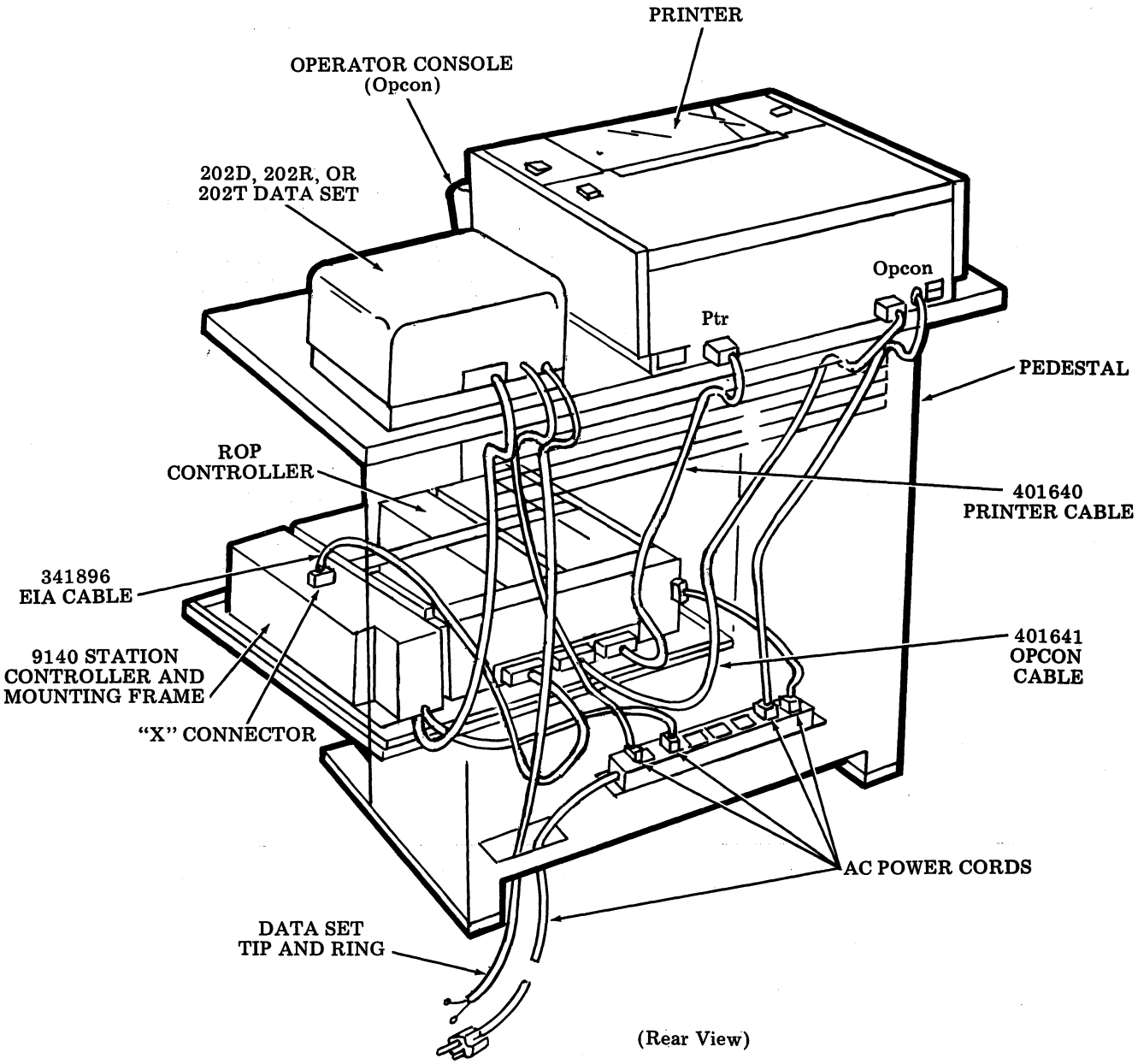


Plug in four connectors, two of which are to be screwed down.

Fig. 23—Printer Under Monitor

ROP Station

Friction or Tractor Feed



Note: 401643 ROP Controller cable must be mounted in electronics package on pedestal door. See Page 29 for cable location.

Fig. 24

KD-ROP Station

Friction or Tractor Feed

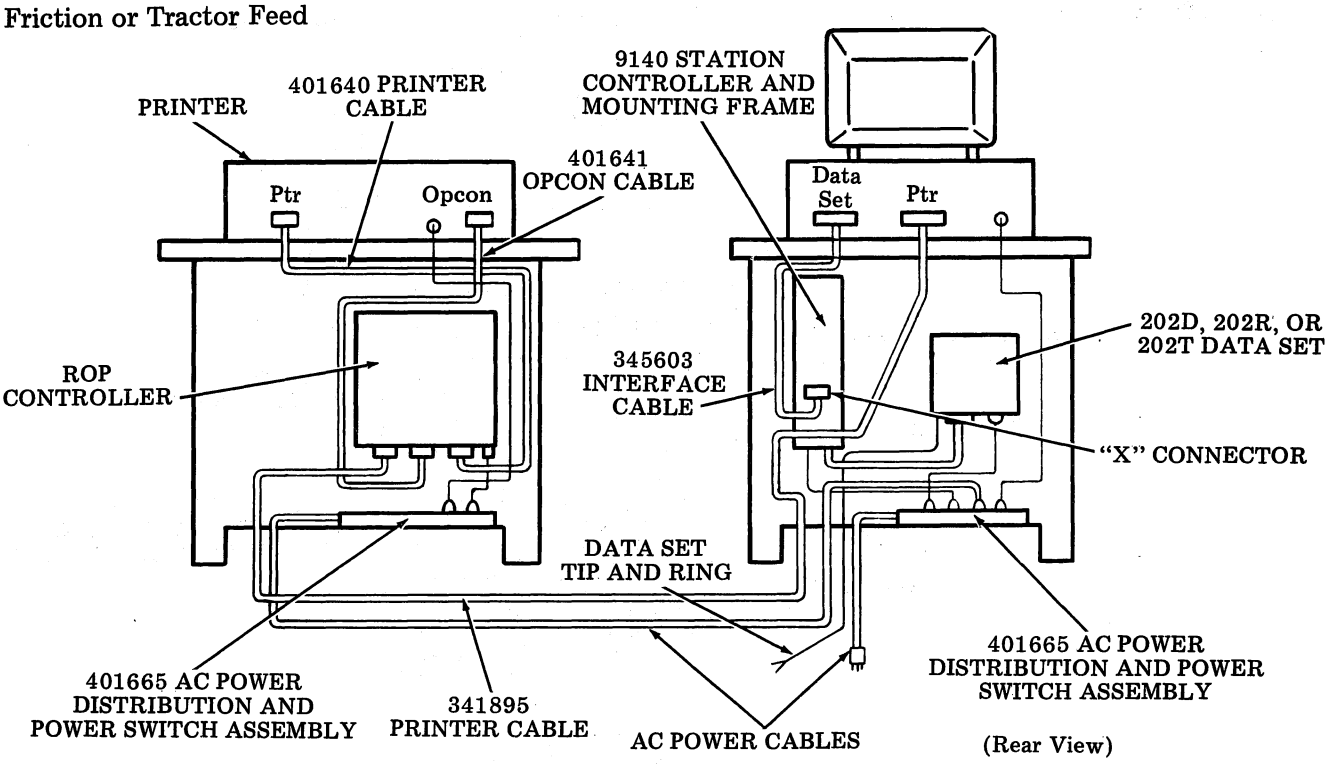


Fig. 25

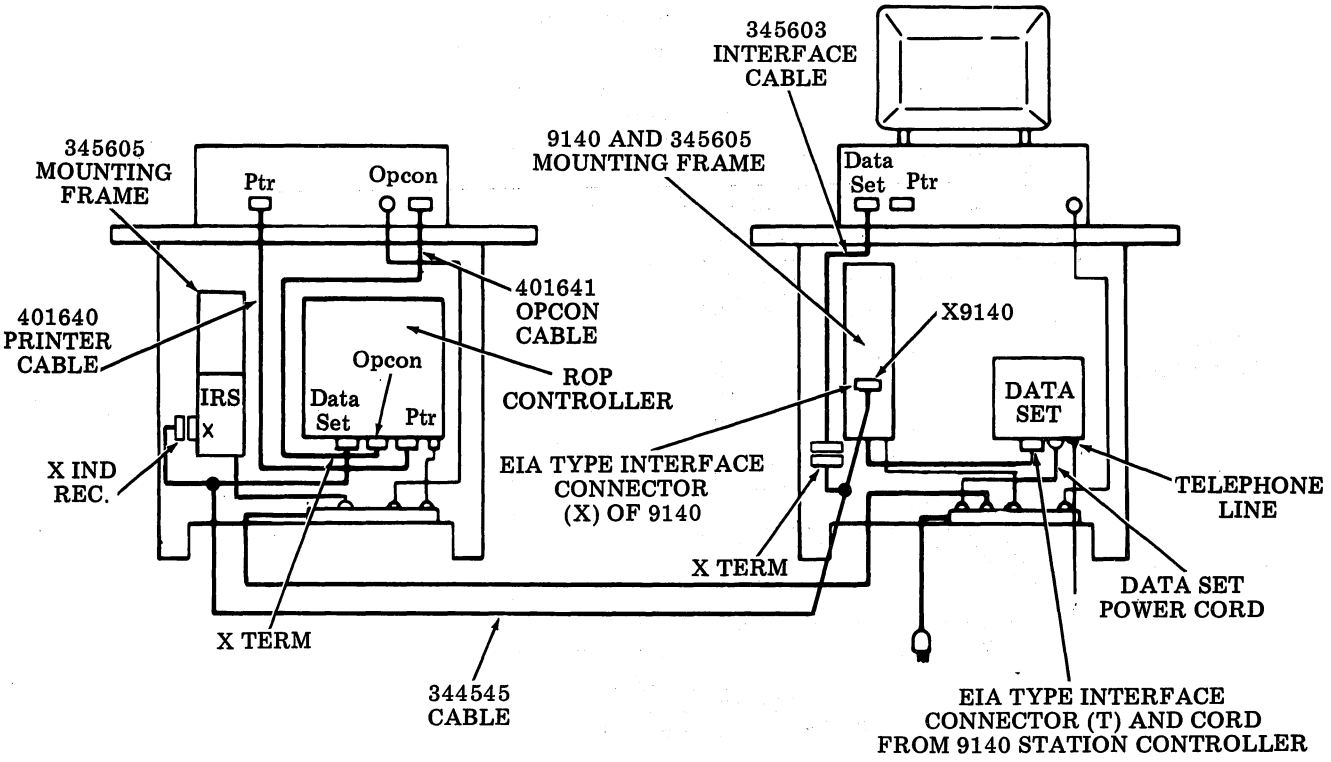


Fig. 26—KD-ROP Station E/W Individual Receiver Selection Modification Kit (Rear View)

KDP & ROP Station

Adjacent Printer — Friction or Tractor Feed; Printer of ROP — Friction or Tractor Feed

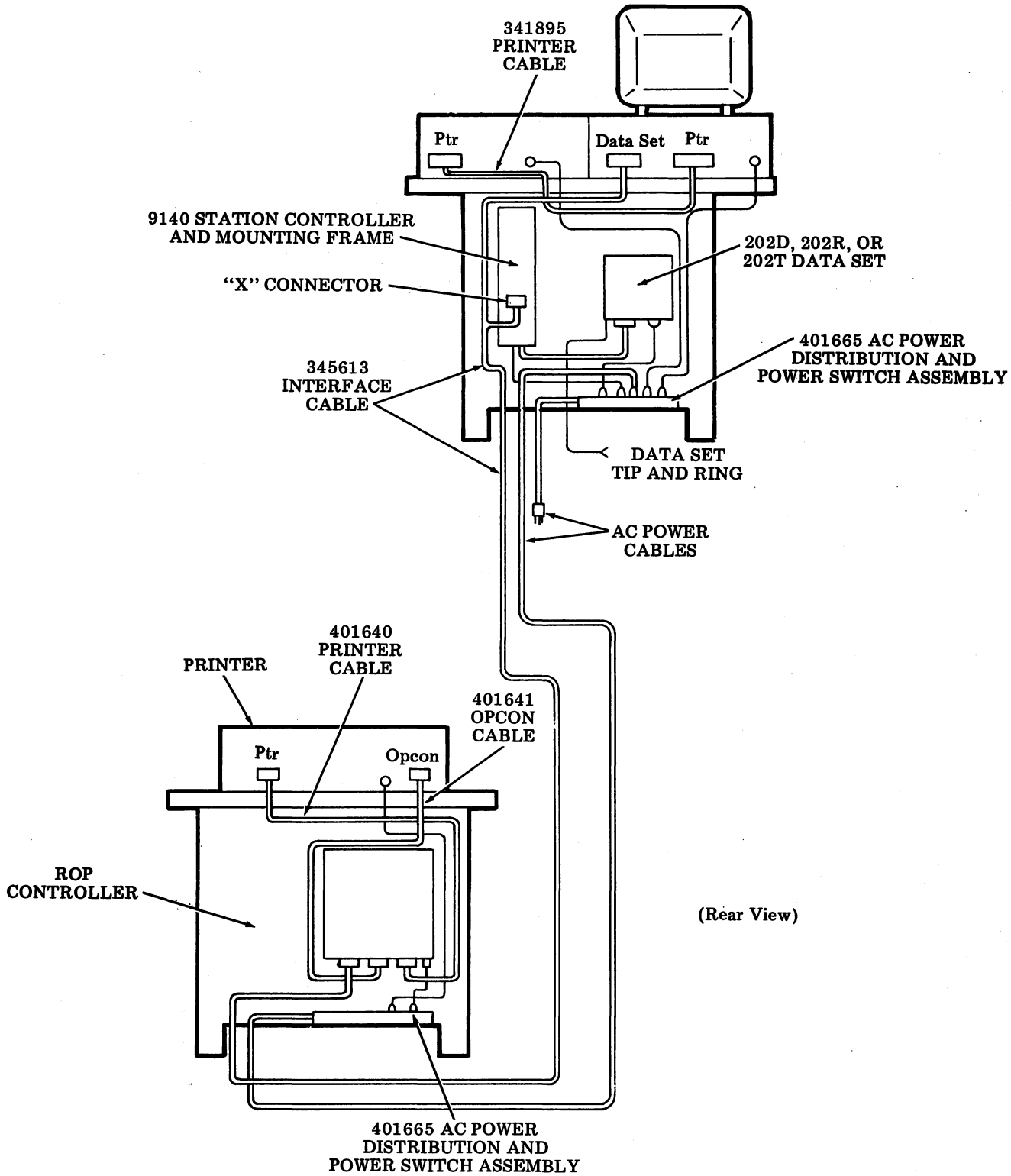


Fig. 27

Printer Under Monitor -- Friction Feed; Printer of ROP — Friction or Tractor Feed

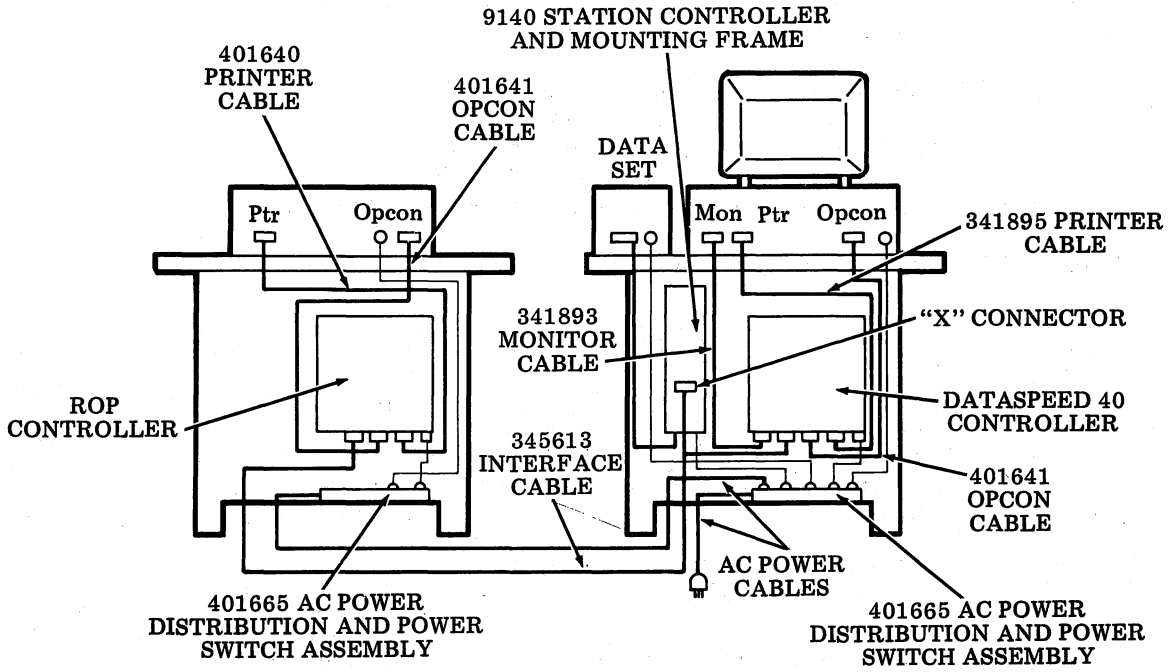


Fig. 28

KD & ROP Station

Friction or Tractor Feed

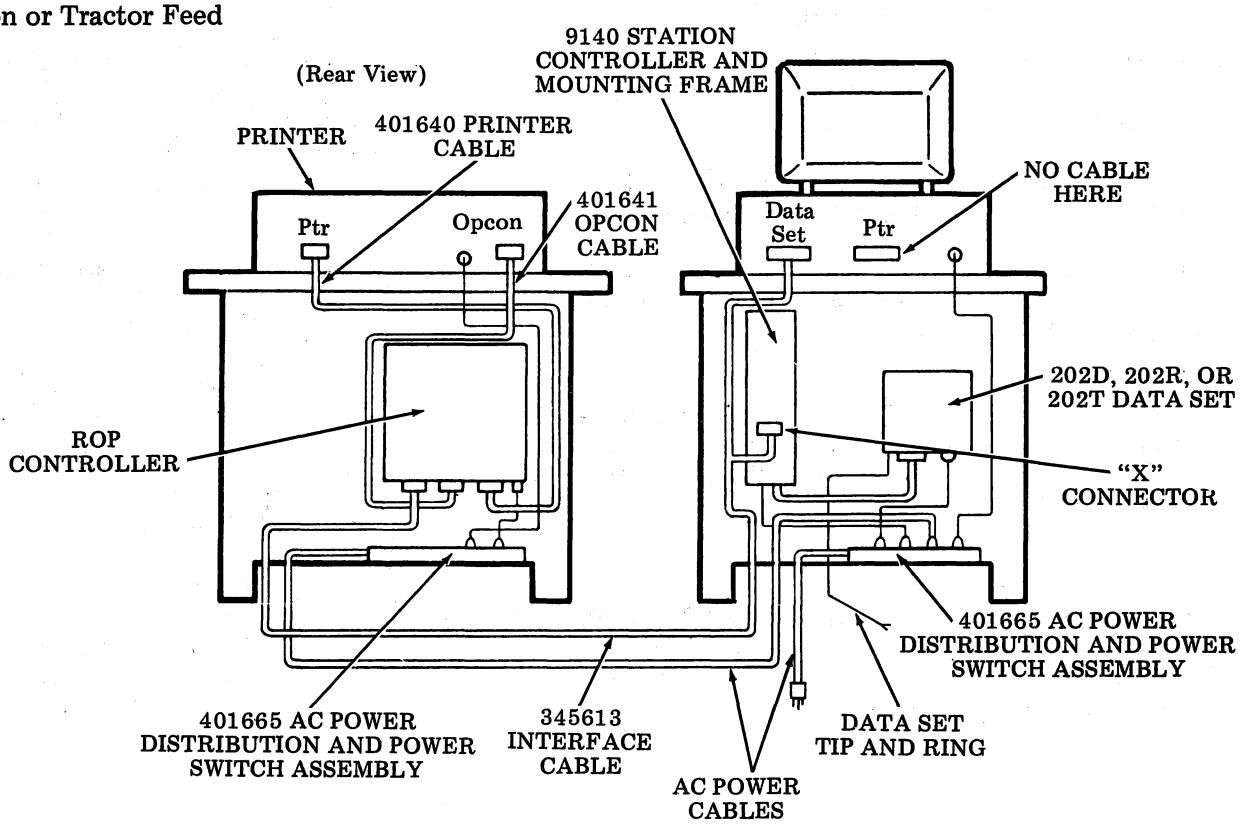


Fig. 29

K. Data Set Installation (Fig. 30, 31 and 22)

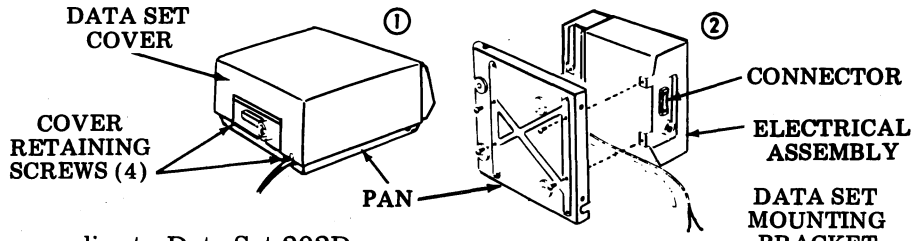
3.03 Option the data set using options given on Pages 97 through 105. Further information on data set installation may be found in the following BSPs:

Data Set 202C Installation — Section 592-015-200
Data Set 202R Installation — Section 592-025-200
Data Set 202T Installation — Section 592-031-200
Data Set 201C Installation — Section 592-029-200
829-Type Data Auxiliary Set Installation — Section 598-082-200

3.04 Data Set 202D, 202R, and 202T Mounting

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).



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.

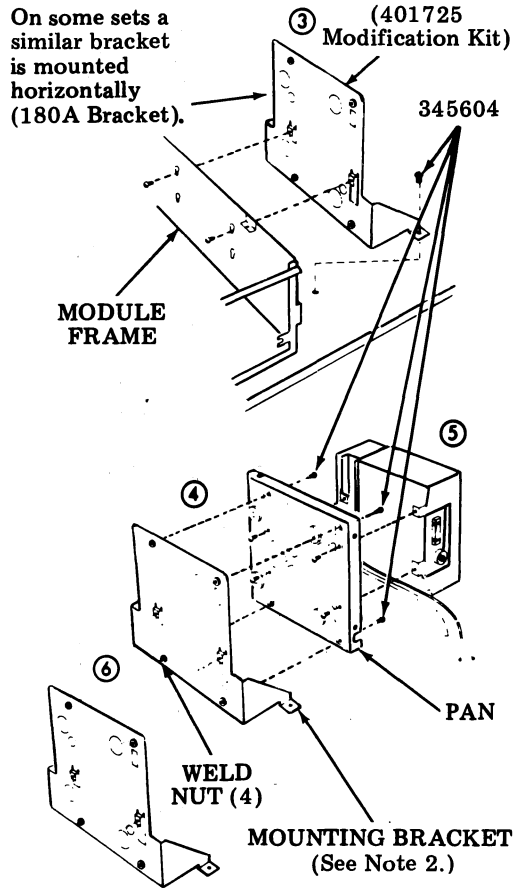
④ Assemble the pan to the mounting bracket so that the connector end of the data set faces the front when the pedestal front panel is opened.

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 202T (345604 set of parts, 193A mounting bracket).

Fig. 30

TABLE A

CUSTOMER INTERFACE PIN ASSIGNMENT AND

CIRCUIT DESIGNATIONS FOR DATA SET 201C

PIN NO.	CIRCUIT DESIGNATIONS USING EIA RS-232-C NOMENCLATURE
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	Received Line Signal Detector (CF)
9	Reserved For Data Set Testing
10	Reserved For Data Set Testing
11-13	Not Used
14	New Sync (NS. NON-EIA)
15	Transmitter Signal Element Timing (DB)
16	Dibit Clock Transmitter (DCT. NON-EIA)
17	Receiver Signal Element Timing (DD)
18	Dibit Clock Receiver (DCR, NON-EIA)
19	Remote Release (RR, NON-EIA) **
20	Data Terminal Ready (CD)¶
21	Ready (RDY, NON-EIA)¶
22	Ring Indicator (CE)¶
23	Ring Indicator 2 (RG2, NON-EIA) **
24	Transmitter Signal Element Timing, External (DA)
25	Not Used

¶ Used for switched-network applications with contact or EIA voltage interface.

** Used only with contact interface option for switched-network applications.

TABLE B

CUSTOMER INTERFACE CIRCUIT DESIGNATIONS, PIN ASSIGNMENTS, AND APPLICATIONS FOR DATA SET 202T

PIN NO.	CIRCUIT DESIGNATIONS USING EIA RS-232-C NOMENCLATURE
1	Protective Ground (AA) — Not Provided in Later Model Sets
2	Trasmitted 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	Received Line Signal Detector (CF)
9	Reserved for Data Set Testing
10	Reserved for Data Set Testing
11	Secondary Request-to-Send (SCA)§§
12	Secondary Received Line Signal Detector (SCF)
13-18	Not Used
19	Secondary Request-to-Send (SCA)§§
20	Data Terminal Ready (CD)††
21	Not Used
22	Ring Indicator (CE)††
23-24	Not Used
25	Carrier Detector Reset (CR) ‡‡

†† These circuits are provided for switched-network service only.

‡‡ This circuit is provided in Data Set 202T. It is not defined in EIA Standard RS-232-C.

§§ The data terminal may control the Secondary Request-to-Send Circuit from either pin 11 or pin 19; these pins are physically connected together in the data set.

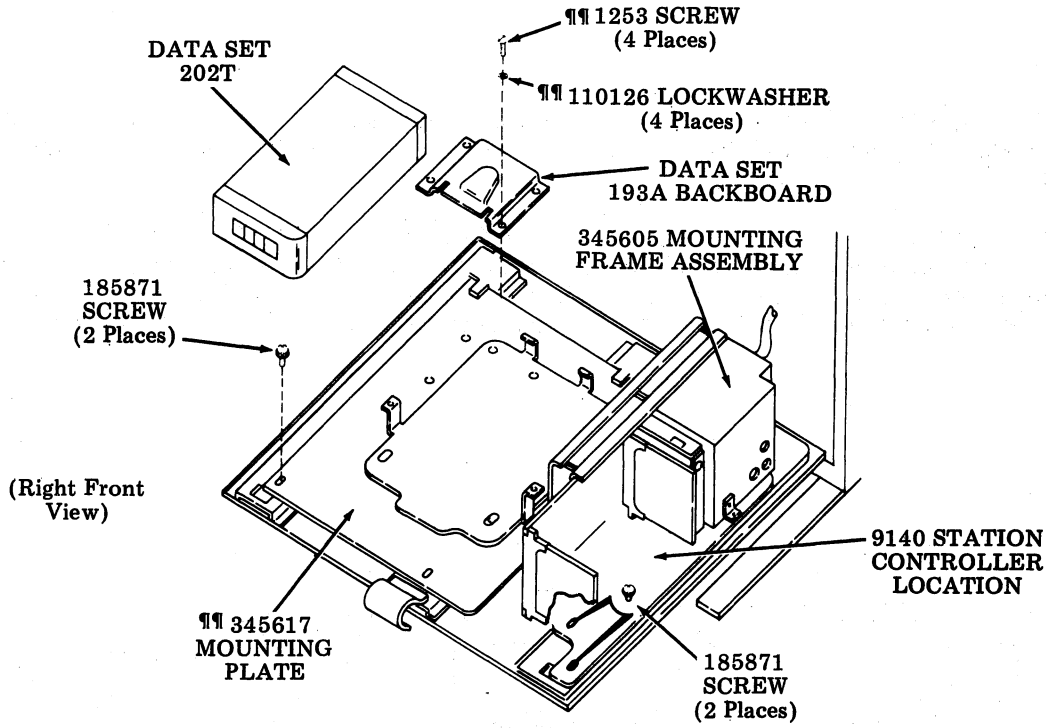
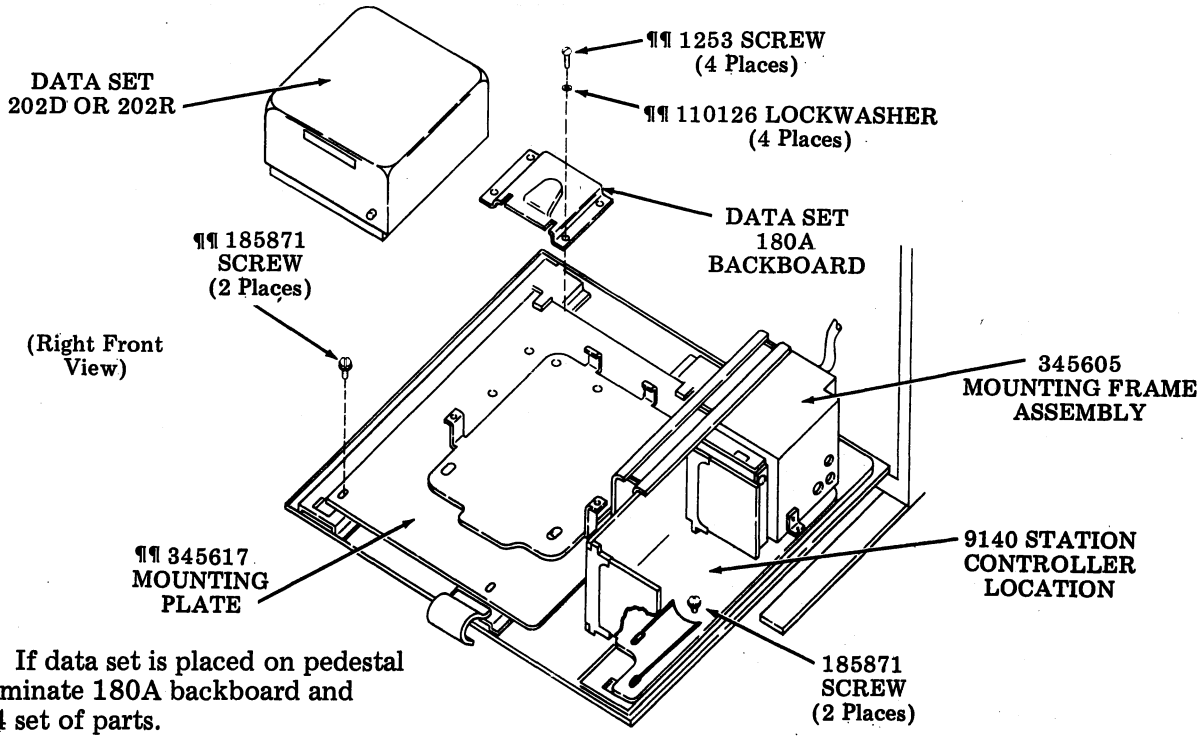


Fig. 31—9140 Station Controller and Data Set 202T Mounting



Note: If data set is placed on pedestal top, eliminate 180A backboard and 345604 set of parts.

¶¶ Part of 345604 set of parts.

Fig. 32—9140 Station Controller and Data Set 202D or 202R Mounting

L. Interfacing

3.05 The 40-Type Private Line Selective Calling Station Arrangements use Electronics Industries Association (EIA) Standard RS-232-C Interface between the 40-Type Terminal, 9140 Station Controller and data set.

3.06 In this application the 40-Type Terminal interfaces with the 9140 Station Controller, which in turn interfaces with Data Set 202D, 202R, or 202T used in a private line network (Fig. 33). A two- or four-wire tip and ring telephone connection then forms the station interface with the line. For further information on data set installation see the BSP installation sections listed in K. Data Set Installation.

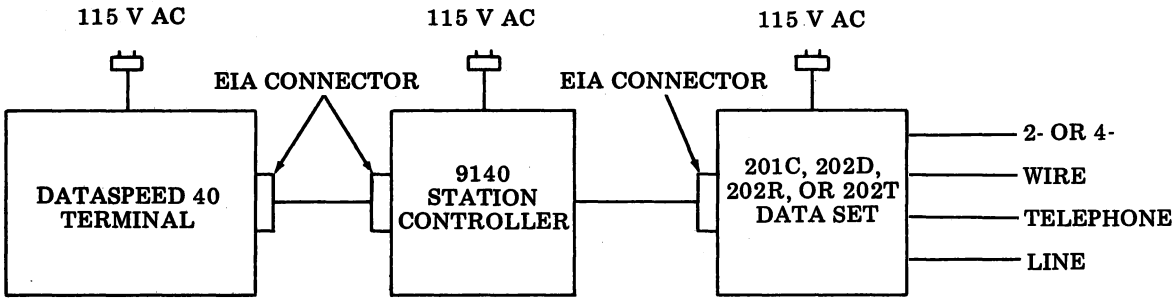


Fig. 33

M. Modification Kits

Audible Alarm and Answer-Back

3.07 The 345625 modification kit will supply an audible alarm and optional answer-back if the station is not ready to receive (DTR off) or a vertical parity error is detected in the message text. A ready to receive answer-back is sent if DTR is on and no errors are detected. The 9140YH controller must contain a 322083 (G3) card and its wiring must conform to Issue 8 or higher of 8523WD Wiring Diagram. Installation of the 345626 alarm assembly and 322641 circuit card are shown in Fig. 34 with details given in Specification 50,803S and the 2006SD Schematic Diagram.

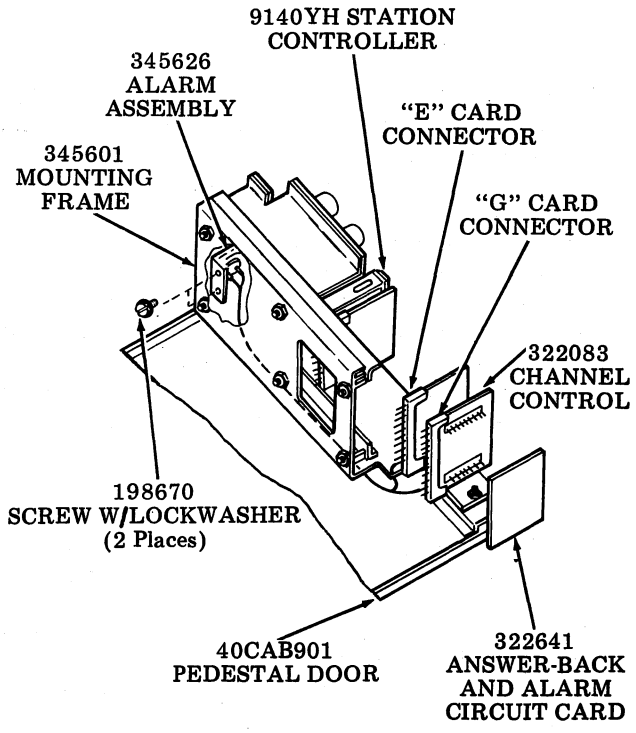


Fig. 34

Individual Receive Selection (Fig. 35)

3.08 The 344555 modification kit provides interconnecting and control facilities in 40-Type Set combination KD/ROP (private line version). The ROP designated as the primary receiver must be equipped with a 345605 mounting frame and power supply. The KD secondary receiver must be equipped with a 345605 mounting frame with power supply, 9140 Station Controller, and 322409 circuit card (3rd code). The 344545 interface cable is used between the primary receiver, secondary receiver, individual receiver selection assembly, and the 9140 Station Controller. Fig. 26 shows a typical KD-ROP arrangement equipped with an individual receiver selection modification kit.

3.09 The Specification 50,800S describes the use of the primary receiver and the ROP as the secondary receiver but this should not be used for full duplex operation and is not recommended for half-duplex because the "No-Traffic" replies "Ready/Not Ready" reflect the primary receiver status. Installation of the 344545 interface cable, the 344546 mounting plate and the 344545 interface cable is given in Specification 50,800S. The actual wiring diagram for the 344546 mounting plate and connector assembly is 9311WD. The schematic wiring diagram for the 344553 logic circuit card is 1210SD. See W-DJOAC, Sheet A12 for the various modification kit options that can be used.

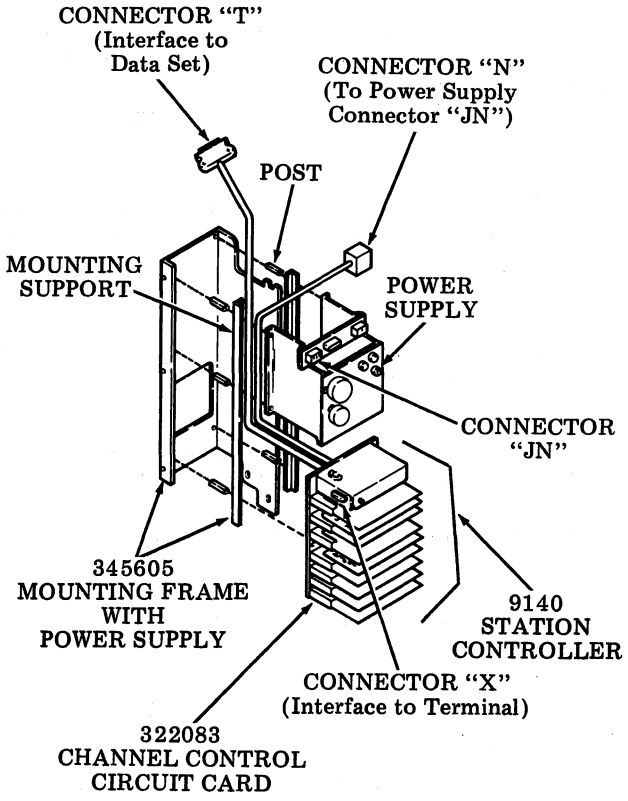


Fig. 35

2400 Baud Isochronous Operation With Private Detection and Alarm Feature.

3.10 The 402326 modification kit provides 2400 baud isochronous operation and requires a 201C or equivalent data set. The kit

also supplies the alarm and vertical parity error features of the 345625 modification kit. The 9140 Station Controller must contain a 322083 card and this modification kit updates a 322010 "A" card into a 322685 "A2" card. The modification may be used with either a KD having a 410771 card or a ROP using a 410580 card. Installation procedures of the modification are given in Specification 50,875S.

4. OPTIONS

GENERAL

4.01 This part includes all options that are utilized in the 40/3-Type 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-DJOAC.

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 (Fig. 36)

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

(b) Lift circuit card straight up.

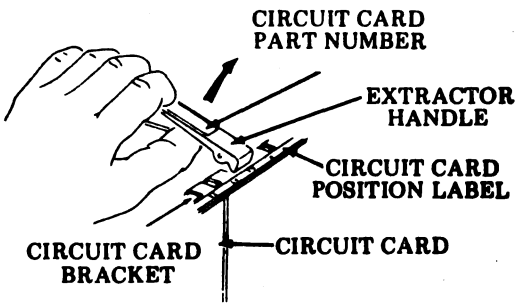


Fig. 36

EXTRACTING CIRCUIT CARDS FROM THE PRINTER (Fig. 37)

4.04 Friction Feed Printer

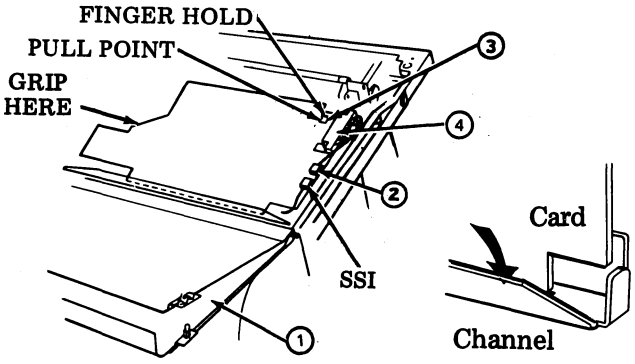


Fig. 37

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 or 410076 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.

4.05 Tractor Feed Printer — 80-Column (Fig. 38)

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.

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

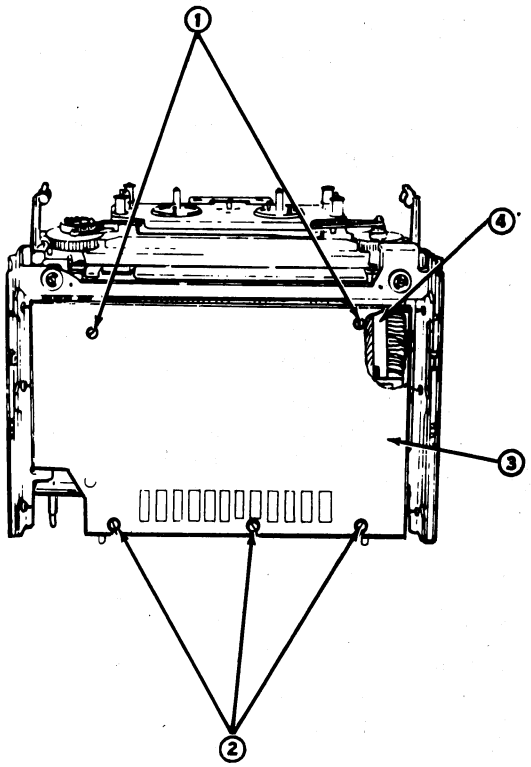


Fig. 38

4.06 Tractor Feed Printer (132-Column)

① Remove cover plate from bottom of printer (Fig. 38).
② Disconnect P109 ribbon connector from card.
③ Rotate card 90 degrees away from printer in direction opposite from ribbon connector.
④ Disconnect P103 and P106 connectors from card and remove card.

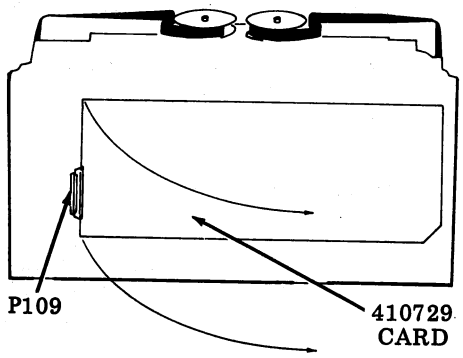


Fig. 39

FIELD OPTIONS AND DESCRIPTIONS

4.07 The options listed on following pages are numbered and provide brief descriptions to facilitate choices available. See Tables C and D for option location and page number. A list of suggested data sets and data set options is provided in 4.14. Option 4-XX indicates a KD or KDP option, while 9-XX indicates a 9140 controller option.

4.08 Options marked with an asterisk (*) are optioned at the factory. This does not imply that use of such options is necessarily permissible. Some factory optioned options on circuit cards are not used on 40/3-Type Stations, and are noted in the following descriptions.

4.09 The following 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-DJOAC. Instructions for activating these options are given in 4.10.

ACTIVATING SET OR STATION OPTIONS

4.10 To activate or change options on the 40/3-type circuit cards, see Fig. 40 and 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 C.)

(c) Remove circuit card.

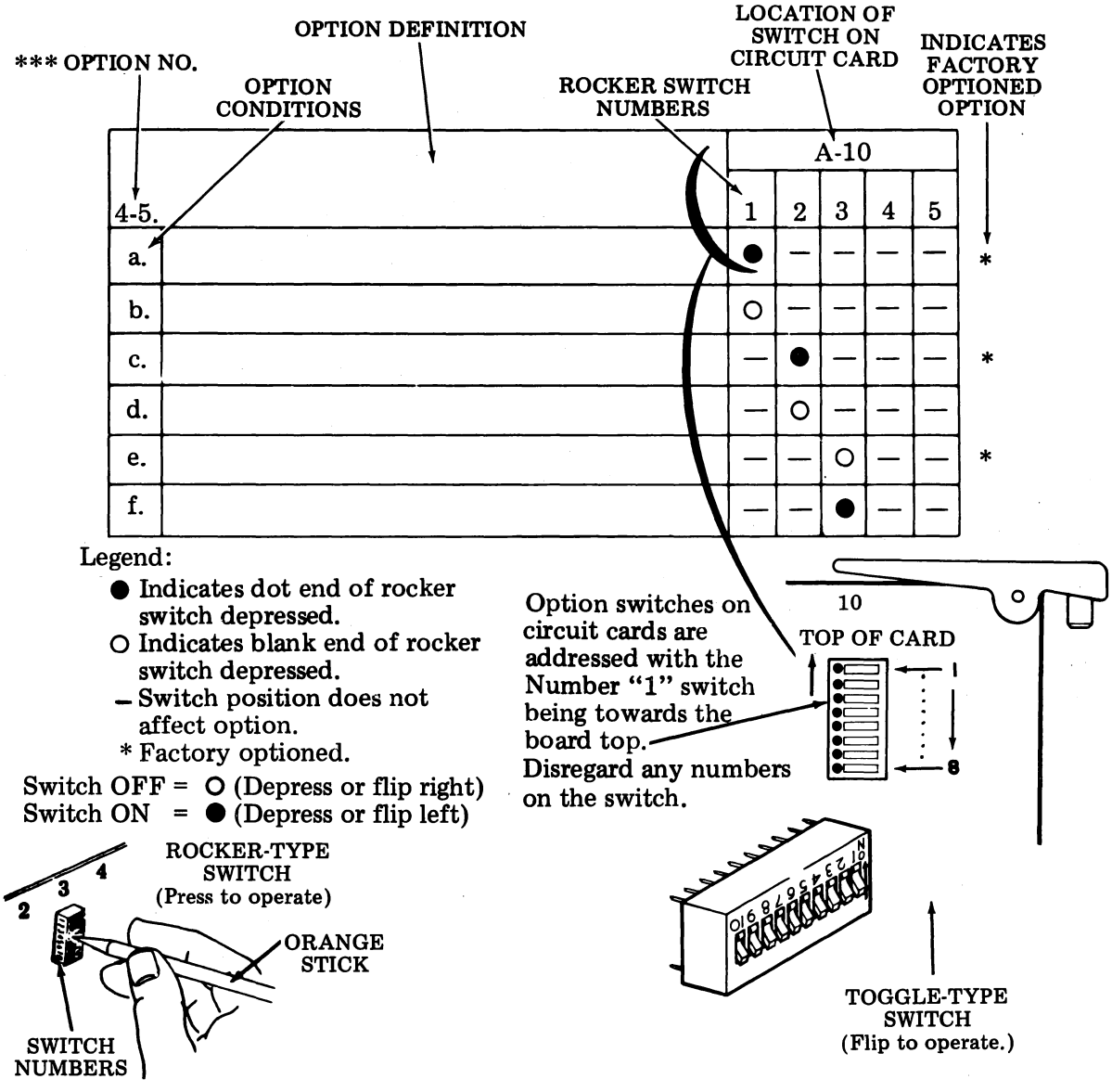
Warning: To avoid possible damage to MOS circuitry, attach 346392 static ground strap to wrist and frame ground before handling circuit cards.

(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.



***KD or KDP options in this section and in Issue 2 of W-DJOAC, are designated 4-1, 4-2, 4-3, etc. Similarly, 9140 options are designated 9-1, 9-2, 9-3, etc.

Fig. 40

TABLE C

40/3 OPTION LOCATION

DATASPEED 40 OPTION NUMBER	LOCATION	PAGE NUMBER
4-1.	410770	67
4-2.	Not Used on 40/3 Type	—
4-(3.-4.)	410771	66
4-(5.-9.)	410674	70
4-(10.-12.)	410675	69
4-13.	410676	68
4-(14.-16.)	Not Used on 40/3 Type	—
4-(17.-19.)	410640, 410729, 410071, 410072 and 410076	74—81
4-20.	On Printer	73
4-(21.-23.)	410640, 410729, 410071, 410072 and 410076	74, 75, 77, 79
4-(24.-25.)	410580	71
4-26.	Not Used on 40/3 Type	—
4-27.	410675	69
4-(28.-29.)	410770	67
4-(30.-34.)	410771	66, 67
4-(35.-36.)	410580	71
4-37.	410771	67
4-38.	410582	72
4-39.	On Printer	73
4-40.	410674	70
4-(41.-47.)	Not Used on 40/3 Type	—
4-48.	410729, 410471, 410072 and 410076	75, 77, 79, 81
4-49.	Not Used on 40/3 Type	—
4-(50.-53.)	410770	67, 68
4-(54.-55.)	410071, 410072 and 410076	77, 79, 81
4-56.	410076	81
4-(57.-58.)	410071, 410072 and 410076	77, 79, 81
4-(59.-60.)	410071 and 410072	77, 79
4-61.	410151	82

TABLE D

9140 CONTROLLER OPTION LOCATION

9140 OPTION NUMBER	LOCATION	PAGE NUMBER
9-1 (a-d)	322442 C2-2	88
9-1 (e-g)	322014 D1	89
9-1 h	322013 C2	87
9-1 (i-j)	322014 D1	89
9-1 (k-n)	322010 A	84
9-1 (o-p)	322409 A-1	85
9-1 q	322018 F2	92
9-2	322014 D1	89
9-3	322011 B	86
9-4	322010 A	84
9-5	322011 B	86
9-6	322014 D1 322451 E2	89 91
9-7	322014 D1	90
9-8	322011 B 322451 E2 322642 —	86 91 94
9-9	322013 C2 322014 D1	87 90
9-10	322014 D1	90
9-11	322083 G3	93
9-12	322442 C2-2	88
9-13	322451 E2	91
9-14 — 9-15	322010 A	84
9-16	322409 A-1	85
9-17	322013 C2	87
9-18	322442 C2-2	88
9-19 (a-d)	322010 A	84
9-19 (e-f)	322409 A-1	85
9-20 — 9-21	322442 C2-2	88
9-22 — 9-23	322013 C2	87
9-24	322451 E2	91
9-25	322017 F1 322018 F2	92 92
9-26	322451 E2	91
9-27	322641 — 322642 —	93 94

KD OPTIONS

4-1. Interface to Printer
- a. EIA
- b. SSI*

Choose 1

4-2. Not Used on 40/3-Type Stations

4-3. EIA Send/Receive Data Baud Rate
- a. 1050
- b. 1200*
- c. 2400 (See Note)

Choose 1

Note: 402326 modificaton kit is required in 9140 for 2400 baud operation.

4-4. EIA Reverse Channel
- a. Reverse Channel Required to Send
- b. Reverse Channel Not Required to Send*

Choose 1

4-5. 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 (Applies to Issues 4B and later of the 410674 Circuit Card Only.)

- i. Reject DC3*
- j. Accept DC3

Choose 1

4-6. 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

4-7. Errored Character on Receive
- a. Not Displayed on Vertical Parity Error
- b. Displayed on Vertical Parity Error*

Choose 1

4-8. 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*
- f. Do Not End on EOT

Choose 1

- g. End on GS*
- h. Do Not End on GS

Choose 1

4-9. Highlight
- a. Delimiters Not Sent (Except in Form Send Mode)
- b. Delimiters Sent (Modified Option 4-13)*

Choose 1

4-10. Line Ending Sequence
- a. CF LF
- b. CR CR LF*
- c. LF

Choose 1

KD OPTIONS (Cont)

4-11. Mode After Send
- a. Local* (See Note)
- b. Receive
- c. EXT Mode (Not Used on 40/3-Type Stations)

] Choose 1

Note: If EOT is message-ending character, the mode after sending is always RECEIVE.

4-12. Form Enter
- a. Disable in Local
- b. Enabled in Local*

] Choose 1

4-13. Send Variations (All W/O Delimiters Except as Modified by Option 4-9b). In Form Send, Protect and Unprotect Sent as Displayed W/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 W/Unprotected HT to Space

] Choose 1

4-14. Not Used on 40/3-Type Stations

4-15. Not Used on 40/3-Type Stations

4-16. Not Used on 40/3-Type Stations

KD OPTIONS (Cont)

4-17. Printer Left Margin and Form Width

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

Choose 1 for 80-column printers. If 410071 or 410076 card, options continue down to 25th column.

Printer Right Margin and Form Width

c.	Last Character on Column 80
d.79.	Last Character on Column 79
d.78.	Last Character on Column 78
d.77.	Last Character on Column 77
d.76.	Last Character on Column 76
d.75.	Last Character on Column 75
d.74.	Last Character on Column 74
d.73.	Last Character on Column 73
e.	Last Character on Column 132*
f.131.	Last Character on Column 131
f.130.	Last Character on Column 130
f.129.	Last Character on Column 129
f.128.	Last Character on Column 128
f.127.	Last Character on Column 127
f.126.	Last Character on Column 126
f.125.	Last Character on Column 125
f.124.	Last Character on Column 124
f.123.	Last Character on Column 123
f.122.	Last Character on Column 122
f.121.	Last Character on Column 121

Choose 1 for 132-column printers. If 410072 card, options continue down to 73rd column.

KD OPTIONS (Cont)

4-18. Printer Paper Feedout
- 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*

] Choose 1

4-19. Printer Errored Character Symbol
- a. Printed on Even Parity Error*] Choose 1
- b. Printed on Odd Parity Error
- c. Not Printed on Parity Error
- d. Printers With 96-Character Set
- e. Printers With 64-Character Set
- f. Printers With Extended ASCII Character Set] Choose 1 (Must match type carrier ordered)
- g. Printers With Longest Character Set Having Less Than 64 Characters

4-20. Line Feed on Printer
- a. Single*] Choose 1
- b. Double

4-21. Foldover on Up-Low Printer
- a. Lower Case and Upper Case Print*
- b. Lower Case Prints as Upper Case

4-22. Foldover on Monocase Printer
- a. Lower Case Prints as Error Symbol
- b. Lower Case Prints as Upper Case*

] Choose 1 (Per type carrier ordered)

4-23. Extended ASCII on Printer
- a. Prints Extended ASCII Characters
- b. Does Not Print Extended ASCII (See 4-19a, b, or c.).*

] For future use — do not change.

4-24. Controller Parity Detection (ROP)
- a. Even Vertical Parity*
- b. Odd Vertical Parity

] Choose 1

4-25. Parity Error Response (ROP)
- a. Odd Parity Null Sent to Printer] Choose 1
- b. Received Character Sent to Printer*
- c. Data Error Lamp Turns on] Choose 1
- d. Data Error Lamp Dos Not Turn On*

4-26. Trans Start (ROP) (Not to Be Enabled)

4-27. Message Start
- a. Home on Transmit] Choose 1
- b. Send From Cursor*

4-28. Disconnect on Loss of Carrier
- a. Disconnect After 45 Seconds] Choose 1
- b. Does Not Disconnect — Timer Disabled*

4-29. Printer Message Mode
- a. Copies Display in Send, Copies in Receive or Local*
- b. Copies Line in Receive or Local

] Choose 1

KD OPTIONS (Cont)

4-29. Printer Message Mode (Cont)

Note: Options 4-29b and 4-29c are not applicable for this arrangement. With Option 4-29d installed and PRINT ON LINE key lighted and if SEND is depressed, the printer motor will start. When polled the PRINT ON LINE light will go out but the motor stays on. At end of message when SEND light goes out, the PRINT ON LINE will light and motor stops. If the printer is optioned for Option 4-18b or 4-18c, a 16-line feedout or form feed will occur (a friction feed printer will feedout, but a tractor feedout or form feed — whichever is shorter). If this feedout is not desired, specify Option 4-18a and requirement that received messages include repeated NLs (with appropriate time fills) or form feeds (whichever applies). Option 4-18a does not affect the printer motor running when sending.

4-30. Message Preparation
- a. Automatic Home on Message-Ending Character*
- b. Manual Home on Message-Ending Character

] Choose 1

4-31. KD Forced to Receive Mode (When ALARM Lead is On.)
- a. Independent of Printer Mode*
- b. Dependent on Printer Mode

] Choose 1

4-32. Printer Access From Line (When PRINT ON LINE Lamp is On)
- a. If KD is in Send, Receive, or Local Mode*
- b. If KD is in Receive Mode Only

] Choose 1

4-33. 9140 Station Controller Mode
- a. Full Duplex (FDX)
- b. Half-Duplex (HDX)*

] Choose 1

Note: If operation of system is such that the computer immediately receives an answer-back after the system sends a message and Option 4-33b is chosen, change to Option 4-33a. Option 4-33a will not allow this answer-back to occur, but should not be selected unless the "automatic" answer-back is used.

4-34. Control Signal Restrictions
- a. RTS Signal Can Turn On When STR is On*
- b. RTS Cannot Turn On if STR is On

] Choose 1

4-35. Printer Motor Control (ROP)
- a. "Data Set Ready" Controls Printer Motor*
- b. "Carrier Detect" Controls Printer Motor

] Choose 1

4-36. Printer Paper Alarm (ROP)
- a. Paper Alarm Turns Off "Data Terminal Ready" at End of Call. DTR Held Off Until Paper is Restored.*
- b. Paper Alarm Turns Off "Data Terminal Ready" Immediately. DTR Off Until Paper is Restored.

] Choose 1

4-37. Requirement for Sending
- a. Clear-To-Send (CTS) Required for Sending*
- b. CTS Not Required for Sending

] Choose 1

KD OPTIONS (Cont)

4-38. Data Stacking (ROP)
- a. Enable Data Stacking
- b. Disable Data Stacking*

] Choose 1

Note: Must use Option 4-38a. if 40C103/AE Controller is used.

4-39. Forms (Tractor Feed Only)
- a. On (See Note)
- b. Off*

] Choose 1

Note: Form feed will not occur if printer is on registration (first) line.

4-40. Go Receive on Sending CR (←)
- a. Not Used on 40/3-Type Stations
- b. Do Not Go Receive on Sending CR*

Note: Option on Issue 4B and later of the 410674 circuit card.

4-41. Not Used on 40/3-Type Stations

4-42. Not Used on 40/3-Type Stations

4-43. Not Used on 40/3-Type Stations

4-44. Not Used on 40/3-Type Stations

4-45. Not Used on 40/3-Type Stations

4-46. Not Used on 40/3-Type Stations

4-47. Not Used on 40/3-Type Stations

4-48. 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 4-48b. delays paper alarm until end of form-out.

4-49. Not Used on 40/3-Type Stations

4-50. Action Upon Printer SSI Loss
- 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 4-50a, 4-50b, or 4-50c.

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.

Note 3: Options 4-50 through 4-53 apply to Issue 3A or later 410770 card.

4-51. Remote Control
- a. 4210 character control*
- b. 9140 Print-on-Line Control For Split Operation
- c. Not Used on 40/3-Type Stations

] Choose 1

KD OPTIONS (Cont)

4-51. Remote Control (Cont)

Note 1: Card issues before 3A are permanently equipped with Option 4-51a.

Note 2: If both Options 4-51b. and 4-53a. are required, cut Strap A (land on component side between coordinates B1 and B2). Otherwise have Strap A intact.

4-52. Print On Line Control
- a. Copy all sent data.
- b. Printer Copies as Option 4-29*

] Choose 1

Note: PRINT ON LINE is automatically turned on when SEND is lighted for Option 4-52a. Card issues before 3A are permanently equipped with Option 4-52b.

4-53. Printer Motor Hold Timer
- a. Enabled
- b. Disabled*

] Choose 1

Note: With Option 4-53a., 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 4-53b.

4-54. Printing of Escape Sequences Suppressed
- a. Character After ESC Printed as Received*
- b. Printing of Character After ESC Suppressed

] Choose 1

Note: Option 4-54b. should not be used on a KDP set. The character after escape is already suppressed by the KD in SSI operation but not in EIA operation.

4-55. Shift-In/Shift/Out Detection
- a. SI/SO Detection Not Used*
- b. SI/SO Detection Enables Printing Additional Characters

] Choose 1

4-56. Friction Feed/Tractor Feed Printer — 410076 Card Only
- a. Friction Feed Printer -- Motor Held On After Paper Alarm*
- b. Tractor Feed Printer — Motor Turned Off After Paper Alarm

] Choose 1

4-57. SSI/OEM Interface
- a. SSI*
- b. Not Used On 40/3-Type Station

4-58. Idle Line Motor Control
- a. Disabled -- Motor Held On Indefinitely During Idle Line*
- b. Enabled — Motor Turned Off After 40-Second Idle Line

] Choose 1

4-59. Speed Selection (Applies Only if Option 4-57b is selected. Therefore, Does Not Apply For 40/3 Stations.)
- a. 75 Baud
- b. 150 Baud
- c. 300 Baud
- d. 600 Baud
- e. 1200 Baud
- f. 2400 Baud*
- g. 4800 Baud
- h. 9600 Baud

] Choose 1

4-60. Aux Alarm
- a. Enabled
- b. Disabled (Or Alarm Mechanism Not Present)*

] Choose 1

KD OPTIONS (Cont)

4-61. Regulator Grounding (Circuit Ground to Frame Ground)
- a. SSI (CKT and FR GND at PTR)
- b. SSI/OEM (CKT and FR GD at PTR, +12 V)*
- c. OEM (CKT GND EXT to PTR, +12 V)

] Choose 1

9140 STATION CONTROLLER OPTIONS

9-1. Variable Characters
- a. Answer-Back (A/B) Character 1
- b. A/B Character 2
- c. A/B Character 3
- d. A/B Character 4
- e. Transmitter On (X-ON) Character (DC1 Recommended)
- f. Transmitter Off (X-OFF) Character (DC3 Recommended)
- g. Acknowledge (ACK) Character (ACK Recommended)
- h. Interrupt Character (ETB Recommended)
- i. TSC (Transmitter Start Code) Character 1 (DC3 Recommended)
- j. TSC Character 2
- k. CDC (Call Directing Code) No. 1, Character 1
- l. CDC No. 1, Character 2
- m. CDC No. 2, Character 1
- n. CDC No. 2, Character 2

] See Note 1

- o. CDC No. 3, Character 1
- p. CDC No. 3, Character 2

] See Note 2

- q. Sub Character (Only When Substitute Character Other Than Sb is Required).

Note 1: If only one CDC is required, code CDC2 identical to CDC1.

Note 2: Applies only if circuit card A-1 is present. This card must be ordered separately if 3rd CDC is required.

9-2. Number of TSC Characters
- a. Two Characters
- b. Two Characters Followed by Delete

] Choose 1

9-3. Unit Code of A/B Sent
- a. 10-Unit Code
- b. 11-Unit Code

] Choose a.

9-4. Unit Code of Characters Sent
- a. 10-Unit Code
- b. 11-Unit Code

] Choose a.

9-5. Code Level of Characters Sent
- a. 8-Level Code
- b. 7-Level Code or Less

] Choose a.

9140 STATION CONTROLLER OPTIONS (Cont)

9-6. HDX or FDX Sending
- a. Stop on "SENT" Interrupt and EOT, Requires Option 9-8b.
- b. No Stopping of Sender
- c. Not Used in 40/3-Type Applications
- d. Not Used in 40/3-Type Applications
- e. Not Used in 40/3-Type Applications
- f. Not Used in 40/3-Type Applications

] Choose 1

9-7. Local Copy on ROP of KD Sent Data (KD & ROP Application)
- a. Local Copy
- b. No Local Copy

] Choose 1

Note: Option 9-13a overrides Option 9-7b.

9-8. Regeneration of Sent Data
- a. No Regeneration
- b. Regeneration

] Choose 1

Note: Do not use Option 9-8a in ROP stations.

9-9. Interrupt Feature
- a. Stop on Interrupt Character, Blind Receive Data and Start on STX
- b. Does Not Stop on Interrupt Character

] Choose 1

Note: If Option 9-9a is selected. Option 9-6a must also be selected. Straps 53 and 54 must not both be closed with straps.

9-10. Function of EOT Sent by Terminal
- a. EOT Deselects 9140 Sender
- b. EOT Does Not Deselect Sender

] Choose 1

Note: If 9140 Station Controller Option 9-10a is selected, also use KD Option 4-8b and 4-8e.

9-11. Delay in Turning Off Carrier
- a. Retain Until Last Character is Sent
- b. Retain for One Character After Interrupt
- c. Retain for Three Characters After Interrupt

] Choose 1

9-12. First or Second A/B Character Restarts Sender
- a. Second A/B Character Restarts Sender
- b. Should Not be Used in 40/3-Type Applications

9-13. Local Copy of Sent Data Provided/Not Provided by 9140 (Note 1)
- a. Copy All Sent Data and CPU Responses
- b. Copy Sent Data After STX is Sent

] Choose 1

Note 1: Option 9-13 has no effect on FDX operation. KD-ROP applications are affected by Option 9-13.

Note 2: If Option 9-13a is selected, local copy will be obtained regardless of status of Option 9-7, provided the PRINT ON LINE key on the opcon is lighted.

9-14. Number of Characters in CDC1
- a. One Character CDC
- b. Two Character CDC

] Choose 1

Note: Number of characters in the option is exclusive of Delete, if used (see Option 9-17).

9140 STATION CONTROLLER OPTIONS (Cont)

9-15. Number of Characters in CDC2 (See Note After Option 9-14.)
- a. One Character CDC
- b. Two Character CDC
- c. No CDC2

Choose 1

Note: If Option 9-15c is selected, code CDC2 identical to CDC1.

9-16. Number of Characters in CDC3 (See Note After Option 9-14.)
- a. One Character CDC
- b. Two Character CDC
- c. No CDC3

Choose 1

Note: CDC3 requires A-1 circuit card.

9-17. Answer-Back Generated for CDCs (See Note 1.)
- a. A/B to CDC1
- b. A/B to CDC1 After Delete
- c. No A/B to CDC1

Choose 1

- d. A/B to CDC2
- e. A/B to CDC2 After Delete
- f. No A/B to CDC2

Choose 1

- g. A/B to CDC3
- h. A/B to CDC3 After Delete
- i. No A/B to CDC3

Choose 1 (See Note 2)

Note 1: All items of Option 9-17 should be consistent. All CDCs either use Delete, do not use Delete, or generate no A/B.

Note 2: If circuit card A-1 is not used, Option 9-17g, 9-17h and 9-17i are not functional.

9-18. Type of A/B to TSC
- a. Same as Ready to Receive A/B to CDC when DTR is On
- b. Same as Ready to Receive A/B to CDC Independent of DTR

Choose 1

Note: Data Terminal Ready (DTR) signal from KD is affected by low paper only if the printer is available to copy on-line (PRINT ON LINE key lighted). It is affected by the mode of the KD portion (LOCAL or RECEIVE key lighted) only if the printer is not available (PRINT ON LINE key not lighted).

9-19. Answer-Back to CDC (See Option 9-17)
- a. A/B to CDC1 Always
- b. A/B to CDC1 When Ready to Receive

Choose 1

- c. A/B to CDC2 Always
- d. A/B to CDC2 When Ready to Receive

Choose 1

- e. A/B to CDC3 Always
- f. A/B to CDC3 When Ready to Receive

Choose 1 (See Note 1)

Note 1: If circuit card A-1 is not used, Options 9-19e and 9-19f need not be specified.

Note 2: Only one station in a group can be programmed to A/B to a group CDC.

Note 3: Options 9-19a, 9-19c and 9-19e are recommended since Option 9-17 overrides Option 9-19.

9140 STATON CONTROLLER OPTIONS (Cont)

9-20. Optional Answer-Back to CDC or TSC — Choose 1
- a. Optional Negative A/B
- b. Optional Positive A/B (CDC Only)
- c. No Optional A/B
- d. Optional Positive and Negative A/B — Should Not be Used in 40/3-Type Applications

Note: If the 9140 Station Controller is equipped with a 345625 alarm/parity error modification kit that provides an audible alarm and the ability to initiate the optional A/B during post message recall use Option 9-20b.

9-21. Response Delay for Motor Start-Up — Choose 1
- a. Nominal 2-Second Delay
- b. Nominal 200-Millisecond Delay

9-22. Received Vertical Parity Error Response — Choose 1
- a. Odd Parity Causes Line Break
- b. Odd Parity Does Not Cause Line Break

9-23. Loss of DTR Response — Choose 1
- a. Loss of DTR Causes Line Break
- b. Loss of DTR Does Not Cause Line Break

9-24. Type of F Card Used — Choose 1
- a. F1 Circuit Card
- b. F2 Circuit Card

9-25. 9140 Recognition of SOH and ETX — Choose 1
- a. SOH Only
- b. ETX Only
- c. Both SOH and ETX
- d. Neither SOH nor ETX

9-26. Data Set Interface
- a. Gate Data Set Clear-To-Send (CTS) With 9140 Request-To-Send (RTS) to Produce M40 CTS.
- b. Do Not Gate CTS of Data Set With 9140 Signals.

Choose 1

- c. Gate Data Set Data-Set-Ready (DSR) With 9140 Data-Terminal-Ready (DTR) to Produce Data Set RTS.
- d. Do Not Gate DSR of Data Set With 9140 Signals.

Choose 1

Note: 202R Data Set furnishes CTS and DSR, and uses Request-To-Send (RTS), produced by Option 9-26c.

9-27. Alarm Time and Reset on STX or EOT
- a. 30-Second Alarm
- b. 60-Second Alarm
- c. 90-Second Alarm

Choose 1

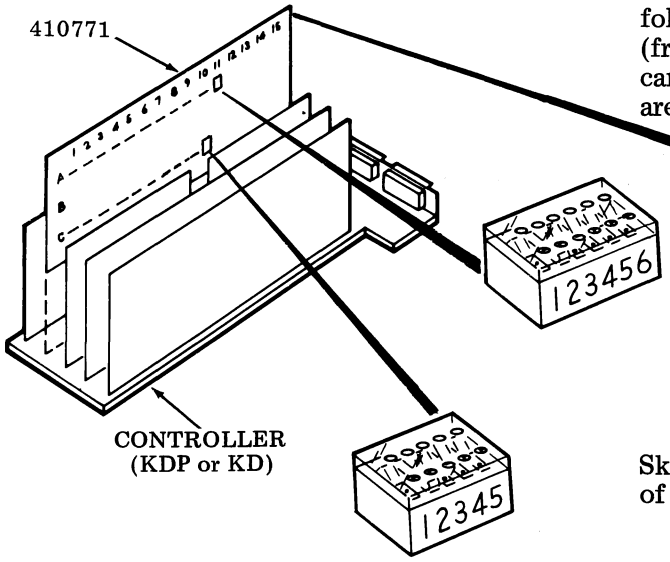
- d. Resets Optional A/B on STX or EOT
- e. Resets Optional A/B on EOT Only

Choose 1

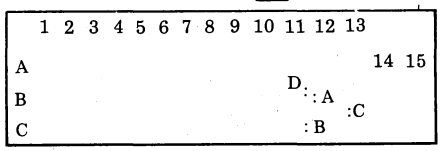
Note: Audible alarm sounds on receipt of CDC if not ready to receive (DTR off).

40C202 CONTROLLER OPTIONS

410771 — Full Duplex Interface Circuit Card — Card Position X02



Note: The straps to enable or disable the following options are on the component side (front) of the 410771 circuit card. Early cards have the lands on the rear. The cards are furnished without straps.



Sketch of present 410771 showing location of Straps (circuit lands) A through D.

			A-11						
4-3.	EIA Send/Receive Data Baud Rate		1	2	3	4	5	6	
	a	1050 Baud	—	●	●	●	●	—	
	b	1200 Baud	—	●	○	○	●	—	*
	c	2400 Baud	—	○	●	○	○	—	
	d	1800 Baud	—	●	●	○	○	—	

Choose 1

			A-11						
4-4.	EIA Reverse Channel		1	2	3	4	5	6	
	a	Reverse Channel Required to Send	●	—	—	—	—	—	
	b	Reverse Channel Not Required to Send	○	—	—	—	—	—	*

Choose 1

			A-11						
4-30.	Message Preparation		1	2	3	4	5	6	
	a	Automatic Cursor Home and Send Mode on Opcon Entry of Message Ending Character	—	—	—	—	—	○	*
	b	Manual Cursor Home and Send Mode on Opcon Entry of Message Ending Character	—	—	—	—	—	●	

Choose 1

			Strap A	
4-31.	KD Forced to Receive Mode When Alarm Lead Is On			
	a	Independent of Printer Mode	○	*
	b	Dependent on Printer Mode (Goes Receive Only if in Print On Line Mode)	●	

Choose 1

			Strap B	
4-32.	Printer Access From Line (When PRINT ON LINE Lamp is On)			
	a	If KD Is in Send, Receive, or Local Mode	○	*
	b	If KD Is in Receive Mode Only	●	

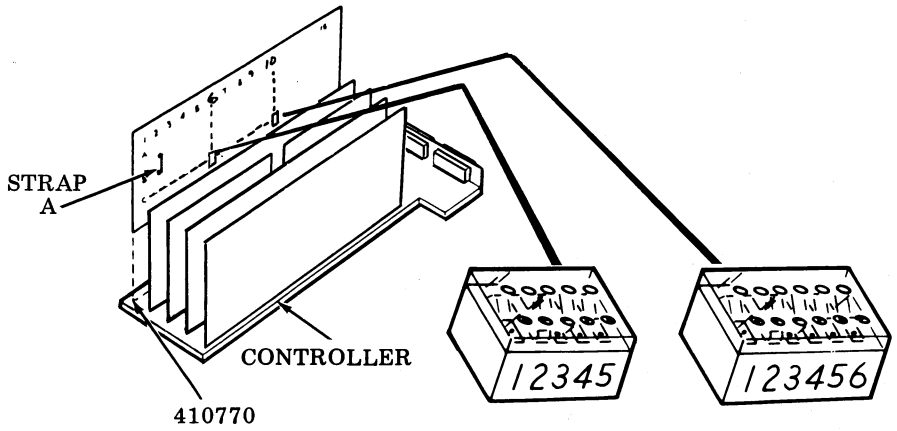
Choose 1

See Legend for ○ , ● , — and * on Page 52.

410771 — Full Duplex Circuit Card — Card Position X02 (Cont)

			Strap C		
4-33.		9140 Controller Mode			
	a	Full Duplex (FDX)	●		Choose 1
	b	Half-Duplex (HDX)	O	*	
4-34.		Control Signal Restrictions	Strap D		
	a	RTS Can Turn On When STR Is On	O	*	Choose 1
	b	RTS Cannot Turn On When STR Is On	●		
4-37.		Requirement for Sending	C-10 1 2 3 4		
	a	CTS Signal Required for Sending	O ● – –	*	Choose 1
	b	CTS Signal Not Required for Sending	● O – –		

410770 -- Independent Printer Access Circuit Card — Card Position X01



			C-6 1 2 3 4 5		
4-1.		Interface to Printer			
	a	EIA (Use for KD-ROP)	O ● – – –		Choose 1
	b	SSI (Use for KDP)	● O – – –	*	
4-28.		Disconnect on Loss of Carrier	C-6 1 2 3 4 5		
	a	Disconnect After 45 Seconds	– – O – –		Choose 1
	b	Does Not Disconnect - Timer Disabled	– – ● – –	*	
4-29.		Printer Message Mode	C-6 1 2 3 4 5		
	a	When in Print On Line Mode, Copies Display in Send. Copies Line in Receive or Local	– – – O ●	*	Choose 1
	b	Not Used on 40/3-Type	– – – – –		
	c	Not Used on 40/3-Type	– – – – –		
	d	When in Print On Line, Copies Received Data in Receive or Local	– – – O O		
4-50.		Action Upon Printer SSI Loss	C-10 1 2 3 4 5 6		
	a	KD GOES LOCAL AND HOLD	● O – – – –		Choose 1
	b	KD GOES LOCAL AND RELEASE	O ● – – – –		
	c	No Mode Change In KD	O O – – – –	*	

See Legend for O , ● , — and * on Page 52.

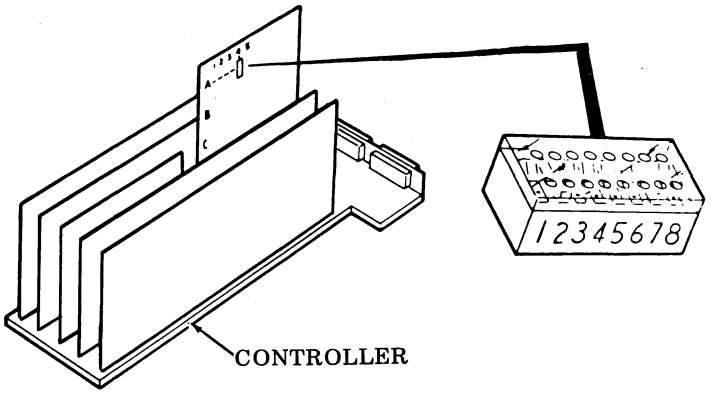
Note: The switch pack in position C-6, was in position C-7 on Issue 2 and earlier circuit cards.

410770 — Independent Printer Access Circuit Card — Card Position X01

				C-10 1	2	3	4	5	6		
4-51.		Remote Control									
	a	4210 Character Control		–	–	●	○	–	–	*	Choose 1
	b	9140 POL Control For Split Operation		–	–	○	●	–	–		
	c	Not Used on 40/3-Type Stations		–	–	○	○	–	–		
				C-10 1	2	3	4	5	6		
4-52.		Print On Line Control									
	a	Copy All Sent Data		–	–	–	–	●	–		Choose 1
	b	As Option 4-29		–	–	–	–	○	–	*	
				C-10 1	2	3	4	5	6		
4-53.		Printer Motor Hold Timer									
	a	Enabled (See Note.)		–	–	–	–	–	●		Choose 1
	b	Disabled		–	–	–	–	–	○	*	

Note: If both Options 4-51b and 4-53a or both 4-52a and 4-53a are used, Strap A (land) must be cut.

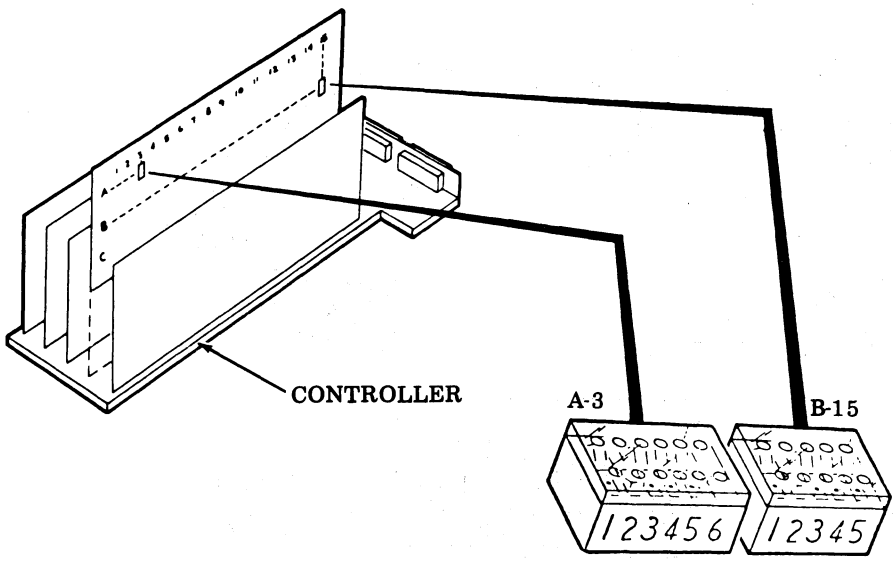
410676 — Send Variations Circuit Card — Card Position X03



				A-4 1	2	3	4	5	6	7	8		
4-13.		Send Variations (All Without Delimiters Except as Modified by Option 4-9b)											
	a	Send All as Displayed		●	○	●	●	●	●	●	○		Choose 1
	b	Send All as Displayed With Unprotected HT to Space		●	○	●	●	●	●	●	●	*	
	c	Send Protect as Space and Unprotected as Displayed		○	●	○	○	●	○	●	○		
	d	Send Protect as Space, Unprotected as Displayed and 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		○	●	○	●	●	●	●	●		

See Legend for ○ , ● , — and * on Page 52.

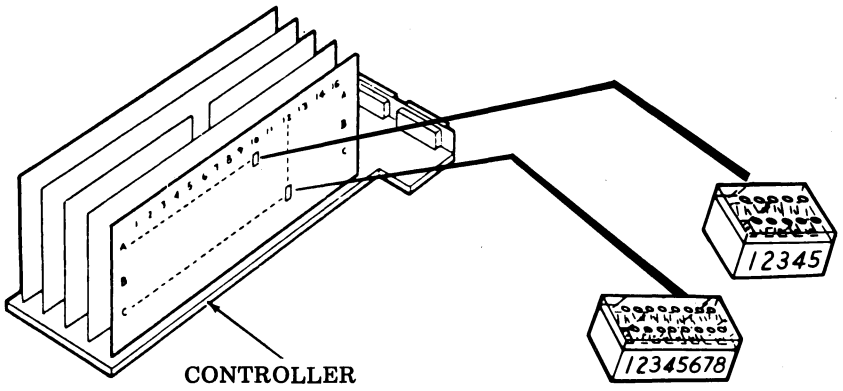
410675 — Message Control Circuit Card — Card Position X04



		A-3						B-15						
4-10	Line Ending Sequence	1	2	3	4	5	6	1	2	3	4	5		
a	CR LF	–	–	–	–	O	–	●	●	O	O	O		Choose 1
b	CR CR LF	–	–	–	–	O	–	O	O	●	●	●	*	
c	LF	–	–	–	–	●	–	●	●	O	O	O		
		A-3												
4-11	Mode After Send	1	2	3	4	5	6							
a	Local	–	O	●	●	–	–						*	Choose 1
b	Receive	–	●	O	●	–	–							
c	Not Used in 40/3-Type Stations	–	O	●	O	–	–							
		A-3												
4-12	Form Enter	1	2	3	4	5	6							
a	Disabled in Local	●	–	–	–	–	–							Choose 1
b	Enabled in Local	O	–	–	–	–	–						*	
		A-3												
4-27	Message Start	1	2	3	4	5	6							
a	Home on Transmit	–	–	–	–	–	●							Choose 1
b	Send From Cursor	–	–	–	–	–	O						*	

See Legend for O , ● , — and * on Page 52.

410674 — Data Bus and Decode Circuit Card — Card Position X05



		A-10					C-12								
4-5 KD Response to Received Characters		1	2	3	4	5	1	2	3	4	5	6	7	8	
a	Reject Null	●	–	–	–	–	–	–	–	–	–	–	–	–	* Choose 1
b	Accept Null	O	–	–	–	–	–	–	–	–	–	–	–	–	
c	Reject CR	–	●	–	–	–	–	–	–	–	–	–	–	–	* Choose 1
d	Accept CR	–	O	–	–	–	–	–	–	–	–	–	–	–	
e	Reject Delete	–	–	●	–	–	–	–	–	–	–	–	–	–	* Choose 1
f	Accept Delete	–	–	O	–	–	–	–	–	–	–	–	–	–	
g	Reject DC_1 (Issue 4b and Higher)	–	–	–	–	–	–	–	–	–	–	●	–	–	* Choose 1
h	Accept DC_1 (Issue 4b and Higher)	–	–	–	–	–	–	–	–	–	–	O	–	–	
i	Reject DC_3 (Issue 4b and Higher)	–	–	–	–	–	–	–	–	–	–	–	●	–	* Choose 1
j	Accept DC_3 (Issue 4b and Higher)	–	–	–	–	–	–	–	–	–	–	–	O	–	

		A-10					
4-6 Functions on Receive		1	2	3	4	5	
a	All Escape Sequences Displayed as Received	–	–	–	O	–	Choose 1
b	All Escape Sequences Performed as Received But Not Displayed	–	–	–	●	–	*

		A-10					
4-7 Errored Character on Receive		1	2	3	4	5	
a	Not Displayed on Vertical Parity Error	–	–	–	–	●	Choose 1
b	Displayed on Vertical Parity Error	–	–	–	–	O	*

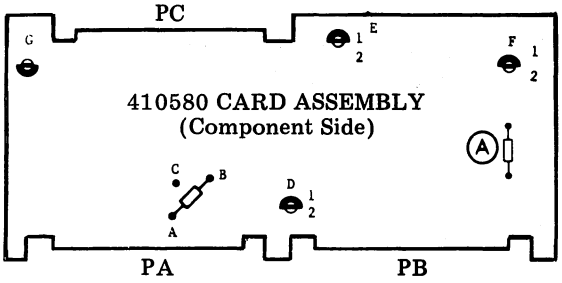
		C-12								
4-8 Message Ending Character		1	2	3	4	5	6	7	8	
a	End on FF	–	–	●	–	–	–	–	–	Choose 1
b	Do Not End on FF	–	–	O	–	–	–	–	–	*
c	End on ETX	●	–	–	–	–	–	–	–	* Choose 1
d	Do Not End on ETX	O	–	–	–	–	–	–	–	
e	End on EOT	–	●	–	–	–	–	–	–	* Choose 1
f	Do Not End on EOT	–	O	–	–	–	–	–	–	
g	End on GS	–	–	–	●	–	–	–	–	* Choose 1
h	Do Not End on GS	–	–	–	O	–	–	–	–	

		C-12								
4-9 Highlight		1	2	3	4	5	6	7	8	
a	Delimiters Not Sent (Except in Form Send Mode)	–	–	–	–	●	–	–	–	Choose 1
b	Delimiters Sent (Modifies Option 4-13)	–	–	–	–	O	–	–	–	*

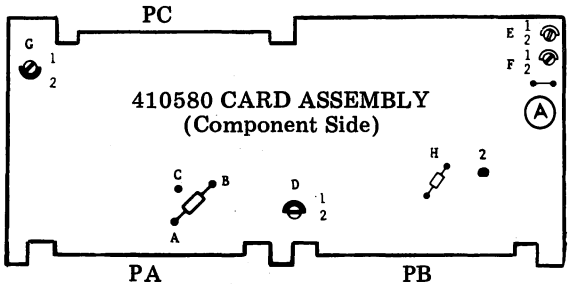
		C-12								
4-40 Go Receive on Sending CR (◄–) (Issue 4b and Higher)		1	2	3	4	5	6	7	8	
a	Not Used in 40/3-Type Stations	–	–	–	–	–	–	–	●	Choose 1
b	Do Not Go Receive on Sending CR	–	–	–	–	–	–	–	O	*

See Legend for O , ● , — and * on Page 52.

410580 — EIA Interface Circuit Card Options — Card Position JC in 40C103 ROP Controller



Early Issue 6A



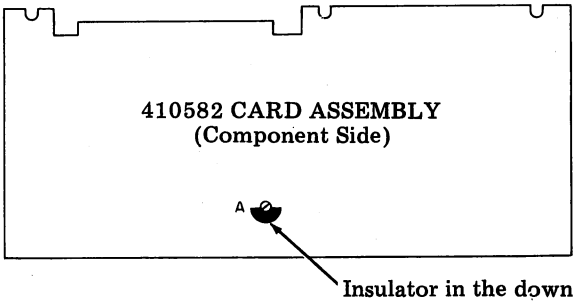
Late Issue 7B

4-3	EIA/Send/Receive Data Baud Rate	Insulator D Position	Insulator E Position		
a	1050	1	2	*	Choose 1
b	1200	1	1		
c	2400	2	1		
4-24	Odd/Even Character Parity Check	Strap Condition			
a	Even Vertical Parity	Strap A to B		*	Choose 1
b	Odd Vertical Parity	Strap A to C			
4-25	Response in Receiving Parity Error	Insulator F Position	Strap A Condition		
a	Printer Receives Odd Parity Null (1-7 Bits Spacing, 8 Bit Marking)	2	-		Choose 1
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	*	Choose 1
4-35	Printer Motor Control	Strap Condition			
a	"Data Set Ready" Controls Printer Motor	Strap H to 1		*	Choose 1
b	"Carrier Detect" Controls Printer Motor	Strap H to 2			
4-36	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		*	Choose 1
b	Paper Alarm Affects "Data Terminal Ready" Immediately. DTR Held Off Until Paper is Restored	1			

See Legend for O , ● , — and * on Page 52.

40C103 CONTROLLER OPTIONS

410582 — ROP Controller — Card Position JA in 40C103 ROP Controller



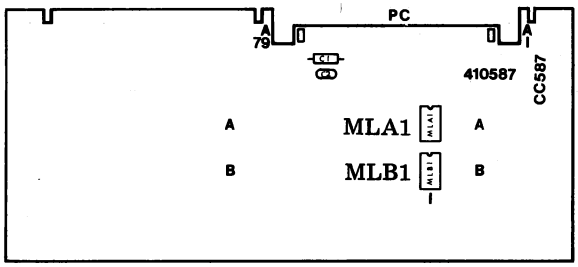
Note: Option 4-38b is shown enabled.

4-38 Data Stacking			Insulator Position
	a	Enable Data Stacking	Insulator Up
	b	Disable Data Stacking	Insulator Down

*

Note: The following strapping is required on Issue 1 of the 410587 circuit card when using a 40C103/AE ROP controller (without a buffer) and Option 4-38a is to be enabled. Select Option 4-38b when using 40C103/AD (with buffer).

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



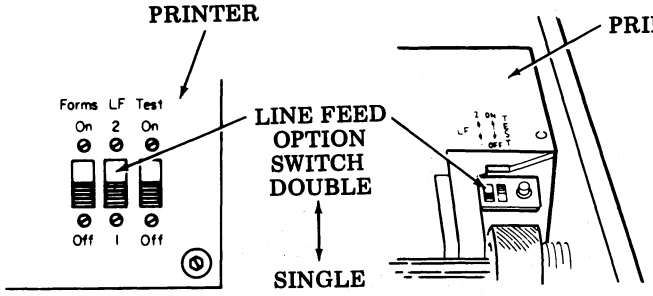
410587 Circuit Card

Issue 2a of the 410587 circuit card has these straps incorporated in the board layout.

See Legend for O , ● , — and * on Page 52.

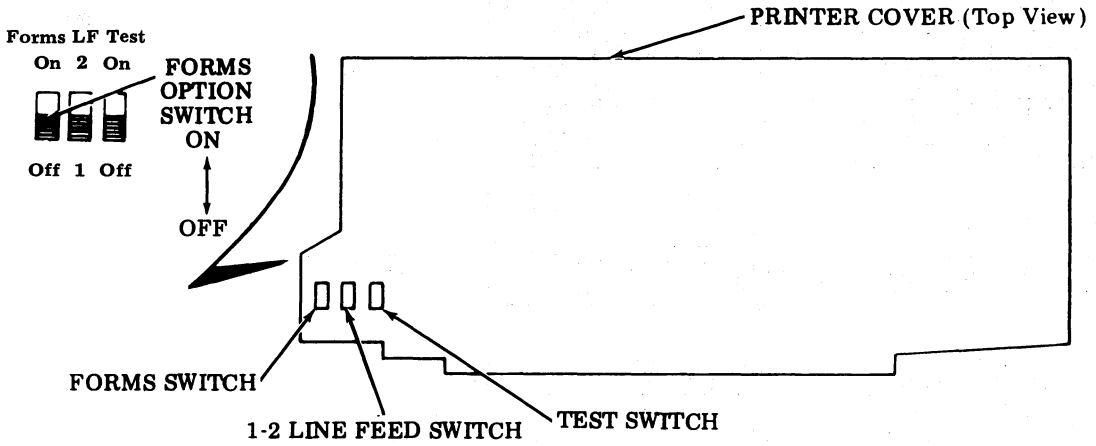
PRINTERS OPTIONS

Printer — Test, LF and Form Switches



Tractor Feed — For 40P151 and 153 Printers

Friction Feed — For 40P101 and 102 Printers



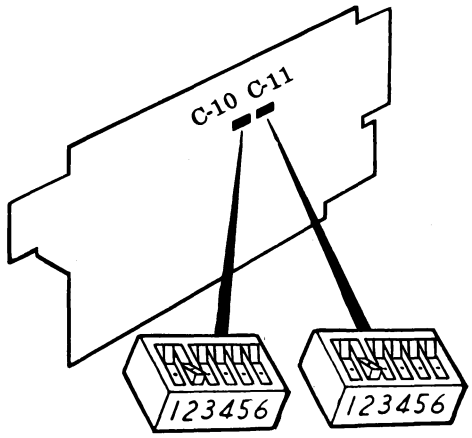
For 40P154, 201 and 202 Printers

Printer Option Switches Located on Top of Printer

4-20	Line Feed on Printer			
	a	Single	*	Choose 1
	b	Double		
4-39	FORMS FEED (TRACTOR FEED PRINTER ONLY)			
	a	On		Choose 1
	b	Off	*	

See Legend for O , ● , — and * on Page 52.

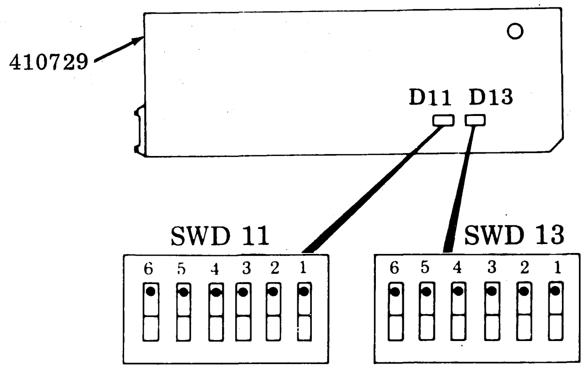
410640 — Printer Logic Circuit Card (80-Column) — Card Located in Lower Portion of Printer



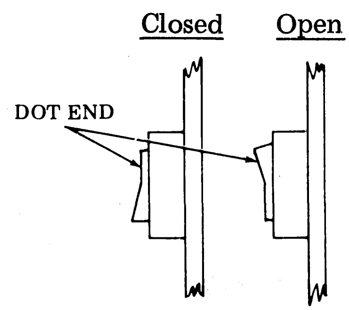
			C-10						C-11							
4-17		Printer Margin and Form Width							1	2	3	4	5	6		
	c	Last Character on 80th Column							○	●	●	○	–	–	*	Choose 1
	d79	Last Character on 79th Column							○	●	●	●	–	–		
	d78	Last Character on 78th Column							●	○	○	●	–	–		
	d77	Last Character on 77th Column							●	○	●	○	–	–		
	d76	Last Character on 76th Column							●	○	●	●	–	–		
	d75	Last Character on 75th Column							●	●	○	●	–	–		
	d74	Last Character on 74th Column							●	●	●	○	–	–		
	d73	Last Character on 73rd Column							●	●	●	●	–	–		
			C-10						C-11							
4-18		Printer Paper Feed Out	1	2	3	4	5	6	1	2	3	4	5	6		
	a	No Paper Feed Out	●	–	–	–	–	–	–	–	–	–	–	○		Choose 1
	b	Paper Feed Out on DSR Loss - 16 Lines	○	–	–	–	–	–	–	–	–	–	–	○		
	c	Paper Feed Out on DSR Loss or ETX	○	–	–	–	–	–	–	–	–	–	–	●	*	
			C-10													
4-19		Printer Errored Character Symbol	1	2	3	4	5	6								
	a	Printed on Even Parity Error	–	–	–	●	○	–							*	Choose 1
	b	Printed on Odd Parity Error	–	–	–	○	●	–								
	c	Not Printed on Parity Error	–	–	–	●	●	–								
	d	Printers With 96 Character Set	–	●	○	–	–	–								
	e	Printers With 64 Character Set	–	○	●	–	–	–								
	f	Printers With Extended ASCII Character Set	–	○	○	–	–	–								
									C-11							
4-21		Foldover on Up-Low Printer							1	2	3	4	5	6		
	a	Lower Case and Upper Case Print							–	–	–	–	○	–	*	Choose 1
	b	Lower Case Prints as Upper Case							–	–	–	–	●	–		
									C-11							
4-22		Foldover on Monocase Printer							1	2	3	4	5	6		
	a	Lower Case Prints as Error Symbol							–	–	–	–	○	–		
	b	Lower Case Prints as Upper Case							–	–	–	–	●	–		
			C-10													
4-23		Extended ASCII on Printer	1	2	3	4	5	6								
	a	Prints Extended ASCII Characters (No Parity Check) (Requires Local Engineering)	–	–	–	○	○	–								Choose 1
	b	Does Not Print Extended Characters (See Option 4-19a, b, or c.)	–	–	–	–	–	–							*	

See Legend for ○ , ● , — and * on Page 52.

410729 — Printer Logic Circuit Card (132-Column) — Access Through Printer Bottom Plate



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

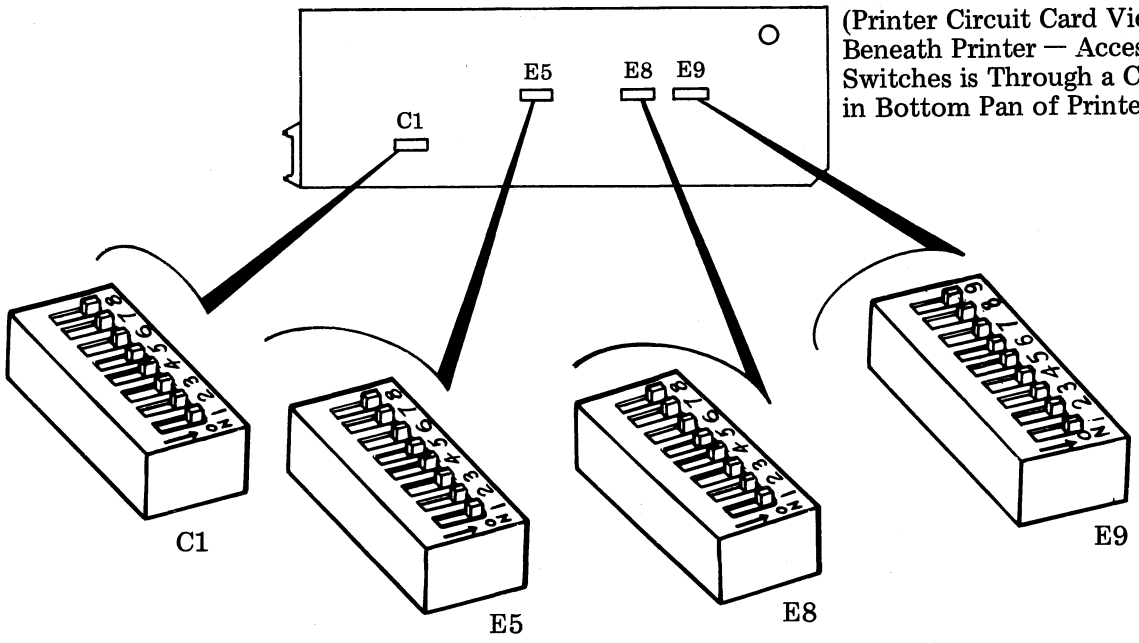


132-Column Printer

			D-11						D-13							
4-17	Printer Margin and Form Width								6	5	4	3	2	1		
	e	Last Character on Column 132							○	○	○	●	—	—	*	Choose 1
	f131	Last Character on Column 131							○	○	●	○	—	—		
	f130	Last Character on Column 130							○	○	●	●	—	—		
	f129	Last Character on Column 129							○	●	○	●	—	—		
	f128	Last Character on Column 128							○	●	●	○	—	—		
	f127	Last Character on Column 127							○	●	●	●	—	—		
	f126	Last Character on Column 126							●	○	○	●	—	—		
	f125	Last Character on Column 125							●	○	●	○	—	—		
	f124	Last Character on Column 124							●	○	●	●	—	—		
	f123	Last Character on Column 123							●	●	○	●	—	—		
	f122	Last Character on Column 122							●	●	●	○	—	—		
	f121	Last Character on Column 121							●	●	●	●	—	—		
4-18	Printer Paper Feed Out		6	5	4	3	2	1	6	5	4	3	2	1		
	a	No Paper Feed Out	—	—	●	—	—	—	—	—	—	—	—	○		Choose 1
	b	Paper Feed Out on DSR Loss-16 Lines	—	—	○	—	—	—	—	—	—	—	—	○		
	c	Paper Feed Out on DSR Loss or ETX	—	—	○	—	—	—	—	—	—	—	—	●	*	
4-19	Printer Errored Character Symbol		6	5	4	3	2	1								
	a	Printed on Even Parity Error	—	—	—	●	○	—								Choose 1
	b	Printed on Odd Parity Error	—	—	—	○	●	—							*	
	c	Not Printed on Parity Error	—	—	—	●	●	—								
	d	Printers With 96 Character Set	●	○	—	—	—	—								
	e	Printers With 64 Character Set	○	●	—	—	—	—								
	f	Printer With Extended ASCII Character Set	○	○	—	—	—	—								
	g	Printers With Longest Character Set Having Less Than 64 Characters	○	●	—	—	—	—								
4-21	Foldover on Up-Low Printer								6	5	4	3	2	1		
	a	Lower Case and Upper Case Print							—	—	—	—	○	—	*	Choose 1
	b	Lower Case Prints as Upper Case							—	—	—	—	●	—		
4-22	Foldover on Monocase Printer								6	5	4	3	2	1		
	a	Lower Case Prints as Error Symbol							—	—	—	—	○	—		
	b	Lower Case Prints as Upper Case							—	—	—	—	●	—	*	
4-23	Extended ASCII on Printer		6	5	4	3	2	1								
	a	Prints Extended ASCII Characters (No Parity Check)	—	—	—	○	○	—								Choose 1
	b	Does Not Print Extended Characters (See Option 4-19.a.,b., or c.)	—	—	—	—	—	—							*	
4-48	Incomplete Form Suppresses Paper Alarm		6	5	4	3	2	1								
	a	No (Paper Out Not Gated With Form Out)	—	—	—	—	—	●								Choose 1
	b	Yes (Paper Out Gated With Form Out)	—	—	—	—	—	○							*	

See Legend for ○ , ● , — and * on Page 52.

410071 — Printer Logic Circuit Card (80-Column) — Access Through Printer Bottom Plate



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

4-17	Printer Left Margin and Form Width	E5 1 2 3 4 5 6 7 8	
a.	First Printed Column – Column 1	– – ● ● ● ● – –	*
b2.	First Printed Column – Column 2	– – ● ● ○ ● – –	
b3.	First Printed Column – Column 3	– – ● ● ○ ○ – –	
b4.	First Printed Column – Column 4	– – ● ○ ○ ○ – –	
b5.	First Printed Column – Column 5	– – ○ ○ ○ ● – –	
b6.	First Printed Column – Column 6	– – ○ ○ ○ ● – –	
b7.	First Printed Column – Column 7	– – ○ ● ○ ○ – –	
b8.	First Printed Column – Column 8	– – ● ○ ○ ● – –	
b9.	First Printed Column – Column 9	– – ○ ○ ○ ● – –	
b10.	First Printed Column – Column 10	– – ○ ● ○ ● – –	
b11.	First Printed Column – Column 11	– – ● ● ● ○ – –	
b12.	First Printed Column – Column 12	– – ● ○ ○ ● – –	
b13.	First Printed Column – Column 13	– – ○ ● ● ○ – –	

Choose 1

4-17	Printer Right Margin and Form Width	E5 1 2 3 4 5 6 7 8	E8 1 2 3 4 5 6 7 8	E9 1 2 3 4 5 6 7 8 9	
	Last Character Printed – Column Number:				
c.	80	● – – – – – ● ●	– – – – – – – ●	○ ● – ● ○ – – –	*
d.(X)	73 61 49 37 25	● – – – – – ● ●	– – – – – – – ●	○ ● – ● ● – – –	
	74 62 50 38 26	● – – – – – ● ●	– – – – – – – ●	○ ○ – ● ● – – –	
	75 63 51 39 27	● – – – – – ● ●	– – – – – – – ●	● ● – ● ● – – –	
	76 64 52 40 28	● – – – – – ● ●	– – – – – – – ●	● ○ – ○ ● – – –	
Circle Column Number	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	● – – – – – ● ●	– – – – – – – ●	● ● ○ ○ ○ – – –	

Choose 1

To obtain counts:

73 through 80 program as shown.
61 through 72 program as shown, then operate E8 position 8 to OFF.
49 through 60 program as shown, then operate E5 position 1 to OFF.
37 through 48 program as shown, then operate E5 position 7 to OFF.
25 through 36 program as shown, then operate E5 position 8 to OFF.

(X) Indicates desired column number.

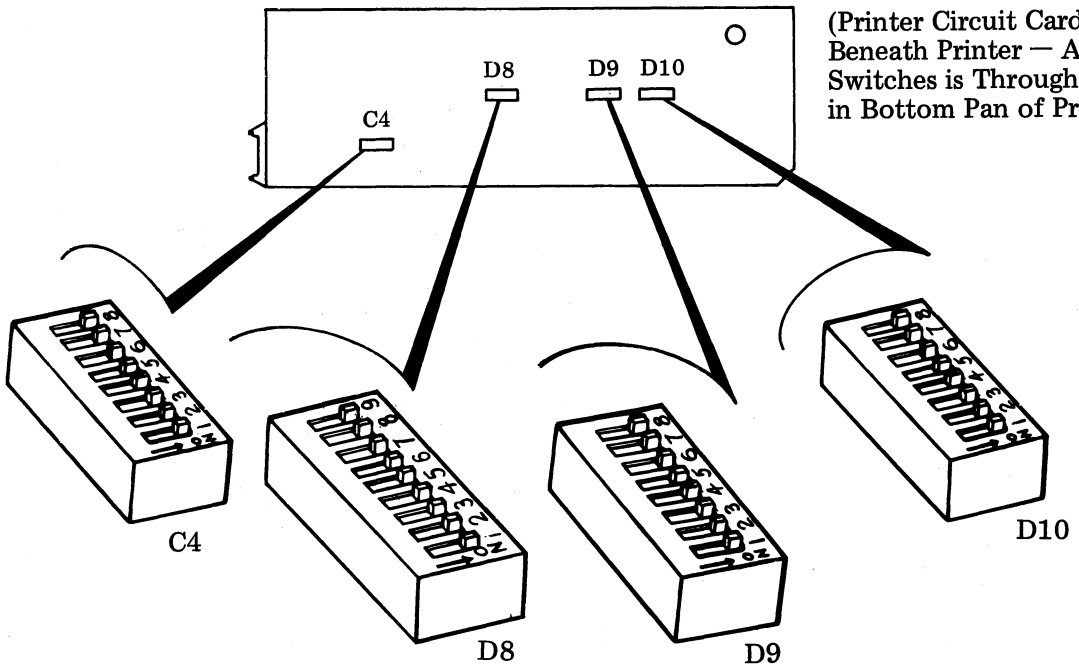
See Legend for O , ● , — and * on Page 52.

410071 — Printer Logic Circuit Card (80-Column) — Access Through Printer Bottom Plate (Cont)

4-18	Printer Paper Feed Out			E8 1 2 3 4 5 6 7 8		
a.	No Paper Feed Out			– – ● – – – – –		Choose 1
b.	Paper Feed Out on DSR or RM Loss -- 16 Lines or One Form			– ○ ○ – – – – –		
c.	Paper Feed Out on DSR or RM Loss or ETX -- 16 Lines or One Form			– ● ○ – – – – –	*	
4-19	Printer Errored Character Symbol				E9 1 2 3 4 5 6 7 8 9	
a.	Printed on Even Parity Error				– – – – – ○ ● – –	* Choose 1
b.	Printed on Odd Parity Error				– – – – – ● ○ – –	
c.	Not Printed on Parity Error				– – – – – ● ● – –	
4-19	Character Set			E8 1 2 3 4 5 6 7 8		
d.	Printers With 96-Character Set			– – – – ● ○ – –		Choose 1
e.	Printers With 64-Character Set			– – – – ○ ● – –		
f.	Printers With Extended ASCII Character Set			– – – – ○ ○ – –		
g.	Printers With Longest Character Set Having Less Than 64 Characters			– – – – ○ ○ – –		
4-21	Foldover on Printers With 96-Character Set			E8 1 2 3 4 5 6 7 8		
a.	Lower Case and Upper Case Print			○ – – – – – – –	*	Choose 1
b.	Lower Case Prints as Upper Case			● – – – – – – –		
4-22	Foldover on Printers With 64-Character Set			E8 1 2 3 4 5 6 7 8		
a.	Lower Case Prints as Error Symbol			○ – – – – – – –		
b.	Lower Case Prints as Upper Case			● – – – – – – –	*	
4-23	Extended ASCII on Printer (Extended ASCII)				E9 1 2 3 4 5 6 7 8 9	
a.	Prints Extended ASCII Characters (No Parity Check)				– – – – – ○ ○ – –	Choose 1
b.	Does Not Print Extended ASCII (See Option 4-19 a, b or c)				– – – (As in 19.) – – –	*
4-48	Incomplete Form Suppresses Paper Alarm				E9 1 2 3 4 5 6 7 8 9	
a.	No (Paper Out Not Gated With Form Out)				– – – – – – – – ●	Choose 1
b.	Yes (Paper Out Gated With Form Out)				– – – – – – – – ○	*
4-54	Printing of Escape Sequences Supressed				E9 1 2 3 4 5 6 7 8 9	
a.	Character After ESC Printed as Received				– – – – – – – ○ –	* Choose 1
b.	Printing of Character After ESC Suppressed				– – – – – – – ● –	
4-55	Shift In/Shift Out Detection				E9 1 2 3 4 5 6 7 8 9	
a.	SI/SO Detection Not Used				– – ○ – – – – – –	Choose 1
b.	SI/SO Detection Enables Printing Additional Characters				– – ● – – – – – –	
4-57	SSI/OEM Interface			E8 1 2 3 4 5 6 7 8		
a.	SSI			– – – – – – ● –	*	
b.	Not used on 40/3 type station.			– – – – – – ○ –		
4-58	Idle Line Motor Control			E8 1 2 3 4 5 6 7 8		
a.	Disabled -- Motor Held On Indefinitely During Idle Line			– – – ○ – – – –	*	Choose 1
b.	Enabled -- Motor Turned Off After 40-Second Idle Line			– – – ● – – – –		
4-59	Speed Selection (Applies only if Option 4-57b is selected.)	C1 1 2 3 4 5 6 7 8				
a.	75 Baud	● ○ ○ ○ ○ ○ ○ ○				Choose 1
b.	150 Baud	○ ● ○ ○ ○ ○ ○ ○				
c.	300 Baud	○ ○ ● ○ ○ ○ ○ ○				
d.	600 Baud	○ ○ ○ ● ○ ○ ○ ○				
e.	1200 Baud	○ ○ ○ ○ ● ○ ○ ○				
f.	2400 Baud	○ ○ ○ ○ ○ ● ○ ○				*
g.	4800 Baud	○ ○ ○ ○ ○ ○ ● ○				
h.	9600 Baud	○ ○ ○ ○ ○ ○ ○ ●				
4-60	Aux Alarm		E5 1 2 3 4 5 6 7 8			
a.	Enable		– ○ – – – – – –			
b.	Disable (or Alarm Mechanism Not Present)		– ● – – – – – –		*	Choose 1

See Legend for ○ , ● , — and * on Page 52.

410072 — Printer Logic Circuit Card (132-Column) — Access Through Printer Bottom Plate



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

4-17	Printer Left Margin and Form Width	D8 1 2 3 4 5 6 7 8 9	
a.	First Printed Column -- Column 1	– – ● ● ● ● – – –	*
b2.	First Printed Column -- Column 2	– – ● ○ ○ ● – – –	
b3.	First Printed Column -- Column 3	– – ● ● ○ ○ – – –	
b4.	First Printed Column -- Column 4	– – ● ○ ○ ○ – – –	
b5.	First Printed Column -- Column 5	– – ○ ○ ● ○ – – –	
b6.	First Printed Column -- Column 6	– – ○ ○ ○ ● – – –	
b7.	First Printed Column -- Column 7	– – ○ ● ○ ○ – – –	
b8.	First Printed Column -- Column 8	– – ● ○ ● ○ – – –	
b9.	First Printed Column -- Column 9	– – ○ ○ ● ● – – –	
b10.	First Printed Column -- Column 10	– – ○ ● ○ ● – – –	
b11.	First Printed Column -- Column 11	– – ● ● ● ○ – – –	
b12.	First Printed Column -- Column 12	– – ● ○ ○ ● – – –	
b13.	First Printed Column -- Column 13	– – ○ ● ● ○ – – –	

Choose 1

4-17	Printer Right Margin and Form Width	D8 1 2 3 4 5 6 7 8 9	D9 1 2 3 4 5 6 7 8	D10 1 2 3 4 5 6 7 8	
	Last Character Printed -- Column Numbers:				
e.	132	– – – – – – ● ● –	– – – – – – ● ●	● ○ – ○ ○ – – –	*
f.(X)	121 109 97 85 73	– – – – – – ● ● –	– – – – – – ● ●	● ● – ● ● – – –	
	122 110 98 86 74	– – – – – – ● ● –	– – – – – – ● ●	○ ● – ● ● – – –	
	123 111 99 87 75	– – – – – – ● ● –	– – – – – – ● ●	● ○ – ● ● – – –	
	124 112 100 88 76	– – – – – – ● ● –	– – – – – – ● ●	● ● – ○ ● – – –	
Circle Column Number	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	– – – – – – ● ● –	– – – – – – ● ●	○ ○ – ○ ○ – – –	

Choose 1

To obtain counts:

121 through 132 program as shown.
109 through 120 program as shown then operate D9 position 7 OFF.
97 through 108 program as shown, then operate D9 position 8 OFF.
85 through 96 program as shown, then operate D8 position 7 OFF.
73 through 84 program as shown, then operate D8 position 8 OFF.

(X) Indicates desired column number.

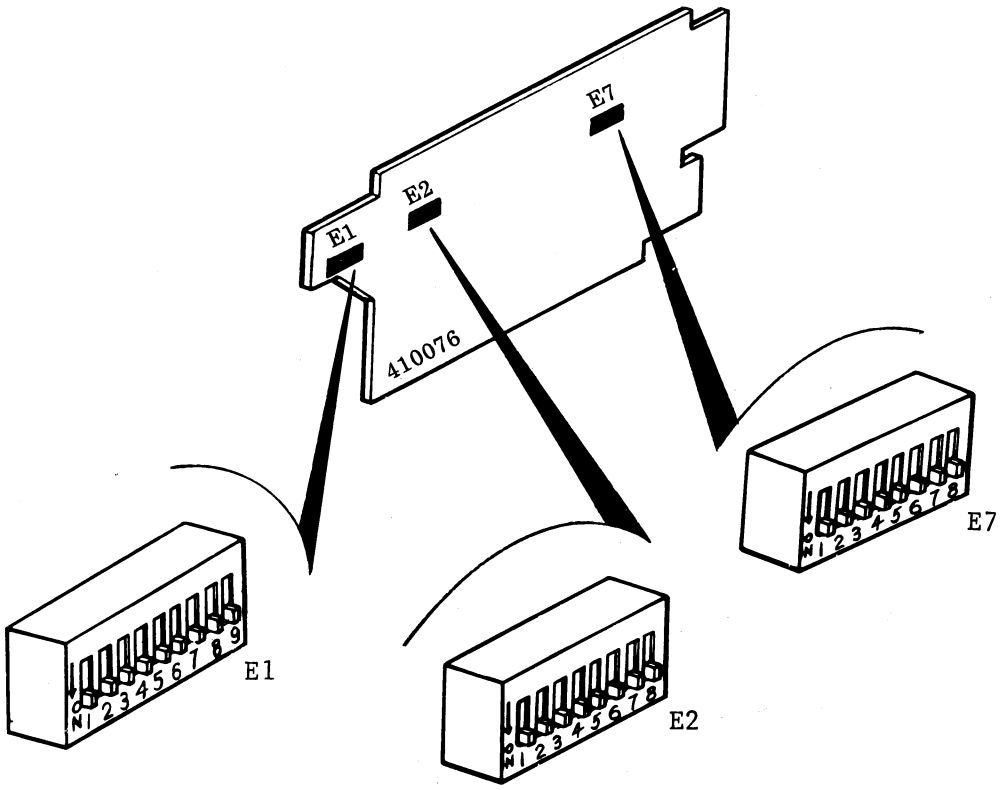
See Legend for O , ● , — and * on Page 52.

410072 — Printer Logic Circuit Card (132-Column) — Access Through Printer Bottom Plate (Cont)

4-18	Printer Paper Feed Out			D9 1 2 3 4 5 6 7 8		
a.	No Paper Feed Out			– – ● – – – –		Choose 1
b.	Paper Feed Out on DSR or RM Loss -- 16 Lines or One Form			– ○ ○ – – – –		
c.	Paper Feed Out on DSR or RM Loss or ETX -- 16 Lines or One Form			– ● ○ – – – –		*
4-19	Printer Errored Character Symbol				D10 1 2 3 4 5 6 7 8	
a.	Printed on Even Parity Error				– – – – – ○ ● –	* Choose 1
b.	Printed on Odd Parity Error				– – – – – ● ○ –	
c.	Not Printed on Parity Error				– – – – – ● ● –	
4-19	Character Set		D8 1 2 3 4 5 6 7 8 9			
d.	Printers With 96-Character Set		● ○ – – – – – –			Choose 1
e.	Printers With 64-Character Set		○ ● – – – – – –			
f.	Printers With Extended ASCII Character Set		○ ○ – – – – – –			
g.	Printers With Longest Character Set Having Less Than 64 Characters		○ ○ – – – – – –			
4-21	Foldover on Printers With 96-Character Set			D9 1 2 3 4 5 6 7 8		
a.	Lower Case and Upper Case Print			○ – – – – – – –		* Choose 1
b.	Lower Case Prints as Upper Case			● – – – – – – –		
4-22	Foldover on Printers With 64-Character Set			D9 1 2 3 4 5 6 7 8		Choose 1
a.	Lower Case Prints as Error Symbol			○ – – – – – – –		
b.	Lower Case Prints as Upper Case			● – – – – – – –		*
4-23	Extended ASCII on Printer (Extended ASCII)				D10 1 2 3 4 5 6 7 8	
a.	Prints Extended ASCII Characters (No Parity Check)				– – – – – ○ ○ –	
b.	Does Not Print Extended ASCII (See Option 4-19 a, b or c.)				– (As in 4-19.) –	* Choose 1
4-48	Incomplete Form Suppresses Paper Alarm			D9 1 2 3 4 5 6 7 8		
a.	No (Paper Out Not Gated With Form Out)			– – – ● – – – –		Choose 1
b.	Yes (Paper Out Gated With Form Out)			– – – ○ – – – –		*
4-54	Printing of Escape Sequences Suppressed				D10 1 2 3 4 5 6 7 8	
a.	Character After ESC Printed as Received				– – – – – – – ○	* Choose 1
b.	Printing of Character After ESC Suppressed				– – – – – – – ●	
4-55	Shift In/Shift Out Detection				D10 1 2 3 4 5 6 7 8	
a.	SI/SO Detection Not Used				– – ○ – – – – –	* Choose 1
b.	SI/SO Detection Enables Printing Additional Characters				– – ● – – – – –	
4-57	SSI/OEM Interface		D8 1 2 3 4 5 6 7 8 9			
a.	SSI		– – – – – – – – ●			*
b.	Not used on 40/3 type station.		– – – – – – – – ○			
4-58	Idle Line Motor Control			D9 1 2 3 4 5 6 7 8		
a.	Disabled -- Motor Held On Indefinitely During Idle Line			– – – – – ○ – –		* Choose 1
b.	Enabled -- Motor Turned Off After 40-Second Idle Line			– – – – – ● – –		
4-59	Speed Selection (Applies only if Option 4-57b is selected.)	C4 1 2 3 4 5 6 7 8				
a.	75 Baud	● ○ ○ ○ ○ ○ ○ ○				Choose 1
b.	150 Baud	○ ● ○ ○ ○ ○ ○ ○				
c.	300 Baud	○ ○ ○ ● ○ ○ ○ ○				
d.	600 Baud	○ ○ ● ○ ○ ○ ○ ○				
e.	1200 Baud	○ ○ ○ ○ ○ ○ ● ○				
f.	2400 Baud	○ ○ ○ ○ ● ○ ○ ○				*
g.	4800 Baud	○ ○ ○ ○ ○ ● ○ ○				
h.	9600 Baud	○ ○ ○ ○ ○ ○ ○ ●				
4-60	Aux Alarm			D9 1 2 3 4 5 6 7 8		
a.	Enable			– – – – ○ – – –		* Choose 1
b.	Disable (or Alarm Mechanism Not Present)			– – – – ● – – –		

See Legend for ○ , ● , – and * on Page 52.

410076 — Printer Logic Circuit Card (80-Column) — Card Located in Lower Portion of Printer



4-17	Printer Left Margin and Form Width	E7 1	2	3	4	5	6	7	8	
a.	First Printed Column -- Column 1	–	–	●	●	●	●	–	–	*
b2.	First Printed Column -- Column 2	–	–	●	●	○	●	–	–	
b3.	First Printed Column -- Column 3	–	–	●	●	○	○	–	–	
b4.	First Printed Column -- Column 4	–	–	●	○	○	○	–	–	
b5.	First Printed Column -- Column 5	–	–	○	○	●	○	–	–	
b6.	First Printed Column -- Column 6	–	–	○	○	○	●	–	–	
b7.	First Printed Column -- Column 7	–	–	○	●	○	○	–	–	
b8.	First Printed Column -- Column 8	–	–	●	○	●	○	–	–	
b9.	First Printed Column -- Column 9	–	–	○	○	●	●	–	–	
b10.	First Printed Column -- Column 10	–	–	○	●	○	●	–	–	
b11.	First Printed Column -- Column 11	–	–	●	●	●	○	–	–	
b12.	First Printed Column -- Column 12	–	–	●	○	○	●	–	–	
b13.	First Printed Column -- Column 13	–	–	○	●	●	○	–	–	

Choose 1

4-17	Printer Right Margin and Form Width	E1 1	2	3	4	5	6	7	8	9	E2 1	2	3	4	5	6	7	8	E7 1	2	3	4	5	6	7	8	
	Last Character Printed -- Column Numbers:																										
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	–	–	–	–	○	○	–	○	●	–	–	–	–	–	–	●	●	●	●	–	–	–	–	–	–	

Circle Column Number

Choose 1

To obtain counts:

73 through 80 program as shown.
61 through 72 program as shown, then operate E7 position 2 to OFF.
49 through 60 program as shown, then operate E7 position 1 to OFF.
37 through 48 program as shown, then operate E2 position 7 to OFF.
25 through 36 program as shown, then operate E2 position 8 to OFF.

(X) Indicates desired column number.

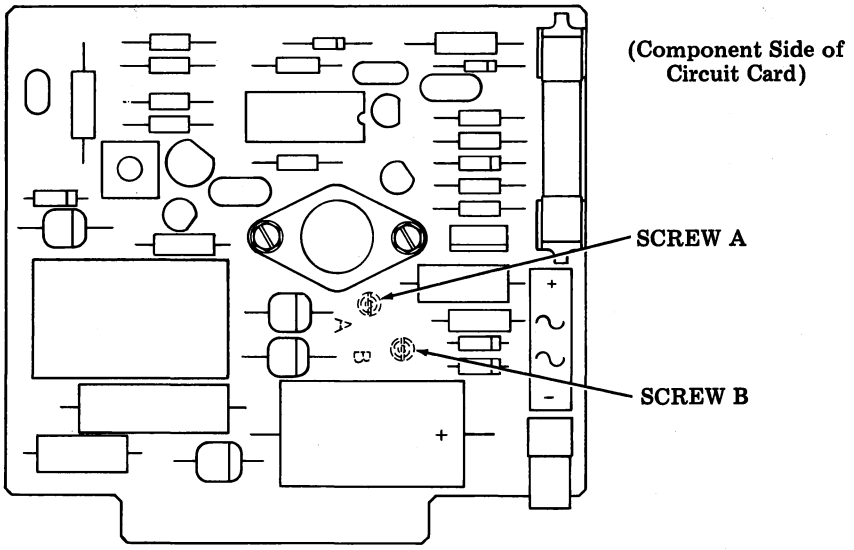
See Legend for O , ● , — and * on Page 52.

410076 — Printer Logic Circuit Card (80-Column) — Card Located in Lower Portion of Printer (Cont)

		E1 1 2 3 4 5 6 7 8 9	E2 1 2 3 4 5 6 7 8		
4-18	Printer Paper Feed Out				
a.	No Paper Feed Out	● – – – – – – – –	– – – – – ○ – –		Choose 1
b.	Paper Feed Out on DSR or RM Loss -- 16 Lines or One Form	○ – – – – – – – –	– – – – – ○ – –		
c.	Paper Feed Out on DSR or RM Loss or ETX -- 16 Lines or One Form	○ – – – – – – – –	– – – – – ● – –	*	
4-19	Printer Errored Character Symbol	E1 1 2 3 4 5 6 7 8 9			
a.	Printer on Even Parity Error	– – ● ○ – – – – –		*	Choose 1
b.	Printed on Odd Parity Error	– – ○ ● – – – – –			
c.	Not Printed on Parity Error	– – ● ● – – – – –			
4-19	Character Set		E2 1 2 3 4 5 6 7 8		
d.	Printers With 96-Character Set		– – – ○ ● – – –		Choose 1
e.	Printers With 64-Character Set		– – – ● ○ – – –		
f.	Printers With Extended ASCII Character Set		– – – ○ ○ – – –		
g.	Printers With Longest Character Set Having Less Than 64 Characters		– – – ○ ○ – – –		
4-21	Foldover on Up-Low Printer		E2 1 2 3 4 5 6 7 8		
a.	Lower Case and Upper Case Print		– – ○ – – – – –	*	Choose 1
b.	Lower Case Prints as Upper Case		– – ● – – – – –		
4-22	Foldover on Monocase Printer		E2 1 2 3 4 5 6 7 8		
a.	Lower Case Prints as Error Symbol		– – ○ – – – – –		
b.	Lower Case Printes as Upper Case		– – ● – – – – –	*	
4-23	Extended ASCII on Printer (Extended ASCII)	E1 1 2 3 4 5 6 7 8 9			
a.	Prints Extended ASCII Characters (No Parity Check)	– – ○ ○ – – – – –			Choose 1
b.	Does Not Print Extended ASCII (See Option 4-19 a,b or c)	– – (As in 4-19.) –		*	
4-48	Incomplete Form Suppresses Paper Alarm		E2 1 2 3 4 5 6 7 8		
a.	No (Paper Out Not Gated With Form Out)		– ● – – – – – –		Choose 1
b.	Yes (Paper Out Gated With Form Out)		– ○ – – – – – –	*	
4-54	Printing of Escape Sequences Suppressed	E1 1 2 3 4 5 6 7 8 9			
a.	Character After ESC Printed as Received	– ○ – – – – – – –		*	Choose 1
b.	Printing of Character After ESC Suppressed	– ● – – – – – – –			
4-55	Shift In/Shift Out Detection	E1 1 2 3 4 5 6 7 8 9			
a.	SI/SO Detection Not Used	– – – – – – ○ – –		*	Choose 1
b.	SI/SO Detection Enables Printing Additional Characters	– – – – – – ● – –			
4-56	Friction Feed/Tractor Feed Printer		E2 1 2 3 4 5 6 7 8		
a.	Friction Feed Printer -- Motor Held On After Paper Alarm		○ – – – – – – –	*	Choose 1
b.	Tractor Feed Printer -- Motor Turned Off After Paper Alarm		● – – – – – – –		
4-57	SSI/OEM Interface			E7 1 2 3 4 5 6 7 8	
a.	SSI			– – – – – – ● –	*
b.	Not used on 40/3 type station.			– – – – – – ○ –	
4-58	Idle Line Motor Control			E7 1 2 3 4 5 6 7 8	
a.	Disabled -- Motor Held On Indefinitely During Idle Line			– – – – – – – ○	* Choose 1
b.	Enabled -- Motor Turned Off After 40-Second Idle Line			– – – – – – – ●	

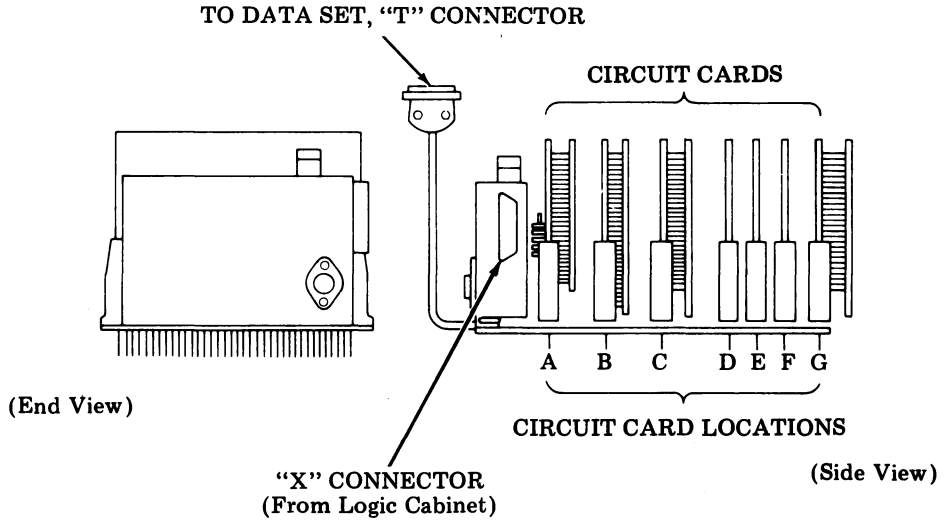
See Legend for ○ , ● , – and * on Page 52.

410151 — Circuit Card — Located in Printer Power Module or Power Supply



4-61	Regulator Grounding (Circuit Ground to Frame Ground)	Screw A		Screw B		
		Component	Noncomponent	Component	Noncomponent	
a.	SSI (CKT & FR GND at PTR)	In	—	—	In	* Choose 1
b.	SSI/OEM (CKT & FR GND at PTR, +12V)	In	—	In	—	
c.	OEM (CKT GND EXT to PTR, +12V)	—	In	In	—	

4.11 The circuit cards in the 9140 Station Controller are located in card connectors bearing the same letter designation as the initial letter designation on the circuit card. Card D1 is therefore located in the "D" card connector. A circuit card with a dash (-) in its designation is mounted piggyback on the card bearing the same letter designation. Card C2-2 is therefore mounted piggyback on card C2 in the "C" connector.



CODE CHART

TABLE E

ASCII CODE (American National Standard Code for Information Interchange)

BITS 7				0				1			
BITS 6				0		1		0		1	
BITS 5				0	1	0	1	0	1	0	1
4	3	2	1								
0	0	0	0	NUL	DLE	SP	0	@	P	`	p
			1	SOH	DC1	!	1	A	Q	a	q
		1	0	STX	DC2	"	2	B	R	b	r
			1	ETX	DC3	#	3	C	S	c	s
	1	0	0	EOT	DC4	$	4	D	T	d	t
			1	ENQ	NAK	%	5	E	U	e	u
		1	0	ACK	SYN	&	6	F	V	f	v
			1	BEL	ETB	'	7	G	W	g	w
1	0	0	0	BS	CAN	(	8	H	X	h	x
			1	HT	EM	)	9	I	Y	i	y
		1	0	LF	SUB	*	:	J	Z	j	z
			1	VT	ESC	+	;	K	[	k	{
	1	0	0	FF	FS	,	<	L	\	l	|
			1	CR	GS	-	=	M	]	m	}
		1	0	SO	RS	.	>	N	^	n	~
			1	SI	US	/	?	O	_	o	DEL

Note: Shaded boxes indicate characters with bit 8 "1" for even parity.

Example: Bits 1 through 7 of the bit permutation for the character M are 1011001, respectively.

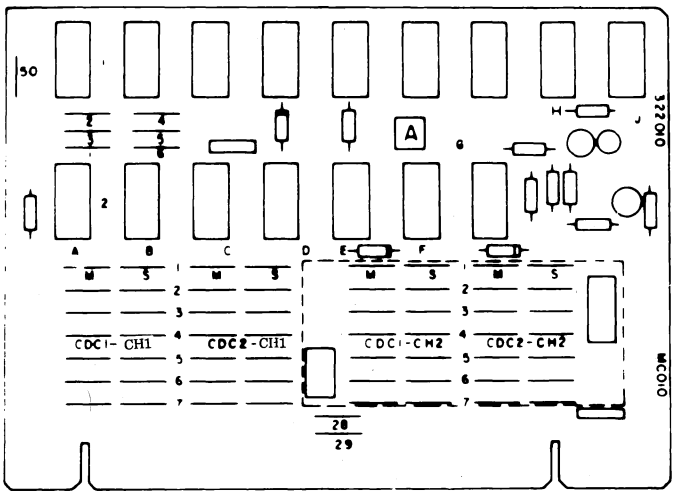
1 = Mark 0 = Space

NUL — Null
SOH — Start of Heading
STX — Start of Text
ETX — End of Text
EOT — End of Transmission
ENQ — Enquiry
ACK — Acknowledge
BEL — Bell
BS — Back Space
HT — Horizontal Tab
NL — New Line
VT — Vertical Tab
FF — Form Feed
CR — Carriage Return
SO — Shift-Out
SI — Shift-In
DLE — Data Link Escape

DC1 — Device Control 1
DC2 — Device Control 2
DC3 — Device Control 3
DC4 — Device Control 4
NAK — Negative Acknowledge
SYN — Synchronous
ETB — End of Transmission Block
CAN — Cancel
EM — End of Media
SUB — Substitute
ESC — Escape
FS — Field Separator
GS — Group Separator
RS — Record Separator
US — Unit Separator
SP — Space
DEL — Delete

9140 CONTROLLER OPTIONS

322010 — CDC Detector (A) — Card Position A



9-1. Variable Characters (See Below)			Coding Instructions
	k.	Call Directing Code (CDC) 1, Character 1	
	l.	Call Directing Code (CDC) 1, Character 2	
	m.	Call Directing Code (CDC) 2, Character 1	
	n.	Call Directing Code (CDC) 2, Character 2	

Cut straps labeled "M" for levels that are marking.
Cut straps labeled "S" for levels that are spacing.
Every level must have one strap cut.

9-4. Unit Code of Characters Sent			Strap 50	
	a.	10-Unit Code	●	Choose 1
	b.	11-Unit Code	O	

9-14. Number of Characters in CDC1 (Exclusive of Delete, if Used)			Straps 1	2	3	
	a.	One-Character CDC	●	O	●	Choose 1
	b.	Two-Character CDC	O	●	●	

9-15. Number of Characters in CDC2 (Exclusive of Delete, if Used)			Straps 4	5	6	
	a.	One-Character CDC	●	O	●	Choose 1
	b.	Two-Character CDC	O	●	●	
	c.	No CDC2	O	O	O	

If no CDC2 is used, program the CDC2 characters (Option 9-1m and 9-1n identical to CDC1 (Option 9-1k and 9-1l) and install Option 9-15c.

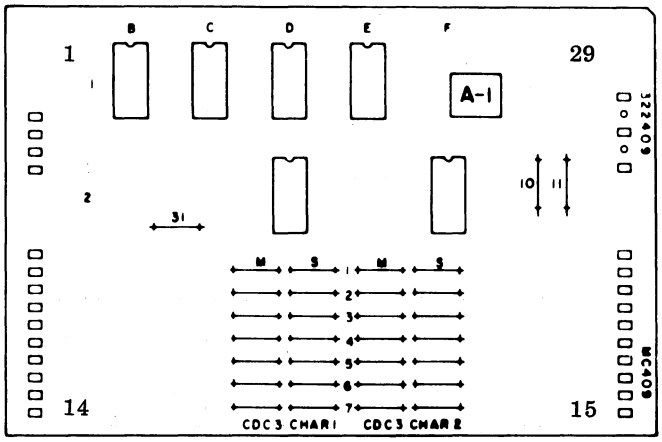
See Legend for O , ● , — and * on Page 52.

322010 — CDC Detector (A) — Card Position A (Cont)

9-19.		Answer-Back to CDC (Observe That, for Example, Option 9-17c Can Override Option 9-19a or 19b) (See Option 9-17, Card C2.)	Straps 28	Straps 29	
	a.	Answer-Back CDC1 Always	O	—	Choose 1
	b.	Answer-Back to CDC1 Only When Ready to Receive	●	—	
	c.	Answer-Back to CDC2 Always	—	O	Choose 1
	d.	Answer-Back to CDC2 Only When Ready to Receive	—	●	
	e.	Answer-Back to CDC3 Always	—	—	Choose 1
	f.	Answer-Back to CDC3 When Ready to Receive	—	—	

322409 — 3rd CDC Detector A-1 — Card Position and Piggyback to A

Note: Card A-1 not present on all stations; it is USOC DJB.



9-1.		Variable Characters (See Below)	Coding Instructions
	o.	Call Directing Code (CDC) 3, Character 1	
	p.	Call Directing Code (CDC) 3, Character 2	

Cut strap labeled "M" for levels that are marking.
Cut strap labeled "S" for levels that are spacing.
Every level must have one strap cut.

9-16.		Number of Characters in CDC3 (Exclusive of Delete, if Used)	Straps 10	Straps 11	
	a.	One Character CDC	●	O	Choose 1
	b.	Two Character CDC	O	●	
	c.	No CDC3	Remove Card A-1		

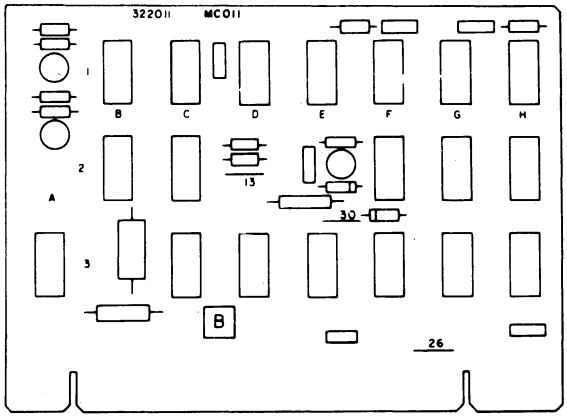
9-19.		Answer-Back to CDC (See Option 9-19, Card A.)	Strap 31	
	a.		—	Choose 1
	b.		—	
	c.		—	Choose 1
	d.		—	
	e.	Answer - Back to CDC3 Always	O	Choose 1
	f.	Answer – Back to CDC3 When Ready to Receive	●	

See Legend for O , ● , — and * on Page 52.

322685 — CDC Detector (A2) — Card Position A

Note: This card is required for 1800 or 2400 baud operation. Options are the same as A card (322010).

322011 — R/T Distributor (B) — Card Position B

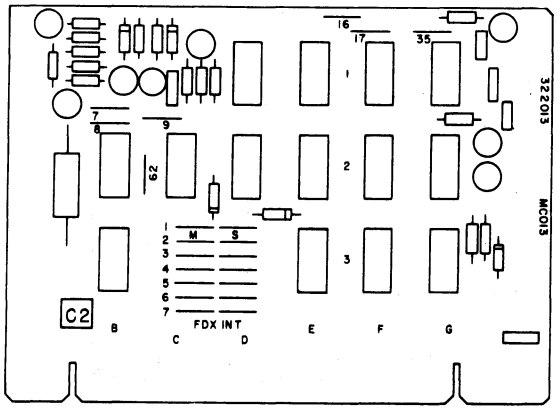


9-3.		Unit Code of Answer-Back Characters Sent	Strap 13	
	a.	10-Unit Code	O	Choose 1
	b.	11-Unit Code	●	
9-5.		Code Level of Characters Sent	Strap 30	
	a.	8-Unit Code	●	Choose 1
	b.	7-Unit Code or Less	O	
9-8.		Regeneration of Sent Data (Requirements of Options 9-6c -- 9-6f Override Option 9-8.) (See Option 9-6, Card D1.)	Strap 26	
	a.	No Regeneration (See Note below.)	O	Choose 1
	b.	Regeneration	●	

Note: Strap 37 must be open in ROP applications; do not install Option 9-8a.

See Legend for O , ● , — and * on Page 52.

322013 — Receive Control Logic (C2) — Card Position C



9-1.		Variable Characters	Coding Instructions
	h.	Interrupt Character	
		Cut straps labeled "M" for levels that are marking. Cut straps labeled "S" for levels that are spacing. Every level must have one strap cut.	

9-9.		Interrupt Feature	Strap 62
	a.	Stop on Interrupt Character and Blind Receive Data, Start on STX (See Note Below)	●
	b.	Does Not Stop on Interrupt Character	O

Choose 1

Note: If Option 9-9a is selected, Option 9-6a must be selected. Straps 53 and 34 must not both be closed with straps.

9-17.		Answer-Back Generated for CDCs	Straps 7	8	9	35
	a.	Answer-Back to CDC1 (No Delete After CDC)	—	—	●	O
	b.	Answer-Back to CDC1 After Delete	—	—	●	●
	c.	No Answer-Back to CDC1	—	—	O	—
	d.	Answer-Back to CDC2 (No Delete After CDC)	●	—	—	O
	e.	Answer-Back to CDC2 After Delete	●	—	—	●
	f.	No Answer-Back to CDC2	O	—	—	—
	g.	Answer-Back to CDC3 (No Delete After CDC)	—	●	—	O
	h.	Answer-Back to CDC3 After Delete	—	●	—	●
	i.	No Answer-Back to CDC3	—	O	—	—

Choose 1 (a–c)
Choose 1 (d–f)
Choose 1 (g–i)

9-22.		Received Vertical Parity Error Response	Strap 16
	a.	Odd Parity Cause Line Break	●
	b.	Odd Parity Does Not Cause Line Break	O

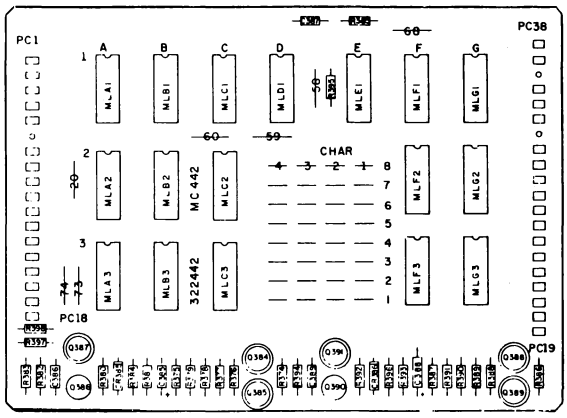
Choose 1

9-23.		Loss of DTR Response (Data Terminal Ready)	Strap 17
	a.	Loss of DTR Causes Line Break	●
	b.	Loss of DTR Does Not Cause Line Break	O

Choose 1

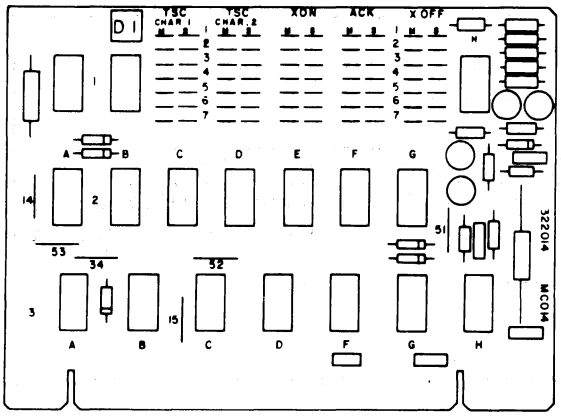
See Legend for O , ● , — and * on Page 52.

322442 — A/B and Motor Control (C2-2) — Card Position, Piggyback to C2



			Coding Instructions			
9-1.		Variable Characters (See Below)				
	a.	Answer-Back Character 1				
	b.	Answer-Back Character 2				
	c.	Answer-Back Character 3 (Optional AB)				
	d.	Answer-Back Character 4 (Negative AB)				
		Cut straps corresponding to marking levels. Close straps corresponding to spacing levels.				
9-12.		1st or 2nd A/B Character Restarts Sender, or Sender Does Not Stop for A/B at All	Straps 58	59	60	
	a.	2nd Character (If Option 9-6c, 9-6d, 9-6e, or 9-6f Must be Used) (See Option 9-6, Card D1)	○	●	○	Choose 1
	b.	1st Character (If Option 9-6c, 9-6d, 9-6e, or 9-6f Is Used) or Does Not Stop (If Option 9-6a or 9-6b Is Used) (See Option 9-6, Card D1) Should Not be Used in 40/3-Type Applications.	●	○	●	
9-18.		Type of Answer-Back to TSC	Strap 20			
	a.	Same as Ready to Receive to a CDC Only When DTR) is On	○			Choose 1
	b.	Same as Ready to Receive to a CDC (Independent of DTR)	●			
9-20.		Optional Answer-Back to CDC or TSC	Straps 73	74		
	a.	Optional Negative Answer-Back	●	○		Choose 1
	b.	Optional Positive Answer-Back (CDC Only)	○	●		
	c.	No Optional Answer-Back	○	○		
	d.	Optional Positive and Negative Answer-Back - Should Not be Used in 40/3-Type Applications.	●	●		
9-21.		Response Delay for Motor Start-Up	Strap 68			Choose 1
	a.	Nominal 2-Second Delay	○			
	b.	Nominal 200-Millisecond Delay	●			

322014 — Send/Receive Logic (D1) (See Note 3) — Card Position D



9-1. Variable Character (See Below)			Coding Instructions		
	e.	Transmitter On (Recommend DC1)			Choose 1
	f.	Transmitter Off (Recommend EOT)			
	g.	Acknowledge (Recommend ACK)			
	i.	Transmitter Start Code (TSC) Character 1			
	j.	Transmitter Start Code (TSC) Character 2			
Cut straps labeled "M" for levels that are marking. Cut straps labeled "S" for levels that are spacing. Every level must have one strap cut.					
9-2. Number of Characters in TSC			Strap 52		
	a.	Two Characters	O		Choose 1
	b.	Two Characters Followed by Delete	●		
9-6. HDX or FDX Stop Sending (See Note 2, Page 90.)			Straps 14	53	
	a.	Stop on "SENT" Interrupt and EOT, Requires Option. 9-8.b	O	O	Choose 1
	b.	No Stopping of Sender	O	●	
	c.	Not Used in 40/3-Type Applications	—	—	
	d.	Not Used in 40/3-Type Applications	—	—	
	e.	Not Used in 40/3-Type Applications	—	—	
	f.	Not Used in 40/3-Type Applications	—	—	

See Legend for O , ● , — and * on Page 52.

322014 — Send/Receive Logic (D1) (See Note 2) — Card Position D (Cont)

			Strap 15	
9-7.		Local Copy on ROP of KD Send Data (KD & ROP Arrangements)		
	a.	Local Copy (Can be Used for KD & ROP)	O	Choose 1
	b.	No Local Copy (May be Overridden by Option 9-13) (Choose for Other Arrangements or KD & ROP, if Desired)	●	

			Strap 34	
9-9.		Interrupt Feature (See Note 2 below.)		
	a.	Stop on Interrupt Character and Blind Receive Data, Start on STX.	●	Choose 1
	b.	Does not Stop on Interrupt Character	O	
9-10.		Function of EOT Sent by Terminal	Strap 51	
	a.	EOT Deselects 9140 Sender	●	Choose 1
	b.	EOT Does Not Deselect Sender	O	

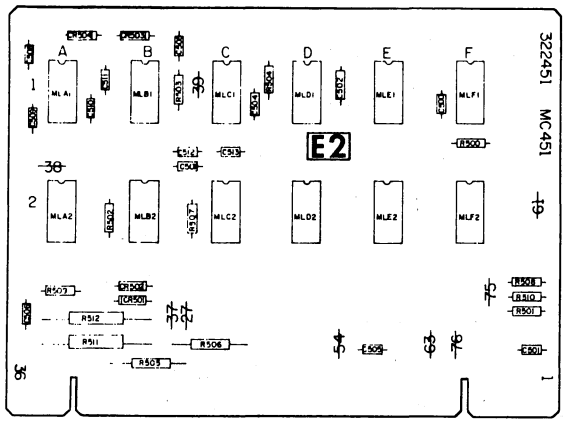
Note 1: If Option 9-10a is used, also use 9-8b and KD Option 4-8e.

Note 2: If Option 9-1a is selected, Option 9-6a must also be used. Straps 53 and 34 must not both be closed with straps.

Note 3: The RO Logic Card (D2) 303734 has no options.

See Legend for O , ● , — and * on Page 52.

322451 — EIA Interface (E2) — Card Position E



			Straps				
9-6.		HDX or FDX Sending (See Option 9-6, Card D1.)	27	37	54	63	
	a.	Stop on "Send" Interrupt and EOT, Requires Option 9-8b.	—	—	—	O	Choose 1
	b.	Not Stopping of Sender	—	—	—	O	
	c.	Not Used in 40/3-Type Applications	—	—	—	—	
	d.	Not Used in 40/3-Type Applications	—	—	—	—	
	e.	Not Used in 40/3-Type Applications	—	—	—	—	
	f.	Not Used in 40/3-Type Applications	—	—	—	—	

			Straps			
9-8.		Regeneration of Sent Data (See Option 9-8, Card B.)	27	37	54	
	a.	No Regeneration	O	●	O	Choose 1
	b.	Regeneration	●	O	●	

			Straps		
9-13.		Local ROP Copy of KD Send Data Provided/Not Provided by 9140	75	76	
	a.	Copy All Sent Data and CPU Responses	●	●	Choose 1
	b.	Copy Sent Data Only After STX is Sent	O	O	

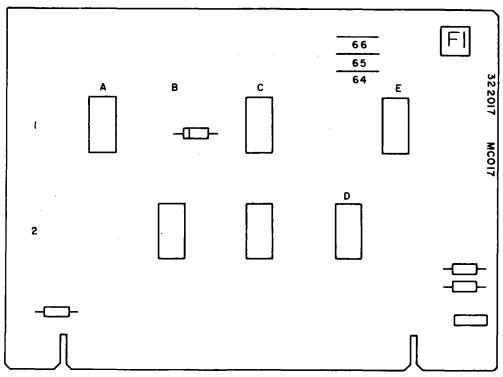
Note: Local KDP printer or KD-ROP printer copy will be provided regardless of the status of Option 9-7 or 9-13, provided PRINT ON LINE key is lighted and 40-Type KD Option 4-29a is chosen.

			Strap 61	
9-24.		Type of F Card Used		
	a.	F1 Circuit Card -- Without 9140 Substitute Character	●	Choose 1
	b.	F2 Circuit Card -- With 9140 Substitute Character	O	

			Straps		
9-26.		Data Set Interface	38	39	
	a.	Gate Data Set CTS With 9140 Signals (Recommended)	O	—	Choose 1
	b.	Do Not Gate Data Set CTS With 9140 Signals	●	—	
	c.	Gate Data Set DSR With 9140 Signals (Recommended)	—	O	Choose 1
	d.	Do Not Gate Data Set DSR With 9140 Signals	—	●	

See Legend for O , ● , — and * on Page 52.

322017 — Character Recognition (F1) — Card Position F1



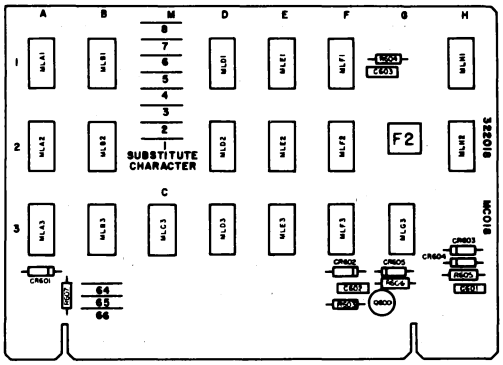
			Straps		
9-25.		9140 Recognition of SOH and ETX	64	65	66
	a.	SOH Only (See Note 1.)	●	O	O
	b.	EXT Only (Action of ETX Requires Local Engineering)	O	●	O
	c.	Both SOH and ETX	O	O	O
	d.	Neither SOH nor ETX (Recommended)	O	O	●

Choose 1

Note 1: If customer requires SOH to act like STX, strap XZF-B29 to XZF-B31.

Note 2: Option 9-25 choice has no effect on selection of ETX as INTERRUPT character.

322018 — Substitute Character — Card Position F2



			Coding Instructions
9-1.		Variable Character	
	q.	Substitute Character	
		Cut straps corresponding to marking levels Close straps corresponding to spacing levels	

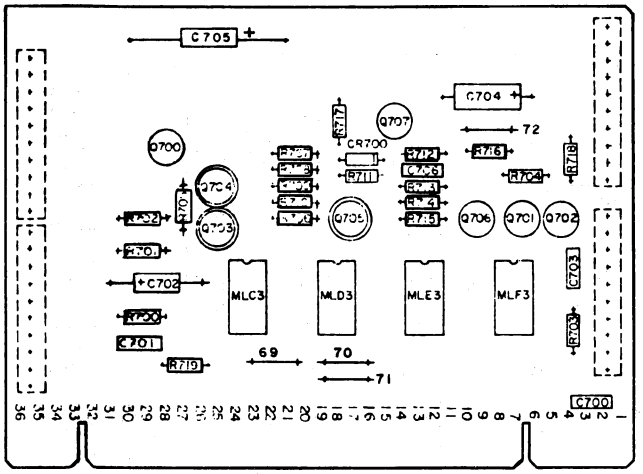
			Straps		
9-25.		9140 Recognition of SOH and ETX	64	65	66
	a.	SOH Only (See Note 2, Card F1)	●	O	O
	b.	ETX Only (Action of ETX Requires Local Engineering)	O	●	O
	c.	Both SOH and ETX	O	O	O
	d.	Neither SOH and ETX	O	O	●

Choose 1

Note: This F2 Card is ordered separately and is not required unless a substitute character other than S_B is desired for KD or other than font ID character for printer.

See Legend for O , ● , — and * on Page 52.

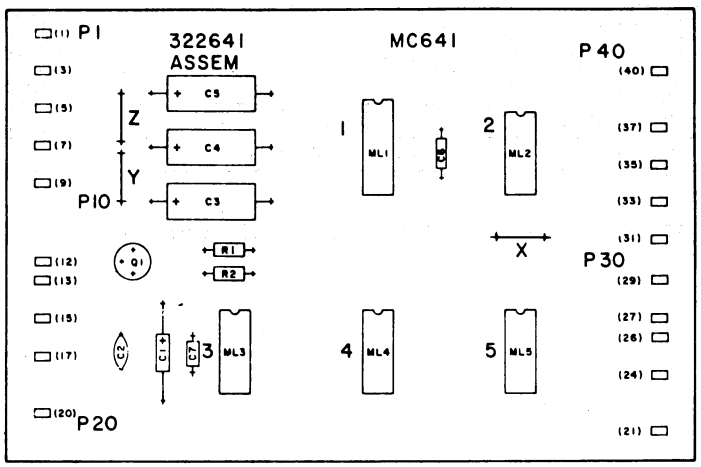
322083 — Channel Control (G3) — Card Position G



			Straps			
9-11.		Delay in Turning Off Carrier	69	70	71	72
	a.	Retain Until Last Character Is Sent	●	●	O	●
	b.	Retain for One Character After Interrupt	●	O	●	O
	c.	Retain for Three Characters After Interrupt	O	O	●	O

Choose 1

322641 — Answer-Back and Alarm — Card Position, Piggyback to G3 (Part of Alarm/Parity Error Response 345625 Modification Kit)



			Straps		
9-27.		Alarm Time and Reset on STX or EOT	X	Y	Z
	a.	30-Second Alarm (See Note below.)	—	O	O
	b.	60-Second Alarm (See Note below.)	—	●	O
	c.	90-Second Alarm (See Note below.)	—	●	●
	d.	Initialize Optional A/B Circuit on STX or EOT	●	—	—
	e.	Initialize Optional A/B Circuit on EOT	O	—	—

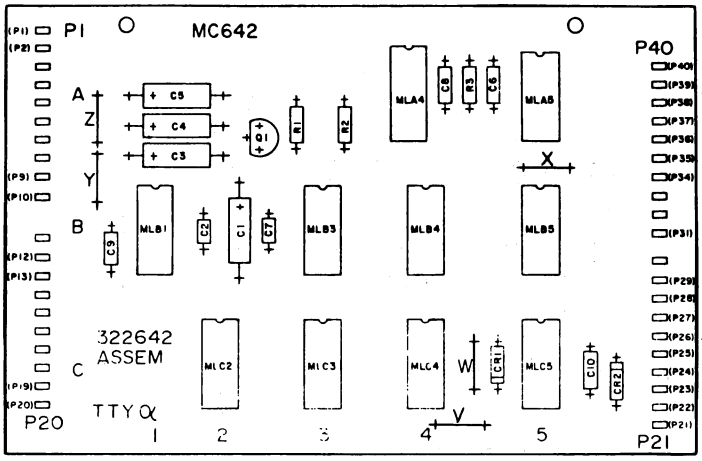
Choose 1

Choose 1

Note: Audible Alarm on receipt of CDC if not ready to receive (DTR off).

See Legend for O , ● , — and * on Page 52.

322642 — 2400 Baud, Isochronous, Parity Detect and Alarm — Card Position, Piggyback to G3 (Part of 402326 Modification Kit)



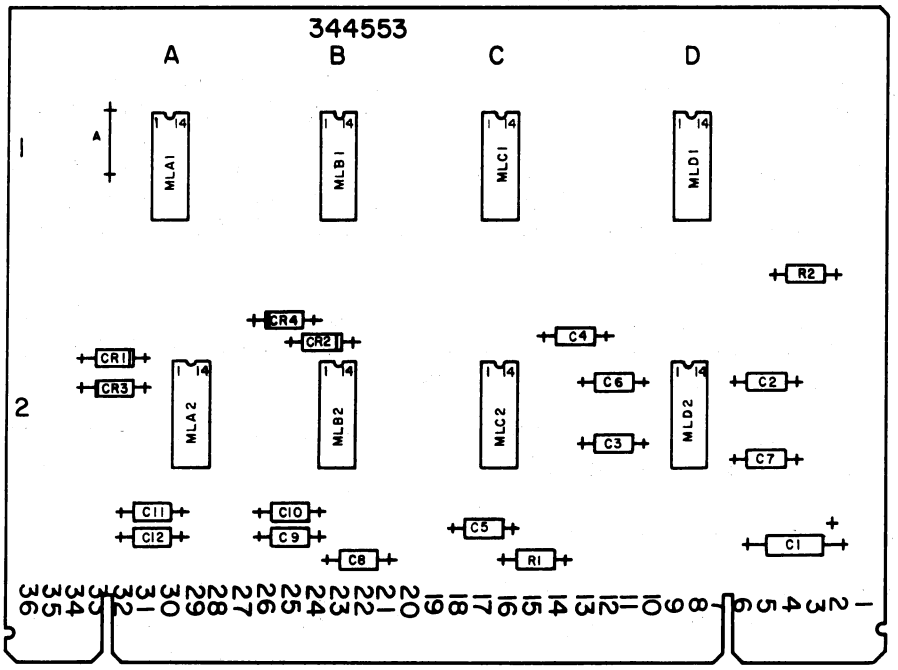
			Straps V	Straps W	
9-8.		Regeneration of Sent Data (See Option 9-8, Cards B and E2.)			
	a.	No Regeneration	●	○	Choose 1
	b.	Regeneration	○	●	

			Straps X	Straps Y	Straps Z	
9-27.		Alarm Time and Reset on STX or EOT				
	a.	30-Second Alarm (See Note below.)	—	○	○	Choose 1
	b.	60-Second Alarm (See Note below.)	—	●	○	
	c.	90-Second Alarm (See Note below.)	—	●	●	
	d.	Initialize Optional A/B Circuit on STX or EOT	●	—	—	Choose 1
	e.	Initialize Optional A/B Circuit on EOT	○	—	—	

Note: Strap 74 on C2-2 card must be closed to use this modification kit.

See Legend for ○ , ● , — and * on Page 52.

344553 — Individual Receiver Selection — (Part of 344555 Modification Kit, 50800S Specification)



4-11 Basic Arrangement:

(a) KD + ROP* (ROP* = Primary Receiver); (KD = Secondary Receiver).

(b) KDP + ROP* (ROP* = Primary Receiver); (KDP = Secondary Receiver).

(c) KD-ROP + ROP* (ROP* = Primary Receiver); (KD-ROP = Secondary Receiver).

4-12 Optional Modifications:

(a) Six lead interchanged in the IND REC connector of the 344545 cable; required to convert ROP* to Secondary and KD to Primary Receivers.

Color	From Pin	To Pin
White-Blue	10- Primary RD	16-Secondary RD
White-Red-Red	16-Secondary RD	10-Primary RD
White-Orange	24-Primary DTR	18-Secondary DTR
White-Red-Brown	18-Secondary DTR	24-Primary DTR
White-Red-Orange	14-Primary DSR	22-Secondary DSR
White-Black	22-Secondary DSR	14-Primary DSR

(b) "A" Strap: Controls Primary DSR "Off" when the station is in the (STS) Selected to Send mode — used for HDX operation only.

(c) Cut circuit land (component side) from MLC2-11 to MLA2-12 and MLA1-8. Remove Secondary DSR when the station is in the (STS) Selected to Send mode. KD will not send with DSR "On" for HDX or FDX operation.

(d) Add wire strap (noncomponent side) between MLC2-11 and MLA1-2. Controls Primary DSR "Off" when Selected to Send is "On" — used for HDX operation only.

(e) X-TERM connector (to KD with Ptr/ROP) lead change: Remove pin 19 White-Red and tape back. Remove pin 6 White-Red-Orange and reposition hole 19. This removes Secondary DSR when Primary Receiver is Selected. KD will not send with DSR "On". Selected to Receive controls Secondary DSR.

(f) Add wire strap (noncomponent side) between MLD1-1 and MLC2-11. This controls Secondary (RD) Received Data to monitor "Sent Data" when the station is in the (STS) Selected to Send mode. The ROP* is the Secondary receiver.

(g) Add diode to MLA pack between MLA1-5 and MLA1-2 with the cathode (band) toward MLA1-5 (NOT compatible with M40).

4-13 Application compatibility of modifications:

Note: It is not recommended to have ROP* a Secondary Receiver because "No-Traffic" replies "Ready/Not Ready" reflect the Primary Receiver status and NOT to be used in FDX operation.

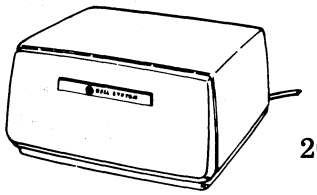
	ROP*-Primary			ROP*-Secondary	
	KD+ROP* ROP* monitor's sent data	KD+ROP* KD-P/ROP+ROP* ROP* does not monitor sent data		KD+ROP* ROP* monitor's sent data	KD+ROP* KD-P/ROP+ROP* ROP* does not monitor sent data
		HDX	FDX		
(a) IND REC interchange	no	no	no	yes	yes
(b) "A" strap	open	open	open	closed	closed
(c) cut circuit land	no	yes	yes	no	yes
(d) add DSR wire strap	no	yes	no	no	yes
(e) S/R X-TERM change	no	yes	yes	no	yes
(f) add RD wire strap	no	no	no	yes	no
(g) add diode	no	no	no	no	no

DATA SET OPTIONS

4.14 The following data sets are used in the DATASPEED 40/3. The Table associated with each data set lists the options for that data set.

TABLE F

202R DATA SET



202R Data Set

202R OPTIONS

FEATURE OR OPTION		OPTION DESIG	CLOSE SWITCH	OPEN SWITCH	CIRCUIT PACK
4-Wire	Patch Cords S4 and S5 and Slide Switch S1 on AR593 CP	Y	S1 to 4W	S4, S5 (Note 1)	AR593 CP
2-Wire		Z	S1 to 2W S4, S5 (Note 2)	—	
Data Set Carrier Controlled by Customer Request-to-Send		X	S3B	S3A	
Continuous Carrier (Transmit Only Service		W	S3A	S3B	
No Carrier (Receive Only Service)		V	—	S3A, S3B	
Fast Turnoff of Carrier		T	—	S2B	AR591 CP
Soft Turnoff of Carrier		S	S2	—	
Squelch of Carrier Detector (Note 3)		R	S3	—	
No Squelch of Carrier Detector		Q	—	S3	
20-ms Carrier Acquisition Timer		N	S1	—	
40-ms Carrier Acquisition Timer		M	—	S1	
Carrier Detector OFF Clamps Received Data Lead		K	S5	—	
No Clamp of Received Data Lead		J	—	S5	
200-ms Clear-to-Send Timer		G	—	S4A, S4B	
60-ms Clear-to-Send Timer		F	S4A	S4B	
30-ms Clear-to-Send Timer		E	S4B	S4A	

Note 1: Switches S4 and S5 are provided on AR593 series 6 or later. Patch cords used for S4 and S5 on AR593 are stored by plugging them into themselves to provide an "open switch" condition. The "open switch" condition allows digital loop-back test. To perform the "beeping" 4-wire loop-back test, close switches S4 and S5 (see Note 2). All data sets are factory-furnished in the "open switch" condition.

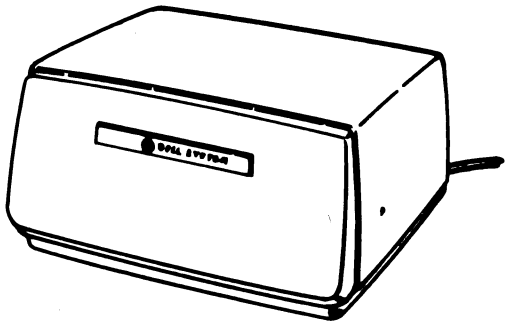
Note 2: To close switch S4 or S5, the patch cord must interconnect the two posts associated with each switch by plugging one end into each post.

Note 3: If Option R is used, then Options X, T, N, J, and G must also be chosen.

202D Data Set

TABLE G

202D OPTIONS AND CONNECTIONS



NUMBER REQUIRED PER CIRCUIT	DESCRIPTION OF FEATURE OR OPTION		OPTION DESIG	TERMINAL BOARD	CONNECTION	REMARKS
1	2-wire operation 4-wire operation		Z Y *	TB2	(61, 62) (64, 65) (62, 63, 64)	
1	600-ohm termination 900-ohm termination		X * W		(32, 33) (37, 38) (33, 34) (38, 39)	
1	Clamp on demod output when noise protection is required Clamp on demod output when noise protection is not required		V * U		(20, 21) (21, 22)	
1	Reverse channel in Reverse channel out		T * S	TB3	(1, 2) (6, 7) (2, 3) (7, 8)	Note 4
1	Squelch in Squelch out		R ZL*	TB2	(35, 36) (202D1-4) (25, 35) or (22, 23), (202D5-6)	Remove ZL wiring Notes 2, 3
1	Automatic answering No automatic answering		Q * —		(59, 60) —	Remove Q Wiring
1	EIA voltage interface Contact interface		N M		(1, 2) (4, 5) (6, 7) (8, 9) (2, 3) (5, 6) (9, 10) (12, 13)	
1	Data Transmit Power Levels	0 dBm −3 dBm −6 dBm −9 dBm	K J H * G		(1, 12) (24, 25) (22, 23) (23, 24)	Note 5
1	Equalizers for Switched Network Operation	Amplitude Equalizer In Amplitude Equalizer Out	F * E		(18, 19) (17, 18)	
1		Delay Equalizer In Delay Equalizer Out	B A		(27, 28) (30, 31) (28, 29, 30)	
1	Bit Rate	900 bits per second or less Over 900 bits per second	ZA ZB *		(14, 15) (15, 16)	Note 1
1	Enables data set TEST key Disables data set TEST key		ZE * ZF		(44,45) (47,48) (50,51) (45,46) (48,49) (51,52)	Note 9

TABLE G (Cont)

202D OPTIONS AND CONNECTIONS

NUMBER REQUIRED PER CIRCUIT	DESCRIPTION OF FEATURE OR OPTION	OPTION DESIG	TERMINAL BOARD	CONNECTION	REMARKS
1	2-wire operation without 4-wire backup 2-wire operation with 4-wire backup 4-wire operation without 2-wire backup 4-wire operation with 2-wire backup	ZG — ZH —	TB2	(53, 54) — (54, 55) —	 Note 7 Note 6
1	When data set is used with 6017AP key only	—	TB1 TB2	(19, 25) (57, 58) (40, 41)	
	When data set is not used with DAS 804A or 6017AP key	ZJ	TB1 TB2	(19, 23) (57, 58) (40, 41)	
	When data set is used with DAS 804A with or without 6017AP key	—	TB1 TB2	(19, 25) (56, 57) (42, 43)	
1	Reverse channel — 3 dBm Transmit — 6 dBm Power level — 9 dBm	ZK ZM ZN		(W) From 1A1 to TB4-1 (W) From 1A1 to TB4-2 (W) From 1A1 to TB4-3	Notes 4, 5
1	40-millisecond carrier detector timing 20-millisecond carrier detector timing	YM YN	TB2	(24, 25) (25, 26)	Note 10 Note 10
1	200-millisecond clear-to-send timing 60-millisecond clear-to-send timing 30-millisecond clear-to-send timing	YP YR YS	TB4	(2, 3) (1, 2) (3, 4)	Note 10 Note 10 Note 10
1	Carrier Soft IN Turnoff OUT	ZY ZZ	AS39 CP AS39 CP	(1, 2) (3, 4)	Note 8 Note 8

Note 1: Use option ZB for all bit rates.
Note 2: On data sets 202D1, D2, D3, and D4, in order to provide ZL option, a P-43N572 connector lead assembly or equivalent is required to connect terminal 25 to 35.
Note 3: On data sets 202D5 and D6, connection of terminal 22 to 23 provides ZL option.
Note 4: Wiring factory-furnished when reverse channel is specified.
Note 5: Data sets prior to 202D1 and D2, series 10, and 202D3 and D4, series 5 contain discrete level options. Data sets starting with these series numbers and data sets 202D5 and D6 contain potentiometers to vary the transmit level from 0 to —12 dBm.
Note 6: When DAS 804A is used to switch from 4-wire to 2-wire (1 DDD backup line) remove ZH wiring. When DAS 804A is used to switch from 4-wire to 2 DDD backup lines, install ZH wiring.
Note 7: When DAS 804A is used to switch from 2-wire to 4-wire or from 4-wire to 2-wire operation, remove both ZG and ZH wiring.
Note 8: Option is located on transmitter circuit pack AS39, AS77, AS87 and is available in data sets 202D3, D4, D5, and D6.
Note 9: Requires TEST key in DAS 804A.
Note 10: Options contained only in 202D5 and D6.

TABLE H
202T-L1 OPTIONS

FEATURE	OPTIONS		SWITCH SETTING									
			S3 SWITCH CONTACT SETTING ON TRANSMITTER RECEIVER (CP1)									
			1	2	3	4	5	6	7	8	9	0
4 WIRE OPERATION	* ZK				X	X				X	X	X
2 WIRE OPERATION WITHOUT REVERSE CHANNEL	ZD		X		X			X	X			
2 WIRE OPERATION WITH REVERSE CHANNEL	** ZC		X	X			X		X			
			S2 SWITCH CONTACT SETTING ON TRANSMITTER-RECEIVER (CP1)									
			1	2	3	4	5	6	7	8	9	0
4 WIRE OPERATION	* ZK		X	-	-	-	-	-	-	-	-	-
LOCAL COPY ON PRIMARY CHANNEL IN 2 WIRE	ZA	IN	X	-	-	-	-	-	-	-	-	-
	** ZB	OUT		-	-	-	-	-	-	-	-	-
SOFT TURN-OFF AND SQUELCH INTERVALS		SOFT TURN-OFF / SQUELCH										
	Z	0 / 0	-	-		X	-	-	-	-		X
	* 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		-	-	-	-		
	R	24 MSEC / 156 MSEC	-	-	X		-	-	-	-	X	
FAST CARRIER DETECTION	* Q	IN	-	-	-	-		-	-	-	-	-
	N	OUT	-	-	-	-	X	-	-	-	-	-
CLEAR TO SEND INTERVAL	* M	8 MSEC	-	-	-	-	-			-	-	-
	K	30 MSEC	-	-	-	-	-		X	-	-	-
	J	60 MSEC	-	-	-	-	-	X		-	-	-
	G	180 MSEC	-	-	-	-	-	X	X	-	-	-

Note: **Refer to the following page for Notes and the explanation of symbols.**

FEATURE	OPTIONS		SWITCH SETTING
			S2 SWITCH CONTACT SETTING ON TRANSMITTER-RECEIVER (CP1) 1 2 3 4 5 6 7 8 9 0
CONTROL BY DATA AUX. SET 828 TYPE (See Note 1 Below)	* B	IN	- - - - - - - - - -
	A	OUT	- - - - - - - X - -
CLAMP	* F	IN	- - - - - - - - - -
	E	OUT	- X - - - - - - - -
			STRAPPING ON TRANSMITTER-RECEIVER (CP1)
CARRIER DETECTOR RESET	ZL	IN	INSTALL E21-E23
	* ZM	OUT	INSTALL E22-E23
CONTINUOUS CARRIER	ZN	IN	INSTALL E24-E25
	* ZO	OUT	INSTALL E25-E26
			STRAPPING ON REVERSE CHANNEL (CP2)
LOCAL COPY ON REVERSE CHANNEL (See Note 2 Below)	ZE	IN	INSTALL E21-E22
	* ZF	OUT	INSTALL E21-E23
			SCREW SWITCH SETTING ON INTERFACE CIRCUIT (CP3)
GROUNDING OPTION	* ZG	SIGNAL GROUND CONNECTED TO FRAME GROUND	S1 CLOSED
	ZH	SIGNAL GROUND NOT CONNECTED TO FRAME GROUND	S1 OPEN

▣ Contact closed.
⊡ Contact not applicable.
□ Contact open.

*Factory furnished.
**Factory furnished instead of 4-wire option when reverse channel board is installed.

Note 1: Install Option B only if 828 or 829 DAS is part of test setup; otherwise, install Option A. Output level of 202T is 0 dbm.

Note 2: If reverse channel is not required then CP2 is not present and neither ZE nor ZF would apply.

202T-L1A Data Set

TABLE I

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 E21-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 to 4-wire option when reverse channel CP is installed.

TABLE I (Cont)

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	
†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	
+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 J
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 J (Cont)

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.

5. ADJUSTMENTS

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

5.02 Monitor adjustments are give in Section 582-213-700.

5.03 The 80-column printer adjustments are given in Section 582-210-700.

5.04 The 132-column printer adjustments are given in Section 582-210-250.

6. TOOLS AND SUPPLIES

6.01 The following tools and supplies may be required for installation or servicing of 40/3-type 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 printers)		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 — Mobil No. 2 (4 oz tube)	145867
Grease — Beacon 325 (5 lb can)	195298
Oil — KS7470 (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)	