INTEGRATED ASYNCHRONOUS "DATASPEED*" 40

RECEIVE-ONLY PRINTER STATION INSTALLATION

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1. GENERAL

1.01 This section contains information for installing the Integrated Asynchronous DATASPEED 40 Receive-Only Printer (ROP) Station. The Integrated ROP is used in the following services: (1) DATAPHONE† using Data Set 202SR or 212AR, (designated 40/1); (2) DATAPHONE using Data Set 103JR, 113AR, 202SR, 208BR, or 212AR (designated 40/2); (3) multipoint private line using Data Set 108D, 108E, 202T, or 208A (designated 40/3); and (4) two-point nonselective private line (point-to-point private line) using Data Set 108D, 108E, 202T, or 208A.

1.02 This section is reissued to include option notes and alternade methods of option implementation.

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

1.03 Circuit card and controller handling procedure:

Warning: To avoid possible internal damage to the MOS devices, or card with MOS devices, due to electrical static discharge by service personnel, the following must be observed. All personnel handling MOS devices, or circuit cards with MOS devices, must wear a 346392 static discharge strap adjusted to make firm contact with the skin at all times ‡ (Fig. 1).

‡ Service personnel are never to be connected directly to ground but rather through a high resistance discharge path of a minimum of one megohm where 115 Vac is present. This resistance is built into the 346392 static discharge strap.

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The static discharge strap must be worn when handling the printer logic circuit cards 410071, 410076, 410640 (80 column) or 410072, 410729 (132 column), the 410727, 410737 (controller card) 410142 (power supply card for 40C303AA/001) and the assembled controller; it is not necessary to wear the strap when handling other cards in the integrated ROP controller; however, it is good practice to ground yourself before touching the controller or its cards.

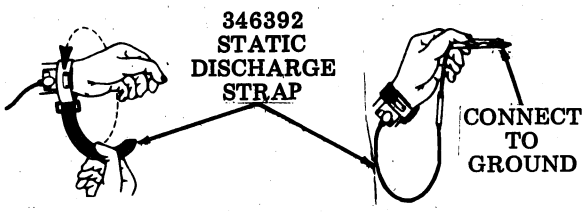


Fig. 1—346392 Static Discharge Strap

1.04 Data set options are given in this section but other information on data set installation (such as connections) must be obtained by reference to the appropriate BSP section, which is referenced for each data set.

1.05 The printer used in the integrated controller station may be an 80- or 132-column printer.

1.06 Tools and Supplies: The following tools and supplies may be required for installation or servicing of DATASPEED 40 ROP with integrated controller.

Note: When ordering tools or supplies as listed below, prefix each number with the letters "TP" (ie, TP125752).

(a) 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 bit	1/4"	135677
Nut driver bit	5/16"	135678
§ Screwdriver	1/8", 2" blade	95368
Screwdriver	1/4", 6" blade	100982
Screwdriver	(blade less than 5/32")	94647
§ Wrench, Allen	0.062	124682
§ Tweezers		151392
§ Spring hook (pull)		142554
§ Spring hook (pull)		75765
§ Spring hook (push)		75503
§ Scale	6"	95960
§ Scale, spring	8 oz	110443
§ Scale, spring	32 oz	110444
Pliers, long nose		108285
Pliers, retaining ring		160396
Extractor, keyswitch		346257
Extractor, keytop		346260
Extractor, terminal		182697
Extractor, terminal		341983
Extractor, terminal		402840
Gauge, adjusting — 80-column printer		402617
Gauge, left — 132-column printer		402716
Gauge, right — 132-column printer		402717

Gauge, backup bar — 80- and 132-column printers	402868
Gauge, type pallet depth — 80- and 132-column printers	402878
Pliers, sidecutters w/insulated handles	408071 (Klein D219-4C or equivalent)
Test Cord — 132-column printer	402779
Test Circuit Card — 132-column printer	410132
Test Circuit Card — 80-column printer	410154
Interlock Strapping Plug — 80-column printer	402782
Static Ground Strap	346392
Cleaning brush, type face	151394
Power Test Cord	402781
Bag, Anti-Static (Printer Circuit Card)	406260

Soldering Iron, Weller Model W-MCP-750 with MP2C Tip or equivalent
Desoldering Tool EDSYN Model MMS005 Soldapult® or equivalent

§ Part of 113778 universal tool kit.

(b) Supplies

Grease: 143484 (Mobil #2, 1 lb can)
145867 (Mobil #2, 4 oz tube)
TKS 103 (Beacon 325, 5 lb can)

Oil: KS-7470

Ribbon: 402444 or approved equivalent

Degreaser: Freon (TF) 337449 (6 oz can)

2. TECHNICAL DATA

2.01 Power Source Requirements: 104-107 V ac 60 Hz ±0.5 Hz or 50 Hz ±0.5 Hz from an unswitched standard 3-wire grounding type receptacle located within 8 feet of the ROP set location. One additional receptacle is required for data set except when terminal includes pedestal equipped with 7-receptacle convenience strip.

2.02 Maximum Inrush Current: 25 amps not exceeding three half cycles.

2.03 Operating Power Consumption and Heat Generation:

Component	Current	Power	Heat
Integrated ROP Set (motor OFF)	1.0 Amp	115 Watts	392 BTU
Integrated ROP Set (motor ON)	2.0 Amp	230 Watts	784 BTU

2.04 Environmental Restrictions (operating):

Ambient Temperature.....+40° to +110°F
Relative Humidity...2% to 95% (noncondensing)
Altitude..... Sea level to 10,000 feet

2.05 Weight (approximate) Unpacked:

Friction Feed Printer	40 lbs
Friction Feed Printer Cabinet (Noise Reduced)	40 lbs
80-Column Tractor Feed Printer Unit	41 lbs
80-Column Tractor Feed Printer Cabinet	43 lbs
132-Column Tractor Feed Printer Unit	56 lbs
132-Column Tractor Feed Printer Cabinet	53 lbs
Forms Access Printer Cabinet	111 lbs
Pedestal	56 lbs
Data Set .....Up to 14 lbs (dependent on type)	

2.06 Dimensions (Terminal):

80-Column Friction Feed Printer (Noise-Reduced Cabinet)

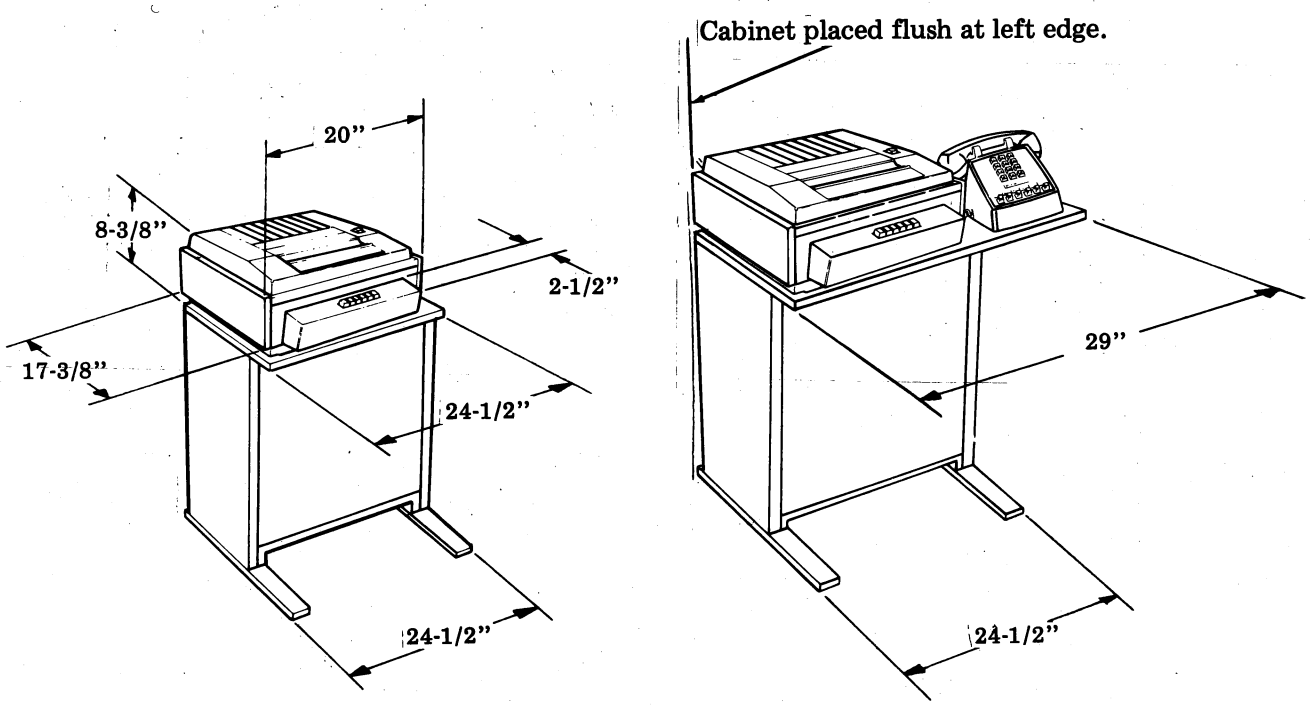
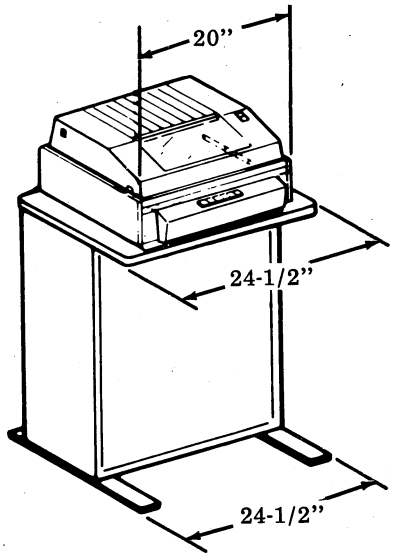
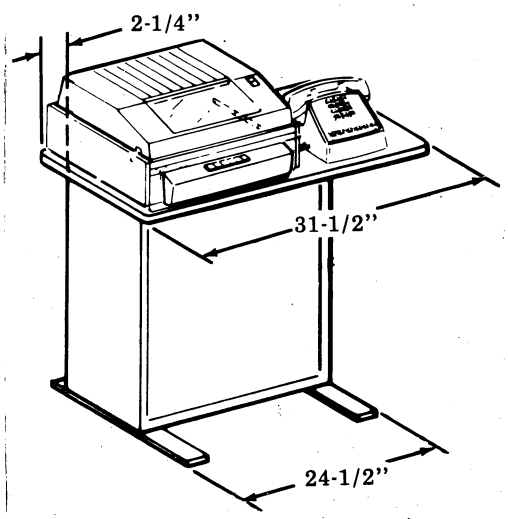


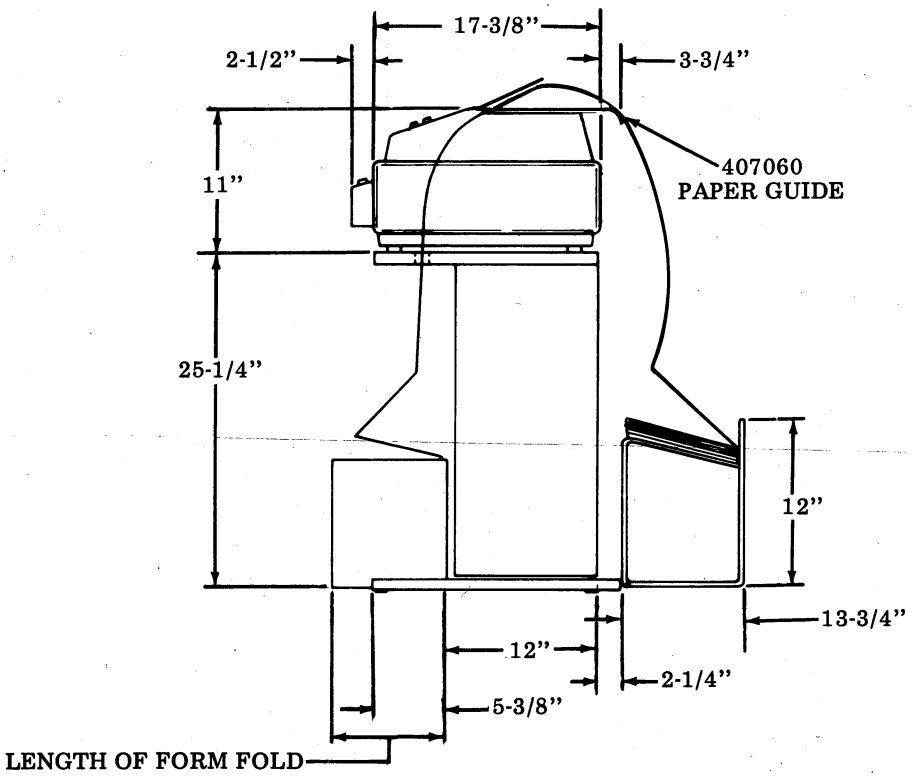
Fig. 2—Integrated Asynchronous Friction Feed ROP Station Arrangement



Cabinet centered on top.



Cabinet placed flush at left edge.



80-Column Tractor Feed Printer

Note: The 132-column tractor feed printer dimensions are similar to those for the 80-column tractor feed printer except that the width is 27-5/8 inches instead of 20 inches. The width of the pedestal top is either 27-5/8 inches or 39-1/8 inches instead of 24-1/2 inches and 31-1/2 inches, and the slot in the pedestal top is 17-1/2 inches wide instead of 11-1/2 inches. A 407061 paper guide is furnished with each cabinet.

Fig. 3—Integrated ROP Station Dimensions

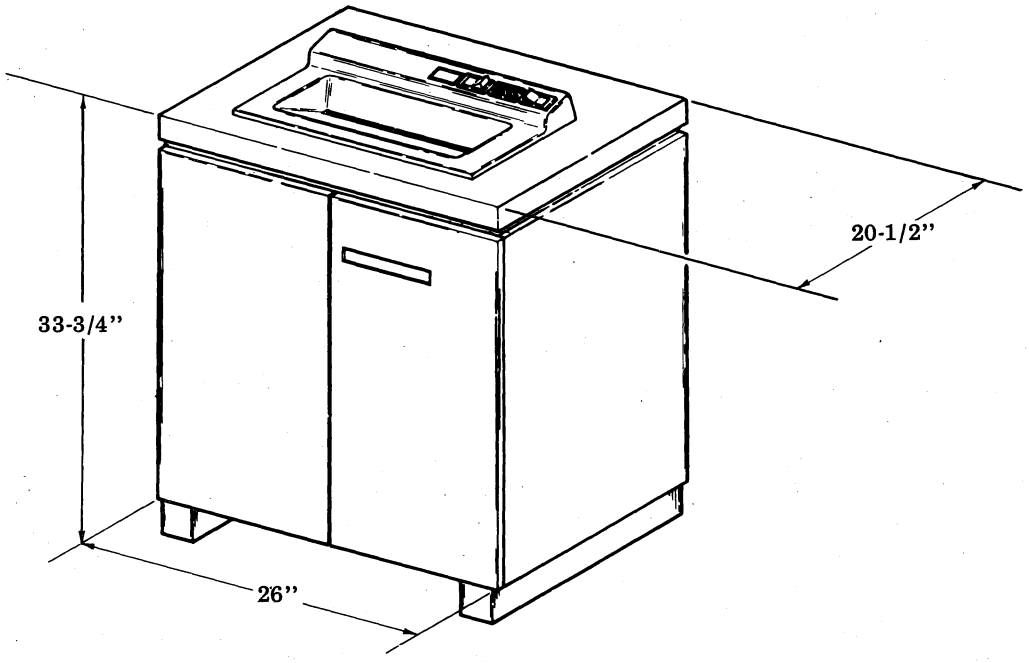
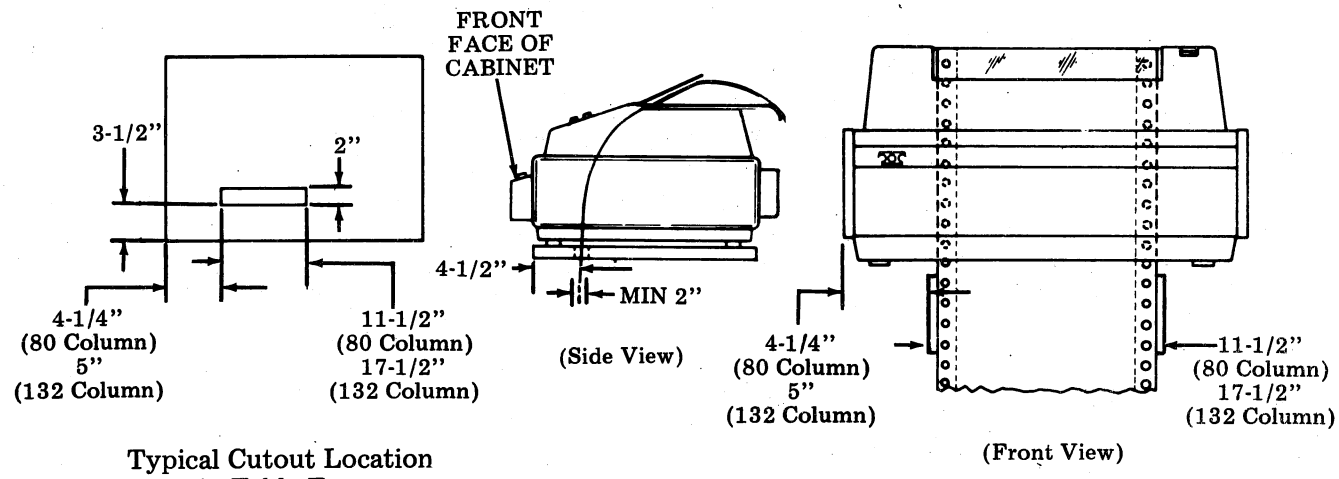


Fig. 4—Integrated Asynchronous Forms Access ROP Station Arrangement

2.07 Customer-Provided Tables: When a pedestal with a slotted top is not specified for use with the tractor feed printer, the following provisions must be observed to allow for paper handling:

(a) An opening in the printer cabinet mounting surface sufficient to allow the paper to pass up through the printer in the location shown in Fig. 5.



Typical Cutout Location in Table Top

Note: Printer cabinet assumed mounted flush with front and left edge of table top.

Fig. 5—Paper Opening Requirements for Customer-Provided Tables

(b) Sufficient height of mounting to allow paper insertion and accumulation (Fig. 6).

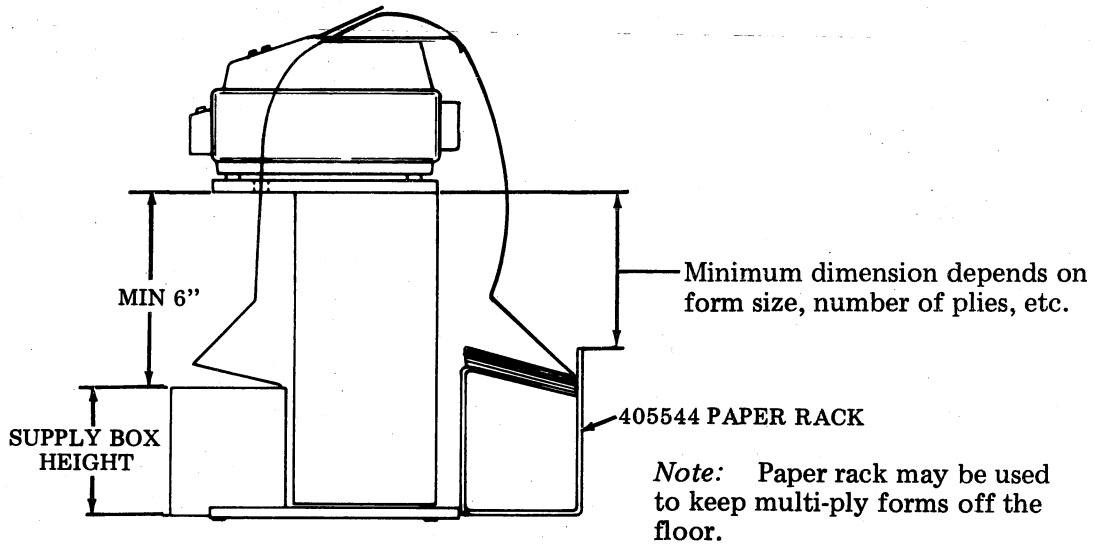


Fig. 6—Height Requirements for Customer-Provided Tables

3. UNPACKING

3.01 Before unpacking the cartons, confirm the customer order with the unit codes marked on the cartons.

3.02 Be sure to observe all safety precautions in lifting the cartons, etc. Safety glasses should be worn during installation. Read all unpacking instructions marked on the cartons.

3.03 For field installation, the integrated ROP may be shipped from the Service Center in the original shipping cartons. Units without pedestals are shipped in two cartons, one for the printer and the other for the cabinet (including the controller). For units with pedestals, one additional carton is shipped, containing the pedestal base and the pedestal top.

3.04 The cabinet should be unpacked before the printer so that the printer can be placed in it (if a pedestal is to be used unpack it before unpacking the printer cabinet).

PEDESTAL

3.05 Carefully turn carton containing pedestal upside down and cut tape. Fold carton flaps out (Fig. 7).

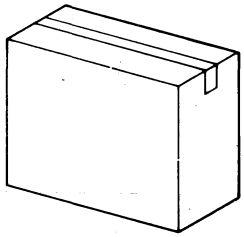


Fig. 7—Pedestal Carton

3.06 Turn carton and its contents upright. Lift carton up and off of pedestal (Fig. 8).

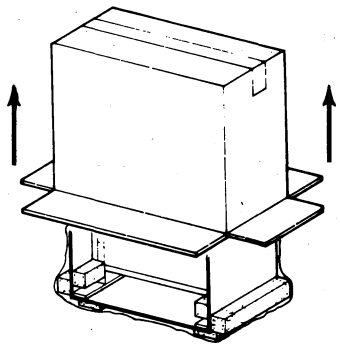


Fig. 8—Pedestal Carton Lifted Up

3.07 Remove tape and packing details (Fig. 9). Place pedestal in position where it is to be located.

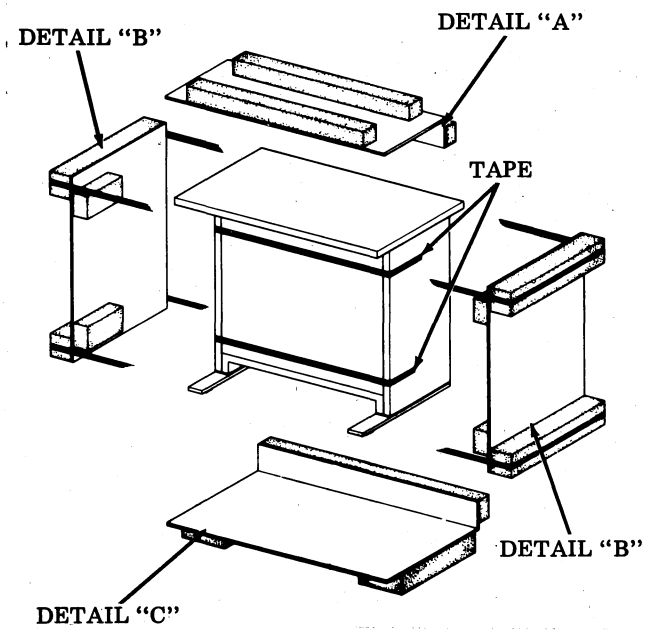


Fig. 9—Packing Details and Pedestal

PRINTER CABINET

3.08 Turn carton bottom upside down. Cut tape and open bottom flaps outward. Return box and contents to upright position, keeping bottom flaps folded out (Fig. 10).

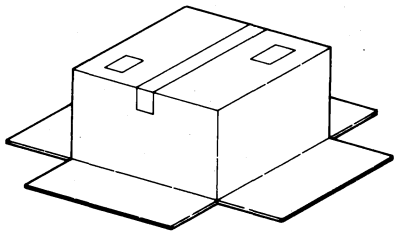


Fig. 10—Printer Carton

3.09 Lift carton off and remove plastic details from around cabinet. Remove bag covering cabinet. Remove bag containing keytops and set aside for possible later use.

3.10 Open cabinet by depressing latches on both sides of cover and lifting up (Fig. 11). Remove paper guide stored inside of cabinet.

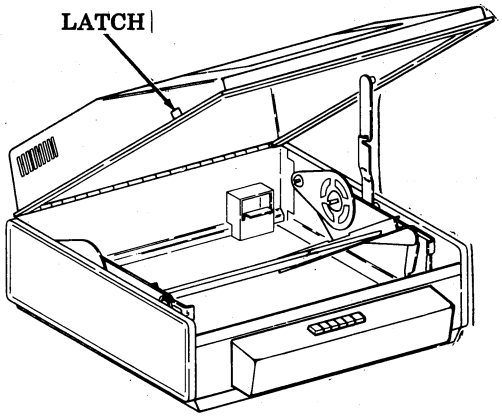


Fig. 11—Printer Cabinet

FORMS ACCESS PRINTER CABINET

3.11 Remove steel strap from bottom of carton. Fold carton flaps outward (Fig. 12).

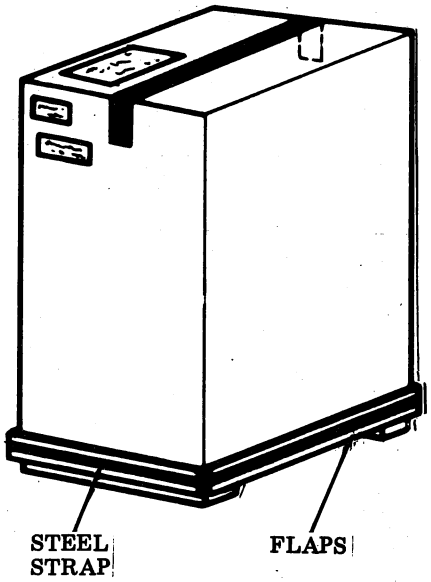


Fig. 12—Forms Access Printer Cabinet Carton

3.12 Lift carton up and off of forms access printer cabinet. Remove plastic bag covering cabinet. Remove tape, packing details A, B, C and D and plastic bag from bottom of cabinet (Fig. 13).

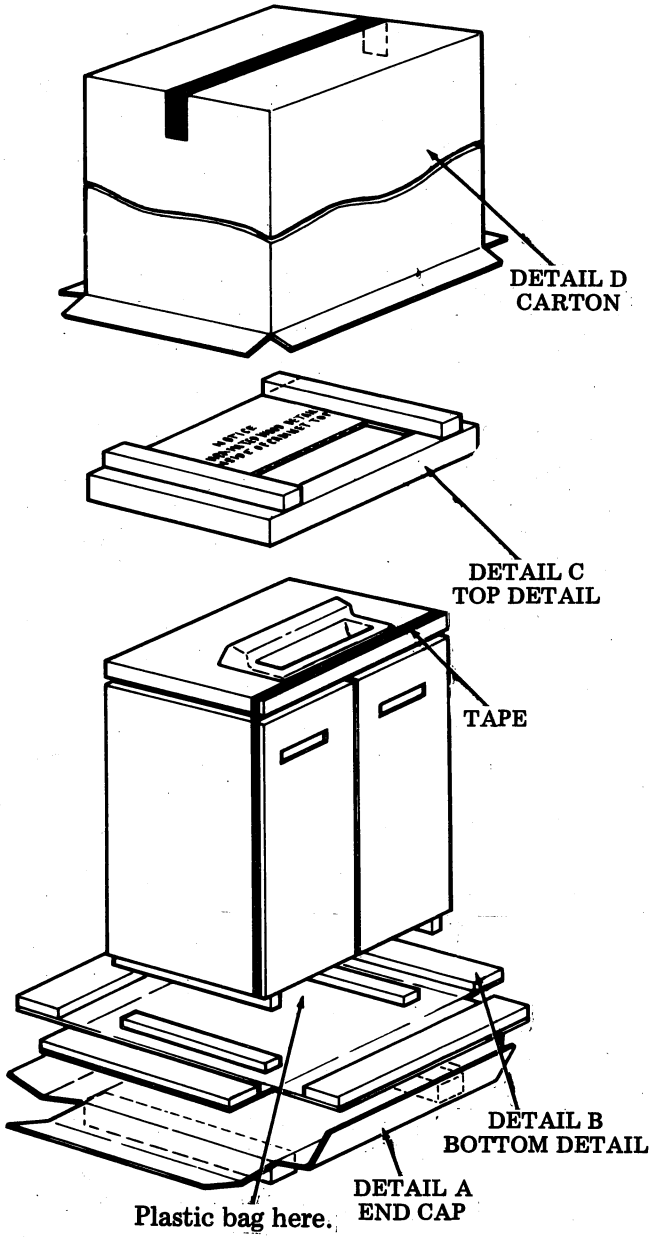


Fig. 13—Forms Access Printer Cabinet Carton Lifted Up

3.13 Open front doors (left first) and depress latch button, open cabinet top and remove two screws and wood detail. (Fig. 14).

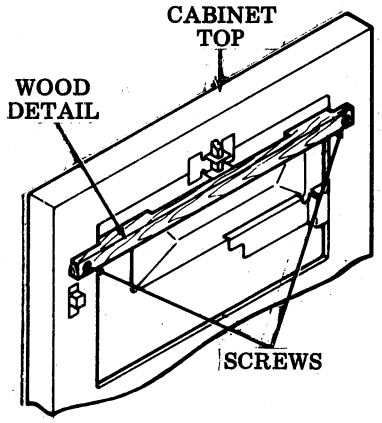


Fig. 14—Forms Access Printer Cabinet Top

3.14 Remove tape from 410140 circuit card. Present only on controller 40C303AA/001. The controller is mounted in the bottom of the 40CAB351 type, 40CAB353 type or 40CAB371 type printer cabinet. Not associated with forms access arrangements. Mount 410140 card to controller 40C303AA/001 (Fig. 15).

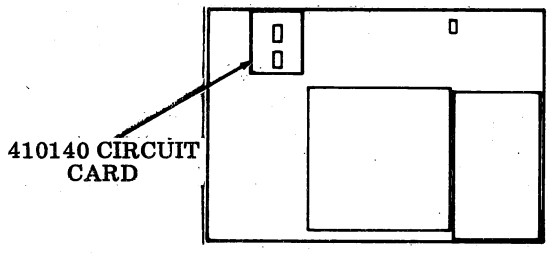


Fig. 15—40C303AA/001 Controller

3.15 Close cover and snap paper guide into position on 40CAB351 type, 40CAB353 type or 40CAB371 type printer cabinets (Fig. 16).

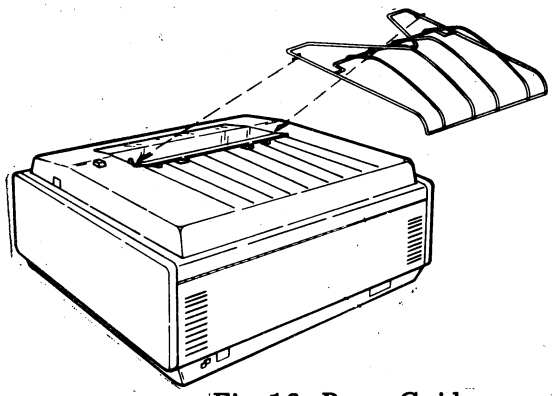


Fig. 16—Paper Guide

PRINTER

3.16 Refer to Section 582-210-200 for unpacking instructions.

4. PRE-OPTIONING DISASSEMBLY

4.01 The integrated ROP should be optioned per the customer order at the Service Center. However it may be necessary to change options per customer request or because of option incompatibility, at the time of installation.

4.02 The controller is shipped in the printer cabinet and must be removed from the cabinet in order to do any optioning of the diode matrix circuit card.

4.03 To remove controller:

Note: Refer to 1.03 for controller handling procedures.

Friction Feed Printer

(a) Loosen nut at each end of clamp (Fig. 17).

(b) Slide clamp to right, raising right end to clear nut. Slide clamp to left and remove.

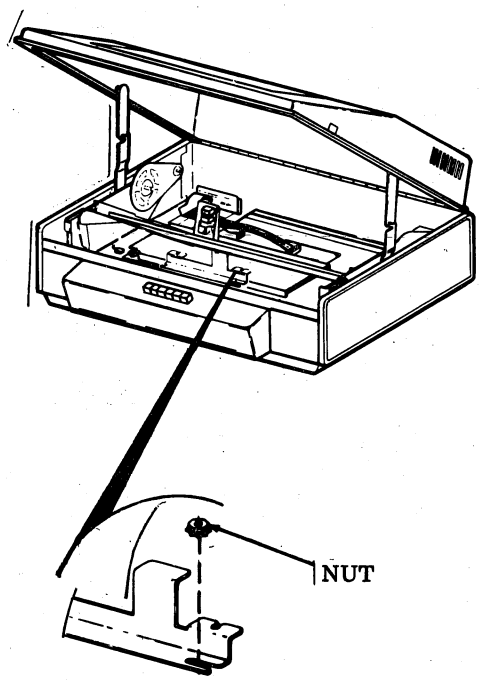


Fig. 17—Controller Removal 40C303AD Shown

(c) For 40C303AA/001 Controller:
Unplug P1, P2, P3, P4 and P12 connectors from the circuit card (Fig. 18).

Caution: When removing P4 connector pull straight up; do not rock connector from side to side.

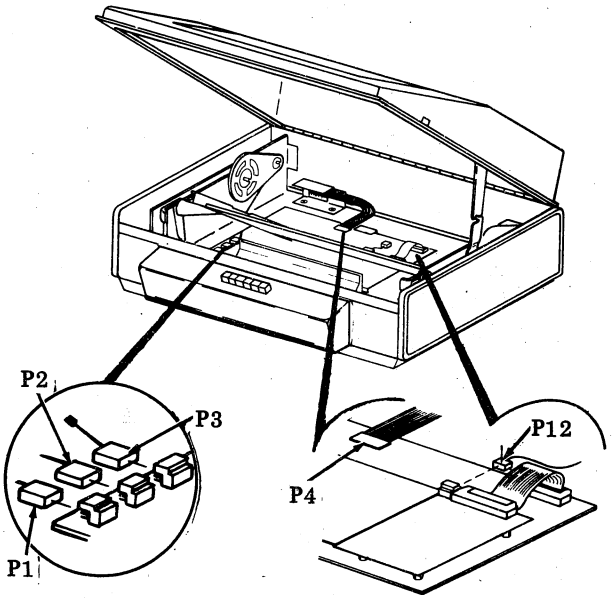


Fig. 18—40C303AA/001 Connectors

For 40C303AD Controller:
Unplug P3, P5, P6 and P21 connectors from the circuit card (Fig. 19).

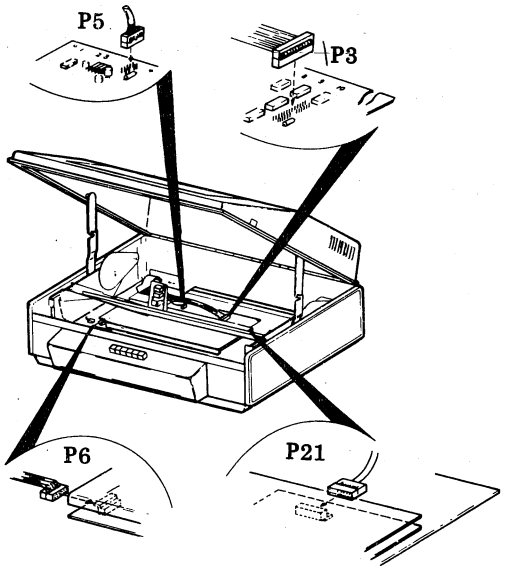


Fig. 19—40C303AD Connectors

(d) Slide controller forward, tilt up and remove. Use care to avoid snagging circuit components or option switches on the rear edge of the printer cradle.

Tractor Feed Printer

(a) Loosen nut at each end of paper guide (Fig. 20).

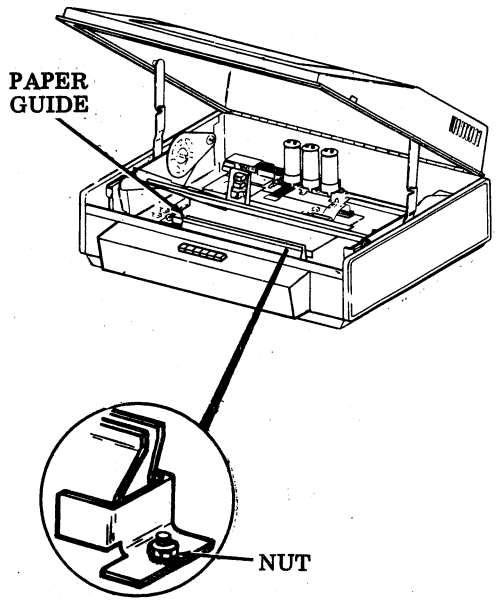


Fig. 20—Controller Removal

(b) Slide paper guide to left, raising right end to clear the nut; slide paper guide to right and remove.

(c) For 40C303AA/001 Controller:
Unplug P1, P2, P3, P4 and P12 connectors from circuit card (Fig. 18).

Caution: When removing P4 connector pull straight up; do not rock connector from side to side.

For 40C303AD Controller:
Unplug P3, P5, P6 and P21 connectors from the circuit card (Fig. 19).

(d) Slide controller forward, tilt up and remove. Use care to avoid snagging circuit components or option switches on the rear edge of the printer cradle.

Forms Access Printer (40C303AD Controller Only)

(a) Loosen four screws securing controller cover to inside of forms access printer cabinet approximately two turns (Fig. 21).

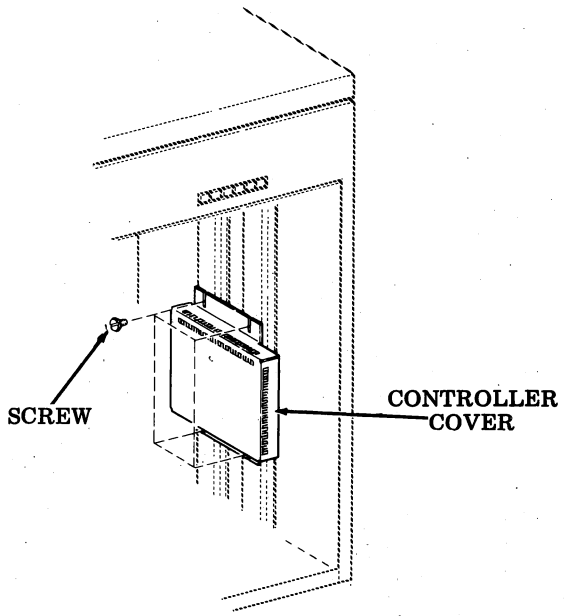


Fig. 21—Controller Removal

(b) Slide controller cover up to limits of upper controller cover slots. Disengage controller cover from lower screws, slide cover down to disengage from upper screws.

(c) Unplug connectors P3, P5, P6 and P21 (Fig. 22).

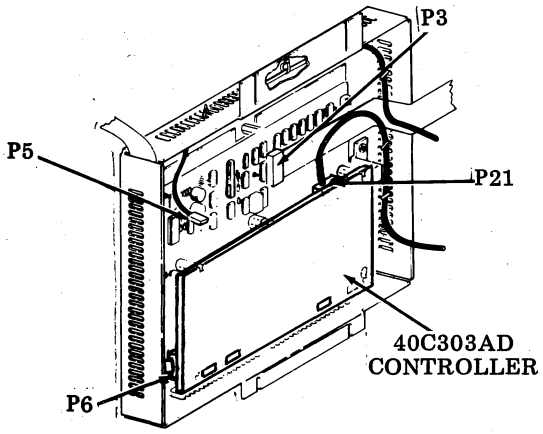


Fig. 22—Controller Connectors

(d) Remove four screws securing the two brackets that hold the controller in place (Fig. 23).

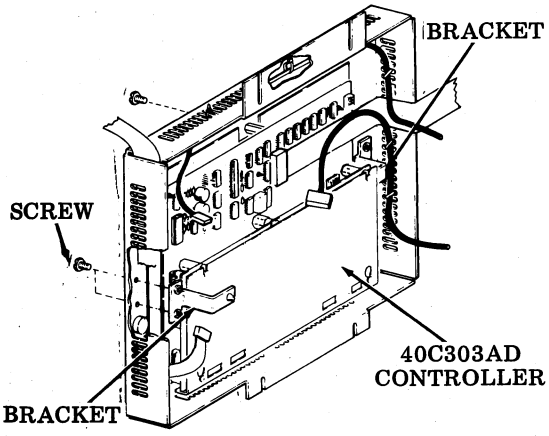


Fig. 23—Removal of 40C303AD Controller

(e) Remove 40C303AD controller from controller cover.

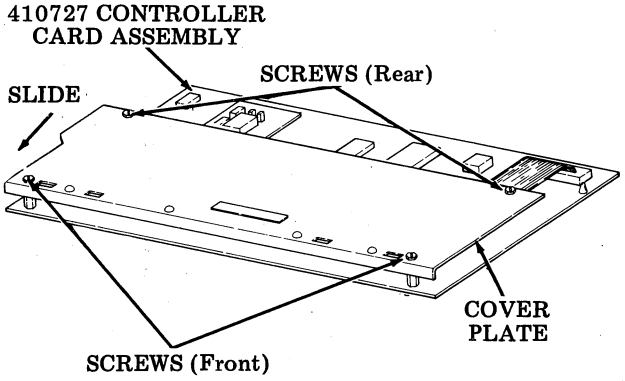
4.04 To option the diode matrix circuit card, the card must be removed from the controller card assembly.

4.05 To remove diode matrix circuit card:

Reminder: Ground yourself before handling the controller assembly, as discussed in 1.03.

For 40C303AA/001 Controller:

(a) Remove cover plate by loosening two rear screws, and removing two front screws, slide cover plate forward (Fig. 24).



Note: Retain front spacers.

Fig. 24—40C303AA/001 Controller

(b) Hold the 410727 card flat, component side up, and grasp the 410141 diode matrix card by any two opposite edges. Pull the card straight up, taking care not to deform the four groups of connecting pins (Fig. 25).

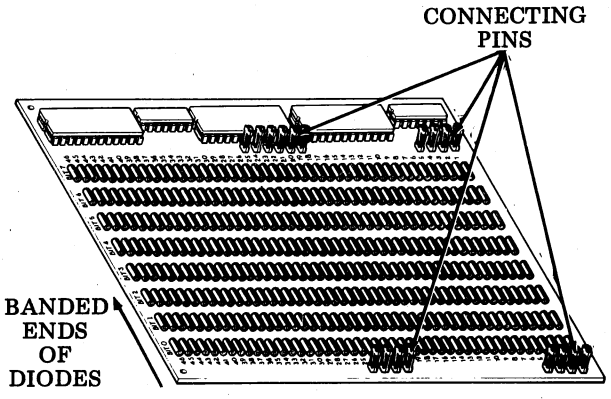


Fig. 25—410141 Diode Matrix Circuit Card

For 40C303AD Controller

(a) Remove cover plate by loosening four screws (Fig. 26) and sliding cover to clear screws then lift off.

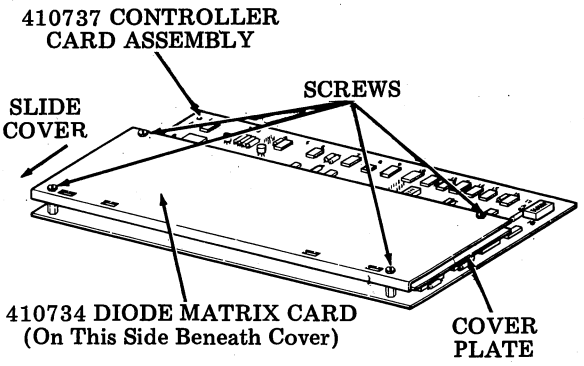


Fig. 26—40C303AD Controller

(b) Remove two screws (loosened in (a)) securing the 410734 diode matrix card (see Fig. 26). Slide card outward until free of center posts. Fold card outward using connecting cable as hinge.

(c) Unplug connector from 410734 diode matrix card (Fig. 27).

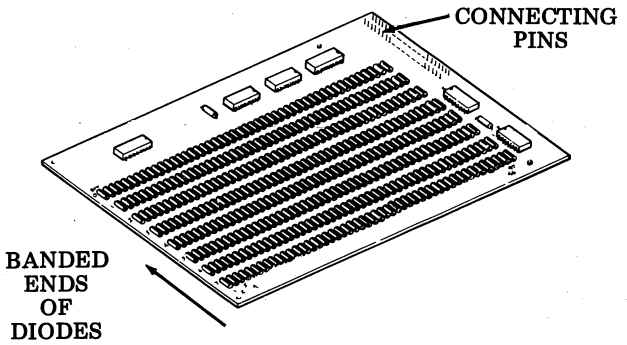


Fig. 27—410734 Diode Matrix Circuit Card

4.06 Refer to Section 582-210-200 for information pertaining to printer option switch access.

5. FIELD OPTIONS AND DESCRIPTIONS

5.01 Certain options are selected by setting miniature rocker/toggle switches on the printer circuit card or on the controller. Other options are implemented by cutting and removing diodes from the diode matrix circuit card of the controller or by cutting straps on the controller circuit card.

5.02 Controller options are listed and briefly described on Pages 17 through 34. Options marked with an ¶ (symbol) are installed at the factory. Data set options are provided on Pages 102 to 119.

5.03 Options other than those shown as factory installed (¶) may be specified for a particular installation. The Station Features and Cption Record on the W-Plan should accurately reflect Service Center or field selection of options. Instructions for selecting and recording options are contained on Pages 35 through 101.

5.04 Numbers assigned to field options are used consistently in all field publications. Options should always be referred to by these numbers.

PRINTER OPTIONS

Option No.	Description	Action
1 through 16 not present.		
17.	Printer Margin and Form Width	
a.	First Printed Column — Column 1 ¶	Choose .a. (See Note 1)
b.2.	First Printed Column — Column 2	
b.3.	First Printed Column — Column 3	
b.4.	First Printed Column — Column 4	
b.5.	First Printed Column — Column 5	
b.6.	First Printed Column — Column 6	
b.7.	First Printed Column — Column 7	
b.8.	First Printed Column — Column 8	
b.9.	First Printed Column — Column 9	
b.10.	First Printed Column — Column 10	
b.11.	First Printed Column — Column 11	
b.12.	First Printed Column — Column 12	
b.13.	First Printed Column — Column 13	
c.	Last Character on 80th Column ¶	Choose c. or e. appropriate to printer ordered (80- or 132-column). (see Notes 2 and 3).
d.79.	Last Character on 79th Column	
d.78.	Last Character on 78th Column	
d.77.	Last Character on 77th Column	
	etc.	
d.25.	Last Character on 25th Column	
e.	Last Character on 132nd Column ¶	
f.131.	Last Character on 131st Column	
f.130.	Last Character on 130th Column	
f.129.	Last Character on 129th Column	
	etc.	
f.73.	Last Character on 73rd Column	

Note 1: Option 17.b. is not present on printers with 410640 or 410729 circuit cards.

Note 2: Options c. and d.79 through d.25 apply to 80 column printers only.
Printers with 410640 circuit cards have Options c. and d.79 through d.73 only.
Printers with 410071 and 410076 circuit have Options c. and d.79 through d.25.

Note 3: Options e. and f.131 through f.73 apply to 132 column printers only.
Printers with 410729 circuit cards have Options e. and f.131. through f.121 only.
Printers with 410072 circuit cards have Options e. and f.131 through f.73.

Option No.	Description	Action
18.	Printer Paper Feedout	
a.	No Paper Feedout	Choose a or b.
b.	Paper Feedout on Data Set Ready (CC) Loss — Up to 16 Lines or Form Feed	
c.	Paper Feedout on Both Data Set Ready (CC) ¶ Loss and ETX — Up to 16 Lines or Form Feed	
	Note: "Data Set Ready (CC) Loss" assumes that data set operation is used; the actual controlling SSI signal is loss of Receive Message. The feedout will be up to 16 lines only if Option 39.b. (Forms Switch off) is selected; if Option 39.a. (Forms Switch on) is selected, the printer will feed out paper to the next form feed position. Tractor feed printers using Option 39.b. should normally use Option 18.a. since the 16-line feedout will be shortened whenever end of form occurs before the 16 lines are up.	
19.	Printer Errored Character Symbol	
a.	Printed on Even Parity Error ¶	Choose c.
b.	Printed on Odd Parity Error	
c.	Not Printed on Parity Error	
d.	Printers With 96-Character Set	Choose 1 to match type carrier ordered.
e.	Printers With 64-Character Set	
f.	Printers With Extended ASCII Character Set	
g.	Printers With Longest Character Set Having Less Than 64 Characters	
	Note: Option switches for Options d., e. and g. must be set to reflect longest character set (f is for future use).	
20.	Line Feed on Printer	
a.	Single ¶	Choose 1
b.	Double	
	Note: This option is operator-selectable.	
21.	Foldover on Up-Low Printer	
a.	Lower Case and Upper Case Print ¶	Choose 1 to match type carrier ordered.
b.	Lower Case Prints as Upper Case	
22.	Foldover on Monocase Printer	
a.	Lower Case Prints as Error Symbol	
b.	Lower Case Prints as Upper Case. ¶	

Option No.	Description	Action
23.	Extended ASCII on Printer (Extended ASCII)	
a.	Prints Extended ASCII Characters (No Parity Checks)	Choose b.
b.	Does Not Print Extended ASCII Characters ¶	
24. — 38.	Not Present	
39.	Forms	
a.	On	Choose 1
b.	Off ¶	
	Note: This option is operator-selectable.	
40. — 47.	Not Present	
48.	Incomplete Form Suppresses Paper Alarm	
a.	No (Paper-Out Not Gated With Form-Out)	Choose 1 see Note
b.	Yes (Paper-Out Gated With Form-Out) ¶	
	Note 1: Option 48 is not present on printers with 410640 circuit cards.	
	Note 2: Select Option 48.a. for friction feed printers.	
49. — 53.	Not Present	
54.	Printing of Escape Sequences Suppressed	
a.	Character after ESC Printed as Received ¶	Choose a. See Notes 1 and 2
b.	Printing of Character After ESC Suppressed	
	Note 1: This option is provided by Option 132 of the controller.	
	Note 2: Option 54 is not present on printers with 410640 or 410729 circuit cards.	
55.	Shift-In/Shift-Out (SI/SO) Detection	
a.	SI/SO Detection Not Used ¶	Choose a. See Notes 1 and 2
b.	SI/SO Detection Enables Printing Additional Characters	
	Note 1: This option is provided by Option 128 of the controller.	
	Note 2: Option 55 is not present on printers with 410640 or 410729 circuit cards.	
56.	Friction Feed/Tractor Feed Printer	
a.	Friction Feed Printer — Motor Held on After Paper Alarm	Choose 1 to match printer See Note
b.	Tractor Feed Printer — Motor Turned Off After Paper Alarm	
	Note: Option 56 is present only on printers with 410076 circuit cards.	

Option No.	Description	Action
57.	SSI/OEM Interface	
a.	SSI ¶	Choose a. see Note
b.	OEM	
	Note: Option 57 is not present on printers with 410640 or 410729 circuit cards.	
58.	Idle Line Motor Control	
a.	Disabled — Motor Held On Indefinitely During Idle Line ¶	Choose a. See Note
b.	Enabled — Motor Turned Off After 40-Second Idle Line	
	Note: Option 58 is not present on printers with 410640 or 410729 circuit cards.	
59.	Does not apply. This option does not affect the operations of the Integrated Asynchronous ROP.	
60.	Auxiliary Alarm	
a.	Enable	Choose b. See Note
b.	Disable ¶	
	Note: Option 60 is present only on printers with 410071 or 410072 circuit cards.	
61.	Regulator Grounding (Circuit Ground to Frame Ground)	
a.	SSI	Choose c. See Note
b.	(OEM) at Printer ¶	
c.	(OEM) External to Printer	
	Note: Option 61 is present only on 40P154/ZZ, 40P253/ZZ and 40P202/ZZ printers.	

CONTROLLER OPTIONS

Option No.	Description	Action
101.	Operating Speed (Note 1)	
a.	110 Baud	Choose 1
b.	150 Baud	
c.	300 Baud	
d.	600 Baud	
e.	1050 Baud	
f.	1200 Baud	
g.	1800 Baud	
h.	2100 Baud	

(Continued on Page 18)

Option No.	Description	Action
101. (Cont)		
i.	2400 Baud	
j.	3000 Baud	
k.	3600 Baud	
l.	4800 Baud	
m.	External Clock (Note 2)	

Note 1: When specifying Options 101.a. through l. for the 40C303AD controller it is also necessary to specify Options 189.b., 190.b. and 192.b.

Note 2: Option 101.m. is available only on the 40C303AD controller. Maximum baud rate is 4800 baud. Options 189.a., 190.a. and 192.c. must also be specified.

Options 102 through 118 apply to multipoint private line operation only; for switched network operation go to Option 119. Options 121 through 158 apply to all types of operation.

102.	Variable Characters for Multipoint Private Line Operation		
a.	CDC No. 1, Character 1		A character must be chosen for each position.
b.	CDC No. 1, Character 2		
c.	CDC No. 2, Character 1	If not used, select same as CDC No. 1 or specify characters not used in system	
d.	CDC No. 2, Character 2		
e.	CDC No. 3, Character 1	If not used, select same as CDC No. 2 or specify characters not used in system	
f.	CDC No. 3, Character 2		
g.	Answer-Back (AB) 1, Character 1 (R1)		
h.	AB 1, Character 2 (R2)		
i.	AB 2 (R3)		
j.	AB 3 (R4)		
k.	Interrupt		
l.	Start of Heading/Start of Text 1		
m.	Start of Heading/Start of Text 2		
n.	End of Transmission (In Addition to EOT or DLE EOT)		
103.	Number of Characters in CDC No. 1		
a.	One Character CDC ¶		Choose 1
b.	Two Character CDC		

Note: The number of characters in this and the following two options is exclusive of DELETE, if used. See Options 106, 107, and 108.

104.	Number of Characters in CDC No. 2	
a.	One Character CDC ¶	Choose 1
b.	Two Character CDC	
105.	Number of Characters in CDC No. 3	
a.	One Character CDC ¶	Choose 1
b.	Two Character CDC	

Option No.	Description	Action
106.	DELETE Must Follow CDC No. 1	
a.	No ¶	Choose 1
b.	Yes	
107.	DELETE Must Follow CDC No. 2	
a.	No ¶	Choose 1
b.	Yes	
108.	DELETE Must Follow CDC No. 3	
a.	No ¶	Choose 1
b.	Yes	
109.	Answer-Back Generated for CDC No. 2	
a.	A/B to CDC 2 ¶	Choose 1
b.	No A/B to CDC 2	
110.	Answer-Back Generated for CDC No. 3	
a.	A/B to CDC 3 ¶	Choose 1
b.	No A/B to CDC 3	
111.	Printer-Controlled Answer-Back	
a.	All Answer-Backs Delayed by Time of Option 118 (118.a. No Delay, 118.b. Approximately 180 ms) ¶	Choose 1 See Note
b.	A/B 1 Delayed Until Printer Ready to Accept a Character or by time of Option 118 (Whichever is Longer), A/B2 and A/B3 Delayed by Time of Option 118; A/B2 Sent if Printer Not Ready to Accept a Character Within 2 Seconds	
	Note: b. requires that Option 140.a. be selected.	
112.	Form Feed on Deselect	
a.	No Form Feed on Deselect ¶	Choose 1 See Notes
b.	FF Character Sent to printer on Deselect	
	Note 1: Form Feed requires Printer Option 39.a. (Forms Switch On), Printer Option 39.b. (Form Switch OFF) will result in a line feed.	
	Note 2: Printer Option 18.b. should also be specified.	

Option No.	Description	Action
113.	Loss of Ability to Receive Causes Deselect	
a.	Loss of Ability to Receive Does Not Cause Deselect ¶	Choose 1 See Note
b.	Loss of Ability to Receive Causes Deselect	

Note: If 113.b. is selected, 146.b. must be selected. "Ability to Receive", as used here, corresponds to Data Terminal Ready, an EIA interface signal not used internally in the integrated controller. It consists of the following indications:

(1) the terminal is in service,
(2) the printer is not in the test mode,
(3) no paper alarm condition exists (see Option 48),
(4) the printer connector is in place (SSI signals present),
(5) the motor is running at the correct speed with the type carrier initially synchronized to the printer

When b is selected, loss of any of these indications except the last (a latching signal) when copying data causes a deselect to occur. (2) and (3) do not apply to current loop applications.

114.	Line Break on Loss of Ability to Receive ("DTR")	
a.	Loss of "DTR" Does Not Cause Line Break ¶	Choose 1 See Note
b.	Loss of "DTR" Does Cause Line Break	

Note: Select Option 114.a. if Option 113.b. has been selected. If Option 114.b. is selected, line break will not occur until the receipt of next character.

115.	Line Break on Vertical Parity Error	
a.	Vertical Parity Error Does Not Cause Line Break ¶	Choose 1
b.	Vertical Parity Error Does Cause Line Break	
116.	Copy Before STX (As Programmed by 102.l. and 102.m.)	
a.	Copy After STX ¶	Choose 1
b.	Copy After Receiving a Valid CDC if Ready to Receive (Before STX)	

Option No.	Description	Action
117.	No. of Characters in Answer-Backs	
a.	A/Bs Consist of 1 Character ¶	Choose 1
b.	A/Bs Consist of 2 Characters	
118.	Answer-Back Response Delay	
a.	No Delay After Clear to Send ON From Data Set ¶	Choose 1
b.	Fixed Delay of Approximately 180 Milliseconds	
119.	Variable Characters for Switched Network Answer-Back	
a.	A/B Character 1	Choose as many characters as are required for answer-back (See Note)
b.	A/B Character 2	
c.	A/B Character 3	
d.	A/B Character 4	
e.	A/B Character 5	
f.	A/B Character 6	
g.	A/B Character 7	
h.	A/B Character 8	
i.	A/B Character 9	
j.	A/B Character 10	
k.	A/B Character 11	
l.	A/B Character 12	
m.	A/B Character 13	
n.	A/B Character 14	
o.	A/B Character 15	
p.	A/B Character 16	

Note: Selection is required only if Option 124.b. or 142.b. is also selected.

Option No.	Description	Action
120.	No. of Characters in Switched Network Answer-Back	
a.	1	Choose 1 See Note
b.	2	
c.	3	
d.	4	
e.	5	
f.	6	
g.	7	
h.	8	
i.	9	
j.	10	
k.	11	
l.	12	
m.	13	
n.	14	
o.	15	
p.	16	

Note: One number must be selected if Option 124.b. or 142.b. is selected.

Option No.	Description	Action
121.	Left Margin Setting	
a.	Left Margin at Column 1 ¶	Choose 1; if b., specify left margin setting required by column no.
b.	Left Margin Begins at Any Column from 2 up	
	Note: Options 121.a. requires Option 131.a; Option 121.b. requires Option 131.b.	
122.	Horizontal Tabulation Settings	
a.	No Horizontal Tab Settings ¶	Choose 1; if b., specify tab settings required by column nos.
b.	Preprogrammed Tab Settings in Any Column from 2-80 (80-column printer) or 2-132 (132-column printer)	
	Note: If compatibility with on-line tabs or with standard speed equipment is required, the last setting on the line (Column 80 or 132, depending on the printer selected) must be specified. This assures that a tab beyond the last enabled tab stop will cause the next character to be printed in the last column position and the character following that to be printed in the first character position of the next line (as selected by the left margin option, if used). (If the last setting on the line is not specified and a tab is received after the last tab stop, the next character received will be printed on the first character position of the next line.)	
123.	Vertical Tabulation Settings	
a.	No Vertical Tab Settings ¶	Choose 1; if b., specify tab settings required by line nos.
b.	Tab Settings of From 2 to 72 Lines	
	Note: Care must be taken not to select vertical tab settings which will carry the printer beyond the form feed position. Option 20.b. (double line feed), if selected, will cause all vertical tab settings to be double those shown. (This allows use of 22-inch forms, if required.)	
	Normally, printer spacing is 6 lines/inch; however, 8 line/inch is optionally available for tractor feed printers (USOCs WES7W and WES8G). Form feed is set by means of optional belts which may be installed to provide form feed for form lengths of from 2-1/2 to 22 inches. If a message vertical tabs past the last tab stop and the printer is set for forms ON mode (Option 39.a.), the next form will come into registration.	

Option No.	Description	Action
124.	Receipt of ENQ Starts Switched Network Answer-Back/Multipoint Private Line Diagnostic Test	
a.	ENQ Does Not Start Answer-Back/Multipoint Private Line Test ¶	Choose 1 See Note
b.	ENQ Starts Answer-Back/Multipoint Private Line Test	
	Note: A selection of Option 124.b. for switched network or point-to-point private line applications requires that a selection be made from Option 120. If no answer-back is specified (Option 119) then select Option 124.a.	
125.	Type of Printer Used	
a.	80-Column Printer ¶	Choose 1 to match printer ordered (See Note)
b.	132-Column Printer	
	Note: Option 125 is not present when EPROMs 404602, 404603, 404604 and 404605 are of Issue 3 or later. EPROMs are located on the 410142 circuit card of the 40C303AA/001 controller. This option does not apply to the 40C303AD controller.	
126.	Pulse or Tone Generated on Receipt of BEL	
a.	Received BEL Character Does Not Cause Pulse or Tone ¶	Choose 1
b.	Received BEL Character (ASCII or - if Option 127.b., 138.b., or 139.b. selected - Baudot or Teletypesetter Code #1 or #2) Causes one second Pulse or Tone Generation	
	Note: Pulse generation on paper out or internal alarm is always provided (not an option). Option 126, controls pulse generation only. Tone generation with 40C303AA/001 controllers requires the addition of a 403418 audible alarm modification kit. Tone generation with 40C303AD controllers is provided by the 40K003AAC opcon. Consecutive BEL characters must be received more than one second apart for more than one tone to be heard.	
127.	Baudot Code Converted to ASCII	
a.	Baudot Code Not Accepted ¶	Choose 1 See Note 1
b.	Baudot Code Converted to ASCII for Printer	
	Note 1: If an answer-back is desired, it must be coded in Baudot. *Note 2:* There is no conversion for horizontal tab and vertical tab functions from Baudot to ASCII in the 40C303AA/001 or 40C303AD controllers.	

Option No.	Description	Action
128.	SI/SO Detection	
a.	SI/SO Detection Not Used ¶	Choose 1 See Note
b.	SI/SO Detection Enables Printing Additional Characters	
	Note: With Option 128.a. all characters are sent to the printer with bit 8 spacing. With Option 128.b. the detection of SI causes all characters sent to the printer with bit 8 spacing and detection of SO causes all characters to be transferred with bit 8 marking beginning with the following character. Power on reset causes the controller go to the SI mode. The selection of Option 128.b. requires that printer Options 19.f. and 23.a. also be selected.	
129.	Horizontal Tabulation	
a.	HT Character Ignored by ROP ¶	Choose 1 See Note
b.	HT Character Causes Horizontal Tab as Programmed in Option 122 or Set On-Line	
	Note: Option 129.b. requires Option 17.c. or .e.	
130.	Vertical Tabulation	
a.	VT Character Causes Line Feed ¶	Choose 1
b.	VT Character Causes Vertical Tab as Programmed in Option 123 or Set On-Line	
131.	Left Margin	
a.	Left Margin Begins at Column 1 Regardless of Programming of Options 121 and 122. ¶	Choose 1 See Note
b.	Left Margin Begins as Programmed in Option 121.	
	Note: Option 131.b. requires Options 17.c. or e. and 121.b.	
132.	Printing of Escape Sequences Suppressed	
a.	Character After ESC Printed as Received ¶	Choose 1 See Note
b.	Printing of Character After ESC Suppressed	
	Note: With Option 132.b. enabled, the character after ESC will be suppressed only if ESC is preceded by a non ESC character; if ESC ESC X is received, X will be printed.	

Option No.	Description	Action
133.	DLE EOT/EOT Disconnect	
a.	DLE EOT Sequence Causes Disconnect or Deselect (No Disconnect or Deselect on EOT Alone) ¶	Choose 1 See Note
b.	EOT Causes Disconnect or Deselect	
	Note: Option 141.a. (plus Option 140.a.) causes a disconnect and Option 141.b. a deselect in conjunction with this option. If Option 140.b. is selected in addition to either Option 133.a. or b. no disconnect is attempted.	
134.	On-Line Printer Control	
a.	DC2 and DC4 Ignored by ROP ¶	Choose 1
b.	DC4 Blinds Printer, DC2 Unblinds Printer	
135.	Idle Line Disconnect	
a.	No Disconnect on Idle Line ¶	Choose 1 See Note
b.	30-Second Idle Line Causes Disconnect	
	Note: Option 135.b. requires that Option 140.a. be selected.	
136.	Normal/Inverted SI/SO	
a.	Normal (SI = ASCII) ¶	Choose 1 See Note
b.	Inverted (SO = ASCII)	
	Note: Option 136.b. inverts Option 128.b.	
137.	Carrier Fail Disconnect	
a.	No Disconnect on Carrier Fail ¶	Choose 1 See Note
b.	No Carrier for 15 Seconds Causes Disconnect	
	Note: Option b. requires that Options 140.a. and 144.a. be selected.	
138.	Teletypesetter Code #1 Converted to ASCII	
a.	Teletypesetter Code #1 Not Accepted ¶	Choose 1
b.	Teletypesetter Code #1 Converted to ASCII for Printer	
139.	Teletypesetter Code #2 Converted to ASCII	
a.	Teletypesetter Code #2 Not Accepted ¶	Choose 1
b.	Teletypesetter Code #2 Converted to ASCII for Printer	

Option No.	Description	Action
140.	Interface to Transmission Facilities	
a.	EIA ¶	Choose 1 See Note
b.	20/60 mA	
	Note: Option 140.b. disables Options 111.b. and 118.b. A/Bs are not delayed. Likewise, Options 135.b. and 137.b. are also disabled.	
141.	Data Link Control Procedures	
a.	Switched Network and Point to Point Private Line Applications ¶	Choose 1
b.	Multipoint Private Line Applications	
142.	Automatic Answer Starts Switched Network Answer-Back	
a.	Auto Answer Does Not Start A/B ¶	Choose 1 See Note
b.	Auto Answer Starts A/B	
	Note: Option 142.b. requires that Options 140.a. and 151.a. be selected in addition to selections from Options 119 and 120. It is also recommended that Options 135.b. and 137.b. be selected when Option 142.b. is chosen.	
143.	Reverse Channel Used/Not Used	
a.	Reverse Channel Not Used — Minimum 400 Ms of Line Break Generated to Stop Sender ¶	Choose 1 to match data set. See Notes
b.	Reverse Channel Send and Receive (SCA and SCF) Used — SCA Turned OFF to Stop Sender, SCF ON Required to Send A/B	
	Note 1: The choice of Option 143.a. or .b. depends on the type of data link control procedures and data set used. The following conditions will cause the controller to attempt to stop the sender: (1) buffer 75% full indication (generates a continuous line break or SCA off until down to 25% full) and (2) manually depressing the INTRPT key on the key strip (generates continous SCA off or 400ms break).	
	Note 2: If Option 143.b. is selected and the controller is used in a system that does not provide reverse channel signals then Option 124.b. will not be functional.	
	Note 3: Choose Option 143.b. for KDP-ROP applications.	

Option No.	Description	Action
144.	Monitor Receive Data on Data Carrier Detect (CF) or Data Set Ready (CC)	
a.	Monitor Receive Data on Recognition of CF and CC ON ¶	Choose 1 to match data set ordered — 113.a. requires b. See Note
b.	Monitor Receive Data on Recognition of CC ON	
	Note: The choice of a. or b. depends on the type of data set used; b. is required for the 113A Data Set but is undesirable for all other present Bell System data sets usable with integrated ROP sets. If the selected control signal is OFF, all incoming data signals are ignored.	
145.	Local Copy of Switched Network Answer-Back	
a.	No Local Copy of A/B ¶	Choose 1
b.	Local Copy of A/B	
	Note: Option 145.a. must be used if Option 141.b. is specified.	
146.	Paper/Terminal Alarm	
a.	Paper Alarm Causes AB2 to be Sent on Next CDC or Data Terminal Ready (CD) OFF on New Call ¶	Choose 1
b.	Paper Alarm Signal Causes Immediate Deselect or Call Disconnect	

Note 1: Option 146.a. is recommended for multipoint private line operation.

Note 2: The response to a paper alarm condition varies with the type of printer and options used:

1. Friction Feed Printer and Option 146.a.

The low paper condition will be recognized; data will continue to be accepted from the line and printed until an end of transmission condition is recognized (Option 133.a. or b., 135.b. or 137.b.). The controller will then refuse to accept new messages until paper is replaced.

2. Friction Feed Printer and Option 146.b.

The low paper condition will be recognized and the controller will immediately drop Data Terminal Ready (DTR) to the data set. The controller will accept data until Data Set Ready (DSR) drops (Option 144.b.) or carrier drops (Option 144.a.). Data in the buffer at this time will be printed.

Option No.	Description	Action

146. (Cont)

3. Tractor Feed Printer With a 410640 Circuit Card and Options 146.a. and 39.a. or .b.

   Tractor Feed Printer With a 410071, 410072, 410076 or 410729 and Options 146.a., 39.a. and 48.a. or Options 146.a., 39.b. and 48.a. or .b.

The out-of-paper condition is immediately recognized by the printer, which then stops accepting data from the controller. However, the controller continues to accept data from the line until an end-of-transmission condition is recognized (Option 133.a. or b., 135.b., or 137.b.). If this causes a buffer full condition Option 143 becomes effective. After 15 seconds of no characters being delivered to the printer, the controller goes into an alarm condition.

4. Tractor Feed Printer With 410640 Circuit Card and Options 146.b. and 39.a. or b.

   Tractor Feed Printer With 410071, 410072, 410076 or 410729 Circuit Card and Options 146.b., 39.a. and 48.a. or Options 146.b., 39.b. and 48.a. or .b.

The out-of-paper condition is immediately recognized by the printer, which then stops accepting data from the controller. The controller immediately drops Data Terminal Ready to the data set but continues accepting data from the line until Data Carrier Detect drops (Option 144.a.) or Data Set Ready drops (Option 144.b.). After 15 seconds of no characters being delivered to the printer, the controller goes into an alarm condition.

5. Tractor Feed Printer With 410071, 410072, 410076 or 410729 Circuit Card and Options 146.a., 39.a. and 48.b.

An out-of-paper condition is not recognized by the printer until the next form is in registration. Data is accepted by the printer from the controller until that time. However, the controller continues to accept data from the line until an end-of-transmission condition is recognized (Option 133.a. or b., 135.b., or 137.b.). If this causes a buffer full condition Option 143 becomes effective. After 15 seconds of no characters being delivered to the printer, the controller goes into an alarm condition.

6. Tractor Feed Printer With 410071, 410072, 410076 or 410729 Circuit Card and Options 146.b., 39.a. and 48.b.

An out-of-paper condition is not recognized by the printer until the next form is in registration. Data is accepted by the printer from the controller until that time. Upon recognizing paper out, the controller immediately drops Data Terminal Ready to the data set but continues accepting data from the line until Data Carrier Detect drops (Option 144.a.) or Data Set Ready drops (Option 144.b.). After 15 seconds of no characters being delivered to the printer, the controller goes into an alarm condition.

Option No.	Description	Action
147.	Buffer Fully Enabled/Minimum Usage of Buffer	
a.	Buffer Fully Enabled — Data Flow to Printer Controlled by Printer to Avoid Data Stacking ¶	Choose 1 (Option 147.a. recommended) See Note
b.	Minimum Usage of Buffer — Data Sent to Printer at Approximately Same Rate as Received	
	Note: Option 147.b. requires that the data be properly formatted to avoid data stacking and possible loss of characters, as for sets controlled by a 40C103AE controller.	
148.	Motor Turn-Off Delay	
a.	Minimum Delay — Motor Turns Off Approximately 30 Seconds After Detection of Idle State ¶	Choose 1 See Note
b.	Maximum Delay — Motor Turn Off Delayed Approximately 2 minutes after Detection of Idle State	
	Note: The controller times out for approximately 30 seconds whenever it recognizes an idle state — no characters being printed. At the end of this time-out, Options 135 and 148 are checked: if Option 135.a. is selected, no action is taken, but if Option 135.b. is selected, the set is disconnected as explained after Option 133.; if Option 148.a. is selected, the motor is shut off, but if Option 148.b. is selected, the time-out is increased. (In switched network operation, the motors will turn off immediately upon detection of the disconnect character(s) if Option 148.a. is selected; if Option 148.b. is selected, the 2 minute delay is enabled.) The indicated time outs are minimum times and could be increased to twice the indicated time.	
149.	New Line Substitution on Carriage Return	
a.	Carriage Return Passed to Printer ¶	Choose 1
b.	New Line Substituted for Carriage Return	
150.	DATA ERROR Lamp Used/Not Used	
a.	DATA ERROR Lamp Lit on Parity Error ¶	Choose 1
b.	DATA ERROR Lamp Not Used to Indicate Parity Errors	
151.	Switched Network/Private Line Applications	
a.	Switched Network Applications — Data Set Ready (CC) ON Turns on Motor ¶	Choose 1 See Note
b.	Private Line Applications — Character in Buffer Turns on Motor	

Option No.	Description	Action

151. (Cont)

Note: With Option 151.a. the motor will be turned on as soon as an ON condition of Data Set Ready is detected. In switched network operation this signal is not turned on until the data set enters the data mode following automatic or manual answering of a call; but in private line operation it comes on with application of power and remains on all the time. Consequently, the selection of Option 151.a. will result in the motor turning on on call connection in switched network applications, but remaining on permanently in private line applications. With Option 151.b. the motor will not be turned on until a character is transferred to the buffer for printing, in point-to-point private line applications or when the CDC is recognized, in multipoint private line applications. No character will be transferred to the printer until the printer motor is on and up to speed and the printer signals that it is ready to accept a character (assuming that Option 147.a. is enabled).

152. Errored Character/Substitute Character to Printer on Parity Error

a.	Errored Character Sent to Printer ¶	Choose 1
b.	Substitute Character Sent to Printer On Parity Error (See Note)	

Note: Monocase printers without foldover (Option 22.a.) will print the type carrier symbol (for 80 column or for 132 column); Monocase printers with foldover (Option 22.b.) will print ^ . Up-Low printers without foldover (Option 21.a.) will print ~ Up-Low printers with foldover (Option 21.b.) will print ^ . Parity errors are determined by Option 158.

153. Answer-Back 3 Use

a.	AB3 Not Generated for Roll Call Replies ¶	Choose 2 (See Notes)
b.	AB3 Generated for Roll Call Replies	
c.	AB3 Not Generated for Initial Address Replies ¶	
d.	AB3 Generated for Initial Address Replies	

Note 1: Option 153 is for use with 40C303AD controller only. The 40C303AA/001 controller has the features supplied by Options 153.b. and d. The application of 406211 modification kit will cause the 40C303AA/001 controller to have the feature supplied by Option 153.a. and c.

Note 2: Two selections must be made; selections a. and b. are independent of c. and d.

Note 3: Option 153 is for multipoint application only. Option has no effect in point-to-point or switched network applications. Refer to the following chart for terminal status.

TERMINAL STATUS

APPLICATION	REPLY CHARACTERS	WITH OPTION 153.c.	WITH OPTION 153.d.	MODE AFTER REPLY
Selection Replies	A/B1 R1 or R1R2	Ready to Receive	Ready to Receive	Selected
	A/B2 R3 or R3R3	Not Ready to Receive	Not Ready to Receive	Deselected
	A/B3 R4 or R4R4	Default to A/B1 if optioned for no A/B3 generated	Terminal Busy (Character in Buffer)	
APPLICATION	REPLY CHARACTERS	WITH OPTION 153.a.	WITH OPTION 153.b.	MODE AFTER REPLY
Roll Call Replies	A/B1 R1 or R1R2	Still ready to receive	Still ready to receive NO PARITY ERRORS	Remains Selected
	A/B2 R3 or R3R3	Out of service. Did not receive all of message and not ready to receive more.	Out of service. Did not receive all of message and not ready to receive more.	Deselected
	A/B3 R4 or R4R4	Default to A/B1 if optioned for no A/B3 generated.	Ready to receive, but: (1) Received parity error(s) (2) Framing error, did not receive all of message. (3) Buffer capacity exceeded, Printer stacked data.	Remains Selected. Copy text after STX.

Option No.	Description	Action
154.	Future Use	
a.	All Present Applications ¶	Choose a. See Note
b.	Possible Future Use	
	Note: Not present on 40C303AD controllers.	
155.	Future Use	
a.	All Present Applications ¶	Choose a. See Note
b.	Possible Future Use	
	Note: Not present on 40C303AD controllers.	
156.	Number of Data Bits Per Character (Excluding Parity Bit, if Used)	
a.	5 Bits/Character	Choose 1 See Notes
b.	6 Bits/Character	
c.	7 Bits/Character	
d.	8 Bits/Character	
	Note 1: Select Options 156.a. for Baudot code, 156.b. for Teletypesetter code, 156.c. for ASCII with parity check, and 156.d. for ASCII without parity check.	
	Note 2: Factory provided option for 40C303AA/001 controllers is 156.c.; factory provided option for 40C303AD controller is 156.a.	
157.	Number of Stop Bits Per Character	
a.	1 Stop Bit	Choose 1 See Note
b.	2 Stop Bits	
	Note: Factory provided option for 40C303AA/001 controller applies to a. The 40C303AD controller will have both diodes in place; this does not match either option.	

Option No.	Description	Action
158.	Parity Used	
a.	Odd Parity Used	Choose 1 See Notes
b.	Even Parity Used	
c.	No Parity Check or Parity Bit Used	

Note 1: Options 158.a. and b. require Option 156.c. for ASCII with one parity bit; 158.c. requires Option 156.d. for ASCII with 8th bit constantly marking or spacing, or present but not checked for parity. (If Options 156.c., 157.a., and 158.c. are selected, the controller will transmit characters having only 9 units instead of 10 — the stop bit will immediately follow the last data bit.)

Note 2: Factory provided option for 40C303AA/001 controllers is 158.b.; factory provided option for 40C303AD controllers is 158.c. .

159. through 188. Not Present

189.	Receiver Clock Control	
a.	Receiver Clock Obtained From Associated Data Set	Choose 1 See Notes
b.	Receiver Clock Generated Internally ¶ .	

Note 1: Option 189 is not present on 40C303AA/001 controllers.

Note 2: The use of Option 189.a. is for isochronous operation and requires the selection of 101.m., 190.a. and 192.c. The use of Option 189.b. is for asynchronous operation and requires the selection of Options 101.a. through l., 190.b. and 192.b.

190.	Transmitter Clock Control	
a.	Transmitter Clock Obtained From Associated Data Set	Choose 1 See Notes
b.	Transmitter Clock Generated Internally ¶	

Note 1: Option 190 is not present on 40C303AA/001 controllers.

Note 2: The use of Option 190.a. is for isochronous operation and requires the selection of Options 101.m., 189.a. and 192.c. The use of 190.b. is for asynchronous operation and requires the selection of Options 101.a. through l; 190.b. and 192.b.

Option No.	Description	Action
191.	Line Wrap-around Operation	
a.	Line Wrap-around Performed by Printer ¶	Choose 1
b.	Line Wrap-around Performed by Controller	

Note: When a right-hand margin is required other than that provided by Option 17.c. or e., choose Option 191.b. and specify a column in Option 122 to designate the last column to be printed. The controller will provide a NL if data continues beyond this point.

192.	Baud Rate Factor	
a.	64X Baud Rate	Choose 1
b.	16X Baud Rate	See Notes
c.	1X Baud Rate	

Note 1: Option 192 is not present on 40C303AA/001 controllers.

Note 2: Option 192.a. is for future applications. The use of Option 192.b. requires the use of Options 101.a. through l., 189.b. and 190.b. The use of Option 192.c. requires the use of Options 101.m., 189.a. and 190.a.

Note 3: Factory will provide both diodes in place; this will not match any of the selections.

193.	Dual Speed Change	
a.	212-Type Data Set Operation /Auto Speed Selection	Choose 1
b.	KD-ROP Manual Dual Speed Operation	See Notes

Note 1: Option 193 is not present on 40C303AA/001 controllers.

Note 2: Option 193.a. allows the controller to respond to the speed mode of the Data Set 212A, and operate over a dual range of 110 baud to 600 baud in the low speed range and at 1200 baud in the high speed range. The low speed range is selected in Option 101.a. through d. Option 193.b. allows the controller to interface to DATASPEED 40KD at 1200 baud for a print local function or to the transmission line at the baud rate selected by Option 101.a. through l. This speed selection is accomplished by replacing the leftmost blocking keytop with a print on line keytop (346104) on Operator Console 40K003/AAC (table top arrangement) or 40K005/AAC (forms access arrangement). Depressing this key will cause the associated lamp to light and the variable baud rate to be selected. Depressing this key again will cause the lamp to extinguish and return the baud rate to 1200 for print local operation. If the KD is programmed for a line speed above 1200 baud it is necessary to have the ROP programmed for this speed and the PRINT-ON-LINE lamp lit in order to receive PRINT LOCAL. If two speeds are used with one of them above 1200 baud then the other must be 1200 baud. The PRINT-ON-LINE key operation will be reversed PRINT-ON-LINE off to receive from the line, on to receive from KD.

Option No.	Description	Action
193. (Contd)	*Note 3:* Option 193.b. may be used to provide manual two speed operation providing one of the speeds is 1200 baud and the other is optionable with Option 101.	
	Note 4: This option is not applicable for single speed operation; refer to Option 101.	
CABINET OPTIONS		
	Ground Connection	
a.	Frame Ground Connected to Signal Ground ¶	Choose 1 See Note
b.	Frame Ground Not Connected to Signal Ground	
	Note: A connection between frame ground and signal ground is required for proper operation of the internal test message. Most data sets make this connection either permanently or as an option, but a few do not. If a cable longer than the standard (408065) is used to connect the data set to the ROP, it may be necessary to break this connection at either the cabinet or the data set (but not both) to avoid electrical noise problems (caused by a ground loop).	
OPERATOR CONSOLE OPTIONS		
	INTRPT Key Present/Removed and Blocked	
a.	INTRPT Key Causes Line Break/Reverse Channel Off (per Option 143) Whenever Depressed, Indicator Lights any time Line Break/Reverse Channel Off Occurs (Manual or Automatic)	Choose 1
b.	INTRPT Key and Indicator Blocked ¶	
	Print-On-Line Key Present/Removed and Blocked	
a.	Print-On-Line Key Removed and Blocked	Choose 1 See Note
b.	Print-On-Line Key Present	
	Note: Print-on-line key present allows the terminal to interface (per Option 193.b.) to a DATASPEED 40 KD at 1200 baud for print-on-line function or to the transmission line at the baud rate selected by Option 101.a. through l.	

6. OPTION SELECTION GUIDE

The following printer and controller options are recommended depending on the type of data set employed. Where an option decision is not specified any available choice may be selected.

103/113-Type Data Set

Recommended Options:
Printer: 17.a., 17.c. or e., 18.a., 19.c., 23.b., 54.a., 55.a., 57.a., 58.a., 60.b., 61.c.
Controller: 101.a. or b. or c., 137.b., 140.a., 143.a., 144.a. (103-type data set) or b. (113-type data set) 146.a. or b., 147.a., 154.a., 155.a., 156.c. or d., 157.b.,189.b. , 190.b., 191.b., and 192.b.

Note: The above assumes electrical connection to input/output pins 1 through 8, 20, 22 and 23. 113-type data set does not connect to pins 8, 20 and 22. Pin 23 is for connection to an external alarm. Connection to other pins is not recommended.

108-Type Data Set (For Multipoint Operation)

Recommended Options:
Printer: 17.a., 17.c. or e., 18.a., 19.c., 23.b., 54.a., 55.a., 57.a., 58.a., 60.b., 61.c.
Controller: 101.a. or b. or c., 135.a., 140.a., 141.b., 143.a., 145.a., 146.a. or b., 147.a., 154.a., 155.a., 156.c. or d., 157.b., 189.b., 190.b., 191.b. and 192.b.

Note: The above assumes electrical connection to input/output pins 1 through 8 and 23. A connection to pin 12 should not be made since the 108-type data set is non-EIA. Connection to other pins is not recommended. It is recommended that the 108-type data set be optioned for full duplex (FDX) and Option U.

202-Type Data Sets (Switched Network Operation see Note 8)

Recommended Options:
Printer: 17.a., 17.c. or e., 18.a., 19.c., 23.b., 54.a., 55.a., 57.a., 58.a., 60.b., 61.c.
Controller: 137.b., 140.a., 141.a., 144.a., 146.a., or b., 147.a., 151.a. (See Note 8), 154.a., 155.a. and 191.b.

Note 1: Options 156.b., 157.b. and 158.c. are recommended for use with Option 138.b. (Teletypesetter Code No. 1 Converted to ASCII).

Note 2: The 202-type data set must be optioned for 4-wire operation if 143.a. (Reverse Channel not used) is specified.

Note 3: Some 202-type data sets automatically loopback data that is sent out on line. This will cause a local copy of the answer-back with Option 145.a. or garbled local copy of answer-back with Option 145.b.

Note 4: In addition to the above recommended options it is also recommended that Option 143.b. (Reverse Channel used) be specified when using a Bell System Data Set 202S (or equivalent). Option ZB in the data set should also be specified.

Note 5: Use of data sets older than Bell System 202C10 is not recommended.

Note 6: The above assumes electrical connections to input/output pins 1 through 8, 11, 12, 20, 22 and 23. Connection to other pins is not recommended.

Note 7: Options 102 through 118 are for use in multipoint private applications only.

Note 8: Specify Option 151.b. rather than 151.a. for point-to-point applications.

202-Type Data Sets (Multipoint Private Line Operation)

Recommended Options:
Printer: 17.a., 17.c. or e. 18.a., 19.c., 23.b., 54.a., 55.a., 57.a., 58.a., 60.b., 61.c.
Controller: 102.a. through n., 135.a., 137.a., 140.a., 141.b., 142.a.. 144.a., 145.a., 146.a. or b. 147.a., 151.b., 154.a. and 155.a.

Note 1: Options 156.b., 157.b., and 158.c., are recommended for use with Option 138.b. (Teletypesetter Code No. 1 converted to ASCII).

Note 2: The 202-type data set must be optioned for 4-wire operation if Option 143.a. (Reverse Channel not used) is specified.

Note 3: In addition to the above recommended options it is also recommended that Option 143.a. (Reverse Channel not used) be specified when using a Bell System Data Set 202T (or equivalent) Option ZB in the data set should also be specified.

Note 4: The above assumes electrical connections to input/output pins 1 through 8, 11, 12, 20, 22 and 23. Connections to other pins is not recommended.

Note 5: Options 119 and 120 are for use in switched network applications only.

20/60 mA Signal Connection

Recommended Options:
Printer: 17.a., 17.c. or e. 18.a., 19.c., 23.b., 54.a., 57.a., 58.a., 60.b., 61.c.
Controller: 140.b., 143.a., 146.a. or b., 147.a. 154.a., 155.a. and 156.c. or d.

Note 1: Options 102 through 118 are for use in multipoint applications.

Note 2: Options 119 and 120 are for use in nonmultipoint applications.

Note 3: Recommended options, in addition to the above, for use with Teletypesetter #1 are: 138.b., 156.b. (instead of c. or d.) and 157.b.

Note 4: Recommended options, in addition to the above, for use with Teletypesetter #2 are: 139.b., 156.b. (instead of c. or d.) and 157.a.

Note 5: Recommended Options, in addition to the above for 5-level (Baudot) operation are: 127.b., 156.a. (instead of c. or d.) and 157.a. Do not select Option 135.b.

Note 6: The above assumes electrical connections to input/output pins 1, 7, 14, 15, 17 and 23 of the 40C303AA/001 controller and pins 1, 14, 16, 23 and 25 of AUX connector of the 40C303AD controller. Connection to other pins is not recommended. Contact suppression is recommended to reduce noise.

Note 7: The EIA connector (for 40C303AA/001 only) must provide a connection betweens pins 6 (DSR), 8 (DCD) and 20 (DTR).

KD-ROP Operation

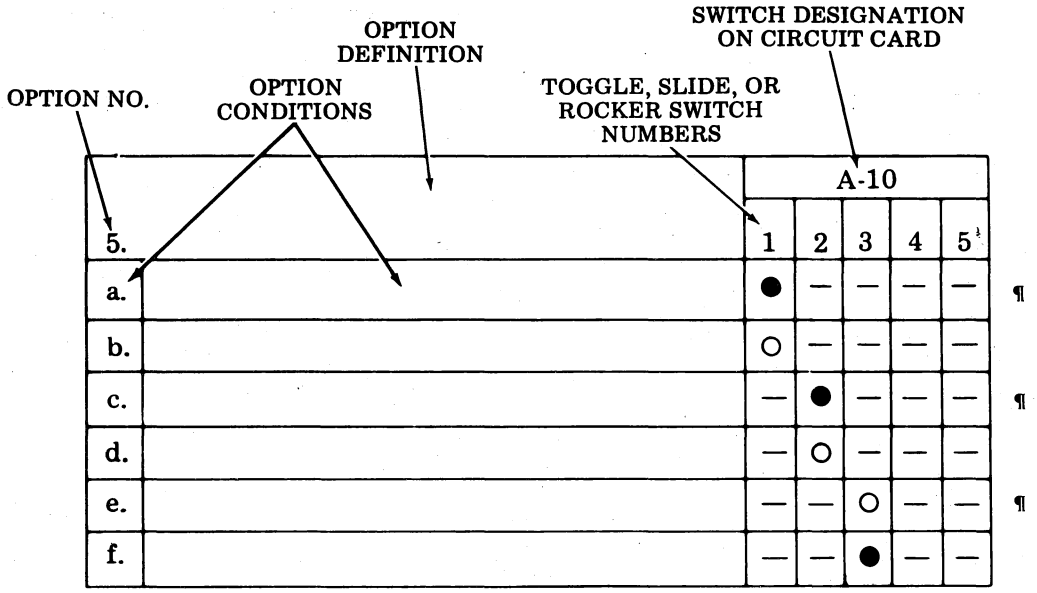
Recommended Options:
Printer: 17.a., 17.c. or e., 19.c., 54.a., 55.a., 57.a., 58.a., 60.b., 61.c.
Controller: 101 to match KD print local and line speed (if dual speed), 124.a., 127.a., 135.a., 137.a., 138.a., 139.a., 140.a., 141.a., 143.b., 147.a. and 193.b. (if dual speed)

Note: Refer to notes under Option 193.

7. OPTION ACTIVATION

7.01 Connect the static discharge strap to wrist as described in 1.03 before activating the options on the 410071, 410072, 410076, 410640, or 410729 printer circuit card.

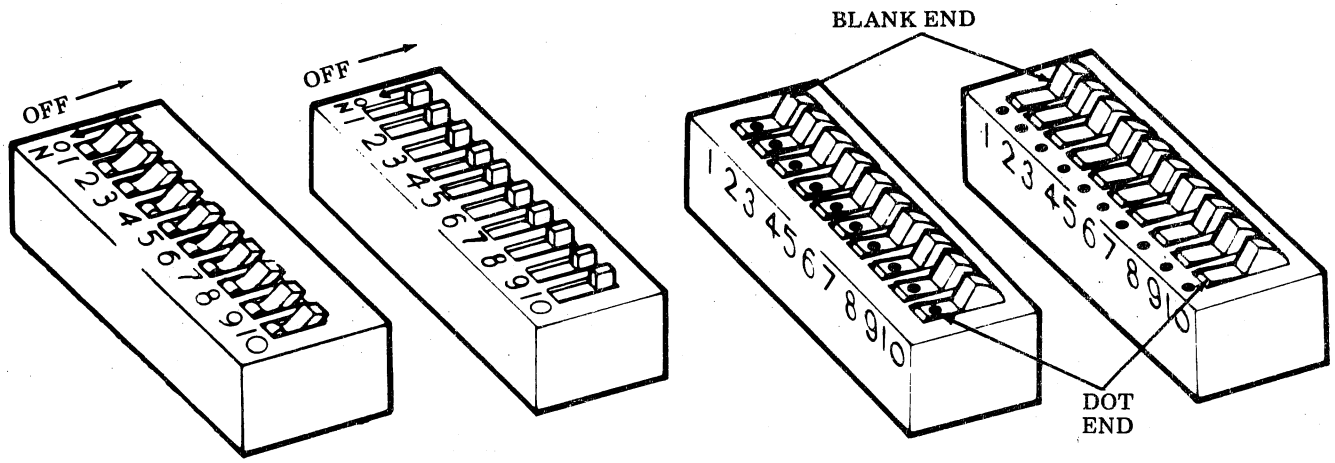
7.02 The format for showing options (except data set options) is illustrated in Fig. 28.



● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
O Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Switch position does not affect option.
¶ Factory installed.

Fig. 28—Option Information Format

7.03 Several styles of option selecting switches may be present on the printer and/or controller circuit cards (Fig. 29). The option selecting switches are of various sizes, having between four and ten toggles, slides or rockers, numbered accordingly. On toggle or slide type switches, options are activated by positioning the toggle or slide toward the ON designation. On rocker type switches, the dotted rocker end or the rocker end adjacent to a dot are positioned down (depressed) to activate an option. Conversely, to deactivate or switch OFF an option, position the toggle or slide away from ON or depress the blank end of the rocker switch.



Toggle Style | Slide Style | Rocker Styles

(Toggles and Slides Shown in OFF Position, Option Deactivated)

(Rockers Shown in ON Position, Option Activated)

Fig. 29—Option Switches

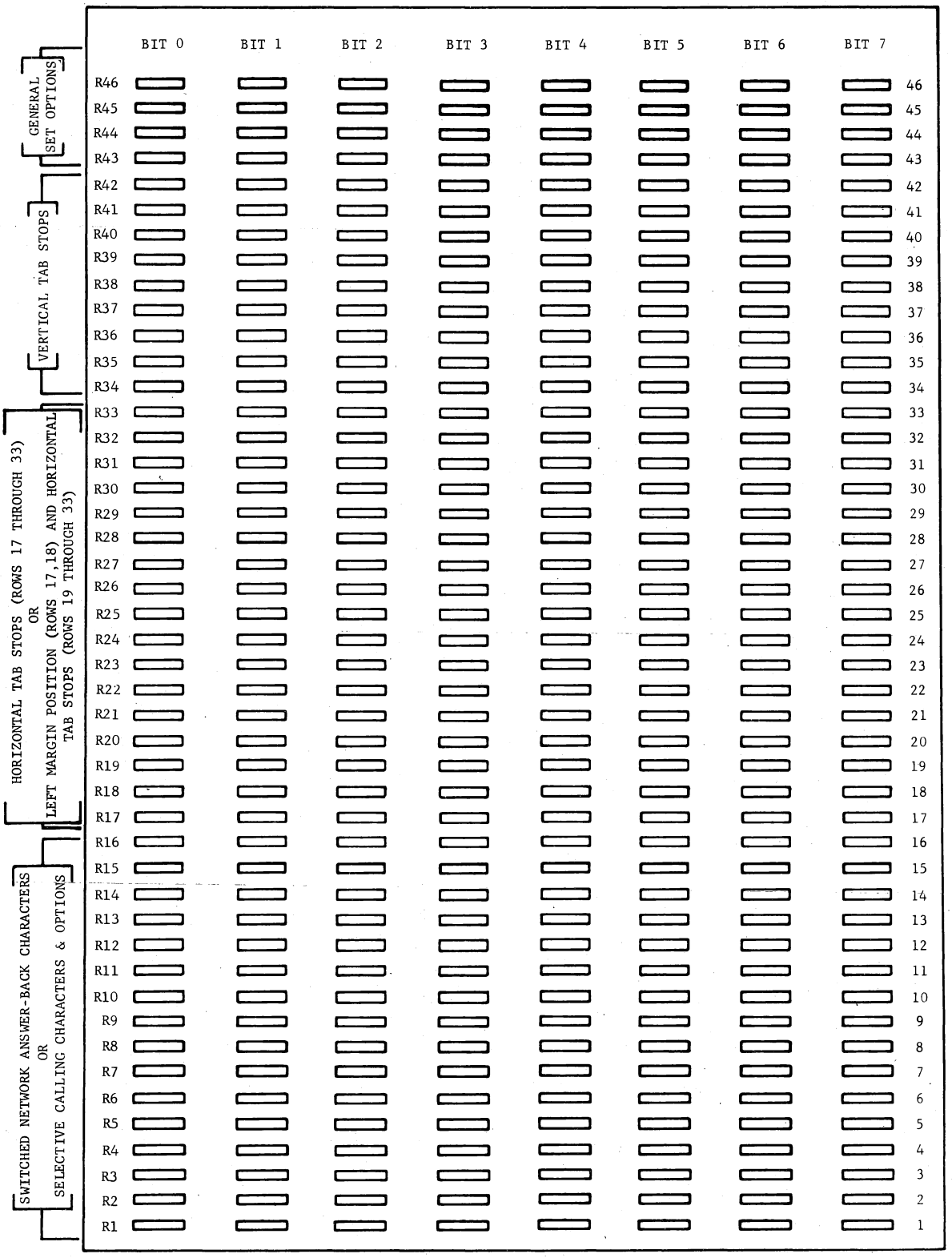
7.04 The diode matrix circuit card (410141 for 40C303AA/001 or 410734 for 40C303AD) is composed of several integrated circuit (IC) packs and 368 (410141 circuit card) or 384 (410734 circuit card) 407336** diodes arranged in eight columns (bit 0 through bit 7) (see Fig. 31 and 32). The horizontal rows are designated R1 through R46 for 40C303AA/001 or R48 for 40C303AD and the vertical columns are designated b0 through b7 in all subsequent optioning instructions of this section. Optioning consists of referring to the Station Feature and Option Record on W-Plan W-40R1A or W-40R2A and the service order and cutting and removing those diodes marked X. (Refer to alternate optioning methods below).

Warning: Diodes should be marked (felt tip pen) before cutting to guard against mistakes. Diodes cut in error CANNOT be resoldered in place — the diode must be replaced, using care not to overheat when soldering. Make certain diode is oriented correctly, the same as the other diodes on the card (banded end toward IC packs — Figs. 25 and 27). RECHECK BEFORE CUTTING!

Alternate Optioning Method:

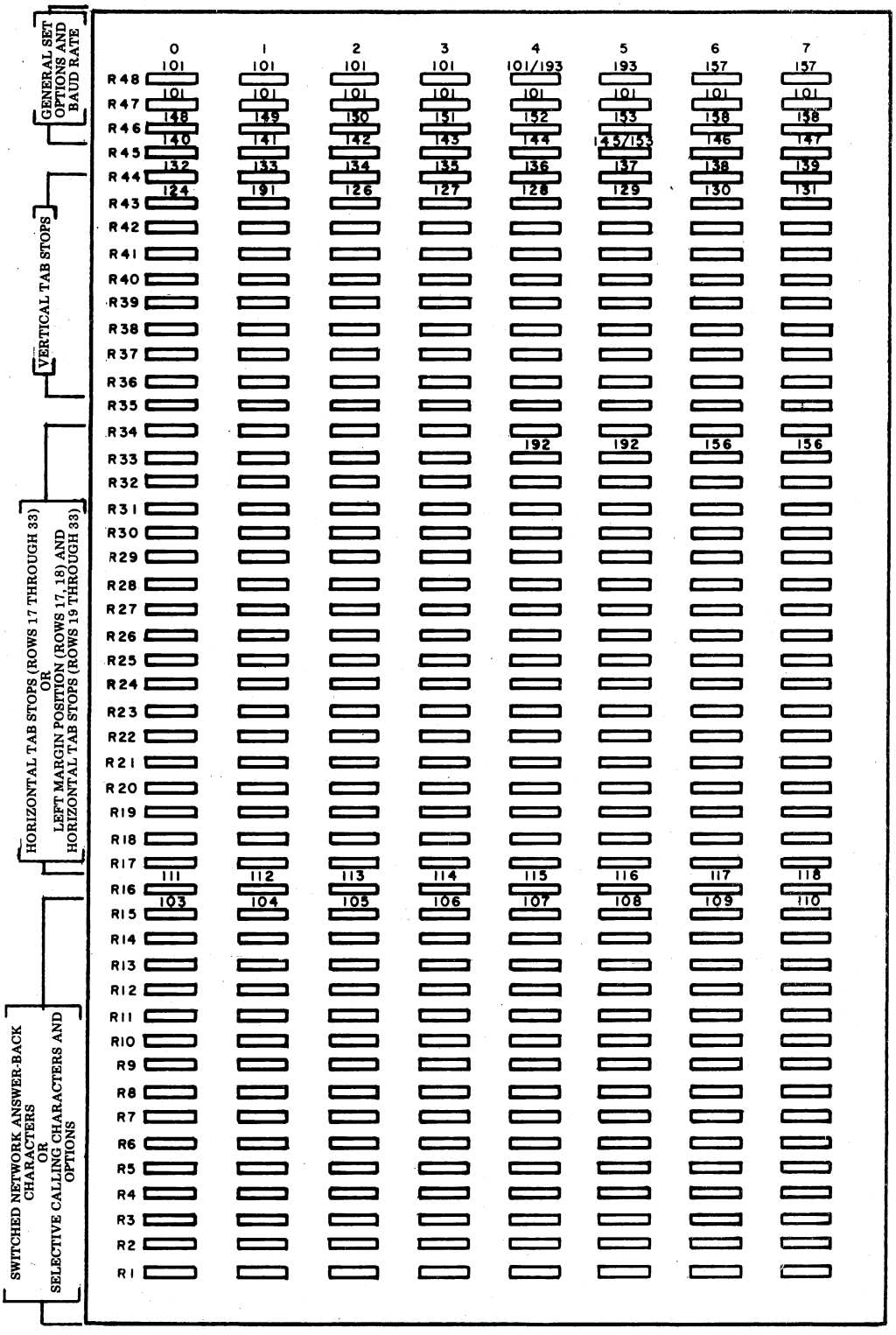
1. Cut diode on one side leaving as much lead as possible for resoldering.
2. Pry free end of diode up so that free end of lead is at least 1/8" from the surface of the circuit board.
3. The diode (including free end) must be covered with suitable insulating sleeving. The sleeving must be friction tight so as not to fall off when the circuit card is handled. The sleeving must be obtained locally.
4. When resoldering the diode, a low (25 watts or less) wattage iron must be used.
5. After resoldering, the diode must be checked with a volt/ohm meter for shorts or opens.
6. After the controller has been reassembled into the set, a diode matrix printout must be obtained to assure that there are no open diodes present or that there are no shorts caused by solder splashes.

**Early version 410141 circuit cards had 177108 diodes. The 407336 and 177108 diodes are interchangeable.



▭ Diode left in.

Fig. 30—410141 Diode Matrix Circuit Card Layout (40C303AA/001 Only)



Diode left in.

Fig. 31—410734 Diode Matrix Circuit Card Layout (40C303AD Only)

7.05 Examples of Option Selecting on the Diode Matrix Circuit Card:

Example 1: Rows R1 through R16 (Fig. 32):

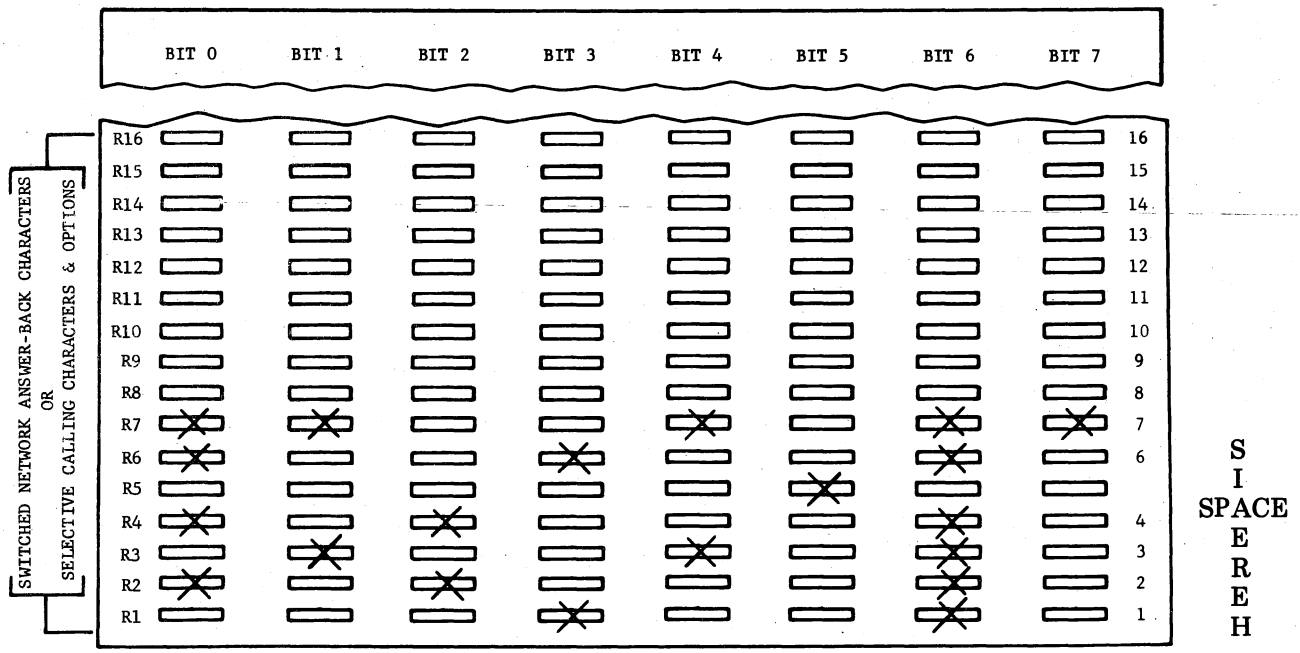
(a) Each row of R1 through R14 (multipoint private line applications) or R1 through R16 (switched network applications) may be optioned to represent any one of the ASCII codes listed in Table A. Diodes left in place (▭) represent spacing or 0 bits; diodes removed (▭ cut) represent marking or 1 bits, for columns b0 through b6. Column b7 diodes control options associated with the system format and must not be considered part of the ASCII codes of columns b0 through b6.

(b) In the example (Fig. 32), R1 through R7 are shown optioned for a seven character ASCII coded switched network answer-back: HERE IS — diode R7 b7, shown removed, denotes a seven character answer-back, as described in Option 120.

(c) Answer-back characters for switched network applications, rows R1 through R16, may also be optioned to represent any of the Baudot codes shown in Table C or the Teletypesetter codes shown in Table B.

(d) When coding for Baudot characters, only diode columns b0 through b4 are selected. Columns b5 and b6 must remain intact. See related Option 127.

(e) Similarily, when coding for Teletypesetter characters, only diode columns b0 through b5 are selected with column b6 remaining intact. Another consideration is that Teletypesetter codes may be transmitted with two different bit order arrangements. For high speed operation (Ex: 1050 wpm) the bit transmission order is 0 1 2 3 4 5 which corresponds to diode columns b0 through b5. For low speed operation (Ex: 100 wpm) the bit transmission order is 1 2 3 4 5 0. This means that diode b0 must be selected to match b1 of the Teletypesetter code. This pattern must be observed: diode b1 for code bit b2, etc, up to diode b5 for code bit b0.



▭ Diode left in.
▭ cut Diode cut and removed.

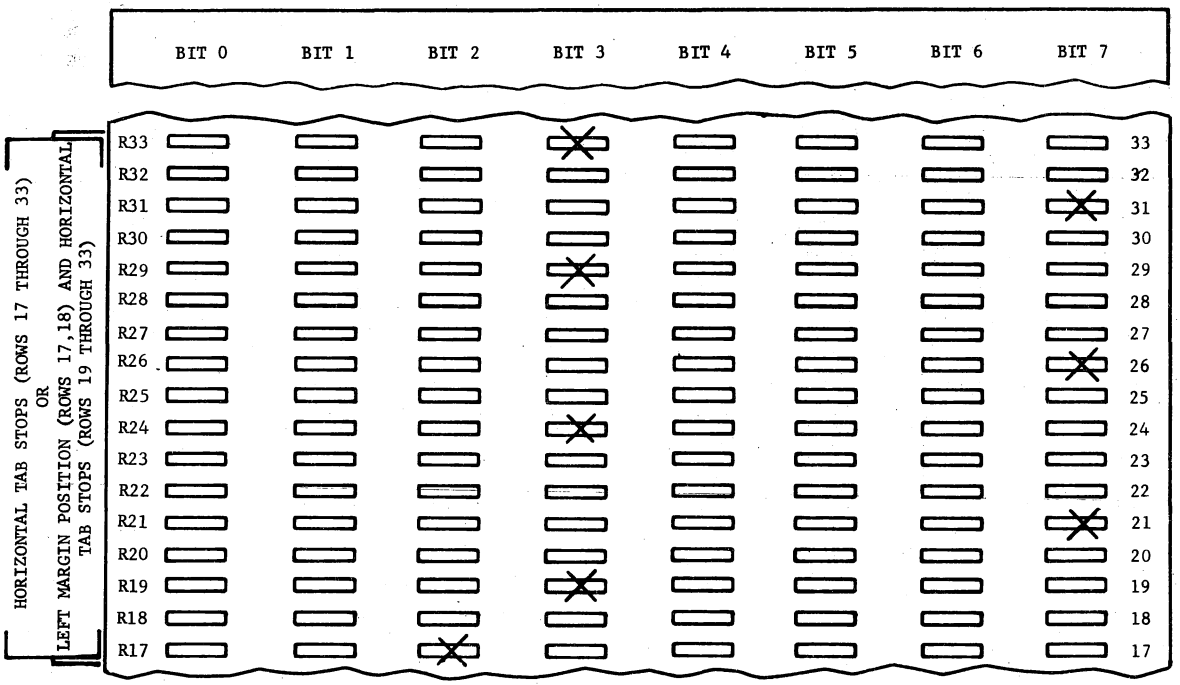
Fig. 32—Example 1: Diode Matrix Circuit Card Optioning

Example 2: Rows R17 through R33 (Fig. 33):

Note: Diodes at R33 b4, b5, b6 are not used.

(a) Each diode represents one horizontal space or column on the printer, ranging from columns 1, 2 and 3 for R17 b0, b1, b2 in order to columns 130, 131, and 132 for R33 b1, b2 and b3. With all diodes in place the printer left margin is at column 1 and no preset horizontal tab stops are provided. Cutting the appropriate diode(s) establishes a printer left margin in other than column 1 and provides tab stops for wherever desired on a line, PROVIDED Options 129 and 131 are also activated. In addition, the diode representing the previously selected printer right margin (Option 17.c. or e.) must be cut. Obviously, tab stop settings to the left of the left margin, or to the right of the right margin will not be optioned.

(b) The example (Fig. 33) represents diode optioning to have a 132-column tractor printer left margin at column 3, with tab stops at columns 20, 40, 60, 80, 100 and 120. See Options 17, 129 and 131.



Diode left in.
Diode cut and removed.

Fig. 33—Example 2: Diode Matrix Circuit Card Optioning

Example 3: Rows R34 through R42 (Fig. 34):

(a) Each diode represents one vertical space or line on the printer, ranging from 1, 2, 3 lines from start of form for R34 b0, b1, b2 in order to 70, 71, 72 lines from start of form for R42 b5, b6, b7. With all diodes in place, no preset vertical tab stops are provided. Cutting the appropriate diode(s) establishes the vertical tab stops for wherever desired on a form. Note that vertical tab stops beyond the length of one form would not ordinarily be optioned.

(b) The example (Fig. 34) represents diode optioning for vertical tab stops at 10, 20, 30, 40, 55 and 70 lines from the start of form.

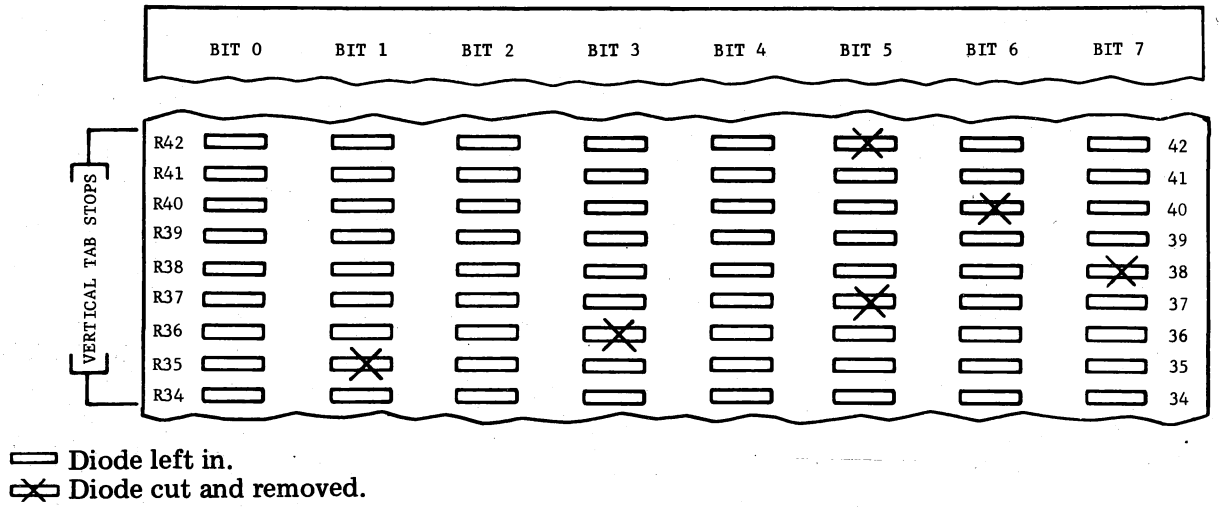


Fig. 34—Example 3: Diode Matrix Circuit Card Optioning

Example 4: Rows R43 through R46 (Fig. 35):

Each diode represents a specific selectable feature. Certain of these features are selected in conjunction with the optioning of diodes R1 b0 through R42 b7. Other features relate to system protocol and/or format. Options 124 through 155 are selected with the diodes in this area. The table below provides the optioning diode location for these options. For option titles and descriptions, refer to Part 5. Refer to ACTIVATING CONTROLLER OPTIONS for examples of activating specific options.

Option Number	Related Diode Location	Option Number	Related Diode Location
101.	R47 b0-b7 (Note 4) R48 b0-b5	142.	R45 b2
		143.	R45 b3
124.	R43 b0	144.	R45 b4
125.	Note 1	145.	R45 b5
126.	R43 b2	146.	R45 b6
127.	R43 b3	147.	R45 b7
128.	R43 b4	148.	R46 b0
129.	R43 b5	149.	R46 b1
130.	R43 b6	150.	R46 b2
131.	R43 b7	151.	R46 b3
132.	R44 b0	152.	R46 b4
133.	R44 b1	153.	R45 b5, R46 b5 (Note 2)
134.	R44 b2	154.	R46 b6 (Note 3)
135.	R44 b3	155.	R46 b7 (Note 3)
136.	R44 b4	156.	R33 b6, b7 (Note 4)
137.	R44 b5	157.	R48 b6, b7 (Note 4)
138.	R44 b6	158.	R46 b6, b7 (Note 4)
139.	R44 b7	191.	R43 b1 (Note 5)
140.	R45 b0	192.	R33 b4, b5 (Note 2)
141.	R45 b1	193.	R48 b4, b5 (Note 2)

Note 1: Option 125 is not applicable to 40C303AD controllers or 40C303AA/001 controllers with EPROMs (located on 410142 circuit card) 404602, 404603, 404604 and 404605 of Issue 3 or later.

Note 2: Options 153, 192 and 193 are available on 40C303AD only.

Note 3: Options 154 and 155 are for future use on 40C303AA/001 only.

Note 4: Options 101, 156, 157 and 158 are diode controlled on 40C303AD only; they are switch controlled on 40C303AA/001.

Note 5: Option 191 is applicable only to 40C303AA/001 controllers containing Issue 3 or later EPROMs 404602, 404603, 404604 and 404605 on circuit card 410142. Option 191 is also applicable to 40C303AD controller.

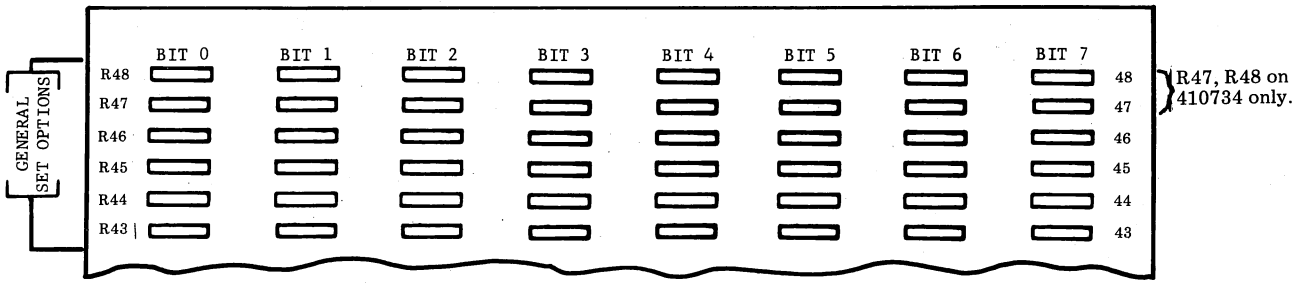


Fig. 35—Example 4: Diode Matrix Circuit Card Optioning

TRANSMITTING CODES

TABLE A

ASCII Code (American National Standard Code for Information Interchange)

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

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

1 = Mark 0 = Space

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

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

TABLE B

TELETYPESETTER CODE

CHARACTERS		CODE ELEMENTS BIT DESIGNATION						CHARACTERS		CODE ELEMENTS BIT DESIGNATION					
UNSHIFT	SHIFT	b0	b1	b2	b3	b4	b5	UNSHIFT	SHIFT	b0	b1	b2	b3	b4	b5
a	A		■	■				7	7/8	■	■	■	■		
b	B		■			■	■	8	—	■		■	■		
c	C			■	■			9	&	■				■	■
d	D		■			■		0	?	■		■	■		■
e	E		■					$	!	■	■	■			
f	F		■		■	■		⩛	⩛	■				■	
g	G			■		■	■	,	,	■			■	■	
h	H				■		■	.	.	■			■	■	■
i	I			■	■			)	(	■	■				■
j	J		■	■		■		;	:	■		■		■	■
k	K		■	■	■	■		-	@	■	■			■	
l	L			■			■	SHIFT			■	■		■	■
m	M				■	■	■	UNSHIFT			■	■	■	■	■
n	N				■	■		BLANK							
o	O					■	■	CARRIAGE RETURN						■	
p	P			■	■		■	ELEVATE (LF)				■			
q	Q		■	■	■		■	SPACE					■		
r	R			■		■		EM SPACE		■	■		■		
s	S		■		■			V. RULE	EM SP	■		■			■
t	T						■	EM LEADER		■			■		■
u	U		■	■	■			EN SPACE		■		■	■	■	
v	V			■	■	■	■	EN LEADER		■	■	■	■		■
w	W		■	■			■	THIN SPACE		■					
x	X		■		■	■	■	ADD-THIN SPACE		■			■		
y	Y		■		■		■	PAPER FEED		■		■			
z	Z		■				■	BELL		■	■	■		■	
1	1/8	■	■		■	■	■	QUAD LEFT		■	■		■	■	
2	1/4	■	■	■			■	QUAD RIGHT		■	■	■	■	■	
3	3/8	■	■					QUAD CENTER		■		■	■	■	■
4	1/2	■		■		■		UPPER RAIL		■	■			■	■
5	5/8	■					■	LOWER RAIL		■	■	■		■	■
6	3/4	■	■		■		■	RUBOUT		■	■	■	■	■	■

■ Marking Element = 1 □ Spacing Element = 0

Example: Bits 0 through 5 of the bit permutation for the character F are 010110, respectively.

Note: Variations of the Teletypesetter code in current use may have different characters substituted for the fraction and/or punctuation symbols shown.

TABLE C

BAUDOT CODE

CHARACTERS		CODE ELEMENTS BIT DESIGNATION				
LETTERS CASE	FIGURES CASE	b0	b1	b2	b3	b4
A	—	■	■			
B	?	■			■	■
C	:		■	■	■	
D	$	■			■	
E	3	■				
F	!	■		■	■	
G	&		■		■	■
H	#			■		■
I	8		■	■		
J	'	■	■		■	
K	(	■	■	■	■	
L	)		■			■
M	.			■	■	■
N	,			■	■	
O	9				■	■
P	0		■	■		■
Q	1	■	■	■		■
R	4		■		■	
S	BELL	■		■		
T	5					■
U	7	■	■	■		
V	;		■	■	■	■
W	2	■	■			■
X	/	■		■	■	■
Y	6	■		■		■
Z	"	■				■
BLANK						
SPACE				■		
CAR. RET.					■	
LINE FEED			■			
FIGURES		■	■		■	■
LETTERS		■	■	■	■	■

■ Marking Element = 1

□ Spacing Element = 0

Example: Bits 0 through 4 of the bit permutation for the character F are 10110, respectively.

ACTIVATING PRINTER OPTIONS

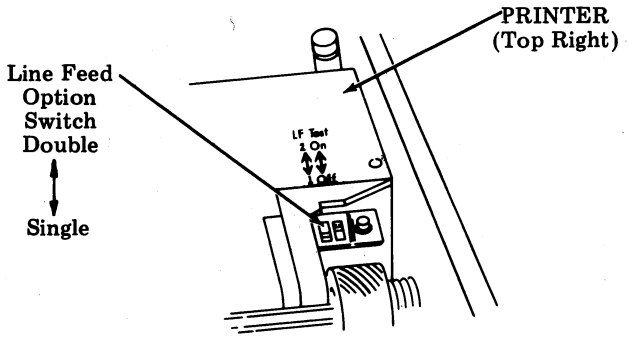
Note: Selection of 50 Hz or 60 Hz sprocket for the motor: The printer is shipped with a 60 Hz sprocket; a 50 Hz sprocket is also shipped with the printer and is mounted on a plate at the left side of the unit. If sprocket is changed for 50 Hz, perform the Impeller Shaft Drive Belt Tension adjustment. Also, check the Clutch Drive Belt Tension adjustment. Refer to Section 582-210-700.

Top of Printer

40P102 Type Printer

20.	Line Feed on Printer	LF Switch
a.	Single	1
b.	Double	2

¶



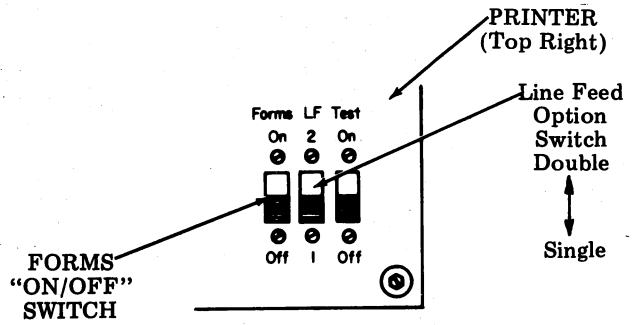
40P153 Type Printer

20.	Line Feed on Printer	LF Switch
a.	Single	1
b.	Double	2

¶

39.	Forms	FORMS SWITCH
a.	ON	ON
b.	OFF	OFF

¶



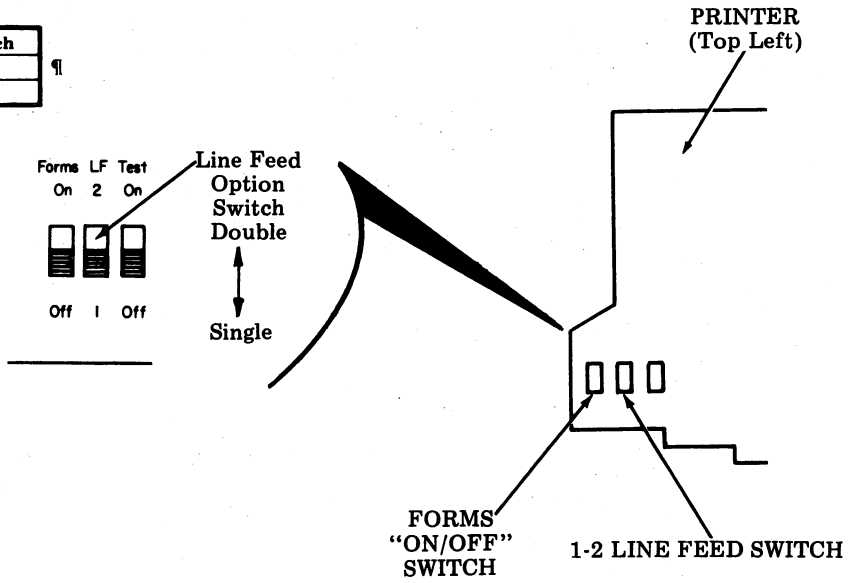
40P154 Type, 40P201 Type, 40P202 Type and 40P253 Type Printers

20.	Line Feed on Printer	LF Switch
a.	Single	1
b.	Double	2

¶

39.	Forms	FORMS SWITCH
a.	ON	ON
b.	OFF	OFF

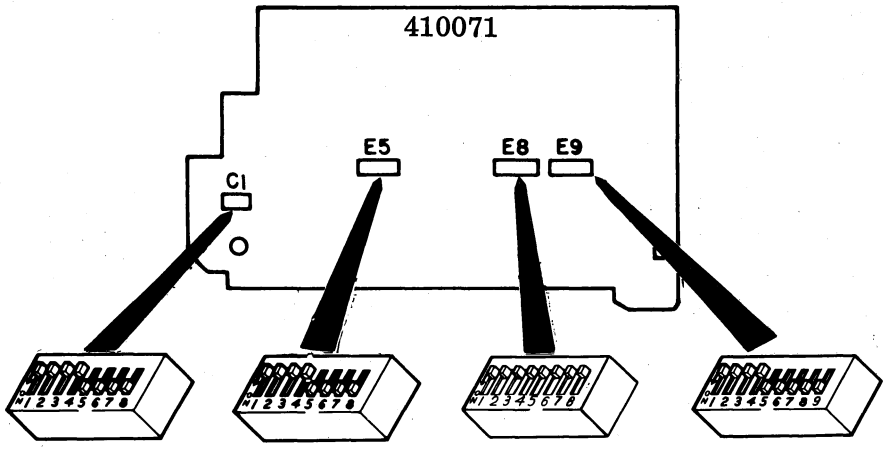
¶



¶ Factory installed.

Printer Logic Circuit Cards

410071 (40P154 Type, 40P253 Type Printers)



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

Note: Choose Option 17.a. for use with Integrated Controller.

17. Printer Right Margin and Form Width						E9						E5								E8								
	Last Character Printed Column Number					1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
c.	80					○	●	—	●	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	¶
d.(x)	73	61	49	37	25	●	●	—	●	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	
	74	62	50	38	26	○	●	—	●	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	
	75	63	51	39	27	●	○	—	●	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	
	76	64	52	40	28	●	●	—	○	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	
	77	65	53	41	29	○	●	—	○	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	
	78	66	54	42	30	●	○	—	○	●	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	
	79	67	55	43	31	●	●	—	●	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	
		68	56	44	32	○	●	—	●	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	
		69	57	45	33	●	○	—	●	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	
		70	58	46	34	●	●	—	○	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	
		71	59	47	35	○	●	—	○	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	
		72	60	48	36	●	○	—	○	○	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	—	—	—	—	●	

x indicates desired column number.
To obtain column number:
73 thru 80 — program as shown.
61 thru 72 — program as shown, then operate E8 position 8 to OFF.
49 thru 60 — program as shown, then operate E5 position 1 to OFF.
37 thru 48 — program as shown, then operate E5 position 7 to OFF.
25 thru 36 — program as shown, then operate E5 position 8 to OFF.

Note: Choose Option 17.c. for use with Integrated Controller. (The diode representing the last printing column must also be removed on the diode matrix card (Option 122)).

● Indicates dot end of rocker switch depressed, toggle or slide positoned to ON.
O Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

		E8							
18.	Printer Paper Feed Out	1	2	3	4	5	6	7	8
a.	No Paper Feed Out	—	—	●	—	—	—	—	—
b.	Paper Feed Out on DSR or Rm Loss — 16 Lines or Form Feed	—	○	○	—	—	—	—	—
c.	Paper Feed Out on DSR Loss or RM Loss or ETX — 16 Lines or Form Feed	—	●	○	—	—	—	—	— ¶

Note: Choose Option 18.a. or b. for use with Integrated Controller.

		E8								E9								
19.	Printer Errored Character Symbol/Character Set	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	9
a.	Printed on Even Parity Error	—	—	—	—	—	—	—	—	—	—	—	—	—	○	●	—	— ¶
b.	Printed on Odd Parity Error	—	—	—	—	—	—	—	—	—	—	—	—	—	●	○	—	—
c.	Not Printed on Parity Error	—	—	—	—	—	—	—	—	—	—	—	—	—	●	●	—	—
d.	Printers With 96 Character Set	—	—	—	—	●	○	—	—	—	—	—	—	—	—	—	—	—
e.	Printers With 64 Character Set	—	—	—	—	○	●	—	—	—	—	—	—	—	—	—	—	— ¶
f.	Printers With Extended ASCII Character Set	—	—	—	—	○	○	—	—	—	—	—	—	—	—	—	—	—
g.	Printers With Longest Character Set Having Less Than 64 Characters	—	—	—	—	○	○	—	—	—	—	—	—	—	—	—	—	—

Note: Choose 19.c. for use with Integrated Controller. Choose 19.d., e., f. or g. to match type carrier.

		E8							
21.	Foldover on Up-Low Printer	1	2	3	4	5	6	7	8
a.	Lower Case and Upper Case Prints	○	—	—	—	—	—	—	— ¶
b.	Lower Case Prints as Upper Case	●	—	—	—	—	—	—	—

		E8							
22.	Foldover on Monocase Printer	1	2	3	4	5	6	7	8
a.	Lower Case Prints as Error Symbol	○	—	—	—	—	—	—	—
b.	Lower Case Prints as Upper Case	●	—	—	—	—	—	—	— ¶

		E9								
23.	Extended ASCII on Printer (Extended ASCII)	1	2	3	4	5	6	7	8	9
a.	Prints Extended ASCII Character (No Parity Check)	—	—	—	—	—	○	○	—	—
b.	Does Not Print Extended ASCII (See Option 19a., b. or c.)	—	—	—	—	—	as in 19		—	— ¶

Note: Option 23.a. overrides Options 19.a., b., c.

		E9								
48.	Incomplete Form Supresses Paper Alarm	1	2	3	4	5	6	7	8	9
a.	No (Paper Out Not Gated With Form Out)	—	—	—	—	—	—	—	—	●
b.	Yes (Paper Out Gated With Form Out)	—	—	—	—	—	—	—	—	○ ¶

		E9								
54.	Printing of Escape Sequences Suppressed	1	2	3	4	5	6	7	8	9
a.	Character After ESC Printed as Received	—	—	—	—	—	—	—	○	— ¶
b.	Printing of Character After ESC Suppressed	—	—	—	—	—	—	—	●	—

Note: Choose Option 54.a. for use with Integrated Controller. See Option 132.

		E9								
55.	SI/SO Detection	1	2	3	4	5	6	7	8	9
a.	SI/SO Detection Not Used	—	—	○	—	—	—	—	—	— ¶
b.	SI/SO Detection Enables Printing Additional Characters	—	—	●	—	—	—	—	—	—

Note: Choose Option 55.a. for use with Integrated Controller. See Option 128.

		E8							
57.	SSI/OEM	1	2	3	4	5	6	7	8
a.	SSI	—	—	—	—	—	—	●	— ¶
b.	OEM	—	—	—	—	—	—	○	—

Note: Choose Option 57.a. for use with Integrated Controller.

● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
○ Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

		E8							
58.	Idle Line Motor Control	1	2	3	4	5	6	7	8
a.	Disabled — Motor Held On Indefinitely During Idle Line	—	—	—	O	—	—	—	— ¶
b.	Enabled — Motor Turned OFF After 40 Second Idle Line	—	—	—	●	—	—	—	—

Note: Choose Option 58.a. for use with Integrated Controller. See Option 148.

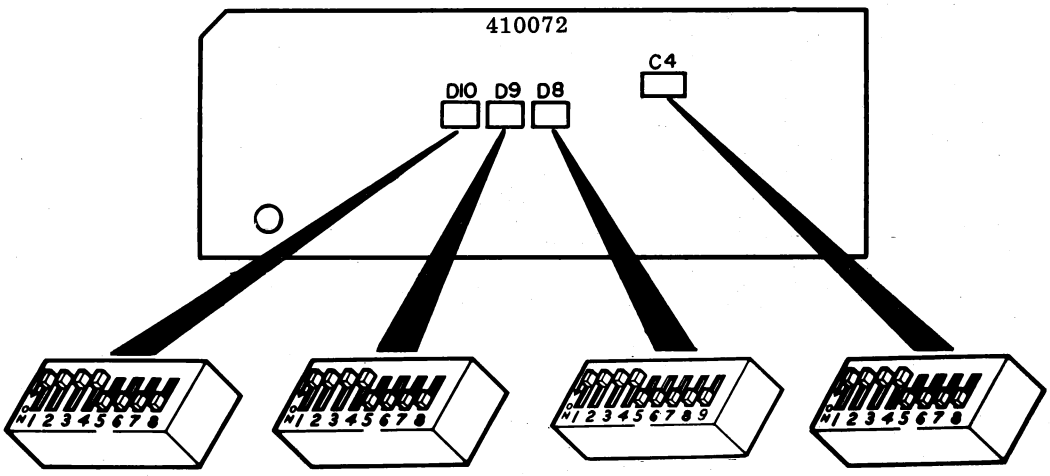
		C1							
59.	Speed Selection	1	2	3	4	5	6	7	8
a.	75 Baud	●	O	O	O	O	O	O	O
b.	150 Baud	O	●	O	O	O	O	O	O
c.	300 Baud	O	O	O	O	O	O	O	●
d.	600 Baud	O	O	●	O	O	O	O	O
e.	1200 Baud	O	O	O	O	O	●	O	O
f.	2400 Baud	O	O	O	●	O	O	O	O
g.	4800 Baud	O	O	O	O	●	O	O	O
h.	9600 Baud	O	O	O	O	O	O	●	O ¶

Note: This option has no affect on Integrated Controller Applications.

		E5							
60.	Auxiliary Alarm	1	2	3	4	5	6	7	8
a.	Enable	—	O	—	—	—	—	—	—
b.	Disable	—	●	—	—	—	—	—	— ¶

Note: Choose 60.b. for use with Integrated Controller.
● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
O Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

410072 (40P202 Type Printer, may also be 40P201 Type Printer)



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

Note: Choose Option 17.a. for use with Integrated Controller.

17. PRINTER RIGHT MARGIN AND FORM WIDTH																											
Last Character Printed Column Number		D8 1	2	3	4	5	6	7	8	9	D9 1	2	3	4	5	6	7	8	D10 1	2	3	4	5	6	7	8	
e.	132	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		●	○	–	○	○	–	–	–	¶
f(x)	121 109 97 85 73	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		●	●	–	●	●	–	–	–	
	122 110 98 86 74	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		○	●	–	●	●	–	–	–	
	123 111 99 87 75	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		●	○	–	●	●	–	–	–	
	124 112 100 88 76	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		●	●	–	○	●	–	–	–	
	125 113 101 89 77	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		○	●	–	○	●	–	–	–	
	126 114 102 90 78	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		●	○	–	○	●	–	–	–	
	127 115 103 91 79	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		●	●	–	●	○	–	–	–	
	128 116 104 92 80	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		○	●	–	●	○	–	–	–	
	129 117 105 93 81	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		●	○	–	●	○	–	–	–	
	130 118 106 94 82	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		●	●	–	○	○	–	–	–	
	131 119 107 95 83	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		○	●	–	○	○	–	–	–	
	120 108 96 84	–	–	–	–	–	–	●	●	–	–	–	–	–	–	●	●		●	○	–	○	○	–	–	–	

x indicates desired column number.
To obtain column number:
121 thru 132 — program as shown.
109 thru 120 — program as shown, then operate D9 position 7 to OFF.
97 thru 108 — program as shown, then operate D9 position 8 to OFF.
85 thru 96 — program as shown, then operate D8 position 7 to OFF.
73 thru 84 — program as shown, then operate D8 position 8 to OFF.

Note: Choose Option 17.c. for use with Integrated Controller (the diode representing the last printing column must also be removed on the diode matrix card (Option 122)).

18.	Printer Paper Feed Out	E1 1	2	3	4	5	6	7	8	E2 1	2	3	4	5	6	7	8	
a.	No Paper Feed Out	●	–	–	–	–	–	–	–	–	–	–	–	–	○	–	–	
b.	Paper Feed Out on DSR or RM Loss — 16 Lines or Form Feed	○	–	–	–	–	–	–	–	–	–	–	–	–	○	–	–	
c.	Paper Feed Out on DSR Loss or RM Loss or ETX — 16 Lines or Form Feed	○	–	–	–	–	–	–	–	–	–	–	–	–	●	–	–	¶

Note: Choose Options 18.a. or b. for use with Integrated Controller.

19.	Printer Errored Character Symbol/Character Sent	D8 1	2	3	4	5	6	7	8	9	D10 1	2	3	4	5	6	7	8	
a.	Printed on Even Parity Error	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	●	–	¶
b.	Printed on Odd Parity Error	–	–	–	–	–	–	–	–	–	–	–	–	–	–	●	○	–	
c.	Not Printed on Parity Error	–	–	–	–	–	–	–	–	–	–	–	–	–	–	●	●	–	
d.	Printers With 96 Character Set	●	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
e.	Printers With 64 Character Set	○	●	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	¶
f.	Printers With Extended ASCII Character Set	○	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
g.	Printers With Longest Character Set Having Less than 64 Characters.	○	○	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

Note: Choose Option 19.c. for use with Integrated Controller. Choose 19.d., e., f. or g. to match type carrier.

● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
○ Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

		D9							
21.	Foldover on Up-Low Printer	1	2	3	4	5	6	7	8
a.	Lower Case and Upper Case Prints	O	—	—	—	—	—	—	— ¶
b.	Lower Case Prints as Upper Case	●	—	—	—	—	—	—	—

		D9							
22.	Foldover on Monocase Printer	1	2	3	4	5	6	7	8
a.	Lower Case Prints as Error Symbol	O	—	—	—	—	—	—	—
b.	Lower Case Prints as Upper Case	●	—	—	—	—	—	—	— ¶

		D10							
23.	Extended ASCII on Printer (Extended ASCII)	1	2	3	4	5	6	7	8
a.	Prints Extended ASCII Character (No Parity Check)	—	—	—	—	—	O	O	—
b.	Does Not Print Extended ASCII (See Option 19a., b. or c.)	—	—	—	—	—	as in 19		— ¶

Note: Option 23.a. overrides Options 19.a., b., c.

		D9							
48.	Incomplete Form Suppresses Paper Alarm	1	2	3	4	5	6	7	8
a.	No (Paper Out Not Gated With Form Out)	—	—	—	●	—	—	—	—
b.	Yes (Paper Out Gated With Form Out)	—	—	—	O	—	—	—	— ¶

		D10							
54.	Printing of Escape Sequences Suppressed	1	2	3	4	5	6	7	8
a.	Character After ESC Printed as Received	—	—	—	—	—	—	—	O ¶
b.	Printing of Character After ESC Suppressed	—	—	—	—	—	—	—	●

Note: Choose Option 54.a. for use with Integrated Controller. See Option 132.

		D10							
55.	SI/SO Detection	1	2	3	4	5	6	7	8
a.	SI/SO Detection Not Used	–	–	O	–	–	–	–	– ¶
b.	SI/SO Detection Enables Printing Additional Characters	–	–	●	–	–	–	–	–

Note: Choose Option 55.a. for use with Integrated Controller. See Option 128.

		D8								
57.	SSI/OEM	1	2	3	4	5	6	7	8	9
a.	SSI	–	–	–	–	–	–	–	–	● ¶
b.	OEM	–	–	–	–	–	–	–	–	O

Note: Choose Option 57.a. for use with Integrated Controller.

		D9							
58.	Idle Line Motor Control	1	2	3	4	5	6	7	8
a.	Disabled — Motor Held On Indefinitely During Idle Line	–	–	–	–	–	O	–	– ¶
b.	Enabled — Motor Turned OFF After 40 Second Idle Line	–	–	–	–	–	●	–	–

Note: Choose Option 58.a. for use with Integrated Controller. See Option 148.

● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
O Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

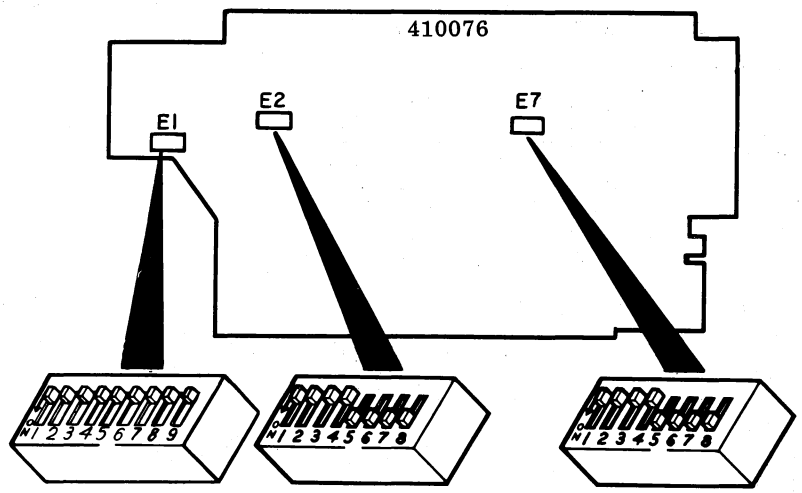
59.	Speed Selection	C4 1	2	3	4	5	6	7	8
a.	75 Baud	●	○	○	○	○	○	○	○
b.	150 Baud	○	●	○	○	○	○	○	○
c.	300 Baud	○	○	○	●	○	○	○	○
d.	600 Baud	○	○	●	○	○	○	○	○
e.	1200 Baud	○	○	○	○	○	○	●	○
f.	2400 Baud	○	○	○	○	●	○	○	○
g.	4800 Baud	○	○	○	○	○	●	○	○
h.	9600 Baud	○	○	○	○	○	○	○	● ¶

Note: This option has no affect on Integrated Controller Applications.

60.	Auxiliary Alarm	D9 1	2	3	4	5	6	7	8
a.	Enable	—	—	-	-	○	—	—	—
b.	Disable	—	—	—	—	●	—	—	— ¶

Note: Choose 60.b. for use with Integrated Controller.

410076 (40P102 Type Printer, may also be 40P153 Type)



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

Note: Choose Option 17.a. for use with Integrated Controller.
● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
○ Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

17. Printer Right Margin and Form Width		E1									E2								E7								
Last Character Printed Column Number		1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
c.	80	–	–	–	–	○	●	–	●	○	–	–	–	–	–	–	●	●	●	●	–	–	–	–	–	–	–	¶
d.(x)	73 61 49 37 25	–	–	–	–	●	●	–	●	●	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	
	74 62 50 38 26	–	–	–	–	●	●	–	●	○	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	
	75 63 51 39 27	–	–	–	–	●	●	–	○	●	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	
	76 64 52 40 28	–	–	–	–	●	○	–	●	●	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	
	77 65 53 41 29	–	–	–	–	●	○	–	●	○	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	
	78 66 54 42 30	–	–	–	–	●	○	–	○	●	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	
	79 67 55 43 31	–	–	–	–	○	●	–	●	●	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	
	68 56 44 32	–	–	–	–	○	●	–	●	○	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	
	69 57 45 33	–	–	–	–	○	●	–	○	●	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	
	70 58 46 34	–	–	–	–	○	○	–	●	●	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	
	71 59 47 35	–	–	–	–	○	○	–	●	○	–	–	–	–	–	–	●	●	●	●	–	–	–	–	–	–	–	
	72 60 48 36	–	–	–	–	○	○	–	○	●	–	–	–	–	–	–	●	●	●	●	–	–	–	–	–	–	–	

x indicates desired column number.
To obtain column number:
73 thru 80 — program as shown.
61 thru 72 — program as shown, then operate E7 position 2 to OFF.
49 thru 60 — program as shown, then operate E7 position 1 to OFF.
37 thru 48 — program as shown, then operate E2 position 7 to OFF.
25 thru 36 — program as shown, then operate E2 position 8 to OFF.

Note: Choose Option 17.e. for use with Integrated Controller (the diode representing the last printing column must also be removed on the diode matrix card (Option 122)).

18. Printer Paper Feed Out		D9								
		1	2	3	4	5	6	7	8	
a.	No Paper Feed Out	—	—	●	—	—	—	—	—	
b.	Paper Feed Out on DSR or RM Loss — 16 Lines or Form Feed	—	○	○	—	—	—	—	—	
c.	Paper Feed Out on DSR Loss or RM Loss or ETX — 16 Lines or Form Feed	—	●	○	—	—	—	—	—	¶

Note: Choose Option 18.a. or b. for use with Integrated Controller.

19. Printer Errored Character Symbol/Character Set		E2								E1								
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	9	
a.	Printed on Even Parity Error	–	–	–	–	–	–	–	–	–	–	●	○	–	–	–	–	–	¶
b.	Printed on Odd Parity Error	–	–	–	–	–	–	–	–	–	–	○	●	–	–	–	–	–	
c.	Not Printed on Parity Error	–	–	–	–	–	–	–	–	–	–	●	●	–	–	–	–	–	
d.	Printers With 96 Character Set	–	–	–	○	●	–	–	–	–	–	–	–	–	–	–	–	–	
e.	Printers With 64 Character Set	–	–	–	●	○	–	–	–	–	–	–	–	–	–	–	–	–	¶
f.	Printers With Extended ASCII Character Set	–	–	–	○	○	–	–	–	–	–	–	–	–	–	–	–	–	
g.	Printers With Longest Character Set Having Less than 64 Characters	–	–	–	○	○	–	–	–	–	–	–	–	–	–	–	–	–	

Note: Choose Option 19.c. for use with Integrated Controller. Choose 19.d., e., f. or g. to match type carrier.

21. Foldover on Up-Low Printer		E2								
		1	2	3	4	5	6	7	8	
a.	Lower Case and Upper Case Prints	—	—	○	—	—	—	—	—	¶
b.	Lower Case Prints as Upper Case	—	—	●	—	—	—	—	—	

22. Fold over on Monocase Printer		E2								
		1	2	3	4	5	6	7	8	
a.	Lower Case Prints as Error Symbol	—	—	○	—	—	—	—	—	
b.	Lower Case Prints as Upper Case	—	—	●	—	—	—	—	—	¶

23. Extended ASCII on Printer (Extended ASCII)		E1									
		1	2	3	4	5	6	7	8	9	
a.	Prints Extended ASCII Character (No Parity Check)	—	—	○	○	—	—	—	—	—	
b.	Does Not Print Extended ASCII (See Option 19a., b. or c.)	—	—	as in 19		—	—	—	—	—	¶

Note: Option 23.a. overrides Options 19.a., b., c.

● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
○ Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

		E2							
48.	Incomplete Form Suppresses Paper Alarm	1	2	3	4	5	6	7	8
a.	No (Paper Out Not Gated With Form Out)	—	●	—	—	—	—	—	—
b.	Yes (Paper Out Gated With Form Out)	—	O	—	—	—	—	—	—

¶

Note: Select 48.a. for Friction Feed Printer 40P102 Type.

		E1								
54.	Printing of Escape Sequences Suppressed	1	2	3	4	5	6	7	8	9
a.	Character After ESC Printed as Received	—	O	—	—	—	—	—	—	—
b.	Printing of Character After ESC Suppressed	—	●	—	—	—	—	—	—	—

¶

Note: Choose Option 54.a. for use with Integrated Controller. See Option 132.

		E1								
55.	SI/SO Detection	1	2	3	4	5	6	7	8	9
a.	SI/SO Detection Not Used	—	—	—	—	—	—	O	—	—
b.	SI/SO Detection Enables Printing Additional Characters	—	—	—	—	—	—	●	—	—

¶

Note: Choose Option 55.a. for use with Integrated Controller. See Option 128.

		E2							
56.	Friction Feed/Tractor Feed Printer	1	2	3	4	5	6	7	8
a.	Friction Feed Printer — Motor Held On After Paper Alarm	O	—	—	—	—	—	—	—
b.	Tractor Feed Printer — Motor Turned OFF After Paper Alarm	●	—	—	—	—	—	—	—

¶

Note: Choose a. for 40P102 Type Printers; choose b. when used to upgrade 40P153 Type Printers.

		E7							
57.	SSI/OEM	1	2	3	4	5	6	7	8
a.	SSI	—	—	—	—	—	—	●	—
b.	OEM	—	—	—	—	—	—	O	—

¶

Note: Choose Option 57.a. for use with Integrated Controller.

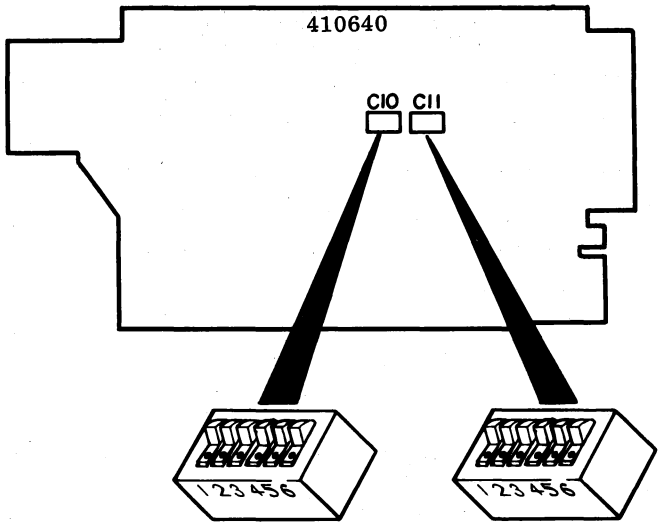
		E7							
58.	Idle Line Motor Control	1	2	3	4	5	6	7	8
a.	Disabled — Motor Held On Indefinitely During Idle Line	—	—	—	—	—	—	—	O
b.	Enabled — Motor Turned OFF After 40 Second Idle Line	—	—	—	—	—	—	—	●

¶

Note: Choose Option 58.a. for use with Integrated Controller. See Option 148.

● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
O Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

410640 (40P153 Type Printer)



17.	Printer Margin and Form Width	C - 11						
		1	2	3	4	5	6	
c	Last Character on 80th Column	O	●	●	O	—	—	¶
d79	Last Character on 79th Column	O	●	●	●	—	—	
d78	Last Character on 78th Column	●	O	O	●	—	—	
d77	Last Character on 77th Column	●	O	●	O	—	—	
d76	Last Character on 76th Column	●	O	●	●	—	—	
d75	Last Character on 75th Column	●	●	O	●	—	—	
d74	Last Character on 74th Column	●	●	●	O	—	—	
d73	Last Character on 73rd Column	●	●	●	●	—	—	

Note 1: Options 17.a. and 17.b. are not present on circuit card 410640.
Note 2: Choose Option 17.c. for use with Integrated Controller (the diode representing the last printing column must also be removed on the diode matrix card (Option 122)).

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

Note: Choose Option 18.a. or b. for use with Integrated Controller.

19.	Printer Errored Character Symbol	C - 10						
		1	2	3	4	5	6	
a	Printed on Even Parity Error	—	—	—	●	O	—	¶
b	Printed on Odd Parity Error	—	—	—	O	●	—	
c	Not Printed on Parity Error	—	—	—	●	●	—	
d	Printers With 96 Character Set	—	●	O	—	—	—	
e	Printers With 64 Character Set	—	O	●	—	—	—	
f	Printers With Extended ASCII Character Set	—	O	O	—	—	—	

Note: Choose Option 19.c. for use with Integrated Controller. Choose 19.d., e.. or f. to match type carrier.
● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
O Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

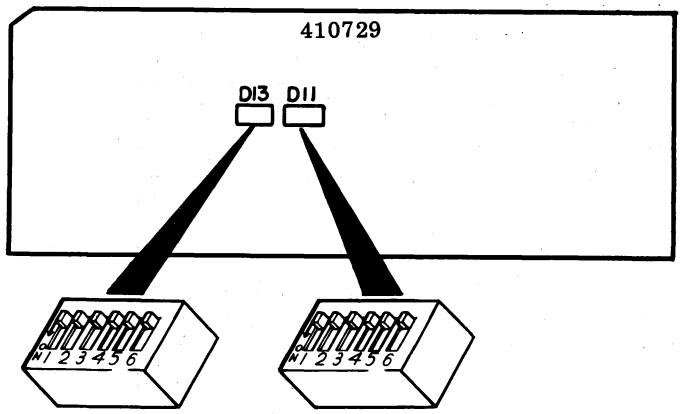
21.	Foldover on Up-Low Printer	C - 11						
		1	2	3	4	5	6	
a	Lower Case and Upper Case Print	—	—	—	—	O	—	¶
b	Lower Case Prints as Upper Case	—	—	—	—	●	—	

22.	Foldover on Monocase Printer	C - 11						
		1	2	3	4	5	6	
a	Lower Case Prints as Error Symbol	—	—	—	—	O	—	
b	Lower Case Prints as Upper Case	—	—	—	—	●	—	¶

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

Note: Option 23.a. overrides Options 19.a., b., c.

410729 (40P201 Type Printer)



17.	Printer Margin and Form Width	D - 13						
		1	2	3	4	5	6	
e	Last Character on Column 132	—	—	●	O	O	O	¶
f131	Last Character on Column 131	—	—	O	●	O	O	
f130	Last Character on Column 130	—	—	●	●	O	O	
f129	Last Character on Column 129	—	—	●	O	●	O	
f128	Last Character on Column 128	—	—	O	●	●	O	
f127	Last Character on Column 127	—	—	●	●	●	O	
f126	Last Character on Column 126	—	—	●	O	O	●	
f125	Last Character on Column 125	—	—	O	●	O	●	
f124	Last Character on Column 124	—	—	●	●	O	●	
f123	Last Character on Column 123	—	—	●	O	●	●	
f122	Last Character on Column 122	—	—	O	●	●	●	
f121	Last Character on Column 121	—	—	●	●	●	●	

Note 1: Options 17.a. and 17.b. are not present on circuit card 410729.
Note 2: Choose Option 17.e. for use with Integrated Controller (the diode representing the last printing column must also be removed on the diode matrix card (Option 122)).
● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
O Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

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

Note: Choose Option 18.a. or b. for use with Integrated Controller.

19.	Printer Errored Character Symbol	D-11						
		1	2	3	4	5	6	
a	Printed on Even Parity Error	—	○	●	—	—	—	¶
b	Printed on Odd Parity Error	—	●	○	—	—	—	
c	Not Printed on Parity Error	—	●	●	—	—	—	
d	Printers With 96 Character Set	—	—	—	—	○	●	
e	Printers With 64 Character Set	—	—	—	—	●	○	
f	Printers With Extended ASCII Character Set	—	—	—	—	○	○	
g	Printers With Longest Character Set Having Less Than 64 Characters	—	—	—	—	●	○	

Note: Choose Option 19.c. for use with Integrated Controller.

21.	Foldover on Up-Low Printer	D-13						
		1	2	3	4	5	6	
a	Lower Case and Upper Case Print	—	○	—	—	—	—	¶
b	Lower Case Prints as Upper Case	—	●	—	—	—	—	

22.	Foldover on Monocase Printer	D-13						
		1	2	3	4	5	6	
a	Lower Case Prints as Error Symbol	—	○	—	—	—	—	
b.	Lower Case Prints as Upper Case	—	●	—	—	—	—	¶

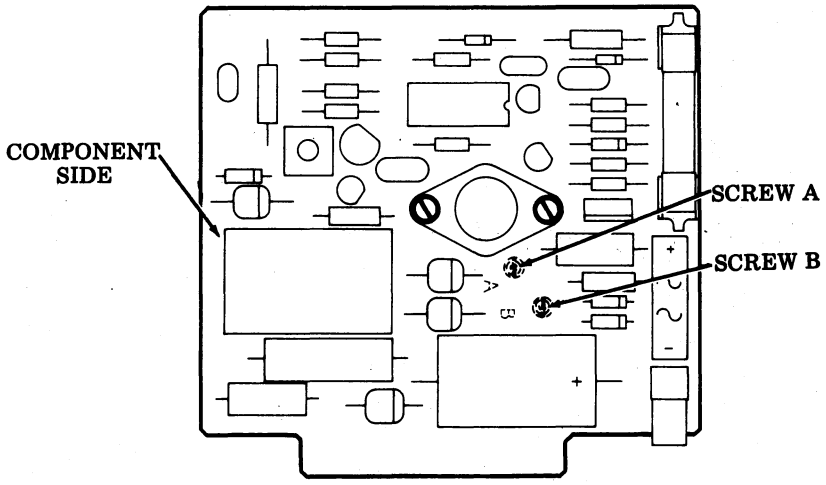
23.	Extended ASCII on Printer	D-11						
		1	2	3	4	5	6	
a.	Prints Extended ASCII Characters (No Parity Check)	—	○	○	—	—	—	
b	Does Not Print Extended Characters (See Option 19.a, b, or c.)	—	as in 19		—	—	—	¶

Note: Option 23.a. overrides Options 19.a., b., c.

48.	Incomplete Form Suppresses Paper Alarm	D-11						
		1	2	3	4	5	6	
a	No (Paper Out Not Gated With Form Out)	●	—	—	—	—	—	
b	Yes (Paper Out Gated With Form Out)	○	—	—	—	—	—	¶

● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
○ Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

410151 Printer Regulator Grounding Circuit Card
(Present in 40P154, 40P201, 40P202 and 40P253 Types only)



61. Regulator Grounding (Circuit Ground to Frame Ground)		SCREW A		SCREW B		
		COMP	NON-COMP	COMP	NON-COMP	
a.	SSI	IN	—	—	IN	
b.	OEM (At Printer)	IN	—	IN	—	¶
c.	OEM (External to Printer)	—	IN	IN	—	

COMP — Component Side
NONCOMP — Noncomponent Side

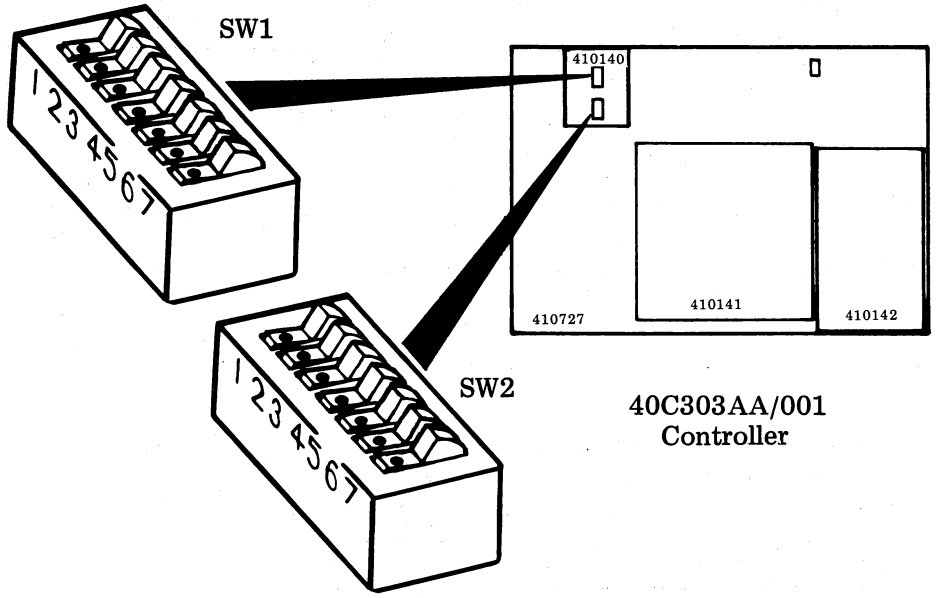
Note: Choose Option 61.c. for use with Integrated Controller.

¶ Factory installed.

ACTIVATING CONTROLLER OPTIONS

40C303AA/001 Controller

410140 Variable Bit Timer Card



101.	Operating Speed	SW1							SW2						
		1	2	3	4	5	6	7	1	2	3	4	5	6	7
a.	110 Baud	●	●	O	●	●	O	●	●	O	●	●	●	●	O
b.	150 Baud	O	O	O	●	●	●	O	●	●	●	●	●	●	O
c.	300 Baud	O	O	●	O	O	●	●	O	●	●	●	●	●	O
d.	600 Baud	●	O	O	O	●	O	O	O	●	●	●	●	●	O
e.	1050 Baud	O	●	O	O	●	●	O	O	●	●	●	●	●	O
f.	1200 Baud	O	●	O	O	O	●	O	O	●	●	●	O	●	O ¶
g.	1800 Baud	O	O	O	O	●	●	O	●	●	O	O	●	●	O
h.	2100 Baud	O	O	O	O	O	●	O	●	●	●	●	●	●	O
i.	2400 Baud	O	O	O	O	O	O	O	●	●	●	O	●	●	O
j.	3000 Baud	O	O	O	O	●	O	●	O	●	●	●	●	●	O
k.	3600 Baud	O	O	O	O	O	●	●	O	O	●	●	●	●	O
l.	4800 Baud	O	O	O	O	O	O	●	O	O	●	●	O	●	O

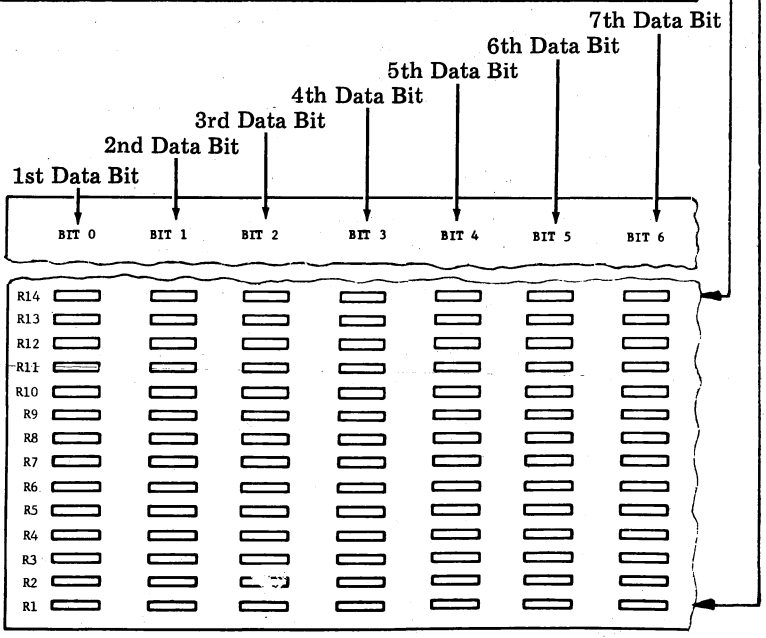
● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
O Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
¶ Factory installed.

410141 Diode Matrix Circuit Card

Note: Options 102 through 118 apply to multipoint private line operation only (Option 141.b. must be selected); for switched network operation skip to Option 119 (Option 141.a. must be selected).

102.	Variable Characters for Multipoint Private Line Operation			Diode Assignment Row	Diode Assignment Column
a.	CDC No. 1, Character 1			R1	b0-b6
b.	CDC No. 1, Character 2			R2	b0-b6
c.	CDC No. 2, Character 1	Note 2		R3	b0-b6
d.	CDC No. 2, Character 2			R4	b0-b6
e.	CDC No. 3, Character 1	Note 3		R5	b0-b6
f.	CDC No. 3, Character 2			R6	b0-b6
g.	Answer-Back 1, Character 1 (R1)		1 or 2 Char. Check Option 117., a. or b.	R7	b0-b6
h.	Answer-Back 1, Character 2 (R2)			R8	b0-b6
i.	Answer-Back 2 (R3)			R9	b0-b6
j.	Answer-Back 3 (R4)			R10	b0-b6
k.	Interrupt			R11	b0-b6
l.	Start of Heading/Start of Text 1			R12	b0-b6
m.	Start of Heading/Start of Text 2			R13	b0-b6
n.	End of Transmission (in addition to EOT or DLE EOT)			R14	b0-b6

REMINDER: LEAVE DIODES IN PLACE (▭) FOR SPACING OR 0 BITS. CUT AND REMOVE (⊱) DIODES FOR MARKING OR 1 BITS.



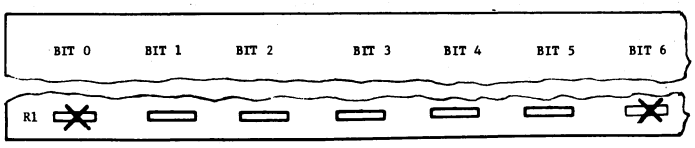
Note 1: A character must be chosen for each position. Code only the first seven levels of ASCII (no parity bit). If Option 124.b. is chosen, remove R14 b7 diode. This allows a diagnostic readout of the variable characters programmed for Option 102. By sending an ENQ to a selected station, the terminal will generate a reply of the characters programmed for Options 102.a. through n.

Note 2: If CDC No. 2 not used, code same as CDC No. 1.

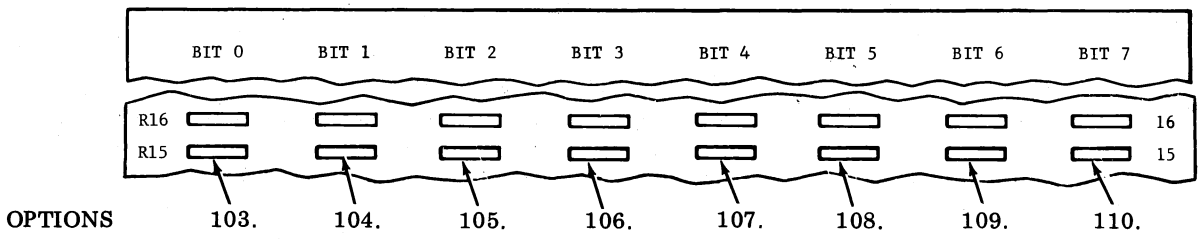
Note 3: If CDC No. 3 not used, code same as CDC No. 2.

Note 4: Program Rows R1 through R14 to match the Options Specified on Station Feature and Option Record of the W-Plan. Program rows R1 through R14 in accordance with Tables A, B, or C.

Example: Option 102.a., CDC No. 1 Character 1, R1 shown coded per ASCII for Character A.



▭ Diode left in.
⊱ Diode cut and removed.



103.	Number of Characters in CDC No. 1	R15, b0	
a.	One Character CDC	▭	¶
b.	Two Character CDC	⊠	

Note 1: A one character CDC No. 1 should have options 102.a. and b. coded the same.
Note 2: If DELETE is used after a CDC, it is not counted in the number of characters selected in this and the following two options (103 through 105); instead DELETE is enabled by Options 106 through 108.

104.	Number of Characters in CDC No. 2	R15, b1	
a.	One Character CDC	▭	¶
b.	Two Character CDC	⊠	

Note: A one character CDC No. 2 should have Options 102.c. and d. coded the same.

105.	Number of Characters in CDC No. 3	R15, b2	
a.	One Character CDC	▭	¶
b.	Two Character CDC	⊠	

Note: A one character CDC No. 3 should have Options 102.e. and f. coded the same.

106.	DELETE Must Follow CDC No. 1	R15, b3	
a.	No	▭	¶
b.	Yes	⊠	

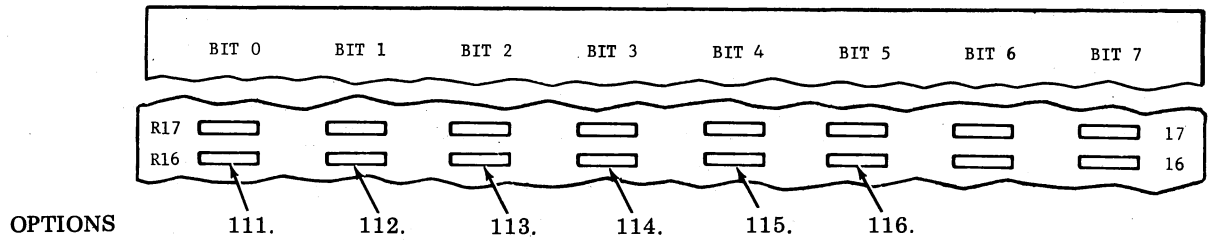
107.	DELETE Must Follow CDC No. 2	R15, b4	
a.	No	▭	¶
b.	Yes	⊠	

108.	DELETE Must Follow CDC No. 3	R15, b5	
a.	No	▭	¶
b.	Yes	⊠	

109.	Answer-Back Generated for CDC No. 2	R15, b6	
a.	Answer-Back to CDC No. 2	▭	¶
b.	No Answer-Back to CDC No. 2	⊠	

110.	Answer-Back Generated for CDC No. 3	R15, b7	
a.	Answer-Back to CDC No. 3	▭	¶
b.	No Answer-Back to CDC No. 3	⊠	

▭ Diode left in.
⊠ Diode cut and removed.
¶ Factory installed.



111.	Printer-Controlled Answer-Back	R16, b0	
a.	All Answer-Backs Delayed by Time of Option 118. (118.a. — No Delay, 118.b. — Approximately 180 Milliseconds)	▭	¶
b.	Answer-Back 1 Delayed Until Printer Ready to Accept a Character or by Time of Option 118. (Whichever is Longer), Answer-Backs 2 and 3 Delayed by Time of Option 118. (If Printer is Not Ready to Accept a Character After 2 Seconds, Answer-Back 2 is Sent.)	▭	

Note: Option 111.b. requires that Option 140.a. be selected.

112.	Form Feed On Deselect	R16, b1	
a.	No Form Feed on Deselect	▭	¶
b.	FF Character Sent to Printer on Deselect	▭	

113.	Loss of Ability to Receive Causes Deselect	R16, b2	
a.	Loss of Ability to Receive Does Not Cause Deselect	▭	¶
b.	Loss of Ability to Receive Causes Deselect	▭	

Note: Option 113.b. requires that Option 146.b. be selected.

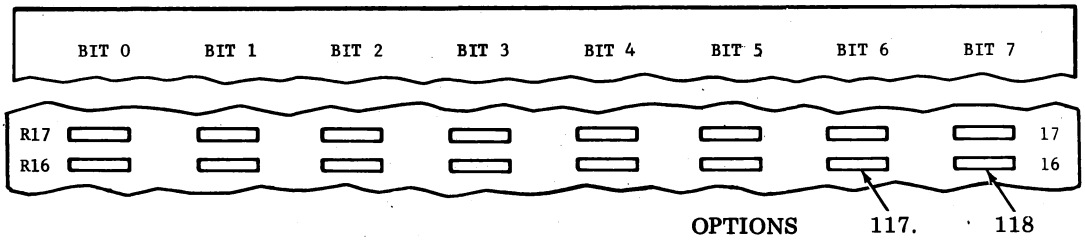
114.	Line Break on Loss of DTR	R16, b3	
a.	Loss of DTR Does Not Cause Line Break	▭	¶
b.	Loss of DTR Does Cause Line Break	▭	

Note: If Option 113.b. has been selected then Option 114.b. is not functional.

115.	Line Break on Vertical Parity Error	R16, b4	
a.	Vertical Parity Error Does Not Cause Line Break	▭	¶
b.	Vertical Parity Error Does Cause Line Break	▭	

116.	Copy Before STX (As Selected by Options 102.l. and m.)	R16, b5	
a.	Copy After STX	▭	¶
b.	Copy After Receiving Valid CDC if Ready to Receive (Before STX)	▭	

▭ Diode left in.
▭ Diode cut and removed.
¶ Factory installed.



117.	Number of Characters in Answer-Backs	R16, b6	
a.	Answer-Backs Consist of 1 Character	▭	¶
b.	Answer-Backs Consist of 2 Characters	⊠	

Note: Option 117 related to answer-back characters for multipoint private line operation. See Option 102.g., h., i., or j.

118.	Answer-Back Response Delay	R16, b7	
a.	No Delay After Clear to Send (CB) ON From Data Set	▭	¶
b.	Fixed Delay of Approximately 180 Milliseconds	⊠	

▭ Diode left in.
⊠ Diode cut and removed.
¶ Factory installed.

119. Variable Characters for Switched Network Answer-Back		Diode Assignment		
			Column	
		Row	ASCII	Baudot
a.	Answer-Back Character 1	R1	b0-b6	b0-b4
b.	Answer-Back Character 2	R2	b0-b6	b0-b4
c.	Answer-Back Character 3	R3	b0-b6	b0-b4
d.	Answer-Back Character 4	R4	b0-b6	b0-b4
e.	Answer-Back Character 5	R5	b0-b6	b0-b4
f.	Answer-Back Character 6	R6	b0-b6	b0-b4
g.	Answer-Back Character 7	R7	b0-b6	b0-b4
h.	Answer-Back Character 8	R8	b0-b6	b0-b4
i.	Answer-Back Character 9	R9	b0-b6	b0-b4
j.	Answer-Back Character 10	R10	b0-b6	b0-b4
k.	Answer-Back Character 11	R11	b0-b6	b0-b4
l.	Answer-Back Character 12	R12	b0-b6	b0-b4
m.	Answer-Back Character 13	R13	b0-b6	b0-b4
n.	Answer-Back Character 14	R14	b0-b6	b0-b4
o.	Answer-Back Character 15	R15	b0-b6	b0-b4
p.	Answer-Back Character 16	R16	b0-b6	b0-b4

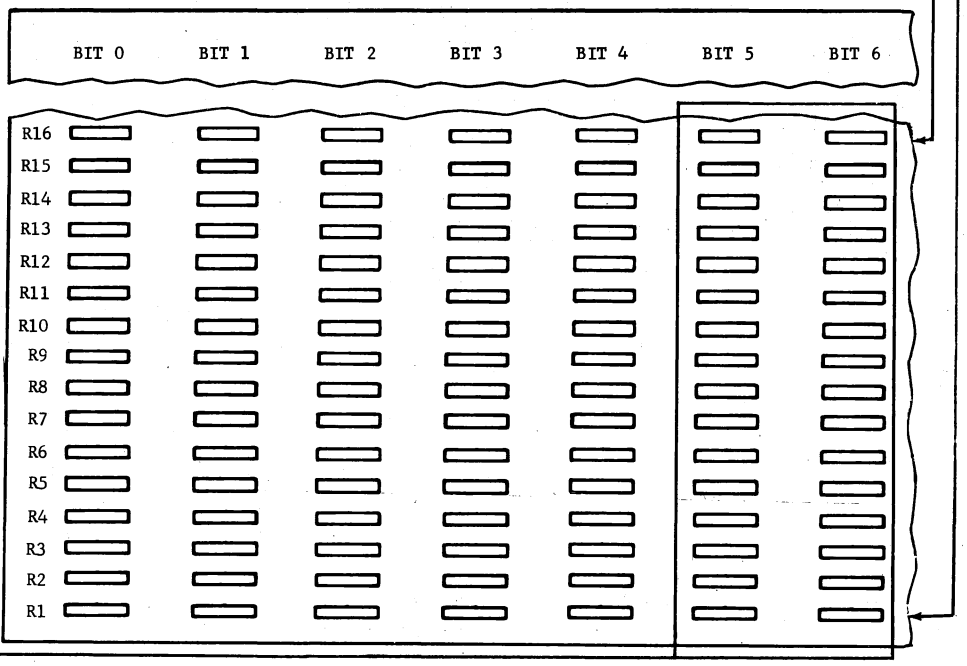
REMINDER: LEAVE DIODES IN PLACE (▭) FOR SPACING OR 0 BITS; CUT AND REMOVE (⊘) DIODES FOR MARKING OR 1 BITS.

Note 1: Option 119. (a. through p., as desired) requires that Options 120. (a. through p., corresponding) and 141.a. be selected.

Note 2: Option 119. is coded for ASCII characters except when Option 127.b. is selected for Baudot applications.

Note 3: The 1st data bit is coded by diode b0, the 2nd data bit by diode b1 etc.

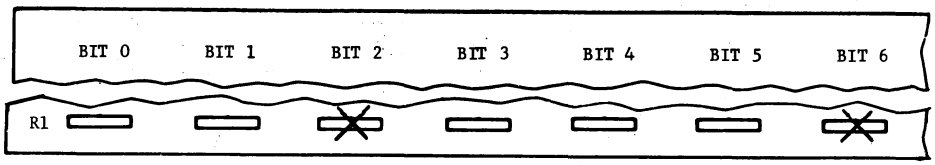
Leave b5 and b6 diodes intact when optioning for Baudot (5-level) codes.



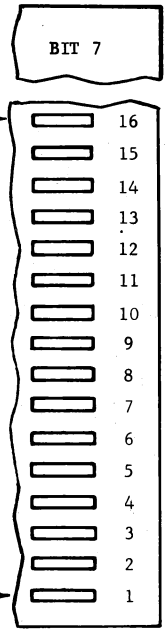
Select rows R1 through R16 to match the options specified on the Station Feature and Option Record on the W-Plan or the service order. When Station Feature and Option Record is not available and the required answer-back characters are known, select rows R1 through R16 in accordance with the ASCII or Baudot code charts (Tables A and C respectively).

Example: Option 119.a. Answer-Back Character 1, R1 shown coded per ASCII code chart for character D.

▭ Diode left in.
⊘ Diode cut and removed.



120.	Number of Characters in Switched Network Answer-Back	Cut and Remove Diode
a.	1	R1, b7
b.	2	R2, b7
c.	3	R3, b7
d.	4	R4, b7
e.	5	R5, b7
f.	6	R6, b7
g.	7	R7, b7
h.	8	R8, b7
i.	9	R9, b7
j.	10	R10, b7
k.	11	R11, b7
l.	12	R12, b7
m.	13	R13, b7
n.	14	R14, b7
o.	15	R15, b7
p.	16	R16, b7



Cut and remove only the b7 diode in the row corresponding to the LAST answer-back character selected in Option 119.

For example, if Option 119.a. through h. has been selected, select only Option 120.h.

Note 1: Option 120. is applicable to both ASCII and Baudot optioning of Option 119.

Note 2: A selection must be made if either Option 124.b. or 142.b. is selected.

Note 3: When optioning for multi-point private line operation or 40/3 systems, cut and remove (⊄) diode R14, b7 for diagnostic testing in conjunction with Option 124.b.

121.	Left Margin Setting	R17, b1 to R18, b7
a.	Left Margin at Column 1 (See Note)	▭ ¶
b.	Left Margin at Column 2 or Beyond	⊄ Per Table D

Note: Diode R17, b0 is NOT cut for Option 121.a. or b.

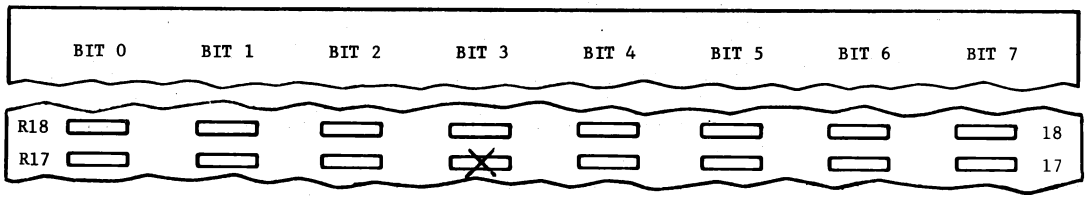
TABLE D

LEFT MARGIN DIODE LOCATION

COLUMN	DIODE	COLUMN	DIODE
2	R17, b1	10	R18,b1
3	R17, b2	11	R18,b2
4	R17, b3	12	R18,b3
5	R17, b4	13	R18,b4
6	R17, b5	14	R18,b5
7	R17, b6	15	R18,b6
8	R17, b7	16	R18,b7
9	R18, b0		

Cut and remove (⊄) only the diode corresponding to the desired left margin position (printer column) as listed in Table D. If the printer left margin is required to be at column 17 or beyond, refer to the table for Option 122. for the diode location. See Note, above, for exception.

Option 121.a. requires selection of Option 131.a.; Option 121.b. requires selection of 131.b. and the removal of the diode representing the last printing column.
Example: Option 121.b. shown selected for printer left margin at printer column 4.



▭ Diode left in.
⊄ Diode cut and removed.
¶ Factory installed.

122.	Horizontal Tabulation Settings	R17, b1 to R33, b3	
a.	No Horizontal Tab Settings (See Notes)	▭ (ALL)	¶
b.	Preselected Horizontal Tab Settings in Any Column 2 Through 80 (80-Column Printer) or 2 Through 132 (132-Column Printer) (See Notes)	⊱ Per Table E	

Note 1: Diode R17, b0 is NOT cut for Option 122.a. or b.

Note 2: When selecting horizontal tab settings for a particular customer application, remember that the printer spaces, prints and tabs at 10 character/columns per inch.

Note 3: Horizontal tab settings to the left of, or the same as the left margin setting of Option 121.b. should, obviously, be avoided. Cutting and removing a lower numbered diode than chosen for the left margin setting will result in a new left margin at a lower numbered column and the left margin established by Option 121.b. will become a horizontal tab stop. Similiarly, horizontal tab selections beyond 80 columns must be avoided for 80-column printers.

Note 4: Option 122.b. requires that 80-column printers be optioned with Option 17.c. (right margin at 80th column) and 132-column printers be optioned with Option 17.e. (right margin at 132nd column).

Note 5: Cut and remove (⊱) the diode(s) corresponding to the desired horizontal tab setting(s), as shown in Table E. Also, cut and remove the diode representing the last printing column of the printer.

Note 6: Option 122.b. only selects the tab settings, Option 129.b. is required to enable the horizontal tab feature.

▭ Diode left in.
⊱ Diode cut and removed.
¶ Factory installed.

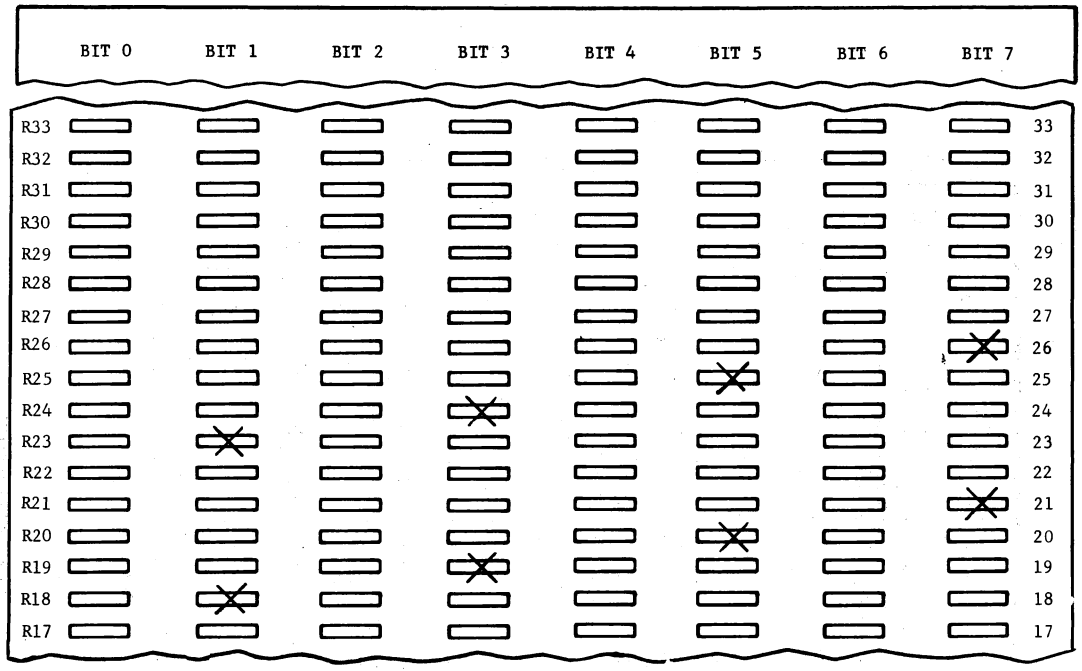
Diodes R33, b4 through b7 have no present application with the 40C303AA/001 controller and should be left in place.

TABLE E

HORIZONTAL TAB SETTING DIODE

TAB COLUMN	TAB DIODE	TAB COLUMN	TAB DIODE	TAB COLUMN	TAB DIODE	TAB COLUMN	TAB DIODE
2	R17, b1	35	R21, b2	68	R25, b3	101	R29,b4
3	R17, b2	36	R21, b3	69	R25, b4	102	R29,b5
4	R17, b3	37	R21, b4	70	R25, b5	103	R29,b6
5	R17, b4	38	R21, b5	71	R25, b6	104	R29,b7
6	R17, b5	39	R21, b6	72	R25, b7	105	R30,b0
7	R17, b6	40	R21, b7	73	R26, b0	106	R30,b1
8	R17, b7	41	R22, b0	74	R26, b1	107	R30,b2
9	R18, b0	42	R22, b1	75	R26, b2	108	R30,b3
10	R18, b1	43	R22, b2	76	R26, b3	109	R30,b4
11	R18, b2	44	R22, b3	77	R26, b4	110	R30,b5
12	R18, b3	45	R22, b4	78	R26, b5	111	R30,b6
13	R18, b4	46	R22, b5	79	R26, b6	112	R30,b7
14	R18, b5	47	R22, b6	80	R26, b7	113	R31,b0
15	R18, b6	48	R22, b7	81	R27, b0	114	R31,b1
16	R18, b7	49	R23, b0	82	R27, b1	115	R31,b2
17	R19, b0	50	R23, b1	83	R27, b2	116	R31,b3
18	R19, b1	51	R23, b2	84	R27, b3	117	R31,b4
19	R19, b2	52	R23, b3	85	R27, b4	118	R31,b5
20	R19, b3	53	R23, b4	86	R27, b5	119	R31,b6
21	R19, b4	54	R23, b5	87	R27, b6	120	R31,b7
22	R19, b5	55	R23, b6	88	R27, b7	121	R32,b0
23	R19, b6	56	R23, b7	89	R28, b0	122	R32,b1
24	R19, b7	57	R24, b0	90	R28, b1	123	R32,b2
25	R20, b0	58	R24, b1	91	R28, b2	124	R32,b3
26	R20, b1	59	R24, b2	92	R28, b3	125	R32,b4
27	R20, b2	60	R24, b3	93	R28, b4	126	R32,b5
28	R20, b3	61	R24, b4	94	R28, b5	127	R32,b6
29	R20, b4	62	R24, b5	95	R28, b6	128	R32,b7
30	R20, b5	63	R24, b6	96	R28, b7	129	R33,b0
31	R20, b6	64	R24, b7	97	R29, b0	130	R33,b1
32	R20, b7	65	R25, b0	98	R29, b1	131	R33,b2
33	R21, b0	66	R25, b1	99	R29, b2	132	R33,b3
34	R21, b1	67	R25, b2	100	R29, b3		

Example: Option 122.b. shown optioned for 80-column printer with tab stops at printer columns 10, 20, 30, 40, 50, 60, 70 and with diode representing 80th column (R26, b7) removed.



123.	Vertical Tabulation Settings	R34, b1 to R42, b7	
a.	No Vertical Tab Settings (See Notes)	▭ (ALL)	¶
b.	Preprogrammed Vertical Tab Settings for Any Line 2 Through 72 Lines (See Notes)	⊟ Table F	

Note 1: Diode R34, b0 is NOT cut for Option 123.a. or b.

Note 2: When selecting vertical tab settings for a particular customer application, remember that the printer line feeds and tabs vertically at 6 or 8 lines per inch. Also, Option 20.b. (double line feed) will, if selected, cause the vertical tab settings to be double the length shown in Table F.

Note 3: Option 123.b. only selects the tab settings, Option 130.b. is required to enable the vertical tab feature.

▭ Diode left in.
⊟ Diode cut and removed.
¶ Factory installed.

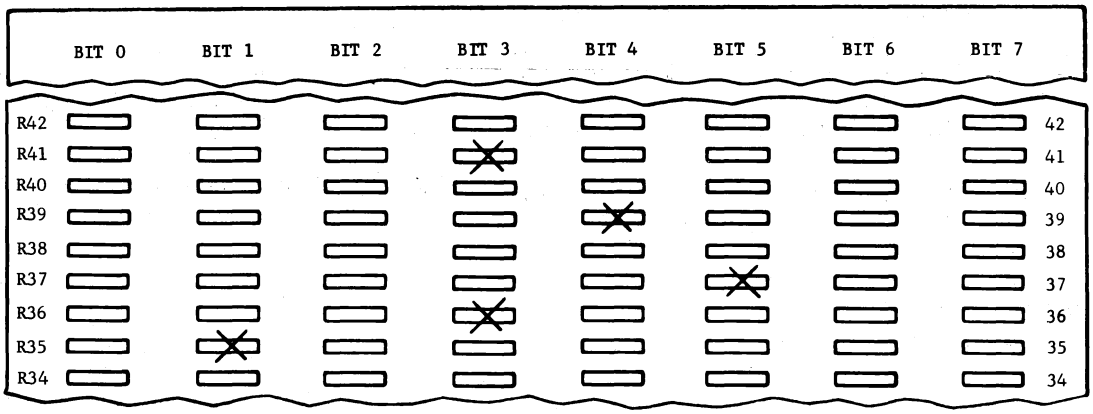
Vertical tab settings that would tab the printer into the next form should obviously be avoided. For example, an 11-inch form would not have a tab setting optioned beyond line 65 of the form.

TABLE F

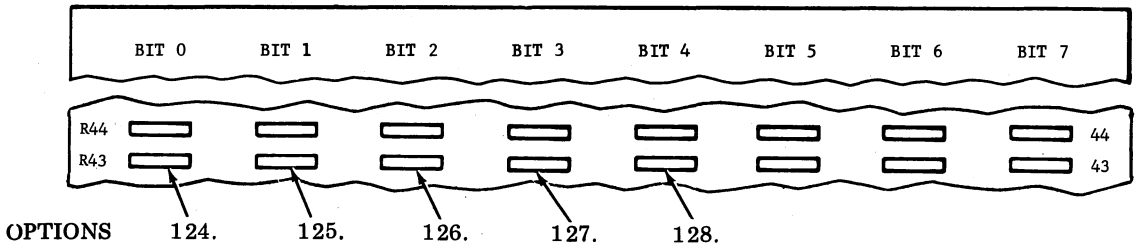
VERTICAL TAB SETTING DIODE

TAB LINE	TAB DIODE	TAB LINE	TAB DIODE	TAB LINE	TAB DIODE	TAB LINE	TAB DIODE
2	R34, b1	20	R36, b3	38	R38, b5	56	R40,b7
3	R34, b2	21	R36, b4	39	R38, b6	57	R41,b0
4	R34, b3	22	R36, b5	40	R38, b7	58	R41,b1
5	R34, b4	23	R36, b6	41	R39, b0	59	R41,b2
6	R34, b5	24	R36, b7	42	R39, b1	60	R41,b3
7	R34, b6	25	R37, b0	43	R39, b2	61	R41,b4
8	R34, b7	26	R37, b1	44	R39, b3	62	R41,b5
9	R35, b0	27	R37, b2	45	R39, b4	63	R41,b6
10	R35, b1	28	R37, b3	46	R39, b5	64	R41,b7
11	R35, b2	29	R37, b4	47	R39, b6	65	R42,b0
12	R35, b3	30	R37, b5	48	R39, b7	66	R42,b1
13	R35, b4	31	R37, b6	49	R40, b0	67	R42,b2
14	R35, b5	32	R37, b7	50	R40, b1	68	R42,b3
15	R35, b6	33	R38, b0	51	R40, b2	69	R42,b4
16	R35, b7	34	R38, b1	52	R40, b3	70	R42,b5
17	R36, b0	35	R38, b2	53	R40, b4	71	R42,b6
18	R36, b1	36	R38, b3	54	R40, b5	72	R42,b7
19	R36, b2	37	R38, b4	55	R40, b6		

Example: Option 123.b. shown selected to accommodate an 11-inch form with vertical tab stop settings at 10, 20, 30, 45, and 60 lines.



Diode left in.
Diode cut and removed.



124.	Receipt of ENQ Starts Switched Network Answer-Back/ Multipoint Private Line Diagnostic Test	R43, b0	
a.	ENQ Does Not Start Answer-Back/Test	▭	¶
b.	ENQ Starts Answer-Back/Test	▭	

Note 1: When Option 124.b. is selected along with Options 141.b. and 151.b. also cut and remove diode at R14, b7 as mentioned in Note 3 for Option 120.
Note 2: Select Option 124.a. for KD-ROP applications.

125.	Type of Printer Used	R43, b1	
a.	80-Column Printer	▭	¶
b.	132-Column Printer	▭	

Note: Option 125 does not apply to 40C303AA/001 controllers that have EPROMs 404602, 404603, 404604 and 404605 of Issue 3 or later. See Option 191. EPROMs are located on 410142 circuit card.

126.	Pulse or Tone Generated on Receipt of BEL	R43, b2	
a.	Received BEL Character Does Not Cause Pulse or Tone	▭	¶
b.	Received BEL Character (ASCII or — if Option 127.b., 138.b., or 139.b. is selected — Baudot or Teletypesetter Code No. 1 or No. 2) Causes 1-Second Pulse or Tone Generation	▭	

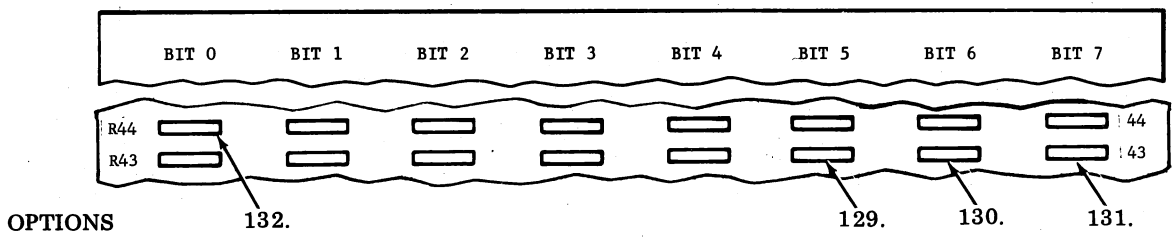
Note: Pulse generation on paper out or internal alarm is always provided (not an option). Option 126. controls only the additional feature of pulse generation on receipt of the BEL character. Tone generation in all cases requires addition of a 403418 audible alarm modification kit (for ROP Terminals) or other arrangements. Consecutive BEL characters must be received more than one second apart for more than one tone to be heard.

127.	Baudot Code Converted to ASCII	R43, b3	
a.	Baudot Code Not Accepted	▭	¶
b.	Baudot Code Converted to ASCII for Printer	▭	

Note: If an answer-back is desired, it must be coded in Baudot as detailed in Option 119. The answer-back will then be sent on-line in Baudot code but printed by the ROP (if Option 145.b. is selected) in ASCII.

128.	Shift In/Shift Out (SI/SO) Detection	R43, b4	
a.	SI/SO Detection Not Used	▭	¶
b.	SI/SO Detection Enables Printing Additional Characters	▭	

▭ Diode left in.
▭ Diode cut and removed.
¶ Factory installed.



129.	Horizontal Tabulation	R43, b5
a.	HT Character Ignored by ROP	▭ ¶
b.	HT Character Causes Horizontal Tab as Selected in Option 122. or Set On-Line	▭/

Note: Option 129.b. requires that Option 17.c. or e. be activated. Individual tab stops are set on-line upon receipt of ESC 1 (one tab per each received ESC 1). ESC 2 clears all tabs at the point and to the right of the point entered, up to the end of line. On-line tab selection overrides the fixed optioning of Option 122.b. A disconnect, or deselect (delayed up to one minute), clears all on-line tab stops and restores any preselected tab stops.

130.	Vertical Tabulation	R43, b6
a.	VT Character Causes Line Feed	▭ ¶
b.	VT Character Causes Vertical Tab as Selected in Option 123. or Set On-Line	▭/

Note: Individual tab stops are set on-line upon receipt of ESC 5 (one tab per each received ESC 5). ESC 6 clears all tabs at the point and below the point entered, up to the end of the tab stops. On-line tab selection overrides the fixed optioning of Option 123.b. A disconnect, or deselect (delayed up to one minute) clears all on-line tab stops and restores any preselected tab stops.

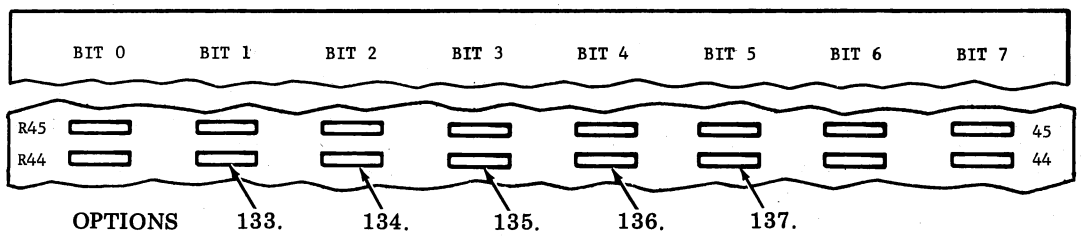
131.	Left Margin	R43, b7
a.	Left Margin Begins at Column 1 Regardless of Selection of Options 121. and 122.	▭ ¶
b.	Left Margin Begins as Selected in Option 121.	▭/

Note: Option 131.b. requires that Options 17.c. or e. and 121.b. be activated. The diode representing the last printing column must also be removed.

132.	Printing of Escape Sequences Suppressed	R44, b0
a.	Character After ESC Printed as Received	▭ ¶
b.	Printing of Character After ESC Suppressed	▭/

Note: With Option 132.b. activated, the character after ESC will be suppressed only if ESC is preceded by a non-ESC character. For example, if ESC ESC X is received, X will be printed.

▭ Diode left in.
▭/ Diode cut and removed.
¶ Factory installed.



133.	DLE EOT/EOT Disconnect	R44, b1	
a.	DLE EOT Sequence Causes Disconnect or Deselect (No Disconnect or Deselect on EOT Alone)	▭	¶
b.	EOT Causes Disconnect or Deselect	⊘	

Note: Either of the above in conjunction with Option 141.a. causes a disconnect provided Option 140.a. is activated. Either of the above in conjunction with Option 141.b. causes a deselect.

134.	On-Line Printer Control	R44, b2	
a.	DC2 and DC4 Ignored by ROP	▭	¶
b.	DC4 Blinds Printer, DC2 Unblinds Printer	⊘	

Note: Choose Option 134.a. for DATASPEED 40/2 KD-ROP applications.

135.	Idle Line Disconnect	R44, b3	
a.	No Disconnect on Idle Line	▭	¶
b.	Disconnect After Idle Line of Approximately 30 Seconds	⊘	

Note: Option 135.b. requires that Option 140.a. be activated. See Option 148. for details of motor turn-off delay action in conjunction with Option 135.

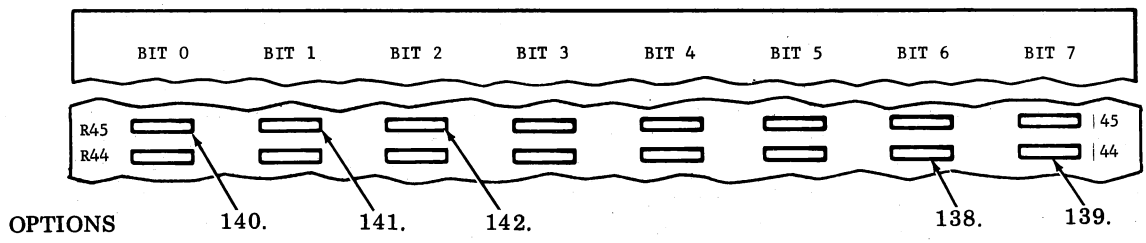
136.	Normal/Inverted SI/SO	R44, b4	
a.	Normal (SI = ASCII)	▭	¶
b.	Inverted (SO = ASCII)	⊘	

Note: Option 136.b. inverts Option 128.b.

137.	Carrier Fail Disconnect	R44, b5	
a.	No Disconnect on Carrier Fail	▭	¶
b.	Disconnect After No Carrier for Approximately 15 Seconds	⊘	

Note: Option 137.b. requires that Options 140.a. and 144.a. be activated.

▭ Diode left in.
⊘ Diode cut and removed.
¶ Factory installed.



138.	Teletypesetter Code No. 1 Converted to ASCII	R44, b6
a.	Teletypesetter Code No. 1 Not Accepted	▭ ¶
b.	Teletypesetter Code No. 1 Converted to ASCII for Printer	▭

Note: Teletypesetter Code No. 1 is defined as Teletypesetter code with the bits transmitted in the sequence 0, 1, 2, 3, 4, 5 (normally used for high speed transmission). Appropriate typecarrier is required.

139.	Teletypesetter Code No. 2 Converted to ASCII	R44, b7
a.	Teletypesetter Code No. 2 Not Accepted	▭ ¶
b.	Teletypesetter Code No. 2 Converted to ASCII for Printer	▭

Note: Teletypesetter Code No. 2 is defined as Teletypesetter code with the bits transmitted in the sequence 1, 2, 3, 4, 5, 0 (normally used for low speed transmission). Appropriate typecarrier is required.

140.	Interface to Transmission Facilities	R45, b0
a.	EIA	▭ ¶
b.	20/60 mA	▭

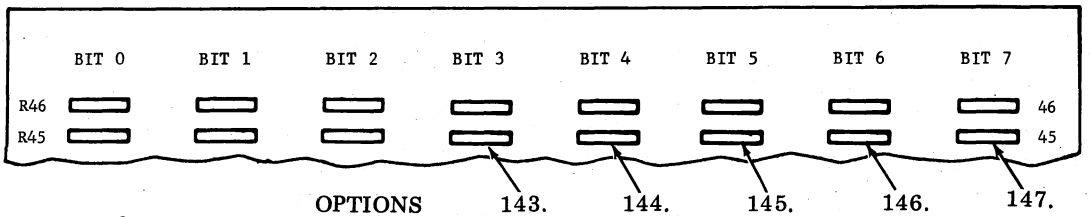
Note 1: Option 140.b. disables Options 111.b., 118.b., 135.b. and 137.b., all of which are related to the EIA "hand shaking" routine between the ROP and the data set.
Note 2: The EIA connector must provide a connection between pins 6 (DSR), 8 (DCD) and 20 (DTR).

141.	Data Link Control Procedures	R45, b1
a.	Switched Network and Point-to-Point Private Line Applications	▭ ¶
b.	Multipoint Private Line Applications	▭

142.	Automatic Answer Starts Switched Network Answer-Back	R45, b2
a.	Auto Answer Does Not Start Answer-Back	▭ ¶
b.	Auto Answer Starts Answer-Back	▭

Note: Option 142.b. requires that Options 140.a. and 151.a. be activated. It is recommended that Options 135.b. or 137.b. also be enabled to prevent possible system delays after aborted calls.

▭ Diode left in.
▭ Diode cut and removed.
¶ Factory installed.



143.	Reverse Channel Used/Not Used	R45, b3	
a.	Reverse Channel Not Used — Minimum 400 Milliseconds of Line Break Generated to Stop Sender	▭	¶
b.	Reverse Channel Send and Receive (SCA and SCF) Used — SCA Turned OFF to Stop Sender, SCF ON Required to Send Answer-Back	⊘	

Note 1: The following conditions will cause the controller to stop the sender by generating a line break (Option 143.a.) or turning SCA off (Option 143.b.):

(1) Buffer 75% full. Sender restarted when buffer down to 25% full.
(2) Manually depressing opcon INTRPT key, when provided.

Note 2: If Option 143.b. is selected and the controller is used in a system that does not provide reverse channel signals then Option 124.b. will not be functional.

Note 3: If EPROMs 404602, 404603, 404604 and 404605 on the 410142 circuit card are Issue 3 or later Option 143.b. must be selected for KD-ROP applications.

144.	Monitor Receive Data on Data Carrier Detect (CF) or Data Set Ready (CC)	R45, b4	
a.	Monitor Receive Data on Recognition of CC and CF ON	▭	¶
b.	Monitor Receive Data on Recognition of CC ON	⊘	

Note: Option 144.b. is required for 113A-type data set; Option 144.a. is required for all other data sets.

145.	Local Copy of Switched Network Answer-Back	R45, b5	
a.	No Local Copy of Answer-Back	▭	¶
b.	Local Copy of Answer-Back	⊘	

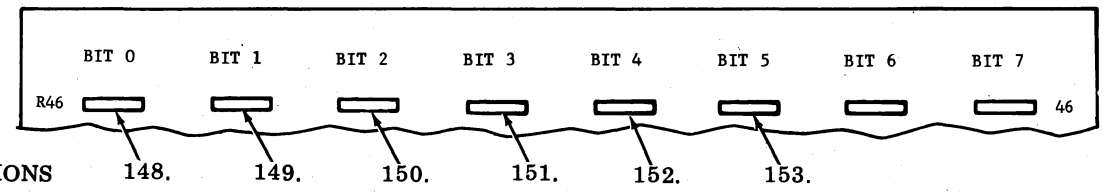
146.	Paper/Terminal Alarm	R45, b6
a.	Paper Alarm Causes AB 2 to be Sent on Next CDC or Data Terminal Ready (CD) OFF on New Call	▭
b.	Paper Alarm Causes Immediate Disconnect	⊘

Note: Option 146.a. is recommended for multipoint private line (Option 141.b.) applications.

147.	Buffer Fully Enabled/Minimum Usage of Buffer	R45, b7	
a.	Buffer Fully Enabled — Data Flow to Printer Controlled by Printer Request-Next-Character Signal to Avoid Data Stacking	▭	¶
b.	Minimum Usage of Buffer — Data Sent to Printer at Approximately Same Rate as Received	⊘	

Note: Option 147.b. is not recommended.

▭ Diode left in.
⊘ Diode cut and removed.
¶ Factory installed.



148.	Motor Turn-Off Delay	R46, b0	
a.	Minimum Delay — Motor Turns Off Approximately 30 Seconds After Detection of Idle State	▭	¶
b.	Maximum Delay — Motor Turn Off Delayed Approximately 2 Minutes After Detection of Idle State	⊘	

Note: After 30 seconds of idle state and with Option 135.b. activated, a disconnect or deselect as stated in Option 133. takes place. At this time, and with Option 148.a. activated the motor is turned off. With Option 148.b. activated, motor turn off is delayed an additional 2 minutes. In switched network applications the motor will turn off immediately upon detection of the disconnect sequence (DLE EOT or EOT) if Option 148.a. is selected; if Option 148.b. is selected the 2 minute delay is enabled.

149.	New Line Substitution on Carriage Return	R46, b1	
a.	Carriage Return Passed to Printer	▭	¶
b.	New Line Substituted for Carriage Return	⊘	

150.	DATA ERROR Lamp Used/Not Used	R46, b2	
a.	DATA ERROR Lamp Lit on Parity Error	▭	¶
b.	DATA ERROR Lamp Not Used to Indicate Parity Errors	⊘	

151.	Switched Network/Private Line Applications	R46, b3	
a.	Switched Network Applications — Data Set Ready (CC) ON Turns on Motor	▭	¶
b.	Private Line Applications — Character in Buffer Turns on Motor	⊘	

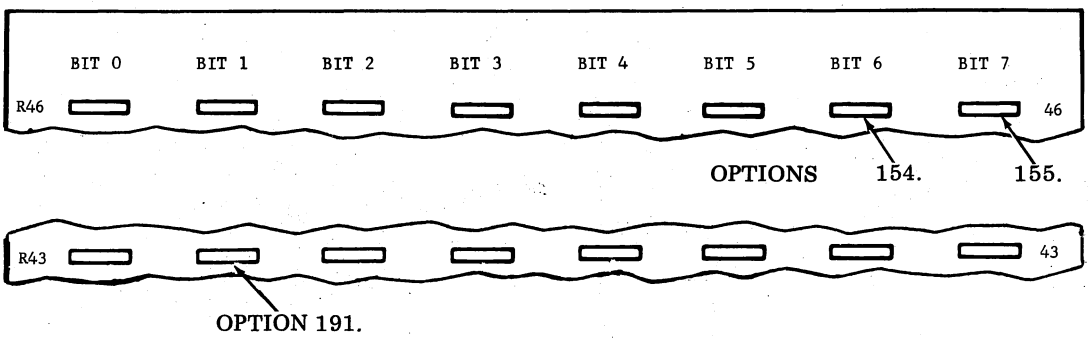
152.	Errored Character/Substitute Character to Printer on Parity Error	R46, b4	
a.	Errored Character Sent to Printer	▭	¶
b.	Substitute Character, (Type carrier symbol) on Monocase without foldover, or (~) on Up-Low Printers, without Foldover, Sent to Printer on Parity Error	⊘	

Note 1: Errored character means the received errored character and NOT the error character symbol as designated by the type font identification symbol.

Note 2: On printers with foldover ^ will be sent rather than the symbol shown for Option 152.b.

Option 153 is not applicable to the 40C303AA/001 controller. The diode at location R46 b5 is not presently used.

▭ Diode left in.
⊘ Diode cut and removed.
¶ Factory installed.



154.	Future Use	R46, b6	
a.	All Present Applications	▭	¶
b.	Possible Future Use	⊘	

155.	Future Use	R46, b7	
a.	All Present Applications	▭	¶
b.	Possible Future Use	⊘	

Note: Do not alter factory installation for Options 154., and 155.

191.	Line Wraparound Operation	R43, b1	
a.	Line Wraparound Performed by Printer	▭	¶
b.	Line Wraparound Performed by Controller	⊘	

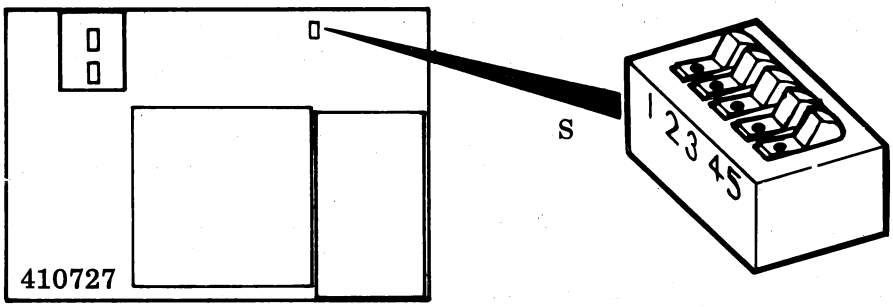
Note 1: Option 191 is present only when EPROMs 404602, 404603, 404604 and 404605 are of Issue 3 or higher. EPROMs are located on circuit card 410142. See Option 125.

Note 2: Use Option 191.a. when the right hand margin is determined by printer Option 17.c., or e. (a NL will be provided by the printer if data continues beyond this point); use Option 191.b. when the right hand margin is determined by Option 122 (a NL will be provided by the controller if data continues beyond this point).

Note 3: A diode must be removed in Option 122 to designate the last printing column.

▭ Diode left in.
⊘ Diode cut and removed.
¶ Factory installed.

410727 Controller Card



156.	Number of Data Bits Per Character (Excluding Parity Bit, if Used)	S 2	S 3	
a.	5 Bits Per Character (Baudot Code)	●	●	
b.	6 Bits Per Character (Teletypesetter Code)	O	●	
c.	7 Bits Per Character (ASCII Code With Parity)	●	O	¶
d.	8 Bits Per Character (ASCII Code Without Parity)	O	O	

157.	Number of Stop Bits Per Character	S 4	
a.	1 Stop Bit	●	¶
b.	2 Stop Bits	O	

158.	Parity Used	S 1	S 5	
a.	Odd Parity Used	●	●	
b.	Even Parity Used	O	●	¶
c.	No Parity Check or Parity Bit Used	—	O	

Note: Option 158.a. and b. require Option 156.c. for ASCII with one parity bit; Option 158.c. requires Option 156.d. for ASCII with 8th bit constantly marking or spacing, or present bit not checked for parity.

● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
O Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

40C303AD Controller

410734 Diode Matrix Card

101. Operating Speed	Diode Row R47								Diode Row R48 (Note 5)					
	b0	b1	b2	b3	b4	b5	b6	b7	b0	b1	b2	b3	b4	b5
a. 110 Baud		X			X						X		X	
b. 150 Baud							X		X	X	X			
c. 300 Baud						X		X	X	X		X		
d. 600 Baud					X		X	X	X		X	X		
e. 1050 Baud							X	X		X	X	X		
f. 1200 Baud				X		X	X	X		X	X	X		
g. 1800 Baud	X		X				X		X	X	X	X		
h. 2100 Baud						X	X		X	X	X	X		
i. 2400 Baud			X		X	X	X		X	X	X	X		
j. 3000 Baud					X			X	X	X	X	X		
k. 3600 Baud		X				X		X	X	X	X	X		
l. 4800 Baud		X		X	X	X		X	X	X	X	X	X	
m. External Clock														

Note 1: Choose Option 101.m. for isochronous operation.

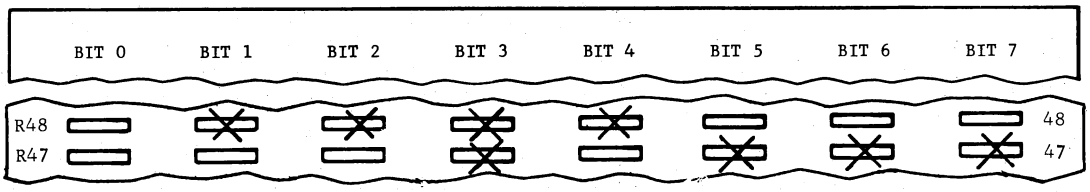
Note 2: Option 101.a. through l. requires Options 189.b., 190.b. and 192.b.; Option 101.m. requires Options 189.a., 190.a. and 192.c.

Note 3: Maximum baud rate with Option 101.m. is 4800.

Note 4: For 75 baud operation remove diodes R47 b6 and R48 b0, b1, b2, and b5.

Note 5: Diode R48 b4 must not be removed when using data set 212A with automatic speed selection (Option 193.a.). Diode R48 b4 must be removed if Auto Speed Selection is not used.

Note 6: Remove diode R48 b5 when using this controller with a 201C-type data set.



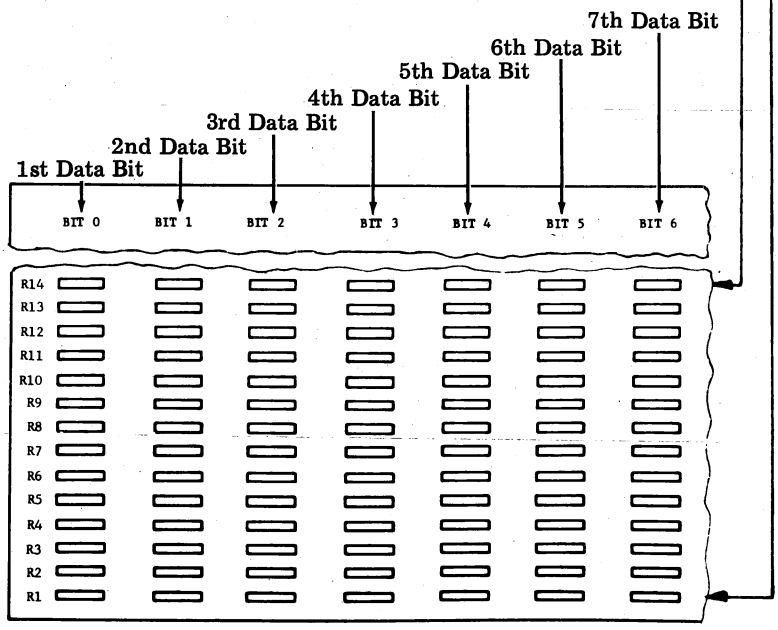
Example: Option 101.f. (1200 baud) shown coded.

Diode left in.
Diode cut and removed.

Note: Options 102 through 118 apply to multipoint private line operation only (Option 141.b. must be selected); for switched network operation skip to Option 119 (Option 141.a. must be selected).

102.	Variable Characters for Multipoint Private Line Operation			Diode Assignment Row	Column
a.	CDC No. 1, Character 1			R1	b0-b6
b.	CDC No. 1, Character 2			R2	b0-b6
c.	CDC No. 2, Character 1	Note 2		R3	b0-b6
d.	CDC No. 2, Character 2			R4	b0-b6
e.	CDC No. 3, Character 1	Note 3		R5	b0-b6
f.	CDC No. 3, Character 2			R6	b0-b6
g.	Answer-Back 1, Character 1 (R1)		1 or 2 Char. Check Option 117., a. or b.	R7	b0-b6
h.	Answer-Back 1, Character 2 (R2)			R8	b0-b6
i.	Answer-Back 2 (R3)			R9	b0-b6
j.	Answer-Back 3 (R4)			R10	b0-b6
k.	Interrupt			R11	b0-b6
l.	Start of Heading/Start of Text 1 Note 5			R12	b0-b6
m.	Start of Heading/Start of Text 2 Note 5			R13	b0-b6
n.	End of Transmission (in addition to EOT or DLE EOT)			R14	b0-b6

REMINDER: LEAVE DIODES IN PLACE (▭) FOR SPACING OR 0 BITS. CUT AND REMOVE (⊱) DIODES FOR MARKING OR 1 BITS.



Note 1: A character must be chosen for each position. Code only the first seven levels of ASCII (no parity bit). If Option 124.b. is chosen, remove R14 b7 diode. This allows a diagnostic readout of the variable characters programmed for Option 102. By sending an ENQ to a selected station, the terminal will generate a reply of the characters programmed for Options 102.a. through n.

Note 2: If CDC No. 2 not used, code same as CDC No. 1.

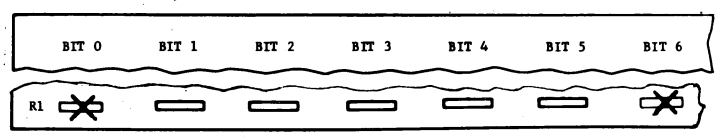
Note 3: If CDC No. 3 not used, code same as CDC No. 2.

Note 4: Option 102.j. (AB 3) should be coded for NUL (all diodes in) when Option 153.a. and e. is selected.

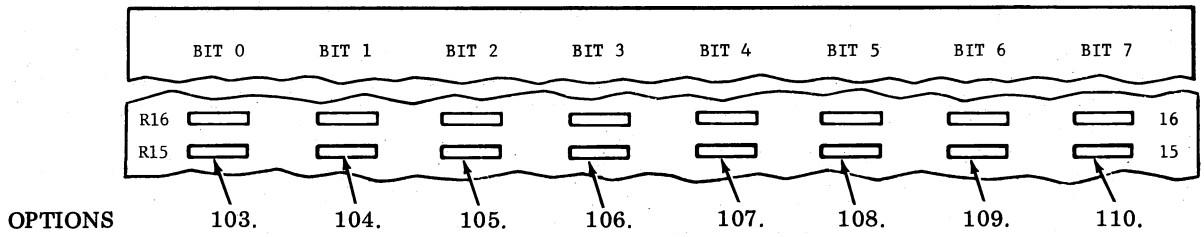
Note 5: Do not use EOT for 102.l. or 102.m.

Note 6: Program Rows R1 through R14 to match the Options Specified on Station Feature and Option Record of the W-Plan. Program rows R1 through R14 in accordance with Tables A, B or C.

Example: Option 102.a., CDC No. 1 Character 1, R1 shown coded per ASCII for Character A.



▭ Diode left in.
⊱ Diode cut and removed.



103.	Number of Characters in CDC No. 1	R15, b0	
a.	One Character CDC	▭	¶
b.	Two Character CDC	▭	

Note 1: A one character CDC No. 1 should have Options 102.a. and b. coded the same.

Note 2: If DELETE is used after a CDC, it is not counted in the number of characters selected in this and the following two options (103 through 105); instead DELETE is enabled by Options 106 through 108.

104.	Number of Characters in CDC No. 2	R15, b1	
a.	One Character CDC	▭	¶
b.	Two Character CDC	▭	

Note: A one character CDC No. 2 should have Options 102.c. and d. coded the same.

105.	Number of Characters in CDC No. 3	R15, b2	
a.	One Character CDC	▭	¶
b.	Two Character CDC	▭	

Note: A one character CDC No. 3 should have Options 102.e. and f. coded the same.

106.	DELETE Must Follow CDC No. 1	R15, b3	
a.	No	▭	¶
b.	Yes	▭	

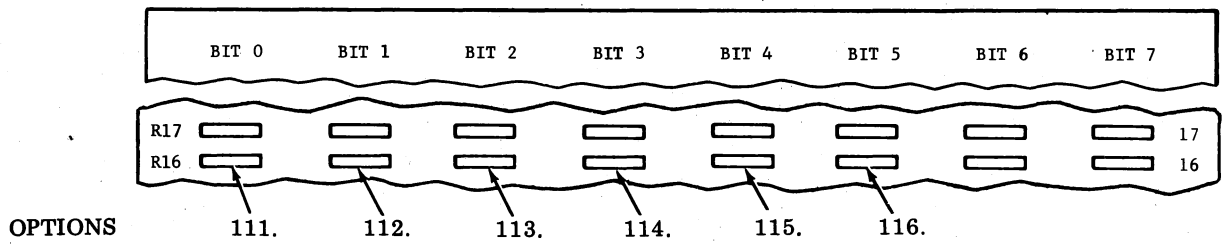
107.	DELETE Must Follow CDC No. 2	R15, b4	
a.	No	▭	¶
b.	Yes	▭	

108.	DELETE Must Follow CDC No. 3	R15, b5	
a.	No	▭	¶
b.	Yes	▭	

109.	Answer-Back Generated for CDC No. 2	R15, b6	
a.	Answer-Back to CDC No. 2	▭	¶
b.	No Answer-Back to CDC No. 2	▭	

110.	Answer-Back Generated for CDC No. 3	R15, b7	
a.	Answer-Back to CDC No. 3	▭	¶
b.	No Answer-Back to CDC No. 3	▭	

▭ Diode left in.
▭ Diode cut and removed.
¶ Factory installed.



111.	Printer-Controlled Answer-Back	R16, b0	
a.	All Answer-Backs Delayed by Time of Option 118. (118.a. — No Delay, 118.b. — Approximately 180 Milliseconds)	▭	¶
b.	Answer-Back 1 Delayed Until Printer Ready to Accept a Character or by Time of Option 118. (Whichever is Longer), Answer-Backs 2 and 3 Delayed by Time of Option 118. (If Printer is Not Ready to Accept a Character After 2 Seconds, Answer-Back 2 is Sent.)	⊠	

Note: Option 111.b. requires that Option 140.a. be selected.

112.	Form Feed On Deselect	R16, b1	
a.	No Form Feed on Deselect	▭	¶
b.	FF Character Sent to Printer on Deselect	⊠	

113.	Loss of Ability to Receive Causes Deselect	R16, b2	
a.	Loss of Ability to Receive Does Not Cause Deselect	▭	¶
b.	Loss of Ability to Receive Causes Deselect	⊠	

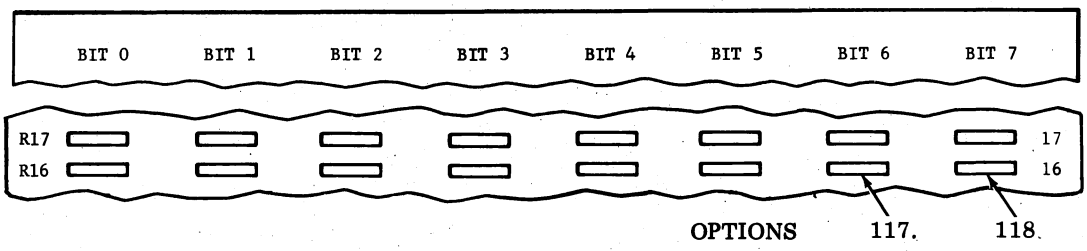
Note: Option 113.b. requires that Option 146.b. be selected.

114.	Line Break on Loss of DTR	R16, b3	
a.	Loss of DTR Does Not Cause Line Break	▭	¶
b.	Loss of DTR Does Cause Line Break	⊠	

115.	Line Break on Vertical Parity Error	R16, b4	
a.	Vertical Parity Error Does Not Cause Line Break	▭	¶
b.	Vertical Parity Error Does Cause Line Break	⊠	

116.	Copy Before STX (As Selected by Options 102.l. and m.)	R16, b5	
a.	Copy After STX	▭	¶
b.	Copy After Receiving Valid CDC if Ready to Receive (Before STX)	⊠	

▭ Diode left in.
⊠ Diode cut and removed.
¶ Factory installed.



117.	Number of Characters in Answer-Backs	R16, b6	
a.	Answer-Backs Consist of 1 Character	▭	¶
b.	Answer-Backs Consist of 2 Characters	⊠	

Note: Option 117 related to answer-back characters for multipoint private line operation. See Option 102.g., h., i., or j.

118.	Answer-Back Response Delay	R16, b7	
a.	No Delay After Clear to Send (CB) ON From Data Set	▭	¶
b.	Fixed Delay of Approximately 180 Milliseconds	⊠	

▭ Diode left in.
⊠ Diode cut and removed.
¶ Factory installed.

119. Variable Characters for Switched Network Answer-Back		Diode Assignment		
			Column	
		Row	ASCII	Baudot
a.	Answer-Back Character 1	R1	b0-b6	b0-b4
b.	Answer-Back Character 2	R2	b0-b6	b0-b4
c.	Answer-Back Character 3	R3	b0-b6	b0-b4
d.	Answer-Back Character 4	R4	b0-b6	b0-b4
e.	Answer-Back Character 5	R5	b0-b6	b0-b4
f.	Answer-Back Character 6	R6	b0-b6	b0-b4
g.	Answer-Back Character 7	R7	b0-b6	b0-b4
h.	Answer-Back Character 8	R8	b0-b6	b0-b4
i.	Answer-Back Character 9	R9	b0-b6	b0-b4
j.	Answer-Back Character 10	R10	b0-b6	b0-b4
k.	Answer-Back Character 11	R11	b0-b6	b0-b4
l.	Answer-Back Character 12	R12	b0-b6	b0-b4
m.	Answer-Back Character 13	R13	b0-b6	b0-b4
n.	Answer-Back Character 14	R14	b0-b6	b0-b4
o.	Answer-Back Character 15	R15	b0-b6	b0-b4
p.	Answer-Back Character 16	R16	b0-b6	b0-b4

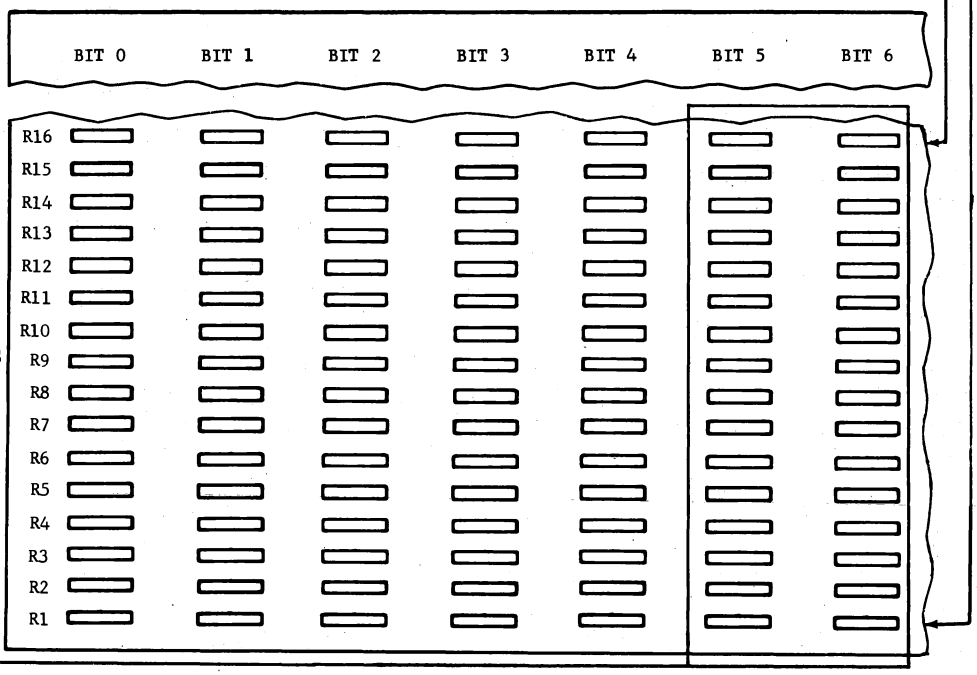
REMINDER: LEAVE DIODES IN PLACE (▭) FOR SPACING OR 0 BITS; CUT AND REMOVE (⊟) DIODES FOR MARKING BITS.

Note 1: Option 119. (a. through p., as desired) requires that Options 120. (a. through p., corresponding) and 141.a. be selected.

Note 2: Option 119. is coded for ASCII characters except when Option 127.b. is selected for Baudot applications.

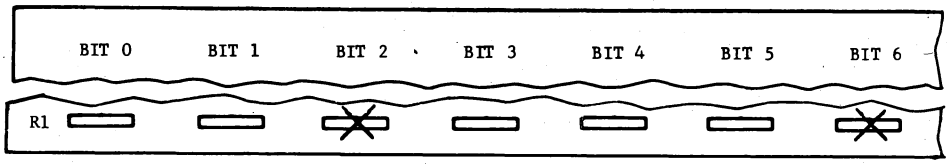
Note 3: The 1st data bit is coded by diode b0, the 2nd data bit by diode b1, etc.

Leave b5 and b6 diodes intact when optioning for Baudot (5-level) codes.



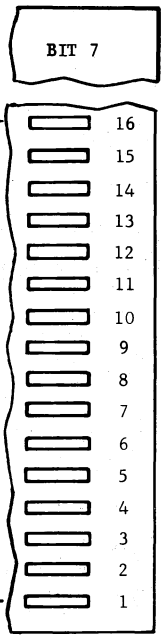
Select rows R1 through R16 to match the options specified on the Station Feature and Option Record on the W-Plan or the service order. When Station Feature and Option Record is not available and the required answer-back characters are known, select rows R1 through R16 in accordance with the ASCII or Baudot code charts (Tables A and C respectively).

Example: Option 119.a. Answer-Back Character 1, R1 shown coded per ASCII code chart for character D.



▭ Diode left in.
⊟ Diode cut and removed.

120.	Number of Characters in Switched Network Answer-Back	Cut and Remove Diode
a.	1	R1, b7
b.	2	R2, b7
c.	3	R3, b7
d.	4	R4, b7
e.	5	R5, b7
f.	6	R6, b7
g.	7	R7, b7
h.	8	R8, b7
i.	9	R9, b7
j.	10	R10, b7
k.	11	R11, b7
l.	12	R12, b7
m.	13	R13, b7
n.	14	R14, b7
o.	15	R15, b7
p.	16	R16, b7



Cut and remove only the b7 diode in the row corresponding to the LAST answer-back character selected in Option 119.

For example, if Option 119.a. through h. has been selected, select only Option 120.h.

Note 1: Option 120 is applicable to both ASCII and Baudot optioning of Option 119.

Note 2: A selection must be made if either Option 124.b. or 142.b. is selected.

Note 3: When optioning for multi-point private line operation or 40/3 systems, cut and remove (⊄) diode R14, b7 for diagnostic testing in conjunction with Option 124.b.

121.	Left Margin Setting	R17, b1 to R18, b7
a.	Left Margin at Column 1 (See Note)	▭ ¶
b.	Left Margin at Column 2 or Beyond	⊄ Per Table G

Note: Diode R17, b0 is NOT cut for Option 121.a. or b.

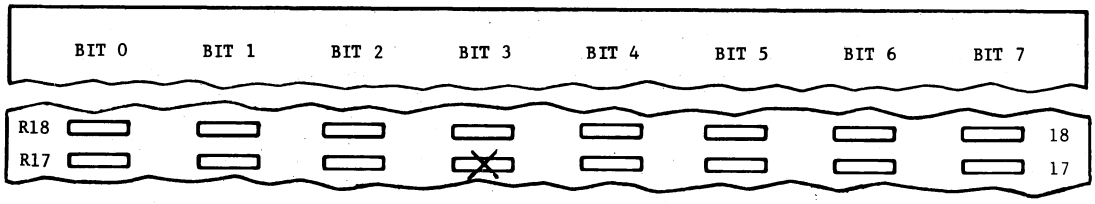
TABLE G

LEFT MARGIN DIODE LOCATION

COLUMN	DIODE	COLUMN	DIODE
2	R17, b1	10	R18, b1
3	R17, b2	11	R18,b2
4	R17, b3	12	R18,b3
5	R17, b4	13	R18,b4
6	R17, b5	14	R18,b5
7	R17, b6	15	R18,b6
8	R17, b7	16	R18,b7
9	R18, b0		

Cut and remove (⊄) only the diode corresponding to the desired left margin position (printer column) as listed in Table G. If the printer left margin is required to be at column 17 or beyond, refer to the table for Option 122 for the diode location. See Note, above, for exception.

Option 121.a. requires selection of Option 131.a; Option 121.b. requires selection of 131.b.
Example: Option 121.b. shown selected for printer left margin at printer column 4.



▭ Diode left in.
⊄ Diode cut and removed.
¶ Factory installed.

122.	Horizontal Tabulation Settings	R17, b1 to R33, b3
a.	No Horizontal Tab Settings (See Notes)	▭ (ALL) ¶
b.	Preselected Horizontal Tab Settings in Any Column 2 through 80 (80-Column Printer) of 2 through 132 (132-Column Printer) (See Notes)	⊱⊰ Per Table H

Note 1: Diode R17, b0 is NOT cut for Option 122.a. or b.

Note 2: When selecting horizontal tab settings for a particular customer application, remember that the printer spaces, prints and tabs at 10 character/columns per inch.

Note 3: Horizontal tab settings to the left of, or the same as the left margin setting of Option 121.b. should, obviously, be avoided. Cutting and removing a lower numbered diode than chosen for the left margin setting will result in a new left margin at a lower numbered column and the left margin established by Option 121.b. will become a horizontal tab stop. Similiarly, horizontal tab selecting beyond 80 columns must be avoided for 80-column printers.

Note 4: Option 122.b. requires that 80-column printers be optioned with Option 17.c. (right margin at 80th column) and 132-column printers be optioned with Option 17.e. (right margin at 132nd column).

Note 5: Cut and remove (⊱⊰) the diode(s) corresponding to the desired horizontal tab setting(s), as shown in Table H. Also, cut and remove the diode representing the last printing column of the printer.

Note 6: Option 122.b. only selects the tab settings, Option 129.b. is required to enable the horizontal tab feature.

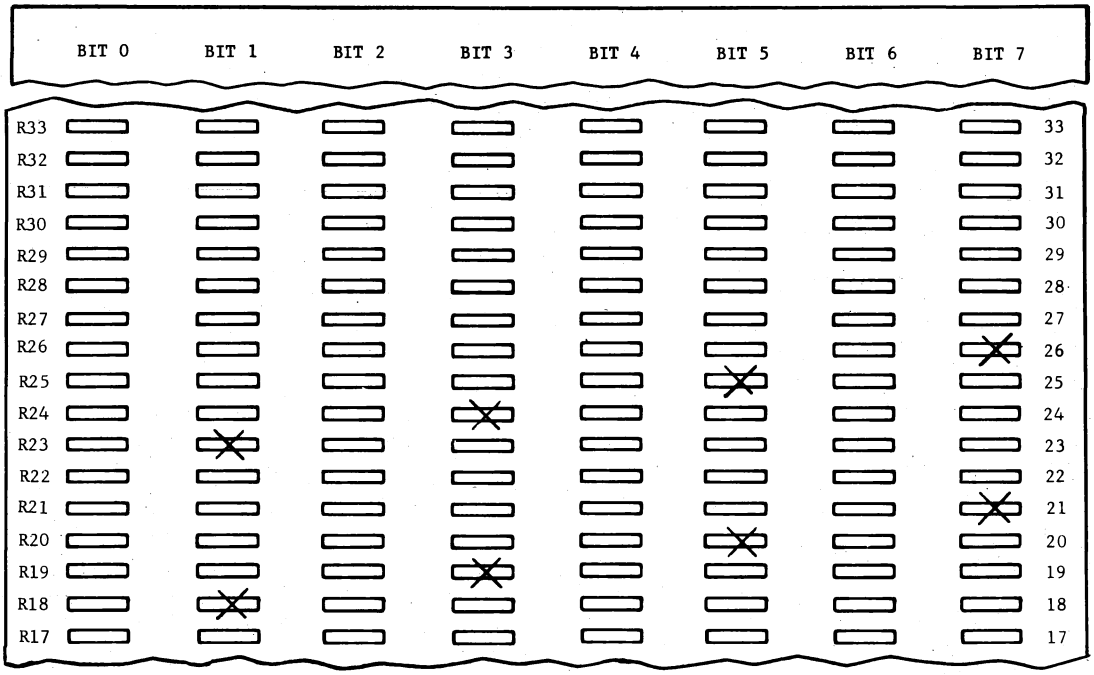
▭ Diode left in.
⊱⊰ Diode cut and removed.
¶ Factory installed.

TABLE H

HORIZONTAL TAB SETTING DIODE

TAB COLUMN	TAB DIODE	TAB COLUMN	TAB DIODE	TAB COLUMN	TAB DIODE	TAB COLUMN	TAB DIODE
2	R17, b1	35	R21, b2	68	R25, b3	101	R29,b4
3	R17, b2	36	R21, b3	69	R25, b4	102	R29,b5
4	R17, b3	37	R21, b4	70	R25, b5	103	R29,b6
5	R17, b4	38	R21, b5	71	R25, b6	104	R29,b7
6	R17, b5	39	R21, b6	72	R25, b7	105	R30,b0
7	R17, b6	40	R21, b7	73	R26, b0	106	R30,b1
8	R17, b7	41	R22, b0	74	R26, b1	107	R30,b2
9	R18, b0	42	R22, b1	75	R26, b2	108	R30,b3
10	R18, b1	43	R22, b2	76	R26, b3	109	R30,b4
11	R18, b2	44	R22, b3	77	R26, b4	110	R30,b5
12	R18, b3	45	R22, b4	78	R26, b5	111	R30,b6
13	R18, b4	46	R22, b5	79	R26, b6	112	R30,b7
14	R18, b5	47	R22, b6	80	R26, b7	113	R31,b0
15	R18, b6	48	R22, b7	81	R27, b0	114	R31,b1
16	R18, b7	49	R23, b0	82	R27, b1	115	R31,b2
17	R19, b0	50	R23, b1	83	R27, b2	116	R31,b3
18	R19, b1	51	R23, b2	84	R27, b3	117	R31,b4
19	R19, b2	52	R23, b3	85	R27, b4	118	R31,b5
20	R19, b3	53	R23, b4	86	R27, b5	119	R31,b6
21	R19, b4	54	R23, b5	87	R27, b6	120	R31,b7
22	R19, b5	55	R23, b6	88	R27, b7	121	R32,b0
23	R19, b6	56	R23, b7	89	R28, b0	122	R32,b1
24	R19, b7	57	R24, b0	90	R28, b1	123	R32,b2
25	R20, b0	58	R24, b1	91	R28, b2	124	R32,b3
26	R20, b1	59	R24, b2	92	R28, b3	125	R32,b4
27	R20, b2	60	R24, b3	93	R28, b4	126	R32,b5
28	R20, b3	61	R24, b4	94	R28, b5	127	R32,b6
29	R20, b4	62	R24, b5	95	R28, b6	128	R32,b7
30	R20, b5	63	R24, b6	96	R28, b7	129	R33,b0
31	R20, b6	64	R24, b7	97	R29, b0	130	R33,b1
32	R20, b7	65	R25, b0	98	R29, b1	131	R33,b2
33	R21, b0	66	R25, b1	99	R29, b2	132	R33,b3
34	R21, b1	67	R25, b2	100	R29, b3		

Example: Option 122.b. shown optioned for 80-column printer with tab stops at printer columns 10, 20, 30, 40, 50, 60, 70 and with diode representing 80th column (R26, b7) removed.



123.	Vertical Tabulation Settings	R34, b1 to R42, b7	
a.	No Vertical Tab Settings (See Notes)	▭ (ALL)	¶
b.	Preprogrammed Vertical Tab Settings for Any Line 2 through 72 Lines (See Notes)	▭ Per Table I	

Note 1: Diode R34, b0 is NOT cut for Option 123.a. or b.

Note 2: When selecting vertical tab settings for a particular customer application, remember that the printer line feeds and tabs vertically at 6 or 8 lines per inch. Also, Option 20.b. (double line feed) will, if selected, cause the vertical tab settings to be double the length shown in Table I.

Note 3: Option 123.b. only selects the tab settings, Option 130.b. is required to enable the vertical tab feature.

▭ Diode left in.
Diode cut and removed.
¶ Factory installed.

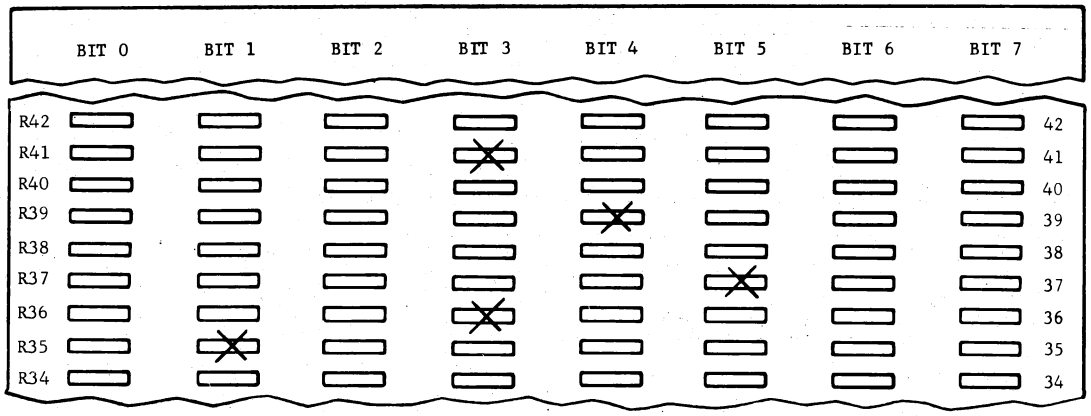
Vertical tab settings that would tab the printer into the next form should obviously be avoided. For example, an 11-inch form would not have a tab setting optioned beyond line 65 of the form.

TABLE I

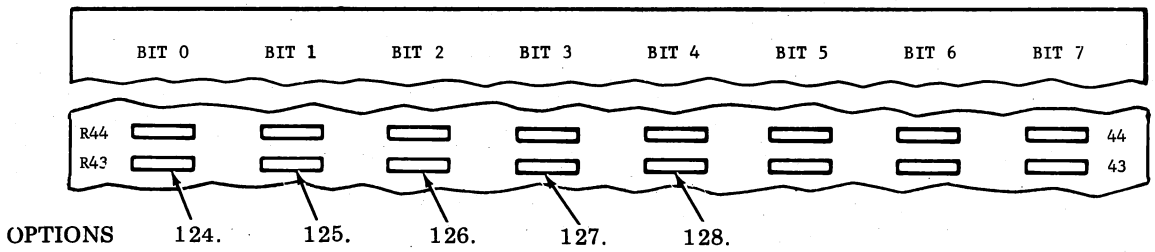
VERTICAL TAB SETTING DIODE

TAB LINE	TAB DIODE	TAB LINE	TAB DIODE	TAB LINE	TAB DIODE	TAB LINE	TAB DIODE
2	R34, b1	20	R36, b3	38	R38, b5	56	R40,b7
3	R34, b2	21	R36, b4	39	R38, b6	57	R41,b0
4	R34, b3	22	R36, b5	40	R38, b7	58	R41,b1
5	R34, b4	23	R36, b6	41	R39, b0	59	R41,b2
6	R34, b5	24	R36, b7	42	R39, b1	60	R41,b3
7	R34, b6	25	R37, b0	43	R39, b2	61	R41,b4
8	R34, b7	26	R37, b1	44	R39, b3	62	R41,b5
9	R35, b0	27	R37, b2	45	R39, b4	63	R41,b6
10	R35, b1	28	R37, b3	46	R39, b5	64	R41,b7
11	R35, b2	29	R37, b4	47	R39, b6	65	R42,b0
12	R35, b3	30	R37, b5	48	R39, b7	66	R42,b1
13	R35, b4	31	R37, b6	49	R40, b0	67	R42,b2
14	R35, b5	32	R37, b7	50	R40, b1	68	R42,b3
15	R35, b6	33	R38, b0	51	R40, b2	69	R42,b4
16	R35, b7	34	R38, b1	52	R40, b3	70	R42,b5
17	R36, b0	35	R38, b2	53	R40, b4	71	R42,b6
18	R36, b1	36	R38, b3	54	R40, b5	72	R42,b7
19	R36, b2	37	R38, b4	55	R40, b6		

Example: Option 123.b. shown selected to accommodate an 11-inch form with vertical tab stop settings at 10, 20, 30, 45, and 60 lines.



Diode left in.
Diode cut and removed.



124.	Receipt of ENQ Starts Switched Network Answer-Back/ Multipoint Private Line Diagnostic Test	R43, b0
a.	ENQ Does Not Start Answer-Back/Test	▭ ¶
b.	ENQ Starts Answer-Back/Test	▭̸

Note 1: When Option 124.b. is selected along with Options 141.b. and 151.b., also cut and remove diode at R14, b7 as mentioned in Option 120.

Note 2: Select Option 124.a. for KD-ROP applications.

Option 125 is not applicable to the 40C303AD controller.

126.	Pulse or Tone Generated on Receipt of BEL	R43, b2
a.	Received BEL Character Does Not Cause Pulse or Tone	▭ ¶
b.	Received BEL Character (ASCII or — if Option 127.b., 138.b., or 139.b. is selected — Baudot or Teletypesetter Code No. 1 or No. 2) Causes 1-Second Pulse or Tone Generation	▭̸

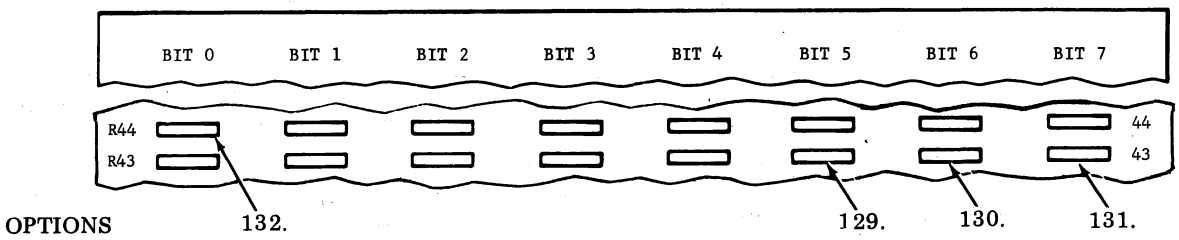
Note: Pulse generation on paper out or internal alarm is always provided (not an option). Option 126 controls only the additional feature of pulse generation on receipt of the BEL character. Tone generation is provided by the 40K003AAC opcon. Consecutive BEL characters must be received more than one second apart for more than one tone to be heard.

127.	Baudot Code Converted to ASCII	R43, b3
a.	Baudot Code Not Accepted	▭ ¶
b.	Baudot Code Converted to ASCII for Printer	▭̸

Note: If an answer-back is desired, it must be coded in Baudot as detailed in Option 119. The answer-back will then be sent on-line in Baudot code but printed by the ROP (if Option 145.b. is selected) in ASCII. With Option 127.b. the diode matrix printout will garble.

128.	Shift In/Shift Out (SI/SO) Detection	R43, b4
a.	SI/SO Detection Not Used	▭ ¶
b.	SI/SO Detection Enables Printing Additional Characters	▭̸

▭ Diode left in.
▭̸ Diode cut and removed.
¶ Factory installed.



129.	Horizontal Tabulation	R43, b5	
a.	HT Character Ignored by ROP	▭	¶
b.	HT Character Causes Horizontal Tab as Selected in Option 122. or Set On-Line	▭	

Note: Option 129.b. requires that Option 17.c. or e. be activated. Individual tab stops are set on-line upon receipt of ESC 1 (one tab per each received ESC 1). ESC 2 clears all tabs at the point and to the right of the point entered, up to the end of line. On-line tab selection overrides the fixed optioning of Option 122.b. A disconnect, or deselect (delayed up to one minute), clears all on-line tab stops and restores any preselected tab stops.

130.	Vertical Tabulation	R43, b6	
a.	VT Character Causes Line Feed	▭	¶
b.	VT Character Causes Vertical Tab as Selected in Option 123. or Set On-Line	▭	

Note: Individual tab stops are set on-line upon receipt of ESC 5 (one tab per each received ESC 5). ESC 6 clears all tabs at the point and below the point entered, up to the end of the tab stops. On-line tab selection overrides the fixed optioning of Option 123.b. A disconnect, or deselect (delayed up to one minute) clears all on-line tab stops and restores any preselected tab stops.

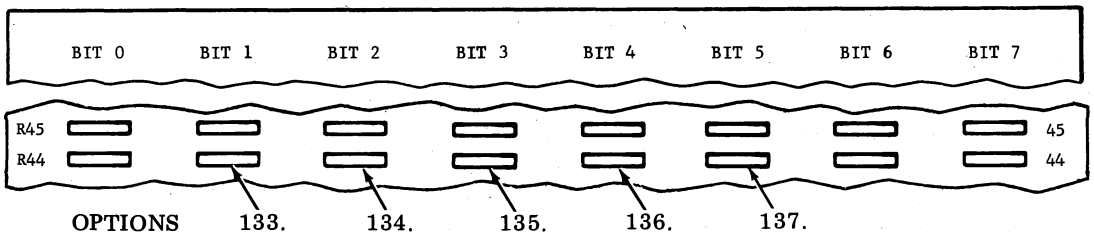
131.	Left Margin	R43, b7	
a.	Left Margin Begins at Column 1 Regardless of Selection of Options 121. and 122.	▭	¶
b.	Left Margin Begins as Selected in Option 121.	▭	

Note: Option 131.b. requires that Options 17.c. or e. and 121.b. be activated.

132.	Printing of Escape Sequences Suppressed	R44, b0	
a.	Character After ESC Printed as Received	▭	¶
b.	Printing of Character After ESC Suppressed	▭	

Note: With Option 132.b. activated, the character after ESC will be suppressed only if ESC is preceded by a non-ESC character. For example, if ESC ESC X is received, X will be printed.

▭ Diode left in.
▭ Diode cut and removed.
¶ Factory installed.



133.	DLE EOT/EOT Disconnect	R44, b1	
a.	DLE EOT Sequence Causes Disconnect or Deselect (No Disconnect or Deselect on EOT Alone)	▭	¶
b.	EOT Causes Disconnect or Deselect	⊟	

Note: Either of the above in conjunction with Option 141.a. causes a disconnect provided Option 140.a. is activated. Either of the above in conjunction with Option 141.b. causes a deselect.

134.	On-Line Printer Control	R44, b2	
a.	DC2 and DC4 Ignored by ROP	▭	¶
b.	DC4 Blinds Printer, DC2 Unblinds Printer	⊟	

Note: Choose Option 134.a. for DATASPEED 40/2 KD-ROP applications.

135.	Idle Line Disconnect	R44, b3	
a.	No Disconnect on Idle Line	▭	¶
b.	Disconnect After Idle Line of Approximately 30 Seconds	⊟	

Note: Option 135.b. requires that Option 140.a. be activated. See Option 148. for details of motor turn-off delay action in conjunction with Option 135.

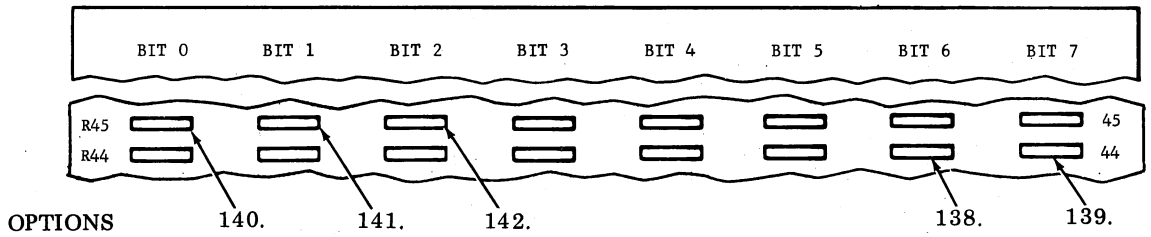
136.	Normal/Inverted SI/SO	R44, b4	
a.	Normal (SI = ASCII)	▭	¶
b.	Inverted (SO = ASCII)	⊟	

Note: Option 136.b. inverts Option 128.b.

137.	Carrier Fail Disconnect	R44, b5	
a.	No Disconnect on Carrier Fail	▭	¶
b.	Disconnect After No Carrier for Approximately 15 Seconds	⊟	

Note: Option 137.b. requires that Options 140.a. and 144.a. be activated.

▭ Diode left in.
⊟ Diode cut and removed.
¶ Factory installed.



138.	Teletypesetter Code No. 1 Converted to ASCII	R44, b6
a.	Teletypesetter Code No. 1 Not Accepted	▭ ¶
b.	Teletypesetter Code No. 1 Converted to ASCII for Printer	⊠

Note : Teletypesetter Code No. 1 is defined as Teletypesetter code with the bits transmitted in the sequence 0, 1, 2, 3, 4, 5 (normally used for high speed transmission). Appropriate typecarrier is required. With Option 138.b. the diode matrix printout will garble.

139.	Teletypesetter Code No. 2 Converted to ASCII	R44, b7
a.	Teletypesetter Code No. 2 Not Accepted	▭ ¶
b.	Teletypesetter Code No. 2 Converted to ASCII for Printer	⊠

Note: Teletypesetter Code No. 2 is defined as Teletypesetter code with the bits transmitted in the sequence 1, 2, 3, 4, 5, 0 (normally used for low speed transmission). Appropriate typecarrier is required. With Option 139.b. the diode matrix printout will garble.

140.	Interface to Transmission Facilities	R45, b0
a.	EIA	▭ ¶
b.	20/60 mA	⊠

Note 1: Option 140.b. disables Options 111.b., 118.b., 135.b. and 137.b., all of which are related to the EIA "hand shaking" routine between the ROP and the data set.

Note 2: Refer to Option 140 on the 410737 circuit card for required switch settings.

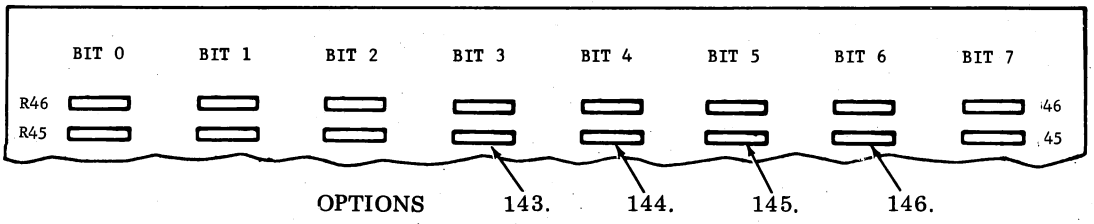
Note 3: The selection of Option 140.b. for 20/60 mA operation requires that the 406172 cable assembly be connected between J32 (Aux connector) on the 410736 dual EIA connector bracket and J4 on the 410737 circuit card.

141.	Data Link Control Procedures	R45, b1
a.	Switched Network and Point-to-Point Private Line and KD-ROP Applications	▭ ¶
b.	Multipoint Private Line Applications	⊠

142.	Automatic Answer Starts Switched Network Answer-Back	R45, b2
a.	Auto Answer Does Not Start Answer-Back	▭ ¶
b.	Auto Answer Starts Answer-Back	⊠

Note: Option 142.b. requires that Options 140.a. and 151.a. be activated. It is recommended that Option 135.b. or 137.b. also be enabled to prevent possible system delays after aborted calls.

▭ Diode left in.
⊠ Diode cut and removed.
¶ Factory installed.



143.	Reverse Channel Used/Not Used	R45, b3	
a.	Reverse Channel Not Used — Minimum 400 Milliseconds of Line Break Generated to Stop Sender	▭	¶
b.	Reverse Channel Send and Receive (SCA and SCF) Used — SCA Turned OFF to Stop Sender, SCF ON Required to Send Answer-Back	⊘	

Note 1: The following conditions will cause the controller to stop the sender by generating a line break (Option 143.a.) or turning SCA off (Option 143.b.):

(1) Buffer 75% full. Sender restarted when buffer down to 25% full.
(2) Manually depressing opcon INTRPT key, when provided.

Note 2: If Option 143.b. is selected and the controller is used in a system that does not provide reverse channel signals then Option 124.b. will not be functional.

Note 3: Option 143.b. must be selected for DATASPEED 40 KD-ROP applications.

144.	Monitor Receive Data on Data Carrier Detect (CF) or Data Set Ready (CC)	R45, b4	
a.	Monitor Receive Data on Recognition of CC and CF ON	▭	¶
b.	Monitor Receive Data on Recognition of CC ON	⊘	

Note: Option 144.b. is required for 113-type data set; Option 144.a. is required for all other data sets.

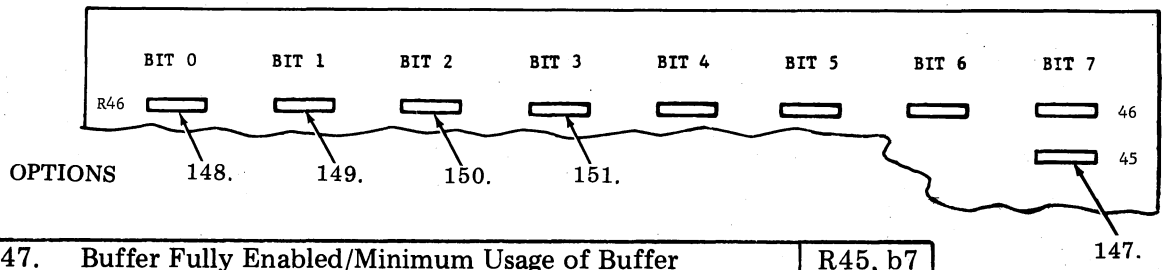
145.	Local Copy of Switched Network Answer-Back	R45, b5	
a.	No Local Copy of Answer-Back	▭	¶
b.	Local Copy of Answer-Back	⊘	

Note: Option 145.a. must be used if Option 141.b. is selected.

146.	Paper/Terminal Alarm	R45, b6
a.	Paper Alarm Causes AB 2 to be Sent on Next CDC or Data Terminal Ready (CD) OFF on New Call	▭
b.	Paper Alarm Causes Immediate Disconnect	⊘

Note: Option 146.a. is recommended for multipoint private line (Option 141.b. enabled) applications.

▭ Diode left in.
⊘ Diode cut and removed.
¶ Factory installed.



147.	Buffer Fully Enabled/Minimum Usage of Buffer	R45, b7	
a.	Buffer Fully Enabled — Data Flow to Printer Controlled by Printer Request-Next-Character Signal to Avoid Data Stacking	▭	¶
b.	Minimum Usage of Buffer — Data Sent to Printer at Approximately Same Rate as Received	⊘	

Note: Option 147.b. is not recommended.

148.	Motor Turn-Off Delay	R46, b0	
a.	Minimum Delay — Motor Turns Off Approximately 30 Seconds After Detection of Idle State	▭	¶
b.	Maximum Delay — Motor Turn Off Delayed Approximately 2 Minutes After Detection of Idle State	⊘	

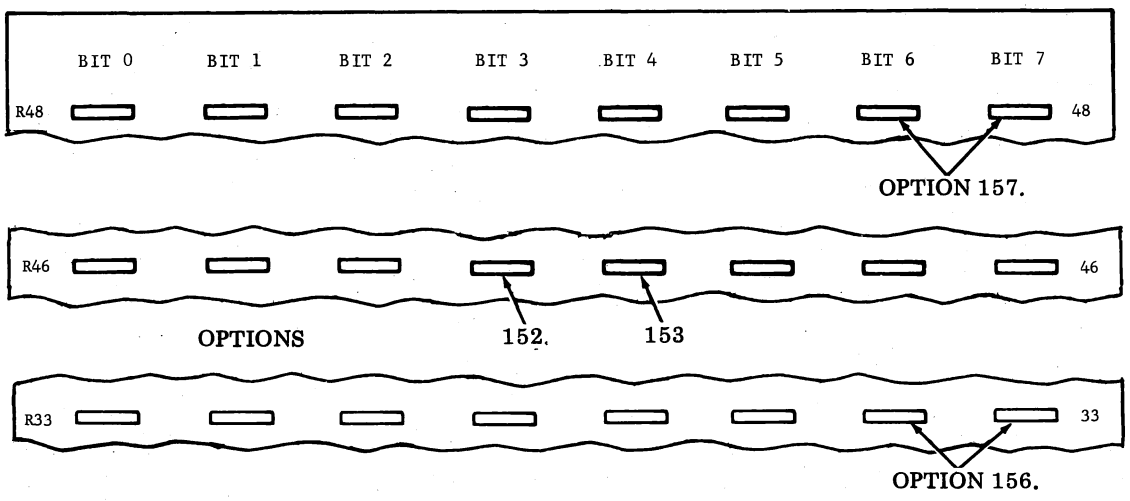
Note: After 30 seconds of idle state and with Option 135.b. activated, a disconnect or deselect as stated in Option 133. takes place. At this time, and with Option 148.a. activated the motor is turned off. With Option 148.b. activated, motor turn off is delayed an additional 2 minutes. In switched network applications the motor will turn off immediately upon detection of the disconnect sequence (DLE EOT or EOT) if Option 148.a. is selected; if Option 148.b. is selected the 2 minute delay is enabled.

149.	New Line Substitution on Carriage Return	R46, b1	
a.	Carriage Return Passed to Printer	▭	¶
b.	New Line Substituted for Carriage Return	⊘	

150.	DATA ERROR Lamp Used/Not Used	R46, b2	
a.	DATA ERROR Lamp Lit on Parity Error	▭	¶
b.	DATA ERROR Lamp Not Used to Indicate Parity Errors	⊘	

151.	Switched Network/Private Line Applications	R46, b3	
a.	Switched Network Applications — Data Set Ready (CC) ON Turns on Motor	▭	¶
b.	Private Line Applications — Character in Buffer Turns on Motor	⊘	

▭ Diode left in.
⊘ Diode cut and removed.
¶ Factory installed.



152.	Errored Character/Substitute Character to Printer on Parity Error	R46, b4	
a.	Errored Character Sent to Printer (See Note 1)	▭	¶
b.	Substitute Character (Type Carrier Symbol) on Mono-case Without Foldover, or (~) on Up-Low Printers, Without Foldover, Sent to Printer on Parity Error	⊘	

Note 1: Errored character means the received errored character and NOT the error character symbol as designated by the type font identification symbol.

Note 2: On printers with foldover ^ will be sent rather than the symbol shown for Option 152.b.

153.	Answer-Back 3 Use	R45, b5	R46, b5	
a.	AB3 Not Generated for Roll Call Replies	—	▭	¶
b.	AB3 Generated for Roll Call Replies	—	⊘	
c.	AB3 Not Generated for Initial Address Replies	▭	—	¶
d.	AB3 Generated for Initial Address Replies	⊘	—	

Note 1: Option 153. applicable only to Multipoint Operation (141.b.).

Note 2: Option 102.j. should be coded for NUL (all diodes present) when Option 153.a. and c. are selected.

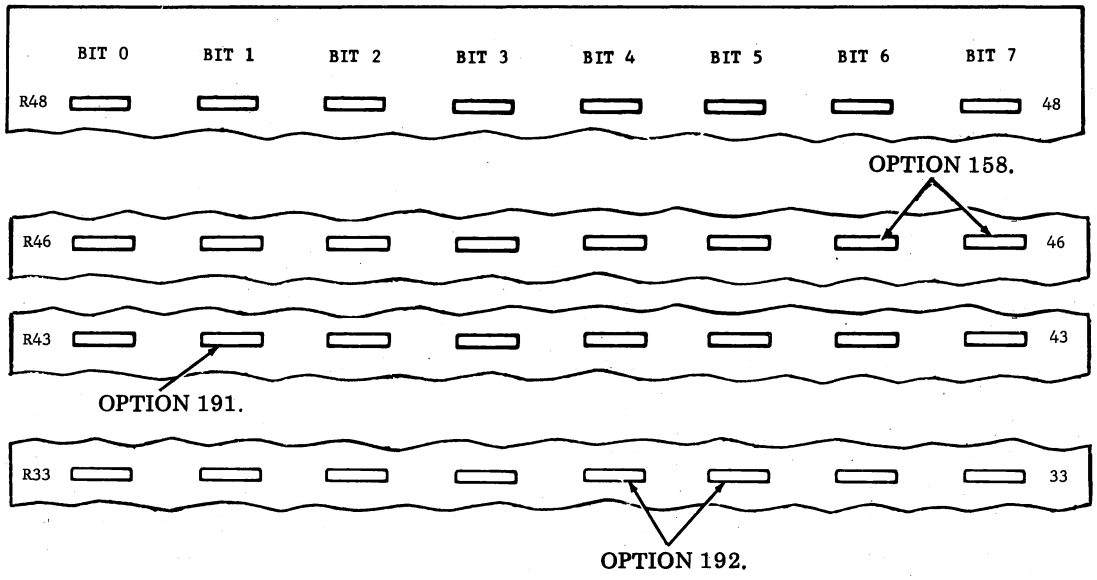
Note 3: Two selections must be made; selections a. and b. are independent of c. and d.

Options 154 and 155 are not applicable to the 40C303AD Controller.

156.	Number of Data Bits Per Character (Excluding Parity Bit, if Used)	R33 b6	R33 b7	
a.	5 Bits Per Character (Baudot Code)	▭	▭	¶
b.	6 Bits Per Character (Teletypesetter Code)	⊘	▭	
c.	7 Bits Per Character (ASCII Code With Parity)	▭	⊘	
d.	8 Bits Per Character (ASCII Code Without Parity)	⊘	⊘	

157.	Number of Stop Bits Per Character	R48 b6	R48 b7
a.	1 Stop Bit	⊘	▭
b.	2 Stop Bits	⊘	⊘

▭ Diode left in.
⊘ Diode cut and removed
¶ Factory installed.



158.	Parity Used	R46 b6	R46 b7
a.	Odd Parity Used	⊠	▭
b.	Even Parity Used	⊠	⊠
c.	No Parity Check or Parity Bit Used	▭	▭

¶

Note: Option 158.a. and b. require Option 156.c. for ASCII with one parity bit; Option 158.c. requires Option 156.d. for ASCII with 8th bit constantly marking or spacing, or present but not checked for parity.

191.	Line Wraparound Operation	R43, b1
a.	Line Wraparound Performed by Printer	▭
b.	Line Wraparound Performed by Controller	⊠

¶

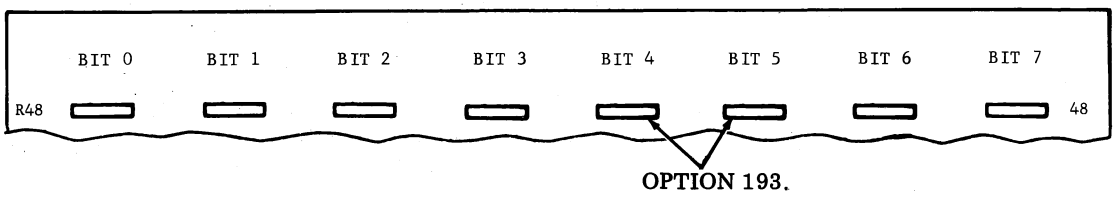
Note 1: Use Option 191.a. when the right hand margin is determined by printer Option 17.c., or e., (a NL will be provided by the printer if data continues beyond this point); use Option 191.b. when the right hand margin is determined by Option 122 (a NL will be provided by the controller if data continues beyond this point).

Note 2: A diode must be removed in Option 122 to designate the last printing column.

192.	Baud Rate Factor	R33 b4	R33 b5
a.	64X	⊠	⊠
b.	16X	▭	⊠
c.	1X	⊠	▭

Note: Option 192.b. requires the selection of Options 101.a. through l., 189.b. and 190.b. Option 192.c. requires the use of Options 101.m., 189.a. and 190.a.

▭ Diode left in.
⊠ Diode cut and removed
¶ Factory installed.



193.	Dual Speed Change	R48 b4	R48 b5	
a.	212-Type Data Set Operation w/Auto Speed Sel. (Note 3)	▭	▭	¶
b.	KD-ROP Manual Dual Speed Operation	⊠	⊠	

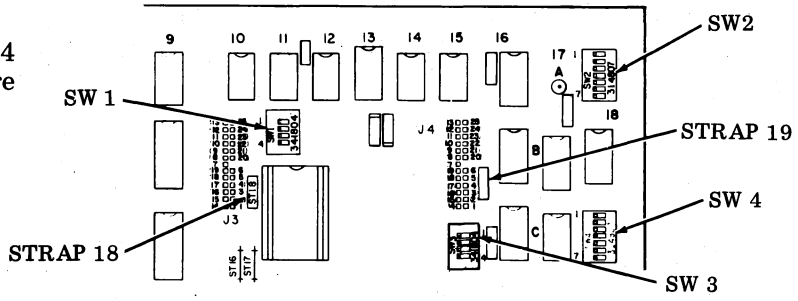
Note 1: Selection of Option 193.b. requires replacement of the leftmost blocking keytop of the 40K003AAC or 40K005AAC opcon with a 346104 print-on-line keytop. Connection of the ROP to a KD may be accomplished with data set cable 408065 through 408068. When this cable is used pins 17 and 23 must be removed and tied back. If two speed operation is desired where one of the speeds is above 1200 baud the other must be 1200 baud.

Note 2: Do not use Option 193. for single speed operation. For single speed ROP configuration refer to Option 101. for status of b4 and b5 diodes in row 48.

Note 3: For Auto Speed change with 212A-type data set 212A must have Option YQ installed.

410737 Controller Card

Note: SW2 and SW4 are reserved for future use.



140.	Interface to Transmission Facilities	SW3 1	SW3 2	SW3 3	SW3 4	
a.	EIA	O	O	O	O	¶
b.	20/60 mA	O	●	O	●	

Note: Refer to Option 140 on the 410734 diode matrix circuit card for required diode removal.

189.	Receiver Clock Control	SW1 1	SW1 2	SW1 3	SW1 4	
a.	Rec. Clock from Associated Data Set	—	—	O	●	
b.	Rec. Clock Generated Internally	—	—	●	O	¶

Note: The selection of Option 189.a. requires the selection of Options 101.m., 190.a. and 192.c. The selection of 189.b. requires the selection of Options 101.a. through l., 190.b. and 192.b.

● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
O Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

Note: Refer to Page 99 for switch and strap locations.

		SW1			
190.	Transmitter Clock Control	1	2	3	4
a.	Trans. Clock from Associated Data Set	O	●	—	—
b.	Trans. Clock Generated Internally	●	O	—	—

¶

Note: The selection of Option 190.a. requires the selection of Options 101.m., 189.a. and 192.c. The selection of 190.b. requires the selection of Options 101.a. through l., 189.b. and 192.b.

		CUT STRAP	
	Ground Connection	18	19
a.	Frame Ground Connected to Signal Ground	NO	NO
b.	Frame Ground Not Connected to Signal Ground	YES	YES

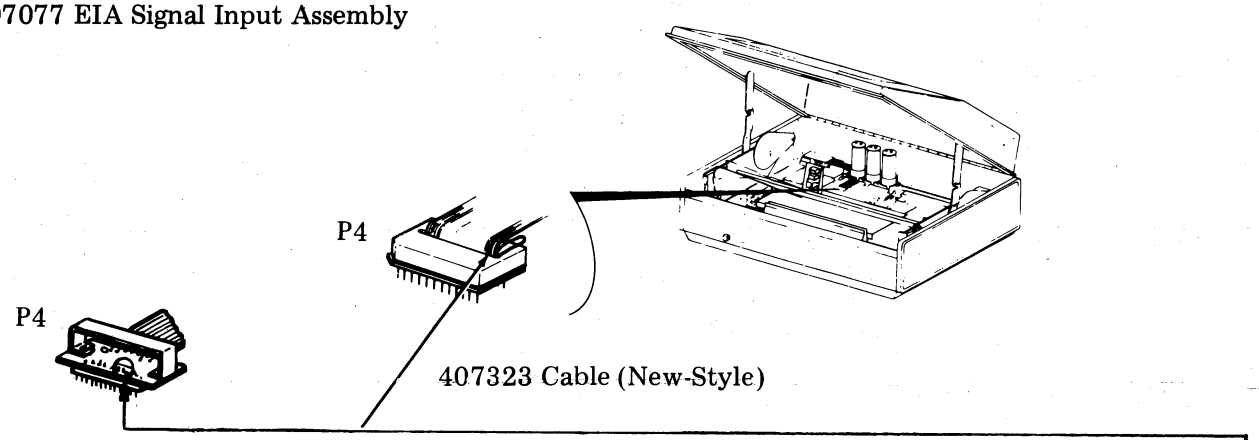
¶

Note: Where a longer than normal (408065) cable for connecting ROP and data set is used, and when electrical noise is a problem, the frame ground to signal ground connection may be broken at the ROP (Option b) and tied together at another point (as at the data set).

ACTIVATING CABINET OPTIONS

40C303AA/001 Controller Only

407077 EIA Signal Input Assembly



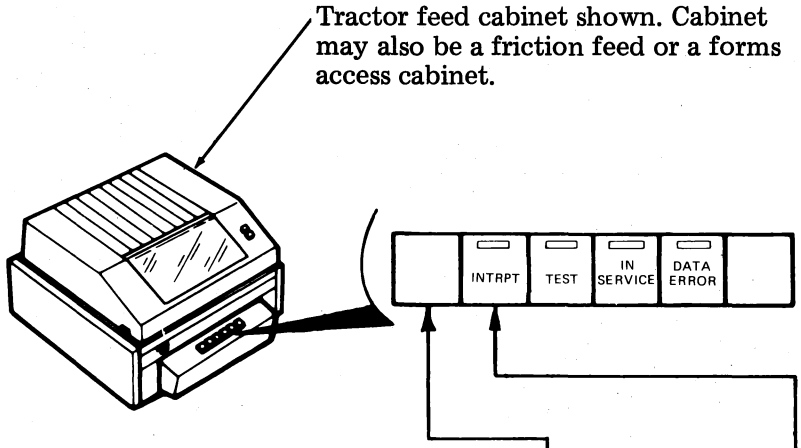
	Ground Connection	Action
a.	Frame Ground Connected to Signal Ground in Cabinet at P4	None
b.	Frame Ground NOT Connected to Signal Ground in Cabinet at P4	Cut Land at P4

¶

Note: Where a longer than normal (408065) cable for connecting ROP and data set is used, and when electrical noise is a problem, the frame ground to signal ground connection may be broken at the ROP (Option b.) OR in the data set. DO NOT break the ground connection at BOTH places as proper operation of the internal test message will be affected.

● Indicates dot end of rocker switch depressed, toggle or slide positioned to ON.
O Indicates blank end of rocker switch depressed, toggle or slide positioned to OFF.
— Position of switch does not affect option.
¶ Factory installed.

ACTIVATING OPCON OPTIONS



PRINT-ON-LINE Key (40C303AD Controller Only)

	Operator Console Option	Action Required
a.	PRINT-ON-LINE Key Blocked	None ¶
b.	KD-ROP Manual Dual Speed Operation (per Option 193.b.) allows the terminal to interface to a KD at 1200 baud for print local function or to line at baud rate selected by Option 101.a. through l.	Remove leftmost BLOCKING keytop and install 346104 PRINT-ON-LINE keytop.

Note: Option b. to be used in conjunction with Option 193.b.

INTRPT Key

	Operator Console Option	Action Required
a.	INTRPT Key Causes Line Break/Reverse Channel Off (Per Option 143.) Whenever Depressed, Indicator Lights Any Time Line Break/Reverse Channel Off Occurs (Manual or Automatic)	None
b.	INTRPT Key and Indicator Blocked	Remove INTRPT keytop. Install 340701 BLOCKING keytop (furnished).

ACTIVATING DATA SET OPTIONS

Refer to the appropriate data set document for data set option activation information.

103J	Section 591-039-XXX
103JR	Section 591-044-XXX
108F/G	Section 591-818-XXX
113A	Section 591-033-XXX
113AR	Section 591-048-XXX
202S	Section 592-028-XXX
202SR	Section 592-037-XXX
202T	Section 592-031-XXX
212A	Section 592-034-XXX
212AR	Section 592-039-XXX

¶ Factory installed.

8. FINAL ASSEMBLY

8.01 Opcon Assembly (Table Mounted Cabinet Only):

40C303AA/001 Controller (Fig. 36):

(a) Push opcon ground strap terminal onto cabinet terminal tab.

Note: Early design opcons do not have the 341989 ground strap. If missing, it must be ordered separately whenever the opcon is used with the integrated controller.

(b) Slide left and right latches down.

(c) Engage connector, left and right guides into slots.

(d) Slide left and right latches upward into latched position.

Warning: Check that opcon is firmly attached on both sides before releasing hold.

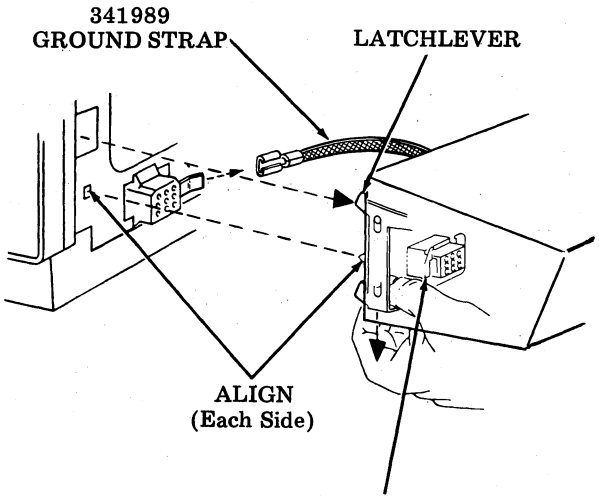


Fig. 36—Opcon Assembly

40C303AD Controller

Opcon Assembly (Fig. 37):

(a) Plug P40 connector (406192 cable assembly) into opcon.

(b) Push opcon ground strap terminal onto cabinet terminal tab.

(c) Slide left and right latches down.

(d) Engage left and right guides into slots.

(e) Slide left and right latches upward into latched position.

Warning: Check that opcon is firmly attached on both sides before releasing hold.

Note: Opcon of forms access arrangements are attached to the forms access cabinets and need not be assembled.

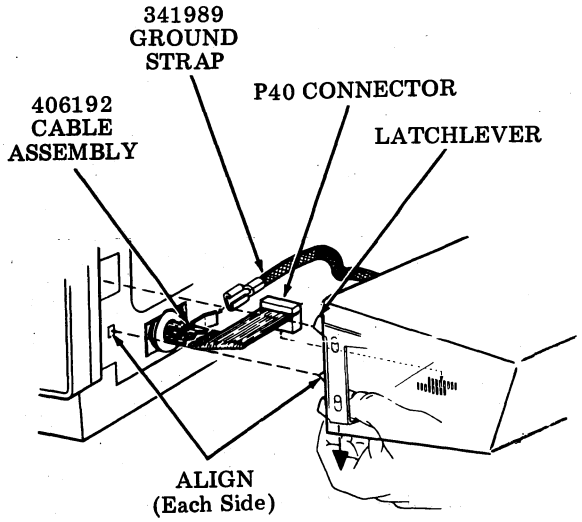


Fig. 37—Opcon Assembly

8.02 Controller Assembly:

Warning 1: Make sure all cabling is out of the way before installing the integrated controller.

Warning 2: Take the proper grounding precautions when handling the integrated controller, as discussed in 1.02.

40C303AA/001 Controller (Fig. 38)

(a) Remount the 410141 diode matrix circuit card and 410140 bit timer card.

(b) Replace cover plate with four screws and two spacers.

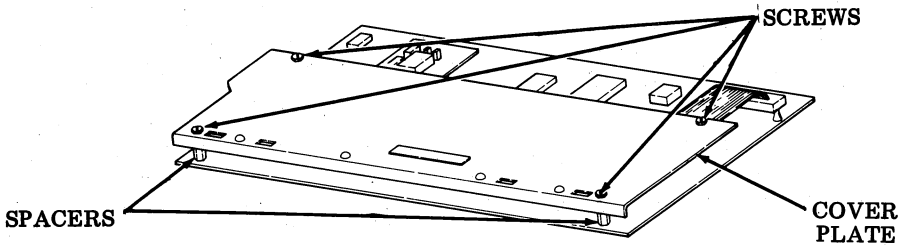


Fig. 38—40C303AA/001 Controller Assembly

40C303AD Controller (Fig. 39)

(a) Remount the 410734 diode matrix circuit card.

(b) Replace cover plate with four screws.

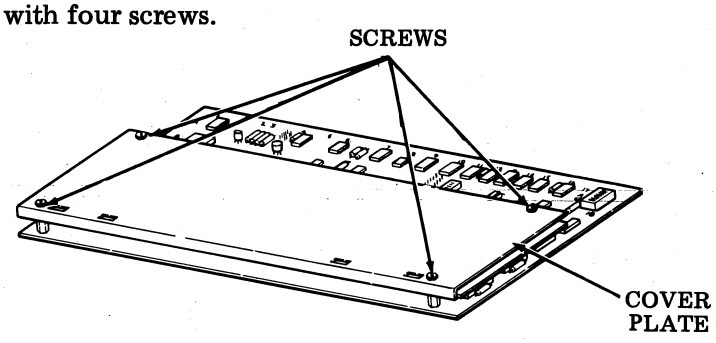


Fig. 39—40C303AD Controller Assembly

8.03 Assembly of Controller Into Cabinet

Table Mounted Cabinet

(a) Locate controller in bottom of cabinet. Use EIA cable connector as a reference.

(b) 40C303AA/001 (Fig. 40) — Plug in P4 (EIA), P12 (Power), P3 (Power), P2 (Opcon) and P1 (SSI) connectors.

Warning: Exercise care when replacing P4 connector; the pins are delicate and will bend or break if handled improperly. Tilt handle back, line up pins at rear, tilt forward to line up pins at front, and push straight down.

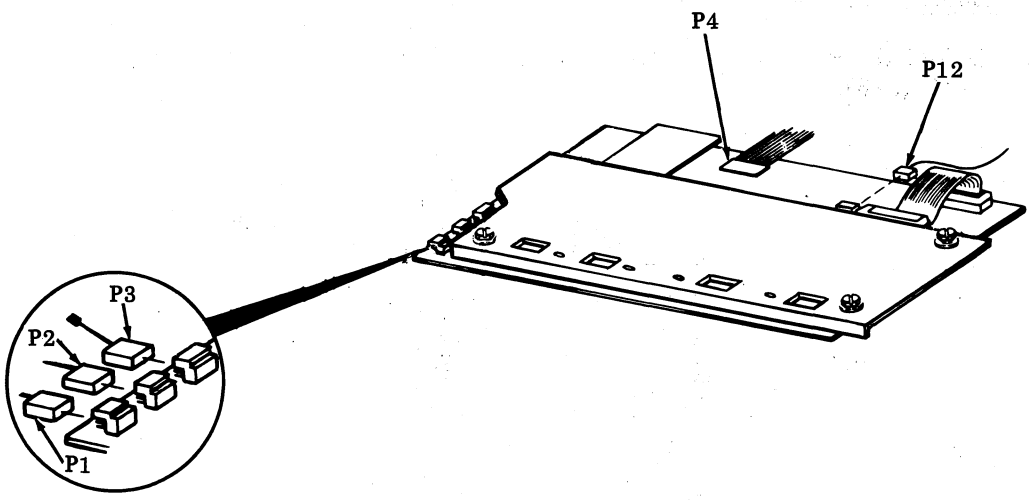


Fig. 40—40C303AA/001 Cable Connections

40C303AD (Fig. 41)

Plug in P3 (EIA), P5 (SSI), P21 (Power) and P6 (Opcon) connectors.

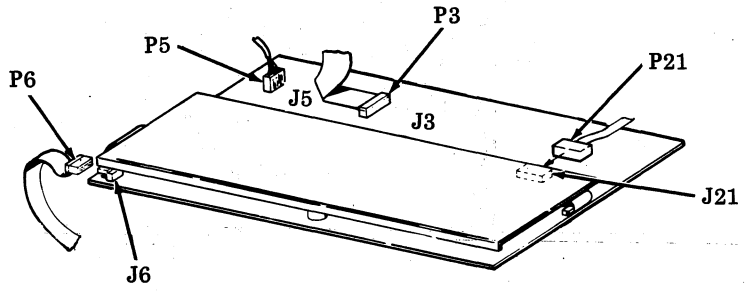


Fig. 41—40C303AD Cable Connections

(a) Push controller against retaining bracket (friction feed) or capacitor bracket (tractor feed) so that rubber isolators prevent controller from moving freely. Rubber isolators must not be pushed out of position and the metal around the isolators must not touch the circuit card.

(b) Replace clamp (friction feed) or paper chute (tractor feed). Tighten two nuts securing clamp or paper chute.

(c) 40C303AA/001 only (Fig. 42 — The 403445 cable must lay flat on the circuit card, any excess cable must be tucked under the 403444 cable and be clear of the switch pack.

Forms Access Cabinet (40C303AD Controller Only)

(a) Locate 40C303AD controller in controller cover. Remount two brackets; secure brackets with four screws (Fig. 43).

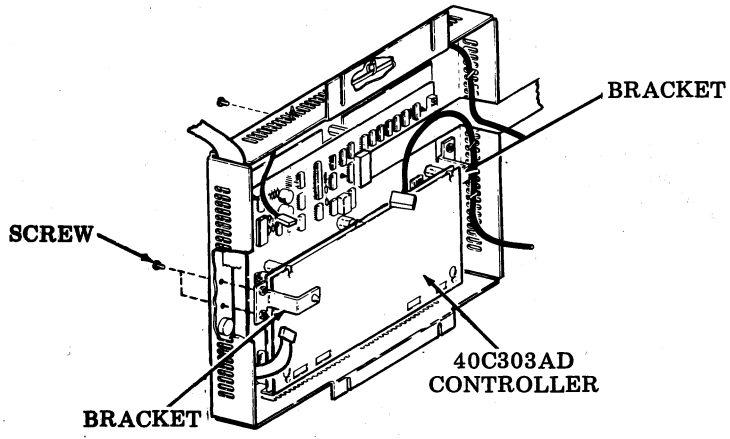


Fig. 42—Assembly of 40C303AD Controller

(b) Plug in P3 (EIA), P5 (SSI), P6 (Opcon) and P21 (Power) connectors (Fig. 43).

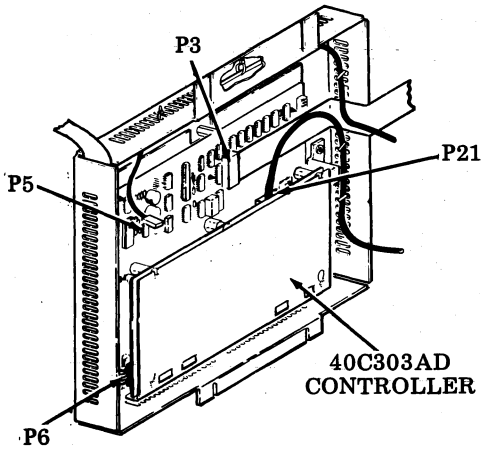


Fig. 43—Controller Connectors

(c) To assemble controller cover with controller to forms access cabinet engage upper mounting screws of cabinet in upper (longer) slots of cover; slide cover up to limits of slots and engage lower slots with mounting screws, slide cover down. Tighten four screws (Fig. 44).

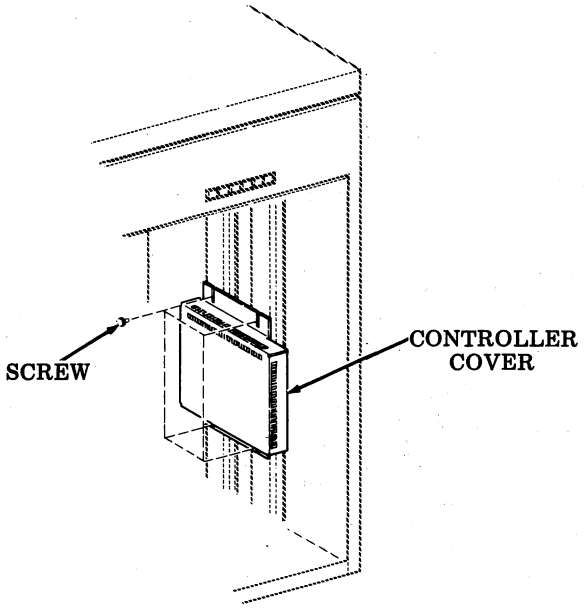


Fig. 44—Controller Assembly

8.04 Cable routing for 40C303AA/001 Controller

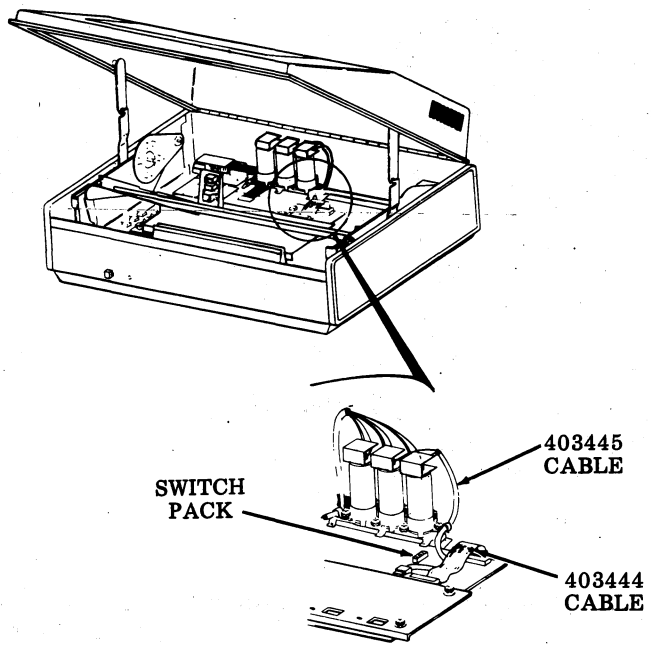
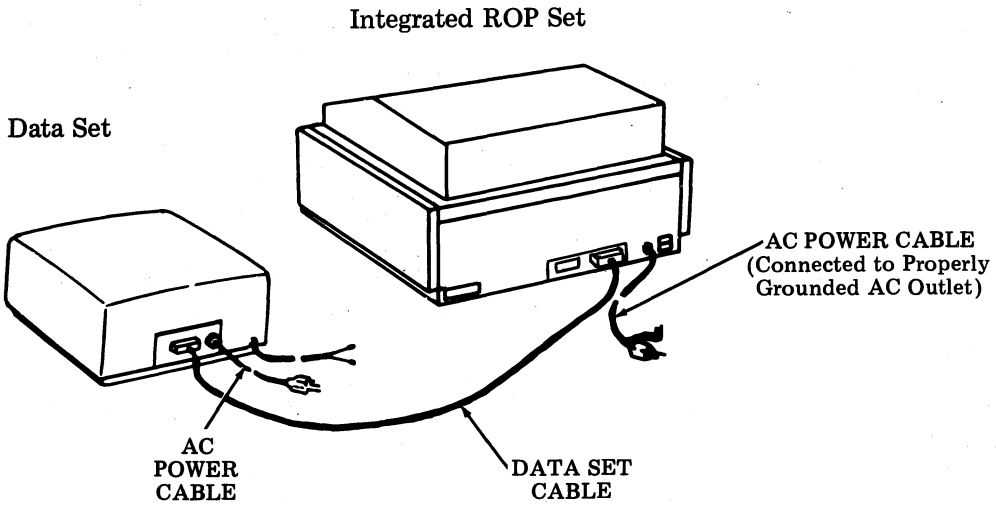


Fig. 45—40C303AA/001 Cable Routing

8.05 For installation of printer into printer cabinet refer to Section 582-210-200, Issue 3, (plus addendum) or later.

8.06 Data Set Connection: After the data set has been optioned, connect to the Integrated ROP Set (Fig. 46, 47, 48).



Data Set Cables	
408065	7 Ft
408066	12 Ft
408067	25 Ft
408068	50 Ft

Fig. 46—Data Set Connection — Tabletop Cabinet

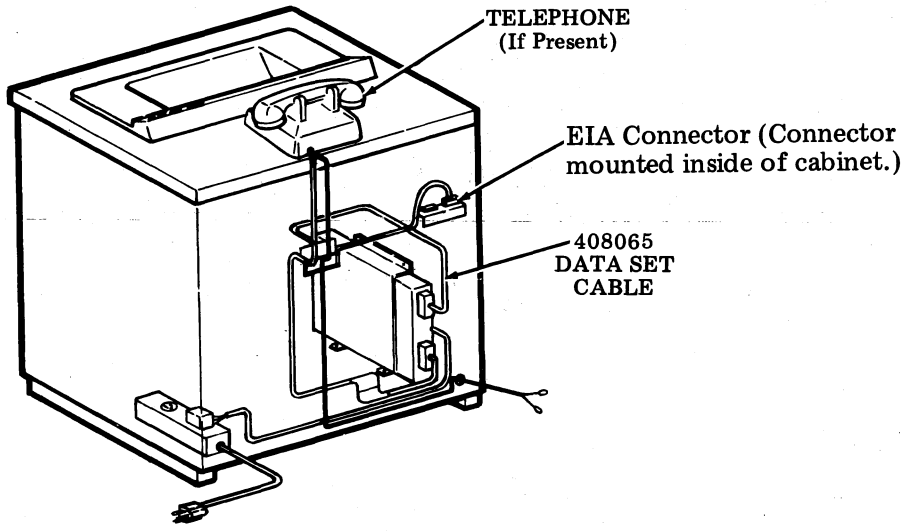


Fig. 47—Data Set Connection — Forms Access Printer Cabinet
(Data Set Internally Mounted)

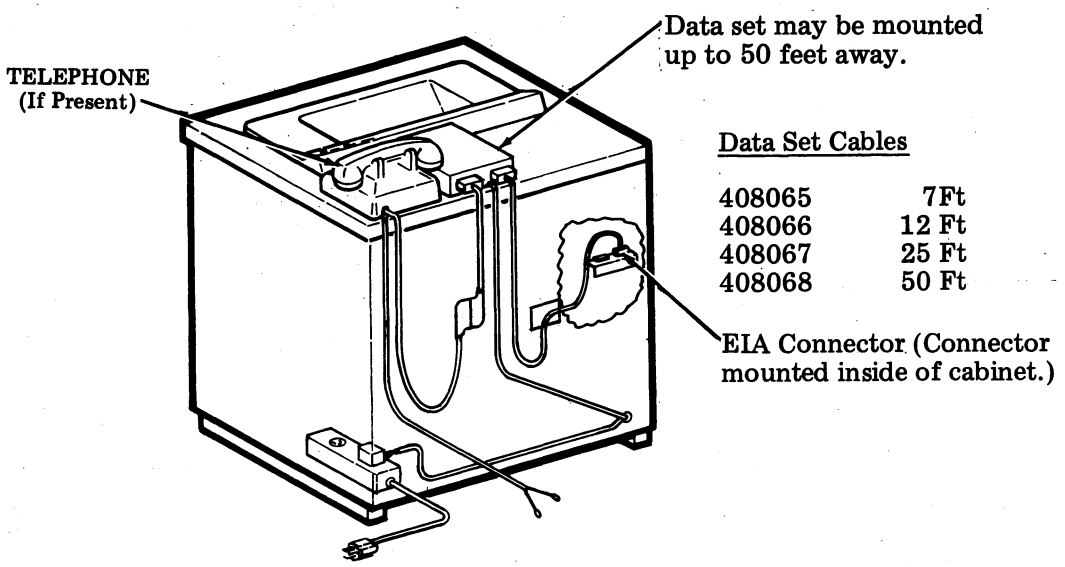


Fig. 48—Data Set Connections — Forms Access Printer Cabinet
(Data Set Externally Mounted)

8.06 Station Feature and Option Record: A record should be made of all ROP station options installed on the appropriate BSTSEA W-Plan (if available). For recording data set options refer to the appropriate data set BSP section. The option record should be associated with the station. It may be placed inside the pedestal if one is present.

8.07 Install ribbon and paper following instructions in Section 582-210-200. Make any adjustments for number of plies of paper used, form out belt settings, etc. at this time.

8.08 Test the station off-line and on-line per Section 582-200-504.