

SYNCHRONOUS "DATASPEED\*" 40/4  
SINGLE DISPLAY STATION ARRANGEMENTS

INSTALLATION

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1. GENERAL

1.01 This section provides installation information for all units and components contained in a Model 40/4 Single Display Station hereafter referred to as 40/4-type (SDS) equipped with a 40C304-type or 40C305-type single display controller.

1.02 The reasons for reissue of this section is to add installation information for:

- The new style forms access printer cabinet.
- The new 410351 Issue 1D Back Panel.
- The new style data set extension cables 454208 and 406075.

1.03 To allow more efficient use of this section early style controller information was moved to the new paragraph 7. Paragraph 7.01 and 7.02 provide details about early style controllers (which are only 40C304-type controllers equipped with a 410251 and 410260 series circuit cards).

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

1.04 The following warnings and danger are to be followed as safety measures for the apparatus and the craftsperson.

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

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



Attach static ground strap tightly to wrist.



Attach clip end of static discharge strap to frame ground.

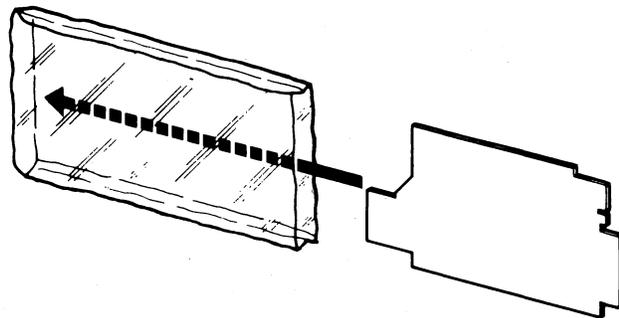
*Warning 3:* Place listed printer card in a 406260 static bag (black) or controller card in a Teletype RM160083 static bag (pink) immediately after removal from unit. Do not place any printer

*paper in the bag with the card. Keep the card in the static bag at all times. Never handle the card outside the bag without wearing a properly grounded 346392 static ground strap.*

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

Cards List

Printer Logic Card Controller — All Cards (Not Monitor Cards)
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STATION WORKSHEET

1.05 The Station Configuration Worksheet provides the craftsperson with an understanding of the station configuration prior to installation. A blank sample of the worksheet is given on Pages 4 and 5.

PREPARATION OF STATION WORKSHEET

1.06 Instructions for preparing 40/-type private line SDS worksheet, (see example on Page 6):

- Use a separate worksheet for each station ordered. Refer to paragraph 4. CONTROLLER OPTIONS, as required.
- In the upper portion of the configuration worksheet, include all information as required.
- In the SDC area of the configuration worksheet, list the Station Poll Address (SPA), Station Select Address (SSA) graphics, and station number of Option 401b. Also, use Xs in boxes following the option numbers to show the selected option.

- (d) Option 405b is the KD device number; fill in the line in the SDC box and list the KD device address in the OPCON box.
- (e) Option 405c is the PTR device number; fill in the line in the SDC box and list the printer device address in the PRINTER box.
- (f) List the printer code on the line provided in the box marked PRINTER.
- (g) On the line between SDS and PRINTER, indicate if an extension cable is used.
- (h) Options 408, 409 and 410 grouped by the controller as OPT4; mark the proper box with an X.
- (i) In the DATA SET box, mark an X for either DATA SET or DATA AUX SET and transmission rate (2400 or 4800). List the proper code on the line provided.
- (j) On the line between the SDC box and DATA SET box, line out the unused connecting cable number, also indicate if an extension cable is used.
- (k) In the SDC box, mark the OPT entries.

*Note 1:* In the example worksheet, entries that are not used are lined out.

*Note 2:* Entering the character that should be displayed for each "OPT" number (when in the OPT mode) on the worksheet will be helpful to the installer.

1.07 Instructions for preparing 40/4-Type dial up SDS worksheet (see example on Page 7):

- (a) Use a separate worksheet for each station ordered. Refer to paragraph 4. CONTROLLER OPTIONS, as required.
- (b) In the upper portion of the configuration worksheet, include all information as required.
- (c) In the SDC area of the configuration worksheet, list the Station Identification Graphics. Also, use Xs in boxes following the option numbers to show the selected option.
- (d) List the printer code on the line provided in the box marked PRINTER.
- (e) On the line between SDS and PRINTER, indicate if an extension cable is used.
- (f) Options 408, 409 and 410 grouped by the controller as OPT4; mark the proper box with an X.
- (g) In the DATA SET box, mark an X for DATA SET and transmission rate (1200, 2400, or 4800). List the proper code on the line provided.
- (h) On the line between the SDC box and DATA SET box, line out the unused connecting cable number, also indicate if an extension cable is used.
- (i) In the SDC box, mark the OPT entries.

*Note 1:* In the example worksheet, entries that are not used are lined out.

*Note 2:* Entering the character that should be displayed for each "OPT" number (when in the OPT mode) on the worksheet will be helpful to the installer.

STATION CONFIGURATION WORKSHEET (SINGLE DISPLAY STATION)

DATE \_\_\_\_\_

TELCO \_\_\_\_\_ CUSTOMER \_\_\_\_\_

TELCO CONTACT \_\_\_\_\_ TEL. NO. \_\_\_\_\_

USSO \_\_\_\_\_ CKT. NO. \_\_\_\_\_ TELCO REQ. NO. \_\_\_\_\_

WE REQ. NO. \_\_\_\_\_ SCHEDULE \_\_\_\_\_

PRIVATE LINE	DIAL UP	
<p>SDC SPA _____ SSA _____</p> <p><b>OPTIONS</b></p> <p>401 b. _____ OPT 1 _____</p> <p>402 a. _____ 402 b. _____ 402 c. _____ } OPT 6 _____</p> <p>402 d. _____</p> <p>403 a. _____ 403 b. _____ 403 c. _____ } OPT 5 _____</p> <p>403 d. _____</p> <p>405 b. _____ OPT 2 _____</p> <p>405 c. _____ OPT 3 _____</p> <p>406 a. _____ 406 b. _____ 407 a. _____ 407 b. _____ } OPT 7 _____</p> <p>408 a., 409 a. &amp; 410 a. _____ 408 b., 409 b. &amp; 410 a. _____ } OPT 4 _____</p> <p>408 a., 409 b. &amp; 410 a. _____ 408 b., 409 b. &amp; 410 b. _____</p> <p>411 a. _____ <del>411 b.</del> _____ } OPT 8 _____</p> <p>414 a. _____ 414 b. _____ } OPT 9 _____</p> <p>418 a. _____ 418 b. _____</p> <p>OPCON _____ KD ADDRESS _____</p>	<p>SDC I.D.+ 1st 2nd 3rd 4th _____</p> <p><b>OPTIONS</b></p> <p>402 a. _____ 402 b. _____ 402 c. _____ } OPT 6 _____</p> <p>402 d. _____</p> <p>403 a. _____ 403 b. _____ 403 c. _____ } OPT 5 _____</p> <p>403 d. _____</p> <p>406 a. _____ 406 b. _____ 407 a. _____ 407 b. _____ } OPT 7 _____</p> <p>414 a. _____ 414 b. _____</p> <p>408 a., 409 a. &amp; 410 a. _____ 408 b., 409 a. &amp; 410 a. _____ } OPT 4 _____</p> <p>408 a., 409 b. &amp; 410 a. _____ 408 b., 409 b. &amp; 410 a. _____</p> <p>408 b., 409 b. &amp; 410 b. _____</p> <p>411 a. _____ <del>411 b.</del> _____ } OPT 8 _____</p> <p>412 a. _____ OPT 1 _____</p> <p>412 b. _____ OPT 2 _____</p> <p>412 c. _____ OPT 3 _____</p> <p>413 _____ OPT 9 _____</p>	<p>OPTIONAL EXT. CABLES</p> <p>406036** - 6FT (OR 454208**) OR 406066* - 6FT</p> <p>OPTIONAL EXT. CABLES</p> <p>408065 - 7 FT. 408066 - 12 FT. 408067 - 25 FT. 408068 - 50 FT.</p> <p>406039 6FT</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p><input type="checkbox"/> **DATA SET</p> <p><input type="checkbox"/> 1200 BPS +</p> <p><input type="checkbox"/> 2400 BPS</p> <p><input type="checkbox"/> 4800 BPS</p> </div> <p>* PRIVATE LINE ONLY + DIAL UP ONLY ** PRIVATE LINE OR DIAL UP</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>PRINTER</p> <p>_____ PTR ADDRESS* _____</p> </div>

# STATION CONFIGURATION WORKSHEET (SINGLE DISPLAY STATION)

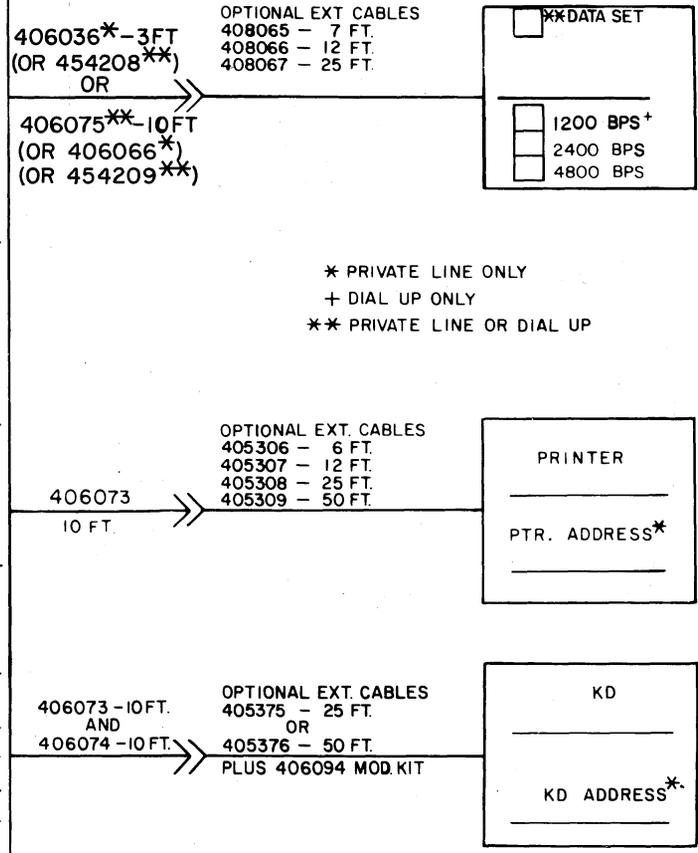
DATE \_\_\_\_\_

NOTE: CABLE LENGTHS  
ARE MEASURED FROM  
PEDESTAL TO DEVICE,  
DATA SET, OR DATA AUX  
SET.

TELCO \_\_\_\_\_ CUSTOMER \_\_\_\_\_  
TELCO CONTACT \_\_\_\_\_ TEL. NO. \_\_\_\_\_  
USSO \_\_\_\_\_ CKT. NO. \_\_\_\_\_ TELCO REQ. NO. \_\_\_\_\_  
WE REQ. NO. \_\_\_\_\_ SCHEDULE \_\_\_\_\_

PRIVATE LINE	
SDC	SPA _____ SSA _____
<b>OPTIONS</b>	
401 b.	OPT 1 _____
402 a	} OPT 6 _____
402 b	
402 c	
402 d	
403 a	} OPT 5 _____
403 b	
403 c	
403 d	} OPT 2 _____
405 b	
405 c	
406 a	} OPT 3 _____
406 b	
407 a	
407 b	} OPT 7 _____
408 a, 409 a & 410 a	
408 b., 409 a & 410 a.	
408 a, 409 b & 410 a	} OPT 4 _____
408 b., 409 b. & 410 a.	
408 b., 409 b. & 410 b	
411 a	} OPT 8 _____
411 b	
414 a	} OPT 9 _____
414 b	
418 a.	
418 b	

DIAL UP	
SDC	I.D.+ 1st 2nd 3rd 4th _____
<b>OPTIONS</b>	
402 a	} OPT 6 _____
402 b.	
402 c	
402 d	
403 a	} OPT 5 _____
403 b	
403 c	
403 d	} OPT 2 _____
406 a	
406 b	
407 a	} OPT 7 _____
407 b	
414 a	
414 b	} OPT 4 _____
408 a, 409 a & 410 a	
408 b., 409 a & 410 a.	
408 a, 409 b. & 410 a	} OPT 4 _____
408 b., 409 b. & 410 a.	
408 b., 409 b. & 410 b	
411 a	} OPT 8 _____
411 b	
412 a	} OPT 1 _____
412 b	
412 c	
413	OPT 9 _____



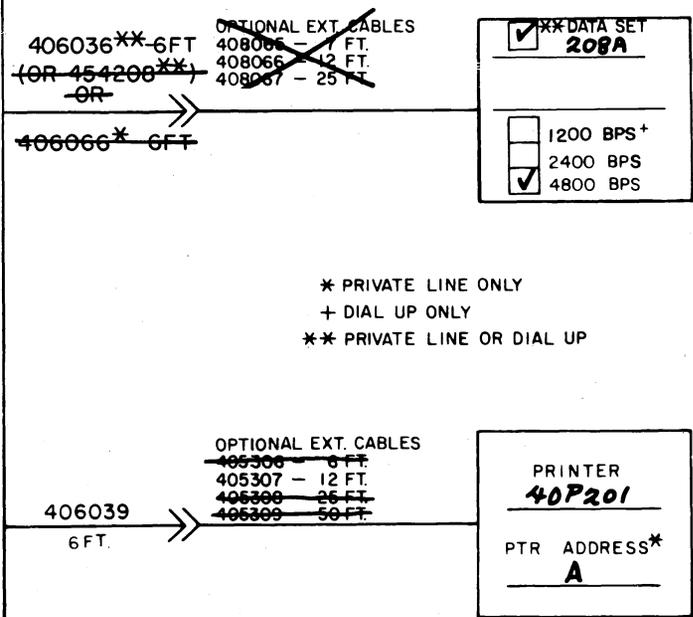
BLANK WORKSHEET FOR 40C305-TYPE  
 40/4-Type Station Configuration Worksheet — Single Display Station (SDS) With 40C305-Type Controller

# STATION CONFIGURATION WORKSHEET (SINGLE DISPLAY STATION)

DATE 8-14-79  
 TELCO (FILL IN) CUSTOMER ABC PROCESSING CO  
 TELCO CONTACT (FILL IN NAME) TEL. NO. (FILL IN #)  
 USSO (FILL IN) CKT. NO. 2FD453 TELCO REQ. NO. 3-81955  
 WE REQ. NO. 94-3-81955 SCHEDULE (FILL IN INSTAL DATE)

PRIVATE LINE	
SDC	SPA <u>C</u> SSA <u>T</u>
<b>OPTIONS</b>	
401 b. <u>03</u>	OPT 1 <u>C</u>
402 a.	} OPT 6 <u>C</u>
402 b. <u>X</u>	
402 c.	
402 d.	} OPT 5 <u>C</u>
403 a. <u>X</u>	
403 b.	
403 c.	} OPT 2 <u>C</u>
403 d.	
405 b. <u>3</u>	
405 c. <u>1</u>	OPT 3 <u>A</u>
<del>406 a.</del>	} OPT 7 <u>A</u>
<del>406 b.</del>	
407 a. <u>X</u>	
407 b.	} OPT 4 <u>G</u>
408 a., 409 a. & 410 a.	
408 b., 409 a. & 410 a.	
408 a., 409 b. & 410 a.	} OPT 4 <u>G</u>
408 b., 409 b. & 410 a.	
408 b., 409 b. & 410 b.	
411 a. <u>X</u>	OPT 8 <u>C</u>
<del>411 b.</del>	} OPT 9 <u>C</u>
414 a. <u>X</u>	
414 b.	
418 a.	
418 b.	
OPCON <u>40K105</u>	
KD ADDRESS <u>C</u>	

DIAL UP	
SDC	I.D.+ 1st 2nd 3rd 4th
<b>OPTIONS</b>	
402 a.	} OPT 6
402 b.	
402 c.	
402 d.	} OPT 5
403 a.	
403 b.	
403 c.	} OPT 7
403 d.	
406 a.	
406 b.	} OPT 4
407 a.	
407 b.	
414 a.	} OPT 8
414 b.	
418 a.	
418 b.	
412 a.	OPT 1
412 b.	OPT 2
412 c.	OPT 3
413	OPT 9



EXAMPLE WORKSHEET FOR PRIVATE LINE

SECTION 582-200-205

# STATION CONFIGURATION WORKSHEET (SINGLE DISPLAY STATION)

DATE 8-14-79

TELCO (FILL IN) CUSTOMER ABC PROCESSING CO.  
 TELCO CONTACT (FILL IN NAME) TEL. NO. (FILL IN #)  
 USSO (FILL IN) CKT. NO. 2 FD453 TELCO REQ. NO. 3-81955  
 WE REQ. NO. 94-3-81955 SCHEDULE (FILL IN INSTAL DATE)

PRIVATE LINE	
SDC	SPA _____ SSA _____
<b>OPTIONS</b>	
401 b.	OPT _____
402 a.	} OPT 6
402 b.	
402 c.	
402 d.	
403 a.	} OPT 5
403 b.	
403 c.	
403 d.	} OPT 2
405 b.	
405 c.	OPT 3
406 a.	} OPT 7
406 b.	
407 a.	} OPT 4
407 b.	
408 a., 409 a. & 410 a.	} OPT 4
408 b., 409 b. & 410 a.	
408 a., 409 b. & 410 a.	
408 b., 409 b. & 410 a.	
408 b., 409 b. & 410 b.	} OPT 8
411 a.	
411 b.	} OPT 9
414 a.	
414 b.	
418 a.	
418 b.	
OPCON _____	
KD ADDRESS _____	

DIAL UP	
SDC	I.D.+ 1st <u>F</u> 2nd <u>2</u> 3rd <u>B</u> 4th <u>W</u>
<b>OPTIONS</b>	
402 a.	} OPT 6 <u>A</u>
402 b.	
402 c.	
402 d. <u>X</u>	
403 a.	} OPT 5 <u>B</u>
403 b.	
403 c. <u>X</u>	
403 d.	} OPT 7 <u>@</u>
406 a. <u>X</u>	
406 b.	} OPT 4 <u>C</u>
407 a.	
407 b.	} OPT 8 <u>@</u>
414 a.	
414 b.	} OPT 1 <u>2</u>
408 a., 409 a. & 410 a.	
408 b., 409 a. & 410 a.	
408 a., 409 b. & 410 a.	
408 b., 409 b. & 410 a.	} OPT 2 <u>B</u>
408 b., 409 b. & 410 a.	
408 b., 409 b. & 410 b.	} OPT 3 <u>W</u>
411 a.	
411 b.	} OPT 9 <u>G</u>
412 a. <u>2</u>	
412 b. <u>B</u>	
412 c. <u>W</u>	
413. <u>7</u>	

406036\*\* 6FT  
 (OR 454208\*\*)  
 OR

OPTIONAL EXT. CABLES  
~~40865 - 7 FT.~~  
~~40866 - 12 FT.~~  
 40867 - 25 FT.

<input checked="" type="checkbox"/> ** DATA SET <u>212A</u>
<input checked="" type="checkbox"/> 1200 BPS+ <input type="checkbox"/> 2400 BPS <input type="checkbox"/> 4800 BPS

406066\* 6FT

\* PRIVATE LINE ONLY  
 + DIAL UP ONLY  
 \*\* PRIVATE LINE OR DIAL UP

OPTIONAL EXT. CABLES  
 405306 - 6 FT.  
~~405307 - 12 FT.~~  
~~405308 - 25 FT.~~  
~~405309 - 50 FT.~~

PRINTER <u>40P201</u>
PTR. ADDRESS*

406039  
 6FT

EXAMPLE WORKSHEET FOR DIAL UP

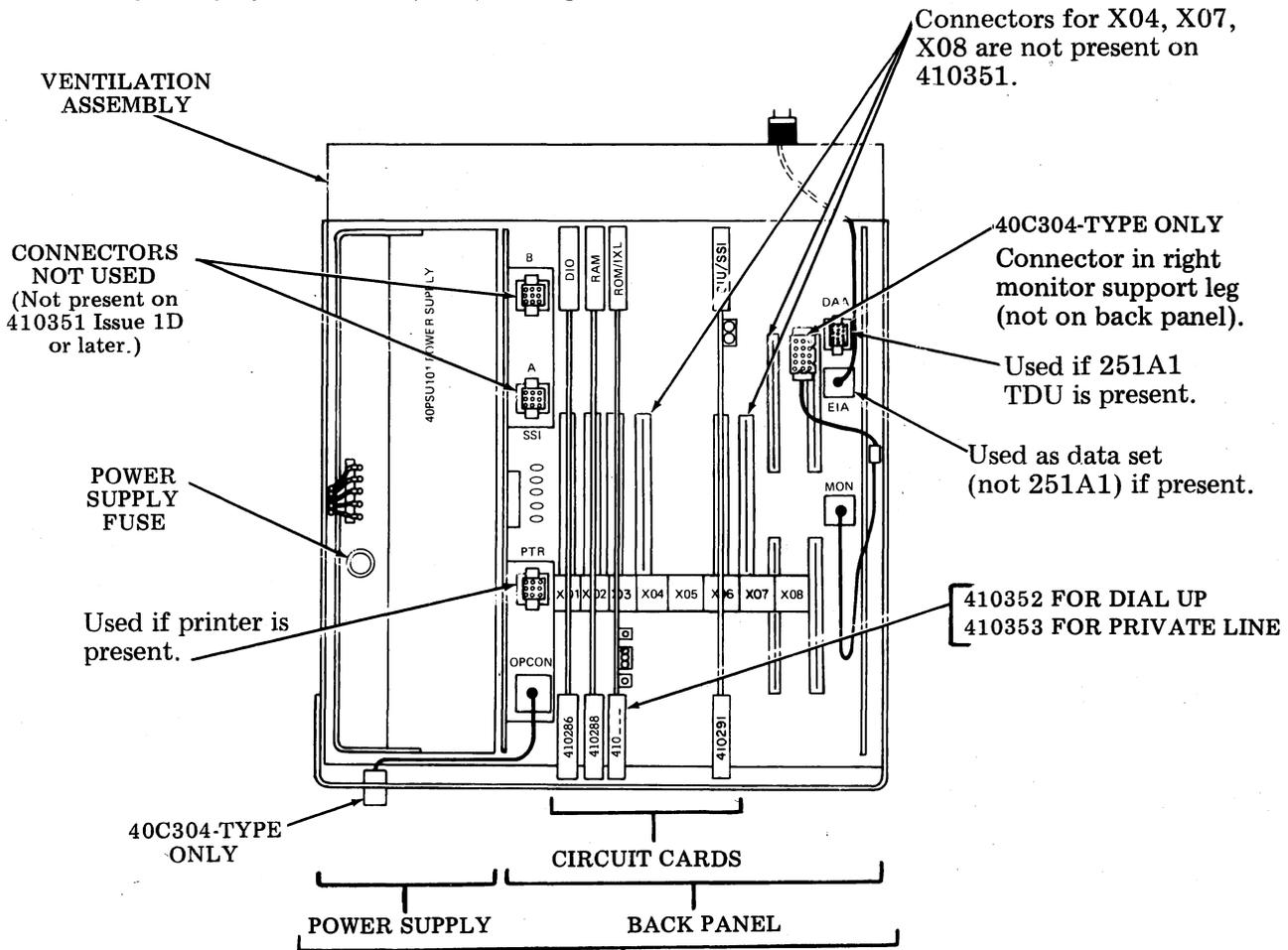
2. THE USE OF CONTROLLER ARRANGEMENT FORMS

2.01 Identification of SDC arrangements are provided in this section. Controller Arrangement Forms are also provided and discussed.

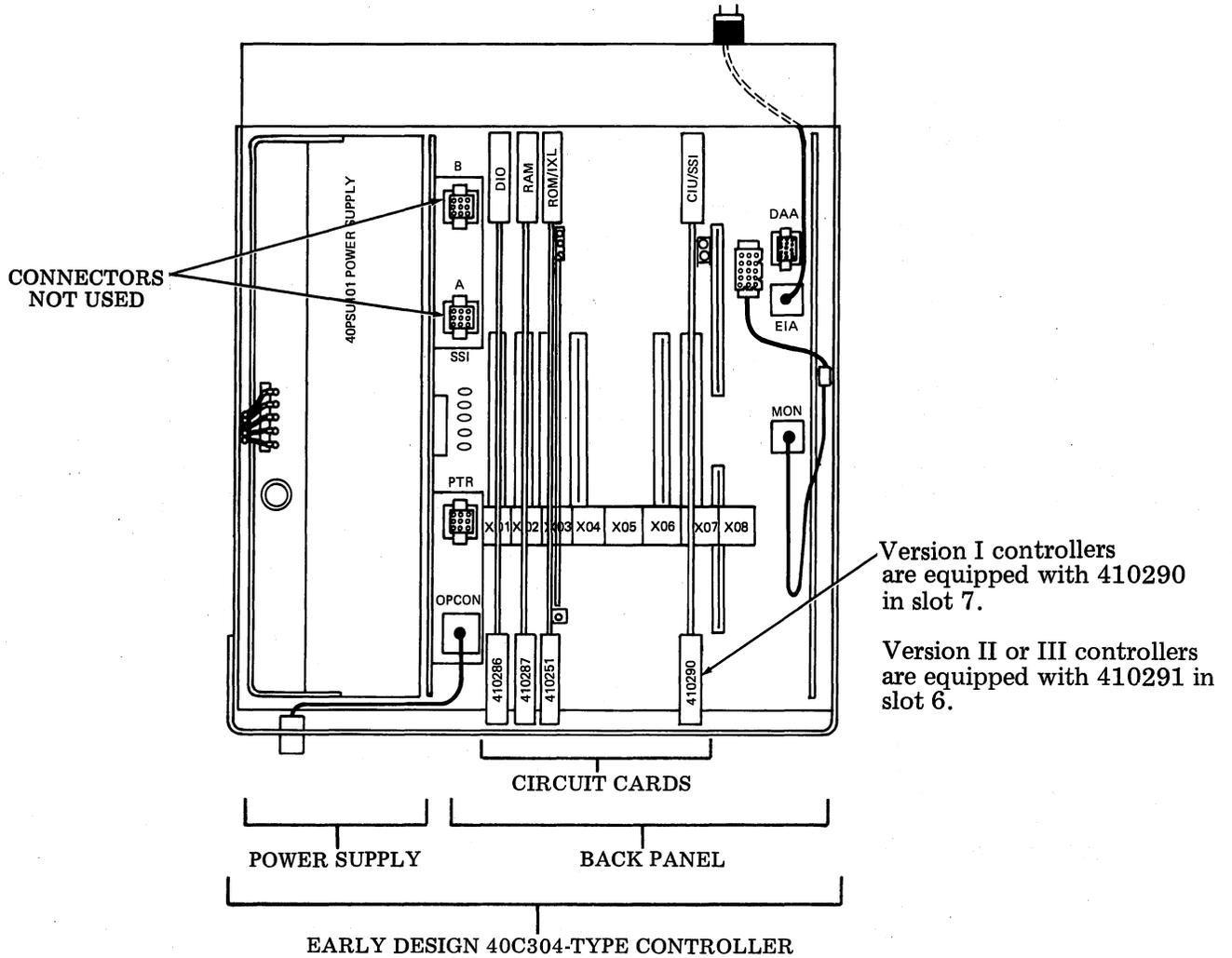
2.02 The Controller Arrangement Forms of this section include a duplicate of the form which should be kept with the Single Display Station (SDS). The form should be filled out in pencil by the service center and kept current by the craftsman. A filled out form is required when performing the actions of paragraph 3. INSTALLATION. The purpose of the form is to provide: location and type of circuit cards required, controller and printer options selected, and required cable connections to controller.

CONTROLLER ARRANGEMENT IDENTIFICATION

2.03 Single Display Controller (SDC) Arrangements:



LATE DESIGN 40C304- OR 40C305-TYPE CONTROLLER (40C304-type shown)



APPLICATION			CIRCUIT CARD POSITION (All card numbers preceded by 410)									BACK PANEL	
			1	2	3	3PB	4	5	6	7	8		9
LATE DESIGN	PRIVATE LINE		286	287	353	NA	-	-	291	-	-	(251A1)	277
	DIAL UP		286	287	352	NA	-	-	291	-	NA	NA	277
EARLY DESIGN	PRIVATE LINE	Version I	286	287	251	261-ISS 3A or less	-	-	-	290	(251A1)	NA	276
		Version II	286	287	251	261-ISS 4A or more	-	-	291	-	NA	(251A1)	277
		Version III	286	287	251	264 or 265	-	-	291	-	NA	(251A1)	277
	DIAL UP	Version III	286	287	251	262	-	-	291	-	NA	NA	277

DI/O                      RAM                      (PIGGY BACK LOCATION)                      CIU/SSI                      INTERNAL MODEM (If Present)                      (See Note)

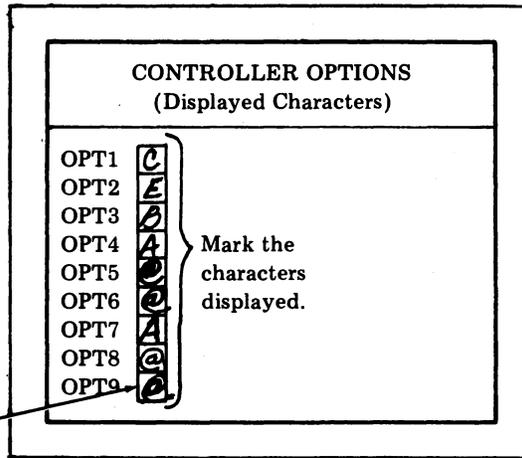
*Note:* Controllers manufactured after July 1979 may be equipped with a 410351 back panel which for these applications is electrically equivalent to a 410277 back panel.

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CIRCUIT CARD	APPLICATION NOTES
410276 (Back Panel)	Rated MD, 410277 replaces. 410291 must be in position 6 or 410290 must be in position 7.
410277 (Back Panel)	410291 must be in position 6 or 410290 must be in position 7.
410351 (Back Panel)	410291 must be in position 6.
410290 (CIU/SSI)	Rated MD, 410291 replaces. can be used only with 410251 and 410261 Issue 3A or earlier.
410291 (CIU/SSI)	Can be used in either design control- ler. (Early design may not use 410261 Iss. 3A or earlier with a 410291).
410251 (ROM/IXL)	Can be used only in early design controller (see 410252 and 410353).
410261 (EPROM) ISS 3A or earlier	Rated MD, 410265 replaces.
410261 (EPROM) ISS 4A or later	Rated MD, 410265 replaces.
410264 (EPROM)	Rated MD, 410265 replaces.
410265 (EPROM)	410353 replaces the combination of 410251 and 410265.
410262 (EPROM)	Rated MD, 410352 replaces.
410352 (ROM/IXL/EPROM)	Available now. (Dial Up)
410353 (ROM/IXL/EPROM)	Available now. (Private Line)



Example for Private Line (Contd)



This area indicates the character displayed when the corresponding customer desired options are installed. References to 4. OPTIONS will show that: the station number is 3; the KD is device 5; the printer is device 2; EBCDIC line code is used; the opcon is typewriter style; the display font is up-low; Options 403a, 402b, 406b, 411a, 414a and 418a are installed.

If a printer is present, the printer option record (part of a controller arrangement form) must be filled out; this example is for a 40P154 up-low 80-column tractor feed printer equipped with a 410071 circuit card.

Option 21 and 22 are installed using the same Option switch.

Option 22 does not apply to an up-low printer.

PRINTER OPTIONS		
Friction Feed		
Tractor Feed 80 Col		✓
Tractor Feed 132 Col		
17. Specify Right Margin		✓
Specify Left Margin		80
18a. No Paper Feed Out		
18b. Paper FO on "RM" Loss		
18c. Paper FO on "RM" Loss and ETX		✓*
19d. 96 Character Set		✓
19e. 64 Character Set		
19f. Ext ASCII Set (DO NOT USE)		
20a. Single LF		✓*
20b. Double LF		
21a. Lower and Upper Case Print		✓*
21b. Lower Case Prints as Upper Case		*
22a. Lower Case Prints as Error		
22b. Lower Case Prints as Upper Case		*
39a. Forms On		✓
39b. Forms Off		
48a. Paper Out Not Gated W/FF		
48b. Paper Out Gated W/FF		✓*
56a. FF, Motor on After Paper Alarm		*
56b. TF, Motor off After Paper Alarm		
58a. No Idle Line Motor Control		✓*
58b. Idle Line Motor Control		

\*Indicates Factory Options

Note: The following printer options are required (when present) 19c., 54a., 55a., 57a., 59f., 60b., and 61a.

Example for Private Line (Contd)

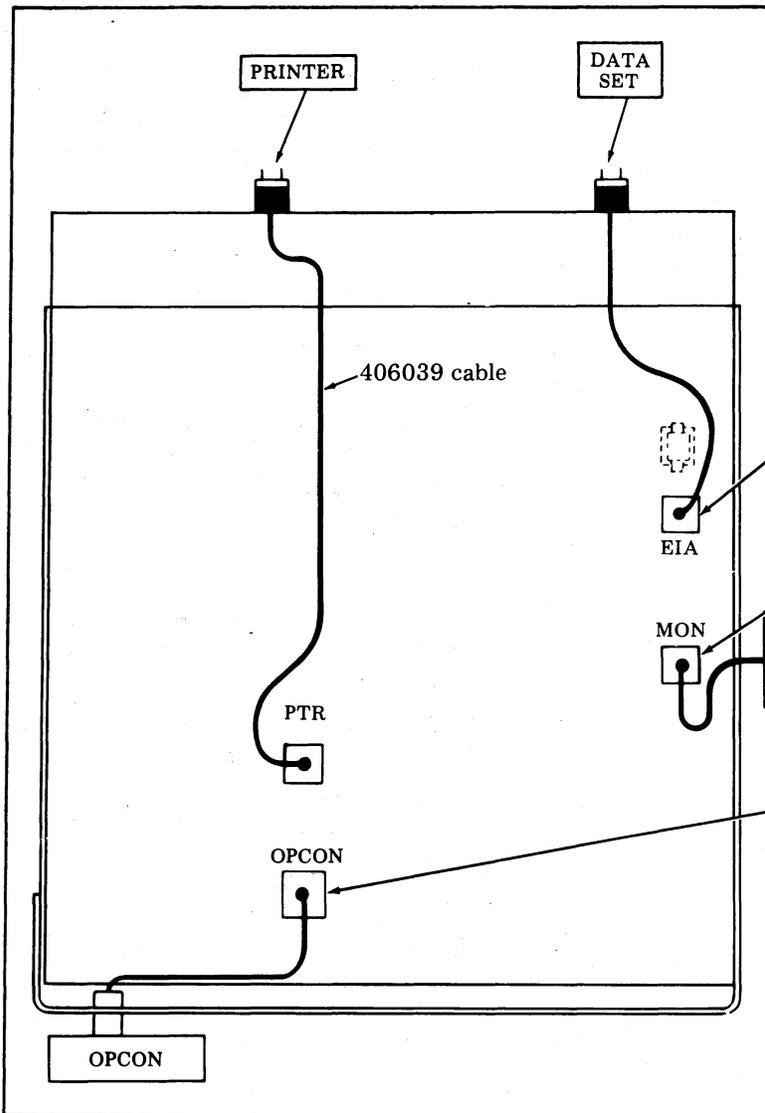
CARD POSITION	I/O SOCKET	STATION WORKSHEET
7	OPCON,	OPCON/
1	MON	MON (DEVICE 1)
7	PTR	PTR (DEVICE 2)
7	EIA	DATA SET

Applies to Private Line only:

Opcon/Monitor (KD) is always Device 1 (Opt 2 applies);

Printer is always Device 2 (Opt 3 applies).

The drawing below illustrates this column.



EIA used to connect to data set. (DAA not used.)

Monitor always connected here for 40C304-type controller.

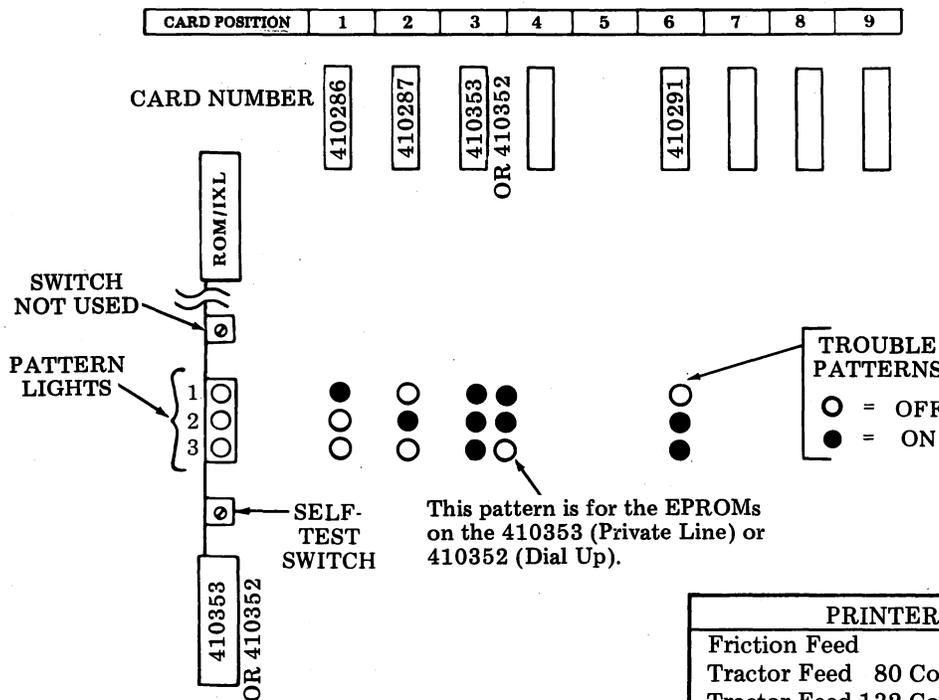
Opcon always connected here for 40C304-type controller.

CONTROLLER ARRANGEMENT FORMS — LATE DESIGN

SDS Equipped with 40C304-Type Controller, Late Design, Without Internal Modem

Arrangement Form

Application: Private Line without 251A1, or Dial Up



If indicated card is not at fault, refer to Section 582-200-505, Chart 7, Step 3, "NO" RESPONSE DIRECTIVE column.

CONTROLLER OPTIONS (Displayed Characters)	
OPT1	} Mark the characters displayed.
OPT2	
OPT3	
OPT4	
OPT5	
OPT6	
OPT7	
OPT8	
OPT9	

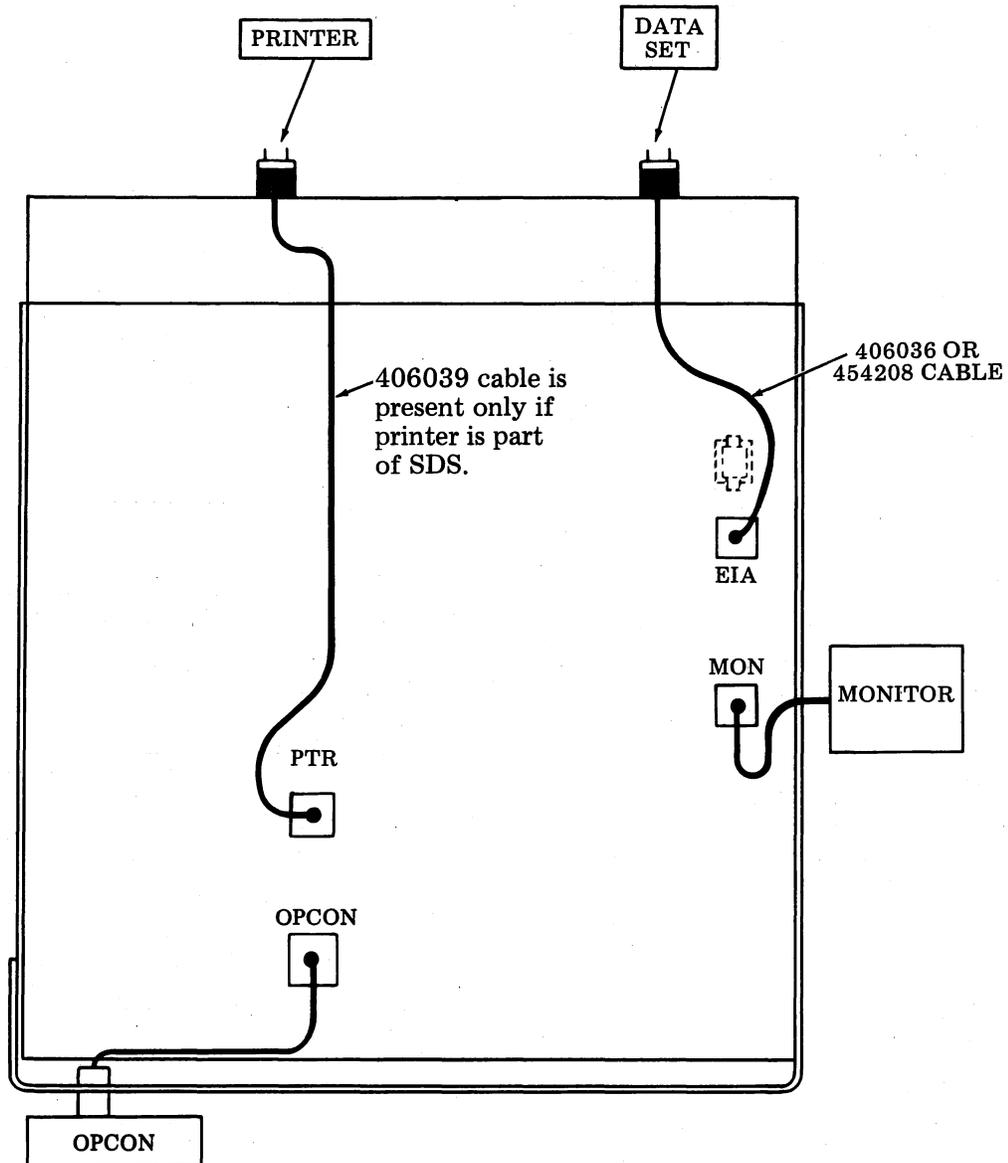
PRINTER OPTIONS	
Friction Feed	
Tractor Feed 80 Col	
Tractor Feed 132 Col	
17. Specify Right Margin	
Specify Left Margin	
18a. No Paper Feed Out	
18b. Paper FO on "RM" Loss	
18c. Paper FO on "RM" Loss and ETX	*
19d. 96 Character Set	
19e. 64 Character Set	
19f. Ext ASCII Set (DO NOT USE)	
20a. Single LF	*
20b. Double LF	
21a. Lower and Upper Case Print	
21b. Lower Case Prints as Upper Case	*
22a. Lower Case Prints as Error	
22b. Lower Case Prints as Upper Case	*
39a. Forms On	
39b. Forms Off	
48a. Paper Out Not Gated W/FF	
48b. Paper Out Gated W/FF	*
56a. FF, Motor on After Paper Alarm	*
56b. TF, Motor off After Paper Alarm	
58a. No Idle Line Motor Control	*
58b. Idle Line Motor Control	

\*Indicates Factory Options

Note: The following printer options are required (when present) 19c., 54a., 55a., 57a., 59f., 60b., and 61a.

See adjacent page for connections.

CARD POSITION	I/O SOCKET	STATION WORKSHEET
7	OPCON,	OPCON/
1	MON	MON (DEVICE 1)
7	PTR	PTR (DEVICE 2)
7	EIA	DATA SET



*Note:* If customer requires that print local operation be prohibited from the opcon, place a 340701 keytop over the PRINT LOCAL position.

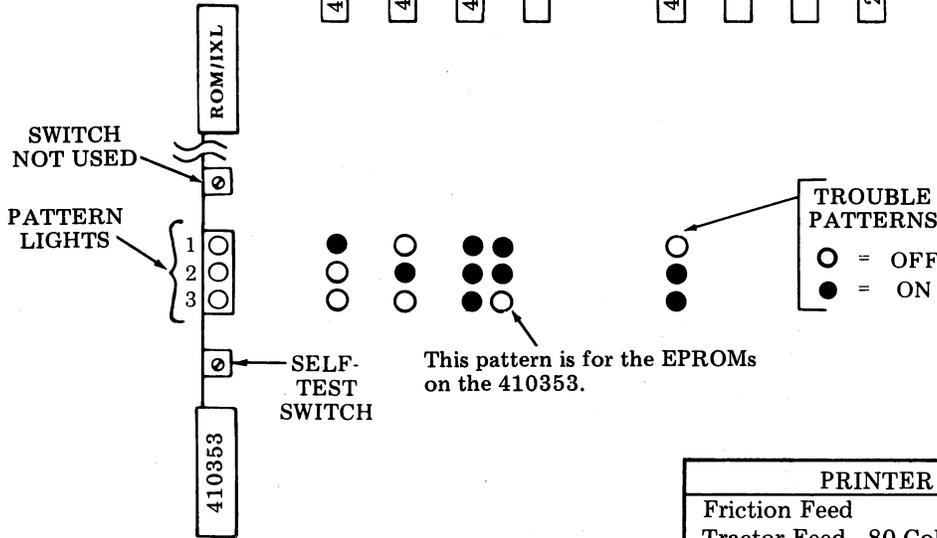
SECTION 582-200-205

SDS Equipped with 40C304-Type Controller, Late Design, with Internal Modem Arrangement Form

Application: Private Line with 251A1

CARD POSITION	1	2	3	4	5	6	7	8	9
---------------	---	---	---	---	---	---	---	---	---

CARD NUMBER	410286	410287	410353			410291			251A1
-------------	--------	--------	--------	--	--	--------	--	--	-------



If indicated card is not at fault, refer to Section 582-200-505, Chart 7, Step 3, "NO" RESPONSE DIRECTIVE column.

CONTROLLER OPTIONS (Displayed Characters)	
OPT1	<input type="checkbox"/>
OPT2	<input type="checkbox"/>
OPT3	<input type="checkbox"/>
OPT4	<input type="checkbox"/>
OPT5	<input type="checkbox"/>
OPT6	<input type="checkbox"/>
OPT7	<input type="checkbox"/>
OPT8	<input checked="" type="checkbox"/>
OPT9	<input type="checkbox"/>

Mark the characters displayed.

251A1 OPTIONS
ZA, ZR, ZT
YA, YC, YD

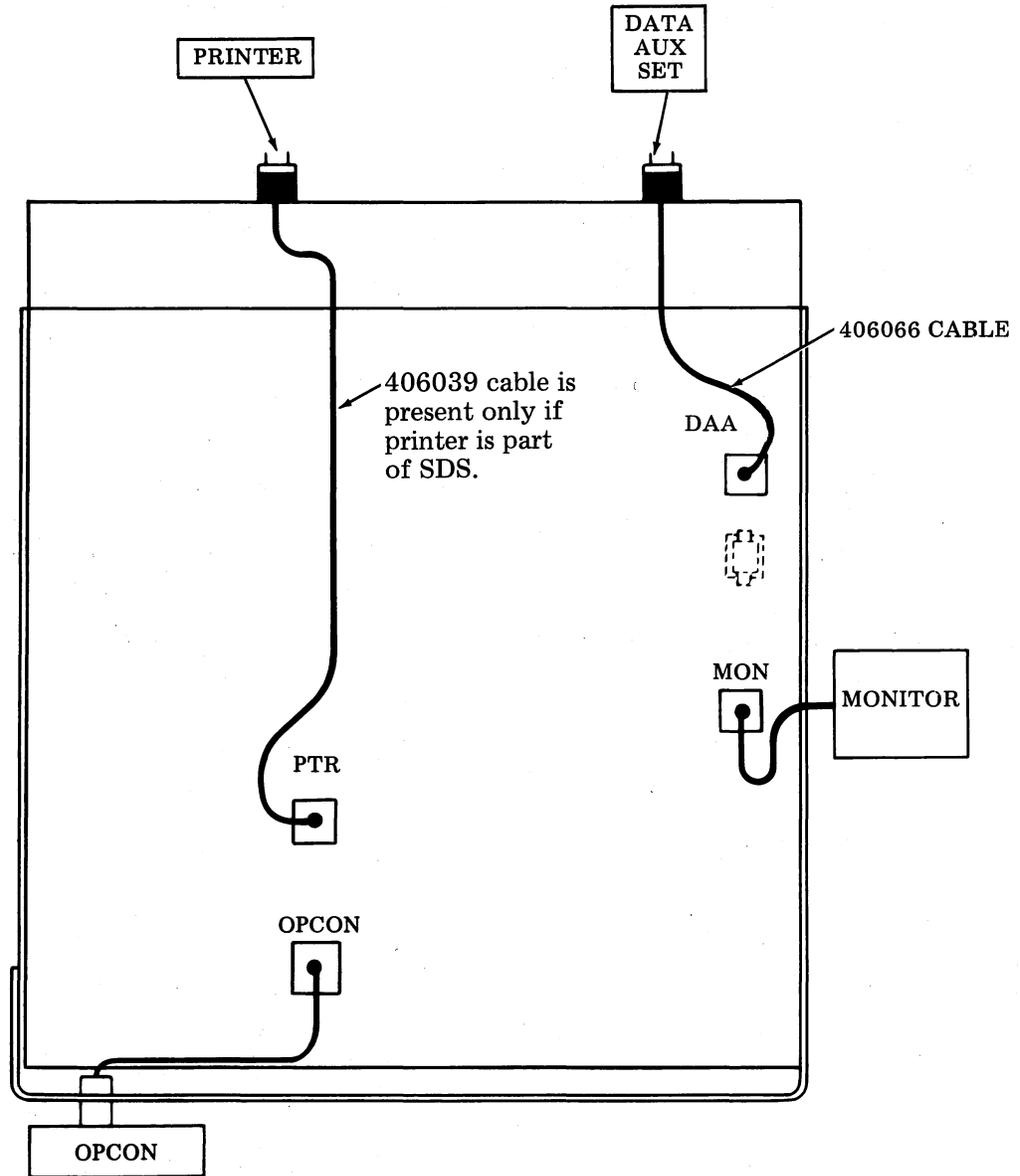
PRINTER OPTIONS	
Friction Feed	<input type="checkbox"/>
Tractor Feed 80 Col	<input type="checkbox"/>
Tractor Feed 132 Col	<input type="checkbox"/>
17. Specify Right Margin	<input type="checkbox"/>
Specify Left Margin	<input type="checkbox"/>
18a. No Paper Feed Out	<input type="checkbox"/>
18b. Paper FO on "RM" Loss	<input type="checkbox"/>
18c. Paper FO on "RM" Loss and ETX	<input type="checkbox"/>
19d. 96 Character Set	<input type="checkbox"/>
19e. 64 Character Set	<input type="checkbox"/>
19f. Ext ASCII Set (DO NOT USE)	<input type="checkbox"/>
20a. Single LF	<input type="checkbox"/>
20b. Double LF	<input type="checkbox"/>
21a. Lower and Upper Case Print	<input type="checkbox"/>
21b. Lower Case Prints as Upper Case	<input type="checkbox"/>
22a. Lower Case Prints as Error	<input type="checkbox"/>
22b. Lower Case Prints as Upper Case	<input type="checkbox"/>
39a. Forms On	<input type="checkbox"/>
39b. Forms Off	<input type="checkbox"/>
48a. Paper Out Not Gated W/FF	<input type="checkbox"/>
48b. Paper Out Gated W/FF	<input type="checkbox"/>
56a. FF, Motor on After Paper Alarm	<input type="checkbox"/>
56b. TF, Motor off After Paper Alarm	<input type="checkbox"/>
58a. No Idle Line Motor Control	<input type="checkbox"/>
58b. Idle Line Motor Control	<input type="checkbox"/>

\*Indicates Factory Options

Note: The following printer options are required (when present) 19c., 54a., 55a., 57a., 59f., 60b., and 61a.

See adjacent page for connections.

CARD POSITION	I/O SOCKET	STATION WORKSHEET
7	OPCON,	OPCON/
1	MON	MON (DEVICE 1)
7	PTR	PTR (DEVICE 2)
9	DAA	DATA AUX SET

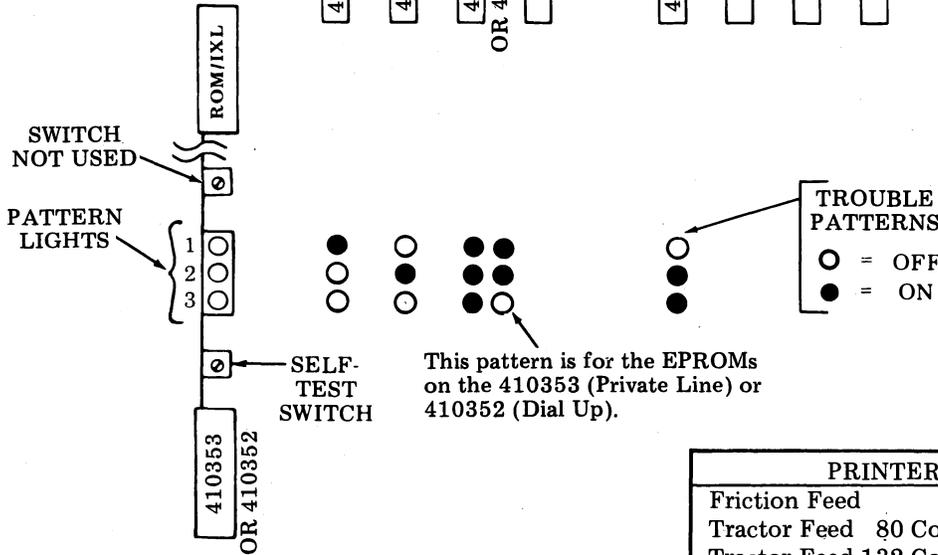


*Note:* If customer requires that print local operation be prohibited from the opcon, place a 340701 keytop over the PRINT LOCAL position.

SDS Equipped with 40C305-Type Controller, Late Design, Without Internal Modem Arrangement Form

Application: Private Line without 251A1, or Dial Up

CARD POSITION	1	2	3	4	5	6	7	8	9
---------------	---	---	---	---	---	---	---	---	---



If indicated card is not at fault, refer to Section 582-200-505, Chart 7, Step 3, "NO" RESPONSE DIRECTIVE column.

CONTROLLER OPTIONS (Displayed Characters)	
OPT1	<input type="checkbox"/>
OPT2	<input type="checkbox"/>
OPT3	<input type="checkbox"/>
OPT4	<input type="checkbox"/>
OPT5	<input type="checkbox"/>
OPT6	<input type="checkbox"/>
OPT7	<input type="checkbox"/>
OPT8	<input checked="" type="checkbox"/>
OPT9	<input type="checkbox"/>

Mark the characters displayed.

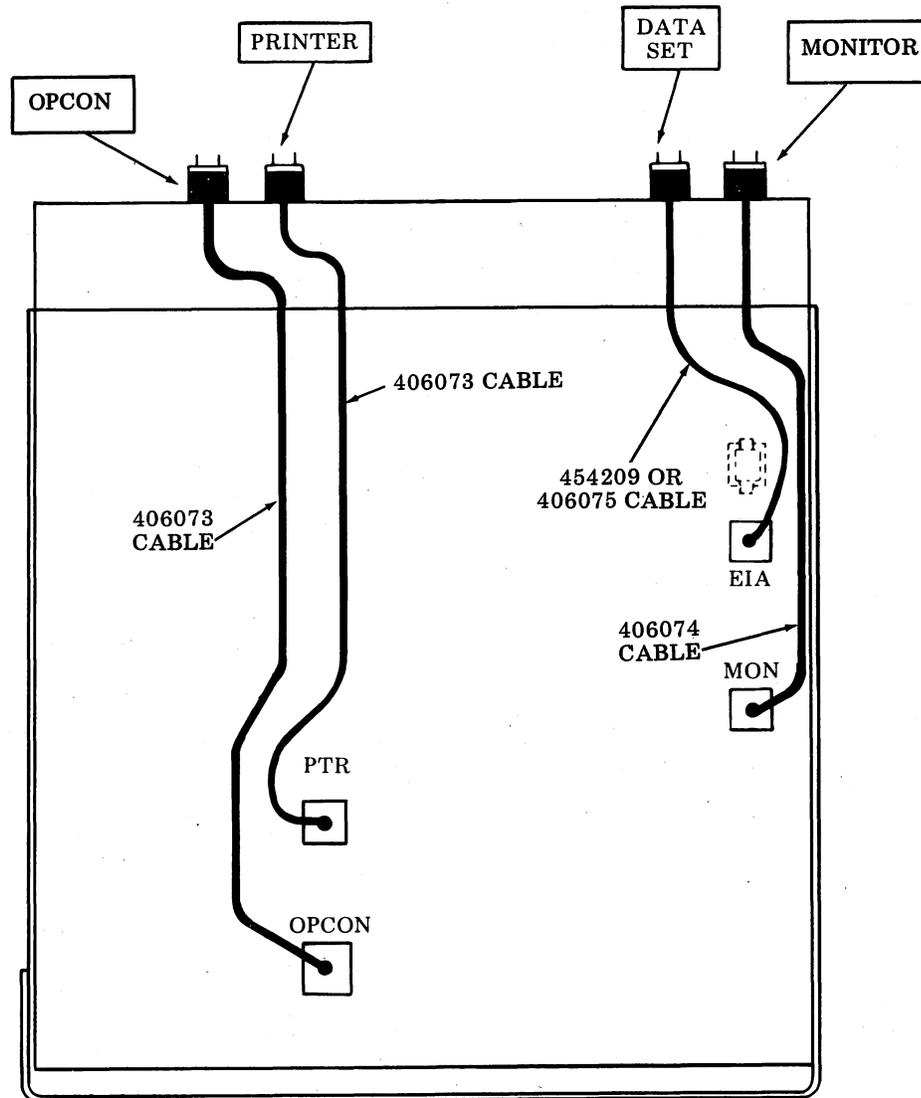
PRINTER OPTIONS	
Friction Feed	<input type="checkbox"/>
Tractor Feed 80 Col	<input type="checkbox"/>
Tractor Feed 132 Col	<input type="checkbox"/>
17. Specify Right Margin Specify Left Margin	<input type="checkbox"/>
18a. No Paper Feed Out	<input type="checkbox"/>
18b. Paper FO on "RM" Loss	<input type="checkbox"/>
18c. Paper FO on "RM" Loss and ETX	<input type="checkbox"/> *
19d. 96 Character Set	<input type="checkbox"/>
19e. 64 Character Set	<input type="checkbox"/>
19f. Ext ASCII Set (DO NOT USE)	<input type="checkbox"/>
20a. Single LF	<input type="checkbox"/>
20b. Double LF	<input type="checkbox"/> *
21a. Lower and Upper Case Print	<input type="checkbox"/>
21b. Lower Case Prints as Upper Case	<input type="checkbox"/> *
22a. Lower Case Prints as Error	<input type="checkbox"/>
22b. Lower Case Prints as Upper Case	<input type="checkbox"/> *
39a. Forms On	<input type="checkbox"/>
39b. Forms Off	<input type="checkbox"/>
48a. Paper Out Not Gated W/FF	<input type="checkbox"/>
48b. Paper Out Gated W/FF	<input type="checkbox"/> *
56a. FF, Motor on After Paper Alarm	<input type="checkbox"/> *
56b. TF, Motor off After Paper Alarm	<input type="checkbox"/>
58a. No Idle Line Motor Control	<input type="checkbox"/> *
58b. Idle Line Motor Control	<input type="checkbox"/>

\*Indicates Factory Options

Note: The following printer options are required (when present) 19c., 54a., 55a., 57a., 59f., 60b., and 61a.

See adjacent page for connections.

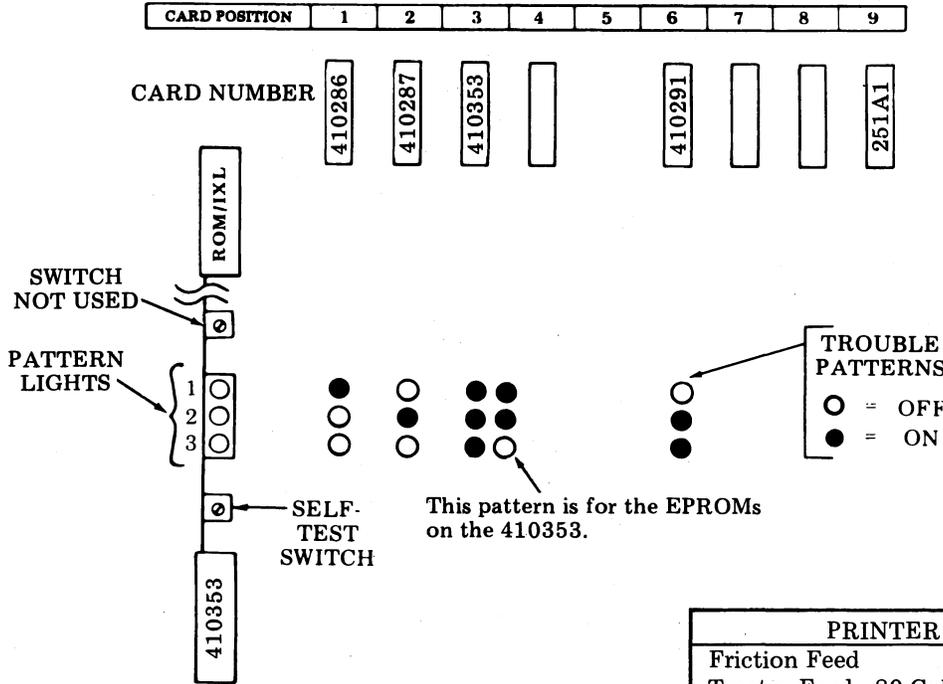
CARD POSITION	I/O SOCKET	STATION WORKSHEET
7	OPCON,	OPCON/
1	MON	MON (DEVICE 1)
7	PTR	PTR (DEVICE 2)
7	EIA	DATA SET



*Note:* If customer requires that print local operation be prohibited from the opcon, place a 340701 keytop over the PRINT LOCAL position.

SDS Equipped with 40C305-Type Controller, Late Design, with Internal Modem Arrangement Form

Application: Private Line with 251A1



If indicated card is not at fault, refer to Section 582-200-505, Chart 7, Step 3, "NO" RESPONSE DIRECTIVE column.

CONTROLLER OPTIONS (Displayed Characters)	
OPT1	<input type="checkbox"/>
OPT2	<input type="checkbox"/>
OPT3	<input type="checkbox"/>
OPT4	<input type="checkbox"/>
OPT5	<input type="checkbox"/>
OPT6	<input type="checkbox"/>
OPT7	<input type="checkbox"/>
OPT8	<input checked="" type="checkbox"/>
OPT9	<input type="checkbox"/>

} Mark the characters displayed.

251A1 OPTIONS
ZA, ZR, ZT
YA, YC, YD

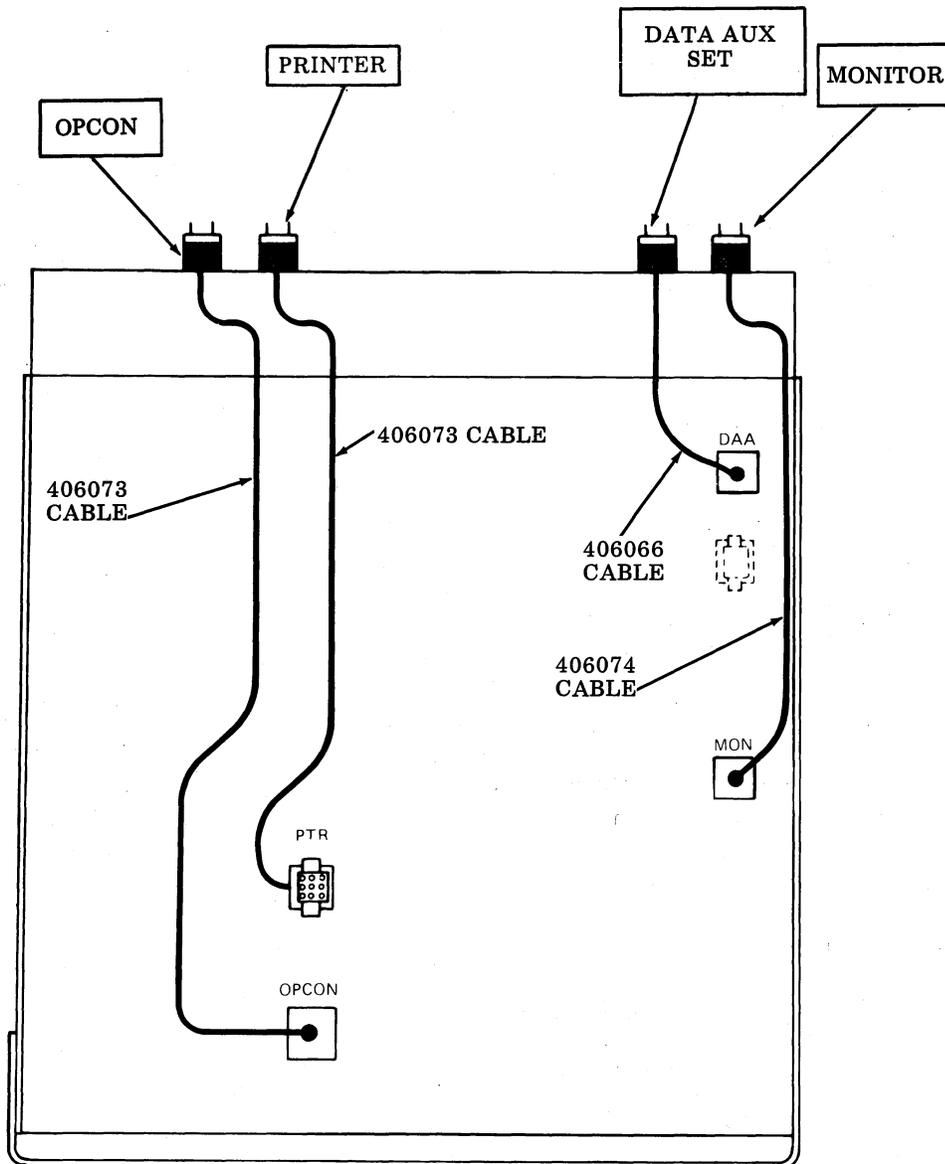
PRINTER OPTIONS	
Friction Feed	<input type="checkbox"/>
Tractor Feed 80 Col	<input type="checkbox"/>
Tractor Feed 132 Col	<input type="checkbox"/>
17. Specify Right Margin	<input type="checkbox"/>
Specify Left Margin	<input type="checkbox"/>
18a. No Paper Feed Out	<input type="checkbox"/>
18b. Paper FO on "RM" Loss	<input type="checkbox"/>
18c. Paper FO on "RM" Loss and ETX	*
19d. 96 Character Set	<input type="checkbox"/>
19e. 64 Character Set	<input type="checkbox"/>
19f. Ext ASCII Set (DO NOT USE)	<input type="checkbox"/>
20a. Single LF	*
20b. Double LF	<input type="checkbox"/>
21a. Lower and Upper Case Print	<input type="checkbox"/>
21b. Lower Case Prints as Upper Case	*
22a. Lower Case Prints as Error	<input type="checkbox"/>
22b. Lower Case Prints as Upper Case	*
39a. Forms On	<input type="checkbox"/>
39b. Forms Off	<input type="checkbox"/>
48a. Paper Out Not Gated W/FF	<input type="checkbox"/>
48b. Paper Out Gated W/FF	*
56a. FF, Motor on After Paper Alarm	*
56b. TF, Motor off After Paper Alarm	<input type="checkbox"/>
58a. No Idle Line Motor Control	*
58b. Idle Line Motor Control	<input type="checkbox"/>

\*Indicates Factory Options

Note: The following printer options are required (when present) 19c., 54a., 55a., 57a., 59f., 60b., and 61a.

See adjacent page for connections.

CARD POSITION	I/O SOCKET	STATION WORKSHEET
7	OPCON,	OPCON/
1	MON	MON (DEVICE 1)
7	PTR	PTR (DEVICE 2)
9	DAA	DATA AUX SET



*Note:* If customer requires that print local operation be prohibited from the opcon, place a 340701 keytop over the PRINT LOCAL position.

3. INSTALLATION

INSTALLATION OUTLINE

- (1) Review Service Order and Configuration Worksheet.
- (2) Unpack equipment (3.02 – 3.07).
- (3) Placement of equipment (3.08, 3.09).
- (4) Install opcon and monitor (3.10, 3.11).
- (5) Check options in printer (paragraph 5).
- (6) Install printers 3.16 – 3.19.
- (7) Install cables 3.20, 3.21.
- (8) Connect power cords, turn on power switches (3.22 – 3.24).
- (9) Verify and install controller options (paragraph 4).
- (10) Check options in modem.
- (11) Perform operational checkout refer to Section 582-200-505.
  - (a) Self-test with all cables installed,
  - (b) Component operational checks,
  - (c) Local test,
  - (d) On-line tests.
- (12) Have customer try out station.
- (13) Complete the installation:
  - (a) Give How To Operate manual(s) to customer,
  - (b) Clean up,
  - (c) Complete service order.

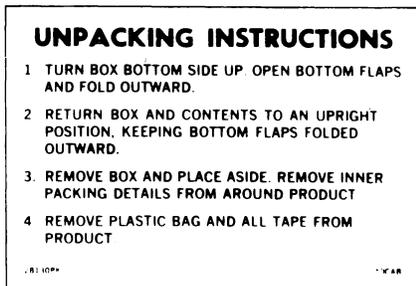
OBTAIN STATION CONFIGURATION WORKSHEET

3.01 Obtain the Station Configuration Worksheet. See 1.05 for purpose and examples of a worksheet. If a worksheet is not present or does not contain required information, obtain the service order.

Note: ID labels are not used; placement of equipment is done from the configuration worksheet.

UNPACKING INSTRUCTIONS

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



If there is no label on the box, use these procedures:

- (a) With box in upright position, open top flaps and fold outward.
- (b) Lift contents out of box. Remove inner packing details from around product.
- (c) Remove plastic bag and all tape from product.

UNPACKING EQUIPMENT

3.03 The following KD and controller components are packed separately:

- (a) These components apply for a station equipped with a 40C304-type controller:

40CAB251/ZZ + Related Parts	KD Cabinet (Includes 40C304-type Controller and a 406047 Set of Parts) and All Set Cables (except extension cables)
40MN101 (or 40MN201)	Monitor
40K104/DAB, 40K105/CAA OR 40K203/GAB	Opcon (If 40K203GAB Opcon is featured, Modification Kit 346936 will be attached to 40CAB251 Cabinet)

- (b) These components apply for a station equipped with a 40C305-type controller:

40CAB901/AJ + top + 40C305	Pedestal For Controller + top + controller
40BSE101	Monitor Base
40BSE201 (for 40K104 or 40K105) or 40BSE202 (for 40K203)	Opcon Base
40MN101 (or 40MN201)	Monitor
40K104/DAB (or 40K105/CAA or 40K203/GAB)	Opcon

3.04 If a friction feed printer is part of the station, the following components are packed separately:

40P101/ZZ + Type Carrier or 40P102/ZZ + Type Carrier	Friction Feed Printer (Includes Type Carrier)
40CAB201/ZZ + Related Parts or 40CAB371/ZZ + Related Parts	Friction Feed Printer Cabinet
40PWU101 (If Present)	Paper Winder For 40CAB201/ZZ
40PWU102 (If Present)	Paper Winder For 40CAB201/ZZ or 40CAB371/ZZ

3.05 If an 80-column tractor feed printer is part of the station, the following components are packed separately:

40P151/ZZ + Type Carrier or 40P154/ZZ + Type Carrier	80-Column Tractor Feed Printer (Includes Type Carrier)
40CAB351/ZZ + Related Parts	80-Column Tractor Feed Printer Cabinet
407060	Paper Guide
405544 (If Present)	Paper Rack

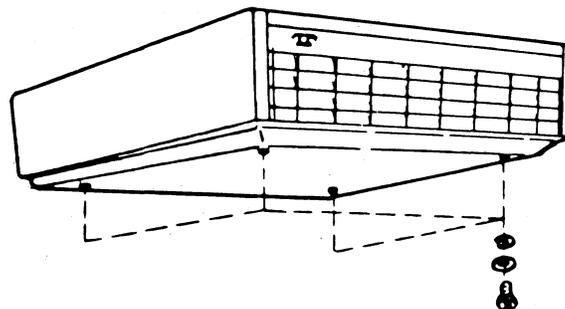
3.06 If a 132-column tractor feed printer is part of the station, the following components are packed separately:

40P201/ZZ + Type Carrier or 40P202/ZZ + Type Carrier	132-Column Tractor Feed Printer (Includes Type Carrier)
40CAB353/ZZ + Related Parts	132-Column Tractor Feed Printer Cabinet
407061	Paper Guide

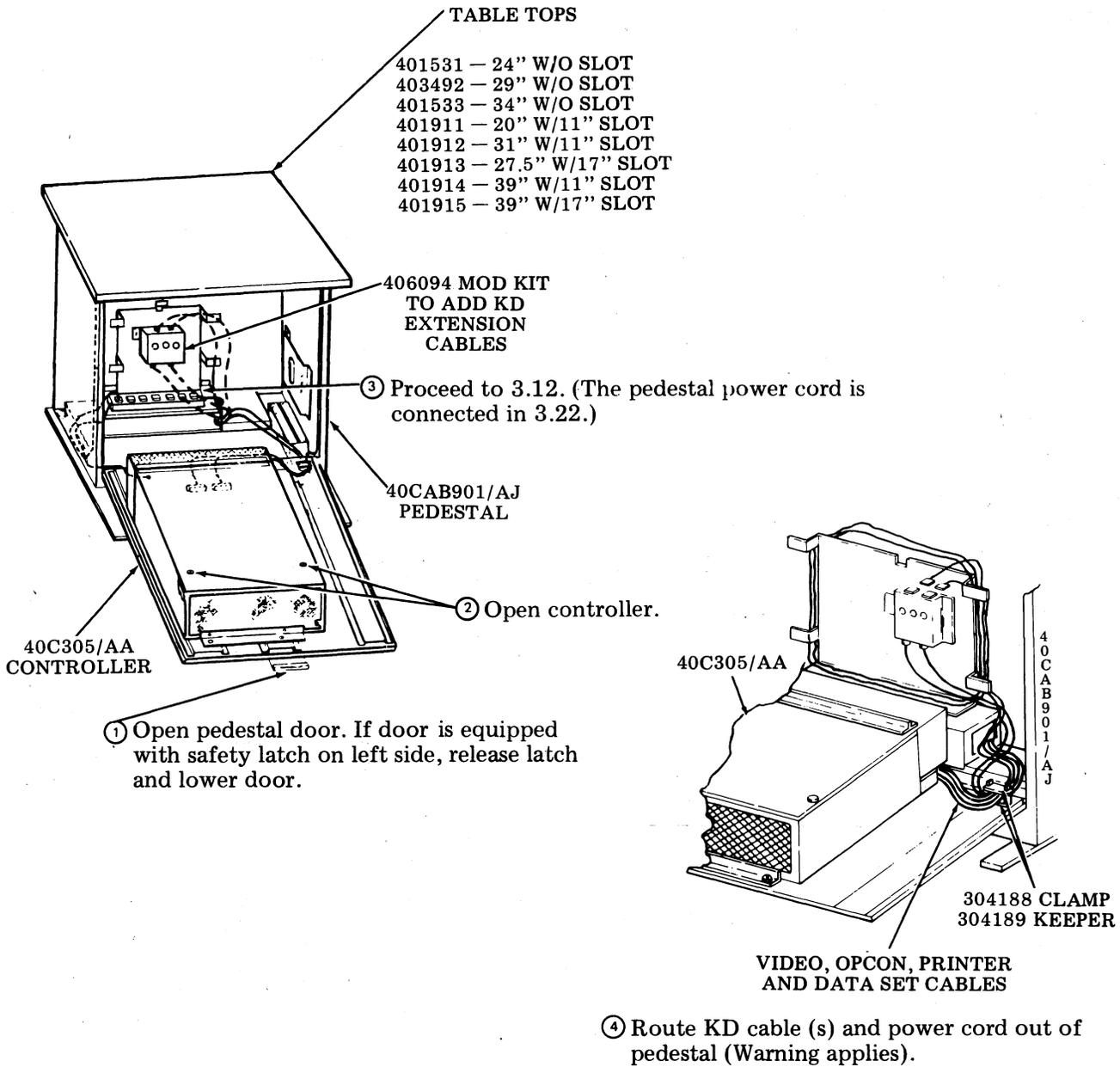
3.07 Unpack all boxes.

**PLACEMENT OF EQUIPMENT**

3.08 40C304-type only: Place the monitor support cabinet (40CAB251) on a flat surface near the desired installation location. With the cabinet on its side, remove the mounting hardware (four places) from the cabinet bottom. Place the cabinet on the customer provided table or desk (a pedestal may be used). Do not connect power cord to ac outlet until 3.22. Proceed to 3.10. (The controller power cord is connected in 3.22.)



3.09 40C305-type only: Place pedestal containing the controller in desired location. Proceed to Step ①.



**Warning:** All the cables to a pedestal-mounted 40C305/AA controller must be routed through the cable duct side opening at the lower rear of the pedestal. The cables must also be routed through the strain relief clamp (304188 clamp and 304189 keeper) located on the right side of the pedestal door. All cable lengths inside the pedestal should be kept to a minimum.

**ATTACHED KD INSTALLATION (40C304-Type Applications)**

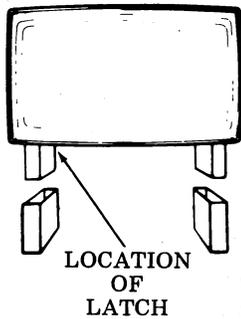
*Danger: When installing monitor, keep your hands clear of the bottom of the monitor posts to avoid injury.*

**3.10 40MN101 (or 40MN201) Monitor Installation to 40CAB251 Cabinet:**

*Warning: A monitor manufactured before June 1979 can be lifted off without releasing any latches, however, a small metal latch on the rear of the left leg of monitors manufactured after May 1979 must be released (pushed forward) to be able to lift off the monitor.*

*Caution: A 40MN101/AA is generally used, however, a 40MN201/AA may be required to avoid "waviness" of displayed data when the 60 hertz voltage varies by more than 0.1% for an extended time. The 40MN201/AA can operate over a range of 48 hertz to 62 hertz.*

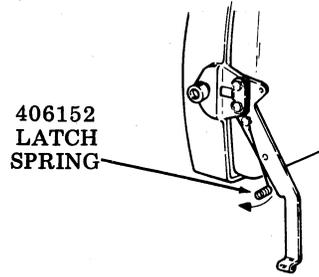
- ① Unpack monitor.
- ② Place the monitor on the support posts. On late style monitors there is a latch on the rear of the left monitor support post, ie, it can not be lifted off without releasing the latch. (Early style monitors do not have a latch).



*Caution: Wear safety glasses.*

**③ Tilt the Monitor back and:**

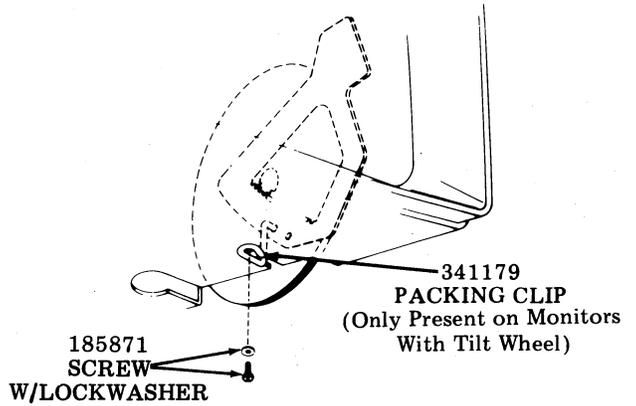
Later Tilt Lever Style — reach in on right side by the tilt lever and push the end of 406152 latch spring to the front. With 406152 held to the front, pull tilt lever to right and move lever to rear. Release the latch spring.



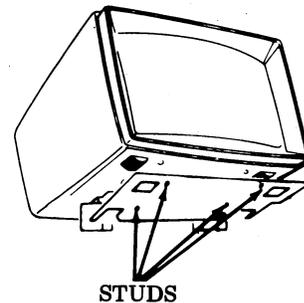
Early Tilt lever Style — remove PK material from tube tilt mechanism.

Tilt Wheel Style — remove 341719 and packing clip from tube tilt mechanism. Retain clip for future repacking.

**TILT WHEEL STYLE MONITOR**



**④ Install the plastic bottom plate (packed separately), it snaps on with four studs that are part of the bottom plate.**

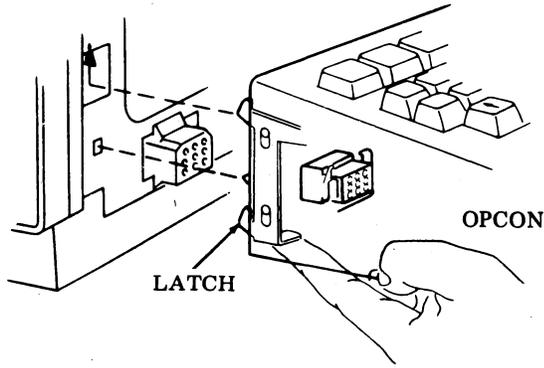


Later Tilt Lever Style — the bottom plate prevents the latch spring from being accidentally engaged in the shipping position.

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3.11 40K104/DAB, 40K105/CAA or 40K203/GAB Opcon Installation to 40CAB251 Cabinet:

- ① New-style pack: Install cover with latches on the keyboard side frames.



- ② Slide latches downward and position opcon so that connectors are aligned and latches on left and right side are fully engaged.

*Note:* Remove shipping plates.  
(Applies to old-style pack.)

- ③ Slide latches upward and check that opcon is firmly attached on both sides before releasing.

- ④ Go to 3.16. (The monitor support cabinet power cord is connected in 3.22.)

FREE-STANDING KD INSTALLATION (40C305-Type Applications)

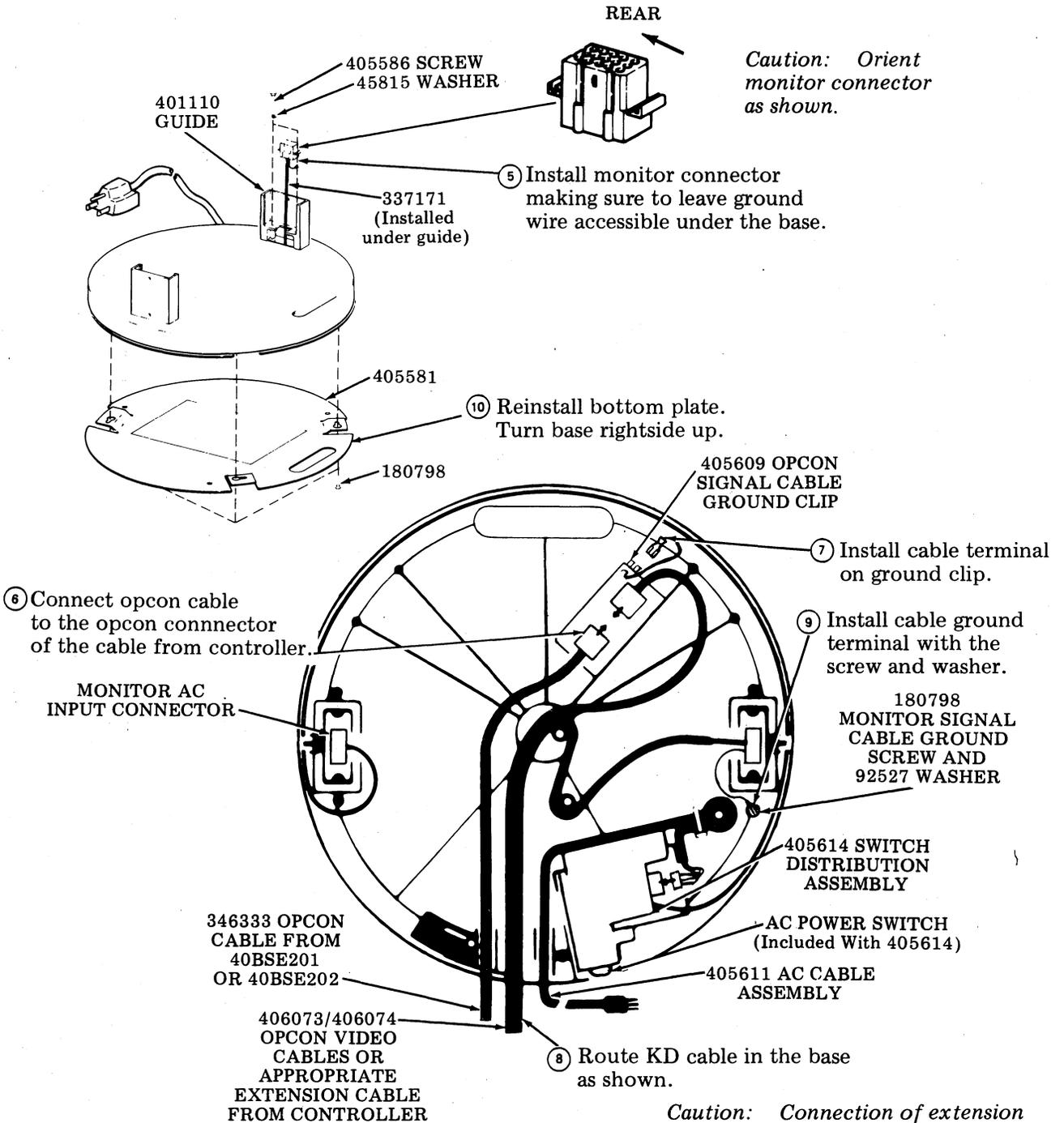
3.12 This paragraph provides the method for installing a monitor base of a free-standing KD. The opcon cable and video cable must be routed to the KD (a single extension cable may also be used). The monitor base be disassembled and the cable(s) must be connected to it and then the base must be reassembled.

- (a) Route cables from controller to desired location of KD (see Note).

- (1) When required cable length is longer than 10 feet, the 406094 modification kit (see 3.09 for identification) and either a 405375 (25 feet) or 405376 (50 feet) cable assembly is required. If 406094 modification kit is not installed, refer to Part 10.
- (2) When 406094 modification kit is used, route the 405375 (or 405376) cable into the pedestal from the rear (through the side opening shown in 3.09). Connect the cable to the 406090 junction box. Then route the cable to the desired KD location.
- (3) When 406094 modification kit is not used, route the 406073 opcon cable and 406074 video cable to the desired location.

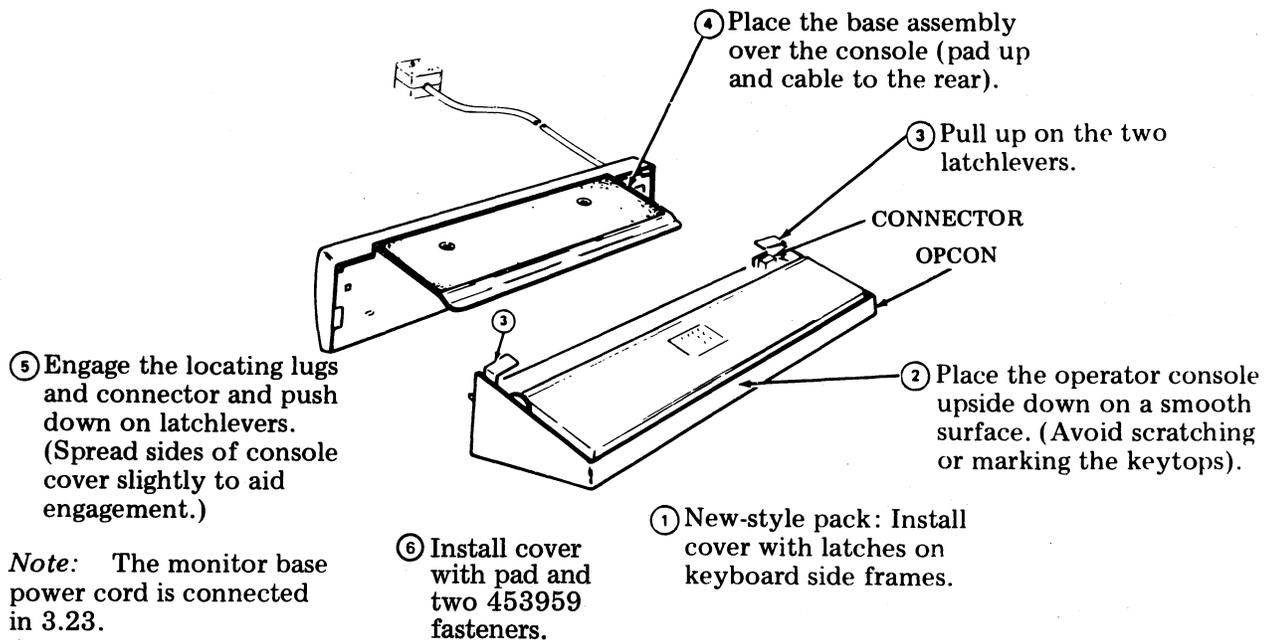
*Note:* Cabling should be routed so as to prevent a hazard to personnel or cable damage.

- (b) Unpack bases and opcon, connect cable from SDC:
- ① Unpack the free standing KD bases (40BSE101 and 40BSE201 or 40BSE101 and 40BSE202).
  - ② Unpack the opcon and lay alongside bases.
  - ③ Turn monitor base upside down. Loosen three 405586 screws from bottom of 40BSE101 base and remove bottom plate.
  - ④ Route KD cable from SDC and install the video connector in guide as shown below.



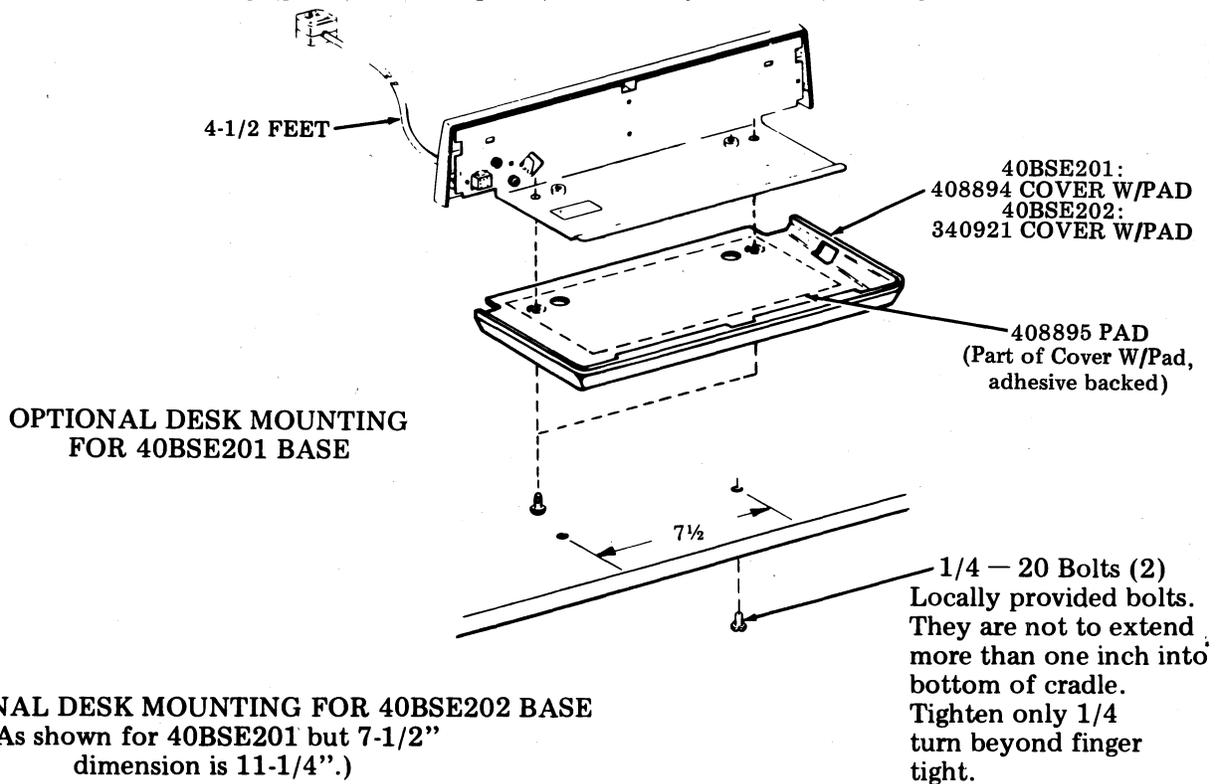
SECTION 582-200-205

- 3.13 Install Monitor (40MN101) to Base (40BSE101) as given in 3.10. The Danger, Warning, and Caution above 3.10 apply.
- 3.14 Install 40K104/DAB or 40K105/CAA Opcon to 40BSE201 Base, or 40K203/GAB Opcon to 40BSE202 Base. (See 3.15 for permanent mounting.)



*Note:* The monitor base power cord is connected in 3.23.

- 3.15 Permanent mounting (per customer option) of the keyboard may be required. Instructions are:



PRINTER INSTALLATION

3.16 A printer requires a type carrier:

Carrier Type	Type Carrier Part Number and Font ID Symbol			
	132-Column		80-Column	
	ASCII	EBCDIC	ASCII	EBCDIC
Monocase Standard	400780 ≡A≡ ≡J≡	400887 ≡A≡ ≡2≡	400645 ≡A≡ ≡A≡	400785 ≡A≡ ≡D≡
Up-Low Standard	400777 ≡A≡ ≡D≡	400783 ≡A≡ ≡M≡	400629 ≡A≡ ≡8≡	400784 ≡A≡ ≡N≡
Monocase OCR-B	408393 ≡8≡ ≡3≡	408522 ≡8≡ ≡K≡	408392 ≡8≡ ≡D≡	408524 ≡8≡ ≡M≡
Up-Low OCR-B	408391 ≡8≡ ≡C≡	408523 ≡8≡ ≡J≡	408390 ≡8≡ ≡8≡	408525 ≡8≡ ≡N≡

3.17 Proceed as applicable:

No printer, go to 3.21.

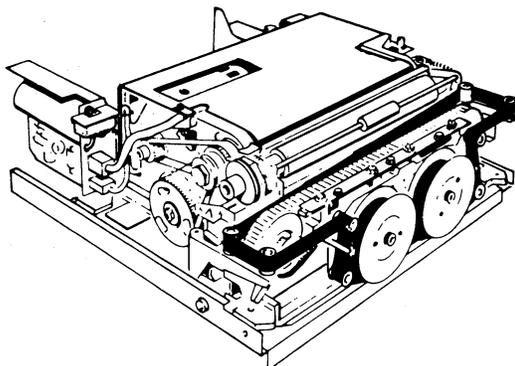
Fraction feed printer, go to 3.18.

Tractor feed printer, go to 3.19.

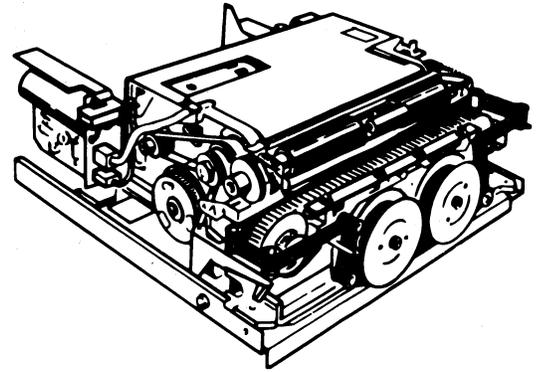
Forms access printer, go to 3.19.

A. Friction Feed

3.18 Friction Feed Printer (40P101/ZZ or 40P102/ZZ)



40P101/ZZ

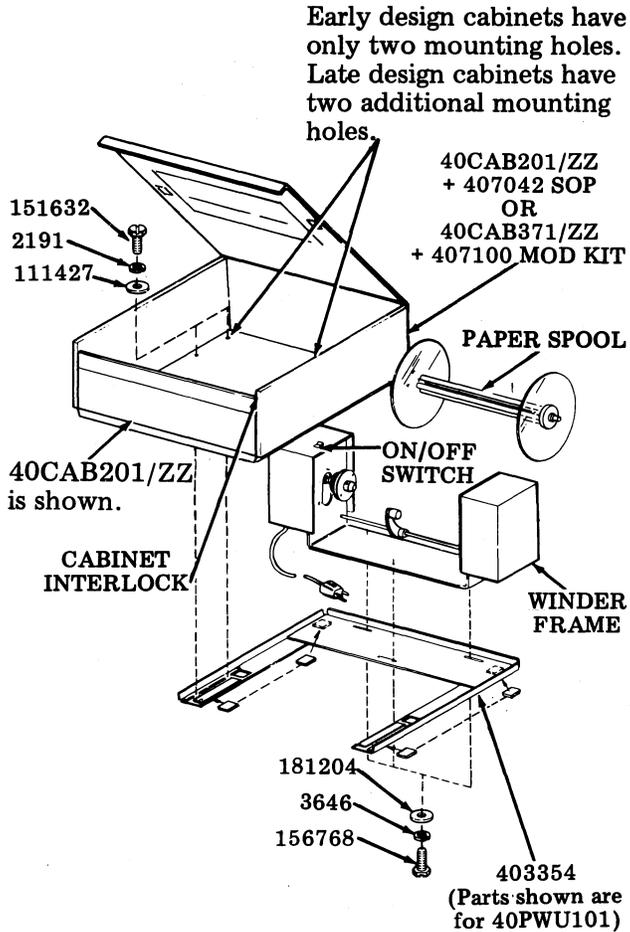


40P102/ZZ

- (a) Unpack the printer and the cabinet (40CAB371/ZZ or 40CAB201/ZZ.)
- (b) If four 400409 immobilization screws are present (see 3.19 for approximate location), back them off 7 or 8 turns. Proceed to paragraph 5 and check the printer options per the service order. Enter the printer options on the Station Configuration Worksheet. Refer to Section 582-210-702 for removal of printer circuit card. Then proceed to (c) below.
- (c) Install printer in cabinet.
- (d) If pedestal is provided with the printer (per Station Configuration Worksheet), unpack pedestal, place printer and cabinet on pedestal top, open the pedestal door and route ac cable from printer cabinet into ac convenience strip inside of pedestal. If necessary stabilize pedestal by turning leg levelers.
- (e) Connection of the SSI cable to printer is done in 3.20. If printer is not pedestal mounted, printer cord is connected in 3.24.
- (f) If pedestal has no ac strip, proceed to (g).  
If the printer is pedestal mounted, and the pedestal has an ac strip, open pedestal door and connect the printer ac cable to convenience strip (if present) in pedestal, then route the pedestal power cord outside the pedestal and proceed to (g). (Power cord is connected in 3.24).
- (g) 40CAB371/ZZ cabinet only: install the 407192 paper guide (included with 40CAB371/ZZ cabinet).

(h) Install paper winder (40PWU101 or 40PWU102), if part of station. Refer to Section 582-002-103 or Specification 50817S if required.

(i) Install paper and ribbon. Go to 3.20.



**B. Tractor Feed**

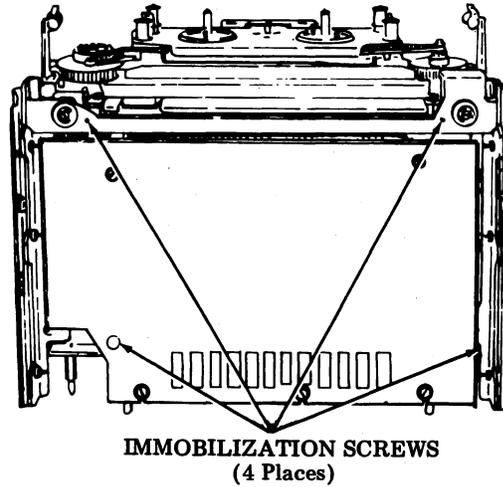
**3.19 Tractor Feed Printers 40P154/ZZ or 40P151/ZZ (80-Column) and 40P204/ZZ and 40P202/ZZ or 40P201/ZZ (132-Column) and 40P253/ZZ (80-Column Forms Access):**

(a) Unpack printer, cabinet and pedestal. To unpack 40CAB302 cabinet for a forms access printer, cut metal band at bottom of box (be careful, band may fly apart when cut), lift off box top from base of box, lift cabinet off of base. Proceed to paragraph 5 and check the printer options per the service order. Enter the printer options on the Station Configuration Worksheet. Refer to Section 582-210-702 for removal of an 80-column circuit card. Checking options in a 132-column printer does not

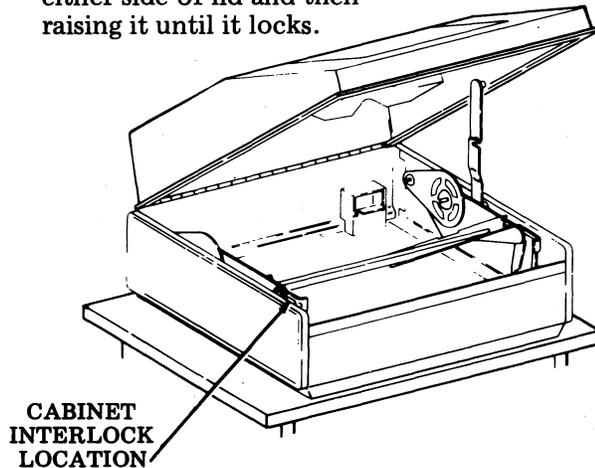
require circuit card removal. Then proceed to (b) below, (for forms access, proceed to (c)).

(b) Install printer (other than forms access) into 40-type cabinet as follows:

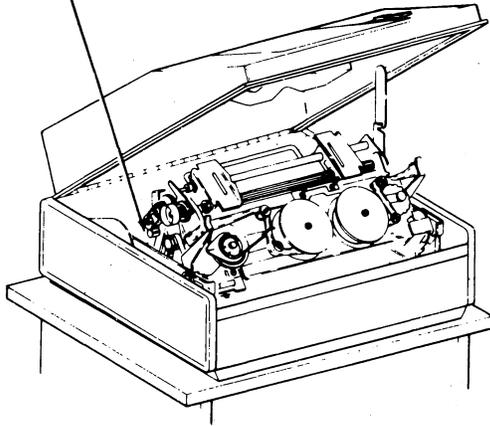
- ① Back off the four black shock mount immobilizing screws 7-8 turns.



- ② Place cabinet on pedestal with opening in bottom of cabinet over slot in pedestal. If necessary, stabilize pedestal by turning pedestal leg levelers. Open lid by depressing latches on either side of lid and then raising it until it locks.



- ③ Install printer on tracks, slide printer down tracks until detents are seated.



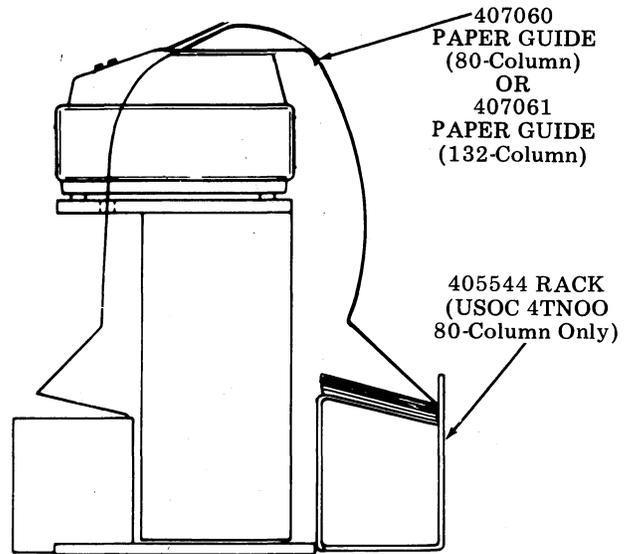
40-Type Cabinet  
(Other than Forms Access)

*Note:* With printer properly seated, all internal power and SSI connections will be made to the cabinet.

- ④ If pedestal has a door, open it and connect printer power cord to ac convenience strip. Then connect the cabinet power cord to an ac outlet. If pedestal has no door then connect the printer power cord to an ac outlet.
- ⑤ Install paper and ribbon (Refer to printer How To Operate if required).

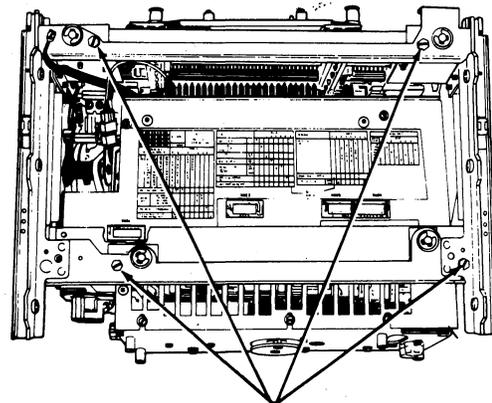
*Caution:* When installing paper on a printer equipped with a paper jam alarm (40P204 has an alarm), a paper alarm exists until the paper jam alarm is reset. Reset by opening the left tractor cover and depressing the small blue lever (under the paper) above the two metal wheels used to sense jams, also take out slack in left wheel position by rotating the top of the wheel to the rear until it stops. See printer How To Operate for details.

- ⑥ Assemble paper guide as shown.
- ⑦ If included with order, install 405544 rack as shown.
- ⑧ Go to 3.20.



- (c) Install forms access printer into 40-type cabinet as given in this step. This application of the 40CAB302 printer cabinet requires an SSI interface on the back of the cabinet. 40CAB302/AB is equipped with an SSI interface, 40CAB302/ZZ requires 406370 modification kit (refer to Specification 50951S, if required). When 406374 pre-sense paper-out modification is required to be installed, refer to Specification 50958S.

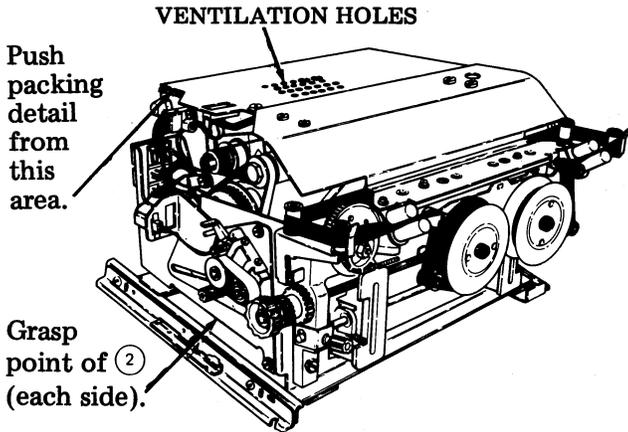
- ① After performing 3.19 (a) (including installing options on 410071 circuit card), with the printer resting on its back side, back off the four black shock mount immobilizing screws 7-8 turns.



IMMOBILIZATION SCREWS  
(4 Places)

Bottom View of 40P253/ZZ

- ② Using grasp points, lower printer with both hands so that it rests on its bottom. Check for a cardboard packing detail under the top plate, if present, it should be seen through the ventilation holes. Remove the packing detail by pushing from the left of the printer, then pull it out the right side of the printer.



Front and Left Side of 40P253/ZZ  
Forms Access Printer

*Warning:* Failure to remove the packing detail before turning on the printer could result in damage to the printer.

- ③ Install ribbon (see printer How to Operate Manual if required).

- ④ If necessary, stabilize cabinet by turning cabinet leg levelers.
- ⑤ Early design printer cabinet: Open cabinet doors, depress lid release button. Raise lid and close doors.

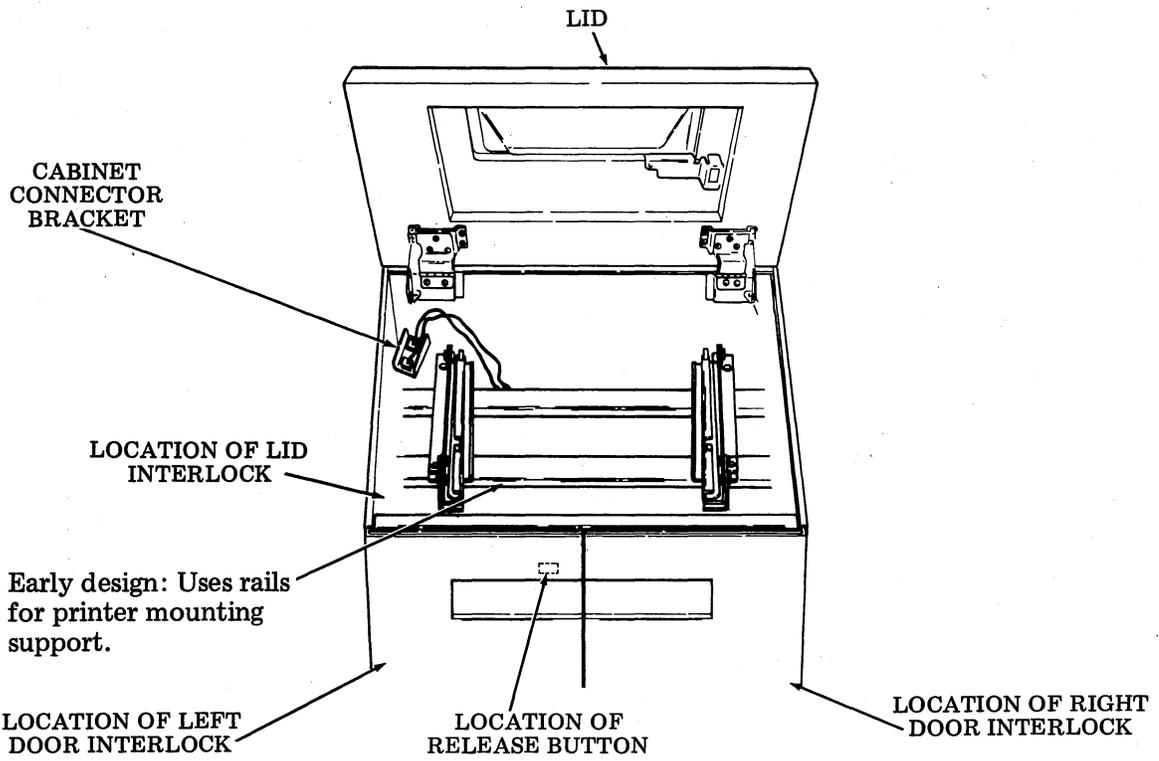
Late design printer cabinet: Open cabinet doors. Raise and latch lid, close doors.

- ⑥ Early design printer cabinet: Grasp printer as in Step 2. Lower printers into cabinet and onto rail assemblies. Slide printer rearward to fully engage latch on right side.

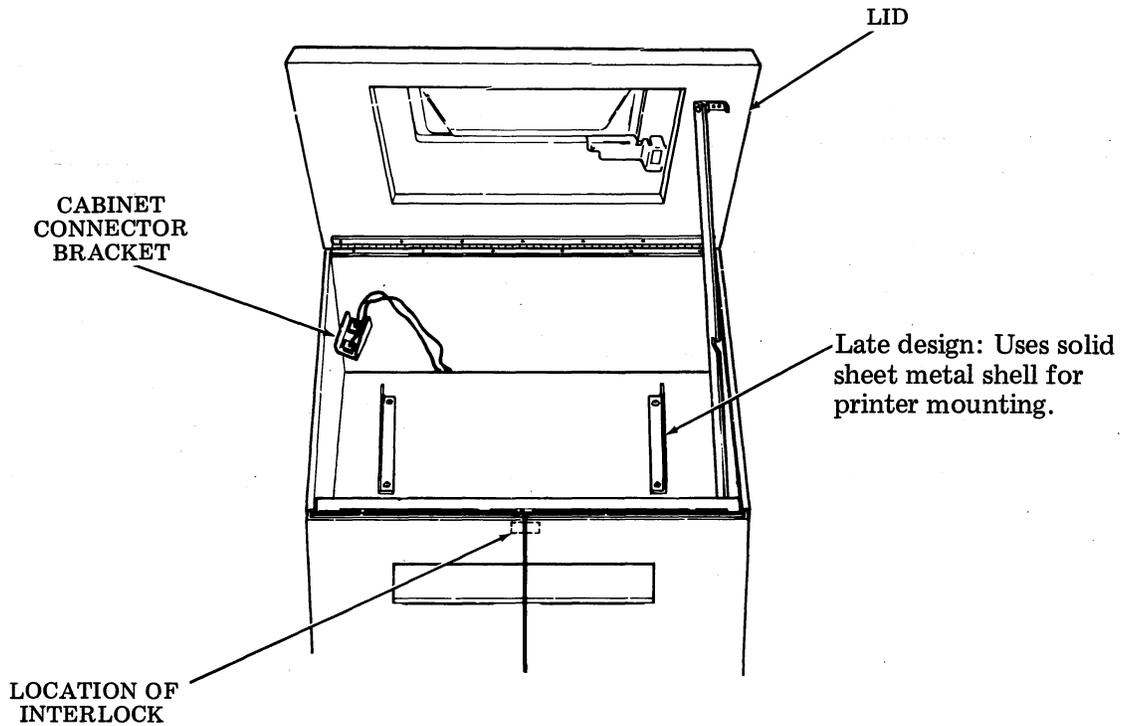
Late design printer cabinet: Follow instruction, on sheet included with cabinet to modify the printer. Grasp printer as in Step 2. Lower printer into cabinet between cabinet mounting brackets and seat bushings in bracket slots. Install the two remaining screws.

- ⑦ Connect cabinet connector bracket (left rear) to printer.

Three cabinet security features are available, refer to 582-212-700 if required. Step 9 provides positioning requirements. Perform ⑧ and ⑨ only if adjustment is required.



Early Design

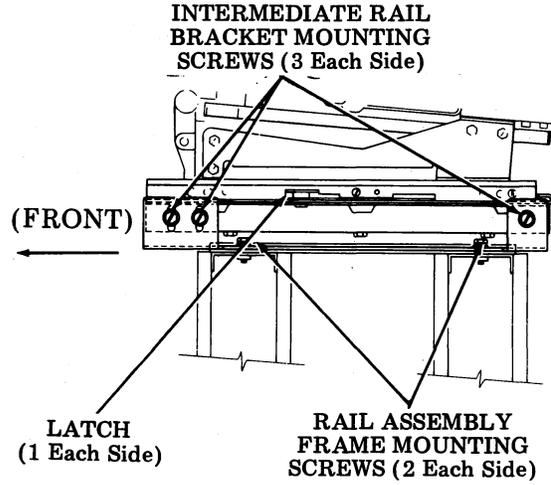


Late Design

40CAB302-TYPE  
Forms Access Cabinet

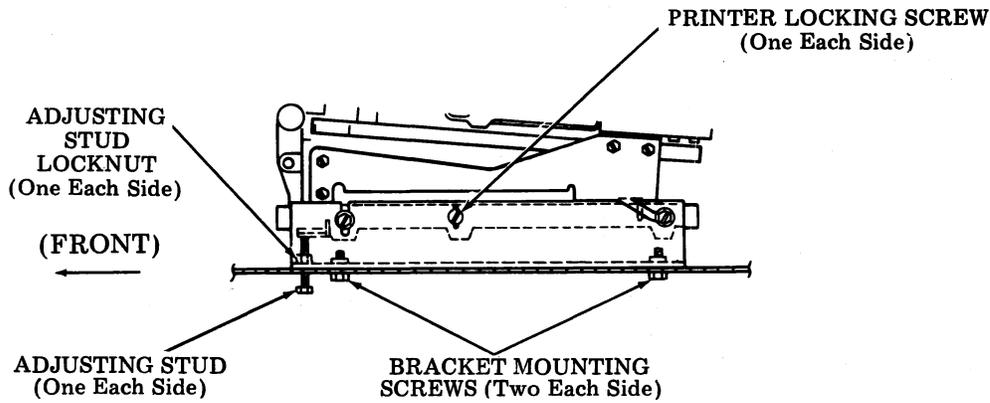
⑧ Early design printer cabinet: If adjustment is required to meet the requirements of Step 9 with the printer positioned and latched in its rearmost location on the rail assembly frame, loosen the following screws friction tight: four rail assembly frame mounting screws and six intermediate rail bracket mounting screws.

Late design printer cabinet: If adjustment is required to meet the requirements of Step 9, loosen the following screws friction tight: two printer locking screws and four bracket mounting screws. Also loosen the two adjusting stud locknuts.



(Right Side View)

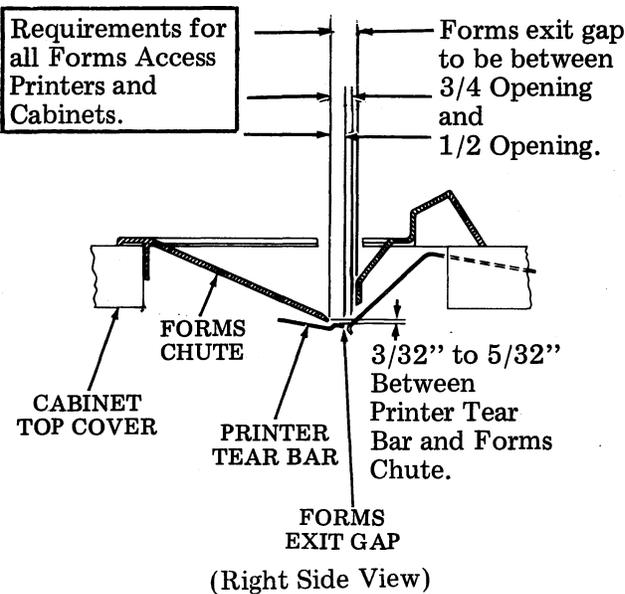
Early Style Cabinet



Late Style Cabinet

- ⑨ Early design printer cabinet: When adjustment of the forms exit gap is required, move the printer rail assembly frame forward or rearward so that the forms exit gap is located half to three-fourths of the way back in the forms chute opening (as gauged by eye). Tighten the rail assembly mounting screws.

Late design printer cabinet: When adjustment is required, move printer forward or rearward so that the forms exit gap is located half to three-fourths of the way back in the forms chute opening (as gauged by eye). Tighten the bracket mounting screws.



- ⑩ Early design printer cabinet: When the adjustment of clearance between the printer tear bar and forms chute is required, place the blade of a screwdriver between the frame and the intermediate rail. To raise up printer: Pry intermediate rail assembly up at alternate left and right front corners until the requirement is met. To lower printer: Push down on printer. Recheck by opening and closing the lid. The clearance is 3/32 to 5/32 inches. Tighten the intermediate rail bracket mounting screws.

Late design printer cabinet: When adjustment of clearance between the printer tear bar and forms chute is required, turn adjusting studs until the clearance is 3/32 to 5/32 inches. Tighten the adjusting stud locknuts and printer locking screws.

*Warning:* For early design printer cabinets; to avoid damage to doors or interlocks, do not close cabinet doors unless door interlocks are returned from maintenance position to operating position.

- ⑪ Open cabinet doors and install paper (refer to printer How to Operate Manual if required). Paper width: 4-1/4 to 9-1/8 inches edge to edge. Close lid and doors.

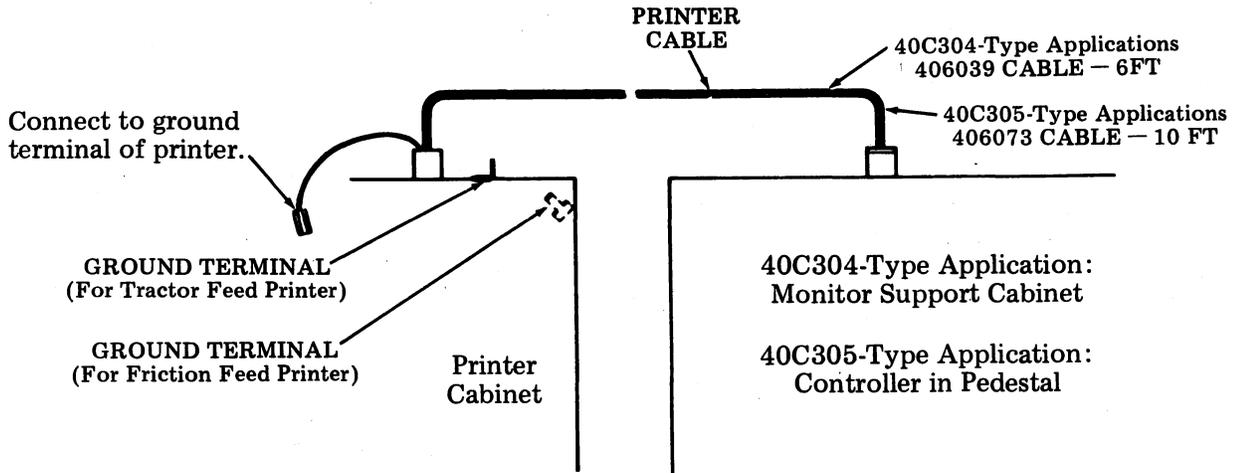
*Caution:* Printer motor will not turn on unless all three interlocks are turned on.

- ⑫ Connect cabinet ac cord to ac outlet.

**CABLE INSTALLATION FOR PRINTER, DATA SET, AND DATA AUX SET**

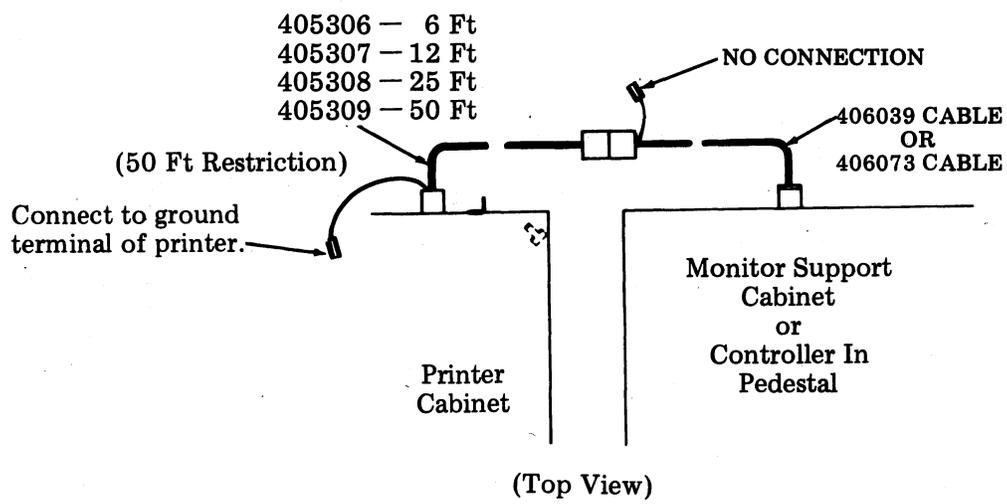
3.20 If a printer is present, connect the printer cable to the printer or the printer extension cable. If a printer extension cable is present, connect it to the printer. The printer connection includes attaching the cable ground connector to the printer cabinet frame terminal.

*Note:* Cable installation for KD connected to 40C304-type is done at the factory, for KD connected to 40C305-type, installation is done in 3.12.

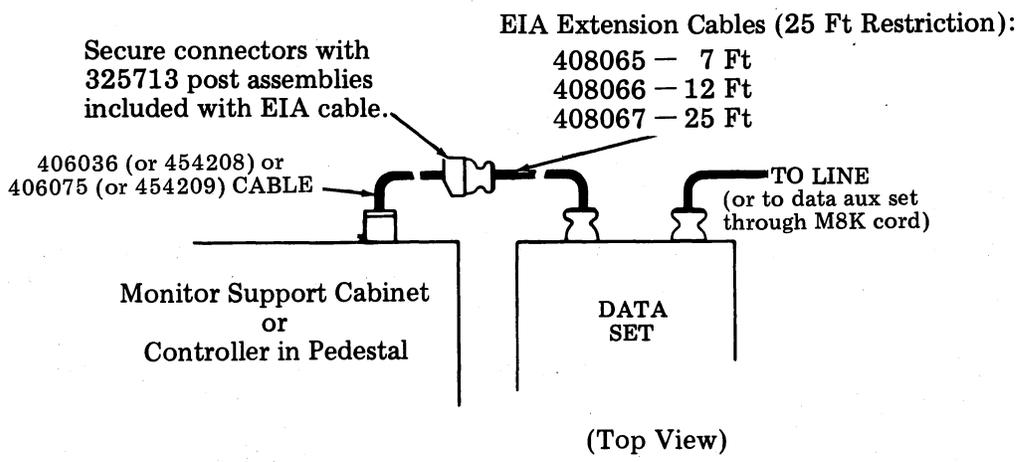
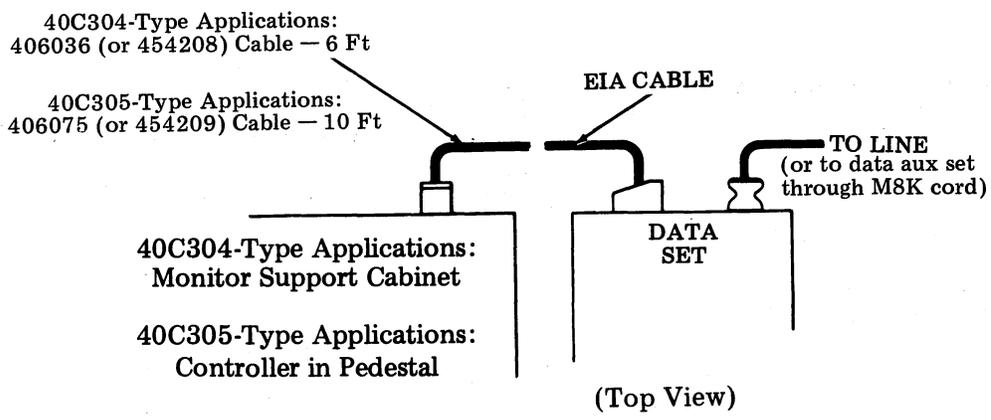


(Top View)

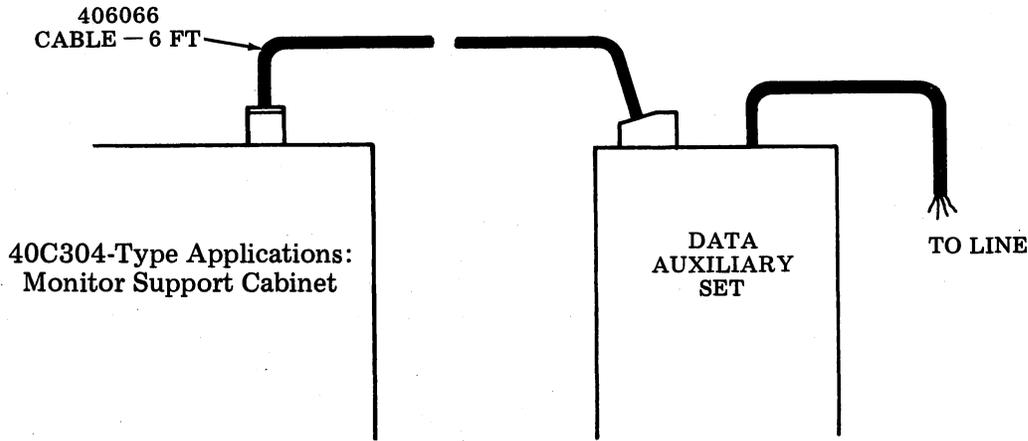
**Printer Extension Cable**



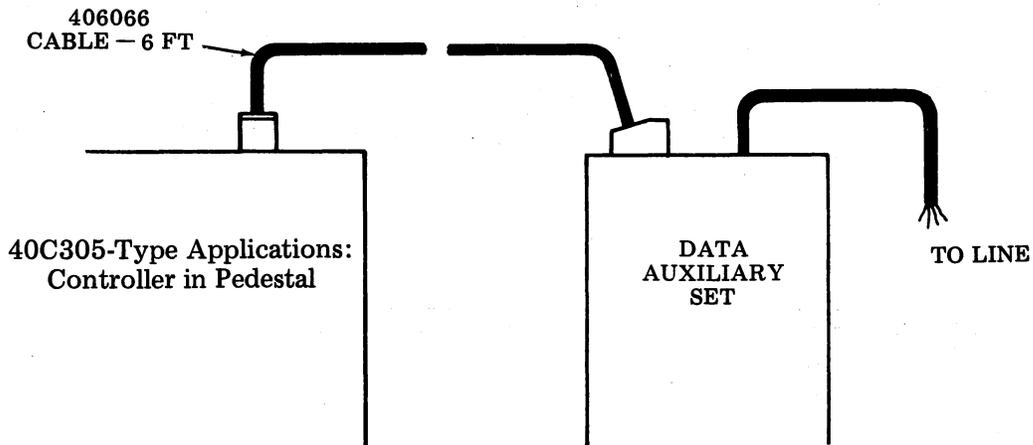
3.21 When a data set will be part of station, connect EIA cable to data set or EIA extension cable. If extension cable is present, connect it to the data set. Connect data set to line.



- (b) When an internal modem will be part of station: connect a 406066 cable to data auxiliary set. Connect data auxiliary set to line.



(Top View)



(Top View)

**CONNECT POWER CORDS, TURN ON POWER SWITCHES**

- 3.22 Connect controller (monitor support cabinet) power cord or controller pedestal power cord to ac outlet, as applies. Turn on monitor support cabinet power switch or controller pedestal power switch, as applies.
- 3.23 Connect free-standing KD base (monitor base) power cord to ac outlet, turn on base power switch. (When the KD is mounted on the monitor support cabinet, power is applied in 3.22.)
- 3.24 Connect printer power cord or printer pedestal power cord to ac outlet, as applies. Turn on printer power switch (and pedestal power switch, as applies).

#### 4. CONTROLLER OPTIONS

##### PREPARING CONTROLLER

4.01 All controller optioning is done from the opcon in the "OPT" mode by depressing appropriate keytops while an option listing (see 4.03) is displayed on the monitor. All controller cards are left in place. To determine what options to enter in the controller, read the filled out Station Worksheet (and the following cross reference tables, if required) before attempting to enter the "OPT" mode.

4.02 To insure the nickel-cadmium battery on the 410353, 410352 or 410251 circuit card is fully charged, ac power must be applied to the controller for approximately 20 hours. The battery charge should be sufficient to hold the option selections without ac power being applied to the controller for several weeks. It may be assumed by TELCO installer that the WECO tester has sufficiently charged the battery when the circuit card is furnished in the controller.

4.03 To enter or change any option:

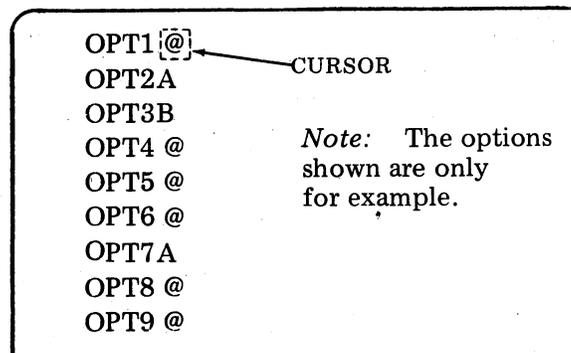
- (a) Turn on power to the station.
- (b) Check brightness control level (under monitor).
- (c) 40C304-type: Tilt monitor up, unlatch and open cabinet cover.
- (d) 40C305-type: Lower pedestal door, release the 408005 latch at left (if present), loosen the two cover screws, raise cover and secure with cover latch at left.
- (e) Depress the SELF-TEST switch near the front of the 410353, 410352 or 410251 circuit card for at least 1/2-second but less than 4 seconds.

4.04 If the SELF-TEST switch is depressed for 4 seconds or longer, the controller will enter the self-test mode. If the controller is in the self-test mode, make sure the switch is in the raised position to allow the controller to return to the operating mode in about one minute.

4.05 The 410353 card and the 410352 card have another switch located more towards the rear of the card. This switch has no affect on operation.

4.06 The option listing is now displayed on the monitor. Each option (identified by "OPT1", etc) is followed by a graphic character which represents the presently selected option.

4.07 The cursor is over the OPT1 graphic character.



4.08 Cursor movement to the graphic character for the next option is done by depressing the CURSOR TAB key. Thus, if only one option is to be changed, just use CURSOR TAB to position the cursor to the graphic character to be changed. There is a slight delay of cursor movement in this mode. If the cursor is below the character to be changed, CURSOR TAB will cause the cursor to wraparound (go from OPT9 back to OPT1).

*Caution: Changing options by the entry of an alpha character requires the character to be upper case.*

4.09 A private line controller (equipped with a 410353, 410265, 410264, or 410261, circuit card) should be optioned using 4.11 - 4.22.

4.10 A dial up (switched network) controller (equipped with a 410352 circuit card) should be optioned using 4.23 - 4.32.

**PRIVATE LINE CONTROLLER OPTIONS**

4.11 When the controller is prepared (4.01 – 4.08), to enter the station poll and select addresses and device addresses, perform the following:

- (a) Find the desired station number or poll address in the OPT1 List on the next page. OPT1 corresponds to Option 401b. Depress the corresponding key on the opcon. Check the OPT1 character column to assure that the proper character is now displayed. Tables A and B cross reference OPT numbers and OPTION numbers.
- (b) Depress CURSOR TAB key. OPT2 corresponds to Option 405b. Find the proper device number for the KD in the OPT2 AND OPT3 LIST. Depress the corresponding key on

the opcon. Check the OPT2 or OPT3 character column to assure the proper character is now displayed after OPT2.

- (c) Depress CURSOR TAB key. OPT3 corresponds to Option 405c. If printer is part of the station, a printer device number is required. Use the OPT2 AND OPT3 LIST. Depress the corresponding key for the device number. (If a printer is not part of the station the OPT3 entry has no effect other than as given in the note below.) Check the OPT2 and OPT3 character column to assure the proper character is now displayed. (See note below.) If no printer is present, proceed to 4.12.

*Note:* The printer device number must be different from the KD device number (examples: 1 and 5, or 10 and 3 – not 1 and 1).

TABLE A

**CROSS-REFERENCE IN OPTION ORDER**

OPTION	CORRESPONDING DISPLAYED OPT
401b	OPT1 (followed by char.)
402a	OPT6 H
402b	OPT6 @
402c	OPT6 I
402d	OPT6A
403a	OPT5 @
403b	OPT5 A
403c	OPT5 B
403d	OPT5 D
405b	OPT2 (followed by char.)
405c	OPT3 (followed by char.)
406a	OPT7 @
406b	OPT7 A
407a	OPT7 A
407b	OPT7 @

OPTION	CORRESPONDING DISPLAYED OPT
408a	OPT4 @ (or B)
408b	OPT4 A (or C or G)
409a	OPT4 @ (or A)
409b	OPT4 B (or C or G)
409c	(does not apply)
410a	OPT4 @ (or A, or B, or C)
410b	OPT4 G
411a	OPT@
411b	OPT A (Not Used)
414a	OPT9 @ (or B)
414b	OPT9 A (or C)
418a	OPT9 @ (or A)
418b	OPT9 B (or C)

*Note:* The block abort procedure for SDS corresponds to Option 404b of maxi-cluster 40/4 stations.

TABLE B

**CROSS-REFERENCE IN OPT ORDER**

DISPLAYED OPT	CORRESPONDING OPTION
OPT1 (followed by char.)	401b
OPT2 (followed by char.)	405b
OPT3 (followed by char.)	405c
OPT4 @	408a, 409a, 410a
OPT4 A	408b, 409a, 410a
OPT4 B	408a, 409b, 410a
OPT4 C	408b, 409b, 410a
OPT4 G	408b, 409b, 410b

DISPLAYED OPT	CORRESPONDING OPTION
OPT5 @	403.a.
OPT5 A	403.b.
OPT5 B	403.c.
OPT5 D	403.d.
OPT6 H	402.a.
OPT6 @	402.b.
OPT6 I	402.c.
OPT6 A	402.d.
OPT7 @	406.a. or 407.b.
OPT7 A	406.b. or 407.a.
OPT8 @	411.a.
OPT8 A	411.b. (Not Used)
OPT9 @	414a, 418a
OPT9 A	414b, 418a
OPT9 B	414a, 418b
OPT9 C	414b, 418b

OPT1 LIST  
(Private Line)

OPTION 401 STATION NUMBER	DEPRESS/DISPLAY OPT1 CHARACTER	CORRESPONDING STATION			
		POLL ADDRESS	STATION SELECT ADDRESS		
00	@	SPACE	- MINUS		
01	A	A	/		
02	B	B	S		
03	C	C	T		
04	D	D	U		
05	E	E	V		
06	F	F	W		
07	G	G	X		
08	H	H	Y		
09	I	I	Z		
10	J	[ (⊕)	VERTICAL LINE		
11	K	. PERIOD	, COMMA		
12	L	<	%		
13	M	(	_ UNDERSCORE		
14	N	+	>		
15	O	!( )	?		
16	P	&	0 ZERO		
17	Q	J	1 ONE		
18	R	K	2		
19	S	L	3		
20	T	M	4		
21	U	N	5		
22	V	O	6		
23	W	P	7		
24	X	Q	8		
25	Y	R	9		
26	Z	] (!)	:		
		EBCDIC ‡			
	ASCII †	DEPRESS	DISPLAY		
27	[	⌘	⊕	\$	#
28	\	\	\	*	@
29	]			)	,
30	^	⊕	⌘	;	=
31	_	_	_	^(⌘)	"

Characters in parentheses appear on EBCDIC opcons.

| is "logical OR" (see Station No. 15).

⌘ is "logical NOT" (see Station No. 31).

† ASCII indicates American National Standard Code for Information Interchange.

‡ EBCDIC indicates Extended Binary Coded Decimal Interchange Code.

**OPT2 AND OPT3 LIST**  
(Private Line)

405b or 405c Device Number	(Depress/Display) OPT2 or OPT3 Character	Corresponding Device Address
0	@	SPACE
1	A	A
2	B	B
3	C	C
4	D	D
5	E	E
6	F	F
7	G	G
8	H	H
9	I	I
10	J	[ (*)
11	K	PERIOD
12	L	<
13	M	(
14	N	+
15	O	! ( )

Characters in parentheses appear on EBCDIC opcons.

“(I)” is “logic OR” (see Device No. 15)

4.12' Depress CURSOR TAB key. Choose the desired operation from the OPT4 list for type of opcon, display font and line code (408). Only one keytop is depressed to select all three options. Depress the required keytop on the opcon. Check the OPT4 character column to assure that the proper character is now displayed.

**OPT 4 LIST**  
(Private Line)

Option 410 Opcon	Option 409 Display Font	Option 408 Line Code	(Depress/Display) OPT4 Character
a. Typewriter Style	a. Up-Low	a. ASCII	@
	a. Up-Low	b. EBCDIC	A
	b. Monocase	a. ASCII	B
	b. Monocase	b. EBCDIC	C
b. Internal Num Cluster Style	b. Monocase	b. EBCDIC	G

§ Factory optioned (for SDC, refers to selection that provides corresponding operation for a SCC/DCC or MCC).

- 4.13 Depress CURSOR TAB key. Choose the proper character from the OPT5 List. Depress the required keytop on the opcon for the option selected. Check the OPT5 character column to assure that the proper character is now displayed.

OPT5 LIST  
(Private Line)

403. Display Field Intensities	(Depress/Display) OPT5 Character
a. Intensified and Blink Fields are Intensified	@ <sup>s</sup>
b. Intensified and Blink Fields are Blinked	A
c. Blink Fields are Blinked, Intensified Fields are Intensified. Intensified Fields and Blinked Fields on the same Display are Blinked.	B
d. Blink Special Intensified Fields All fields marked as intensified, protected and alpha-numeric will be blinked.	D

- 4.14 Depress CURSOR TAB key. Choose from OPT6 List and proceed as for OPT5.

OPT6 LIST  
(Private Line)

402. Type of Alarm on Receipt of Alarm, Write Control, or Copy Control Character and Action Upon Opcon Entry of TAB	(Depress/Display) OPT6 Character
a. Continuous Alarm TAB key erases field (inserts nulls) and moves cursor to first character of next unprotected field.	H
b. Single Alarm TAB key erases field (inserts nulls) and moves cursor to first character of the next unprotected field.	@ <sup>s</sup>
c. Continuous Alarm TAB key erases field (inserts nulls), no cursor movement.	I
d. Single Alarm TAB key erases field (inserts nulls), no cursor movement.	A

*Note:* A continuous alarm causes the opcon bell to ring repeatedly. Alarm and TAB have been grouped into OPT6 for convenience. There is no relationship between TAB and alarm.

<sup>s</sup> Factory optioned (for SDC, refers to selection that provides corresponding operation for a SCC/DCC or MCC).

4.15 Depress CURSOR TAB key. The style of the opcon determines whether Option 406 or 407 applies. Use the OPT7 List and depress key required for the option selected. Check the OPT7 character column to assure that the proper character is now displayed.

**OPT7 LIST  
(Private Line)**

406. Numeric Field Override (Used With Typewriter Style Opcon — 40K104 or 40K203)		(Depress/Display) OPT7 Character
a.	Alpha Data Can be Entered in Numeric Field (Bell Will Sound)	@
b.	Alpha Data Cannot be Entered in Numeric Field (Bell Will Sound)	A
407. Numeric Special Feature (Used With Data Entry Style Opcon — 40K105) Feature Does Not Apply to Unformatted Display.		(Depress/Display) OPT 7 Character
a.	Enabled — In a Numeric Field, Only the Depression of a Numeric Cluster Key (Digits 0 to 9, Minus DUP, Period) Will Cause the Numeric Character to be Displayed Otherwise Bell Will Sound.	A
b.	Disabled — In a Numeric Field, Depression of Any Key Causes a "Numeric" Character to be Displayed.	@

*Note:* In operation, a numeric field can be temporarily overridden by simultaneously depressing NUMERIC or ALPHA and a character key.

4.16 Depress CURSOR TAB key. Use OPT8 List. Depress required key. Check displayed character.

**OPT8 LIST  
(Private Line)**

411. External Data Set/Internal Modem, Loopback Testing (See Caution Below.)		(Depress/Display) OPT8 Character
a.	External Data Set	@
b.	(Do not use, does not apply)	A
c.	Loopback Testing Only (See Section 582-200-505 for testing procedures.)	C

*Caution:* Option 411a is required to provide customer operation. Option 411c is only used during installation or maintenance. As explained in Section 582-200-505, operation with Option 411c on the customer data channel can cause transmissions to be scrambled and possibly halt all system operation.

4.17 Depress CURSOR TAB key. Use the OPT9 List. Depress the key for the option selected. Check the OPT9 character column to assure the proper character is now displayed.

**OPT9 LIST (See Notes 1 and 2 on next page)  
(Private Line)**

Option 414 Buffer Lock (See Note 3)	Option 418 Immediate Poll Response	(Depress/Display) OPT9 Character
a. Enable	a. Disable	@
b. Disable (no restriction on print local)	a. Disable	A
a. Enable	b. Enable	B
b. Disable	b. Enable	C

s Factory optioned (for SDC, refers to selection that provides corresponding operation for a SCC/DCC or MCC).

*Note 1:* Option 414b requires a 410353 or 410265 circuit card. Option 418 is not an option for 410261 or 410264 circuit card, it is always disabled, use OPT9 @ or A. Option 418 is not an option for 410265 circuit card, it is always enabled, however, use OPT9 @ or A. OPT9 B and OPT9 C apply only to 410353 circuit card.

*Note 2:* For 410353 circuit card: (1) where fast response is required, use OPT9 B or OPT9 C; (2) where extra synch characters in text causes problems, OPT9 @ or OPT9 A is required; (3) Specific poll environment should use OPT9 B or OPT9 C.

*Note 3:* The 40/4 SDS does not allow copy via command from host when a protected alphanumeric attribute character is in the home position.

- 4.18 Again check all options to make sure that displayed characters match these entered on Station Configuration Worksheet supplied with station.
- 4.19 Depress LOCAL or RESET key on opcon to exit the "OPT" mode. The controller will exit the mode, go through a power-up routine and begin normal operation. 40C304-type: lower and latch cabinet cover, tilt monitor forward to operating position. 40C305-type: release cover latch, secure cover, raise and latch pedestal door.
- 4.20 To check printer and data set options, turn off all power and proceed to paragraph 5 (for printer options).
- 4.21 To perform an operational checkout, refer to Part 2.

#### DIAL UP CONTROLLER OPTIONS

- 4.22 The SDS ID sequence consists of 4 characters. The first character is preset (when ASCII or EBCDIC is chosen in OPT4) to "F" for ASCII line code "f" for EBCDIC line code. This first character is not displayed.
- 4.23 When the controller is prepared (4.01 – 4.08), to enter the station ID sequence, perform the following:
  - (a) Find the desired 2nd character of the station ID sequence in the OPT1, OPT2 and OPT3 List on next page. OPT1 corresponds to Option 412a. Depress the corresponding key on the opcon. Check the OPT1 character to assure that the proper character is now displayed. Tables C and D cross-reference OPT numbers and OPTION numbers.
  - (b) Depress the Cursor Tab key. OPT2 corresponds to Option 412b. Find the desired 3rd character of the station ID sequence in the OPT1, OPT2 and OPT3 List. Depress the corresponding key on the opcon. Check the OPT2 character to assure that the proper character is now displayed.
  - (c) Depress the Cursor Tab key. OPT3 corresponds to Option 412c. Find the desired 4th character of the station ID sequence in the OPT1, OPT2 and OPT3 List. Depress the corresponding key on the opcon. Check the OPT3 character to assure that the proper character is now displayed.

OPT1, OPT2 AND OPT3 LIST  
(Dial Up)

412a,b,c. STATION IDENTIFICATION SEQUENCE							
SP	(	0	8	@	H	P	X
!( )	)	1	9	A	I	Q	Y
"	*	2	:	B	J	R	Z
#	+	3	;	C	K	S	[(ç)
\$	,	4	<	D	L	T	\
%	-	5	=	E	M	U	](!)
&	.	6	>	F	N	V	~(¬)
,	/	7	?	G	O	W	-

Characters in parentheses appear on EBCDIC opcons.

TABLE C  
Cross Reference in Option Order

OPTION	CORRESPONDING DISPLAYED OPT	OPTION	CORRESPONDING DISPLAYED OPT
402a	OPT6 H	408a	OPT4 @ (or B)
402b	OPT6 @	408b	OPT4 A (or C or G)
402c	OPT6 I	409a	OPT4 @ (or A)
402d	OPT6A	409b	OPT4 B (or C or G)
403a	OPT5 @	409c	(does not apply)
403b	OPT5 A	410a	OPT4 @ (or A, or B, or C)
403c	OPT5 B	410b	OPT4 G
403d	OPT5 D	411a	OPT8 @
404	(does not apply)	411b	OPT8 A (Not Used)
406a	OPT7 @ (or C)	412a	OPT1 (followed by char.)
406b	OPT7 A (or B)	412b	OPT2 (followed by char.)
407a	OPT7 A (or B)	412c	OPT3 (followed by char.)
407b	OPT7 @ (or C)	413 a - o	OPT9 (A-O)
		414a	OPT7 @ (or A)
		414b	OPT7 C (or B)

TABLE D  
Cross Reference in Opt Order

DISPLAYED OPT	CORRESPONDING OPTION	DISPLAYED OPT	CORRESPONDING OPTION
OPT1 (followed by char.)	412a	OPT5 @	403.a.
OPT2 (followed by char.)	412b	OPT5 A	403.b.
OPT3 (followed by char.)	412c	OPT5 B	403.c.
OPT4 @	408a, 409a, 410a	OPT5 D	403.d.
OPT4 A	408b, 409a, 410a	OPT6 H	402.a.
OPT4 B	408a, 409b, 410a	OPT6 @	402.b.
OPT4 C	408b, 409b, 410a	OPT6 I	402.c.
OPT4 G	408b, 409b, 410b	OPT6 A	402.d.
		OPT7 @	414a (and 406.a. or 407.b.)
		OPT7 A	414a (and 406.b. or 407.a.)
		OPT7 B	414b (and 406b or 407a)
		OPT7 C	414b (and 406a or 407b)
		OPT8 @	411.a.
		OPT8 A	411.b. (Not Used)
		OPT9 a - o	413 A-O

4.24 Depress CURSOR TAB key. Choose the desired operation from the OPT4 list for type of opcon, display font and line code (408). Only one keytop is depressed to select all three options. Depress the required keytop on the opcon. Check the OPT4 character column to assure that the proper character is now displayed.

**OPT4 LIST**  
(Dial Up)

Option 410 Opcon	Option 409 Display Font	Option 408 Line Code	(Depress/Display) OPT4 Character
a. Typewriter Style	a. Up-Low	a. ASCII	@
	a. Up-Low	b. EBCDIC	A
	b. Monocase	a. ASCII	B
	b. Monocase	b. EBCDIC	C
b. Internal Num Cluster Style	b. Monocase	b. EBCDIC	G

4.25 Depress CURSOR TAB key. Choose the proper character from the OPT5 List. Depress the required keytop on the opcon for the option selected. Check the OPT5 character column to assure that the proper character is now displayed.

**OPT5 LIST**  
(Dial Up)

403. Display Field Intensities	(Depress/Display) OPT5 Character
a. Intensified and Blink Fields are Intensified	@
b. Intensified and Blink Fields are Blink	A
c. Blink Fields are Blink, Intensified Fields are Intensified. Intensified Fields and Blink Fields on the same Display are Blink.	B
d. Blink Special Intensified Fields All fields marked as intensified, protected and alpha-numeric will be blink.	D

4.26 Depress CURSOR TAB key. Choose from OPT6 List and proceed as for OPT5.

**OPT6 LIST**  
(Dial Up)

402. Type of Alarm on Receipt of Alarm, Write Control, or Copy Control Character and Action Upon Opcon Entry of TAB	(Depress/Display) OPT6 Character
a. Continuous Alarm. TAB key erases field (inserts nulls) and moves cursor to first character of next unprotected field.	H
b. Single Alarm. TAB key erases field (inserts nulls) and moves cursor to first character of the next unprotected field.	@
c. Continuous Alarm. TAB key erases field (inserts nulls), no cursor movement.	I
d. Single Alarm. TAB key erases field (inserts nulls), no cursor movement.	A

*Note:* A continuous alarm causes the opcon bell to ring repeatedly. Alarm and TAB have been grouped into OPT6 for convenience. There is no relationship between TAB and alarm.

s Factory optioned (for SDC, refers to selection that provides corresponding operation for a SCC/DCC or MCC).

4.27 Depress CURSOR TAB key. The style of the opcon determines whether Option 406 or 407 applies. Use the OPT7 List and depress key required for the option selected. Check the OPT7 character column to assure that the proper character is now displayed. The complete description of Options 406 and 407 is given in 4.15. Option 414b requires 410352 circuit card. Option 414b allows print local (but not copy via copy command via the host) when a protected alphanumeric attribute character is in the home position.

OPT7 LIST  
(Dial Up)

406 Num. Field Override (40K104, 40K203)	407 Num. Lock Spec. Feature (40K105)	414 Buffer Lock	(Depress/Display) OPT7 Character
a. Alpha (can be entered)	b. Disabled	a. Enabled	@
b. No alpha	a. Enabled	a. Enabled	A
a. Alpha	b. Disabled	b. Disabled	C
b. No alpha	a. Enabled	b. Disabled	B

Either 406 or 407 applies.

4.28 Depress CURSOR TAB key. Use OPT8 List. Depress required key. Check displayed character.

OPT8 LIST  
(Dial Up)

411. External Data Set, Loopback Testing (See Caution Below.)		(Depress/Display) OPT8 Character
a.	External Data Set	@
b.	(Do not use, does not apply)	A
c.	Loopback Testing Only (See Section 582-200-505 for testing procedures.)	C

*Caution: Option 411a is required to provide customer operation Option 411c is only used during installation or maintenance. As explained in Section 582-200-505, operation with Option 411C on the customer data channel can cause transmissions to be scrambled and possibly halt all system operation.*

§ Factory optioned (for SDC, refers to selection that provides corresponding operation for a SCC/DCC or MCC).

4.29 Depress CURSOR TAB key. Use the OPT9 List below. Depress required key on the opcon for the option selected. Check the OPT9 character column to assure that the proper character is now displayed.

OPT9 LIST  
(Dial Up)

413. Automatic Disconnect Timer (1 to 15 minutes) (Timer reset by SYN sent or received on-line)					
	Time-out	Depress/Display OPT9 Character		Time-out	Depress/Display OPT9 Character
a.	1 Min.	A	i.	9 Min.	I
b.	2 Min.	B	j.	10 Min.	J
c.	3 Min.	C	k.	11 Min.	K
d.	4 Min.	D	l.	12 Min.	L
e.	5 Min.	E	m.	13 Min.	M
f.	6 Min.	F	n.	14 Min.	N
g.	7 Min.	G	o.	15 Min.	O
h.	8 Min.	H			

§ Factory optioned

- 4.30 Again check all options to make sure that displayed characters match those entered on Station Configuration Worksheet supplied with station.
- 4.31 Depress LOCAL or RESET key on opcon to exit the "OPT" mode. The controller will exit the mode, go through a power-up routine and begin normal operation. 40C304-type: lower and latch cabinet cover, tilt monitor forward to operating position. 40C305-type: release cover latch, secure cover, raise and latch pedestal door.
- 4.32 To check printer and data set options, turn off all power and proceed to 4.19 through 4.28 (for printer options) and 4.29 through 4.37 (for data set options).
- 4.33 To perform an operational checkout, refer to Section 582-200-505.

## 5. PRINTER OPTIONS

5.01 This paragraph tells where to find listings of the printer options so that options can be installed:

PRINTER CODE	DESCRIPTION	COMPATIBLE PRINTER LOGIC CIRCUIT CARD	FOR OPTIONS,REFER TO PARAGRAPH
40P101/ZZ	FF 80-COLUMN	410640	5.05
		410076	5.07
40P102/ZZ	FF 80-COLUMN	410076	5.07
40P151/ZZ	TF 80-COLUMN	410640	5.05
		410076	5.07
40P154/ZZ or 40P253/ZZ	TF 80-COLUMN TF 80-COLUMN (Forms Access)	410071	5.08
40P201/ZZ	TF 132-COLUMN	410729	5.06
		410072¶	5.09
40P202/ZZ or 40P204/ZZ	TF 132-COLUMN	410072	5.09

FF — Friction Feed

TF — Tractor Feed

¶Use of the 410072 card in a 40P201/ZZ printer requires use of a 402980 lower pan assembly. The 402887 modification kit includes both a 410072 card and a 402980 lower pan assembly. The 402980 lower pan assembly is compatible with either the 410729 or 410072 circuit cards.

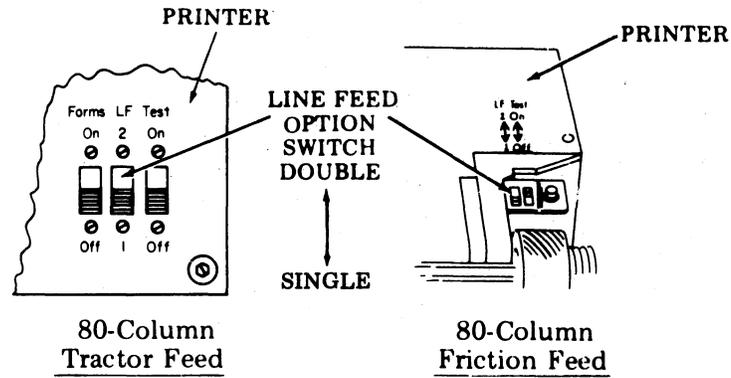
*Note:* Selected printer options must be entered on the Controller Arrangement Form located in the SCC to which printer is connected.

5.02 This paragraph tells the relationship between type carrier font symbol, use of type carrier, and part number of type carrier:

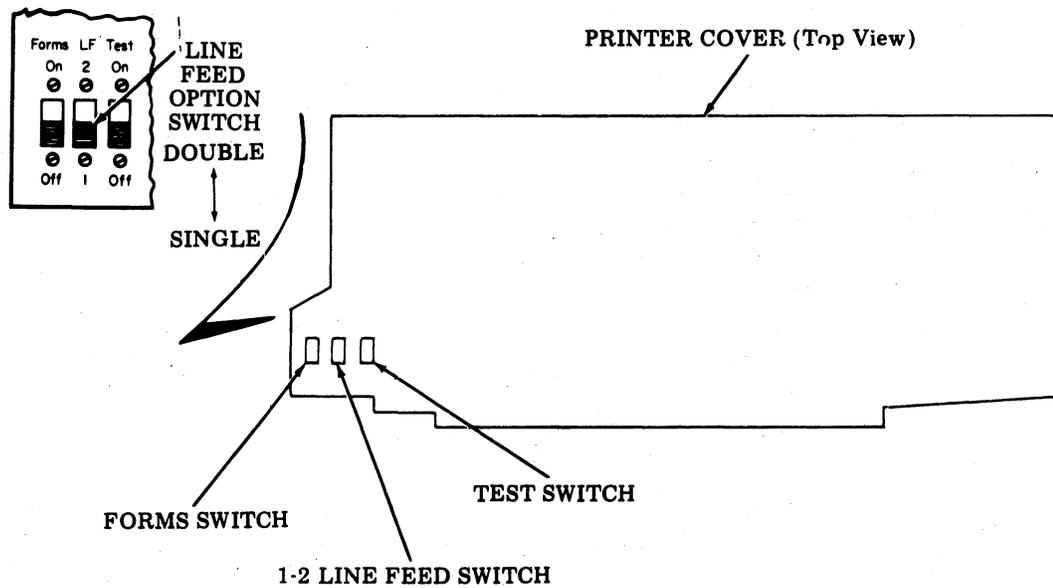
Carrier Type	Type Carrier Part Number and Font ID Symbol			
	132-Column		80-Column	
	ASCII	EBCDIC	ASCII	EBCDIC
Monocase Standard	400780 ⌘A⌘ ⌘J⌘	400887 ⌘A⌘ ⌘2⌘	400645 ⌘A⌘ ⌘A⌘	400785 ⌘A⌘ ⌘Q⌘
Up-Low Standard	400777 ⌘A⌘ ⌘Q⌘	400783 ⌘A⌘ ⌘M⌘	400629 ⌘A⌘ ⌘8⌘	400784 ⌘A⌘ ⌘N⌘
Monocase OCR-B	408393 ⌘8⌘ ⌘3⌘	408522 ⌘8⌘ ⌘K⌘	408392 ⌘8⌘ ⌘D⌘	408524 ⌘8⌘ ⌘M⌘
Up-Low OCR-B	408391 ⌘8⌘ ⌘C⌘	408523 ⌘8⌘ ⌘J⌘	408390 ⌘8⌘ ⌘8⌘	408525 ⌘8⌘ ⌘N⌘

5.03 Location of "Forms" and "LF" Switches on All 80-Column Printers.

*Note:* The 80-column tractor feed 40P154/ZZ printer is the exception, the switches are on the left side.



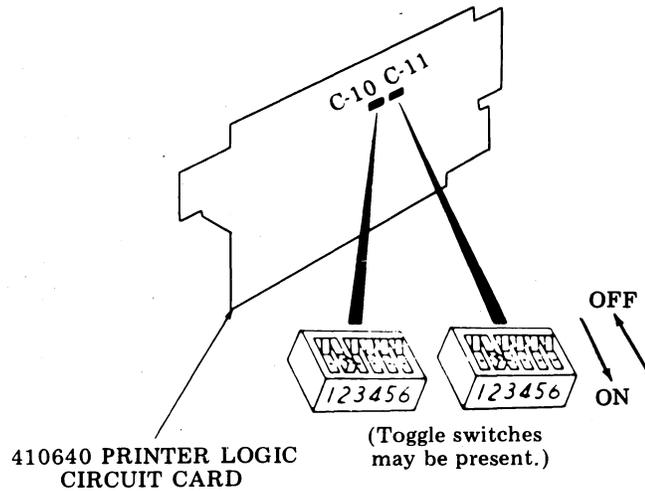
5.04 Location of "Forms" and "LF" Switches on All 132-Column Printers.



SECTION 582-200-205

5.05 Printer options for 410640 circuit card.

For  
80-Column  
Applications



17. Printer Right Margin and Form Length	C10						C11						
	1	2	3	4	5	6	1	2	3	4	5	6	
c. Last Character on 80th Column	—	—	—	—	—	—	○	●	●	○	—	—	*
Last Character on 79th Column	—	—	—	—	—	—	—	●	●	●	—	—	
Last Character on 78th Column	—	—	—	—	—	—	●	—	—	●	—	—	
d.(X) Last Character on 77th Column	—	—	—	—	—	—	●	—	●	—	—	—	
Last Character on 76th Column	—	—	—	—	—	—	●	—	●	●	—	—	
Last Character on 75th Column	—	—	—	—	—	—	●	●	—	●	—	—	
Last Character on 74th Column	—	—	—	—	—	—	●	●	●	—	—	—	
Last Character on 73rd Column	—	—	—	—	—	—	●	●	●	●	—	—	

Unless otherwise specified, choose 17c.

(X) Indicates desired column number.

Note: If right margin specified is 36 through 72, a 410076 circuit card must be used.

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	●	—	—	—	—	—	—	—	—	—	—	○	
b. Paper Feed Out on "RM" Loss — 16 Lines	○	—	—	—	—	—	—	—	—	—	—	○	
c. Paper Feed Out on "RM" Loss or ETX	○	—	—	—	—	—	—	—	—	—	—	●	*

Unless otherwise specified, choose 18a. Printer motor turns off approximately 10 seconds after printout unless printing of next message begins.

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.

19. Printer Errored Character Symbol		C10						C11							
		1	2	3	4	5	6	1	2	3	4	5	6		
c.	Not Printed on Parity Error	-	-	-	●	●	-	-	-	-	-	-	-	-	*

→ Required Selection

19. Character Set		C10						C11							
		1	2	3	4	5	6	1	2	3	4	5	6		
d.	Printers with 96 Character Set (Up-Low)	-	●	○	-	-	-	-	-	-	-	-	-	-	*
e.	Printers with 64 Character Set (Monocase)	-	○	●	-	-	-	-	-	-	-	-	-	-	*
f.	Printers with Special Carrier (Line Drawing)	-	○	○	-	-	-	-	-	-	-	-	-	-	*

→ Do not use.

Use of 400629 (⚡), 400784 (⚡), 408390 (⚡), or 408525 (⚡) type carriers requires selection of 19d.

Use of 400645 (⚡), 400785 (⚡), 408392 (⚡), or 408524 (⚡) type carriers requires selection of 19e.

(Type carriers are discussed in 5.02)

20. Line Feed on Printer		See 4.20.														
a.	Single															*
b.	Double															

Unless otherwise specified, choose 20a.

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

→ Consider only with selection of 19d or 19f.

Unless otherwise specified, choose 21a.

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

→ Consider only with selection of 19e.

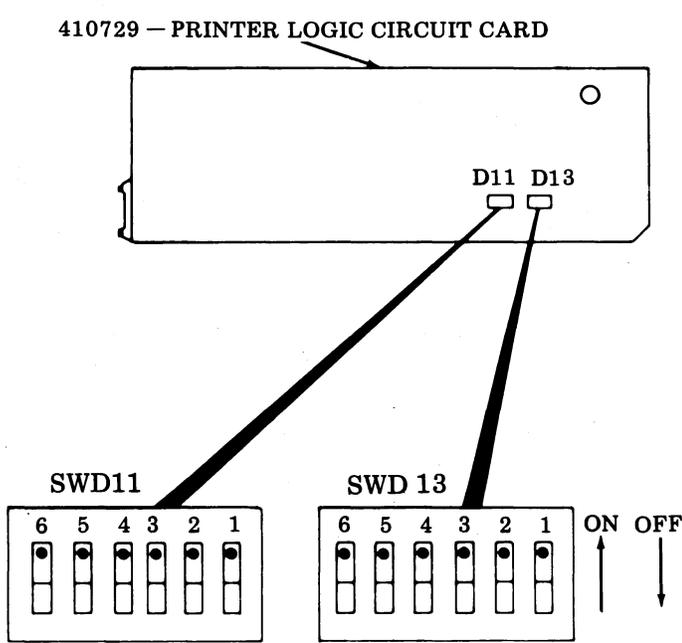
Unless otherwise specified, choose 22b.

39. Forms (Tractor Printer Only)		See 5.03.														
a.	On															*
b.	Off															

Unless otherwise specified, choose 39a.

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.

5.06 Printer Options For 410729 Circuit Card (Also see 5.10).



For  
132-Column  
Applications

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

(Toggle switches may be present.)

17. Printer Right Margin and Form Width		D11					D13							
		6	5	4	3	2	1	6	5	4	3	2	1	
e.	Last Character on Column 132	—	—	—	—	—	—	○	○	○	●	—	—	*
	Last Character on Column 131	—	—	—	—	—	—	○	○	●	○	—	—	
	Last Character on Column 130	—	—	—	—	—	—	○	○	●	●	—	—	
	Last Character on Column 129	—	—	—	—	—	—	○	●	○	●	—	—	
	Last Character on Column 128	—	—	—	—	—	—	○	●	●	○	—	—	
f.(X)	Last Character on Column 127	—	—	—	—	—	—	○	●	●	●	—	—	
	Last Character on Column 126	—	—	—	—	—	—	●	○	○	●	—	—	
	Last Character on Column 125	—	—	—	—	—	—	●	○	●	○	—	—	
	Last Character on Column 124	—	—	—	—	—	—	●	○	●	○	—	—	
	Last Character on Column 123	—	—	—	—	—	—	●	●	○	●	—	—	
	Last Character on Column 122	—	—	—	—	—	—	●	●	●	○	—	—	
	Last Character on Column 121	—	—	—	—	—	—	●	●	●	●	—	—	

Unless otherwise specified, choose 17e.

(X) Indicates desired column number.

Note: If right margin specified is 73 through 120, a 410072 circuit card must be used.

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.



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22. Foldover on Monocase Printer		D11					D13						
		6	5	4	3	2	1	6	5	4	3	2	1
a.	Lower Case Prints as Error Symbol	-	-	-	-	-	-	-	-	-	-	○	-
b.	Lower Case Prints as Upper Case	-	-	-	-	-	-	-	-	-	-	●	-

Consider only with selection of 19e.  
Unless otherwise specified, choose 22b.

39. Forms		Refer to 5.04.												
a.	On													
b.	Off													

Unless otherwise specified, choose 39a.

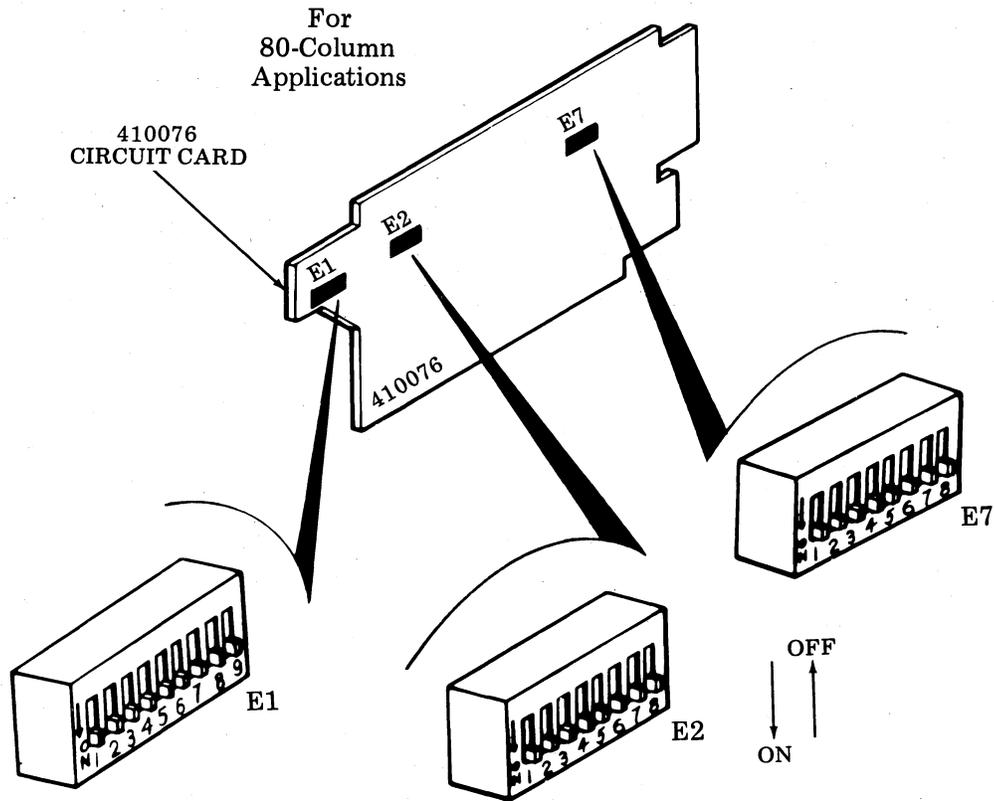
48. Incomplete Form Suppresses Paper Alarm		D11					D13						
		6	5	4	3	2	1	6	5	4	3	2	1
a.	No (Paper-Out Not Gated With Form-Out)	-	-	-	-	-	●	-	-	-	-	-	-
b.	Yes (Paper-Out Gated With Form-Out)	-	-	-	-	-	○	-	-	-	-	-	-

Unless otherwise specified, choose 48b.

Also see 5.10 for other printer options.

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.

5.07 Printer Options For 410076 Circuit Card.



17. Printer Left Margin and Form Width		E7								
		1	2	3	4	5	6	7	8	
a.	First Printed Column -- Column 1	—	—	●	●	●	●	—	—	*
	First Printed Column -- Column 2	—	—	●	●	○	●	—	—	
	First Printed Column -- Column 3	—	—	●	●	○	○	—	—	
	First Printed Column -- Column 4	—	—	●	○	○	○	—	—	
	First Printed Column -- Column 5	—	—	○	○	●	○	—	—	
b.(X)	First Printed Column -- Column 6	—	—	○	○	○	●	—	—	
	First Printed Column -- Column 7	—	—	○	●	○	○	—	—	
	First Printed Column -- Column 8	—	—	●	○	●	○	—	—	
	First Printed Column -- Column 9	—	—	○	○	●	●	—	—	
	First Printed Column -- Column 10	—	—	○	●	○	●	—	—	
	First Printed Column -- Column 11	—	—	●	●	●	○	—	—	
	First Printed Column -- Column 12	—	—	●	○	○	●	—	—	
	First Printed Column -- Column 13	—	—	○	●	●	○	—	—	

Unless otherwise specified, choose 17a.

(X) — Indicates desired column number.

● Indicates on.

○ Indicates off.

— Position of switch does not affect option.

\* Factory optioned.

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

To obtain counts:

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

Unless otherwise specified, choose 17c.

(X) — Indicates desired column number.

18. Printer Paper Feed Out		E1									E2							
		1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8
a.	No Paper Feed Out	●	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—
b.	Paper Feed Out on RM Loss - - 16 Lines or One Form	○	—	—	—	—	—	—	—	—	—	—	—	—	—	○	—	—
c.	Paper Feed Out on RM loss or ETX - - 16 Lines or One Form	○	—	—	—	—	—	—	—	—	—	—	—	—	—	●	—	—

Unless otherwise specified, choose 18a. See Option 58.

19. Printer Errored Character Symbol		E1								
		1	2	3	4	5	6	7	8	9
c.	Not Printed on Parity Error	—	—	●	●	—	—	—	—	—

Required Selection

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.

19. Character Set		E2							
		1	2	3	4	5	6	7	8
d.	Printers With 96-Character Set (Up-Low)	-	-	-	○	●	-	-	-
e.	Printers With 64-Character Set (Monocase)	-	-	-	●	○	-	-	-
f.	Printers With Special Carrier (Line Drawing)	-	-	-	○	○	-	-	-

→ Do not use.

Use of 400629 (⚡), 400784 (⚡), 408390 (⚡), or 408525 (⚡) type carriers requires selection of 19d.  
 Use of 400645 (⚡), 400785 (⚡), 408392 (⚡), or 408524 (⚡) type carriers requires selection of 19e.  
 (Type carriers are discussed in 5.02)

20. Line Feed on Printer		See 5.03													
a.	Single														*
b.	Double														

Unless otherwise specified, choose 20a.

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

→ Consider only with selection of 19d or 19f.

Unless otherwise specified, choose 21a.

22. Foldover 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	-	-	●	-	-	-	-	-

→ Consider only with selection of 19c.

Unless otherwise specified, choose 22b.

39. Forms		See 5.03													
a.	On														
b.	Off														*

Unless otherwise specified, choose 39a.

48. Incomplete Form Suppresses Paper Alarm		E2							
		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)	-	○	-	-	-	-	-	-

→ Position of switch has no effect with friction feed printer.

For tractor feed printer, unless otherwise specified, choose 48b.

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.

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

→ Not Applicable — Position of switch does not affect operation.

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

→ Not Applicable — Position of switch does not affect operation.

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

Friction Feed Printer — Choose 56a.  
Tractor Feed Printer — Choose 56b.

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

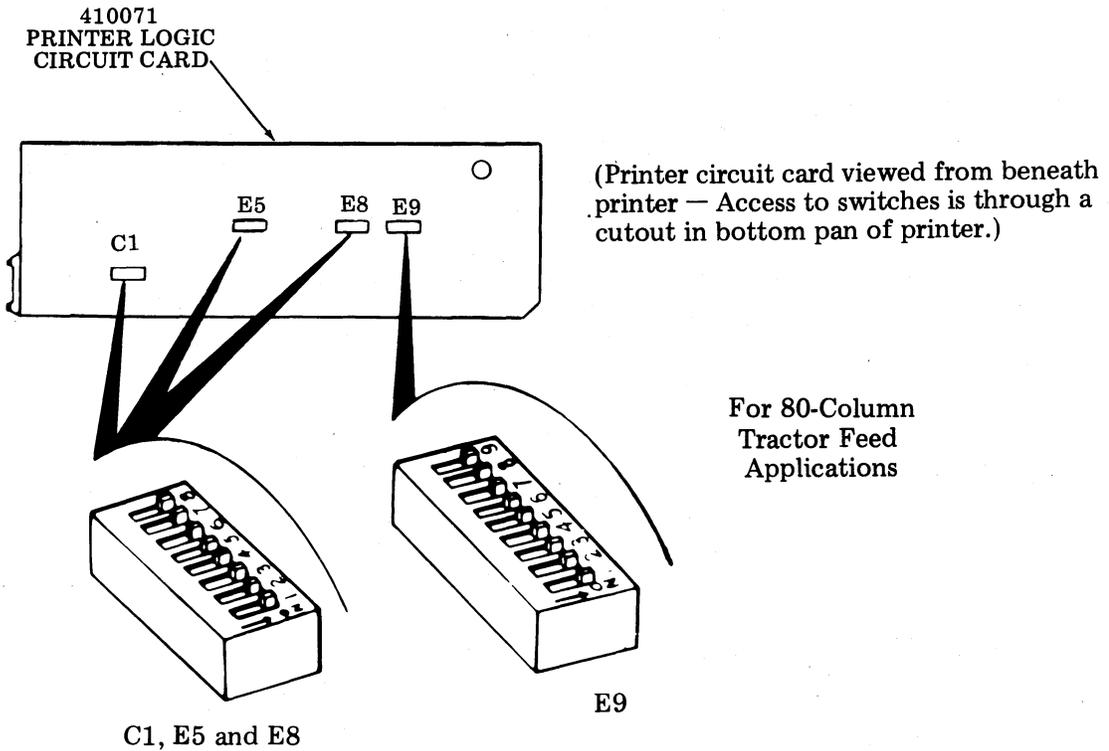
→ Required Selection

58. Idle Line Motor Control		E7								
		1	2	3	4	5	6	7	8	
a.	Disabled — Motor Held On Indefinitely During Idle Line	—	—	—	—	—	—	—	○	*
b.	Enabled — Motor Turned Off After 40-Seconds Idle Line	—	—	—	—	—	—	—	●	

Not applicable, printer motor turns off approximately 10 seconds after printout — unless printing of next message begins. Position of switch does not affect operation.

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.

5.08 Printer Options for 410071 Circuit Card (Also see 5.10.)



17. Printer Left Margin and Form Width		E5								
		1	2	3	4	5	6	7	8	
a.	First Printed Column — Column 1	—	—	●	●	●	●	—	—	*
	First Printed Column — Column 2	—	—	●	●	○	●	—	—	
	First Printed Column — Column 3	—	—	●	●	○	○	—	—	
	First Printed Column — Column 4	—	—	●	○	○	○	—	—	
	First Printed Column — Column 5	—	—	○	○	●	○	—	—	
	First Printed Column — Column 6	—	—	○	○	○	●	—	—	
b.(X)	First Printed Column — Column 7	—	—	○	●	○	○	—	—	
	First Printed Column — Column 8	—	—	●	○	●	○	—	—	
	First Printed Column — Column 9	—	—	○	○	●	●	—	—	
	First Printed Column — Column 10	—	—	○	●	○	●	—	—	
	First Printed Column — Column 11	—	—	●	●	●	○	—	—	
	First Printed Column — Column 12	—	—	●	○	○	●	—	—	
	First Printed Column — Column 13	—	—	○	●	●	○	—	—	

Unless otherwise specified, choose 17a.

(X) — Indicates desired column number.

● Indicates on.

○ Indicates off.

— Position of switch does not affect option.

\* Factory optioned.

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

To obtain counts:

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

Unless otherwise specified, choose 17c.

(X) — Indicates desired column number.

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

Unless otherwise specified, choose 18a. See Option 58.

19. Printer Errored Character Symbol		E9								
		1	2	3	4	5	6	7	8	9
c.	Not Printed on Parity Error	—	—	—	—	—	●	●	—	—

→ Required Selection

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.

19. Character Set		E8							
		1	2	3	4	5	6	7	8
d.	Printers With 96-Character Set ( Up-Low)	-	-	-	-	●	○	-	-
e.	Printers With 64-Character Set (Monospace)	-	-	-	-	○	●	-	-
f.	Printers With Special Carrier (Line Drawing)	-	-	-	-	○	○	-	-

Do not use.

Use of 400629 (▲), 400784 (▲), 408390 (♣), or 408525 (♣) type carriers requires selection of 19d.  
 Use of 400645 (▲), 400785 (♣), 408392 (♣), or 408524 (♣) type carriers requires selection of 19e.

(Type carriers are discussed in 5.02.)

20. Line Feed on Printer		See 5.03							
a.	Single								
b.	Double								

Unless otherwise specified, choose 20a.

21. Foldover on Printers With 96-Character Set		E8							
		1	2	3	4	5	6	7	8
a.	Lower Case and Upper Case Print	○	-	-	-	-	-	-	-
b.	Lower Case Prints as Upper Case	●	-	-	-	-	-	-	-

Consider only with selection of 19d or 19f.

Unless otherwise specified, choose 21a.

22. Foldover on Printers With 64-Character Set		E8							
		1	2	3	4	5	6	7	8
a.	Lower Case Prints as Error Symbol	○	-	-	-	-	-	-	-
b.	Lower Case Prints as Upper Case	●	-	-	-	-	-	-	-

Consider only with selection of 19e.

Unless otherwise specified, choose 22b.

39. Forms (Tractor Printer Only)		See 5.03							
a.	On								
b.	Off								

Unless otherwise specified, choose 39a.

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

Unless otherwise specified, choose 48b. 40P253 equipped with 406374 paper-out modification kit requires 48b.

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.

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

→ Not Applicable — Position of switch does not affect operation.

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

→ Not Applicable — Position of switches does not affect operation.

57. SSI/OEM Interface		E8								
		1	2	3	4	5	6	7	8	
a.	SSI	—	—	—	—	—	—	●	—	*

→ Required Selection

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

→ Not applicable. Printer motor turns off approximately 10 seconds after printout, unless printing of next message begins — Position of switch does not affect operation.

59. Speed Selection (Applies Only if Option 57b is Selected)		C1								
		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	○	○	○	○	○	○	●	○	

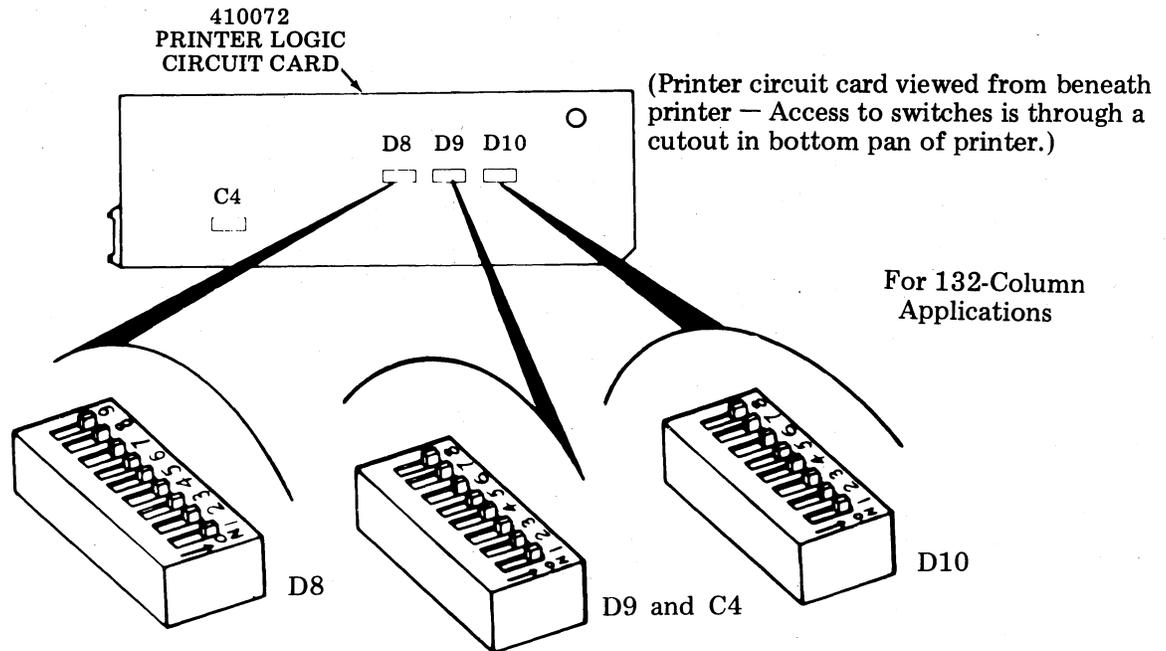
→ Not Applicable — Position of switches does not affect operation.

60. Aux Alarm		E5								
		1	2	3	4	5	6	7	8	
a.	Enable	—	○	—	—	—	—	—	—	
b.	Disable	—	●	—	—	—	—	—	—	*

→ Required selection, even for paper jam alarm of 40P204 or 402920 modification kit. See 5.10 for other printer options.

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.

5.09 Printer Options for 410072 Circuit Card (also see 5.10).



17. Printer Left Margin and Form Width		D8									
		1	2	3	4	5	6	7	8	9	
a.	First Printed Column - Column 1	—	—	●	●	●	●	—	—	—	*
b.(X)	First Printed Column - Column 2	—	—	●	●	○	●	—	—	—	
	First Printed Column - Column 3	—	—	●	●	○	○	—	—	—	
	First Printed Column - Column 4	—	—	●	○	○	○	—	—	—	
	First Printed Column - Column 5	—	—	○	○	●	○	—	—	—	
	First Printed Column - Column 6	—	—	○	○	○	●	—	—	—	
	First Printed Column - Column 7	—	—	○	●	○	○	—	—	—	
	First Printed Column - Column 8	—	—	●	○	●	○	—	—	—	
	First Printed Column - Column 9	—	—	○	○	●	●	—	—	—	
	First Printed Column - Column 10	—	—	○	●	○	●	—	—	—	
	First Printed Column - Column 11	—	—	●	●	●	○	—	—	—	
	First Printed Column - Column 12	—	—	●	○	○	●	—	—	—	
	First Printed Column - Column 13	—	—	○	●	●	○	—	—	—	

Unless otherwise specified, choose 17a.

(X) - Indicates desired column number.

● Indicates on.

○ Indicates off.

— Position of switch does not affect option.

\* Factory optioned.

SECTION 582-200-205

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

To obtain counts:

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

(X) Indicates desired column number.

Unless otherwise specified, choose 17e.

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

Unless otherwise specified, choose 18a. See Option 58.

19. Printer Errored Character Symbol		D10								
		1	2	3	4	5	6	7	8	
c.	Not Printed on Parity Error	—	—	—	—	—	—	●	●	—

→ Required Selection

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.



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

→ Not Applicable — Position of switch does not affect operation.

57. SSI/OEM Interface		D8										
		1	2	3	4	5	6	7	8	9		
a.	SSI	—	—	—	—	—	—	—	—	—	●	*

→ Required Selection

58. Idle Line Motor Control		D9								
		1	2	3	4	5	6	7	8	
a.	Disabled - - Motor Held On Indefinitely During Idle Line	—	—	—	—	—	○	—	—	*
b.	Enabled - - Motor Turned Off After 40-Second Idle Line	—	—	—	—	—	●	—	—	

→ Not applicable. Printer motor turns off approximately 10 seconds after printout, unless printing of next message begins — Position of switch does not affect operation.

59. Speed Selection (Applies Only if Option 57b is Selected)		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	○	○	○	○	○	○	○	●	

→ Not Applicable — Position of switch does not affect operation.

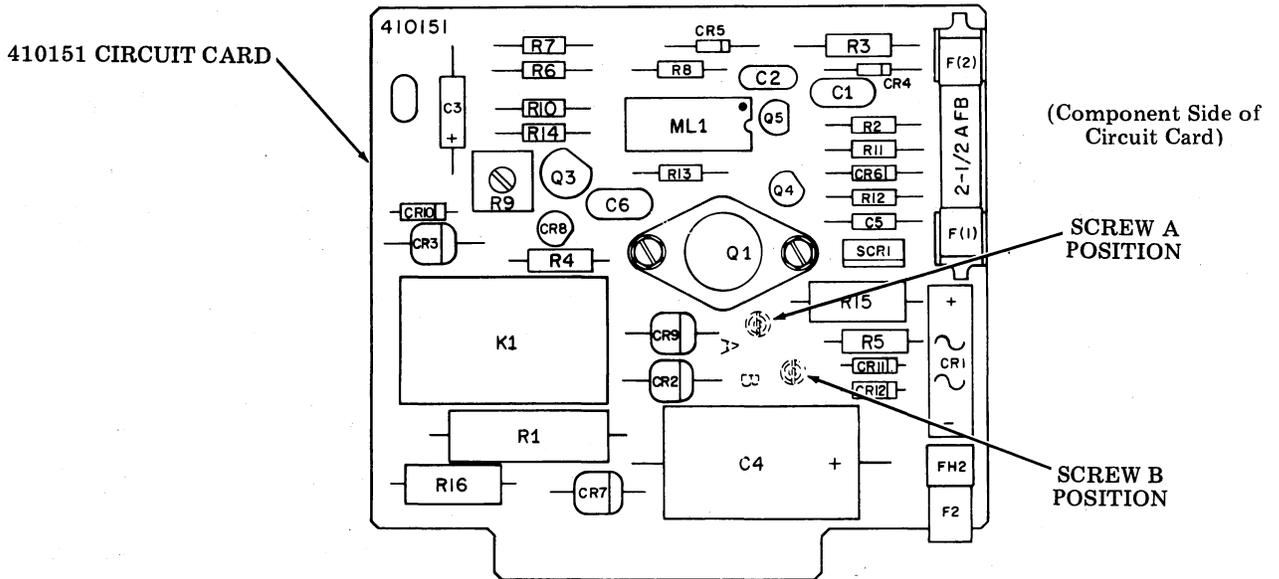
60. Aux Alarm		D9								
		1	2	3	4	5	6	7	8	
a.	Enable	—	—	—	—	○	—	—	—	
b.	Disable	—	—	—	—	●	—	—	—	*

→ Required selection even for paper jam alarm of 40P204 or 402920 modification kit.

See 5.10 for other printer options.

- Indicates on.
- Indicates off.
- Position of switch does not affect option.
- \* Factory optioned.

5.10 Printer options for 410151 circuit card. This paragraph applies only when one of these circuit cards is in a printer: 410071, 410072 or 410729.



61. Regulator Grounding (Circuit Gnd to Frame Gnd)		Screw A		Screw B	
		Component	Noncomponent	Component	Noncomponent
a.	SSI	In	—	—	In
b.	(SSI/OEM) At Printer	In	—	In	—
c.	(OEM) Ext to Printer	—	In	In	—

→ Either 61a or 61b must be chosen for proper operation.

## 6. DATA SET, DATA SERVICE UNIT AND INTERNAL MODEM OPTIONS

### 6.01 Section references:

Data Set 201C (DS), 2400 BPS — Section 592-029 Series and Technical Reference Pub. 41210.

Data Set 208A (DS), 4800 BPS — Section 592-027 Series and Technical Reference Pub. 41209.

Data Set 208B (DS), 4800 BPS — Section 592-030 Series.

Data Set 212A (DS), 1200 BPS — Section 592-034 Series.

500A-L1/2 Data Service Unit (DSU), 2400 BPS and 500A-L1/3 Data Service Unit (DSU), 4800 BPS — Section 595-200 Series.

48230 (LADS), 2400 or 4800 or 4600 BPS — Section 592-035 Series and EL 5504.

251A1 Terminal Data Unit (TDU), 2400 BPS — (no section released). This TDU is an internal modem.

Automatic Calling Unit 801-Type (DAS) Section 592-010 and 592-012 Series.

Telephone Set 2565 HK — Section 502-543-405.

SECTION 582-200-205

6.02 **Private Line Only:** A referenced data set or data service unit (or equivalent) can be used provided there is access to a private line system with 3002 conditioning. The 48230 LADS can be used provided there is access to a nonloaded type 83 local area data channel, such a channel uses metallic facilities and is intended for point-to-point transmission.

6.03 **Private Line only:** A 500A-Type Data Service Unit (DSU) can be used with a station arrangement provided there is access to a synchronous digital data system. The 500A-L1/2 operates at 2400 BPS and uses the NH1 and HP1 circuit cards. The 500A-L1/3 operates at 4800 BPS and uses the HN2 and HP1 circuit cards.

6.04 The tables of Part 6 list options for DSs, DSUs, and the TDU. The SDS should be connected to the DS, DSU or TDU. After making the connection and checking the options, go to Section 582-200-505. Proceed to:

Data Set (DS) or Terminal Data Unit (TDU) or Data Service Unit (DSU)	Private Line or Dial Up	For Options Refer To Paragraph
201C-L1A/2/4/5 (DS)	Private Line	6.05 (See Note 1)
201C-L1D/2/4/5 (DS)	Private Line	6.06 (See Note 2)
208A-L1A (DS)	Private Line	6.05
500A-Type (DSU)	Private Line	6.07
251A1 (TDU)	Private Line	6.08
48230 LADS (DS)	Private Line	6.09
212A-L1 (DS)	Dial Up	6.10
212A-L1A (DS)	Dial Up	6.10
212AR-L1A (DS)	Dial Up	6.10
201C-L1A/2/3/4 (DS)	Dial Up	6.11 (See Note 1)
201C-L1C (DS)	Dial Up	6.12
201CR-L1C (DS)	Dial Up	6.12
208B-L1 (DS)	Dial Up	6.13
208BR-L1C (DS)	Dial Up	6.13

*Note 1:* For 201C-L1A entries, L2 is for power unit and ac cord, L3 is for line control and M13F cord required for dial up, L4 is stand alone enclosure, L5 is M8K cord for connection to data auxiliary set required for private line.

*Note 2:* For 202C-L1D entry, L2 is power supply, L4 is data mounting, L5 is cord.

## 6.05 201C-L1A/2/4/5 and 208A-L1A Data Sets (Private Line):

DESCRIPTION OF RECOMMENDED DATA SET OPTIONS		DATA SET AT 40/4 STATION	
		201C-L1A/2/4/5	208A-L1A
WITHOUT AUX DATA SET		YJ	S3C-DOWN
NEW SYNC — NOT USED		YA	S4C-DOWN
600 or 900 OHM IMPEDANCE		ZQ or ZR	—
4-WIRE SWITCHED CARRIER (Note 1)		XA	S4B-DOWN
EIA INTERFACE		YK, YG, YE	—
XMIT LEVEL (Optional)		ZA — ZP	—
REC LEVEL (Optional)		ZU	—
COMP. EQUALIZER — IN		ZS	—
INTERNAL XMIT TIMING		YC	S3A-DOWN
DSR "ON" IN AL-MODE		—	S1A-UP
NO COMP. EQUALIZER TEST		—	S1B-UP
RETRAIN AUTOMATICALLY		—	S3B-UP
1-SEC. HOLDOVER ENABLED		—	S4A-DOWN
EQUALIZER ADJ. (Note 2)		—	S2B-UP S2C-UP
SWITCHED RTS			S1C-DOWN
DATA SET AT CUSTOMER LCU — SAME AS ABOVE, EXCEPT:		201C-L1A/2/4/5	208A-L1A
O	4-WIRE SWITCHED CARRIER	XA	S4B-DOWN
M	1-SEC. HOLDOVER ENABLED	—	S4A-DOWN
I	NEW SYNC. NOT USED (Note 3)	YA	S4C-DOWN
T			
A	CONTINUOUS CARRIER	XB	S4B-UP
	1-SEC. HOLDOVER DISABLED	—	S4A-UP
D	NEW SYNC. USED (See Note 3)	YB	S4C-UP
D	(If required at customer machine)		

*Note 1:* In a single 40/4 station telephone channel to a customer's equipment station, the continuous carrier option is preferred at the 40/4 station.

*Note 2:* For switched carrier operation, correct setting of the Compromise Equalizer must be determined using the Compromise Equalizer Test in Section 592-027-500.

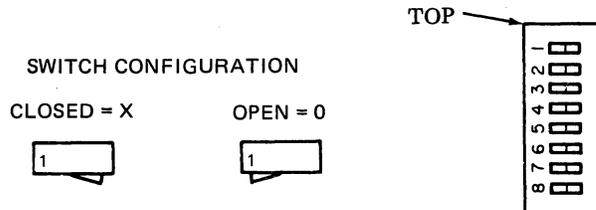
*Note 3:* In multipoint station arrangements, the data set at the customer LCU may use NEW SYNC OPTION to quench timing signals in the data set and condition the receiver for the next message — if required, refer to customer LCU requirements.

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6.06 201C-L1D/2/4/5 Data Set (Private Line)

FEATURE		OPTION	DIGITAL BOARD JB5	FRONT PANEL SWITCH SETTING								LINE INTERFACE BOARD CP - TP2	
				1	2	3	4	5	6	7	8		
NEW SYNC	NOT USED	YA*		0									
	UNDER CUSTOMER CONTROL	YB		X									
TRANSMITTER TIMING	INTERNAL	YC*			0	0							
	EXTERNAL	YD		X	0								
	CONTROLLED BY RECEIVER BIT CLOCK	WI		X	X								
USE WITH DAS 828/829-TYPE	YES	YI*	INSTALL E5-E6										
	NO	YJ*	INSTALL E4-E5										
GROUNDING OPTION	SIGNAL GROUND CONNECTED TO FRAME GROUND	YK*	INSTALL E7-E8										
	SIGNAL GROUND NOT CONNECTED TO FRAME GROUND	YL	INSTALL E8-E9										
STATUS OF DSR DURING LOCAL ANALOG LOOPBACK	DSR ON	YM										0	
	DSR OFF	YN*										X	
CONTINUOUS RECEIVER BIT CLOCK	IN	YO										0	
	OUT	YP*										X	
FUNCTION OF EIA INTERFACE PIN 18	INITIATES LOCAL ANALOG LOOPBACK	YS	INSTALL E1-E2										
	PROVIDES RECEIVER SYMBOL CLOCK	YT*	INSTALL E2-E3										
TYPE OF OPERATION AND CLEAR TO SEND DELAY	4-WIRE	SWITCH CARRIER, 7 MSEC CLEAR TO SEND DELAY	XA*				0		X				INSTALL E4-E6 INSTALL E2-E3
		CONTINUOUS CARRIER, 7 MSEC CLEAR TO SEND DELAY	XB				0			X			INSTALL E4-E6 INSTALL E2-E3
		CONTINUOUS CARRIER, 0 MSEC CLEAR TO SEND DELAY	XC				X				0	X	INSTALL E4-E6 INSTALL E2-E3
	2-WIRE	SWITCH CARRIER, 150 MSEC CLEAR TO SEND DELAY	XE				0		X			0	INSTALL E5-E6 INSTALL E1-E3

\*FACTORY OPTIONED



Recommended options for 201C-L1D/2/4/5 (unless otherwise specified) are: YA, YC, YJ, YK, YM, YP, YT, XA. (Notes 1 and 3 of 6.05 apply.)

## 6.07 500A-Type Data Service Units (Private Line):

## 500A-TYPE DSUs

(Private Line)

OPTION	FEATURE	SWITCH	SWITCH POSITION	CP	
WV	Fixed line build-out network installed (Note 1)	S1A	3	HN1 or HN2	
		S1B	5		
		S1C	9		
WW	Fixed line build-out network removed	S1A	2		
		S1B	6		
		S1C	8		
YK	Signal ground connected to frame ground	S2	IN		HP1
YL	Signal ground disconnected from frame ground		OUT		
YS	Continuous request-to-send (permanent RTS)	S3A	2		
YT	Switched request-to-send		3		
YQ	Circuit assurance installed (Note 2)	S3B	6		
YR	Circuit assurance removed		5		
XK	System status installed (Note 2)	S3C	9		
XL	System status removed		8		
XM	Switch LED assembly installed to rear			HN1 or HN2	
XN	Switch LED assembly installed to front				
XO	LL spring clip installed				
XP	LL spring clip not installed				

*Note 1:* Option WV required only under guidelines of Section 886-100-115 when local cable pairs are too short for proper operation of receiver.

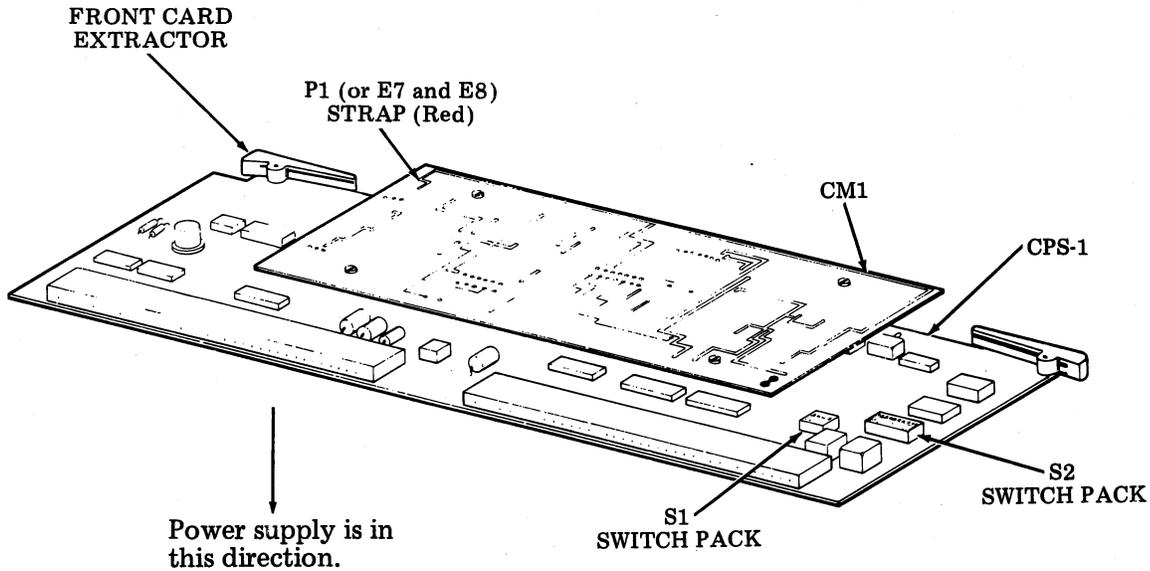
*Note 2:* Options YQ and XK should not be installed except as required in other installation practices.

*Note 3:* DSUs are not capable of near-end analog loopback.

*Note 4:* Refer to Section 595-200-Series for details.

6.08 251A1 Terminal Data Unit (Private Line):

Note: 251A1 TDU can be used in place of a 201B or 201C data set provided the required station arrangement hardware is present. An 828 or 829 data auxiliary set is also required.



251A1 TDUs

OPTION	DESCRIPTION	SWITCH PACKS ON CPS-1	STRAPPING ON CM1
ZA	0 -DB For Transmit Line Signal Level (Required for Private Line Application)	Close S2-3,5,6,10 Open S2-2,4,7,8	—
ZR	-24 DB For Carrier On Sensitivity (Required For Private Line Application)	—	Remove P1 Strap
ZT	4-Wire Private Line Operation With 7 Millisecond CTS Delay	Open S1-4	—
YA	851A1 TAU Auto Dialer Out	Close S1-5	—
YC	DSR on in Private Line Service	Close S2-9 S1-3	—
YD	4-Wire Private Line	Close S1-1 S2-1 Open S1-2	—

## 6.09 48230 LADS (Private Line)

OPTION DESCRIPTION (Customer Options)	AVAILABLE CHOICES
Transmit Timing (XMT TMG)	Internal (INTL)* (Required)
	NO OPTION
	External (EXT)
	LOOP
CLEAR TO SEND DELAY (CA/CB Delay)	0 ms (Use for Point-to-Point)
	8 ms*
BAUD RATE (Data Rate) (Chose 2400, 4800 or 9600)	2400 bps
	NO OPTION
	4800 bps*
	9600 bps
SIGNAL GROUND AND FRAME GROUND (On Power Supply Card)	CONNECTED*
	NOT CONNECTED

OPTION DESCRIPTION (Engineering Options)	AVAILABLE CHOICES
Carrier Detect Delay (CF Delay)	40 ms*
	5 ms (Use)
Mode (DX Mode)	Full* (Use)
	Half
Carrier Control (CARR CONT)	On*
	Off (Use for Point-to-Point)
Receiver Hold (RCV HOLD)	Mark* (Use)
	Space (SP)
Receive Clock (RCV CLK)	Normal (NORM)* (Use)
	Inverted (INVT)
Transmit Clock (XMIT CLK)	Normal (NORM)* (Use)
	Inverted (INVT)
RANGE (Select Appropriate Equalizer Setting)	Long (4800 bps, >4.5 mi. to 6 mi.) (9600 bps, >2.25 mi. to 3 mi.)
	Normal* (2400 bps, 500 Ft to 6 mi.) (4800 bps, 500 Ft to 4.5 mi.) (9600 bps, 500 Ft to 2.25 mi.)
	Short (Less than 500 Ft)
Output Level (Requirements)	0 dbm (2400 bps) -6 dbm (4800 bps) -16 dbm (9600 bps)
Transmit Impedance (XMT IMP)	Low 150* (Use)
4-Wire or 2-Wire (2/4 WIRE)	Four* (Required) Two
Receiver Impedance (RCV IMPD)	150* (Use) High

\*Factory Optioned

6.10 212A-Type Data Set (Dial Up):

DATA SET 212A-L1, 212A-L1A AND 212AR-L1A OPTIONS  
(Dial Up)

FEATURE		OPTION	SWITCH SETTINGS															
			S1 SWITCH											S5				
			1	2	3	4	L1A only							1	2			
Tip Ring Make Busy	IN	F	X															
	OUT	E*	O															
CC Indication (DSR on) for Analog Loop	ON	ZF*			X	X												
	OFF	ZE			O	O												
			S2 SWITCH															
			1	2	3	4	5	6	7	8	9	1	2					
Speed Control (212A-L1A only)	Interface	XJ	O									X						
	HS Button	XK*	X									O						
Speed Control (212A-L1 only)	HS Button (XJ not available, see L1 entries YG and YH)	XK*	X									O						
Interface Control MB/AL via CN Lead (See Options XO, XN, XR)	IN	YE		O														
	OUT	YF*		X														
Transmitter Timing	INT.	YC*			O	O												
	EXT.	YD			O	X												
	Slave	WI			X	O												
1200 BPS Operation (L1A only)	Async/Start-Stop	YG*					O					O	O					
	Sync	YH				X						X	X					
1200 BPS Operation (212A-L1 only)	Async/Start-Stop	YG*	X				O			O	O	O	O					
	Sync	YH	X			X				O	O	X	X					
Character Length (Use with YG)	9 Bit	YI						O										
	10 Bit	YJ*					X											
RCVR responds to Digital Loop (In HS mode only)	IN	YK*								O								
	OUT	YL								X								
Interface Control RDL Lead (L1A only)	IN	XL									X							
	OUT	XM*									O							
Interface Control RDL Lead (212A-L1 only) (See L1 entries YG and YH)	OUT	XM*									O							

See Note

(continued on next page)

Note: RDL (Remote Digital Loopback) can be used when both the near-end and far-end data sets are 212A-type. Depressing the RDL key on the near-end data set causes the far-end data set to go into the DL mode. When the RDL key is depressed again (to release RDL) or the on-line connection is broken, the far-end is restored to the normal operating mode.

DATA SET 212A-L1, 212A-L1A AND 212AR-L1A OPTIONS (Contd)  
(Dial Up)

FEATURE		OPTION	SWITCH SETTINGS								
			S3 SWITCH								
			1	2	3	4	5	6	7	8	
Loss of Carrier causes Disconnect	IN	S*	X								
	OUT	R	O								
Received Space causes Disconnect	IN	V*		X							
	OUT	Y		O							
CB (CTS) and CF (DCD) Indications	COM	A*			X						
	SEP	B			O						
Send Space then Disconnect on loss of DTR	IN	T*				X					
	OUT	U				O					
Automatic Answer	IN	ZH*					O				
	OUT	ZG					X				
Answer Mode Indication on CE (RI) (Option W is required)	CE ON	X						X			
	CE OFF	W*						O			
Speed Mode	HIGH	YO							X		
	DUAL	YP*							O		
Interface Speed Indication-CI (Pin 12, on for HS)	IN	YQ									X
	OUT	YR*									O
CN and TM Interface Pin Assignments (L1A only)	CN is 25. TM (No Connection)		XO*	Strap Plugs E3-E4, E1-E2							
	CN is 18. TM (No Connection)		XN	Strap Plugs E4-E5, E1-E2							
	CN is 18. TM is 25.		XR	Strap Plugs E4-E5, E2-E3							
CN and TM Interface Pin Assignments (212A-L1 only)	CN is 25. TM (No Connection)		XO*	(No Switch Settings or Plugs)							
Signal Ground to Frame Connection (on 47D Mounting)	IN	Q*	S1 Closed								
	OUT	P	S1 Open								

X Switch closed (depressed on side adjacent to numbers 1-8).

O Switch open (depressed on side opposite to numbers 1-8).

— Switch does not affect option.

\* Factory optioned.

Recommended options for 212A-L1 (unless otherwise specified) for 2-wire switched network: E, ZF, XK, YF, YC, YH, YJ, YK, XM, R, Y, B, U, ZH, W, YO, YR, XO, Q. Options YK and XM are furnished by Option YG (or YH).

Recommended options for 212A-L1A (unless otherwise specified) for 2-wire switched network: E, ZF, XK, YF, YC, YH, YJ, YK, XM, R, Y, B, U, ZH, W, YO, YR, XO, Q.

*Caution: Although HS button has no effect at called station, for this application it is required to be in the depressed (locking) position as a calling station. It is recommended that HS should always be in the depressed position.*

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6.11 201C-L1A/2/3/4 Data Set (Dial Up)

FEATURE		OPTION	STRAPPING ON ANALOG BOARD (JB1 CP) INSTALL RED STRAPS	STRAPPING ON DIGITAL BOARD (JB2 CP) INSTALL RED STRAPS	REMOVE RED STRAPS FOR OPTION
Transmit Line Signal Level	0 dBm	ZA	27-28, 29-30, 31-32, 33-34		ZP
	- 1 dBm	ZB	19-20, 29-30, 31-32, 33-34		ZO
	- 2 dBm	ZC	27-28, 21-22, 31-32, 33-34		ZN
	- 3 dBm	ZD	19-20, 21-22, 31-32, 33-34		ZM
	- 4 dBm	ZE	27-28, 29-30, 23-24, 33-34		ZL
	- 5 dBm	ZF	19-20, 29-30, 23-24, 33-34		ZK
	- 6 dBm	ZG	27-28, 21-22, 23-24, 33-34		ZJ
	- 7 dBm	ZH	19-20, 21-22, 23-24, 33-34		ZI
	- 8 dBm	ZI	27-28, 29-30, 31-32, 25-26		ZH
	- 9 dBm	ZJ	19-20, 29-30, 31-32, 25-26		ZG
	- 10 dBm	ZK	27-28, 21-22, 31-32, 25-26		ZF
	- 11 dBm	ZL	19-20, 21-22, 31-32, 25-26		ZE
	- 12 dBm	ZM	27-28, 29-30, 23-24, 25-26		ZD
	- 13 dBm	ZN	19-20, 29-30, 23-24, 25-26		ZC
	- 14 dBm	ZO	27-28, 21-22, 23-24, 25-26		ZB
- 15 dBm	ZP	19-20, 21-22, 23-24, 25-26		ZA	
Line Impedance	600 Ω	ZQ	16-17		ZR
	900 Ω	ZR	17-18		ZQ
Compromise Equalizer is IN (Required)		ZS	8-9, 11-12		ZT
Carrier ON Sensitivity is -44 for DDD (Required)		ZV	1-2		
New Sync	Not Used	YA		20-21	YB
	Customer Controlled	YB		19-20	YA
Transmitter Timing	INT	YC			YD
	EXT	YD		13-14	
Automatic Answer	RDY and DTR Control or Not Provided	YE			YF
	DTR Control Only	YF		17-18	
Ring Indication On Customer Interface	EIA	YG		22-24	YH
	Contact	YH		22-23	YG
Use With DAS 828-Type	Yes	YI			YJ
	No	YJ		15-16	
Grounding Option	Common	YK		25-26	
	Not Common	YL			YK
2-Wire DDD Operation and Clear-to-Send Delay (Required)		XD	4-5	1-3,4-6,27-28	Note 2

} Choose One

Note 1: Do not remove any black test straps.

Note 2: Remove red straps: 35-36 on JB1 CP; 2-3, 5-6, 28-29, 11-12, 133, 134 on JB2 CP.

Recommended Options: YJ, YA, ZQ, or XR, XD, ZS, ZV, YC, YF, YG and YK.

6.12 201C-L1C and 201CR-L1C-Type Data Set (Dial Up)

DATA SET 201C-L1C and 201CR-L1C OPTIONS

OPTION		LINE CONTROL BOARD (TP1B)								PROVIDE		
DESCRIPTION	DESIG	STRAP IN (VERTICAL)				STRAP OUT (HORIZONTAL)						
Transmit Line Signal Level †	- 4 dBm	ZE*					1, 2, 4, 8			One Per Station		
	- 5 dBm	ZF	1				2, 4, 8					
	- 6 dBm	ZG	2				1, 4, 8					
	- 7 dBm	ZH	1, 2				4, 8					
	- 8 dBm	ZI	4				1, 2, 8					
	- 9 dBm	ZJ	1, 4				2, 8					
	- 10 dBm	ZK	2, 4				1, 8					
	- 11 dBm	ZL	1, 2, 4				8					
	- 12 dBm	ZM	8				1, 2, 4					
	- 13 dBm	ZN	1, 8				2, 4					
	- 14 dBm	ZO	2, 8				1, 4					
- 15 dBm	ZP	1, 2, 8				4						
			SWITCH SETTING								DIGITAL BOARD (JB4B)	PROVIDE
			1	2	3	4	5	6	7	8		
Transmitter Timing	Internal	YC*					X				One Per Station	
	External	YD					O					
Automatic Answer	RDY & DTR Controlled or Not Provided	YE								O	One Per Station	
	DTR Controlled Only	YF*								X		
Grounding	Signal Ground Connected to Frame Ground	YK*									Install E1-E2	One Per Station
	Signal Ground Not Connected to Frame Ground	YL									Remove E1-E2	
Function of EIA Interface Pin 18	Initiates Analog Loopback	YS				X					Install E3-E4	One Per Station
	Provides Dibit Clock Receiver	YT*				O					Install E4-E5	
Continuous Receiver Bit Clock	In	YO								O	One Per Station	
	Out	YP*								X		
Satellite	In	YQ*		X							One Per Station	
	Out	YR		O								

\*Factory Optioned

Recommended Options: YC, YF, YK, YT, YO and YR.

6.13 208B-L1 and 208 BR-L1C Type Data Set (Dial Up)

208B-L1 DATA SET OPTIONS

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

TRANSMIT LEVEL

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

\* Factory Optioned.

\*\* Compromise Equalizer should always be in.

†† If not specified on service order, install 50 interval.

Recommended Options: ZS, YM, YP and YC.

\*Factory Optioned.

208BR-L1C DATA SET OPTIONS

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

\* Factory Optioned.

\*\* Strap may be up or down.

§§ Down position must be selected.

Recommended Options: WU, YM, YP and YC.

7. DETAILS ABOUT EARLY STYLE ARRANGEMENTS

7.01 The identification of early style arrangements is provided in 2.03.

7.02 The remainder of Part 7 lists the Controller Arrangement Forms for early style arrangements.

TRANSMIT LEVEL (TELCO) OPTIONS FOR DS 208BR-L1C

TRANSMIT LEVEL (dBm)	OPTION DESIGNATION	SWITCH			
		S1A	S1B	S1C	S2A
-4**	ZE	DOWN	UP	DOWN	UP
-5	ZF	DOWN	UP	DOWN	DOWN
-6	ZG	DOWN	UP	UP	UP
-7	ZH	DOWN	UP	UP	DOWN
-8	ZI	DOWN	DOWN	DOWN	UP
-9	ZJ	DOWN	DOWN	DOWN	DOWN
-10	ZK	DOWN	DOWN	UP	UP
-11	ZL	DOWN	DOWN	UP	DOWN
-12	ZM	UP	UP	DOWN	UP
-13	ZN	UP	UP	DOWN	DOWN
-14	ZO	UP	UP	UP	UP
-15	ZP	UP	UP	UP	DOWN

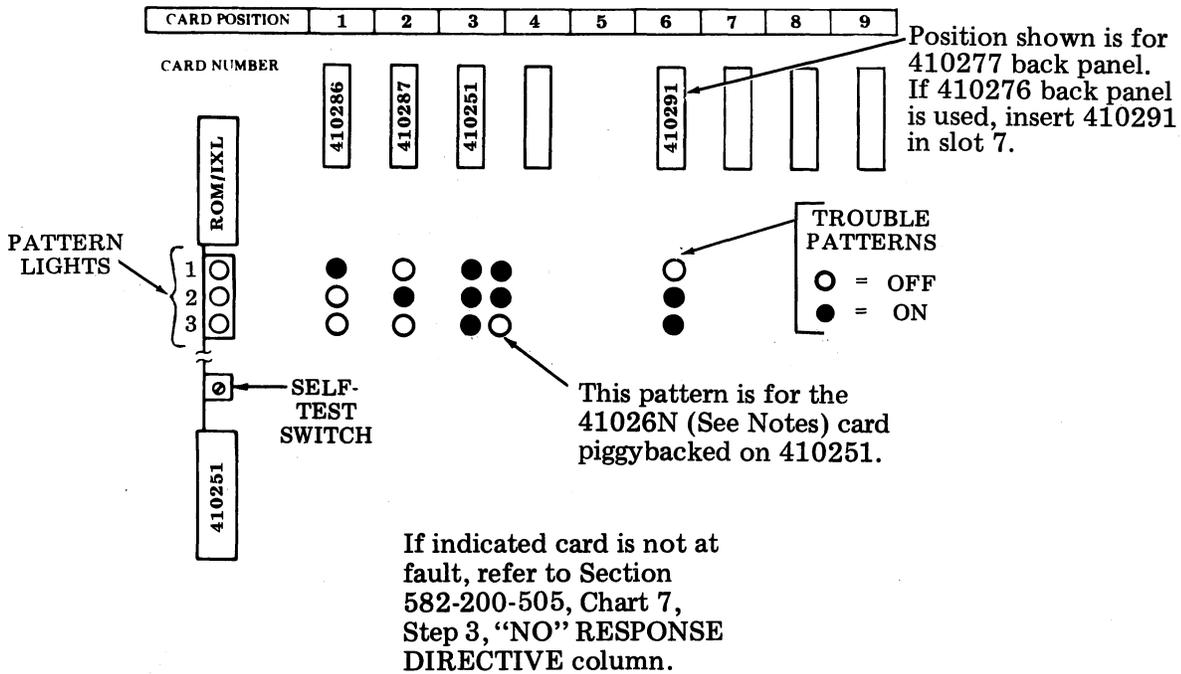
\*\* Use option ZE for all data sets in registered installations. For "grandfathered" installations, select the appropriate level so that the signal reaching the serving central office does not exceed -12dBm.

**NOTES:**

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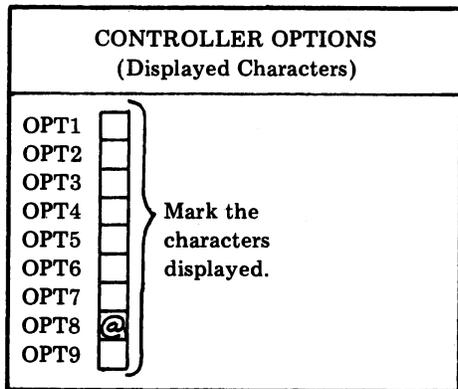
SDS Equipped with 40C304-Type Controller, Early Design, Version II or III, Without Internal Modem Arrangement Form

Application: Private Line Without 251A1, or Dial Up



Note 1: 410261 — Private Line — Version II  
 410264 or 410265 — Private Line — Version III  
 410262 — Dial Up

Note 2: If 410261 is used, it must be Issue 4A or later.



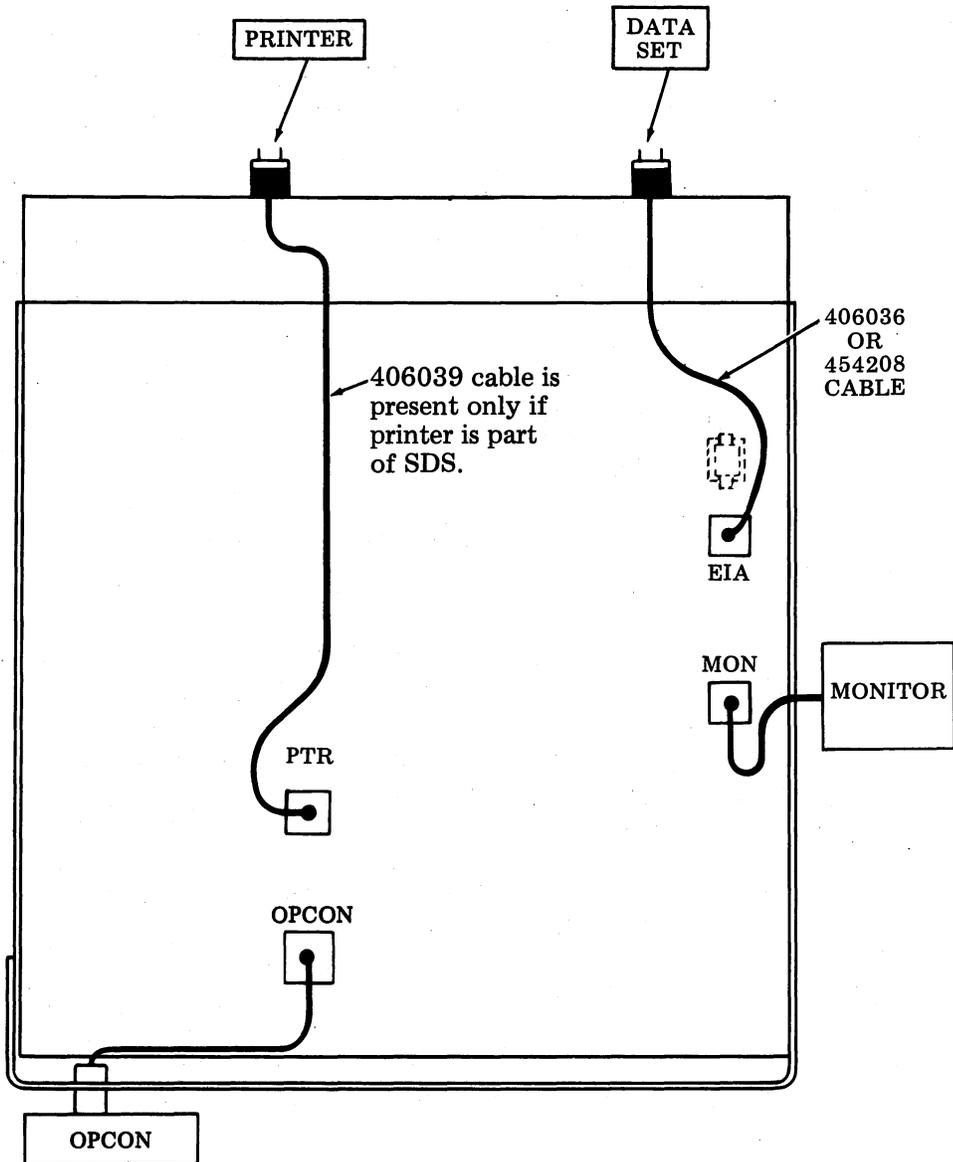
Note 3: The following printer options are required (when present), 19c, 54a, 55a, 57a, 59f, 60b and 61a.

PRINTER OPTIONS	
Friction Feed	
Tractor Feed 80 Col	
Tractor Feed 132 Col	
17. Specify Right Margin	
Specify Left Margin	
18a. No Paper Feed Out	
18b. Paper FO on "RM" Loss	
18c. Paper FO on "RM" Loss and ETX	*
19d. 96 Character Set	
19e. 64 Character Set	
19f. Ext ASCII Set (DO NOT USE)	
20a. Single LF	*
20b. Double LF	
21a. Lower and Upper Case Print	
21b. Lower Case Prints as Upper Case	*
22a. Lower Case Prints as Error	
22b. Lower Case Prints as Upper Case	*
39a. Forms On	
39b. Forms Off	
48a. Paper Out Not Gated W/FF	
48b. Paper Out Gated W/FF	*
56a. FF, Motor on After Paper Alarm	*
56b. TF, Motor off After Paper Alarm	
58a. No Idle Line Motor Control	*
58b. Idle Line Motor Control	

\*Indicates Factory Options

See adjacent page for connections.

CARD POSITION	I/O SOCKET	STATION WORKSHEET
7	OPCON,	OPCON/
1	MON	MON (DEVICE 1)
7	PTR	PTR (DEVICE 2)
7	EIA	DATA SET

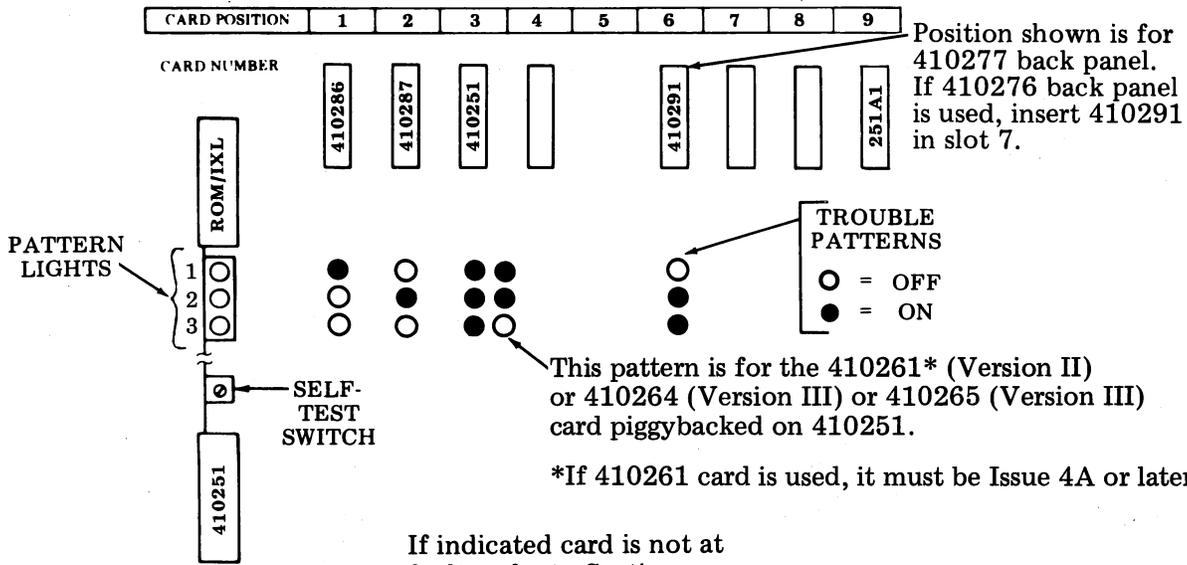


*Note:* If customer requires that print local operation be prohibited from the opcon, place a 340701 keytop over the PRINT LOCAL position.

SECTION 582-200-205

SDS Equipped with 40C304-Type Controller, Early Design, Version II or III, with Internal Modem Arrangement Form

Application: Private Line with 251A1



If indicated card is not at fault, refer to Section 582-200-505, Chart 7, Step 3, "NO" RESPONSE DIRECTIVE column.

251A1 OPTIONS
ZA, ZR, ZT YA, YC, YD

CONTROLLER OPTIONS (Displayed Characters)	
OPT1	} Mark the characters displayed.
OPT2	
OPT3	
OPT4	
OPT5	
OPT6	
OPT7	
OPT8	
OPT9	

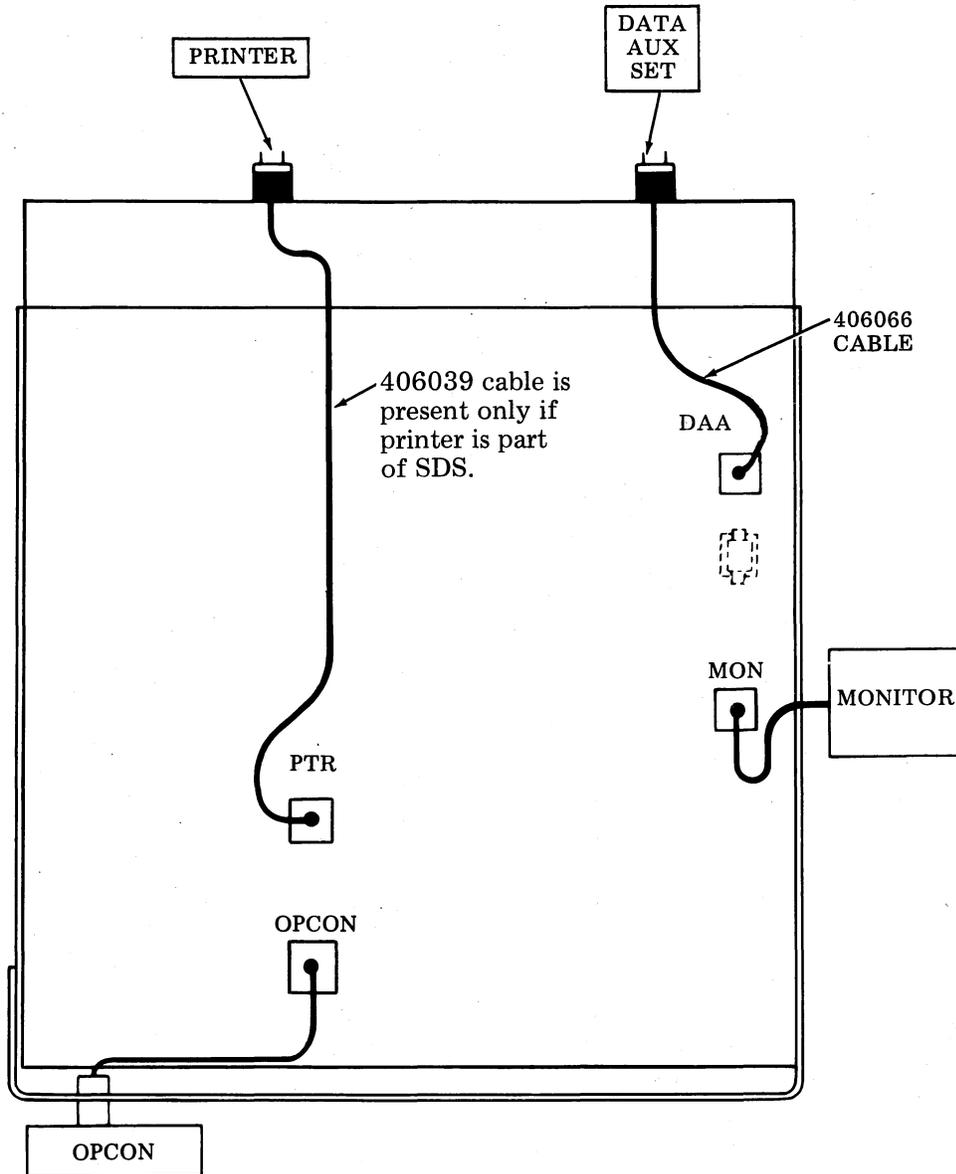
Note: The following printer options are required (when present), 19c, 54a, 55a, 57a, 59f, 60b and 61a.

PRINTER OPTIONS	
Friction Feed	
Tractor Feed 80 Col	
Tractor Feed 132 Col	
17. Specify Right Margin Specify Left Margin	
18a. No Paper Feed Out	
18b. Paper FO on "RM" Loss	
18c. Paper FO on "RM" Loss and ETX	*
19d. 96 Character Set	
19e. 64 Character Set	
19f. Ext ASCII Set (DO NOT USE)	
20a. Single LF	*
20b. Double LF	
21a. Lower and Upper Case Print	
21b. Lower Case Prints as Upper Case	*
22a. Lower Case Prints as Error	
22b. Lower Case Prints as Upper Case	*
39a. Forms On	
39b. Forms Off	
48a. Paper Out Not Gated W/FF	
48b. Paper Out Gated W/FF	*
56a. FF, Motor on After Paper Alarm	*
56b. TF, Motor off After Paper Alarm	
58a. No Idle Line Motor Control	*
58b. Idle Line Motor Control	

See adjacent page for connections.

\*Indicates Factory Options

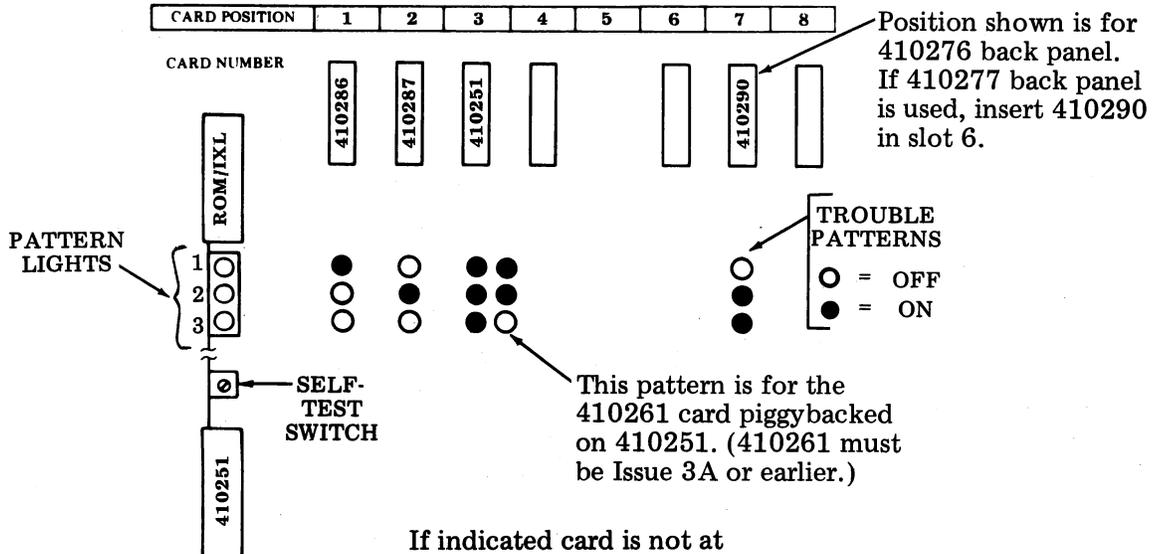
CARD POSITION	I/O SOCKET	STATION WORKSHEET
7	OPCON,	OPCON/
1	MON	MON (DEVICE 1)
7	PTR	PTR (DEVICE 2)
9	DAA	DATA AUX SET



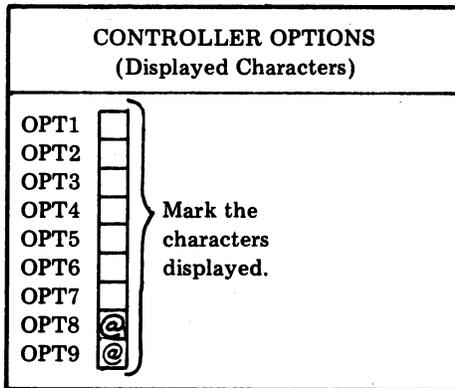
*Note:* If customer requires that print local operation be prohibited from the opcon, place a 340701 keytop over the PRINT LOCAL position.

SDS Equipped with 40C304-Type Controller, Early Design, Version I, Without Internal Modem Arrangement Form

Application: Private Line Without 251A1



If indicated card is not at fault, refer to Section 582-200-505, Chart 7, Step 3, "NO" RESPONSE DIRECTIVE column.



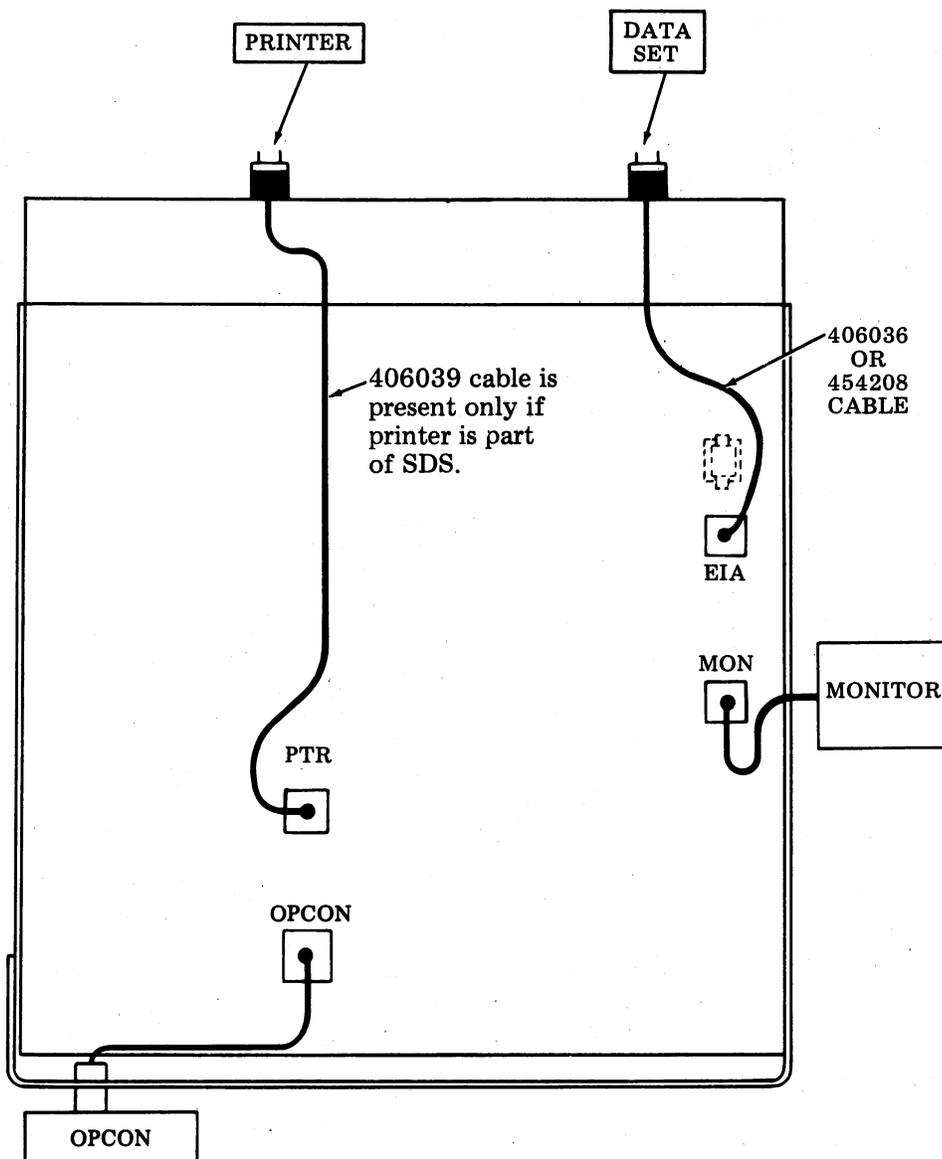
PRINTER OPTIONS	
Friction Feed	
Tractor Feed 80 Col	
Tractor Feed 132 Col	
17. Specify Right Margin	
Specify Left Margin	
18a. No Paper Feed Out	
18b. Paper FO on "RM" Loss	
18c. Paper FO on "RM" Loss and ETX	*
19d. 96 Character Set	
19e. 64 Character Set	
19f. Ext. ASCII Set (DO NOT USE)	
20a. Single LF	*
20b. Double LF	
21a. Lower and Upper Case Print	
21b. Lower Case Prints as Upper Case	*
22a. Lower Case Prints as Error	
22b. Lower Case Prints as Upper Case	*
39a. Forms On	
39b. Forms Off	
48a. Paper Out Not Gated W/FF	
48b. Paper Out Gated W/FF	*
56a. FF, Motor on After Paper Alarm	*
56b. TF, Motor off After Paper Alarm	
58a. No Idle Line Motor Control	*
58b. Idle Line Motor Control	

\*Indicates Factory Options

Note: The following printer options are required (when present), 19c, 54a, 55a, 57a, 59f, 60b and 61a.

See adjacent page for connections.

CARD POSITION	I/O SOCKET	STATION WORKSHEET
7	OPCON, MON	OPCON/ MON (DEVICE 1)
1	PTR	PTR (DEVICE 2)
7	EIA	
7	EIA	DATA SET

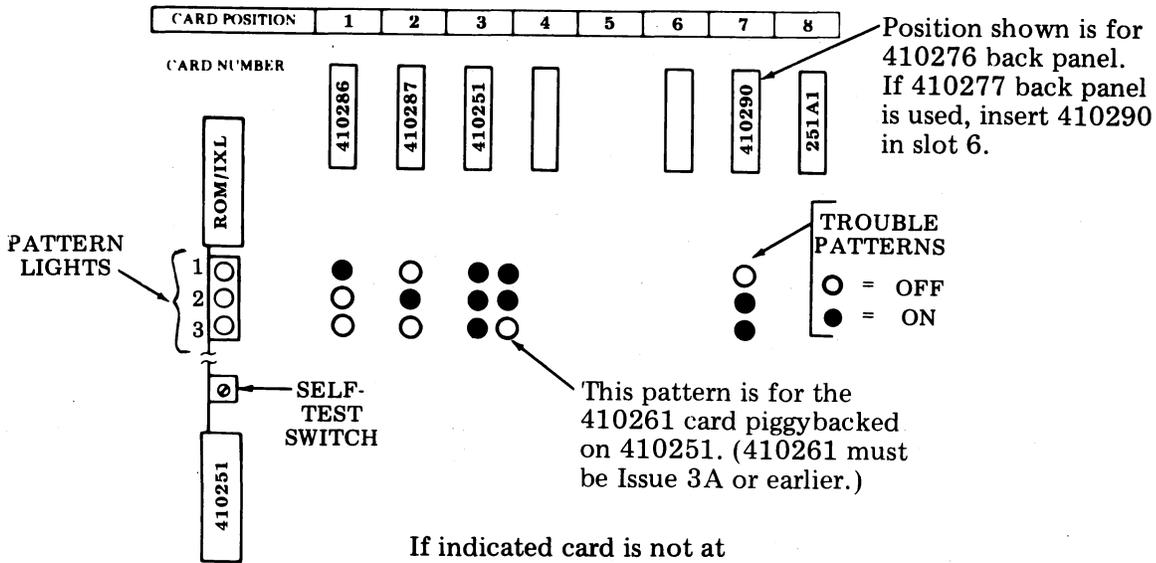


*Note:* If customer requires that print local operation be prohibited from the opcon, place a 340701 keytop over the PRINT LOCAL position.

SECTION 582-200-205

SDS Equipped with 40C304-Type Controller, Early Design, Version I, With Internal Modem Arrangement Form

Application: Private Line, Version I, With 251A1



If indicated card is not at fault, refer to Section 582-200-505, Chart 7, Step 3, "NO" RESPONSE DIRECTIVE column.

251A1 OPTIONS
ZA, ZR, ZT YA, YC, YD

CONTROLLER OPTIONS (Displayed Characters)		
OPT1	} Mark the characters displayed.	
OPT2		
OPT3		
OPT4		
OPT5		
OPT6		
OPT7		
OPT8		A
OPT9		@

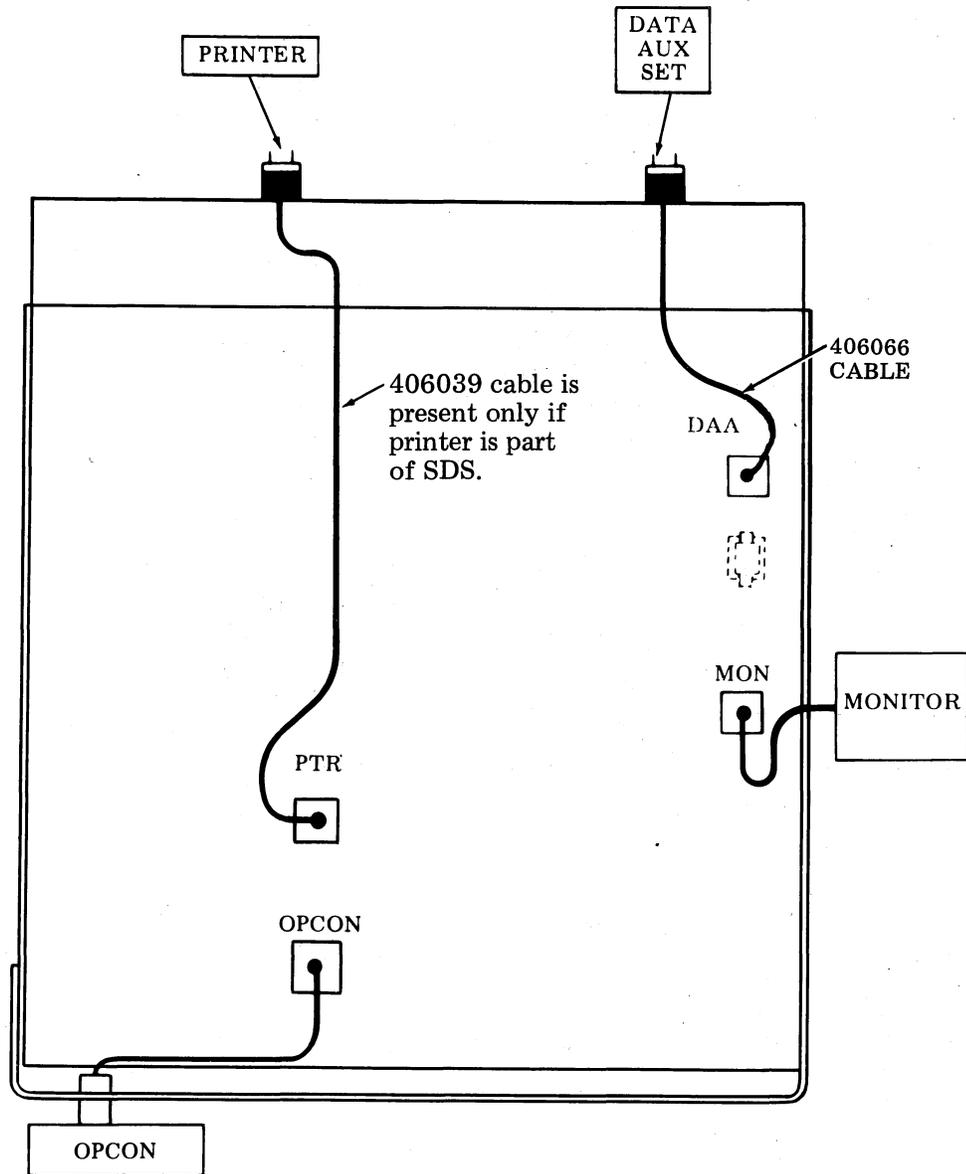
PRINTER OPTIONS	
Friction Feed	
Tractor Feed 80 Col	
Tractor Feed 132 Col	
17. Specify Right Margin	
Specify Left Margin	
18a. No Paper Feed Out	
18b. Paper FO on "RM" Loss	
18c. Paper FO on "RM" Loss and ETX	*
19d. 96 Character Set	
19e. 64 Character Set	
19f. Ext ASCII Set (DO NOT USE)	
20a. Single LF	*
20b. Double LF	
21a. Lower and Upper Case Print	
21b. Lower Case Prints as Upper Case	*
22a. Lower Case Prints as Error	
22b. Lower Case Prints as Upper Case	*
39a. Forms On	
39b. Forms Off	
48a. Paper Out Not Gated W/FF	
48b. Paper Out Gated W/FF	*
56a. FF, Motor on After Paper Alarm	*
56b. TF, Motor off After Paper Alarm	*
58a. No Idle Line Motor Control	*
58b. Idle Line Motor Control	

Note: The following printer options are required (when present), 19c, 54a, 55a, 57a, 59f, 60b and 61a.

See adjacent page for connections.

\*Indicates Factory Options

CARD POSITION	I/O SOCKET	STATION WORKSHEET
7	OPCON,	OPCON/
1	MON	MON (DEVICE 1)
7	PTR	PTR (DEVICE 2)
9	DAA	DATA AUX SET



*Note:* If customer requires that print local operation be prohibited from the opcon, place a 340701 keytop over the PRINT LOCAL position.

SECTION 582-200-205

8. TOOLS AND SUPPLIES

8.01 The following tools and supplies may be required for installation or servicing of 40/4 apparatus. Most of these items should normally be present in standard maintenance tool kits. (Reference Section 570-005-800)

8.02 Tools

Cleaning Brush (Type Face)		151394
Cutting Pliers		108286
Gauge (Friction Feed Printer)		400610
Gauge (Tractor Feed Printer)		402617
Keyswitch Extractor		346257
Keytop Extractor		346260
Long-nose Pliers		108285
Nut Driver	Handle	135676
Nut Driver	1/4"	89954
Nut Driver	5/16"	89955
Nut Driver	1/4"	135677
Nut Driver	5/16"	135678
Retaining Ring Pliers		160396
Ruler, 6"		95960
Scales, Spring (802)		110443
Screwdriver	1/8", 2" Blade	95368
Screwdriver	1/4", 6" Blade	100982
Screwdriver	(Blade Less Than 5/32")	94647
Spring Hook (Pull)		142554
Spring Hook (Pull)		75675
Spring Hook (Push)		75503
Static Ground Strap		346392
Terminal Extractor (Data Set)		341983
Terminal Extractor (40/4)	(MOLEX HT2285)	402840
Tweezers		151392
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
Wrench, Open End	1/2" and 7/16"	129536
Carrying Case 40/4 Circuit Cards		405900

8.03 Supplies

- All purpose grease — 145867, 4 oz tube or 143484, 1 lb can
- Oil — KS7470
- Thermal compound — 402640
- Ribbon — 402444
- Paper (friction feed) — standard 8-1/2" wide, 5" dia. roll
- Paper (tractor feed)
- Degreaser (trichlorotriflorethylene) — KS20406 L-1

## 9. ADJUSTMENTS

9.01 The only adjustments in the station are in printers and monitors.

9.02 Make monitor adjustments during station installation only when one of the conditions exists when the attendant brightness is fully turned up and characters are displayed (you may have to enter characters from the keyboard):

- Raster is too bright or not visible at all.
- Characters are not in focus.
- Characters not of uniform size as gauged by eye.
- A line of characters is not parallel to the top and bottom of the tube face as gauged by eye.

- After a three minute warm-up, 80 columns by 24 lines is displayed as 10-1/4 inches +1/4 inch by 5-1/4 inches +1/10 inch as gauged by eye.

*Danger: Wear safety glasses when the monitor housing is removed, and observe all safety precautions to avoid accidental electrical shock or breakage of the cathode ray tube. Insure that nothing can fall out of your pocket and strike the tube.*

Monitor adjustments are given in Section 582-213-700.

9.03 The line printer adjustments are given in Section 582-210-700.

9.04 The line printer cabinet adjustments are given in Section 582-212-700.