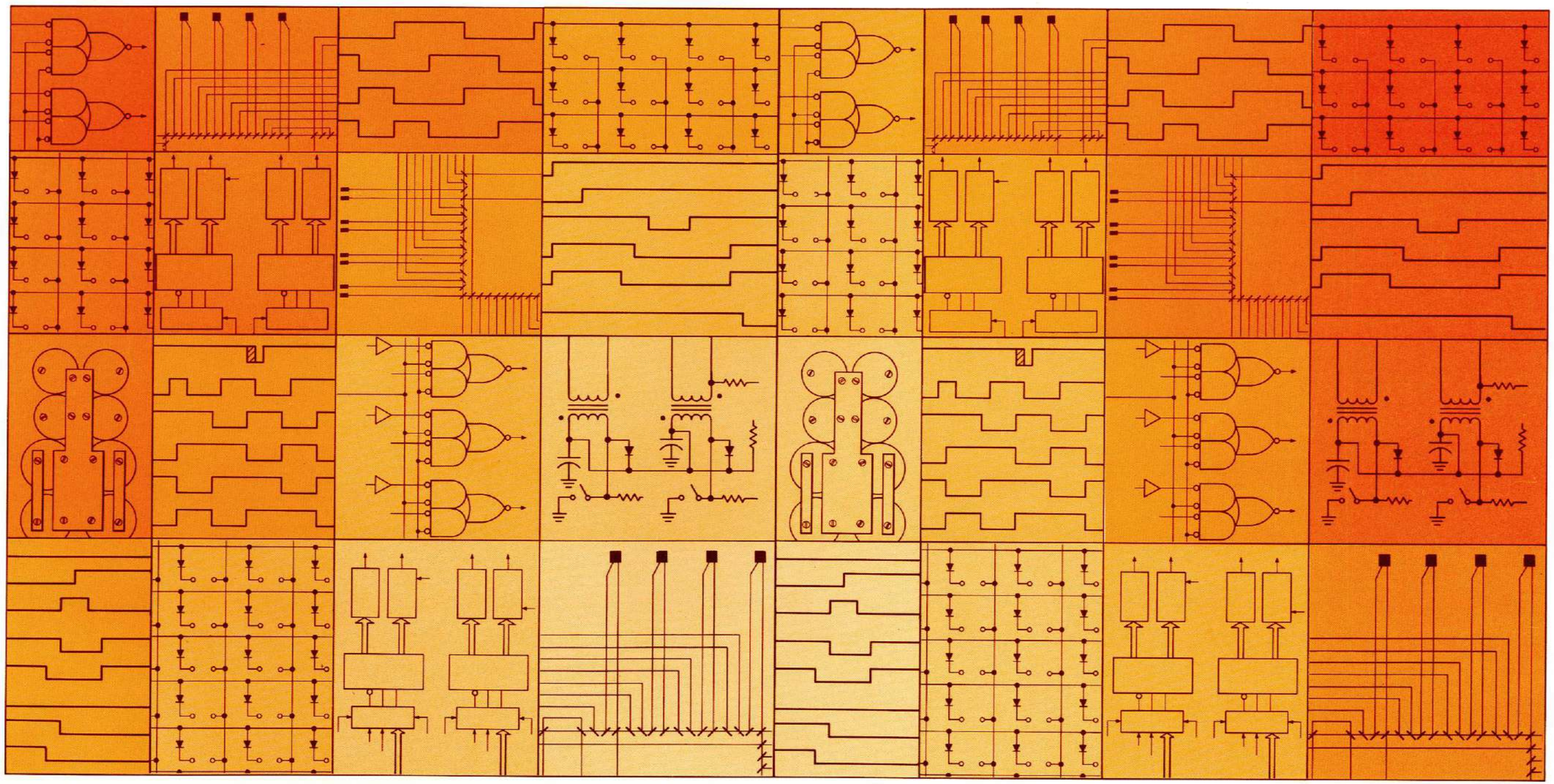
pdp8/e

pdp8/F & pdp8/m

TA8-Ø
cassette interface
engineering drawings



digital

TA8-Ø
cassette interface
engineering drawings

digital equipment corporation · maynard, massachusetts

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE	
DRAWING DIRECTORY	B-DD-TA8-Ø
PWR WIRING & CABLE CONF.	C-IC-TA8-Ø-1
CABINET CONFIGURATION	C-AR-TA8-Ø-Ø
PARTS LIST	A-PL-TA8-Ø-Ø
ACCESSORY LIST	A-AL-TA8-Ø-4
PARTS LIST	A-PL-TA8-E-Ø
INTERFACE MODULE	D-CS-M8331-Ø
CABLE I/O	C-UA-BCØ8R-Ø-Ø
CASSETTE SYSTEM INTERFACE	A-SP-TA8-Ø-3
DRAWING DIRECTORY	B-DD-TU6Ø-Ø
FIELD INSTALLATION AND ACCEPTANCE PROCEDURE	**A-SP-TA8-Ø-6**

THIS IS PRINT SET

UNIT VARIATIONS		PRINT SET TYPE
VARIATION	TITLE	1
TA8-AA	TA8-E + TU60-AA	X
TA8-AB	TA8-E + TU60-AB	X

REVISIONS			
REV	A	B	
CHG. NO.	TA8-1	TA8-2	
DATE	1/73	8/73	

USED ON OPTION/MODEL

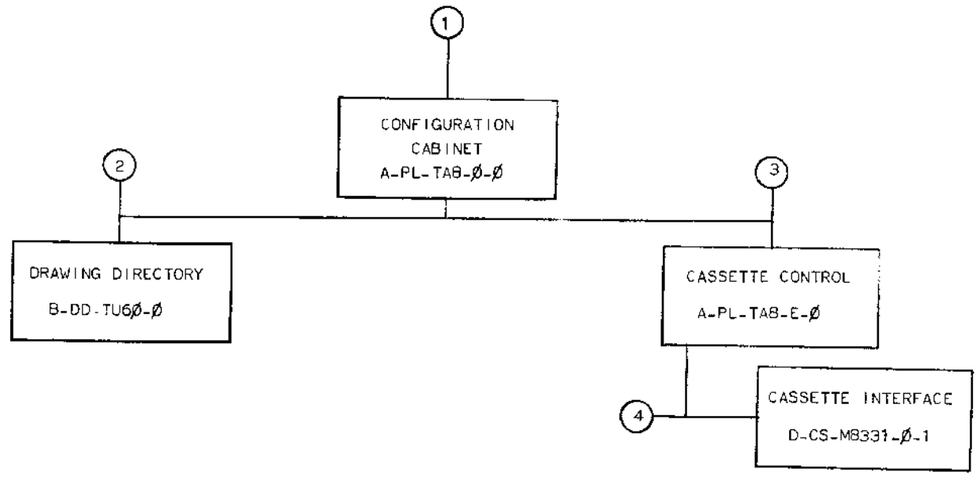
DRN. ROBICHAUD	DATE 7/22/72	TITLE CASSETTE SYSTEM
CHK'D. FERGUSON	DATE 8/31/72	
PROJ ENG.	DATE 9/17/72	
PROD.	DATE 9/[illegible]	
FIELD SERV.	DATE	
SHEET 1 OF 3		

SIZE	CODE	NUMBER	REV
B	DD	TA8-Ø	B

DIST

DRB 106

DEC 16-(325)-1062-1-NA71



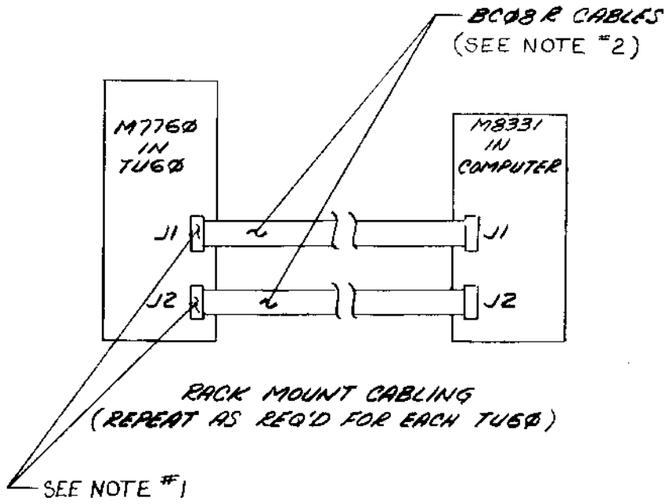
TITLE		SIZE	CODE	NUMBER	REV
CASSETTE SYSTEM (TA8-E)	SHEET 2 OF 3	B	DD	TA8-Ø	B

CUSTOMER PRINT SET	MFG SET	MECHANICAL FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
		1	C-[illegible]-TA8-Ø-Ø	P	1	CONFIGURATION CABINET	
			A-AL-TA8-Ø-4	B	1	CASSETTE SYSTEM	
			A-SP-TA8-Ø-3	B	7	CASSETTE SYSTEM INTERFACE	
X			A-SP-TA8-Ø-2	B	3	CHECKOUT PROCEDURE	
X			C-AR-TA8-0-0	B	1	CABINET CONFIGURATION	
X			C-4A-BC08-R-0-0	#	1	I/O CABLE	
C		2	B-DD-TU6Ø-Ø	#	6	DRAWING DIRECTORY	
X		3	A-PL-TA8-E-Ø	#	1	CASSETTE CONTROL	
X		4	D-CS-M8331-Ø-1	#	3	CASSETTE INTERFACE	
			B-MH-M8331-Ø-6		1	ECO MODULE HISTORY	
			D-AH-M8331-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
			K-CO-M8331-Ø-4		1	X-Y COOR. HOLE LOCATION	

CUSTOMER PRINT SET	MFG SET	ELECTRICAL FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X		1	C-IC-TA8-Ø-1	B	1	PWR WIRING & CABLE CONFIG.	
			A-SP-TA8-Ø-3	B	7	CASSETTE SYSTEM INTERFACE	
			A-SP-TA8-Ø-2	B	3	CHECKOUT PROCEDURE	
			A-SP-TA8-Ø-5	A	4	M8331 CHECKOUT PROCEDURE	
X			A-SP-TA8-Ø-6		7	FIELD INSTALLATION & ACCPT. PROC.	
			A-SP-TA8-Ø-7		7	IN-HOUSE F.S. ACCEPTANCE PROC.	
		2	B-DD-TU6Ø-Ø		5	DRAWING DIRECTORY	
		3	A-PL-TA8-E-Ø		1	CASSETTE CONTROL	
		4	D-CS-M8331-Ø-1		3	CASSETTE INTERFACE	
			B-MH-M8331-Ø-6		1	ECO MODULE HISTORY	
			D-AH-M8331-Ø-5		1	ASSY/DRILLING HOLE LAYOUT	
			K-CO-M8331-Ø-4		1	X Y COOR. HOLE LOCATION	

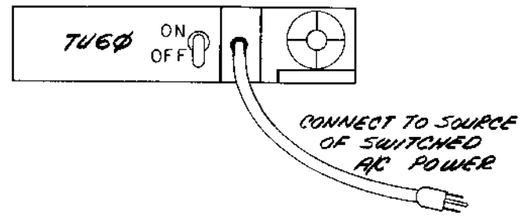
TITLE	SHEET	SIZE	CODE	NUMBER	REV
CASSETTE SYSTEM (TA8-E)	3 OF 3	B	DD	TA8-Ø	A

DRB 108



NOTES:

1. INSTALL CONNECTOR SO THE LETTERING ON THE CONNECTOR FACES DOWN.
2. ON EACH END OF CABLE, LABEL J1 OR J2 AND "THIS SIDE UP" AS REQUIRED.



A/C POWER WIRING

REV.	DWN	DATE	CHK'D	DATE
A	L.NARHI	4-15-73		
B	L.NARHI	5-24-73		

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TA8-E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DWN		DATE 7-25-72
CHK'D.		DATE
ENG.		DATE
PROJ ENG		DATE
PROD.		DATE 9-7-72

NEXT HIGHER ASSY.
E-LL-TA8-0

SCALE NONE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
POWER WIRING AND CABLE CONFIGURATION (TA8-E)

SIZE	CODE	NUMBER	REV
C	IC	TA8-0-1	B

DIST.

REV. B
NUMBER TA8-0-1
SIZE CODE C IC

NOTES:

1. ONE (1) M8331 (TA8-E) MODULE REQ'D FOR EACH TU60. FOR TWO (2) OR MORE TU60'S, CHANGE IOT CODES PER DRAWING D-CS-M8331-0-1 FOR EACH TU60 BEYOND #1
2. TWO (2) BC08R-10 CABLES REQ'D PER TU60.
3. ~~FOR TABLE-TOP TU60'S ONE (1) 7003620 IS REQ'D PER TU60.~~

	TU60 #6
	TU60 #5
	TU60 #4
	TU60 #3
TU60 #8	TU60 #2
TU60 #7	TU60 #1
	COMPUTER PDP8/E, FORM
	EXPANDER BOX

FRONT VIEW

FIRST USED ON OPTION/MODEL: TA8-E	QTY.	DESCRIPTION: PARTS LIST	PART NO. / ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES. DECIMALS: XXX ± .005, XX ± .02, X ± 1. ANGLES: ± 0° 30'. REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓	DRN.	DATE 7-25-72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D.	DATE 9-1-72	
	ENG. M. Marden	DATE 9-1-72	TITLE: CONFIGURATION, CABINET (TA8-E)
	PROJ. ENG. Tony Hahn	DATE 9-1-72	
	PROD. M D Grey	DATE 9-5-72	
MATERIAL: —	NEXT HIGHER ASSY. TA8-0		SIZE C / CODE AR / NUMBER TA8-0-0 / REV. B
FINISH: —	SCALE NONE		
	SHEET 1 OF 1		DIST.

REV.			
A	TA8-00001	L NARHI	7-18-72
B	TA8-00002	L NARHI	8-9-73

REV. B | SIZE C / CODE AR | NUMBER TA8-0-0

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	L.NARHI	CHECKED	SECTION 1
DATE	7/6/72	DATE	
ENG	L.NARHI	PROD MD	ISSUED SECT. 1
DATE	7/6/72	DATE 8/-/-	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY VARIATION TA8-AA	TA8-AB	~~TA8-BA~~	~~TA8-BB~~
1	C-UA-BCØ8R-1Ø-Ø	I/O CABLE (BCØ8R)	2	2	-	-
~~2~~	~~D-IA-7008624-Ø-Ø~~	~~CABLE, CASSETTE DATA~~	~~-~~	~~-~~	~~1~~	~~1~~
3	D-UA-TU6Ø-AA-Ø	CASSETTE, DUAL DRIVE				
		RACK MOUNTABLE, 115V	1	-	-	-
4	D-UA-TU6Ø-AB-Ø	CASSETTE, DUAL DRIVE				
		RACK MOUNTABLE, 230V	-	1	-	-
~~5~~	~~D-UA-TU6Ø-BA-Ø~~	~~CASSETTE, DUAL DRIVE~~				
		~~TABLE TOP, 115V~~	~~-~~	~~-~~	~~1~~	~~-~~
~~6~~	~~D-UA-TU6Ø-BB-Ø~~	~~CASSETTE, DUAL DRIVE~~				
		~~TABLE TOP, 230V~~	~~-~~	~~-~~	~~-~~	~~1~~
7	A-PL-TA8-E-Ø	CASSETTE CONTROL (M8331 FOR TU60)	1	1	~~1~~	~~1~~

TITLE: CONFIGURATION CABINET (TA8-E)	ASSY NO. C-AR-TA8-Ø-Ø	SIZE A	CODE PL	NUMBER TA8-Ø-Ø	REV. B	ECO NO. TA8-00002
	SHEET 1 OF 1	DIST. G				

DEC FORM DRA 110 DEC 16-(325)-1031-N870

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY L.NARHI DATE 7-6-72	CHECKED DATE	SECTION 1
ENG L.NARHI DATE 7-6-72	PROD M.D.CONROY DATE 9-7-72	ISSUED SECT. 1

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	QUANTITY/VARIATION TA8-AA	TA8-AB						KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	LIBKIT-Ø8-TA8EA-A-K	CASSETTE MAINDECS	1	1							
2	DEC-ØØ-TU6Ø-DB	TU6Ø, MAINTENANCE MANUAL	1	1							
3	DEC-8E-HR3B-D	PDP 8/E MAINTENANCE MANUAL - VOL 3	1	1							
4	36-11226	DEC 15Ø CASSETTES	2	2							
5	B-DD-TA8-Ø	TA8-Ø PRINT SET	1	1							
6	M8331	TA [illegible] INTERFACE MODULE	1	1							
7	BCØ8R-1Ø	INTERFACE CABLES	2	2							
8	D-UA-TU6Ø-Ø-Ø	MOUNTING HARDWARE	1	1							
9	74-1Ø69Ø	SHIPPING BRACKET	1	1							
10	12Ø9154	CHASSIS SLIDES	1	1							
	NOTE: SHIP ITEM 11	IN LIEU OF ITEM 3 UNTIL THIS MANUAL BECOMES IN									
	ITS FINAL FORM A PART OF THE PDP-8E MAINTENANCE MANUAL VOL. 3										
11	DEC-8E-HR3B-D-TA8-E	TA8-E MAINTENANCE MANUAL	1	1							

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
CASSETTE SYSTEM	SHEET 1 OF 1	A	AL	TA8-Ø-4	B	TA8-00002
		DIST.				

DEC 16-(325)-1075-N172 DRA 121

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J.FERGUSON DATE 8/24/72	CHECKED DATE	SECTION 1
ENG Larry Martin DATE 9/1/72	PROD M Powers DATE 9/1/72	ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-CS-M8331-Ø-1	CASSETTE INTERFACE	1

TITLE CASSETTE CONTROL (M8331) FOR TU60	ASSY NO. SHEET 1 OF 1	SIZE A	CODE PL	NUMBER TA8-E-Ø DIST.	REV. / ECO NO.

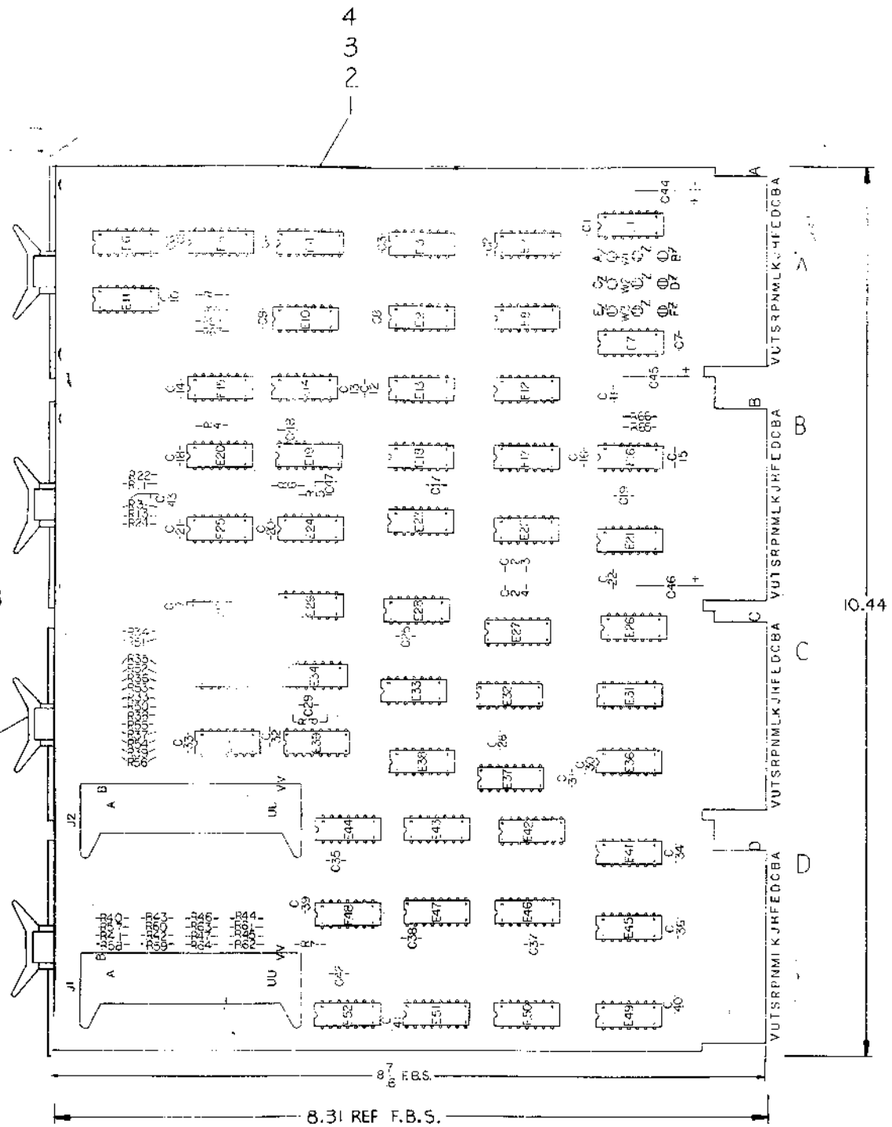
DEC FORM DEC 16-(325)-1031-N870
DRA 110

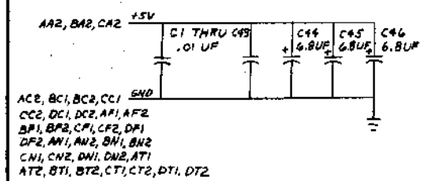
NOTES:

1. TO CHANGE IOT CODES ARRANGE JUMPERS PER TABLE BELOW:

IOT CODE	JUMPERS A	B	C	D	E	F
70	X		X		X	
71	X		X			X
72	X			X	X	
73	X			X		X
74		X	X		X	
75		X	X			X
76		X		X	X	
77		X		X		X

AN X INDICATES A JUMPER INSTALLED AT THAT LOCATION





384	1	8
6380	1	8
6314	1	8
74123	8	16
7442	8	16
8235	8	16
8271	8	16
IC TYPE	GND	+5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

DRAWING 40-522, 1688

DEC FORM NO. DRD-135A

ITEM NO.	QTY	REF DESIGNATION	DESCRIPTION	PART NO.
34	4		HANDLE, FLIP CHIP (MAGENTA)	9008387-06
33	8		EYELET	9006750
32	9		SPLIT LUG	9006735
31	4		SPACER	1202704
30	1	E19	DEC IC 74123	1910436
29	2	E4, E27	DEC IC 7442	1910046
28	10	E17, E21, E22, E23, E26, E29, E30, E44, E48, E49	DEC IC 9740I	1909973
27	1	E1	DEC IC 6314	1909972
26	6	E6, E7, E24, E33, E36, E41	DEC IC 6380	1909971
25	2	E37, E42	DEC IC 8235	1909935
24	2	E10, E25	DEC IC 7417	1909929
23	1	E20	DEC IC 8881	1909705
22	5	E12, E15, E28, E31, E50	DEC IC 7404	1909686
21	4	E32, E39, E47, E51	DEC IC 8271	1909615
20	8	E11, E16, E35, E38, E40, E43, E45, E52	DEC IC 384	1909486
19	1	E5	DEC IC 7440	1905579
18	1	E18	DEC IC 7420	1905577
17	1	E2	DEC IC 7410	1905576
16	5	E3, E8, E9, E34, E46	DEC IC 7400	1905575
15	2	E13, E14	DEC IC 7474	1905547
14	18	R11, R13, R33 THRU R47, R66	RES., 180, 1/4W, 5%	1301322
13	2	R5, R6,	RES., 10K, 1/4W, 5%	1300479
12	7	R1, R2, R4, R7, R8, R67, R68	RES., 3K, 1/4W, 5%	1300432
11	18	R22, R24, R50 THRU R65	RES., 390, 1/4W, 5%	1300309
10	1	R3	RES., 47, 1/4W, 5%	1300202
9	2	J1, J2	CONN, RIGHT ANGLE HEADER	1209941
8	43	C1 THRU C43	CAP., .01UF, 100V, 20%	1001610
7	3	C44, C45, C46	CAP., 6.8UF, 35V, 20%	1000067
6	1	C47	CAP., 100 PF, 100V, 5%	1000016
5	1	C48	CAP., 10PF, 100V, 5%	1000006
4	1		ETCHED CIRCUIT BOARD	50/0015
3	REF		ECO MODULE HISTORY	B-MH-M8331-0-6
2	REF		ASSY/DRILL HOLE LAYOUT	D-AH-M8331-0-5
1	REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8331-0-4

PARTS LIST

ETCH BOARD REV B

FIRST USED ON OPTION MODEL TA8-E

REV	CHANGE NO.	DATE	BY
E	M8331-00004	6/28/72	L. NARHI
D	M8331-00003	5/17/73	L. NARHI
C	M8331-00002	1-12-73	L. NARHI
B	M8331-00001	9/20/72	L. NARHI
A	INITIATED		

DEC NO. EIA NO. DEC NO. EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN. S. Roberts DATE 9/5/72
CHK'D. DATE
ENG. Larry Marker DATE 9-7-72
PROJ. ENG. Larry Marker DATE 9-7-72
PROD. M D Gray DATE 9-7-72
NEXT HIGHER ASSY
SCALE NONE
SHEET 1 OF 3

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
CASSETTE INTERFACE

SIZE D | CODE DCS | NUMBER M8331-0-1 | REV. E

DIST.

MD Ø3 L API
MD Ø4 L AK1
MD Ø5 L BL1
MD Ø6 L BM1
MD Ø7 L BP1
MD Ø8 L DK1
I/O PAUSE L CD1
B PAUSE (L)
SELECT H
WRITE LOCK H
EOT/BOT L
END FILE L
CSI SKIP L
INT RQST L
INT ENA H
TIM ENB L
CRC/BLK ERR L
DRIVE EMPTY L
TRANSFER RQST L
+5V
R4 3K
ENABLE "A" H
B PAUSE(L)
NOT LAST XFER L
BUS STROBE L (CK)
IOT 4 · TP3 (L)
IOT 4 H
WRITE STATUS L
J2-J
READY L
J2-L
END L
REW L
J2-N
J2-R START L
J2-V TRANSFER L
WRITE DATA ENA H
READ DATA ENA L
TP2 H CE2
READ L
LOAD R/W BUFFER L
INITIALIZE L (TO TU60)
J1-DD REWIND CMD L
READ/WRITE J2-C
J1-R WRITE MODE L
J1-BB BACK FILE GAP L
J2-F READ/WRITE FILE GAP L
J1-N BACK BLOCK GAP L
MD Ø9 L DL1
MD 10 L DM1
MD 11 L DP1
IOT 7 L
IOT 6 (L)
INITIALIZE H CR1
TP3 H CH2
LOAD STATUS A L
CLEAR ALL L
FRQ H L3
FR1 H L4
FR2 H L5

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV

REV	CHANGE NO.	DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

		DATE
DRN.		
CHK'D.		
ENG.	Terry Shaler	9-1-72
PROJ. ENG.	Terry Shaler	
PROG.		
NEXT HIGHER ASSY		
SCALE		
SHEET	OF	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CASSETTE INTERFACE

SIZE	CODE	NUMBER	REV.
D	DCS	M8351-0-1	E

DIST.

DEC FORM NO. DRD-155

DRIVE B L
SELECT ENABLE L
INT ENA H
FR1 H
FR2 H
ENABLE "A"
SELECT H
LOCAL STATUS A L
CLR ALL L
IOTT L
REAL DATA ENA L
CRC/BLK ERR L
TIM ERR L
EOT /BOT L
END FILE L
EOF L
EOT/BOT L
TIMING ERR L
CRC/BLK ERR L
R/W#5 L
R/W#6 L
R/W#7 L
R/W#8 L
R/W#1 L
R/W#2 L
R/W#3 L
R/W#4 L
READ L
IOT 6 L
DVI
DATA11 L
DATA10 L
DATA09 L
DATA08 L
WRITE LOCK H
REW L
DRIVE EMPTY L
END L
WRITE DATA ENA H
LOAD R/W BUFFER L
WRITE LOCK OUT L
REWIND L

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO	ITEM NO.
TA8/E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS XXX ± .005, XX ± .02, X ± .1 — ANGLES ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN MK — DATE 7-31-72
CHK'D — DATE
ENG — DATE 9-1-72
PROJ. ENG. — DATE 9-1-72
PROD — DATE 9-7-72
NEXT HIGHER ASSY —

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CASSETTE INTERFACE

SIZE D | CODE | NUMBER M8331-0-1 | REV E
SCALE —
SHEET 3 OF 3 | DIST

DCS M8331-0-1 REV E

WIRE TABLE

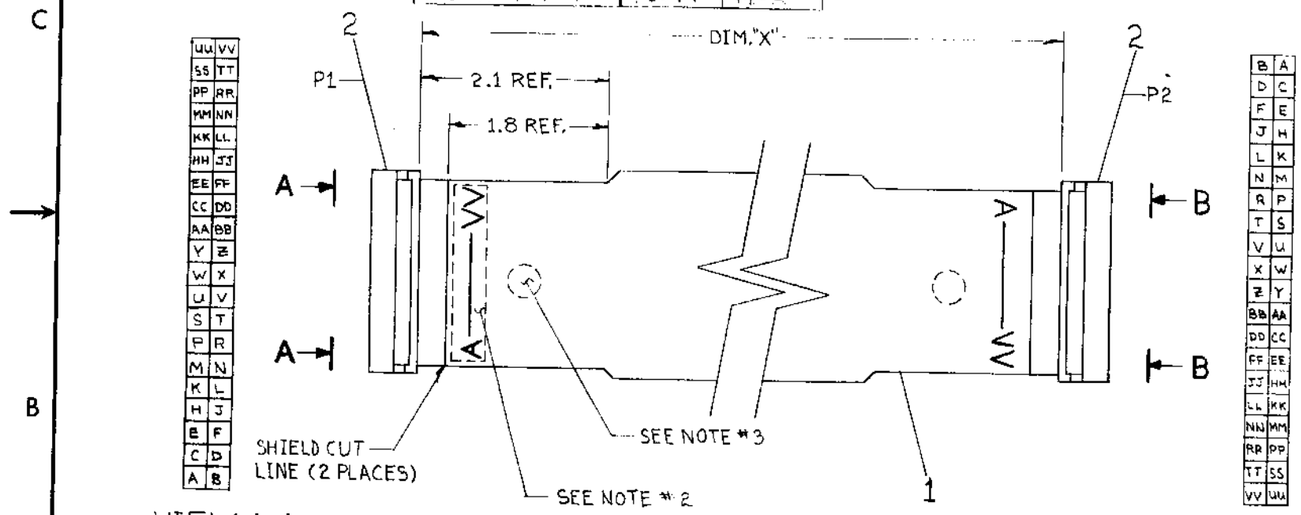
FROM	TO	FROM	TO
P1-A	P2-VV	P1-Y	P2-X
P1-B	P2-UU	P1-Z	P2-W
P1-C	P2-TT	P1-AA	P2-V
P1-D	P2-SS	P1-BB	P2-U
P1-E	P2-RR	P1-CC	P2-T
P1-F	P2-PP	P1-DD	P2-S
P1-H	P2-NN	P1-EE	P2-R
P1-J	P2-MM	P1-FF	P2-P
P1-K	P2-LL	P1-HH	P2-N
P1-L	P2-KK	P1-JJ	P2-M
P1-M	P2-JJ	P1-KK	P2-L
P1-N	P2-HH	P1-LL	P2-K
P1-P	P2-GG	P1-MM	P2-J
P1-R	P2-FF	P1-NN	P2-H
P1-S	P2-EE	P1-PP	P2-F
P1-T	P2-DD	P1-RR	P2-E
P1-U	P2-BB	P1-SS	P2-D
P1-V	P2-AA	P1-TT	P2-C
P1-W	P2-ZZ	P1-UU	P2-B
P1-X	P2-YY	P1-VV	P2-A

LEGEND

NUMBER	DIM"X"	PRECUT LENGTH
BCØ8R-Ø1	1FT	1FT 1.5IN ±1IN
BCØ8R-Ø2	2FT	2FT 1.5IN ±1IN
BCØ8R-Ø3	3FT	3FT 1.5IN ±1IN
BCØ8R-Ø4	4FT	4FT 1.5IN ±1IN
BCØ8R-Ø6	6FT	6FT 1.5IN ±2IN
BCØ8R-Ø8	8FT	8FT 1.5IN ±2IN
BCØ8R-10	10FT	10FT 1.5IN ±2IN
BCØ8R-12	12FT	12FT 1.5IN ±2IN
BCØ8R-2Ø	20FT	20FT 1.5IN ±2IN
BCØ8R-25	25FT	25FT 1.5IN ±3IN
BCØ8R-3Ø	30FT	30FT 1.5IN ±3IN
BCØ8R-4Ø	40FT	40FT 1.5IN ±4IN
BCØ8R-5Ø	50FT	50FT 1.5IN ±4FT
BCØ8R-75	75FT	75FT 1.5IN ±4FT
BCØ8R-AØ	100FT	100FT 1.5IN ±4FT
BCØ8R-A3	130FT	130FT 1.5IN ±4FT
BCØ8R-A6	160FT	160FT 1.5IN ±4FT

NOTES:

1. ASSEMBLE THIS CABLE PER PROCESS SPEC #7606485-0-0.
2. CONNECTOR LEGEND IDENTIFICATION TO BE PLACED ON SHIELD SIDE OF CABLE IN THIS AREA AS SHOWN.
3. INSPECTION & TEST STAMPS TO BE PLACED AT EACH END OF THE CABLE ASSEMBLY.



VIEW A-A
CONN. LEGEND REF.

VIEW B-B
CONN. LEGEND REF.

QTY.	DESCRIPTION	PART NO.	ITEM NO.
2	CONNECTOR, 40 SOCKET	1211206	2
A/R	CABLE, 40 COND. FLAT W/SHIELD	1700004	1

PARTS LIST

FIRST USED ON OPTION/MODEL

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: .xxx = .005, .xx = .02, .x = .1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √
MATERIAL
FINISH

	NAME	DATE
DRN.	D.FONTAINE	8-28-70
CHK'D.	J.FLEMING	8-28-70
ENG.	P.GARDNER	9-3-70
PROJ. ENG.	P.GARDNER	9-3-70
PROD.	DONALD	9-4-70

NEXT HIGHER ASSY.
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
BCØ8R
I/O CABLE

SIZE	CODE	NUMBER	REV.
C	UA	BCØ8R-0-0	J

DIST.

REVISIONS	CHANGE NO	REV.
CHK	BCØ8R-00004	J
	REVISED & REDRAWN	
	P.GARDNER	9-16-73

SIZE C CODE UA NUMBER BCØ8R-0-0 REV. J

DEC FORM NO DRC 100-B

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 8/21/72

TA8-E CASSETTE SYSTEM INTERFACE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	CHANGE PER ECO	TA8-00001	NARHI	12/72	[illegible]	1/14
B	CHANGE PER ECO	TA8-00002	NARHI	8/73	[illegible]	9/31/73

ENG	APPD	SIZE	CODE	NUMBER	REV
Larry Narhi	[illegible]	A	SP	TA8-Ø-3	B

DEC FORM NO. DRA 107

1. Overall Description

The TA8-E is an interface between a PDP8/E, M or F computer and the TU6Ø cassette drives. The tape format is: 8-bit serial word, programmable block length, and up to 92K, (see graph at end of spec.) 8-bit words per cassette cartridge of the Phillips type.

2. General Description

2.1 The basic system consists of one TU6Ø (Dual Drive) and one interface module, the M8331, and interface cables 2-BCØ8R-10.

2.2 Two cassette drives are contained in one chassis.

The cassette system, TA8-E, has the following variations:

TA8-AA - M8331 module & TU6Ø-AA, Rack Mount, 115VAC
TA8-AB - M8331 module & TU6Ø-AB, Rack Mount, 23ØVAC

Jumpers on the interface card can be arranged to select IOT codes 7Ø through 77. Code 7Ø for the first TU6Ø, and code 77 for the eighth, or last TU6Ø.

2.3 The entire interface is contained on one 8½" quad module.

2.4 Operating temperature is Ø° to 55°C and 15% to 90% relative humidity, non-condensing. Power required is +5.Ø volts at 2.4 amps for the M8331, and 1.5 amp at 12ØVAC for the TU6Ø drive.

3. Specifications of Vendor Supplied Equipment

See purchase spec for applicable board components.

4. Programming

4.1 The IOT codes for the TA8-E are as follows:

Mnemonic	Octal	Function
KCLR	67XØ	Clear all. Clears Status A and B registers. See note below.
KSDR	67X1	Skip on Data flag, for either a read or a write.
KSEN	67X2	Skip on, EOT/BOT or EOF or Drive Empty or Timing Error, Block Error or Write Lock and "Write" True.
KSBF	67X3	Skip on Ready Flag.
KLSA	67X4	Load Status A from AC 4-11, clear AC, load complement Status A back into AC.
KSAF	67X5	Skip on any flag or error condition.
KGOA	67X6	Assert the contents of Status A, transfer data into the AC for a read, out of the AC into the Read/Write buffer for a write. This command has three functions: a) Causes the command in Status A register to be executed by the TU6Ø; b) For a Read command the first KGOA causes the tape to start moving, then upon receipt of the data flag, the second KGOA loads the first byte into the AC; c) For a write command, Status A is set up for a Write, the AC is loaded with the first byte to be written and then KGOA is issued which causes the tape to move and to write the first byte on tape.
KRSB	67X7	Read Status B into AC 4-11.

Status A register definition:

AC Bit	Function
11	Enable Interrupts
1Ø	Not used
Ø9	Not used
Ø8, Ø7, Ø6	Function Register
Ø5	Drive B Ø=A, 1=B
Ø4	Select Enable

NOTE: Upon selection of a drive, "Ready" and "EOT/BOT" flags will appear in Status B. EOT/BOT will only appear obviously, if the tape is at EOT or BOT.

Function Register

ØØØ - Read
ØØ1 - Rewind
Ø1Ø - Write
Ø11 - Backspace to File Gap
1ØØ - Write Gap
1Ø1 - Backspace Block Gap
11Ø - Read/Write CRC Character
111 - Space Forward File Gap

Status "B" Register Definition:

AC Bit	Function
11	Ready flag
1Ø	Write lock out
Ø9	Rewind
Ø8	Drive empty
Ø7	End of file flag
Ø6	EOT/BOT
Ø5	Timing Error
Ø4	CRC/Block error

4.2 There are no maintenance instructions.

Error Flags: These will appear at the end of the block if true, but timing error flag will be raised when it occurs. Error flags are cleared by KGOA.

Drive Empty: The bit in Status B will be a one if there is no cassette in the drive. The skip and interrupt tests will occur if the drive is empty.

EOT/BOT: This flag will be true whenever the optical sensors have detected clear leader/trailer. Bit is held false for 125 ms after a motion command to allow tape to move off clear leader/trailer.

Rewind: Will remain true as long as drive is rewinding and is selected.

Write Lock Out: Bit is true in Status B if tab is missing on cassette or the Drive is empty or Drive is rewinding. Bit will not interrupt or skip unless attempting a Write command.

Ready Flag: This bit is asserted in Status B when a drive is selected and is able to accept commands from the interface. This bit is false when commands are being executed.

Data Flag: This flag appears for every byte including the two CRC bytes. Flag is cleared by KGOA. Flag timing averages 1.78 ms per flag.

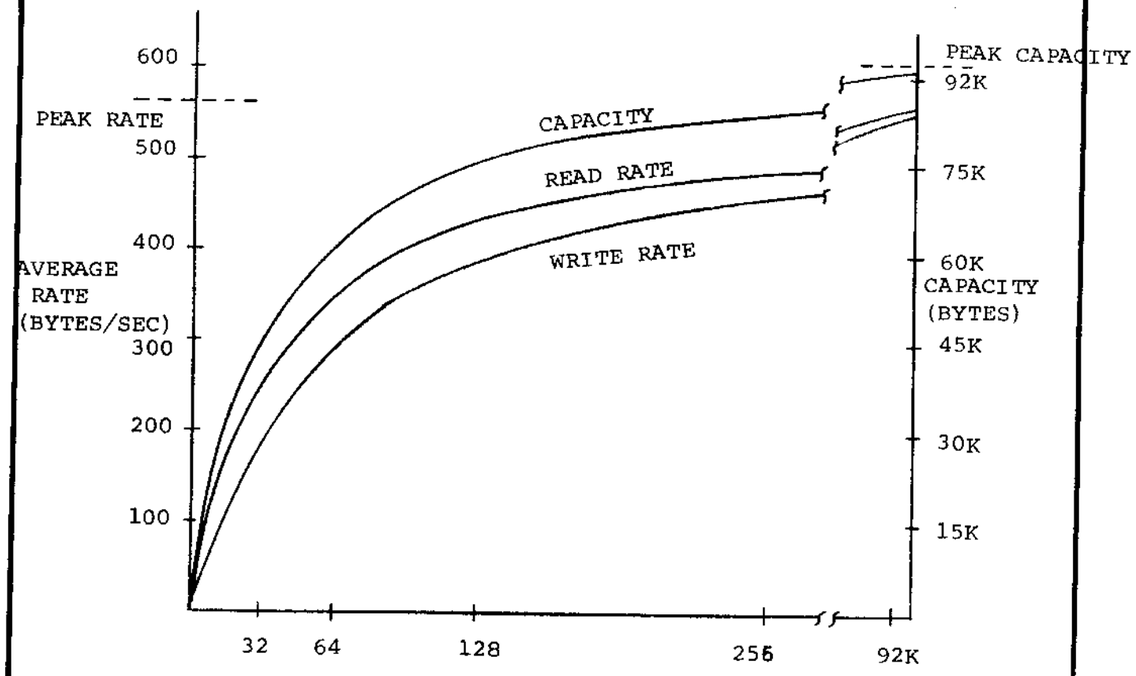
4.5 There are no operator controls on the interface.

5. Interface Specifications

All signals leaving the interface going to the cassette drives are open collector Nand gates type 97401. All signals from the cassette drives are received with Untilogic gates type SP380 or equivalent. Both drivers and receivers are terminated with a 390 ohm resistor to ground and a 180 ohm resistor to +5.0 volts, at the interface end only.

The one exception is "START". This line has a 390 ohm resistor to ground at the interface and a 180 ohm resistor at the TU6Ø, to +5 volts.

All signals to and from the cassette drive are low true levels including Status B bits. The only exception is the Read/Write level. Read is true when the level is at +3 volts. Write is true when the level is at Ø volts.


600
PEAK RATE
500
400
AVERAGE RATE (BYTES/SEC)
300
200
100
CAPACITY
READ RATE
WRITE RATE
PEAK CAPACITY
92K
75K
60K
CAPACITY (BYTES)
45K
30K
15K
32
64
128
256
92K
BLOCK LENGTH (BYTES/BLOCK)

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE	
DIRECTORY	B-DD-TU6Ø-Ø
TU6Ø LOGIC (M776Ø)	D-CS-M776Ø-Ø-1
READ/WRITE AND SERVO (M7761)	D-CS-M7761-Ø-1
TERMINATOR, CASSETTE DRIVE	D-CS-5410135-0-1
H751 POWER SUPPLY	B-DD-H751-Ø
CASSETTE DRIVE WIRING DIAGRAM	D-WD-TU6Ø-Ø-WD
TU6Ø UNIT ASSEMBLY	D-UA-TU6Ø-Ø-Ø
TU6Ø UNIT ASSEMBLY	A-PL-TU6Ø-Ø-Ø
TRANSPORT ASSEMBLY (TU6Ø)	D-AD-7009014-0-0
TRANSPORT ASSEMBLY (TU6Ø)	A-PL-7009014-0-0
BASE ASSEMBLY	D-IA-7410640-0-0
SWITCH ASSEMBLY	D-AD-7009141-0-0
SPINDLE ASSEMBLY	C-AD-7009146-0-0
MOTOR MOUNT ASSEMBLY	C-AD-7009140-0-0
DRIVE MOTOR ASSEMBLY	C-IA-7009139-0-0
LEVER ASSEMBLY	C-AD-7009148-0-0

THIS IS PRINT SET [X]

UNIT VARIATIONS

VARIATION	TITLE	PRINT SET TYPE: TU6Ø-Ø
TU6Ø-AA	TU6Ø UNIT ASSY (115V)	X
TU6Ø-AB	TU6Ø UNIT ASSY (23ØV)	X

REVISIONS			
REV	A		B
CHG. NO.	TU50-07		TU60-12
DATE	2/73		8/73

USED ON OPTION/MODEL

DRN. W. MAJOR	DATE 1/9/73	TITLE TU6Ø DECASSETTE
CHK'D. W Major	DATE 1/17/73	
PROJ ENG.	DATE 1/18/73	
PROD.	DATE 1/18/73	SIZE B / CODE DD / NUMBER TU60-0 / REV D
FIELD SERV.	DATE 1/18/73	
SHEET 1 OF 4		DIST

DRB 106

1 — TU6Ø UNIT ASSY
D-UA-TU6Ø-Ø-Ø

2 — TRANSPORT ASSY (TU6Ø)
D-AD-7009014-0-0

3 — BASE ASSY
D-IA-7410640-0-0

4 — COVER, LOWER CASSETTE ASSY
C-IA-7409924-0-0

5 — EJECTOR ASSY
C-IA-7409930-0-0

6 — SWITCH ASSY
D-AD-7009041-0-0

7 — SPINDLE ASSY
C-AD-7009146-0-0

8 — PULLEY, DRIVE ASSY
C-IA-7409914-0-0

9 — MOTOR MOUNT ASSY
C-AD-7009140-0-0

10 — DRIVE-MOTOR ASSY
C-IA-7009139-0-0

11 — LEVER ASSY
C-AD-7009148-0-0

12 — ROCKER ASSY
C-IA-7409919-0-0

13 — TERMINATOR CABLE ASSY
D-IA-7009141-0-0

14 — CARD FRAME ASSY
D-IA-7410604-0-0

15 — BEZEL ASSY
D-IA-7410556-0-0

16 — LOGO (TU6Ø)
B-IA-7410691-0-0

17 — TU6Ø LOGIC
D-CS-M776Ø-Ø-1

18 — READ/WRITE AND SERVO
D-CS-M7761-Ø-1

19 — H751 POWER SUPPLY
B-DD-H751-Ø
D-UA-H751-Ø-Ø

20 — LINE SET
B-DD-BCØ5H-Ø
C-UA-BCØ5H-Ø-Ø

LINE SET
B-DD-BCØ5J-Ø
C-UA-BCØ5J-Ø-Ø

TITLE		SIZE	CODE	NUMBER	REV
TU6Ø DECASSETTE	SHEET 2 OF 4	B	DD	TU6Ø-Ø	B

ELECTRICAL

CUSTOMER PRINT SET									
			SET MFG	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X				1	D-WD-TU6Ø-Ø-WD		1	CASSETTE DRIVE WIRING DIAGRAM	
X				13	D-IA-7009041-0-0		1	TERMINATOR CABLE ASSY	
					D-CS-5410135-0-1		2	TERMINATOR,CASSETTE DRIVE	
X				17	D-CS-M776Ø-Ø-1		4	TU6Ø LOGIC	
X				18	D-CS-M7761-Ø-1		5	READ/WRITE AND SERVO	
C				19	B-DD-H751-Ø		3	H751 POWER SUPPLY	
					D-UA-H751-Ø-Ø		2	H751 POWER SUPPLY	
					E-IA-5310191-0-0		1	CHASSIS,POWER SUPPLY	
				20	B-DD-BCØ5H-Ø		3	LINE SET	
					C-UA-BCØ5H-Ø-Ø		1	LINE SET BCØ5H (115V)	
					C-UA-BC05J-Ø-Ø		1	LINE SET BCØ5J (230V)	

MECHANICAL

CUSTOMER PRINT SET									
			SET MFG	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X				1	D-UA-TU6Ø-Ø-Ø	B	2	TU6Ø UNIT ASSEMBLY	
X					A-PL-TU6Ø-Ø-Ø	B	2	TU6Ø UNIT ASSEMBLY	
					E-IA-7409943-0-0		2	CHASSIS (TU6Ø)	
					D-IA-7409990-0-0		1	PLATE,CHASSIS,FRONT (TU6Ø)	
					E-MD-7409941-0-0		1	COVER,CHASSIS	
					C-MD-7409904-0-0		1	BRACKET,SYMMETRICAL	
					B-MD-7409933-0-0		1	BUSHING,PIVOT	
					D-UA-BCØ5L-Ø-Ø		1	CABLE,JUMPER	
					D-PS-1210931-0-0		1	BLOCK,CABLE RETAINING	
					C-MD-7410690-0-0		1	BRACKET,SHIPPING	
					D-PS-1209154-0-0		1	CHASSIS-TRAK	
X				2	D-AD-7009014-0-0		2	TRANSPORT ASSY (TU6Ø)	
X					A-PL-7009014-0-0		3	TRANSPORT ASSY (TU6Ø)	
					C-MD-7409911-0-0		1	SPACER,TAPE GUIDE	
					C-MD-7409912-0-0		1	GUIDE,TAPE	
					C-MD-7409928-0-0		1	BRACKET,SOLENOID	
					C-MD-7409908-0-0		1	PLATE,HEAD MOUNT	
					B-MD-7410518-0-0		1	BUTTON,REWIND SWITCH	
					B-MD-7410519-0-0		1	BRACKET,REWIND SWITCH	
					C-MD-7410537-0-0		1	SPRING,LOCK BAR	
					B-MD-7410544-0-0		1	SPACER,E.O.T. BLOCK	
					D-PS-1211279-0-0		1	COUPLING,CASSETTE DRIVE(3MM)	
					D-MD-7409917-0-0		1	LOCK-BAR, CASSETTE	
					D-PS-1211289-0-0		1	SENSOR ASSY	
					B-MD-7409929-0-0		1	BRACKET,TERMINAL BOARD	
X				3	D-IA-7410640-0-0		1	BASE ASSEMBLY	
					E-MD-7409835-0-0		1	BASE,CASSETTE TRANSPORT (MACH)	
					B-MD-7409938-0-0		1	BUSHING,ROCKER	
					B-MD-7410553-0-0		1	SHIM,SKEW	
					C-MD-7410539-0-0		1	PIN,ANCHOR	
					C-MD-7409934-0-0		1	PIN,SPRING,MOTOR BIAS	
					E-PS-1211122-0-0		1	BASE,CASSETTE TRANSPORT (CAST)	

CUSTOMER PRINT SET CODES

X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE	SHEET	SIZE	CODE	NUMBER	REV
TU6Ø DECASSETTE	3 OF 4	B	DD	TU6Ø-Ø	B

DRB 108

DEC 16-(325)-1062-2B-R972

MECHANICAL

CUSTOMER PRINT SET TU6Ø-Ø	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
		4	C-IA-7409924-0-0		1	COVER,LOWER CASSETTE ASSY	
			C-MD-7409905-0-0		1	COVER,LOWER CASSETTE	
			C-MD-7410541-0-0		1	PIN,SPRING,COVER,CASSETTE	
			B-MD-7410552-0-0		1	LENS	
		5	C-IA-7409930-0-0		1	EJECTOR ASSY	
			C-MD-7409907-0-0		1	EJECTOR	
			B-MD-7410543-0-0		1	ROLLER,EJECTOR	
X		6	D-AD-7009141-0-0		1	SWITCH ASSY	
			C-MD-7409926-0-0		1	BLOCK,SWITCH	
			C-MD-7409935-0-0		1	SPACER, MICRO SWITCH	
X		7	C-AD-7009146-0-0		1	SPINDLE ASSY	
			D-MD-7410509-0-0		1	COUPLING,CASSETTE DRIVE (2MM)	
			C-MD-7410692-0-0		1	BEARING,SPINDLE	
		8	C-IA-7409914-0-0		1	PULLEY,DRIVE ASSY	
			C-MD-7410535-0-0		1	PULLEY,DRIVE	
			C-MD-7410527-0-0		1	SPINDLE	
X		9	C-AD-7009140-0-0		1	MOTOR MOUNT ASSY	
			C-MD-7409915-0-0		1	PIVOT,MOTOR	
			C-MD-7409910-0-0		1	MOUNT,MOTOR	

MECHANICAL

CUSTOMER PRINT SET TU6Ø-Ø	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		10	C-IA-7009139-0-0		1	DRIVE-MOTOR ASSY	
			C-MD-7409913-0-0		1	SLEEVE,MOTOR	
X		11	C-AD-7009148-0-0		1	LEVER ASSY	
			C-MD-7409931-0-0		1	LEVER,ROCKER	
			B-MD-7409932-0-0		1	ROLLER,IDLER	
		12	C-IA-7409919-0-0		1	ROCKER ASSY	
			C-MD-7409916-0-0		1	PLATE,ROCKER	
			B-MD-7409921-0-0		1	SLEEVE,ROCKER	
			B-MD-7409922-0-0		1	SHAFT,IDLER	
		14	D-IA-7410604-0-0		1	CARD FRAME ASSY	
			E-MD-7409942-0-0		1	FRAME,CARD	
			C-MD-7410587-0-0		1	STAND-OFF,THREADED	
		15	D-IA-7410556-0-0		1	BEZEL ASSY	
			C-MD-7409882-0-0		1	ADAPTER,BEZEL	
			D-MD-7410579-0-0		1	INLAY,BEZEL	
			D-CS-1209226-0-0		1	BEZEL 5 1/4"	
		16	B-IA-7410691-0-0		1	LOGO (TU6Ø)	
			A-SS-7410691-0-1		1	SILK SCREEN	
		19	B-DD-H751-Ø		3	H751 POWER SUPPLY	
			D-UA-H751-Ø-Ø		2	H751 POWER SUPPLY	
			E-1A-5310191-0-0		1	CHASSIS,POWER SUPPLY	

CUSTOMER PRINT SET CODES

X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

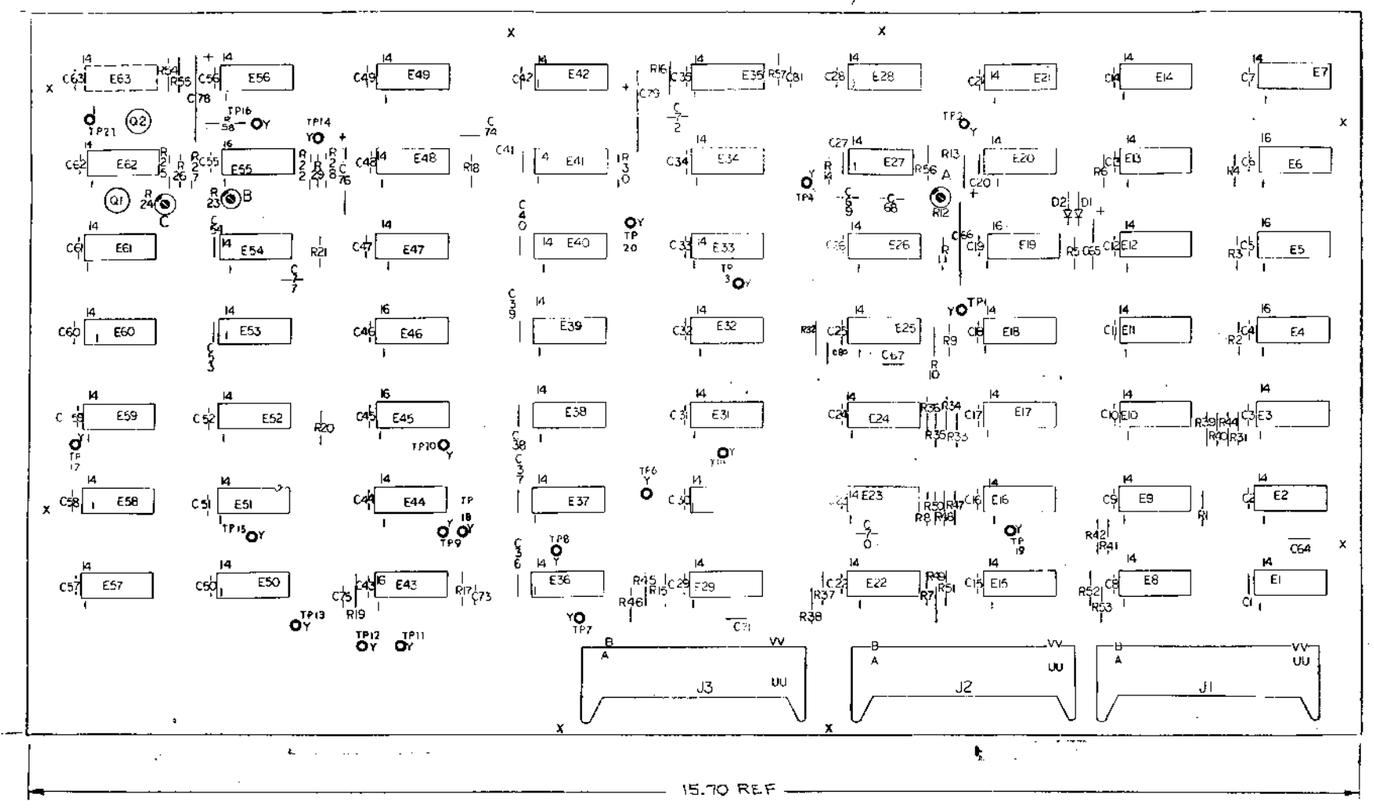
TITLE	SHEET	OF	SIZE	CODE	NUMBER	REV
TU6Ø DECASSETTE	4	4	B	DD	TU6Ø-Ø	B

DRB 108

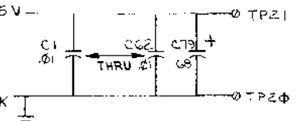
OEC 16-(325)-1062-2B-R972

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   RESISTANCE IS IN OHMS
   CAPACITANCE IS IN MICROFARADS



J3-AA,BB,CC,DD, +5V



J1 A,B,C,E,H,K,M,P,S,U,W,Y, AA,CC,EE,HH,KK,MM,PP,SS,UU,VV.

J2 A,B,C,E,H,K,M,P,S,U,W,Y, AA,CC,EE,HH,KK,MM,PP,SS,UU,VV.

J3 M,N,P,R

7438	8	14
7411	12	16
7400	7	8
74193	8	16
74123	8	16
IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

COMPONENT SUBSTITUTION

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
ACCEPTANCE SIG		DATE		
1	R26	RES 620 1/4W 5%	1303178	52
1	R25	RES 680 1/4W 5%	1301424	51
1	R11	RES 5.6 K 1/4W 5%	1301874	50
1	C66	CAP 180 MFD 6V 20% S.TANT	1000086	49
1	R56	RES 30K 1/4W 5%	1302394	48
11	R34,R36,R38,R40,R42, R44,R46,R48,R49,R51,R53	RES 390 1/4W 5%	1300309	47
1	R16,R58	RES 150 1/4W 5%	1300250	46
1	R5	RES 24K 1/4W 5%	1304837	45
2	R12,R24	RES 20K 1/2W 10% G2P POT	1309150-13	44
1	R55	RES 2K 1/4W 5%	1302388	43
1	R23	RES 200 1/2W 10% G2P POT	1309150-10	42
1	R22	RES 47K 1/4W 5%	1302177	41
1	R27	RES 12K 1/4W 5%	1300488	40
1	R28	RES 14.7K 1/8 W 1%	1302941	39
11	R8,R33,R35,R37,R39,R41,R45 R47,R31,R54,R52	RES 180 1/4W 5%	1301322	38
1	R17	RES 10K 1/4W 5%	1300479	37
7	R1,R3,R4,R9,R28, R30,R32	RES 1K 1/4W 5%	1300365	36
2	R6, R29	RES 470 1/4W 5%	1300316	35
10	R1, R7, R10, R13, R14, R15, R18 R21, R32, R57	RES 220 1/4W 5%	1300271	34
1	R19	RES 20K 1/4W 5%	1302391	33
1	E22	IC DEC 7427	1910518	32
3	E19, E43, E55	IC DEC 74123	1910436	31
2	E45, E46	IC DEC 74193	1910018	30
1	E21	IC DEC 7486	1910011	29
5	E1, E8, E23, E11, E29	IC DEC 3880	1909485	28
3	E11, E12, E13	IC DEC 7416	1909328	27
5	E3, E10, E15, E16, E18	IC DEC 8881	1909705	26
6	E18, E20, E22, E47, E49, E60	IC DEC 7404	1909686	25
3	E6, E5, E6	IC DEC 8871	1909615	24
2	E2, E9	IC DEC 7495	1909055	23
8	E17, E20, E33, E35, E38, E50, E58, E59	IC DEC 7407	1909004	22
2	E41, E52	IC DEC 7401	1905570	21
2	E42, E56	IC DEC 7450	1905580	20
2	E40, E54	IC DEC 7410	1905576	19
9	E27, E28, E31, E32, E48, E51, E57, E61	IC DEC 7400	1905575	18
8	E7, E14, E16, E34, E36, E37, E44, E62	IC DEC 7474	1905597	17
2	D1, D2	DIODE D664	1100114	16
1	C76	CAP 6.8 MFD 35V 10% S.TANT	1005306	15
1	C65	CAP 3.9 MFD 10V 10% S.TANT	1000064	14
64	C1 THRU C62, C73, C75	CAP .01 MFD 100V 20% DISC	1001610	13
2	C78, C79	CAP 68 MFD 15V 10% S.TANT	1000262	12
4	C67, C77, C72, C81	CAP 1000 PF 100V 3% MICA	1000342	11
4	C68, C69, 71, C74	CAP 680 PF 100V 5% DM	1000026	10
2	C64, C70	CAP 470 PF 100V 5% DM	1000024	9
3	J1, J2, J3	CONNECTOR 43PIN	1209941	8
21	TP1 THRU TP21	LUG, SWAGE #1026-2	9007791	7
2	Q1, Q2	TRANS, 6534D PNP 310MW	1503409	6
1	C80	CAP 100 PF 100V 5% DM	1000016	5
REF		MODULE ECO HISTORY	B-AH-M7760-1-2	4
REF		ASSY/DRILLING HOLE LAYOUT	E-AH-M7760-0-1	3
REF		X-Y COORDINATES (PC LOCATION)	K-CD-M7760-0-1	2
1		ETCHED CIRCUIT BOARD	50100??	1
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL	ETCH BOARD REV
TU60	E

DEC NO.	EIA NO.	DEC NO.	EIA NO.
D664	IN3692		

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	CHK
F	M7760-00004	M. LEIS 6-9-73
E	M7760-00003	M. LEIS 1/15/73
D	M7760-00002	M. LEIS 12-21-72
C	M7760-00001/A	M. LEIS 12-20-72

REVISIONS

DRN. 8/15/72
CHK'D. 9/18/72
ENG. M. LEIS
PROJ. ENG.
PROD.
NEXT HIGHER ASSY E-DI-TU60-0

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TU60 LOGIC

SIZE D | CODE CS | NUMBER M7760-0-1 | REV. F

SCALE — SHEET OF

DEC FORM NO DRD 135A

SELECT J2-JJ ENABLE L
DRIVE A L
READ L
DRIVE A L
SEL ENA L
REF L
W GAP L
R/W GAP H
BACK BLOCK GAP L
REV L
BACK FILE L
HIGH SPEED H
LDR L
REWIND CMD H
REWIND MODE L
R/W CRC L
R/W CRC H
TRANSFER L
TRANSFER H
START L
READY L
CLEAR L
CLEAR H
INITIALIZE L
INIT L
WRITE MODE L
WRITE H (MARK L)
TP5 DATA MODE H
READ H
SHIFT CLK H
TP3 CRC ERR PRESET L
D GO H
D GO L
GO H
INHIBIT H
WRITE H
ENC FILE H
TR H
T ERROR L
J2-TT CRC ERROR L
WRITE STATUS L
WRITE PROTECT L
DRIVE L
WRITE PERMIT H
SEL ENA L
REWIND L
OFF LINE L
READY L
END FILE L
EOT/BOT L
TRANSFER REQ L
TIME ERROR L
REQ UNIT L
REQ UNIT H
R/W B L
R/W 7 L
R/W 6 L
R/W 5 L
R/W 4 L
R/W 3 L
R/W 2 L
R/W 1 L
LOAD BUFFER H
WD L
DRIVE A H
FWD DIR A H
FWD DIR B H
REV DIR H
SAME DIR AGAIN L
INHIBIT H
LDR L

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO	ITEM NO
TUGØ		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX ± .005, .XX ± .02, .X ± .1 — ANGLES: ±0°30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

DRN: A.C. [illegible] DATE 6 5 72
CHK'D DATE
ENG DATE
PROJ. ENG. DATE
PROD DATE
NEXT HIGHER ASSY
SCALE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE TUG [illegible]

SIZE D CODE CS NUMBER M7760-0-1 REV F
SHT

REVISIONS: CHANGE NO / CHK

DRAWING 40-522-15840

READ STOP H
TRANSFER STOP H
TR L
SIGNAL H J3-T
DRIVE L
LOAD BUFFER H
LDR L
C Φ H
SHIFT CLK H
END BYTE L
WC24 L
-2 H
R/W CRC H
ERROR L
CLEAR L
WRITE L
J3-F CRC TIME H
FIRST LDR L
FIRST LDR H
READ Φ H
DRIVE H
+5V
TAPE BLANK L
TP16
PLANK STOP L
WRITE CRC H
GAP TIME H
PREAMBLE H
TP17 GAP TIME F
40 MS PRE 30 MS POST
END W DATA L
GAP TIME L
TAPE READING L
CLK 1 L
CRC BIT 1 L
C32 L
WD L
J3-A W DATA H
TP18
END W DATA L
END WRITE H
DATA MODE H
DRIVE H
J3-V DRIVE L
TP6
TP14 TAPE READING L
INIT L
BLANK STOP L
HIGH SPEED H
READ H
SIGNAL H
CLEAR L
TP4
END TAPE H
WRITE L
R CRC CLR H
CLEAR H
C32 H
READ SYNC L
WRITE CRC H
J3-B
J3-E CLK 2 L
PREAMBLE H TP Φ
SHIFT CLK H
CRC CLK L
STOP H
DRIVE H
CLK 1 L J3-C
TP2Φ GND
+5V TP21
J3-KK J2-FF
FIRST LDR H
1.4SEC OFFBOT
WGAP L
DGO H
WF GAP H
END WFG L
CLEAR L
EOT P L
EOT H
TP4
ENERGY H
SEEK H
READ H
END BYTE L
READ STOP H
TP13
C Φ H
C7 L
C32 H
C32 L
J3-Z C24 H
WC 24 L
WRITE H

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TU60		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: XXX ± .005, XX ± .02, X ± .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN. K 8-3 DATE 8-7-72
CHK'D DATE 9/7/72
ENG. DATE 9/7/72
PROJ. ENG. DATE 9/7/72
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TU60 LOGIC (FORMATTER)

NEXT HIGHER ASSY: B-DD-TU60-0
SIZE D CODE CS NUMBER M7760-C- REV. F
SCALE —
SHEET 3 OF 4 DIST.

REVISIONS: REV. | CHANGE NO | CHK

+5V R6 470Ω

7416 E13 10Φ
7416 E13 12
7416 E13 4
7416 E12 12
7416 E12 10Φ
7416 E12 8
7416 E12 6
7416 E12 4
7416 E12 2
7416 E11 8
7416 E11 4
7416 E11 2
7416 E11 10Φ
7416 E11 12
7416 E13 2
7416 E13 8 — GOOD CRC H

CRC BIT 1 L

+5V R3 1K
+5V R2 1K
+5V R4 1K

8271 E6 SIN PLD SFT CLK CLR
8271 E5 SIN PLD SFT CLK CLR
8271 E4 SIN PLD SFT CLK CLR

7474 E7 D C Φ
7474 E7 D C Φ
7474 E14 D C Φ
7474 E14 D C Φ

7486 E21
7486 E21
7486 E21
7486 E21

7416 E13 — 60 H
7416 E11 — CRC CLK L

READ DATA L
READ H
WRITE H
WD L
7400 E28
7400 E28
7402 E28

TEST IN L — TP12
TEST IN H — TP11
+5V R10 300Ω
74123 E93 TEST — 10Φ uS — TP9 TEST OUT H
C35 .01Φ

+5V R17 10K
74123 E93 TEST — 50 uS
C73 .01Φ

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TU60		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS .XXX ± .005 .XX ± .02 .X ± .1 ANGLES ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN. Cristiano DATE 5-MAR-80
CHK'D L. Lewis DATE 10MAR80
ENG. M. Lewis DATE 7/82
PROJ. ENG. N. Sakr DATE 10/82
PROD. M. L. A. DATE —
NEXT HIGHER ASSY. B60 TU60-0
SCALE —
SHEET 4 OF 4

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
TU60 LOGIC (CRC LOGIC)

SIZE D | CODE CS | NUMBER M7760-0-1 | REV F | DIST

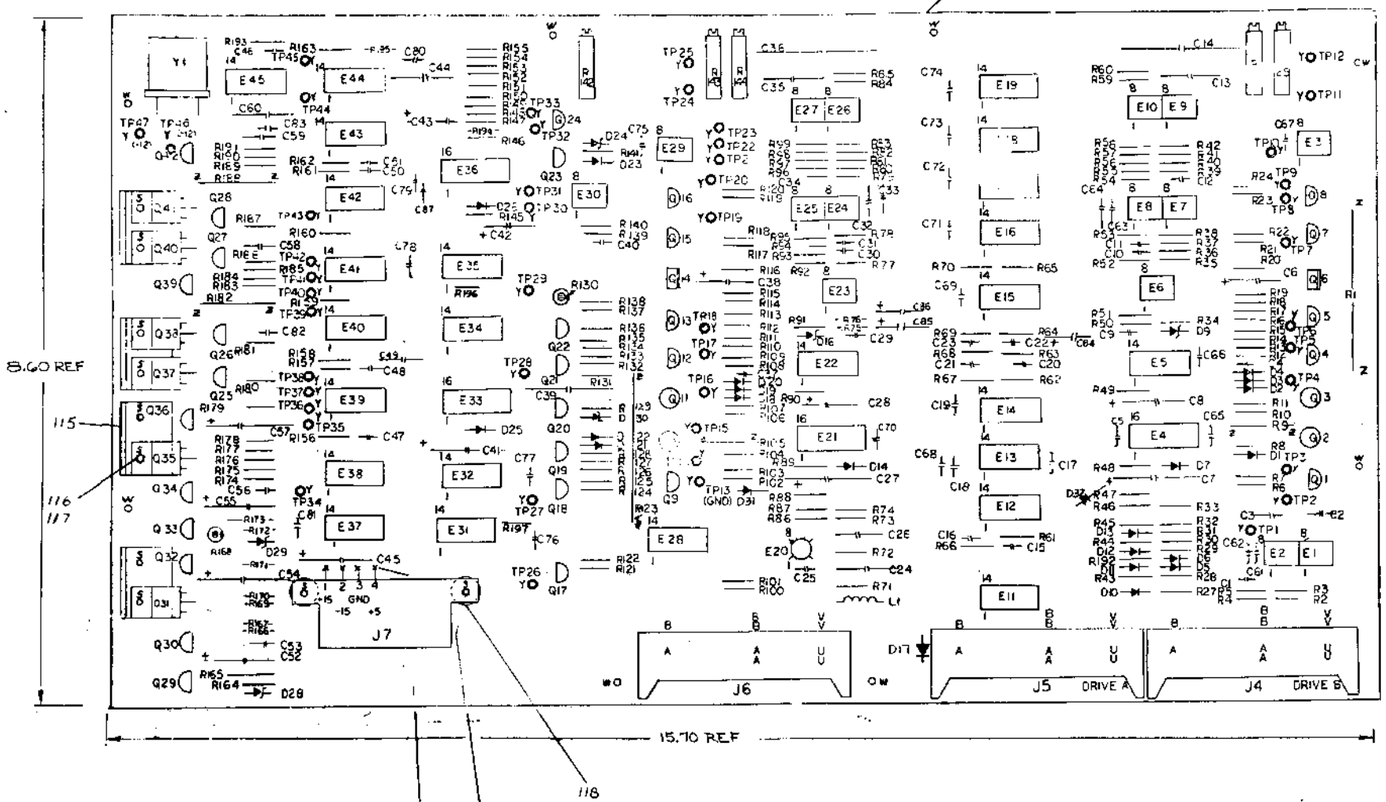
SIZE CS | FSCM NO. M7760-0-1

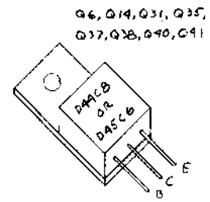
REVISIONS
LTR	CHANGE NO	DATE

PRINTING 40-522 15840
CET FORM NO

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   RESISTANCE IS IN OHMS
   CAPACITANCE IS IN MICROFARADS





IC TYPE	GND	+5V	+12V	-12V
4024	5,7,9	1,13,14		
3806	1		3	4
7496	10	5		
7493	10	5		
388	1	8		
321			7	4
741			7	4
74LS	8	16		
7545	4	13		

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

FOR PARTS LIST INFORMATION SEE SHEET 2

ITEM NO	PART NO.	DESCRIPTION	REF DESIGNATION	QTY

PARTS LIST

FIRST USED ON OPTION MODEL: TU60

ETCH BOARD REV: E

DEC NO.	EIA NO.	DEC NO.	EIA NO.
DG64	IN3606		

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	CHK	DATE
L	M7761-00009	M.LEIS	5-13-73
K	M7761-00008	M.LEIS	2-13-73
H	M7761-00006	M.LEIS	11/13/73
F	M7761-00005	M.LEIS	6-21-73
E	M7761-00004	M.LEIS	1/22/73
D	M7761-00003	M.LEIS	10-17-72
C	M7761-00001	M.LEIS	10-2-72

REVISIONS

DRN.	DATE 12/4/72
CHK'D	DATE 2/15/72
ENG. M. LEIS	DATE 9/6/72
PROJ. ENG.	DATE 7/6/72
PROD'N	DATE

NEXT HIGHER ASSY: B11-TU60-[illegible]

SCALE: [illegible]

SHEET 1 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: READ/WRITE AND SERVO

SIZE	CODE	NUMBER	REV.
D	CS	M7761-2-1	L

DIST.

ITEM NO	PART NO	DESCRIPTION	QTY	REF DESIGNATION
1	5010029	ETCH BOARD	1	
2	K-CO-M7761-0-4	X-Y COORDINATE HOLE LOCATION	-	
3	O-MH-M7761-0-5	ASSY/DRILLING HOLE LAYOUT	-	
4	B-MH-M7761-0-6	MODULE ECO HISTORY	-	
5	1000006	CAP 10PF 100V 5% DM	2	C61,C62
6	1000018	CAP 100PF 100V 5% CV	3	C12,C25,C34
7	1000019	CAP 150PF 100V 5% DM	2	C17,C18
8	1000023	CAP 330PF 100V 5% DM	2	C4,C37
9	1000025	CAP 680PF 100V 5% DM	5	C22,C23,C50,C51,C87
10	1000042	CAP 1000PF 100V 5% DM	2	C47,C48
11	1000054	CAP 1500PF 250V 10% DISC	2	C11,C31
12	1002423	CAP 3300PF 100V 5% DM	2	C53,C56
13	1000061	CAP 8200PF 100V 10% MYLAR	1	C60
14	1001610	CAP .01UF 100V 20% DISC	29	C5,C9,C15,C16,C19,C20,C21,C29,C40,C46,C65,C66,C67,C68,C69,C70,C71,C72,C73,C74,C75,C76,C77,C78,C79,C80,C81,C82,C83
15	1002323	CAP .022UF 100V 10% MYLR	3	C24,C26,C44
16	1000049	CAP .027UF 100V 10% MYLR	2	C13,C35
17	1000030	CAP .1UF 100V 20% DISC	8	C2,C3,C32,C33,C58,C59,C63,C64
18	1010978-36	CAP .1UF 50V 10% CER	2	C10,C30
19	1002180	CAP .15UF 35V 20% TANT	2	C42,C43
20	1010279	CAP .47UF 25V 20% CER	1	C1
21	1009871	CAP .51UF 100V 5% MYLR	2	C14,C36
22	1001776	CAP 1UF 35V 10% TANT	3	C64,C85,C86
23	1009725	CAP 1.5UF 35V 10% TANT	2	C8,C38
24	1002827	CAP 2.2UF 20V 10% TANT	1	C49
25	1005306	CAP 6.8UF 35V 10% TANT	5	C9,C28,C45,C52,C55
26	1004812	CAP 15UF 20V 10% TANT	1	C41
27	1004814	CAP 47UF 20V 10% TANT	2	C54,C57
28	1000082	CAP 68UF 15V 10% TANT	2	C7,C27
29	1005572	CAP 150UF 6V 20% TANT	1	C39
30	1100714	DIODE D664	17	D4,D5,D6,D7,D10,D11,D12,D13,D14,D20,D21,D22,D23,D25,D26,D31,D32
31	1104860	IN746A 3.3V2 5% .4W	1	D30
32	1100124	IN750A 4.7V2 5% .4W	2	D9,D16
33	1102808	IN752A 5.6V2 5% .4W	1	D24
34	1102421	IN753A 6.2V2 5% .4W	2	D28,D29
35	1105798	IN4004 400V PIV 1A	6	D1,D2,D3,D17,D18,D19
36	1209841	CONN 40 PIN	3	J4,J5,J6
37	1209340	CONN #1-480458	1	J7
38	1209456	PIN, SOCKET, #61320-1	4	
39	1311064	RES 0.2 10W 5% WW	2	R1,R123
40	1301317	RES 10 1/4W 5% CC	2	R7,R103
41	1300229	RES 100 1/4W 5% CC	5	R33,R48,R159,R181,R187
42	1302380	RES 100 2W 5% CC	2	R182,R188
43	1309150-10	RES 200 1/2W 10% 82 PR	1	R130
44	1300271	RES 220 1/4W 5% CC	17	R8,R11,R27,R32,R81,R84,R86,R89,R74,R102,R107,R129,R128,R156,R157,R161,R162,R193
45	1301425	RES 300 1/4W 5% CC	4	R15,R111,R196,R197
46	1300295	RES 330 1/4W 5% CC	5	R9,R63,R68,R104,R141
47	1300309	RES 390 1/4W 5% CC	2	R19,R115
48	1300308	RES 390 1/2W 5% CC	2	R165,R173
49	1300316	RES 470 1/4W 5% CC	10	R20,R116,R186,R187,R169,R170,R174,R175,R177,R178,
50	1303048	RES 560 1W 5% CC	1	R105
51	1303178	RES 620 1/4W 5% CC	2	R,R110
52	1302872	RES 681 1/8W 1% MF	4	R43,R44,R45,R192
53	1305143	RES 825 1/8W 1% MF	2	R37,R85
54	1303114	RES 1K 1/8W 1% MF	4	R52,R93,R176,R179
54	1300365	RES 1K 1/4W 5% CC	34	R4,R10,R47,R50,R56,RE2 R65,R67,R80,R12,R73,R75,R83 R86 R94 R97 R99,R105,R122,R125 R133,R137,R138,R180,R183,R184,R171,R172,R180,R183,R186,R189
56	1300351	RES 1.5K 1/4W 5% CC	4	R13,R57,R82,R108
57	1300398	RES 1.8K 1/4W 5% CC	2	R185,R190
58	1304833	RES 1.96K 1/8W 1% MF	4	R28,R30,R148,R149
59	1302388	RES 2K 1/4W 5% CC	9	R16,R17,R112,R114,R121,R124,R126,R132,R136
60	1309150-07	RES 2K 1/2W 10% 82 PR	1	R169
61	1300417	RES 2.2K 1/4W 5% CC	2	R56,R81
62	1300439	RES 3.3K 1/4W 5% CC	8	R12,R22,R23,R109,R118,R119,R150,R151
63	1305114	RES 3.48K 1/8W 1% MF	4	R21,R24,R117,R120
64	1309413	RES 3.83K 1/8W 1% MF	1	R131
65	1300444	RES 3.9K 1/4W 5% CC	4	R18,R113,R164,R191
66	1305324	RES 4.99K 1/8W 1% MF	3	R152,R155,R158
67	1304854	RES 5.11K 1/8W 1% MF	1	R147
68	1301874	RES 5.6K 1/4W 5% CC	1	R154
69	1304870	RES 6.81K 1/8W 1% MF	6	R41,R54,R55,R79,R90,R96
70	1305322	RES 7.5K 1/8W 1% MF	2	R58,R84
71	1303312	RES 10K 1/8W 1% MF	10	R35,R38,R39,R40,R42,R92,R94,R98,R97,R99
72	1300479	RES 10K 1/4W 5% CC	3	R2,R3,R140
73	1309143-10	RES 10K 3/4W 10% 76 PR	2	R25,R144
74	1300488	RES 12K 1/4W 5% CC	1	R153
75	1302391	RES 20K 1/4W 5% CC	1	R139
76	1309143-11	RES 20K 3/4W 10% 76 PR	2	R26,R143
77	1305346	RES 27K 1/4W 5% CC	1	R5
78	1302394	RES 30K 1/4W 5% CC	2	R48,R89
79	1303158	RES 34.8K 1/8W 1% MF	2	R134,R135
80	1302514	RES 39K 1/4W 5% CC	1	R145
81	1309143-13	RES 50K 3/4W 10% 76 PR	1	R142
82	1304839	RES 51K 1/4W 5% CC	7	R49,R51,R71,R76,R90,R101,R146
83	1310636	RES 82.5K 1/8W 1% MF	2	R60,R85
84	1303044	RES 100K 1/8W 1% MF	6	R29,R31,R34,R36,R77,R91
85	1300539	RES 120K 1/4W 5% CC	2	R194,R195
86	1302397	RES 180K 1/4W 5% CC	2	R53,R78
87	1509632	TRANSISTOR DEC 2007.6W NPN	2	Q2,Q10
88	1501913	TRANSISTOR 2N2904A .6W PNP	2	Q3,Q11
89	1509338	TRANSISTOR 8531B .31W NPN	11	Q1,04,09,Q12,Q20,Q24,Q25,Q27,Q30,Q33,Q36
90	1503409	TRANSISTOR 6534D .31W PNP	19	Q5,07,Q8,Q13,Q15,Q18,Q17,Q18,Q19,Q21,Q22,Q23,Q26,Q28,Q29,Q32,Q34,Q39,Q42
91	1510421	TRANSISTOR D44C8 30W (RED) NPN	3	Q35,Q37,Q40
92	1510414	TRANSISTOR D45C8 30W (GRN) PNP	5	Q6,Q14,Q31,Q38,Q41
93	1611034-01	INDUCTOR 47 MH	1	L1
94	1811110	CRYSTAL 2.304 MHZ	1	Y1
95	1910282	IC 301	5	E1,E2,E6,E23,E30
96	1909675	IC 306	1	E20
97	109485	IC 380	1	E40
98	1910298	IC 741	8	E7,E8,E9,E10,E24,E25,E26,E27
99	1911039	IC 4024	1	E45
100	1911039	IC 4044	1	E44
101	1905575	IC 7400	3	E16,E35,E39
102	1905590	IC 7401	1	E12
103	1909004	IC 7402	2	E13,E15
104	1909686	IC 7404	2	E28,E34
105	1910741	IC 7406	1	E43
106	1905576	IC 7410	1	E42
107	1910236	IC 7426	2	E11,E18
108	1910878	IC 7427	1	E17
109	1905580	IC 7450	3	E5,E22,E31
110	1905547	IC 7474	3	E19,E32,E41
111	1910011	IC 7486	1	E14
112	1909054	IC 7493	2	E37,E38
113	1910436	IC 74123	4	E4,E21,E33,E36
114	1910845	IC 75452	2	E3,E29
115	5510315	HEAT SINK	4	
116	9006010-1	SCREW,PPH 4-40 X 5/16	10	
117	9006557	NUT,KEP 4-40 X 1/4 X 1/16	10	
118	9008708	WASHER,NYLON #4	2	
119	9007791	LUG,SWAGE #1028-2	47	TP1 TO TP47

COMPONENT SUBSTITUTION

ITEM NO	PART NO	DESCRIPTION	QTY	REF. DESIGNATION

ACCEPTANCE SIGNATURE DATE

ITEM NO	PART NO	DESCRIPTION	QTY	REF DESIGNATION

FIRST USED ON OPTION/MODEL: T1Ø

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS: XXX ± .005, XX ± .02, X ± .1 ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN F.CARBERRY DATE 8-4-7?
CHK'D W.MAJOR DATE 9-6-7?
ENG M.LEIS DATE 9-?-?
PROJ ENG M.LEIS DATE ?-?-?
PROD M.CONROY DATE 9-?-?
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

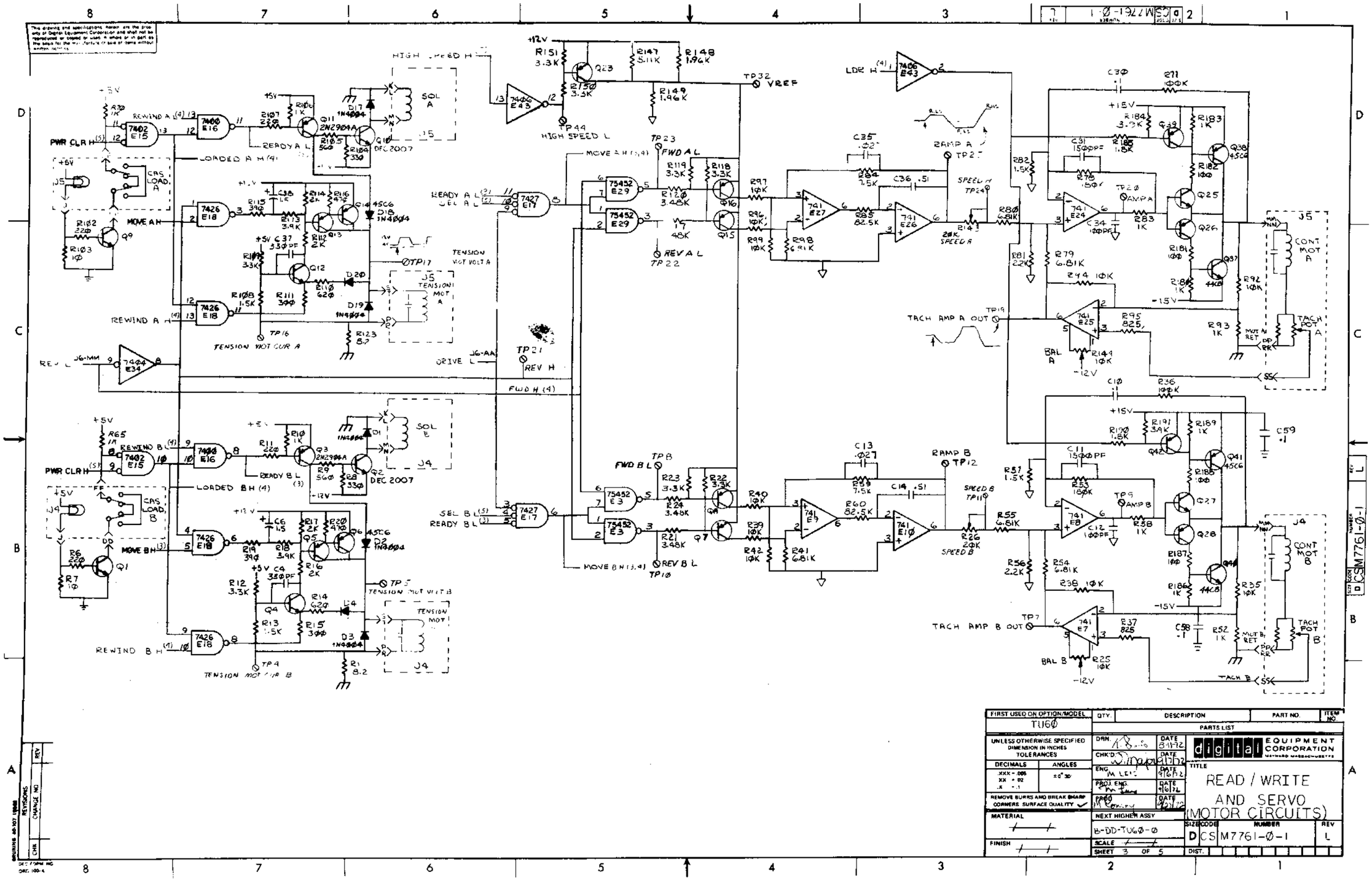
TITLE: ?- AD/W[illegible] ?-?-BD

SIZE D CODE NUMBER M7761-?
SCALE
SHEET ? OF ?
DIST

REVISIONS

REV	CHANGE NO	DATE	APPROVED
A	CHN		

BRUNING 40 522 1680



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TU60		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS: XXX ± .005, XX ± .02, X ± .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN. [illegible] DATE 8-1-72
CHK'D [illegible] DATE 8/10/72
ENG. M. LEE DATE 9/6/72
PROJ ENG. [illegible] DATE 9/6/72
PROD [illegible] DATE 9/12/72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: READ / WRITE AND SERVO (MOTOR CIRCUITS)

NEXT HIGHER ASSY: B-DD-TU60-0
SIZE D | CODE CS | NUMBER M7761-0-1 | REV L
SCALE —
SHEET 3 OF 5 | DIST.

REVISIONS	REV	CHANGE NO	CHK
DRAWING 48-107 12888			

DEC FORM NO. ORC 100-4

M7761-0-1 SIZE D CODE CS REV L

+15V J7-1 — R173 390 — R172 1K — Q34 — Q35 D44CB — TP45 — +12V
C55 6.8 — R174 470 — R175 470 — R177 470 — R176 1K — C57 47
D29 6.2V2 1N753A — C56 3300 PF — R178 470 — R179 1K
GND J7-3

D28 6.2V2 1N753A — C53 3300 PF — R170 470 — R171 1K — C54 47
C52 6.8 — Q29 Q32 — R168 2K — −12V ADJ (RAMP)
R166 470 — R167 470 — R169 470 — Q31 D45C6 — TP47 — −12V
R165 390 — R164 1K
−15V J7-2 — −15V
C86 1 UF — −6V

+3V — R160 1K
+5V J7-4 — TP43 — +5V
C65-C69 .01 — C71-C88 .01
C45 6.8
GND — TP13 — GND

+12V — C3 .1 — C32 .1 — C63 .1
GND
−12V — C2 .1 — C33 .1 — C64 .1

+5V — J4 - W, X. J5 - W, X. J6 - S, T, U, V.
GND — J4 - A, C, E, H, K, L, Y, Z, AA, BB, PP, RR.
J5 - A, C, E, H, K, L, Y, Z, AA, BB, PP, RR.
J6 - EE, FF, HH, JJ.

LOADED A H (1) — FWD DIR A H — J6-J — 74S86 E14 — LDR A L (4) — 125 MS — 74123 E21 INHIBIT LDR A — LDR INH A L
REWIND A L (4) — R69 220 — C23 680 PF — +5V — R89 51K — C28 6.8
MOVE A H (3) — +3V
+5V — MANUAL REWIND A H — TS-77
J5 +5V LDR SENSOR A — R75 1K — R91 100K — R74 51K — C85 1UF — C29 .01 — −6V — TP18 — D16 4.7 V Z 1N750A — 74S00 E16 — CLR LEADER A H
FWD H (3)

+5V PWR CLEAR H (5) — R197 300 — D32 — E31 74S50
R48 30K — +5V
LOADED B H (3) — FWD DIR B H — J6-Y — 74S86 E14 — LDR B L (4) — 125 MS — 74123 E9 INHIBIT LDR B — LDR INH B L
REWIND B L (4) — R64 220 — C22 680 PF — +5V — R49 51K — C8 6.8
MOVE B H (3) — +3V
J9 +5V LDR SENSOR B — R34 100K — R50 1K — R51 51K — C84 1UF — C9 .01 — −6V — TP6 — D9 4.7 V Z 1N750A — 74S00 E16 — CLR LEADER B H
+5V — MANUAL REWIND B H — TS-77

REWIND A L (4) — TP17 REWIND A H (3)
SEL A H (5) — 1SEC — 74123 E21 REWIND A — D14 — C27 68
SEL B H (5) — 1SEC — 74123 E9 REWIND B — D7 — C7 68
C7 150PF
C5 .01
PWR CLEAR H — 74S02 E3 — 74S01 E12 — 74S02 E13 — 74S21 E2 — R33 100 — C16 .01 — R66 220 — 74S04 E28 — R67 1K — C21 .01 — R68 330 — 74S02 E15 — C18 150PF
LDR A L (4) — 74S02 E13 — 74S01 E12 — 74S02 E13 — 74S01 E12 — R46 100 — C15 .01 — R61 220 — R62 1K — C20 .01 — R63 330 — 74S02 E15
PWR CLEAR H — 74S86 E19 — LDR B L (4)

WRITE PROTECT SW A — J5 — R88 1K — R47 1K — +5V — J4 — WRITE PROTECT SW B — J3
74S00 E22 — J6-B — WRITE PERMIT H (5)
REWIND B L (4) — 74S00 E5 — J6-P — REWIND H
74S00 E22 — J6-DD — LDR H (3)
TP3 REWIND B H (3) — LOADED A H (1) — LOADED B H (1) — 74S00 E5 — J6-F — DRIVE EMPTY H
SEL A H (5) — SEL B H (5)

FIRST USED ON OPTION/MODEL: TU60	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX ± .005; .XX ± .02; .X ± .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL — FINISH

DRAWN — DATE 9/4/72
CHK'D — DATE 9/11/72
ENG. M LEIS — DATE 9/6/72
PROJ. ENG. — DATE 9/6/72
PROD. — DATE 9/5/72
NEXT HIGHER ASSY. B-00-TU60 -2
SCALE — SHEET 4 OF 5

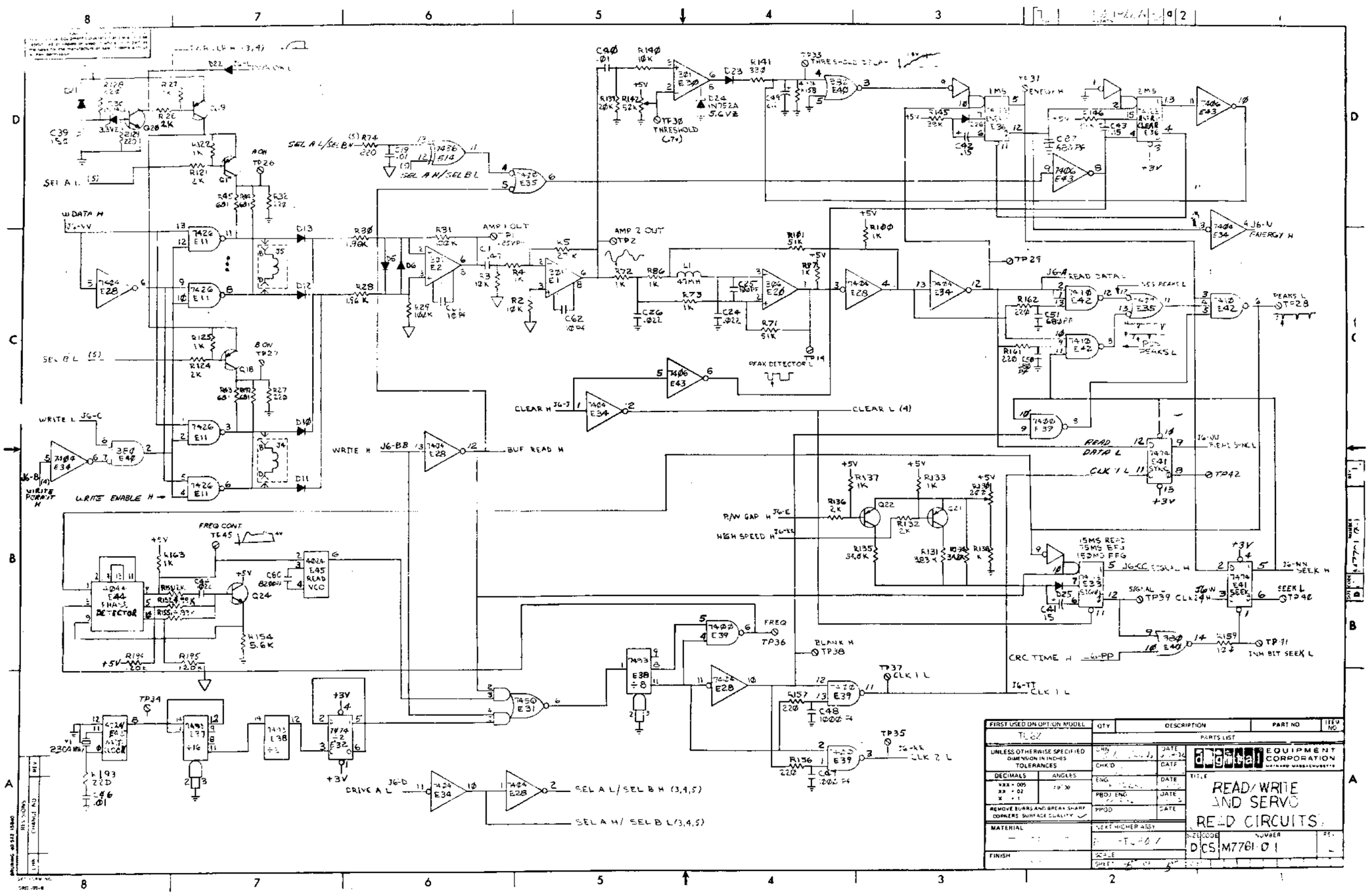
digital EQUIPMENT CORPORATION

TITLE: READ/WRITE AND SERVO (REWIND/REG)

SIZE	CODE	NUMBER	REV.
D	CS	M7761-0-1	L

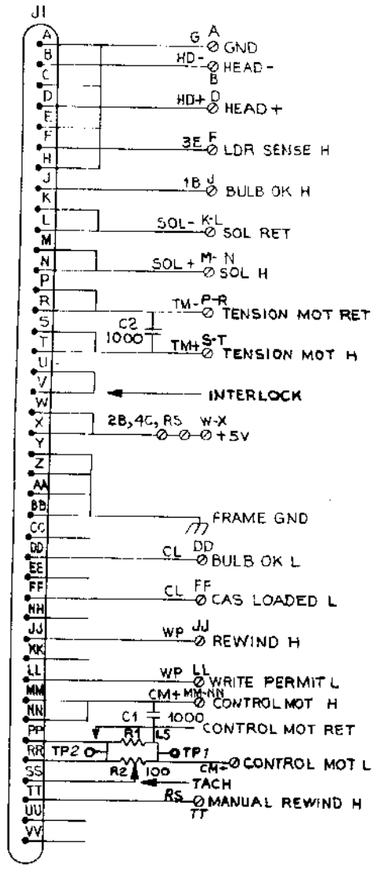
DIST

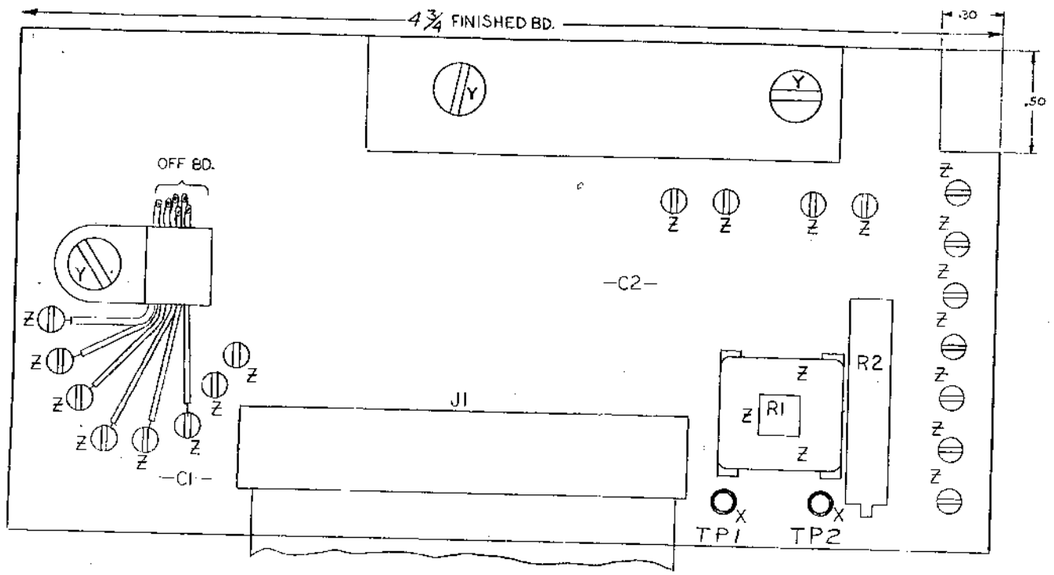
REV	REVISIONS	CHANGE NO	CHK
L			


SEL A L (5)
SEL B L (5)
WRITE L J6-C
WRITE H J6-B
WRITE ENABLE H
J6-B WRITE PERMIT H
W DATA H
SEL A H/SEL B L
SEL A L/SEL B H (3,4,5)
SEL A H/ SEL B L(3,4,5)
DRIVE A L J6-D
AMP 1 OUT TP1
AMP 2 OUT TP2
PEAK DETECTOR L TP19
CLEAR H J6-J
CLEAR L (4)
WRITE H J6-BB
BUF READ H
FREQ CONT TP45
FREQ TP36
BLANK H TP38
CRC TIME H J6-PP
R/W GAP H J6-E
HIGH SPEED H J6-KK
READ DATA L J6-A
PEAKS L TP28
READ DATA L J6-UU
CLK 1 L TP42
SEEK L TP40
INH BIT SEEK L TP41
CLK 1 L J6-TT
CLK 2 L J6-RR
FIRST USED ON OPTION MODEL TL6X
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS .XXX ± .005 .XX ± .02 X ± 1
ANGLES ± 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY
MATERIAL
FINISH
QTY DESCRIPTION PART NO ITEM NO
PARTS LIST
CHN DATE
CHK'D DATE
ENG DATE
PROJ ENG DATE
MPOD DATE
NEXT HIGHER ASSY
SCALE
SHEET
SIZE CODE NUMBER REV
D CS M7761-01
EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
TITLE
READ/WRITE AND SERVO READ CIRCUITS

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   RESISTANCE IS IN OHMS.
   CAPACITANCE IS IN MICROFARADS.





REF				
2	TP1, TP2	TERMINATOR CASSETTE DRIVE ASSY	D-IA-5010134-0-0	11
2	C1, C2	TURRET LUG #1026-2	9007791	10
1	R1	CAP 1000 DM	1000042	9
1	R2	RES 1.5 10W WIRE WOUND	131112	8
1	J1	RES 100Ω ¾% 6% POT 16PR	1309143-04	7
19		CONNECTOR 40 TERMINAL	1210073	6
REF		SPLIT LUGS	9006735	5
		MODULE ECO HISTORY	B-MH-5410135-0-0	4
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5410135-0-0	3
1		ETCHED CIRCUIT BOARD	5010134	2
QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: TU58

ETCH BOARD REV: D

IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

REV	REVISIONS	CHANGE NO.	CHK	DATE
D	5410135-00002		A. PLOURDE	2-18-73
C	5410135-00001		A.G. PLOURDE	11/27/72

DEC NO	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN.		DATE
CHK'D.		DATE 10/31/72
ENG.		DATE
ENGR. ENG.		DATE
PROD.		DATE

NEXT HIGHER ASSY: D-IA-5010241-0-0

SCALE:

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TERMINATOR CASSETTE DRIVE

SIZE D | CODE CS | NUMBER 5410135-0-1 | REV. D

DIST.

BRUNING 40-522 16699

DEC FORM NO DAD-136A

EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE		SEQUENCE
DRAWING DIRECTORY	B-DD-H751-Ø	
CIRCUIT SCHEMATIC	D-CS-H751-Ø-1	
UNIT ASSY	D-UA-H751-Ø-Ø	
UNIT ASSY (PL)	A-PL-H751-Ø-Ø	
CIRCUIT SCHEMATIC	D-CS-5410131-0-1	

THIS IS PRINT SET ☐☐☐☐

UNIT VARIATIONS

VAR	TITLE	PRINT SET H751-Ø
H751-A	H751 POWER SUPPLY 115V	x
H751-B	H751 POWER SUPPLY 230V	x

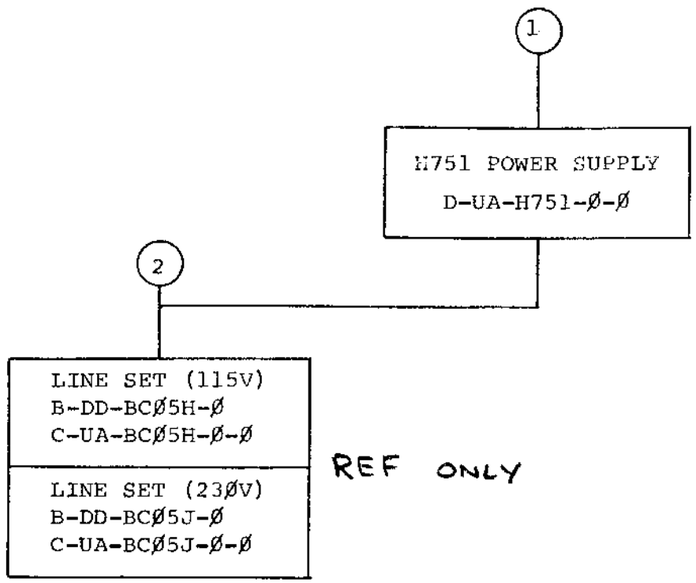
REVISIONS	DATE	CHG. NO.	REV
	12-72	H751-1	A
	3-73	H751-2	B
	4-73	H751-3	C
	8-73	H751-4	D

USED ON OPTION/MODEL	
TU6Ø	

SHEET 1 OF 3

DRN. B.MAJOR	DATE 10/25/72	TITLE H751 POWER SUPPLY	
CHK'D. W.Major	DATE 10/26/72		
PROJ ENG. Terry Hacker	DATE 10-26-72		
PROD.	DATE	SIZE B	CODE DD	NUMBER H751-Ø	REV
FIELD SERV.	DATE	DIST			

DRB 106
DEC 16-(325)-1062-1A-R972



TITLE		SIZE	CODE	NUMBER	REV
H751 POWER SUPPLY	SHEET 2 OF 3	B	DD	H751-2	D

DPB 107

	ELECTRICAL					CUSTOMER PRINT SET					MECHANICAL					
	WING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE	H751-Ø				MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
	H751-Ø-Ø	D	2	H751 POWER SUPPLY							1	D-UA-H751-Ø-Ø	C	2	H751 POWER SUPPLY	
	A-PL-H751-Ø-Ø	D	2	H751 POWER SUPPLY (PL)								A-PL-H751-Ø-Ø	C	2	H751 POWER SUPPLY (PL)	
	E-IA-5310191-0-0		1	CHASSIS, POWER SUPPLY								E-IA-5310191-0-0		1	CHASSIS, POWER SUPPLY	
	D-CS-H751-Ø-1	B	1	CIRCUIT SCHEMATIC H751												
	D-CS-5410131-0-1	#	2	CIRCUIT SCHEMATIC												
2	B-DD-BCØ5H-Ø	#	3	LINE SET												
	C-UA-BCØ5H-Ø-Ø		1	LINE SET BCØ5H (115V)												
	C-UA-BCØ5J-Ø-Ø		1	LINE SET BCØ5J (230V)												

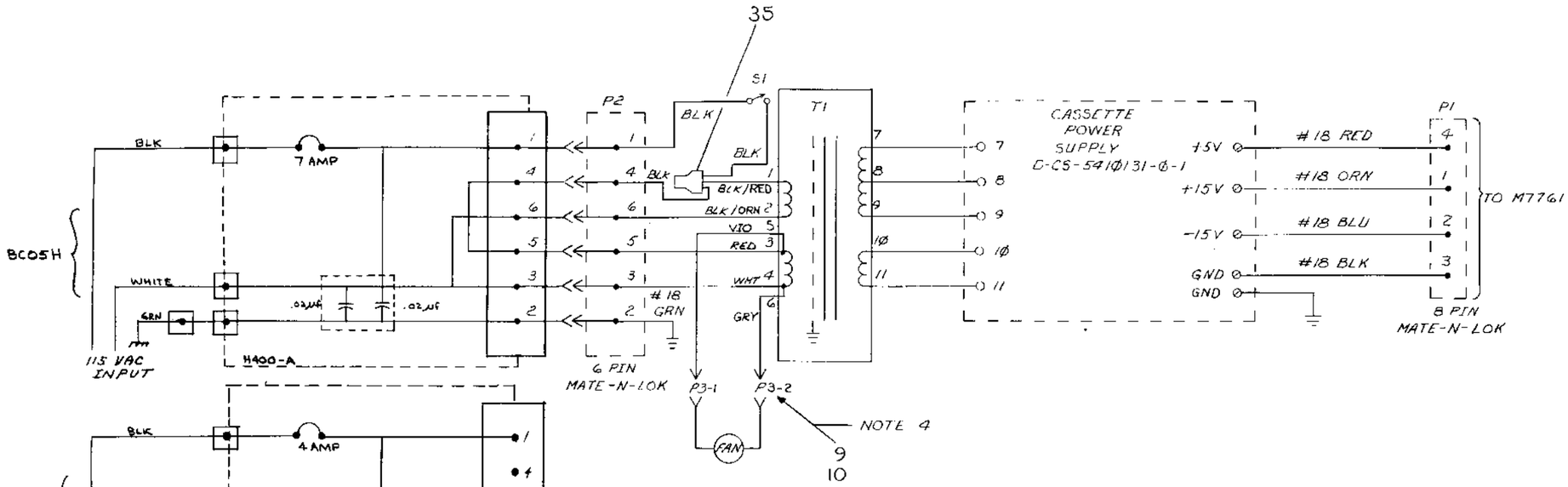
CUSTOMER PRINT SET CODES	
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
	C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
	S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
H751 POWER SUPPLY	SHEET 3 OF 3	B	DD	H751-Ø	D

DRB 108

NOTES:

1. WIRES NUMBERED 1-7 ARE TRANSFORMER LEADS.
2. FOR DIAGRAM OF CASSETTE POWER SUPPLY SEE D-CS-5410131-0-1.
3. Ø INDICATES SPLIT LUGS.
4. P3-1 AND P3-2 ARE FASTAPS.



IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

BRUNING 40-822 16659

DEC FORM NO. DRD 135A

REV	CHANGE NO.	DATE	BY
A	H751-00001	2-19-72	
B	H751-00004	8-9-72	

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.	DEC NO.	EIA NO.

FIRST USED ON OPTION MODEL: H751

ETCH BOARD REV

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. M. LEIS 5-10-72
CHK'D. G. Bronson 8-9-72
ENG. H751-00004 B
PROJ. ENG. Larry Nash 1/5/73
PROD. L. NARHI
CHK. Vincent 2-19-72 A
REVISIONS

NEXT HIGHER ASSY: B-SC-H751-Ø

SCALE: 1/1

SHEET 1 OF 1

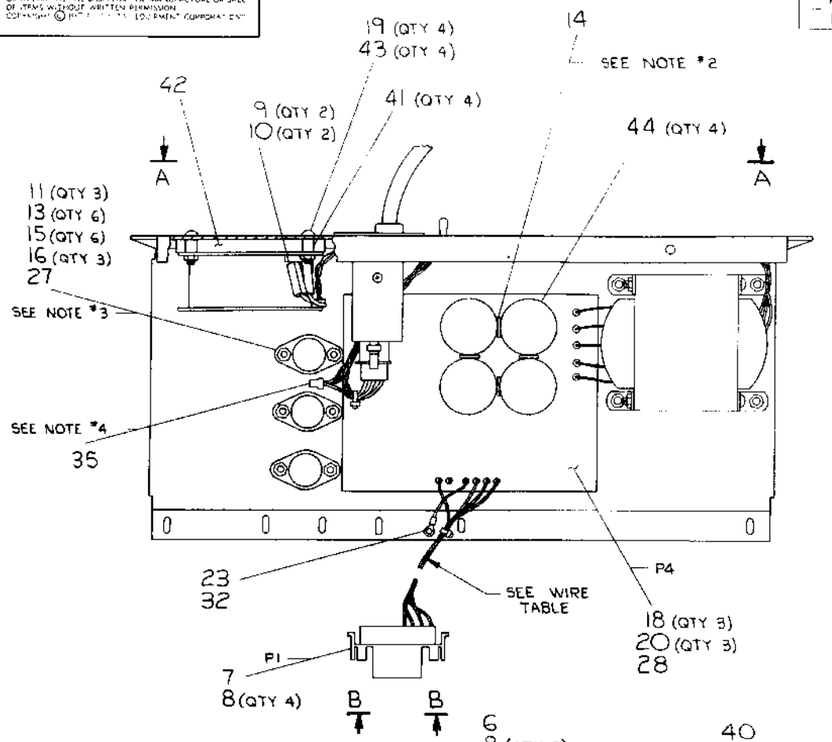
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

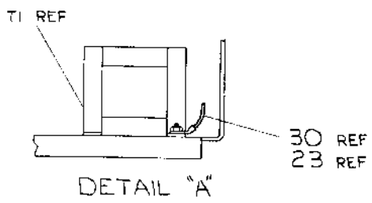
TITLE: CIRCUIT SCHEMATIC H751

SIZE D | CODE CS | NUMBER H751-Ø-1 | REV. B

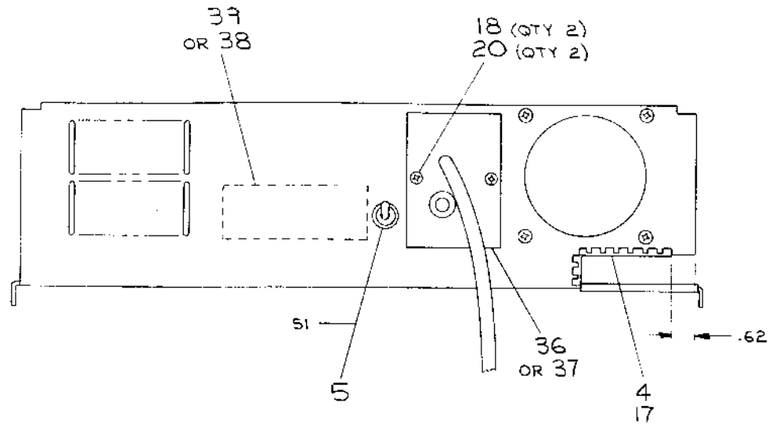
DIST.

LEGEND	
H751-A	115 V
H751-B	230 V

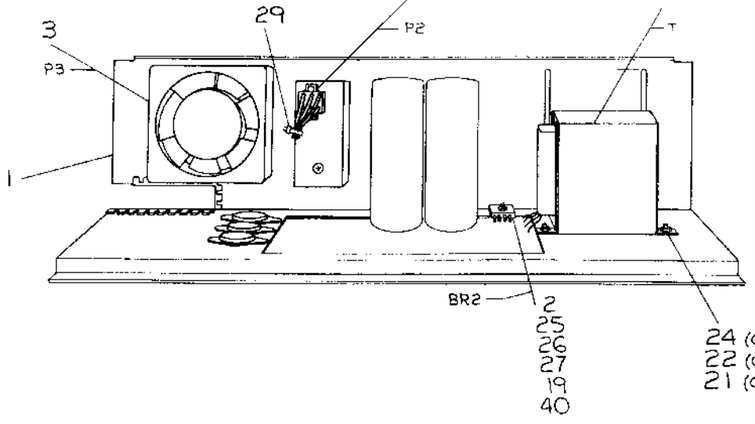


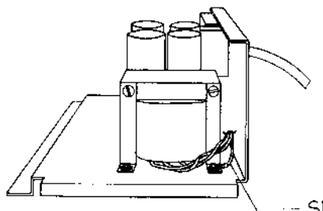


DETAIL "A"



VIEW A-A
ROTATED 180°





NOTES:

1. MOUNT ITEM # 28 (CASSETTE POWER SUPPLY) TO ITEM #1 (CHASSIS) BEFORE MOUNTING ITEMS #2, #11, & #12.
2. USE ITEM #14 (TAPE) BETWEEN EACH OF FOUR LARGE CAPACITORS AS SHOWN.
3. ITEM #27 (COMPOUND) TO BE APPLIED TO BOTH SIDES OF ITEM #16 (WASHER) BEFORE ASSEMBLY.
4. USE CRIMP TOOL #45219 FOR ITEM #35.
5. #'S IN PARENTHESIS INDICATE QUANTITY USED AT THAT LOCATION.

REVISIONS			
CHK	CHANGE NO	REV	
	H751-0C004	D	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TU6Ø		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS: .xxx = .005, .xx = .02, .x = .1 ANGLES: ±0° 30' REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √	DRN. F. CARBERRY	DATE 9-25-72
	CHK'D. B. MAJOR	DATE 10-25-72
	ENG. LARRY NAR-HI	DATE 10-25-72
	PROJ. ENG. M. LEIS	DATE 10-25-72
	PROD. B. DIGREGORIO	DATE 10-26-72
MATERIAL —— /	NEXT HIGHER ASSY. B-DD-H751-Ø	
FINISH /	SCALE NONE	
	SHEET 1 OF 2	

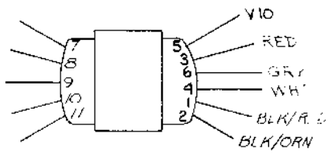
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
H751
POWER SUPPLY

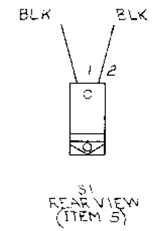
SIZE	CODE	NUMBER	REV.
D	DJA	H751-Ø-Ø	D

DIST.

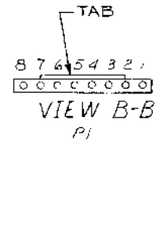
WIRE NO	DESIGNATION AWG	COLOR	FROM CONN	FROM PIN	TO CONN	TO PIN	WITH	REMARKS	LENGTH (IN.)
1	18	BLK	S1-1	—	P1-1		18		DO NOT CUT
5	18	BLK	S1-2	—					DO NOT CUT
12	18	BLK/RED	T1-1				35	SEE NOTE 4	15
32	18	BLK	P2-4	8					3
12	18	VIO	T1-2	—	P1-2		18		18
12	18	RED	T1-3		P1-3		18		18
12	18	WHT	T1-4	—	P1-4		18		18
30	18	GRN	P2-2	—	-INP		23	SEE DETAIL A	16
12	18	GRY	T1-6	—	P1-5		18		18
12	18	—	T1-7	40	P4-7		SOLDER		1 1/4
12	18	—	T1-8	40	P4-8		SOLDER		1 1/4
12	18	—	T1-10	40	P4-9		SOLDER		1 1/4
12	18	—	T1-12	40	P4-10		SOLDER		1 1/4
12	18	—	T1-11	40	P4-11		SOLDER		1 1/4
31	18	RED	P4 - +15V	SOLDER	P1-4		18		16
33	18	GRN	P4 - +15V	SOLDER	P1-1		18		16
34	18	VIO	P4 - -15V	SOLDER	P1-2		18		16
32	18	BLK	P4 - GND	SOLDER	P1-5		18		16
12	18	BLK/ORN	T1-2	—	P2-6		18		18
2	—	—	BR2-(+)	40	P4-(+)		SOLDER		1
2	—	—	BR2-(-)	40	P4-(-)		SOLDER		1
2	—	—	BR2-A	40	P4-A		SOLDER		1
2	—	—	BR2-B	40	P4-B		SOLDER		1



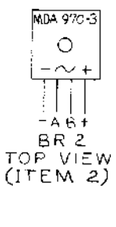
T1
TOP VIEW
(ITEM 12)



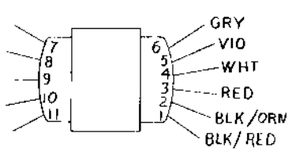
S1
REAR VIEW
(ITEM 5)



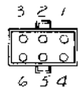
VIEW B-B
P1



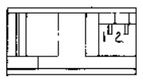
BR 2
TOP VIEW
(ITEM 2)



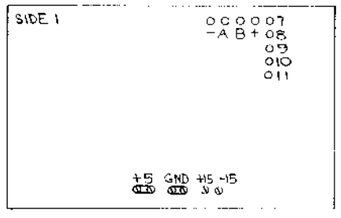
T1
(ALTERNATE
VENDOR)



P2
(ITEM 6)



P3
(ITEM 3)
TOP VIEW



P4
(ITEM 28)

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TU60	PARTS LIST			

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: XXX - .005, XX - .02, X - 1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

		DATE
DRN	[illegible]	3/2/81
CHK'D	[illegible]	DATE
ENG.	[illegible]	DATE
PROJ ENG.	[illegible]	DATE
PROD	[illegible]	DATE

MATERIAL
FINISH
NEXT HIGHER ASSY.
SCALE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
H751
POWER SUPPLY

SIZE	CODE	NUMBER	REV
D	[illegible]	[illegible]	D

DIST

REV	REVISIONS	CHANGE NO	CHK

BRUNING 40-102 1986

SECT CODE D | DRAWING NUMBER D UA H751-0-0

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY F.CARBERRY | CHECKED W.MAJOR | SECTION 1
DATE 9/19/72 | DATE 10/6/72
ENG Larry Marley | PROD Bob Pinkham | ISSUED SECT. 1
DATE 10/26/72 | DATE 10/26/72

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION H751-A	H751-B
1	E-IA-5310191-0-0	CHASSIS, POWER SUPPLY	1	1
2	1110208	DIODE ARRAY MDA970-3 (BR2)	1	1
3	1210719	FAN, BOXER 115V, 25-35 CUFT	1	1
4	9007036	GROMMET, CATERPILLAR	A/R	A/R
5	1203376	SWITCH, TOGGLE SPST	1	1
6	1209351-06	CONNECTOR, MATE-N-LOCK 6 PIN	1	1
7	1209340-01	CONNECTOR, MATE-N-LOK 8 PIN	1	1
8	1209378-01	PIN, MATE-N-LOK	10	10
9	1210820-01	MINI-FASTAB, HOUSING #1-480417-0	2	2
10	1210820-02	MINI-FASTAB, PIN #60291-1	2	2
11	1505819	TRANSISTOR, 2N3055 (Q2, Q3, Q4)	3	3
12	1611096	TRANSFORMER, MMC 4565-1/T72105 (T1)	1	1
13	9006012-1	SCR. #4-40 x 7/16, PHL PAN HD	6	6
14	9007834	TAPE, DOUBLE SIDED, ½ INCH	A/R	A/R
15	9006557	KEP NUT #4	6	6
16	9006721	WASHER, INSULATING	3	3
17		LOCTITE, IS-15Ø	A/R	A/R
18	9006633	LOCK WASHER #6, INT TOOTH	5	5
19	9008185	KEP NUT #6	5	5
20	9006020-1	SCR, 6-32 x ¼, PHL PAN HD	5	5
21	9006039-1	SCR, 8-32 x ½, PHL PAN HD	4	4
22	9006666	WASHER, FLAT, #8	4	4

TITLE: H751 POWER SUPPLY
ASSY NO.: D-UA-H751-Ø-Ø
SHEET 1 OF 2
SIZE: A | CODE: PL | NUMBER: H751-Ø-Ø | REV: D | ECO NO: H751-000224
DIST.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

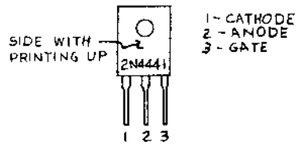
MADE BY F.CARBERRY | CHECKED W.MAJOR | SECTION 1
DATE 9/19/72 | DATE 10/6/72
ENG Larry Marley | PROD Bob Pinkham | ISSUED SECT. 1
DATE 10/26/72 | DATE 10/26/72

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY VARIATION H751-A	H751-B
23	9006776	CONN, SOLDERLESS, AMP #31889	2	2
24	9006563	KEP NUT, #8	4	4
25	9007793-1	SCR, #6-32 x 9/16, PHL PAN HD	1	1
26	9006656	WASHER, FLAT, #6	1	1
27	9008268	COMPOUND, THERMAL JOINT	A/R	A/R
28	D-CS-5410131-0-1	CASSETTE POWER SUPPLY	1	1
29	9007031	CABLE TIE, PANDUIT, SST 1 M	A/R	A/R
30	9107360-55	WIRE, #18 AWG STRD, IPVC, GRN	A/R	A/R
31	9107360-22	WIRE, #18 AWG, STRD, IPVC, RED	A/R	A/R
32	9107360-00	WIRE, #18 AWG, STRD, IPVC, BLK	A/R	A/R
33	9107360-33	WIRE, #18 AWG, STRD, IPVC, ORN	A/R	A/R
34	9107360-66	WIRE, #18 AWG, STRD, IPVC, BLU	A/R	A/R
35	9009541	SPLICE, CLOSED END AMP #36965	1	1
36	C-UA-BCØ5H-Ø-Ø	LINE CORD SET, 115VAC	1	
37	C-UA-BCØ5J-Ø-Ø	LINE CORD SET, 230VAC		1
38	A-DC-5310297-0-0	H751-A DECAL (115V)	1	
39	A-DC-5310298-0-0	H751-B DECAL (230V)		1
40	9107278-00	TUBING, BLACK, TFE #18 AWG	A/R	A/R
41	9007615	1/4 X 1/4 X 6 ROUND FIBER SPACER	4	4
42	A-PS-1211343-0-0	FILTER	1	1
43	9006025-1	SCR. 6-32 X 5/8 PHL. PAN HD.	4	4
44	1011023	CAP, 14000 UF, 20V, (C7, C8, C9, C10)	4	4

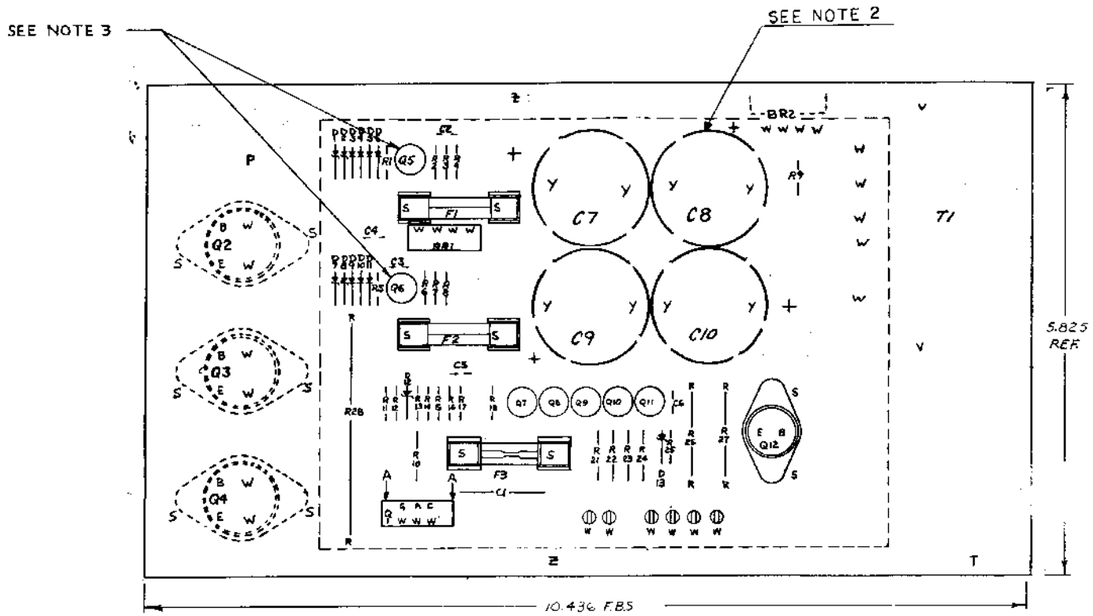
TITLE: H751 POWER SUPPLY
ASSY NO.: D-UA-H751-Ø-Ø
SHEET 2 OF 2
SIZE: A | CODE: PL | NUMBER: H751-Ø-Ø | REV: D | ECO NO:
DIST.

NOTES:

1. UNLESS OTHERWISE SPECIFIED
   RESISTANCE IS IN OHMS
   CAPACITANCE IS IN PICOFARADS
2. C7 - C10 ARE MOUNTED ON NEXT HIGHER ASSEMBLY (H751).
3. INSTALL ITEM #37 (TRANSIPADS) UNDER Q5 & Q6.



VIEW A-A
(Q1)



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2		TRANSIPADS, #10134	90-07200	37
1	R28	RES .3 10 W 5% W.W.	13-09107	36
1	Q6	TRANS. DEC 3762	15-09649	35
1	Q5	TRANS. DEC. 3734	15-10062	34
5	Q7 THRU Q11	TRANS. DEC. 3009 B	15-03100	33
1	Q1	TRANS. 2N4441 SCR	15-05867	32
1	Q12	TRANS 2N4912	15-09483	31
6	R2,R6,R3,R11,R12,R18	RES 470 1/4W 5%	13-00316	30
1	R24	RES. 348 1/8W 1% MF	13-04858	29
2	R26,R27	RES.100 2W 5%	13-02380	28
1	R10	RES. 82 1/2W 10%	13-00225	27
2	R15,R14	RES. 10K 1/4W 5%	13-00479	26
2	R3,R7	RES. 10 1/4W 5%	13 01317	25
2	R14, R28	RES. 4.7K 1/4W 5%	13-00447	24
1	R21	RES. 3.16K 1/8W 1% MF	13-03045	23
1	R23	RES 1.96K 1/8W 1% MF	13-04833	22
1	R22	RES. 1.47K1/8W 1% MF.	13-05108	21
6	R1,R4,R5,R8,R13,R17	RES. 1K 1/4W 5%	13-00365	20
1	BR1	DIODE ARRAY MDA-970-3	15-10209	19
5	D1,D2,D7,D8,D13	DIODE HZ1 1/4M 6.8V ZENER 1%	15-09991-1	18
1	D12	DIODE IN752A 5.6V ZENER	15-03808	17
7	D3,THRU D6,D9,D10,D11	DIODE D662	15-10113	16
				15
1	C1	CAP 47UF 20V 10% S.TAN	10-04814	14
5	C2 THRU C6	CAP .01UF 100V 20% D.D.	10-01610	13
6		SPLIT LUGS	90-06735	12
1	F3	FUSE 5 AMP	90-07221	11
2	F1,F2	FUSE 3 AMP	90-07217	10
6		FUSE CLIP	90-07203	9
6		EYELET	90-0900	8
2		FLAT WASHER	90-06655	7
2		KEPNUT #4-40	90-06557	6
2		SCREW, PAN HEAD #4-40 X 5/16	90-06010-1	5
REF		MODULE ECO HISTORY	B-MH-5410131-0-6	4
REF		ASSY/DRILLING HOLE LAYOUT	E-AH-5410131-0-5	3
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5410131-0-4	2
1		ETCHED CIRCUIT BOARD	5010130	1

PARTS LIST

IC TYPE	GND	+ 5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE		

IC PIN LOCATIONS

REV	CHANGE NO.	CHK
C	5410131-00002	L.NARH 4/35
B	5410131-00001	L.NARH 10-13-72
A	5410131-00003	L.NARH 9-29-72
E	5410131-00004	L.NARH 10/4/72

2N4441		DEC 3009B	EN3009
2N4912		2N4912	
DEC 3762			
DEC 3734			
D662	IN645		
IN752A	5.6MA		
HZ1			
DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: TUSØ

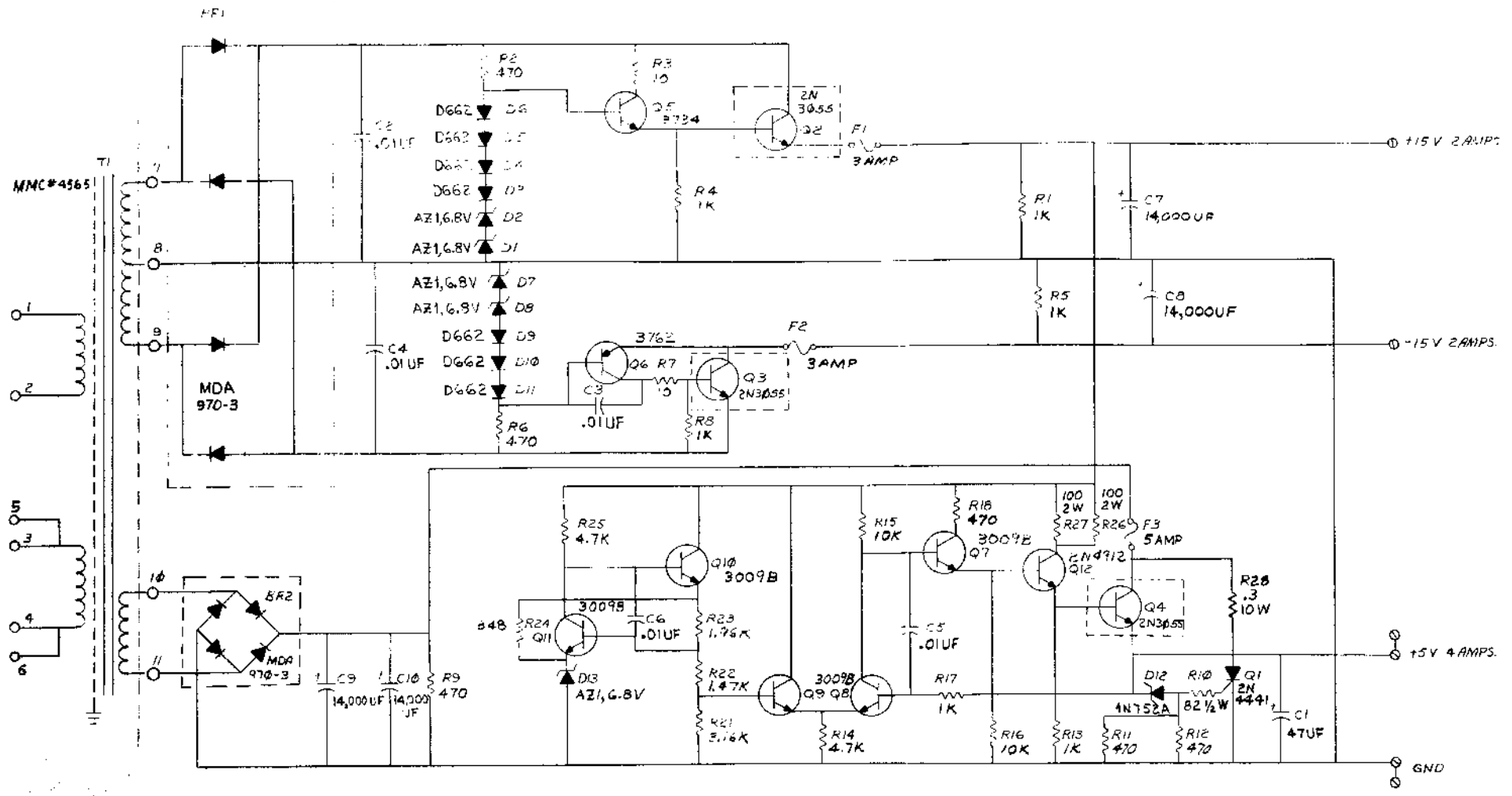
ETCH BOARD REV: C

DRN: [illegible] DATE
CHK'D: NANCY MOORE DATE 9-26-72
ENG: Larry Narhi DATE 9/27/72
PROJ ENG: Larry Narhi DATE 9/27/72
PROD: Bob LaVigne DATE 9/27/72
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: [illegible]
SIZE: D | NUMBER: 5410131-01 | REV: E
SCALE
SHEET 1 OF 2

DRAWING 40-322 16699
DEC FORM NO DRD 135A



O INDICATES HOLES FOR DIODE BRIDGE
Q2,Q3,Q4 BR2 T1 ARE MOUNTED ON CHASSIS/HEAT SINK

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV C

REV	CHANGE NO. REVISIONS	CHK	DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

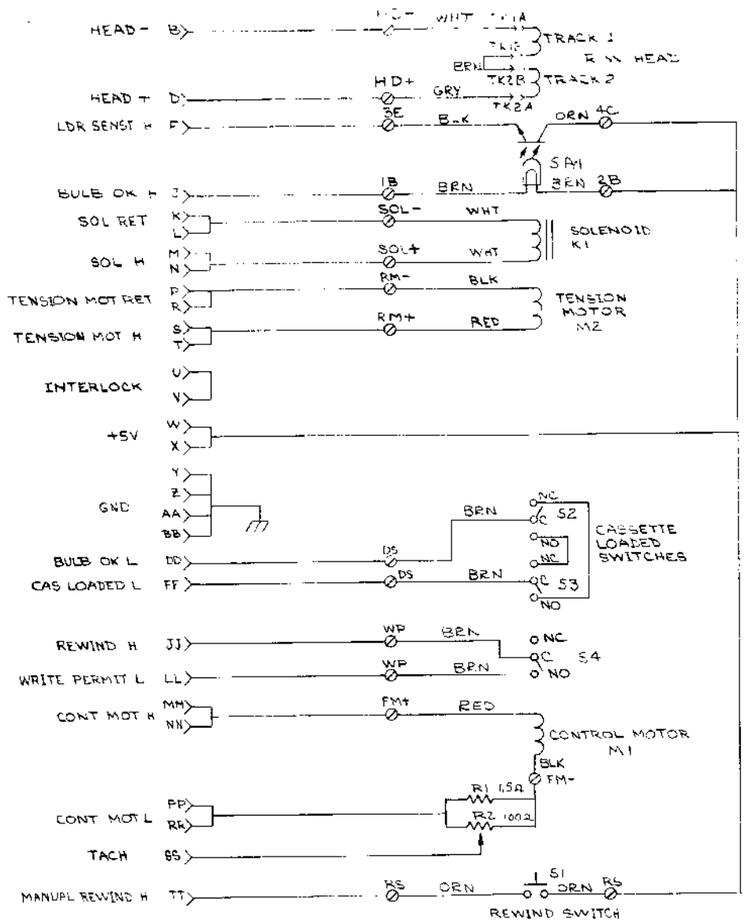
DRN		DATE
CHK'D	Mark Hanke	DATE 7-24-72
ENG	Larry Harris	DATE 7/25/72
PROJ ENG	Larry Harris	DATE 7/25/72
PROD	Bruce Boyer	DATE 7/27/72
NEXT HIGHER ASSY		
SCALE		
SHEET	2 OF 2	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CASSETTE POWER SUPPLY

SIZE D | CODE 83 | NUMBER 5410131-0-1 | REV. E | DIST.

DEC FORM NO 52-135



NOTES:
1. SWITCHES ARE SHOWN WITH "CAS LOADED" AND "WRITE PERMIT" ACTIVATED.
2. CONNECT WIRE (ITEMS #44 & #45) TO HEAD (ITEM #20) USING CONNECTOR PINS SUPPLIED WITH HEAD (ITEM #20). SEE DETAIL "A".

REVISIONS		
REV	CHANGE NO	CHK

BRUNING 40-522 15840

DEC FORM NO
ORD 102-B

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
TU60		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS .XXX ± .005, .XX ± .02, X ± .1
ANGLES ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —SS—
FINISH —SS—

DRN		DATE 10/13/72
CHK'D		DATE 12/21/72
ENG		DATE 12/21/72
PROJ. ENG		DATE 12/21/72
PROD.		DATE 12/21/72

NEXT HIGHER ASSY: B-LL-TU60-0
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

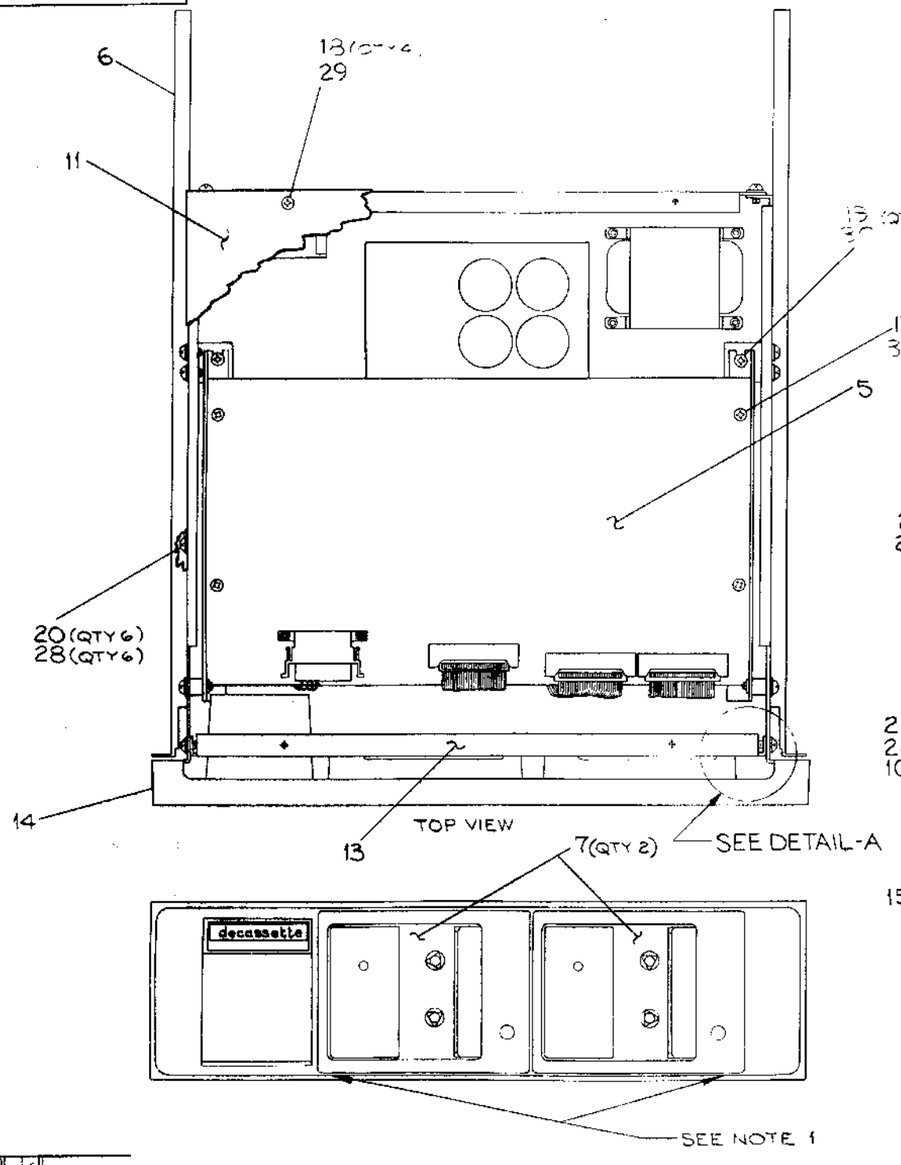
TITLE: CASSETTE DRIVE WIRING DIAGRAM

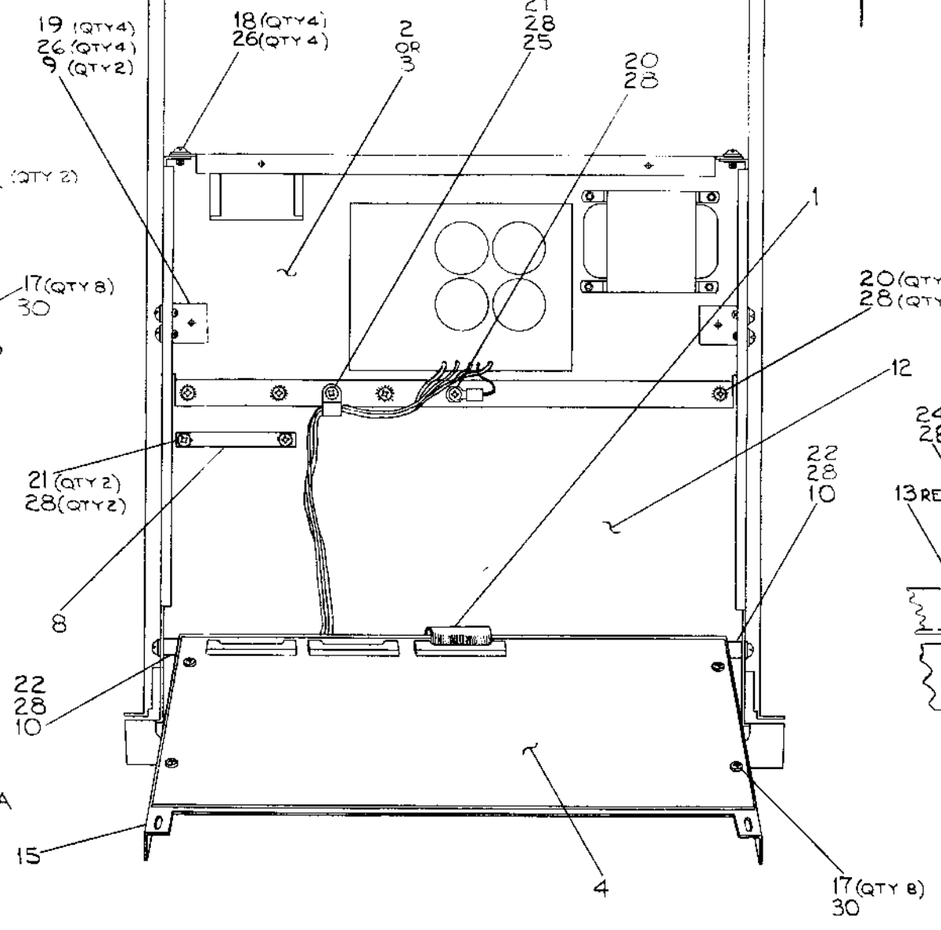
SIZE	CODE	NUMBER	REV
D	WD	TU60-0-WD	

DIST

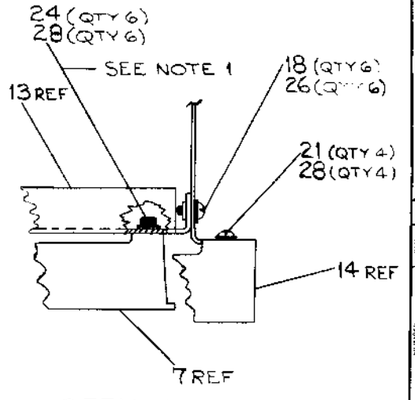
LEGEND	
NUMBER	VARIATION
TU60-AA	115 VAC
TU60-AB	230 VAC

NOTES:
1. DO NOT INSTALL DRIVE MTG SCREWS & WASHERS (ITEMS #24 & #28) AT LOWER FAR LEFT AND LOWER FAR RIGHT CORNER OF DRIVE ASSEMBLIES.





TOP VIEW WITH ITEM #11 (COVER) REMOVED AND ITEM #15 (CARD FRAME ASSY) IN UP POSITION



DETAIL-A

REVISIONS				
CHK	CHANGE NO	REV		
JG	TU60-00012	B	REDRAWN & REVISED	T. SCANLON 8/14/72 A. PICURDE

FIRST USED ON OPTION/MODEL: TU60	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: .xxx = .005, .xx = .02, .x = .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √

DRN. G. FLANDERS	DATE 12/20/72	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. W. MAJOR	DATE 1/1/73	
ENG. M. ELLIS	DATE 1/5/73	TITLE: TU60 UNIT ASSY
PROJ. ENG. M. ELLIS	DATE 1/5/73	
PROD M. ELLIS	DATE 1/5/73	

MATERIAL —
FINISH —
NEXT HIGHER ASSY. B-DD-TU60-0
SCALE —
SHEET 1 OF 2

SIZE	CODE	NUMBER	REV.
D	UA	TU60-0-0	B

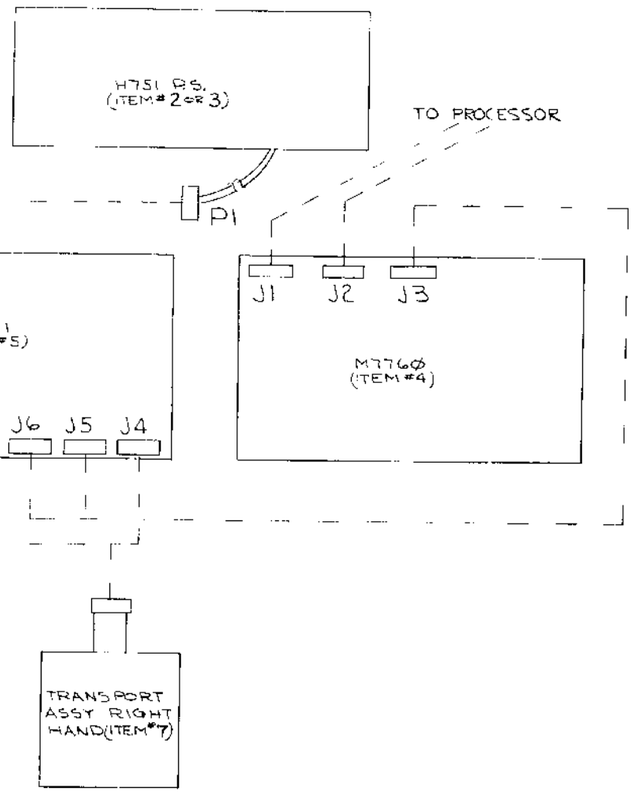
DIST.

ASSY CONNECTIONS

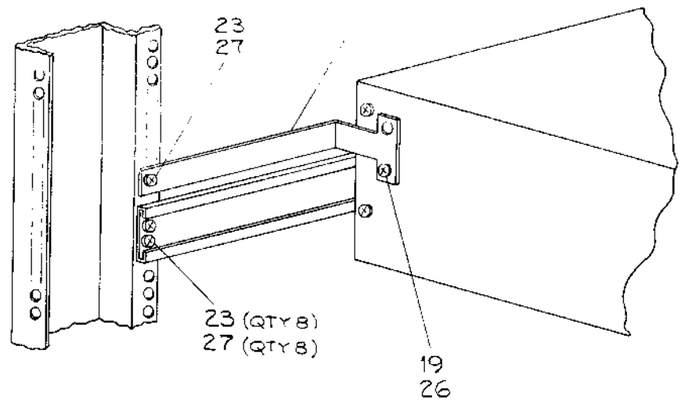
FROM ITEM NO	FROM DESCRIPTION	FROM EQ NO	TO DESCRIPTION
2 OR 3	H751 P.S. - P1	5	M7761-J7
7	TRANSPORT ASSY LEFT	5	M7761-J8
7	TRANSPORT ASSY RIGHT	5	M7761-J4

CABLE CONNECTIONS

ITEM NO	FROM	TO
1	M7761-J6	M7[illegible]-J3



16



LOCATION OF SHIPPING BRACKET (ITEM # 16) WHEN UNIT IS SHIPPED IN CABINET

BRUNING 40-107-15968

REVISIONS		
CHK	CHANGE NO	REV

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX ± .005 .XX ± .02 X ± .1	± 0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN.		DATE 12/72
CHK'D	D. Major	DATE 1/1/73
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE
NEXT HIGHER ASSY.		
SCALE		
SHEET	2 OF	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TU60 UNIT ASSY

SIZE	CODE	NUMBER	REV.
D	UA	TU60-C-C	F

DIST.

SIZE D | CODE UA | NUMBER TU60-0-0 | REV B

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	G.Flanders	CHECKED	W.Major	SECTION	1
DATE	12/20/73	DATE	1/3/73		
ENG	M.Leis	PROD	M.Leis	ISSUED SECT.	1
DATE	1/12/73	DATE	1/12/73		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION TU6Ø-AA	TU6Ø-AB
1	D-UA-BCØ5L-Ø-Ø	CABLE, JUMPER	1	1
2	D-UA-H751-A	H751 POWER SUPPLY (115V)	1	
3	D-UA-H751-B	H751 POWER SUPPLY (230V)		1
4	D-CS-M776Ø-Ø-1	TU6Ø LOGIC	1	1
5	D-CS-M7761-Ø-1	READ/WRITE AND SERVO	1	1
6	D-PS-1209154-0-0	CHASSIS-TRAK (PAIR	1	1
7	D-AD-7009014-0-0	TRANSPORT ASSY (TU6Ø)	2	2
8	C-MD-7409479-0-0	PLATE,PRESSURE	1	1
9	C-MD-7409904-0-0	BRACKET,SYMMETRICAL	2	2
10	B-MD-7409933-0-0	BUSHING,PIVOT	2	2
11	E-MD-7409941-0-0	COVER,CHASSIS	1	1
12	E-IA-7409943-0-0	CHASSIS (TU6Ø)	1	1
13	D-IA-74009990-0-0	PLATE,CHASSIS,FRONT (TU6Ø)	1	1
14	D-IA-7410556-0-0	BEZEL ASSY	1	1
15	D-IA-7410604-0-0	CARD FRAME ASSY	1	1
16	C-MD-7410690-0-0	BRACKET,SHIPPING	1	1
17	9006020-1	SCR,PHL PAN HD#6-32 ¼ LG	16	16
18	9006020-3	SCR,PHL TRUSS HD#6-32 x ¼ LG	14	14
19	9006021-3	SCR,PHL TRUSS HD #6-32 x 5/16 LG	7	7
20	9006035-3	SCR,PHL TRUSS HD #8-32 x ¼ LG	11	11
21	9006037-3	SCR,PHL TRUSS HD #8-32 x 3/8 LG	7	7
22	9006040-3	SCR,PHL TRUSS HD #8-32 5/8 LG	2	2

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO
TU6Ø UNIT ASSY	D-UA-TU6Ø-Ø-Ø	A	PL	TU6Ø-Ø-Ø	B	TU6Ø 00012
	SHEET 1 OF 2	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

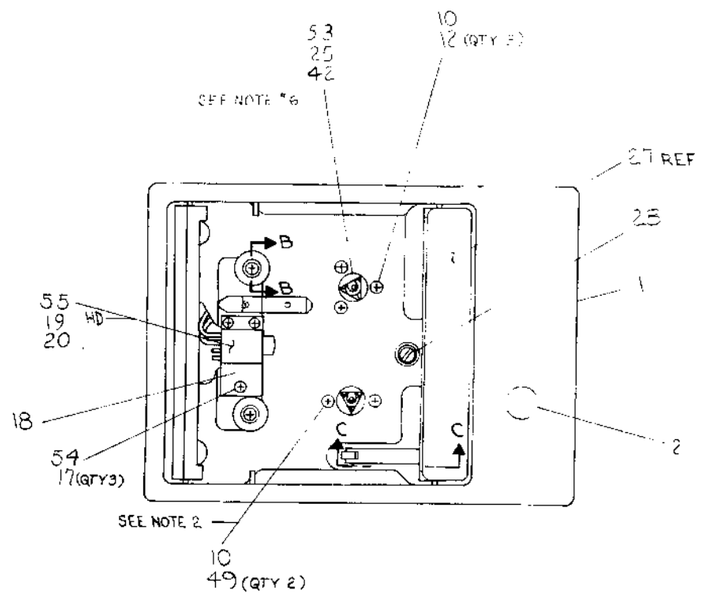
PARTS LIST

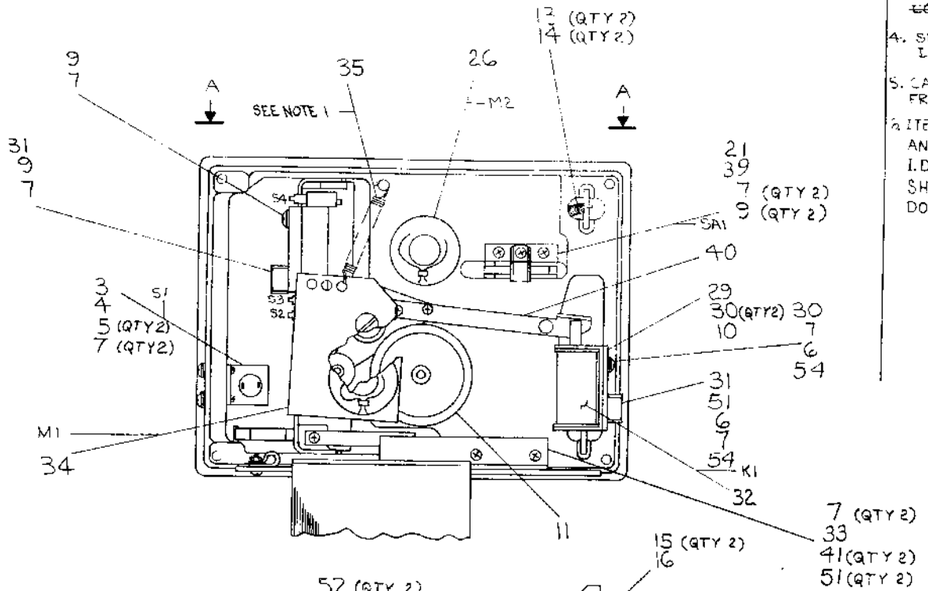
MADE BY	G.Flanders	CHECKED	W.Major	SECTION	1
DATE	12/20/73	DATE	1/3/73		
ENG	M.Leis	PROD	M.Leis	ISSUED SECT.	1
DATE	1/12/73	DATE	1/12/73		

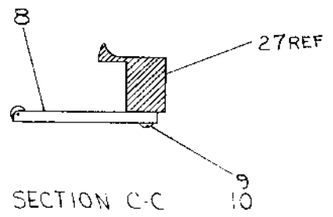
ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION TU6Ø-AA	TU6Ø-AB
23	9006071-3	SCR,PHL TRUSS HD #10-32 x 3/8 LG	9	9
24	9006337-8	SCR,SOCKET HD #8-32 x 3/8 LG	6	6
25	9007080	CABLE CLAMP 3/16	1	1
26	9007649	LOCKWASHER #6 EXT TOOTH	15	15
27	9007786	NUT,#10-32 TINNERMAN	9	9
28	9008072	LOCKWASHER # 8 EXT TOOTH	26	26
29		LOCTITE 242	A/R	A/R
30		TORQUE SEAL	A/R	A/R

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
TU6Ø UNIT ASSY	D-UA-TU6Ø-Ø-Ø	A	PL	TU6Ø-Ø-Ø	B	
	SHEET 2 OF 2	DIST.				

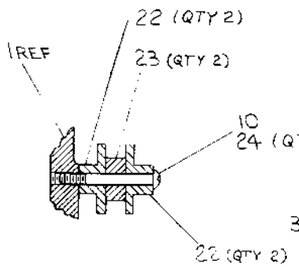
NOTES:
1. SET SPRING TENSION 45/55 GRAMS MEASURED ON ROCKER ASSY LEVER AT POSITION WHERE SOLENOID STRIKES LEVER. TRANSPORT MUST BE IN OPERATING POSITION.
2. TIGHTEN SCR(ITEM #49) TO 6 INCH-POUNDS OF TORQUE.
3. ~~TRIM LEADS OF ITEM #50(CAP) TO 3/8 LONG BEFORE SOLDERING TO ITEM #36.~~
4. SEE DETAILS B,C FD TO LOCATE ITEM #47 (CABLE TIES).
5. CABLE WILL BE LACED SO AS NOT TO INHIBIT FREE MOTION OF LOCK-BAR #27.
6. ITEM #53 TO BE USED BETWEEN MOTOR SHAFT AND I.D. OF COUPLING. APPLY LOCTITE TO I.D. OF COUPLING AND SLIP ON MOTOR SHAFT. BE SURE LOCTITE DOES NOT RUN DOWN MOTOR SHAFT TO MOTOR BEARING.



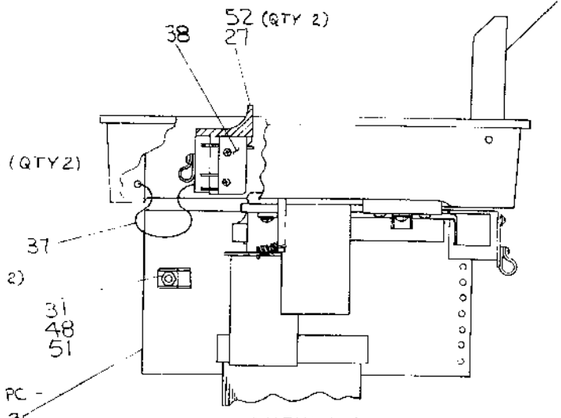




SECTION C-C



SECTION B-B



VIEW A-A

REVISIONS				
CHK	CHANGE NO	REV		
	TU60-00006	A	V. DEMPSEY	2-7-72
	7009014-0000	B	V. DEMPSEY	2-7-72
	TU60-0002	C	M. LEIS	5-7-72

BRUNING 40-107 1568

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO
TU60		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS: XXX ± .005, XX ± .02, X ± .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN.		DATE 10/20/72
CHK'D.		DATE 12/21/72
ENG.		DATE 12-19-72
PROJ. ENG.		DATE
PROD.		DATE
NEXT HIGHER ASSY.	TU60-2-0	
SCALE NONE	SHEET OF 2	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

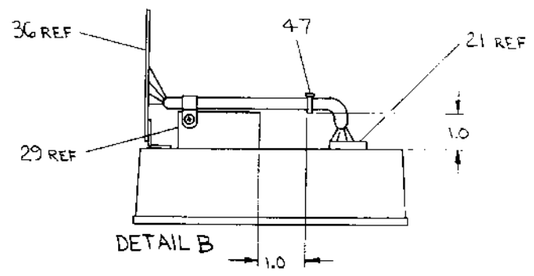
TITLE: TRANSPORT ASSY (TU60)

SIZE	CODE	NUMBER	REV.
D	A1	7009014-0-0	C

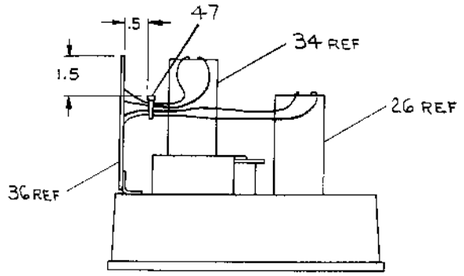
D.ST

WIRE TABLE

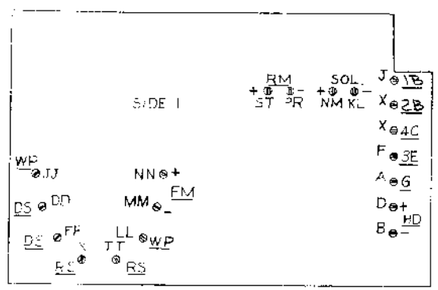
ITEM NO.	DESCRIPTION COLOR	AWG	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS	LENGTH
43	ORN	26	S1	SOLDER	PC-X	SOLDER	EITHER S1 TERM	3.5
43	ORN	26	S1	SOLDER	PC-TT		REMAINING S1 TERM	3.5
			S2-C		PC-DD			
45	WHT	26	HD-TK1A	SOLD&46	PC-D		SEE DETAIL A	4.5
	GRY	26	HD-TK2A	SOLD&46	PC-B			4.5
			S3-C		PC-EE			
			S4-C		PC-LL			
			S4-NO		PC-JJ			
	BLK		M1-1		PC-MM			5.0
	RED		M1-2		PC-NN			5.0
	BLK		M2-1		PC-PR			5.0
	RED		M2-2		PC-ST			5.0
	WHT		K1		PC-MN		EITHER K1 LEAD	1.25
	WHT		K1		PC-KL		REMAINING K1 LEAD	1.25
	BRN		SA-1		PC-J		EITHER BRN LEAD	
	BRN		SA-2		PC-X		REMAINING BRN LEAD	
	BLK		SA-3		PC-F			
	ORN		SA-4		PC-X	SOLDER		
44	BRN	26	HD-TK1B	SOLD&46	HD-TK2B	SOLD&46	SEE DETAIL A	.75



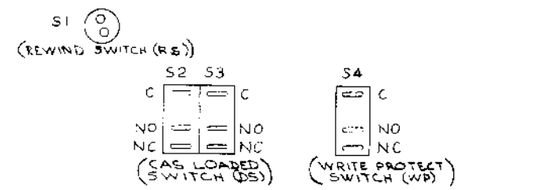
DETAIL B

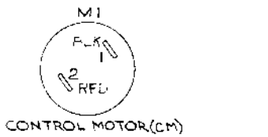


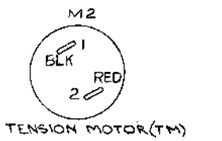
DETAIL C

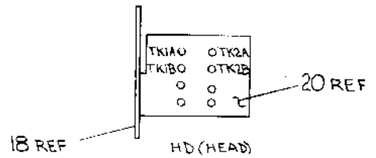


PC
(DRIVE TERMINATOR CARD)

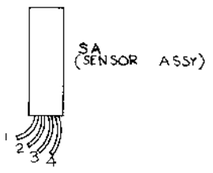


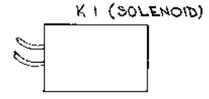


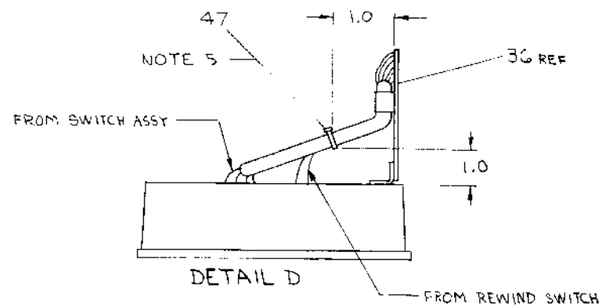




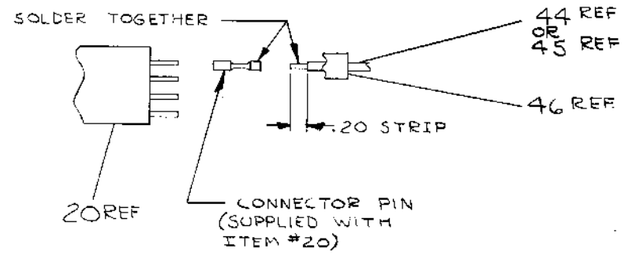
HD(HEAD)







DETAIL D



DETAIL A

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
TU60		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES: DECIMALS XXX ± .005, XX ± .01, X ± .1; ANGLES ±0° 30'. REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓. MATERIAL —. FINISH —.

		DATE
DRN	[illegible]	12-25-72
CHK'D	[illegible]	12/21/72
ENG.	[illegible]	12-19-72
PROJ. ENG.	[illegible]	12-7-72
PROD.	[illegible]	[illegible]

NEXT HIGHER ASSY. D [illegible] TU-V-V ✓

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TRANSPORT ASSY (TU60)

SIZE D | CODE [illegible] | NUMBER 7009014-0-C | REV. C

SCALE — | SHEET 2 OF 2 | DIST

REVISIONS: REV | CHANGE NO | CHK

BRUNING 40 107 15986

DEC COPY TO [illegible]

7009014-0-0 REV C SIZE D

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY W. MAJOR	CHECKED W. Major	SECTION 1
DATE 11/27/72	DATE 1/16/73	
ENG W. BENSON	PROD [illegible]	ISSUED SECT. 1
DATE 1-16-73	DATE 1/16/73	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-IA-7410640-0-0	BASE ASSY	1
2	B-MD-7410518-0-0	BUTTON, REWIND SWITCH	1
3	1211040	SWITCH, PUSHBUTTON SPST	1
4	B-MD-7410519-0-0	BRACKET, REWIND SWITCH	1
5	9006011-1	SCR, PHL HD PAN #4-40 X 3/8	2
6	9008172	WASHER, FLAT #4 S.S.	2
7	9006632	WASHER, INT TOOTH #4	12
8	C-IA-7409930-0-0	EJECTOR ASSY	1
9	9006013-1	SCR, PHL HD PAN #4-40 X 1/2	5
10		LOCTITE 242	A/R
11	D-AD-7009146-0-0	SPINDLE ASSEMBLY	1
12	9009275-2	SCR, PHL HD PAN #4-40 X 3/8	3
13	9009308	SPRING	2
14	9006527	ROLL PIN 3/32 X 11/16 LG	2
15	9006531	ROLL PIN 1/8 X 3/8 LG	2
16	C-IA-7409924-0-0	COVER, LOWER CASSETTE ASSY	1
17	9006001-1	SCR, PHL HD PAN #2-56 X 1/4	3
18	C-MD-7409908-0-0	PLATE, HEAD MOUNT	1
19	9009276	SCR, PHL HD PAN #2-56 X 1/8	1
20	1211174	HEAD	1
21	D-PS-1211289-0-0	SENSOR ASSEMBLY	1
22	C-MD-7409912-0-0	GUIDE, TAPE	4

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
TRANSPORT ASSY (TU6Ø)	D-AD-7009014-0-0	A	PL	7009014-0-0	C	TU60-00012
	SHEET 1 OF 3	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY W. MAJOR	CHECKED W. Major	SECTION 1
DATE 11/27/72	DATE 1/16/73	
ENG W. BENSON	PROD [illegible]	ISSUED SECT. 1
DATE 1-16-73	DATE 1/16/73	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
23	C-MD-7409911-0-0	SPACER, TAPE GUI[illegible]	2
24	9006015-1	SCR, PHL HD PAN #4-40 X 3/4	2
25	D-PS-1211279-0-0	COUPLING, CASSETTE DRIVE	1
26	1211111	MOTOR, CASSETTE	1
27	D-MD-7409917-0-0	LOCK-BAR, CASSETTE	1
28	9009277-1	SCR, SLOTTED HD PAN #8-32 X 1/4	1
29	C-MD-7409928-0-0	BRACKET, SOLENOID	1
30	9008301-1	SCR, PHL HD PAN #4-40 X 1/4	5
31	9007079	CLAMP, CABLE 5/16	3
32	1211189	SOLENOID	1
33	B-MD-7409929-0-0	BRACKET, TERMINAL BOARD	1
34	C-AD-7009140-0-0	MOTOR MOUNT ASSY	1
35	9009279	SPRING	1
36	D-IA-7009041-0-0	TERMINATOR CABLE ASSY	1
37	C-MD-7410537-0-0	SPRING, LOCK BAR	1
38	C-AD-7009141-0-0	SWITCH ASSY	1
39	B-MD-7410544-0-0	SPACER, E.O.T. BLOCK	1
40	C-AD-7009148-0-0	LEVER ASSY	1
41	9006791	SPACER, AL HEX #4 1/8 LG	2
42	9009274	SCREW, SET #2-56 X 1/8 LG	1
43	9107636-33	WIRE, #26 AWG IPVC STRD ORN	A/R
44	9107636-11	WIRE, #26 AWG IPVC STRD BRN	A/R

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
TRANSPORT ASSY (TU6Ø)	D-AD-7009014-0-0	A	PL	7009014-0-0	C	

| | SHEET 2 OF 3 | DIST. | | | | |

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

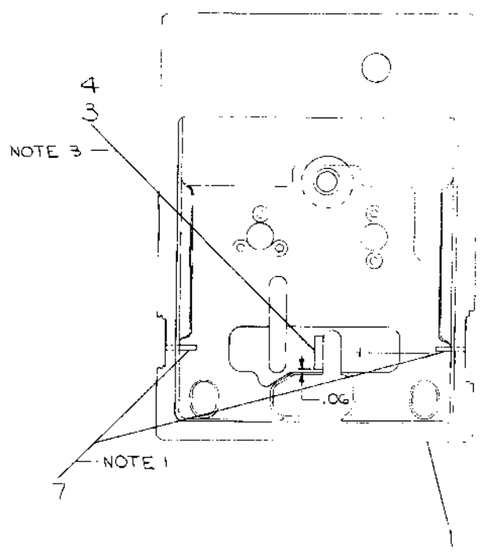
MADE BY W. MAJOR 11/27/72	CHECKED W. Major	SECTION 1
ENG W Benson	PROD	ISSUED SECT. 1
DATE 1-16-73	DATE 1/16/73 DATE 1/15/73	

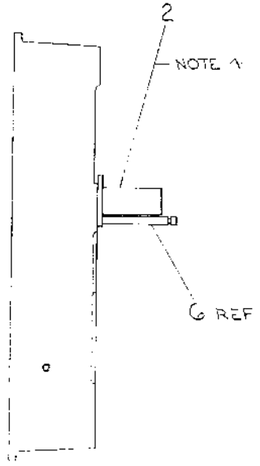
ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
45	9107678-98	WIRE, #26 AWG TEF INS WHT/GRY	A/R
46	9107755	TUBING, SHRINKABLE 3/64 DIA	A/R
47	9007031	TIE,CABLE 3 3/4 LG X 3/32 WIDE	A/R
48	9009280	NUT,HEX #4-40 X 3/16 X 1/16	1
49	9009504-2	SCR,PHL FLAT HD #4-40 X 5/8	2
~~50~~	~~1000042~~	~~CAPACITOR 1000 PF 5%~~	~~2~~
51	9006010-1	SCR,PHL PAN HD #4-40 X 5/16	4
52	9006517	ROLL PIN 1/8 X 1/4 LG	2
53		LOCTITE IS-150	A/R
54		TORQUE SEAL	A/R
55	9006631	WASHER, INT TOOTH #2	1

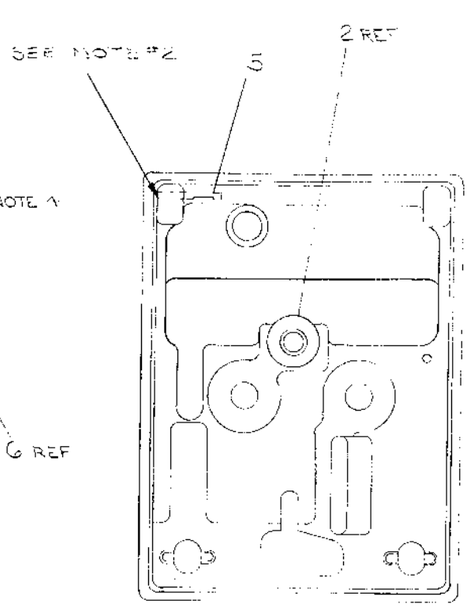
TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
TRANSPORT ASSY (TU6Ø)	D-AD-7009014-0-0	A	PL	7009014-0-0	C	
	SHEET 3 OF 3	DIST.				

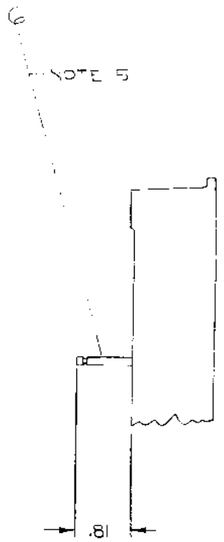
DEC FORM DEC 16-(325)-1031-N870
DRA 110

NOTES:
1. PIN (ITEM#6) TO BE PRESSED FLUSH WITH OUTSIDE SURFACE OF BASE AS SHOWN, 2 PLACES.
2. PIN (ITEM#5) TO BE PRESSED FLUSH WITH TOP SURFACE AS SHOWN. NOTE POSITION OF CUTOUT ON ITEM#5.
3. WHEN MOUNTING SHIM (ITEM#3) TO BASE (ITEM#1), USE LOCTITE IS-0-6 (ITEM#4) SPARINGLY TO AVOID BUILDUP BUT ENOUGH TO OBTAIN A GOOD BOND. NOTE LOCATION OF SHIM ALONG EDGE OF SLOT IN BASE.
4. BUSHING (#2) TO BE PRESSED INTO ITEM#1 AS SHOWN.
5. PIN (#6) TO BE PRESSED INTO ITEM#1 TO DIMENSION SHOWN.









QTY	DESCRIPTION	PART NO	ITEM NO
2	ROL PN	9006531	7
1	PIN, SPRING MOTOR BIAS	C-MD-7409934-0-0	6
1	PIN, ANCHOR	C-MD-7410539-0-0	5
A/R	LOCTITE IS-06		4
1	SHIM, SPRING	B-MD-7410553-0-0	3
1	BUSH [illegible] ROCKER	B-MD-7409938-0-0	2
1	BASE, PLATE FRAME (M.M.H)	B-MD-7409835-0-0	1

PARTS LIST

FIRST USED ON OPTION/MODEL: TU-60

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS: .XXX ± .005, .XX ± .02, X ± .1; ANGLES: ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. [illegible] DATE 9-15-72
CHK'D [illegible] DATE 11/17/72
ENG. DATE
PROJ. ENG. DATE
PROD. DATE 11/17/72
NEXT HIGHER ASSY
SCALE

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: REF ASSY

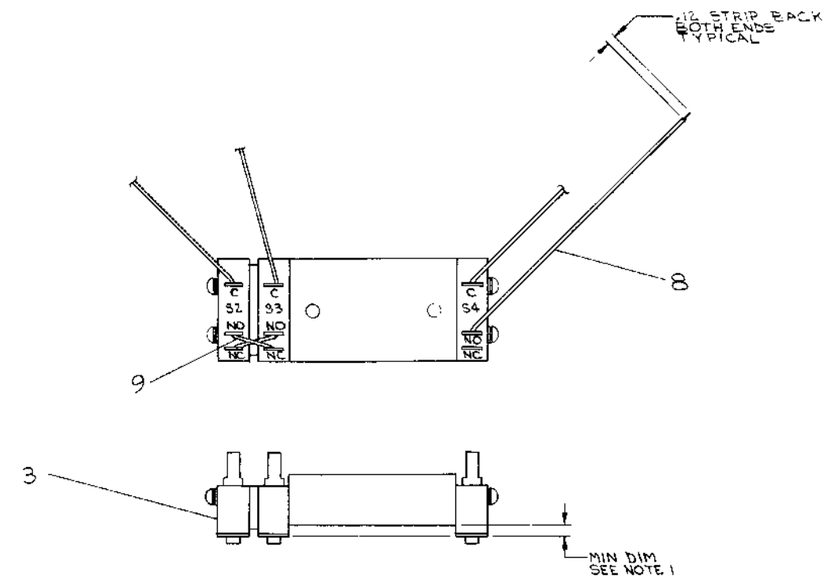
SIZE D | CODE AU | NUMBER 74106[illegible]-0-0 | REV A

REVISIONS	CHK	CHANGE NO	REV
		TU60-00012	A
		MEIS	

BRUNING 40-107 15566
OFF FORM NO. DR 1105-A

WIRE TABLE

ITEM NO.	DESCRIPTION COLOR	AWG	FROM CONN	FROM WITH	TO CONN	TO WITH	LENGTH
8	BRN	26	S2-C	SOLDER	⟵	⟵	5"
9	BUSS	22	S2-NO	SOLDER	S3-NC	SOLDER	.75"
9	BUSS	22	S2-NC	SOLDER	S3-NO	SOLDER	.75"
8	BRN	26	S3-C	SOLDER	⟵	⟵	5"
8	BRN	26	S4-C	SOLDER	⟵	⟵	6"
8	BRN	26	S4-NO	SOLDER	⟵	⟵	4.5"



NOTES:
1. SWITCHES MUST BE ADJUSTED AT ASSY TO OBTAIN MINIMUM DIMENSION FROM BOTTOM SURFACE OF SWITCHES TO BOTTOM SURFACE OF SWITCH BLOCK.

QTY.	DESCRIPTION	PART NO.	ITEM NO.
A/R	WIRE, BUSS, #22 AWG	9107560-01	9
A/R	WIRE #26 AWG, IPVC, STRD	9107636-11	8
2	SCR, PHL HD PAN 2-56 X 1/2 SST	9006005-1	7
2	SCR, PHL HD PAN 2-56 X 3/4 SST	9006006-1	6
~~4~~	~~WASHER, .250 X .094 X .020 THK~~	~~9008871~~	~~5~~
4	WASHER, INT TOOTH #2 SST	9006631	4
3	SWITCH, MICRO	1209782	3
1	SPACER, MICRO SWITCH	12-MD-7409935-00	2
1	BLOCK, SWITCH	12-MD-7409926-00	1

PARTS LIST

FIRST USED ON OPTION/MODEL: TU60

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS: XXX ± .005, XX ± .02, X ± .1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. M. Leis DATE 11/2/72
CHK'D. DATE 12/5/72
ENG. DATE 12/7/72
PROJ. ENG. DATE
PROD. DATE

NEXT HIGHER ASSY. D-AD-7009014-0-0
SCALE 2/1
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: SWITCH ASSY

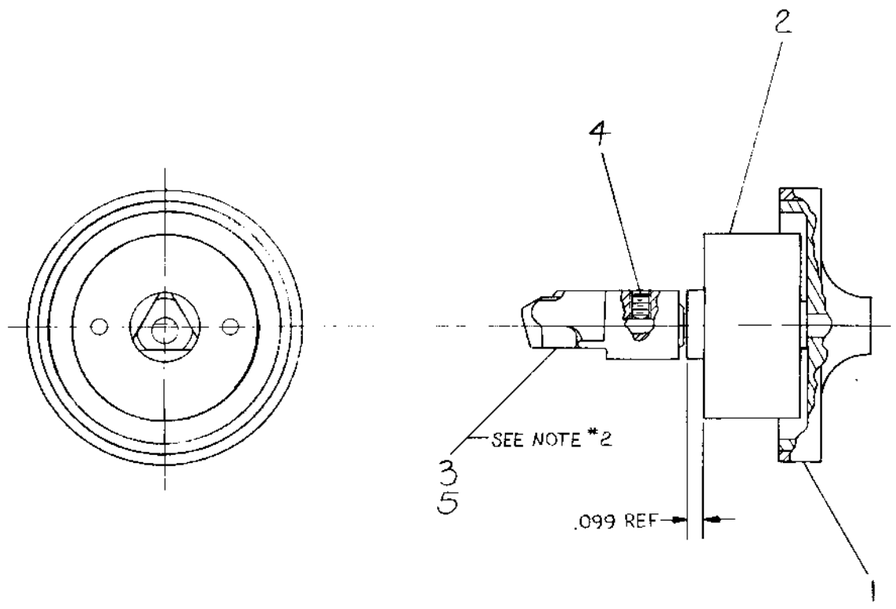
SIZE D | CODE AD | NUMBER 7009141-0-0 | REV. A
DIST.

REVISIONS REV	CHANGE NO	CHK	
A	TU60-00012		M. LEIS

RUNNING 40-107 15968

NUMBER D AD 7009141-0-0 REV A

NOTES:
1. ITEM [illegible] TO BE USED [illegible] SPINDLE.
2. LOCTITE TO BE USED BETWEEN SPINDLE SHAFT AND I.D. OF COUPLING. APPLY LOCTITE TO I.D. OF COUPLING AND O.D. OF ON SPINDLE SHAFT. BE SURE LOCTITE DOES NOT RUN DOWN TO BEARING.



ITEM NO.	PART NO.	DESCRIPTION	QTY.
5		LOCTITE IS 150	A/R
4	9009274	SCREW, SET, #2-56	1
3	D-PS-1211279-0-0	COUPLING, CASSETTE DRIVE	1
2	C-MD-7410692-0-0	BEARING	1
1	C-IA-7409914-0-0	PULLEY, DRIVE ASSY	1

PARTS LIST

FIRST USED ON OPTION/MODEL: TU60

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, .X = .1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

MATERIAL: —

FINISH: —

		DATE
DRN.	[illegible]	3/11/72
CHK'D.	[illegible]	10/25/72
ENG.	[illegible]	[illegible]
PROJ. ENG.	[illegible]	[illegible]
PROD.	[illegible]	6/27/72

NEXT HIGHER ASSY.: D-AL-7005014-0-0

SCALE 2/1

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: SPINDLE ASSY

SIZE	CODE	NUMBER	REV
C	AD	7009146-0-0	B

DIST.

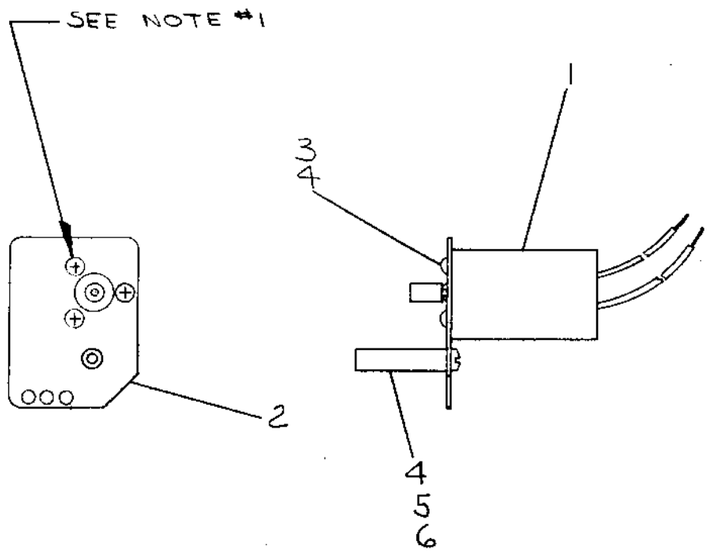
REVISIONS	CHANGE NO.	REV.
CHK	TU60-00004	A
DRN W. BENSON 12/12/72		
CHK V. LEMPSEY 3-27-73	TU60-00007	B

BRUNING 40-107 15968

DEC FORM NO. DRC 100-A

SIZE C CODE AD NUMBER 7009146-0-0

NOTES:
1. LOCTITE(#4) TO BE APPLIED TO THREADS OF ITEMS #3 & #5.



ITEM NO.	QTY.	DESCRIPTION	PART NO.
		PARTS LIST	
6	1	PIVOT, MOTOR	G-MD-7409915-0-0
5	1	SCR, SLOT HD PAN	9009277
4	A/R	LOCTITE 242	
3	3	SCR, PHL PAN HD 4-40-1/4	9008301-1
2	1	MOUNT, MOTOR	G-MD-7409910-0-0
1	1	DRIVE MOTOR ASSY	G-IA-7009139-0-0

FIRST USED ON OPTION/MODEL: TU6Ø

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, .X = .1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

MATERIAL: —
FINISH: —

DRN. K Davis	DATE 9-12-72	
CHK'D W. Major	DATE 11/1/72	
ENG. W G Benson	DATE 11/1/72	
PROJ. ENG.	DATE 11/6/72	
PROD.	DATE 11/1/72	

NEXT HIGHER ASSY.: D-AD-7009014-0-0
SCALE: 1/1
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

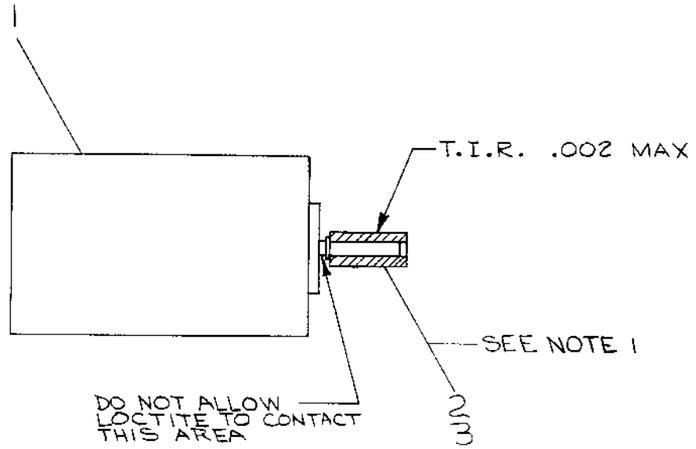
TITLE: MOTOR MOUNT ASSY

SIZE C | CODE AD | NUMBER 7009140-0-0 | REV. A
DIST.

REVISIONS			
REV.	CHANGE NO.	CHK	
A	TU60-00012		M.LEIS 9-7-72

BRUNING 40-107 15988
DEC FORM NO. DRC 100-A

NOTES:
1. SLEEVE(#1) TO BE PRESSED ON MOTOR SHAFT TO BE RING. LOCTITE TO BE APPLIED SPARINGLY TO INSIDE OF SLEEVE BEFORE ASSEMBLY.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
A/R	LOCTITE IS-150		3
1	SLEEVE, MOTOR	C-MD-7409913-0-0	2
1	MOTOR	12111111	1

PARTS LIST

FIRST USED ON OPTION/MODEL: TU60

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, .X = .1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

MATERIAL

FINISH

DRN. [illegible] DATE 10-5-72
CHK'D. [illegible] DATE
ENG. [illegible] DATE
PROJ. ENG. [illegible] DATE
MGR. [illegible] DATE 10/27/72

NEXT HIGHER ASSY. C-MD-7[illegible]-0-1

SCALE 2/1
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DRIVE-MOTOR ASSY

SIZE	CODE	NUMBER	REV.
C	1A	70[illegible]9139-0-0	A

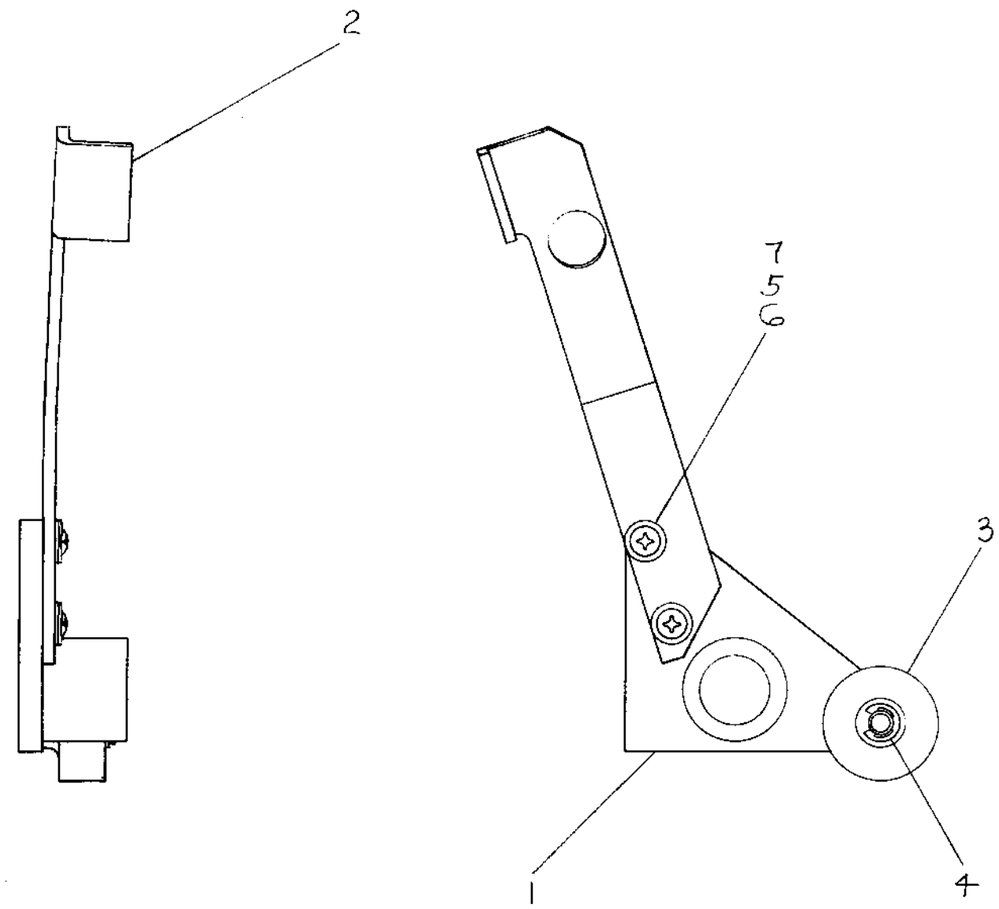
DIST.

REVISIONS			
REV.	CHANGE NO.	CHK	
A	TU60-00012	M.LEIS	[illegible]

BRUNING 40-107 15968

DEC FORM NO. DRC 100-A

SIZE C | CODE 1A | NUMBER 7009139-0-0 | REV. A



ITEM NO.	PART NO.	DESCRIPTION	QTY.
7	9008172	WASHER, FLAT #4	2
6	9006632	WASHER, INT TOOTH TYPE, #4	2
5	9008301-1	SCR, #4-40 X 1/4, PHL PAN HD	2
4	9009273	RING, RETAINING	1
3	B-MD-7409932-0-0	ROLLER, IDLER	1
2	C-MD-7409931-0-0	LEVER, ROCKER	1
1	C-IA-7409219-0-0	ROCKER ASSY	1

PARTS LIST

FIRST USED ON OPTION/MODEL: TU60

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL: —SS—

FINISH: —SS—

DRN.	Z. Carberry	DATE 9/12/72
CHK'D	W. Major	DATE 11/1/72
ENG.		DATE 11/1/72
PROJ. ENG.		DATE 11/6/72
PROD.		DATE 11/7/72

NEXT HIGHER ASSY.: D AD 700[illegible]14-0-0

SCALE 2/1

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LEVER ASSY

SIZE	CODE	NUMBER	REV.
C	AD	7009148-0-0	

DIST.

REVISIONS

REV.	CHANGE NO.	CHK.

BRUNING 40-107 15968

DEC FORM NO. DRC 100-A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 12-13-72

TITLE TA8 FIELD INSTALLATION AND ACCEPTANCE PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	APPD	SIZE	CODE	NUMBER	REV
L. Martin 12/13/72	L. Martin 12/13/72	A	SP	TA8-0-6	

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION — digital — CONTINUATION SHEET

TITLE TA8 Field Installation and Acceptance Procedure

1.0 HARDWARE

1.1 TA8E DECASSETTE Interface Module (M8331)

1.2 TU60 DECASSETTE, Dual Drive

1.2.1 TA8-AA, TU60-AA Cass., Dual Drive 115VAC 50-60 Hz, Rackmountable

1.2.2 TA8-AB, TU60-AB Cass., Dual Drive 230VAC, 50-60 HZ, Rack Mountable

1.2.3 TA8-BA, TU60-BA Cass., Dual Drive 115VAC 50-60 Hz, Table Top

1.2.4 TA8-BB, TU60-BB Cass., Dual Drive 230VAC 50-60 Hz, Table Top

1.3 Interface Cables

1.3.1 (2) BC08-R-10, Flat Cable (used with TA8-A)

1.3.2 (1) 70-08624, Round Cassette Cable, 20 feet, (used with TA8-B)

1.4 System Hardware Requirements

1.4.1 ASR Teletype, or equivalent

1.4.2 Programmer Console

1.4.3 A PDP-8E, 8M, or 8F with at least 4K of Read/Write Memory.

2.0 ACCESSORIES

2.1 Cassette, Maindecs - LIBKIT-8E-TA8E

2.1.1 TA8E Cassette Diagnostic
Maindec-08-DHTAA-A-PB
Maindec-08-DHTAA-A-D

2.1.2 TA8E Data Reliability
Maindec-08-DHTAB-A-PB
Maindec-08-DHTAB-A-D

SIZE	CODE	NUMBER	REV
A	SP	TA8-0-6	

DEC FORM NO DEC 16-(381)-1022-N370
DRA 108

2.0 continued

2.2 TA8E Maintenance Manual
DEC-8E-HR3B-TA8E-D

2.3 TU60 Maintenance Manual
DEC-00-TU60-DA

2.4 TA8 Print Set
B-DD-TA8-E-D
B-DD-T60-0-0

2.5 DECASSETTE Tapes (2)
36-11226

3.0 TOOLS

3.1 The following tools are the only ones necessary to install and perform the Acceptance Procedure.

3.1.1 If the TA8 is rack mounted, some sort of pallet handling equipment is needed to position the system.

3.1.2 A philips head screw driver.

3.1.3 A box cutter, if TU60 is in a separate container.

3.1.4 If TU60 is rack mounted, a 10in adjustable wrench to remove the pallet.

4.0 UNPACKING AND INSPECTION

4.1 Rack Mounted

4.1.1 Place the rack in the final installation location and remove the protective covering.

4.1.2 Remove the bolts securing the rack to the pallet and raise the leveling legs.

4.1.3 Carefully roll the rack off the pallet.

4.1.4 Open the rear door of the rack and remove the shipping brackets from the rear of each TU60. Retain the brackets for possible future shipments.

4.1.5 Slide the TU60 out from the rack and remove the top cover.

4.1.6 Inspect the TU60 and, if any, record all damage on the Acceptance Form.

4.0 continued

4.2 Shipped in a separate container.

4.2.1 Using a box cutter open the container and remove the foam and corrugated packing pieces.

4.2.2 Lift the transport out of the carton and remove the plastic shipping bag.

4.2.3 If the TU60 is to be rack mounted, unpack the chassis slides and install them onto the rack. (Refer to Drawing C-AR-TA8-5-0 for correct configuration). Then install the chassis slide receptacles in both slides in the rack to their stops and insert the transport.

4.2.4 Remove the top cover and inspect the transport, recording any damage on the Acceptance Form.

4.3 Both Rack Mounted and Separate Container

4.3.1 Using the parts list (A-PL-TA8-E-0) and accessory list (A-AL-TA8-E-0) verify that all items are present.

4.3.2 Inspect the interface (M8331) and control modules (M7760 and M7761) to insure circuit and etch revisions match those on the ECO status sheet.

4.3.3 Check the interface module (M8331) to insure that the device code is correct. (Normally 670X for the first TA8E-677X for the eight or last TA8E). Refer to drawing D-CS-M8331-0-1 for proper jumper configuration.

4.3.4 Check power supply line cord assembly to ensure that the transport is configured properly for the input power to be used. Line cord breaker assembly BC05-H is for 115VAC operation and BC05-J is for 230 VAC operation.

4.3.5 Record any discrepancies on the Acceptance Form.

5.0 INSTALLATION

5.1 Insure that the power switch on the PDP-8E, 8M, or 8F is turned off and that the power source for the TU60 is denergized.

5.2 Connect the interface cable(s) to the M8331 module. Refer to the TA8E power wiring and cable configuration drawing (C-IC-TA8-E-1) for instructions.

5.3 Insert the M8331 module into the Omnibus, refer to recommended omnibus module assignments (A-SP-PDP-8E-0-4) and route the interface cable(s) through the strain relief.

5.4 Route the cable(s) through the opening below the fan in the rear of the TU60 and under the strain relief.

5.5 Connect the cable(s) to the M7760 module, again referring to the TA8E power wiring and cable configurations drawing (C-IC-TA8-E-1).

5.6 Connect the TU60's AC power cord to a source of switched AC power.

6.0 ACCEPTANCE

6.1 Test Procedure

NOTE

Any failures observed (refer to 7.0) while performing this procedure should be corrected before preceding to the next step.

6.1.1 Place the TU60's power switch (rear of chassis) in the Off position.

6.1.2 Energize the PDP-8E,8M or 8F.

6.1.3 Place the TU60's power switch in the ON position, and observe that the two (one on each drive) power ON indicators light.

6.0 continued

6.1.4 Insert a "scratch" cassette into each drive with the tape wound around the lower reel. (Refer to cassette insertion and removal procedure in the TU60 cassette tape transport Maintenance Manual, Chapter 2.) Check that the drive receives the tape without binding.

6.1.5 Check that tape does not "creep" from one reel to the other. (To correct refer TU60 Maintenance Manual Chapter 5.)

6.1.6 Momentarily depress the rewind pushbotton on each drive and insure that the tape completely rewinds to the BOT clear leader, (about 20 seconds).

6.1.7 Momentarily depress the rewind pushbotton on each drive again, and insure that the drive rewinds for cassette about one second, hitting the stops!

6.1.8 Perform the following tests, in order, using the loading and operating procedure in the programs document.

6.1.8.1 TA8E Cassette Diagnostic

A. Static Test	-3 Passes per TU60
B. Control Test	-3 Passes per Drive
C. Write Protect	-1 Pass per Drive
D. Data Test	-4 Passes per Drive

6.1.8.2 TA8E Data Reliability Test

A. Format Cassettes -1 Pass per drive
B. Read Only to EOT Forever - 1 pass per drive
C. Data Reliability Test - 6 passes per drive

7.0 DIAGNOSTIC FAILURE

7.1 Any TA8E/TU60 which while performing acceptance tests haults, generates error printouts, garbles or runs other than as specified in the diagnostic's document, will be classified as a failure and must be repaired. However, errors will be allowed per 7.2 and 7.3.

7.2 One READ error, per drive, while performing steps 6.1.8.1-D to 6.1.8.2-D is acceptable.

7.3 If, while performing step 6.1.8 more than one READ error per drive is observed the testing should be stopped. The head and tape guides should be cleaned using magnetic tape head cleaner. The cassette should be examined for any dirt on the tape surface, and replaced in the drive. Testing should be continued starting with step 6.1.8.1-D.

If any errors occur on the forementioned drive, after the cassette has been replaced the TA8E/TU60 should be repaired or adjusted. (Refer to the maintenance section of the TA8E or TU60 for troubleshooting aids.)