

DRAWING NO.	NO OF SHTS.	PART NO.	DESCRIPTION	REVISIONS																		
				A1	-	B1	C1	C2	C3	C4	C4											
		RD54-A	159 MBYTE 5 1/4" DISK DRIVE	A1	-	B1	C1	C2	C3	C4	C4											
		RD54-EA	159 MBYTE 5 1/4" DISK DRIVE	-	A1	B1	C1	C2	C3	C4	C4											
B-TC-RD54-0	1		FIELD MAINTENANCE PRINT SET	B	B	C	C	C	C	C	C											
K-PL-RD54-0-DBP	1		PARTS LIST (SH414)	B	B	C	C	C	C	C	C											
D-MD-7428201-0-DBU	1	7428201-01	CLIP, GROUND	REF	REF	REF	REF	REF	REF	REF	REF											
D-MD-7425652-0-DBU	1	7425652-01	PLATE, SKID	REF	REF	REF	REF	REF	REF	REF	REF											
C-UA-RD54-0-0	1		159 MBYTE 5 1/4" DISK DRIVE	B	B	B	B	B	B	B	B											
K-RM-RD54-0-0	4		REVISION MATRIX	B	B	C	C	C	C	C	D											

NOTES:

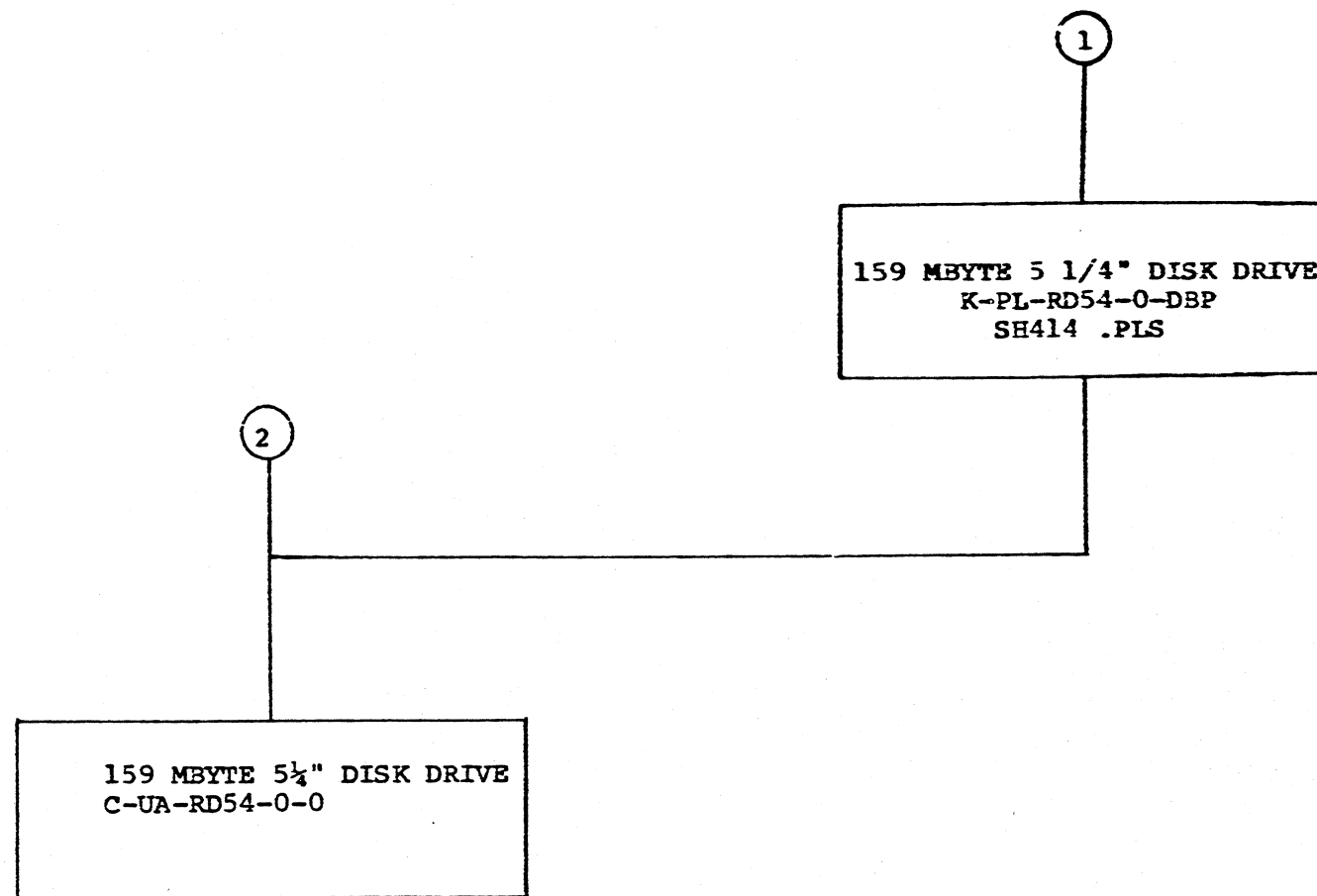
REVISION HISTORY		DATE	ECO NO.	REV.	B	B	C	C	C	C	C	D
		6/87	SH001									
		6/87	SH001									
		7/88	SH002									
		7/88	SH002									
		7/88	SH002									
		7/88	SH002									
		11/88	SH003									

THIS DRAWING AND THE SPECIFICATIONS CONTAINED HEREIN ARE CONFIDENTIAL AND PROPRIETARY. THEY ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. THIS IS AN UNPUBLISHED WORK PROTECTED UNDER THE FEDERAL COPYRIGHT LAWS.

1987



DRN. C. ASSADOURIAN	DATE 17-JUN-87	TITLE	
CHK'D R. KOPPENAL	DATE 17-JUN-87	159 MBYTE 5 1/4" DISK DRIVE	
DES. ENG. JIM LUCAS	DATE 17-JUN-87	DOCUMENT NUMBER	
RESP. ENG. D. HOWELL	DATE 17-JUN-87	SIZE B DD	NUMBER RD54-0
MFG. ENG. BOB BARBOUR	DATE 17-JUN-87	SHEET 1 OF 3	



TITLE	SIZE	CODE	NUMBER	REV.
159 MBYTE 5 1/4" DISK DRIVE	B	DD	RD54-0	D
SHEET 2 OF 3				

OPTION NAME:

RDS4-A
159 MB (FORMATTED) 5 1/4" INCH
WINCHESTER DISK DRIVE

INFORMATION SHEET

RM ECO #

NOTES:

RDS4-SH001

1. CREATED EA VARIATION (WITHOUT SKID PLATE/GROUND CLIP 4-87).
2. THE USE OF P/N 74-25652-02 (SKID PLATE) IS OPTIONAL.

RDS4-SH002

- UPDATED THIS REVISION MATRIX AND DOCUMENTED MINIMUM SHIPPABLE REVISIONS OF THE DRIVE AND DEVICE PCB.
SEE NOTES 3 THROUGH 7.
3. USE CAUTION WHEN ANALYZING DRIVE REVISION LEVELS. IN ORDER TO BRING RDS4 AND THIS REVISION MATRIX INTO CONFORMANCE WITH THE CURRENT DEC STANDARD 12 MANY DRIVE REVISION LEVELS HAVE BEEN REASSIGNED AND SHOWN ON THE TOP LINE AS TO WHAT THEY SHOULD BE. AS A RESULT REVISION LEVELS MARKED ON THE DRIVE MAY OR MAY NOT REFLECT THE ACTUAL HARDWARE REVISION AS DEFINED BY THIS DOCUMENT. TO ASSIST IN ANALYZING DRIVE REVISION LEVELS, REVISION LEVELS WHICH WERE ORIGINALLY MARKED ON THE DRIVE ARE INCLUDED IN PARENTHESES UNDERNEATH WHAT SHOULD HAVE BEEN THE CORRECT REVISION LEVELS FOR RDS4. THE REVISION LEVEL IN PARENTHESES IS THE REVISION LEVEL YOU WILL FIND ON THE RDS4 BAR CODE LABEL UNLESS THE DRIVE HAS BEEN REMARKED DURING REPAIR.
4. THE CHANGE IN RDS4 REVISION LEVEL FROM A1 TO B1 REFLECTS A CHANGE IN THE COATING ON THE HDA BASE CASTING FROM ZINC CHROMATE TO ELECTROLESS NICKEL. DRIVE REVISIONS A1 AND B1 ARE FUNCTIONALLY EQUIVALENT. THE ALPHA CHARACTER SHOULD NOT HAVE BEEN INCREMENTED WHEN THIS CHANGE WAS MADE. SINCE BOTH HDA'S HAVE A SIMILAR APPEARANCE, THE EASIEST WAY TO IDENTIFY HDA'S WITH THE OLD ZINC CHROMATE COATING IS BY THE DRIVE REVISION MARKING. DRIVES WITH THE "OLD" HDA (ZINC CHROMATE COATING) WERE ORIGINALLY MARKED A1 AND MAY HAVE BEEN REMARKED WITH C1 OR C3 PER THIS DOCUMENT DURING REPAIR.
5. THE CHANGE IN 29-26103 ALPHA REVISION FROM A TO B ADDS A 2.32 K 1% RESISTOR AT R61 IN PARALLEL WITH THE EXISTING RESISTOR AT R61. THE RESISTOR ADD IS REFLECTED FOR VENDOR PART NUMBER 1059085 BY A -22 FOLLOWING THE VENDOR ALPHA REV. LEVEL. POSSIBLE REVISIONS FOR VENDOR PART NUMBER 1059085 WITH THE RESISTOR ADD ARE C-22, D-22, F-22, AND H-22. SIMILARLY, THE CHANGE IN 29-81306-00 ALPHA REVISION FROM A TO B ADDS A 2.32 K 1% RESISTOR AT R61 IN PARALLEL WITH THE EXISTING RESISTOR AT R61. FOR VENDOR PART NUMBER 1059055 THE RESISTOR ADD IS INDICATED BY A -23 FOLLOWING THE VENDOR ALPHA REV. LEVEL. POSSIBLE VENDOR REVISIONS FOR VENDOR PART NUMBER 1059055 ARE J-23, K-23, L-23 AND M-23. THE -22 OR -23 WILL BE MARKED ON THE J3 POWER CONNECTOR OR THE U43 (40 PIN DIP) CHIP. THIS RESISTOR ADD ADDRESSES A PROBLEM WHERE RDS4 INTERMITTENTLY FAILS TO SIZE CORRECTLY DURING A FORMAT OPERATION ON VAXSTATION 2000 AND MICROVAX 2000.

THIS DRAWING AND THE SPECIFICATIONS CONTAINED HEREIN ARE CONFIDENTIAL AND PROPRIETARY. THEY ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. THIS IS AN UNPUBLISHED WORK PROTECTED UNDER THE FEDERAL COPYRIGHT LAWS.

1987

digital

DRN.	R.KOPPENAL	DATE	3/19/87	TITLE:			REVISION MATRIX
CHKD.	R.KOPPENAL	DATE	3/19/87				DOCUMENT
DES. ENG.	DEAN HOWELL	DATE	3/19/87	DOCUMENTATION NUMBER			
RESP. ENG.	DEAN HOWELL	DATE	3/19/87	SIZE	CODE	NUMBER	REV.
MFG. ENG.	JOHN MURRY	DATE	3/19/87	K	RM	RDS4-0-0	0
						SHEET	1 OF 4

OPTION NAME: R054-A 159 MB (FORMATTED) 5 1/4" INCH WINCHESTER DISK DRIVE	INFORMATION SHEET
--	--------------------------

RM ECO #

NOTES:

RD54-SH003

6. THERE ARE TWO PART NUMBERS FOR THE R054 DEVICE PCB, 29-26103 (VENDOR PART 1059085) AND 29-81306 (VENDOR PART 1059055). ALL VENDOR PART NUMBER 1059085 (DEC 29-26103) WITH A -22 FOLLOWING THE VENDOR ALPHA REV. LEVEL AND ALL VENDOR PART NUMBER 1059055 (DEC 29-81306) WITH A -23 FOLLOWING THE VENDOR ALPHA REV. LEVEL ARE FUNCTIONALLY EQUIVALENT AND BOTH ARE AT DEC REVISION LEVEL B. THE VARIOUS DEC NUMERICAL REVISIONS OF THESE TWO PART NUMBERS REFLECT VENDOR ECO'S WHICH HAVE NO FUNCTIONAL IMPACT ON R054. THE DEC NUMERICAL REVISION LEVELS (A01 THROUGH A08 AND B01 THROUGH B08) WERE INCREMENTED IN THESE CASES FOR TRACKING PURPOSES ONLY AND ARE NOT MARKED ON THE MODULE. ONLY THE ALPHA REVISION LEVEL CHARACTER IMPACTS FUNCTIONALITY.

7. THE CHANGE IN 29-26103 REVISION TO B09 INCORPORATED THE RESISTOR ADD AT R61 INTO A SINGLE RESISTOR AND ADDED HEAT SINKS TO THE SPINDLE MOTOR FETS PER MAXTOR EC 886. VENDOR PART NUMBER 1059085 TOP REVISION WENT FROM REV. H-22 TO REV. J TO REFLECT THIS CHANGE. THESE CHANGES WERE NOT IMPLEMENTED ON VENDOR PART NUMBER 1059055 (DEC PART 29-81306).

THE MINIMUM SHIPPABLE REVISION OF DEC PART 29-26103 IS B01. NO DEC REVISION LEVELS ARE MARKED ON THIS BOARD. THE DEC B01 REVISION LEVEL MUST BE IDENTIFIED BY LOOKING FOR A -22 FOLLOWING THE VENDOR ALPHA REVISION LEVEL. (SEE NOTES 5 AND 6)

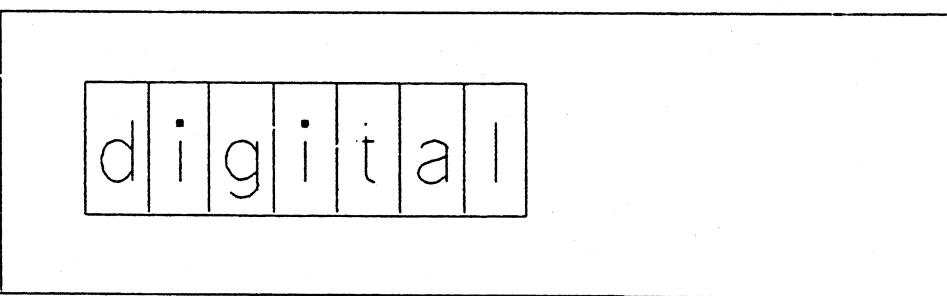
THE MINIMUM SHIPPABLE REVISION OF DEC PART 29-81306 IS B05. NO DEC REVISION LEVELS ARE MARKED ON THIS BOARD. THE DEC B05 REVISION LEVEL MUST BE IDENTIFIED BY LOOKING FOR A -23 FOLLOWING THE VENDOR ALPHA REVISION LEVEL. (SEE NOTES 5 AND 6)

THE MINIMUM SHIPPABLE REVISION OF THE R054-EA AND R054-A DRIVE IS C1. (SEE NOTE 3)

8. THE CHANGE TO DEC P/N 29-26103 TO A B10 INCORPORATED A RESISTOR VALUE CHANGE (R44 FROM 681 OHMS TO 3.01K OHMS). THE REMOVAL OF C17 AND ADDITION OF A 47uh COIL PER VENDOR ECO #1067. THIS CHANGE IS AN ENHANCEMENT TO THE SERVO READ CIRCUIT AND POWER LINES TO IMPROVE COMMON-MODE REJECTION OF SYSTEM NOISE. THESE CHANGES WERE NOT IMPLEMENTED ON VENDOR P/N 1059055 (DEC PART NUMBER 29-81306).

THIS DRAWING AND THE SPECIFICATIONS CONTAINED HEREIN ARE CONFIDENTIAL AND PROPRIETARY. THEY ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. THIS IS AN UNPUBLISHED WORK PROTECTED UNDER THE FEDERAL COPYRIGHT LAWS.

1987



DRN.	R.KOPPENAL	DATE	3/19/87	TITLE: REVISION MATRIX DOCUMENT			
CHKD.	R.KOPPENAL	DATE	3/19/87				
DES. ENG.	DEAN HOWELL	DATE	3/19/87	DOCUMENTATION NUMBER			
RESP. ENG.	DEAN HOWELL	DATE	3/19/87	SIZE	CODE	NUMBER	REV.
MFG. ENG.	JOHN MURRY	DATE	3/19/87	K	RM	R054-0-0	0
						SHEET	2 OF 4

OPTION NAME: R054-A 159 MB (FORMATTED) 5 1/4" INCH (ORIGINALLY MARKED / SEE NOTE 3)		REVISIONS												
PART NO.	DESCRIPTION	A1 (A1)	B1 (B1)	C1 (A1)	C2 (B1)	C3 (A1)	C4 (B2)	C3 (A1)	C4 (B2)					
30-26245-01 2190	190 MB WINCHESTER DISK DRIVE MAXTOR P/N (VENDOR P/N)	A1	B1	C1	C2	C3	C4	C3	C4					
NO DEC PART # VPN 1050454 or VPN 1011549	MAXTOR HDA ASSY. (SEE NOTE 4)	OLD	NEW	OLD	NEW	OLD	NEW	OLD	NEW					
29-26103-00 1059085	DEVICE PCB (SEE NOTE 5,6,7) MAXTOR P/N (VENDOR P/N)	A01,A02 A03,A04 C,D,F,H	A01,A02 A03,A04 C,D,F,H	B01,B02 B03,B04 -22	B01,B02 B03,B04 -22	B09 J	B09 J	B09, B10	B09, B10					
29-81306-00 (1059055)	DEVICE PCB (ALTERNATE PART) * ALTERNATE VENDOR P/N 1059085	A05,A06 A07,A08 J,K,L,M	A05,A06 A07,A08 J,K,L,M	B05,B06 B07,B08 -23	B05,B06 B07,B08 -23	---	---	---	---					
12-14314-00	JUMPER PLUG	A1	A1	A1	A1	A1	A1	A1	A1					
74-28201-01	GROUND CLIP	A4	A4	A4	A4	A4	A4	A4	A4					
74-25652-02	SKID PLATE	A2	A2	A2	A2	A2	A2	A2	A2					
90-06021-01	SCREW PHL PAN HD 6-32 X .312	A1	A1	A1	A1	A1	A1	A1	A1					
37-00916-01	SINGLE PACKAGE	A1	A1	A1	A1	A1	A1	A1	A1					
90-00049-66	SCREW SEMS PAN HD 4-40 X .250	A1	A1	A1	A1	A1	A1	A1	A1					
90-09414-03	SCREW PHL FLAT HD 4-40 X .187	A1	A1	A1	A1	A1	A1	A1	A1					

NOTES:

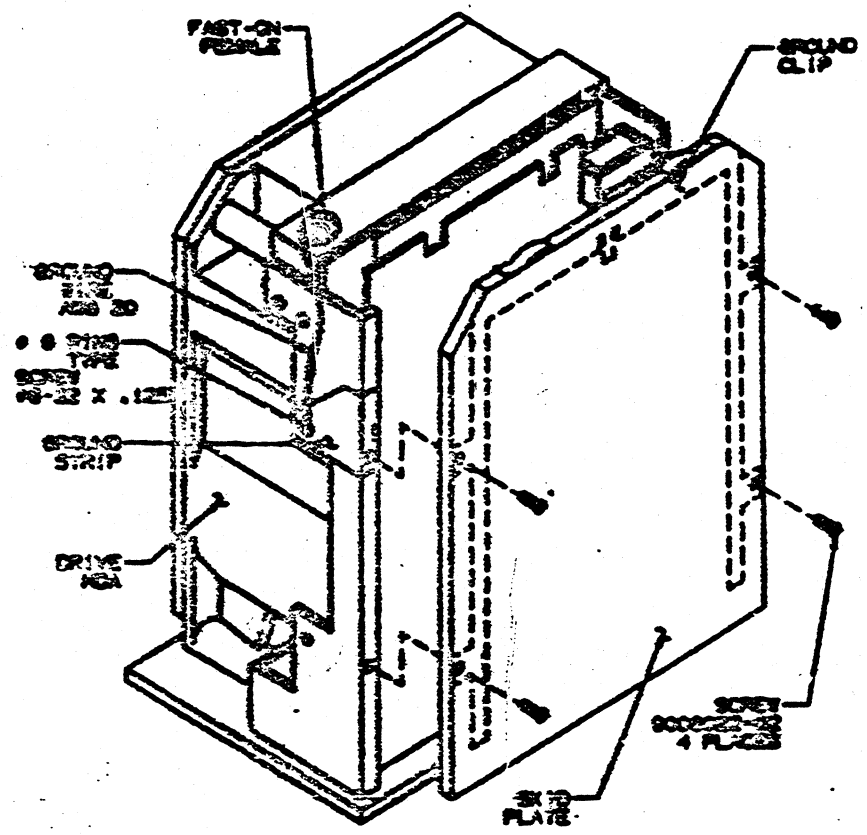
REVISION HISTORY	ECO NO	DATE	INIT	SH001	SH002	SH002	SH002	SH002	SH002	SH003	SH003				
			31/19 87		6/18 87	7/88	7/88	7/88	7/88	7/88	11/88	11/88			

digital

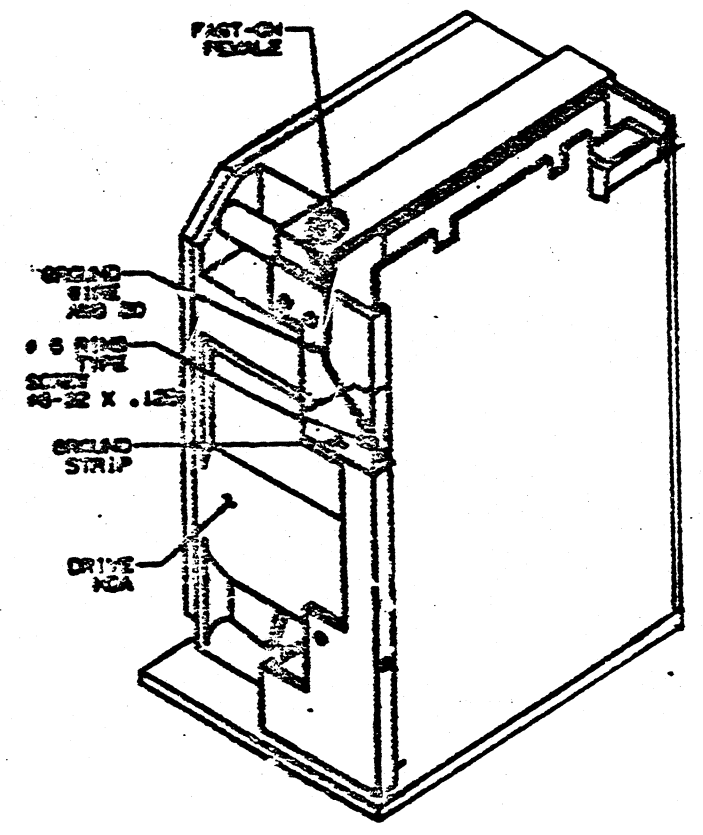
OPTION NAME:		REVISIONS										
R054-EA 159 MB (FORMATTED) 5 1/4" INCH (ORIGINALLY MARKED / SEE NOTE 3)		A1 (A1)	B1 (B1)	C1 (A1)	C2 (B1)	C3 (A1)	C4 (B2)	C3 (A1)	C4 (B2)			
PART NO.	DESCRIPTION											
30-26245-01 2190	190 MB WINCHESTER DISK DRIVE MAXTOR P/N (VENDOR P/N)	A1	B1	C1	C2	C3	C4	C3	C4			
NO DEC PART # VPN 1050454 or VPN 1011549	MAXTOR HDA ASSY. (SEE NOTE 4)	OLD	NEW	OLD	NEW	OLD	NEW	OLD	NEW			
29-26103-00 1059085 29-81306-00 (1059055)	DEVICE PCB (SEE NOTE 5,6,7) MAXTOR P/N (VENDOR P/N) DEVICE PCB (ALTERNATE PART) * ALTERNATE VENDOR P/N 1059085	A01,A02 A03,A04 C,D,F,H A05,A06 A07,A08 J,K,L,M	A01,A02 A03,A04 C,D,F,H A05,A06 A07,A08 J,K,L,M	B01,B02 B03,B04 -22 B05,B06 B07,B08 -23	B01,B02 B03,B04 -22 B05,B06 B07,B08 -23	B09 J ---	B09 J ---	B09, B10 J,K ---	B09, B10 J,K ---			
12-14314-00	JUMPER PLUG	A1	A1	A1	A1	A1	A1	A1	A1			
37-00916-01	SINGLE PACKAGE	A1	A1	A1	A1	A1	A1	A1	A1			
90-00049-66	SCREW SEMS PAN HD 4-40 X .250	A1	A1	A1	A1	A1	A1	A1	A1			
90-09414-03	SCREW PHL FLAT HD 4-40 X 3/16	A1	A1	A1	A1	A1	A1	A1	A1			
NOTES:												
REVISION MATRIX (TOP LEVEL AND COMPATIBILITY)		REVISION HISTORY	ECO NO									
		DATE		SH002	SH002	SH002	SH002	SH002	SH002	SH003	SH003	
				7/88	7/88	7/88	7/88	7/88	7/88	11/88	11/88	
digital		TITLE REVISION MATRIX R054-A 159 MB (FORMATTED) 5 1/4" INCH WINCHESTER DISK DRIVE					SIZE K	CODE RM	NUMBER R054-0-0		REV. D	SHEET 4 OF 4

THIS DRAWING AND THE SPECIFICATIONS CONTAINED HEREIN ARE CONFIDENTIAL AND PROPRIETARY. THEY ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. THIS IS AN UNPUBLISHED WORK PROTECTED UNDER THE FEDERAL COPYRIGHT LAWS 1987

SIZE
C UA
RD54-0-0
REV
A



RD54-A



RD54-EA

REVISION HISTORY

REV	ECO NUMBER	DATE
A	INIT	1/14/88

REV
A
NUMBER
RD54-0-0
C UA
SIZE

DESCRIPTION	DRAWING NO	PART NO	ITEM NO
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)			
DIMENSIONS RANGE IN INCHES			
INCHES TOLERANCES	ANGLES ± 0° 30'	APPLICABLE DIMENSION RANGE CHECK ONE:	
XX ± .02		<input type="checkbox"/> 0 TO 0.2	<input type="checkbox"/> .02
XXX ± .005		<input type="checkbox"/> .2 TO 0.8	<input type="checkbox"/> .03
		<input type="checkbox"/> .8 TO 1.2	<input type="checkbox"/> .04
		<input type="checkbox"/> 1.2 TO 4.0	<input type="checkbox"/> .05
		<input type="checkbox"/> 4.0 TO 12.0	<input type="checkbox"/> .06
		<input type="checkbox"/> 12.0 TO 40.0	<input type="checkbox"/> .07
		<input type="checkbox"/> 40.0 TO 80.0	<input type="checkbox"/> .08
THIRD ANGLE PROJECTION	DRG: R. KOPPENAL	DATE: 17 JUN 87	TITLE: digital
DO NOT SCALE DRAWING	CHKD: R. KOPPENAL	DATE: 17 JUN 87	159 MBYTE 5 1/4" DISK DRIVE
REMOVE BURRS AND BREAK SHARP CORNERS	DES ENG: JIM LUCAS	DATE: 17 JUN 87	
	RESP ENG: D. HOWELL	DATE: 17 JUN 87	
MATERIAL	MFG ENG: B. BARBOUR	DATE: 17 JUN 87	DOCUMENT NUMBER
FINISH	TOP DOC NO: B-DD-RD54-0		C UA RD54-0-0 A

DPC 200F EN-01295-16-REVA(396)