

MASTER DRAWING LIST	

[illegible]

REVISIONS	APP'D.	M.A. W.M. A.K.			DRN. R. BERNIER	DATE 3/68														
	CHG. NO	EA08-19 LT33-1 LT33-2			CHK'D. D. HEALY	DATE 3/68	TITLE TELETYPEWRITERS LT33													
	DATE	7/69 3/71 7/71			ENG FITZGERALD	DATE 5/68														
	REV.	A B C			PROJ. ENG FITZGERALD	DATE 5/68														
					PROD. ANTONUCCIO	DATE 5/68														
					FIRST USED ON PDP10															
	SCALE		SIZE A	CODE ML	NUMBER LT33-0				REV. C											
	SHEET 1 OF 2		DIST.																	

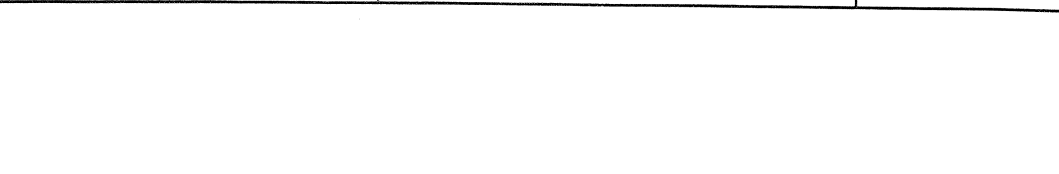
DRA 131

Dec 16 (325)-1048-N471

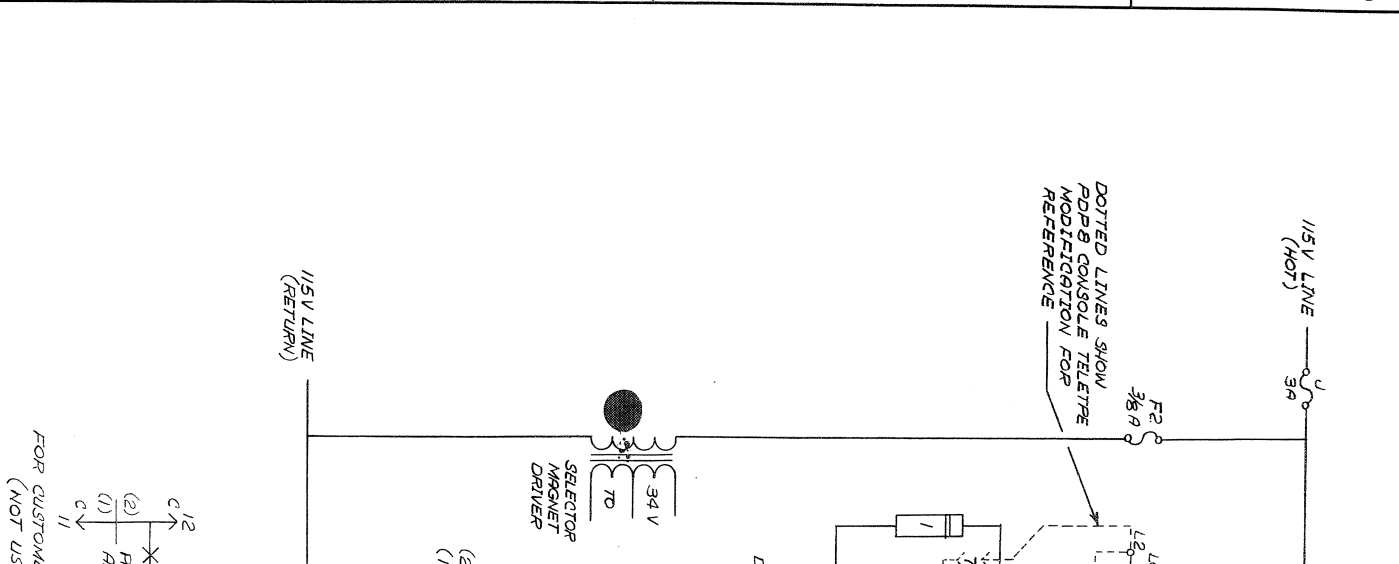
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DRA 132

DEC 16-(325)-1048-1-N471



1. *Journal of the American Medical Association*, 1997; 277: 1033-1036.



REV.
A

1

100

PROVIDES 115 V TO THE LOAD AT
LINE VOLTAGE

UNLESS OTHERWISE SPECIFIED	SECTION / MODEL
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DEGMAS FRACTIONS ANGLES = FINA SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	FINISH

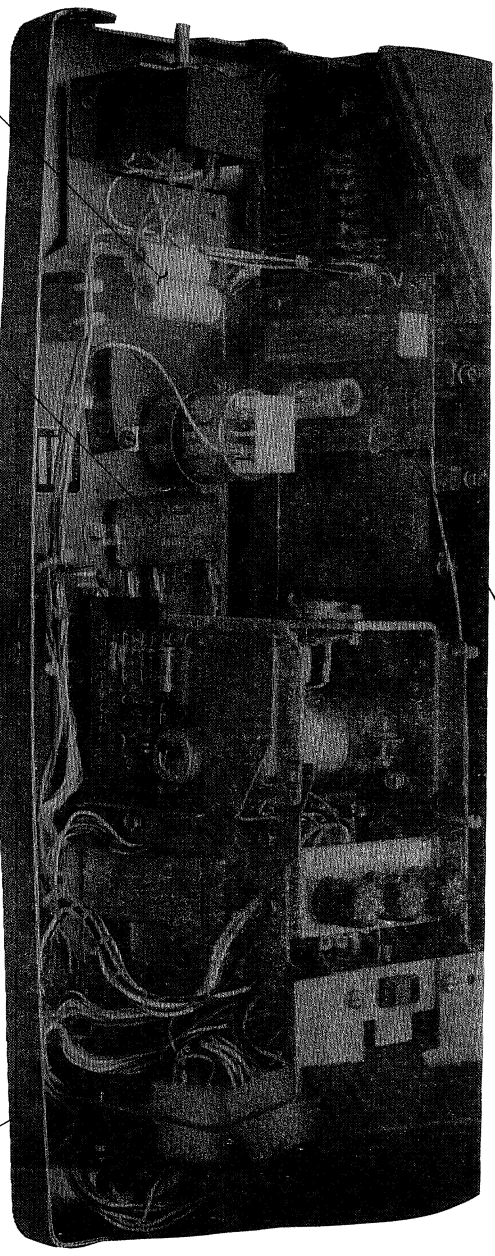
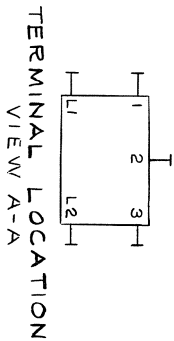
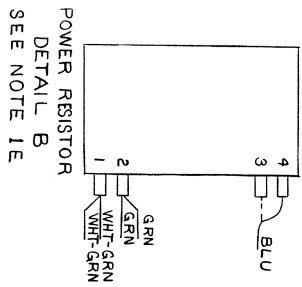
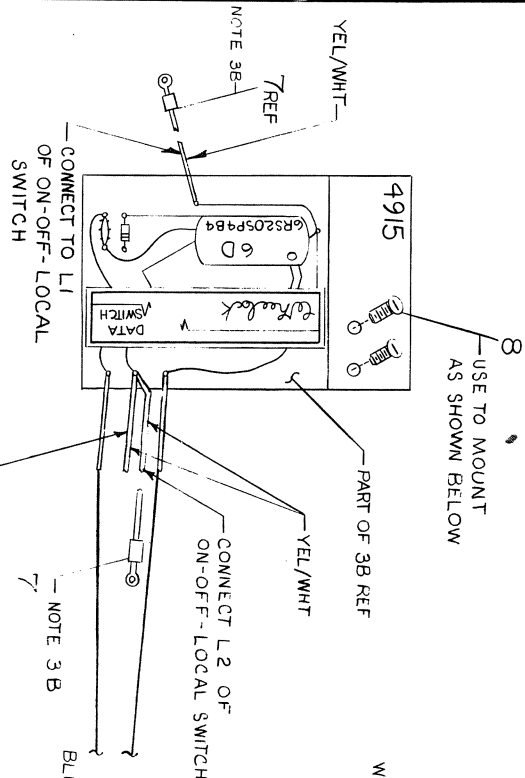
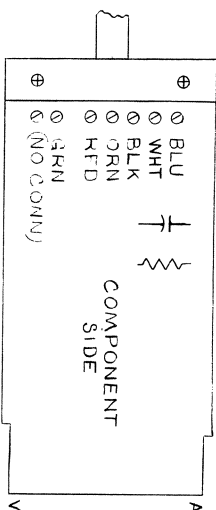
digital EQUIPMENT CORPORATION NORWOOD, MASSACHUSETTS	
READER CONTROL CIRCUITS	
PLATED (DIAGRAM)	
MESHARING ASR 33]	
DATE	NUMBER
LT33 - B - CONT	
	REV
	A

→

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CABLE CONNECTIONS TO TERMINAL BOARD

NUMBER IN LUG CORRESPONDS TO TERMINAL BOARD NUMBERS



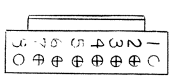
SEE NOTE 3A
6RS20SP4B4
THYRISTORS

SEE DETAIL B

ASR-33 TELETYPE MODIFICATIONS & CABLE CONNECTIONS (ALL UNITS USING RELAY CONTROLLED READER) 4915 CARD INSERTED

SEE CABLE VIEW

PIN VIEW 7006593
MATE-N-LOCK CONNECTOR

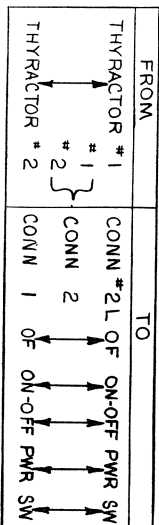


TTY CABLE VARIATIONS

PROD LINE	CABLE NUMBER
PDP-8, 81, 85	7005676-1 (12 FT)
PDP-12, LINC 8	7005676-2 (18 FT)
PDP-9, 9L	
PDP-8E, PDP-11	7006593-1 (12 FT)
PDP-15	7006593-2 (18 FT)

NOTES:

1. ADDITIONAL ELECTRICAL CHANGES TO TERMINAL BOARD CONNECTIONS AND CALL CONTROL UNIT.
2. MECHANICAL CHANGES
3. A. REMOVE SPRING & WRU PAWL UNIT FROM SLOT "N" IN FUNCTION CASTING.
4. A. ADD (2) 6RS20SP4B4 THYRISTORS DEC #1100106 TO UNIT & WIRE AS INDICATED BELOW USING ITEM #7
5. REMOVE PURPLE WIRE FROM LUG 8 & PLACE ON LUG 9.
6. REMOVE BROWN WIRE ON LUG #4 FROM LOCATION #11 TO LOCATION #7 (MATES WITH YEL/WHT WIRE FROM 4915)
7. MOVE BLUE WIRE FROM TERMINAL #3 TO TERMINAL #4 (END) OF 18186 POWER RESISTOR.



8. USING ITEM #7 CONNECT YEL-WHT WIRES TO INDICATED TERMINALS OF ON-OFF-LOCAL SWITCH.
9. USE ITEM #9 TO THE WIRING.
10. TELETYPE FOR USE ON 50 HZ OR VOLTAGES OTHER THAN 115V ALSO REQUIRE MODIFICATION PER DWG. D-1A-7505039-0-0

REVISIONS		
CHK	CHANGE NO.	REV.
720	LT 33-00002	B
REVISED & REDRAWN		
7-20-71		
A. KENT		
Allen Kent 28 July 71		

FIRST USED ON OPTION/MODEL		
LT 33-DA		
UNLESS OTHERWISE SPECIFIED		
DRN	DATE	DESCRIPTION
R. THELLEN	2-24-70	REVISION MINOR
K. RUSS	2-24-70	TOLERANCES
DECIMALS	ANGLES	
XXX - .005	±0° 30'	
XX - .01		
X - .1		
REMOVE BURNS AND BREAK SHARP CORNERS SURFACE QUALITY		
MATERIAL		
NEXT HIGHER ASSY.		
FINISH		
SCALE 1 OF 2		
DIA 7505038-0-0		
REV. B		

PARTS LIST		
QTY.	DESCRIPTION	ITEM NO.
2	CABLE TIE 3/16 X 6-1/2 LG SST 2M	9007032
15	CABLE TIE 3/32 X 3-3/4 LG SST 1W	9007031
2	SCR PH PANI HD. 6-32 X 1/4	9006020-1
5	SOLDERLESS TERM *6AWG18-22	9007929
2	THYRISTOR GE 6RS20SP4B4	1100106
1	CABLE ASSY MATE-N-LOCK 704915	7006593
1	CABLE ASSY W706 TO 4915	7005676
1	PIN TELETYPE 182644	2911459
1	TTY WRITER MODEL 337U(60H2)	3004779
1	TTY WRITER MODEL 337BP(50H2)	3005716

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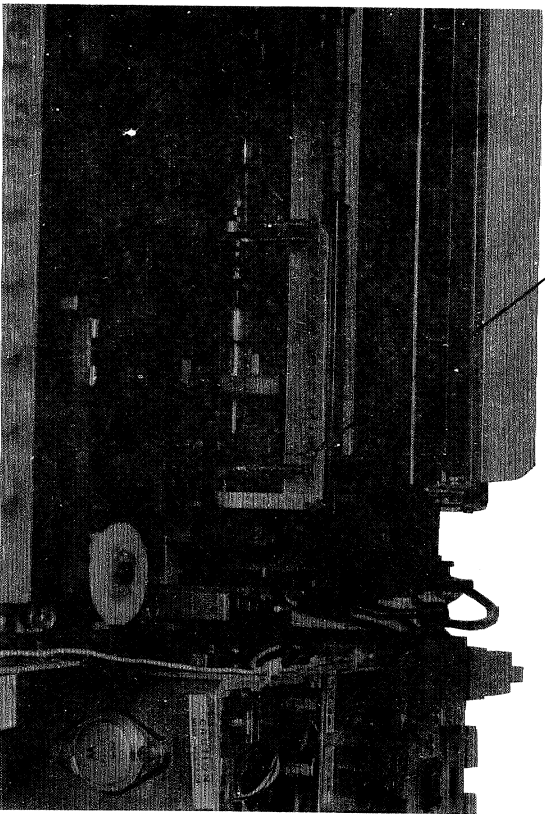
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WRU PAWL SPRING

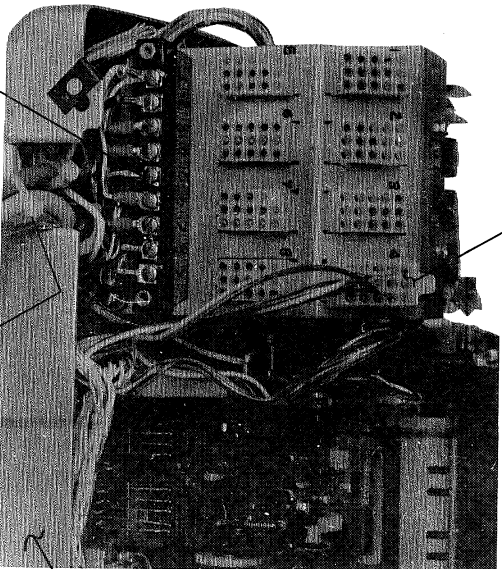
SEE NOTE 2A
PARTS TO BE REMOVED
INDICATED BY DASHED LINE



PLUG PANEL

SEE CABLE LAYOUT
SHEET 1 AND NOTE 1D

WIRING SIDE VIEW OF
PLUG #4. (PIN SIDE VIEW
OF RECEPTACLE #4)



SUB BASE

SEE NOTE 1
SECURE INTERFACE CABLE TO
CALL CONTROL UNIT AND
IO POWER CORD.

TERMINAL BOARD

REVISIONS	
CHK	CHANGE NO.

REV.

DEC FORM NO.
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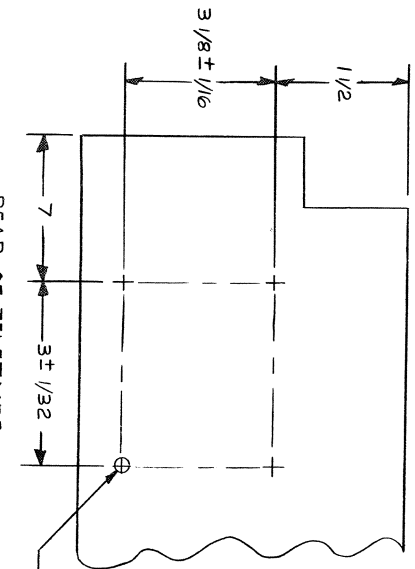
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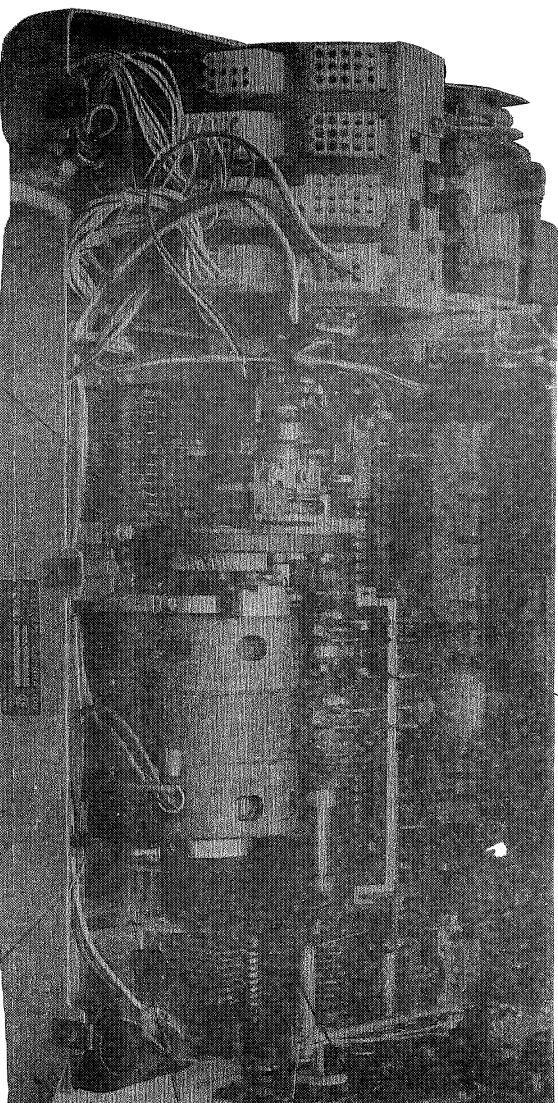
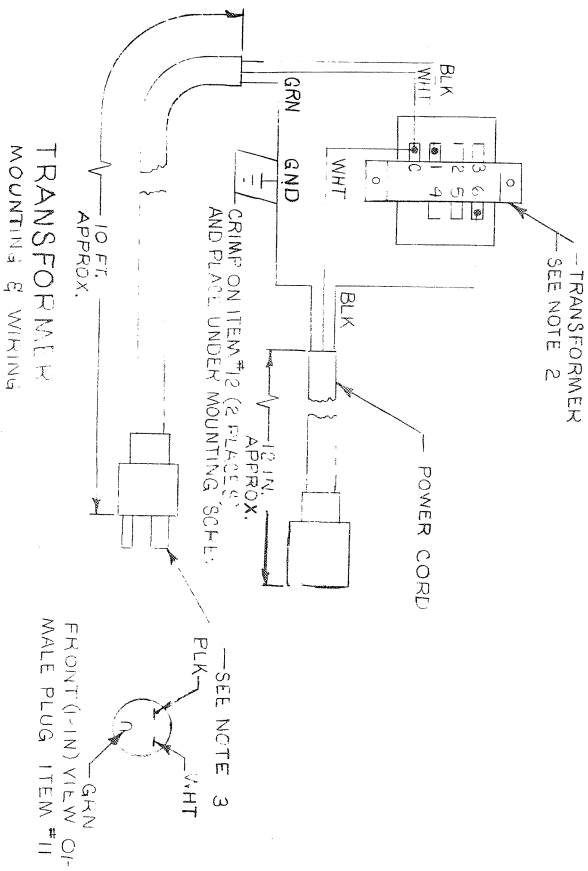
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FRONT OF TELETYPE



REAR OF TELETYPE
SCALE: NONE
HOLE DRILLING DIAGRAM FOR MOUNTING OF TRANSFORMER, ITEM #5, TO PLATE INSIDE BOTTOM OF BASE.



240V TRANSFORMER TAP TABLE				
VOLTAGE	LINE	LOAD	COMMON	
287	3	4	C	
275	2	4	C	
274	3	5	C	
265	1	4	C	
263	2	5	C	
260	1	5	C	
252	2	5	C	
250	1	5	C	
240	1	6	C	
220	1	6	C	
213	2	6	C	
213	2	5	C	
206	2	6	C	
204	2	5	C	
203	2	5	C	
198	2	5	C	
197	2	4	C	
193	2	4	C	

THIS TABLE PROVIDES 115V TO THE LOAD AT THE NOMINAL LINE VOLTAGE

NOTES:

- FOR 50 HZ OPERATION, PERFORM THE FOLLOWING CHANGES (NOT NECESSARY IF STARTING WITH TELETYPE 33 TBP):
 - REMOVE MOTOR AND REPLACE WITH ITEM #1 (NOT NECESSARY IF MOTOR WAS ALREADY 50/60 HZ ON NAME PLATE)
 - REMOVE DRIVE GEAR AND REPLACE WITH ITEM #2
 - REMOVE PINION GEAR AND REPLACE WITH ITEM #3
 - REMOVE PLATE WITH STUD AND REPLACE WITH ITEM #4 (181850 CAN BE USED WITH 50 OR 60 HZ)
- FOR OPERATION ON VOLTAGES OTHER THAN 115V, PERFORM THE FOLLOWING OPERATIONS:
 - MOUNT ITEM #5 IN BASE OF TELETYPE STAND USING ITEM #6 THRU #9, DRILL HOLES PER PATTERN SHOWN, CUT ITEM #10 AND CONNECT AS SHOWN.
 - FOR OPERATION ON VOLTAGES FROM 200V TO 250V ON PD08-E AND PD11 TELETYPE, CUT MALE PLUG OF POWER CORD AND REPLACE WITH ITEM #11, WIRE AS SHOWN.
 - SEE ALSO DWG. D-1A-7505038-0-0 WHEN RELAY CONTROLLED READER IS REQUIRED.
 - ADD FAN DEFLECTOR TO 50 HZ UNITS IF NOT ALREADY SUPPLIED.

REVISIONS		
CHK	CHANGE NO.	REV.
LT	33-00002	B
REVISED & REDRAWN		
M-Quinn 7-22-71		
A-KENT		
Allen Kent 28 July 71		

REC FORM NO. DRD 100-A

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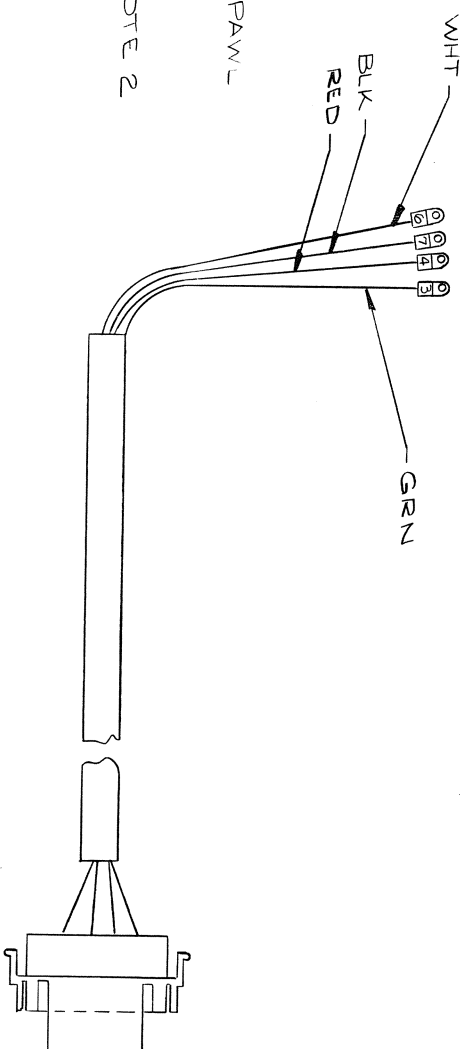
-301

CABLE	CONNECTIONS TO TERMINAL BOARD	NUMBER IN LUG CORRESPONDS TO TERMINAL BOARD NUMBER
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
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10	10	10
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91	91	91
92	92	92
93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99
100	100	100

TTY	CABLE	VARIATIONS	REMARKS
PROD LINE	CABLE NUMBER		
PDP-8, 8 ¹ / ₂ , 8L, 8S	7005011-1 (12 FT)		
PDP-12, LINC 8,	7005011-2 (18 FT)		NOT SHOWN
PDP-9, 9L			
PDP-8E, PDP-11,	7006594-1 (12 FT)		
PDP-15	7006594-2 (18 FT)		AS SHOWN

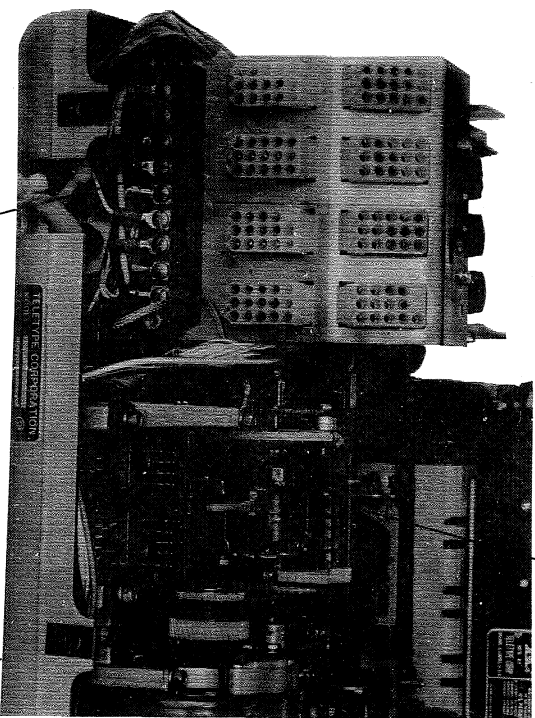
NOTES:

- | | |
|---|--------------------------|
| 1. ADDITIONAL ELECTRICAL CHANGES TO TERMINAL BOARD CONNECTIONS : | |
| A. REMOVE BROWN-YELLOW WIRE FROM LUG 3 & PLACE ON LUG 5. | |
| B. REMOVE BLUE-WHITE WIRE FROM LUG 4 & PLACE ON LUG 5. | |
| C. REMOVE PURPLE WIRE FROM LUG 8 & PLACE ON LUG 9. | |
| 2. MECHANICAL CHANGES : | |
| A. REMOVE SPRING & WRU PAUL UNIT FROM SLOT "N" IN FUNCTION CASTING | |
| 3. ADD (2) SP4-B4 THYRISTORS DEC #100106 TO UNIT & WIRE AS INDICATED BELOW. | |
| FROM | TO |
| THYRISTOR #1 | CONN #2 OF ON-OFF PWR SW |
| " #1 | " #2L " |
| " #2 | " " " |
| " #2 | " " " |
| " #1 | " " " |
| " #2 | " " " |
4. SEE ALSO D-1A-7505039-0-0 FOR ADDITIONAL MODIFICATIONS TO 50 H Z OR 240 V UNITS.



SEE NOTE 2

WRU PAWL



- SEE NOTE #1
- CABLE CONN'S
- TERMINAL BOARD

SUBBASE

KSR-33 TELETYPE MODIFICATION
AND CABLE CONNECTIONS

REVISONS		
CHK	CHANGE NO.	REV.
<i>7/1</i>	<i>LT 33 00000</i>	<i>A</i>
<i>A. KENT</i>		
<i>Alan Kent 26 Jul 71</i>		

FIRST USED ON OPTION/MODEL		DO NOT SCALE DRAWING		UNLESS OTHERWISE SPECIFIED		DIMENSION IN INCHES		TOLERANCES		DECIMALS FRACTIONS		ANGLES		FINAL SURFACE QUALITY		REMOVE BURNS AND BREAK SHARP CORNERS		MATERIAL		FINISH	
LT33-CA																					
DRAWN		DATE		CHECKED		DATE		ENG.		DATE		PROL.		DATE		REVISION		NEXT HIGHER ASST		SCALE	
10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70	
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10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70	
10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70	
10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70	
10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70	
10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70	
10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70	
10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70	
10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70	
10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70		10/1/70	
10/1/70		10/1/70		10/1/7																	

MAYNARD, MASSACHUSETTS

LEGEND

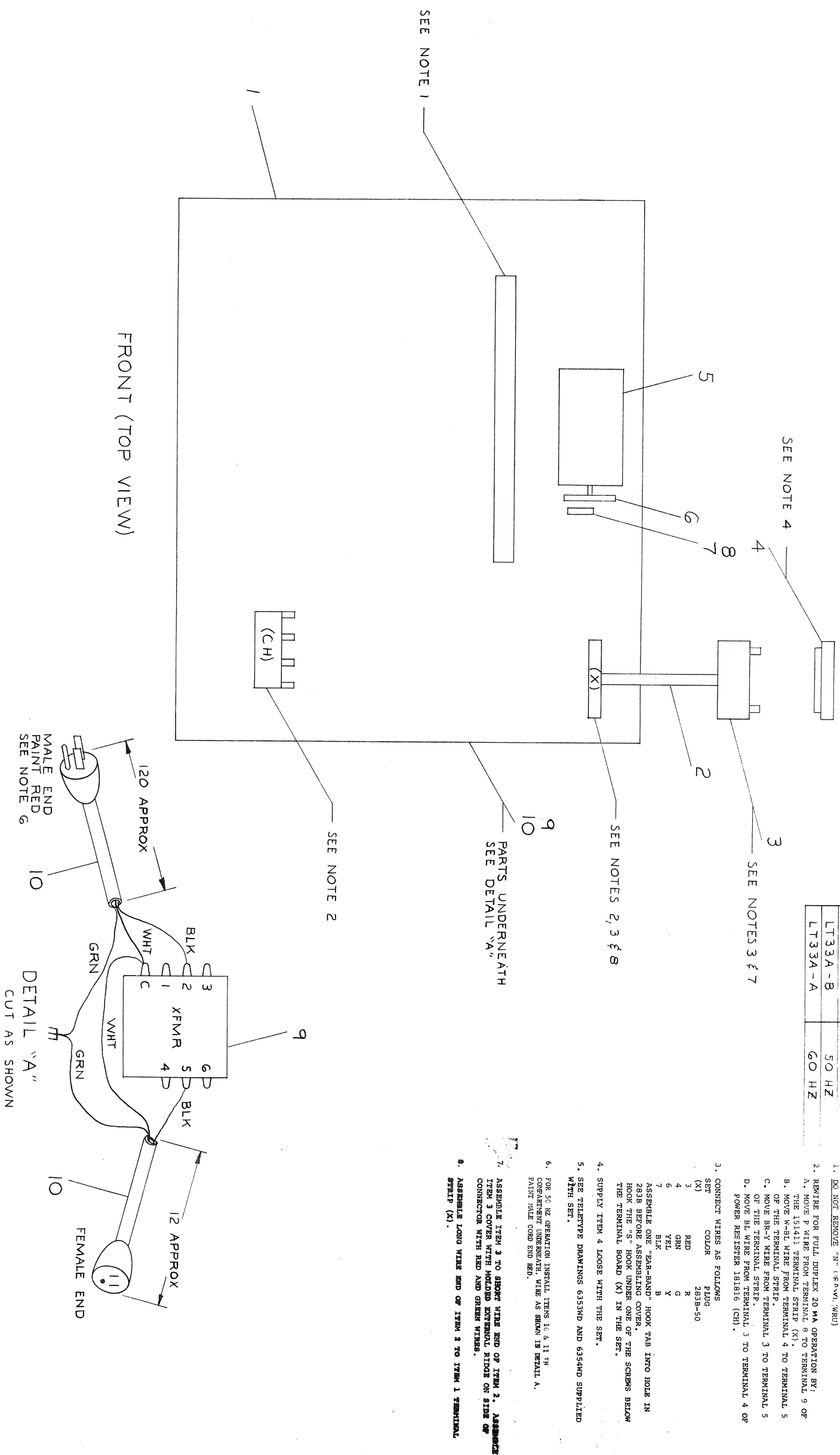
D	DOCUMENT
DN	DOCUMENT CHANGE NOTICE

PA	PAPER TAPE ASCII
PB	PAPER TAPE BINARY
PM	PAPER TAPE
	READ-IN-MODE

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION
	LT33	-DB,
		-EA,
	LT33	-CA,
		-CD,
	KIT C	
	BY _____	
	INSTA _____	
	BY _____	

SIZE CODE	NUMBER	REV.	ECO NO
A AL	LT33-0-12	A	LT33-000002
DIST.			

X



LEGEND	
NUMBER	VARIATION
LT33A-B	50 HZ
LT33A-A	60 HZ

1. DO NOT REMOVE "N" IF AVAILABLE
2. REMOVE FOR FULL DUPLEX 20 MA OPERATION BY:
 - A. MOVE P WIRE FROM TERMINAL 8 TO TERMINAL 9 OF THE 151411 TERMINAL STRIP (X).
 - B. MOVE W-BL WIRE FROM TERMINAL 4 TO TERMINAL 5 OF THE TERMINAL STRIP.
 - C. MOVE BR-Y WIRE FROM TERMINAL 3 TO TERMINAL 5 OF THE TERMINAL STRIP.
 - D. MOVE BL WIRE FROM TERMINAL 3 TO TERMINAL 4 OF POWER RELEASER 151416 (CH).
3. CONNECT WIRES AS FOLLOWS

SET	COLOR	PILING
(X)		283B-50

REVISIONS		
CHK	CHANGE NO.	REV.

UNLESS OTHERWISE SPECIFIED		DRAWN <i>2/2/68</i>		DATE <i>1/23/68</i>	
UNITLESS OR OTHERWISE SPECIFIED		CHD <i>1/2/68</i>		DATE <i>2-7-68</i>	
DIMENSIONS		END <i>1/2/68</i>		DATE <i>2-7-68</i>	
TOLERANCES		PDR <i>1/2/68</i>		DATE <i>2-7-68</i>	
DECIMALS $\pm 1/64$		PDR <i>1/2/68</i>		DATE <i>2-7-68</i>	
FRACTIONS ± 0.001		PDR <i>1/2/68</i>		DATE <i>2-7-68</i>	
ANGLES $\pm 0.09^\circ$		PDR <i>1/2/68</i>		DATE <i>2-7-68</i>	
REMOVE BURRS AND BREAK SHARP CORNERS		PDR <i>1/2/68</i>		DATE <i>2-7-68</i>	
MATERIAL		FIRST USED ON			
<i>+</i>		<i>+</i>			
FINISH		SCALE		NONE	
<i>+</i>		SHEET		1 OF 1	
		SIZE		NUMBER	
DUAL		LT33A-0-0		REV	
DIST		G			

MAYNARD, MASSACHUSETTS

PARTS LIST

DIGITAL EQUIPMENT CORPORATION				QUANTITY										REVISIONS		
PARTS LIST																

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY		CHECKED	D. HEALY	SECTION
DATE	9/23/65	DATE	1-20-70	1
ENG	McLean Kent #	PROD	Q. McLean	ISSUED SECT.
DATE	30 Jan 70	DATE	2-9-70	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION
----------	--------------------	-------------

DESCRIPTION

LT33-BB 50 Hz

LT33-BA 60 Hz

LT33-BA 60 Hz

QUANTITY / VARIATION

[illegible]

TITLE
TIJESHARING TELETYPE 33 ASR (TY)

ASSY NO.
D-UA-LT33-B-0

SIZE	CODE
A	PL

NUMBER
LT33-B-0

REV.	ECO NO.
A	LT33-
	00002

DEC FORM NO.
DRA 110

X

PARTS LIST

MAYNARD, MASSACHUSETTS

CHECKED	K. GUTICK	SECTION
DATE	11-18-70	1
PROD	<i>General Electric</i>	ISSUED SECT.
DATE	<i>11/18/70</i>	1

[illegible]

TITLE		LT33-B TELETYPE RECOMMENDED SPARE PARTS									
ASSY NO.		SIZE	CODE	NUMBER			REV.	ECO NO.			
		A	PL	LT33-SB-Ø							
SHEET 1 OF 1		DIST.									

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY J. FERGUSON	CHECKED K GULICK	SECTION
DATE 11-18-70	DATE 11-18-70	1
ENG <i>W. O. O'Sullivan</i>	PROD <i>Long Harbor</i>	ISSUED SECT.
DATE 11-19-70	DATE 11/19/70	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION									
1	29 12521	SCALE, 80Z #110443 TTY CORP	1									
2	29 12522	SCALE, 32 OZ #110444 TTY CORP	1									
3	29 12602	SCALE, 64 OZ #82711 TTY CORP	1									
4	29 12520	GAGE SET #117781 TTY CORP	1									
5	29 12532	SCREWDRIVER, OFFSET #94644 TTY CORP	1									
6	29 12524	SCREWDRIVER, OFFSET #94645 TTY CORP	1									
7	29 12525	CROCKET HOOK, NO. 8 #151351 TTY CORP	1									
8	29 12526	CROCKET HOOK, NO. 12 #151959 TTY CORP	1									
9	29 12527	SPRING HOOK PUSH #142555 TTY CORP	1									
10	29 12528	SPRING HOOK PULL #142554 TTY CORP	1									
11	29 12529	SCREW HOLDER #151384 TTY CORP	1									
12	29 12530	HAND WHEEL ADAPTOR #181465 TTY CORP	1									
13	29 12540	HANDWHEEL #161430 TTY CORP	1									
14	29 12553	CONTACT ADJUSTMENT TOOL #172060 TTY CORP	1									
15	29 12554	GAGE #180587 TTY CORP	1									
16	29 12555	GAGE #180588 TTY CORP	1									
17	29 12556	BENDING TOOL #180993 TTY CORP	1									
18	29 12557	GAGE #183103 TTY CORP	1									
19	29 12558	EXTRACTOR #182697 TTY CORP	1									
20	29 12559	TWEEZER #151392 TTY CORP	1									
21	29 12560	TOMMY WRENCH #6617 TTY CORP	1									

TITLE	LT33 TELETYPE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MAINTENANCE TOOL KIT			A	PL	LT33-ST-0	A	LT33-00002
SHEET 1 OF 2		DIST.					

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY	J.FERGUSON	CHECKED	K GULLICK	SECTION
DATE	11-18-70	DATE	11-18-70	1
ENG NO.	11-19-70	PROD	11-19-70	ISSUED SECT.
DATE	11-19-70	DATE	11-19-70	1

[illegible]

TITLE		ASR 33 TELETYPE MAINTENANCE TOOL KIT									
ASSY NO.		SIZE CODE		NUMBER				REV.		ECO NO.	
		A PL		LT13-ST-Ø				A			
SHEET 2 OF 2		DIST.									

DIGITAL EQUIPMENT CORPORATION																																												
MAYNARD, MASSACHUSETTS																																												
ENGINEERING SPECIFICATION				DATE 5/3/68																																								
TITLE MODIFICATION PROCEDURE TELETYPE MODEL 33ASR-TY																																												
REVISIONS																																												
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE																																						
The model 33TY must be modified in the following manner: (Ref: refers to teletype manual) 1. Remove the WRU pawl from the function casting. It is the second pawl from the right of the casting. Ref: Vol II - Sec: 574-122-700 page 6 2. Remove the blue lead from the 750Ω resistor post and reconnect it to the 1450Ω resistor post. Ref: Vol I - Sec: 574-100-102 3. On the call control unit terminal strip the following wires are transferred: <table><tr><td>Color of Wire</td><td>Remove From</td><td>Connect To</td></tr><tr><td>Brown/White</td><td>Term. 3</td><td>Term. 5</td></tr><tr><td>Blue/White</td><td>Term. 4</td><td>Term. 5</td></tr><tr><td>Purple</td><td>Term. 8</td><td>Term. 9</td></tr></table> Ref: Vol I - Sec: 574-100-102 page 14 (fig.12) 4. The leads of DEC cable #5288-2 which have red crimp lugs are connected to the call box terminal strip as follows: <table><tr><td>Color of Wire</td><td>Term. No.</td></tr><tr><td>Grey/White</td><td>3</td></tr><tr><td>Red</td><td>4</td></tr><tr><td>Yellow/White</td><td>6</td></tr><tr><td>Black</td><td>7</td></tr></table> 5. Mount the 4195 reader control card on the left side of the call control unit. A bracket is provided for mounting and is located to the right of arrow pointing to "plate", near the on-off switch. Connect the wires on one end of reader control card to locations as follows: <table><tr><td>Color of Wire</td><td>Length of Wire</td><td>Origin</td><td>Connect To</td></tr><tr><td>Yellow/White</td><td>6" approx.</td><td>to</td><td>I2 of on-off solenoid switch</td></tr><tr><td>Yellow/White</td><td>6" approx.</td><td>to</td><td>I1 of on-off reader switch</td></tr><tr><td>Yellow/White</td><td>2' approx.</td><td>---</td><td>Plug #4 of call control unit (3rd hole from right)</td></tr></table>							Color of Wire	Remove From	Connect To	Brown/White	Term. 3	Term. 5	Blue/White	Term. 4	Term. 5	Purple	Term. 8	Term. 9	Color of Wire	Term. No.	Grey/White	3	Red	4	Yellow/White	6	Black	7	Color of Wire	Length of Wire	Origin	Connect To	Yellow/White	6" approx.	to	I2 of on-off solenoid switch	Yellow/White	6" approx.	to	I1 of on-off reader switch	Yellow/White	2' approx.	---	Plug #4 of call control unit (3rd hole from right)
Color of Wire	Remove From	Connect To																																										
Brown/White	Term. 3	Term. 5																																										
Blue/White	Term. 4	Term. 5																																										
Purple	Term. 8	Term. 9																																										
Color of Wire	Term. No.																																											
Grey/White	3																																											
Red	4																																											
Yellow/White	6																																											
Black	7																																											
Color of Wire	Length of Wire	Origin	Connect To																																									
Yellow/White	6" approx.	to	I2 of on-off solenoid switch																																									
Yellow/White	6" approx.	to	I1 of on-off reader switch																																									
Yellow/White	2' approx.	---	Plug #4 of call control unit (3rd hole from right)																																									
ENG	APPD	SIZE	CODE	NUMBER	REV																																							
		A	SP	LT33-0-2																																								

DEC FORM NO. DRA 107

SHEET 1 OF 3

ENGINEERING SPECIFICATION				CONTINUATION SHEET													
TITLE MODIFICATION PROCEDURE TELETYPE MODEL 33ASR-TY																	
Brown --- Plug #4 of call control unit (3rd hole from right) Ref: Sec: 574-100-102 page 14 (fig.12) 6. Connect two SP4B4 thractors on the on-off switch as follows: a. One thyraactor from position 2 to position 1 of the on-off switch. b. The other thyraactor from position 2 to position I2 of the on-off switch. STUNT BOX AREA 7. Remove the pawls #11 and #12 (the casting is numbered). Also remove the pawl lettered "N" which is the second from the right as you face the keyboard. Ref: Vol II Sec: 574-122-700 page 8 (fig.5) KEYBOARD AREA 8. Remove the red/green wire from the top bus bar. Insulate this wire and pace it under the keyboard. This connection is no longer required for operation. 9. The third contact which is located on the left of the keyboard is to be cut 1/8 inch above the bus bar. The contact should no longer be affected by the control lever, but should remain in contact with the bus bar. 10. Remove the fourth contact which is located on the right side of the keyboard. This contact is shaped slightly different from the third one. Replace the fourth contact with a duplicate of the third contact (TTY P/N 180043). The third and fourth contacts are cut 1/8 inch above the bus bars as described in step #9. Proper operation now consists of both the third and fourth contacts opening and closing simultaneously and unaffected by their previously related control levers. PUNCH AREA 11. Refer to parts bulletin 1184B Sec: 574-125-800 pages 3 and 4 (fig.2 & 3) Remove the following components from the punch assembly: <table><tr><td>Part Number</td><td>Name</td><td>Refer To</td></tr><tr><td>184-200</td><td>Bail</td><td></td></tr><tr><td>182-465</td><td>Bracket</td><td>Page 3, fig.2, top center of page</td></tr><tr><td>182-466</td><td>Lever</td><td></td></tr></table> Remove screw P/N 182-823 (page 3, fig.2) from post and remove complete tape feed mechanism. Place the new lever P/N 182-460 vertically (with its attached post						Part Number	Name	Refer To	184-200	Bail		182-465	Bracket	Page 3, fig.2, top center of page	182-466	Lever	
Part Number	Name	Refer To															
184-200	Bail																
182-465	Bracket	Page 3, fig.2, top center of page															
182-466	Lever																
ENG	SIZE	CODE	NUMBER	REV													
	A	SP	LT33-0-2														

DEC FORM NO. DRA 108

SHEET 2 OF 3

ENGINEERING SPECIFICATION



CONTINUATION SHEET

TITLE MODIFICATION PROCEDURE TELETYPE MODEL 33ASR-TY

away from the punch casting and to the front) between the punch casting and arm (P/N 182-848, page 4, fig.3). Assemble new lever to post (P/N 182-412, page 3 fig.2). It is held in place by previously removed "E" ring. Re-install the tape feed mechanism and post P/N 182-395 (page 3 fig.2). With the flat top of the new plastic lever (P/N 182-394) towards the rear, insert the lever onto the post (P/N 182-395). With the flat top of the second new plastic lever now facing the front, insert it on the same post. The corresponding vertical levers are attached to the plastic levers and plate (P/N 182-839, page 3 fig.2) is re-installed and held in place by the "E"ring.

12. Refer to Vol II sec: 574-125-700 (page 4, fig.2). Notice sensing lever chart; 8 level column, slot A-O P/N 182-457 lever and slot A-8 P/N 182-457 lever. These two levers are located on the extreme opposite sides of the punch assembly. They must be disengaged from their related pawls and held down. They must not be effected by operational functions. This is accomplished by tying down.

SIZE	CODE	NUMBER	REV
A	SP	1A33-0-2	

DEC FORM NO
DRA 108

SHEET 3 OF 3

DIGITAL EQUIPMENT CORPORATION						
MAYNARD, MASSACHUSETTS						
ENGINEERING SPECIFICATION					DATE 4/23/68	
TITLE ALIGNMENT/TEST PROCEDURE FOR TELETYPE MODEL LT33 SERIES						
REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGED ECO	LT33-00002	A. KENT	7-6-71	AKF	26 July 71

TELETYPE ALIGNMENT PROCEDURE:

A. Carefully check for damaged or obviously misaligned components.
Note: In the following sections, power is off unless noted.

B. Main Shaft
1. Clearance between slotted bronze bearing and collar
.005
.015

C. Distributor Clutch
1. Endplay between left bearing and clutch gear assembly
.002
.008

2. Clearance between brush holder and disc at closest point
.025
.025

3. Clearance between shoe lever and stop lug with clutch disengaged and keyboard universal lever in down position
.015 min.

4. Increase in clearance recorded in step #3 after clutch has been engaged
.050
.080

5. Disengage clutch and depress any non-function key. Clearance between clutch shoe lever and trip lever with upper edge of clutch lever in line with upper edge of trip lever
.015
.035

6. Power on and keyboard universal lever in latched position. Clearance of clutch shoe lever beyond rear most surface of trip lever
000
.015

D. Selector Clutch
1. Disengage clutch. Endplay between clutch and side plate
.002
.008

ENG	APPD	SIZE	CODE	NUMBER	REV
AKF		A	SP	LT33-0-6	A

DEC FORM NO. DRA 107 SHEET 1 OF 4

ENGINEERING SPECIFICATION						CONTINUATION SHEET	
TITLE ALIGNMENT/TEST PROCEDURE FOR TELETYPE MODEL LT33 SERIES							

2. Disengage clutch. Trip lever shall engage shoe lever by approximately the full thickness of shoe lever.

3. Disengage clutch lift trip lever to trip clutch, permit trip lever to rest on shoe lever. Edge of shoe lever shall sit in center of slot in trip lever

E. Codebar Clutch
1. Disengage clutch. Endplay at maximum
.002
.008
.012

2. Endplay in latchlevers

3. Typing unit in stop condition. Trip lever shall engage shoe lever by approximately the full thickness of shoe lever

4. Disengage clutch lift trip lever to trip clutch, permit trip lever to rest on shoe lever. Edge of shoe lever shall sit in slot in trip lever.

F. Function Clutch
1. Disengage clutch. Endplay between clutch and collar at maximum
.002
.008

2. Typing unit in stop condition. Trip lever shall engage shoe lever by approximately the full thickness of shoe lever.

3. Disengage clutch. Lift trip lever to trip clutch, permit trip lever to rest on shoe lever. Edge of shoe lever shall sit in center of slot in trip lever.

G. Rear Rail
1. Power on. Perform carriage return. Power off. Release codebar clutch. Rotate main shaft until codebars are fully raised. Observe small portion of #1 codebar slide below right guide plate. Move carriage to right margin. Protruding portion of codebar must remain constant throughout carriage traverse.

H. Drive Bail
1. Power on. Perform carriage return. Power off. Release codebar clutch. Rotate main shaft until carriage drive bail reaches its rearmost position.

DEC FORM NO. DRA 108	SIZE	CODE	NUMBER	REV
	A	SP	LT33-0-6	A

SHEET 2 OF 4

ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLE ALIGNMENT/TEST PROCEDURE FOR TELETYPE MODEL		LT33 SERIES	
Clearance between print hammer bail and print hammer trip lever This clearance must remain constant as carriage is manually moved to right margin.		.015 .030	
I. Print Suppression Latch			
1. Place carriage approximately 1/2 inch from left margin. Set (--3-5-78) code in selector. Rotate main shaft until drive bail reaches rearmost position. Take up print suppression latchlever play to the right. Clearance between print suppression latch and print hammer bail		.015 .030	
J. Reader (Disregard on KSR units)			
1. Control lever in free position. Alternately hold and release armature to cycle sprocket and sensing pins through several positions. At each position:			
a. The sprocket pin shall be in line with sensing pins within		.002 max. .001 max.	
b. Sprocket backlash shall not exceed			
2. Control Lever In Free Position.			
a. Armature in attached position. Clearance between top surface of top plate to tip of each sensing pin in fully extended positions			
b. Armature in unattracted position. Clearance between tip of each sensing pin below top surface of top plate		.015 max.	
3. Tape lid closed. Tape lid latch must be centrally located in cut out of tape lid. Clearance between top plate and latch spring		.005 .030	
4. Armature in unattracted position.			
a. Clearance between feed pawl and ratchet with fine teeth between feed pawl and detent lever		.001 .008	
b. Clearance between blocking pawl and ratchet tooth		.001 .010	
K. Tape Punch (Disregard on KSR units)			
1. Check to insure punch driver arm assembly			
SIZE	CODE	NUMBER	REV
A	SP	LT33-0-6	A

DEC FORM NO
DRA 108

SHEET 3 OF 4

ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLE ALIGNMENT/TEST PROCEDURE FOR TELETYPE MODEL		LT33 SERIES	
is securely fastened to main rocker shaft.			
2. Power on. Manually rotate main shaft until function rocker shaft and stripper bail are in most forward positions. Take up rear roller play toward rear and tape nudger play in clockwise direction. Clearance between rear roller and highest point on tape nudger.		.070 .090	
3. Set all marking code in selector. Manually rotate main shaft until function rocker shaft and stripper bail are in rearmost position. There must be some clearance between rightmost sensing lever and its associated pawl.		.005 .020	
a. Clearance between left most sensing lever and its associated pawl			
b. Take up all play in stripper bail toward rear. Feed wheel in its fully detented position. Clearance between feed pawl and feed wheel ratchet tooth		.001 .005	
4. Position end of spring to lowest notch of arm with bushing. Perforate alternate R and hyphen codes in 8 inches of tape. Align #2 code hole of tape with first .072 hole on smooth side of gage TP156011. The four remaining .072 gage holes must be visible through corresponding #2 code holes in tape. The #2 code hole which corresponds with .86 gage hole must be entirely within the perimeter of that gage hole.			
TEST PROCEDURE			
Run the following tape using PDP8/S or PDP8/I processor:			
Combo Test - MAINDEC-08-D2TA			
(A) If failures occur run the following diagnostic pertaining to the particular area, that failed in the Combo Test, repair, re-run combo.			
Teleprinter Test		MAINDEC-08-D25A	
Binary Loader		DEC-8-2-U-RIM	
Punch Test		MAINDEC-08-D2QA	
Keyboard Test		MAINDEC-08-D2RA	
Reader Test		MAINDEC-08-D2PA	
(B) Unit is ready for shipment when Combo Test #MAINDEC-08-D2A makes one complete pass with no error typeouts.			
SIZE	CODE	NUMBER	REV
A	SP	LT33-0-6	A

DEC FORM NO
DRA 108

SHEET 4 OF 4

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 5/3/68

TITLE PACKING PROCEDURE FOR TELETYPE WRITERS LT33 SERIES

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGED ECO	LT33-00002	A KENT	7-6-71	Don Kent	26 July 71

DISREGARD READER AND PUNCH INSTRUCTIONS ON KSR UNITS.

1. Put reader clip in holder; reader pins in upward position as originally received.
2. Use one tie wrap to hold carriage at left margin.
3. Mount printer unit to fiberboard platform with the eight (8) mounting screws and three (3) studs, originally provided.
4. Put chad box and reader power pack as well as copy holder in the box provided.
5. ~~Fifty (50) extra~~ Teletypes should have transformer (if previously mounted) left in base stand.
6. The four (4) mounting screws that mount the printer to the base stand should be put in a bag along with the on/off knob and the platen knob and then tied to the base stand.
7. Teletype AC cable and signal cable should be placed on the plastic cover where paper roll normally goes and wrapped in kim pack.
8. Tape down printer cover, punch paper-roller, printer paper-roller and cables of item 7 above. Additional tape should be used to secure whole cover to base.
9. Make sure that there are three (3) thumbscrews that hold teletype cover on, and four (4) screws in the front of the machine, also a screw in reader cover and one (1) face-plate for each machine.

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ENG	APPD	SIZE	CODE	NUMBER	REV
<i>Don Kent</i>		A	SP	LT33-0-10	A

DEC FORM NO.
DRA 107

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 5/3/68

TITLE INSTALLATION PROCEDURE FOR TELETYPE MODEL LT33 SERIES

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGED ECO	LT33-000002	A. KENT	7-6-71	Allen Kent	26 July 71

DISREGARD READER AND PUNCH INSTRUCTIONS ON KSR UNITS.

1. Remove all tape holding covers and cables.
2. Remove the whole cover and in the reader, remove clip which holds reader pins in an upward position before turning machine on.
3. Mount power supply for reader on basic stand and plug connector cable in.
4. Remove the wrap being used to hold carriage at left hand margin.
5. Mount base to bottom of unit with screws provided.
6. Replace cover being sure that three (3) thumbscrews, four (4) panhead screws and one (1) special screw (for reader) are correctly installed before attaching face plate and knobs.

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ENG	APPD	SIZE A	CODE SP	NUMBER LT33-0-11	REV A
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DEC FORM NO.
DRA 107

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DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS									
ENGINEERING SPECIFICATION								DATE 3/18/71	
TITLE ASR33 TELETYPE INCOMING INSPECTION PROCEDURES AND ADJUSTMENTS									
REVISIONS									
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE			

ENG
W. Smith

APPD
W. Smith

SIZE
A

CODE
 SP

NUMBER
 LT33-0-13

REV

REC FORM NO.
 PRA 107

SHEET 1 OF 7

ENGINEERING SPECIFICATION				CONTINUATION SHEET	
TITLE ASR33 TELETYPE INCOMING INSPECTION PROCEDURES AND ADJUSTMENTS					
1.0 SCOPE This procedure outlines the procedures for inspection and acceptance of the ASR 33 Teletype. 1.1 These instructions specifically outline the requirements for DEC production standards and will be used as the basis for acceptance or rejection of vendor supplied equipment.					
2.0 EQUIPMENT REQUIRED 2.1 Feeler gauges type TTY #117781, DEC 29-12520 or similar. 2.2 DEC tape gauge type T18118. 2.3 Reader gauge type TTY #TP183103. ALL CHECKS ARE MADE WITH POWER OFF					
3.0 KEYBOARD Section 574-121-700TC, ISSUE 3, JUNE 1969, VOL. 2, Technical Manual Type ASR33 Teletypewriter 3.1 Universal lever clearance. (Ref. Page 21) 3.1.1 Minimum .014", maximum .058" clearance between latch lever and universal lever.					
4.0 TYPING UNIT Section 574-122-700TC, Issue 4, August 1969, Vol. 2, Technical Manual Type ASR33 Teletypewriter. * 4.1 Distributor shaft end play. (Ref. Page 11) 4.1.1 Minimum .001", maximum .012" clearance between left bearing and clutch gear assembly. * 4.2 Distributor clutch adjustment. (Ref. Page 13) 4.2.1 With clutch released, leading edge of trip lever should come approximately in the center of the shoe lever 4.2.2 With clutch latched, shoe lever should be minimum flush, maximum .015" beyond rearmost surface of trip lever.					

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SHEET 2 OF 7

ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLE ASR33 TELETYPE INCOMING INSPECTION PROCEDURES AND ADJUSTMENTS			
4.2.3 With clutch latched, advance distributor brush holder in its driving direction until it stops and releases. It should restore to normal position.			
4.3 Selector cam end play. (Ref. Page 18)			
4.3.1 Disengage selector clutch, move mainshaft toward the right, minimum .002", maximum .012" clearance measured between left end bearing and collar.			
* 4.4 Code bar and function clutch adjustment. (Ref. Pages 22 to 24)			
4.4.1 When disengaged, the upper surface of the trip lever and shoe lever should be approximately flush. When released, the leading edge of the shoe lever should come to the center of the notch on the trip lever.			
* 4.5 Selector clutch adjustment. (Ref. Page 27)			
4.5.1 When disengaged, the upper surface of the trip lever and shoe lever should be approximately flush. When released, the leading edge of the shoe lever should come to the center of the notch on the trip lever.			
* NOTE: When all clutches are adjusted, reverse the rotation of the mainshaft by hand, with all clutches latched. The mainshaft should rotate freely, if it does not, the clutch adjustments must be measured according to the teletype manual.			
4.6 Blocking lever adjustment. (Ref. Page 39)			
4.6.1 Set range finder to 72, set up an all marking code combination in selector. Release code bar clutch, cycle by hand, all code bars should go marking and a slight vertical movement of some blocking levers should occur as the code bars pass beneath the blocking levers.			
4.7 Print Suppression. (Ref. Pages 37 and 47)			
4.7.1 Print suppression latch horizontal clearance between right side of print suppression latch and print suppression code bar should be min. .001", max. .025" (machine in restored position.)			
4.7.2 Print suppression latch vertical clearance between upper part of print suppression latch and print suppression code bar should be min. .005", max. .020". (mach.in rest, pos			
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ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLEASR33 TELETYPE INCOMING INSPECTION PROCEDURES AND ADJUSTMENTS			
4.8 Carriage freedom of horizontal movement. (Ref. Page 51)			
4.8.1 The carriage should move freely side to side with no binding. Make any necessary roller and belt adjustments. (Ref. Pages 51, 52, 54 and 57)			
4.9 Rear rail adjustments. (Ref. Page 53)			
4.9.1 Set up number one code bar in marking position and move carriage side to side. There should be no visible difference between the number one shift slide and the right reset guide plate when in the right or left margins.			
4.10 Front rail and print hammer trip lever release adjustments. (Ref. Page 62)			
4.10.1 Clearance should be minimum .030", maximum .060" measured between print hammer trip lever and print bail.			
4.10.2 Adjustments should remain constant in both margins to within .010".			
4.11 Dash pot adjustment. (Ref. Page 80)			
4.11.1 Typing unit piston should return freely into the dash pot cylinder from any position when moved toward the right margin and released by hand.			
4.12 Line feed adjustments. (Ref. Pages 84 to 92)			
4.12.1 Set up a line feed code in the selector. Release the code bar and clutch. Cycle by hand, while holding the platen detent pawl away from the ratchet until the platen is fully advanced by the feed pawl. At this point slowly release the detent pawl into the ratched gear. There should be very little rotation of the ratched gear as the pawl seats into the gear.			
4.12.2 If adjustmens are necessary, refer to Pages 84 to 92.			
→ APPLY POWER ←			
4.13 Answer back mechanism, operation under power. (Ref. Pages 132 to 146)			
4.13.1 Turn on punch, press "here is" key, see that punch			
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ENGINEERING SPECIFICATION				CONTINUATION SHEET	
TITLE ASR33 TELETYPE INCOMING INSPECTION PROCEDURES AND ADJUSTMENTS					
punches blank tape. If not, refer to adjustments Pages 132 to 146.					
→ TURN POWER OFF ←					
5.0 READER					
Section 524-124-700TC, Issue 3, June 1969, Vol. 2, Technical Manual Type ASR33 Teletypewriter.					
5.1 Horizontal and vertical clearance between trip lever and armature extension. (Ref. Pages 6 and 7)					
5.1.1 With reader trip lever fully forward, clearance between reader trip lever and armature extension, should be minimum .008", maximum .020".					
5.1.2 With the armature held all the way down, clearance between reader trip lever and upper part of the armature, should be minimum .001", maximum .010" as the reader trip lever passes over the armature extension.					
5.2 Reader trip contacts. (Ref. Page 8)					
5.2.1 The clearance should be minimum .025", maximum .040" when measured between the contacts when they are open.					
5.3 Feed pawl and blocking pawl adjustments. (Ref. Pages 13 and 15)					
5.3.1 With the machine power on, energize reader armature by tripping reader trip solenoid. Insert FPL83103 Gauge between upstop bracket and upstop shoulder screw. Gauge should enter friction tight, if not follow Teletype Manual for adjusting sequence.					
5.3.2 With the reader in the rest position, the clearance should be minimum .001", maximum .008" when measured between the feed pawl and the ratchet tooth.					
5.3.3 With the reader in rest position the clearance should be minimum .001", maximum .003" when measured between blocking pawl and the ratchet tooth.					
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ENGINEERING SPECIFICATION				CONTINUATION SHEET	
TITLE ASR33 TELETYPE INCOMING INSPECTION PROCEDURES AND ADJUSTMENTS					
6.0 PUNCH					
Section 574-125-700TC, Issue 4, June 1969, Vol 2, Technical Manual Type ASR33 Teletypewriter.					
6.1 Sensing lever down stop.					
6.1.1 Check screws securing the punch drive arm assembly to the rocker shaft are tight.					
6.1.2 Push sensing levers down by hand, see that they limit on the down stop before they leave the guide post. Position guide post as required to attain this condition.					
6.2 Tape nudger adjustments. (Ref. Page 8)					
6.2.1 Manually rotate the main shaft until the tape nudger is in the fully driven position, the clearance between the tape nudger and the rear roller should be minimum .030" and maximum .080".					
6.3 Total punch operation in static state. (Ref. Pages 5 to 12)					
6.3.1 Put an all marking code in selector, cycle by hand until the feed pawl is fully rearward, at this point check the following:					
A. With the feed wheel ratchet fully detented, move the feed pawl out of engagement with the gear, release slowly and see that it re-enters the gear with no perceptable clearance.					
B. The clearance between the sensing levers and the function pawl should be minimum .005", maximum .020".					
6.3.2 Continue to cycle by hand until the punch drive link is fully forward. The clearance between the punch pin drive levers and the bottom surface of the punch die block assembly, should be minimum .017", maximum .037". (Ref. Page 9)					
6.3.3 Complete the cycle by hand, the clearance between the stripper bail and sensing pawl should be minimum .001", maximum .012". (Ref. Page 7)					
6.4 Turn the power on, punch some tape and check for proper registration with DEC tape gauge T18118.					
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ENGINEERING SPECIFICATION

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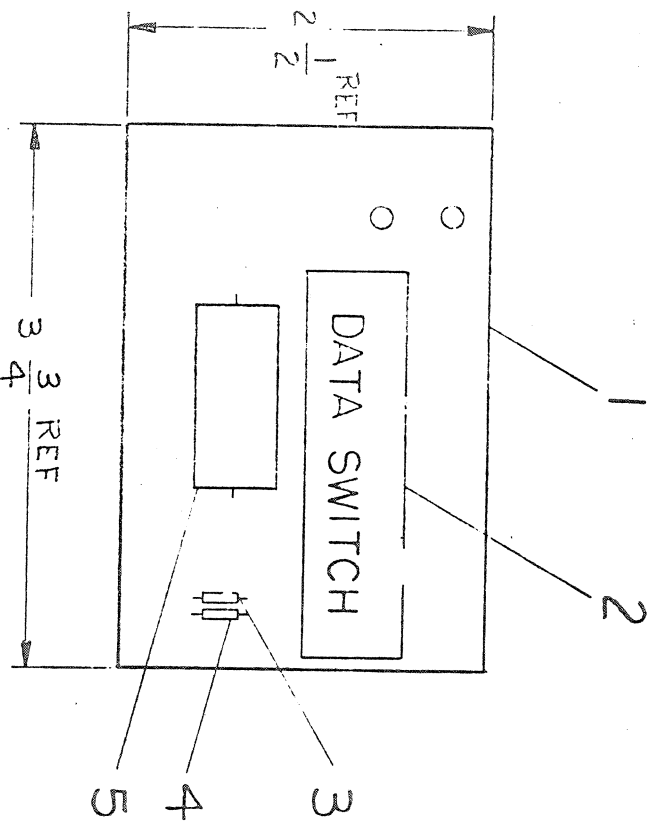
CONTINUATION SHEET

TITLE ASR33 TELETYPE INCOMING INSPECTION PROCEDURES AND ADJUSTMENTS

6.4.1 Adjust spring to obtain proper registration within one
half hole over entire gauge. (Ref. Page 12)

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REVISIONS		
CHK	CHANGE NO.	REV.
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REVISED & REDRAWN		
BY: [Signature]		
DATE: 3-20-65		

DEC FORM 100
DRB 100

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3

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REV. A 0-0-5164 B 2

REVISION

DATE

2

1

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
DRN.	FAY GEE	DATE	8-17-65
CHKD.	G. GRAHAM	DATE	8-18-65
ENG.	D. A. WHITE	DATE	8-20-65
PROD. ENG.	D. A. WHITE	DATE	3-20-65
PROD.	D. A. WHITE	DATE	8-20-65
TITLE			
TELETYPE READER			
CONTROL 4915			
UNLESS OTHERWISE SPECIFIED			
DIMENSION IN INCHES			
TOLERANCES			
DECIMALS FRACTIONS ANGLES			
± .005 ± 1/64 ± 0°30'			
FINAL SURFACE QUALITY			
REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL			
FINISH			
SCALE 1 OF 1			
SHEET 1 OF 1			
SIZE CODE			
B UA 4915-0-0			
NUMBER			
REV. A			