37 TELETYPEWRITER AUTOMATIC SEND-RECEIVE (ASR)

DATA STATION ARRANGEMENTS —"DATA-PHONE®"

INSTALLATION

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1. GENERAL

1.01 This section describes the procedures to be followed when installing a Model 37 Automatic Send-Receive (ASR) Teletypewriter (TTY) Data Station for DATA-PHONE service (Figure 1). The station operates at 150 words per minute and uses Data Set 103H1 and 37 TTY ASR Set which conforms to the EIA RS-232-B Interface Standard.

1.02 The standard 37 TTY ASR data station consists of the following components:

37 TTY KSR Set
37 TTY Tape Module
Data Set 103H1 (consisting of Data Set 103E5, 17A or 48A Power Unit, and a housing)
Data Auxiliary Set (DAS) 804P5, 6, 7, or 8 (See Table A)
2012B-48 Transformer (used only with DAS804P8)
Hand Telephone Set 223C-52

1.03 The 37 TTY ASR data station consists of two pieces of self-contained equipment --- the 37 TTY tape module and the 37 TTY KSR Set. The latter piece of equipment also houses the remaining station components. Each piece of self-contained equipment is intended to be completely assembled by the service center prior to shipment.

1.04 The customer must furnish a standard 3-wire grounding-type 106- to 129-volt, 59.5 to 60.5 hertz ac power receptacle (to accept a plug equipped with two parallel blades and a round-shaped grounding pin).

Note: The receptacle should not be under control of a switch.

1.05 Verify with plant service center (PSC) that the overall facilities meet transmission requirements specified in the section entitled Data Systems on Direct Distance Dialing (DDD) Network --- DATA-PHONE Services --- Transmission Requirements --- DATA-PHONE Subscriber Lines (314-205-500).

Figure 1 - 37 TTY ASR Data Station

Prepared for American Telephone and Telegraph Company by Teletype Corporation

TABLE A

DATA AUXILIARY SET (DAS) COMPARISON*

DAS	IDENTIFYING FEATURE
804P5	Rotary Dial
804P6	TOUCH-TONE®Dial
804P7	TOUCH-TONE Dial With Card Dialer
804P8	Rotary Dial With Card Dialer

* For a more detailed comparison, see Sections 591-027-100 (Data Set 103H-type — Description and Operation) and 598-061-100 (Data Auxiliary Set 804P5, 6, 7, and 8 — Identification).

2. INSTALLATION

2.01 Verify that the location selected by the customer for the 37 TTY ASR data station is adequate for maintenance. The location measurements should exceed 4-feet wide and 37-inches deep, and vertical obstructions should be more than 5 feet above the floor to allow sufficient room for 37 TTY ASR data station disassembly, if required.

2.02 Verify that the customer provided ac power receptacle is within 8 feet of the selected location and adequately fused for 15 amperes required by the data station.

CAUTION: DO NOT CONNECT POWER TO THE 37 TTY ASR DATA STATION UNTIL INSTRUCTED TO DO SO.

2.03 Interconnections for the 37 TTY ASR data station components are shown in Figure 2. In addition, verify that all plugs and cables are properly connected and terminated. Use Table B as a guide in making this check.

KSR SET ELECTRICAL SERVICE UNIT

2.04 To verify that the proper options are installed on the circuit cards of the KSR set electrical service unit and to encode the data station answer-back drum, the KSR set electrical service unit should be removed from the left compartment of the table (Figure 5). Remove as follows.

(1) Unlatch the front panel by pushing down on the release lever in the panel slot while holding the panel. Allow panel to move forward a few inches to the safety catch.

(2) Push up on the safety catch, rotate the front panel downward, and place it to the floor.

(3) If lower (TP333170) or upper (TP333171) shipping brackets were used to secure the electrical service unit during shipment, remove them (Figure 5). The upper shipping bracket is secured by four TP3442 screws, TP128100 flat washers, and TP3646 lockwashers. The lower shipping bracket is secured by two TP151724 screws, TP125307 flat washers, TP2669 lockwashers, and two TP162730 screws, TP125014 flat washers, and TP2449 lockwashers.

(4) Remove one (late design) or two (early design) mounting screws which secure the top front of the electrical service unit to the table.

(5) Loosen two screws which secure a mounting bracket to the top front of the electrical service unit (Figure 5). This will enable the mounting bracket to drop.

(6) Remove two mounting screws which secure the bottom front of the electrical service unit to the table (Figure 5).

(7) Verify that the circuit breaker (CB101) located on the utility strip is in the OFF position (Figure 5). Turn it OFF if it is ON.

(8) Grasp the KSR set electrical service unit and slide it out onto the front panel.

CAUTION: BEFORE REMOVING ELECTRICAL SERVICE UNIT FROM TABLE AND/OR INSTALLING CIRCUIT CARD OR CABLE OPTIONS, TURN OFF CIRCUIT BREAKER OR PULL AC POWER PLUG TO REMOVE ELECTRICAL POWER.

TABLE B

CONNECTIONS

EQUIPMENT WITH CABLES	CONNECTORS	TERMINATION	AREA	FIG. REF.
KSR Set Electrical Service Unit	P302	Copylight Plug	Typing Unit Cover	3
	P303	J8 Receptacle	Data Set	11
	P304	Receptacle	Base (Rear)	3
	P305	None	None	-
	P306	Left Receptacle	Typing Unit	3
	P307	Receptacle	Keyboard	3
	P308	Right Receptacle	Typing Unit	3
	J310	P310 Plug	Tape Module	4, 7
	A Plug (Control Panel)	Left Switch Receptacle	Control Panel Assembly	3
	C Plug (Control Panel)	Right Switch Receptacle	Control Panel Assembly	3
	AC Power Plug	Utility Strip	Left Compartment of Table	5
Utility Strip	AC Power Plug	Customer Furnished AC Receptacle	External	-
Data Set 103H1	AC Power Plug	Utility Strip	Left Compartment of Table	5
	Telephone Cord	44A Connecting Block or Equivalent	External	-
Data Auxiliary Set (804P5, 6, 7, or 8)	P2	J2 Receptacle	Data Set	11
Tape Module	P310	J310 Receptacle	KSR Set	4, 7
Electrical Service Unit	P311	Receptacle (Bottom)	Reader	4
	P312	Receptacle	Cabinet Door	4
	P313	None	None	-
	P314	Receptacle	Punch Base (Rear)	4
	P315	Receptacle	Punch	4
	P316	Control Switch Receptacle	Cabinet Top (Bottom)	4
	AC Power Plug	Utility Strip	KSR Set	4

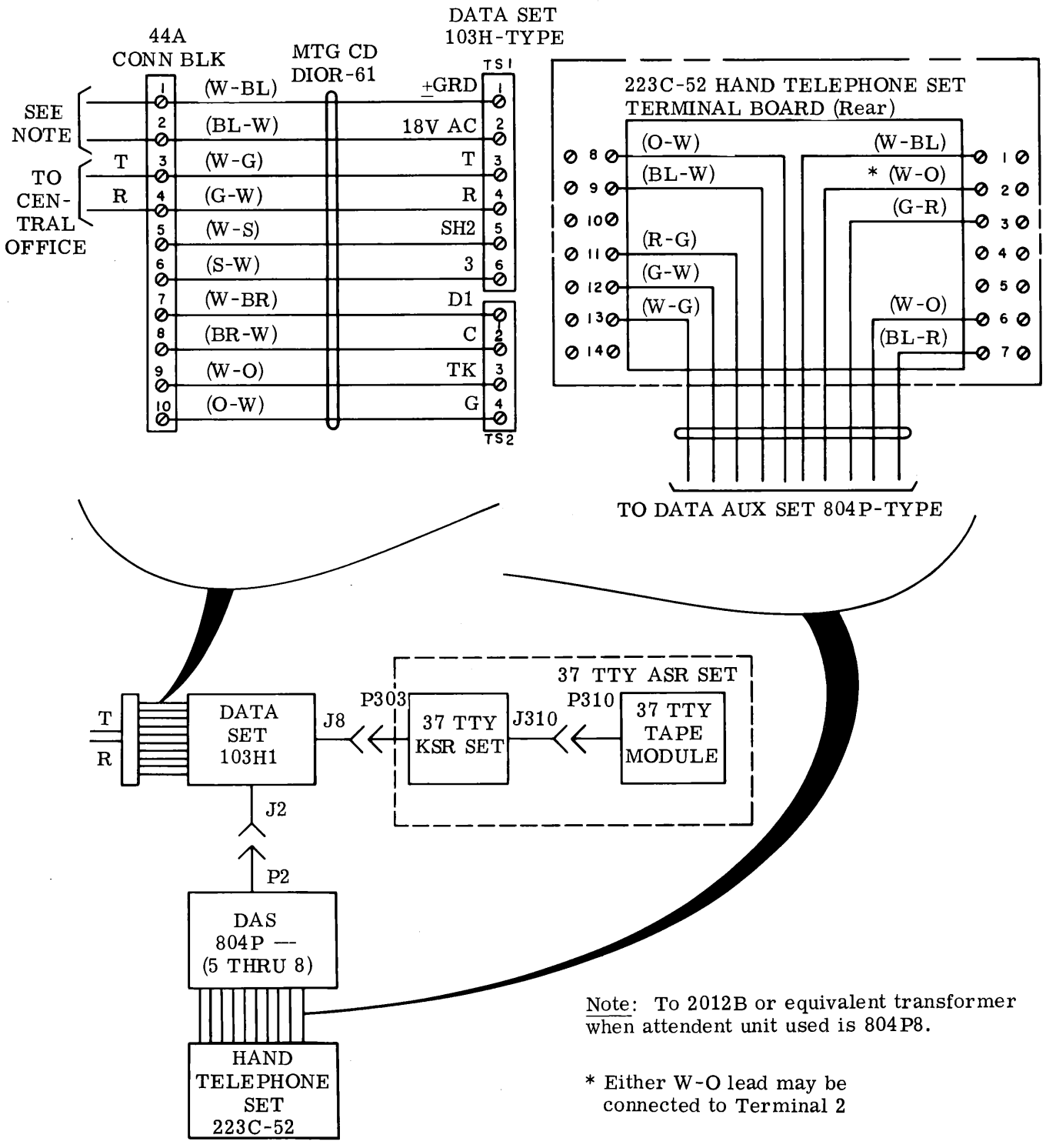
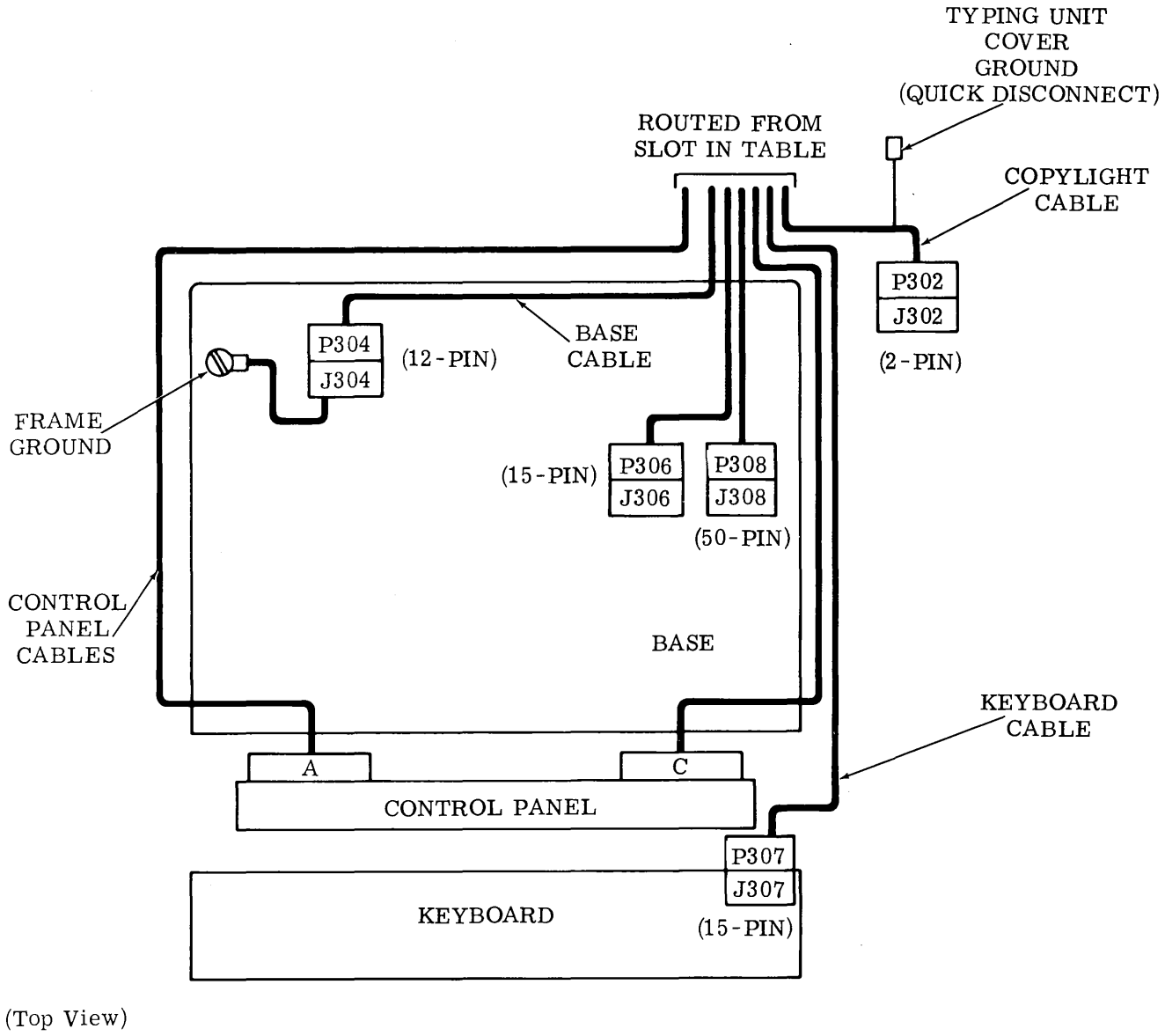


Figure 2 - Interconnection of 37 TTY ASR Data Station Components



(Top View)

Figure 3 - 37 TTY KSR Connector Locations

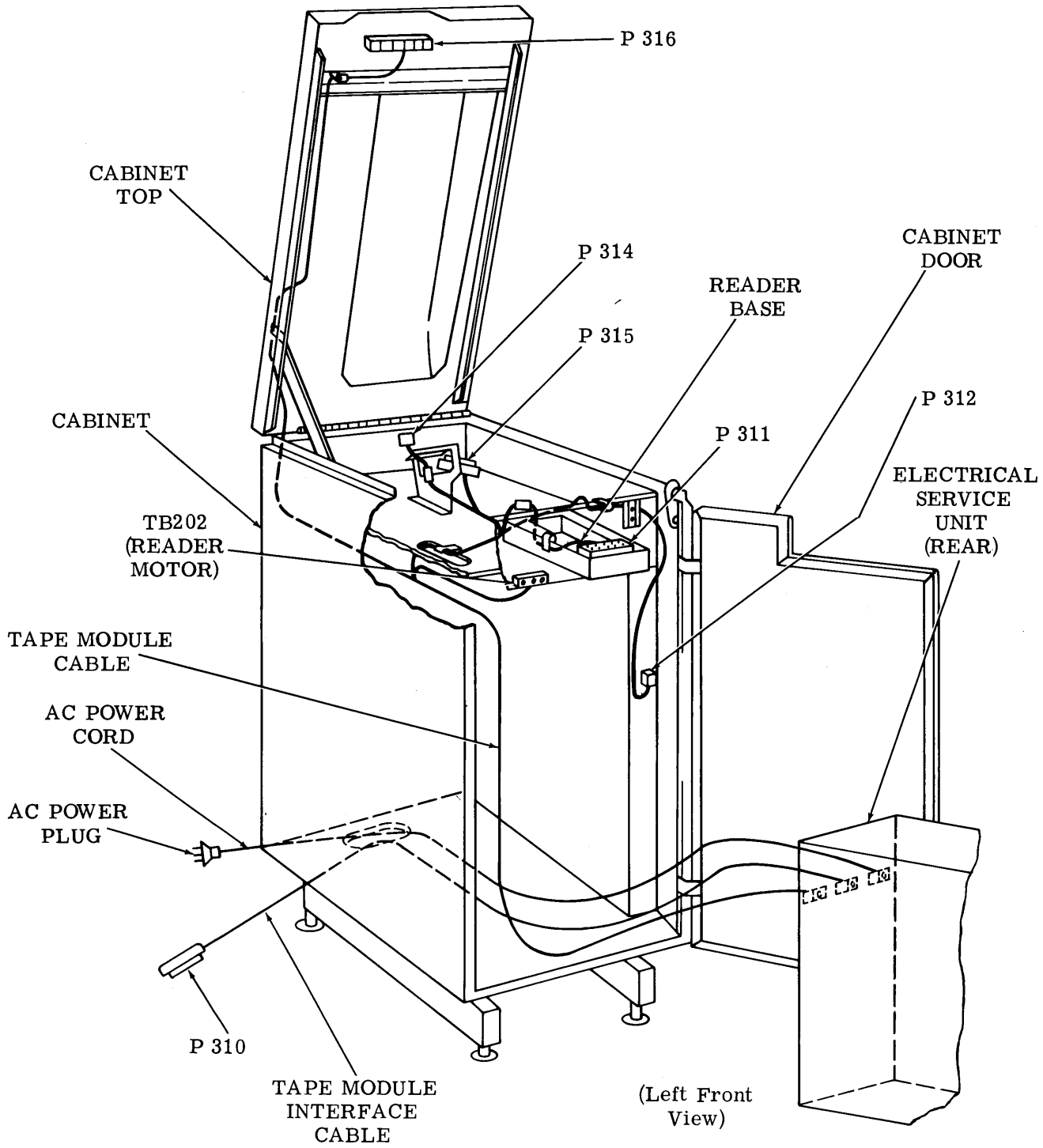


Figure 4 - 37 Tape Module Connector Locations

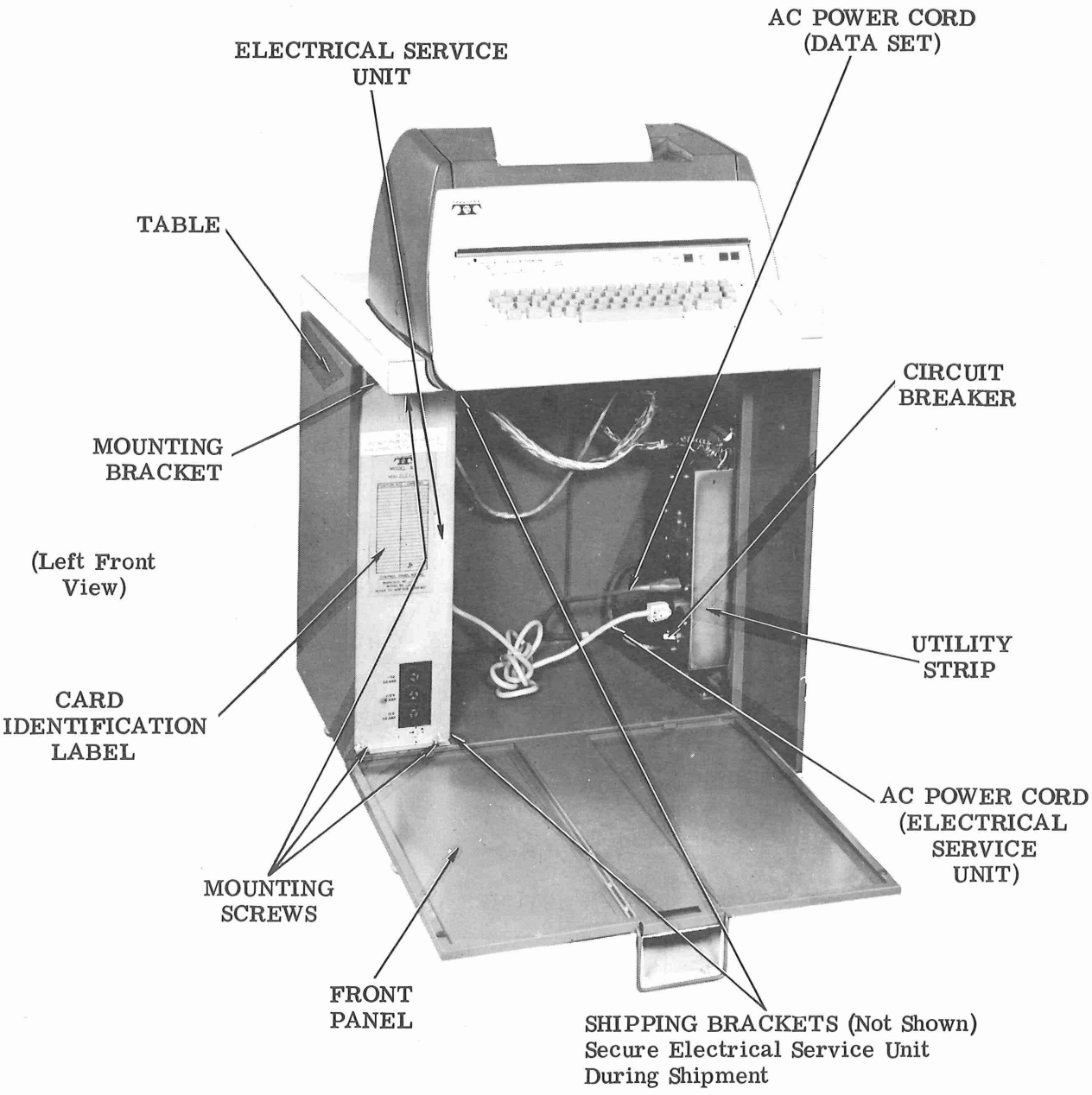


Figure 5 - KSR Set Electrical Service Unit and Utility Strip Location in Two-Compartment Table

2.05 Verify that the proper circuit cards and mechanisms are installed into the KSR set electrical service unit and that the proper options are enabled. Required options for the installation should be specified on the service order and/or work sheet. The available features and options are shown in Table C.

Note 1: Card and mechanism locations within the KSR set electrical service unit are shown in Figure 6. Use the card identification label to itemize the cards used and their locations.

Note 2: When removing a strap option on a circuit card, take care to avoid: (1) Damage to adjacent components and circuit board; (2) Shorting remaining portion of strap to adjacent circuit; and (3) Littering card with cut straps.

Note 3: When adding a circuit card strap option to a previously programmed card, use a soldering iron not larger than 25 watts. Take care to avoid damaging adjacent components or circuit board.

TAPE MODULE ELECTRICAL SERVICE UNIT

2.06 To verify that the proper circuit cards are installed into the tape module electrical service unit in the correct locations, the electrical service unit should be removed from the tape module cabinet (Figure 7). Remove as follows.

(1) Open the cabinet door by depressing door latch (Figure 7).

(2) Remove one (late design) or two (early design) mounting screws which secure the top front of the electrical service unit to the cabinet.

(3) Loosen two screws which secure a mounting bracket to the top front of the electrical service unit (Figure 7). This will enable the mounting bracket to drop.

(4) Remove two mounting screws which secure the bottom front of the electrical service unit to the cabinet (Figure 7).

(5) Verify that the circuit breaker (CB101) located on the utility strip is in OFF position (Figure 5). Turn off if it is on.

(6) Grasp the tape module electrical service unit and slide it out. Place onto the floor.

2.07 Verify that the proper circuit cards are installed into the electrical service unit.

Note: Card locations within the tape module electrical service unit are shown in Figure 8. Use the card identification label to itemize the cards used and their locations.

TABLE C

37 TTY ASR SET -- FEATURES AND OPTIONS

FEATURE	CARD OR MECHANISM	OPTIONS	INSTALLATION PROCEDURE
150 wpm operation with 10 unit code	Mode Control (Fig. 6, XZ105)	10-Unit Code*	Do not remove strap "A".
Full or half-duplex operation or full and half-duplex with line control	Receive Control (Fig. 6, XZ107)	Dedicated Half-Duplex	Remove strap "B". See Note 1.
		Dedicated Full-Duplex	Remove strap "A". See Note 1.
		Line Control Operation*	1. Remove straps "A", "B", and "C". See Note 1. 2. Check mechanical portions of stunt box for appropriate codes.

TABLE C (continued)

FEATURE	CARD OR MECHANISM	OPTION	INSTALLATION PROCEDURE
Typing Unit required on-line to receive a call	Receive Control (Fig. 6, XZ107)	Receiver Status Alarm	Remove strap "C". See Note 1.
Data Set Control of Motor. Disconnect on either EOT or Alarm Condition	Channel Control (Fig. 6, XZ109)	Motor Control, EOT, and Alarm Disconnect*	Remove straps "D", "E", "G", "H", "K", "M", "Y". Do not remove straps "A", "B", "C", "F", "L".
Automatic turn-on and turn-off of punch and reader in response to line signals	Alarms and Automatic Control (Fig. 6, XZ304)	On-Line Punch and Reader Control*	1. Program control panel per 8365WD. 2. Check mechanical portions of stunt box for appropriate codes (DC1, DC2, DC3, and DC4).
	Reader Driver (Fig. 8, XZ108)		Remove strap "A".
Counts the number of forward-spacing characters generated by the keyboard	Keyboard Control With Character Counter (Fig. 6, XZ301)	Character counter and programmable counter control to count up to 255 keyboard generated characters*	Install Character Counter card "piggy back" to Keyboard Control card. Note: Remove strap "A" when NEW LINE operation is not implemented in typing unit.

TABLE C (continued)

FEATURE	CARD OR MECHANISM	OPTION	INSTALLATION PROCEDURE
	Counter Control (Fig. 6, XZ303)		1. For a count of 66, program P1 thru P24 as follows: strap P3-P18, P6-P19, P8-P20, P10-P21, P12-P22, P13-P23, P2-P17. 2. For other counts see 8380CD and chart below.

COUNT DESIRED

FROM	TO 1	2	4	8	16	32	64	128
P1	P17	-	-	-	-	-	-	-
P2	-	P17	P17	P17	P17	P17	P17	P17
P3	-	P18	-	-	-	-	-	-
P4	P18	-	P18	P18	P18	P18	P18	P18
P5	-	-	P19	-	-	-	-	-
P6	P19	P19	-	P19	P19	P19	P19	P19
P7	-	-	-	P20	-	-	-	-
P8	P20	P20	P20	-	P20	P20	P20	P20
P9	-	-	-	-	P21	-	-	-
P10	P21	P21	P21	P21	-	P21	P21	P21
P11	-	-	-	-	-	P22	-	-
P12	P22	P22	P22	P22	P22	-	P22	P22
P13	-	-	-	-	-	-	P23	-
P14	P23	P23	P23	P23	P23	P23	-	P23
P15	-	-	-	-	-	-	-	P24
P16	P24	P24	P24	P24	P24	P24	P24	-

TABLE C (continued)

FEATURE	CARD OR MECHANISM	OPTION	INSTALLATION PROCEDURE
Programmable answer-back message	Answer-Back Assembly (Fig. 6, XZ310-XZ315)	Answer-Back at beginning of call, on HERE IS, or on received ENQ*	Install TP326575 cable as follows: WIRE COLOR — TB111 CONNECTION White-Brown — A1 White-Red — A2 White-Orange — A3 White-Yellow — A4 White-Green — A5 White-Blue — A6 White-Purple — A7 White-Slate — A8 White-Black — A11 Green-Slate — J3 Blue-Green — H3 Orange-Green — F3 Red-Blue — C3 Yellow — A13 Green — A14 Black — G3 Blue — A10 Brown — D3 Brown — E3

* Required options.

Note 1: Card shipped with all straps installed.

Note 2: References to typing unit and stunt box indicate option is part electrical service unit and part associated components.

ANSWER-BACK ASSEMBLY

2.08 Encode the answer-back message onto the data station's answer-back drum. Proceed as follows.

(1) Deflect brace extension downward, lift feed pawl, and remove answer-back drum from plastic block (Figure 9).

CAUTION: DO NOT OVEREXTEND FEED PAWL SPRING.

(2) Determine all characters, including space, carriage return (CR), line feed (LF), and other control characters, which are required for the customer's answer-back message. The maximum number of characters that can be encoded into the answer-back drum depends upon the number of rows available for message encoding. The maximum number of rows available for encoding the message for different cycles of operation is shown in Table D.

TABLE D

ROWS AVAILABLE FOR MESSAGE ENCODING

CYCLES OF OPERATION	TOTAL DRUM ROWS	ROWS AVAILABLE FOR CHAR.
1	21	20
2	10 (11)*	9
3	7	6

* Alternately one, then the other.

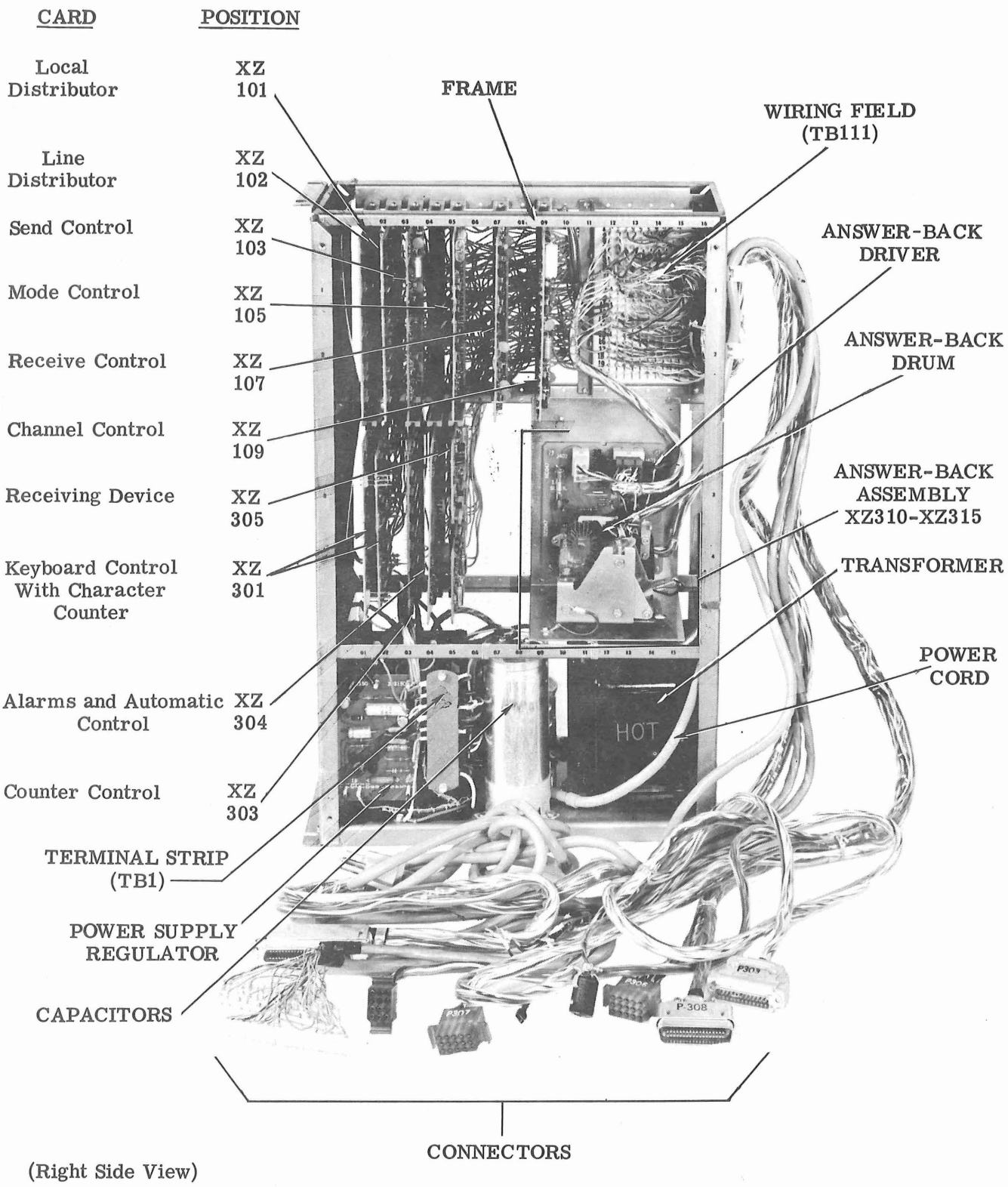


Figure 6 - KSR Set Electrical Service Unit --- Card Location and Miscellaneous Components

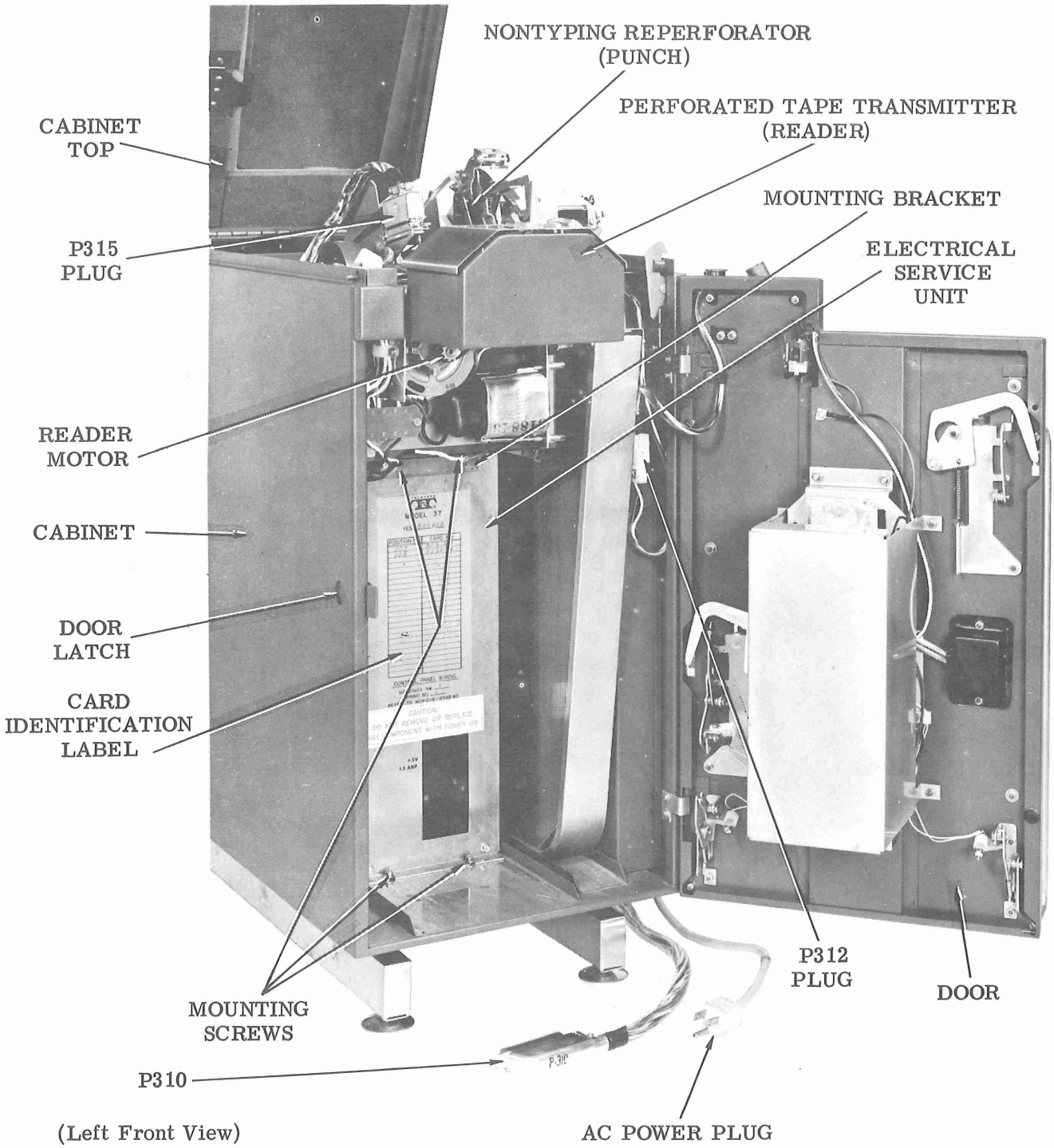


Figure 7 - Tape Module Electrical Service Unit and Other Components

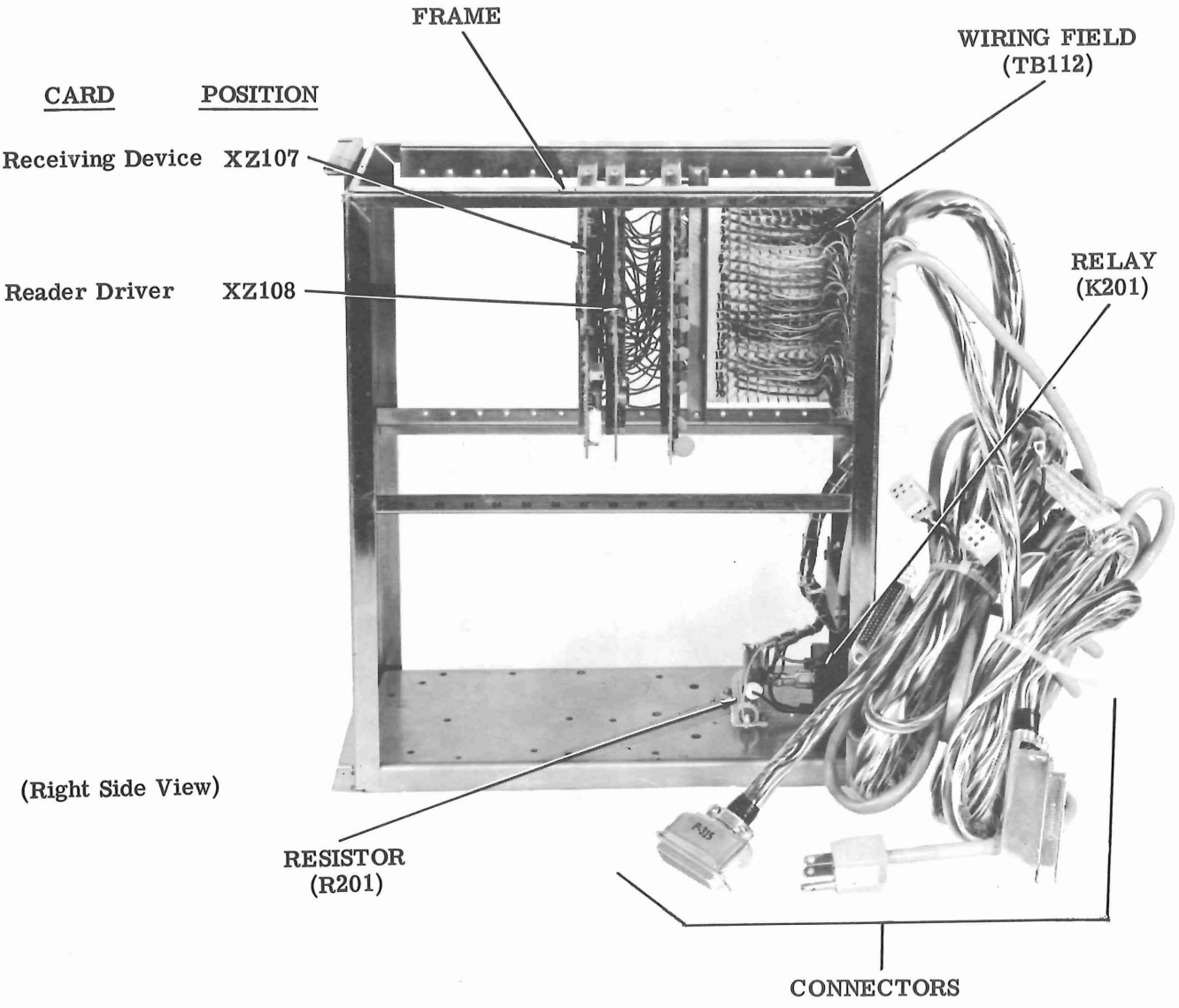


Figure 8 - Tape Module Electrical Service Unit —
Card Location and Miscellaneous

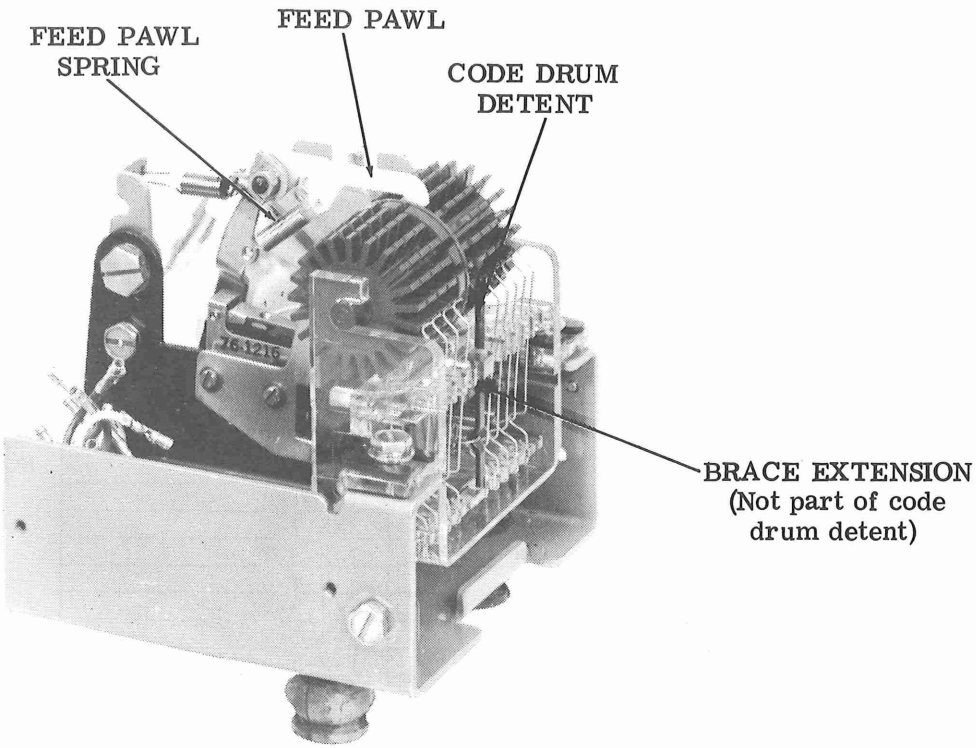


Figure 9 - Answer-Back Assembly

(a) The answer-back drum may cycle one time or a fraction thereof for each message, ie, there may be one, two, or three message cycles per drum cycle.

(b) Consider coding the drum for either 2- or 3-cycle operation for short messages. When the drum is encoded for multiple-cycle operation, each cycle must have the same message coded into it. For longer messages, code the drum for 1-cycle operation.

(3) Obtain different cycles of operation by removing the appropriate tines from the "Stop Cam" and "Character Suppression" levels (Figure 10).

(a) Remove the character suppression tine from rows which are surplus after coding a message into the answer-back drum. The character suppression tine controls a blinding contact which, when operated, takes the answer-back off line. Thus, with the character suppression tine removed from surplus rows, the answer-back will operate blind while the drum steps to its rest (stop) position.

Note: The character suppression tine can also be used to eliminate coding errors. If a coding error is made or it is desirable to "erase" characters, remove the character suppression tine from the row(s) affected.

(b) Do not remove the character suppression tine from rest (stop) position rows:

Cycle	Character Suppression Rest Position
1	ST Row
2	ST & 11 Rows
3	ST, 7 & 14 Rows

(c) End each answer-back message with the ACK character.

(d) If the answer-back message includes the carriage return-line feed (CRLF) sequence, follow it with a "delete" fill character, ie, CRLF DEL. If new line operation is used (carriage return and line feed on the "line feed" character) add two "delete" fill characters, ie, LF DEL DEL.

ASCII CHAR.	MARKING CODE LEVELS
NUL	NONE
SOH	1-8
STX	2-8
ETX	1-2
EOT	3-8
ENQ	1-3
ACK	2-3
BEL	1-2-3-8
BS	4-8
HT	1-4
LF	2-4
VT	1-2-4-8
FF	3-4
CR	1-3-4-8
SO	2-3-4-8
SI	1-2-3-4
DLE	5-8
DC1	1-5
DC2	2-5
DC3	1-2-5-8
DC4	3-5
NAK	1-3-5-8
SYN	2-3-5-8
ETB	1-2-3-5
CAN	4-5
EM	1-4-5-8
SUB	2-4-5-8
ESC	1-2-4-5
FS	3-4-5-8
GS	1-3-4-5
RS	2-3-4-5
US	1-2-3-4-5-8
SPACE	6-8
!	1-6
"	2-6
#	1-2-6-8
$	3-6
%	1-3-6-8
&	2-3-6-8
' (APOS)	1-2-3-6
(	4-6
)	1-4-6-8
*	2-4-6-8
+	1-2-4-6
,	3-4-6-8
-	1-3-4-6
.	2-3-4-6
/	1-2-3-4-6-8
0	5-6
1	1-5-6-8
2	2-5-6-8
3	1-2-5-6
4	3-5-6-8
5	1-3-5-6
6	2-3-5-6
7	1-2-3-5-6-8
8	4-5-6-8
9	1-4-5-6
:	2-4-5-6
;	1-2-4-5-6-8
<	3-4-5-6
=	1-3-4-5-6-8
>	2-3-4-5-6-8
?	1-2-3-4-5-6

ASCII CHAR.	MARKING CODE LEVELS
@	7-8
A	1-7
B	2-7
C	1-2-7-8
D	3-7
E	1-3-7-8
F	2-3-7-8
G	1-2-3-7
H	4-7
I	1-4-7-8
J	2-4-7-8
K	1-2-4-7
L	3-4-7-8
M	1-3-4-7
N	2-3-4-7
O	1-2-3-4-7-8
P	5-7
Q	1-5-7-8
R	2-5-7-8
S	1-2-5-7
T	3-5-7-8
U	1-3-5-7
V	2-3-5-7
W	1-2-3-5-7-8
X	4-5-7-8
Y	1-4-5-7
Z	2-4-5-7
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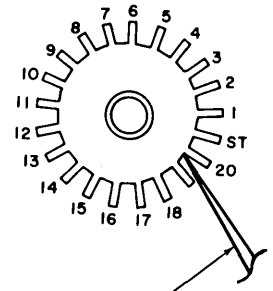
\	3-4-5-7
]	1-3-4-5-7-8
^	2-3-4-5-7-8
_	1-2-3-4-5-7
`	6-7
a	1-6-7-8
b	2-6-7-8
c	1-2-6-7
d	3-6-7-8
e	1-3-6-7
f	2-3-6-7
g	1-2-3-6-7-8
h	4-6-7-8
i	1-4-6-7
j	2-4-6-7
k	1-2-4-6-7-8
l	4-5-6-7
m	1-3-4-6-7-8
n	2-3-4-6-7-8
o	1-2-3-4-6-7
p	5-6-7-8
q	1-5-6-7
r	2-5-6-7
s	1-2-5-6-7-8
t	3-5-6-7
u	1-3-5-6-7-8
v	2-3-5-6-7-8
w	1-2-3-5-6-7
x	4-5-6-7
y	1-4-5-6-7-8
z	2-4-5-6-7-8
{	1-2-4-5-6-7
|	3-4-5-6-7-8
}	1-3-4-5-6-7
~	2-3-4-5-6-7
DEL	1-2-3-4-5-6-7-8

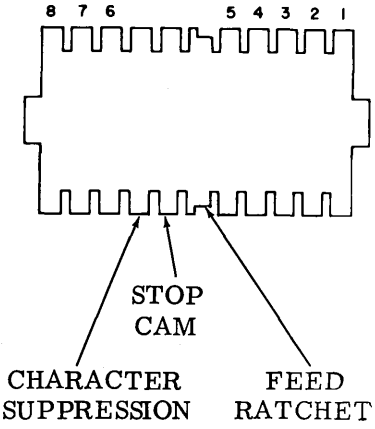
MESSAGE DRUM

ROWS



TP95368
SCREWDRIVER

LEVELS



Note 1: Remove tine --- marking. Leave tine --- spacing.

Note 2: The eighth code level must be coded as shown for even parity operation.

Note 3: Remove the tines specified below to get proper cycle:

Cycles	Stop Cam	Character Suppression
1	Row 6	Unused rows except ST row
2	Row 6 Row 17	Unused rows except ST & 11 rows
3	Row 6 Row 13 Row 20	Unused rows except ST, 7 & 14 rows

Figure 10 - Answer-Back Drum Code Chart

(4) Code each character into the drum by breaking and removing the tines as indicated in Figure 10. Marking code levels shall have tines removed; spacing code levels shall have tines left intact. Start encoding the message onto the answer-back drum beginning with row 1 for the first character, row 2 for the second character, etc. The numbering of the rows of tines is embossed onto the right end of the answer-back drum. Either of the following two methods may be used for breaking off tines.

(a) Method 1: Use a TP95368 screwdriver to remove each tine. Place the end of the screwdriver blade at the base of the tine to be removed. While applying pressure against the base of the adjacent tine, press the side of the blade against the top of the tine to be removed until it breaks. If both tines adjacent to the tine to be removed have been broken off, apply the end of the screwdriver to the stub of either one in breaking off the unwanted tine. This method of removing a tine is indicated in the illustration showing the tine rows in Figure 10. In the illustration, pressure is being applied to the base of a row 20 tine and against the top of an adjacent tine in row 19 to break it off.

(b) Method 2: Use a TP161686 tine tool or a pair of TP108285 long-nosed pliers to remove each unwanted tine. Place the unwanted tine into slot of the tine tool, or grasp the unwanted tine firmly with the long-nosed pliers, and then, with the tool or the pliers held stationary, rotate the answer-back drum back and forth until the unwanted tine breaks off near its base. Use care not to damage adjacent tines.

2.09 With the answer-back drum properly coded, replace drum in answer-back assembly as follows.

(1) Lift the feed pawl while depressing the switch actuator arm.

(2) Insert and properly seat the drum.

Note: Code drum will not seat properly in the plastic block if installed backwards.

(3) When replaced, the ST position (row with all tines left in) should be opposite contact wires.

(4) Restore brace extension to normal position.

Note: If answer-back assembly fails to operate properly after installing drum, check the following adjustments found in Section 574-325-700 after positioning contact assembly to its rearmost position in retaining slots:

FEED PAWL - ADVANCED
FEED PAWL - RELAXED
OFF-NORMAL SWITCH
FEED BAIL SPRING

DATA SET 103H1

2.10 To verify that the proper options are installed in Data Set 103H1, the data set must be removed from the right compartment of the table. Remove as follows.

(1) Open right compartment door by depressing door latch (Figure 11).

(2) Loosen captive fastener holding the data set to the compartment floor.

(3) Grasp the data set and pull out.

(4) Place data set on floor in front of right compartment door.

2.11 Verify that the proper options are installed in Data Set 103H1 (Figure 12). Required options for the installation should be specified on the service order and/or work sheet. The available features or options for Data Set 103H1 are shown in Table E.

Note: Options are installed by tightening or loosening screws on terminal blocks located on the data set circuit packs.

2.12 Adjust the transmitted power level of the data set as follows.

(1) Using the data station telephone line, place a call to the 1000-Hz, 1-mw terminal in the serving central office.

(2) Using a 900-ohm transmission measuring set, measure the level of received tone.

(3) Using Table F, locate the value in the 1000-Hz Measured Loss column equal to the measured value in (2).

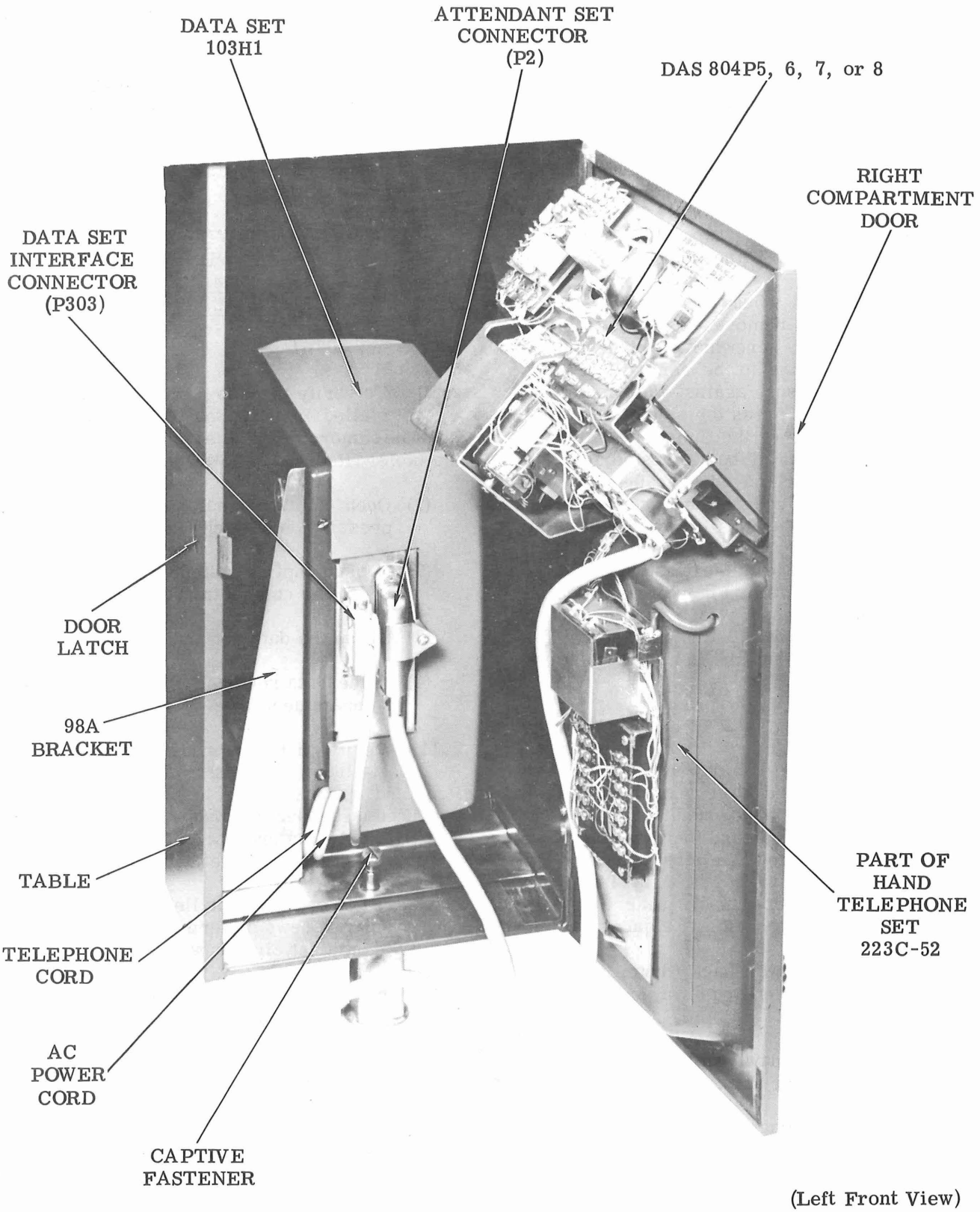


Figure 11 - Data Station Components Located in Right Compartment of a Two-Compartment Table

TABLE E

DATA SET 103H1 - FEATURES AND OPTIONS

FEATURES	OPTION	DESIG	CP NO.	SCREW SETTING LOOSEN	TIGHTEN
Answer mode indication	CE on	X*	CJ9	1	2
	CE off	W		2	1
Space disconnect	Long	V*	CJ10		8
	Short	H			3, 8
	None	W/O V, H		3, 8	
Send disconnect	Yes	T*	CJ10		1
	No	W/O T		1	
Loss of carrier disconnect	Yes	S*	CJ10		4
	No	W/O S		4	
Common grounds	Yes	Q*	CJ19		10
	No	W/O Q		10	
Test	Answer/ originate	W/O G*	CJ10	12	
	Originate only	G			12
Answer/originate transfer	Without	N*	CJ10		10
	With	W/O N		10	
Answer control	Combined	M*	CJ9		9
	Separate	W/O M		9	
CB and CF indications	Common	A	CJ9	5, 7	4, 6
	Separate	B*		4, 6	5, 7

* Required options.

TABLE F

DATA SET 103H1

F2 TRANSMIT LEVEL (CP CJ11)

1000 HZ MEAS LOSS	DATA SET TRANSMIT LEVEL - DBM	F2 RMS VOLTAGE
Above 10 dB	---0	2.05
8 to 10 dB	---2	1.63
6 to 8 dB	---4	1.29
4 to 6 dB	---6	1.03
2 to 4 dB	---8	0.82
0 to 2 dB	---10	0.65

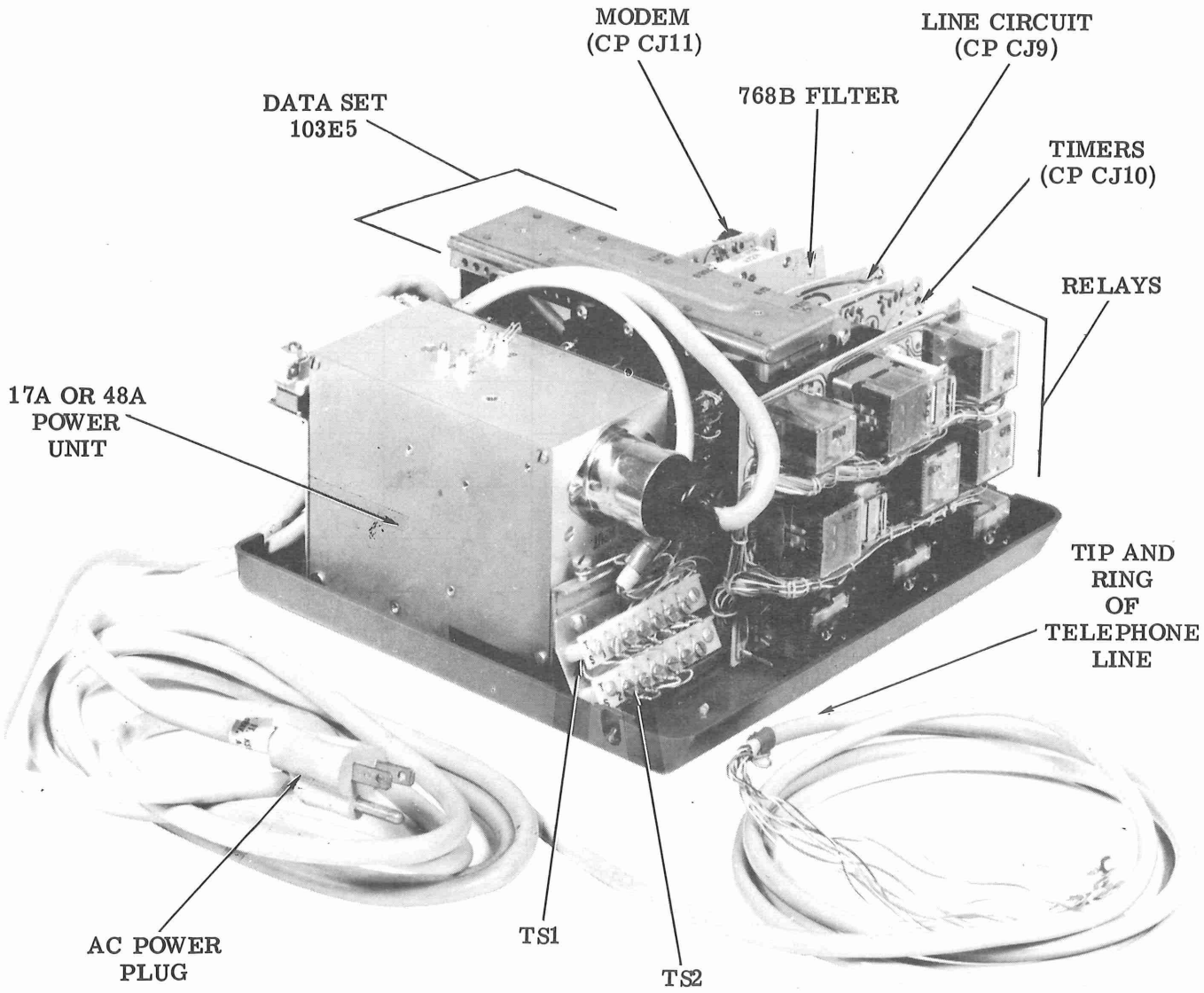


Figure 12 - Data Set 103H1 (Cover Removed)

(4) Verify that the circuit breaker (CB101) located on the utility strip is in the OFF position. See 2.04 (7).

(5) Connect the power plug from the utility strip to the customer-provided ac receptacle.

Note: Where local regulations permit, a power cord plug retainer should be installed.

(6) Connect the T (W-G) and R (G-W) leads from the line cord of the data set to the telephone line (Figures 2 and 12).

Note: As a suggestion, use 44A connecting block on customers premises for terminating the T, R, and other line cord leads from the data set.

(7) Set the function switch of KS-14510 L1 volt-ohm-milliammeter (VOM) or equivalent VOM to 3 volts ac.

(8) Connect the VOM test leads between terminals 10 and 13 on CP CJ9 of the data set (Figure 12).

(9) Operate circuit breaker (CB101) located on utility strip to the ON position (Figure 5).

(10) Verify that AUTO key is released (AUTO lamp is extinguished). If AUTO lamp is lit, operate AUTO key.

(11) Operate DATA key; DATA lamp should light and dial tone should be heard in loudspeaker.

(12) Dial telephone number of the 900-ohm terminating trunk in the serving central office.

(13) When connection is established, operate DATA key and hold it operated.

(14) Operate TEST key. Hold DATA key operated, release TEST key, and then release DATA key.

(15) Using a screwdriver, adjust R34 on CP CJ11 (Figure 12) for the f_2 RMS voltage reading associated with the 1000 Hz measured loss value in (3).

(16) At completion of R34 adjustment, operate CLEAR/TALK key.

(17) Remove test leads from CP CJ9 and operate circuit breaker (CB101) to the OFF position.

3. INSTALLATION TESTS

3.01 Lubricate all components prior to placing the station into service. Complete lubricating instructions can be found in the following sections.

COMPONENT	SECTION NUMBER
Answer-Back Unit	574-325-701
Keyboard and Base Assembly	574-321-704
Motor Unit	570-220-701
Nontyping Reperforator	574-329-701
Reader	592-801-701
Tape Cabinet	574-327-701
Typing Unit (Early Design)	574-320-701
Typing Unit (Late Design)	574-320-704
Typing Unit Cover and Pan	574-326-704

3.02 Check out the operation of the 37 Teletypewriter Automatic Send-Receive (ASR) DATA-PHONE Station by following the Operating Tests given in Field Maintenance Practices (FMP) 579-400-350.

4. REFERENCES

4.01 The following schematic drawings and circuit descriptions pertain to the 37 TTY ASR data station:

SD and CD-1D121-01 Data Set 103H1
SD and CD-1D136-02 Data Auxiliary Set 804P5, 6, 7, or 8
SD and CD-1D147-01 Data Set 103E5
SD and CD-3D037-01 Hand Telephone Set 223C-52
574-302-400 37 TTY ASR