

BISP-TYPE STATION ARRANGEMENTS
UTILIZING "DATASPEED*" 40 TERMINALS

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1. GENERAL

INTRODUCTION

1.01 This practice contains information for BISP (Business Information System Programs) utilizing DATASPEED 40 Station Arrangements shown in Part 7. The contents of this practice covers only the station arrangements described in E.L. 2689 (GL: 74-03-06). However, if some equipment was used in earlier nonstandard locally engineered stations, this practice is applicable to that equipment only with the local engineering information.

1.02 This practice provides information to connect a DATASPEED 40/0 Parallel Terminal Interface (PTI) Keyboard Display (KD), described in Service Manual 325-059, to other equipment to make a station arrangement.

1.03 As indicated in the index, this practice provides information to identify terminals and other equipment used in various station arrangements. Also provided is information on installation, checkout operation, maintenance and, if required, correct operational troubles occurring during station operation.

1.04 The correction of troubles (see Part 4) is based on replacement of defective components, therefore, the components shown in this practice which are applicable to the set or station should be readily available to the craftsman. Part 4 provides information on when and how to utilize test routines and trouble indicators provided in the design of DATASPEED Station equipment.

1.05 Troubles isolated to the data set, telephone lines, or associated devices are not analyzed in this practice (nor are the replaceable components shown). For systems analysis routines, refer to appropriate BTL-BIS systems analysis procedure.

1.06 In order to facilitate correction of troubles on the initial visit of a trouble call, subscriber assistance should be sought in isolating the trouble. The most likely replacement components that may be required can then be determined before the craftsman is dispatched to the customer premises by the Test Center. A series of questions to ask a subscriber are provided in Part 4 for the Test Center to localize the trouble to a station terminal or other equipment.

1.07 Troubleshooting information for the DATASPEED 40 KD Terminal, using built-in diagnostic switches and tests, is provided in Service Manual 325-059.

1.08 The routine servicing specified for stations or sets with printers or for trouble call local operating tests should be performed at the customer's convenience.

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Warning: If station equipment must be taken out-of-service for routine servicing and operational testing, advise the Computer Center or Data Service Bureau. Do not attempt local testing until Data Service Bureau or Computer Center acknowledges request for local test. Upon completion of testing, notify Data Computer Center of return-to-service and ask for "start-up" message to verify the ability of the station to receive (and send, if applicable) before leaving the customer site.

1.09 TECHNICAL DATA

(1) Customer Power Source Requirements

115 V ac $\pm 10\%$ 60 Hz $\pm 0.75\%$ from an unswitched, standard 3-wire grounding type receptacle.

The equipment used in the station arrangements is not provided with an outlet-type convenience strip for interconnection of other power cords from adjacent station equipment. The exception is a KD terminal equipped with a pedestal that has a power convenience strip (seven ac receptacles, one not switched) which requires only one outlet receptacle. The strip can be used to connect six other device power cords but the total current load should not exceed 13 amperes.

(2) Equipment Power Cord Lengths

	<u>Approx</u>
KD Terminal	10 feet
2541 Buffer/Interface Set	11 feet
4210 Magnetic Tape Set	9 feet
Printer Cabinet	10 feet
2550 Cluster Controller	22 feet
Data Set 201C (KS14532 L-15)	5-1/2 feet

(3) Power Consumption, Heat Dissipation, and Current Draw

KD	260 Watts	885 BTU/Hr	2.7 Amps
2541 Buffer/Interface Set	NA	NA	NA
• 1 - CDIF814 With	29 Watts DC		
1 - CDBU806 and	NA		
1 - CDPS805	NA		
• 2 - CDIF814 and	58 Watts DC	NA	NA
2 - CDPS805	NA		
• 1 - CDIF810 With	NA	NA	NA
1 - CDBU806 and			
1 - CDPS805			

NA - Not Available

(3) Power Consumption, Heat Dissipation, and Current Draw (Cont)

4210 Magnetic Tape Set	230 Watts	780 BTU/Hr	2 Amps (run) 11 Amps (start)
2550 Cluster Controller	450 Watts	1536 BTU/Hr	3.9 Amps
Printer	150 Watts	513 BTU/Hr	1.3 Amps
Data Set 201C	15 Watts	51 BTU/Hr	0.13 Amps

(4) Environmental Restrictions (Operating)

Ambient Temperature	+40°F to +110°F
Relative Humidity	2% to 95% (noncondensing)

(5) Weight (approximate)

	<u>Unpacked</u>
Display Monitor W/Housing	42 lbs
Terminal Logic	50 lbs
Printer and Printer Logic	40 lbs
Housing for Terminal Logic or Printer	15 lbs
Operator Console W/Cover	5 lbs
Pedestal	56 lbs
Data Set	14 lbs
Data Aux Set	6 lbs
Test Set (TSG803)	16 lbs
2550 Cluster Controller	400 lbs
CDIF810 Interface Module	15 lbs
CDIF814 Module	15 lbs
CDBU806 Buffer Module	15 lbs
2541 Buffer/Interface Cabinet	NA
CDPS805 Power Supply	NA

NA — Not Available

TEST FACILITIES (TSG803 and Test Centers)

1.10 Test Centers are equipped to perform on-line checkout procedures and to isolate system troubles encountered by field service personnel. When test centers are equipped, their telephone numbers will be made available through established procedures (General Plant Letter).

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SUPPLEMENTARY INFORMATION

1.11 Supplementary information can be found in the following BSPs.

DATASPEED 40

Service Manual 325-057
Service Manual 325-059

TSG803 Parallel Signaling Terminal Simulator

Description and Operation 107-801-100
Parts 107-801-800

TP323540 Line Monitor Test Set

Description and Operation 107-802-100
Parts 107-802-800

2550 Cluster Controller

Description and Principles of Operation 578-150-100
Installation 578-150-200
Troubleshooting 578-150-300
Adjustments and Lubrication 578-150-700
Parts 578-150-800

Interface Modules

Modules and Power Supplies Parts 578-100-802

CDIF810 Interface Module

Description and Principles of Operation 578-110-102
Installation and Checkout 578-110-202
Checkout and Troubleshooting 578-110-302

CDIF814 Station Controller

Description and Principles of Operation 578-110-101
Installation 578-110-201
Troubleshooting 578-110-303

Buffer Storage Modules

Modules and Power Supply Parts 578-100-802

SUPPLEMENTARY INFORMATION (Cont)

CDBU806 Buffer Module

Description and Principles of Operation	578-141-104
Installation, Checkout, and Troubleshooting	578-141-204

2541 Buffer/Interface Set

Cabinet Description and Principles of Operation	578-140-101
Installation, Checkout and Troubleshooting	578-140-200
Set Removal and Replacement of Components	578-140-700
Cabinet Parts	578-140-800
2541 Set — Description and Operation	578-141-100
2541 Set — Installation	578-141-200

DATASPEED Magnetic Tape Set

General Description	582-900-100
Description and Principles of Operation	582-900-110
Installation	582-900-200
Checkout and Troubleshooting	582-900-300
Adjustments and Lubrication — Tape Transport	582-900-700
Adjustments — Cabinet	582-900-701
Removal and Replacement of Components	582-900-702
Disassembly and Reassembly	582-900-703
Parts	582-900-800
Field Installation and Maintenance Practice	579-504-350

Data Set 201B3 (Manufacture Discontinued)

Description and Operation	592-011-101
Supplementary Information	592-011-151
Theory of Operation and Supplementary Information	592-011-152
Installation and Connections	592-011-201
Maintenance	592-011-301
Test Procedures	592-011-501

Data Set 201C

Description and Operation	592-029-100
Installation and Connections	592-029-200
Maintenance	592-029-300
Test Procedures	592-029-500

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SUPPLEMENTARY INFORMATION (Cont)

Data Set 208A

Description and Operation	592-027-100
Installation and Connections	592-027-200
Maintenance	592-027-300
Test Procedures	592-027-500

TOOLS AND SUPPLIES

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

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

(1) 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
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
Keypress extractor		346257

(1) Tools (Cont)

Keypop extractor	346260
Gauge (Friction Feed Printer)	400610
Gauge (Tractor Feed Printer)	402617
Static Ground Strap	346392
Terminal extractor	(MOLEX HT2285)

(2) Supplies

Grease — KS-7471
Oil — KS-7470
Ribbon — 402444
Paper (friction feed) — standard 8-1/2" wide, 5" dia roll
Paper (tractor feed)
Degreaser (Trichlorotriflorethylene) — KS-20406 L1

NOTES

2. INSTALLATION

PREPARATION FOR INSTALLATION

2.01 Installation of DATASPEED 40 Sets consists of assembly and interconnection of components. Components that make up the station arrangements are shown in Part 7.

2.02 General unpacking information is given in 2.06. Detailed information for components are covered in BSPs referenced in 1.11.

2.03 Determine the location requirements of the various components. The 1000-foot cables shown in Fig. 29 and 30 must be ordered separately.

Caution: Prior to installation of cluster controller and associated equipment, it must be determined that the carrying capacity of the floor is adequate.

2.04 A set of wiring diagrams are packed with the DATASPEED Magnetic Tape Set, 2550 Cluster Controller and the 2541 Buffer/Interface Set. The DATASPEED 40 Sets are supplied with a Service Manual 325-059.

2.05 There should be adequate space behind and in front of each component unit for proper ventilation. There should be a 115 V ac polarized (3-wire) outlet within easy reach of each cabinet. The temperature of the room in which these units operate should be at least 40°F but no more than 110°F.

2.06 UNPACKING

(1) 2541 Buffer/Interface Set Unpacking

- (a) Place buffer unit in designated area in upright position.
- (b) Remove metal strap from bottom of shipping carton.
- (c) Remove outer shipping container and inside liner.
- (d) Carefully remove all packing details and tape from buffer unit.
- (e) Remove front and rear panels.
- (f) Remove inner packing detail and replace panels.

Note: Do not remove plywood found behind left and right side panels.

Caution: Do not lift the buffer unit by its cover.

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(1) 2541 Buffer/Interface Set Unpacking (Cont)

- (g) Remove four brackets that secure buffer unit to skid.
- (h) Remove buffer unit from skid.
- (i) Refer to Section 578-140-200 for additional assembly information.

(2) DATASPEED Magnetic Tape Set Unpacking

- (a) Remove identification tag from outside of carton.
- (b) Cut perimeter of carton about 1 inch from bottom and lift off the carton.
- (c) Remove wiring diagrams from cardboard folder on top of carton.
- (d) Remove packing materials from set and remove tissue from tape head (see Fig. 1).
- (e) Remove tape cartridge taped to the cartridge holder. Close tape transport cover.
- (f) Refer to Section 582-900-200 for additional assembly information.

LOCATION OF
TAPE HEAD

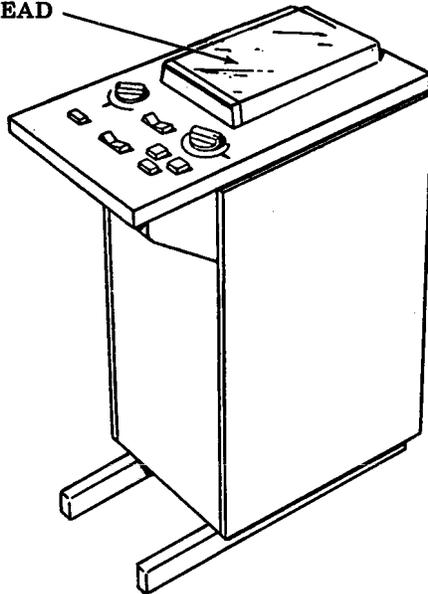


Fig. 1

(3) 2550 Cluster Controller Unpacking

- (a) Place cabinet as near as possible to designated installation area.
- (b) Uncrate cabinet in upright position (see Fig. 2).

Caution: Cabinet is not attached to skid.

- (c) Remove controller from skid and place in desired position.
- (d) Remove slide stop hardware from three slides (see Fig. 3).
- (e) Refer to Section 578-150-200 for additional assembly information.

(4) DATASPEED 40 Unpacking

Unpack all cartons per the unpacking instructions on the individual cartons. Assemble per Section 582-200-200.

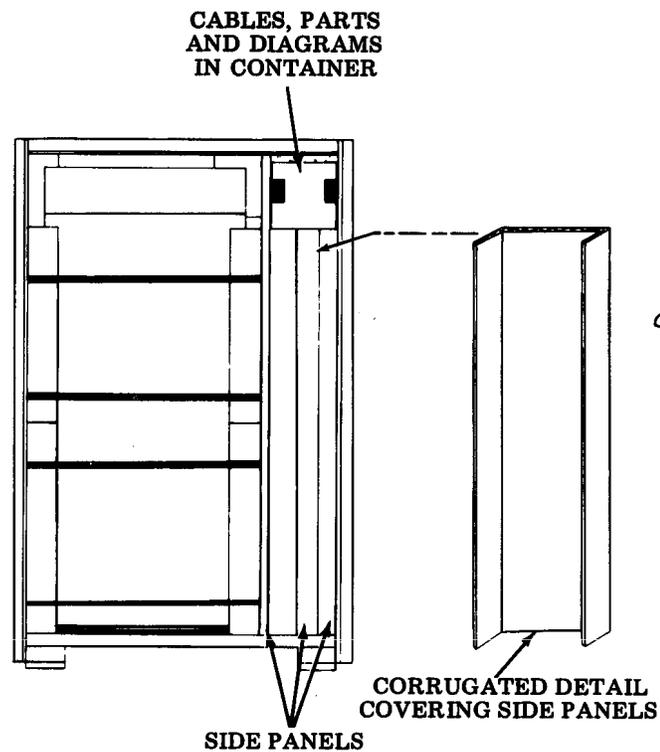


Fig. 2

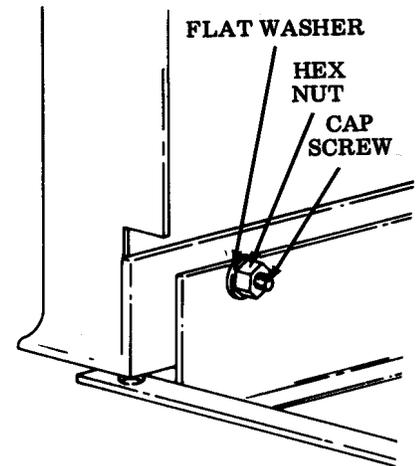


Fig. 3

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FIELD OPTIONS AND DESCRIPTIONS

2.07 The options described below are applicable field options for all components of BISP-Type Station Arrangements. The options are numbered and described briefly to facilitate choices available. The option titles are, wherever possible, the same as those found in the referenced BSPs. Options required for BISP are covered in Option Installation.

Note: Options marked with an asterisk (*) are programmed at the factory.

2.08 The options listed below may have been changed by the Service Center. The selected options should be entered on the Station Feature and Option Record on Pages 20 and 21.

Option Descriptions

2550 Cluster Controller
CDIF810 Interface Module
CDIF814 Station Controller
DATASPEED Magnetic Tape Set
DATASPEED 40

(1) 2550 Cluster Controller Option Description

- 1. Receiver Selectable (RS)
 - a. Forced
 - b. Not Forced*] Choose 1

RS is a signal that tells the 2550 if associated DATASPEED 40 is selectable as a receiver (ie, REC lit on KD). Related DATASPEED 40 options are 14 and 15. With Option 14.a., RS is under control of KD REC but not 2550 Option 1. With Option 14.b., KD can never receive. With Option 15.a. (and 14.a.), RS is also under control of 2550 Option 1. With Option 15.b., 2550 Option 1 has no effect.

- 2. Answer-Back (AB)
 - a. Controller Answers a "Selection With Reply"
 - b. Controller Does Not Answer a "Selection With Reply"*] Choose 1

The 2550 will (Option 2.a.), or will not (Option 2.b.), answer-back to "DLE EOT SID DC2 ENQ" for one of its SIDs (Station Identify Codes). Example: If RS is off, AB is (Option 2.a.) "SID NAK" or (Option 2.b.) none.

- 3. Substitute Character
 - a. Reverse Slash (\)*
 - b. Other Character (Specify) ____] Choose 1

Option 3 has no affect if Option 9.b. is used.

(1) 2550 Cluster Controller Option Description (Cont)

4. SID Character 1 — S1 Card

Character (Specify) _____

Character must be from column 4 or 5 of ASCII chart (see Fig. 4).
An example is shown in Option Installation.

Note: Character chosen for Option 4 must be the same as for
Options 15 and 17.

5. Receive Parity

- a. Odd* Choose 1
b. Even

Synchronous systems require Option 5.a.

6. Receive MCC (Message Check Character)

(This MCC is received by 2550 from computer.)

- a. Controller Receives MCC*
(System uses MCC. This is type B message transfer.)
b. Controller Ignores MCC
(System does not use MCC. This is type A message
transfer.) } Choose 1

Note: Type A message transfer procedure does not use MCC,
type B does use MCC. Type BA is type B transmission (from
computer), type A reception (at computer).

7. MSG W/O MCC (Message sent from 2550 is followed/not followed by MCC.)

- a. Controller Sends MCC*
b. Controller Does Not Send MCC Choose 1

If Option 6.a. is chosen, 7.a. should be chosen.

8. DEL MCC Error

- a. Controller Ignores MCC Error
b. Controller Responds to MCC Error* Choose 1

Choose Option 8.b. if 6.a. is chosen, choose Option 8.a. if 6.b. is chosen.

9. DEL Subs Character

- a. Substitute Character Used*
b. Substitute Character Not Used Choose 1

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(1) 2550 Cluster Controller Option Description (Cont)

10. NAK on Parity Error
- a. Controller Generates a NAK if it Received a Parity Error*
 - b. Controller Does Not Generate a NAK Due to Receiving a Parity Error
-] Choose 1

The NAK would be sent to computer. With Option 10.b., ACK is sent instead of NAK (type A reception).

11. MCC Transmit
- a. Controller Transmits MCC*
 - b. Controller Does Not Transmit MCC
-] Choose 1

Option 11.a. is used for systems requiring message transfer B, 11.b. is used for systems requiring message transfer A.

12. Xmit Parity OD-EV
- a. Controller Transmits Odd Parity*
 - b. Controller Transmits Even Parity
-] Choose 1

13. No Regen Xmit Dev Par (No regeneration of transmit device parity)
- a. Controller Regenerates Parity of Transmit Device*
 - b. Transmit Device Generates Its Own Parity
-] Choose 1

14. No Xmit Parity Ck (No transmit parity check)
- a. Controller Regenerates Device Transmit Data Parity*
 - b. Controller Acts on Vertical Parity Error
-] Choose 1

Option 14.b. causes blinding of 2550 transmit device send data code detection if 2550 detects a vertical parity error.

15. SID Character 1 — S2 Card
- Character (Specify) _____

Note: Character chosen for Option 15 must be the same as for Option 4.

16. SID Character 2 — S2 Card
- Character (Specify) _____

17. SID Character 1 — S3 Card
- Character (Specify) _____

Note: Character chosen for Option 17 must be the same as for Option 4.

(1) 2550 Cluster Controller Option Description (Cont)

- 18. SID 2 General Poll Character — S3 Card
 - a. Question Mark (?)*
 - b. Other Character (Specify) _____ Choose 1

- 19. CTS Fail (Clear to Send Fail)
 - a. CTS Alarm Enabled*
 - b. CTS Alarm Disabled Choose 1

Note: The alarm is visual.

- 20. DTR (Data Terminal Ready)
 - a. DTR Always On
 - b. DTR is a Function of DSR* Choose 1

Note: DSR is provided by data set.

- 21. CONT RTS (Continuous Request to Send)
 - a. CONT RTS Sent to Data Set Interface
 - b. CONT RTS Disabled* Choose 1

Note: Option 21.b. causes data set to turn carrier on only to reply or transmit.

- 22. CD Fail (Carrier Detect Fail)
 - a. CD Alarm Enabled*
 - b. CD Alarm Disabled Choose 1

Note: The alarm is visual.

- 23. SCTE (Serial Clock Transmit External)
 - a. SCTE (Data Rate Clock) Furnished to Data Set Interface
 - b. SCTE Disabled* Choose 1

Note: If data set is to have Internal Clock, select Option 23.b.

Options 24 through 29 are reserved for future use.

(2) CDIF814 Station Controller Option Description

- 30. Polling Option
 - a. Station Responds to a Specific Poll — DC1*
 - b. Station Responds to a General Poll — DC3 Choose 1

Note: If Option 30.b. is selected, Options 32.a. and 35.a. must be programmed for “?”.

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(2) CDIF814 Station Controller Option Description (Cont)

31. Receive SID 1 (Station Code)

Character (Specify) _____
(Character A)*

32. Receive SID 2 (Send/Receive Device Code)

- a. Character (Specify) _____
(Character A)*
 - b. SID 2 Not Used
- } Choose 1

Note: If Option 30.b. is chosen and Option 32.a. is selected, the character must be "?".

Note 1: If Options 32.a. and 33.a. are selected, different characters must be specified.

Note 2: If only CDIF814, CDBU806, and printer make up the station, then Option 32.b. must be selected.

Note 3: If Option 30.b. is chosen, Option 32.a. must be "?".

Note 4: If DATASPEED 40 KD is to be on-line, but not printer; choose Options 31, 32.a., and 33.b.

33. Receive SID 3

- a. Character (Specify) _____
(Character B)*
 - b. SID 3 Not Used
- } Choose 1

34. Transmit SID 1 (Must be the same as Option 31)

Character (Specify) _____
(Character A)*

35. Transmit SID 2 (Must be the same as Option 32)

- a. Character (Specify) _____
(Character A)*
 - b. SID 2 Not Used
- } Choose 1

Note: If Option 30.b. is chosen and Option 35.a. is selected, the character must be "?".

36. Transmit SID 3 (Must be the same as Option 33)

- a. Character (Specify) _____
(Character B)*
 - b. SID 3 Not Used
- } Choose 1

(2) CDIF814 Station Controller Option Description (Cont)

- 37. Force Receive
 - a. Terminal Can Be Forced Into REC Mode
 - b. Terminal Cannot Be Forced Into REC Mode* Choose 1

Note: Option 37.a. and DATASPEED 40 Option 15.a. (together) provide for incoming message override (force receive). Selection of Option 37.a. requires DATASPEED 40 Option 15.a.

- 38. Synchronous Transmit Parity (CDIF814 to computer)
 - a. Odd Parity* Choose 1
 - b. Even Parity
- 39. Vertical Parity Detect/Generate
 - a. Controller Detects Vertical Parity* Choose 1
 - b. Controller Generates Vertical Parity

Note: If Option 39.a. is chosen, Option 41.a. should be selected.

- 40. Vertical Parity Odd/Even
 - a. Controller Detects/Generates Odd Parity* Choose 1
 - b. Controller Detects/Generates Even Parity

- 41. Overwrite Character
 - a. Controller Sends Overwrite Character to Receiver Upon Detection of Parity Error
Overwrite Character (Specify) _____
(Character " ")* Choose 1
 - b. Controller Does Not Use Overwrite Character

Note: Specify Option 41.a. only if Option 39.a. is also chosen.

Options 42 through 49 are reserved for future use.

(3) DATASPEED Magnetic Tape Set Option Description

- 50. Search Character A Selection
 - a. Character (Specify) _____
Example: Character DEL* Choose 1
 - b. Character A Not Used
- 51. Search Character B Selection
 - a. Character (Specify) _____
Example: Character DEL* Choose 1
 - b. Character B Not Used

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(3) DATASPEED Magnetic Tape Set Option Description (Cont)

52. Search Character C Selection
- a. Character (Specify) _____
 - Example: Character DEL*
 - b. Character C Not Used
-] Choose 1

53. Action Upon Recognition of Character A
- a. Search Only (SO)
 - b. Send and Search (SS)
 - c. Character A Disabled*
-] Choose 1

54. Action Upon Recognition of Character B
- a. Search Only (SO)
 - b. Send and Search (SS)
 - c. Character B Disabled*
-] Choose 1

Note: Option 56.c. must be chosen if Option 54.a. or b. is used.

55. Action Upon Recognition of Character C
- a. Search Only (SO)
 - b. Control Code Delay (CCD)
 - c. Character C Disabled*
-] Choose 1

56. Action Upon Recognition of Parity Error
- a. Search Only (SO)
 - b. Send and Search (SS)
 - c. Parity Error Disabled*
-] Choose 1

Note: Option 54.c. must be specified if Option 56.a. or b. is chosen.

2.09 ACTIVATING OPTIONS

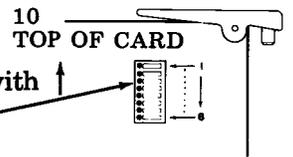
- (a) Turn off all power.
- (b) Locate circuit card that contains the option to be activated. A complete list of options available can be found on the Station Features and Options Record (following pages). The record does not list the requirements for operation which are given in this paragraph. The location of all circuit cards with options can be found in Part 7, Component Access.
- (c) Remove circuit card.
- (d) Refer below to locate proper option switch, strap, or screw and activate as required.
- (e) Return circuit card to its proper location.
- (f) After all options have been checked turn on power.
- (g) Perform a checkout of the station to verify proper operation of the option.

Example of Format:

OPTION NO.	OPTION DEFINITION	IDENTIFICATION OF SWITCH, STRAP (or screw) ON CIRCUIT CARD					INDICATES FACTORY PROGRAMMED OPTION
		1	2	3	4	5	
5.							
a.		●	-	-	-	-	*
b.		○	-	-	-	-	
c.		-	●	-	-	-	*
d.		-	○	-	-	-	
e.		-	-	○	-	-	*B
f.		-	-	●	-	-	

- Indicates strap or screw installed.
- Indicates strap cut (or screw removed).
- Strap (or screw) condition does not affect option.
- * Factory programmed.
- B Recommended for BISP.

INDICATES OPTION RECOMMENDED



Option switches on circuit cards are addressed with Number "1" switch being toward board top. Disregard any numbers on switch if not consistent with above instruction.

BISP-TYPE STATION ARRANGEMENTS FEATURES & OPTIONS RECORD	
STATION ARRANGEMENT NO. 1 <input type="checkbox"/>	
2 <input type="checkbox"/>	
3 <input type="checkbox"/>	
4 <input type="checkbox"/>	
5 <input type="checkbox"/>	
<input checked="" type="checkbox"/> Check as Installed * (Asterisk) Indicates Factory Programming	Page 1 of 2
"DATASPEED" 40 CONTROLLER (PTI) -- FULL EDIT	
5 (a) Reject NULL * <input type="checkbox"/> 5 (c) Reject CR * <input type="checkbox"/> 5 (e) Reject DELETE * <input type="checkbox"/> 6 (a) Esc. Displayed/No Functions <input type="checkbox"/> 7 (a) Vert. Par. Err. Char. Not Displayed <input type="checkbox"/> 8 (a) End Page on FF <input type="checkbox"/> 8 (c) End Page on ETX * <input type="checkbox"/> 8 (e) End Page on EOT * <input type="checkbox"/> 8 (g) End Page on GS * <input type="checkbox"/> 9 (a) High Light Not Sent <input type="checkbox"/> 10 (a) Send CR LF <input type="checkbox"/> 10 (c) Send LF <input type="checkbox"/> 11 (a) Go Local after Send * <input type="checkbox"/> 11 (c) External Mode <input type="checkbox"/> 12 (a) No Form Enter in Local <input type="checkbox"/> 13 (a) Send All (P and Unp.) as Displayed <input type="checkbox"/> 13 (c) Send Protect as SPACE <input type="checkbox"/> 13 (e) Send Protect as DELETE <input type="checkbox"/> 13 (g) Send Unp. and HT at End of Field <input type="checkbox"/> 14 (a) Rec. Select On * <input type="checkbox"/> 15 (a) Override goes to Rec. <input type="checkbox"/> 16 (a) Rec. after TDA * <input type="checkbox"/> 16 (c) Home after TDA <input type="checkbox"/> 27 (a) Home Cursor on Transmit <input type="checkbox"/>	5 (b) Accept NULL <input type="checkbox"/> 5 (d) Accept CR <input type="checkbox"/> 5 (f) Accept DELETE <input type="checkbox"/> 6 (b) Esc. Not Displayed/Function Enabled * <input type="checkbox"/> 7 (b) Vert. Par. Err. Char. Displayed * <input type="checkbox"/> 8 (b) Do Not End Page on FF * <input type="checkbox"/> 8 (d) Do Not End Page on ETX <input type="checkbox"/> 8 (f) Do Not End Page on EOT <input type="checkbox"/> 8 (h) Do Not End Page on GS <input type="checkbox"/> 9 (b) High Light Sent * <input type="checkbox"/> 10 (b) Send CR CR LF * <input type="checkbox"/> 11 (b) Go Receive after Send <input type="checkbox"/> 12 (b) Form Enter Enabled in Local * <input type="checkbox"/> 13 (b) Send All/HT Convert to SPACE * <input type="checkbox"/> 13 (d) Send Protect & HT as SPACE <input type="checkbox"/> 13 (f) Send Unprotect (Unp.) Only <input type="checkbox"/> 13 (h) Send Unp. and HT as SPACE <input type="checkbox"/> 14 (b) Rec. Select Off <input type="checkbox"/> 15 (b) Stays in Send or Loc * <input type="checkbox"/> 16 (b) Loc after TDA <input type="checkbox"/> 16 (d) Stays at Mess. end * <input type="checkbox"/> 27 (b) Send from Cursor Position <input type="checkbox"/>
"DATASPEED" 40 PRINTER	
17 (a) 1st Char. -- 1st Position * <input type="checkbox"/> 17 (c) Last Char. -- 80th Position * <input type="checkbox"/> 17 (e) 11 Inch Form Length <input type="checkbox"/> 18 (a) No Paper Feed Out <input type="checkbox"/> 18 (c) Paper FO on RM Loss and ETX * <input type="checkbox"/> 19 (a) Symbol on Even V.P. Error * <input type="checkbox"/> 19 (c) No Symbol on V.P. Error <input type="checkbox"/> 19 (e) 64 Character Set <input type="checkbox"/> 20 (a) Single LF * <input type="checkbox"/> 21 (a) Lower and Upper Case Print (U.L.) * <input type="checkbox"/> 22 (a) Lower Case Print as Error Symbol (Mono) <input type="checkbox"/> 23 (a) Prints Extended ASCII Characters <input type="checkbox"/>	17 (b) 1st Char. -- 2nd thru 12th Position <input type="checkbox"/> 17 (d) Last Char. -- 73rd thru 79th Position <input type="checkbox"/> 17 (f) 2-1/2 to 22 Inch Form Length <input type="checkbox"/> 18 (b) Paper FO of 16 Lines on RM Loss <input type="checkbox"/> 19 (b) Symbol on Odd V.P. Error <input type="checkbox"/> 19 (d) 96 Character Set <input type="checkbox"/> 19 (f) Printers Using Ext. ASCII Char. Set <input type="checkbox"/> 20 (b) Double LF <input type="checkbox"/> 21 (b) Lower Case Printed as Upper Case (U.L.) <input type="checkbox"/> 22 (b) Lower Case Printed as Upper Case (Mono) * <input type="checkbox"/> 23 (b) Ext. ASCII Char. Not Printed (See 19 a, b, or c.) <input type="checkbox"/>
"DATASPEED" 40 SET VARIATIONS	
Monocase <input type="checkbox"/> Upper-Lower Case <input type="checkbox"/> 24 Line Display <input type="checkbox"/> 48 Line Display <input type="checkbox"/> 72 Line Display <input type="checkbox"/>	Pedestal <input type="checkbox"/> Paper Winder <input type="checkbox"/> Copy Holder <input type="checkbox"/>

BISP-TYPE STATION ARRANGEMENTS FEATURES & OPTIONS RECORD	
STATION ARRANGEMENT NO. 1	
<input checked="" type="checkbox"/> Check as Installed	2 <input type="checkbox"/>
	3 <input type="checkbox"/>
	4 <input type="checkbox"/>
	5 <input type="checkbox"/>
Page 1 of 2	
"DATASPEED" 40 CONTROLLER (PTI) - FULL EDIT	
5 (a) Reject NULL * <input type="checkbox"/> 5 (c) Reject CR * <input type="checkbox"/> 5 (e) Reject DELETE * <input type="checkbox"/> 6 (a) Esc. Displayed/No Functions <input type="checkbox"/> 7 (a) Vert. Par. Err. Char. Not Displayed <input type="checkbox"/> 8 (a) End Page on FF <input type="checkbox"/> 8 (c) End Page on ETX * <input type="checkbox"/> 8 (e) End Page on EOT * <input type="checkbox"/> 8 (g) End Page on GS * <input type="checkbox"/> 9 (a) High Light Not Sent <input type="checkbox"/> 10 (a) Send CR LF <input type="checkbox"/> 10 (c) Send LF <input type="checkbox"/> 11 (a) Go Local after Send * <input type="checkbox"/> 11 (c) External Mode <input type="checkbox"/> 12 (a) No Form Enter in Local <input type="checkbox"/> 13 (a) Send All (P and Unp.) as Displayed <input type="checkbox"/> 13 (c) Send Protect as SPACE <input type="checkbox"/> 13 (e) Send Protect as DELETE <input type="checkbox"/> 13 (g) Send Unp. and HT at End of Field <input type="checkbox"/> 14 (a) Rec. Select On * <input type="checkbox"/> 15 (a) Override goes to Rec. <input type="checkbox"/> 16 (a) Rec. after TDA * <input type="checkbox"/> 16 (c) Home after TDA <input type="checkbox"/> 27 (a) Home Cursor on Transmit <input type="checkbox"/>	5 (b) Accept NULL <input type="checkbox"/> 5 (d) Accept CR <input type="checkbox"/> 5 (f) Accept DELETE <input type="checkbox"/> 6 (b) Esc. Not Displayed/Function Enabled * <input type="checkbox"/> 7 (b) Vert. Par. Err. Char. Displayed * <input type="checkbox"/> 8 (b) Do Not End Page on FF * <input type="checkbox"/> 8 (d) Do Not End Page on ETX <input type="checkbox"/> 8 (f) Do Not End Page on EOT <input type="checkbox"/> 8 (h) Do Not End Page on GS <input type="checkbox"/> 9 (b) High Light Sent * <input type="checkbox"/> 10 (b) Send CR CR LF * <input type="checkbox"/> 11 (b) Go Receive after Send <input type="checkbox"/> 12 (b) Form Enter Enabled in Local * <input type="checkbox"/> 13 (b) Send All/HT Convert to SPACE * <input type="checkbox"/> 13 (d) Send Protect & HT as SPACE <input type="checkbox"/> 13 (f) Send Unprotect (Unp.) Only <input type="checkbox"/> 13 (h) Send Unp. and HT as SPACE <input type="checkbox"/> 14 (b) Rec. Select Off <input type="checkbox"/> 15 (b) Stays in Send or Loc * <input type="checkbox"/> 16 (b) Loc after TDA <input type="checkbox"/> 16 (d) Stays at Mess. end * <input type="checkbox"/> 27 (b) Send from Cursor Position <input type="checkbox"/>
"DATASPEED" 40 PRINTER	
17 (a) 1st Char. - 1st Position * <input type="checkbox"/> 17 (c) Last Char. - 80th Position * <input type="checkbox"/> 17 (e) 11 Inch Form Length <input type="checkbox"/> 18 (a) No Paper Feed Out <input type="checkbox"/> 18 (c) Paper FO on RM Loss and ETX * <input type="checkbox"/> 19 (a) Symbol on Even V.P. Error * <input type="checkbox"/> 19 (c) No Symbol on V.P. Error <input type="checkbox"/> 19 (e) 64 Character Set <input type="checkbox"/> 20 (a) Single LF * <input type="checkbox"/> 21 (a) Lower and Upper Case Print (U.L.) * <input type="checkbox"/> 22 (a) Lower Case Print as Error Symbol (Mono) <input type="checkbox"/> 23 (a) Prints Extended ASCII Characters <input type="checkbox"/>	17 (b) 1st Char. - 2nd thru 12th Position <input type="checkbox"/> 17 (d) Last Char. - 73rd thru 79th Position <input type="checkbox"/> 17 (f) 2-1/2 to 22 Inch Form Length <input type="checkbox"/> 18 (b) Paper FO of 16 Lines on RM Loss <input type="checkbox"/> 19 (b) Symbol on Odd V.P. Error <input type="checkbox"/> 19 (d) 96 Character Set <input type="checkbox"/> 19 (f) Printers Using Ext. ASCII Char. Set <input type="checkbox"/> 20 (b) Double LF <input type="checkbox"/> 21 (b) Lower Case Printed as Upper Case (U.L.) <input type="checkbox"/> 22 (b) Lower Case Printed as Upper Case (Mono) * <input type="checkbox"/> 23 (b) Ext. ASCII Char. Not Printed (See 19 a, b, or c.) <input type="checkbox"/>
"DATASPEED" 40 SET VARIATIONS	
Monocase <input type="checkbox"/> Upper-Lower Case <input type="checkbox"/> 24 Line Display <input type="checkbox"/> 48 Line Display <input type="checkbox"/> 72 Line Display <input type="checkbox"/>	Pedestal <input type="checkbox"/> Paper Winder <input type="checkbox"/> Copy Holder <input type="checkbox"/>

BISP-TYPE STATION ARRANGEMENTS FEATURES & OPTIONS RECORD	
STATION ARRANGEMENT NO. 1 <input type="checkbox"/>	
2 <input type="checkbox"/>	
3 <input type="checkbox"/>	
4 <input type="checkbox"/>	
5 <input type="checkbox"/>	
<input checked="" type="checkbox"/> Check as Installed	Page 2 of 2
* (Asterisk) Indicates Factory Programming	
2550 CLUSTER CONTROLLER	
1 (a) Receiver Selectable Forced <input type="checkbox"/> 2 (a) Controller Answers Back * <input type="checkbox"/> 3 (a) " " Substitute Character * <input type="checkbox"/> 4 SID Char 1-S1 Card (Specify) _____ <input type="checkbox"/> 5 (a) Odd Receive Parity * <input type="checkbox"/> 6 (a) Controller Receives MCC * <input type="checkbox"/> 7 (a) Controller Sends MCC * <input type="checkbox"/> 8 (a) Controller Ignores MCC Error * <input type="checkbox"/> 9 (a) Substitute Character Used * <input type="checkbox"/> 10 (a) Controller NAKs On Parity Error * <input type="checkbox"/> 11 (a) Controller Transmits MCC * <input type="checkbox"/> 12 (a) Controller Transmits Odd Parity * <input type="checkbox"/> 13 (a) Controller Regenerates Parity * <input type="checkbox"/> 14 (a) Controller Regenerates Parity * <input type="checkbox"/> 15 SID Char 1-S2 Card (Specify) _____ <input type="checkbox"/> 16 SID Char 2-S2 Card (Specify) _____ <input type="checkbox"/> 17 SID Char 1-S3 Card (Specify) _____ <input type="checkbox"/> 18 (a) SID Char 2-S3 Card "7" * <input type="checkbox"/> 19 (a) CTS Alarm Enabled * <input type="checkbox"/> 20 (a) DTR Always On <input type="checkbox"/> 21 (a) CONT RTS Sent <input type="checkbox"/> 22 (a) CD Fail Alarm Enabled <input type="checkbox"/> 23 (a) SCTE Enabled <input type="checkbox"/>	1 (b) Receiver Selectable Not Forced * <input type="checkbox"/> 2 (b) Controller Does Not Answer Back * <input type="checkbox"/> 3 (b) Other Sub. Char (Specify) _____ <input type="checkbox"/> 5 (b) Even Receive Parity <input type="checkbox"/> 6 (b) Controller Ignores MCC <input type="checkbox"/> 7 (b) Controller Does Not Send MCC <input type="checkbox"/> 8 (b) Controller Responds to MCC Error * <input type="checkbox"/> 9 (b) Substitute Character Not Used <input type="checkbox"/> 10 (b) Controller Doesn't NAK on Parity Error <input type="checkbox"/> 11 (b) Controller Doesn't Transmit MCC <input type="checkbox"/> 12 (b) Controller Transmits Even Parity <input type="checkbox"/> 13 (b) Transmitter Generates Parity <input type="checkbox"/> 14 (b) Controller Acts on Parity Error <input type="checkbox"/> 18 (b) SID Char 2-S3 Card Other (Specify) _____ <input type="checkbox"/> 19 (b) CTS Alarm Disabled <input type="checkbox"/> 20 (b) DTR is a Function of DSR * <input type="checkbox"/> 21 (b) CONT RTS Not Sent * <input type="checkbox"/> 22 (b) CD Fail Alarm Disabled <input type="checkbox"/> 23 (b) SCTE Disabled * <input type="checkbox"/>
CDF814 INTERFACE MODULE (Space provided for 2 options of module.)	
30 (a) Responds to Specific Poll (DC1) * <input type="checkbox"/> 31 Receive SID 1 (Specify) _____ <input type="checkbox"/> 32 (a) Receive SID 2 (Specify) _____ <input type="checkbox"/> 33 (a) Receive SID 3 (Specify) _____ <input type="checkbox"/> 34 Transmit SID 1 (Specify) _____ <input type="checkbox"/> 35 (a) Transmit SID 2 (Specify) _____ <input type="checkbox"/> 36 (a) Transmit SID 3 (Specify) _____ <input type="checkbox"/> 37 (a) Terminal Forced Into REC Mode <input type="checkbox"/> 38 (a) Controller Transmits Odd Parity * <input type="checkbox"/> 39 (a) Controller Detects Vertical Parity * <input type="checkbox"/> 40 (a) Controller Det/Gen Odd Parity * <input type="checkbox"/> 41 (a) Controller Sends Overwrite Char <input type="checkbox"/> Overwrite Char (Specify) _____ <input type="checkbox"/>	30 (b) Responds to a General Poll (DC3) <input type="checkbox"/> 32 (b) SID 2 Not Used <input type="checkbox"/> 33 (b) SID 3 Not Used <input type="checkbox"/> 35 (b) SID 2 Not Used <input type="checkbox"/> 36 (b) SID 3 Not Used <input type="checkbox"/> 37 (b) Terminal Not Forced Into REC Mode * <input type="checkbox"/> 38 (b) Controller Transmits Even Parity <input type="checkbox"/> 39 (b) Controller Generates Vertical Parity <input type="checkbox"/> 40 (b) Controller Det/Gen Even Parity <input type="checkbox"/> 41 (b) Controller Does Not Use Overwrite Character <input type="checkbox"/>
"DATASPEED" MAGNETIC TAPE	
50 (a) Search Char A (Specify) _____ <input type="checkbox"/> 51 (a) Search Char B (Specify) _____ <input type="checkbox"/> 52 (a) Search Char C (Specify) _____ <input type="checkbox"/> 53 (a) Char A - Search Only <input type="checkbox"/> 54 (a) Char B - Search Only <input type="checkbox"/> 55 (a) Char C - Search Only <input type="checkbox"/> 56 (a) Parity Error - Search Only <input type="checkbox"/>	50 (b) Char A Not Used <input type="checkbox"/> 51 (b) Char B Not Used <input type="checkbox"/> 52 (b) Char C Not Used <input type="checkbox"/> 53 (b) Char A - Send and Search <input type="checkbox"/> 53 (c) Char A Disabled * <input type="checkbox"/> 54 (b) Char B - Send and Search <input type="checkbox"/> 54 (c) Char B Disabled * <input type="checkbox"/> 55 (b) Char C - Control Code Delay <input type="checkbox"/> 55 (c) Char C Disabled <input type="checkbox"/> 56 (b) Parity Error - Search and Send <input type="checkbox"/> 56 (c) Parity Error Disabled * <input type="checkbox"/>
CDBU806 BUFFER	
2K Memory 4K Memory 6K Memory	Options: None

BISP-TYPE STATION ARRANGEMENTS FEATURES & OPTIONS RECORD	
STATION ARRANGEMENT NO. 1 <input type="checkbox"/>	
	2 <input type="checkbox"/>
	3 <input type="checkbox"/>
	4 <input type="checkbox"/>
	5 <input type="checkbox"/>
<input checked="" type="checkbox"/> Check as Installed * (Asterisk) Indicates Factory Programming	
Page 2 of 2	
2550 CLUSTER CONTROLLER	
1 (a) Receiver Selectable Forced * <input type="checkbox"/> 2 (a) Controller Answers Back * <input type="checkbox"/> 3 (a) " " Substitute Character * <input type="checkbox"/> 4 SID Char 1-S1 Card (Specify) ___ <input type="checkbox"/> 5 (a) Odd Receive Parity * <input type="checkbox"/> 6 (a) Controller Receives MCC * <input type="checkbox"/> 7 (a) Controller Sends MCC * <input type="checkbox"/> 8 (a) Controller Ignores MCC Error <input type="checkbox"/> 9 (a) Substitute Character Used * <input type="checkbox"/> 10 (a) Controller NAKs On Parity Error * <input type="checkbox"/> 11 (a) Controller Transmits MCC * <input type="checkbox"/> 12 (a) Controller Transmits Odd Parity * <input type="checkbox"/> 13 (a) Controller Regenerates Parity * <input type="checkbox"/> 14 (a) Controller Regenerates Parity * <input type="checkbox"/> 15 SID Char 1-S2 Card (Specify) ___ <input type="checkbox"/> 16 SID Char 2-S2 Card (Specify) ___ <input type="checkbox"/> 17 SID Char 1-S3 Card (Specify) ___ <input type="checkbox"/> 18 (a) SID Char 2-S3 Card "?" * <input type="checkbox"/> 19 (a) CTS Alarm Enabled * <input type="checkbox"/> 20 (a) DTR Always On <input type="checkbox"/> 21 (a) CONT RTS Sent <input type="checkbox"/> 22 (a) CD Fail Alarm Enabled <input type="checkbox"/> 23 (a) SCTE Enabled <input type="checkbox"/>	1 (b) Receiver Selectable Not Forced * <input type="checkbox"/> 2 (b) Controller Does Not Answer Back <input type="checkbox"/> 3 (b) Other Sub. Char (Specify) ___ <input type="checkbox"/> 5 (b) Even Receive Parity <input type="checkbox"/> 6 (b) Controller Ignores MCC <input type="checkbox"/> 7 (b) Controller Does Not Send MCC <input type="checkbox"/> 8 (b) Controller Responds to MCC Error * <input type="checkbox"/> 9 (b) Substitute Character Not Used <input type="checkbox"/> 10 (b) Controller Doesn't NAK on Parity Error <input type="checkbox"/> 11 (b) Controller Doesn't Transmit MCC <input type="checkbox"/> 12 (b) Controller Transmits Even Parity <input type="checkbox"/> 13 (b) Transmitter Generates Parity <input type="checkbox"/> 14 (b) Controller Acts on Parity Error <input type="checkbox"/> 18 (b) SID Char 2-S3 Card Other (Specify) ___ <input type="checkbox"/> 19 (b) CTS Alarm Disabled <input type="checkbox"/> 20 (b) DTR is a Function of DSR * <input type="checkbox"/> 21 (b) CONT RTS Not Sent * <input type="checkbox"/> 22 (b) CD Fail Alarm Disabled <input type="checkbox"/> 23 (b) SCTE Disabled * <input type="checkbox"/>
CDIF814 INTERFACE MODULE (Space provided for 2 options of module.)	
30 (a) Responds to Specific Poll (DC1) * <input type="checkbox"/> 31 Receive SID 1 (Specify) ___ <input type="checkbox"/> 32 (a) Receive SID 2 (Specify) ___ <input type="checkbox"/> 33 (a) Receive SID 3 (Specify) ___ <input type="checkbox"/> 34 Transmit SID 1 (Specify) ___ <input type="checkbox"/> 35 (a) Transmit SID 2 (Specify) ___ <input type="checkbox"/> 36 (a) Transmit SID 3 (Specify) ___ <input type="checkbox"/> 37 (a) Terminal Forced Into REC Mode <input type="checkbox"/> 38 (a) Controller Transmits Odd Parity * <input type="checkbox"/> 39 (a) Controller Detects Vertical Parity * <input type="checkbox"/> 40 (a) Controller Det/Gen Odd Parity * <input type="checkbox"/> 41 (a) Controller Sends Overwrite Char <input type="checkbox"/> Overwrite Char (Specify) ___ <input type="checkbox"/>	30 (b) Responds to a General Poll (DC3) <input type="checkbox"/> 32 (b) SID 2 Not Used <input type="checkbox"/> 33 (b) SID 3 Not Used <input type="checkbox"/> 35 (b) SID 2 Not Used <input type="checkbox"/> 36 (b) SID 3 Not Used <input type="checkbox"/> 37 (b) Terminal Not Forced Into REC Mode * <input type="checkbox"/> 38 (b) Controller Transmits Even Parity <input type="checkbox"/> 39 (b) Controller Generates Vertical Parity <input type="checkbox"/> 40 (b) Controller Det/Gen Even Parity <input type="checkbox"/> 41 (b) Controller Does Not Use Overwrite Character <input type="checkbox"/>
"DATASPEED" MAGNETIC TAPE	
50 (a) Search Char A (Specify) SOH <input type="checkbox"/> 51 (a) Search Char B (Specify) ETX <input type="checkbox"/> 52 (a) Search Char C (Specify) STX <input type="checkbox"/> 53 (a) Char A - Search Only <input type="checkbox"/> 54 (a) Char B - Search Only <input type="checkbox"/> 55 (a) Char C - Search Only <input type="checkbox"/> 56 (a) Parity Error - Search Only <input type="checkbox"/>	50 (b) Char A Not Used <input type="checkbox"/> 51 (b) Char B Not Used <input type="checkbox"/> 52 (b) Char C Not Used <input type="checkbox"/> 53 (b) Char A - Send and Search <input type="checkbox"/> 53 (c) Char A Disabled * <input type="checkbox"/> 54 (b) Char B - Send and Search <input type="checkbox"/> 54 (c) Char B Disabled * <input type="checkbox"/> 55 (b) Char C - Control Code Delay <input type="checkbox"/> 55 (c) Char C Disabled <input type="checkbox"/> 56 (b) Parity Error - Search and Send <input type="checkbox"/> 56 (c) Parity Error Disabled * <input type="checkbox"/>
CDBU806 BUFFER	
2K Memory 4K Memory 6K Memory	
Options: None	

NOTES

2.09 ACTIVATING OPTIONS (Cont)

This paragraph includes installation of screws and straps that are requirements for proper operation.

Option (and/or Requirement) Installation

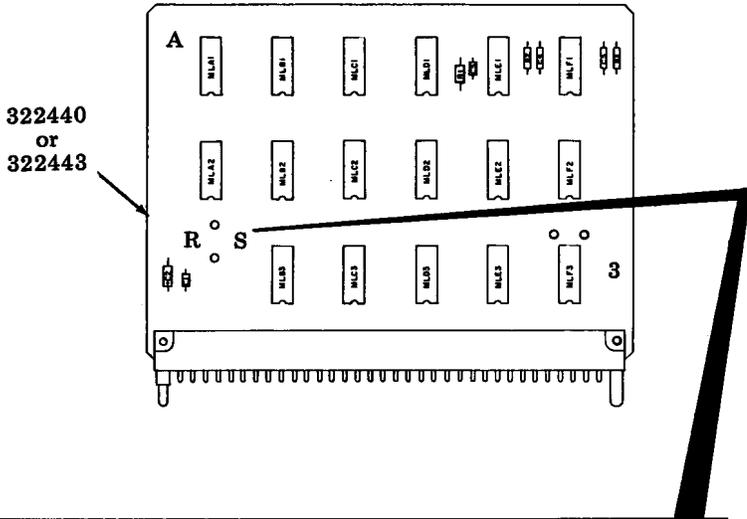
2550 Cluster Controller	Page 24
CDIF814 Station Controller	Page 35
DATASPEED Magnetic Tape Set	Reference given on Page 45.
DATASPEED 40	Reference given on Page 45.
CDIF810 Interface Module	Page 45
CDBU806 Buffer Module	Page 47

Note: Data Set 201C and 201B options are covered in 2.13.

SECTION 579-505-352

(1) 2550 Cluster Controller Option Installation

(a) L Circuit Card Options (L cards are located on I/O rack 1 or 2.)



1.	Receiver Selectable	RS Strap
a.	Forced	●
b.	Not Forced	○

*, B

Legend applies to the options:

● Strap installed or screw installed.

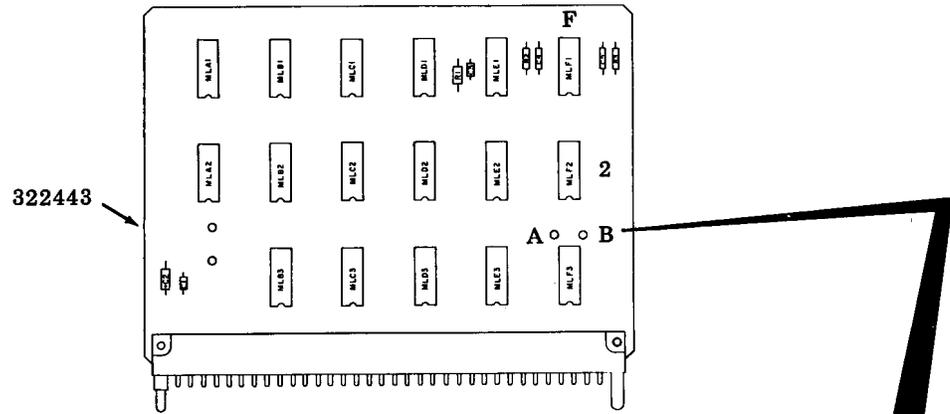
○ Strap cut or not present, or screw removed (can install on back of card).

* Factory programmed.

B Recommended for BISP.

(1) 2550 Cluster Controller Option Installation (Cont)

(a) L Circuit Card Options (Cont)

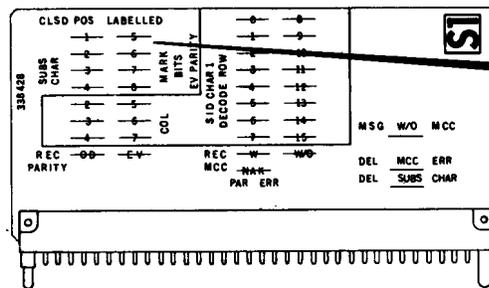


2.	Answer-Back	AB Strap	
a.	Controller Answers "Selection With Replies"		● B
b.	Controller Does Not Answer "Selection With Replies"		○ *

Note 1: 322440 which is manufacture discontinued is only available with Option 2.b.

Note 2: Every L card must be optioned.

(b) S1 Circuit Card Options (S1 card is in center logic rack, logic panel LB, position Z1.)



Note: Closed strap is Mark, open (or cut) strap is Space. Code for even parity. Option 3 has no affect if Option 9.b. is used.

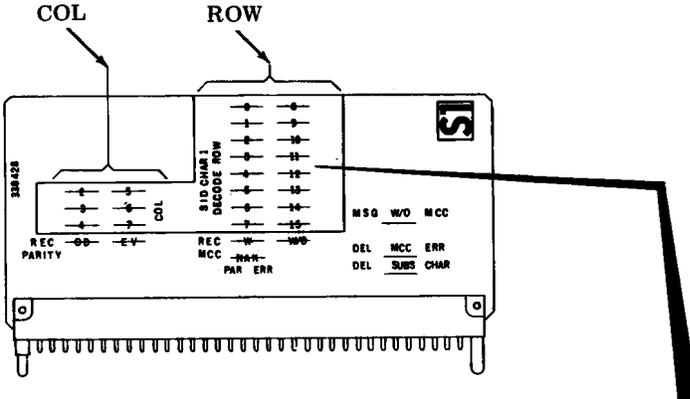
3.	Substitute Character	Straps							
a.	Reverse Slash (\)	○	○	●	●	●	○	●	○
b.	Other Character (Specify) _____								

* , B Depends on character, see Fig. 5.

SECTION 579-505-352

(1) 2550 Cluster Controller Option Installation (Cont)

(b) S1 Circuit Card Options (Cont)



4. SID Character 1 — S1 Card	Straps Within Block in Middle of Card																
Character <u> </u> Which is Col <u> </u> , Row <u> </u> (Specify from column 4 or 5 of ASCII chart, Fig. 4.)	Col	2	3	4	5	6	7										
	Row	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Example: Character A
Which is Col 4, Row 1

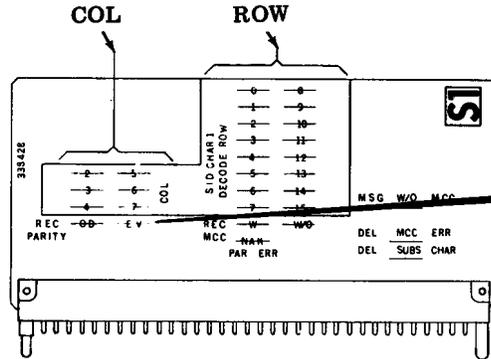


Note 1: Cut all column and row straps except the one column and the one row selected.

Note 2: Character chosen for Option 4 must be the same as for Options 15 and 17.

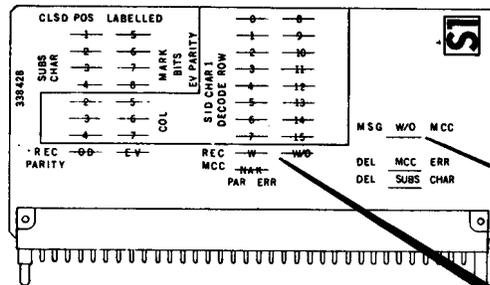
(1) 2550 Cluster Controller Option Installation (Cont)

(b) S1 Circuit Card Options (Cont)



Note: Synchronous systems require Option 5.a.

		Straps		
		OD	EV	
5.	Receive Parity			
a.	Odd	●	○	*, B
b.	Even	○	●	



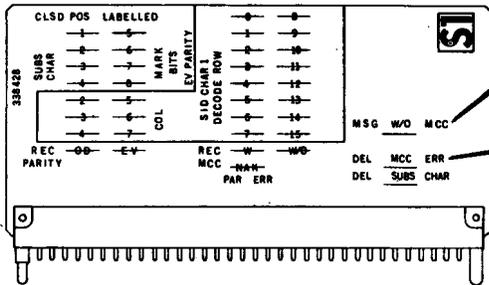
		Straps		
		W	W/O	
6.	Receive MCC			
a.	Controller Receives MCC (With MCC)	●	○	*, B
b.	Controller Ignores MCC (Without MCC)	○	●	
7.	MSG W/O MCC			
a.	Controller Sends MCC	○		*, B
b.	Controller Does Not Send MCC	●		

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(1) 2550 Cluster Controller Option Installation (Cont)

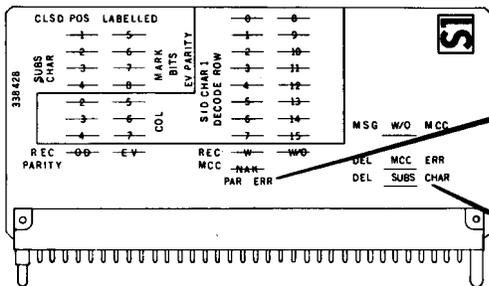
(b) S1 Circuit Card Option (Cont)

Note: The OMIT ETX BLIND strap must always be cut for proper system operation. Strap is not labeled, it is below "MSG W/O MCC" strap.



8.	DEL MCC Error	Strap
a.	Controller Ignores MCC Error (Option 6.a. must also be chosen.)	●
b.	Controller Responds to MCC Error (Option 6.a. must be chosen.)	○

*, B



9.	DEL Subs Character	Strap
a.	Substitute Character Used	○
b.	Substitute Character Not Used	●

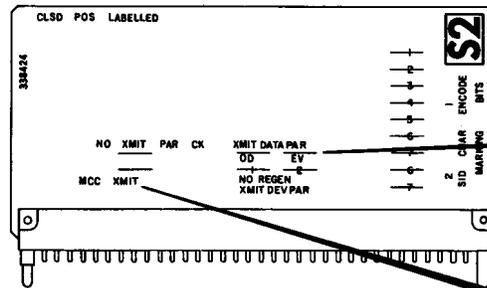
*, B

10.	NAK on Parity Error	Strap
a.	Send NAK Due to Receiving a Parity Error	●
b.	Do Not Send NAK Due to Receiving a Parity Error	○

*, B

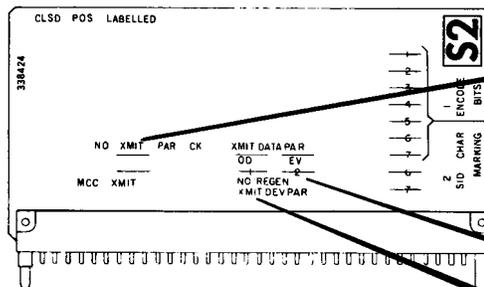
(1) 2550 Cluster Controller Option Installation (Cont)

(c) S2 Circuit Card Options (S2 card is in center logic rack, logic panel LC, position Z1.)



11.	MCC Transmit	Strap	
a.	Controller Sends MCC	●	* , B
b.	Controller Does Not Send MCC	○	

12.	Xmit Parity OD-EV	Straps		* , B
		OD	EV	
		a. Controller Transmits Odd Parity	●	
b. Controller Transmits Even Parity	○	●		



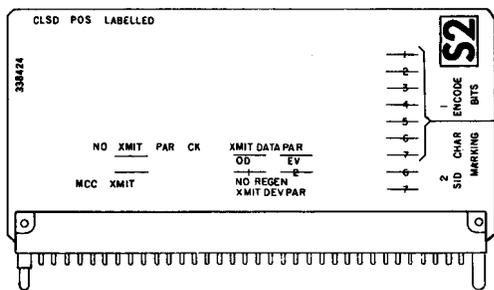
13.	No Regen Xmit Dev Par	Straps		* , B
		1	2	
		a. Controller Regenerates Parity of Transmit Device	○	
b. Transmit Device Generates Its Own Parity	●	●		

14.	No Xmit Parity Ck	Strap	
a.	Controller Regenerates Device Transmit Data Parity	●	* , B
b.	Controller Acts on Vertical Parity Error	○	

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(1) 2550 Cluster Controller Option Installation (Cont)

(c) S2 Circuit Card Options (Cont)



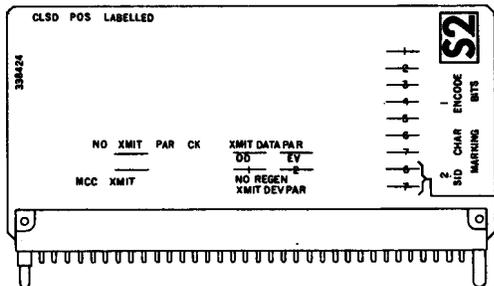
Note: Straps 1 through 7 are factory installed.

15. SID Character 1 — S2 Card Character (Specify) ____ (See Fig. 5.)	Straps						
	1	2	3	4	5	6	7

Example: Character A
Closed strap is Mark, open strap is Space.



Note: Character chosen for Option 15 must be the same as for Option 4 (must be even parity).



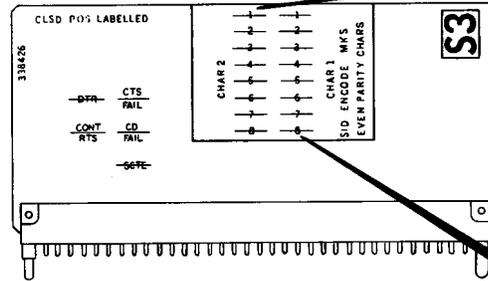
16. SID Character 2 — S2 Card Character (Specify) ____ (See Fig. 5.)	Straps	
	6	7

A sequence of two strapping points is shown in a row. The first is an open circle (○) and the second is a closed circle (●). An asterisk (*) is placed to the right of the sequence.

Note: Straps 6 and 7 must reflect levels 6 and 7 of specific station characters (must be even parity).

(1) 2550 Cluster Controller Option Installation (Cont)

(d) S3 Circuit Card Options (S3 card is in center rack, logic panel LA, position Z1.)



17. SID Character 1 — S3 Card	Straps							
	1	2	3	4	5	6	7	8
Character (Specify) _____ (See Fig. 5.)								

Example: Character A . *

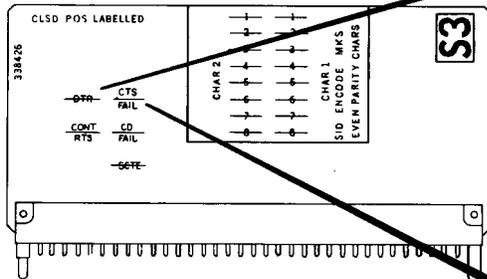
Note: Character chosen for Option 17 must be the same as for Option 4.

18. SID 2 General Poll Character — S3 Card	Straps							
	1	2	3	4	5	6	7	8
a. Question Mark (?)	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>					
b. Other Character (Specify) (See Fig. 5.)								

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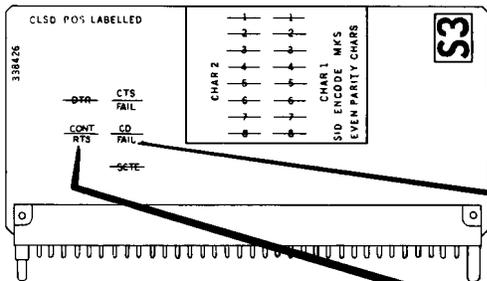
(1) 2550 Cluster Controller Option Installation (Cont)

(d) S3 Circuit Card Options (Cont)



19.	CTS Fail (Clear to Send Fail)	Strap
a.	CTS Alarm Enabled	<input type="radio"/> *
b.	CTS Alarm Disabled	<input checked="" type="radio"/> B

20.	DTR (Data Terminal Ready)	Strap
a.	DTR Always On	<input type="radio"/> *
b.	DTR is a Function of DSR	<input checked="" type="radio"/> B

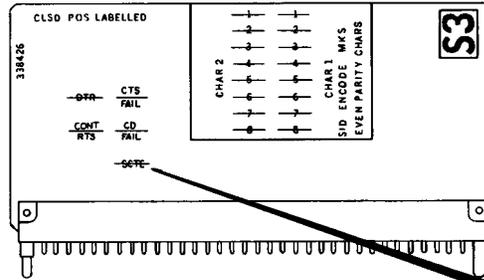


21.	CONT RTS (Continuous Request to Send)	Strap
a.	CONT RTS Enabled	<input checked="" type="radio"/> *
b.	CONT RTS Disabled	<input type="radio"/> B

22.	CD Fail (Carrier Detect Fail)	Strap
a.	CD Alarm Enabled	<input type="radio"/> *
b.	CD Alarm Disabled	<input checked="" type="radio"/> B

(1) 2550 Cluster Controller Option Installation (Cont)

(d) S3 Circuit Card Options (Cont)



23.	SCTE (Serial Clock Transmit External)	Strap
a.	SCTE Enabled	●
b.	SCTE Disabled	○

*, B

Note: There are only three circuit cards (S1, S2, and S3) in the center rack with options.

Options 24 through 29 are reserved for future use.

Bits					COLUMN										
					0 0	0 0 1	0 1 0	0 1 1	1 0 0	1 0 1	1 1 0	1 1 1			
b7	b6	b5	b4	b3	b2	b1	ROW	0	1	2	3	4	5	6	7
0	0	0	0	0	0	0	0	NUL	DLE	SP	0	•	P	^	p
0	0	0	0	1	1	1	0	SOH	DC1	!	1	A	Q	a	q
0	0	0	1	0	2	2	0	STX	DC2	"	2	B	R	b	r
0	0	1	1	3	3	3	0	ETX	DC3	#	3	C	S	c	s
0	1	0	0	4	4	4	0	EOT	DC4	\$	4	D	T	d	t
0	1	0	1	5	5	5	0	ENQ	NAK	%	5	E	U	e	u
0	1	1	0	6	6	6	0	ACK	SYN	&	6	F	V	f	v
0	1	1	1	7	7	7	0	BEL	ETB	^	7	G	W	g	w
1	0	0	0	8	8	8	0	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	9	9	0	HT	EM	)	9	I	Y	i	y
1	0	1	0	10	10	10	0	LF	SUB	*	:	J	Z	j	z
1	0	1	1	11	11	11	0	VT	ESC	+	;	K	[	k	{
1	1	0	0	12	12	12	0	FF	FS	,	<	L	\	l	|
1	1	0	1	13	13	13	0	CR	GS	-	=	M	]	m	}
1	1	1	0	14	14	14	0	SO	RS	.	>	N	^	n	~
1	1	1	1	15	15	15	0	SI	US	/	?	O	_	o	DEL

Fig. 4—American National Standard Code for Information Interchange (ASCII x 3.4 - 1968)

USA STANDARD PERFORATED TAPE CODE FOR INFORMATION INTERCHANGE

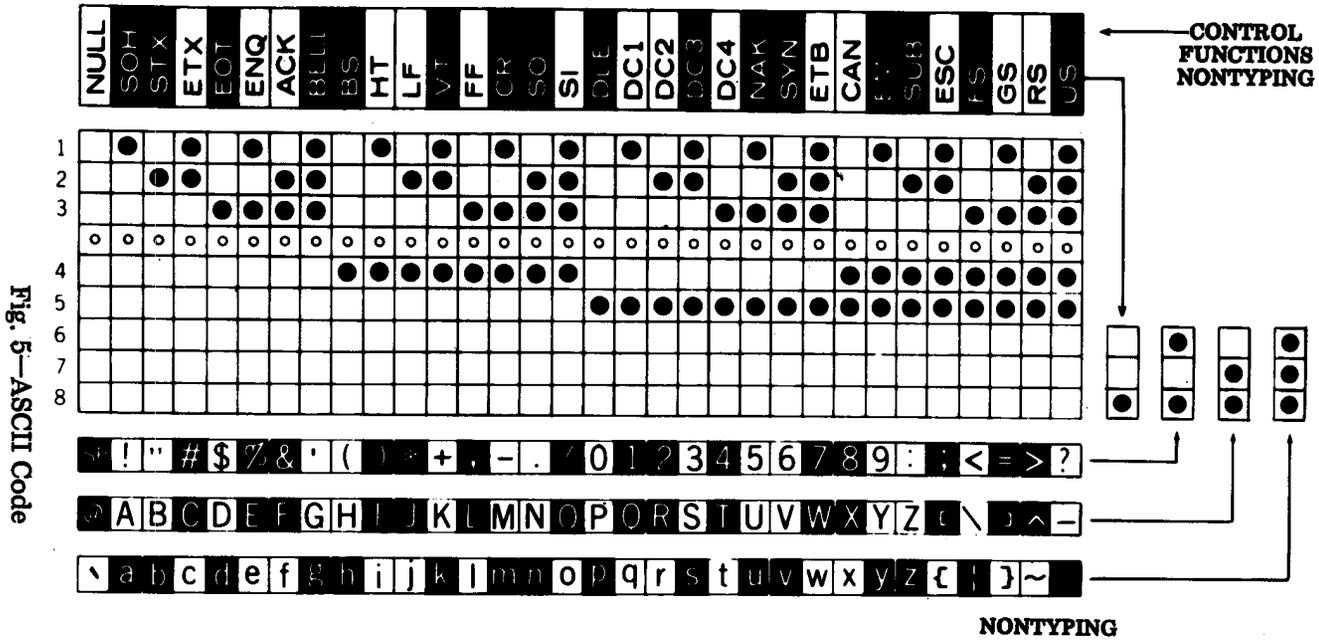


Fig. 5—ASCII Code

●Mark To obtain even parity, the characters and functions shown with shaded backgrounds have 8th bit marking.

Upon receiving code combinations for \ through ~, monospace equipment displays respective characters @ through ^.

(2) CDIF814 Station Controller Option Installation

Refer to Fig. 6 to verify card location. Example: 322572 is shown as MC572 and is in location XZ112.

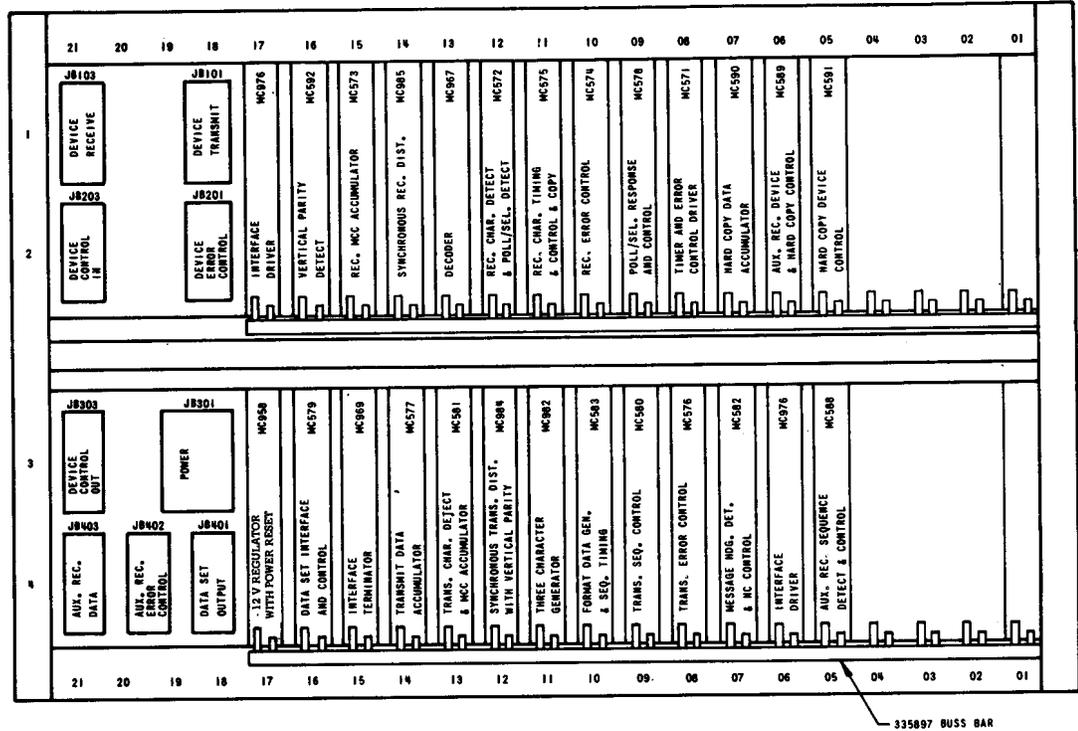
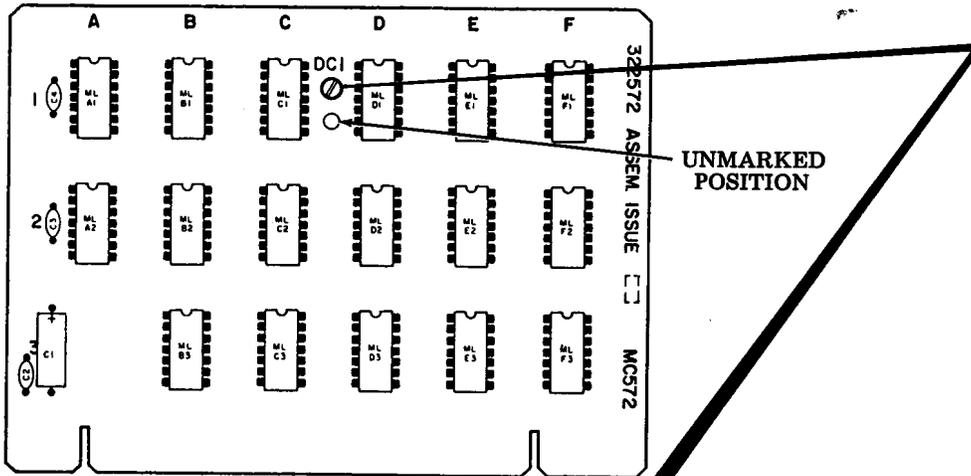


Fig. 6—CDIF814 Interface Module Card Location (Viewed From Wired Side)

(2) CDIF814 Station Controller Option Installation (Cont)

(a) 322572 Circuit Card Options (Card is in position XZ112.)



30.	Polling Option	Screws		
		DC1	Unmarked	
a.	Station Responds to Specific Poll (DC1)	●	○	*, B
b.	Station Responds to General Poll (DC3)	○	●	

Note: If Option 30.b. is selected, Options 32.a. and 35.a. must be used and must be coded for "?".

(b) CDIF814 Interface Module Wiring Options

31. Receive SID 1	147307 Straps
Character (Specify) ___ Which is Col __, Row __	Col: XZ112/12 to XZ113/___ (See Note below.) Row: XZ112/11 to XZ113/___ (See Table A.)

Example: Character A
Which is Col 3, Row 1

Col: to XZ113/ <u>12</u> Row: to XZ113/ <u>17</u>
--

*

Note: "XZ112" is card connector in position 112, "/12" is pin 12.

(2) CDIF814 Station Controller Option Installation (Cont)

(b) CDIF814 Interface Module Wiring Options (Cont)

32.	Receive SID 2	147307 Straps
a.	Character (Specify) __ Which is Col __, Row __	Col: XZ112/7 to XZ113/____ Row: XZ112/13 to XZ113/____ (See Table A.)
	Example: Character <u>A</u> Which is Col <u>3</u> , Row <u>1</u>	Col: to XZ113/ <u>12</u> Row: to XZ113/ <u>17</u>
b.	SID 2 Not Used	Insure no strap connected to XZ112/7 or XZ112/13 (or other end removed and taped).

*

Note 1: If Options 32.a. and 33.a. are selected, different characters must be specified.

Note 2: If only CDIF814, CDBU806, and printer make up the station then Option 32.b. must be selected.

Note 3: If Option 30.b. is chosen, Option 32.a. must be “?”.

Note 4: If DATASPEED 40 KD is to be on-line, but not printer; choose Options 31, 32.a., and 33.b.

33.	Receive SID 3	343650 Straps
a.	Character (Specify) __ Which is Col __, Row __	Col: XZ305/2 to XZ113/____ Row: XZ305/1 to XZ113/____ (See Table A.)
	Example: Character <u>B</u> Which is Col <u>3</u> , Row <u>2</u>	Col: to XZ113/ <u>12</u> Row: to XZ113/ <u>18</u>
b.	SID 3 Not Used	Insure no strap connected to XZ305/2 or XZ305/1 (or other end removed and taped).

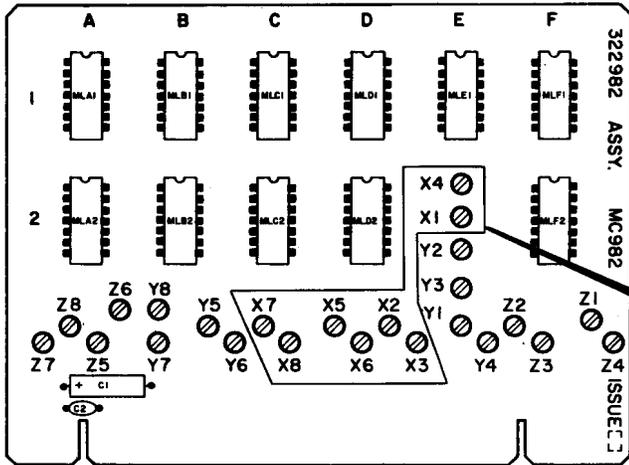
*

Note: Options 31 and 33.a. must be chosen if station is made up of only CDIF814, CDBU806, and printer.

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(2) CDIF814 Station Controller Option Installation (Cont)

(c) 322982 Circuit Card Options (Card is in position XZ311.)



34. Transmit SID 1 Character (Specify) _____ (Character must be same as Option 31.)	Screws							
	X1	X2	X3	X4	X5	X6	X7	X8

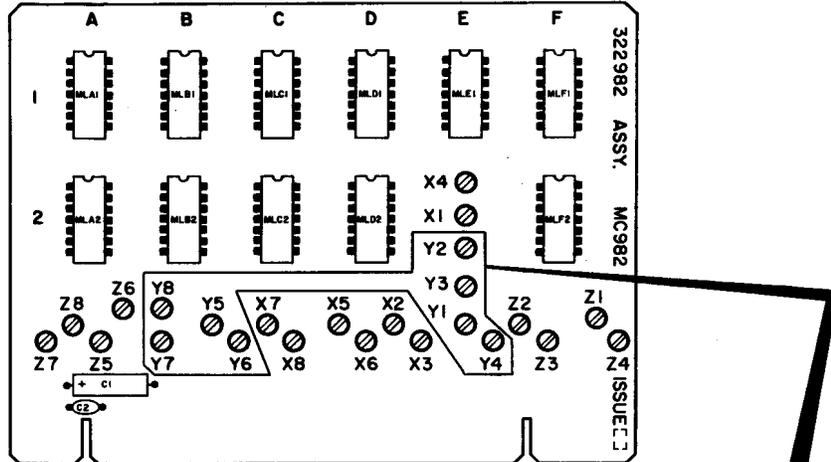
Example: Character A



Note: Code for odd parity must be coded for same character.

(2) CDIF814 Station Controller Option Installation (Cont)

(c) 322982 Circuit Card Options (Cont)



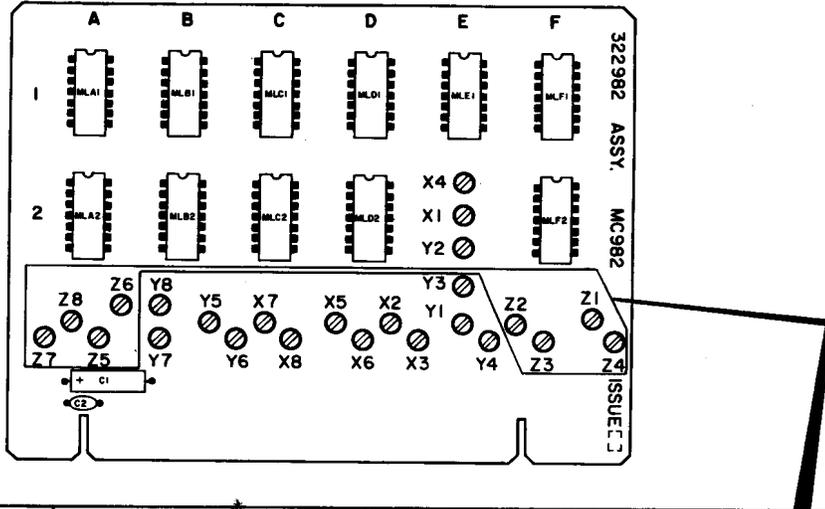
		Screws							
35.	Transmit SID 2	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8
a.	Character (Specify) _____ (Character must be same as Option 32.a.)								
b.	SID 2 Not Used (Use only with Option 32.b.)	○	○	○	○	○	○	○	○

Example: Character A



(2) CDIF814 Station Controller Option Installation (Cont)

(c) 322982 Circuit Card Options (Cont)



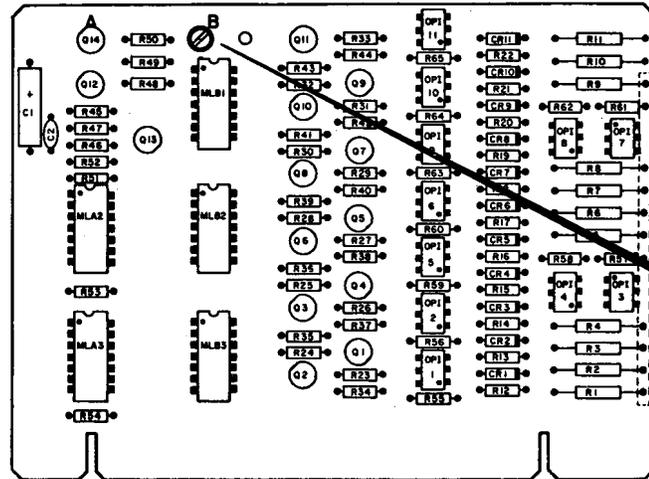
		Screws							
		Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
36.	Transmit SID 3								
a.	Character (Specify) _____ (Character must be same as Option 33.a.)								
b.	SID 3 Not Used (Use only with Option 33.b.)	○	○	○	○	○	○	○	○

Example: Character B



(2) CDIF814 Station Controller Option Installation (Cont)

(d) 322969 Circuit Card Requirement (Card is in position XZ315.)

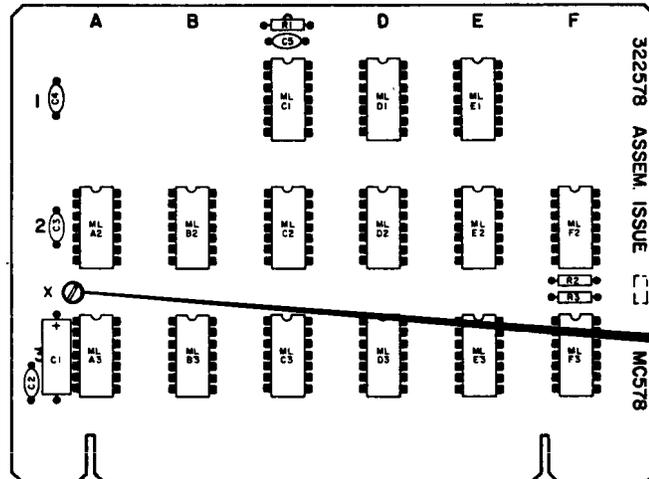


Note: "A" is not labeled.

Requirement for PTI Terminator Send Terminal	Screws	
	A	B

* , B

(e) 322578 Circuit Card Options (Card is in position XZ109.)



37.	Force Receive	Screw X
a.	Terminal Can Be Forced Into REC Mode	●
b.	Terminal Cannot Be Forced Into REC Mode	○

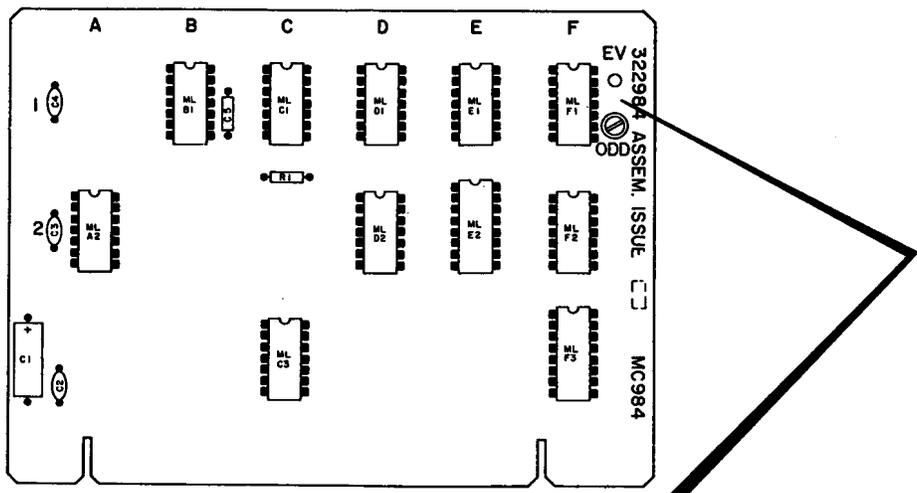
* , B

Note: Selection of Option 37.a. requires DATASPEED 40 Option 15.a.

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(2) CDIF814 Station Controller Option Installation (Cont)

(f) 322984 Circuit Card Options (Card is in position XZ312.)

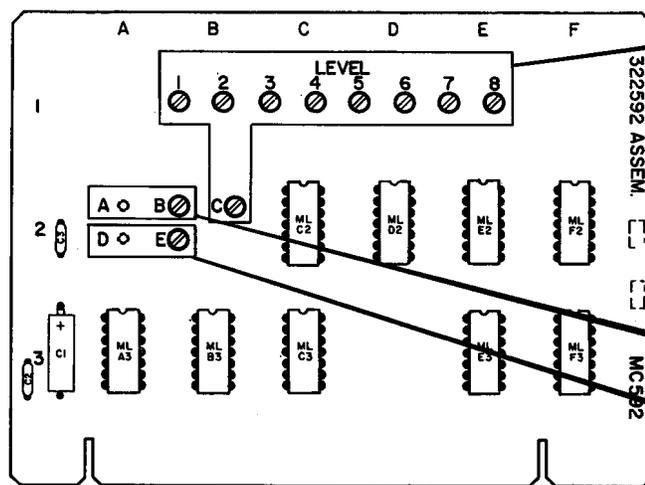


		Screws	
		EV	ODD
38.	Synchronous Transmit Parity		
a.	Odd Parity	○	●
b.	Even Parity	●	○

*, B

(2) CDIF814 Station Controller Option Installation (Cont)

(g) 322592 Circuit Card Options (Card is in position XZ116.)



39. Vertical Parity Detect/Generate	Screws	
	A	B
a. Controller Detects Vertical Parity (Option 41.a. must also be selected.)	<input type="radio"/>	<input checked="" type="radio"/>
b. Controller Generates Vertical Parity	<input checked="" type="radio"/>	<input type="radio"/>

*, B

40. Vertical Parity Odd/Even	Screws	
	D	E
a. Controller Detects/Generates Odd Parity	<input type="radio"/>	<input checked="" type="radio"/>
b. Controller Detects/Generates Even Parity	<input checked="" type="radio"/>	<input type="radio"/>

*, B

41. Overwrite Character	Screws								
	C	1	2	3	4	5	6	7	8
a. Controller Sends Overwrite Character to Receiver Upon Detection of Parity Error Character (Specify) _____ Example: " <u> </u> " (underline)	<input checked="" type="radio"/>	<input type="radio"/>							
b. Overwrite Character Not Used by Controller	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*, B

Note: Overwrite character must be odd parity if Option 40.a. is selected. If Option 40.b. is selected, character must be even parity. When Option 41.b. is selected, screws 1 through 8 can be in or out (they have no affect). Options 42 through 49 are reserved for future use.

— Screw has no affect on option.

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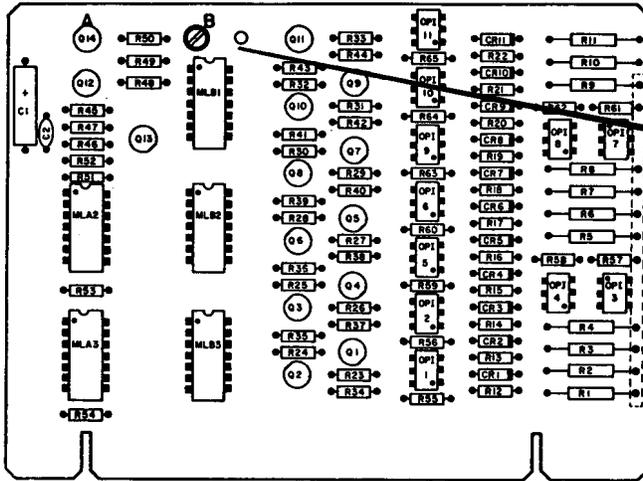
(2) CDIF814 Station Controller Option Installation (Cont)

TABLE A

ROW ↓ \ COLUMN →	1 XZBI13/10	2 XZBI13/11	3 XZBI13/12	4 XZBI13/13	5 XZBI13/14	6 XZBI13/15
0 XZBI13/16	SP	0	ⓐ	P	\	p
1 XZBI13/17	!	1	A	Q	a	q
2 XZBI13/18	"	2	B	R	b	r
3 XZBI13/19	#	3	C	S	c	s
4 XZBI13/20	\$	4	D	T	d	t
5 XZBI13/21	%	5	E	U	e	u
6 XZBI13/22	&	6	F	V	f	v
7 XZBI13/23	'	7	G	W	g	w
8 XZBI13/24	(	8	H	X	h	x
9 XZBI13/25	)	9	I	Y	i	y
10 XZBI13/26	*	:	J	Z	j	z
11 XZBI13/27	+	;	K	[	k	{
12 XZBI13/28	,	<	L	\	l	!
13 XZBI13/29	-	=	M	]	m	}
14 XZBI13/30	.	>	N	^	n	~
15 XZBI13/31	/	?	O	_	o	DEL

(5) CDIF810 Interface Module Requirement Installation (Cont)

(a) 322969 Circuit Card Requirement For Position XZ116



Note: "A" is not labeled.

Requirement for Use With DATASPEED Magnetic Tape Set	Screws	
	A	B
Send Terminal	●	○

*, B

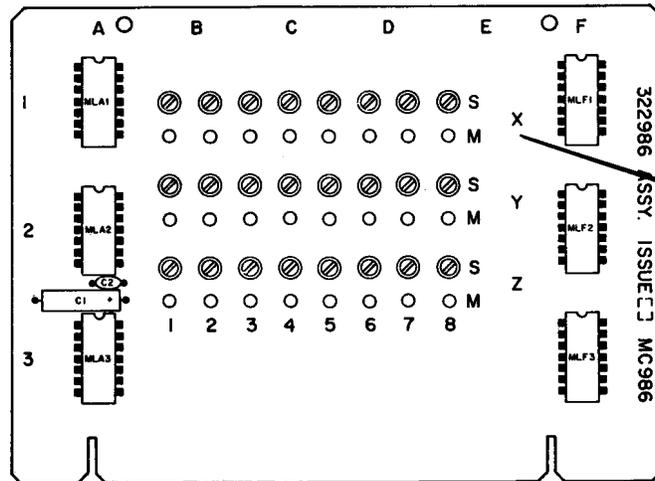
(b) 322969 Circuit Card Requirement For Position XZ117

Requirement for Use With 2550 Cluster Controller	Screws	
	A	B
Receive Terminal	○	●

*, B

(5) CDIF810 Interface Module Requirement Installation (Cont)

(c) 322986 Circuit Card Requirement (Card is in position XZ114.)



		Screws								
		1	2	3	4	5	6	7	8	
Character X										
Coded for ETX	S	○	○	●	●	●	●	●	●	*, B
	M	●	●	○	○	○	○	○	○	

		Screws								
		1	2	3	4	5	6	7	8	
Character Y										
Not Coded	S	○	○	○	○	○	○	○	○	*, B
	M	○	○	○	○	○	○	○	○	

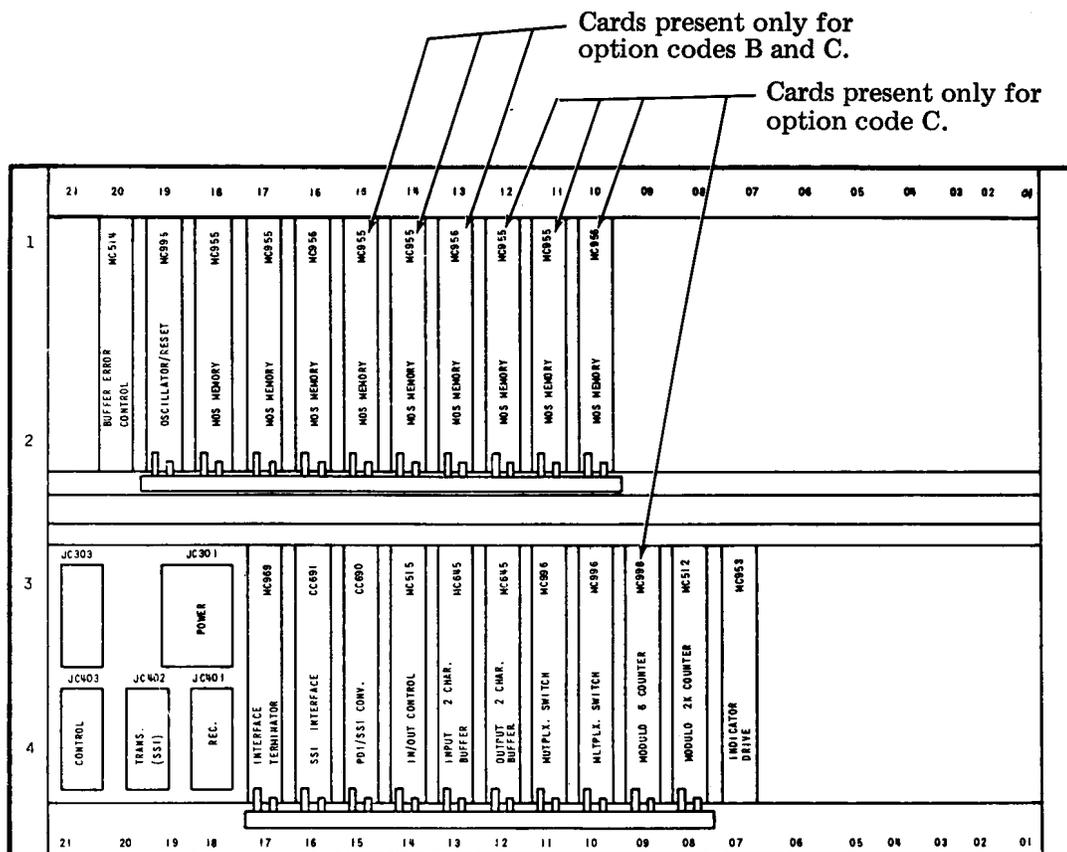
		Screws								
		1	2	3	4	5	6	7	8	
Character Z										
Not Coded	S	○	○	○	○	○	○	○	○	*, B
	M	○	○	○	○	○	○	○	○	

(6) CDBU806 Buffer Module Requirement Installation

Fig. 8 shows card locations in the buffer module. Table B lists the part number and description of each card.

The buffer module is factory coded for specific options; refer to identification plate on the module for code letters after CDBU806. Table C contains factory unit codes with their associated option codes, and identification of the option codes. Table D contains wiring for the option codes, and Table E contains the required circuit cards for each coded unit.

(6) CDBU806 Buffer Module Requirement Installation (Cont)



Note: See Table C for option codes.

Fig. 8—CDBU806 Buffer Module Card Location (Viewed From Wired Side)

(6) CDBU806 Buffer Module Requirement Installation (Cont)

TABLE B

CIRCUIT CARDS FOR CDBU806 BUFFER MODULE

TP PART NO.	DESCRIPTION
322512	MC512 2K Counters and Read/Write Controls
322514	MC514 Buffer Error Control
322515	MC515 In/Out Controls
322633	(See 322955 entry below.)
322634	(See 322956 entry below.)
322645	MC645 Two Character Buffer
322953	MC953 Control Indicators Drive
322955*	MC955 Three and Two Level MOS Memory
322956**	MC956 Three and Two Level MOS Memory
322969	MC969 Parallel Terminal Interface Terminator
322995	MC995 Oscillator and Reset
322996	MC996 Multiplex Switch
322998	MC998 Modulo 6 Counters and Decoders
410690	CC690 PDI/SSI Converter
410691	CC691 SSI Interface

*Either 322955 or 322633 can be used.

**Either 322956 or 322634 can be used.

Note: Complete list of cards required is given in Table E.

TABLE C

OPTION INDEX AND IDENTIFICATION

FACTORY UNIT CODE	OPTION CODE	OPTION IDENTIFICATION
CDBU806/EA (This code not released.)	A	2000 Character Storage
CDBU806/EB	B*	4000 Character Storage
CDBU806/EC	C	6000 Character Storage

*Recommended for BISP.

(6) CDBU806 Buffer Module Requirement Installation (Cont)

TABLE D

REQUIRED WIRING FOR OPTION CODES

INSTALL 147307 STRAP BETWEEN	OPTION A (ONLY) AND	OPTION B* (ONLY) AND	OPTION C (ONLY) AND
XZC118-29 XZC118-30 XZC118-31 XZC117-29	XZC118-3 XZC118-4 XZC118-5 XZC117-3	XZC118-7 XZC118-8 XZC118-9 XZC117-7	XZC118-7 XZC118-8 XZC118-9 XZC117-7
XZC117-30 XZC117-31 XZC116-29 XZC116-30	XZC117-4 XZC117-5 XZC116-3 XZC116-4	XZC117-8 XZC117-9 XZC116-7 XZC116-8	XZC117-8 XZC117-9 XZC116-7 XZC116-8
XZC115-29 XZC115-30 XZC115-31 XZC114-29	XZC115-15 XZC115-16 XZC115-17 XZC114-15	XZC115-3 XZC115-4 XZC115-5 XZC114-3	XZC115-7 XZC115-8 XZC115-9 XZC114-7
XZC114-30 XZC114-31 XZC113-29 XZC113-30	XZC114-16 XZC114-17 XZC113-15 XZC113-16	XZC114-4 XZC114-5 XZC113-3 XZC113-4	XZC114-8 XZC114-9 XZC113-7 XZC113-8
XZC112-29 XZC112-30 XZC112-31 XZC111-29	XZC112-15 XZC112-16 XZC112-17 XZC111-15	XZC112-15 XZC112-16 XZC112-17 XZC111-15	XZC112-3 XZC112-4 XZC112-5 XZC111-3
XZC111-30 XZC111-31 XZC110-29 XZC110-30	XZC111-16 XZC111-17 XZC110-15 XZC110-16	XZC111-16 XZC111-17 XZC110-15 XZC110-16	XZC111-4 XZC111-5 XZC110-3 XZC110-4

*Recommended for BISP

(6) CDBU806 Buffer Module Requirement Installation (Cont)

TABLE E

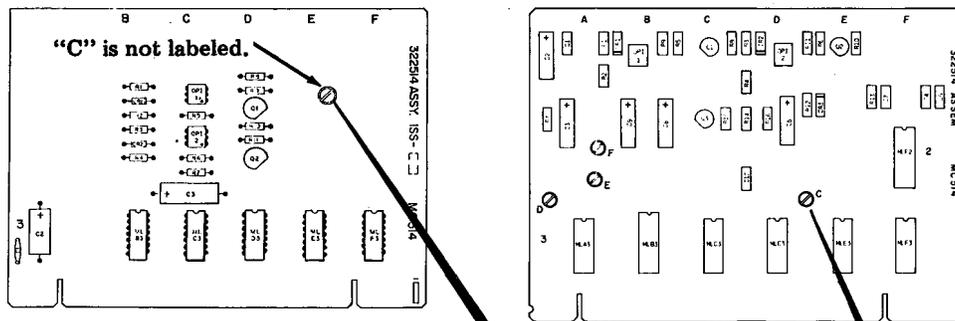
REQUIRED CIRCUIT CARDS FOR EACH CODED UNIT

CIRCUIT CARD (2400 Baud)	CONNECTOR LOCATION	UNIT CODE, BUFFER STORAGE, OPTION CODE		
		806/EA, 2K, A	806/EB, 4K, B	806/EC, 6K, C
PTI Terminator MC969	XZC317	●	●	●
SSI Interface CC691	XZC316	●	●	●
PDI/SSI Converter CC690	XZC315	●	●	●
In/Out Controls MC515	XZC314	●	●	●
Input 2K Character Buffer MC645	XZC313	●	●	●
Output 2K Character Buffer MC645	XZC312	●	●	●
Multiplex Switch MC996	XZC311	●	●	●
Multiplex Switch MC996	XZC310	●	●	●
Modulo 6K Counter MC998	XZC309	●	●	●
Modulo 2K Counter MC512	XZC308	●	●	●
Indicator Drive MC953	XZC307	●	●	●
Buffer Error Control MC514	XZC120	●	●	●
Oscillator/Reset MC995	XZC119	●	●	●
MOS Memory MC955	XZC118	●	●	●
MOS Memory MC955	XZC117	●	●	●
MOS Memory MC956	XZC116	●	●	●
MOS Memory MC955	XZC115	●	●	●
MOS Memory MC955	XZC114	●	●	●
MOS Memory MC956	XZC113	●	●	●
MOS Memory MC955	XZC112	●	●	●
MOS Memory MC955	XZC111	●	●	●
MOS Memory MC956	XZC110	●	●	●

Note: Refer to Table A for circuit card part numbers.

(6) CDBU806 Buffer Module Requirement Installation (Cont)

(a) 322514 Circuit Card Requirement for Position XZ120



Issues 3A, 3B, and 4
(Issue 3B shown)

Issue 5A

Operation of CLEAR BUFFER key	Issue 3A Strap	Issue 3B and 4 Screw C	Issue 5A Screw C
causes buffer to clear.	●	●	●
has no effect.	○	○	○

* , B

Note: Card issues earlier than 3A do not have option, in effect it is hard wired for "no effect".

Requirement for module when 322514 circuit card (Issue 5A and higher) is present in position XZ120.

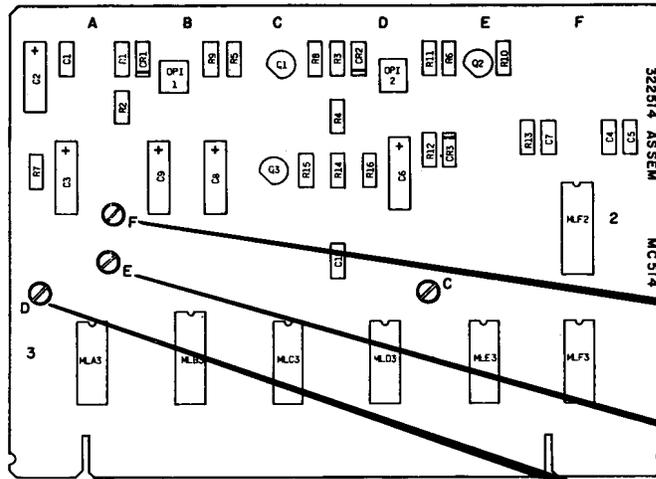
<p>Note: Install 343650 straps if required.</p> <p>Check for presence of connections between:</p>		
XZ120-1 and XZ309-1	XZ120-7 and XZ316-12	XZ120-7 and XZ309-5

The above connections not required for card issues earlier than 5A.

Note: All Issue 5A information in this section is preliminary.

(6) CDBU806 Buffer Module Requirement Installation (Cont)

(a) 322514 Circuit Card Requirement for Position XZ120 (Cont)



Issue 5A

Printer Motor	Screw D
turns off upon detection of message end character.	○
stays on for duration of screw F.	●

*, B
(See Note below.)

Note: Earlier issue cards have (in effect) screw D removed.

Buffer becomes selectable	Screw E
with no delay after message end character.	○
260 ms after message end character.	●

*, B
(See Note below.)

Note: Earlier issue cards have (in effect) screw E installed.

Motor remains on	Screw F
after end character for a period of approximately 15 seconds.	○
after end character for a period of approximately 75 seconds.	●

*, B
(See Notes below.)

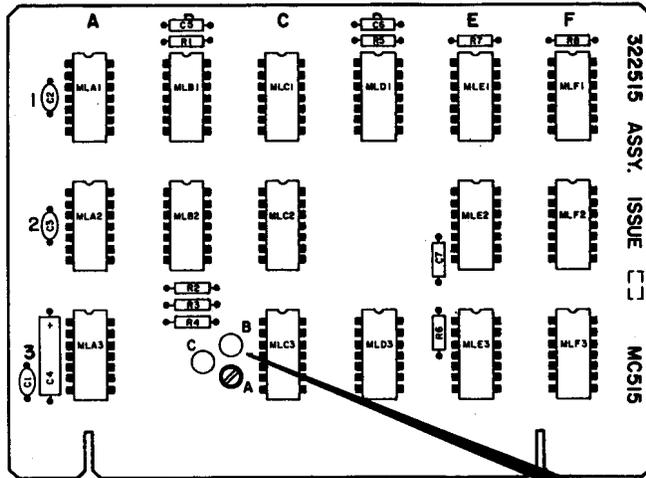
Note 1: Card Issue 5A — If screw D is not installed, motor is not under control of screw F.

Note 2: Card issues earlier than 5A have (in effect) screw D removed which means the printer motor turns off upon detection of message end character.

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(6) CDBU806 Buffer Module Requirement Installation (Cont)

(b) 322515 Circuit Card Requirement for Position XZ314

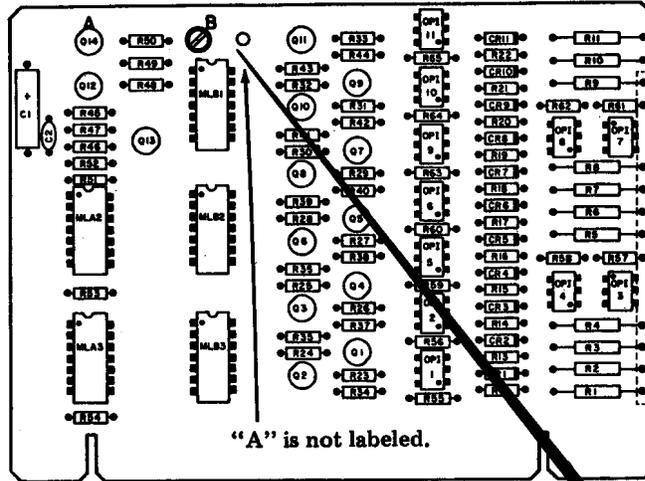


Character Detection	Screws		
	A	B	C
EOT	●	○	○
ETX	○	●	○
FF and EOT	○	○	●

*, B

(6) CDBU806 Buffer Module Requirement Installation (Cont)

(c) 322969 Circuit Card Requirement for Position XZ317

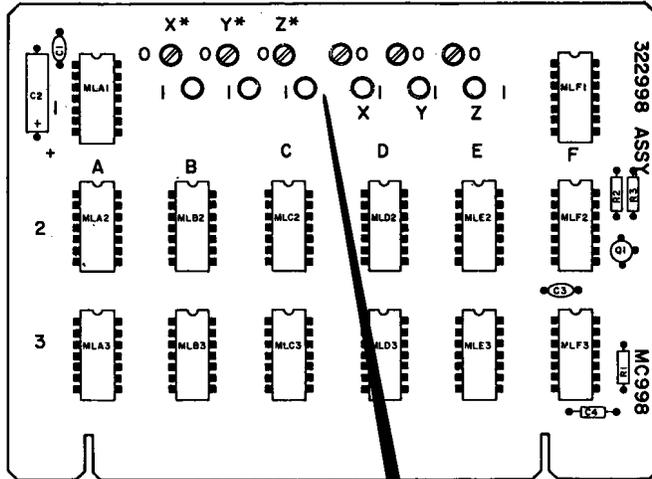


	Screws	
Requirement for Use With 2550 or CDIF814	A	B
Receive Terminal	○	●

*, B

(6) CDBU806 Buffer Module Requirement Installation (Cont)

(d) 322998 Circuit Card Requirement for Position XZ309



Buffer Capacity	Screws					
	X	Y	Z	X*	Y*	Z*
2000 characters	○	●	●	○	●	●
4000 characters	●	○	●	●	○	●
6000 characters	○	○	●	○	○	●

*, B

2.10 IDENTIFICATION OF STATION ARRANGEMENTS

The major components of the various station arrangements are shown in Fig. 9 through 13. Cable routing and identification is covered in 2.11.

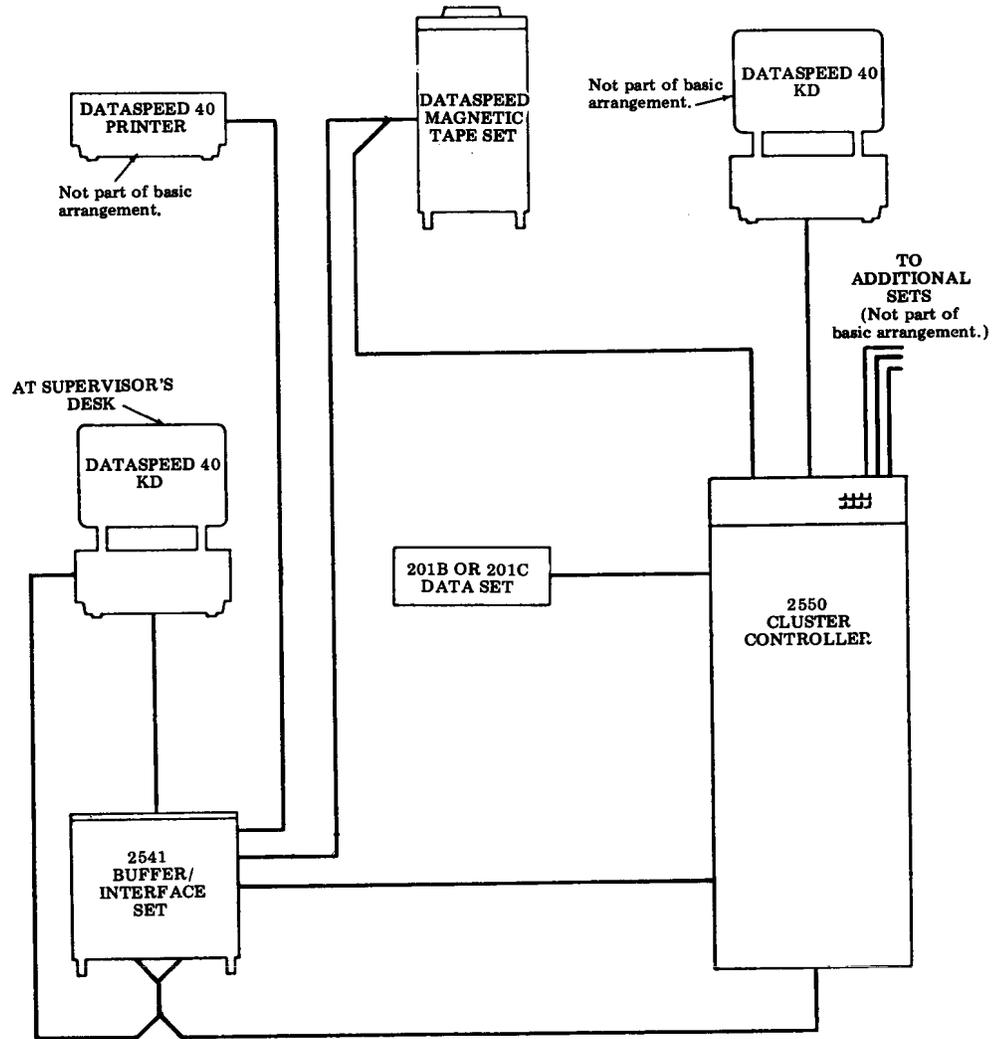


Fig. 9—Station Arrangement 1

2.10 IDENTIFICATION OF STATION ARRANGEMENTS (Cont)

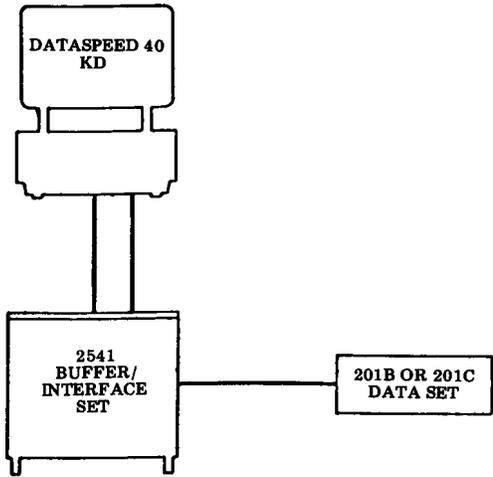


Fig. 10—Station Arrangement 2

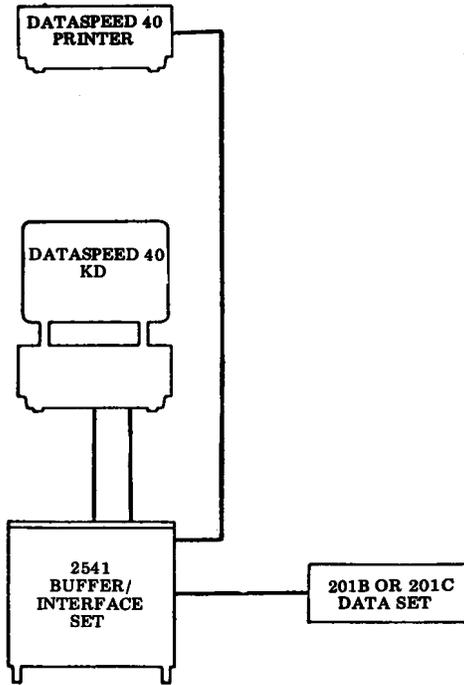


Fig. 12—Station Arrangement 4

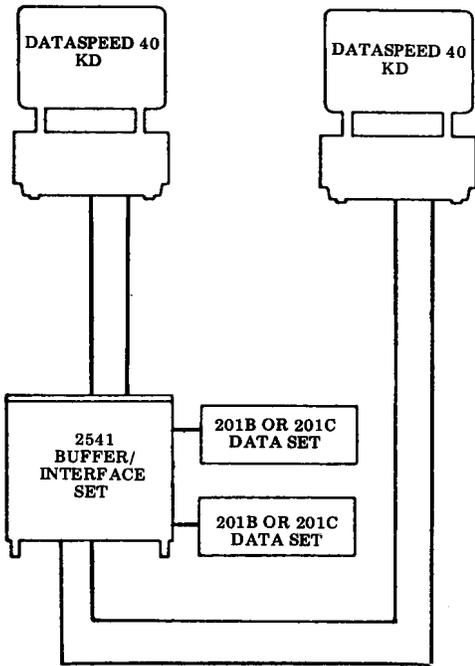


Fig. 11—Station Arrangement 3

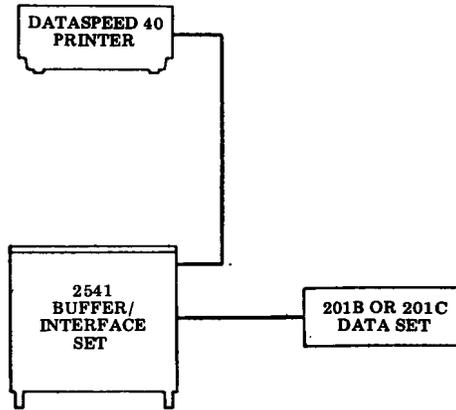


Fig. 13—Station Arrangement 5

2.11 Cable Routing

This paragraph shows required cable routing. Quick identification of arrangements is given in 2.10.

Station Arrangement

- 1 Page 59
- 2 Page 67
- 3 Page 67
- 4 Page 67
- 5 Page 67

Cable wiring is contained in Part 5.

(1) Station Arrangement 1 Cable Routing

Steps 1 through 6 and Fig. 14 describe connections to DATASPEED Magnetic Tape Set.

1. Release latch on cabinet door. Lower cabinet door. Lower electronics module. Route 337447 cable through back of magnetic tape cabinet.
2. Connect J401 to P401 on DMAM800 PTI modification kit as shown.
3. Release circuit hold down bar of electronics module.

Perform Steps 4 and 5 if MC465 was not optioned per 2.09 (3).

4. Remove MC465 card and program per instructions in Section 582-900-200 or FIMP 579-504-350.
5. Replace MC465 card and attach hold down bar.
6. Raise electronics module. Close and latch cabinet door.

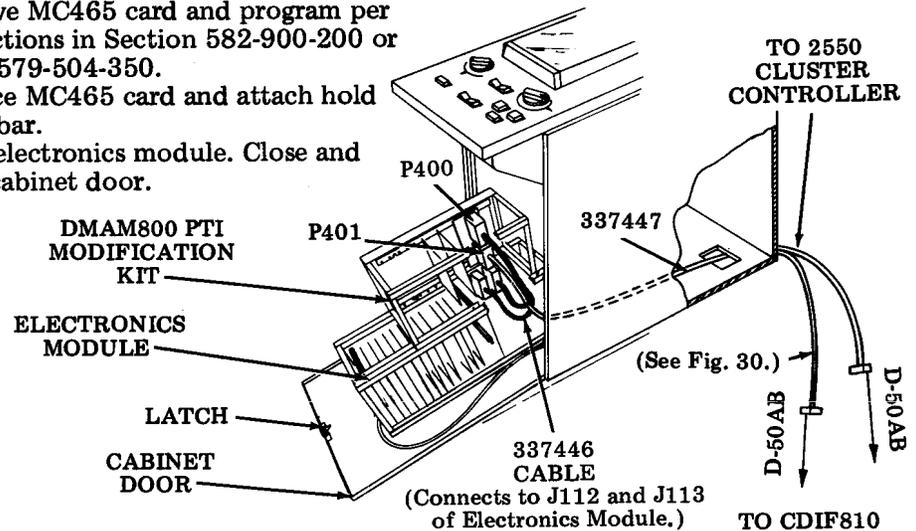


Fig. 14—DATASPEED Magnetic Tape Set Connections

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(1) Station Arrangement 1 Cable Routing (Cont)

Steps 7 through 14 and Fig. 15 describe KD and DATASPEED Magnetic Tape Set connections to 2550 Cluster Controller.

7. Release slide locking catch at top of I/O rack 1.
8. Pull rack out as far as possible.
9. Route device cables (WECo D-50AB type cord).

Note: D-50AB type cords must not exceed 1000 feet (see Fig. 30).

10. Connect D connector of device A cable in position A.

11. Connect D connectors of device cables B, C, D, and E. If additional devices are added the above pattern is continued.
12. Route receive cable from DATASPEED Magnetic Tape Set.
13. Connect D connector of magnetic tape cable in position shown.
14. Tie cables and slide rack to closed position.

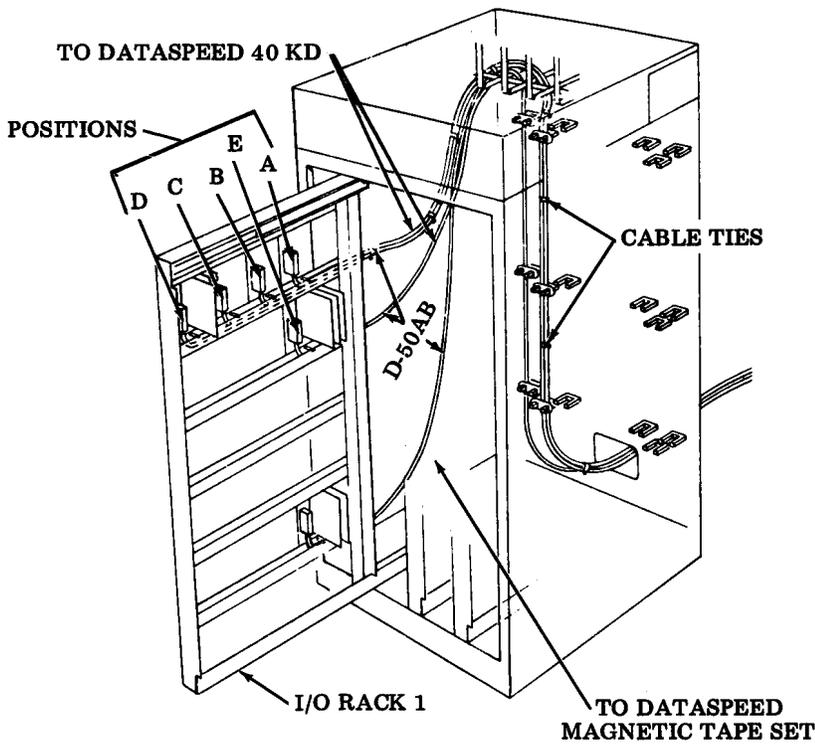
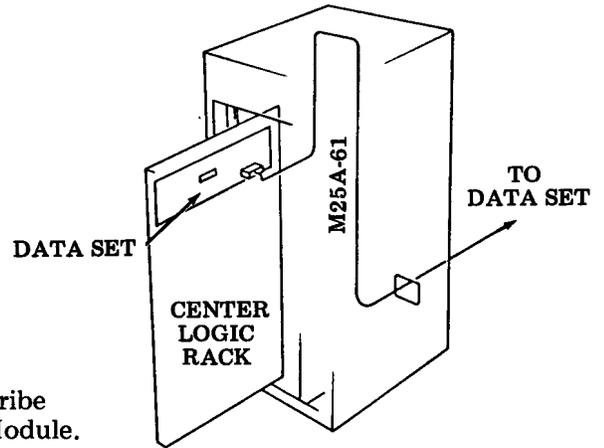


Fig. 15—Connections to 2550 Cluster Controller

(1) Station Arrangement 1 Cable Routing (Cont)

Steps 15 through 19 and Fig. 16 describe connection to 2550 Cluster Controller from data set.

15. Release slide locking catch at top of center logic rack.
16. Pull rack out as far as possible.
17. Route data set M25A-61 cable as shown.
18. Connect data set cable connector to center logic rack.
19. Slide center rack into cabinet.



Steps 20 through 24 and Fig. 17 describe connections to CDIF810 Interface Module.

20. Press latches on each side of top of interface cabinet and open cover.
21. Turn release handle and lift module up.
22. Route cables through cable entry slot. Connect cables as shown.
23. Position cables in interface set so the module can move up and down freely.
24. Secure all connectors. Replace module and close cover.

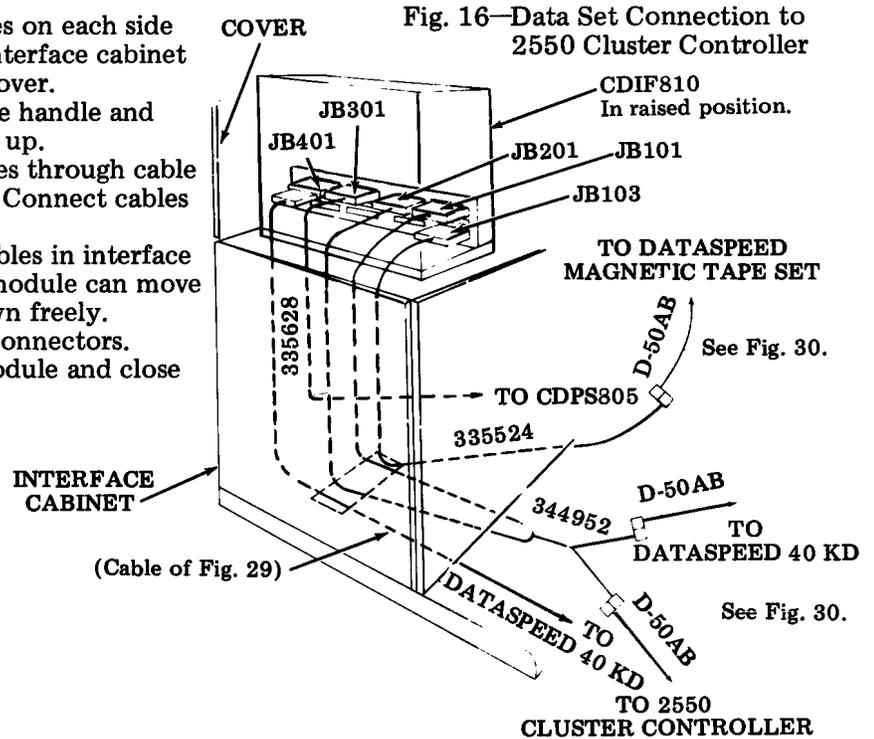


Fig. 17—Connections to CDIF810 Interface Module in 2541 Buffer/Interface Set

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(1) Station Arrangement 1 Cable Routing (Cont)

Steps 25 through 29 and Fig. 18 describe connections to CDBU806 Buffer Module if arrangement is equipped with printer.

25. Press latches on each side of top of interface module and open cover.
26. Turn module release handle and lift module up.
27. Route cables through cable entry slot. Connect cables as shown.
28. Position cables in interface cabinet so module can move up and down freely.
29. Secure all connectors. Replace module and close cover.

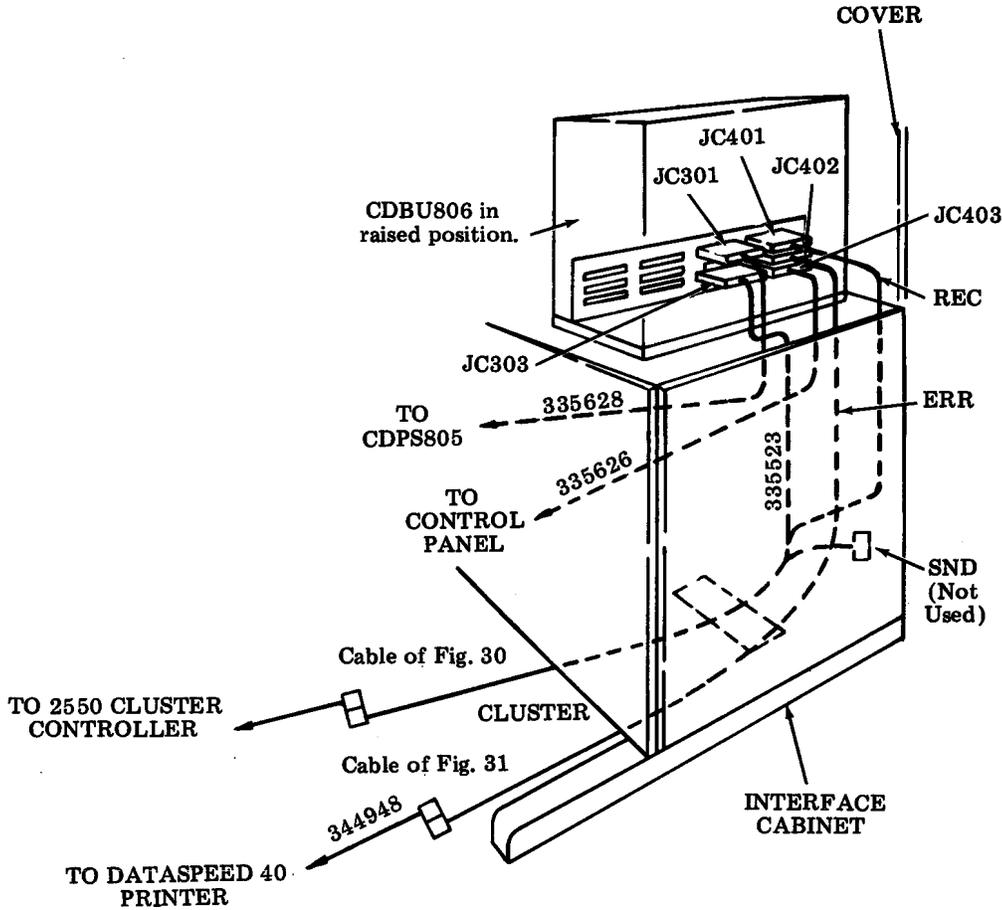


Fig. 18—Connections to CDBU806 Buffer Module in 2541 Buffer/Interface Set Application to Station Arrangement 1 Equipped With Printer

(1) Station Arrangement 1 Cable Routing (Cont)

Fig. 19, 20 and 21 show cable routing between all components. Fig. 19 shows the required mode and function keytops for supervisory KD. Fig. 29, 30, and 31 provide cable details. Fig. 22 shows additional components required for adding a KD to the arrangement. Fig. 18 shows connections to CDBU806 Buffer Module (used when printer is part of Station Arrangement 1).

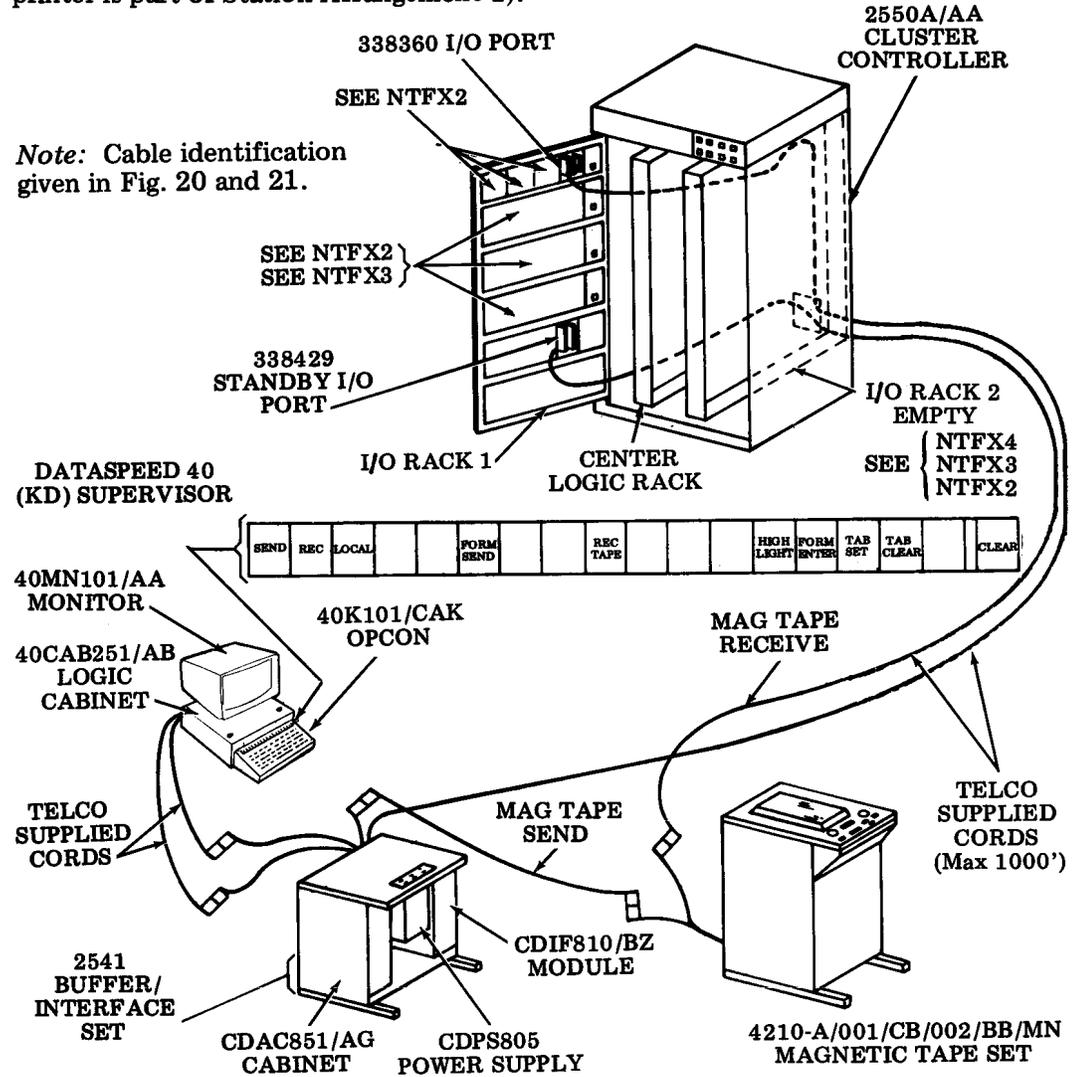
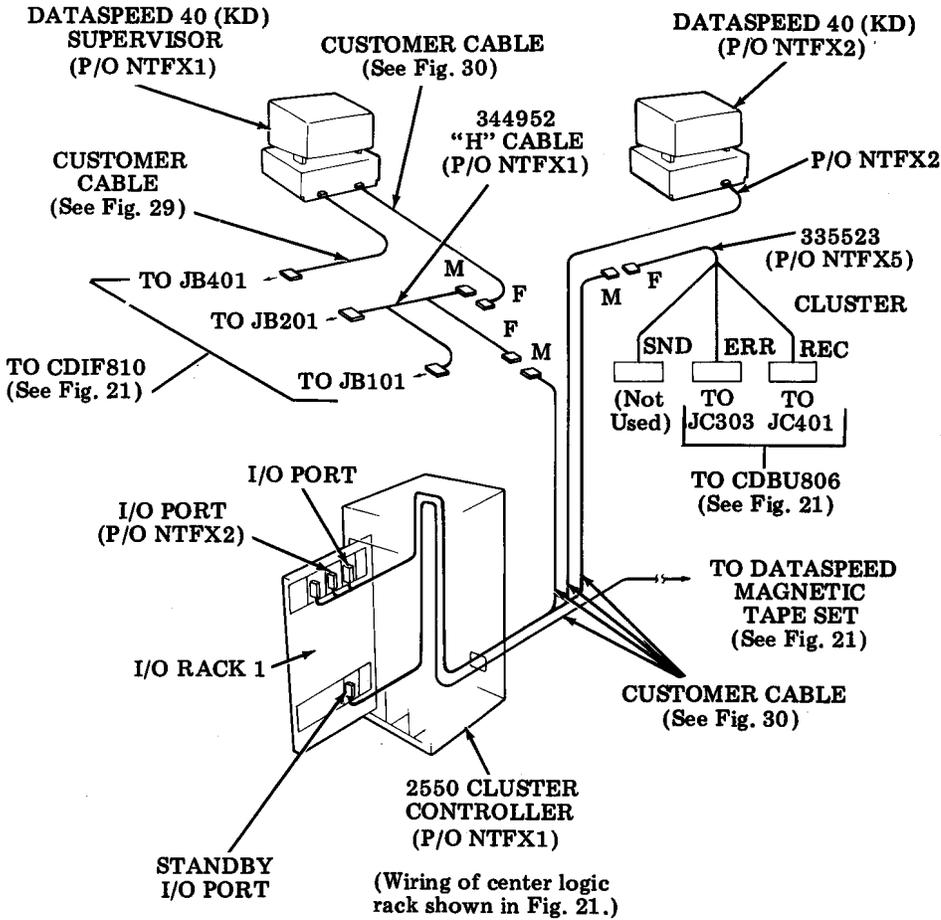


Fig. 19—Basic Cluster Controller Configuration (Uniform Service Order Codes — USOC NTFX1) Cable Routing and References to Other USOCs

(1) Station Arrangement 1 Cable Routing (Cont)

Note: Also see Fig. 21 for cable identification and connections.



M = Male connector
 F = Female connector
 P/O = Part of

Fig. 20—USOC NTFX2 and Parts of USOCs NTFX1 and NTFX5

(1) Station Arrangement 1 Cable Routing (Cont)

Note: Also see Fig. 20 for cable identification and connections.

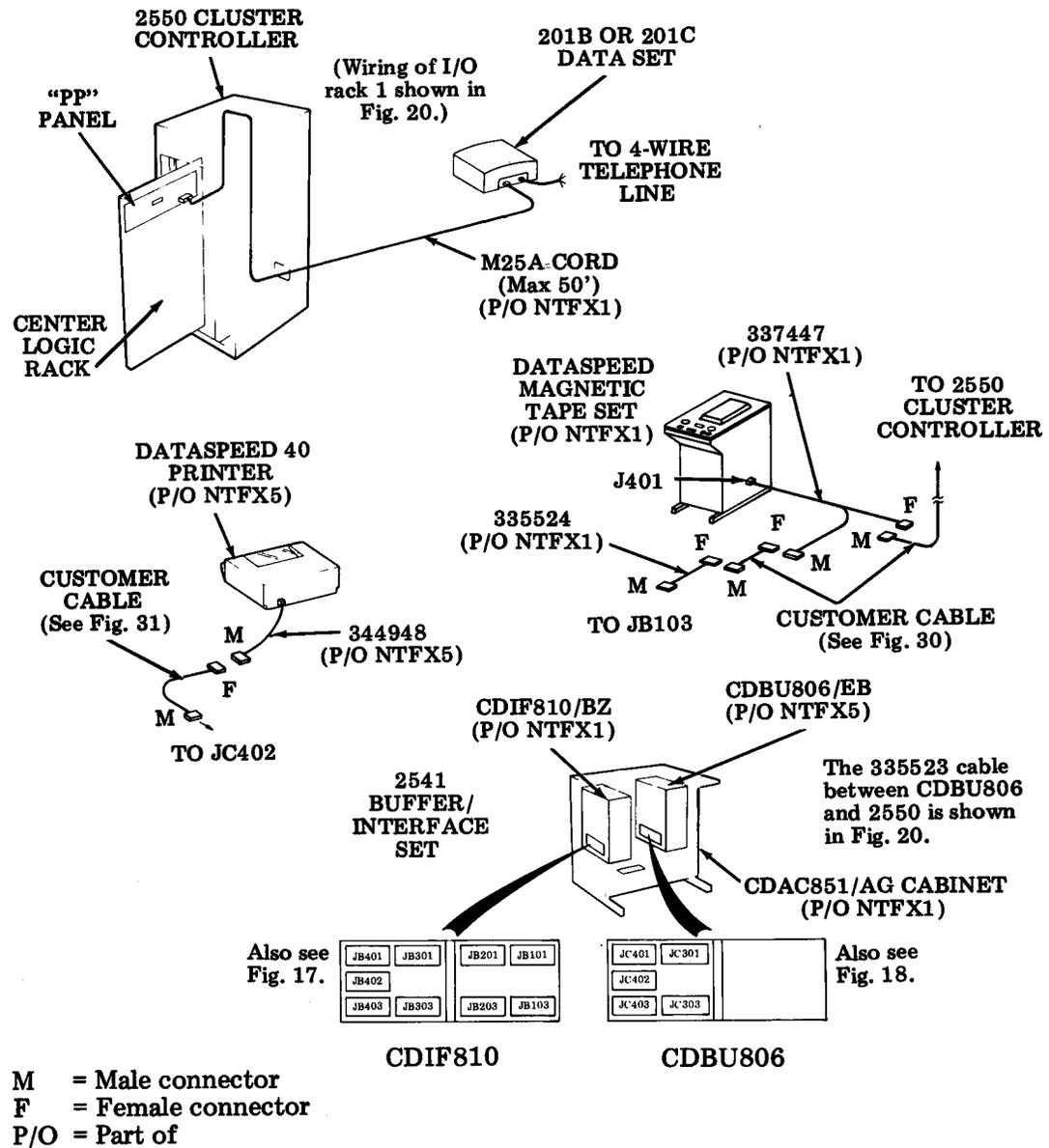
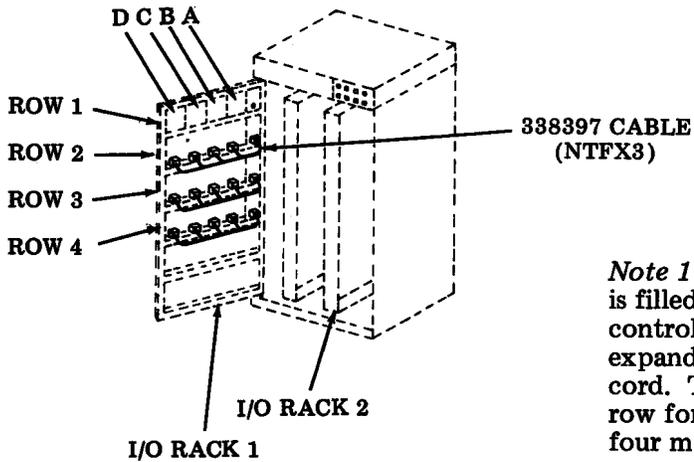
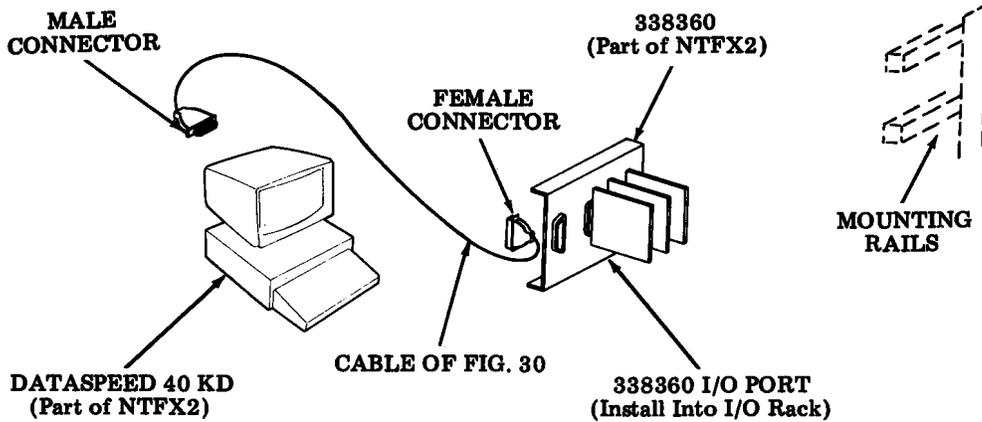


Fig. 21—Parts of USOCs NTFX1 and NTFX5

(1) Station Arrangement 1 Cable Routing (Cont)



Note 1: When an existing row is filled with I/O ports, cluster controller port capacity may be expanded by adding an NTFX3 cord. The cord will begin a new row for connecting one through four more KD terminals.

Note 2: If I/O rack 1 is filled to its maximum capacity of 16 KD terminals, one 338389 rack assembly (NTFX4) is required to begin I/O rack 2.

Fig. 22—Additional Components Required for Adding a KD to Station Arrangement 1

(2) Station Arrangement 2 Cable Routing

To identify and connect cables, refer to Fig. 23 and 24. Additional cable details are given in Fig. 30.

(3) Station Arrangement 3 Cable Routing

To identify and connect cables, refer to Fig. 23 and 24. Observe the note at the top of Fig. 23. Additional cable details are given in Fig. 30.

(4) Station Arrangement 4 Cable Routing

To identify and connect cables, refer to Fig. 25, 27, and 28. Additional cable details are given in Fig. 29, 30, and 31.

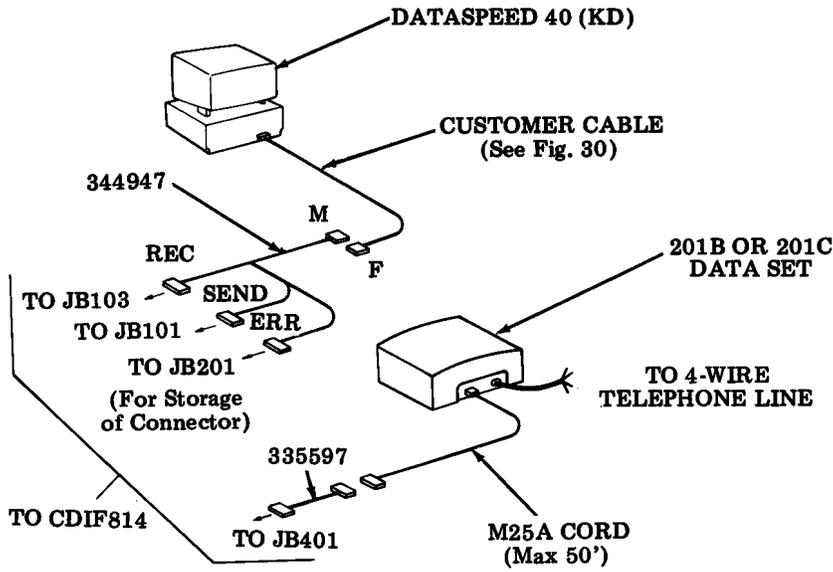
(5) Station Arrangement 5 Cable Routing

To identify and connect cables, refer to Fig. 26, 27, and 28. Observe that two cables of Fig. 27 are not used in Station Arrangement 5 as noted on figure. Additional cable details are given in Fig. 30 and 31.

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Station Arrangements 2 and 3 Cable Routing

Note: Station Arrangement 3 adds another item of every item shown in Fig. 23 except the 2541 cabinet. The second CDIF814 mounts in right side of 2541 cabinet.



M = Male Connector
F = Female Connector

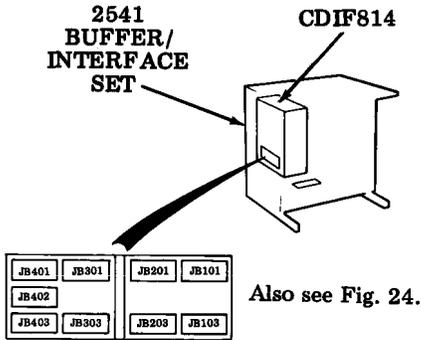


Fig. 23—Station Arrangements 2 and 3 (Arrangement 2 Shown)
Cable Identification and Connections

Station Arrangements 2 and 3 Cable Routing (Cont)

Steps 1 through 5 and Fig. 24 describe connections to CDIF814 Station Controller.

1. Press latches on each side of top of interface module and open cover.
2. Turn module release handle and lift module up.
3. Route cables through cable entry slot. Connect cables as shown.
4. Position cables in interface set so module can move up and down freely.
5. Secure all connectors. Replace module and close cover.

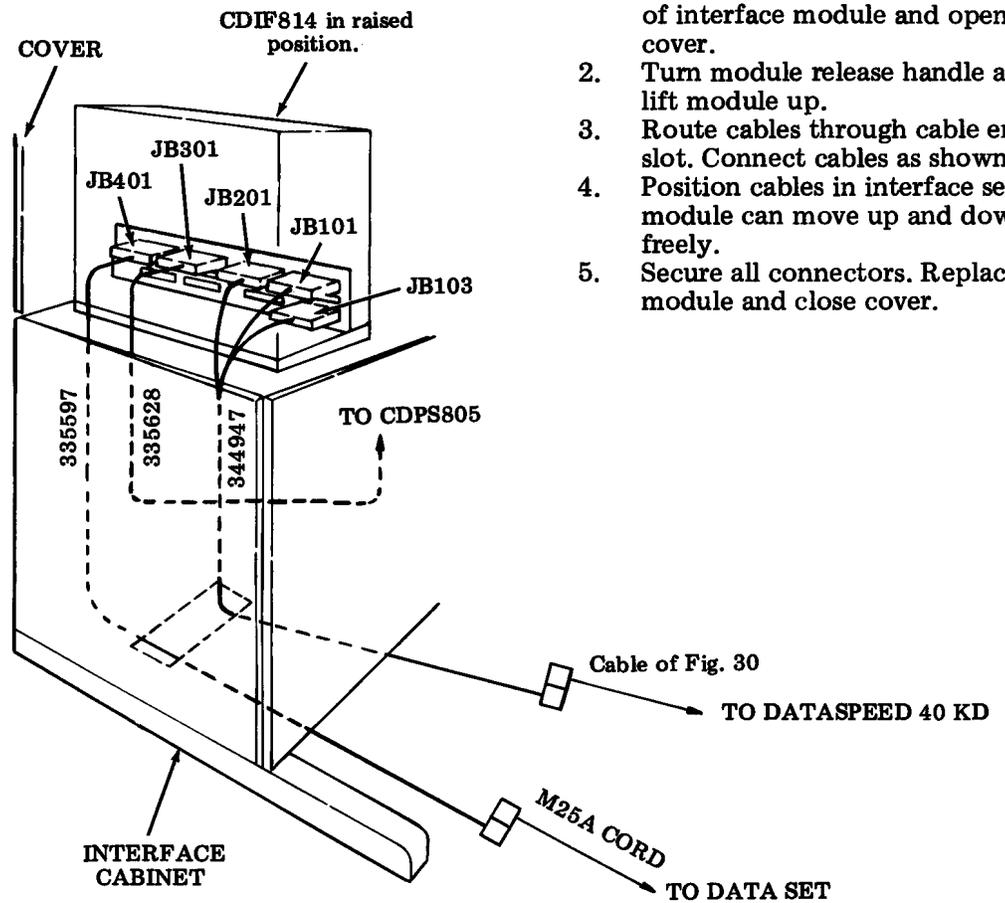


Fig. 24—Connections to CDIF814 Station Controller in 2541 Buffer/Interface Set Application to Station Arrangements 2 and 3

Station Arrangement 4 Cable Routing

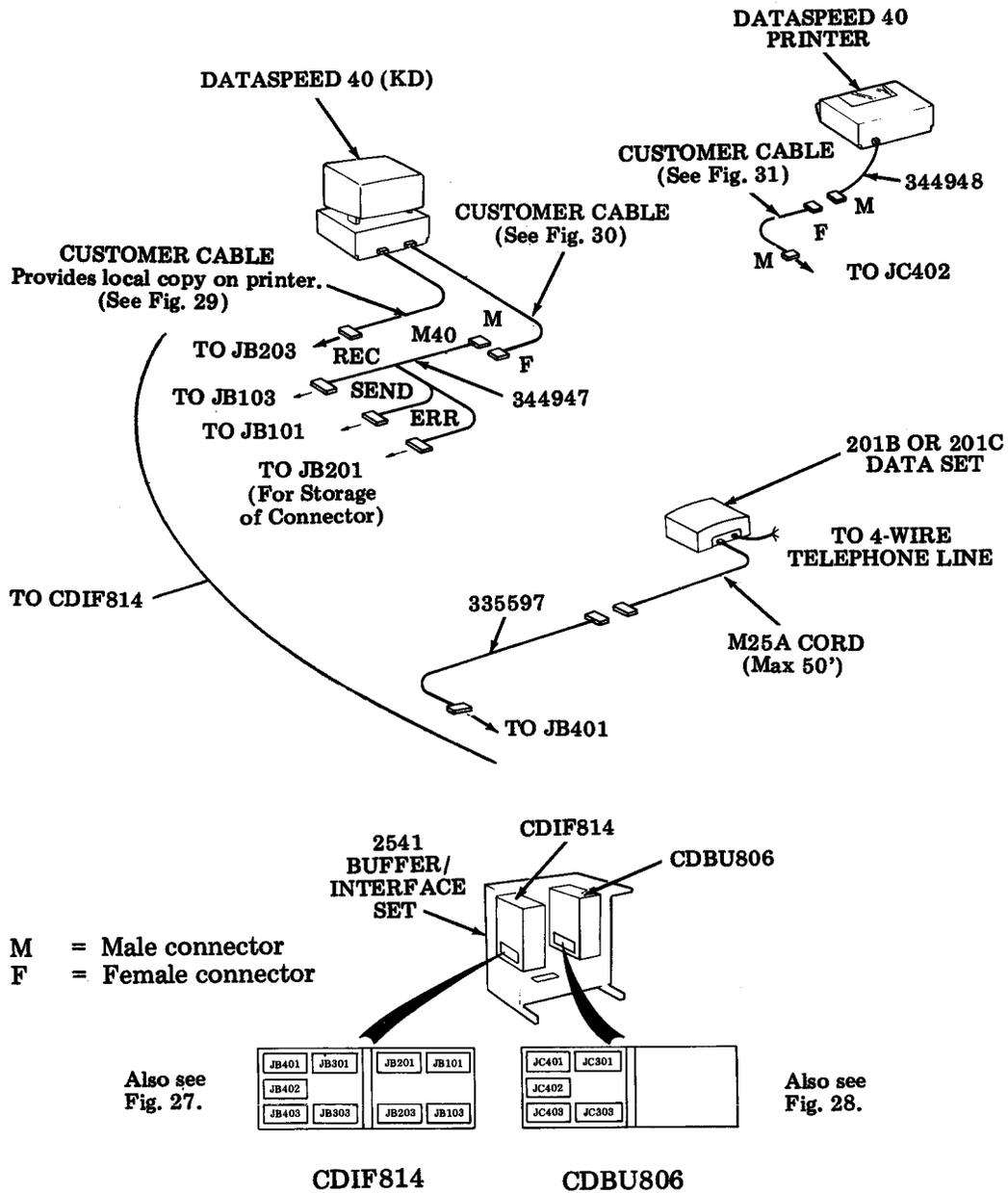


Fig. 25—Station Arrangement 4 Cable Identification and Connections

Station Arrangement 5 Cable Routing

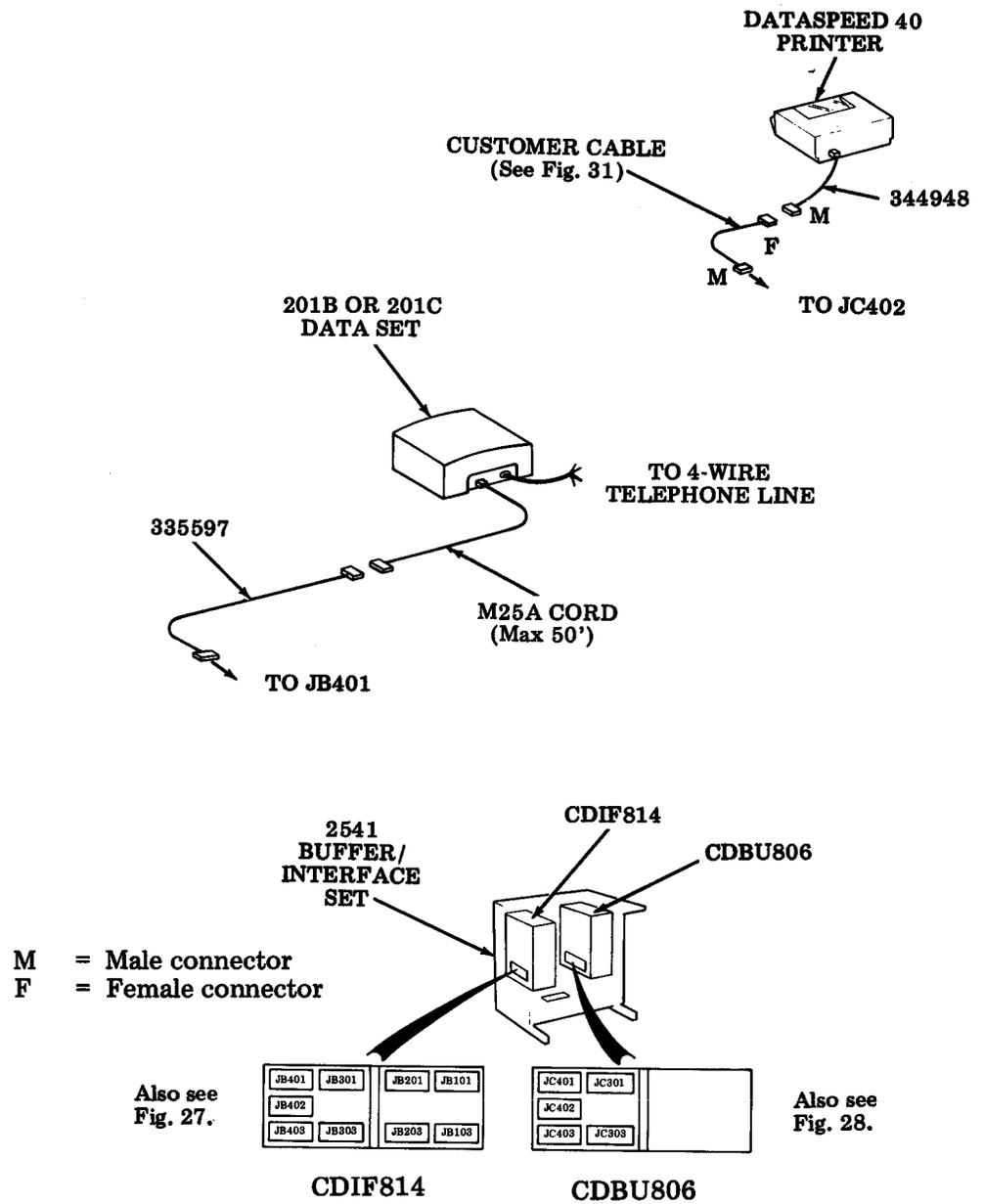


Fig. 26—Station Arrangement 5 Cable Identification and Connections

Station Arrangements 4 and 5 Cable Routing

Steps 1 through 5 and Fig. 27 describe connections to CDIF814 Station Controller.

1. Press latches on each side of top of interface module and open cover.
2. Turn module release handle and lift module up.
3. Route cables through cable entry slot. Connect cables as shown.
4. Position cables in interface set so module can move up and down freely.
5. Secure all connectors. Replace module and close cover.

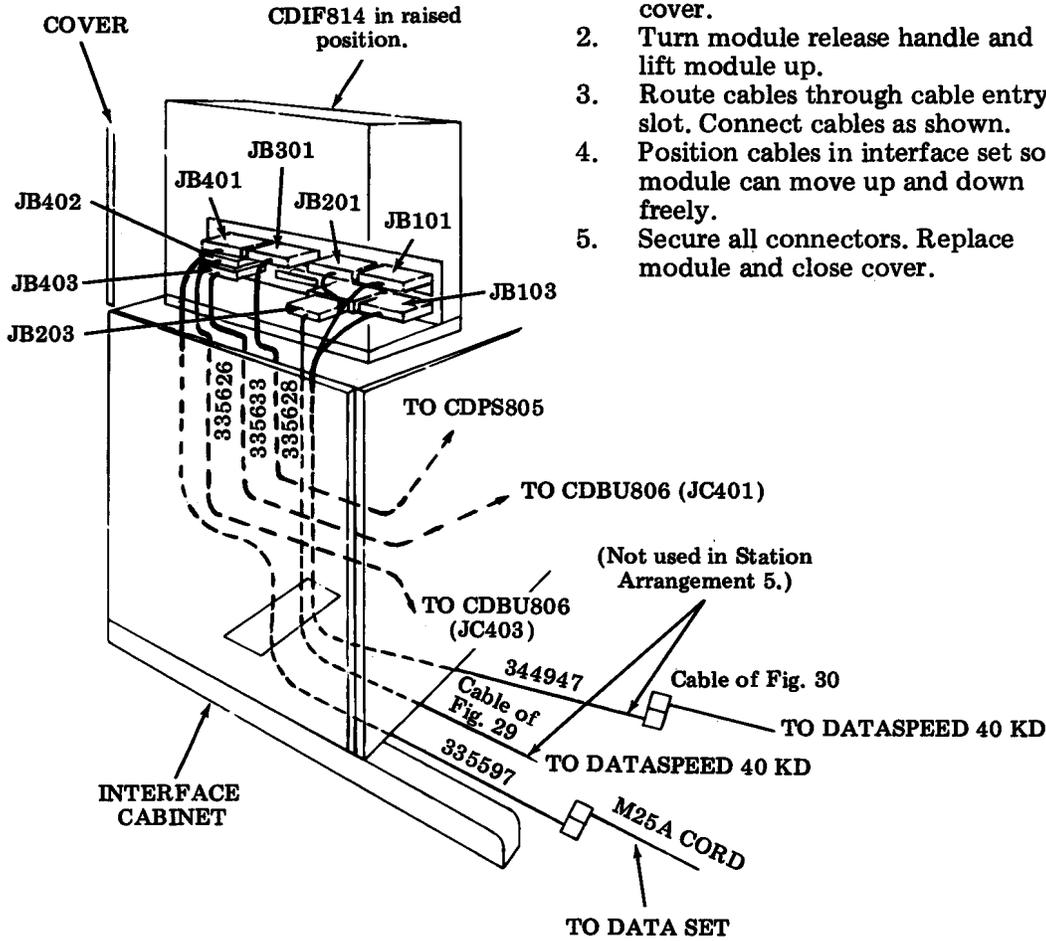


Fig. 27—Connections to CDIF814 Station Controller in 2541 Buffer/Interface Set Application to Station Arrangements 4 and 5

Station Arrangements 4 and 5 Cable Routing (Cont)

Steps 6 through 10 and Fig. 28 describe connections to CDBU806 Buffer Module.

6. Press latches on each side of top of interface module and open cover.
7. Turn module release handle and lift module up.
8. Route cables through cable entry slot. Connect cables as shown.
9. Position cables in interface set so module can move up and down freely.
10. Secure all connectors. Replace module and close cover.

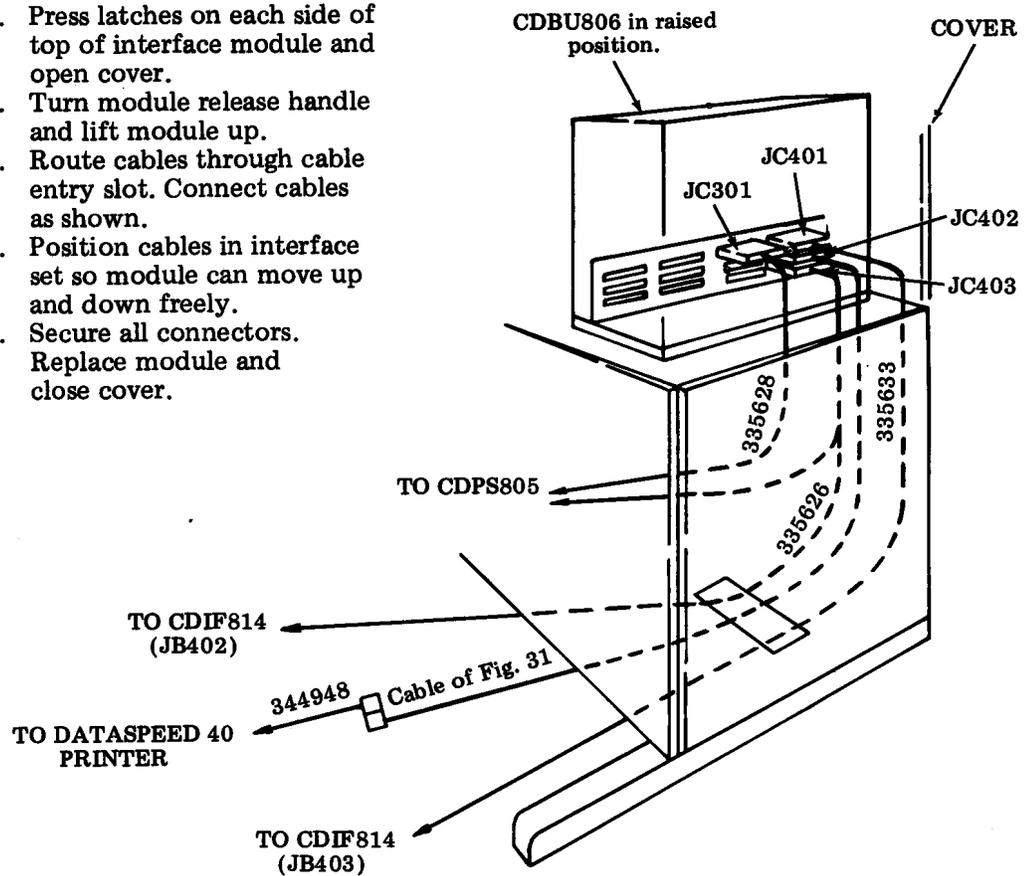
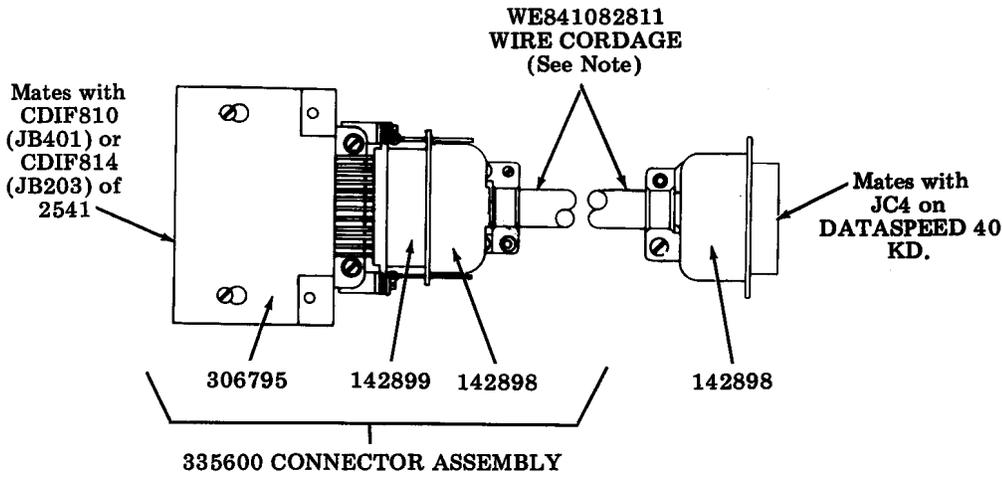
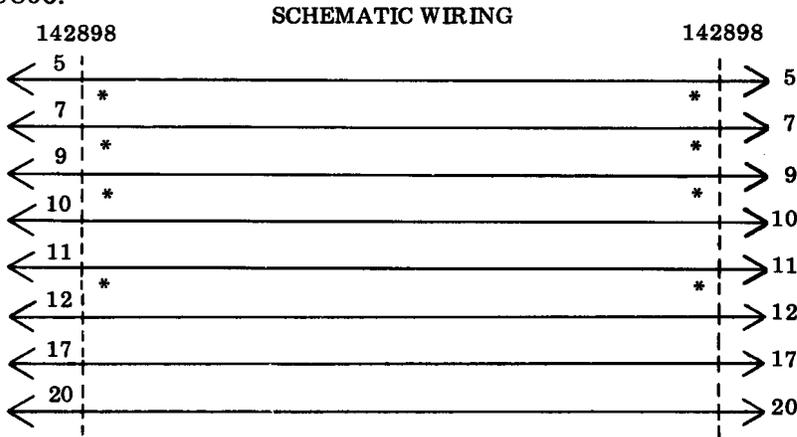


Fig. 28—Connections to CDBU806 Buffer Module in 2541 Buffer/Interface Set Application to Station Arrangements 4 and 5

Station Arrangements 1 and 4 Cable Routing



Note: Material list for NTFX8 (Station Arrangement 4) calls for WE841082928 but WE841082811 can be used between the KD and CDIF814. If WE841082928 is used for Station Arrangement 4, only wires marked "*" in schematic below need be installed. Station Arrangement 4 also requires a cable of Fig. 31 between printer and CDBU806.



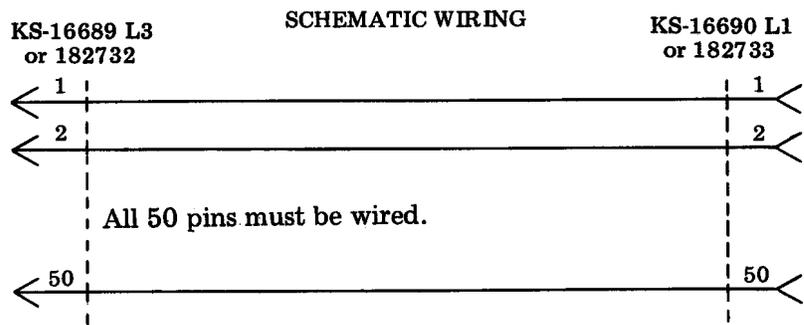
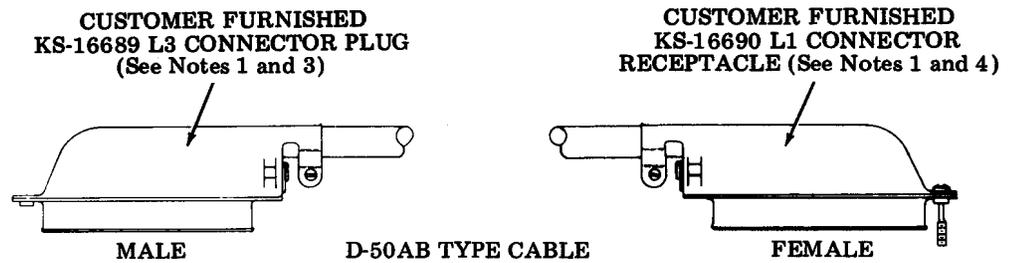
Wire the leads of cable as shown above or instruct cable maker to make cable from terminal number 5 to terminal number 5, etc, for all eight wires (one to one cable). Any remaining wires should be cut back away from connector.

Cable length must not exceed 25 feet between devices.

Fig. 29—Customer Wired Cable Used in Station Arrangements 1 and 4

Station Arrangements 1 through 5 Cable Routing

The number of such cables required will vary depending on distances between parts of station.



Wire all leads of D-50AB type cable from terminal number 1 to terminal number 1, etc, for all remaining leads. If the standard cable lengths are ordered (see Note 1), cable is already wired.

Note 1: D-50AB type cables come equipped with both connectors (double-ended) when standard lengths of either 5 feet 6 inches, 9 feet, 13 feet, and 25 feet are ordered from WE. Special cable lengths require separate ordering for connector portions. All cables should be ordered from WE well in advance of installation date to insure availability.

Note 2: Cable length must not exceed 1000 feet maximum distance between devices (maximum distance for Teletype Corporation PTI signaling).

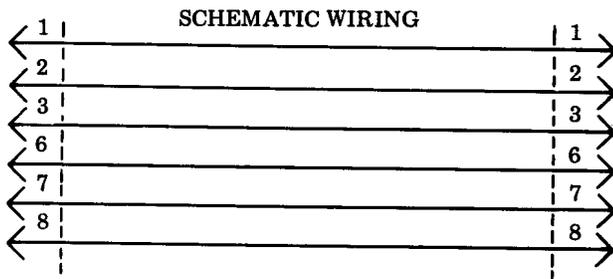
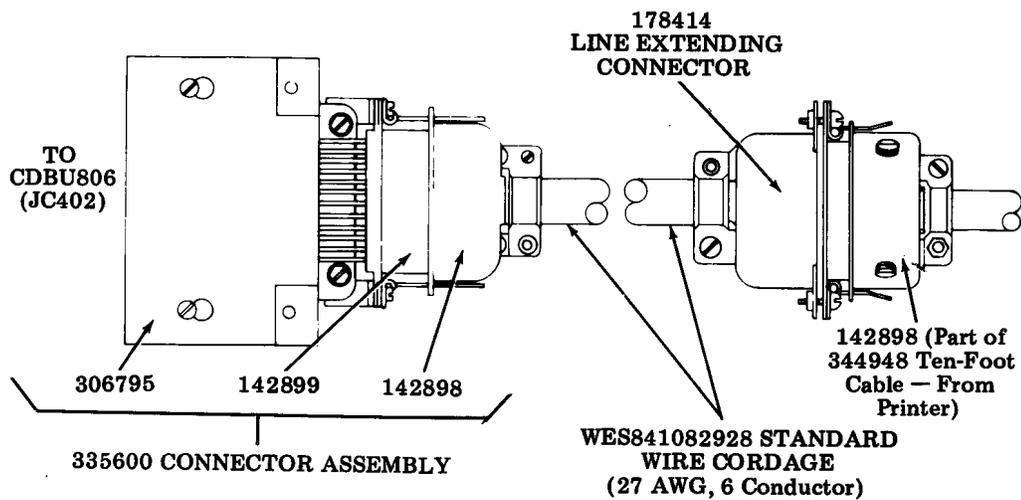
Note 3: When preparing cable end to DATASPEED 40 Set, the 182732 connector is furnished with set controller electronics.

Note 4: This connector can also be ordered from Teletype Corporation as 182733.

Fig. 30—Customer Wired PTI Cable Used in Station Arrangements 1 Through 5

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Station Arrangements 1 (With Printer), 4, and 5 Cable Routing

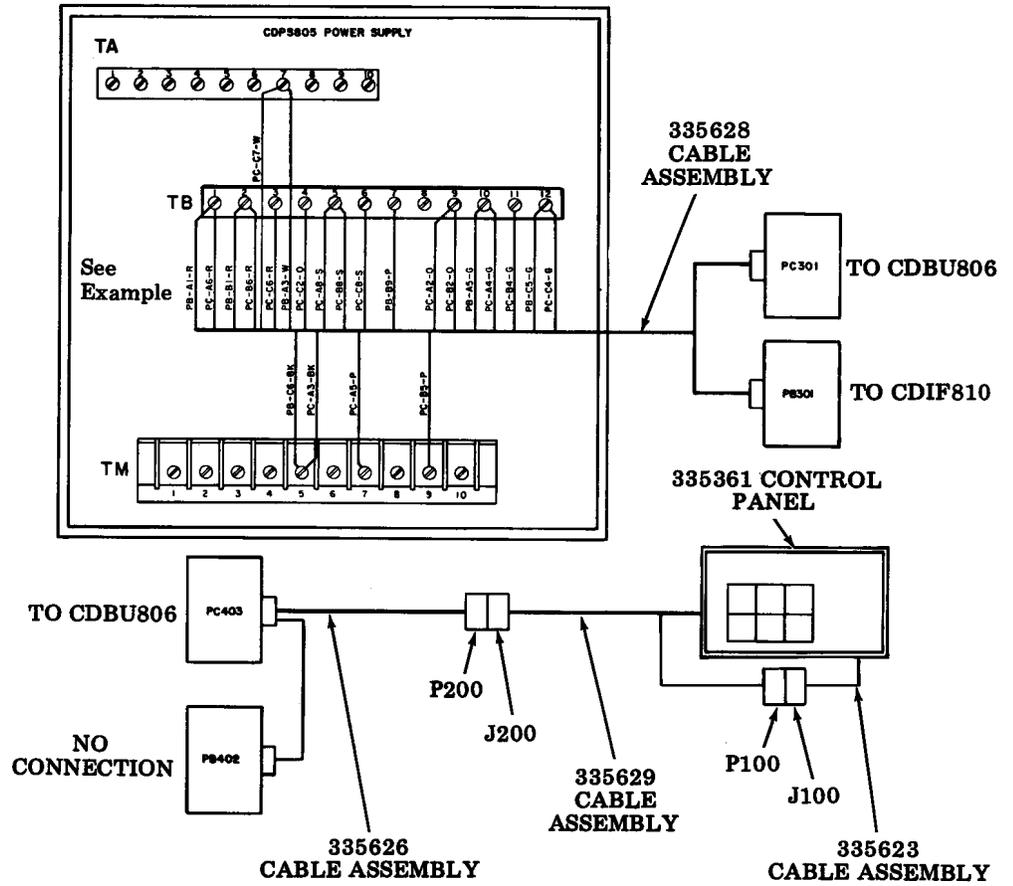


Wire leads of cable as shown in diagram.

Note: Cable length must not exceed 1000 feet maximum between devices.

Fig. 31—Buffer to Printer Extension Cable
Application to Station Arrangements 1
(With Printer), 4, and 5

2.12 CDPS805 POWER SUPPLY CONNECTIONS



Example: Read PB-A1-R as wire connects to PB301, pin A1, wire color is red.

Fig. 32—Connections for Station Arrangement 1 (With Printer)

2.12 CDPS805 POWER SUPPLY CONNECTIONS (Cont)

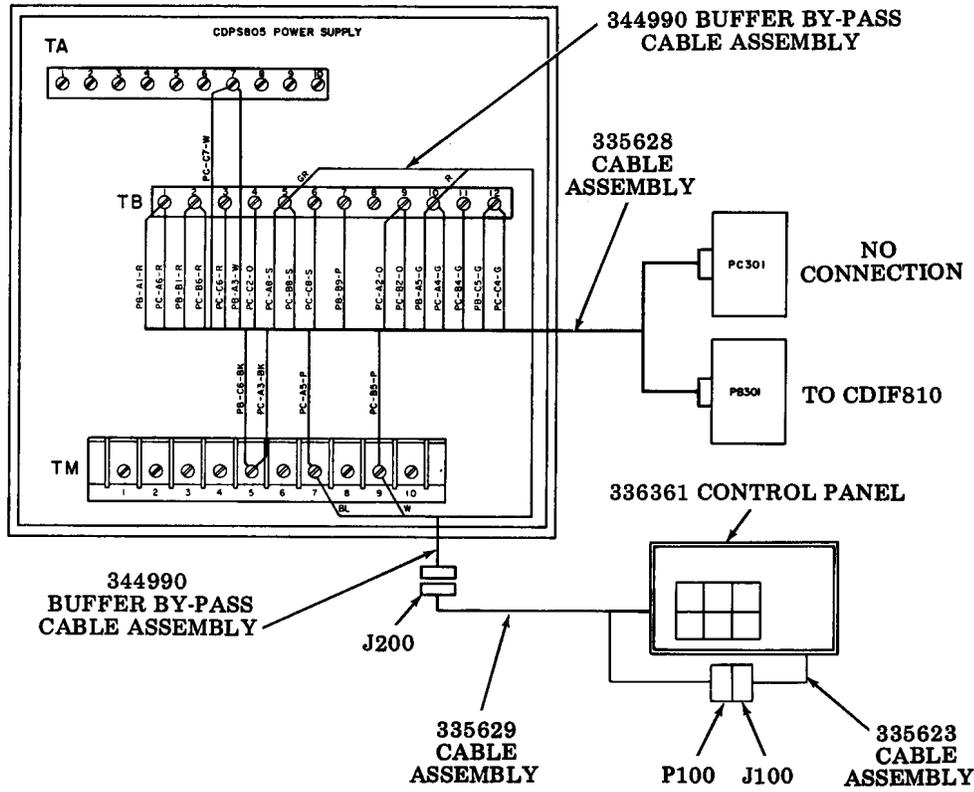
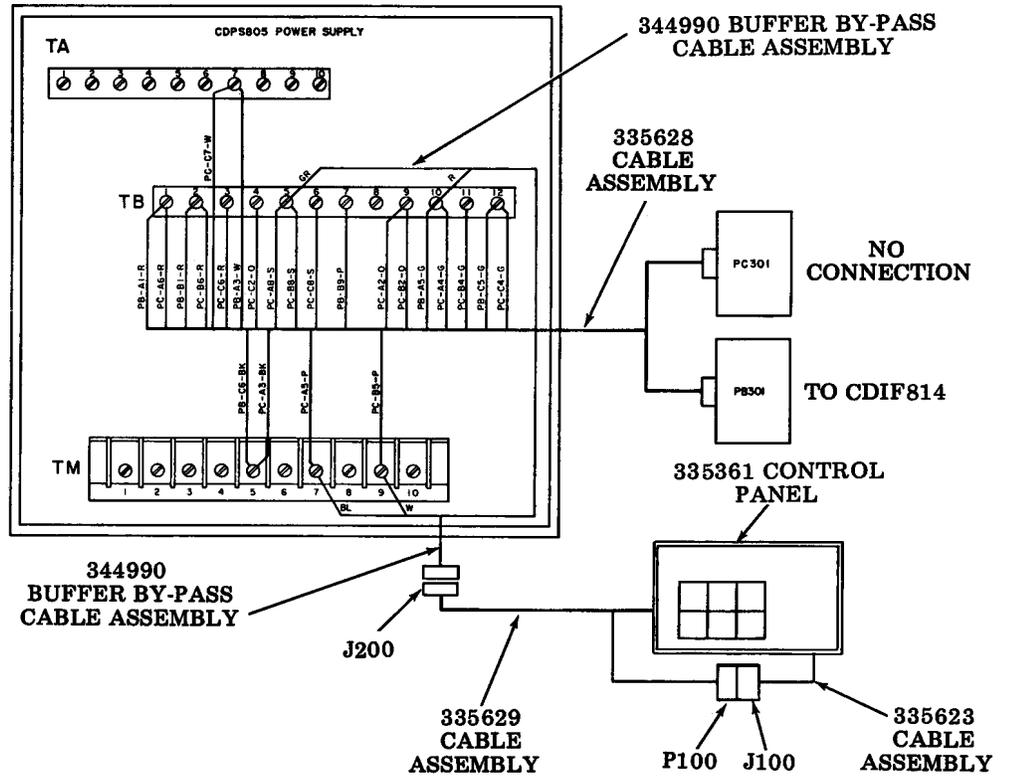


Fig. 33—Connections for Station Arrangement 1 (Without Printer)

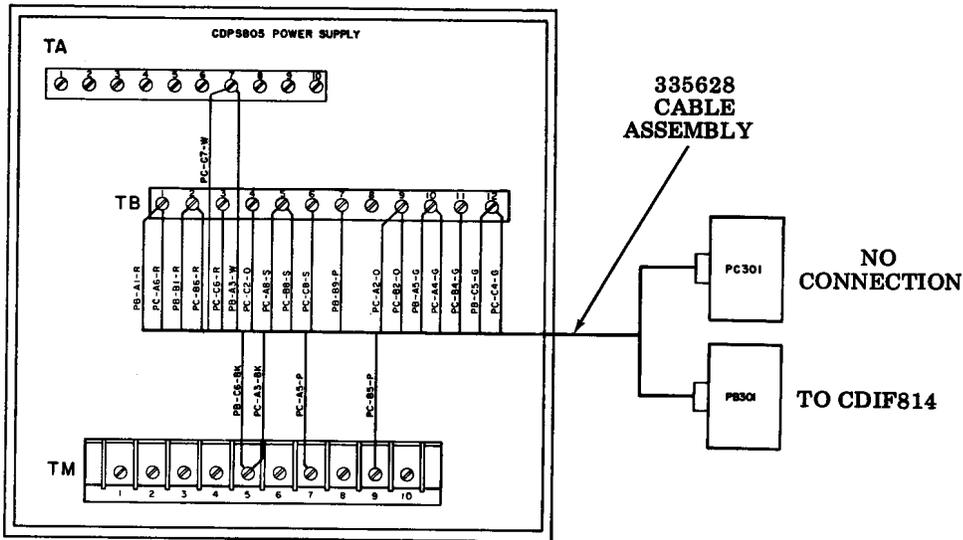
2.12 CDPS805 POWER SUPPLY CONNECTIONS (Cont)



Note: This figure also applies to part of Station Arrangement 3.

Fig. 34—Connections for Station Arrangement 2

2.12 CDPS805 POWER SUPPLY CONNECTIONS (Cont)



Note: This arrangement also uses all components and wiring shown in Fig. 34. Thus two power supplies, two interface modules, and two 335628 cable assemblies are part of arrangement.

Fig. 35—Connections for Station Arrangement 3

2.12 CDPS805 POWER SUPPLY CONNECTIONS (Cont)

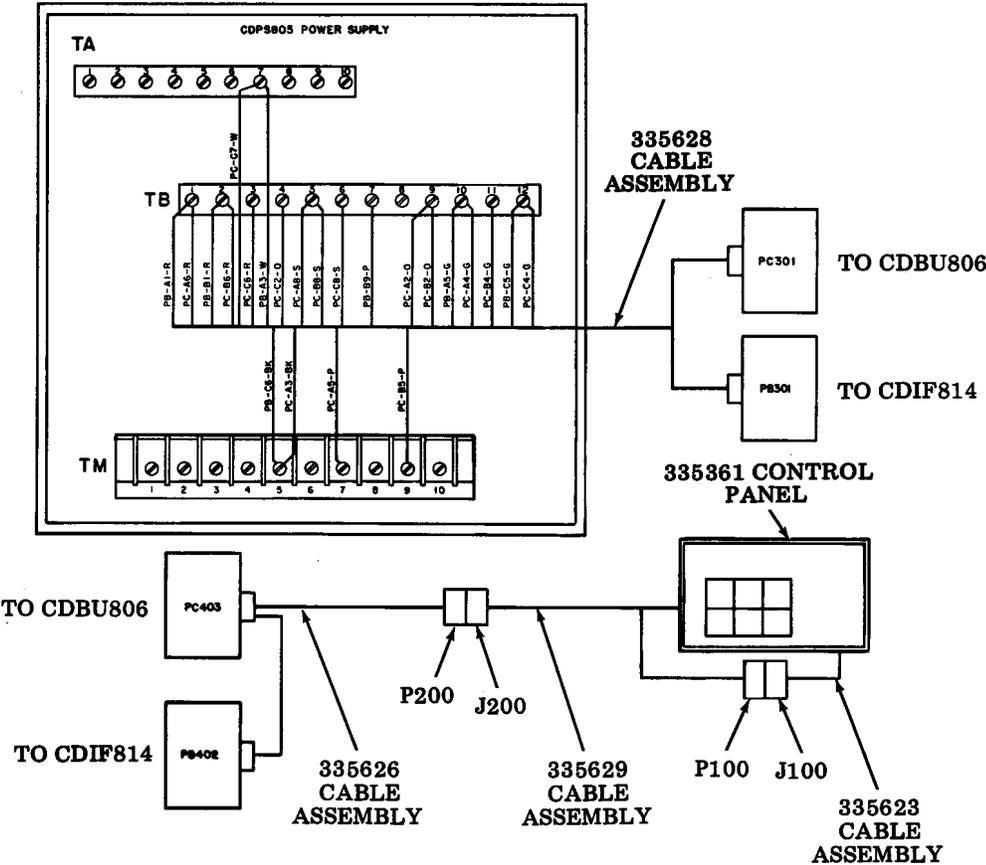


Fig. 36—Connections for Station Arrangements 4 and 5

2.13 DATA SET OPTIONS

(1) Data Set 201C Option Installation

- (a) Remove all cords connected to data set.
- (b) Remove front and rear plastic covers. (Gently squeeze on top and bottom of cover in order to clear plastic tabs. Tilt cover down then lift out.)
- (c) Loosen two retaining screws located at rear, near the center. Slide out data set from front.
- (d) Remove slotted head screw.
- (e) Slide JB1 circuit card to left until rivets are free from their keyhole slots.

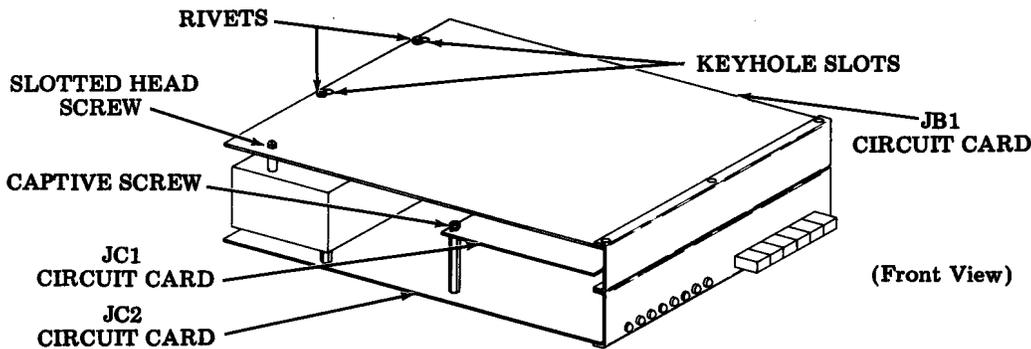


Fig. 37—Data Set 201C Removed From Housing

- (f) Rotate JB1 to the right.

Note: List 3 data sets have a JC1 circuit card.

- (g) If present, loosen four captive screws (one on each corner).

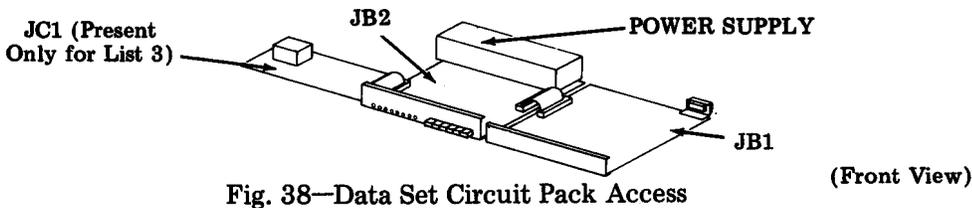


Fig. 38—Data Set Circuit Pack Access

To reassemble data set, reverse above procedure. Make sure both edges of the circuit cards engage slots in data set housing.

(1) Data Set 201C Option Installation (Cont)

OPTION	FEATURE	RED STRAPS ON JB1								RED STRAPS ON JB2		REMARKS
		19-20	21-22	23-24	25-26	27-28	29-30	31-32	32-34	INSTALL	REMOVE	
ZA(*)	Transmit Signal Level (See Notes 1 and 3.)					X	X	X	X	-	-	0 dBm
ZB		X					X	X	X	-	-	-1 dBm
ZC			X				X	X	X	-	-	-2 dBm
ZD		X	X					X	X	-	-	-3 dBm
ZE				X			X	X	X	-	-	-4 dBm
ZF		X	X				X	X		-	-	-5 dBm
ZG			X	X			X		X	-	-	-6 dBm
ZH		X	X	X					X	-	-	-7 dBm
ZI					X	X	X	X		-	-	-8 dBm
ZJ		X			X		X	X		-	-	-9 dBm
ZK			X		X	X	X	X		-	-	-10 dBm
ZL		X	X		X			X		-	-	-11 dBm
ZM				X	X	X	X			-	-	-12 dBm
ZN		X		X	X	X	X			-	-	-13 dBm
ZO			X	X	X	X	X			-	-	-14 dBm
ZP		X	X	X	X					-	-	-15 dBm
ZQ(*, B)	Line Impedance	INSTALL				REMOVE				-	-	600 Ohm
ZR		16-17	17-18	16-17						-	-	900 Ohm
ZS(*, B)	Compromise Equalizer	8-9	9-10						-	-	Installed	
ZT		11-12	12-13						-	-		
		9-10	8-9						-	-	Out	
ZU(*, B)	Carrier On Sensitivity	12-13	11-12					-	-			
ZV		-	1-2						-	-	PL, -24 SN, -44	
YA(*, B)	New Sync	1-2						20-21	19-20	NS Not Used		
YB		-							19-20	20-21	Under Customer Control	

*Factory programmed.
B Recommended for BISP.

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(1) Data Set 201C Option Installation (Cont)

OPTION	FEATURE	RED STRAPS ON JB1		RED STRAPS ON JB2				REMARKS						
		Install	Remove	Install	Remove	1-3	2-3		4-6	5-6	11-12	27-28	28-29	133-134
YC(*, B)	Transmitter	—	—	—	13-14									Internal
YD	Timing	—	—	13-14	—									External
YE(*, B)	Auto-	—	—	—	17-18									
YF	Answer	—	—	17-18	—									
YG(*, B)	Ring	—	—	22-24	22-23									EIA **
YH	Indicator on Customer Interface	—	—	22-23	22-24									Contact
YI(*)	Use With DAS 828	—	—	—	15-16									Yes
YJ	Type (See Note 2.)	—	—	15-16	—									No
YK(*, B)	Signal	—	—	25-26	—									Conn to Frame
YL	Ground Option	—	—	—	25-26									No Conn to Frame
XA(*, B)	Type of Operation and CTS	35-36	4-5	X	X	X	X							Switched Carr 7 ms CTS Delay
XB	Delay (See Note 3.)	35-36	4-5	X		X	X	X						Continuous Carr 7 ms CTS Delay
XC	4-Wire Prv Line	35-36	4-5		X	X	X	X						Continuous Carr No CTS Delay
XD	2-Wire Sw Net.	4-5	35-36	X	X			X						Switched Carr 150 ms CTS Delay
XE	2-Wire Prv Line	4-5 35-36	—	X	X	X					X			Switched Carr 150 ms CTS Delay

*Factory programmed.

**Electronic Industries Association.

B Recommended for BISP.

Note 1: Transmit signal level is installation dependent.

Note 2: Use of DAS 828 (or 829) is installation dependent, if none present, choose Option YJ.

Note 3: For Options ZA through ZP (JB1 entries) and Options XA through XE (JB2 entries), "X" indicates install strap, blank indicates remove strap.

(2) Data Set 201B Option Installation

- (a) Disconnect cords from rear of data set.
- (b) Remove three captive retaining screws.
- (c) Slide cover off to rear of data set.

To reassemble data set, reverse the above procedure.

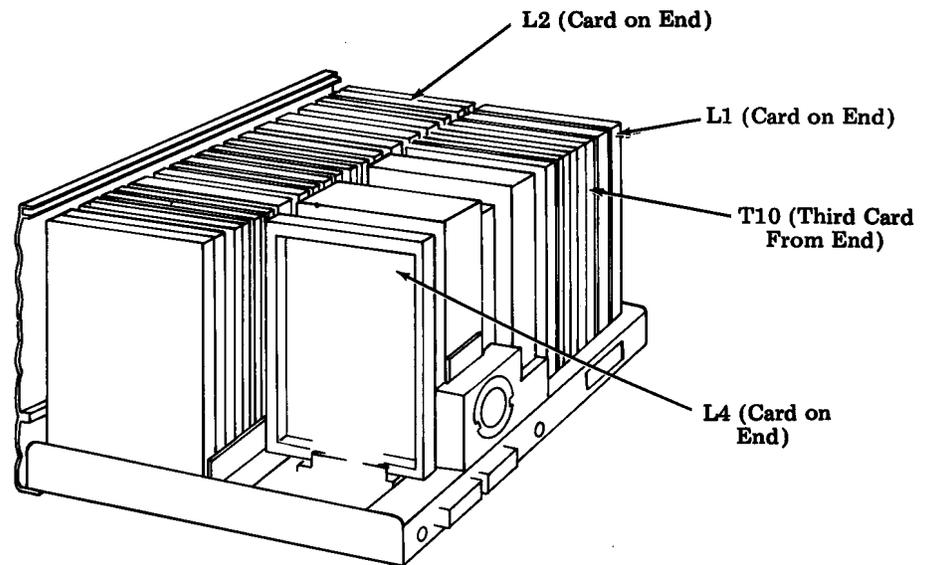


Fig. 39—Data Set 201B3 With Cover Removed

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(2) Data Set 201B Option Installation (Cont)

OPTION	FEATURE	CONNECTION	REMARKS
ZJ(B)	Auto-Answer	(1, 2) on T10 (CP AN4)	Without 804A
Z(*)		None	With 804A
ZK	New Sync	None	Used
W(*, B)		(7, 15) on L1 (CP AN6)	Not Used
V	Echo Delay	(1, 5) (11, 12) on L1 (CP AN6)	Used
T(B)		(11, 16)	Not Used — Short CTS Interval
ZL		(1, 5) (11, 16)	Not Used — Long CTS Interval
Y(*, B)	Terminal Impedance	(6, 10) (3, 8) on L1 (CP AN6)	600 Ohm
X		(2, 10) (3, 4)	900 Ohm
ZA	2- or 4-Wire	(22, 24, 25) (20, 21, 23) (13, 16) (11, 12) on L2 (CP AN7)	4-Wire, Continuous Carr, Prv Line Factory Wired for 201B3 and 4
ZB(B)		(18, 22) (19, 20) (24, 25) (14, 17) (21, 23) (13, 16) (11, 12)	4-Wire, Continuous Carr, Prv Line Factory Wired for 201B3 and 4
ZC		(22, 24) (20, 23) (15, 25) (10, 21) (9, 14, 17)	2-Wire Prv Line or DDD
G	Transmitter Line Signal (See Note 1.)	(26, 30) on L2 (CP AN7)	0 dBm Signal Level
F		(27, 30)	-2 dBm
E		(28, 30)	-4 dBm
B		(29, 30)	-6 dBm
A(*)		(30, 31)	-8 dBm

*Factory programmed.
B Recommended for BISP.

(2) Data Set 201B Option Installation (Cont)

OPTION	FEATURE	CONNECTION	REMARKS
S	Receiver Signal Level (See Note 2.)	(5, 7) on L2 (CP AN7)	-50 to -20 dBm Signal Level, 28 dBrc Max Noise
R		(1, 7) (3, 5)	-44 to -14, 34
Q		(6, 7) (4, 5)	-38 to -8, 40
N		(1, 7) (3, 6) (4, 5)	-32 to -2, 46 — Factory Wired for 201B3 and 4
M		(2, 7) (5, 8)	-42 to -12, 36
K		(1, 7) (2, 3) (5, 8)	-36 to -6, 42
J (See Note 3.)		(2, 4) (5, 8) (6, 7)	-30 to 0, 48
H (See Note 4.)		(1, 7) (3, 6) (2, 4) (5, 8)	-24 to +6, 54
ZD(*, B)		Interlock (Part of Control Lead Interface)	(1, 3) (5, 6) (11, 13) (21, 24) on L4 (CP AP1)	Corresponds to DSR of EIA RS-232A
ZE	(1, 2) (4, 5, 7) (11, 12, 24)		Used for Contact Closure Interface
ZF(*, B)	Ring Indica- tor, Remote Control etc, (Part of Con- trol Lead Interface)	(9, 10) (17, 18) (19, 20) (21, 22) (8, 14, 15) on L4 (CP AP1)	Corresponds to RI and DTR of EIA RS-232A
ZG		(8, 9) (15, 16) (18, 20) (22, 23)	Used for Contact Closure Interface

*Factory programmed.

B Recommended for BISP.

Note 1: Transmitter signal level is installation dependent.

Note 2: Receiver signal level is installation dependent.

Note 3: Use Option J for loop loss less than 4 dB.

Note 4: Use Option K for loop loss between 4 and 10 dB, but if line noise causes faulty operation, use Option J.

NOTES

3. OPERATIONAL CHECKOUT

GENERAL

3.01 All checkout procedures are presented with the understanding that all power cords are connected to properly grounded ac sources, all cable connectors and circuit cards are fully seated, lids are closed, and options are properly installed.

Note: The DATASPEED 40 KDs must be completely checked out with the TSG803 simulator prior to beginning these checkout procedures.

3.02 The checkout procedures are organized by station arrangement in accordance with E.L. 2689 (GL: 74-03-067) and should be performed in the order given in Part 3.

3.03 When a trouble is encountered, refer to Part 4.

3.04 For testing purposes, it is assumed that the following options are installed (see Part 2 for option descriptions):

- (a) DATASPEED 40 — Options 5.a. and 5.c.
- (b) 2550 Cluster Controller — Factory programmed options
- (c) 2541 Station Controller — Options 38.a. and 40.a.

3.05 Any options not listed in 3.04 are either unaffected by the test procedures or the differing results are given in the applicable steps and identified by the option number.

3.06 The checkout procedures are grouped by station arrangements as follows:

STATION ARRANGEMENT	APPLICABLE OPERATIONAL CHECKOUT
1 (Without Printer)	All steps of Table F.
1 (With Printer)	All steps of Table F. Steps 51 through 58 of Table G.
2	Step 1 and Steps 24 through 50 of Table G.
3	Repeat the checkout procedure for Station Arrangement 2 twice (once for each single station controller).
4 (With Printer Used as a Local Device Only)	Steps 1 through 50 of Table G.
4 (With Printer Used as an On-Line Device)	All steps of Table G.
5	Steps 1 through 5, 24, and 51 through 58 of Table G.

SECTION 579-505-352

3.07 STATION ARRANGEMENT 1

- (a) A complete operational checkout of the DATASPEED 40 KD (D40 or KD) should be performed using Section 582-200-500 prior to starting Table F.
- (b) At least two D40s are required to test the station.

TABLE F
STATION ARRANGEMENT 1

Test Mode

Note: Refer to 4.02 if station fails to pass any step(s) listed below.

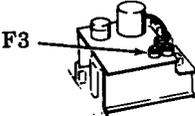
STEP	ACTION	RESULT
1	<p>Apply ac power to all station equipment.</p> <p><i>Note:</i> If any data is on display of D40, depress FORM ENTER, CLEAR, and TAB CLEAR. Depress FORM ENTER again to extinguish light. Upon turn on of a D40, the above "clearing procedure" is always required if data is on the display.</p> <p>2550 Cluster Controller:</p> <ul style="list-style-type: none"> a. Depress POWER. b. Remove F3 fuse from power supply control assembly located in center logic rack. c. Replace fuse.  d. Unplug data set connector from cluster controller center logic PP panel. 	<p>D40s: LOCAL lights and cursor appears in home position.</p> <p>2541 Buffer/Interface: POWER lights when depressed.</p> <p>POWER lights.</p> <p>-12 V FAIL on top control panel lights.</p> <p>-12 V FAIL extinguishes.</p> <p>DSR FAIL lights. CD FAIL is flashing. CTS FAIL does not flash nor light.</p>

TABLE F (Cont)

STATION ARRANGEMENT 1

Test Mode (Cont)

STEP	ACTION	RESULT
1 (cont)	<p>e. Reconnect data set connector to PP panel and restore any alarm lamp conditions by depressing lamp key.</p> <p>Place Magnetic Tape (MT) switch to EOT position.</p>	<p>DSR FAIL extinguishes when depressed (reset). CD FAIL continues to flash. CTS FAIL does not light.</p> <p>MT: STOP lit. (If ERROR also lights, depress ERROR to extinguish light.)</p>
2	Depress TEST switch located on cluster controller center logic rack.	TEST on top control panel lights.
3	<p>At port B D40, depress RECEIVE (see sketch in Step 10).</p> <p><i>Note:</i> If cluster controller L card in I/O port has RS strap not cut and D40 has Option 15.a., it is not necessary to depress RECEIVE. This is applicable throughout this procedure. Hereafter these two options are called the Force Receive feature.</p> <p>If port B has Force Receive feature, depress port B D40 LOCAL; if not, leave port B D40 in RECEIVE.</p>	<p>RECEIVE lights.</p> <p>Port B D40 With Force Receive: LOCAL lights.</p> <p>Port B D40 Without Force Receive: RECEIVE still lit.</p>

TABLE F (Cont)
STATION ARRANGEMENT 1

Test Mode (Cont)

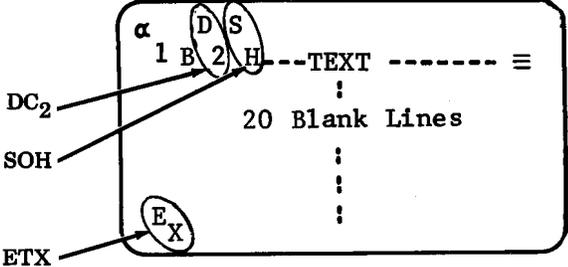
STEP	ACTION	RESULT
4	At port A D40, prepare message shown to send to port B (see Note 2).	<p>CLUSTER ADDRESS (See Note 1)</p> <p>RECEIVE D40 ADDRESS (α_2), (See Note 2)</p>  <p>Note 1: The cluster controller address (α_1) is character programmed for SID 1 on S1 and S3 circuit cards in panel A and panel B position 1. Read α_1 as "alpha one".</p> <p>Note 2: The receive D40 address (α_2) is where receive D40 is connected to cluster controller port (see Step 10). Read α_2 as "alpha two".</p> <p>Note 1: If port B D40 RECEIVE is lit go to Note 2. If port B D40 LOCAL is lit, LOCAL will extinguish and RECEIVE will light when Step 5 is completed (see Note 2). RECEIVE lights if port B D40 begins to receive in Step 6. If this does not occur then depress port B D40 RECEIVE and repeat Steps 5 and 6. If port B D40 performs correctly then trouble is in port B D40, 410678 card or port B, 2550 L card. If port B D40 still fails go to Part 4.</p> <p>Note 2: Step 6 must be performed immediately after Step 5.</p>

TABLE F (Cont)
STATION ARRANGEMENT 1

Test Mode (Cont)

STEP	ACTION	RESULT										
5	At port A D40, depress HOME then SEND.	Message is resent after the interruption of Step 6 (after complete message is sent). After third unsuccessful transmission, cursor remains at end of message, SEND goes out, and LOCAL flashes.										
6	When port B D40 begins to receive, interrupt message by depressing port B D40 LOCAL.	<p>Begins to receive:</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>S H---TEXT---- ≡</p> <p style="text-align: center;">!</p> <p style="text-align: center;">!</p> </div> <p>LOCAL lights when depressed.</p> <p>At end of first message, cursor goes home. After third unsuccessful transmission from port A, cursor goes home (if not already there), all data clears from display and LOCAL remains lit.</p>										
7	At port A send D40, depress LOCAL and HOME.	LOCAL stops flashing and remains lit, and cursor goes home.										
8	At port A send D40, depress SEND.	<p>After a successful transmission:</p> <table border="1" data-bbox="1101 1207 1549 1423"> <thead> <tr> <th data-bbox="1101 1207 1203 1255">Option</th> <th data-bbox="1203 1207 1549 1255">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="1101 1255 1203 1297">16.a.</td> <td data-bbox="1203 1255 1549 1297">D40 changes to RECEIVE</td> </tr> <tr> <td data-bbox="1101 1297 1203 1329">16.b.</td> <td data-bbox="1203 1297 1549 1329">D40 changes to LOCAL</td> </tr> <tr> <td data-bbox="1101 1329 1203 1360">16.c.</td> <td data-bbox="1203 1329 1549 1360">Cursor goes to home</td> </tr> <tr> <td data-bbox="1101 1360 1203 1423">16.d.</td> <td data-bbox="1203 1360 1549 1423">Cursor stays at end-of-message</td> </tr> </tbody> </table> <p><i>Note:</i> Check that port A D40 performs according to its options.</p>	Option	Description	16.a.	D40 changes to RECEIVE	16.b.	D40 changes to LOCAL	16.c.	Cursor goes to home	16.d.	Cursor stays at end-of-message
Option	Description											
16.a.	D40 changes to RECEIVE											
16.b.	D40 changes to LOCAL											
16.c.	Cursor goes to home											
16.d.	Cursor stays at end-of-message											

TABLE F (Cont)
STATION ARRANGEMENT 1

Test Mode (Cont)

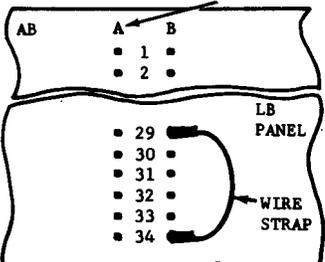
STEP	ACTION	RESULT
10 (cont)		<p><i>Note 2:</i> If only two KDs are available, first connect one (KD No. 1) to port A, the other (KD No. 2) to port B. After test (described in Note 1), retain KD No. 2 connection but connect KD No. 1 to port C. After test, retain KD No. 1 connection but connect KD No. 2 to port D, etc.</p>
<p><i>Note 1:</i> If Step 10 tests perform correctly, see Note 2. If Step 10 tests do not perform correctly, proceed to Part 4.</p> <p><i>Note 2:</i> If a 2541 Set is equipped with a CDBU806 module and its D40 printer is part of Station Arrangement 1, it can be checked by following Steps 11 through 16. If 2541 Set is not part of station, go to Step 17.</p>		
11	<p>For test purposes, add a wire jumper strap as shown from terminal B29 to B34.</p>	<div style="text-align: center;"> <p>ZB29 CONNECTOR</p>  <p>The diagram shows a ZB29 connector with terminals A and B. Below it, a wire strap connects terminal 29 to terminal 34 on an LB panel. The LB panel has terminals 29, 30, 31, 32, 33, and 34.</p> </div> <p>Wired side of 2550 Cluster Controller center logic rack (LB).</p>

TABLE F (Cont)
STATION ARRANGEMENT 1

Test Mode (Cont)

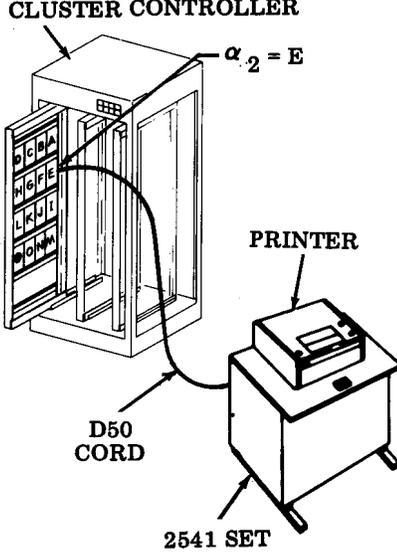
STEP	ACTION	RESULT
12	<p>At a D40, prepare a message for transmission to D40 printer.</p> <p>Depress LOCAL and type:</p> <div data-bbox="219 556 657 808" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p> α_1 α_2 D S ---TEXT---≡ 2 H | 20 Blank Lines : : : E_X </p> </div> <div data-bbox="251 871 609 934" style="border: 1px solid black; padding: 2px; margin: 10px 0;"> <p>Example: AE is address of printer "E" of cluster "A".</p> </div>	 <p>CLUSTER CONTROLLER</p> <p>$\alpha_2 = E$</p> <p>D50 CORD</p> <p>PRINTER</p> <p>2541 SET</p>
13	<p>At send D40, depress SEND.</p>	<p>D40: Will send message and resend message two additional times; after that SEND will remain lit and LOCAL will flash (this is aborted send condition).</p> <p>2541 Set: While message is being received, RECEIVE and DATA IN STORE light. When D40 aborts send, all lamps on 2541 Set should extinguish.</p> <p>Note: TRANSMIT at 2541 Set will not light. D40 printer motor will remain off.</p>

TABLE F (Cont)
STATION ARRANGEMENT 1

Test Mode (Cont)

STEP	ACTION	RESULT
14	Depress LOCAL on D40.	LOCAL lights without flashing. SEND will extinguish.
15	Remove wire jumper (Step 11) from center logic rack at ZB29, B29 to B34.	
16	Depress HOME and SEND on D40.	<p>D40: Cursor homes; message is sent. D40 changes from SEND to LOCAL.</p> <p>2541 Set: RECEIVE and DATA IN STORE light as soon as D40 begins to send.</p> <p><i>Note 1:</i> After receiving ETX character, RECEIVE will extinguish; TRANSMIT will light and remain lit as long as DATA IN STORE is lit.</p> <p><i>Note 2:</i> Within a few seconds, D40 printer motor turns on. When message is copied by printer, all lamps on 2541 Set extinguish except for POWER.</p> <p><i>Note 3:</i> If a tractor feed printer is used in 2541 Set and printer has Option 18.c., with forms switch ON, a form feed will occur when ending character ETX is received.</p>
17	Depress TEST (nonilluminating) on inside of cluster controller center logic rack.	TEST lamp on top of cluster control panel extinguishes.

TABLE F (Cont)

STATION ARRANGEMENT 1

Standby Mode

Note: Refer to 4.03 if station fails to pass any step(s) listed below.

STEP	ACTION	RESULT
18	Check that all D40s are in LOCAL.	D40s: LOCAL is lit (all D40s).
19	<p>Make certain that Magnetic Tape Set (MT Set) is turned on and cartridge is loaded with an erased tape that has a valid clock track recorded on it.</p> <p>a. Make sure function selector switch is not in TAPE UNLOAD position. Make sure engagement lever is in release position.</p> <p>b. Lift dark plastic lid. Position cartridge on transport (label side up). Pull out enough tape leader to place between read/write heads.</p> <p>c. While holding cartridge in position, draw tape leader between guides and into take-up spool as shown.</p> <p>d. Place square hole of tape leader in center of slot in take-up spool.</p> <p>e. Move engagement lever to engage.</p> <p>f. Close dark plastic lid. Place motor control switch in ON position.</p>	<p>TAPE LEADER</p> <p>CARTRIDGE</p> <p>GUIDEPOST</p> <p>ENGAGEMENT LEVER (Release Position)</p> <p>READ/WRITE HEADS</p> <p>TRANSPORT</p> <p>TAKE-UP SPOOL (Center Slot)</p> <p>Tape being loaded.</p> <p>ENGAGEMENT LEVER (Engage Position)</p> <p>TAPE LEADER</p> <p>Tape Loaded, Ready for Step 11(f).</p>

TABLE F (Cont)

STATION ARRANGEMENT 1

Standby Mode (Cont)

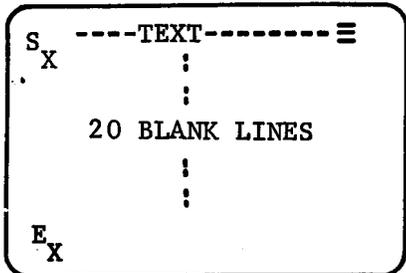
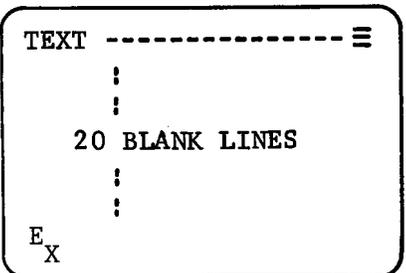
STEP	ACTION	RESULT
19 (cont)	g. Depress FAST ACCESS FWD until beginning of tape marker passes tape head. h. Depress FAST ACCESS REV until tape stops moving. Depress SINGLE STEP FWD.	BOT lamp lights and goes out when tape moves to first character position. Motor remains on.
20	Depress STANDBY ON on cluster control panel.	Cluster: After short time, STANDBY ON will light.
21	Place motor control switch in AUTO and depress STOP.	MT: Motor stops.
22	Place D40 at port A (may be another port) in LOCAL. Prepare message shown. This can be done by using message already on display; depress HOME once, CHAR DLETE three times, then type STX. Observe message starts with STX.	LOCAL lights. 
23	Place D40 at cluster port B in LOCAL. (Port B may be port other than port of Step 22.) Depress HOME once and CHAR DLETE four times so message starts with "text".	LOCAL lights. 

TABLE F (Cont)

STATION ARRANGEMENT 1

Standby Mode (Cont)

STEP	ACTION	RESULT
26	Depress HOME and SEND on both D40s. (Note 1 of Step 25 applies.)	Results as for Step 25.
27	Place D40 at port A (may be another port) in LOCAL. Depress HOME, type S _H .	LOCAL lights if not already lit. Display appears as sketch of Step 24.
28	Depress HOME and SEND on port A D40.	Results as for Step 25 (send only from port A D40).
29	Depress STANDBY OFF on front panel of 2550 Cluster Controller.	Cluster: STANDBY ON extinguishes. MT: The motor turns off.
30	Depress and hold FAST ACCESS REV to beginning of tape.	MT: BOT lights.
31	Depress SINGLE STEP FWD past BOT.	MT: BOT extinguishes.
32	Depress STOP.	MT: Motors turn off.
33	At main edit D40 (the D40 with REC MAG TAPE key), perform Steps 33a., b., and c. until all three messages are received from MT. The main edit D40 is connected to 2541 Set. a. Depress HOME. b. Depress CLEAR. c. Depress REC TAPE and verify received message is correct from each sender.	Main Edit D40: Cursor in home position. Main Edit D40: Display is cleared. MT: Motors turn on each time that D40 REC TAPE lights. Tape moves during tape send and stops at end of message; MT motor also turns off.

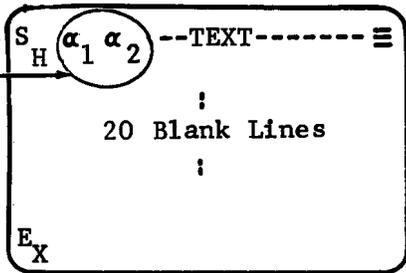
TABLE F (Cont)
STATION ARRANGEMENT 1

Standby Mode (Cont)

STEP	ACTION	RESULT
<p>33 (cont)</p>		<p>D40: REC TAPE and REC lamps light while message is being received. Both lamps extinguish and LOCAL lights at end of message.</p> <p>The message displayed must be the same as message on screen of original send D40 except for addition of SOH and cluster and send port addresses by the 2550.</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> <p>S_H is SOH</p> </div> <div style="border: 1px solid black; padding: 10px; width: 200px;"> <p>S_H α_1 α_2 S_X-TEXT-----≡</p> <p style="text-align: center;">:</p> <p style="text-align: center;">20 Blank Lines</p> <p style="text-align: center;">:</p> <p style="text-align: center;">:</p> <p style="text-align: center;">:</p> <p>E_X</p> </div> </div> <p style="text-align: center;">Display Screen Received From Set A</p> <p style="text-align: center;">(Read α_1 as "alpha one", α_2 as "alpha two".)</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> <p>Example: AB is address of second D40 cluster A.</p> </div> <div style="border: 1px solid black; padding: 10px; width: 200px;"> <p>S_H α_1 α_2 S_X-TEXT-----≡</p> <p style="text-align: center;">:</p> <p style="text-align: center;">20 Blank Lines</p> <p style="text-align: center;">:</p> <p style="text-align: center;">:</p> <p style="text-align: center;">:</p> <p>E_X</p> </div> </div> <p style="text-align: center;">Display Screen Received From Set B</p>

TABLE F (Cont)
STATION ARRANGEMENT 1

Standby Mode (Cont)

STEP	ACTION	RESULT
33 (cont)	<p>Example: AC is address of third D40 of cluster A.</p> <p>Note: If only two D40s are present, display shown at right is from Set A.</p>	 <p>Display Screen Received From Set C</p>

On-Line Mode With Test Center

Note: Refer to 4.04 if station fails to pass any step(s) listed below.

BEFORE BEGINNING TEST, MAKE CERTAIN THAT ALL LOCAL OPERATIONAL CHECKOUT TESTS (TABLE F, STEPS 1 THROUGH 33) HAVE BEEN PERFORMED AND THAT STATION HAS PASSED ALL STEPS.		
34	<p>Prepare for on-line test (3.09). Make a list stating assignments for:</p> <p>Station Code (α_1) No. of D40s (α_2) (If used) D40 Printer/Buffer Set I/O Port Tel No. 1 (REC) 2 (SEND) 3 (VOICE)</p> <p>Note 1: Read α_1 as "alpha one", α_2 as "alpha two".</p> <p>Note 2: In these tests; α_1 is station identity α_2 is identity of a D40 at a station $\alpha_1 \alpha_2$ is address of a D40 at a station.</p>	

TABLE F (Cont)
STATION ARRANGEMENT 1

On-Line Mode With Test Center (Cont)

STEP	ACTION	RESULT										
35	Operate all station power switches to ON position.	<p>2541 Set: POWER lights.</p> <p>Cluster: Only POWER is lit.</p> <p><i>Note:</i> After call is established to Test Center, depress CD FAIL and DSR FAIL to reset cluster controller logic circuits.</p> <p>D40s: Only LOCAL is lit, cursor is in home position.</p>										
36	<p>Determine which of the following conditions apply to the 2550 Cluster Controller and inform Test Center that you want either Step 37, 38, 39, or 40 to be performed. Choose only one, test, then proceed to Step 41.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; border-bottom: 1px solid black;"><u>Conditions</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>Test Wiring</u></th> </tr> </thead> <tbody> <tr> <td style="border-right: 1px solid black; padding: 5px;">Cluster: AB and RS cut. D40: Option 15.b. enabled. (No Force Receive in 2550 or D40. 2550 does not answer "select with reply".)</td> <td style="text-align: center; vertical-align: top; padding: 5px;">Step 37</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">Cluster: AB not cut, RS cut. D40: Option 15.b. enabled. (No Force Receive in 2550 or D40. 2550 answers "select with reply".)</td> <td style="text-align: center; vertical-align: top; padding: 5px;">Step 38</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">Cluster: AB cut, RS not cut. D40: Option 15.a. enabled. (Force Receive in 2550 and D40. 2550 does not answer "select with reply".)</td> <td style="text-align: center; vertical-align: top; padding: 5px;">Step 39</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">Cluster: AB and RS not cut. D40: Option 15.a. enabled. (Force Receive in 2550 and D40. 2550 answers "select with reply".)</td> <td style="text-align: center; vertical-align: top; padding: 5px;">Step 40</td> </tr> </tbody> </table> <p><i>Note:</i> Option 15 is on 410678 card in D40.</p>	<u>Conditions</u>	<u>Test Wiring</u>	Cluster: AB and RS cut. D40: Option 15.b. enabled. (No Force Receive in 2550 or D40. 2550 does not answer "select with reply".)	Step 37	Cluster: AB not cut, RS cut. D40: Option 15.b. enabled. (No Force Receive in 2550 or D40. 2550 answers "select with reply".)	Step 38	Cluster: AB cut, RS not cut. D40: Option 15.a. enabled. (Force Receive in 2550 and D40. 2550 does not answer "select with reply".)	Step 39	Cluster: AB and RS not cut. D40: Option 15.a. enabled. (Force Receive in 2550 and D40. 2550 answers "select with reply".)	Step 40	
<u>Conditions</u>	<u>Test Wiring</u>											
Cluster: AB and RS cut. D40: Option 15.b. enabled. (No Force Receive in 2550 or D40. 2550 does not answer "select with reply".)	Step 37											
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Cluster: AB and RS not cut. D40: Option 15.a. enabled. (Force Receive in 2550 and D40. 2550 answers "select with reply".)	Step 40											

TABLE F (Cont)

STATION ARRANGEMENT 1

On-Line Mode With Test Center (Cont)

STEP	ACTION	RESULT
37	<p>Cluster: AB and RS straps cut on L card. D40: Option 15.b. enabled. (These are factory options.)</p> <p>No action required; proceed to Step 41.</p>	
38	<p>Cluster: AB strap not cut, RS strap cut on each I/O port — L card. D40: Option 15.b. enabled.</p> <p>a. Place all D40s in LOCAL.</p> <p>b. After all D40s are checked, go to Step 41.</p>	LOCAL lights.
39	<p>Cluster: AB strap cut, RS strap not cut on each I/O port — L card. D40: Option 15.a. enabled.</p> <p>a. Place all D40s in LOCAL.</p> <p>b. Turn monitor power switch OFF on all D40s.</p> <p>c. When Test Center has completed testing all D40s, turn monitor power switches ON. Depress LOCAL to extinguish RECEIVE.</p> <p>d. Proceed to Step 41.</p>	<p>LOCAL lights.</p> <p><i>Note:</i> When proper station sequence is received, D40 RECEIVE will light.</p> <p>D40 RECEIVE is still lit. RECEIVE extinguishes and LOCAL lights.</p>
40	<p>Cluster: AB and RS straps not cut on each I/O port — L card. D40: Option 15.a. enabled.</p> <p>a. Place all D40s in LOCAL.</p> <p>b. Turn monitor power switch OFF on all D40s.</p>	<p>LOCAL lights.</p> <p><i>Note:</i> When proper select sequence is received, D40 will switch to RECEIVE.</p>

TABLE F (Cont)
STATION ARRANGEMENT 1

On-Line Mode With Test Center (Cont)

STEP	ACTION	RESULT
40 (cont)	c. When Test Center makes the request, turn monitor power switches ON. d. Go to Step 41.	Set should remain in RECEIVE. Set does not display FOX message sent from Test Center.
41	Depress LOCAL, HOME, and RECEIVE on D40s of ports A, B, and C. Any other sets should be in LOCAL.	A, B, and C D40s: RECEIVE is lit. Other D40s: LOCAL is lit.
<i>Note:</i> Steps marked "None" indicate action at the Test Center.		
42	None	None
43	None	None
44	None	Port A D40 receives (on one line): <div style="border: 1px solid black; border-radius: 10px; padding: 10px; width: fit-content; margin: 10px auto;"> $S_X \equiv$ <p>THE QUICK BROWN FOX ---90 E_X</p> </div>
45	None	Port A D40 LOCAL lights.
46	None	None

TABLE F (Cont)

STATION ARRANGEMENT 1

On-Line Mode With Test Center (Cont)

STEP	ACTION	RESULT
47	<p>Appearance of display depends on D40 options. Display for factory options is shown.</p> <p>Verbally verify message with Test Center.</p>	<p>Port B D40 receives:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>5 NULLS ≡ 5 DELETES ≡ 5 CRS ≡ 5 BAD PARITY \\\\\ \ ≡ 5 BELLS BBBBBE LLLLLX</p> </div> <p>Characters depend on programming on MC592, position 116, in CDIF814 module.</p> <p>The cursor then goes home.</p> <p><i>Note:</i> The keyboard should sound one long tone while 5 BELLS are received.</p>
48	None	Display is cleared and RECEIVE stays lit.
49	None	<p>Port B D40 receives (on one line):</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>S X THE QUICK BROWN FOX JUMPED ---90 E X</p> </div>
50	None	Port B D40 LOCAL lights.

TABLE F (Cont)

STATION ARRANGEMENT 1

On-Line Mode With Test Center (Cont)

STEP	ACTION	RESULT										
51	Depress LOCAL, HOME, and SEND on ports A, B, and C D40s.	If Force Receive feature is installed in station (2550 L card has RS strap not cut, D40 has Option 15.a.). RECEIVE will light. If it does, depress SEND.										
52	None											
53	None	Port A D40: The cursor moves through the message and stops past EX. SEND remains lit. Message was placed on display in Step 44.										
54	None	Port A D40: The cursor homes and the message is sent again.										
55	None	Port A D40: After a few seconds, SEND extinguishes and LOCAL flashes.										
56	At port A D40, depress LOCAL.	LOCAL stops flashing.										
57	None (Port B and C D40s SEND are lit since Step 51.)	Port B D40 sends message.										
58	None	After Test Center action, port B D40 reacts according to its options as follows: <table> <thead> <tr> <th><u>Option</u></th> <th><u>Action of Set</u></th> </tr> </thead> <tbody> <tr> <td>16.a.</td> <td>Goes to REC</td> </tr> <tr> <td>16.b.</td> <td>Goes to LOCAL</td> </tr> <tr> <td>16.c.</td> <td>Cursor goes home</td> </tr> <tr> <td>16.d.</td> <td>Cursor stays at end-of-message.</td> </tr> </tbody> </table>	<u>Option</u>	<u>Action of Set</u>	16.a.	Goes to REC	16.b.	Goes to LOCAL	16.c.	Cursor goes home	16.d.	Cursor stays at end-of-message.
<u>Option</u>	<u>Action of Set</u>											
16.a.	Goes to REC											
16.b.	Goes to LOCAL											
16.c.	Cursor goes home											
16.d.	Cursor stays at end-of-message.											

3.08 STATION ARRANGEMENTS 2 THROUGH 5

A complete operational checkout of the D40 KD should be performed using Section 582-200-500 prior to starting Table G.

TABLE G
STATION ARRANGEMENTS 2 THROUGH 5

Local Mode

Note: If station fails to pass any step(s) listed below, refer to the following:

Station Arrangement 2 — 4.05
3 — 4.07
4 — 4.09
5 — 4.11

STEP	ACTION	RESULT
1	<p>Apply ac power to all station equipment.</p> <p><i>Note 1:</i> If any data is on display of D40, depress FORM ENTER, CLEAR, and TAB CLEAR. Depress FORM ENTER again to extinguish light. Upon turn on of a D40, the above "clearing procedure" is always required if data is on display.</p>	<p>2541 Set: POWER lights when depressed and ventilating fans operate.</p> <p><i>Note 2:</i> If a D40 printer is connected to 2541 Set, the printer motor should not start.</p> <p>D40: LOCAL lights and cursor appears in segment No. 1 and first line, first character position.</p>
<p>Station Arrangements 2 and 3: Proceed to On-Line Testing, Step 24.</p> <p><i>Note 1:</i> If 2541 Set has a D40 only, go to On-Line Testing, Step 24.</p> <p><i>Note 2:</i> If a printer is part of the station, go to Step 2.</p>		
2	Open printer cabinet and lift cover interlock switch to bypass position.	None
3	Place printer test switch in ON position.	Printer motor turns on and character font identification prints in all 80 columns across the page (^A / _A for monospace carrier and ^A / _B for up-low carrier).

TABLE G (Cont)

STATION ARRANGEMENTS 2 THROUGH 5

Local Mode (Cont)

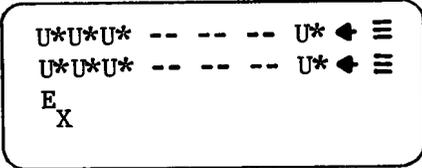
STEP	ACTION	RESULT
3 (cont)		<i>Note:</i> Check that printer ribbon feeds properly during printing and that one or two line feeds occur at end of each line; line feed 1 or 2 is determined by position of LF switch.
4	Place printer TEST switch in OFF position and close printer cover.	Printer motor turns off.
<p><i>Note 1:</i> If 2541 Set does not have a D40, go to On-Line Testing, Step 24.</p> <p><i>Note 2:</i> If 2541 Set has a D40 with an auxiliary D40 printer (ie, CDIF814 Options 33.a. and 36.a. are selected), go to Step 6 (continue through Step 23).</p> <p><i>Note 3:</i> If D40 printer is only used off-line, (ie, CDIF814 Options 33.b. and 36.b. are selected), go to Step 5 (continue through Step 23).</p>		
5	Depress PAPER on top of printer cabinet.	Printer motor turns on and feeds out paper for as long as key is depressed.
Station Arrangement 5: Proceed to On-Line Testing, Step 24.		
6	D40: Type two lines of U*; end each line with Return and New Line. Type ETX on third line.	 <pre> U*U*U* -- -- -- U* ◀ ≡ U*U*U* -- -- -- U* ◀ ≡ E X </pre>
7	D40: Depress HOME.	Cursor moves to segment No. 1, first line, first character position.
8	D40: Depress PRINT LOCAL.	D40: SEND lights and cursor moves through message and stops after ETX character. After transmission, D40 goes to LOCAL.

TABLE G (Cont)

STATION ARRANGEMENTS 2 THROUGH 5

Local Mode (Cont)

STEP	ACTION	RESULT
8 (cont)		<p>2541 Set: REC lights while D40 is sending. DATA IN STORE also lights.</p> <p><i>Note 1:</i> After receipt of ETX character, REC will extinguish; TRANSMIT and DATA IN STORE will light and remain lit.</p> <p><i>Note 2:</i> Within two seconds the printer motor will be up to speed and printer will copy entire message. At the end of the message, all lights on 2541 Set will go off except for POWER.</p>
9	D40: Turn off ac power. Open lid of electronics cabinet, pull module forward (to stop). Remove 410674 card from controller. At card coordinates C-12, depress dot end of switch No. 2. This enables the End-on-EOT option.	LOCAL goes out.
10	Reinstall 410674 card into D40. Leave lid open.	None
11	D40: Turn on ac power.	Cursor appears and LOCAL lights.
12	D40: Depress test switch No. 3 on 410001 card.	Display screen fills with U and is replaced with * (asterisks) when switch is released.
13	Determine character storage capacity (2K, 4K, or 6K) of CDBU806 buffer in 2541 Set (see Results column).	a. 2K Storage = Cards in module positions 116, 117 and 118; none in positions of b. and c.

TABLE G (Cont)

STATION ARRANGEMENTS 2 THROUGH 5

Local Mode (Cont)

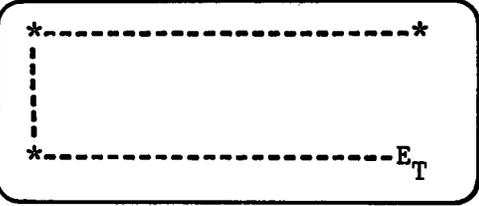
STEP	ACTION	RESULT
13 (cont)		<p>b. 4K Storage = Same as given in a. but also cards in module positions 113, 114, and 115; none in positions of c.</p> <p>c. 6K Storage = Same as given in a. and b. but also cards in module positions 110, 111, and 112.</p>
14	<p>D40: Leave screen filled with asterisks and enter an EOT character in last character position of 24th line.</p>	
15	<p>D40: Depress LOCAL, HOME, and PRINT LOCAL.</p> <p><i>Note:</i> Repeat action of Step 15 until 2541 Set FULL ALARM RESET lights and tone sounds. CLEAR BUFFER should also light at this time.</p>	<p>2541 Set: RECEIVE and DATA IN STORE light during receipt of message. FULL ALARM RESET lights and flashes (see Note). A tone sounds indicating that buffer is full.</p> <p>CLEAR BUFFER lights indicating buffer is full and no message ending character was detected. RECEIVE extinguishes after buffer is full.</p> <p>D40 (if 2541 has 2K buffer): During second D40 print local operation, buffer storage capacity should be filled.</p>

TABLE G (Cont)

STATION ARRANGEMENTS 2 THROUGH 5

Local Mode (Cont)

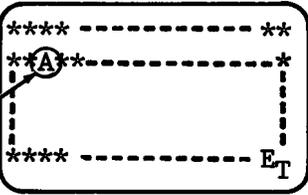
STEP	ACTION	RESULT
15 (cont)		<p>D40 (if 2541 has a 4K buffer): During third D40 print local operation, buffer storage capacity should be filled.</p> <p>D40 (if 2541 has a 6K buffer): During fourth D40 print local operation, buffer storage capacity should be filled.</p>
16	2541 Set: Depress FULL ALARM RESET.	Tone silences but FULL ALARM RESET continues to flash.
17	2541 Set: Depress FULL ALARM RESET again.	Tone now sounds but FULL ALARM RESET continues to flash.
18	D40: Depress LOCAL. Leave cursor at present position.	LOCAL lights.
19	2541 Set: Depress CLEAR BUFFER.	DATA IN STORE, FULL ALARM RESET, and CLEAR BUFFER lights extinguish.
20	<p>D40: Depress cursor left three times to move cursor three places and type character A.</p> <div data-bbox="300 1199 618 1268" style="border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;"> <p>Example: Position of A could be elsewhere.</p> </div>	
21	D40: Depress HOME and PRINT LOCAL.	D40: PRINT LOCAL and SEND light as cursor moves across display and stops at E _T . The "last" time (see Step 22) that PRINT LOCAL is depressed, cursor will stop before EOT. D40 LOCAL lights.

TABLE G (Cont)

STATION ARRANGEMENTS 2 THROUGH 5

Local Mode (Cont)

STEP	ACTION	RESULT
21 (cont)		2541 Set: RECEIVE lights while data is being received. DATA IN STORE remains lit indicating data is stored in buffer.
22	<p>2541 With 2K Buffer: Repeat Step 21 but before depressing PRINT LOCAL a second time, position cursor over character A and type ETX.</p> <p>2541 With 4K Buffer: Repeat Step 21 but before depressing PRINT LOCAL for third time, position cursor over character A and type ETX.</p> <p>2541 With 6K Buffer: Repeat Step 21 but before depressing PRINT LOCAL for fourth time, position cursor over character A and type ETX.</p>	<p>2541 Set: Same as Step 21 except that upon receipt of message end character ETX, RECEIVE extinguishes and TRANSMIT lights.</p> <p><i>Note:</i> TRANSMIT on buffer should light when printer motor is up to operating speed (approximately two seconds) and while printer copies the message.</p>
23	D40: After results of Step 22 are obtained, turn off ac power. Remove 410674 card. At card coordinates C-12, depress blank end of switch No. 2 (This disables End-on-EOT option.) Reinstall card, push module back, and close lid. Turn ac power on.	
<p>On-Line Mode With Test Center</p> <p><i>Note 1:</i> If Station Arrangement 1 includes a printer, Steps 51 through 58 apply.</p> <p><i>Note 2:</i> If station fails to pass my step(s) listed below, refer to the following:</p> <p>Station Arrangement 1 (With Printer) — 4.02 (a) and (e)</p> <p style="margin-left: 40px;">2 — 4.06</p> <p style="margin-left: 40px;">3 — 4.08</p> <p style="margin-left: 40px;">4 — 4.10</p> <p style="margin-left: 40px;">5 — 4.12</p>		

TABLE G (Cont)

STATION ARRANGEMENTS 2 THROUGH 5

On-Line Mode With Test Center (Cont)

STEP	ACTION	RESULT
<p>BEFORE BEGINNING TEST, MAKE CERTAIN THAT ALL LOCAL OPERATIONAL CHECKOUT TESTS (TABLE G, STEPS 1 THROUGH 23) HAVE BEEN PERFORMED AND THAT STATION HAS PASSED ALL STEPS.</p>		
<p>24</p>	<p>Prepare for on-line test (3.09). Make a list stating assignments for:</p> <p>Station Code (α_1) *D40 Code (α_2) Printer (Aux α_3) *Specific Poll, DC₁, (Option 30.a.) or *General Poll, DC₃, (Option 30.b.) Tel No. 1 (REC) 2 (SEND) 3 (VOICE)</p> <p>*Poll entries do not apply to Station Arrangement 5. To test Station Arrangement 5, proceed to Step 51.</p> <p><i>Note 1:</i> Read α_1 as "alpha one", α_2 as "alpha two".</p> <p><i>Note 2:</i> In these tests; α_1 is station identity α_2 is identity of a D40 at a station α_3 is identity of a printer at a station $\alpha_1 \alpha_2$ is address of a D40 at a station $\alpha_1 \alpha_3$ is address of a printer at a station.</p>	

TABLE G (Cont)

STATION ARRANGEMENTS 2 THROUGH 5

On-Line Mode With Test Center (Cont)

STEP	ACTION	RESULT
Steps 25 through 50 apply to Station Arrangements 2, 3, and 4.		
25	Apply ac power to all equipment (cabinets, printer, D40, etc).	D40: Only LOCAL is lit and cursor is in home position. 2541 Set: POWER lights when depressed. Fans turn on.
26	D40: Depress LOCAL, HOME, CLEAR, and RECEIVE. <i>Note:</i> If D40 and CDIF814 have Incoming Message Override (Options 11.c. and 15.a. on 410678 circuit card of D40; and Option X on MC578 circuit card in position 109 or CDIF814) then RECEIVE need not be depressed in this or any other step.	LOCAL lights; cursor homes; display clears. RECEIVE lights (if Incoming Message Override is not used). Incoming Message Override is also called Force Receive.
<i>Note:</i> Steps marked "None" indicate action at the Test Center.		
27	None	None
28	None	None
29	<div data-bbox="734 1251 1032 1402" style="border: 1px solid black; padding: 5px; width: fit-content;"> Appearance of display depends on D40 options. Display for factory options is shown. </div>	D40 receives: <div data-bbox="1143 1230 1507 1436" style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <pre> 5 NULLS ≡ 5 DELETES ≡ 5 CRS ≡ 5 BAD PARITY \\\ \ \ ≡ 5 BELLS BBBBBE LLLLLX </pre> </div> Characters depend on programming on MC592, position 116, in CDIF814 module.

TABLE G (Cont)

STATION ARRANGEMENTS 2 THROUGH 5

On-Line Mode With Test Center (Cont)

STEP	ACTION	RESULT
29 (cont)	Verbally verify the message with Test Center.	<i>Note:</i> The keyboard should sound one long tone while 5 BELLS are received.
30	None	The cursor goes home. The display is cleared and RECEIVE stays lit.
31	None	D40 receives (on one line): <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> S_X <p>THE QUICK BROWN FOX</p> $---90 E_X$ </div>
32	None	LOCAL lights.
33	D40: Depress HOME and SEND.	Cursor goes home and SEND lights. If Force Receive feature is installed in station (D40, 410678 card, Options 11.c. and 15.a., CDIF814, MC578 card, Option X) then RECEIVE will light. If RECEIVE lights, depress SEND.
34	None	D40: Cursor moves through message and stops on E _X . SEND remains lit.
35	None	D40: Cursor goes home and message is retransmitted.
36	None	D40: SEND goes out and LOCAL flashes.

TABLE G (Cont)

STATION ARRANGEMENTS 2 THROUGH 5

On-Line Mode With Test Center (Cont)

STEP	ACTION	RESULT
37	Depress LOCAL.	D40: LOCAL lights without flashing.
38	Depress HOME.	Cursor homes.
39	Type $\begin{matrix} S \\ O \\ H \end{matrix}$.	<p>S_H overwrites S_X (displayed on one line):</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> S_H THE QUICK BROWN--- ---8 9 0 E_X </div>
40	Depress HOME and SEND.	SEND lights.
41	None	D40: The cursor moves through the message, stopping past E_X .
42	None	D40 changes from SEND to RECEIVE (Option 16.a.) or to LOCAL (Option 16.b.).
43	Depress LOCAL, HOME, and CHAR DLETE.	<p>The first line becomes (displayed on one line):</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> THE QUICK BROWN----- -----8 9 0----- E X </div>
44	Depress HOME and SEND.	SEND lights.
45	None	None
46	None	D40 changes from SEND to RECEIVE or LOCAL (Step 42).

TABLE G (Cont)

STATION ARRANGEMENTS 2 THROUGH 5

On-Line Mode With Test Center (Cont)

STEP	ACTION	RESULT
51	Open printer cabinet lid. <i>Note 1:</i> The previous step for Station Arrangement 1 was Step 59 of Table F. <i>Note 2:</i> The previous step for Station Arrangement 5 was Step 24 of Table G.	None
52	Close and latch printer cabinet lid.	None
53	None	2541 Set: RECEIVE flashes and DATA IN STORE lights. Printer: Motor is off while RECEIVE is lit.
54	None <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> Printer copy shown for monospace printer with Option 22.b. (or up-low printer with Option 21.b.). </div>	2541 Set: RECEIVE goes out and TRANSMIT lights while data is copied by printer, after which TRANSMIT and DATA IN STORE lights go out. Printer copies the following: <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <pre> !"#\$%&'()*+,-./0123456789:;<=>? !"#\$%&'()*+,-./0123456789:;<=>? @ABCDEFGHIJKLMNOPQRSTUVWXYZ [\] ^ _ @ABCDEFGHIJKLMNOPQRSTUVWXYZ [\] ^ _ @ABCDEFGHIJKLMNOPQRSTUVWXYZ [\] ^ _ @ABCDEFGHIJKLMNOPQRSTUVWXYZ [\] ^ _ </pre> </div> <i>Note:</i> Observe that control characters do not cause printing.

TABLE G (Cont)

STATION ARRANGEMENTS 2 THROUGH 5

On-Line Mode With Test Center (Cont)

STEP	ACTION	RESULT
55	None	2541 Set: RECEIVE flashes and DATA IN STORE lights. After a short time both lights go out.
56	None	2541 Set: RECEIVE flashes and DATA IN STORE lights. After a short time the FULL ALARM RESET flashes, CLEAR BUFFER lights, and an alarm sounds. Tell Test Center "buffer is full".
57	Depress FULL ALARM RESET.	2541 Set: The alarm silences but FULL ALARM RESET still flashes.
58	After Test Center action, depress CLEAR BUFFER.	All lights extinguish except for POWER. <i>Note:</i> The buffer will not clear until the Test Center sends D E L O E T
THIS COMPLETES THE CHECKOUT.		

3.09 ON-LINE TEST PREPARATION

- (a) If the on-line connection to a Test Center is to be made via switched-network lines (as well as the private line connected to the station) then the Serving Central Office must provide a method to couple the private line to the switched line. The Serving Test Center must then provide a method of coupling the switched line back to a private line. The send and receive pairs at the station must be connected to the data set. The data set must be connected to the rest of the station.
- (b) If the on-line connection to a Test Center is to be made via private lines (nonswitched lines), all that is required at the station is to contact the Test Center and ask for a test. The send and receive pairs at the station must be connected to the data set. The data set must be connected to the rest of the station.
- (c) Station Arrangement 1: Return to Table F, Step 34.
Station Arrangements 2 through 5: Return to Table G, Step 24.

NOTES

4. TROUBLESHOOTING

4.01 GENERAL

The on-line troubles that are indicated in Part 4 could be caused by the data set or the phone lines (transmission path between the data set and Test Center).

The cables between the components are not always given as a possible fault, even though they may have a fault.

This part requires the use of a TSG803 simulator. If further instructions are required in the use of a TSG803, refer to Section 107-801-100.

Caution: Turn off all power before removing or replacing any component in the station arrangement.

If replacement of the part or subcomponent indicated in 4.15 through 4.21 (as applies) does not correct the trouble, replace the next higher order of component (ie, circuit card or entire module).

When installing a replacement component, make certain that all options (if present) in this component are implemented for proper station operation.

Where more than one component is specified for replacement, substitute one at a time in the order specified. The original component shall be replaced if the trouble is not corrected before making the next indicated substitution.

Once the trouble has been corrected, the terminal should be checked out to be sure that it is performing properly. Refer to Part 3, Operational Checkout.

To locate components, circuit cards, connectors, test switches, indicator lamps and other elements indicated in the troubleshooting information, refer to Part 7, Component Access.

For wire color codes, cable, connector, and other wiring indicated for continuity checks, etc, in troubleshooting, refer to Part 5, Wiring Diagrams.

The following information is included to aid in locating the paragraph which covers the troubles of a particular station arrangement and the mode.

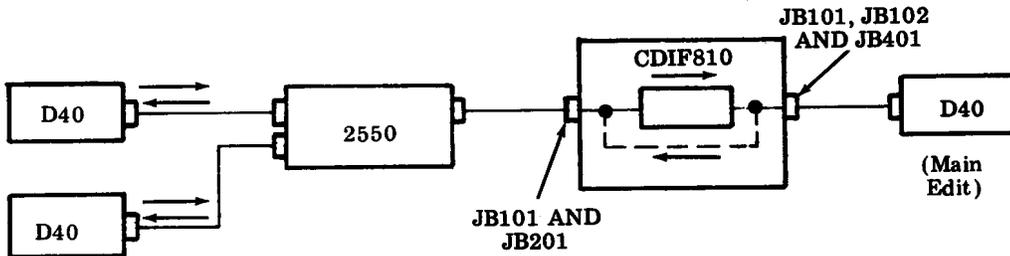
Station Arrangement 1	Station Arrangement 2	Station Arrangement 3
Test Mode 4.02	Local Mode 4.05	Local Mode 4.07
Standby Mode 4.03	On-Line Mode 4.06	On-Line Mode 4.08
On-Line Mode 4.04		
Station Arrangement 4	Station Arrangement 5	
Local Mode 4.09	Local Mode 4.11	
On-Line Mode 4.10	On-Line Mode 4.12	

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4.02 STATION ARRANGEMENT 1 -- TEST MODE

(1) Overview

Block diagram of components used in test mode (not including D40 printer).

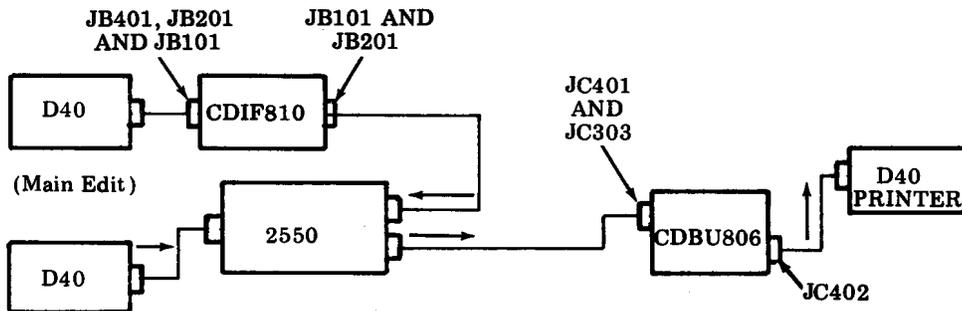


(Other D40s would also connect to 2550.)

In test mode, any D40 (meaning a D40 KD) should be able to send to any other D40 through the 2550. The main edit D40 should receive through the CDIF810 but send directly to the 2550. (This is accomplished through the CDIF810 wiring, not the CDIF810 circuit cards.)

If station also includes a D40 printer, it should receive from any D40 via the 2550 and CDBU806. (It should receive from the main edit D40 via CDIF810, 2550, and CDBU806.)

Block diagram of components used when D40 printer receives in test mode.



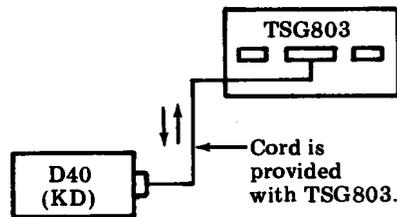
If one D40 can send to another D40 but the D40 printer cannot receive (or does receive, but with an error) from a D40, go to 4.02 (5).

If trouble relates to all D40s, go to 4.15 to check the 2550.

If trouble relates to only one or two D40s, go to 4.02 (2).

(2) D40 (Not D40 Printer) Check

Disconnect suspected D40 (D40 that is suspected of a fault) from 2550 (or CDIF810) as applies. Connect TSG803 to D40 as shown.



To Check	Operate TSG803 INTERFACE SELECT switch to
D40 receive operation (Option 14.a. only)	REC
D40 receive operation (Option 14.b. only)	SEND
D40 send operation	REC

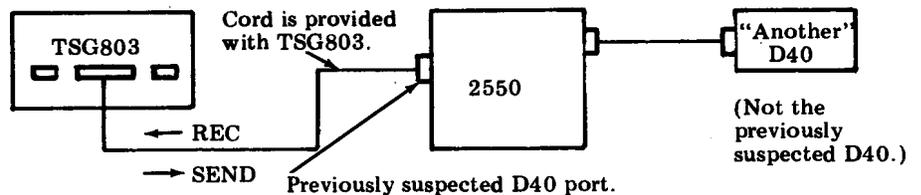
Use test procedure described in Section 582-200-500.

If the D40 passes both send and receive checks, the D40 is not at fault; check other suspected D40s in the same way. If all suspected D40s pass the checks, go to 4.02 (3). (If suspected D40 is main edit, go to 4.02 (4) first.)

If D40 fails either send or receive checks, refer to Section 582-200-500.

(3) 2550 Cluster Controller Check (D40 Printer Not Included)

Disconnect D40 (checked in 4.02 (2)) from TSG803. Reconnect all D40s to the rest of station. Disconnect previously suspected D40 at 2550. Connect TSG803 to 2550 as shown.



Make the following selections on TSG803:

- POWER to ON,
- INTERFACE SELECT to SEND,
- DATA SELECT to U*.

(a) 2550 Port Receive Check

Perform check only if D40 cannot receive correctly from "another" D40. To check if the 2550 port can receive from "another" D40, first depress SINGLE STEP on RECEIVE side of TSG803. Attempt to send a short U* message (include

(3) 2550 Cluster Controller Check (D40 Printer Not Included) (Cont)

(a) 2550 Port Receive Check (Cont)

ETX) to this port from "another" D40. Depress TSG803 N.C. STEP to display the next character of the message from "another" D40 on the TSG803 lamps. (See ASCII code chart, Fig. 5.) If lamps do not indicate correct character, go to 4.15 to check 2550.

If "another" D40 REC or LOCAL lights, fault is in cable between 2550 and previously suspected D40. (In the case of the main edit D40, fault is in cable between 2550 and CDIF810.)

If "another" D40 SEND remains lit, fault is in 2550. Go to 4.15.

(b) 2550 Port Send Check

Perform check only if "another" D40 cannot receive correctly from D40. To check if the 2550 port can send to "another" D40, first depress SINGLE STEP on TRANSMIT side of TSG803. Also operate DATA SELECT to SWITCH. Depress "another" D40 RECEIVE. Send $\alpha_1 \alpha_2$ DC2 SOH U*U* ETX (no space characters) from TSG803 by selecting TSG803 LEVEL SELECT switches for the first character (use an ASCII code chart), then depress C.A. STEP. Repeat to send each character. α_1 is cluster address, α_2 is "another" D40 address.

If "another" D40 does not display the message (or display with any error), fault is in 2550. Go to 4.15.

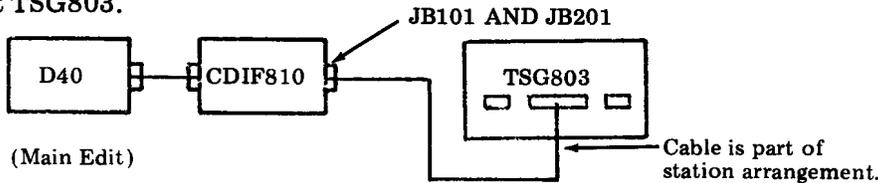
If "another" D40 displays the message without error, but RECEIVE is still lit, fault is in 2550. Go to 4.15.

If "another" D40 displays the message without error but LOCAL lights, fault is in cable between 2550 port being checked and D40. (In the case of the main edit D40, fault is in cable between 2550 and CDIF810.)

(4) CDIF810 Interface Module Check (D40 Printer Not Included)

Perform this check only if main edit KD cannot send (and/or cannot receive) and if 4.02 (2) shows main edit D40 is not at fault.

Restore all station connections (disconnect TSG803). At 2550, disconnect CDIF810 and connect TSG803.



(4) CDIF810 Interface Module Check (D40 Printer Not Included) (Cont)**(a) D40 Receive Through CDIF810 Check**

Perform check only if main edit D40 cannot receive from "another" D40.

Make the following selections on TSG803:

POWER to ON,
INTERFACE SELECTs to SEND,
PARITY DETECT to ODD,
SPEED SELECTs to SINGLE STEP,
DATA SELECT to SWITCH.

Depress main edit D40 RECEIVE. RECEIVE should light. Send SOH U*U* ETX (no space characters) from TSG803 by selecting TSG803 LEVEL SELECT switches for SOH (use an ASCII code chart), then depress C.A. STEP. Repeat to send each character.

If D40 does not display the message (or displays with any error), fault is in CDIF810. Go to 4.16.

If D40 displays message without error but RECEIVE is lit after ETX is sent from TSG803, fault is in CDIF810 or cable between CDIF810 and 2550. Go to 4.16.

If D40 displays message without error and LOCAL lights, fault is in 2550. Go to 4.16.

(b) Main Edit D40 Sends Through CDIF810 Check

Perform check only if "another" D40 cannot receive from main edit D40.

Make TSG803 selections given in 4.02 (3) (a).

At main edit D40 (in LOCAL) prepare this message: AB SOH U*U* ETX (no space characters). Depress main edit D40 SEND. Depress TSG803 N.C. STEP to display the first character (use an ASCII code chart). Verify that the character is correct. Repeatedly depress N.C. STEP for all characters of the message.

D40 action on TDA, TDE, or TA can be checked by depressing the appropriate TSG803 switch. Once one is depressed, the message must be resent to observe another action. If TDA is depressed, D40 LOCAL (or RECEIVE) should light. If TDE is depressed, D40 cursor should go home. If TA is depressed, D40 cursor should go home, display should be cleared of all data, and LOCAL should flash.

If the correct indications are observed, trouble is in cable between CDIF810 and 2550 or in 2550 itself. Go to 4.15.

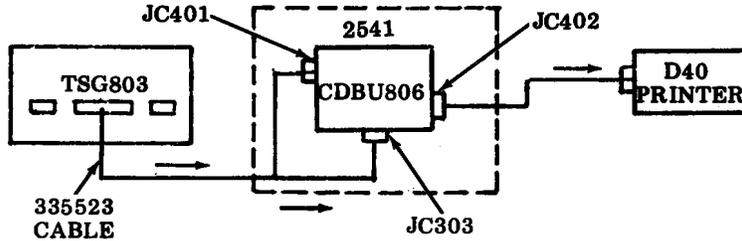
If an incorrect indication is observed, trouble is in CDIF810. Go to 4.16.

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(5) CDBU806 Buffer Module and D40 Printer Check

Perform this check only if D40 printer cannot receive (or does receive, but with an error) from a D40, or 2541 indications are incorrect when buffer capacity is exceeded.

Restore all station connections (if not already connected). At 2550, disconnect cord to CDBU806 and connect cord to TSG803.



Make the following selections on TSG803:

POWER to ON,
INTERFACE SELECTs to SEND,
PARITY DETECT to ODD,
SPEED SELECTs to SINGLE STEP,
DATA SELECT to SWITCH.

Printer motor will not turn on in the following procedure if there is a D40 printer paper alarm or if printer cabinet lid is not lowered (and latched).

(a) Buffer Capacity Not Exceeded

Send SOH U*U* ETX (no space characters) from TSG803 by selecting TSG803 LEVEL SELECT switches for SOH (use an ASCII code chart), then depress C.A. STEP. Repeat to send each character.

Note: U*U* is the suggested message. If station fails on some particular message or a longer message, such a message should be sent from TSG803 in place of U*U*.

If 2541 RECEIVE and DATA IN STORE lamps do not light after C.A. STEP is depressed to send SOH (or do not stay lit until ETX is sent), go to 4.17 to check CDBU806.

If 2541 TRANSMIT lamp is lit or D40 printer motor is running, go to 4.17 to check CDBU806. Printer motor may be running due to a previous message (if CDBU806 motor hold option is installed). If this is the cause of the motor running, do not go to 4.17.

ETX has now been sent by TSG803, 2541 RECEIVE and DATA IN STORE lamps are lit.

(5) CDBU806 Buffer Module and D40 Printer Check (Cont)**(a) Buffer Capacity Not Exceeded (Cont)**

If TSG803 sends RDA, 2541 RECEIVE light extinguishes, TRANSMIT lights. D40 printer motor turns on, printer copies U*U*, motor turns off (time to stop is CDBU806 option dependent). 2541 TRANSMIT and DATA IN STORE lights extinguish. If TSG803 sends RDE, D40 printer motor never turns on. 2541 RECEIVE and DATA IN STORE lights extinguish.

Note: If either RDA or RDE is sent, to check action on the other, the SOH U*U* ETX must be sent again.

If station fails to perform as indicated, go to 4.17 to check CDBU806.

If TSG803 sends RDA and printer fails to feed out 16 lines as ETX is received (friction feed) or form feed as ETX is received (tractor feed) then fault is in printer (provided printer has Option 18.c. installed, otherwise there is no fault in printer). Go to 4.02 (5) (b).

(b) Buffer Capacity Exceeded

Send U*U* (etc) from TSG803 by operating DATA SELECT to U*, SPEED SELECT on TRANSMIT side to FREE FUN.

When FREE RUN is selected, 2541 RECEIVE and DATA IN STORE lamps light. Within a minute the buffer should fill. If TSG803 NC lamp is lit, go to 4.17 to check CDBU806.

Depress TSG803 SINGLE STEP on TRANSMIT side. If 2541 FULL ALARM RESET does not flash, CLEAR BUFFER does not light, or alarm does not send; go to 4.17 to check CDBU806.

Depress 2541 FULL ALARM RESET; if alarm does not silence, go to 4.17 to check CDBU806.

Depress 2541 CLEAR BUFFER; if there is any affect, go to 4.17 to check CDBU806.

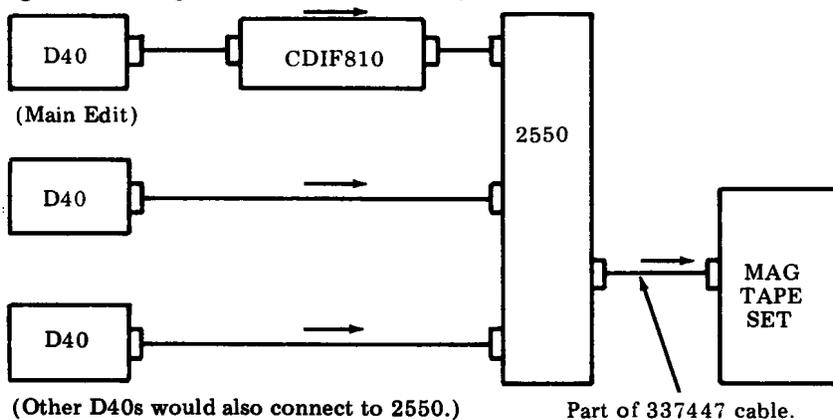
Depress TSG803 RDE then 2541 CLEAR BUFFER; if all 2541 lights (except POWER) do not extinguish, go to 4.17 to check CDBU806.

If CDBU806 and D40 printer do not fail, go to 4.15 to check 2550.

4.03 STATION ARRANGEMENT 1 — STANDBY MODE

(1) Overview

Block diagram of components used in standby mode.



In standby mode, any D40 should be able to send to the Magnetic Tape Set through the 2550.

It is assumed that all D40s passed the standby mode checks which means that all D40s and their 2550 ports are not the cause of a fault.

(2) Magnetic Tape Set Receive Check

Make the following selections on TSG803:

POWER to ON,
 INTERFACE SELECTs to SEND,
 PARITY DETECT to ODD,
 SPEED SELECTs to SINGLE STEP,
 DATA SELECT to U*.

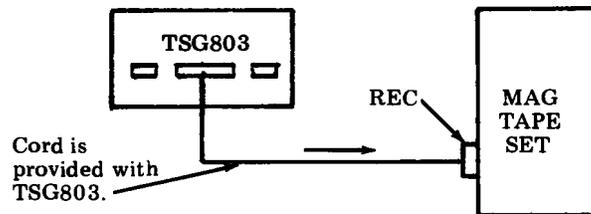
At Magnetic Tape Set, check for the following conditions:

Power is turned on.
 Tape cartridge with recorded clock track is present in Magnetic Tape Set.
 Engagement lever is in engaged position.
 Tape is past BEGIN OF TAPE and ready to receive.
 MOTOR CONTROL switch is in AUTO.
 STOP has been depressed.
 Motor is off.

To achieve the above, refer to Table F, Standby Mode, Steps 19, 20 and 21 if required. If above does not occur, go to 4.18 to check Magnetic Tape Set.

(2) Magnetic Tape Set Receive Check (Cont)

At Magnetic Tape Set, disconnect 337447 cable from DMAM800, connect TSG803 to DMAM800 REC connector.



Magnetic tape set motor should start and run; if not, go to 4.18 to check Magnetic Tape Set.

Depress **FREE RUN** on **TRANSMIT** side of TSG803. If Magnetic Tape Set **STOP** lamp does not light and continues to flash, and tape continues to move, or **ERROR** stays lit, go to 4.18 to check Magnetic Tape Set.

After approximately one minute, depress TSG803 **SINGLE STEP**. If Magnetic Tape Set **ERROR** lights, depress it. Disconnect TSG803 from Magnetic Tape Set. If tape continues to move, **STOP** lamp flashes, or motor still runs, go to 4.18 to check Magnetic Tape Set.

Leave power on, go to 4.03 (3).

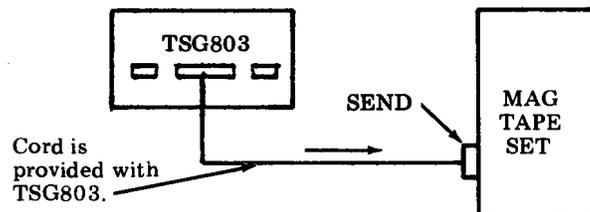
(3) Magnetic Tape Set Send Check

Note: This procedure also checks that Magnetic Tape Set receives without error and should be performed only after 4.03 (2).

Depress Magnetic Tape Set **FAST ACCESS REV** to beginning of tape. Depress **SINGLE STEP FORWARD** to cause **BEGIN OF TAPE** light to extinguish. If this does not occur, go to 4.18.

TSG803 selections remain the same as given in 4.03 (2).

At Magnetic Tape Set, connect TSG803 to DMAM800 **SEND** connector.



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(3) Magnetic Tape Set Send Check (Cont)

Depress TSG803 N.C. STEP repeatedly until Magnetic Tape Set sends the first character to TSG803 (look at TSG803 lamps 1 through 8).

If Magnetic Tape Set motor does not turn on or first character is never seen at TSG803, go to 4.18 to check Magnetic Tape Set.

Check that the lamps correspond to the first character (use ASCII code chart). If TSG803 ERROR RESET lights, depress ERROR RESET.

Depress N.C. STEP again. If TSG803 displayed character is not correct or if ERROR RESET lights, go to 4.18 to check Magnetic Tape Set.

Depress FREE RUN on RECEIVE side of TSG803. If ERROR RESET lights immediately, depress it. If ERROR RESET lights again, go to 4.18 to check Magnetic Tape Set.

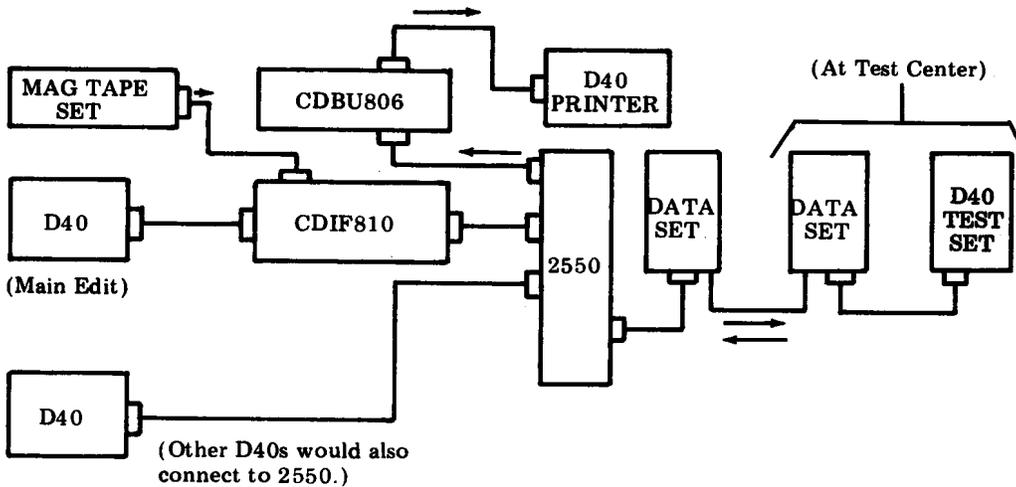
When the last of the data on tape has been received, the lamps 1 through 8 will stop flashing. At that time, depress SINGLE STEP on RECEIVE side of TSG803.

The Magnetic Tape Set has been shown to send and receive, if there is still a problem in sending to the Magnetic Tape Set (in standby mode) or receiving on the main edit D40 (in on-line mode), go to 4.15 to check 2550.

4.04 STATION ARRANGEMENT 1 — ON-LINE MODE

(1) Overview

Block diagram of components used in on-line mode.



(1) Overview (Cont)

In on-line mode, any D40 should be able to send to or receive from the Test Center. The D40 printer should receive from the Test Center via 2550 and CDBU806. The Magnetic Tape Set should send to the main edit D40 if D40 REC TAPE is depressed.

(2) Checks

- (a) If trouble relates to all D40s, replace data set. If problem remains, restore original data set and go to 4.15 to check 2550.
- (b) If trouble relates to one or two D40s (including D40 printer), go to 4.02 (2). If trouble relates only to D40 printer, go to 4.02 (4) (after performing 4.02 (2), if applies).
- (c) If trouble relates to sending to main edit D40 from the Magnetic Tape Set, go to 4.03.

4.05 STATION ARRANGEMENT 2 — LOCAL MODE

(1) Overview

Block diagram of components used in local mode.



In the local mode, the D40 can prepare data but cannot send or receive. There is no interaction between CDIF814 and D40.

(2) Checks

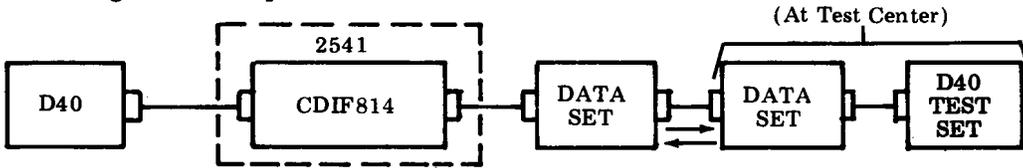
- (a) D40 — Table G, Local Mode only checks for LOCAL to light, displayed data to be cleared, and cursor in home position. If station cannot do this, refer to FIMP 579-505-350 to repair the D40.
- (b) 2541 — Table G, Local Mode only checks for POWER to light and fans to operate. If station cannot do this, refer to WDP0230 to repair the 2541.

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4.06 STATION ARRANGEMENT 2 — ON-LINE MODE

(1) Overview

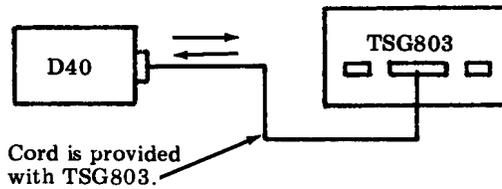
Block diagram of components used in on-line mode.



In on-line mode, the D40 can send or receive via CDIF814 and data set.

(2) D40 Check

At D40, disconnect CDIF814 and connect TSG803 as shown.

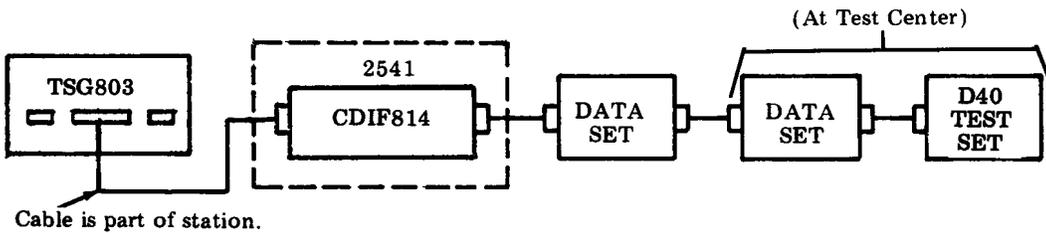


Use test procedure in Section 582-200-500.

If D40 passes both send and receive checks, the D40 is not at fault. Go to 4.06 (3).

(3) Cable Between D40 and CDIF814, CDIF814, and Data Set Check

Disconnect TSG803 from D40 and connect TSG803 to cable between D40 and CDIF814 as shown.



Make the following selections on TSG803:

- POWER to ON,
- INTERFACE SELECTs to SEND,
- DATA SELECT to U*.

Go to 4.06 (3) (a).

(3) Cable Between D40 and CDIF814, CDIF814, and Data Set Check (Cont)**(a) Receive Check**

Perform the check only if D40 cannot receive at all (or does not receive correctly), otherwise go to (b).

Depress FREE RUN on RECEIVE side of TSG803. Ask Test Center to attempt to send you a message. After selection, Test Center should send U*U* message by sending U and halting until you check TSG803 lamps 1 through 8 (see ASCII code chart). Then the Test Center should send * and halt (etc).

If proper characters are displayed, the station can receive, but station action at the end of a message has not been checked. If Table G, On-Line Mode indicates some problem in receiving (including sending the message check character to the Test Center), go to 4.20 to check CDIF814. If Table G, On-Line Mode does not indicate a problem in receiving, go to (b).

If an improper character is displayed, go to 4.20 to check the CDIF814. Either the cable between the D40 and CDIF814, CDIF814, or data set is at fault.

(b) Send Check

Perform this check only if the Test Center cannot receive at all (or does not receive properly) from the station.

Depress FREE RUN on TRANSMIT side of TSG803. Ask Test Center to poll your station to attempt to receive your repeated U* message.

If Test Center receives no message or the message is in error, go to 4.20 to check the CDIF814. Either the cable between the D40 and CDIF814, CDIF814, or data set is at fault.

If Test Center receives the message without error, sending of ETX and Message Check Character (MCC) should be checked. Go to (c).

(c) Send ETX MCC Check

Depress SINGLE STEP on TRANSMIT side of TSG803. Operate DATA SELECT switch to SWITCH. Operate LEVEL SELECT switches to send ETX (1, 2 marking). Depress C.A. STEP.

If Test Center does not receive ETX followed by some MCC, go to 4.20 to check CDIF814 (the data set is not at fault).

If Test Center receives ETX MCC, Test Center should send $\alpha_1 \alpha_2$ ACK. You will see no effect.

(3) Cable Between D40 and CDIF814, CDIF814, and Data Set Check (Cont)

(c) Send ETX MCC Check (Cont)

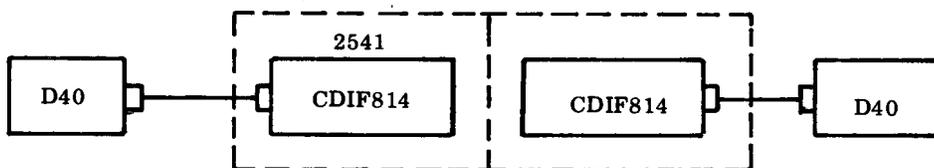
Operate TSG803 LEVEL SELECT switches to send U (1, 3, 5, 7 marking). Depress C.A. STEP.

Ask Test Center to poll your station to attempt to receive U. After the U is received, operate switches to send * (2, 4, 6, 8 marking). Depress C.A. STEP. Continue this process until Test Center has received U*U* (or any even number of Us and *s). Now send ETX (1, 2 marking). If Test Center receives ETX ETX, the station can send without fault. If Test Center does not receive U*U* ETX ETX, the CDIF814 is at fault. Go to 4.20.

4.07 STATION ARRANGEMENT 3 – LOCAL MODE

(1) Overview

Block diagram of components used in local mode.



In local mode, either D40 can prepare data but cannot send or receive. There is no interaction between either CDIF814 and either D40.

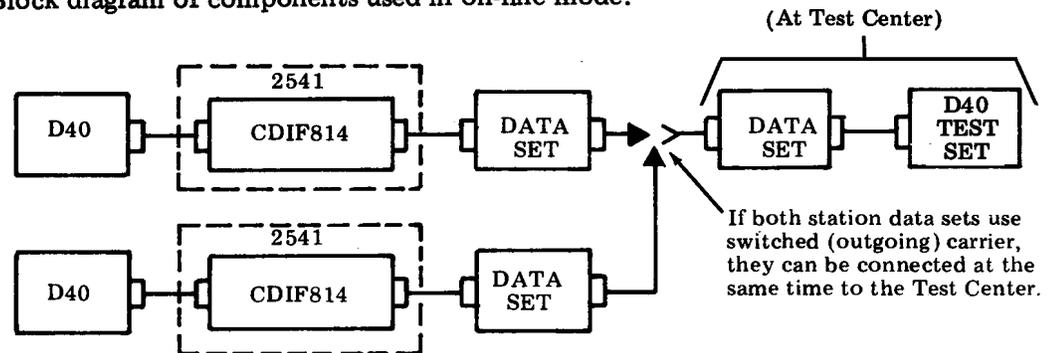
(2) Checks

- (a) D40 – Table G, Local Mode only checks for LOCAL to light, displayed data to be cleared and cursor in home position. If station cannot do this, refer to Section 582-200-500 to repair the D40.
- (b) 2541 – Table G, Local Mode only checks for POWER to light and fans to operate. If station cannot do this, refer to WDP0230 to repair the 2541.

4.08 STATION ARRANGEMENT 3 — ON-LINE MODE

(1) Overview

Block diagram of components used in on-line mode.



In on-line mode, either D40 can send or receive via its CDIF814 and data set.

(2) Trouble Isolation Methods

Two methods are available for trouble isolation:

- (a) Substitution, and
- (b) Method used in 4.06.

If neither D40 can send, or neither receive, or neither send or receive, the fault is not in the station.

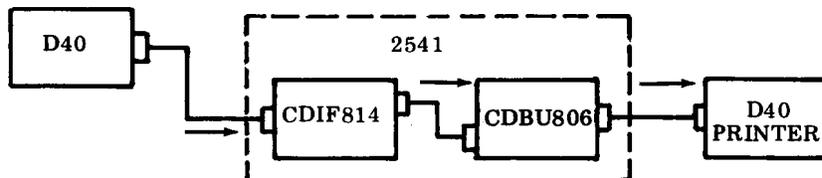
If trouble symptom only relates to one D40, either go to 4.06 or substitute one D40 for the other, then return to Table G, On-Line Mode and recheck. If trouble does not follow the D40, substitute the data sets. If trouble does follow the D40, refer to Section 582-200-500 and use a TSG803 to isolate trouble in the D40.

If trouble does not follow the data set, go to 4.20 to isolate trouble in CDIF814. If trouble follows data set, replace data set.

4.09 STATION ARRANGEMENT 4 – LOCAL MODE

(1) Overview

Block diagram of components used in local mode.



In local mode, D40 can prepare data and send data to the D40 printer by depressing D40 PRINT LOCAL.

(2) Checks

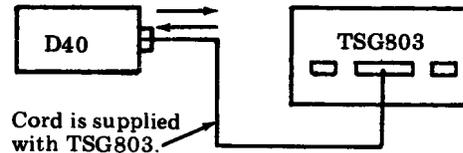
- (a) D40 LOCAL should be lit and any data should be able to be entered on display (or cleared from display). If station cannot do this, refer to Section 582-200-500 to repair the D40.
- (b) 2541 POWER should light and fans should run when POWER is lit. If station cannot do this, refer to WDP0230 to repair the 2541.
- (c) D40 printer test switch should cause all columns to print errored character symbol when printer cabinet lid is latched closed (or cabinet interlock switch is in maintenance position). During this condition, ribbon should move. Printer motor should stop when switch is operated to OFF. If station cannot do these things, refer to Service Manual 325-059 to repair printer.
- (d) When D40 printer PAPER is depressed, printer should feed out paper. If D40 printer is a tractor feed model, depressing FORM OUT should cause a form feed operation to occur (provided forms switch is ON). If station cannot do this, either D40 printer or CDBU806 is at fault, go to 4.17 to check CDBU806.
- (e) D40 should send displayed data to D40 printer without error, provided message length does not exceed CDBU806 buffer capacity and ETX is the last character. If station cannot do this, go to 4.09 (3).
- (f) D40 printer should not copy but 2541 FULL ALARM RESET should flash, CLEAR BUFFER should light, and tone should sound when message exceeds buffer capacity. 2541 RECEIVE light should extinguish. Depressing 2541 FULL ALARM RESET should cause tone to silence. After D40 LOCAL is depressed, 2541 CLEAR BUFFER should cause all 2541 lights except POWER to extinguish. If station cannot do this, go to 4.09 (5).

(2) Checks (Cont)

- (g) If station failed some step in Table G, Local Mode not covered above, go to 4.09 (3). If station passed all steps in Table G, Local Mode go to Table G, On-Line Mode.

(3) D40 Check

At D40, disconnect CDIF814 and connect TSG803 as shown.

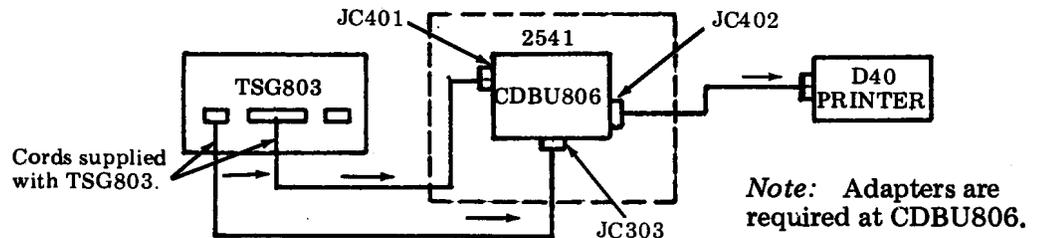


Use test procedure in Section 582-200-500. If D40 passes both the send and receive checks, the D40 is not at fault. Go to 4.09 (4).

(4) CDBU806 Buffer Module and D40 Printer Check

Perform this check only if D40 printer cannot receive (or does receive, but with an error) from a D40, or 2541 indications are incorrect when buffer capacity is exceeded.

Restore all station connections (if not already connected). At CDIF814, disconnect cords to CDBU806 and connect TSG803 cords to CDBU806.



Make the following selections on TSG803:

- POWER to ON,
- INTERFACE SELECTs to SEND,
- PARITY DETECT to ODD,
- SPEED SELECTs to SINGLE STEP,
- DATA SELECT to SWITCH.

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(4) CDBU806 Buffer Module and D40 Printer Check (Cont)

Printer motor will not turn on in the following procedure if there is a D40 printer paper alarm or if printer cabinet lid is not lowered (and latched).

(a) Buffer Capacity Not Exceeded

Send SOH U*U* ETX (no space characters) from TSG803 by selecting TSG803 LEVEL SELECT switches for SOH (use an ASCII code chart), then depress C.A. STEP. Repeat to send each character.

Note: U*U* is the suggested message. If station fails on some particular message or a longer message, such a message should be sent from the TSG803 in place of U*U*.

If 2541 RECEIVE and DATA IN STORE lamps do not light after C.A. STEP is depressed to send SOH (or do not stay lit until ETX is sent), go to 4.17 to check CDBU806.

If 2541 TRANSMIT lamp is lit or D40 printer motor is running, go to 4.17 to check CDBU806. Printer motor may be running due to a previous message (if CDBU806 motor hold option is installed). If this is the cause of the motor running; do not go to 4.17.

ETX has now been sent by TSG803, 2541 RECEIVE and DATA IN STORE lamps are lit.

If TSG803 sends RDA, 2541 RECEIVE light extinguishes, TRANSMIT lights. D40 printer motor turns on, printer copies U*U*, motor turns off (time to stop is CDBU806 option dependent). 2541 TRANSMIT and DATA IN STORE lights extinguish. If TSG803 sends RDE, D40 printer motor never turns on. 2541 RECEIVE and DATA IN STORE lights extinguish.

Note: If either RDA or RDE is sent, to check action on the other, the SOH U*U* ETX must be sent again.

If station fails to perform as indicated, go to 4.17 to check CDBU806.

If TSG803 sends RDA and printer fails to feed out 16 lines as ETX is received (friction feed) or form feed as ETX is received (tractor feed) then fault is in printer (provided printer has Option 18.c. installed, otherwise there is no fault in printer).

If D40 printer copies above message without error and the given requirements were met but D40 could not send a message ending in ETX (within buffer capacity), the fault is in the CDIF814 or cables between the CDIF814 and CDBU806. Go to 4.20 to check CDIF814.

(4) CDBU806 Buffer Module and D40 Printer Check (Cont)

(a) Buffer Capacity Not Exceeded (Cont)

If station trouble related to station action on buffer capacity exceeded, go to (b).

(b) Buffer Capacity Exceeded

Send U*U* (etc) from TSG803 by operating DATA SELECT to U*, SPEED SELECT on TRANSMIT side to FREE RUN.

When FREE RUN is selected, 2541 RECEIVE and DATA IN STORE lamps light. Within a minute the buffer should fill. If TSG803 lamp is lit, go to 4.17 to check CDBU806.

Depress TSG803 SINGLE STEP on TRANSMIT side.

If 2541 FULL ALARM RESET does not flash, CLEAR BUFFER does not light, or alarm does not sound; go to 4.17 to check CDBU806.

Depress 2541 FULL ALARM RESET; if alarm does not silence, go to 4.17 to check CDBU806.

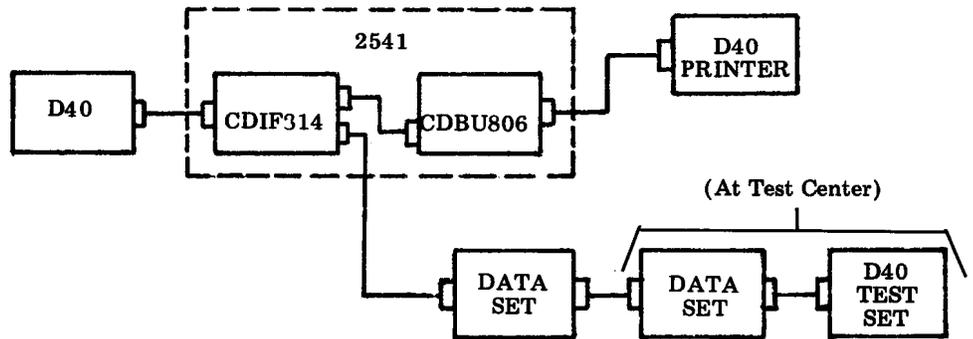
Depress TSG803 RDE, then 2541 CLEAR BUFFER; if all 2541 lights (except POWER) do not extinguish, go to 4.17 to check CDBU806.

If CDBU806 and D40 printer do not fail, go to 4.20 to check CDIF814.

4.10 STATION ARRANGEMENT 4 – ON-LINE MODE

(1) Overview

Block diagram of components used in on-line mode.



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(1) Overview (Cont)

In on-line mode, the Test Center can send or receive from D40. If CDIF814 is coded for printer address, then Test Center can send to D40 printer. The PRINT LOCAL operation (KD to printer) was covered in 4.09.

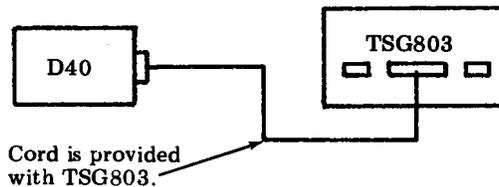
(2) Checks

The checks below assume that the station can pass the applicable steps in Table G, Local Mode.

- (a) If neither the D40 printer or D40 can receive from the Test Center and D40 cannot send to the Test Center, replace data set. If a new data set causes no change in symptoms, restore original data set and proceed with these procedures.
- (b) If printer (with CDIF814 coded address) can receive from Test Center but the D40 cannot, go to 4.10 (3) to check D40.
- (c) If D40 can receive from (and send to) the Test Center, but the D40 printer (with CDIF814 coded address) cannot receive, go to 4.10 (4) to check CDIF814 at CDBU806 connection.
- (d) If D40 cannot send to (and/or cannot receive from) the Test Center, go to 4.10 (3) to check D40.

(3) D40 Check

At D40, disconnect CDIF814 and connect TSG803 as shown.



Use test procedure in Section 582-200-500. If D40 passes both the send and receive checks, the D40 is not at fault. Go to 4.20 to check CDIF814.

(4) CDIF814 Interface Module Check

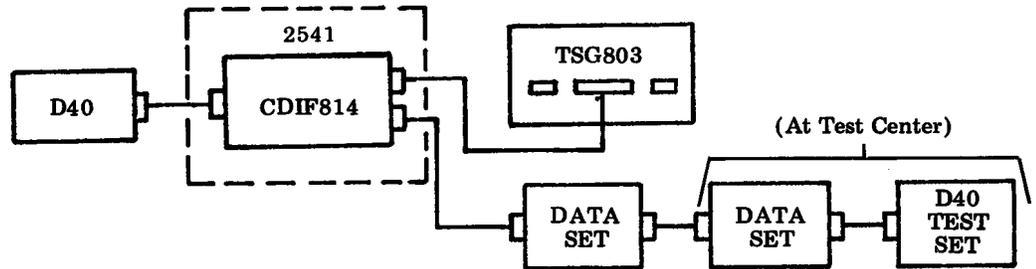
Because the station passed the local check, the CDBU806 and D40 printer are not at fault. This check procedure only applies if CDIF814 has been coded with a printer address (D40 printer can receive from Test Center). If it is desired that printer not be able to receive from Test Center, do not perform this check, return to 4.10 (1).

(4) CDIF814 Interface Module Check (Cont)

Make the following selections on TSG803:

POWER to ON,
 INTERFACE SELECTs to SEND,
 PARITY DETECT to ODD,
 SPEED SELECT on TRANSMIT side to SINGLE STEP,
 SPEED SELECT on RECEIVE side to FREE RUN,
 DATA SELECT to SWITCH.

Restore all station connections. At CDIF814, disconnect CDBU806 and connect TSG803 as shown.



Ask Test Center to select D40 printer as a receiver. After selection, request a message. The suggested message is U*U* ETX. The message should be sent one character at a time, pausing until you ask for the next character.

Note: If trouble is known to occur only on a longer message or only on some particular message, such a message should be sent.

When first character is received, check character on the TSG803 lamps 1 through 8 (use an ASCII code chart). The character should be received correctly. Ask for the next character and check it. Continue until ETX is received. At this time the Test Center should receive $\alpha_1 \alpha_2$ ACK.

If station fails any part of the above procedures, go to 4.20 to check CDIF814.

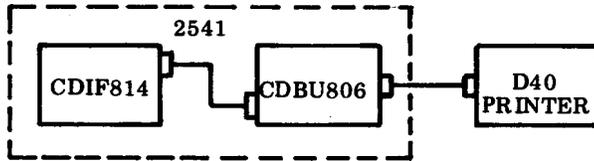
If station passes all the above procedures, go to 4.17 to check CDBU806. (Note that if the station passed the local tests, CDBU806 and D40 printer are not at fault.) The RDA circuit to the buffer has not been checked by this procedure, so the fault could still be in CDIF814 (see 4.20, if required).

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4.11 STATION ARRANGEMENT 5 – LOCAL MODE

(1) Overview

Block diagram of components used in local mode.



In local mode, only the 2541 lamps (and fans) and a few printer functions can be checked.

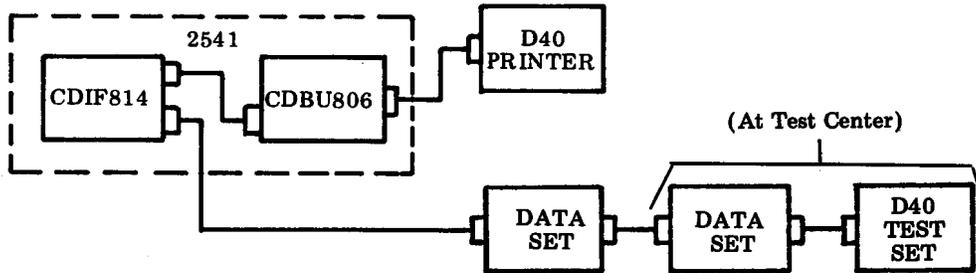
(2) Checks

- (a) 2541 – Same check as 4.09 (2) (b).
- (b) D40 Printer – Same check as 4.09 (2) (c) and (d).

4.12 STATION ARRANGEMENT 5 – ON-LINE MODE

(1) Overview

Block diagram of components used in on-line mode.

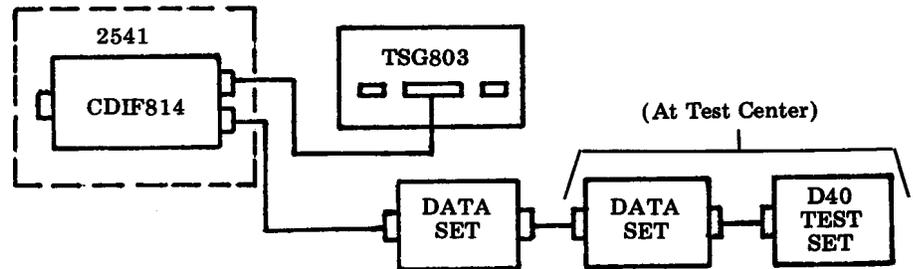


In on-line mode, the Test Center can send to the D40 printer.

(2) Checks

The checks below assume that the station can pass the applicable steps in Table G, Local Mode.

- (a) Set up the TSG803 as given in 4.10 (4). All station connections should be made. At CDIF814, disconnect CDBU806 and connect TSG803 as shown.



- (b) Go to 4.10 (4) (below sketch) and perform the procedure indicated.

4.13 COMPONENTS

Paragraphs 4.14 through 4.21 are included to provide troubleshooting information within a component of the station. See references below.

<u>Component</u>	<u>Paragraph</u>
D40 (KD)	4.14
2550 Cluster Controller	4.15
CDIF810 Interface Module	4.16
CDBU806 Buffer Module	4.17
Magnetic Tape Set	4.18
D40 Printer	4.19
CDIF814 Interface Module	4.20
CDPS805 Power Supply	4.21

4.14 D40 (KD)

Check that all circuit cards and option switches are in the proper positions. This can be determined by referring to the service order and Section 582-200-200. Then refer to Section 582-200-500, to perform PTI KD off-line and PTI on-line checks. The on-line checks require a TSG803. Section 582-200-500 contains the information to isolate the trouble.

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4.15 2550 CLUSTER CONTROLLER

First determine the symptom of operating failure.

- (a) If station fails test mode checks in Part 3, go to Note 1 and 4.15 (1) through (6). (Perform in order given.)
- (b) If station passes test mode checks but fails standby checks in Part 3, go to Note 2 and 4.15 (1), (2), (3) and (6). (Perform in order given.)
- (c) If station passes test mode and standby mode checks in Part 3 but fails on-line checks in Part 3, go to 4.15 (1), (2) and (3) (center rack only), (7) and (6). (Perform in order given.)

Note 1: If only one or two D40 KDs indicate the trouble symptom (and the others do not), the trouble is not in the center logic rack. The trouble is probably in the input/output assembly. If all the D40 KDs indicate the trouble symptom, the trouble is probably in the center logic rack.

Note 2: Determine if standby mode failure is related to more than one D40 KD, and if failure is that the Magnetic Tape Set does not receive or send.

- (1) Check that circuit cards of all three racks are in proper position.
 - (a) For center rack card positions, see sheet D6 (Conn and Card Ass'm No. columns) of 1107SD (part of WDP0279). Logic panel A is the top row of cards on the center rack. Logic panel B is below A, and C is below B. Logic panel A is below the patch panel.
 - (b) The two input/output (I/O) racks provide mounting for a number of 338360 I/O assemblies (identical) and one 338429 standby assembly (for the Magnetic Tape Set). Each I/O assembly that is used should have three circuit cards (L, R, T) that should be installed in the connectors indicated on each assembly. The one exception is the standby assembly which is provided with an LS card in position L, and R card in position R, but no T card.
- (2) Check that the proper options are installed in cards of the 2550. See 2.09 (1).
- (3) Check that required cable connections in the 2550 are made. See Fig. 19, 21, and 22 in Part 2.
- (4) Check that required power wiring connections are made. See 9241WD (part of WDP0279).

4.15 2550 CLUSTER CONTROLLER (Cont)

- (5) The output voltages of 333669 power supply should be checked at the output connector JN.

VOLTAGES	CONNECTORS
+12 V (-1.5 V, +6 V)	JN-2 and JN-6
-12 V (+1 V, -8 V)	JN-4 and JN-6
Circuit Common	(Used to measure the voltages.)

If a voltage is not present or is incorrect, the trouble is in the 333669 power supply.

Note: Fuse locations are given in Note 101 on sheet D1 of 1107SD (part of WDP0279).

The output voltage of 338425 (or 338450) power supply should be checked as given in Part 6. Do not perform Overvoltage Trip Point adjustment unless output voltage reading between TBP-1 and TBP-2 is higher than +5.6 V dc or lower than +5.4 V dc.

If voltage is not present or is incorrect, the trouble is in 338425 (or 338450) power supply or the 338378 power supply control.

- (6) If above voltages are correct, the trouble may be in the circuit cards or wired frames of the 2550. Use Fig. 40 and Table H together with either the 2550 control panel schematic (sheets B122 and B123 of 1107SD), Section 578-150-200, or WDP0279 to isolate the trouble.

Block diagrams are shown on H sheets of 1107SD (part of WDP0279).

Also use the indicator panel to provide visual indications of the various 2550 functions.

INDICATOR PANEL						
DATA SET	POLLING ADDRESS	TRANSMIT FUNCTIONS		RECEIVE FUNCTIONS		RESPONSE
CD	1	BID	SOH-ETX	RD	STA SEL	ACK
RTS	2	STA SEL	SOH-EOT	SYNC	NAK	ENQ
DSR	4	LOCK-ON	FDX-INT	SOH-ETX	PARITY	DLE-EOT
DTR	8	READY	PARITY	SOH-EOT	MCC	HEADING
CTS	16	DEV CTS	ENQ TO	COPY EN	COPY	4-SYN

4.15 2550 CLUSTER CONTROLLER (Cont)

Table H is keyed to the indicator panel layout shown in Fig. 40, and provides indicator panel connection information. The information within the parentheses is (sheet number, connector-pin number) of 1107SD (part of WDP0279).

TABLE H
INDICATOR PANEL CONNECTIONS

DATA SET	POLLING ADDRESS	TRANSMIT FUNCTIONS		RECEIVE FUNCTIONS		RESPONSE
						ACK (B15,JTP-D8)
CD (B1,JTP-A6)	1 (B63,JTP-A11)	BID (B61,JTP-B7)	SOH-ETX (B79,JTP-B12)	RD (B1,JTP-C13)	STA SEL (B47,JTP-C8)	NAK (B15,JTP-D9)
RTS (B10,JTP-A7)	2 (B63,JTP-A12)	STA SEL (B50,JTP-B8)	SOH-EOT (B80,JTP-B13)	SYNC (B6,JTP-D4)	NAK (B15,JTP-D9)	ENQ (B16,JTP-D10)
DSR (B10,JTP-A8)	4 (B63,JTP-A13)	LOCK-ON (B61,JTP-B9)	FDX-INT (B43,JTP-C5)	SOH-ETX (B50,JTP-D5)	PARITY (B34,JTP-C9)	DLE-EOT (B15,JTP-D11)
DTR (B1,JTP-A9)	8 (B63,JTP-B5)	READY (B65,JTP-B10)	PARITY (B76,JTP-C6)	SOH-EOT (B52,JTP-D6)	MCC (B38,JTP-C10)	HEADING (B15,JTP-D12)
CTS (B10,JTP-A10)	16 (B63,JTP-B6)	DEV CTS (B11,JTP-B11)	ENQ TO (B81,JTP-C7)	COPY EN (B34,JTP-D7)	COPY (B51,JTP-C11)	4-SYN (B16,JTP-D13)

With ac power off, connect the indicator panel JTP connector to the 2550 338420 patch panel. (When removing indicator panel disconnect ac power.)

Apply ac power.

Condition 1: Cluster controller in on-line mode being polled by the computer, but not sending traffic.

- (a) CD lamp — lit due to data set carrier being on.
- (b) DSR lamp — lit due to data set having its DSR lead on.
- (c) DTR lamp — lit due to cluster being in on-line mode and DSR being on.

4.15 2550 CLUSTER CONTROLLER (Cont)

Condition 1: (Cont)

- (d) RD lamp — blinks due to data received from data set.
- (e) SYNC lamp — blinks during a polling sequence from computer.
- (f) TRANSMIT STA SEL — lamp blinks due to polling sequence being properly decoded.
- (g) DLE-EOT lamp — blinks to start generation of no-traffic response.
- (h) RTS lamp — blinks to prime data set to send.
- (i) CTS lamp — blinks to allow cluster to send.
- (j) DEV CTS lamp — blinks to prime transmit distributor to send.
- (k) 4-SYN lamp — blinks when transmit distributor generates character sync sequence.

Condition 2: Cluster controller in on-line mode being polled by the computer or D40 test set (general poll), and sending a message.

Up until the time the SEND key on D40 is depressed, the indicator lamps should follow the pattern in Condition 1. At all times during this operation, the CD, DSR, and DTR lamps should remain on for the reasons explained in Condition 1. After SEND key is depressed the following sequence will occur.

- (a) BID lamp — lit due to sender selectable coming on in sending D40.
- (b) LOCK-ON and POLLING ADDRESS lamps — lit when selector ring stops at D40 port desiring to send. Polling address lamps define which port and D40 are sending.
- (c) TRANSMIT STA SEL lamp — lit when polling sequence recognized.
- (d) READY lamp — lit when D40 turns on its sender ready signal.
- (e) RTS lamp — lit to prime data set to send.
- (f) CTS lamp — lit to allow cluster to prepare to send.
- (g) DEV CTS lamp — lit to allow cluster to send.

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4.15 2550 CLUSTER CONTROLLER (Cont)

Condition 2: (Cont)

- (h) **HEADING lamp** — blinks once to start transmitting distributor and prepare to insert heading information.
- (i) **4-SYN lamp** — blinks once when transmitting distributor starts to send.
- (j) **TRANSMIT SOH-ETX and SOH-EOT lamps** — lit when cluster generates an SOH on-line.
- (k) At the end of the message, **TRANSMIT SOH-ETX light** will extinguish and the **ENQ TO** will light momentarily if computer answers back immediately or will light for one second if computer does not respond, and cause 4-SYN and ENQ lights to blink once due to cluster asking the computer for a response.
- (l) If computer responds with an **ACK**, 4-SYN and **DLE-EOT lights** will blink once in acknowledgment to **ACK**, and the **BID, LOCK-ON, TRANSMIT STA SEL, READY, RTS, CTS** and **TRANSMIT SOH-EOT lights** will extinguish.
- (m) If computer responds **NAK**, 4-SYN and **HEADING lights** will blink once and **TRANSMIT SOH-ETX** will light while the cluster retransmits message to the computer.
- (n) If cluster receives two **NAKs**, or generates three **ENQ time-out periods**, it will disconnect and all transmit function lights (also **RTS** and **CTS**) will extinguish.

Condition 3: Cluster controller in on-line mode being selected to receive a message.

- (a) The sequence shown is for selection sequences with responses. For systems using fast select procedure ignore (e) and (f).
- (b) The **CD, DSR, and DTR lamps** should be lit.
- (c) When selection sequence is generated, **RD light** will blink and **SYNC** will light.
- (d) On receipt of selection sequence, **RECEIVE STA SEL** will light.
- (e) If selected station is in receive mode, 4-SYN, **ACK, RTS, and CTS lights** will blink once indicating a ready-to-receive response is being generated.
- (f) If selected station is in local or transmit mode, 4-SYN, **NAK, RTS, and CTS lights** will blink once indicating a not ready-to-receive response is being generated. This will also extinguish **RECEIVE STA SEL light**.

4.15 2550 CLUSTER CONTROLLER (Cont)

Condition 3: (Cont)

- (g) COPY EN lamp lights indicating the cluster is ready to receive.
- (h) RECEIVE SOH-ETX and SOH-EOT lamps will light when SOH is received by cluster.
- (i) At the end of the message (ETX received) the RECEIVE SOH-ETX light will extinguish.
- (j) If no receive errors occur, cluster will generate an ACK response causing 4-SYN, ACK, RTS, and CTS lights to blink once. When computer returns with DLE-EOT, RECEIVE STA SEL, COPY EN, and RECEIVE SOH-EOT lights will extinguish.
- (k) If a receive error occurs, MCC, PARITY or COPY lights or blinks, the cluster will (at the end of the message) generate a NAK response causing 4-SYN, NAK, RTS and CTS lights to blink once. Then RECEIVE SOH-ETX will light again while computer attempts to resend message.

Condition 4: Cluster controller in the test mode with no traffic being sent.

- (a) With cluster in test mode (test mode lamp on front of cluster lit) and no traffic being sent, the polling sequence generator should send 16 bits of marking line, 4-SYNs, DLE, EOT, A, ?, DC₃, and ENQ. This sequence should be recognized by the cluster and cause it to generate a 4-SYN, DLE, EOT response. This sequence should be continuous and indicator panel lamps should operate in the following manner.
- (b) RD lamp — blinks due to polling sequence and no-traffic response.
- (c) DSR lamp — lit.
- (d) SYNC lamp — blinks for polling sequence and no-traffic response.
- (e) TRANSMIT STA SEL lamp — blinks each time polling sequence is recognized.
- (f) 4-SYN, DLE-EOT, RTS, CTS, and DEV CTS lamps — blinks each time a no-traffic response is made.

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4.15 2550 CLUSTER CONTROLLER (Cont)

Condition 5: Cluster controller in test mode and sending traffic.

- (a) Indicator lamps will follow the sequence in Condition 4 until sending D40 is placed in send mode. It is assumed that the intended receiving D40 is in receive mode and that a properly formatted message is sent.
- (b) The lighting sequence of lamps is as follows:

BID
LOCK-ON and POLLING ADDRESS
TRANSMIT STA SEL
READY
RTS
CTS
DEV CTS
4-SYN (Blinks Once)
RD (Blinks)
SYNC
RECEIVE STA SEL
COPY EN
TRANSMIT SOH-ETX RECEIVE SOH-ETX
TRANSMIT SOH-EOT RECEIVE SOH-EOT

- (c) At the end of the message, both SOH-ETX lights will extinguish, 4-SYN and ACK lights will blink once and cluster will return to polling sequence in Condition 4.

Condition 6: Cluster controller in standby mode with no traffic being sent.

With cluster in standby mode (standby on lamp on cluster lit) and no traffic being sent, lamp pattern on indicator panel should look similar to that described in Condition 4.

Condition 7: Cluster controller in standby mode with traffic being sent.

- (a) When a D40 sends traffic to standby port, lamp sequence on indicator panel will be similar to sequence described in Condition 5 (b) with the exception that the HEADING light will blink once after DEV CTS lamp lights.
- (b) At the end of a proper message transfer, lamps will return to no-traffic sequence of Condition 6.

4.15 2550 CLUSTER CONTROLLER (Cont)

(7) The data set may be the cause of the fault (if all station D40s are affected) in the on-line mode but not the test or standby mode. Check for the following conditions on the control panel.

- (a) CD FAIL lamp lit — This condition could be caused by faulty circuit card in cluster or a malfunction in data set. To verify that cluster cards are operational check CD fail (N) circuit on 1107SD-B12, area B7.
- (b) DSR FAIL lamp lit — This condition could be caused by a faulty circuit card in cluster or a malfunction in data set. To verify that cluster cards are operational, check DSR fail (N) circuit on 1107SD-B12, area A7.
- (c) CTS FAIL lamp lit — This condition could be caused by a faulty circuit card in cluster or a malfunction in data set. To verify that cluster cards are operational check CTS fail (N) circuit on 1107SD-B12, area C7.

4.16 CDIF810 INTERFACE MODULE

(1) Check that the circuit cards are in the proper position.

POSITION	CIRCUIT CARD
ZB113	322501
ZB114	322986
ZB115	322976
ZB116	322969*
ZB117	322969*

*A 322989 circuit card (rated manufacture discontinued) can be substituted for a 322969 circuit card.

- (2) Check that the proper requirements (screw settings) are installed in the CDIF810 cards, see 2.09 (5).
- (3) Check that the required dc voltages are present.

VOLTAGE	TERMINALS
+5 V (± 0.5 V)	ZB113-35 and ZB113-36
-20 V (± 2 V)	ZB113-18 and ZB113-36
+12 V	(Not required, do not measure.)
-6 V	(Not required, do not measure.)
Circuit Common	(Used in measuring +5 V and -20 V.)

SECTION 579-505-352

4.16 CDIF810 INTERFACE MODULE (Cont)

- (4) If some voltage is not present or is incorrect, the trouble is in the CDPS805, go to 4.21.
- (5) If voltages are correct, the trouble may be in CDIF810 circuit cards or wired frame. Either signal trace (using WDP0267) or replace the cards or wired frame to isolate trouble.
- (6) If trouble is shown not to be in CDIF810, check cables that connect to the CDIF810.

4.17 CDBU806 BUFFER MODULE

- (1) Check that circuit cards are in the proper position. See 2.09 (6), Table E.
- (2) Check that proper straps are installed. See 2.09 (6), Tables C and D.
- (3) Check that proper requirements are installed. See 2.09 (6) for eight requirements.
- (4) Check that required dc voltages are present.

VOLTAGE	TERMINALS
+12 V (-1 V +3 V)	ZC315-34 and ZC315-36
-11 V (± 0.4 V)	ZC315-33 and ZC315-36
+6 V (± 0.3 V)	ZC312-1 and ZC315-36
+5 V (± 0.25 V)	ZC315-35 and ZC315-36
Circuit Common	(Used in measuring voltages.)

- (5) If some voltage is not present or is incorrect, trouble is in CDPS805, go to 4.21.
- (6) If voltages are correct, trouble may be in CDBU806 circuit cards or wired frame. Either,
 - (a) refer to Section 578-141-204,
 - (b) signal trace (using WDP0385), or
 - (c) replace the cards or wired frame

to isolate the trouble. If trouble is shown not to be in CDBU806, check cables that connect to CDBU806.

4.18 MAGNETIC TAPE SET

Refer to FIMP 579-504-350 or Section 582-900-300 and perform the following checks:

- (a) Check that circuit cards are in the proper position.
- (b) Check that proper options are installed.
- (c) Check that magnetic tape power supply voltages are correct.
- (d) Follow FIMP 579-504-350 or Section 582-900-300 troubleshooting procedure to isolate trouble. If trouble is shown not to be in Magnetic Tape Set, check cables that connect to Magnetic Tape Set.

4.19 D40 PRINTER

Refer to Section 582-210-500. If trouble is shown not to be in D40 printer or its cabinet, check cable that connects D40 printer to the CDBU806.

Note: Disregard references to a data set, EIA controller, RO controller and transmission facilities.

4.20 CDIF814 INTERFACE MODULE

- (1) Check that circuit cards are in proper position. See 2.09 (2), Fig. 6.
- (2) Check that proper options are installed. See 2.09 (2).
- (3) Check that required dc voltages are present.

VOLTAGE	TERMINALS
+12 V (± 1.2 V)	ZB316-30 and ZB316-36
+5 V (± 0.5 V)	ZB316-35 and ZB316-36
+6 V	(Not used, do not check.)
-20 V	ZB317-19 and ZB316-36
Circuit Common	(Used in measuring voltages.)

- (4) If some voltage is not present or is incorrect, trouble is in CDPS805, go to 4.21.

SECTION 579-505-352

4.20 CDIF814 INTERFACE MODULE (Cont)

- (5) If voltages are correct, trouble may be in CDIF814 circuit cards or wired frame. Either,
- (a) refer to Section 578-110-303,
 - (b) signal trace (using WDP0325), or
 - (c) replace cards or wired frame

to isolate trouble. If trouble is shown not to be in CDIF814, check cables that connect to the CDIF814.

4.21 CDPS805 POWER SUPPLY

- (1) Refer to 2.12, Fig. 32 for terminal identifications.
- (2) With ac power on, check the following voltages with respect to ground on PC301.

VOLTAGE	JC301, TERMINAL
Circuit Ground (Signal Ground)	A4, B4, C4
+5 Volts ± 250 MV (5%)	A6, B6, C6
+6 Volts ± 300 MV (5%)	A8, B8, C8
-11 Volts ± 500 MV (5%)	A2, B2, C2
+12 Volts +3 V, -1.2 V Nonregulated	C7
Frame Ground	A3

- (3) If voltages are correct, CDPS805 is not the cause of the fault. The cables connecting to CDPS805 should be checked.
- (4) If some voltage is at fault, either replace power supply or isolate to bad component using 1071SD (part of WDP0385).

5. WIRING DIAGRAMS

5.01 Part 5 contains the wiring of all the cables for Station Arrangements 1 through 5 mentioned in Part 2. The cables are presented in numerical order.

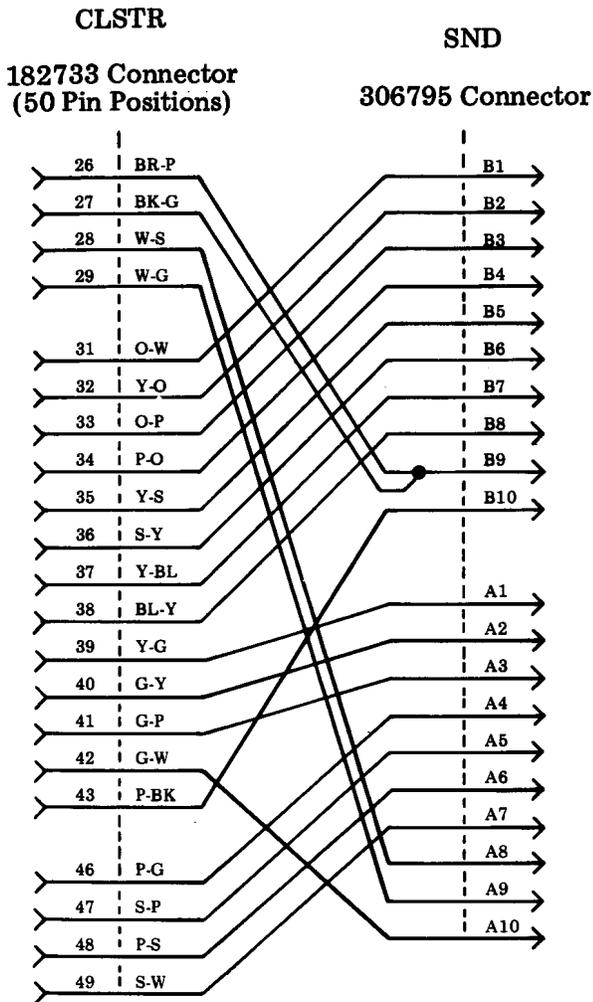
5.02 Wiring diagrams are provided with all components except DATASPEED 40. Refer to Section 582-200-400.

5.03 List of applicable wiring diagram packages (WDPs):

<u>Component</u>	<u>WDP Number</u>
CDBU806 Buffer Module	0385
CDIF810 Interface Module	0267
CDIF814 Interface Module	0325
2541 Buffer/Interface Set	0230
2550 Cluster Controller	0279
340210 Indicator Panel	0337

5.04 Part 2, Fig. 29 and 30 show wiring of customer wired cables.

(1) 335523 Cable Assembly (Application to Station Arrangement 1)



Note 1: Remainder of CLSTR connector is shown in Fig. 42 and 43.

Note 2: All three 306795 connectors have 174785 terminals on all pins that are wired.

Fig. 41

(1) 335523 Cable Assembly (Application to Station Arrangement 1) (Cont)

Note: Remainder of CLSTR connector is shown in Fig. 41 and 43.

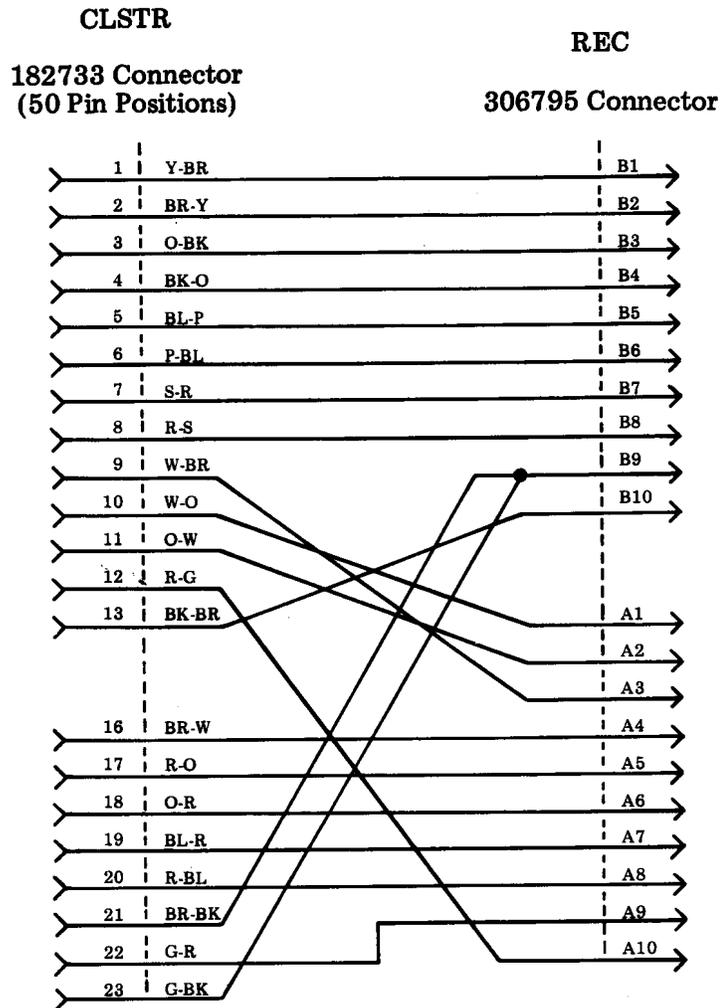
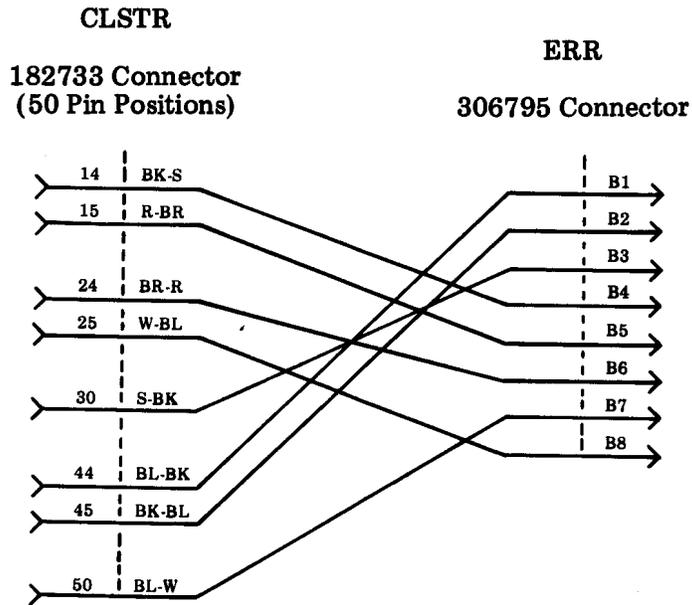


Fig. 42

SECTION 579-505-352

(1) 335523 Cable Assembly (Application to Station Arrangement 1) (Cont)

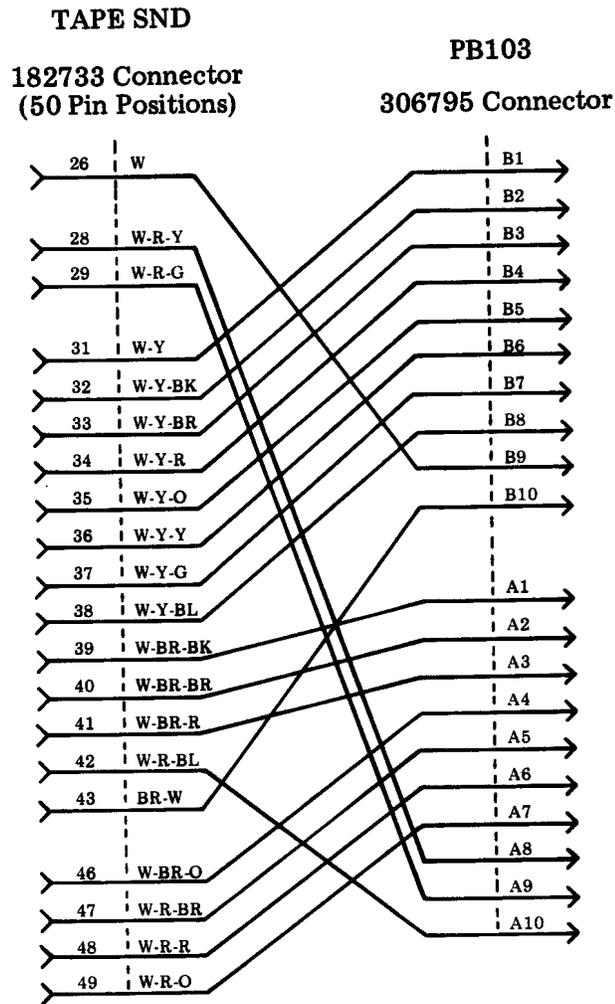


Note 1: Remainder of CLSTR connector is shown in Fig. 41 and 42.

Note 2: There are no connections to the following 306795 terminals: B9, B10, A1 through A10.

Fig. 43

(2) 335524 Cable Assembly (Application to Station Arrangement 1)



Note 1: 306795 connector has 174785 terminals on all 20 pins.

Note 2: W-BR-GR, W-BR-Y, W-R-BK, and W-R wires in cable are spares and are tied back.

Fig. 44

SECTION 579-505-352

(3) 335597 Cable Assembly (Application to Station Arrangements 2 Through 5)

PB801

306795 Connector
(20 Pin Positions)

145914 Connector
(25 Pin Positions)

Note: W-S, BK-G,
BK-O, BK-BL, R-S,
R-BR, and R-G wires
in cable are spares and
are tied back.

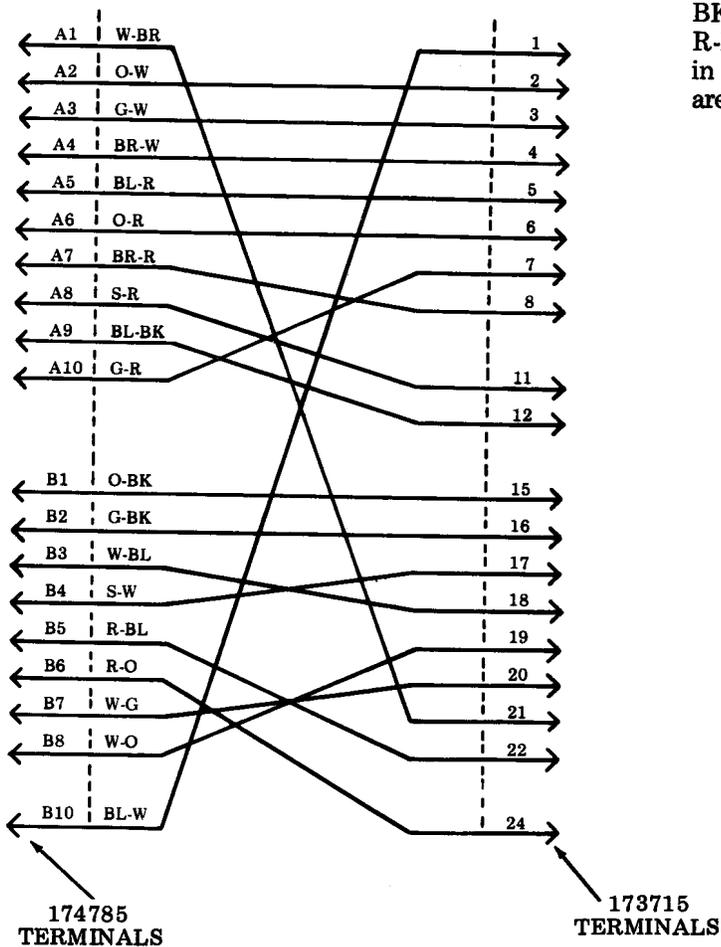
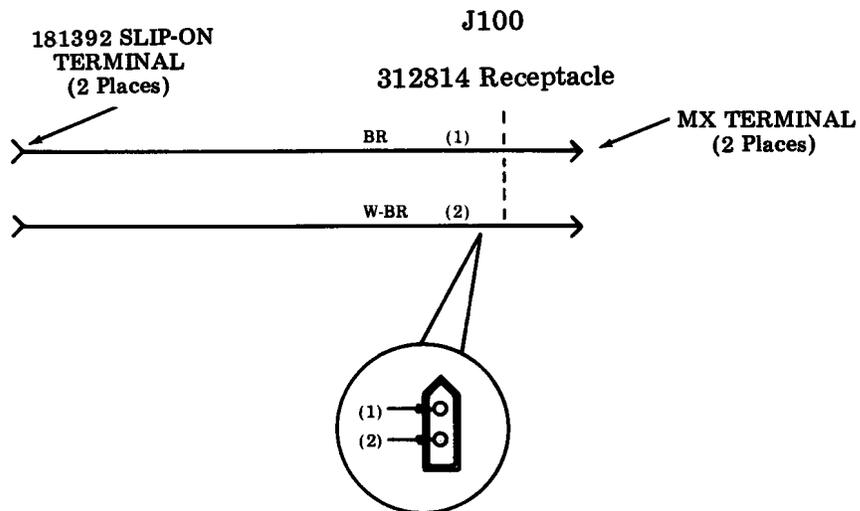


Fig. 45

(4) 335623 Cable Assembly (Part of 335361 Six-Button Switch Assembly)
 (Application to Station Arrangements 1 Through 5)



() Arbitrary numbers.

Note: For 335611, see 335633 (Fig. 50).

Fig. 46

SECTION 579-505-352

(5) 335626 Cable Assembly (Application to Station Arrangements 1, 4, and 5)

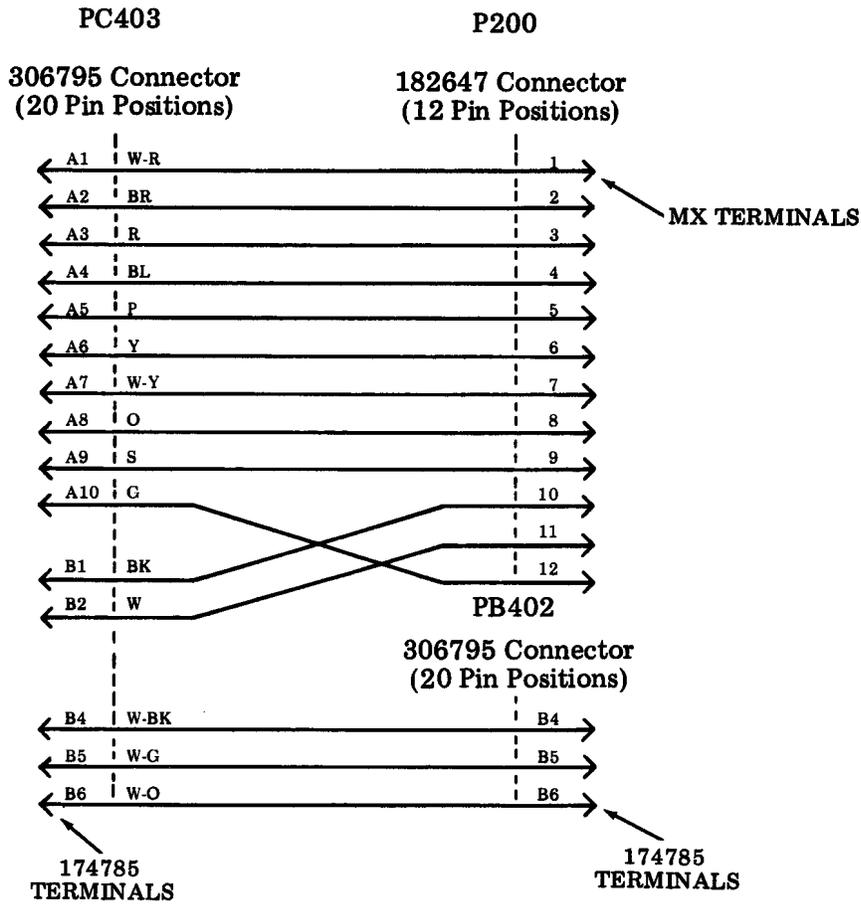


Fig. 47

(6) 335628 Cable Assembly (Application to Station Arrangements 1 Through 5)

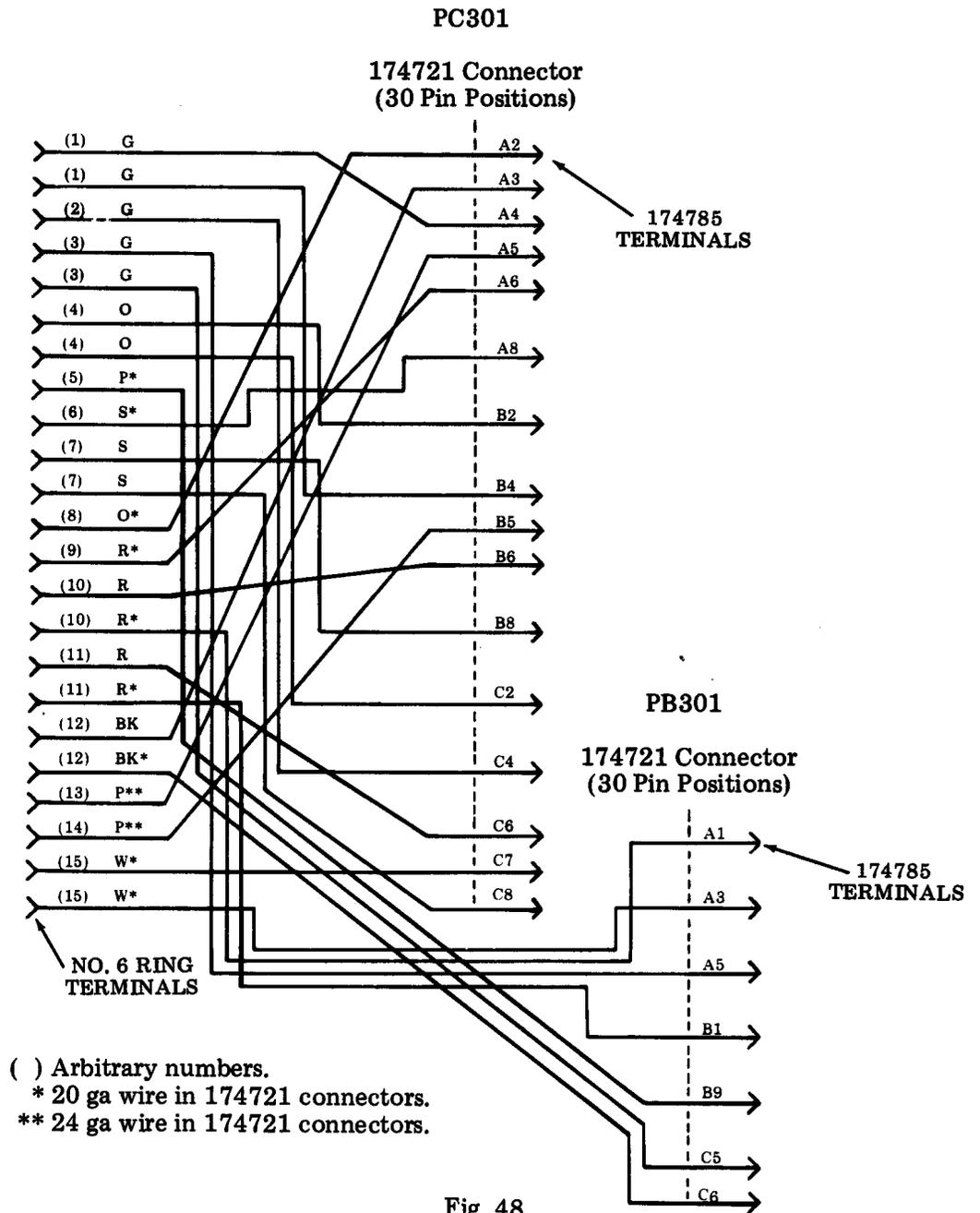


Fig. 48

SECTION 579-505-352

(7) 335629 Cable Assembly (Part of 335361 Six-Button Switch Assembly)
 (Application to Station Arrangements 1 — With Printer, 4, and 5)

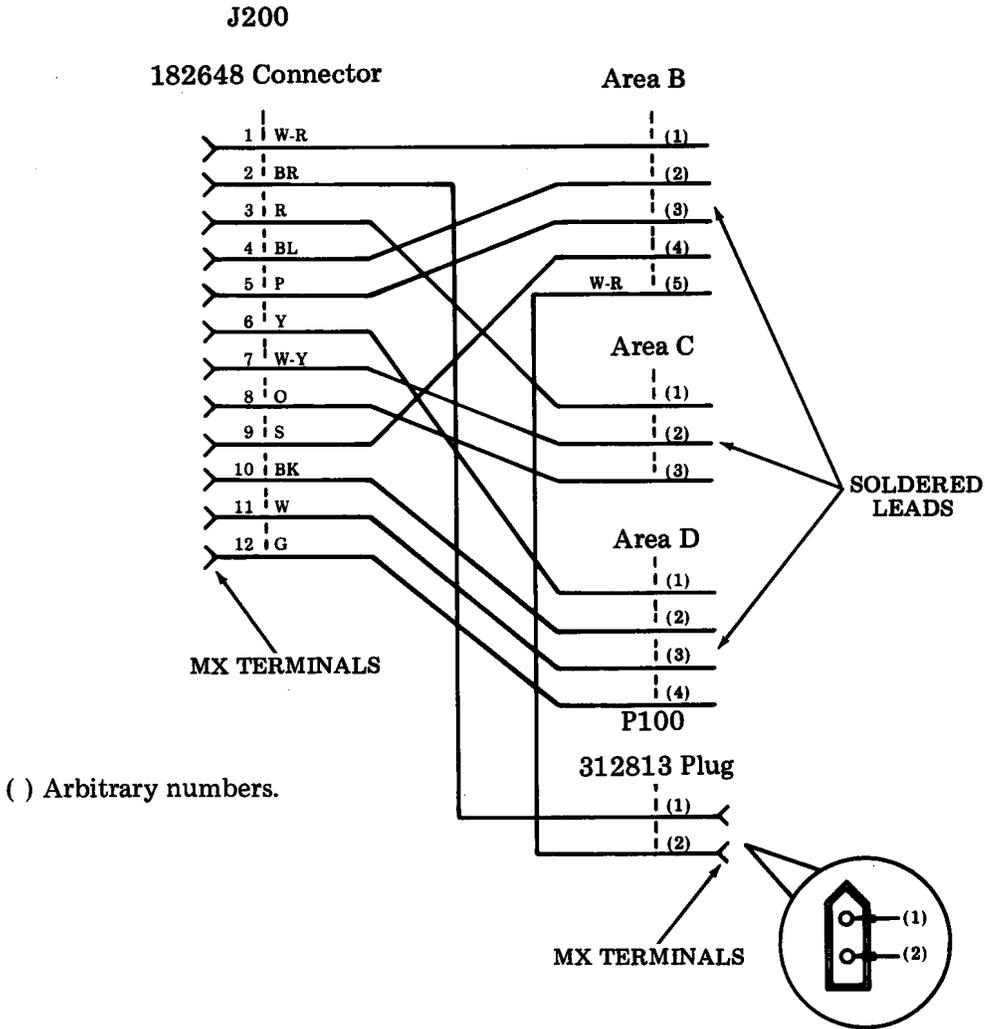
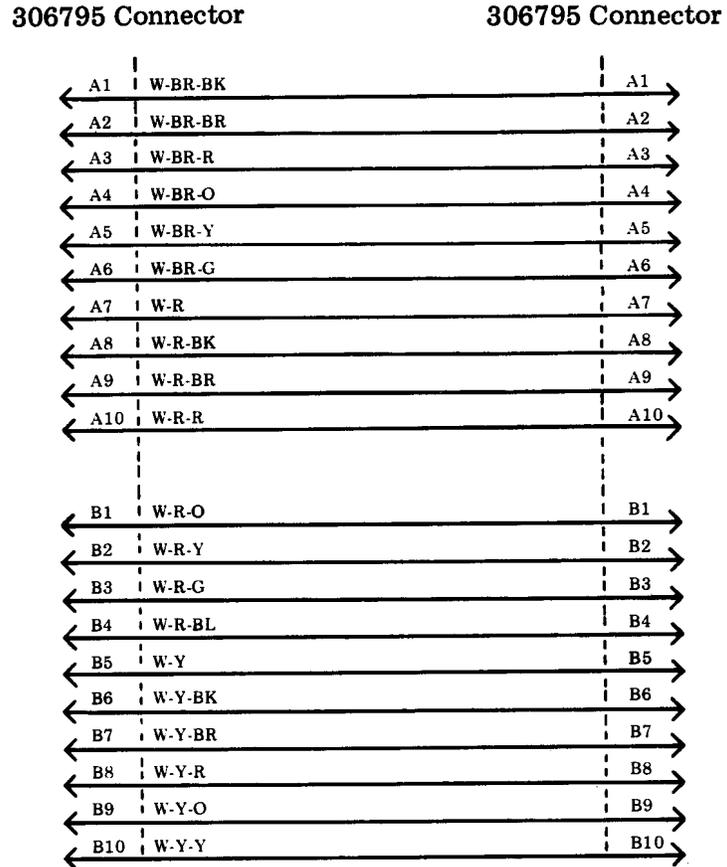


Fig. 49

(8) 335633 Cable Assembly (Application to Station Arrangements 4 and 5)



Note 1: Observe this is a one-to-one cable.

Note 2: Four unused wires are tied back: W, BR-W, W-Y-G, and W-Y-BL.

Note 3: Wiring for 335611 cable (40 inches long) is the same as for 335633.

Fig. 50

SECTION 579-505-352

(9) 337447 Cable Assembly (Application to Station Arrangement 1)

Note: Remainder of P401 connector is shown in Fig. 52.

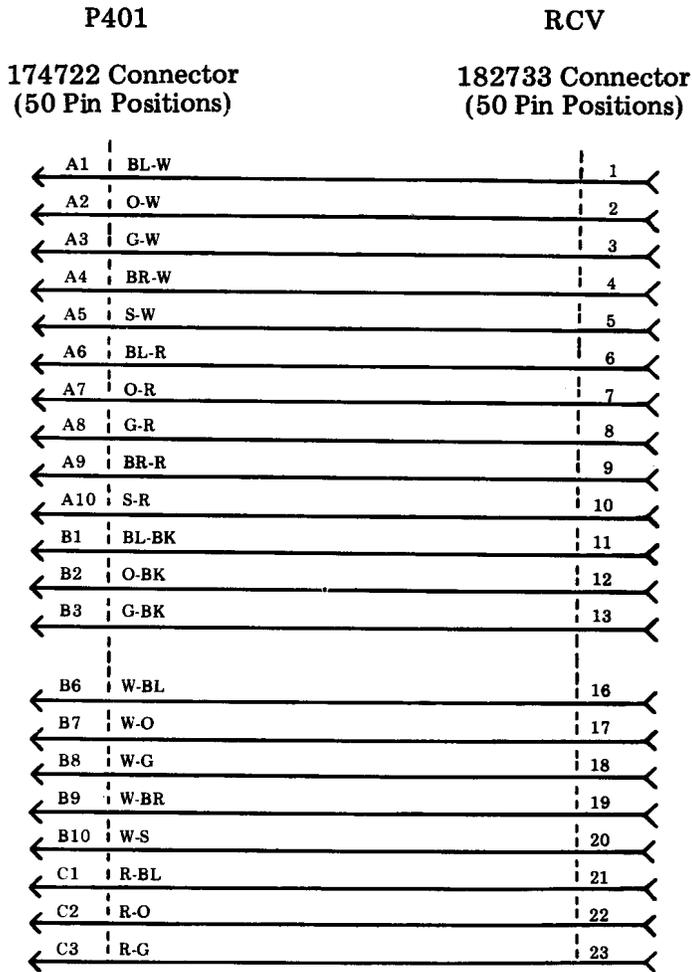


Fig. 51

(9) 337447 Cable Assembly (Application to Station Arrangement 1) (Cont)

Note: Remainder of P401 connector is shown in Fig. 51.

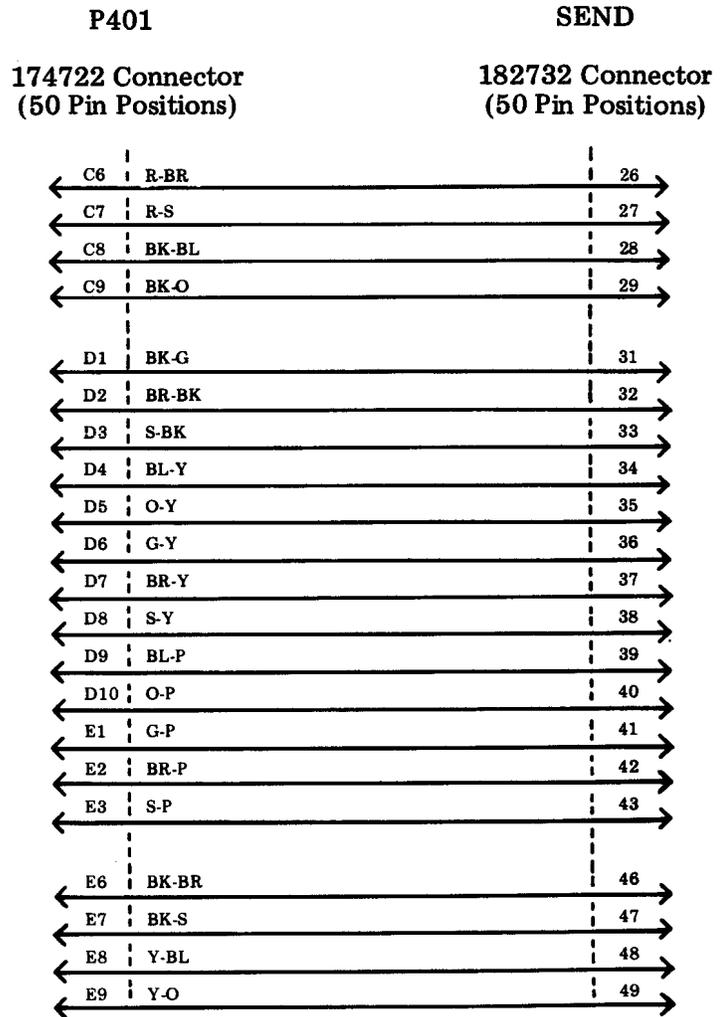


Fig. 52

SECTION 579-505-352

(10) 338397 Cable Assembly (Application to Station Arrangement 1)

Note 1: All connectors are 338400; all use 338410 terminals.

Note 2: Remainder of JM and D connectors are shown in Fig. 54.

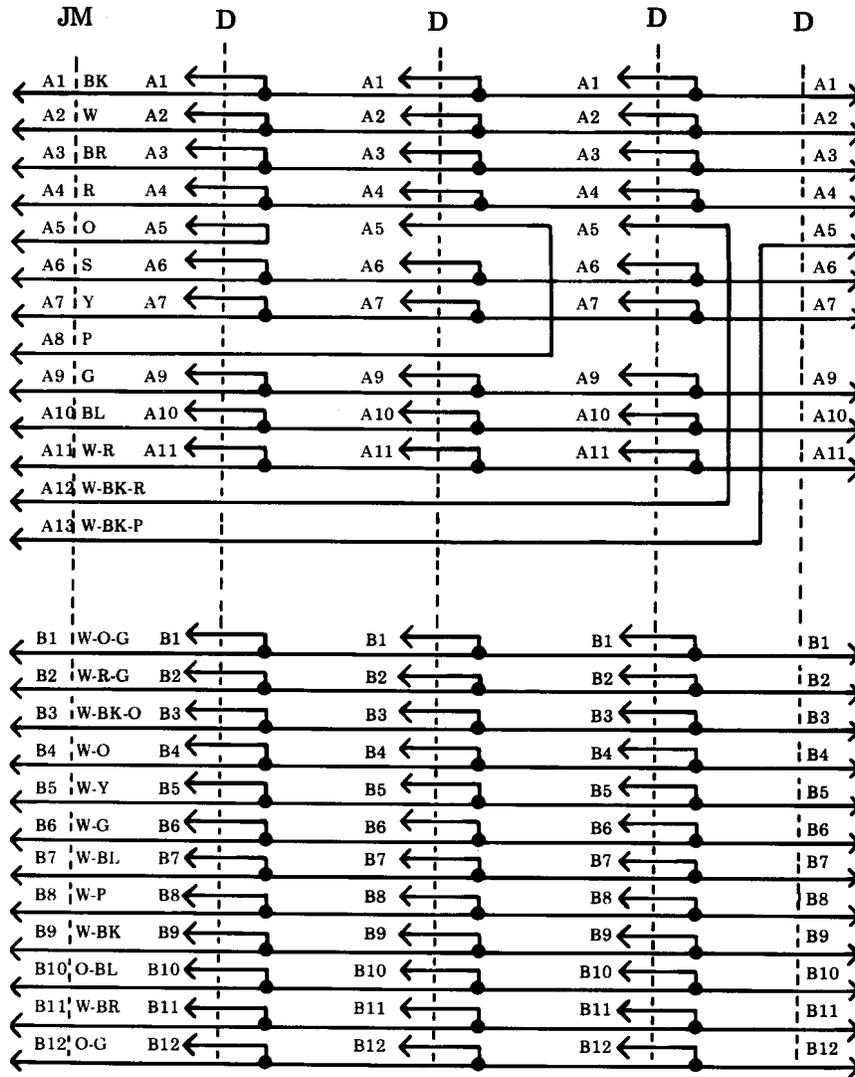


Fig. 53

(10) 338397 Cable Assembly (Application to Station Arrangement 1) (Cont)

Note 1: All connectors are 338400; all use 338410 terminals.

Note 2: Remainder of JM and D connectors are shown in Fig. 53.

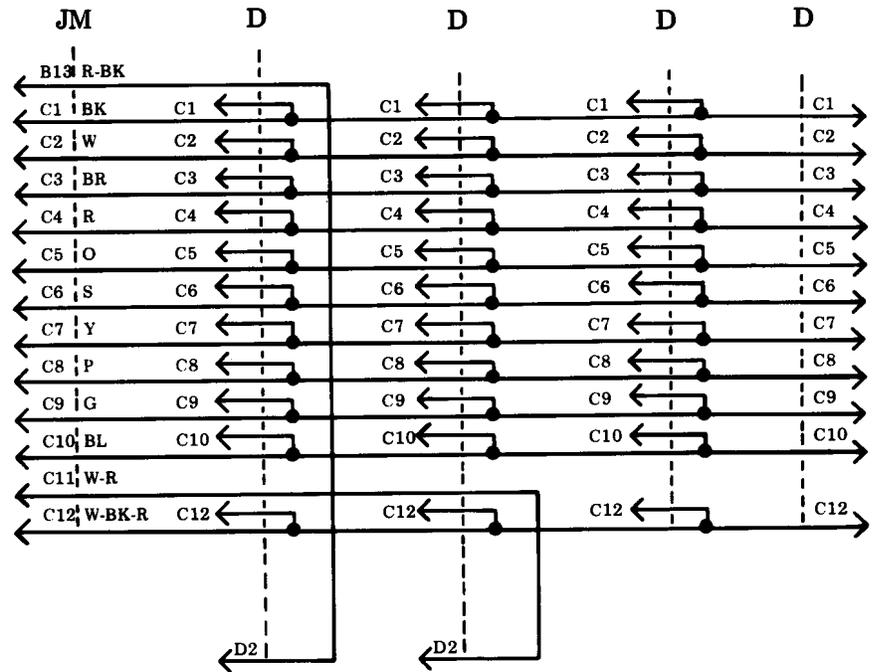
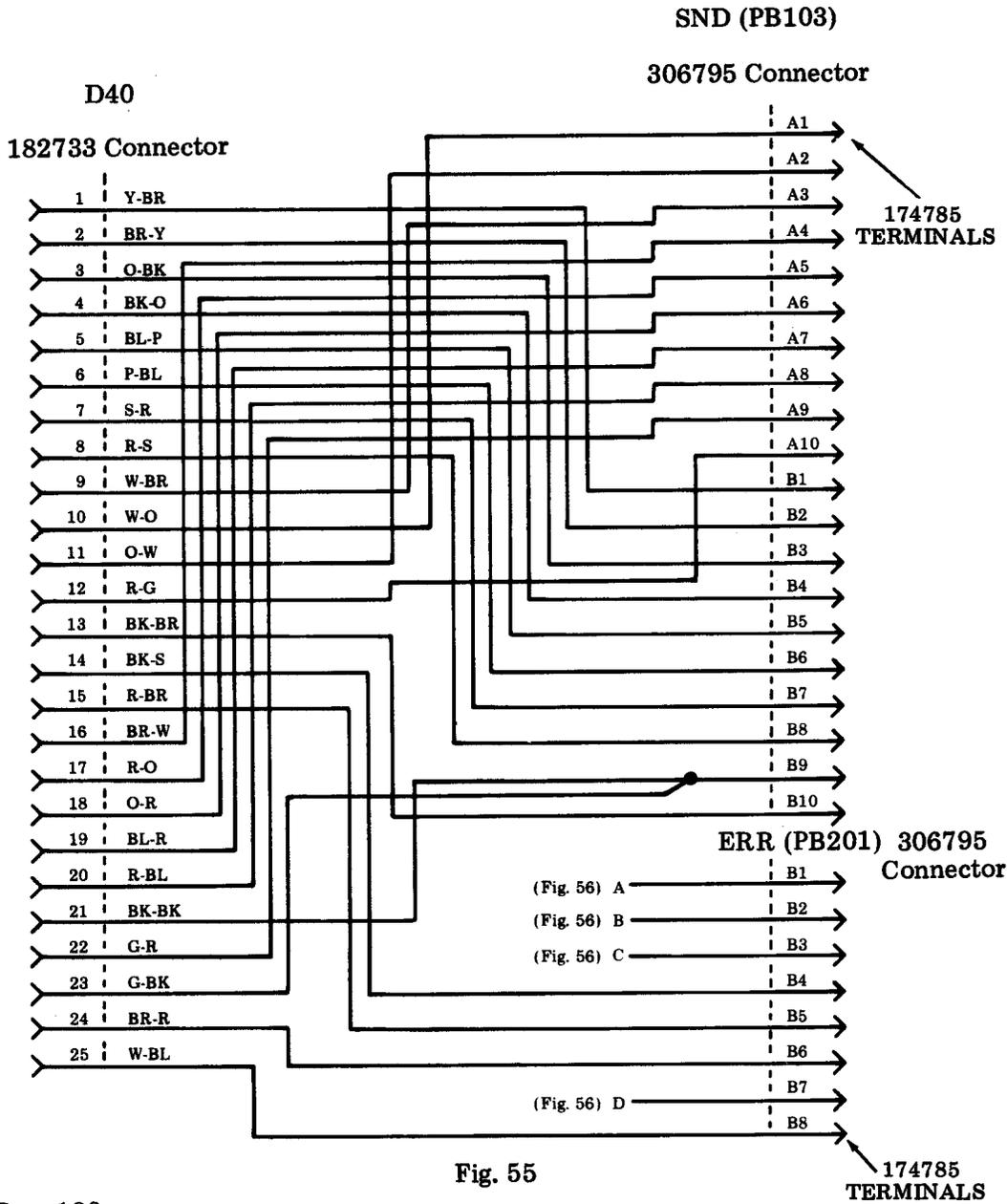


Fig. 54

SECTION 579-505-352

(11) 344947 Cable Assembly (Application to Station Arrangements 2, 3, and 4)

Note: Remainder of D40 connector is shown in Fig. 56.



(11) 344947 Cable Assembly (Application to Station Arrangements 2, 3, and 4)
(Cont)

Note: Remainder of D40 connector is shown in Fig. 55.

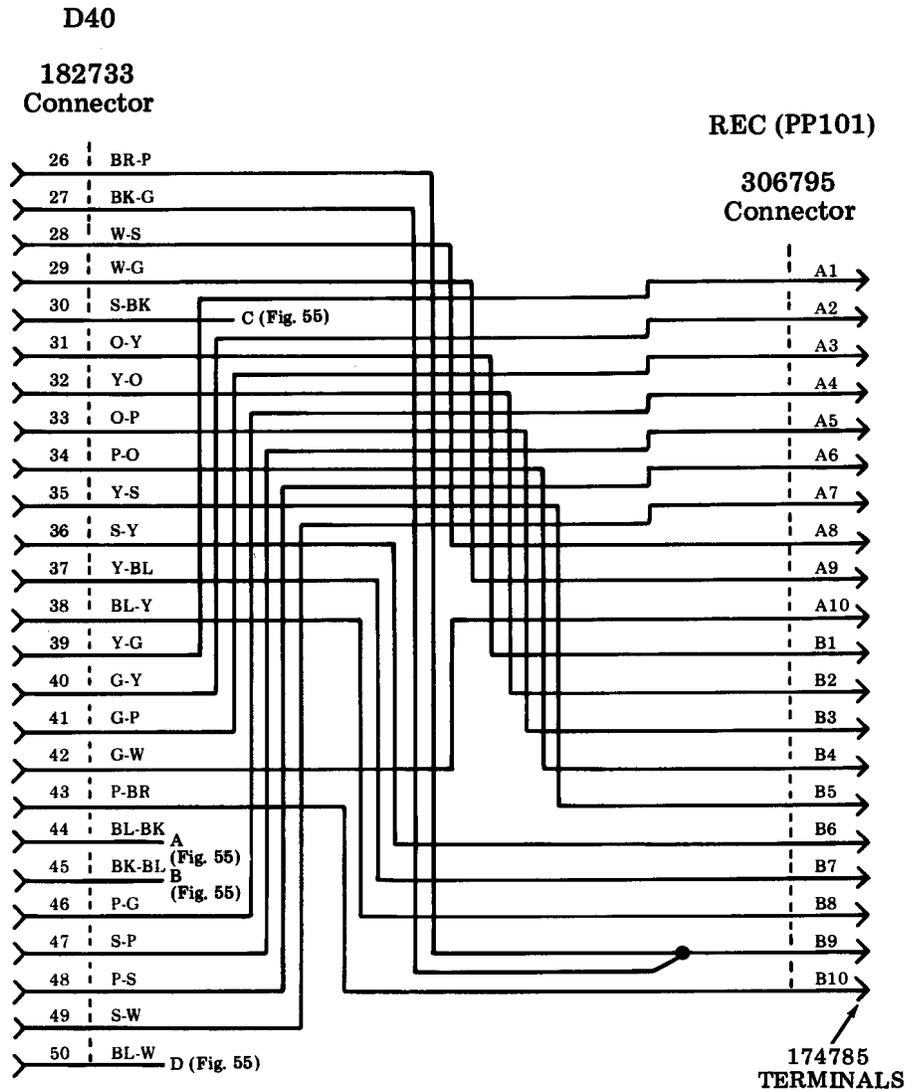
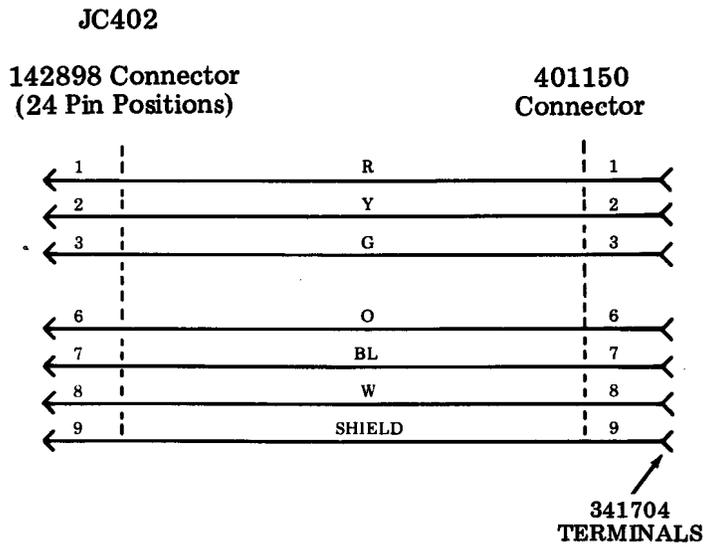


Fig. 56

(12) 344948 Cable Assembly (Application to Station Arrangements 1, 4, and 5)



Note: 401717 clamp is installed on 401150 connector.

Fig. 57

(13) 344952 Cable Assembly (Application to Station Arrangement 1)

Note: Remainder of CLSTR connector is shown in Fig. 60.

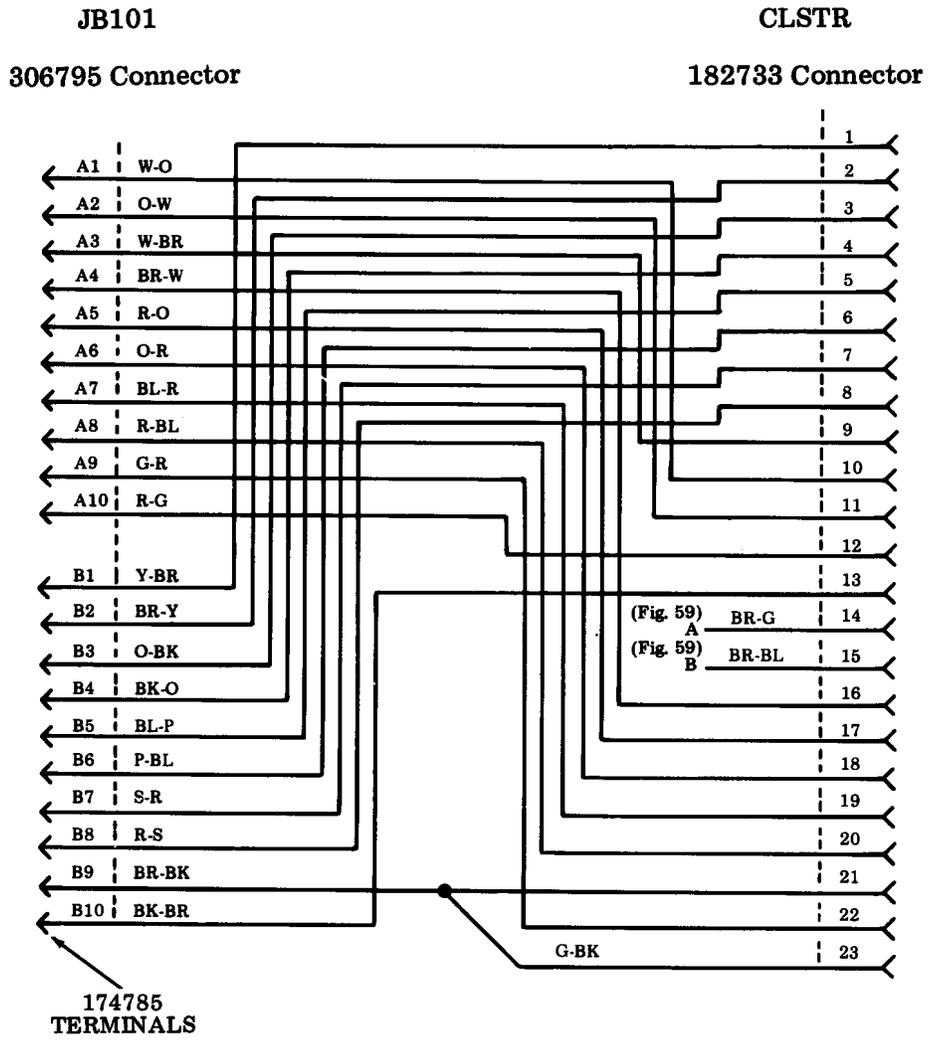


Fig. 58

SECTION 579-505-352

(13) 344952 Cable Assembly (Application to Station Arrangement 1) (Cont)

Note: Remainder of D40 connector is shown in Fig. 60.

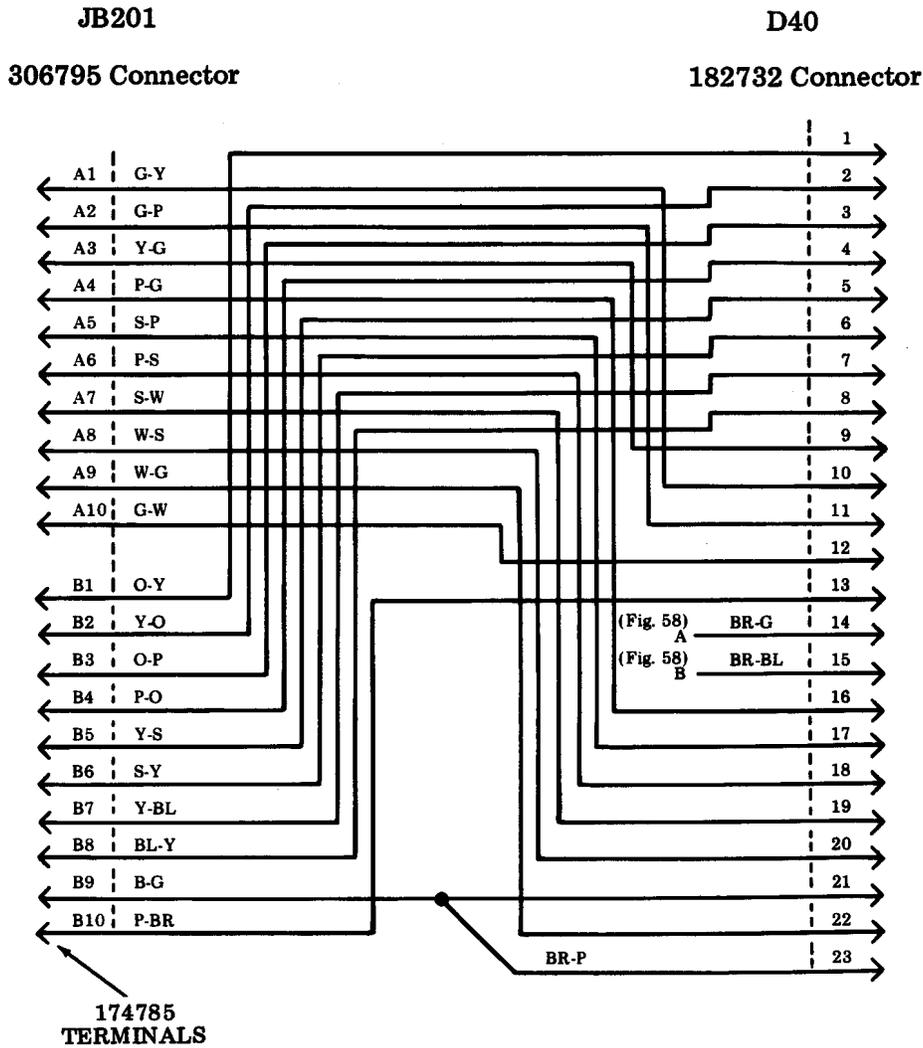
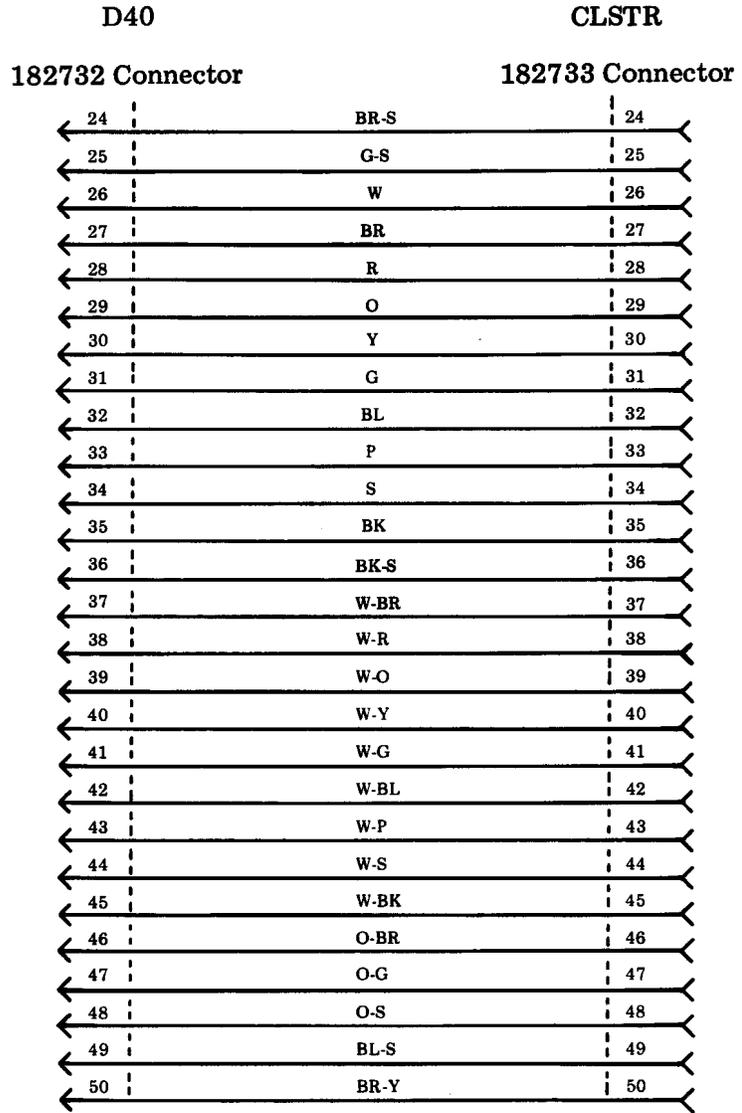


Fig. 59

(13) 344952 Cable Assembly (Application to Station Arrangement 1) (Cont)

Note 1: Remainder of CLSTR and D40 connectors are shown in Fig. 58 and 59, respectively.



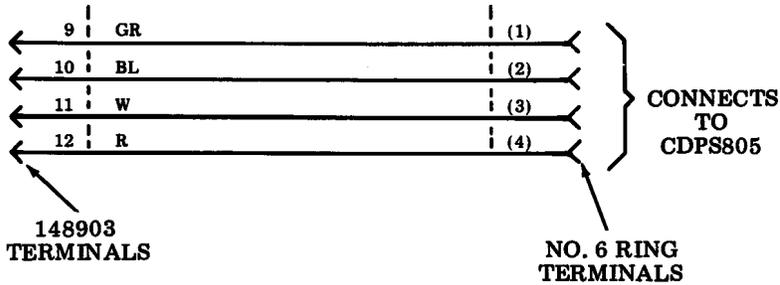
Note 2: The cutoff spare wires are: BK-S, R-BR, BR-R, W-BL, S-BK, BL-BK, BK-BL and BL-W.

Fig. 60

SECTION 579-505-352

(14) 344990 Cable Assembly (Application to Station Arrangements 1 — Without Printer, 2, and 3)

182647 Connector
(12 Pin Positions)

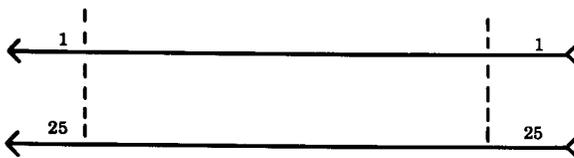


() Arbitrary numbers.

Fig. 61

(15) M25A Cord (Application to Station Arrangements 1 through 5)

KS-19088 L2 Connector KS-19087 L2 Connector
KS-19196 L2 Hood KS-19196 L2 Hood



Note 1: All 25 pins are connected, 1 to 1, etc.

Note 2: Cord length is 5, 9, 25, or 50 feet.

Fig. 62

6. ADJUSTMENTS

Note: Part 6 applies only to Station Arrangement 1.

POWER SUPPLY (Located in 2550 Cluster Controller)

6.01 The 338425 or 338450 power supply (either one may be used for the controller) is factory adjusted for correct output voltage. A brief description of the two types of power supplies that are interchangeable for use in the controller is given in 6.02 through 6.05.

Warning: No additional adjusting is necessary unless troubleshooting analysis requires readjusting or checking the adjustment.

6.02 A 338450 power supply (Manufacturers Type — Lambda LME5) with externally mounted 338445 overvoltage device (Lambda LMOV-1) was installed in the initial factory production of controller terminals. Subsequent 338450 power supplies (Lambda LME5 4274) were supplied under the same TP part number but were equipped with an internal nonadjustable overvoltage device.

6.03 The replacement for 338450 is 338425 (Manufacturers Type — North Electric N15005) which currently is supplied in factory built controller terminals. This power supply uses an externally mounted 340175 overvoltage device.

6.04 These power supplies are physically and electrically interchangeable for use in controller terminals. The only difference is that the power supply may have an externally adjustable overvoltage device or it may have an internally mounted nonadjustable device. Adjust using this part with respect to the unit supplied.

Note: If a power supply requires repair or replacement, send it to the nearest Teletype Corporation Product Service Center with a description of the defect.

6.05 For making power supply adjustments, a calibrated dc voltmeter is required. The meter should be capable of measuring dc voltage between the 5 to 10 volt range with a known accuracy of +2 percent of full scale. Controller power must be turned on when the power supply Output Voltage and Overvoltage Trip Point adjustments are made.

Caution: Before making the power supply adjustments, turn off ac power and remove the six fuses on center logic rack patch panel. Replace fuses when adjustments are completed.

SECTION 579-505-352

POWER SUPPLY (Located in 2550 Cluster Controller) (Cont)

(1) Output Voltage

Adjust the power supply as follows:

- (a) Set dc voltmeter range scale to a setting for measuring +5.50 V and connect meter leads across terminals 1 (+) and 2 (-) on TBP terminal board on center logic rack patch panel (Fig. 63); observe that meter polarity is correct.
- (b) Remove controller terminal ac power cord from wall or floor receptacle. Check if wire jumper straps are present on power supply between terminals TB1-3 to TB1-4 and terminals TB1-6 to TB1-7. These straps, if present, must be removed and discarded prior to making Output Voltage adjustment.
- (c) Make certain the power supply terminal connections are secure; replace controller ac power cord; and turn on ac power. Using a small screwdriver, adjust output voltage adjusting screw on power supply (Fig. 64) until meter reading is +5.50 V dc.
- (d) Turn off controller ac power. Replace the six fuses into patch panel that were removed earlier (6.05, Caution).
- (e) Make certain all circuit cards and cable connectors are in their proper place and secured.
- (f) Turn on controller ac power and readjust, if necessary, so that output voltage is +5.50 V dc plus or minus 100 mV (+5.40 V dc to +5.60 V dc).

TBP Terminal Board

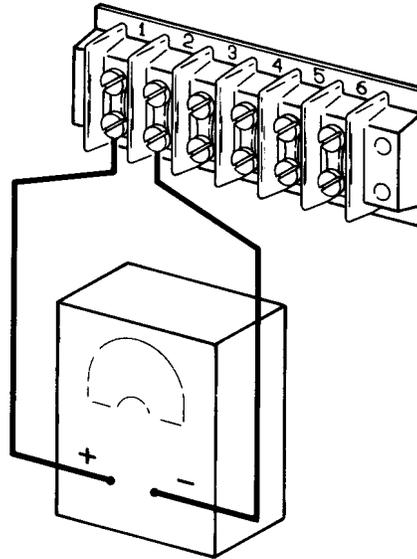


Fig. 63—Controller Patch Panel Terminal Block

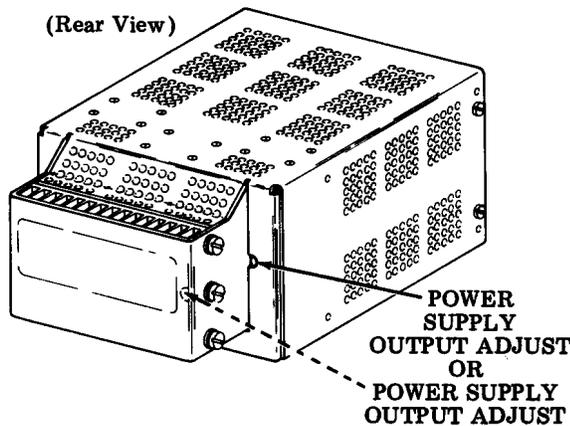


Fig. 64—Controller Power Supply

(2) Overvoltage Trip Point

Adjust overvoltage crowbar assembly, if provided, using the following procedure. See Fig. 65.

- (a) Remove controller ac power cord from wall receptacle.
- (b) Connect a dc voltmeter according to (1) Output Voltage, (a).
- (c) With output voltage adjusted according to (1) Output Voltage, install overvoltage crowbar assembly onto power supply and connect it to respective voltage output terminals. See Fig. 65.
- (d) Replace ac power cord and turn controller power on.
- (e) Using a small screwdriver, decrease voltage trip point (Fig. 65) on overvoltage crowbar until power supply output voltage on voltmeter fails. To decrease voltage trip point on units from Lambda, turn screw counterclockwise; on units from North Electric, turn screw clockwise.

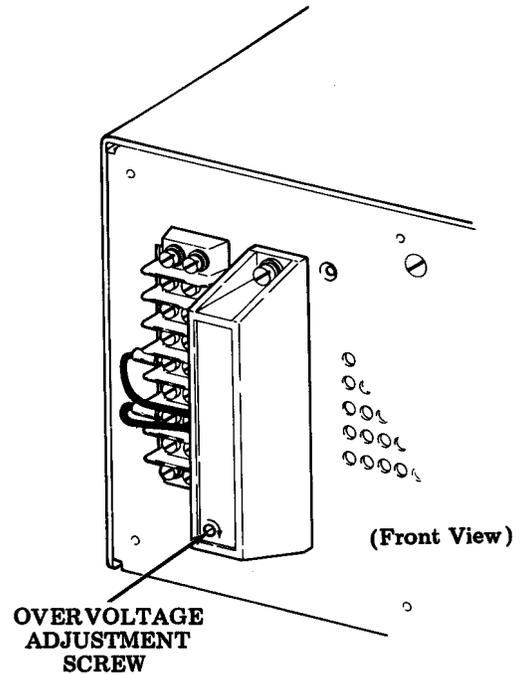


Fig. 65—Overvoltage Crowbar Assembly

- (f) After voltmeter falls to near zero (trip point), rotate adjustment screw two full turns in an opposite direction to (e) to increase voltage trip point. Turn power off (approximately 5 seconds), then on again to reset overvoltage crowbar device. Voltmeter should display output voltage.

NOTES

7. COMPONENT ACCESS

Note: When ordering parts, prefix each part number with the letters "TP".

7.01 STATION ARRANGEMENTS

Five equipment configurations are illustrated in Fig. 66 through 70.

The ac power connections are not shown.

(1) Station Arrangement 1

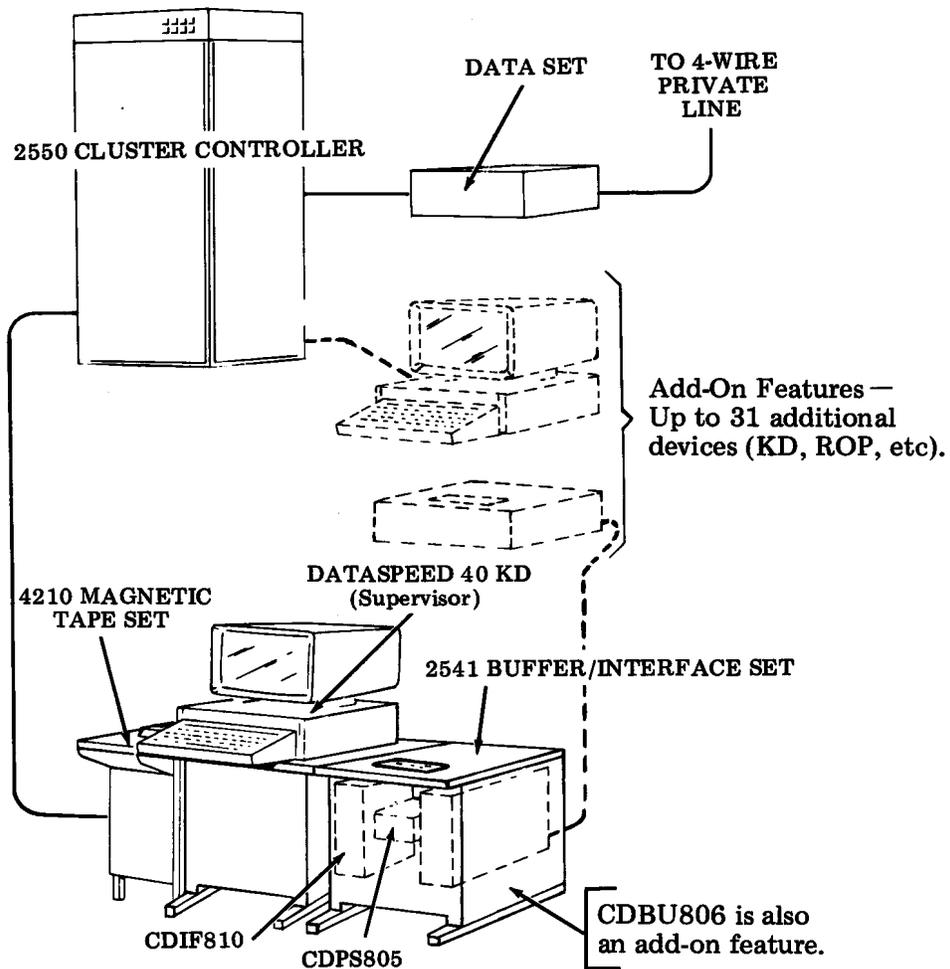


Fig. 66—Basic 2550 Cluster Controller Station (USOC NTFX1)

(2) Station Arrangement 2

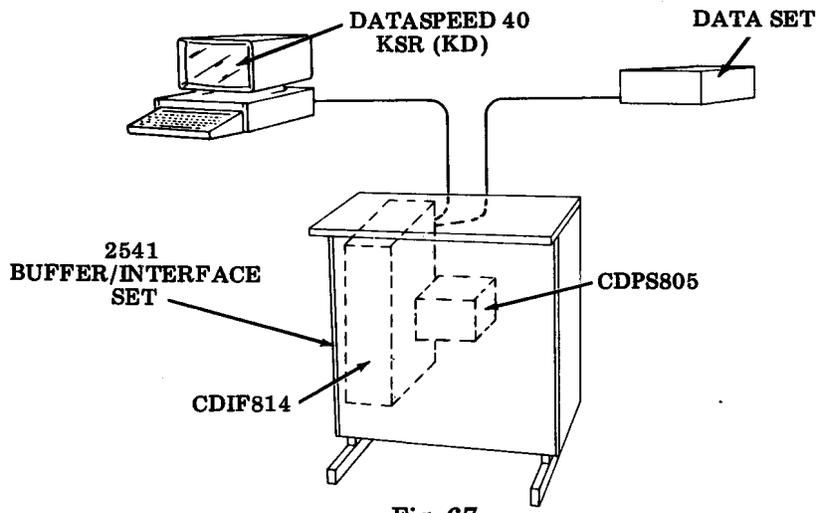


Fig. 67

(3) Station Arrangement 3

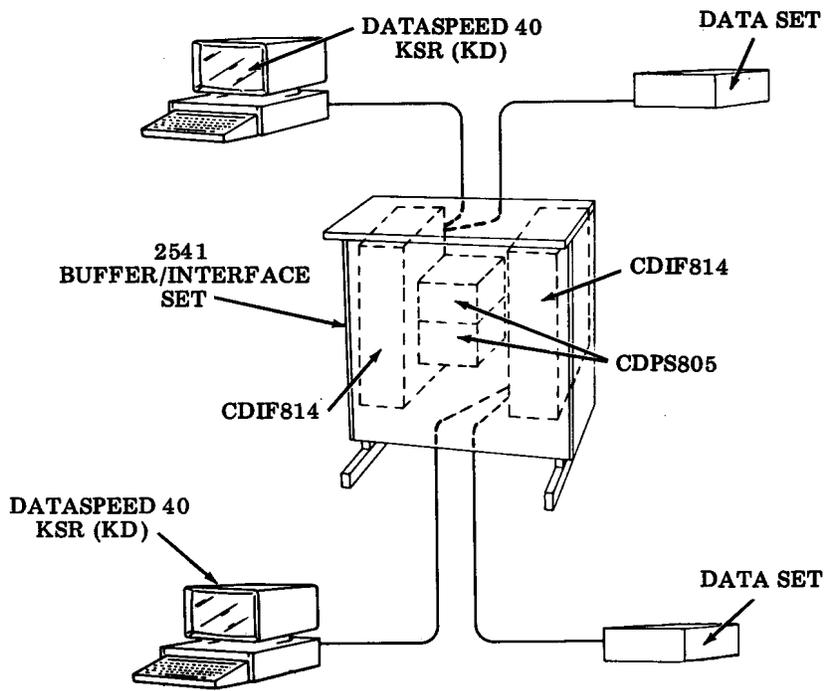


Fig. 68

(4) Station Arrangement 4

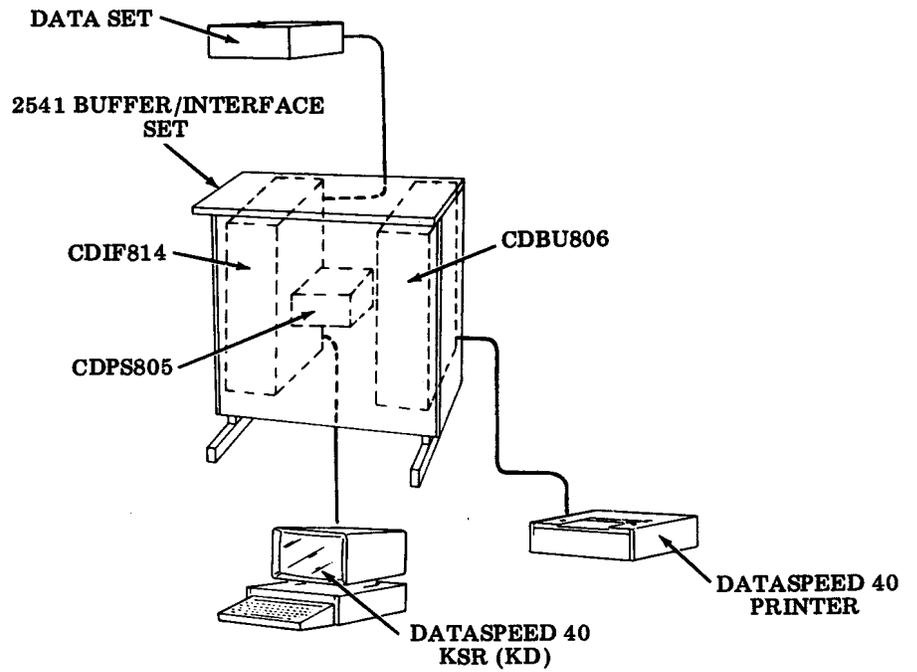


Fig. 69

(5) Station Arrangement 5

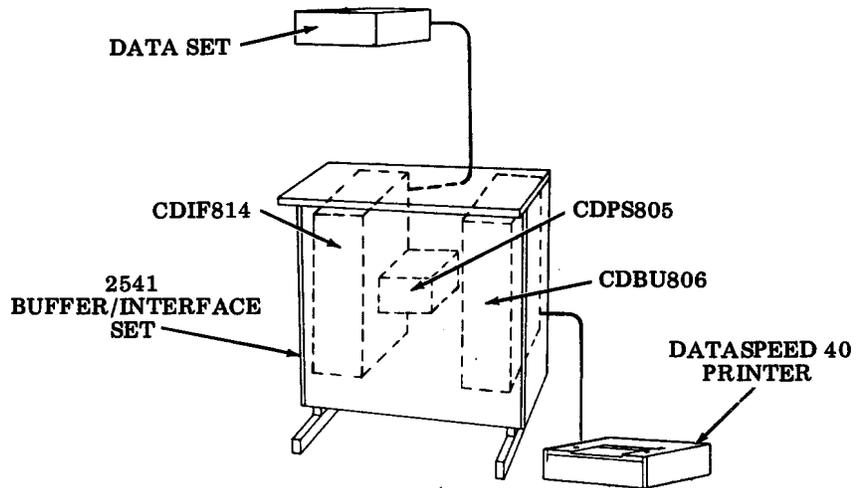


Fig. 70

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7.02 2550 CLUSTER CONTROLLER PARTS

Note: Refer to Section 578-150-800, Numerical Index for description of part numbers.

(1) Cluster Controller Cabinet

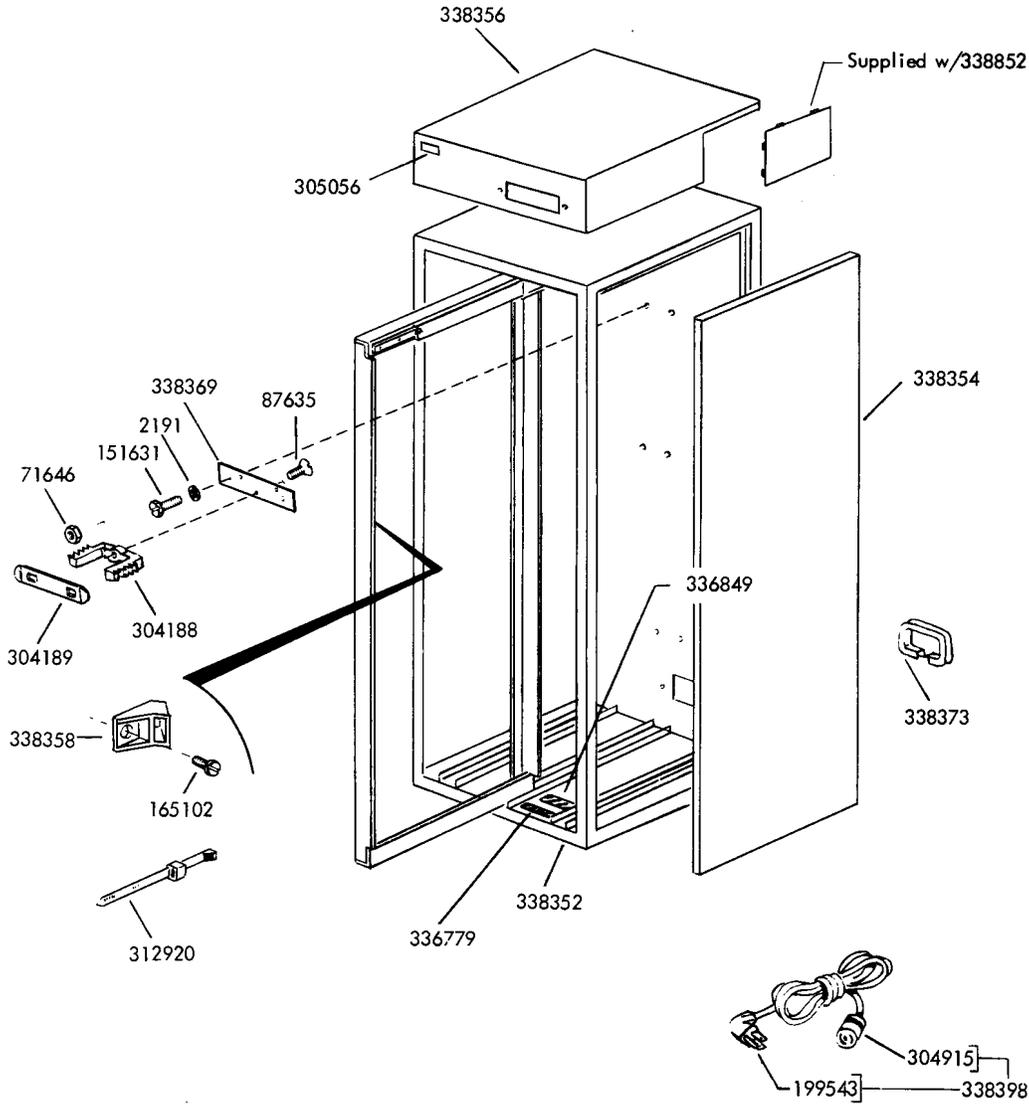


Fig. 71

(2) Power Supply Control and Mounting

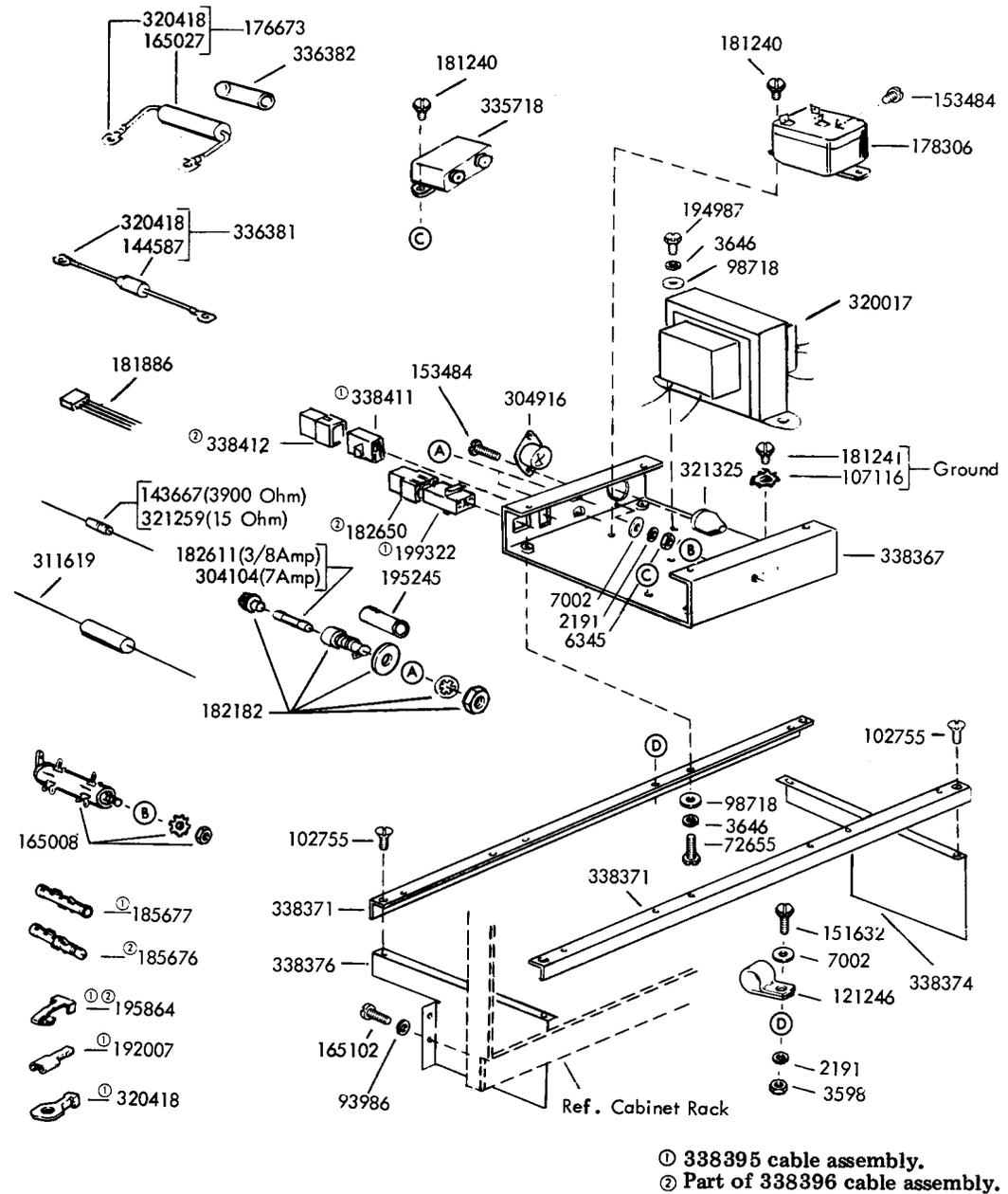


Fig. 72

(3) Power Supply Assembly

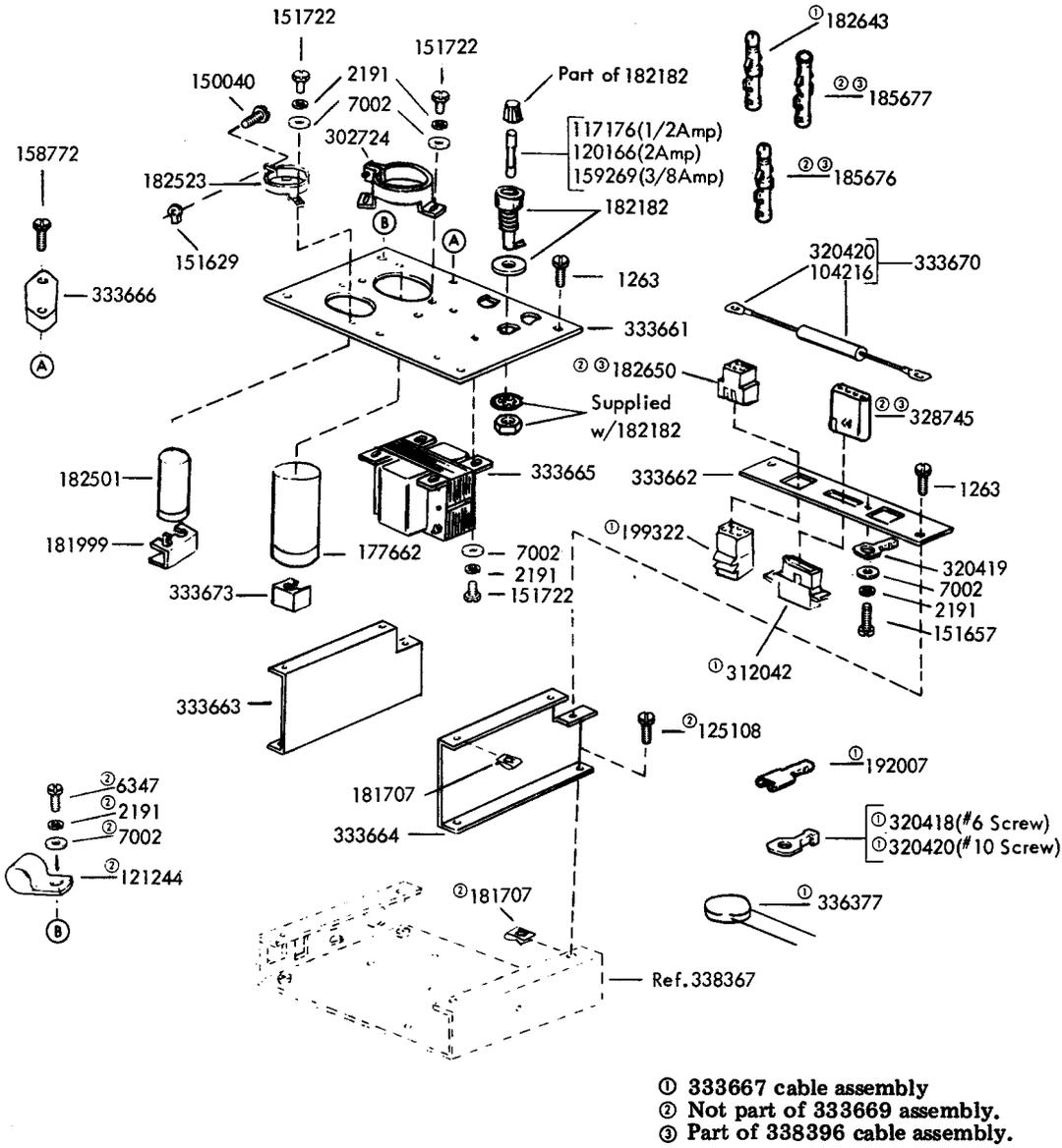
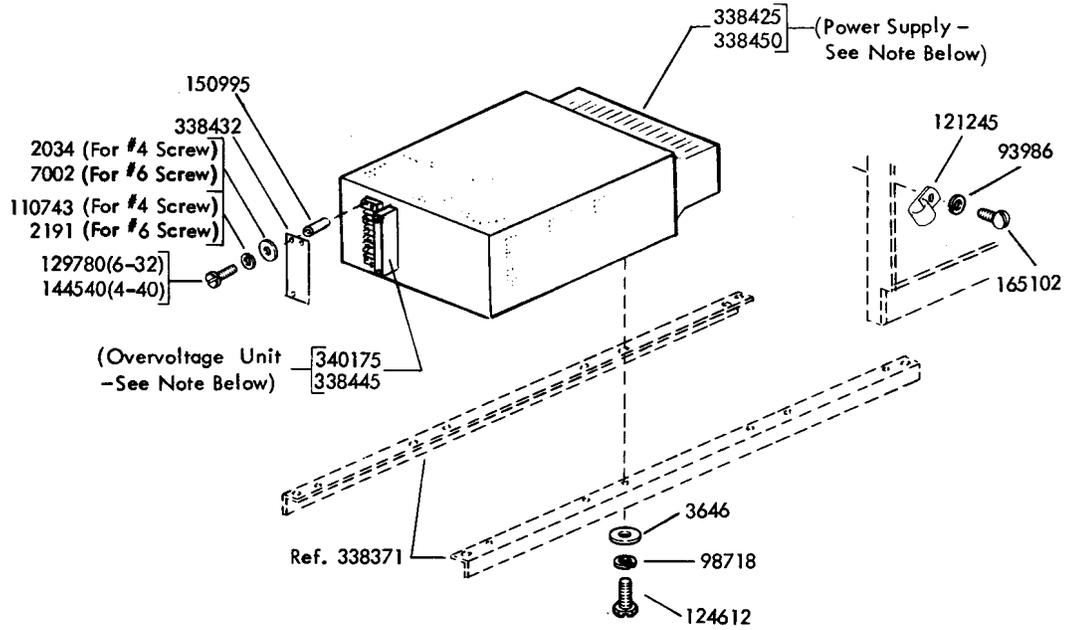


Fig. 73

(4) Power Supply and Overvoltage Unit



Note: The 338425 power supply uses 340175 overvoltage unit (external mounted). Early design 338450 power supply uses 338445 overvoltage unit (external mounted). Late design 338450 power supply incorporates an internally mounted nonadjustable overvoltage device.

Fig. 74

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(5) Cabinet Control Assembly

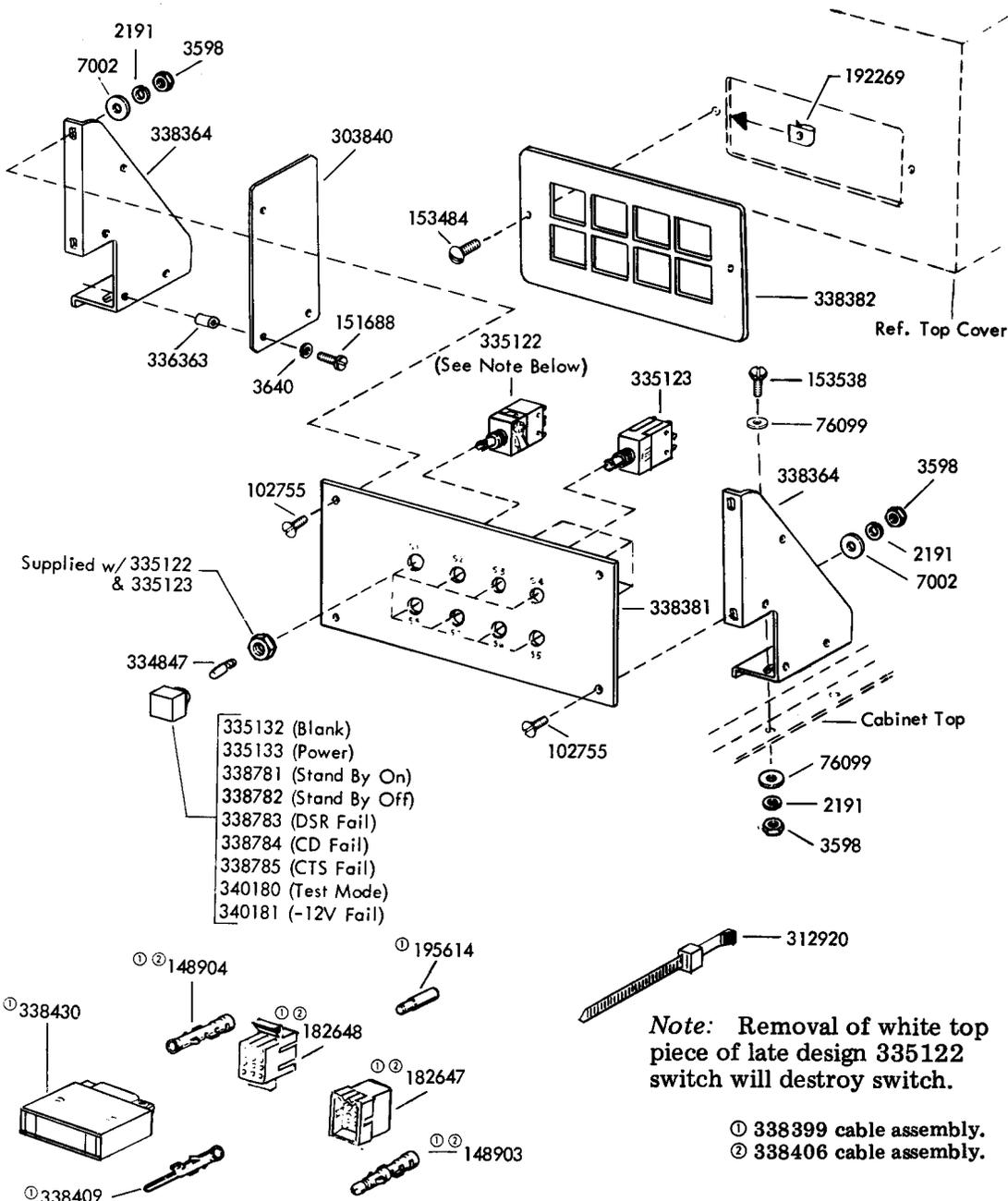
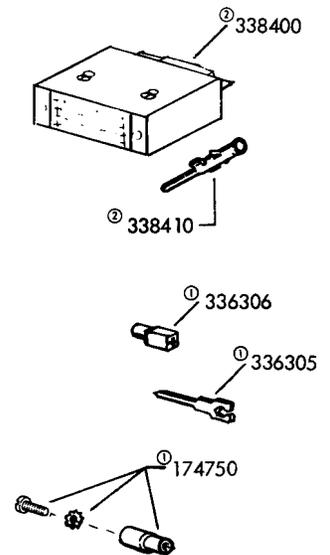
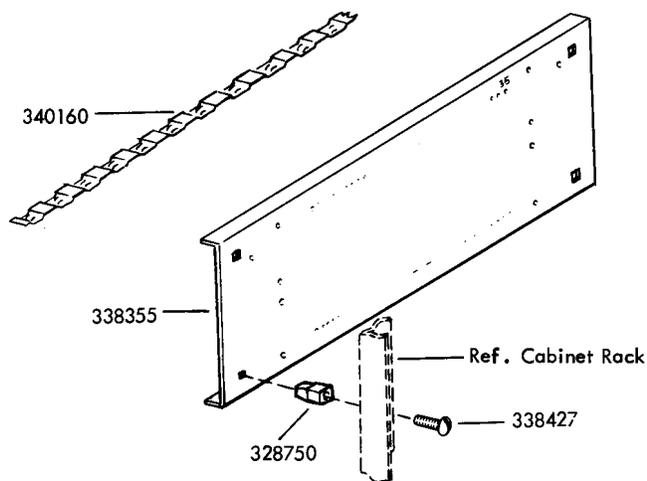


Fig. 75

(6) Logic Panels

Circuit Card	Circuit Card Description	Logic Panel Assembly No.		
		338370 "LA"	338380 "LB"	338390 "LC"
303835	Oscillator	X		X
303836	Components	X		
303837	E. I. A. Amplifier	X		
322425	Gates	X	X	X
322426	844 Power Gates	X	X	X
322428	833 Expanders	X		X
322429	836 Hex Inverters	X	X	X
322430	845 Flip-Flops	X	X	X
322431	846 Gates	X	X	X
322433	853 J-K Flip-Flops	X	X	X
322434	7486 Exclusive or Gates		X	X
322435	9300 Resistors	X	X	
322437	9301 Decoders	X	X	X
338422	Resistors	X	X	X
338423	Resistor-Cap		X	X
338424	Program Test S2			X
338426	Program Test S3	X		
338428	Program Test S1		X	
Logic Panel (Wired)		340197	340198	340199

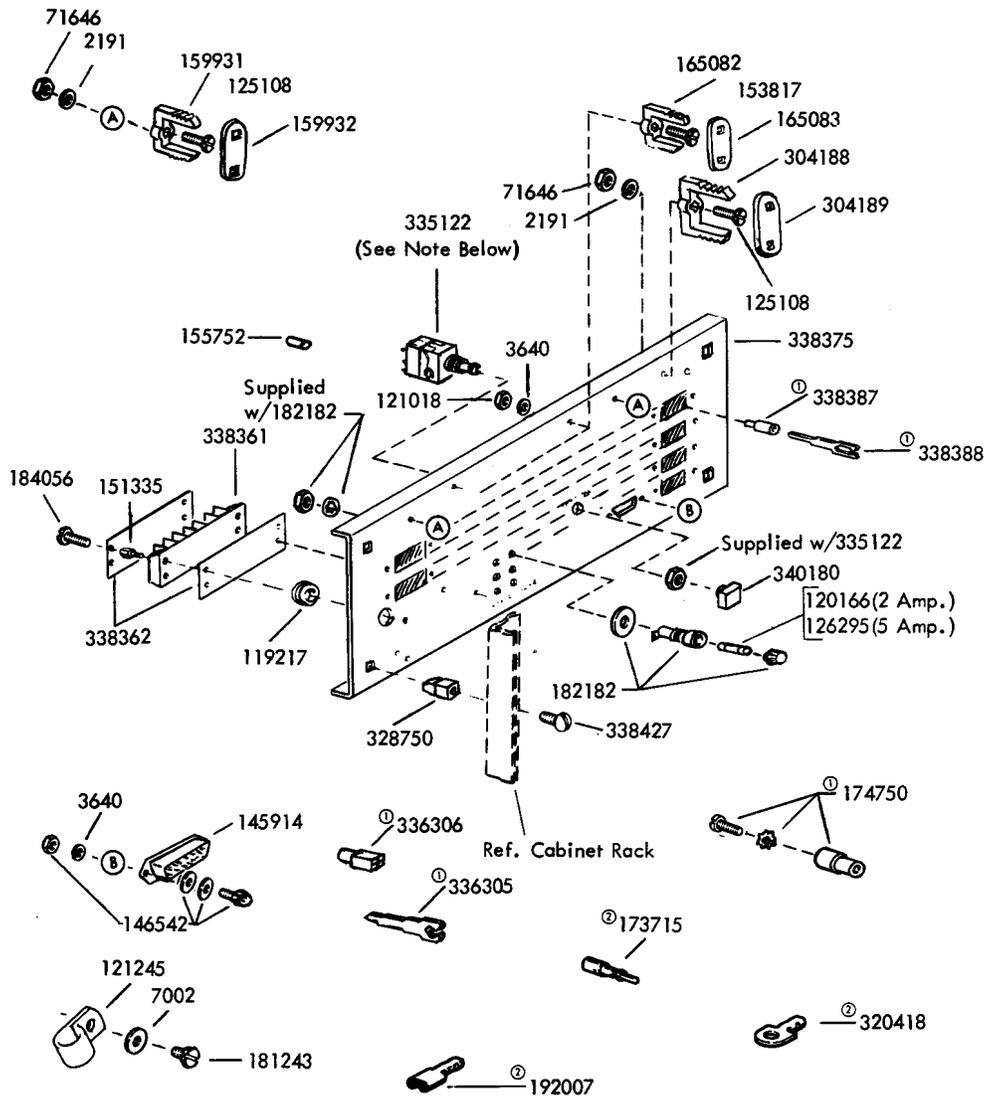


- ① Part of 338355 connector plate.
- ② 338401 cable assembly (not part of panel assemblies).

Fig. 76

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(7) 338420 Patch Panel Assembly

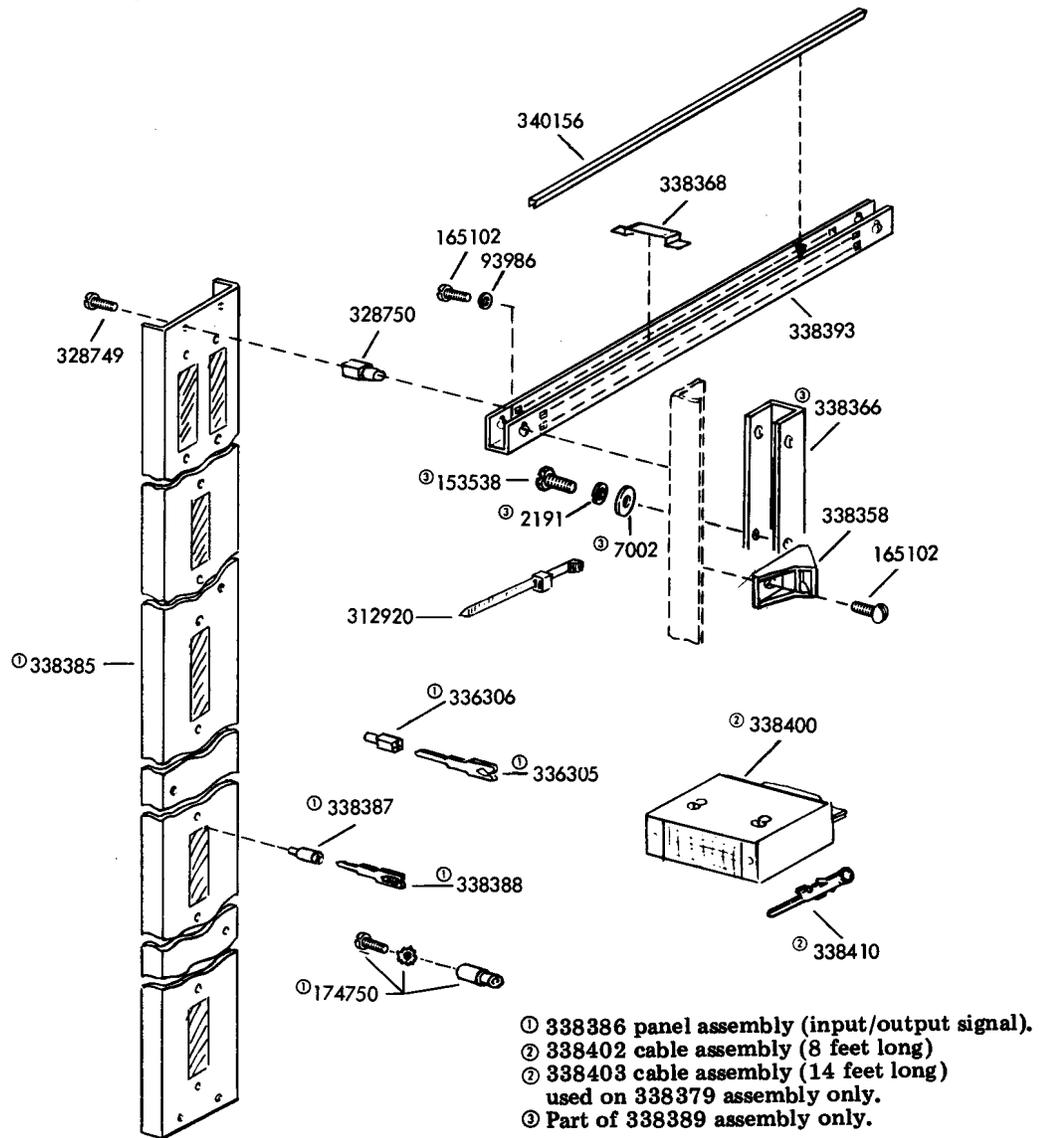


Note: Removal of white top piece of late design 335122 switch will destroy switch.

- ① Part of 338375 connector plate.
- ② Part of 338394 cable w/terminals.

Fig. 77

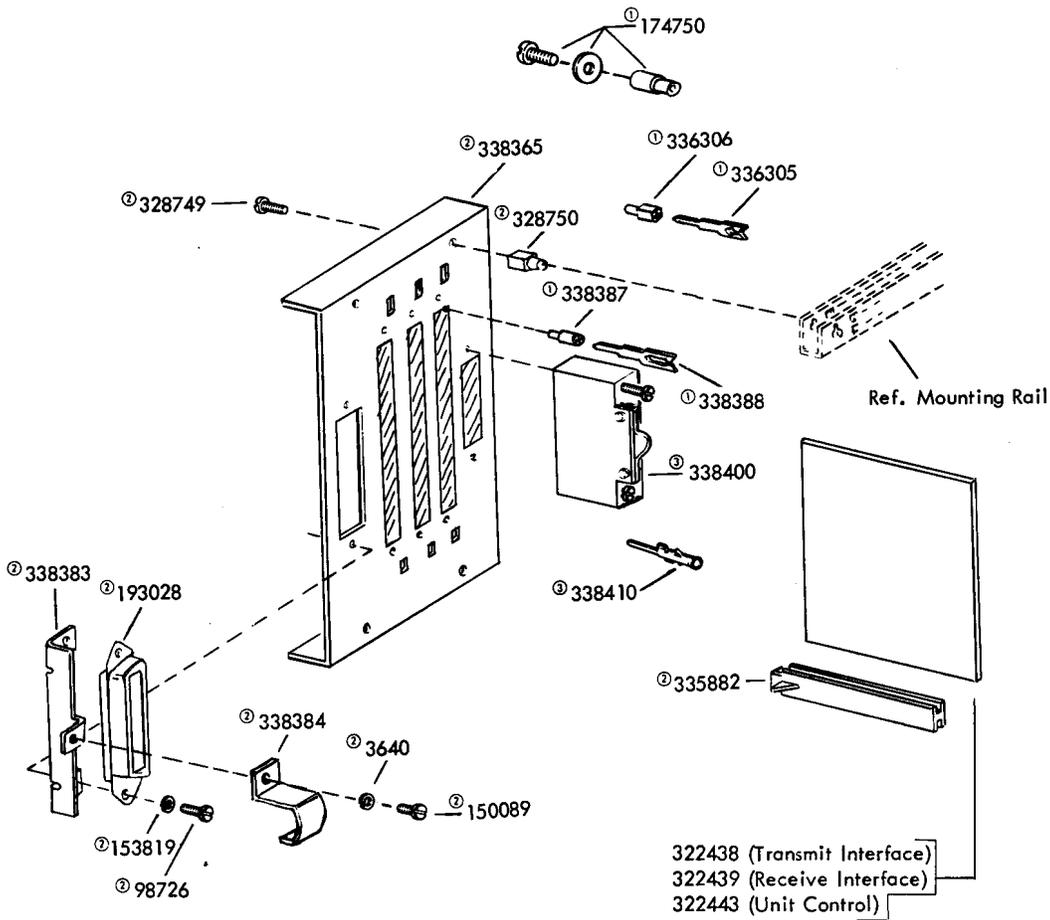
(8) 338379 Input/Output Rack 1 Assembly and 338389 Input/Output Rack 2 Assembly



Note: The 338379 input/output rack assembly also includes 338429 input/output standby assembly shown in Fig. 80.

Fig. 78

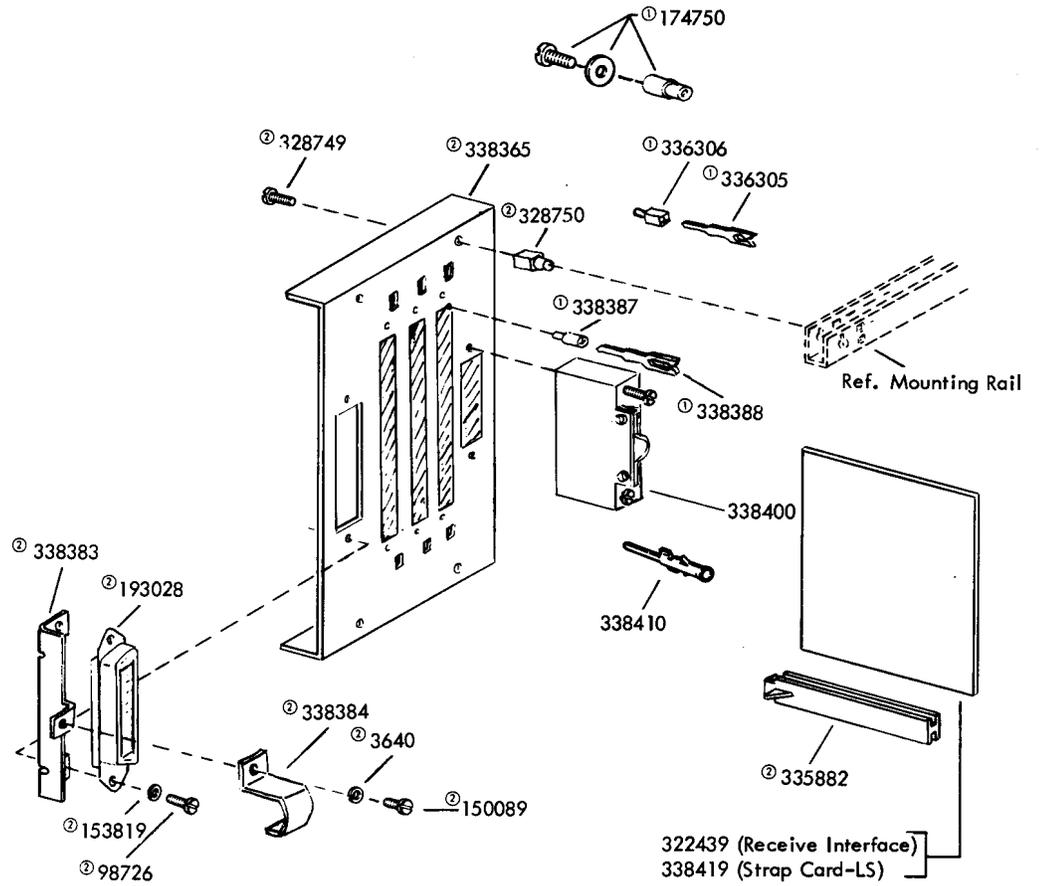
(9) 338360 Input/Output Logic Assembly



- ① Part of 338365 connector plate.
- ② 340196 input/output panel (wired).
- ③ 338397 cable assembly (not part of 338360 assembly).

Fig. 79

(10) 338429 Input/Output Standby Assembly



- ① Part of 338365 connector plate.
- ② 340196 input/output panel (wired).

Note: The 338429 input/output standby assembly is part of 338379 input/output rack assembly shown in Fig. 78.

Fig. 80

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7.03 2541 BUFFER/INTERFACE MODULE SET PARTS

Note: Refer to Section 578-100-802, Numerical Index for description of part numbers.

(1) Low Voltage Power Supply (CDPS805) Chassis

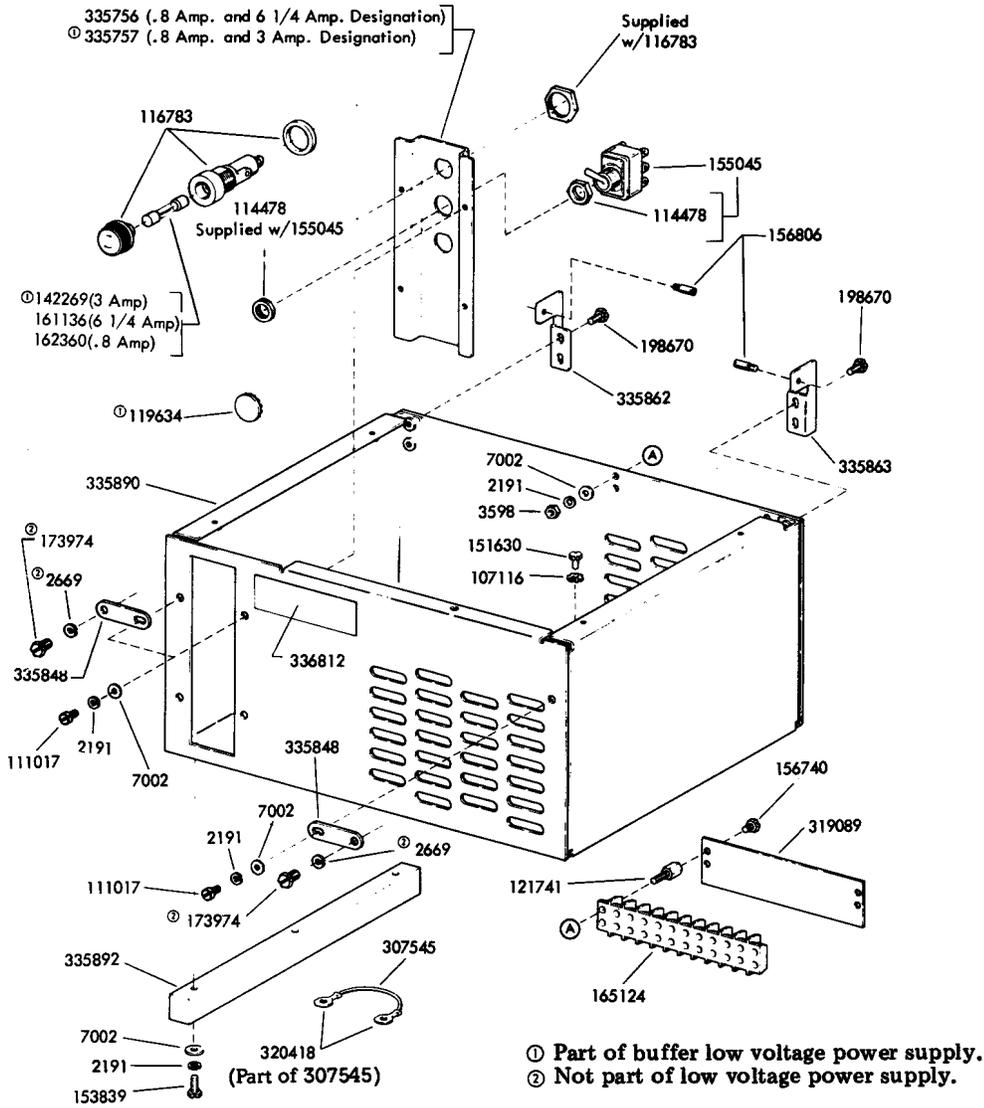


Fig. 81

(2) Low Voltage Power Supply (CDPS805) Insulator and Components

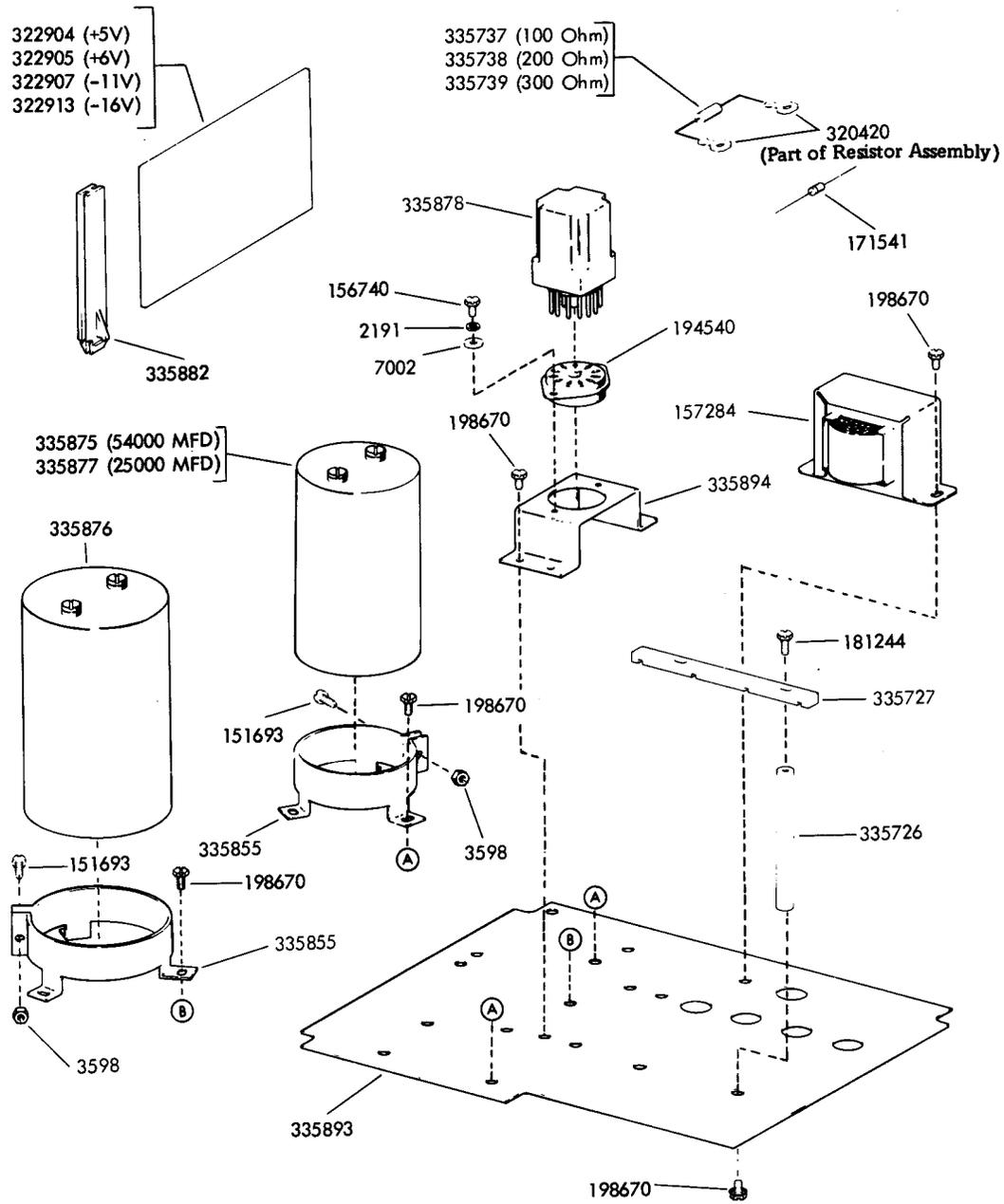


Fig. 82

(3) Low Voltage Power Supply (CDPS805) Heat Sinks

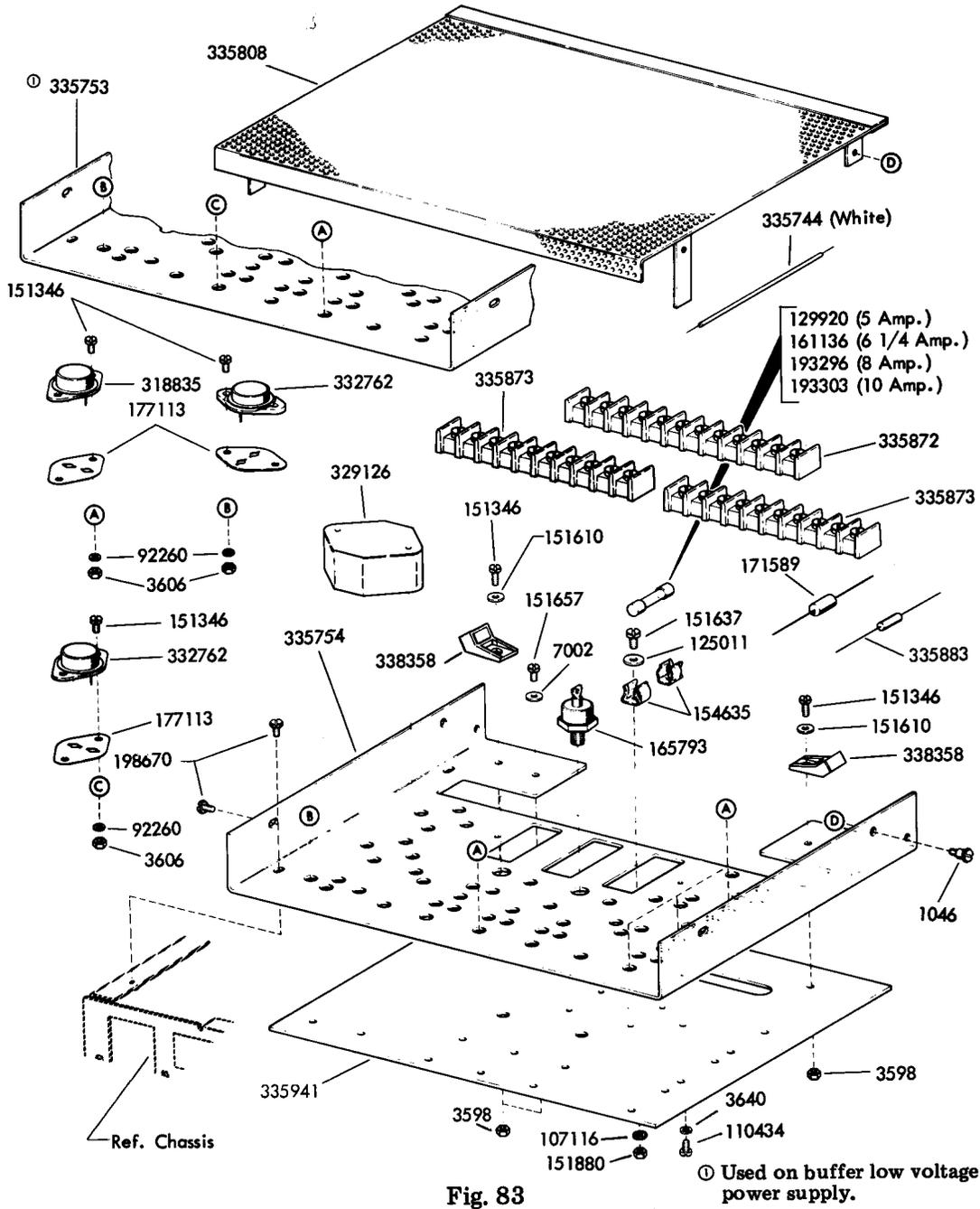


Fig. 83

(4) Module Frame for CDBU806 and CDIF810 and 814 Modules

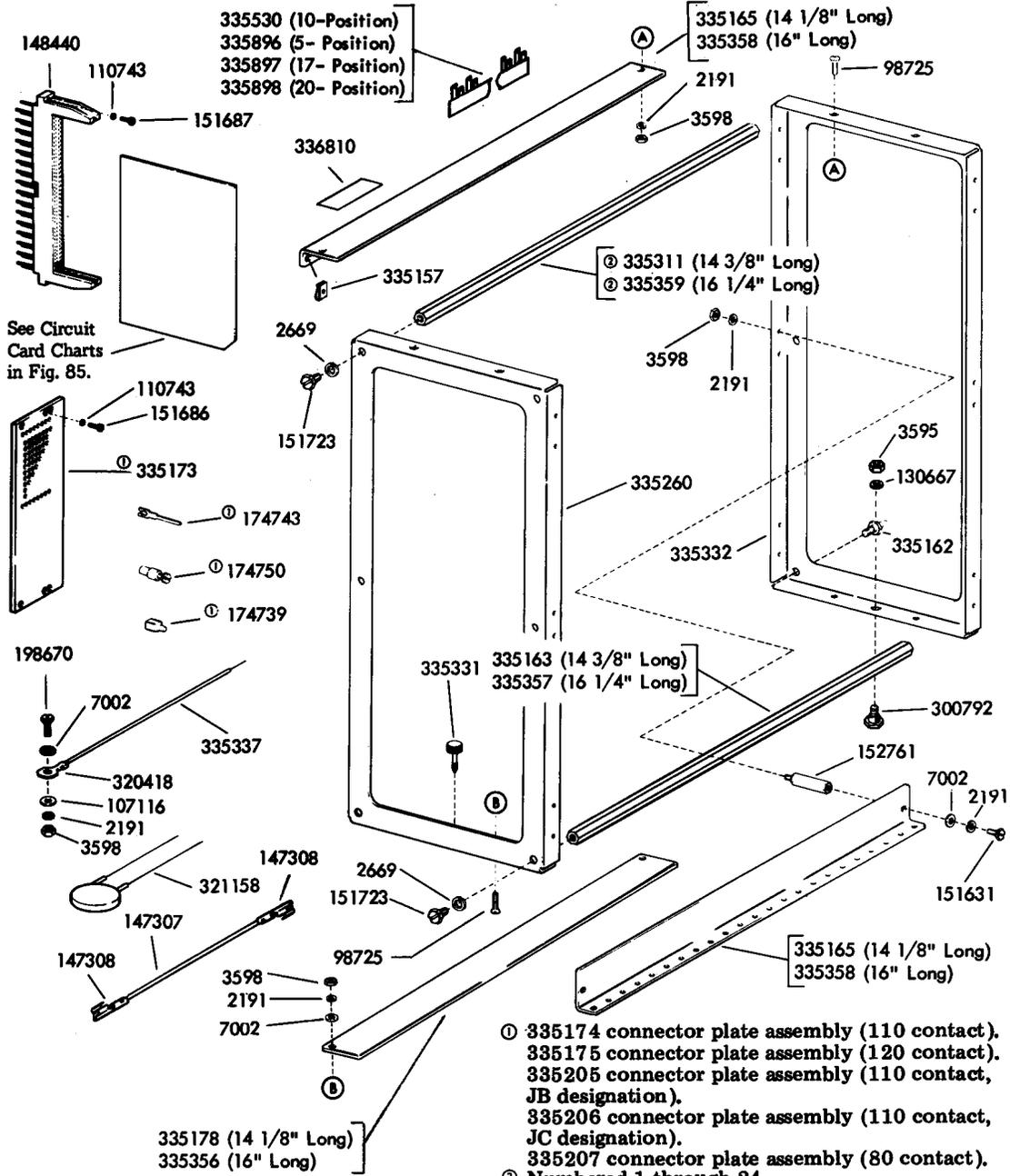


Fig. 84

SECTION 579-505-352

(5) Circuit Cards for CDBU806 and CDIF810 and 814 Modules
(Also See Fig. 84.)

CDBU806 MODULE CIRCUIT CARDS	
Description	Part No.
2K Register Counter	322512
Buffer Error Control	322514
In/Out Controls	322515
(See 322955)	322633
(See 322956)	322634
2-Character Buffer	322645
Control Indicator Drive	322953
3-Level Mos Memory	322955*
2-Level Mos Memory	322956**
PTI Terminator	322969
Oscillator/Reset	322995
Multiplex Switch	322996
Modulo 6 Counter	322998
PDI/SSI Converter	410690
SSI Interface	410691

*Either 322955 or 322633 can be used.
**Either 322956 or 322634 can be used.

CDIF814 MODULE CIRCUIT CARDS	
Description	Part No.
Timer and Error Control Driver	322571
Rec Char Det and Poll/Sel Det	322572
Rec MCC Accumulator	322573
Rec Error Control	322574
Rec Char Timing, Control and Copy	322575
Trans Error Control	322576
Trans Data Accumulator	322577
Poll/Sel Response and Control	322578
Data Set Interface and Control	322579
Trans Seq Control	322580
Trans Char Det and MCC Accumulator	322581
Message Heading Det and NC Control	322582
Format Data Gen and Seq Timing	322583
Aux Rec Seq Det and Control	322588
Aux Rec Device and Hard Copy Control	322589
Hard Copy Data Accumulator	322590
Hard Copy Device Control	322591
Vertical Parity Det	322592
-12 V Req W/Power Reset	322958
Decoder	322967
Interface Terminator	322969
Interface Driver (2 required)	322976
3-Char Generator	322982
Sync Trans Dist W/Vertical Parity	322984
Sync Rec Dist	322985

CDIF810 MODULE CIRCUIT CARDS	
Description	Part No.
Interrupt Contention Control	322501
PTI Terminator	322969
PTI Driver	322976
3-Character Recognizer	322986

Fig. 85

(6) Module Interconnecting Cables

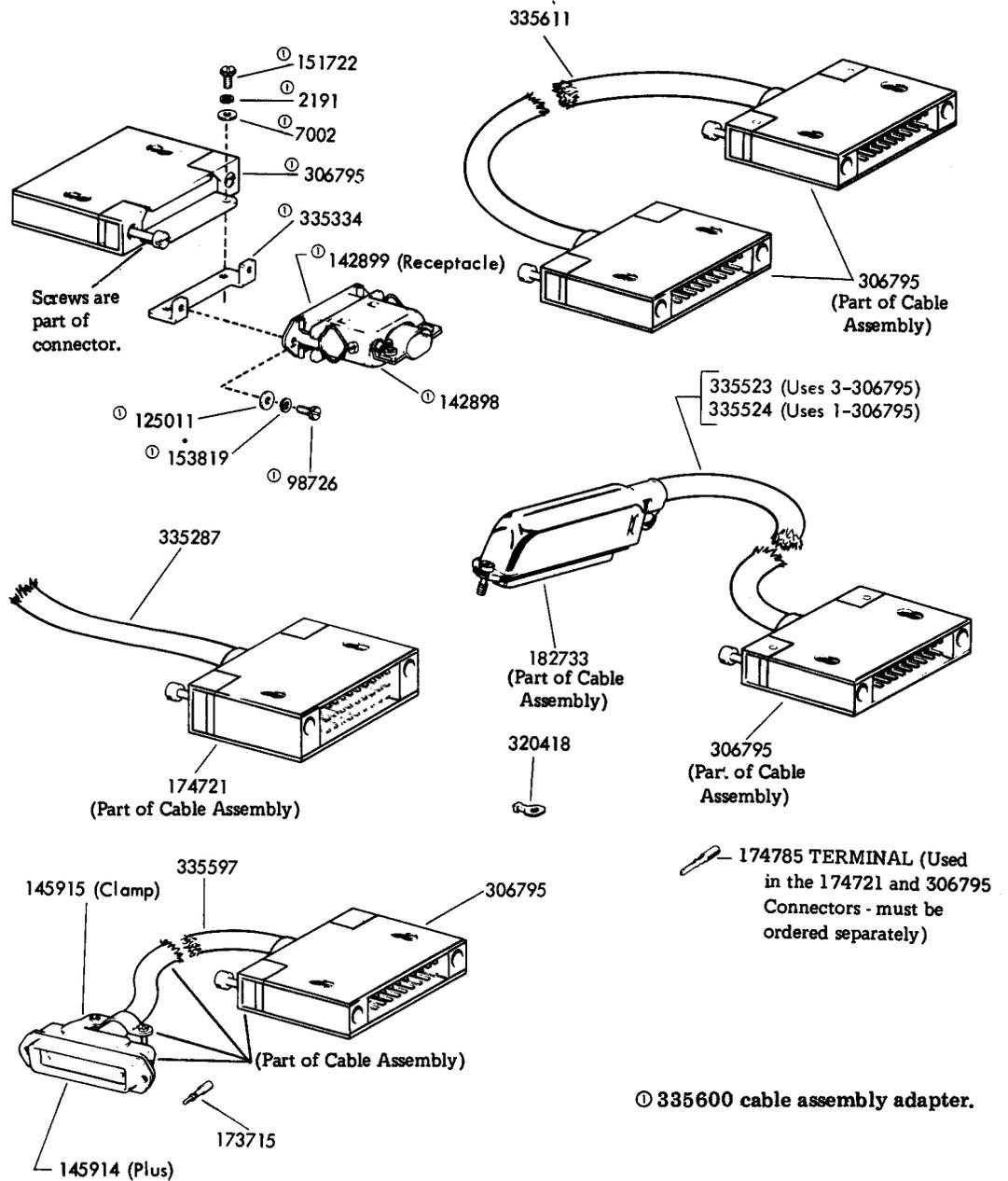
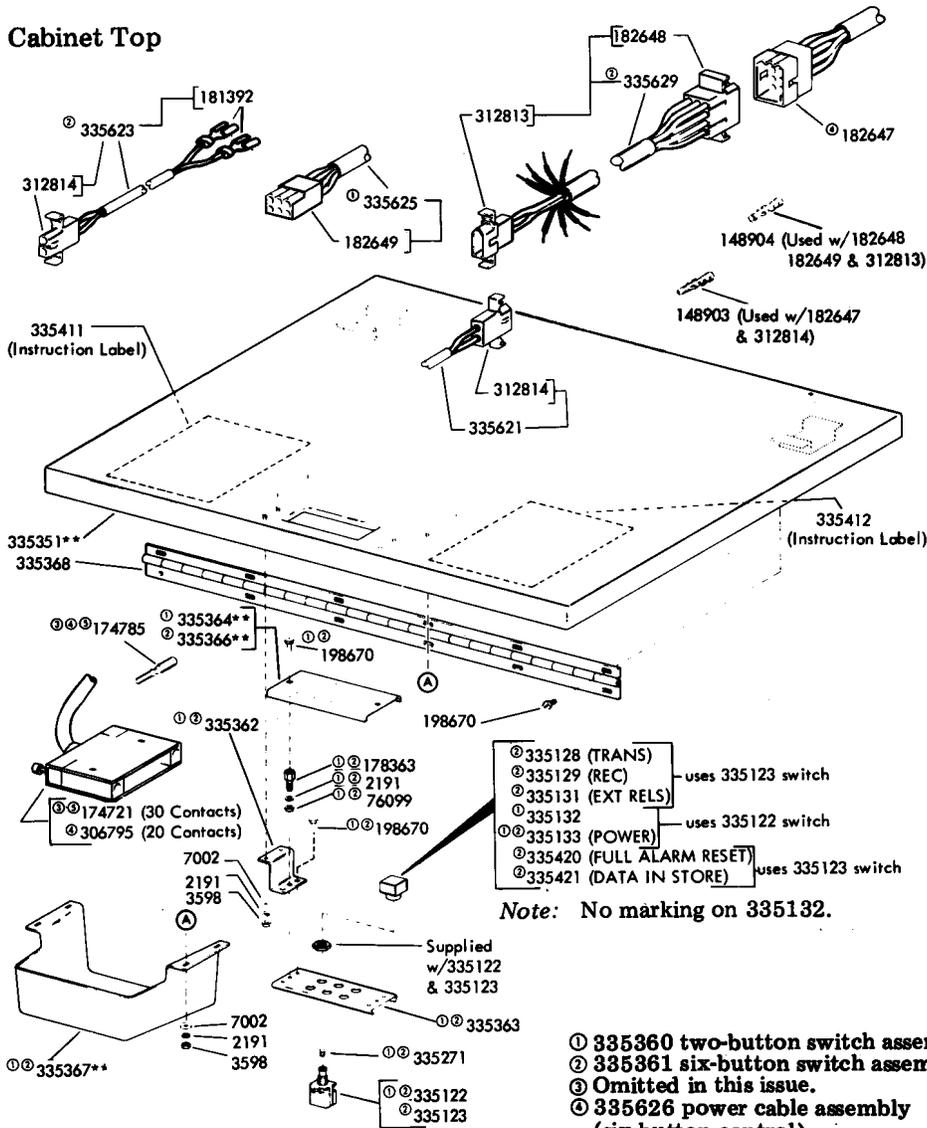


Fig. 86

7.04 2541 BUFFER/INTERFACE MODULE CABINET PARTS

Note: Refer to Section 578-140-800, Numerical Index for description of part numbers.

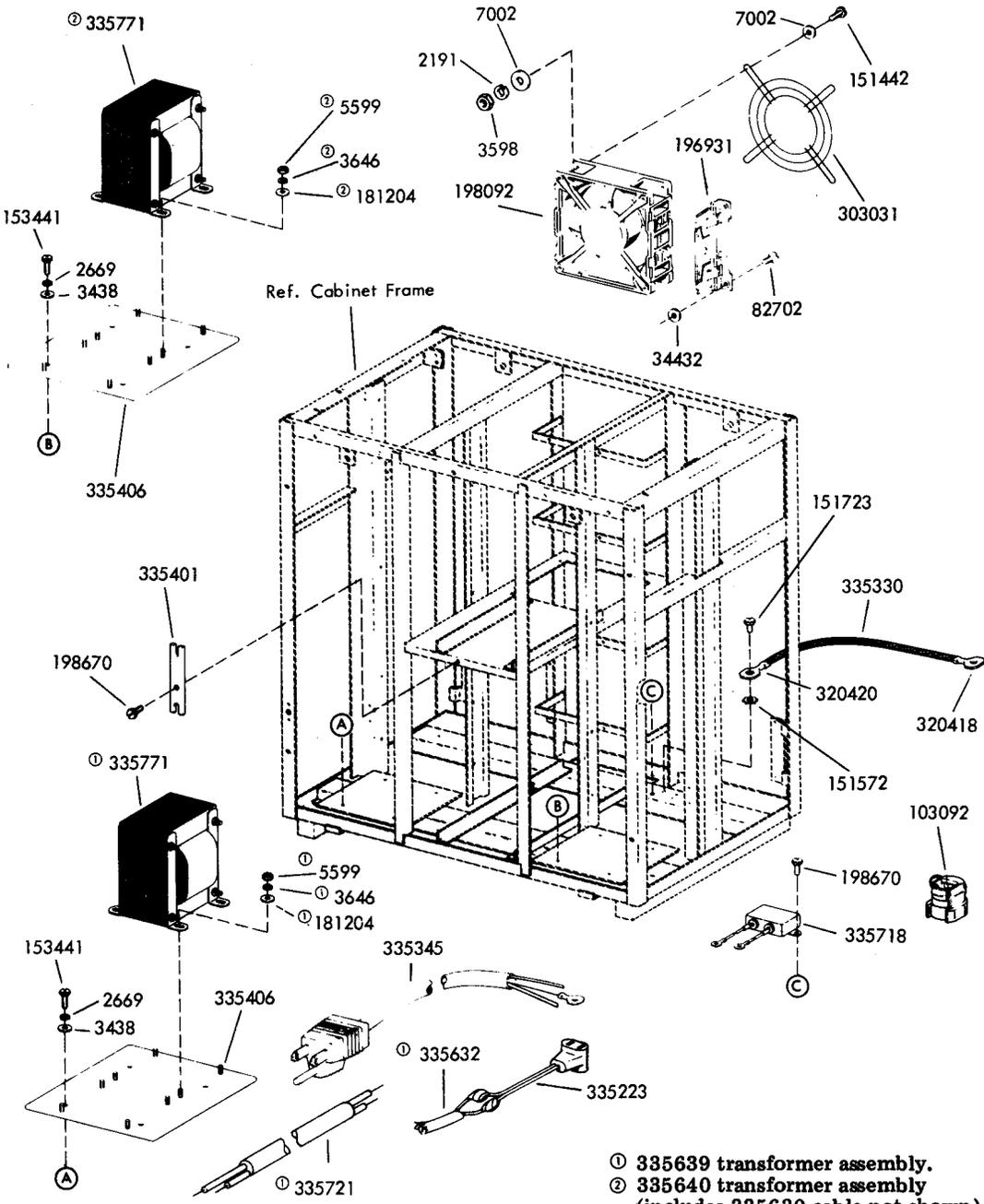
(1) Cabinet Top



- ① 335360 two-button switch assembly.
 - ② 335361 six-button switch assembly.
 - ③ Omitted in this issue.
 - ④ 335626 power cable assembly (six-button control).
 - ⑤ 335628 control cable assembly (six-button control).
- **Refer to Fig. 90 for finish suffix.

Fig. 87

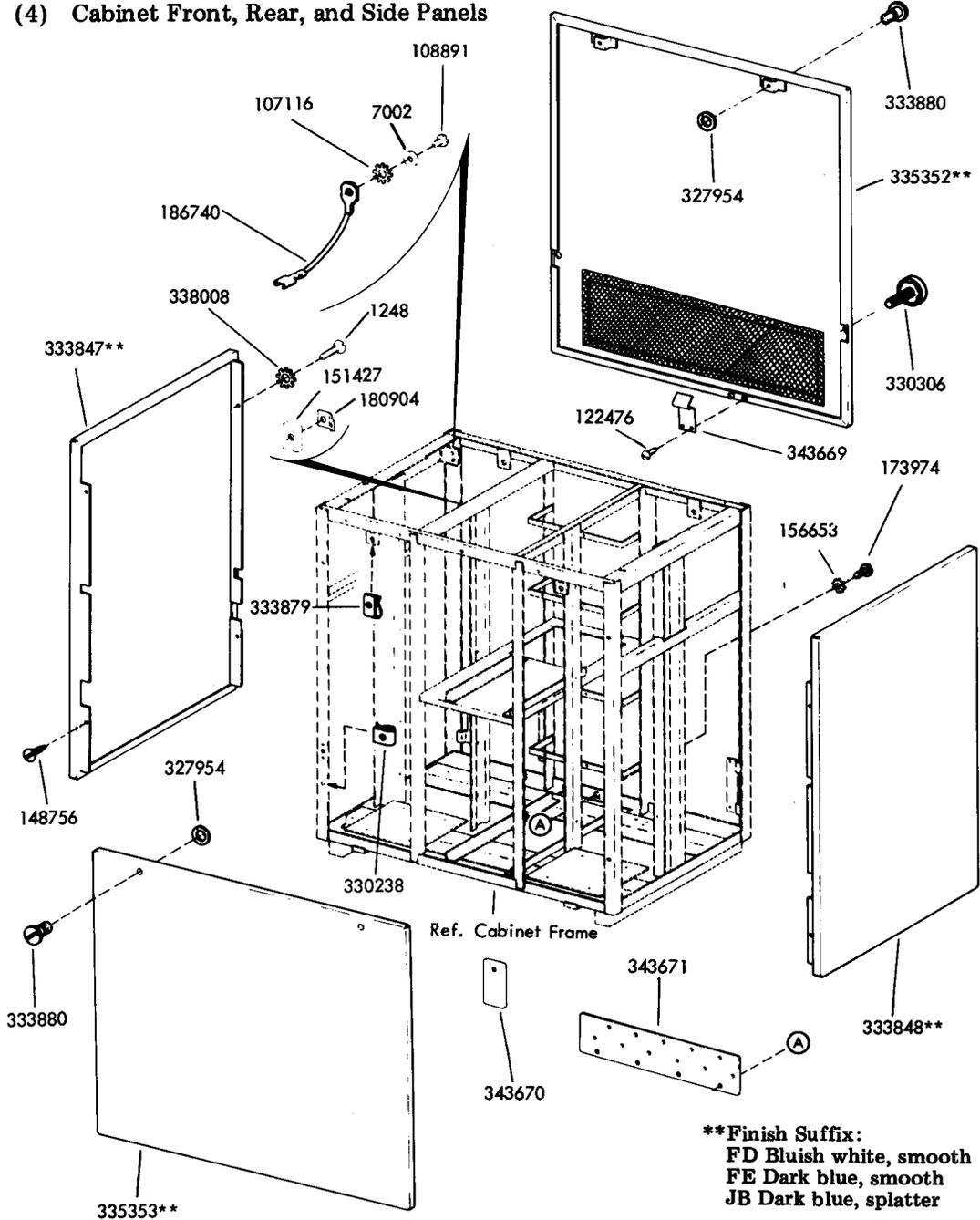
(3) 335639 and 335640 Transformer Assemblies



① 335639 transformer assembly.
 ② 335640 transformer assembly
 (includes 335630 cable not shown).

Fig. 89

(4) Cabinet Front, Rear, and Side Panels



****Finish Suffix:**
 FD Bluish white, smooth
 FE Dark blue, smooth
 JB Dark blue, splatter

Fig. 90

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(5) Module Slides

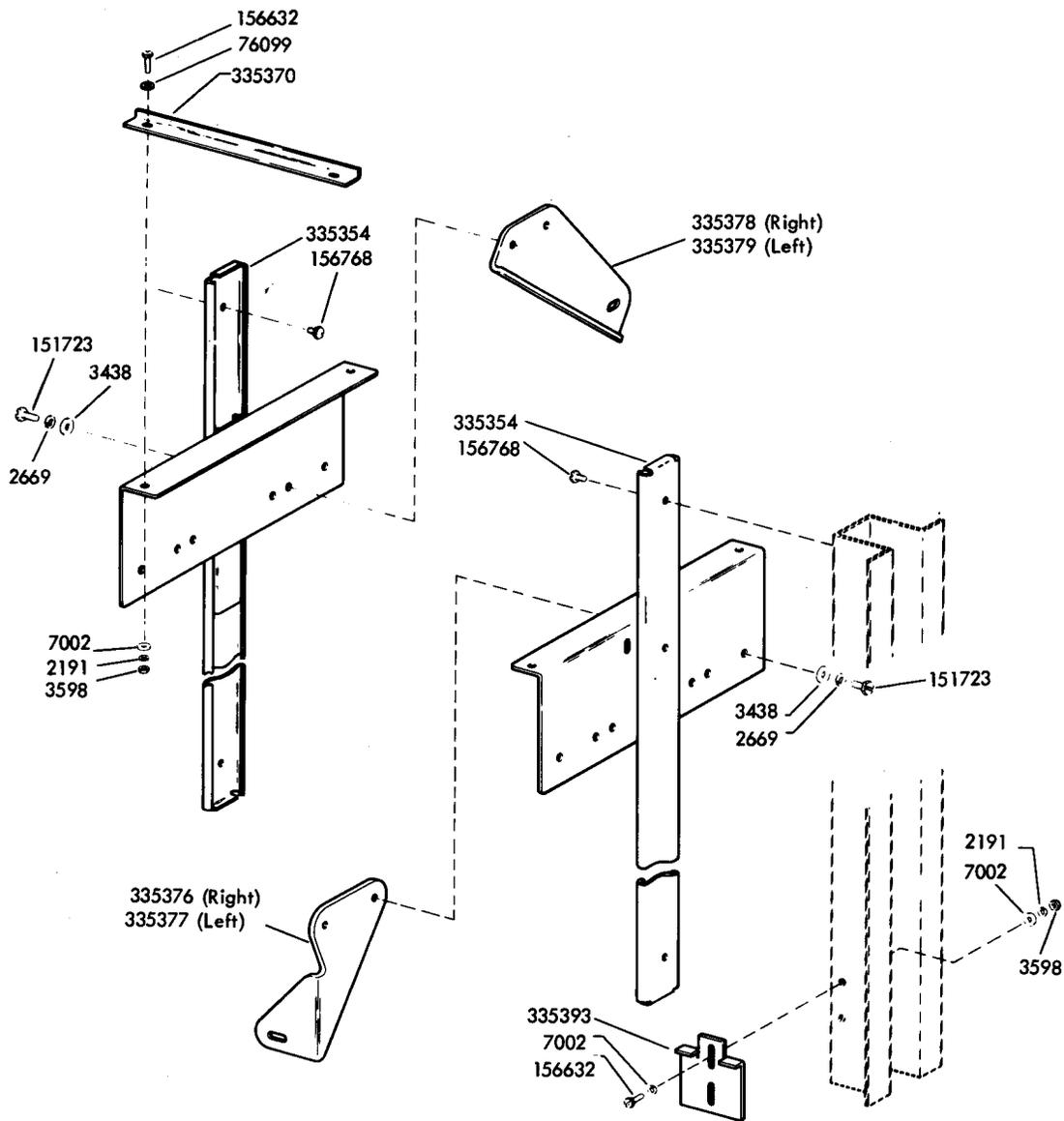
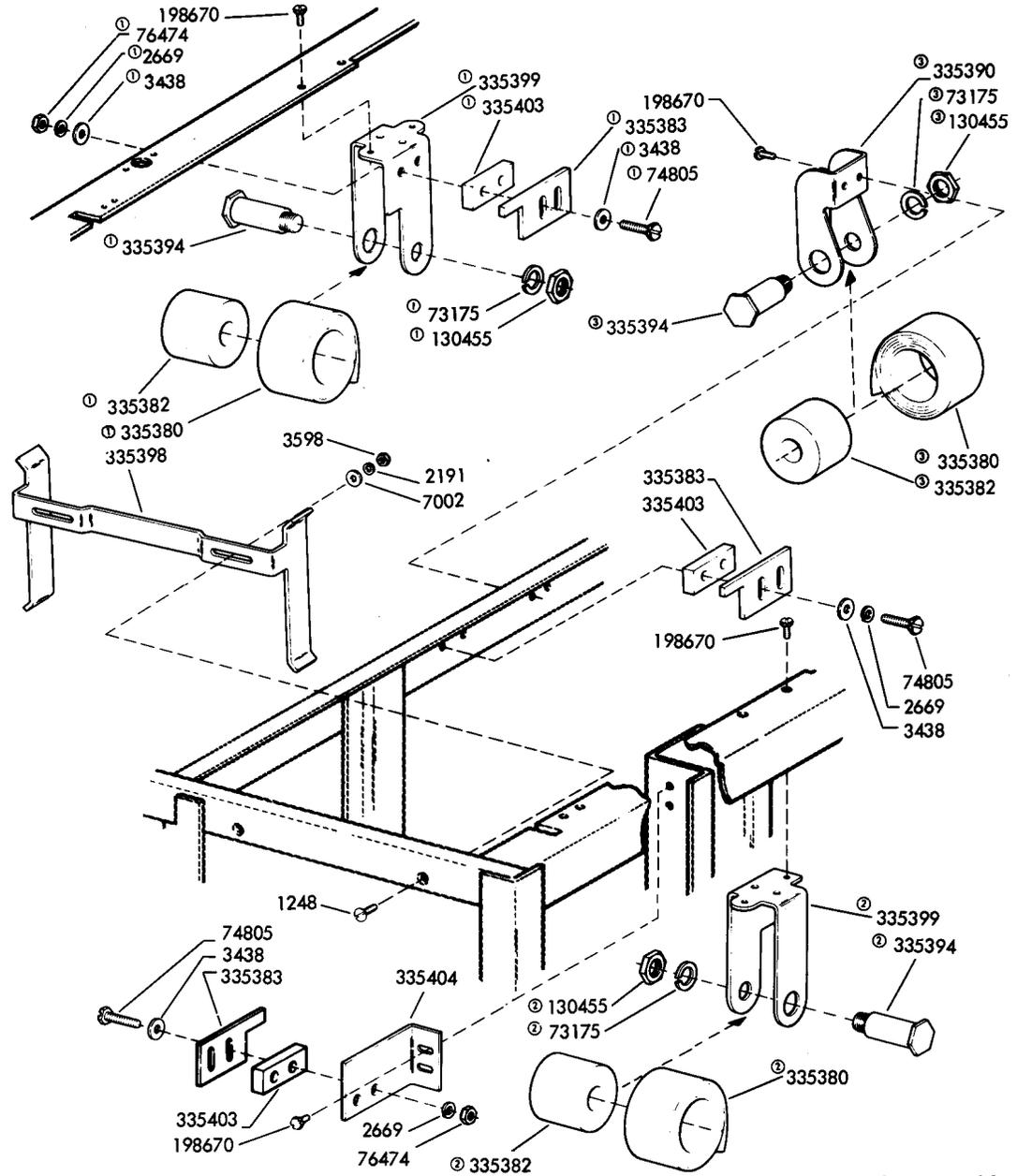


Fig. 91

(6) 335413, 335414, and 335415 Roller Bracket Assemblies



- ① 335413 roller bracket assembly.
- ② 335414 roller bracket assembly.
- ③ 335415 roller bracket assembly.

Fig. 92

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(7) 335400 Module Mounting Assembly (Handle and Latch)

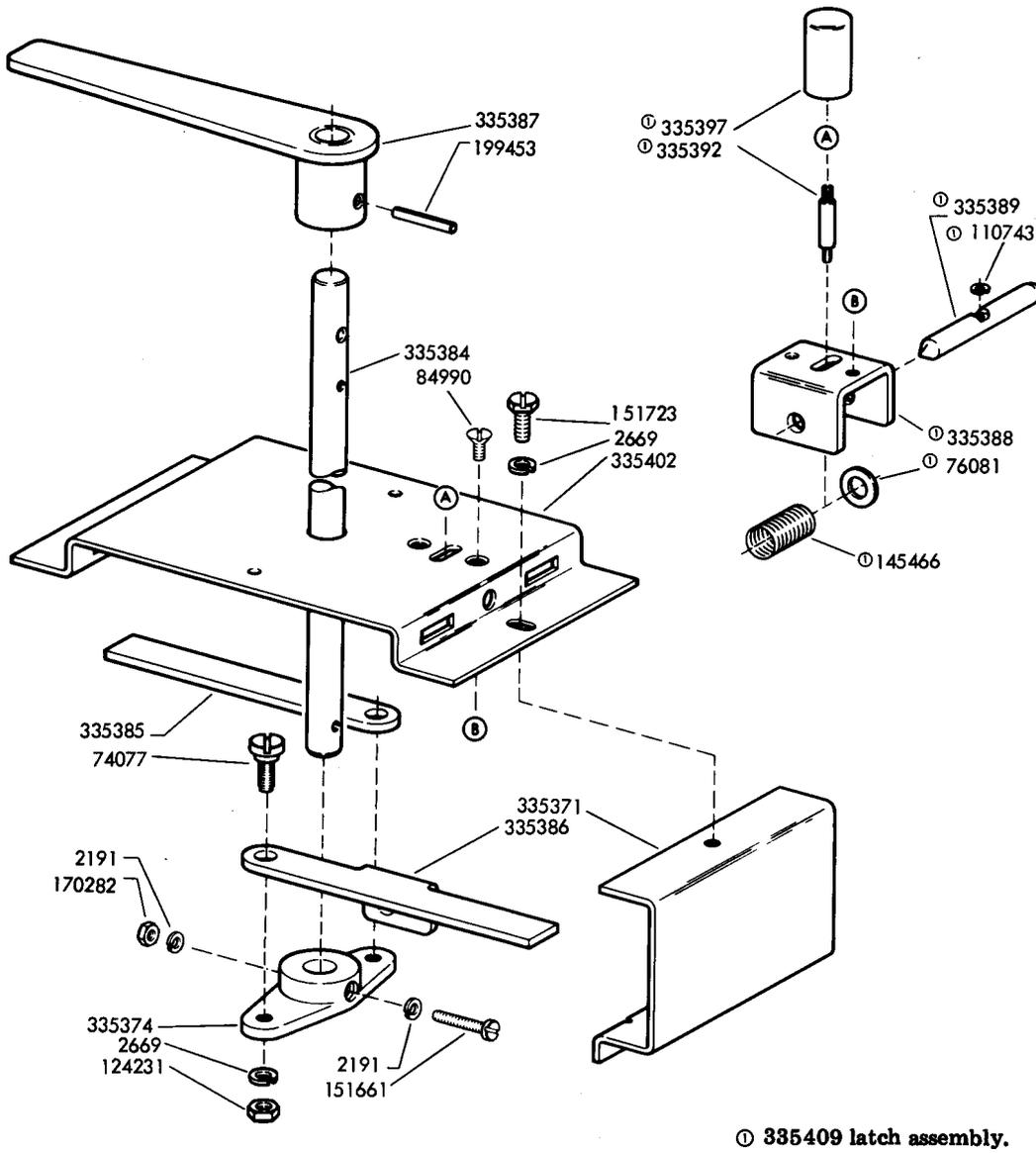


Fig. 93

(8) 335400 Module Mounting Assembly (Bottom Plate)

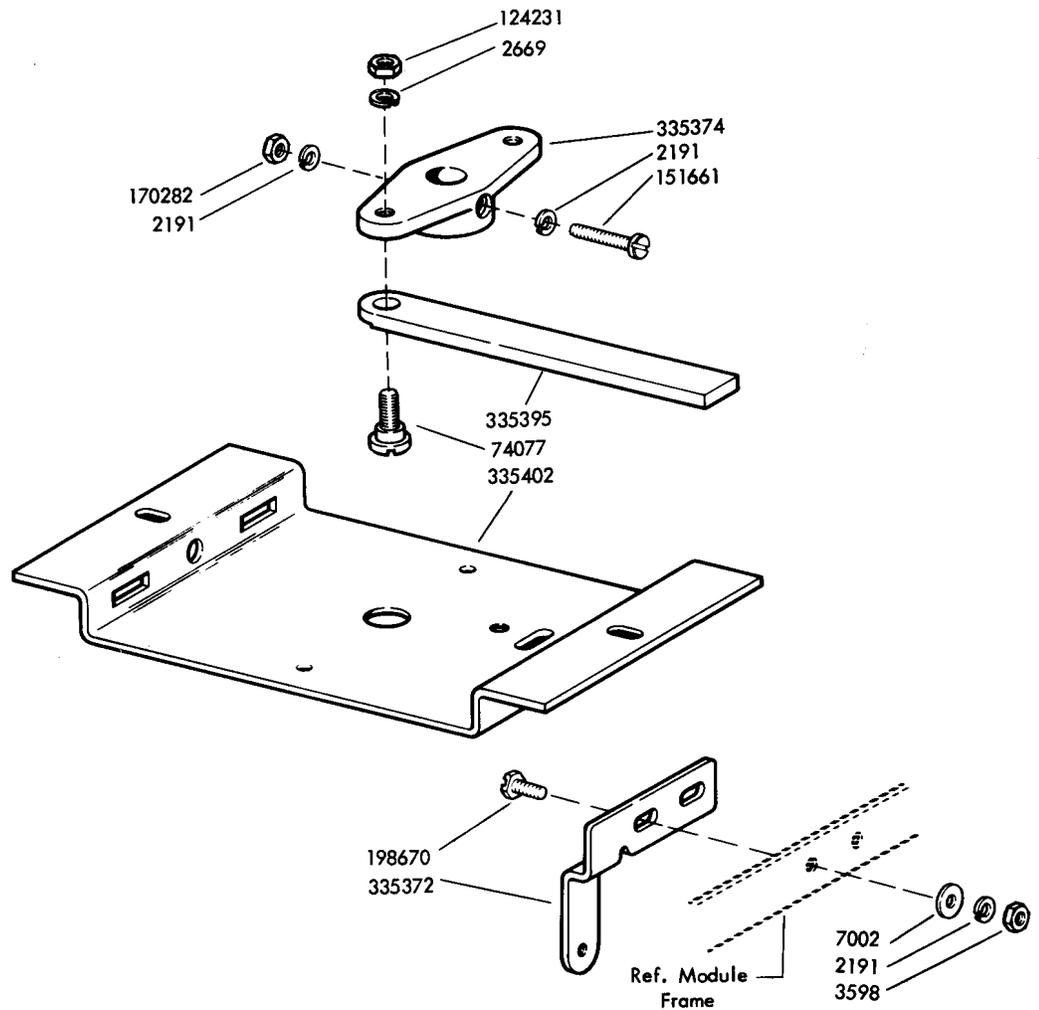


Fig. 94

7.05 "DATASPEED" 40

Refer to Service Manuals 325-059 and 325-057.

7.06 4210 "DATASPEED" MAGNETIC TAPE SET

Refer to Section 582-900-703 (or 578-300-703).

NOTES

8. ROUTING MAINTENANCE**8.01 CHECK POINTS**

- (a) All connectors properly seated.
- (b) Look for crimped wires or cables.
- (c) Doors and panels open and close properly.
- (d) Latches open easily and close securely.
- (e) Covers are secure.
- (f) Unrestricted air flow of fan assemblies.
- (g) Quiet operation of fan assemblies.

8.02 CLEANING

- (a) Any screen through which air is drawn.
- (b) Any dust buildup inside or outside.

8.03 LUBRICATION

Lubrication cannot be tolerated at points or on surfaces other than those specified, particularly on surfaces that contact electrical terminals or terminal connections. Only those surfaces specified should be lubricated. See Fig. 96 and 97, and 99 through 102 for specific points to be lubricated.

The symbols used in the text indicate the following:

<u>SYMBOL</u>	<u>MEANING</u>
O1	Apply 1 drop of KS-7470 oil.
G	Apply thin coat of KS-7471 grease.

(1) Station Arrangement 1

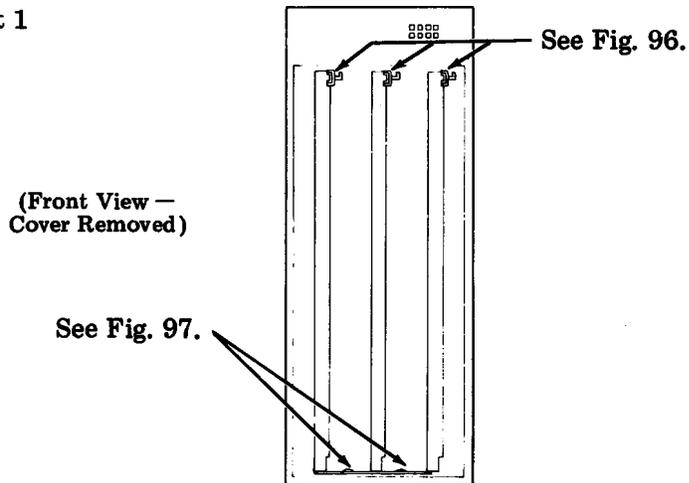


Fig. 95—2550 Cluster Controller

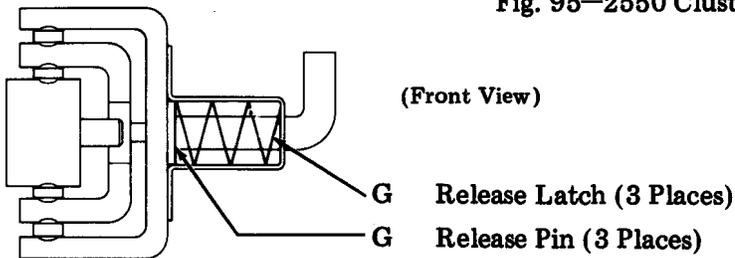


Fig. 96—Slide Locking Catch

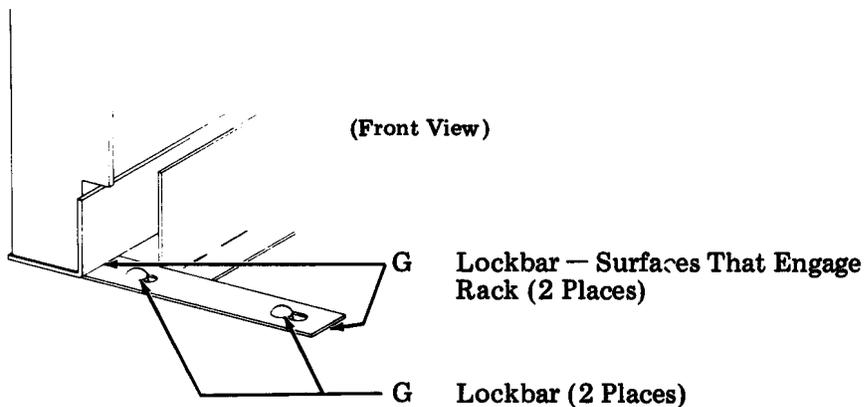


Fig. 97—Slide Interlock Bar

(2) 2541 Buffer/Interface Set

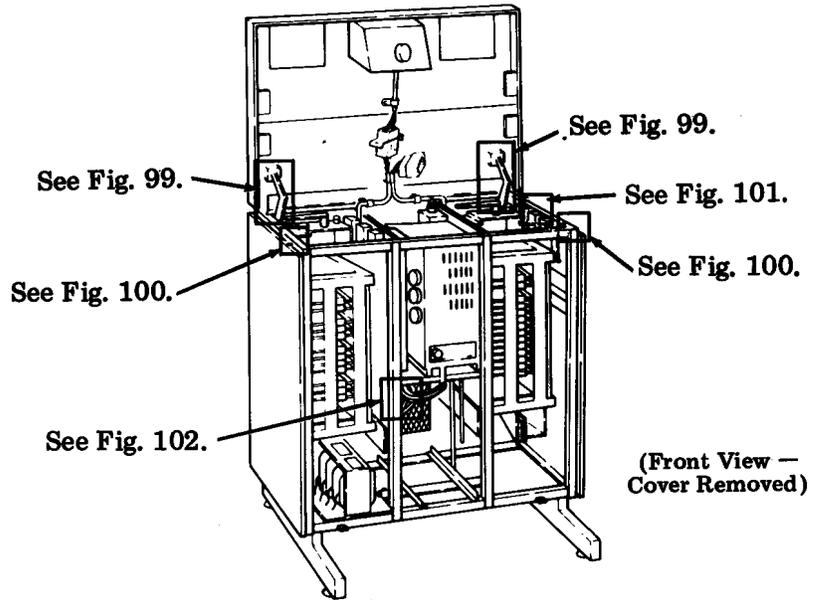


Fig. 98—2541 Buffer/Interface Set

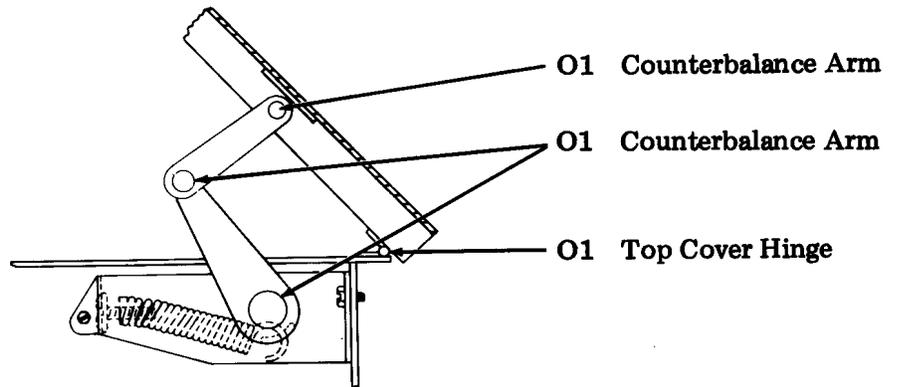


Fig. 99—Cover Hinge and Counterbalance Arm

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(2) 2541 Buffer/Interface Set (Cont)

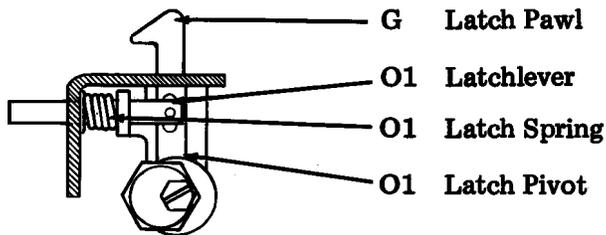
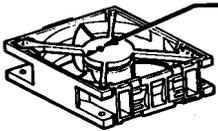


Fig. 100—Latch



Fig. 101—Module Slide

To Lubricate: Remove fans from enclosure mounting. When fans are loose, turn them over to expose gold seal. **DO NOT DISCONNECT FAN WIRING.** Lubricate fans every 10,000 hours using 194853 oil injector.



1. Remove cap from end of oil injector.
2. Place needle at center of circle marked on gold label.
3. Position needle at an angle of approximately 45 degrees to surface of label.
4. Pierce label and concealed self-sealing rubber cap located under label.
5. Depress oil injector plunger slowly to release approximately 1/8 inch of oil.

Note: Four fans are located in buffer set.

Fig. 102—Ventilation Fans

(3) "DATASPEED" 40

Refer to Service Manual 325-059.