43 TELEPRINTER

ENGINEERING OPTIONS

CONTENTS PAGE

1. GENERAL

1.01 This section provides information on engineering options for the 43 basic KSR and RO teleprinter and for the 43 5- and 8-level buffered teleprinter.

1.02 This section is reissued to include the selective calling unit modification kit circuit card and 43 5- and 8-level buffered teleprinter engineering options.

1.03 The engineering options can be made to satisfy engineering requirements using switches or in some cases, straps located on the circuit cards of the 43 teleprinter.

1.04 The options are numbered for field identification and record keeping purposes.

1.05 The keyboard circuitry can be damaged by static discharge. The 346392 static discharge ground strap is available for use by service personnel.

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

Prepared for American Telephone and Telegraph Company by Teletype Corporation

1.07 For additional servicing information, refer to sections listed below:

574-500-300	43 Basic KSR Teleprinter, Troubleshooting
574-500-301	43 Basic RO Teleprinter, Troubleshooting
574-500-302	43 Teleprinter 8-Level Buffered Send/Receive (BSR) Station, Troubleshooting
574-500-303	43 Teleprinter 8-Level Buffered Selective Calling (BSC) Station, Troubleshooting
574-500-304	43 Teleprinter 5-Level Buffered Selective Calling (BSC) Station, Troubleshooting

Specification 50944S — 430900 Answer-Back Modification Kit

Specification 50962S — 430910 Selective Calling Modification Kit

1.08 The option switches are factory optioned and should not be changed unless the local engineering requirements specify incorporating a nonstandard option (Fig. 1).

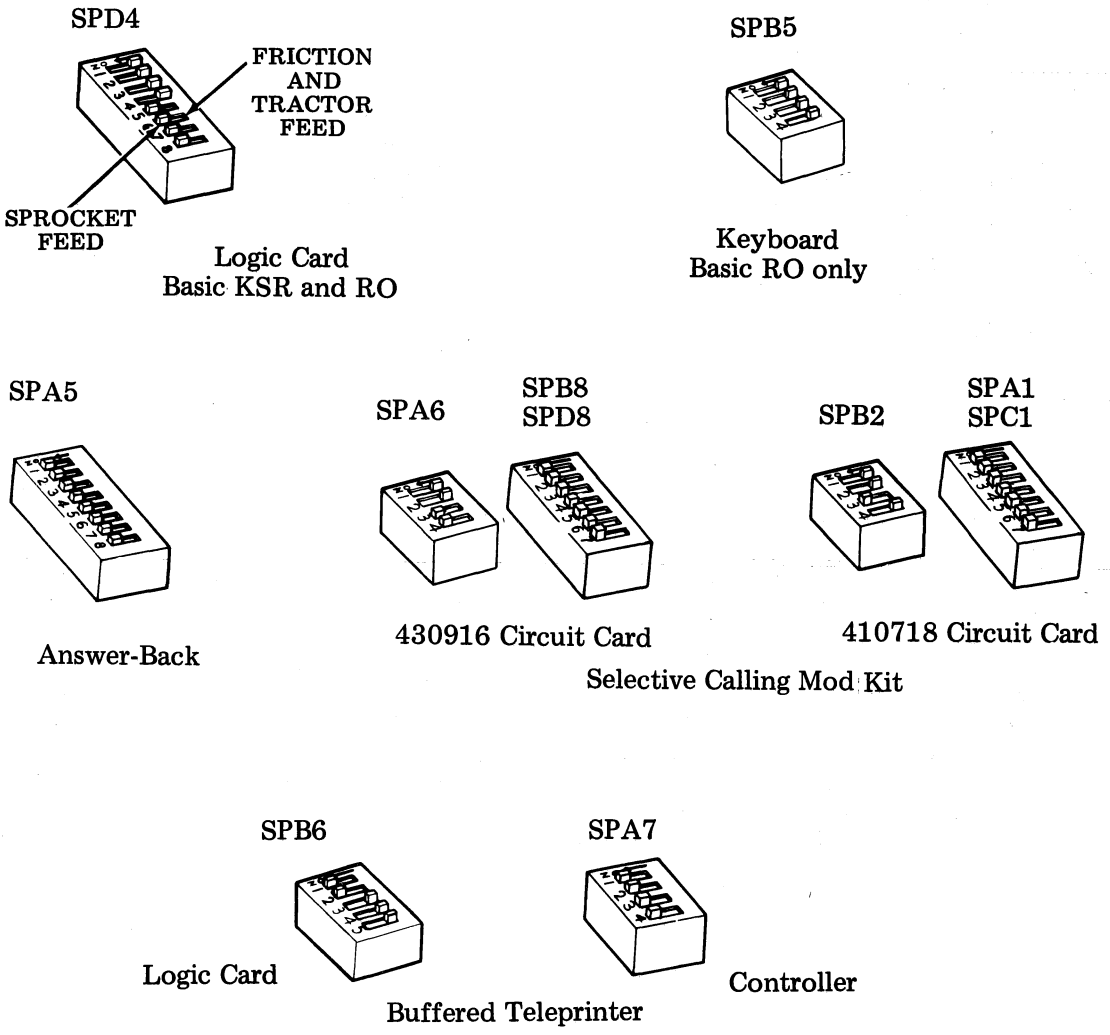


Fig. 1—Standard Switch Positions

1.09 The procedures in Table C through Table H verify proper operation of engineering options only. The features as furnished from the factory are checked in Sections 574-500-500 through 574-500-504, teleprinter testing. The procedures in Table C through Table H may be checked either on-line or off-line as indicated.

1.10 For basic KSR and RO teleprinters without access to the switched network, off-line test procedures are provided to simulate on-line tests where external communication test devices or test centers are not available. For basic RO teleprinters with the selective calling unit modification kit, access to a data set center or a test device capable of transmitting call directing codes and monitoring the answerbacks, is required.

1.11 Off-line checkout of Options 433 through 444 will require placing the teleprinter into the loopback mode. See Table A. To perform these tests, the connector terminals, as shown below, should be strapped before proceeding with the tests. The remaining terminals should be connected or measured as specified during the tests steps.

Note: Contact Teletype Corporation Custom System Division for availability of a 43 Teleprinter Interface Test Box, CP10.002.001-1 which provides both arrangements shown as follows:

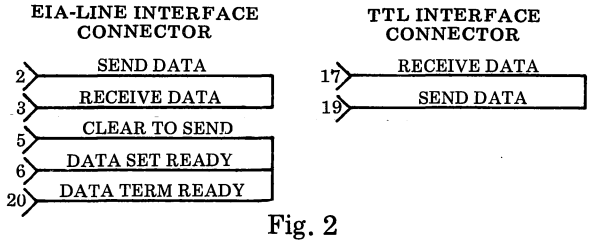


Fig. 2

1.12 A 43 KSR keyboard, 43K101/CAA or CAB can be substituted in RO teleprinters to perform option checks off-line when external communication test devices are not available for on-line operation.

1.13 A volt-ohmmeter or equivalent means to measure ±12 volts and +5 volts is required to perform continuity checks.

1.14 For buffered teleprinters, access to the switched network or to a data test center is not required. Checkout of engineering options is done off-line or through a data set in analog loopback mode or through a 403378 interface loopback connector. See Page 32 for configuration of loopback connector.

1.15 Before an on-line checkout of options (teleprinters with access to the switched network) can be performed, the test center must be provided details about the teleprinter under test, such as telephone number, type of terminal (KSR, RO, buffered, friction feed, tractor feed etc.) options present, speed etc. After the test is completed, contact the test center and verify test results.

2. TOOLS REQUIRED

2.01 The following tools will be required to enable the engineering options. These items should normally be present in standard maintenance tool kits.

Wrench, open end	3/16" and 1/4"	129534
Screwdriver	1/4", 6" blade	100982
Static Discharge Strap		346392

3. ACTIVATING OPTIONS

3.01 Refer to the appropriate paragraph 4. through 8. for the engineering options pertaining to the various teleprinters.

3.02 Paragraphs 4. through 8. list the engineering options and provide the method to activate these options.

3.03 After enabling the engineering options, remove the directory card (see Fig. 3) and fill in the appropriate option information. See Fig. 4 through 7 for examples of the various directory cards. To remove the directory card, pull it out as far as it will go, then by holding card at edges, move it slightly to one side and pivot to clear the opposite latch. After filling in the options information replace the directory card "Frequently Called Numbers" side up.

3.04 Proceed to paragraph 9. OPTION CHECKOUT to verify proper operation of the non-standard option(s) installed.

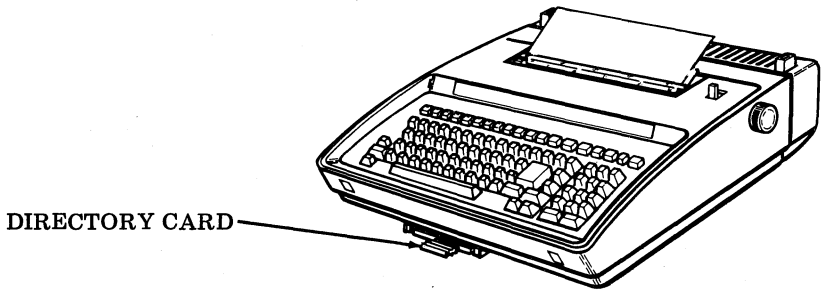
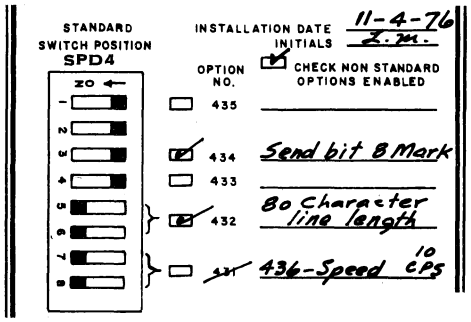
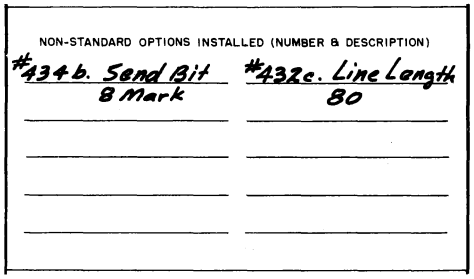


Fig. 3—Directory Card Location



Early Design



Late Design

Fig. 4—Basic KSR and RO Directory Card

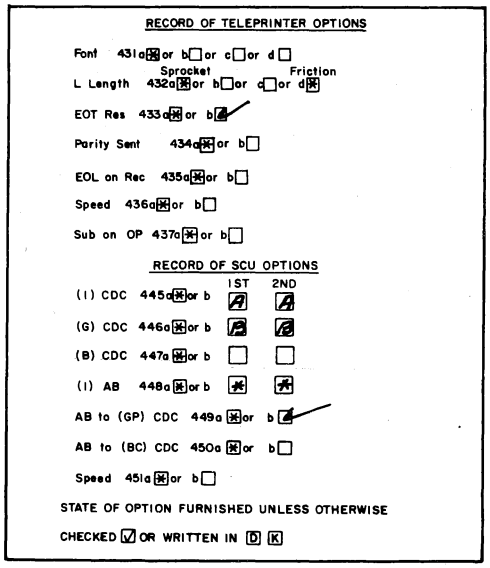


Fig. 5—Basic RO with Selective Calling Unit Mod Kit Directory Card

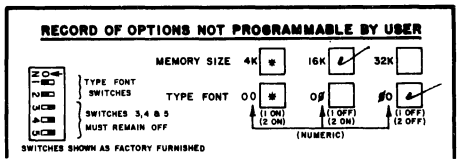


Fig. 6—Buffered 8-Level Send/Receive Teleprinter Directory Card

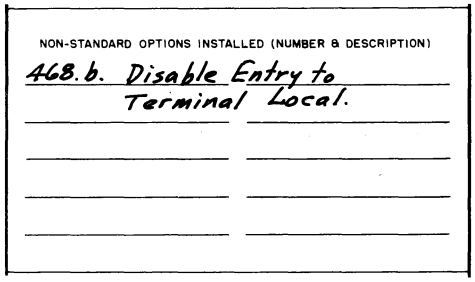


Fig. 7—Buffered 5-Level and 8-Level Selective Calling Teleprinter Directory Card

4. ENGINEERING OPTIONS BASIC KSR

Option No. | Option Suffix and Conditions | Option Definition | Switch Numbers | Location of Switch on Circuit Card (See Page 6).

XXX	SPD4 1	2	3	4	5	6	7	8	
a.	—	—	—	—	○	●	—	—	*
b.	—	—	—	—	○	●	—	—	

Logic Card

431. Type Font Arrangement	SPD4 1	2	3	4	5	6	7	8	
a. Narrow numeric 0 and wide alpha O Standard ^ and underline _	—	—	—	—	—	—	●	●	*
b. Slash numeric Ø and wide alpha O ^ prints as ↑ and _ prints as ←.	—	—	—	—	—	—	●	○	
c. Slash alpha Ø and wide numeric O ^ prints as ↑ and _ prints as ←.	—	—	—	—	—	—	○	○	
d. Slash alpha Ø and wide numeric O Standard ^ and underline __.	—	—	—	—	—	—	○	●	

432. Line Length and Bell	SPD4 1	2	3	4	5	6	7	8	
a. 132 Characters Bell Enabled (Pin Feed Only)	—	—	—	—	●	●	—	—	†
b. 72 Characters — Printed line not centered — Bell Enabled.	—	—	—	—	○	●	—	—	
c. 80 Characters — Bell Enabled. §	—	—	—	—	●	○	—	—	‡
d. 72 Characters — Printed line centered — Bell Enabled (Friction Feed Only) §	—	—	—	—	○	●	—	—	
e. 132 Characters — Bell Inhibited. (Pin Feed Only) ¶	—	—	—	—	○	○	—	—	

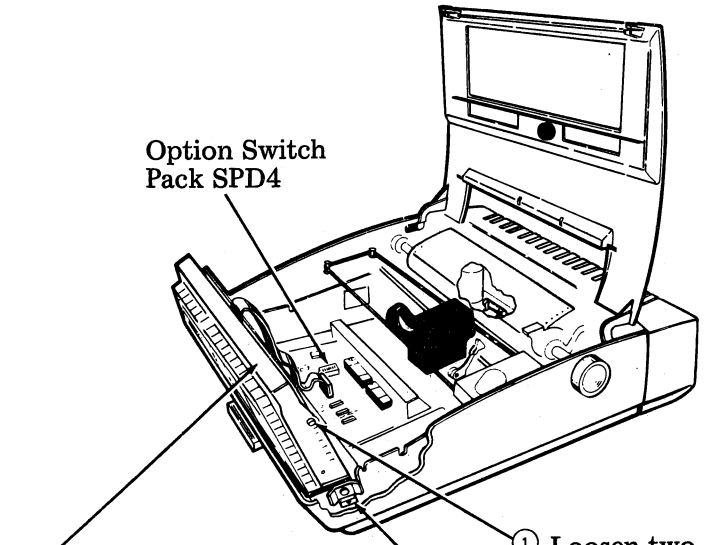
433. EOT Response	SPD4 1	2	3	4	5	6	7	8	
a. Disconnect or turn off Term Ready on received EOT.	—	—	—	○	—	—	—	—	*
b. Does not disconnect or turn off Term Ready on received EOT.	—	—	—	●	—	—	—	—	

434. Character Parity Bit Sent.	SPD4 1	2	3	4	5	6	7	8	
a. Even Parity	—	—	○	—	—	—	—	—	*
b. 8th Bit Mark	—	—	●	—	—	—	—	—	

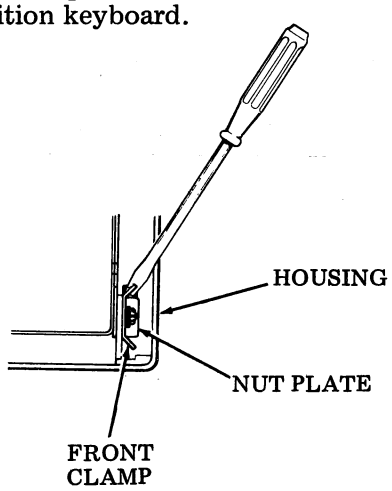
435. End-of-Line on Receive	SPD4 1	2	3	4	5	6	7	8	
a. Auto CR-LF performed.	○	—	—	—	—	—	—	—	*
b. Bell & Print Inhibit at last char. position.	●	—	—	—	—	—	—	—	

● Indicates toggle or slide position to ON.
○ Indicates toggle or slide position to OFF.
— Position of switch does not affect option.
* Factory furnished state of option (all versions).
† Factory furnished state of option (pin feed only).
‡ On friction and tractor feed terminals, 432c (80 Characters) is factory furnished. 432a or 432e (132 Characters) should not be selected.
§ LEFT-HAND MARGIN adjustment must be checked on friction feed sets.
¶ Inhibits margin bell and the E.O.L. bell that rings on AUTO CR-LF (Option 435a). Option 432e is overridden if right margin is set using ESC_r sequence. The signal bell (CTRL G) operates normally.

4.01 To enable engineering options for the basic KSR:



④ Reverse steps to reposition keyboard.



Note: When repositioning keyboard, insert a screwdriver into the square hole in the nut plate and gently twist (or pry) the screwdriver with enough force to draw the assembly forward.

Caution: Do not over twist the screwdriver.

⑤ Tighten the clamp screws.

5. ENGINEERING OPTIONS BASIC RO

Option No. | Option Suffix and Conditions | Option Definition | Switch Numbers | Location of Switch on Circuit Card (See Page 9).

XXX	SPD4 1	2	3	4	5	6	7	8
a.	–	–	–	–	O	●	–	–
b.	–	–	–	–	O	●	–	–

Logic Card

431. Type Font Arrangement	SPD4 1	2	3	4	5	6	7	8	
a. Narrow numeric 0 and wide alpha O Standard ^ and underline _	—	—	—	—	—	—	●	●	*
b. Slash numeric Ø and wide alpha O ^ prints as ↑ and _ prints as ←.	—	—	—	—	—	—	●	O	
c. Slash alpha Ø and wide numeric O ^ prints as ↑ and _ prints as ←.	—	—	—	—	—	—	O	O	
d. Slash alpha Ø and wide numeric O Standard ^ and underline __.	—	—	—	—	—	—	O	●	

432. Line Length and Bell	SPD4 1	2	3	4	5	6	7	8	
a. 132 Characters Bell Enabled (Pin Feed Only)	—	—	—	—	●	●	—	—	†
b. 72 Characters — Printed line not centered — Bell Enabled.	—	—	—	—	O	●	—	—	
c. 80 Characters — Bell Enabled. §	—	—	—	—	●	O	—	—	‡
d. 72 Characters — Printed line centered — Bell Enabled (Friction Feed Only) §	—	—	—	—	O	●	—	—	
e. 132 Characters — Bell Inhibited. (Pin Feed Only) ¶	—	—	—	—	O	O	—	—	

433. EOT Response	SPD4 1	2	3	4	5	6	7	8	
a. Disconnect or turn off Term Ready on received EOT.	—	—	—	O	—	—	—	—	*
b. Does not disconnect or turn off Term Ready on received EOT.	—	—	—	●	—	—	—	—	

434. Character Parity Bit Sent. **	SPD4 1	2	3	4	5	6	7	8	
a. Even Parity	—	—	O	—	—	—	—	—	*
b. 8th Bit Mark	—	—	●	—	—	—	—	—	

435. End-of-Line on Receive	SPD4 1	2	3	4	5	6	7	8	
a. Auto CR-LF performed.	O	—	—	—	—	—	—	—	*
b. Bell & Print Inhibit at last char. position.	●	—	—	—	—	—	—	—	

● Indicates toggle or slide position to ON.
O Indicates toggle or slide position to OFF.
— Position of switch does not affect option.
* Factory furnished state of option (all versions).
† Factory furnished state of option (pin feed only).
‡ On friction and tractor feed terminals, 432c (80 characters) is factory furnished. 432a or 432c (132 characters) should not be selected.
§ LEFT HAND MARGIN adjustment must be checked on friction feed sets.
¶ Inhibits margin bell and the EOL bell that rings on AUTO CR-LF (Option 435a). Option 432e is overriden if right margin is set using ESCr sequence. The signal bell (CTRL G) operates normally.
** Not applicable on RO.

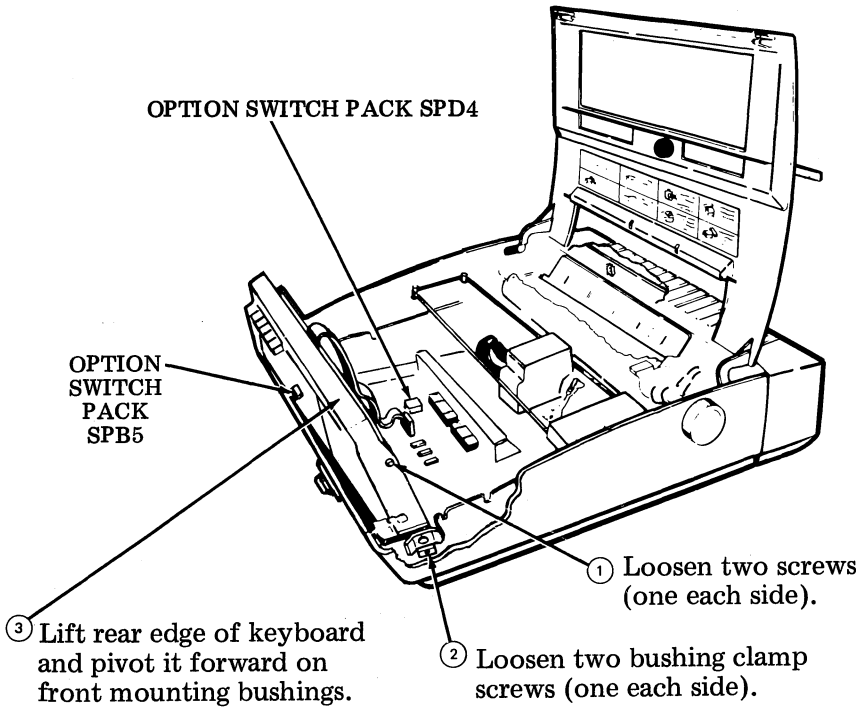
Keyboard

436. Speed Control	SPB5				
	1	2	3	4	
a. 30 Characters/Sec.	—	O	—	—	*
b. 10 Characters/Sec.	—	●	—	—	

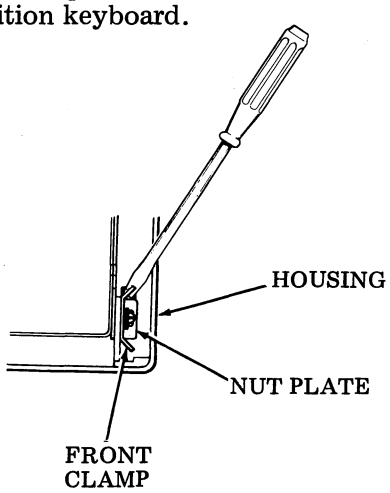
437. Print Substitute character ■ on odd Parity Received.	SPB5				
	1	2	3	4	
a. Print ■ on odd parity received.	O	—	—	—	*
b. Ignore parity.	●	—	—	—	

● Indicates toggle or slide position to ON.
O Indicates toggle or slide position to OFF.
— Position of switch does not affect option.
* Factory furnished state of option (all versions).

5.01 To enable engineering options for the basic RO:



④ Reverse steps to reposition keyboard.



Note: When repositioning keyboard, insert a screwdriver into the square hole in the nut plate and gently twist (or pry) the screwdriver with enough force to draw the assembly forward.

Caution: Do not over twist the screwdriver.

⑤ Tighten the clamp screws.

6. ENGINEERING OPTIONS ANSWER-BACK

Option No. | Option Suffix and Conditions | Option Definition | Switch Numbers | Location of Switch on Circuit Card (See Page 12).

XXX	SPA5 1	2	3	4	5	6	7	8
a.	–	–	–	–	O	●	–	–
b.	–	–	–	–	O	●	–	–

Answer-Back Card

438. Answer-Back on HERE IS	SPA5 1	2	3	4	5	6	7	8	
a. Yes	–	–	–	–	–	–	●	–	*
b. No	–	–	–	–	–	–	O	–	
439. Answer-Back on ANSWER	**SPA5**								
	1	2	3	4	5	6	7	8	
a. Yes	–	–	–	–	●	–	–	–	*
b. No	–	–	–	–	O	–	–	–	
440. Answer-Back on ENQ	**SPA5**								
	1	2	3	4	5	6	7	8	
a. Yes	–	–	–	–	–	–	–	●	*
b. No	–	–	–	–	–	–	–	O	

● Indicates toggle or slide position to ON.
O Indicates toggle or slide position to OFF.
– Position of switch does not affect option.
* Factory furnished state of option.

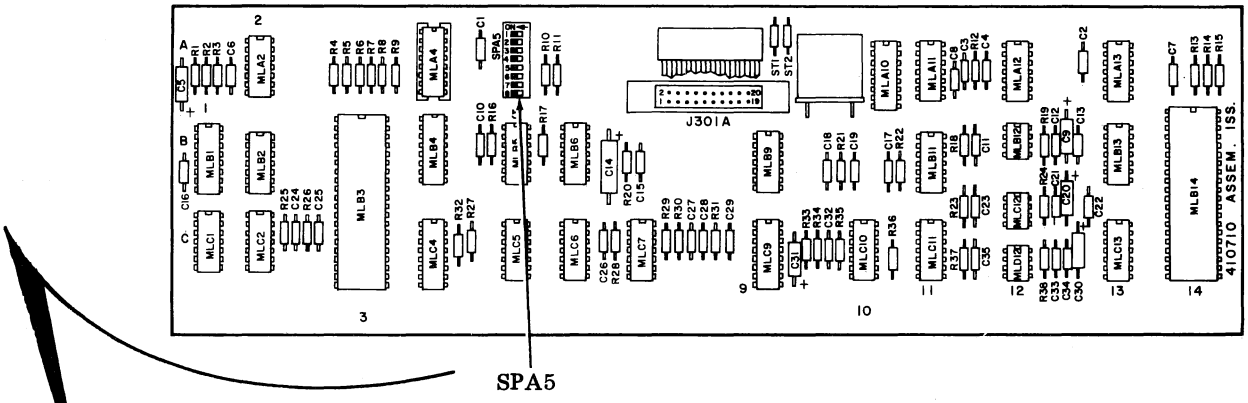
441. Type of Interface Unit	SPA5								
	1	2	3	4	5	6	7	8	
a. Terminal Data Unit (TDU)	—	—	—	—	—	●	—	—	*
b. TAU, TAU1, TAU2 or no Interface Unit	—	—	—	—	—	O	—	—	
442. Local Copy of Answer-Back	SPA5								
	1	2	3	4	5	6	7	8	
a. Yes	—	—	—	●	—	—	—	—	*
b. No	—	—	—	O	—	—	—	—	

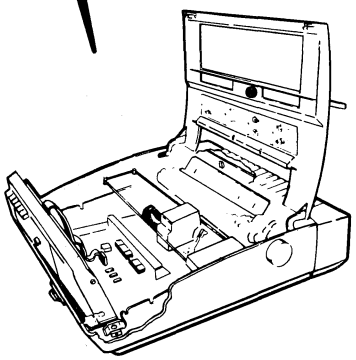
443. Character Parity Bit Sent from Answer-Back (should be the same as Option 434 if installed in KSR teleprinter).	SPA5								
	1	2	3	4	5	6	7	8	
a. Even Parity	●	●	—	—	—	—	—	—	*
b. 8th Bit Mark	O	O	—	—	—	—	—	—	

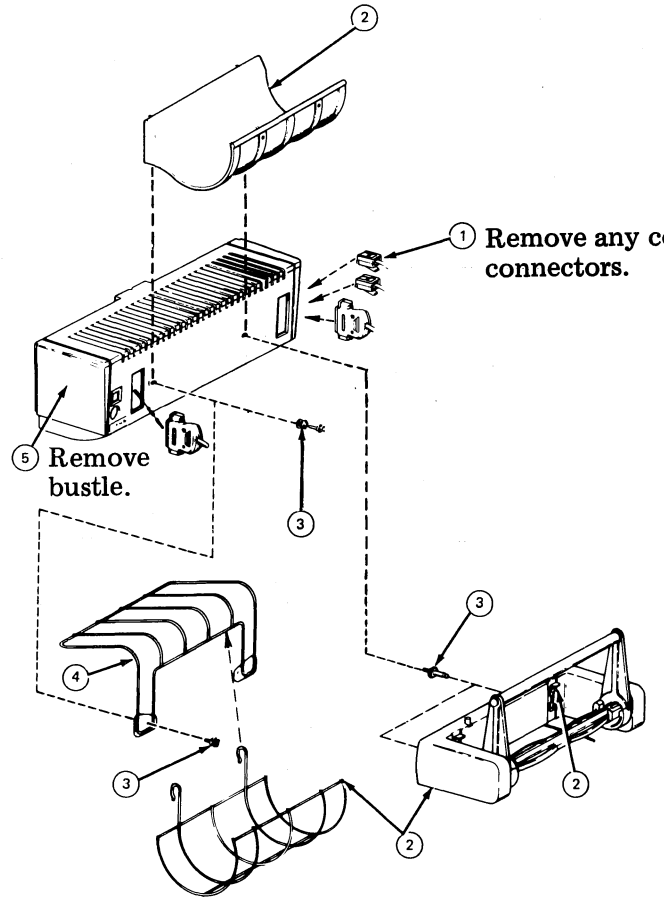
444. Blinding of ENQ Recognition	SPA5								
	1	2	3	4	5	6	7	8	
a. Auxiliary Sender controls (HDX only) (Aux Pin 4)	—	—	●	—	—	—	—	—	*
b. Auxiliary Sender cannot blind	—	—	O	—	—	—	—	—	

● Indicates toggle or slide position to ON.
O Indicates toggle or slide position to OFF.
— Position of switch does not affect option.
* Factory furnished state of option.

6.01 To enable engineering options for the answer-back:



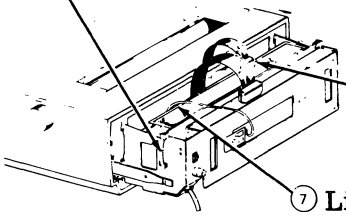




② Remove paper and paper holder or paper supply assembly, if present. To remove paper supply assembly, disengage latch from mounting posts and pull straight up. Slide off of mounting posts.

③ Remove screws with bushings, or mounting posts.

④ Remove deflector, if present.



⑥ Use screwdriver to pry two clips (left and right) outward.

⑦ Lift up the power supply until the option switch pack SPA5 on the answer-back card clears the housing.

7. ENGINEERING OPTIONS SELECTIVE CALLING UNIT

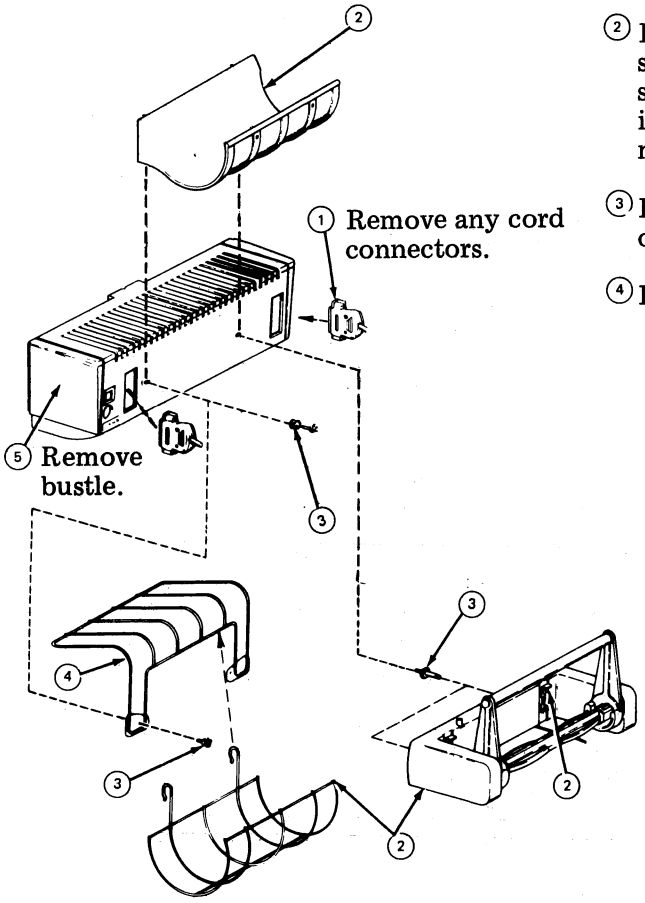
Selective Calling Unit Card (See Page 15)

445.	Individual Call Directing Code (CDC)	1st ASCII Character	2nd ASCII Character
a.	Uncoded			*
b.	Two ASCII Characters (must specify)		
446.	Group Call Directing Code (CDC)	1st ASCII Character	2nd ASCII Character
a.	Uncoded			*
b.	Two ASCII characters (must specify — same for all terminals in group)		
447.	Broadcast Call Directing Code (CDC)	1st ASCII Character	2nd ASCII Character
a.	Uncoded			*
b.	Two ASCII characters (must specify — same for all terminals in system)		

448.	**Answer-Back (to individual group or broadcast CDC)**	**430916 Circuit Card (Early)**				**410718 Circuit Card (Late)**				
		SPD8 and SPB8 (See Page 14)				**SPA1 and SPC1 (See Page 14)**				
a.	Uncoded	All ON-Space				All ON-Space				*
b.	Two ASCII Characters	**Coded ON - Space OFF- Mark**				**Coded ON - Space OFF- Mark**				†
c.	Second AB Character Sent: Programmed Character (Positive Reply) Delete (Negative Reply)	**Not Applicable Negative Reply Always Delete**				SPB2 1 2 3 4 — — — O				*
d.	**Second AB Character Sent (410718 Circuit Card Only): ‡** ACK (Positive Reply) NAK (Negative Reply)	**Not Applicable Negative Reply Always Delete**				SPB2 — — — ●				
449.	Answer-Back to Group CDC	430916 SPA6				410718 SPB2				
		1	2	3	4	1	2	3	4	
a.	No	O	—	—	—	O	—	—	—	*
b.	Yes	●	—	—	—	●	—	—	—	
450.	Answer-Back Broadcast CDC	430916 SPA6				410718 SPB2				
		1	2	3	4	1	2	3	4	
a.	No	—	O	—	—	—	O	—	—	*
b.	Yes	—	●	—	—	—	●	—	—	
451.	SCU Speed Control	430916 SPA6				410718 SPB2				
		1	2	3	4	1	2	3	4	
a.	30 Characters/Sec	—	—	●	●	—	—	●	—	*
b.	10 Characters/Sec	—	—	O	O	—	—	O	—	

● Indicates toggle or slide position to ON.
O Indicates toggle or slide position to OFF.
— Position of switch does not affect option.
* Factory furnished state of option.
† Must code answer-back characters.
‡ Second AB character if coded, will be overridden.

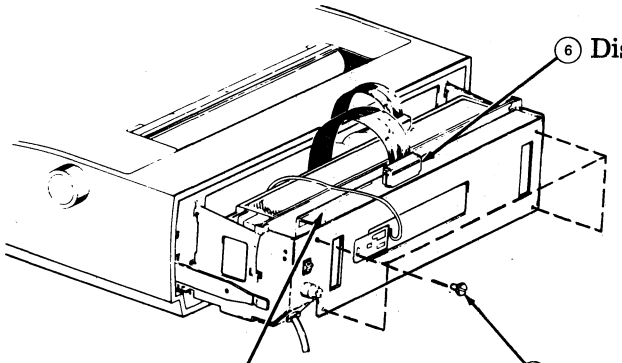
7.01 To enable engineering options for the selective calling unit:



② Remove paper and paper holder or paper supply assembly, if present. To remove paper supply assembly, disengage latch from mounting posts and pull straight up. Slide off of mounting posts.

③ Remove screws, screws with bushings or mounting posts.

④ Remove deflector, if present.



7.02 Call Directing Codes (CDC) are optioned by wiring from the column field to the column field terminals and from the row field to the row field terminals (see Fig. 8 and 9). Refer to Fig. 10 to determine the correct column and row for the characters to be optioned as the CDC's. Two straps are required for each character to be coded, one to the column field terminals and one to the row field terminals. Fig. 11 and 12 show an example of CDC wiring where the individual CDC is AA, the group CDC is XY and the broadcast CDC is BB.

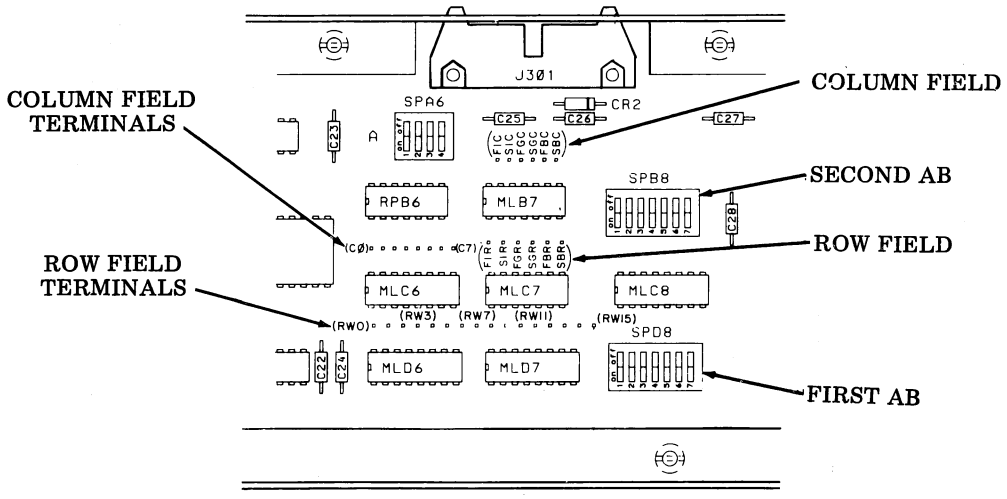


Fig. 8—430916 Circuit Card

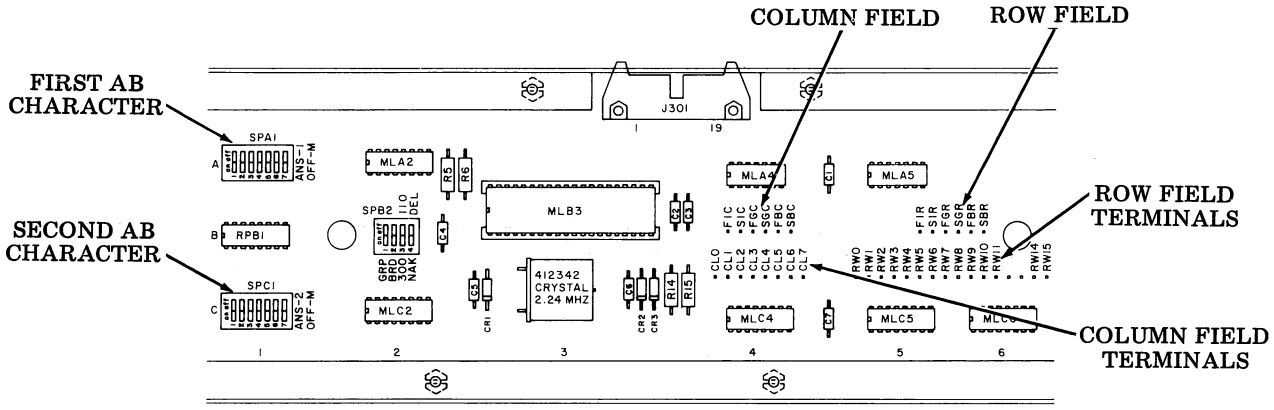


Fig. 9—410718 Circuit Card

Char.	Col	Row	Char.	Col	Row	Char.	Col	Row	Char.	Col	Row	Char.	Col	Row	Char.	Col	Row	Char.	Col	Row
NULL	0	0	DLE	1	0	SP	2	0	0	3	0	@	4	0	P	5	0	▶	6	0	p	7	0
SOH	0	1	DC1	1	1	!	2	1	1	3	1	A	4	1	Q	5	1	a	6	1	q	7	1
STX	0	2	DC2	1	2	"	2	2	2	3	2	B	4	2	R	5	2	b	6	2	r	7	2
ETX	0	3	DC3	1	3	#	2	3	3	3	3	C	4	3	S	5	3	c	6	3	s	7	3
EOT	0	4	DC4	1	4	$	2	4	4	3	4	D	4	4	T	5	4	d	6	4	t	7	4
ENQ	0	5	NAK	1	5	%	2	5	5	3	5	E	4	5	U	5	5	e	6	5	u	7	5
ACK	0	6	SYN	1	6	&	2	6	6	3	6	F	4	6	V	5	6	f	6	6	v	7	6
BEL	0	7	ETB	1	7	/	2	7	7	3	7	G	4	7	W	5	7	g	6	7	w	7	7
BS	0	8	CAN	1	8	(	2	8	8	3	8	H	4	8	X	5	8	h	6	8	x	7	8
HT	0	9	EM	1	9	)	2	9	9	3	9	I	4	9	Y	5	9	i	6	9	y	7	9
LF	0	10	SUB	1	10	*	2	10	:	3	10	J	4	10	Z	5	10	j	6	10	z	7	10
VT	0	11	ESC	1	11	+	2	11	;	3	11	K	4	11	[	5	11	k	6	11	{	7	11
FF	0	12	FS	1	12	'	2	12	<	3	12	L	4	12	\	5	12	l	6	12	¦	7	12
CR	0	13	GS	1	13	—	2	13	=	3	13	M	4	13	]	5	13	m	6	13	}	7	13
SO	0	14	RS	1	14	.	2	14	>	3	14	N	4	14	^	5	14	n	6	14	~	7	14
SI	0	15	US	1	15	/	2	15	?	3	15	O	4	15	—	5	15	o	6	15	DEL	7	15

DO NOT USE FOR CDC.

Fig. 10—Character To Row and Column Conversion

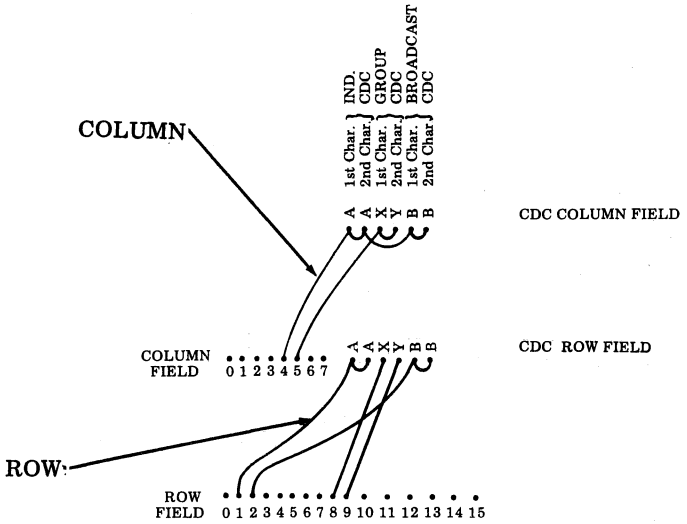


Fig. 11—430916 Circuit Card CDC Wiring Example

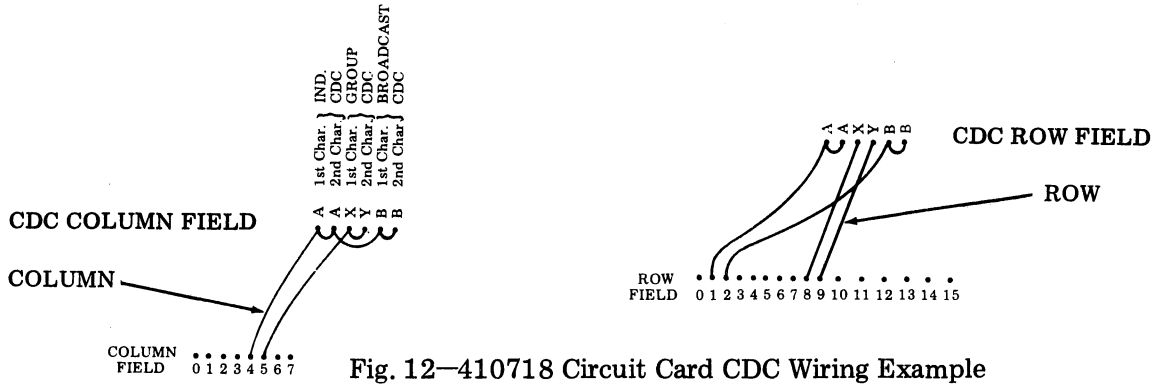
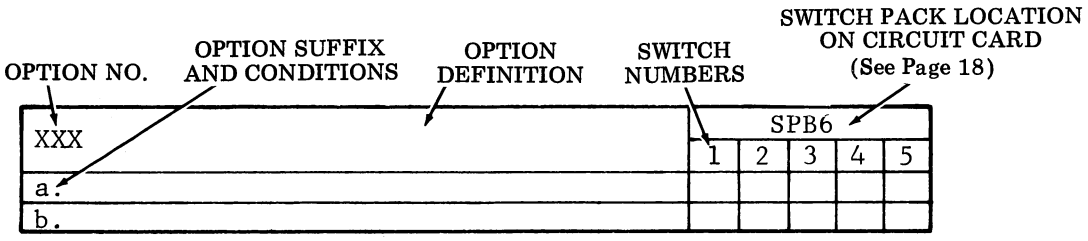


Fig. 12—410718 Circuit Card CDC Wiring Example

8. ENGINEERING OPTIONS BUFFERED TELEPRINTERS



Logic Card

431. Type Font Arrangement	SPB6 1	2	3	4	5	
a. Narrow Numeric 0 and Wide Alpha O. Standard ^ and Underline _.	●	●	–	–	–	*
b. Slash Numeric Ø and Wide Alpha O. ^ Prints as ↑ and _ Prints as ←.	O	●	–	–	–	
c. Slash Alpha Ø and Wide Numeric O. ^ Prints as ↑ and _ Prints as ←.	O	O	–	–	–	
d. Slash Alpha Ø and Wide Numeric O. Standard ^ and Underline ____.	●	O	–	–	–	
Switches Must be Set as Shown	–	–	O	O	O	*

Controller for 43 8-Level Send/Receive Teleprinter

	SPA7 1	2	3	4	
Switches Must be Set as Shown	●	●	●	●	*

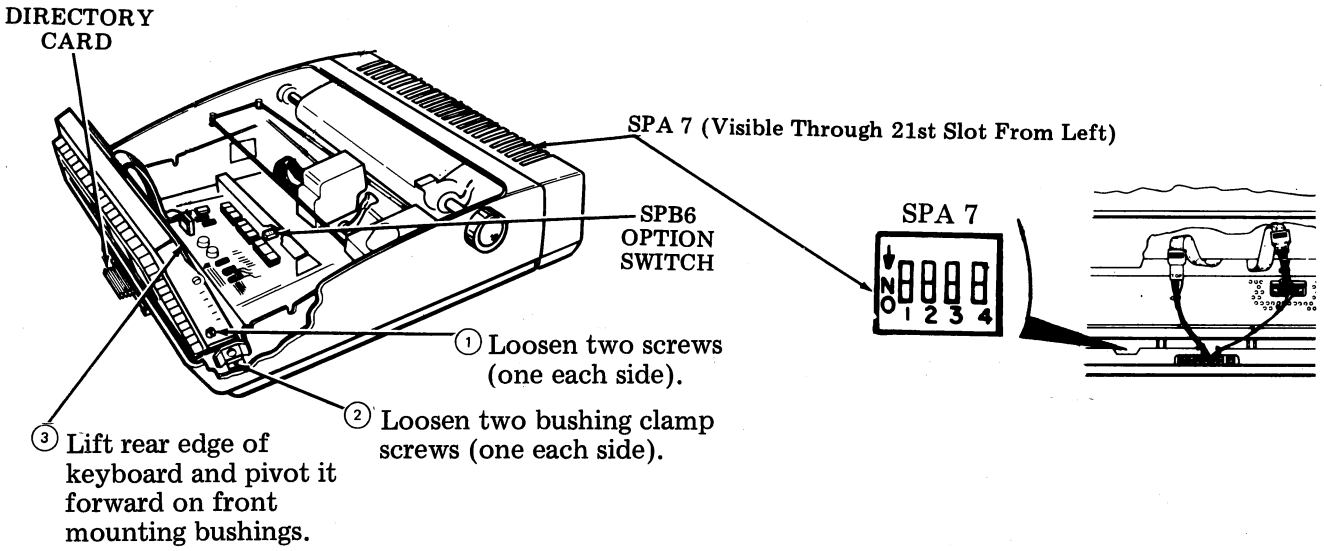
Controller for 43 5- or 8-Level Selective Calling Teleprinter

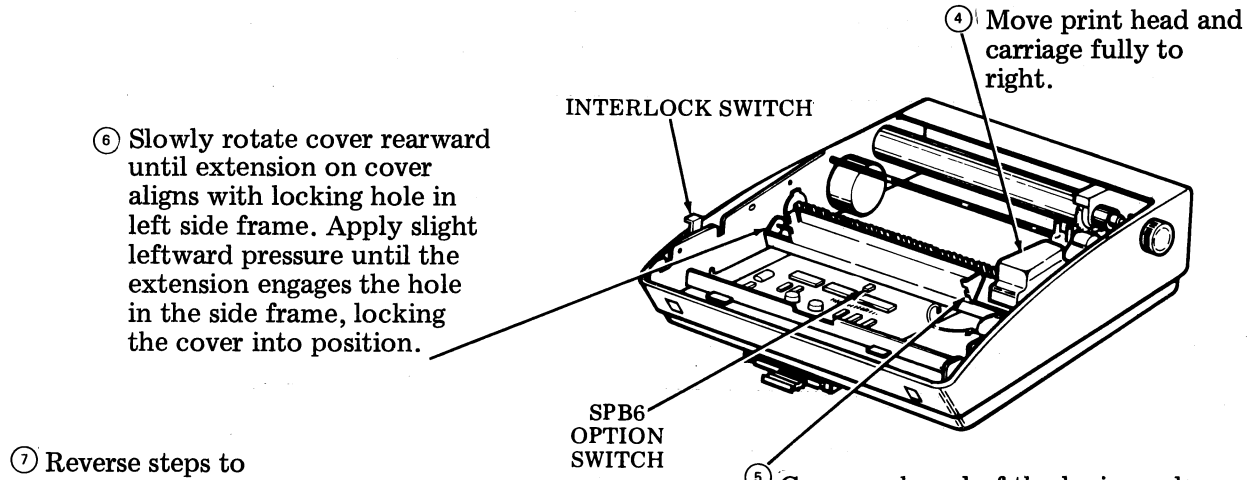
468. Entry To Terminal Local Mode	SPA7 1	2	3	4	
a. Enable	–	●	–	–	*
b. Disable	–	O	–	–	
Switches Must be Set as Shown	●			●	*

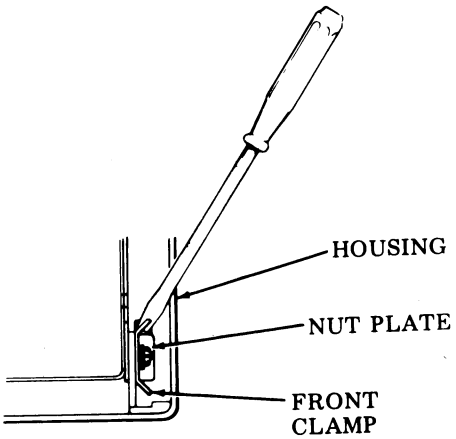
469. Terminal Loopback Test	SPA7 1	2	3	4	
a. Enable	–	–	●	–	*
b. Disable	–	–	O	–	
Switches Must be Set as Shown	●			●	*

● Indicates toggle or slide position to ON.
O Indicates toggle or slide position to OFF.
– Position of switch does not affect option.
* Factory furnished state of option.

8.01 To enable engineering options for the buffered teleprinters:







Note: When repositioning keyboard, insert a screwdriver into the square hole in the nut plate and gently twist (or pry) the screwdriver with enough force to draw the assembly forward.

Caution: Do not over twist the screwdriver.

⑧ Tighten the clamp screws.

9. OPTION CHECKOUT

TABLE A

LOOPBACK MODE PROCEDURES (Basic KSR and RO)

PROCEDURE	RESPONSE
(RO) Remove RO Operator Console and install KSR Operator Console.	
W/TDU — Depress TERM READY (AUTO ANSW) key. Depress ESC key. Hold SHIFT key depressed and depress  key.	TERM READY (AUTO ANSW) turns on, if not already on. TERM READY (AUTO ANSW) goes off. DATA turns on. ALARM flashes.
W/TAU or TAU1 — LINE INTERFACE: Connect the test arrangement shown on Page 3 to the interface connector. Connect Carrier Detect Pin 8 to Data Term Ready Pin 20. Turn on Teleprinter POWER switch. W/TTL INTERFACE — Connect the test arrangement shown on Page 3 to the interface connector. Connect Terminal Ready Pin 5 to Data Ready Pin 15. Turn on Teleprinter POWER switch.	Print head returns to left-hand margin. Printer performs one line feed. DATA turns on.

TABLE B

ON-LINE MODE PROCEDURES (Basic KSR and RO)
(Teleprinters with access to the switched network.)

RO

STATION UNDER TEST		TEST CENTER	
PROCEDURE	RESPONSE	PROCEDURE	RESPONSE
Verify TERM READY is on.	DATA turns on. TERM READY goes off.	Set up operating speed. Call station under test. Go to Data mode.	Answering data tone will be heard.

KSR

STATION UNDER TEST		TEST CENTER	
PROCEDURE	RESPONSE	PROCEDURE	RESPONSE
With power on and AUTO ANSW lit, depress LOCAL-TALK key and place DUPLEX key in UP position (HALF-DUPLEX).	LOCAL-TALK turns on.		
Place CAPS LOCK key in DOWN position. Depress RETURN and LINE FEED keys.	Print head is returned to left-hand margin. Paper feeds to next line.		
Call test center and request 43 KSR Teleprinter on-line option test. Provide testing station with phone number of station, operating speed and option numbers to be tested. Agree that testing station will call back after disconnect.		Set up operating speed as indicated by station under test.	

TABLE C

OPTIONS CHECKOUT PROCEDURES (Basic KSR and RO)

Note: All switches except those indicated for the option being checked must be in the factory furnished state while performing the options checkout procedures.

CHECK	PROCEDURE	RESPONSE
Option 431.b., c., and d.	Depress and hold PRINTER TEST key.	Characters printed as in Fig. 13. Bell sounds at end of each line.

(Option 431.b.)

■ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]↑← `abcdefghijklmnopqrstuvwxyz{|}~

(Option 431.c.)

■ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNØPQRSTUVWXYZ[\]↑← `abcdefghijklmnopqrstuvwxyz{|}~

(Option 431.d.)

■ !"#$%&'()*+,-./0123456789::<=>?@ABCDEFGHIJKLMNØPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~

Fig. 13—Printer Test Message

CHECK	PROCEDURE	RESPONSE
Option 432.b. and c.	Depress and hold PRINTER TEST key.	Line length will be: 432.b. or .d. — 72 characters 432.c. — 80 characters 432.e. — 132 characters Characters printed as in Fig. 14. Bell sounds at end of each line.

*(Option 432.b. or d.)

Note: The lower case "g" does not print on 72 character lines.

■ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdef
hijklmnopqrstuvwxyz{|}~
■ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdef
hijklmnopqrstuvwxyz{|}~

*(Option 432.c.)

Note: The lower case "o" does not print on 80 character lines.

■ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmn
pqrstuvwxyz{|}~
■ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmn
pqrstuvwxyz{|}~

(Option 432.e.) Sprocket Feed Only

■ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~
■ !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~

*Sprocket Feed (approximately 13 characters per inch), Friction or Tractor Feed (10 characters per inch)

Fig. 14—Printer Test Message

TABLE C (Contd)

OPTIONS CHECKOUT PROCEDURES (Basic KSR and RO)

CHECK		PROCEDURE	RESPONSE
Option 433.b.	Off-Line	Place teleprinter in Loopback mode. (See Table A.) Depress DUPLEX key to DOWN position (FULL DUPLEX). Depress the following keys: ABC Hold CTRL key depressed and depress  key.	Printer will print ABC. DATA remains on (does not flash). TERM READY (AUTO ANSW) remains off (does not flash) as EOT key is depressed.
	On-Line	Place teleprinter in On-line mode. (See Table B.) TEST CENTER Send the following message ending with EOT: 43 TELEPRINTER	 STATION UNDER TEST 43 TELEPRINTER will be printed. DATA remains on. AUTO ANSW remains off.
Option 434.b. (KSR only)	Off-Line	Place teleprinter in Loopback mode. (See Table A.) Depress DUPLEX key to DOWN position (FULL DUPLEX). Depress and release PARITY key to UP position (PARITY ON). Place CAPS LOCK key in DOWN position. Depress the following keys: PARITY TEST	Printer will print: ▪▪RIT▪ TE▪T
	On-Line	Place teleprinter in On-line mode. (See Table B.) TEST CENTER Set up to check even parity. STATION UNDER TEST Type the following test message on the operator console: THE QUICK BROWN FOX	 TEST CENTER Test Center receives message ■ Indicates even parity error. T▪E Q▪IC▪ ▪ROW▪ FOX

TABLE C (Contd)

OPTIONS CHECKOUT PROCEDURES (Basic KSR and RO)

CHECK	PROCEDURE		RESPONSE
Option 435.b.		Place teleprinter in Loopback mode. (See Table A.)	Characters will be printed until end of line is reached.
	Off-Line	Depress DUPLEX key to DOWN position (FULL DUPLEX).	Automatic return and line feed will not be performed.
		Depress REPT and K keys. Hold down until end of line is reached.	Bell will sound continuously until keys are released.
	On-Line (TDU only)	Place teleprinter in On-line mode. (See Table B.)	
		TEST CENTER	STATION UNDER TEST
		Send the following message in Full Duplex mode: ESC x (lower case) LF four spaces ESC L (lower case) six spaces ESC r (lower case) CR LF ESC < two lines of repeat Ks ESC x (lower case) Send ESC = *Note:* CR = Carriage Return LF = Line Feed < = Hold shift key depressed when depressing < key.	ALARM flashes. Printer will print one line of Ks between columns 5 and 10. Automatic return and line feed will not be performed. Bell will sound until message is completed. Print head returns to left-hand margin and indicates beginning of line. ALARM turns off.
Option 436.b. (RO only)		Place teleprinter in Loopback mode. (See Table A.)	Continuous Ks will be printed across entire line.
	Off-Line	Depress DUPLEX key to DOWN position (FULL DUPLEX).	Bell rings at end of line and automatic return and line feed will be performed.
		Place CPS key in DOWN position (10 CPS).	One printed line plus return will occur in approximately: 14 seconds (sprocket feed) 8.5 seconds (friction feed).
		Depress REPT and K keys.	
		Hold down until two lines of Ks are printed.	First part of second line (approximately 18 characters) will be printed at a faster rate of speed.
		Measure continuity between pins 4 and 17 on RO opcon connector.	Meter should read 0 ohms.
	On-Line (TDU only)	Place teleprinter in On-line mode (See Table B.)	
		TEST CENTER	STATION UNDER TEST
		Send the "FOX" test message at (10 CPS) to station under test.	"FOX" test message will be printed.

TABLE C (Contd)

OPTIONS CHECKOUT PROCEDURES (Basic KSR and RO)

CHECK		PROCEDURE	RESPONSE
Option 437.b. (RO only)		Enable Option 434.b. Place teleprinter in Loopback mode. (See Table A.) Place CAPS LOCK key in DOWN position. Depress DUPLEX key to DOWN position (FULL DUPLEX).	
	Off-Line	Depress the following keys: PARITY TEST Measure continuity between pins 4 and 20 on RO opcon connector.	Printer will print: PARITY TEST. Meter should read 0 ohms.
	On-Line	Place teleprinter in On-line mode. (See Table B.) TEST CENTER Send the following message (8th Bit Marking) PARITY TEST	 STATION UNDER TEST Printer will print: PARITY TEST

TABLE D

OPTIONS CHECKOUT PROCEDURES
(Answer-Back Associated with Basic KSR and RO)

CHECK		PROCEDURE	RESPONSE
Option 438.b. (KSR with Answer-Back only)		Place teleprinter in Loopback mode. (See Table A.) Place DUPLEX key in UP position (HALF-DUPLEX).	Answer-Back message does not print.
	Off-Line	Hold CTRL key depressed and depress  key.	
	On-Line	Place teleprinter in On-line mode. (See Table B.) STATION UNDER TEST Hold CTRL key depressed and depress  key.	 TEST CENTER Answer-Back message does not print.

TABLE D (Contd)

OPTIONS CHECKOUT PROCEDURES
(Answer-Back Associated with Basic KSR and RO)

CHECK		PROCEDURE	RESPONSE
Option 439.b. (with Answer-Back only)		Place teleprinter in Loopback mode. (See Table A.)	
		Place DUPLEX key in UP position (HALF-DUPLEX).	
	Off-Line	W/TDU — Depress ESC and then  key.	ALARM turns off.
		Place DUPLEX key in UP position (HALF-DUPLEX).	ALARM flashes.
		Wait 6 seconds, then depress ESC key.	DATA turns on.
		Hold SHIFT key depressed and depress  key.	Answer-Back message does not print.
		W/TAU, TAU1 OR TAU2 — LINE INTERFACE: Remove strap from Send Data pin 2 to Rec Data pin 3.	
		(Perform the following procedures within 6 seconds.)	
		Disconnect wire from Carrier Detect pin 8 and momentarily connect to Ring Indicator pin 22, then reconnect to pin 8.	Answer-Back message does not print.
		W/TTL INTERFACE — Remove strap from Send Data pin 19 to Rec Data pin 17.	
		(Perform the following procedures within 6 seconds.)	
		Disconnect wire from Term Ready pin 5 and connect to +5 V pin 7.	
		Connect strap between +12 V pin 3 and Ring Indicator pin 12. Immediately disconnect wire from pin 7 and reconnect to pin 5.	Answer-Back message does not print.
	On-Line	Place teleprinter in On-line mode. (See Table B.)	
		TEST CENTER	STATION UNDER TEST
		Data Test Center will disconnect call and then recall station under test.	Phone rings once. DATA turns on. AUTO ANSW goes off.
			Answer-Back message does not print.

TABLE D (Contd)

OPTIONS CHECKOUT PROCEDURES
(Answer-Back Associated with Basic KSR and RO)

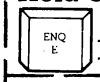
CHECK		PROCEDURE	RESPONSE
Option 440.b. (with Answer-Back only)	Off-Line	Place teleprinter in Loopback mode. (See Table A.) Place DUPLEX key in UP position (HALF-DUPLEX).	
		W/TAU, TAU1, TAU2 or TTL INTERFACE — Depress ESC key. Hold SHIFT key depressed and depress  key.	ALARM flashes.
		Hold CTRL key depressed and depress  key.	Answer-Back message does not print.
	On-Line	Place teleprinter in On-Line mode. (See Table B.) TEST CENTER Data Test Center sends CTRL E "ENQ".	STATION UNDER TEST Answer-Back message does not print.
Option 441 (with Answer-Back only)		Must match type of interface unit — Refer to Off-Line Test Procedures in Section 574-500-500 or Section 574-500-501.	
Option 442.b. (with Answer-Back only)	Off-Line	Place teleprinter in Loopback mode. (See Table A.) Place DUPLEX key in UP position (HALF-DUPLEX).	
		W/TAU, TAU1, TAU2 OR TTL INTERFACE — Depress ESC key. Hold SHIFT key depressed and depress  key.	ALARM flashes
		Hold CTRL key depressed and depress  key.	Answer-Back message does not print.

TABLE D (Contd)

OPTIONS CHECKOUT PROCEDURES
(Answer-Back Associated with Basic KSR and RO)

CHECK	PROCEDURE		RESPONSE
	On-Line	Place teleprinter in On-Line mode. (See Table B.)	
		TEST CENTER	STATION UNDER TEST
		Data Test Center sends CTRL E "ENQ".	Answer-Back message does not print.
		Answer-back message is received.	
Option 443.b. (with Answer-Back only)	Off-Line	Place teleprinter in Loopback mode. (See Table A.)	
		Depress and release PARITY key to UP position (PARITY ON).	
		Place DUPLEX key in UP position (HALF-DUPLEX).	Answer-Back message will be printed with substitute character (■) on parity error.
		Hold CTRL key depressed and depress HERE IS V key.	
	On-Line	Place teleprinter in On-Line mode. (See Table B.)	
		Depress and release PARITY key to UP position (PARITY ON).	
		TEST CENTER	STATION UNDER TEST
		Data Test Center sends CTRL E "ENQ".	Answer-Back message will be printed with substitute character (■) on parity error.
		Answer-Back message will be received with 8th bit marking.	
Option 444.b. (with Answer-Back only)	Off-Line	W/TAU2 AUX PORT INTERFACE: Place teleprinter in Loopback mode. (See Table A.)	
		Connect Clear to Send pin 5 to Request to Send pin 4.	
		Place DUPLEX key in UP position (HALF-DUPLEX).	Answer-Back message is printed.
		Hold CTRL key depressed and depress ENQ E key.	

Note: Options 433 through 444 — Depress LOCAL (LOCAL-TALK) key to terminate checkout procedure. Disconnect Interface Test arrangement, if present. Replace RO operator console if removed.

TABLE E

OPTIONS CHECKOUT PROCEDURES
(SCU Mod. Kit Associated with Basic RO)

CHECK	PROCEDURE	RESPONSE
Option 448.d.	STATION UNDER TEST Teleprinter in data mode, cover closed and no paper alarm. TEST CENTER Data test center sends individual CDC to station under test.	Data test center receives the first character of the coded answer-back followed by the control character ACK.
	STATION UNDER TEST Open teleprinter cover. TEST CENTER Data test center sends individual CDC to station under test.	Data test center receives the first character of the coded answer-back followed by the control character NAK.
Option 449.b.	STATION UNDER TEST Teleprinter in data mode, cover closed and no paper alarm. TEST CENTER Data test center sends group CDC.	Data test center receives the teleprinter's positive answer-back.
Option 450.b.	STATION UNDER TEST Teleprinter in data mode, cover closed and no papar alarm. TEST CENTER Data test center sends broadcast CDC.	Data test center receives the teleprinter's positive answer-back.
Option 451.b.	STATION UNDER TEST Teleprinter in data mode, cover closed and no paper alarm. TEST CENTER Data test center sends individual CDC at 110 baud.	Data test center receives the teleprinter's positive answer-back.

TABLE F

OPTIONS CHECKOUT PROCEDURES
(8-Level Buffered Send/Receive)

Latch [CAPS LOCK] key in the down position and perform the following procedure.

CHECK	PROCEDURE	RESPONSE
Option 431.b. 431.c. 431.d.	Depress [SI / 0] key.	O Ø Ø
Option 431.b. 431.c. 431.d.	Depress [) / 0] key.	Ø O O
Option 431.b. & c. 431.d.	Hold [SHIFT] key depressed and depress [^ / 6] key.	↑ ^
Option 431.b. & c. 431.d.	Hold [SHIFT] key depressed and depress [— / _] key.	← —

TABLE G

OPTIONS CHECKOUT PROCEDURES
(8-Level Buffered Selective Calling)

Latch [CAPS LOCK] key in the down position and perform the following procedure.

CHECK	PROCEDURE	RESPONSE
Option 431.b. 431.c. 431.d.	Depress [SI / 0] key.	O Ø Ø
Option 431.b. 431.c. 431.d.	Depress [) / 0] key.	Ø O O
Option 431.b. & c. 431.d.	Hold [SHIFT] key depressed and depress [^ / 6] key.	↑ ^
Option 431.b. & c. 431.d.	Hold [SHIFT] key depressed and depress [— / _] key.	← —

TABLE G (Contd)

OPTIONS CHECKOUT PROCEDURES
(8-Level Buffered Selective Calling)

CHECK	PROCEDURE	RESPONSE
Option 468.b.	Depress [TERM LOCAL] key.	[TERM LOCAL] key does not light.
Option 469.b.	If the teleprinter is attached to data set and data set has analog loopback feature, place data set in analog loopback mode. Otherwise, attach the 403378 loopback connector or modified 403378 loopback connector* to the line port of the 43 8-Level BSC Teleprinter. Depress [TERM ON LINE] key if not lit. Hold the [CTRL] key depressed and depress the [~ `] key. *See Page 32 for modification instructions of the 403378 loopback connector.	[TERM ON LINE] key lights. "Test 1234" does not print.

TABLE H

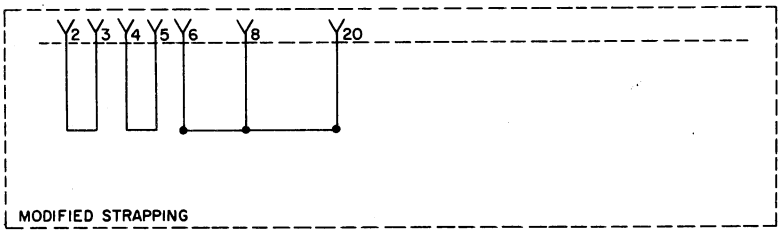
OPTIONS CHECKOUT PROCEDURES
(5-Level Buffered Selective Calling)

Perform the following procedure.

CHECK	PROCEDURE	RESPONSE
Option 431.b. 431.c.	Depress [O] (Alpha) key.	O Ø
431.b. 431.c.	Depress [O] (Zero) key.	Ø O
Option 468.b.	Depress [TERM LOCAL] key.	[TERM LOCAL] key does not light.
Option 469.b.	If the teleprinter is attached to data set and data set has analog loopback feature, place data set in analog loopback mode. Otherwise, attach the 403378 loopback connector or modified 403378 loopback connector* to the line port of the 43 5-Level BSC Teleprinter. Depress [TERM ON LINE] key if not lit. Hold the [CTRL] key depressed and depress the [#] key. *See Page 32 for modification instructions of the 403378 loopback connector.	[TERM ON LINE] key lights. "Test 1234" does not print.

10. MODIFIED 403378 INTERFACE LOOPBACK CONNECTOR

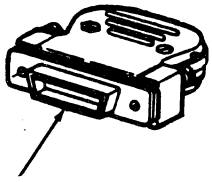
403378 INTERFACE†
LOOPBACK CONNECTOR



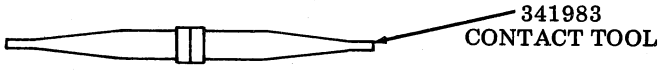
† See instructions for modification below.

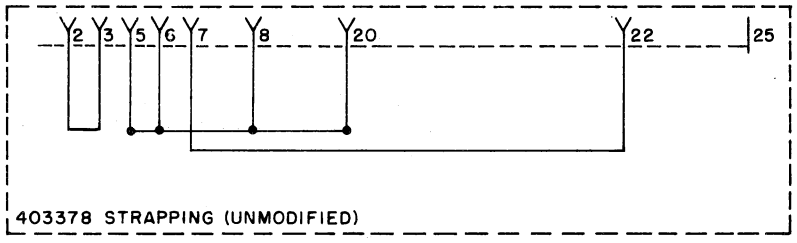
Modification Instructions

10.01 The following instructions should be followed to modify the connector, if desired, to assure that RTS (pin 4) turns on.



403378 INTERFACE
LOOPBACK CONNECTOR





(a) Disassemble the 403378 interface loopback connector.

(b) Cut the strap between terminals 5 and 6 at terminal 6.

(c) Using the 341983 contact tool, remove terminal 5 and the attached strap.

(d) Using the 341983 contact tool, remove the strap between positions 7 and 22 and install between positions 4 and 5.

(e) Reassemble the connector.