

# **HP 9133/9134 D/H/L Service Manual**

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# General Information

CHAPTER

1

## Introduction

The HP 9133/34D,H and L products (Figure 1-1) are random access data storage devices containing a 5 1/4-inch Winchester drive providing 15, 20 and 40 Mbytes of storage capacity respectively. The HP 9133 also has a 3 1/2-inch Flexible Disc Drive with a maximum storage capacity of 710 Kbytes.

The HP 9133D,H and L products use the SUBSET 80 command set.

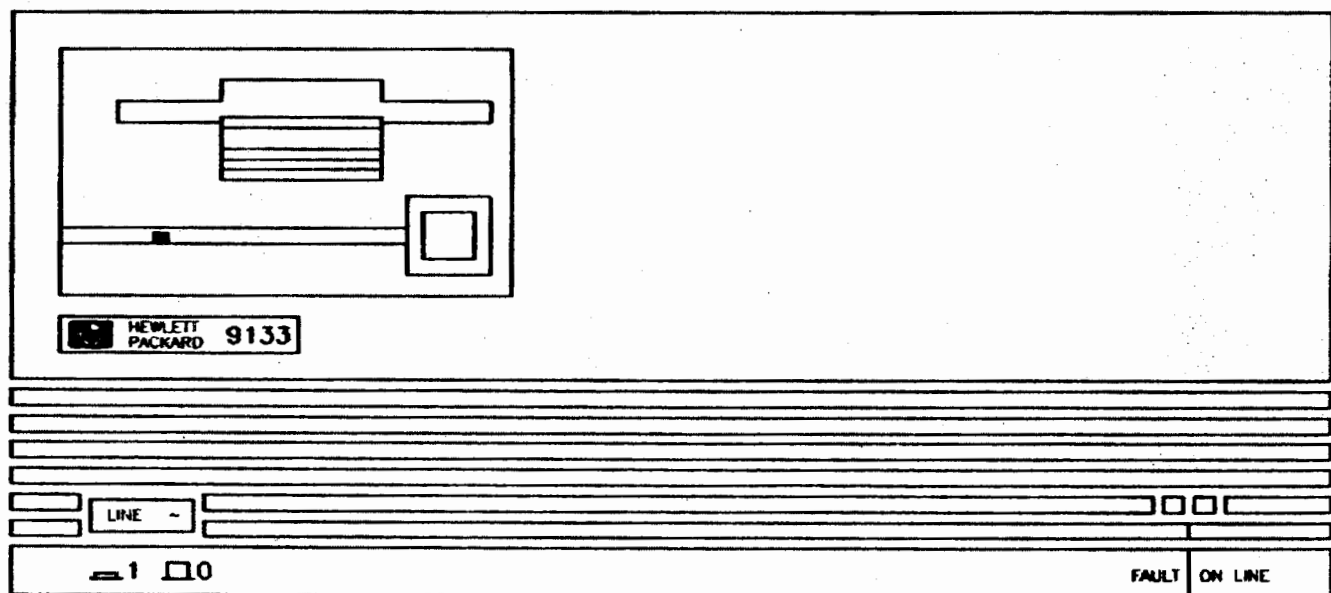


Figure 1-1. HP 9133D,H and L Disc Memory.

Part Number 5957-6560



## General Information

## Specifications

### PERFORMANCE CHARACTERISTICS

	15 Mbyte(D) Winchester	20 Mbyte(H) Winchester
<b>Maximum Formatted Capacity:</b>		
<b>HP 150</b>		
Bytes Per Unit	14.8 MB	20.0 MB
Bytes per Sector	256	256
Sectors per Track	32	32
<b>Series 200 (BASIC and Pascal)</b>		
Bytes Per Unit	14.8 MB	20.0 MB
Bytes Per Sector	256	256
Sectors per Track	32	32
<b>Series 200 (HPUX)</b>		
Bytes Per Unit	16.6 MB	22.56 MB
Bytes Per Sector	1024	1024
Sectors per Track	9	9
Tracks per Surface	303	612
Surfaces per Disc	2	4
Tracks per inch	135	580
Recording Format	MFM	MFM
Max Sustained Transfer Rate*	145 KB/s	140 KB/s
Average Access Time	85 ms	85 ms
Maximum Access Time	205 ms	205 ms
Rotational Speed	3600 rpm	3600 rpm

\* Mainframe and interleave dependent.

**PERFORMANCE CHARACTERISTICS (Continued)**

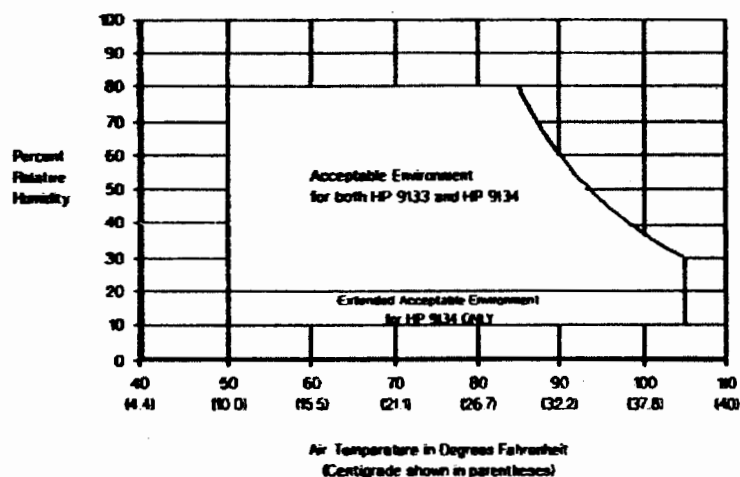
	<b>40 Mbyte(L) Winchester</b>	<b>Double-Sided 3 1/2-inch Disc Drive</b>
<b>Maximum Formatted Capacity:</b>		
<b>HP 150</b>		
Bytes Per Unit	40.02 MB	710 Kbytes
Bytes per Sector	256	512
Sectors per Track	32	9
<b>Series 200 (BASIC and Pascal)</b>		
Bytes Per Unit	40.02 MB	630 Kbytes
Bytes Per Sector	256	256
Sectors per Track	32	16
<b>Series 200 (HPUX)</b>		
Bytes Per Unit	45.02 MB	630 Kbytes
Bytes Per Sector	1024	256
Sectors per Track	9	16
Tracks per Surface	977	80
Surfaces per Disc	5	2
Tracks per inch	960	135
Recording Format	MFM	MFM
Max Sustained Transfer Rate*	140 KB/s	17 Kb/s
Average Access Time	40 ms	497 ms
Maximum Access Time	80 ms	1.742 s
Rotational Speed	3600 rpm	600 rpm

\* Mainframe and interleave dependent.

## General Information

### ENVIRONMENTAL RANGES

The following chart shows the acceptable environment for the HP 9133 and HP 9134 series products.



#### 9133D.H.L

#### Altitude

##### Operating

0 to 4572m  
(0 to 15000 ft)

##### Non-Operating

-304 to 1524m  
(-1000 to 50000 ft)

### PHYSICAL CHARACTERISTICS

#### Size

Height	132 mm (4.9 in)
Width	325 mm (12.8 in)
Depth	285 mm (11.2 in)

#### Weight

Net	(L) 10.5 kg (23.0 lbs)
	(H) 9.1 kg (20.0 lbs)
	(D) 10.0 kg (22.0 lbs)

##### Shipping

(L)	13.5 kg (32.0 lbs)
(H)	13.2 kg (29.0 lbs)
(D)	16.8 kg (37.0 lbs)

### POWER REQUIREMENTS

#### Voltage

(selected by rear  
panel switch)

86-127VAC  
195-253VAC

#### Frequency

48-66 Hz

#### Power

125W

## Equipment Supplied

The following equipment is supplied with each HP 9133/34D,H and L product.

Description	Quantity	HP Part Number
AC Power Cord	1	Dependent on location
Operator's Manual	1	09133-90070

### CAUTION

The HP 9133/34D,H and L are precision instruments. Mechanical shock can misalign the READ/WRITE HEAD, resulting in READ ERRORS and/or DAMAGED DISCS whether the disc is operating or not.

## Cleaning the Case

Refer to the operators manual supplied with the unit for complete instructions on cleaning procedures.

### CAUTION

Chemical spray-on cleaners used for appliances and other household and industrial applications may damage the case finish. Do not use detergents that contain ammonia, benzenes, chlorides, or abrasives.



Config. Setting	Number of Volumes	Size of Volumes	
		256 bytes/sector	1024 bytes/sector
0	One	14.84 Mbyte/volume	16.64 Mbyte/volume
1	One	14.84 Mbyte/volume	16.64 Mbyte/volume
2	Two	7.37 Mbyte/volume	8.23 Mbyte/volume
3	Three	4.91 Mbyte/volume	5.47 Mbyte/volume
4	Four	3.64 Mbyte/volume	4.03 Mbyte/volume
5	One	12.29 Mbyte/volume	13.76 Mbyte/volume
	One	2.51 Mbyte/volume	2.76 Mbyte/volume
6	Six	2.41 Mbyte/volume	2.65 Mbyte/volume
7	One	9.83 Mbyte/volume	11.00 Mbyte/volume
	Two	2.46 Mbyte/volume	2.70 Mbyte/volume
8	Eight	1.77 Mbyte/volume	1.93 Mbyte/volume
9	One	7.32 Mbyte/volume	8.18 Mbyte/volume
	Three	2.46 Mbyte/volume	2.70 Mbyte/volume

**Figure 2-3. Volume configuration settings (9133/34 D).**

Config. Setting	Number of Volumes	Size of Volumes	
		256 bytes/sector	1024 bytes/sector
0	One	19.92 Mbyte/volume	22.33 Mbyte/volume
1	One	19.92 Mbyte/volume	22.33 Mbyte/volume
2	Two	9.92 Mbyte/volume	11.09 Mbyte/volume
3	Three	6.61 Mbyte/volume	7.37 Mbyte/volume
4	Four	4.49 Mbyte/volume	5.49 Mbyte/volume
5	Five	3.93 Mbyte/volume	4.34 Mbyte/volume
6	Six	3.27 Mbyte/volume	3.61 Mbyte/volume
7	Seven	2.81 Mbyte/volume	3.09 Mbyte/volume
8	Eight	2.45 Mbyte/volume	2.69 Mbyte/volume
9	One	19.92 Mbyte/volume	22.33 Mbyte/volume

**Figure 2-4. Volume configuration settings (9133/34 H).**

Config. Setting	Number of Volumes	Size of Volumes	
		256 bytes/sector	1024 bytes/sector
0	One	39.85 Mbyte/volume	44.74 Mbyte/volume
1	One	39.85 Mbyte/volume	44.74 Mbyte/volume
2	Two	19.90 Mbyte/volume	22.30 Mbyte/volume
3	Three	13.23 Mbyte/volume	14.79 Mbyte/volume
4	Four	9.91 Mbyte/volume	11.06 Mbyte/volume
5	Five	7.90 Mbyte/volume	8.80 Mbyte/volume
6	Six	6.59 Mbyte/volume	7.32 Mbyte/volume
7	Seven	5.65 Mbyte/volume	6.26 Mbyte/volume
8	Eight	4.91 Mbyte/volume	5.44 Mbyte/volume
9	drive split into two units, each of one volume		
	One	19.90 Mbyte/Volume	22.30 Mbytes/Volume
	One	19.90 Mbyte/Volume	22.30 Mbytes/Volume

Figure 2-5. Volume configuration settings (9133/34 L).

#### NOTE

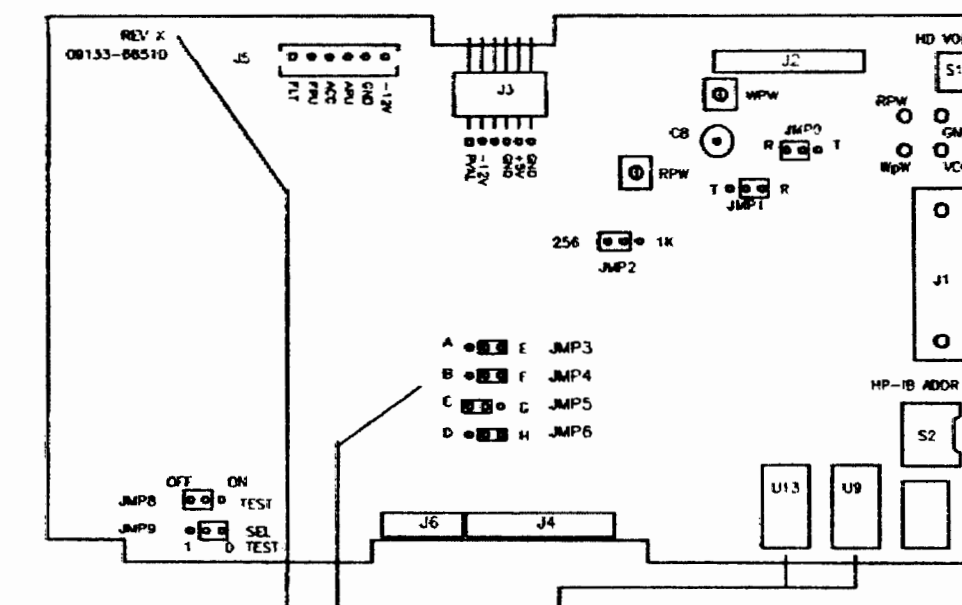
For 9133/34L, 40 Megabyte Drive:

Configuration switch = 9 (2 units)

	Unit 0	Unit 1	Unit 2
HP-IB 0-7	hard disc	hard disc	flexible disc
HP-IB 8,9	flexible disc	hard disc	hard disc

## Unit Configuration

The following figure shows the proper jumper settings for the type of hard disc used.



Product	S/N Prefix	Rev	JMP3-JMP6	Required Firmware
9133D	2419A/2511A	B	EFCH	Any 09133-8910X/-8920X
9133D	2419A/2511A	C	EFCD	09133-89105/-89205 and above
9133D	2513A and above	B	ABCH	09133-89105/-89205 and above
9133D	2513A and above	C	ABCD	09133-89105/-89205 and above
9134D	2425A	B	EFGH	Any 09133-8910X/-8920X
9134D	2425A	C	EFGD	09133-89105/-89205 and above
9134D	2514A and above	B	ABGH	09133-89105/-89205 and above
9134D	2514A and above	C	ABGD	09133-89105/-89205 and above
9133H	ALL	B	AFCH	09133-89105/-89205 and above
9133H	ALL	C	AFCD	09133-89105/-89205 and above
9134H	ALL	B	AFGH	09133-89105/-89205 and above
9134H	ALL	C	AFGD	09133-89105/-89205 and above
9133L	ALL	B	EBCH	09133-89108/-89208 and above
9133L	ALL	C	EBCD	09133-89108/-89208 and above
9134L	ALL	B	EBGH	09133-89108/-89208 and above
9134L	ALL	C	EBGD	09133-89108/-89208 and above

NOTE: JMP2 is shown in the position for a standard product.  
Option 001 will have JMP2 in the 1K position.

Figure 2-6. Controller board configuration.

## Fuses

The AC line fuse used in the HP 9133/34D,H and L products is for both 115 and 230Vac.







## Introduction

The following information applies to the HP 9133D,H and L.

### Setting the HP-IB Address

Figure 3-1 shows the location of the HP-IB address switch. This is a thumbwheel switch with numbers 0 through 9. To select the proper address, turn the thumbwheel until the number you want appears in the window.

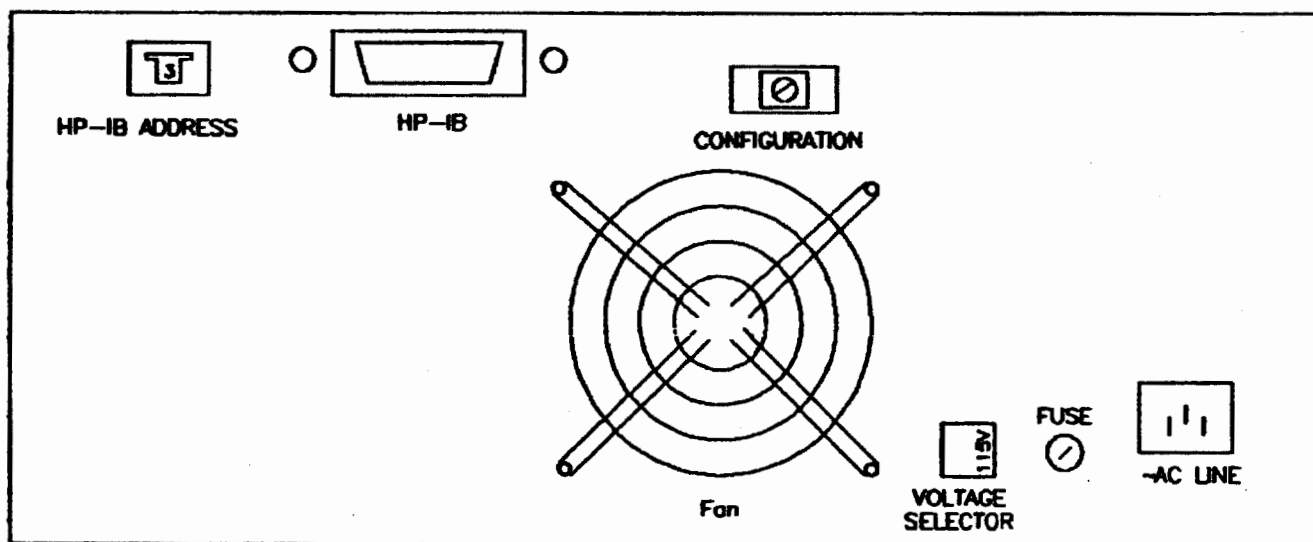


Figure 3-1. HP 9133/34D,H and L rear panel.



# Troubleshooting

CHAPTER

4

## Repair Philosophy

The 5 1/4-inch Winchester disc drive assembly is serviced on the exchange program. This includes the drive, and the drive electronics PCA. The 20 and 40 Mbyte drives are exchanged as complete assemblies.

The selftest procedures are given to help isolate problems in the field.

Controller assembly detailed information is not presented.

## Exchange Assemblies



DESCRIPTION	PART NUMBER
3 1/2-inch Flexible Disc Drive	-- 09114-69511
40 Mbyte Winchester	-- 09133-69308
20 Mbyte Winchester	-- 09133-69206
15 Mbyte Winchester	-- 09133-69104
15 Mbyte Drive Electronics	-- 09133-69105
Controller Board	-- 09133-69520

## Non-Exchange Assemblies

Fan Assembly	-- 09133-68501
3 1/2-inch Disc Cntl Cable	-- 09133-61622
Winchester Disc Cntl Cable	-- 09133-61623
Winchester Disc R/W Cable	-- 09133-61624
Power Supply	-- 09133-67120
Fuse 3A 250V	-- 2110-0003
Firmware Upgrade Kit	-- 09133-89905

## Selftest

### HP 9133/34D,H and L SELFTESTS

The selftest routines can be initiated in the following 3 ways:

1. **At Power-On:** A selftest of the processor, ROM, HP-IB chip, microprocessor RAM, and buffer RAM is performed. Read/Write tests are then performed on both drives, followed by spindle speed and ECC chip tests. (A disc must be inserted to test the 3 1/2-inch drive.)

2. **Host Computer Initiated:** The Diagnostic command from the host initiates the selftest routine that is performed at power-on.

## TROUBLESHOOTING

**3. Switch/Jumper Selected:** The Test Jumper (JMP8) starts the test that is selected by the 4-bit HP-IB Address Switch and Select Test Jumper (JMP9). If JMP8 is left in the on position (0), the test will be repeated. When JMP8 is taken out of the test position, the unit finishes the selected test, goes through the power-on sequence, and is then ready for HP-IB commands. Use Figure 4-3 for location of JMP8 and JMP9.

When a test is performed, the LED is first blinked once (to show that the LED works). If the test is successful, the LED blinks 5 times. If the test fails, the LED stays on for 5 seconds, and then goes off.

### SELECTABLE SELFTESTS

#### NOTE

The RAM test (Test 0) will clear all RAM-loaded parameters, some of which are needed for other tests. Once the RAM test is performed, the RAM must be refreshed by powering the unit off, then on again in order to perform any of the other tests. The RAM test is repeatable without refreshing the RAM.

Tests other than the RAM Test can be selected randomly with the power on.

### SELFTEST PROCEDURE

1. Select the desired test. Use the Selftest table in Figure 4-1 and the Test Description table in Figure 4-2.
2. Observe the LED. The unit will do all or part of the power-on selftest and will then start the selected test. When the test is completed, the selftest LED should blink 5 times. If it doesn't, the test failed.
3. Repeat steps 1 and 2 for any additional tests. Refresh the RAM (see the above note) if the RAM test was performed and a test OTHER THAN the RAM test is desired.

HP-IB ADDRESS SWITCH (S2)	SELECT TEST JUMPER (JMP9)	SELECTED TEST NUMBER
0	0	0
1	0	1
2	0	2
3	0	3
4	0	4
5	0	5
6	0	6
7	0	7
0	1	8
1	1	9
2	1	10
3	1	11
4	1	12
5	1	13
6	1	14
7	1	15

Figure 4-1. Selftest table.

**SELFTEST SELECTION****LED Indications**

- Start**
1. LED ON 4 seconds
  2. LED OFF 0.5 seconds
  3. LED ON during test

**TEST PASSES**

4. LED ON/OFF 5 times

**TEST FAILS**

LED stays ON.

**NOTE**

A disc must be in the drive to perform tests 4,6,8,10, and 12 (HP 9133 series only). Ensure that the disc is an unprotected and initialized scratch disc.

**TEST DESCRIPTION**

TEST	DURATION (s)	DESCRIPTION
0 RAM	35	All possible patterns are written in all locations of both RAMS.
1 ROM	10	A checksum calculation is performed.

## TROUBLESHOOTING

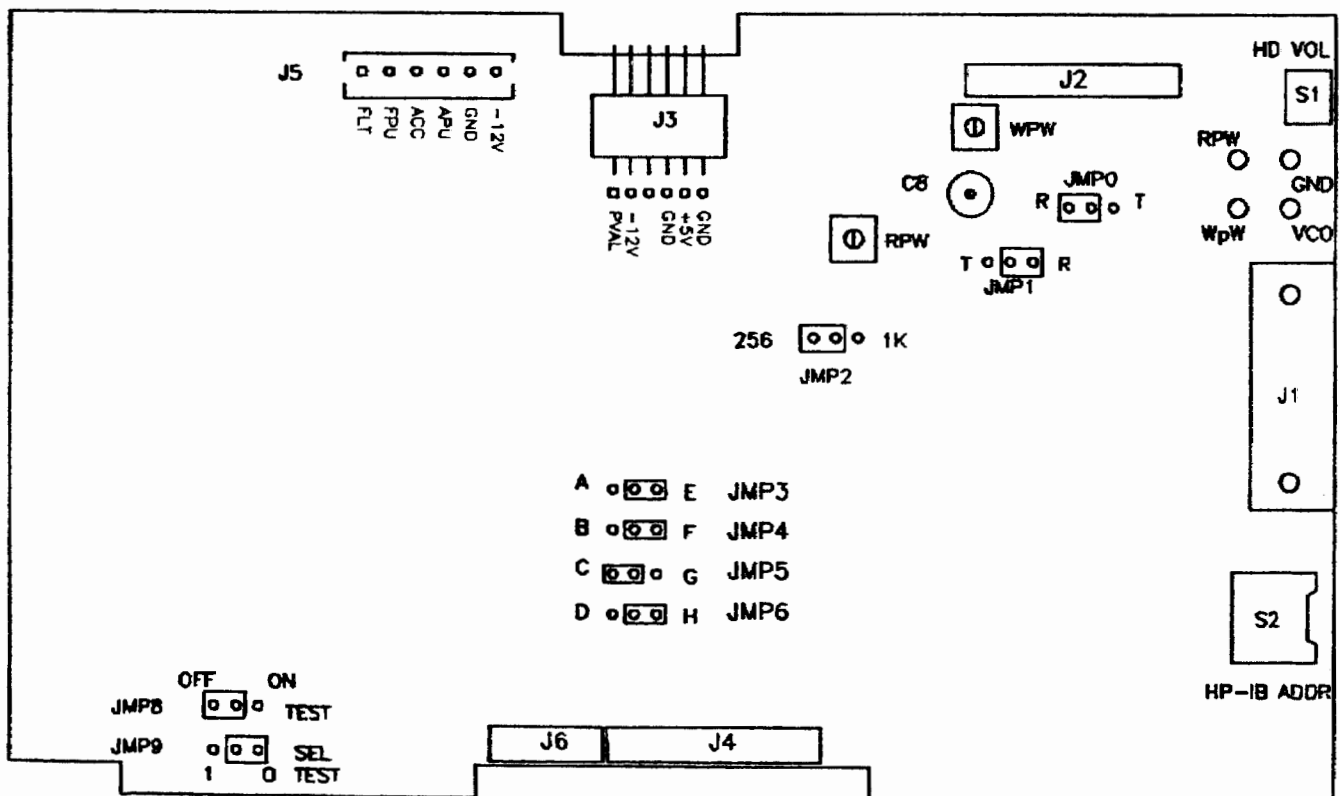
2 HP-IB	10	Two of the registers on the HP-IB chip are written to and their contents verified.
3 FDC chip	10	Two of the registers on the FDC chip are written to and their contents verified.
4 Floppy Seek	10	Commands are given to the FDC to move the head on and off track 0. The track 0 indicator is checked to see that movement occurred.
5 Winchester Seek	10	Seek commands step the Winchester on and off cylinder 0 in order to test the track 0 indicator.
6 Floppy Speed	10	The head is stepped to track 35 and loaded. The period of the index pulse is measured and compared against the specification. No test is performed if there is no disc in the drive.
7 Winchester Speed	10	The spindle speed of the drive is checked and compared with the allowed range.
8 Floppy Write Verify	85	Every sector on the disc is written and the data is verified. All user data on the disc is lost.
9 Winchester Write Verify	25	All sectors on the selftest cylinder are written and read. Each byte including the ECC is checked. Error correction is also checked. No user data is affected.
10 Floppy Verify	45	All sectors in the data area of the disc are checked for CRC errors. No user data is affected.
11 Winch. Verify	330	All sectors in the data area of the disc are checked for CRC errors. No user data is affected.
12 Floppy Format	80	The disc is re-initialized with a 011 data pattern.
13 HDC Check	10	All read/write registers on the HDC chip are checked. HDC = Hard Disc Controller.
14 WD1100 Check	10	Writes data pattern to all registers with all combinations and verifies the data. Rev B controllers only.
15 WD1100 Buffer RAM	10	Tests the WD data buffer RAM (Rev B controllers only)

Figure 4-2. Test description table.

### ADDITIONAL HINTS

If the unit does not respond to commands after power-on, the fault LED can be used to locate a failing section of the PCA. The LED will respond in one of the following ways:

- |                                       |   |
|---------------------------------------|---|
| - LED blinks off once every 6 seconds | ROM checksum is wrong                       |
| - LED blinks off 2 times/6 seconds    | Processor ram is bad                        |
| - LED blinks off 3 times/6 seconds    | Buffer ram is bad                           |
| - LED blinks off 4 times/6 seconds    | Configuration jumpers A through H set wrong |
| - LED blinks off 5 times/6 seconds    | 8291 is bad                                 |
| - LED on 6 seconds blinks off 6 times | 6809 is bad                                 |



**Figure 4-3. Controller jumper location.**



## SS/80 External Exerciser

The SS/80 External Exerciser tape part number is 5010-0310, and the Reference Manual for the External Exerciser is 5958-4142.

### Using the SS/80 Exerciser

The following information will help in interpreting the results obtained with the SS/80 External Exerciser, and will also assist in effective use of the Exerciser.

### DERRORS

DERRORS may be indicated following the execution of the External Exerciser tests. A DERROR reports the run-time status of the drive, and provides additional information concerning what the product is doing. The DERROR alone never indicates a failure. Additional status information will be displayed if a problem exists.

The following tables list the DERRORS for the flexible and fixed drives.

External Exerciser DERRORS for the Flexible Drive

Error Code	Description
B0H	Seek failed in M_init_head
B1H	Seek failed in Position_head
B2H	Read address failed in Position_head
B3H	Read address failed in Position_head
B4H	Restore failed in Position_head
B5H,X	Timeout in Wait_for_FDC, FDC status
B6H	Wait_for_FDC failure in seek routine
B7H	Wait_for_FDC failure in Restore
B8H	Seek error in Restore
B9H,X,X	M_INIT_MEDIA, head 0 tracks spared, head 1 tracks spared
BAH	No system cylinder, no read/write tests performed by M_INIT_DIAG
BBH	A read compare was performed by M_INIT_DIAG
BCH,X	Busy bit set in FDC status in FDC_TERM, FDC status
BDH,X	INTER_FDC_ERROR called with no bits set, FDC status
BEH	Unit fault in STP_HD_IN
BFH	Unit fault in STP_HD_OUT
COH,X	Timeout during a seek, X=FDC_STATUS. (This is the old unit fault problem.) The chip was reset and the seek was repeated.

## External Exerciser ERRORS for the Fixed Drive

Error Code	Description
A0H	Status Register Error
A1H	Header Error
A2H	CRC Error
A3H	Write Fault Error
A4H	Register bad on WD1010 or WD 2010
A5H	Timed out
A6H	WD1010 or WD2010 is bad
A7H	Timed out
A8H	Timed out
A9H	Timed out
AAH	Bad sectors on track
ABH	More than 6 bad sectors on one track
ACH	Firmware error
ADH	Couldn't read anything on disc
AEH	Couldn't get two sectors which compared
AFH	Spare table is full
B0H	Had to approach track from inside to recover data
B1H	Had to approach track from outside to recover the data
B2H	WD1100 chip is bad
B3H	WD data buffer RAM bad
B4H	Length error
B5H	Drive did not come up
B6H	Illegal configuration jumper
B7H	Something wrong with configuration
B8H	Header or data mark error
B9H	No error correction
BAH	No error correction was attempted
BBH	Error too large to be corrected
BCH	Error correction successful
BDH	Bad sector
BEH	More than three bad headers
BFH	More than five bad sectors
C0H	More than five bad sectors
C1H	Something wrong with track zero
C2H	Spindle speed out of spec
C3H	Index pulse doesn't appear to change
C4H	Volume setting is bad
C5H	Checksum on the ROM failed
C6H	An ECC or WRITE FAULT error
C7H	Data buffer RAM is bad
C8H	Head actuator not moving
C9H	Drive actuator problem
CAH	WRITE FAULT error
CBH	WRITE FAULT error
CCH	Something wrong with WD2010
CDH	Write fault latch
CEH	Header re-try was done



# Assembly Access

## CHAPTER

## 5

### Introduction

The following is information which pertains to the HP 9133/34D,H and L.

#### Controller PCA Removal

To remove the controller board proceed as follows: (The procedure below assumes that you are facing the front of the unit.)

1. Detach cables J2 thru J6.
2. Remove the 3 mounting screws from the left side of the board.
3. Remove the HP-IB connector nuts from the rear of the chassis.
4. Lift the board clear of the chassis.
5. During reassembly, note that the board slides into lanced board guides on the right side of the chassis.

#### HP 9133/34H and L Winchester Disc Drive Removal

The HP 9133H and L have a different mounting bracket for the Winchester drive assembly. Following is a list of part numbers that are associated with the bracket and drive. Figure 5-1 shows the bracket, drive and ground strap.

Bracket	09133-01203
Bracket screws	2360-0454
Ground strap	09133-61620 (H only)
Ground strap screws	
to bracket	0515-1085
to chassis	2360-0113

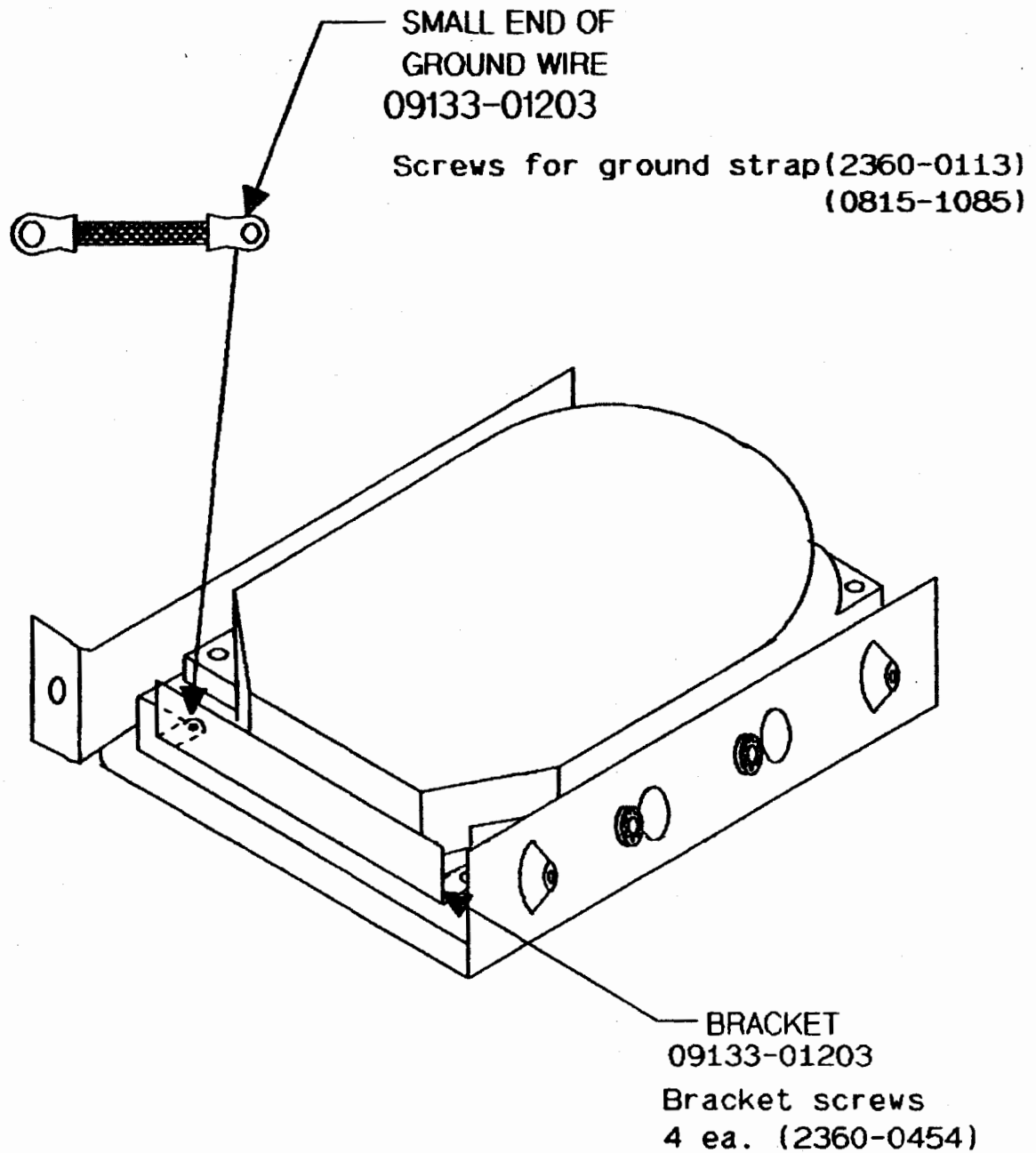


Figure 5-1. 9133/34H and L Winchester mounting bracket.

## 9133/34D,H and L PARTS LIST

LEVEL	REFERENCE DESIGNATOR	PART NUMBER	DESCRIPTION
1	A1	09133-69560	CONTROLLER PCA
.2	C8	0121-0552	C-V 7-60PF VAC
.2	C1-7,10-22,25,26, C28-30	0160-4571	C-F .1UF + 80
.2	C31	0160-4803	C-F 68PF 5% 100V
.2	C32	0160-4807	C-F 33PF 5%100V
.2	C37	0160-4809	C-F 390PF 5%
.2	C35,36	0160-4832	C-F .01UF 10%
.2	C38	0160-4833	C-F .022UF 10%
.2	C9,23	0160-4835	C-F .1UF 10% 50V
.2	C39	0160-5861	C-F 100 PF 1%
.2	C24	0180-0291	C-F 1UF 35V 10%
.2	C27	0180-1746	C-F 15UF 20V
.2	R14	0683-1015	R-F 100 OHM .05
.2	R13,15,16	0683-1035	R-F 10K .05 1/4W
.2	R5,6,7,22	0683-3615	R-F 360 OHM .5
.2	R9	0683-4725	R-F 4.7K .05
.2	R8	0698-3438	R-F 147 1% .125W
.2	R21,23	0698-3700	R-F .125W 715 1%
.2	R18	0757-0161	R-F 604 OHM 1%
.2	R17	0757-0274	R-F 1.21K 1%
.2	R1,3,20	0757-0280	R-F 1K 1% .125W
.2	R19	0757-0400	R-F 90.90HM .01
.2	R11,12	0757-0437	R-F 4.75K 1%
.2	U9	09133-89111	PROM-1
.2	U13	09133-89211	PROM-2
.2	U29	1200-0817	SOCKET 40 PIN
.2	U9,13	1200-0861	SKT-IC 28-CONT
.2	J1	1251-7651	CN24 M AMP CHAMP
.2	J5	1251-8089	CN 6.100 ST HDR
.2	J6	1251-8681	20 PIN CONNECTOR
.2	J2	1251-8682	CN 26.1 SQ POST
.2	J4	1251-8683	CONNECTOR,34 PIN
.2	JMP1-JMP9	1252-0058	CN3.1 SQ POST
.2	JMP1-JMP9	1258-0141	JUMPER-REM
.2	RP1	1810-0083	NTWK-R 13X1K DIP
.2	RP3	1810-0182	NTWK-R24XMULTDIP
.2	RP2	1810-0235	NTWK-R15X2.2KDIP
.2	RP4	1810-0286	NTWK-R 15X10KDIP
.2	U57	1813-0067	XTAL-CLK-OSC
.2	U11	1813-0194	XTAL-CLK-OSC
.2	U55	1813-0346	DLAY LINE 60NSEC
.2	U4,17	1818-1611	IC-STATIC RAM
.2	U5	1820-0471	IC-SN7406N
.2	U37,58,59	1820-0621	TTL BUFF 7438N
.2	U63	1820-0693	IC SN74S74

## Assembly Access

.2	U19,23,49,53	1820-1112	IC SN74LS74AN
.2	U47,51	1820-1144	IC 74LS02
.2	U46	1820-1196	IC SN74LS174N
.2	U21,26,35,50	1820-1197	IC SN74LS00N
.2	U27,39	1820-1199	IC 74LS04
.2	U31,32,44	1820-1201	IC SN74LS08N
.2	U54	1820-1202	IC 74LS10N
.2	U24,43,25,34,45,48	1820-1208	IC 74LS32
.2	U38	1820-1216	IC SN74LS138
.2	U18	1820-1281	IC SN74LS139N
.2	U56	1820-1285	IC SN74LS54N
.2	U1,40	1820-1416	IC SN74LS14N
.2	U20,22	1820-1433	IC SN74LS164N
.2	U28	1820-1568	IC SN74LS125AN
.2	U30,41	1820-1730	IC SN74LS273N
.2	U61	1820-1782	IC 26S02
.2	U7,33,42	1820-2024	IC SN74LS244
.2	U8	1820-2075	IC SN74LS245N
.2	U15,16	1820-2096	IC SN74LS393N
.2	U62	1820-2203	IC AM26LS32PC
.2	U14	1820-2536	IC SN74LS352N
.2	U6	1820-2549	IC 8291AP
.2	U12	1820-2624	IC 68B09
.2	U64	1820-2749	IC AM26LS31PC
.2	U29	1820-3168	IC WD1010
.2	U52	1820-3318	IC SN74ALS273N
.2	U2	1820-3431	IC DS75160AN
.2	U3	1820-3513	IC DS75161AN
.2	U10	1820-3659	WD-2793-02 FDC
.2	U60	1820-3705	DP8460N-4
.2	CR1	1901-0050	SWITCHING DIODE
.2	R2,4	2100-3210	TRIMMER RESISTOR 10K 1%
.2	R10	2100-3874	VARIABLE RESISTOR 5K 10%
.2		2200-0107	SCREW 4-40
.2	S1	3100-1662	10 POSITION SWITCH
.2	S2	3100-1951	THUMBWHEEL SWITCH -10

## FUSES

1	2110-0003	FUSE-3AMPS NB
---	-----------	---------------

## EXCHANGE ASSEMBLIES

09114-69511	3 1/2-inch Flexible Disc Drive
09133-69308	40 Mbyte WINCHESTER
09133-69206	20 Mbyte WINCHESTER
09133-69104	15 Mbyte WINCHESTER
09133-69105	WINCHESTER DRIVE ELECTRONICS
09133-69560	CONTROLLER PCA

# NON-EXCHANGE ASSEMBLIES

09133-68501	FAN ASSEMBLY
09133-61623	DISC CONTROLLER CABLE
09133-61624	DISC R/W CABLE
09133-67110	POWER SUPPLY
09133-08866	TOP COVER/SHIELD ASSEMBLY
2110-0003	FUSE 3A 250V
09133-61622	FLEX DRIVE CABLE

## MISCELLANEOUS PARTS

1	8120-1378	CABLE-POWER
1	0403-0427	BUMPER FOOT
1	0515-0825	SCR MAX. 7 X 8MM
1	0624-0458	SCR-TPG 8-16
1	0624-0525	SCR-TPG 10-14
1	07940-00026	FAN GUARD
1	09121-48303	FOOT-MOLDED
1	09133-00602	FRT SHIELD-33
1	09133-09100	SPRING-RETAINER
1	09133-20101	CHASSIS - 9133
1	09133-40201	FRT PNL- 9133
1	09133-40202	SWITCH SHAFT
1	09133-42501	LIGHT PIPE
1	09133-61606	LED/PWR CABLE
1	09133-61621	PWR HARNESS
1	<del>09133-68501</del>	FAN ASSEMBLY
1	09144-45404	POWER GUARD
1	1450-0625	LED HOLDER
1	5041-1203	POWER BUTTON



use 3160-0288 FAN  
Den 12-92

## CASE PARTS

### Drive Mounting Hardware

#### FLEXIBLE DISC DRIVE

09133-01201	BRACKET
0515-1079	SCREW (BRACKET TO DRIVE)
0515-1085	SCREW (BRACKET TO CHASSIS)
0515-1079	SCREW (CHASSIS TO DRIVE)

#### WINCHESTER DISC DRIVE

09133-01204	BRACKET
2360-0113	SCREW (DRIVE TO BRACKET)
0511-1085	SCREW (BRACKET TO CHASSIS)

### Top Cover Mounting Hardware

3050-0010	FLAT WASHER
0515-0353	SCREW
0151-1085	SCREW

### HP-IB Mounting Hardware

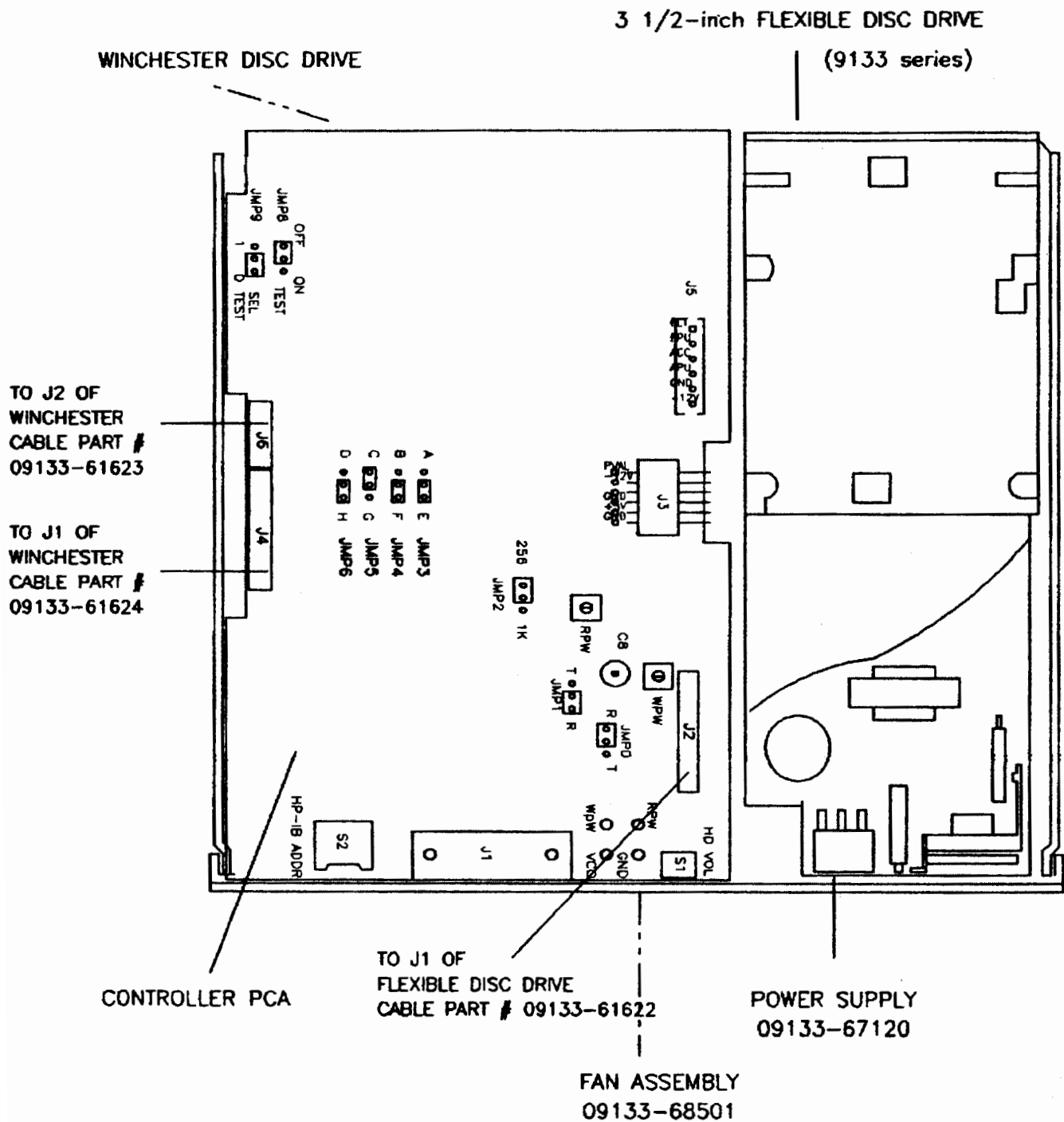


#### **Assembly Access**

0380-1717    HEX STANDOFF  
2190-0843    LOCK WASHER

#### **Controller PCA Mounting Hardware**

0515-1085    SCREW



Location of Field Replaceable Assemblies (FRA)



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## Service Note History

The following tables list the service notes which have been issued against the HP 9133/34 D/H/L products. The service notes are provided at the end of this chapter for reference.

## Service Notes for the HP 9133D

Service Note Number	Description	S/N Prefix	Affected Part
9133D-1A	Screws for exchange flexible drives	All	09114-69510
9133D-2	Timeout with HP 150	2419A00100 to 2419A03714	9133D
9133D-3A	Firmware upgrade	S/N Prefix less than 2443A	09133-69510
9133D-4	Firmware upgrade	All	09133-69510
9133D-5B	New controller board	All	09133-69510
9133D-6	Self test failure after new hard drive	All	9133D
9133D-7A	New Winchester	2511A and up	09133-69106
9133D-8	New flexible drive	2511A and up	09114-69511
9133D-9	Potential service test no. 12 failure with old ROMs	2511A and up	9133D
9133D-10	Loose screws on hard drive	All	09133-69104
9133D-11	New shipping disc	All	9133D
9133D-12	Top flexible head damage	All	09114-69511
9133D-13	New controller board P/N	All	09133-69530
9133D-14	Noisy hard drive	All	09133-69106
9133D-15	Controller board jumpers	All	09133-69540
9133D-16	Flexible drive problem with HP 9817	2513A33600 to 2513A33900	9133D
9133D-17	New shipping discs	All	9133D
9133D-18	Controller firmware changed	All	09133-69550
9133D-19	Firmware upgrade	All	09133-69560

## Service Notes for the HP 9133H

Service Note Number	Description	S/N Prefix	Affected Part
9133H-1	New flexible drive	2512 and up	09114-69511
9133H-2	Potential service test no. 12 failure with old ROMs	2512A and up	9133H
9133H-3	New shipping disc	All	9133H
9133H-4	Controller PCA jumpers	All	09133-69250
9133H-5	Top flexible head damage	All	09114-69511
9133H-6	New controller board P/N	All	09133-69530
9133H-7	Internal self test no. 11 failure	All	9133H
9133H-8	Noisy hard drive	All	09133-69106
9133H-9	Controller board part no.	All	09133-69540
9133H-10	Controller PCA jumpers	All	9133H
9133H-11	Problems with HP 9817A	262136270 to 262142000	9133H
9133H-12	Controller firmware changed	All	09133-69550
9133H-13	New shipping disc	All	9133H
9133H-14	Firmware upgrade	All	09133-69560



**Service Notes for the HP 9133L**

<b>Service Note Number</b>	<b>Description</b>	<b>S/N Prefix</b>	<b>Affected Part</b>
9133L-1	New firmware update	All	09133-69530
9133L-2	Controller PCA jumpers	All	09133-69530
9133L-3	Controller jumper revision	All	09133-69530
9133L-4	New 40 Mbyte hard drive	All	09133-69208
9133L-5	Problems with HP 9817A	2623A00850 to 2623A09494	9133L
9133L-6	New shipping disc	All	9133L
9133L-7	New controller firmware	All	9133L
9133L-8	New 40 Mbyte Winchester	All	09133-69308
9133L-9	Firmware upgrade	All	09133-69560

## SERVICE NOTE

Supersedes:

9133D  
09114-69511  
All Serial Numbers

Required Screws in Exchange Flexible

APPLIES TO:	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>	
PERFORM:	Immediately <input type="checkbox"/> On Future <input type="checkbox"/>	At PM/Normal Call <input type="checkbox"/> Information Only <input checked="" type="checkbox"/>	
WARRANTY:	<u>EXTENDED</u>	<u>NORMAL</u>	<u>NONE</u>
LABOR:			X
PARTS:			X
TRAVEL:			X
SERVICE	Return for updates <input type="checkbox"/>	Use as is <input checked="" type="checkbox"/>	
INVENTORY	Return for salvage <input type="checkbox"/>	See text <input type="checkbox"/>	
WARRANTY EXTENDED UNTIL:			

## SITUATION:

The 09114-69511 Flexible Disc drive is currently used in three products; the 9114A, the 9122D/S, and the 9133D. There are 5 possible locations for mounting-screws that attach the shield to the frame of the drive. Each product requires a different minimum number of screws. In some cases, screws must NOT be installed in certain locations.

All drives in the 9133D's have been shipped with the proper mounting-screws. However, many of the EXCHANGE drives shipped prior to September 1984 contained only the one rear mounting-screw. The exchange drive is now being shipped with the MAXIMUM number of screws to accommodate all products that use the drive.

## DESCRIPTION:

The 9133D requires screws in locations 2 and 3 ONLY. Screws 1,4, and 5 MUST BE REMOVED.

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06-24-85 - 5800

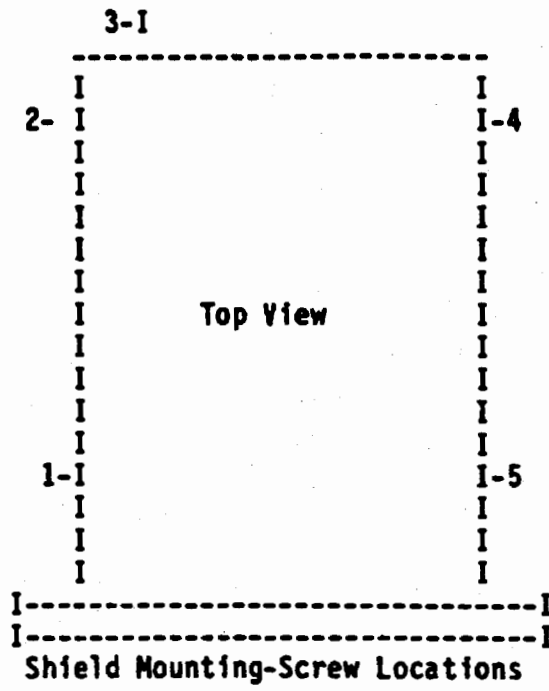
9320-4766 (1/83)



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## S E R V I C E   N O T E



9133D

Serial Numbers  
2419A00100 thru 2419A03714

Disc Timeout on Power Up with HP 150B

**PROBLEM:**

A problem occurs frequently when the 150B and the 9133D Winchester disc are initially powered up if power is applied to the computer and the disc at the same time. The problem is that the computer will not consistently boot properly from the 9133D, and will display a message of "OP SYS NOT FOUND" or something similar.

**SOLUTION:**

The 9133D should be powered from a separate AC outlet as indicated in the 9133D manual and the 150B manual. Apply power to the 9133D and wait until it has completed selftest as indicated by the "Fault" indicator and the "On Line" indicator on the front of the 9133D both being off, then apply power to the computer.

If the computer fails to boot because power was not applied to the system in the sequence described above, wait until the 9133D has completed selftest. Press "Return" and then simultaneously press "Shift", "CTRL", and "Reset", and the computer will then boot properly from the 9133D.

Note that the 9133D SHOULD NOT use the short power cable and be powered from the computer. The power requirements for the 9133D are greater than the rating indicated on the AC outlet on the computer. An additional problem could occur if the 9133D is powered from the outlet on the computer, and a fault should develop in the 9133D which would draw a large surge of current and possibly cause the computer to lose the contents of its memory.

A revision has been made to the 9133D firmware which should minimize the probability that the problem will occur. The new firmware is in 9133D's with serial numbers 2419A03715 and above.

**WARRANTY:**

Update of service inventory will be covered in a separate service note.

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11/6/84 - 5800

Supersedes:

SUPERSEDES:

<b>APPLIES TO:</b>	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>	
<b>PERFORM:</b>	Immediately <input type="checkbox"/>	At PM/Normal Call <input type="checkbox"/>	
	On Failure <input type="checkbox"/>	Information Only <input checked="" type="checkbox"/>	
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>	<b>NONE</b>
<b>LABOR:</b>			X
<b>PARTS:</b>			X
<b>TRAVEL:</b>			X
<b>SERVICE INVENTORY</b>	Return for update <input type="checkbox"/>	Return for salvage <input type="checkbox"/>	Use as is <input type="checkbox"/>
			See text <input checked="" type="checkbox"/>
<b>WARRANTY EXTENDED UNTIL:</b>			



9320-4766 (1/83)



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## S E R V I C E   N O T E

Supersedes: 9133D-3

SUPERSEDES:

9133D

Firmware Upgrade on 09133-69510

Assemblies in Field Service  
Inventory with Date Code Less  
Than 2443

<b>APPLIES TO:</b>	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>
<b>PERFORM:</b>	Immediately <input type="checkbox"/> On Failure <input type="checkbox"/>	At PM/Normal Call <input type="checkbox"/> Information Only <input type="checkbox"/>
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>
<b>LABOR:</b>	N/A	
<b>PARTS:</b>	N/A	
<b>TRAVEL:</b>	N/A	
<b>SERVICE</b>	Return for update <input type="checkbox"/>	Use as is <input type="checkbox"/>
<b>INVENTORY</b>	Return for salvage <input type="checkbox"/>	See text <input type="checkbox"/>
<b>WARRANTY EXTENDED UNTIL:</b>	N/A	

**Situation:**

A complete firmware update of all 09133-69510 assemblies in field service inventory is specified in Service Note 9133D-4. The new firmware specified in 9133D-4 also corrects the timeout problem indicated in Service Note 9133D-3.

**Action:**

Service note 9133D-3 is cancelled.

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5800-03/22/85

9320-4766 (1/83)



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## S E R V I C E   N O T E

Supersedes:

SUPERSEDES:

HP9133D and HP9134D  
Winchester Disc Drive

09133-69510 Controller  
Assembly

Firmware Change to Support  
20 Mbyte Winchester Drive

<b>APPLIES TO:</b>	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>	
<b>PERFORM:</b>	Immediately <input checked="" type="checkbox"/> On Failure <input type="checkbox"/>	At PM/Normal Call <input type="checkbox"/> Information Only <input type="checkbox"/>	
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>	<b>NONE</b>
<b>LABOR:</b>	X		
<b>PARTS:</b>	X		
<b>TRAVEL:</b>			X
<b>SERVICE</b>	Return for update <input type="checkbox"/>	Use as is <input checked="" type="checkbox"/>	
<b>INVENTORY</b>	Return for salvage <input type="checkbox"/>	See text <input checked="" type="checkbox"/>	
<b>WARRANTY EXTENDED UNTIL:</b> 6/1/85 (see text)			

## Background:

In March Greeley Division will begin using a 20 Mbyte Winchester disc drive in the 9133D and 9134D Winchester products. These products will continue to be configured as 15 Mbyte Winchesters, however. (Two new products, the 9133H and 9134H, will be introduced in the near future which will allow use of the full 20 Mbyte capacity of the Winchester, but host system support for the 20 Mbyte configuration is not currently available.) It is necessary to replace the firmware, two EPROM's in the 09133-69510 Controller board so that the assemblies in Field Service Inventory can be used to service 9133D and 9134D products with either the 15 Mbyte Winchester drive, 09133-69104, or the new 20 Mbyte Winchester drive, 09133-69106, as well as the new products at the time they are introduced.

## Implementation:

1. Order Firmware Upgrade Kit 09133-89901 from CPC/CPE.
2. Replace the EPROM's in the 09133-69510 controller assemblies in FSI with the EPROM's in the kit per the instructions included in the kit.
3. The configuration jumpers JMP3 thru JMP6 must be set as follows for use in the 9133/9134 products when this updated board (09133-66510 Rev B etched on board) is used to replace a defective controller assembly:

9320-4766 (1/83)



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## SERVICE NOTE

Supersedes:

SUPERSEDES:

<b>APPLIES TO:</b>	All Units <input type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>
<b>PERFORM:</b>	Immediately <input type="checkbox"/>	At PM/Normal Call <input type="checkbox"/>
	On Failure <input type="checkbox"/>	Information Only <input type="checkbox"/>
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>
<b>LABOR:</b>		
<b>PARTS:</b>		
<b>TRAVEL:</b>		
<b>SERVICE</b>	Return for update <input type="checkbox"/>	Use as is <input type="checkbox"/>
<b>INVENTORY</b>	Return for salvage <input type="checkbox"/>	See text <input type="checkbox"/>
<b>WARRANTY EXTENDED UNTIL:</b>		

## JMP3-JMP6

## Product Configuration

EFGH	15 Mbyte hard, no flex disc (9134D)
AFGH	20 Mbyte hard w/20 Mbyte capacity, no flex (9134H)
EBGH	Future use only
ABGH	20 Mbyte hard w/15 Mbyte capacity, no flex (9134D)
EFCH	15 Mbyte hard, flex disc (9133D)
AFCH	20 Mbyte hard w/20 Mbyte capacity, flex disc (9133H)
EBCH	Future use only
ABCH	20 Mbyte hard w/15 Mbyte capacity, flex disc (9133D)

## Warranty:

Greeley Division will accept extended warranty billing for the cost of the Firmware Upgrade Kit, 09133-89901, and 15 minutes labor until June 1, 1985. Please reference this service note on the billing.

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5800-2/28/85

9320-4766 (1/83)

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2 of 2

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## SERVICE NOTE

9133D

9133D DISC DRIVE

Serial number:  
ALL

NEW CONTROLLER PCA

Supersedes: 9133D-5A

APPLIES TO: All Units: X		Only Units on Agreement:	
PERFORM:	Immediately: On Failure:	At Pri/Normal Call: Information Only: X	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:			X
PARTS:			X
TRAVEL:			X
SERVICE INVENTORY:	Return for Update: Return for Salvage:	Use as is: X See Text:	
WARRANTY EXTENDED UNTIL:		N/A	

**Situation:**

A revised controller PCA is being shipped in all 9133D Disc Drives. The new controller will be in 9133D products beginning at approximately serial number 2419A14750. This controller will also be shipped in all 9133D products with serial number prefix of 2511A and above.

A new revision of firmware for the 9133D is being used with this new controller. This new firmware is also being used to update existing field service inventory of 09133-69510 controller PCA's per service note 9133D-4.

Both the original controller board, which had part number 09133-66510 Rev B etched on the board, and the new controller PCA, which has 09133-66510 Rev C etched on the board will be used as exchange assembly 09133-69520.

**Cause:**

The controller assembly has been revised to use a single IC to perform the hard disc controller and ECC functions which were previously performed by two IC's. Additional changes include a change to a different IC for the phase lock loop for the hard disc, and silkscreen changes to correct an error on the original PCA.

**Details:**

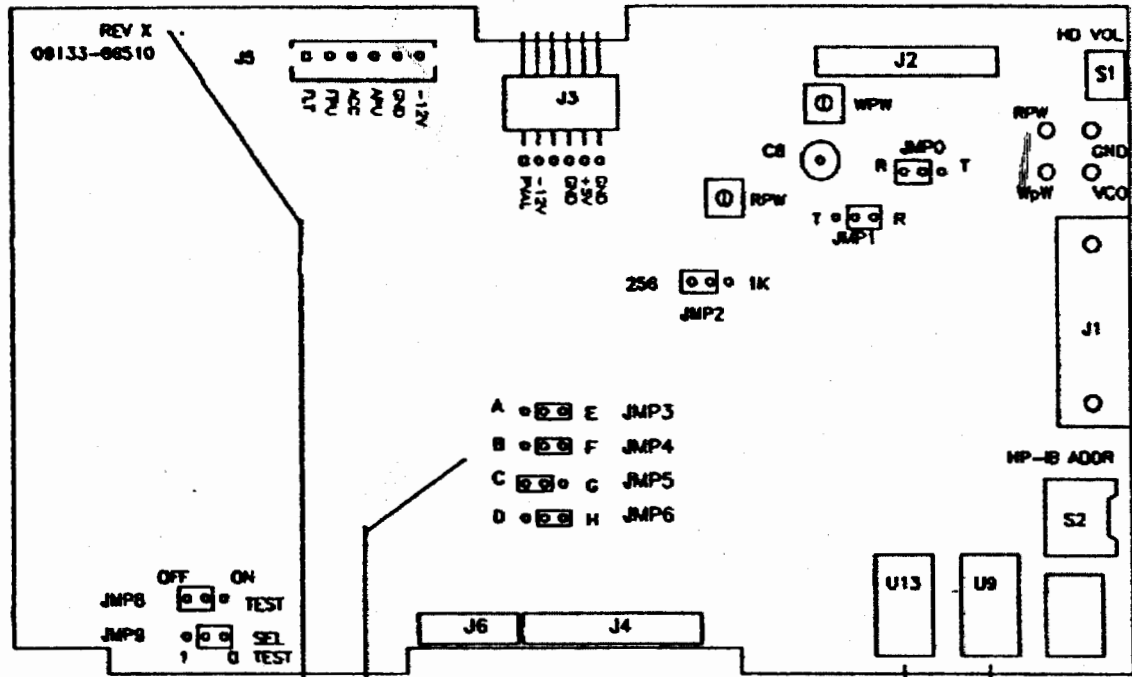
Both the Rev B and the Rev C controller assemblies will be used as exchange assembly 09133-69520. All service inventory of the original exchange assembly 09133-69510 must have firmware updated per service note 9133D-4 before being used to service any 9133D Disc Drives with serial number prefix 2511A or above. Firmware should not be updated in 9133D Disc Drives which are repaired.

Jumpers JMP3-JMP6 must be installed as shown in the figure on the next page to assure correct operation. Note that the jumper configurations shown here differ from those shown in the service documentation for the 9133D.

LSM  
6/28/85

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Product	S/N Prefix	Rev	JMP3-JMP6	Required Firmware
9133D	2419A/2511A	B	EFCH	Any 09133-8910X/-8920X
9133D	2419A/2511A	C	EFCD	09133-89105/-89205 and above
9133D	2513A and above	B	ABCH	09133-89105/-89205 and above
9133D	2513A and above	C	ABCD	09133-89105/-89205 and above
9134D	2425A	B	EFGH	Any 09133-8910X/-8920X
9134D	2425A	C	EFGD	09133-89105/-89205 and above
9134D	2514A and above	B	ABGH	09133-89105/-89205 and above
9134D	2514A and above	C	ABGD	09133-89105/-89205 and above
9133H	ALL	B	AFCH	09133-89105/-89205 and above
9133H	ALL	C	AFCD	09133-89105/-89205 and above
9134H	ALL	B	AFGH	09133-89105/-89205 and above
9134H	ALL	C	AFGD	09133-89105/-89205 and above

NOTE: JMP2 is shown in the position for standard product.  
Option001 will have JMP2 in 1K position.

LSM  
6/28/85

## 2 of 2

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## SERVICE NOTE

9133D

9133D Disc Drive

Serial number:

ALL

## SELF TEST FAILURE AFTER DRIVE

## REPLACEMENT

Supersedes:

APPLIES TO: All Units: <input checked="" type="checkbox"/>		Only Units on Agreement:	
PERFORM:	Immediately:	At PM/Normal Call:	
	On Failure:	Information Only: <input checked="" type="checkbox"/>	
WARRANTY:		EXTENDED	NONE
LABOR:			X
PARTS:			X
TRAVEL:			X
SERVICE INVENTORY:	Return for Update:	Use as is:	
	Return for Salvage:	See Text: <input checked="" type="checkbox"/>	
WARRANTY EXTENDED -TTL:		N/A	

## Situation:

9133D Disc Drives which contain firmware with part numbers 09133-89105 and 09133-89205 will fail the power up selftest after a replacement Winchester drive is installed. This selftest failure will occur with either the 09133-69104 or the 09133-69106 Winchester drive assembly.

The FAULT and ON LINE indicators on the product will both remain on for approximately 1 1/2 to 2 minutes, then the ON LINE indicator will go out and the FAULT indicator will remain on.

## Cause:

A change has been made in the firmware to provide a more thorough test of the product during the power up selftest. A result of this increased capability to detect failures is that a Winchester disc which is not formatted causes the selftest to fail.

## Details:

Proceed as follows after installation of an exchange drive assembly:

1. Apply power to the drive and wait until the ON LINE indicator goes out. (This should not be longer than 2 minutes). The FAULT indicator being on at this time does not indicate that the drive which was just installed is defective.
2. Use a host computer to 'INITIALIZE' or 'FORMAT' the disc. If a mass storage error should occur the first time the command is executed, try the command a second time. The drive should execute the command correctly and initialize the media if no other problems exist in the disc.

LSM

03/13/84



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## SERVICE NOTE

Supersedes: 9133D-7

9133D

9133D DISC DRIVE

Serial number:  
ALL PREFIX 2513A AND ABOVE

NEW WINCHESTER EXCHANGE

ASSEMBLY

APPLIES TO: All Units: <b>X</b>		Only Units on Agreement:	
PERFORM:	Immediately:	At Pri/Normal Call:	
	On failure:	Information Only: <b>X</b>	
WARRANTY:		EXTENDED	NORMAL
LABOR:			<b>X</b>
PARTS:			<b>X</b>
TRAVEL:			<b>X</b>
SERVICE INVENTORY:	Return for Update:	Use as is:	
	Return for Salvage:	See Text:	
WARRANTY EXTENDED UNTIL:		N/A	

## Situation:

A new exchange assembly for the Winchester drive is required for all 9133D Disc Drives with serial number prefix 2513A and above. The new exchange assembly is part number 09133-69106, and includes both the drive and the drive electronics assembly. This new exchange assembly will be used to service only 9133D products with serial number prefix 2513A and above. 9133D's with serial number prefix less than 2513A MUST continue to use drive assembly 09133-69104 and drive electronics assembly 09133-69105 as repair parts.

## Cause:

The manufacturer is discontinuing production of the drive which was originally used in the 9133D.

## Details:

The 09133-69106 Winchester drive must be used to replace a defective Winchester mechanism in all 9133D's with serial number prefix 2513A and above. Refer to service note 9133D-5 for information concerning setting of jumpers on the controller board when this drive assembly is used.

LSM  
04/24/85



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## SERVICE NOTE

Supersedes: None

SUPERSEDES:

## 9133D Disc Drive

09114-69511

3.5 Inch Drive Mechanism  
(All Prefix 2511A and later)

APPLIES TO:	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>
PERFORM:	Immediately <input type="checkbox"/> On Failure <input type="checkbox"/>	At PM/Normal Call <input type="checkbox"/> Information Only <input checked="" type="checkbox"/>
WARRANTY:	EXTENDED	NORMAL
LABOR:		
PARTS:		
TRAVEL:		
SERVICE	Return for update <input type="checkbox"/>	Use as is <input checked="" type="checkbox"/>
INVENTORY	Return for salvage <input type="checkbox"/>	See text <input type="checkbox"/>
WARRANTY EXTENDED UNTIL:	NA	

## Situation:

Starting with Serial Number prefix 2511A, a new 3.5 Inch Drive (PN09114-69511) is being used in the 9133D. The new drive has a different Drive Electronics PCA (Fewer components) and Cassette-Up Assembly. The new drive will be used interchangeably with the existing 3.5 Inch Drive, therefore it will be stocked with the same exchange part number and no FSI action is required.

Cause: The drive is being changed to reduce cost and improve reliability. The new drive has fewer parts to increase reliability.

Warranty: Both drives will be used interchangeably using exchange part number 09114-69511. No F.S.I or warranty action is required.



KK/tm

4/9/85 - 5800

9320-4766 (1/83)



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## SERVICE NOTE

9133D  
Disc Drive

09133-69520 Firmware Change  
Floppy/Hard Disc Board  
(All Prefix 2511A and later)

Potential Service Test Failure

Supersedes: NONE

SUPERSEDES:

<b>APPLIES TO:</b>	<input checked="" type="checkbox"/> All Units <input checked="" type="checkbox"/>	<input type="checkbox"/> Only Units on Agreement <input type="checkbox"/>	
<b>PERFORM:</b>	<input type="checkbox"/> Immediately <input type="checkbox"/> <input type="checkbox"/> On Failure <input type="checkbox"/>	<input type="checkbox"/> At PM/Normal Call <input type="checkbox"/> <input checked="" type="checkbox"/> Information Only <input type="checkbox"/>	
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>	<b>NONE</b>
<b>LABOR:</b>			<input checked="" type="checkbox"/>
<b>PARTS:</b>			<input checked="" type="checkbox"/>
<b>TRAVEL:</b>			<input checked="" type="checkbox"/>
<b>SERVICE INVENTORY</b>	<input type="checkbox"/> Return for update <input type="checkbox"/> <input type="checkbox"/> Return for salvage <input type="checkbox"/>	<input checked="" type="checkbox"/> Use as is <input type="checkbox"/> <input type="checkbox"/> See text <input type="checkbox"/>	
<b>WARRANTY EXTENDED UNTIL:</b>	<b>NA</b>		

**Symptom:** The latest 3 1/2-inch Drive mechanism, part number 09114-69511 date codes 2513 and 2514, when in products with the older E-PROMs, part numbers 09133-89105 and 09133-89205 and earlier, does not perform the jumper-initiated Floppy Format test correctly.

Due to timing differences between the new drive and controllers with older firmware, step commands may not all be performed by the drive during the Service Format Test. When this occurs, all tracks will not be formatted. The test will not indicate a failure as no read operation is done during the test. A failure will not occur until a read or write operation is attempted. The failure occurs on the jumper-initiated Floppy Format Test (Test 12) ONLY. No other tests or functions are effected.

**Solution:** New E-PROMs, part numbers 09133-89106 and 09133-89206 correct timing differences for both the earlier and later drives. The Controller/Power PCA, part number 09133-69520, date code 2513 and later has the new E-PROM.

09114-69511 Drive Date Code	E-PROMs PN 09133-89105 and 09133-89205 and earlier	E-PROMs PN 09133-89106 and 09133-89206 and later
2418 and 2432	Will pass Service Format Test on good unit	Will pass Service Format Test on good unit
2513 and 2514	May not complete Service Format Test. (All tracks may not be formatted)	Will pass Service Format Test on good unit

**Warranty:** As no customer operations are affected, no warranty or F.S.I. action is required. All other operations are unaffected.

KK/tm

5/9/85 - 5800

9320-4766 (1/83)



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## S E R V I C E   N O T E

Supersedes:

SUPERSEDES:

9133D  
Any Serial Number  
09133-69104

## Loose Screws on Drive Mech Assembly

<b>APPLIES TO:</b>	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>
<b>PERFORM:</b>	Immediately <input type="checkbox"/> On Failure <input checked="" type="checkbox"/>	At PM/Normal Call <input type="checkbox"/> Information Only <input type="checkbox"/>
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>
<b>LABOR:</b>		X
<b>PARTS:</b>		X
<b>TRAVEL:</b>		X
<b>SERVICE</b>	Return for update <input type="checkbox"/>	Use as is <input type="checkbox"/>
<b>INVENTORY</b>	Return for salvage <input type="checkbox"/>	See text <input checked="" type="checkbox"/>
<b>WARRANTY EXTENDED UNTIL:</b>	NA	

## Problem:

Some drive mechanisms shipped with the above products could have mounting screws that are loose or could come loose during shipping.

These mounting screws attach the winchester casting to the winchester chassis. These three screws have rubber washers under them and are located under the drive electronics board on the drive mech assembly.

## Symptom:

One symptom associated with the screws coming loose or falling off completely is loud vibrating noises coming from the drive mech. Other failures include the fault LED light staying on or the inability to access the drive by a host. These symptoms are normally caused by the screw or screws falling off and shorting the drive electronics board on the drive mechanism assembly.

## Solution:

Replace the drive mechanism PN 09133-69104.

Drive mechanisms should be inspected before using as Field Service Inventory.

RP/tm

4/18/85 - 5800

9320-4766 (1/83)



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## SERVICE NOTE

Supersedes:

SUPERSEDES:

9133D  
3 1/2 Inch Double Sided  
Floppy Disc Drives  
  
New Shipping Disc

<b>APPLIES TO:</b>	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>
<b>PERFORM:</b>	Immediately <input type="checkbox"/>	At PM/Normal Call <input type="checkbox"/>
	On Failure <input type="checkbox"/>	Information Only <input checked="" type="checkbox"/>
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>
<b>LABOR:</b>		X
<b>PARTS:</b>		X
<b>TRAVEL:</b>		X
<b>SERVICE</b>	Return for update <input type="checkbox"/>	Use as is <input type="checkbox"/>
<b>INVENTORY</b>	Return for salvage <input type="checkbox"/>	See text <input checked="" type="checkbox"/>
<b>WARRANTY EXTENDED UNTIL:</b>		

**Situation:**

The 3 1/2 inch double sided disc drive PN 09114-69511 has been changed by Sony to improve performance and reliability from a -10 drive to a -11 drive. The new date codes on these drives will be 2513 or 2514. The older date codes on these drives were 2418 or 2432. The newer drives have a plastic shipping disc that has been designed especially for these newer drives, but is backward compatible with the older drives. All the double sided drives are now being shipped with the new plastic shipping disc. The older cardboard shipping disc PN 1535-4881 can be used with both the newer and older drives. The new plastic shipping disc will also have part number 1535-4881. The old cardboard shipping disc does not eject as smoothly as the new plastic disc in the new drives, but careful handling when removing the disc from the drive will not damage the drive.

**Implementation:**

CPC will use up all old cardboard shipping discs. No action on FSI because the old cardboard shipping discs can be used on either drive. Use up all FSI before using new shipping discs.

RP/tm

06/20/85 - 5800

9320-4766 (1/83)



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## SERVICE NOTE

9133D

3 1/2 In. Double Sided Floppy Disc  
Drive

Serial number:  
All

Top Head Damage of the Drive  
Mechanism HP part number 09114-69511.

## Supersedes:

<b>APPLIES TO:</b>	<b>All Units</b> <input type="checkbox"/>	<b>Only Units on Agreement</b> <input type="checkbox"/>	
<b>PERFORM:</b>	<b>Immediately</b> <input type="checkbox"/>	<b>At PM/Normal Call</b> <input type="checkbox"/>	
	<b>On Failure</b> <input type="checkbox"/>	<b>Information Only</b> <input type="checkbox"/>	
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>	<b>NONE</b>
<b>LABOR:</b>		<b>X</b>	
<b>PARTS:</b>		<b>X</b>	
<b>TRAVEL:</b>		<b>X</b>	
<b>SERVICE</b>	<b>Return for update</b> <input type="checkbox"/>	<b>Use as is</b> <input type="checkbox"/>	
<b>INVENTORY</b>	<b>Return for salvage</b> <input type="checkbox"/>	<b>See text</b> <input type="checkbox"/>	
<b>WARRANTY EXTENDED UNTIL:</b>	<b>N/A</b>		

## Situation:

Top head damage is occurring on the Sony drive mechanism (09114-69511) used in this unit. This top head damage could cause: 1. Scratching of media. 2. Failing self tests. 3. Not being able to read or write data on media. 4. Intermittent failures.

## Cause:

The new plastic shipping disc, HP part number 1535-4881, used in this drive may become partially ejected, due to shock of shipment. When the shipping disc becomes ejected without first pressing the eject button, the cassette up assembly is still in the head load position. Since the heads are then loaded incorrectly on the shipping disc, vibration and shock can easily damage the heads. Other damage could occur if the customer perceives that the shipping disc, although slightly ejected, is ready to install or remove from the drive. When the disc or media is installed or ejected without first pressing the eject button to unload the heads, head damage can occur. This damage may be either loosening of the top head causing failures at a later date or tearing out the top head completely causing a DOA.

It is also possible for media to become partially ejected from the mechanism due to shock and vibration. The same cautions regarding removal and insertion of partially ejected shipping discs also applies to media.

RP  
9-23-85



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**Solution:**

1. If the drive is moved or shipped, customers should install a rubber wedge into the drive above the shipping disc to prevent the shipping disc from ejecting. The HP part number of the rubber wedge is 9223-0648.
2. Educate customers regarding removing and installing the shipping disc or media into the drive without first depressing the eject button. New products will contain an instruction sheet explaining the situation. The part number of the instruction sheet is 09114-90036.

FSI: All 09114-69511 drives shipped from CSR and CSE will have the rubber wedge and instruction sheet with the drive. All drives in FSI should have the rubber wedge installed immediately. Any drives received in FSI with the shipping disc ejected should be returned to CSR or CSE. No drive mechanisms should be shipped without the rubber wedge.

RP  
9-23-85

## SERVICE NOTE

9133D

Disc Drive

Serial number:  
AllController PCA Part Number  
09133-69520 Changed to 09133-69530

Supersedes: None

APPLIES TO:		All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>
PERFORM: **		Immediately <input type="checkbox"/>	At PMA/Normal Call <input type="checkbox"/>
		On Failure <input type="checkbox"/>	Information Only <input type="checkbox"/>
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:	X		
PARTS:	X		
TRAVEL:			X
SERVICE	Return for update <input type="checkbox"/>		Use as is <input type="checkbox"/>
INVENTORY	Return for salvage <input type="checkbox"/>		See text <input checked="" type="checkbox"/>
WARRANTY EXTENDED UNTIL: See text			

\*\* See Text

## Situation:

Controller PCA Part Number 09133-69520 is being changed to 09133-69530. The part number change is being made to identify boards that have been updated to correct a problem when the PCA is used in the 9133L. Reference Service Note 9133L-1 for description of symptom. While the symptoms described do not affect the 9133D, this assembly is also used for 9133D repair and new part number 09133-69530 should be used when ordering replacement assemblies.

## Solution:

Controller PCA part number 09133-69530 will have EPROM's part number 09133-89108/208 or higher. F.S.I. of Controller PCA PN 09133-69520 needs to be upgraded to 09133-69530. This upgrade will be performed in the field and affects F.S.I. ONLY. Firmware Upgrade Kit PN 09133-89902 is set up at CPC to allow field upgrade of F.S.I. of controller PCA PN 09133-69520. The kit includes EPROMs PN 09133-89108/89208, upgrade instructions and part number label to indicate the new Controller PCA part number. All F.S.I. should be checked and upgraded if necessary to ensure the firmware is part number 09133-89108/208 or higher.

## Warranty:

Greeley Division will accept 0.25 hours labor and material cost for the firmware upgrade kit, PN09133-89902, to perform upgrade of F.S.I. No installed base action is required. The cost of the parts and the anticipated inventory at each site does not justify returning EPROMs replaced per this service note for reprogramming. Scrap any parts locally.

KK  
10/30/31

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## SERVICE NOTE

9133D

Disc Drive

Serial number:  
2513A and above

Noisy Hard Disc HP part number  
09133-69106.

Supersedes: None

APPLIES TO:	All Units: <u>X</u>	Only Units on Agreement:	
PERFORM:	Immediately: On Failure: <u>X</u>	At Pri/Normal Call: Information Only:	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:	X		
PARTS:	X		
TRAVEL:			X
SERVICE INVENTORY:	Return for Update: <u>X</u>	Use as is:	
	Return for Salvage:	See Text:	
WARRANTY EXTENDED UNTIL:	Feb 27, 1987		

**Situation:**

Customer complaints about noisy 20 Mbyte hard disc HP exchange part number 09133-69106. This noise only affects the 20 Mbyte drive in the 9133D unit. The 15 Mbyte drives, HP exchange part number 09133-69104 are not affected.

**Cause:**

The spindle motor of the hard disc was found, in some small cases, to be noisy. An improvement has been made to the spindle motor to prevent this noise from occurring.

**Solution:**

If a customer complains about the noise of the 20 Mbyte hard disc, replace the disc with part number 09133-69206. This new exchange part number has been tested for noise or has the new spindle motor installed.

All FSI of 09133-69106 hard disc drives should be purged and replaced with part number 09133-69206.

**Warranty:**

Greeley will accept 1/2 hour labor and part number 09133-69206 replaced due to customer complaint of noise. Do not replace drive if not noisy.



RP  
2-27-86



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## SERVICE NOTE

9133D

Supersedes: None

Disc Drive

Serial number:

All

Controller PCA Jumper Revision

APPLIES TO:	All Units: <input checked="" type="checkbox"/>	Only Units on Agreement: <input type="checkbox"/>	
PERFORM:	Immediately: <input type="checkbox"/> On Failure: <input type="checkbox"/>	At PM/Normal Call: <input type="checkbox"/> Information Only: <input checked="" type="checkbox"/>	
WARRANTY:	EXTENDED <input type="checkbox"/>	NORMAL <input type="checkbox"/>	NONE <input type="checkbox"/>
LABOR:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PARTS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TRAVEL:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SERVICE INVENTORY:	Return for Update: <input type="checkbox"/>	Use as is: <input checked="" type="checkbox"/>	
	Return for Salvage: <input type="checkbox"/>	See Text: <input type="checkbox"/>	
WARRANTY EXTENDED UNTIL:	NA		

**Situation:**

There continues to be confusion in setting the jumpers on the 09133-69540 PCA when replacing a defective PCA. This results in field confusion and NTF's on assemblies returned to SMR/CSG. This mainly occurs when the replacement PCA is a different revision PC board than the original assembly.

**Solution:**

The position of configuration jumper 6 (D/H) is determined by the PCA revision only. Controller PCA's with electrical revision date code 2520A or higher will have the connector for jumper 6 removed and a soldered jumper installed.

**Warranty:**

This change does not affect FSI or installed base. No extended warranty or FSI upgrade is authorized by this service note. Controller assemblies will be updated during normal repair at SMR/CSG.

KK

05/20/86

HEWLETT  
PACKARD

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## SERVICE NOTE

9133D

15 Mbyte Hard Disc - 3 1/2 Inch  
Floppy Disc

Serial number: Approximately 2513A33600  
to 2513A33900

Floppy Disc problems **ONLY** when using  
9817A Host Controller.

Supersedes: N/A

APPLIES TO:	All Units: <u>X</u>	Only Units on Agreement:	
PERFORM:	Immediately: On Failure: <u>X</u>	At PM/Normal Call: Information Only:	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:		X	
PARTS:		X	
TRAVEL:			X
SERVICE INVENTORY:	Return for Update:	Use as is: <u>X</u>	
	Return for Salvage:	See Text:	
WARRANTY EXTENDED UNTIL:	Jan 1, 1988		

**Problem Symptoms:**

**ONLY** when using a 9817A computer as a host, **ONLY** on the floppy disc mechanism:

1. Cannot boot-up
2. Read errors
3. Cannot initialize.

**Cause:**

A ground strap was removed on the products shipped from August 1986 through November 1986. Removing the ground strap caused noise to appear on the floppy disc read channel **ONLY** when the product was used with a 9817A Computer.

**Solution:**

If any of the above symptoms occur, install a ground strap (09133-61620) between the hard disc bracket and the chassis. Use screw (2360-0113) to install one side of the ground strap to the bracket, remove screw (0515-1085) on the chassis and install the other side of the ground strap under the screw and tighten. Refer to page 5-2 in the 9133/34, D, H & L service manual part number 5957-6571, for a pictorial drawing.

**Warranty:**

GLD will pay for 1/2 hour labor and parts (09133-61620 & 2360-0113) to install the ground strap and screw if any of the above symptoms occur using a 9817A Computer. Both parts are available at CPE or CPC.



RP  
12-4-86



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## SERVICE NOTE

9133D

Winchester\3 1/2 Floppy Disc Drive

Serial number:

All

New shipping disc

## Supersedes:

APPLIES TO:	All Units: <u>X</u>	Only Units on Agreement:	
PERFORM:	Immediately: On Failure:	At PIV/Normal Call: Information Only: <u>X</u>	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:			X
PARTS:			X
TRAVEL:			X
SERVICE INVENTORY:	Return for Update:	Use as is:	
	Return for Salvage:	See Text: <u>X</u>	
WARRANTY EXTENDED UNTIL:	N/A		

## Situation:

There is a new improved shipping disc available for the 3 1/2 Inch floppy disc drives. This new shipping disc has a disc lock attached to the plastic shipping disc which eliminates the need for the rubber wedge (9223-0648) required on the old shipping disc (1535-4881).

## Solution:

All products will ship with the new shipping discs starting approximately Mar 1, 1987. The new shipping disc will have part number 1150-1786 and will be available approximately Mar 1, 1987 from CPC and PCE. The old discs and wedges will be available until the stock is depleted. There will be NO upgrade, users must purchase the new shipping discs if needed.

RP

2-25-87

HEWLETT  
PACKARD

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217 Meyrin 2-Geneva, Switzerland. IN JAPAN, Yokogawa-Hewlett-Packard Ltd., 1-27-15, Yabe Sagami-hara City,  
gawa Prefecture, Japan 229.





## SERVICE NOTE

9133D

Supersedes: None

Disc Drive

Serial number:  
AllController PCA PN 09133-69540 Changes  
to 09133-69550

APPLIES TO:	All Units: <input checked="" type="checkbox"/> Only Units on Agreement: <input type="checkbox"/>
PERFORM:	Immediately: <input type="checkbox"/> On Failure: <input checked="" type="checkbox"/> At PN/Normal Call: <input type="checkbox"/> Information Only: <input type="checkbox"/>
WARRANTY:	EXTENDED <input type="checkbox"/> NORMAL <input type="checkbox"/> NONE <input type="checkbox"/>
LABOR:	<input checked="" type="checkbox"/>
PARTS:	<input checked="" type="checkbox"/>
TRAVEL:	See Text
SERVICE INVENTORY:	Return for Update: <input type="checkbox"/> Use as is: <input type="checkbox"/> Return for Salvage: <input type="checkbox"/> See Text: <input checked="" type="checkbox"/>
WARRANTY EXTENDED UNTIL:	12/01/87

## Situation:

Some 9133D Disc Drives with revision C Controller PCA's (PN09133-69540) can incorrectly report "recoverable" data errors. This situation does not affect transfer rate and is transparent to the user in most cases as these errors are not reported to the user. The System 1000 is the only host which reports recoverable (soft) data errors to the user. While no data is affected, this is perceived by System 1000 users as a performance problem. The problem only affects some revision C controllers.

## Solution:

A firmware revision on controller PCA 09133-69550 corrects this situation. The change allows one free retry before setting status information indicating a recoverable data error. An upgrade kit PN09133-89904 is set up at CPC/PCE to allow field upgrade of Controller PCA PN09133-69540. The kit includes EPROM's PN09133-89110 and 09133-89210, an instruction sheet and a PN09133-69550 label to identify upgraded assemblies. Inspect and upgrade all Field Service inventory of controller PCA PN09133-69540.

This firmware change will not have any real affect on drive performance. No hard data errors will be corrected as a result of this change and no performance enhancement will occur. The change should be performed on a customer unit only when a System 1000 user perceives the reporting of "recoverable" data errors as a problem in their application.

Other systems should not have this firmware upgrade performed as no problems will be corrected as a result of the change.

## Warranty:

KK  
03/30/87

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Greeley Division will accept 0.5 hours of labor and the cost of the upgrade kit PN09133-89904 to perform F.S.I. upgrade of Controller PCA PN09133-69540.

On 1000 Systems, "only when a customer complains of excessive recoverable data errors", Greeley Division will accept 1 hour of labor and the cost of the upgrade kit, PN09133-89904, to perform the upgrade. Travel is only allowed if the 9133D was ordered as Option W03 and under warranty or if the customer has an on-site maintenance agreement.

KK

03/30/87

2 of 2

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9133D-19    9134D-12  
 9133H-14    9134H-7  
 9133L-9    9134L-9

# S E R V I C E   N O T E

## MODELS AFFECTED:

9133D/H/L  
 9134D/H/L

PARTS AFFECTED:  
 CONTROLLER PCA CHANGES FROM  
 09133-69550 TO 09133-69560

DRIVE SERIAL PREFIX:  
 ALL

Supersedes: None

APPLIES TO:	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>	
PERFORM:	Immediately <input type="checkbox"/> On Failure <input checked="" type="checkbox"/>	At PM/Normal Call <input checked="" type="checkbox"/> Information Only <input type="checkbox"/>	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:			X
PARTS:			X
TRAVEL:			X
SERVICE	Return for update <input type="checkbox"/>	Use as is <input type="checkbox"/>	
INVENTORY	Return for salvage <input type="checkbox"/>	See text <input checked="" type="checkbox"/>	
WARRANTY EXTENDED UNTIL:	N / A		

TITLE: 9133/34D/H/L FIRMWARE UPDATE



**PROBLEM:** Some 9133L drives have intermittently failed during a back up operation to a 914X tape drive due to "UNRECOVERABLE DATA ERRORS". A firmware defect causes the problem. There is NO corruption of the customer's data. The problem occurs when a data pointer that should point to a good sector is incorrectly set to point to a sector which has been spared out. This defect has only been seen with 9133L drives but can occur on any 913XD/H/L drive. The problem has also been seen on a HP 9000 series 310 which was loading large programs.

**SOLUTION:** The firmware on the controller PCA was changed to correct the defect. The old EPROMs (09133-89110 and 09133-89210) have been replaced with new EPROMs (09133-89111 and 09133-89211).

**ACTION:** The new EPROMs are being put into all SMR exchange controller PCAs. The part number for the board will change from 09133-69550 to 09133-69560. A new firmware upgrade kit PN 09133-89905 is now available to allow field upgrade of Controller PCA 09133-69550 to 09133-69560. The kit includes the new EPROMS, a label to change the PCA part number, and instructions. In addition to upgrading all your current stock of Controller PCAs, upgrade all 913XD/H/L disc drives when they come in for repair regardless of the initial problem.

FW/ss

2/88-48

9320-4766 (1/83)



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## S E R V I C E   N O T E

Supersedes: None

SUPERSEDES:

**9133H Disc Drive****09114-69511****3.5 Inch Drive Mechanism****(All Prefix 2512A and later)**

<b>APPLIES TO:</b>	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>	
<b>PERFORM:</b>	Immediately <input type="checkbox"/> On Failure <input type="checkbox"/>	At PM-Normal Call <input type="checkbox"/> Information Only <input checked="" type="checkbox"/>	
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>	<b>NONE</b>
<b>LABOR:</b>			<input checked="" type="checkbox"/>
<b>PARTS:</b>			<input checked="" type="checkbox"/>
<b>TRAVEL:</b>			<input checked="" type="checkbox"/>
<b>SERVICE</b>	Return for update <input type="checkbox"/>	Use as is <input checked="" type="checkbox"/>	
<b>INVENTORY</b>	Return for salvage <input type="checkbox"/>	See text <input type="checkbox"/>	
<b>WARRANTY EXTENDED UNTIL:</b>	<b>NA</b>		

**Situation:**

Starting with Serial Number prefix 2512A, a new 3.5 Inch Drive (PN09114-69511) is being used in the 9133H. The new drive has a different Drive Electronics PCA (Fewer components) and Cassette-Up Assembly. The new drive will be used interchangeably with the existing 3.5 Inch Drive, therefore it will be stocked with the same exchange part number and no FSI action is required.

**Cause:** The drive is being changed to reduce cost and improve reliability. The new drive has fewer parts to increase reliability.

**Warranty:** Both drives will be used interchangeably using exchange part number 09114-69511. No F.S.I or warranty action is required.

KK/tm

4/9/85 - 5800

9320-4766 (1/83)

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## SERVICE NOTE

Supersedes: NONE

SUPERSEDES:

**9133H  
Disc Drive****09133-69520 Firmware Change  
Floppy/Hard Disc Board  
(All Prefix 2512A and later)****Potential Service Test Failure**

<b>APPLIES TO:</b>	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>	
<b>PERFORM:</b>	Immediately <input type="checkbox"/> On Failure <input type="checkbox"/>	At PM/Normal Call <input type="checkbox"/> Information Only <input type="checkbox"/>	
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>	<b>NONE</b>
<b>LABOR:</b>			<input checked="" type="checkbox"/>
<b>PARTS:</b>			<input checked="" type="checkbox"/>
<b>TRAVEL:</b>			<input checked="" type="checkbox"/>
<b>SERVICE</b>	Return for update <input type="checkbox"/>	Use as is <input checked="" type="checkbox"/>	
<b>INVENTORY</b>	Return for salvage <input type="checkbox"/>	See text <input type="checkbox"/>	
<b>WARRANTY EXTENDED UNTIL:</b>	NA		

**Symptom:** The latest 3 1/2-inch Drive mechanism, part number 09114-69511 date codes 2513 and 2514, when in products with the older E-PROMs, part numbers 09133-89105 and 09133-89205 and earlier, does not perform the jumper-initiated Floppy Format test correctly.

Due to timing differences between the new drive and controllers with older firmware, step commands may not all be performed by the drive during the Service Format Test. When this occurs, all tracks will not be formatted. The test will not indicate a failure as no read operation is done during the test. A failure will not occur until a read or write operation is attempted. The failure occurs on the jumper-initiated Floppy Format Test (Test 12) ONLY. No other tests or functions are effected.

**Solution:** New E-PROMs, part numbers 09133-89106 and 09133-89206 correct timing differences for both the earlier and later drives. The Controller/Power PCA, part number 09133-69520, date code 2513 and later has the new E-PROM.

	E-PROMs PN	E-PROMs PN
09114-69511 Drive Date Code	09133-89105 and 09133-89205 and earlier	09133-89106 and 09133-89206 and later
2418 and 2432	Will pass Service Format Test on good unit	Will pass Service Format Test on good unit
2513 and 2514	May not complete Service Format Test. (All tracks may not be formatted)	Will pass Service Format Test on good unit

**Warranty:** As no customer operations are affected, no warranty or F.S.I. action is required. All other operations are unaffected.

KK/tm

5/9/85 - 5800



9320-4766 (1/83)



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## SERVICE NOTE

Supersedes:

SUPERSEDES:

9133H  
3 1/2 Inch Double Sided  
Floppy Disc Drives

New Shipping Disc

<b>APPLIES TO:</b>	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>
<b>PERFORM:</b>	Immediately <input type="checkbox"/> On Failure <input type="checkbox"/>	At PM/Normal Call <input type="checkbox"/> Information Only <input checked="" type="checkbox"/>
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>
<b>LABOR:</b>		<b>NONE</b>
<b>PARTS:</b>		X
<b>TRAVEL:</b>		X
<b>SERVICE</b>	Return for update <input type="checkbox"/>	Use as is <input type="checkbox"/>
<b>INVENTORY</b>	Return for salvage <input type="checkbox"/>	See text <input checked="" type="checkbox"/>
<b>WARRANTY EXTENDED UNTIL:</b>		

**Situation:**

The 3 1/2 inch double sided disc drive PN 09114-69511 has been changed by Sony to improve performance and reliability from a -10 drive to a -11 drive. The new date codes on these drives will be 2513 or 2514. The older date codes on these drives were 2418 or 2432. The newer drives have a plastic shipping disc that has been designed especially for these newer drives, but is backward compatible with the older drives. All the double sided drives are now being shipped with the new plastic shipping disc. The older cardboard shipping disc PN 1535-4881 can be used with both the newer and older drives. The new plastic shipping disc will also have part number 1535-4881. The old cardboard shipping disc does not eject as smoothly as the new plastic disc in the new drives, but careful handling when removing the disc from the drive will not damage the drive.

**Implementation:**

CPC will use up all old cardboard shipping discs. No action on FSI because the old cardboard shipping discs can be used on either drive. Use up all FSI before using new shipping discs.

RP/tm

06/20/85 - 5800

9320-4766 (1/83)



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# SERVICE NOTE

9133H

9133H DISC DRIVE

Serial number:  
ALL

CONTROLLER PCA JUMPERING

Supersedes: NONE

APPLIES TO:	All Units: <input checked="" type="checkbox"/> Only Units on Agreement: <input type="checkbox"/>	
PERFORM:	Immediately: On Failure: <input type="checkbox"/>	At R/N/Normal Call: Information Only: <input checked="" type="checkbox"/>
WARRANTY:	EXTENDED	NORMAL
LABOR:		<input checked="" type="checkbox"/>
PARTS:		<input checked="" type="checkbox"/>
TRAVEL:		<input checked="" type="checkbox"/>
SERVICE INVENTORY:	Return for Update: <input type="checkbox"/>	Use as is: <input checked="" type="checkbox"/>
	Return for Salvage: <input type="checkbox"/>	See Text: <input type="checkbox"/>
WARRANTY EXTENDED UNTIL:	N/A	

**Situation:**

The 09133-69520 Controller PCA which is used in the 9133D, 9133H, 9134D, and 9134H may be a board which has '09133-66510 Rev B' or '09133-66510 Rev C' etched on the board. Jumpers JMP3-JMP6 must be configured properly for the product in which it is installed. Please note that the correct jumper configuration is determined by the product in which it is installed and the revision letter on the PC assembly.

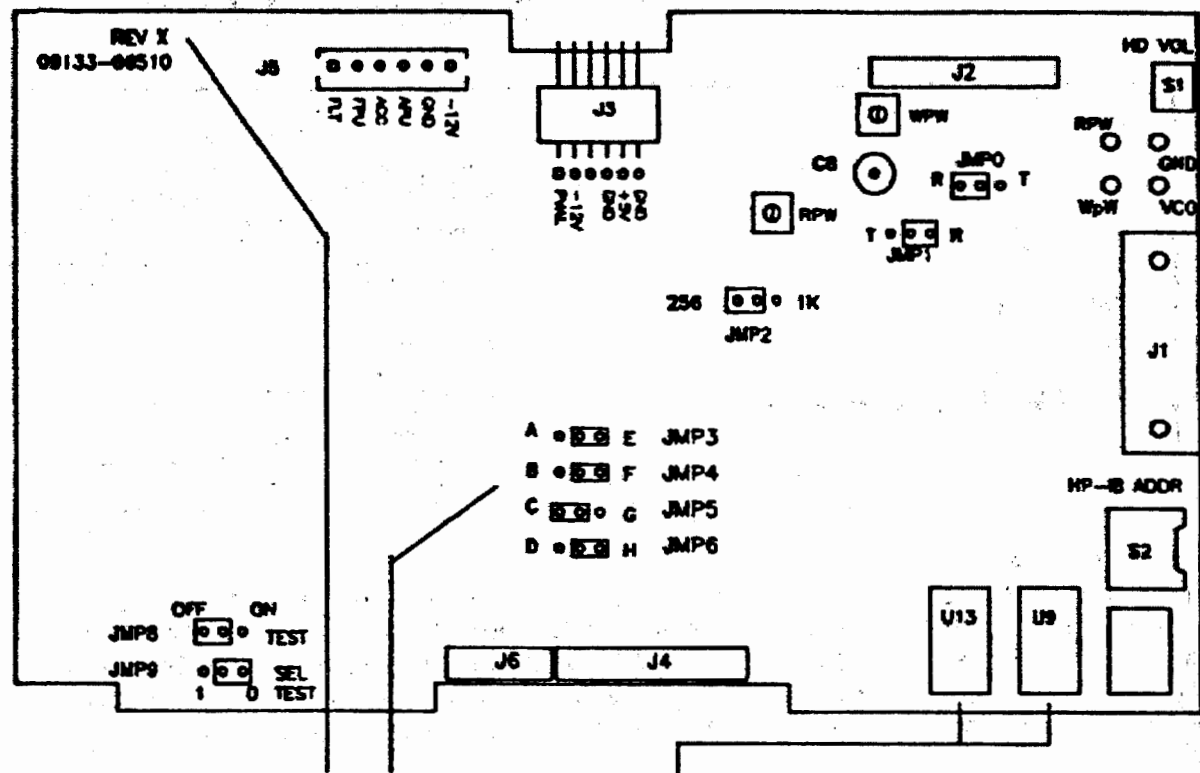
**Solution:**

Set JMP3-JMP6 as shown in the figure on the next page to assure that the jumpering is correct for the product in which the controller PCA is installed. Also note that JMP2 will have to be changed when a controller PCA is installed if the disc drive is option 001.

LSM  
06/20/85



INFORMATION, CALL YOUR LOCAL HP SALES OR SERVICE OFFICE or East (201) 265-6000, Midwest (312) 265-6000, South (404) 265-1600, West (713) 670-7000 or (415) 660-0700 or write, Hewlett-Packard, 1870 Embarradero, Palo Alto, California. IN SWITZERLAND, CALL YOUR LOCAL HP SALES OR SERVICE OFFICE or write, Hewlett-Packard S.A., 7, rue du Bois du Lion, P.O. Box, CH 1217 Meyrin 2 Geneva, Switzerland. IN JAPAN, Yokogawa Hewlett-Packard Ltd., 1-27-15, Yoko Nogamihara City, Kanagawa Prefecture, Japan 220.



Product	S/N Prefix	Rev	JMP3-JMP6	Required Firmware
9133D	2419A/2511A	B	EFCH	Any 09133-8910X/-8920X
9133D	2419A/2511A	C	EFCD	09133-89105/-89205 and above
9133D	2513A and above	B	ABCH	09133-89105/-89205 and above
9133D	2513A and above	C	ABCD	09133-89105/-89205 and above
9134D	2425A	B	EFGH	Any 09133-8910X/-8920X
9134D	2425A	C	EFGD	09133-89105/-89205 and above
9134D	2514A and above	B	ABGH	09133-89105/-89205 and above
9134D	2514A and above	C	ABGD	09133-89105/-89205 and above
9133H	ALL	B	AFCH	09133-89105/-89205 and above
9133H	ALL	C	AFCD	09133-89105/-89205 and above
9134H	ALL	B	AFGH	09133-89105/-89205 and above
9134H	ALL	C	AFGD	09133-89105/-89205 and above

NOTE: JMP2 is shown in the position for standard product.  
Option001 will have JMP2 in 1K position.

LSM  
06/20/85

## SERVICE NOTE

9133H

3 1/2 In. Double Sided Floppy Disc Drive

Serial number:  
All

Top Head Damage of the Drive Mechanism HP part number 09114-69511.

Supersedes:

APPLIES TO:	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>
PERFORM:	Immediately <input type="checkbox"/> On Failure <input type="checkbox"/>	At PM/Normal Call <input type="checkbox"/> Information Only <input checked="" type="checkbox"/>
WARRANTY:	EXTENDED	NORMAL
LABOR:		X
PARTS:		X
TRAVEL:		X
SERVICE INVENTORY	Return for update <input type="checkbox"/> Return for salvage <input type="checkbox"/>	Use as is <input type="checkbox"/> See text <input checked="" type="checkbox"/>
WARRANTY EXTENDED UNTIL:		N/A

**Situation:**

Top head damage is occurring on the Sony drive mechanism (09114-69511) used in this unit. This top head damage could cause: 1. Scratching of media. 2. Failing self tests. 3. Not being able to read or write data on media. 4. Intermittent failures.

**Cause:**

The new plastic shipping disc, HP part number 1535-4881, used in this drive may become partially ejected, due to shock of shipment. When the shipping disc becomes ejected without first pressing the eject button, the cassette up assembly is still in the head load position. Since the heads are then loaded incorrectly on the shipping disc, vibration and shock can easily damage the heads. Other damage could occur if the customer perceives that the shipping disc, although slightly ejected, is ready to install or remove from the drive. When the disc or media is installed or ejected without first pressing the eject button to unload the heads, head damage can occur. This damage may be either loosening of the top head causing failures at a later date or tearing out the top head completely causing a DOA.

It is also possible for media to become partially ejected from the mechanism due to shock and vibration. The same cautions regarding removal and insertion of partially ejected shipping discs also applies to media.

RP  
9-23-85



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**Solution:**

1. If the drive is moved or shipped, customers should install a rubber wedge into the drive above the shipping disc to prevent the shipping disc from ejecting. The HP part number of the rubber wedge is 9223-0648.
2. Educate customers regarding removing and installing the shipping disc or media into the drive without first depressing the eject button. New products will contain an instruction sheet explaining the situation. The part number of the instruction sheet is 09114-90036.

**FSI:** All 09114-69511 drives shipped from CSR and CSE will have the rubber wedge and instruction sheet with the drive. All drives in FSI should have the rubber wedge installed immediately. Any drives received in FSI with the shipping disc ejected should be returned to CSR or CSE. No drive mechanisms should be shipped without the rubber wedge.

RP  
9-23-85

## SERVICE NOTE

9133H

Disc Drive

Serial number:

All

Controller PCA Part Number  
09133-69520 Changed to 09133-69530

Supersedes: None

APPLIES TO:	All Units: <input checked="" type="checkbox"/>	Only Units on Agreement:	
PERFORM:	本廠 Immediately: On Failure:	At PM/Normal Call: Information Only:	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:	See Text		
PAPTS:	See Text		
TRAVEL:	See Text		
SERVICE INVENTORY:	Return for Update:	Use as is:	
	Return for Salvage:	See Text: <input checked="" type="checkbox"/>	
WARRANTY EXTENDED UNTIL:	See Text		

\*\* See Text

**Situation:**

Controller PCA Part Number 09133-69520 is being changed to 09133-69530. The part number change is being made to identify boards that have been updated to correct a problem when the PCA is used in the 9133L. Reference Service Note 9133L-1 for description of symptom. While the symptoms described do not affect the 9133H, this assembly is also used for 9133H repair and new part number 09133-69530 should be used when ordering replacement assemblies.

**Solution:**

Controller PCA part number 09133-69530 will have EPROM's part number 09133-89108/208 or higher. F.S.I. of Controller PCA PN 09133-69520 needs to be upgraded to 09133-69530. This upgrade will be performed in the field and affects F.S.I. ONLY. Firmware Upgrade Kit PN 09133-89902 is set up at CPC to allow field upgrade of F.S.I of controller PCA PN 09133-69520. The kit includes EPROMs PN 09133-89108/89208, upgrade instructions and part number label to indicate the new Controller PCA part number. All F.S.I should be checked and upgraded if necessary to ensure the firmware is part number 09133-89108/208 or higher.

**Warranty:**

Greeley Division will accept 0.25 hours labor and material cost for the firmware upgrade kit, PN09133-89902, to perform upgrade of F.S.I. No installed base action is required. The cost of the parts and the anticipated inventory at each site does not justify returning EPROMs replaced per this service note for reprogramming. Scrap any parts locally.

KK

10/30/31

HEWLETT  
PACKARD

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## SERVICE NOTE

9133H

Disc Drive

Serial number:

All

Internal self test #11 not performing correctly.

Supersedes: None

APPLIES TO:	All Units: <u>X</u>	Only Units on Agreement:	
PERFORM:	Immediately: On Failure:	At P1/Normal Call: Information Only: <u>X</u>	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:			X
PARTS:			X
TRAVEL:			X
SERVICE INVENTORY:	Return for Update:	Use as is: <u>X</u>	
	Return for Salvage:	See Text:	
WARRANTY EXTENDED UNTIL:	N/A		

## Situation:

When testing the disc drive using internal self test number 11, the yellow front panel self test LED, indicates a failure. A failure is indicated on the LED by the light remaining lit after the self test is performed.

Test number 11 checks all sectors on the winchester hard disc for CRC errors. This test normally takes 4-5 minutes to run.

## Cause:

A firmware bug causes the internal self test to fail. This failure will never be noticed by a user. This failure will only show up on the 09133-69106 hard disc when it is formatted for 20 Mbyte. If the drive is used in a 9133D, formatted at 15 Mbyte, the test will pass if the drive is good.

## Solution:

Ignore internal self test number 11 at this time. The next firmware change on the controller PCA will fix this bug. If there is a suspicion that the drive is bad run all of the other self tests and use the subset 80 diagnostic tape HP part number 5010-0310. This diagnostic tape has two programs Manual and Oper that have the suprogram LCVFY (locate and verify) that is similar to internal self test number 11.



RP  
2-12-86



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## SERVICE NOTE

9133H

Disc Drive

Serial number:  
all

Noisy Hard Disc HP part number  
09133-69106.

Supersedes: None

APPLIES TO:	All Units: X	Only Units on Agreement:	
PERFORM:	Immediately: On Failure: X	At Pri/Normal Call: Information Only:	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:	X		
PARTS:	X		
TRAVEL:			X
SERVICE INVENTORY:	Return for Update: X	Use as is:	
	Return for Salvage:	See Text:	
WARRANTY EXTENDED UNTIL:	Feb 27, 1987		

## Situation:

Customer complaints about noisy 20 Mbyte hard disc HP exchange part number 09133-69106.

## Cause:

The spindle motor of the hard disc was found, in some small cases, to be noisy. An improvement has been made to the spindle motor to prevent this noise from occurring.

## Solution:

If a customer complains about the noise of the 20 Mbyte hard disc, replace the disc with part number 09133-69206. This new exchange part number has been tested for noise or has the new spindle motor installed.

All FSI of 09133-69106 hard disc drives should be purged and replaced with part number 09133-69206.

## Warranty:

Greeley will accept 1/2 hour labor and part number 09133-69206 replaced due to customer complaint of noise. Do not replace drive if not noisy.

RP  
2-27-86



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## SERVICE NOTE

9133H

Disc Drive

Serial number:  
2621A and Above

Controller PCA Part Number  
09133-69530 Changed to 09133-69540

Supersedes: None

APPLIES TO:		All Units: <b>X</b>	Only Units on Agreement:
PERFORM:	<b>**</b>	Immediately: On Failure:	At PT/Normal Call: Information Only:
WARRANTY:		EXTENDED	NORMAL
LABOR:		See Text	
PARTS:		See Text	
TRAVEL:			<b>X</b>
SERVICE INVENTORY:		Return for Update:	Use as is:
		Return for Salvage:	See Text: <b>X</b>
WARRANTY EXTENDED UNTIL:		NR	

\*\* See Text

## Situation:

Series 300 computers using the HP286 DOS CoProcessor may require an additional volume configuration option to efficiently utilize the storage capacity of the 9133H. The operating system that controls the CoProcessor uses more memory than is currently available with any multiple volume configuration of the 9133H. This effectively limits the 9133H to use as operating system storage, with no user data storage available. Controller PCA's PN09133-69530 with EPROMs 09133-89108/208 and lower use configuration switch setting 9 to partition the 20 MByte drive into 1 single volume. This configuration can be duplicated by setting the configuration switch to either position 0 or 1.

## Solution:

Controller PCA's PN09133-69540 with firmware revision 09133-89109/89209 and higher use configuration setting 9 to partition the 9133H into two unequal volumes. See the table below for volume sizes. Configurations for 9133D and L Disc Drives are not changed. All FSI of PN09133-69530 should be inspected and upgraded with EPROMs 09133-89109/89209. A firmware upgrade kit PN09133-89903 is set up at CPC/PCE to allow the field to perform this upgrade. The kit includes EPROMs PN09133-89109/ 89209, instructions, an owners manual change sheet and a 09133-69540 part number label.

## 09133-69540 Configuration Information for Setting 9

Number of Volumes: 2

Capacity/Volume 256 byte Sectors: Volume 0 = 4.68 MBytes  
Volume 1 = 15.20 MBytes



KK  
05/14/86



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Capacity/Volume 1 KByte Sectors: Volume 0 - 5.20 MBytes  
Volume 1 - 17.03 MBytes

**Warranty:**

Greeley Division will accept 0.25 hours labor and material cost for the firmware upgrade kit, PN09133-89903 to perform upgrade of F.S.I. No installed base action is required. Upgrade of installed base will be at the request of the customer and will be billed to the customer. The cost of the parts and the anticipated inventory at each site does not justify returning EPROMs replaced per this service note for reprogramming. Scrap any parts locally.

KK  
05/14/86

2 of 2

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## SERVICE NOTE

9133H

Disc Drive

Serial number:

All

Controller PCA Jumper Revision

Supersedes: None

APPLIES TO:	All Units: <input checked="" type="checkbox"/>	Only Units on Agreement: <input type="checkbox"/>	
PERFORM:	Immediately: On Failure:	At PM/Normal Call: Information Only: <input checked="" type="checkbox"/>	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:			<input checked="" type="checkbox"/>
PARTS:			<input checked="" type="checkbox"/>
TRAVEL:			<input checked="" type="checkbox"/>
SERVICE INVENTORY:	Return for Update:	Use as is: <input checked="" type="checkbox"/>	
	Return for Salvage:	See Text:	
WARRANTY EXTENDED UNTIL:	NA		

**Situation:**

There continues to be confusion in setting the jumpers on the 09133-69540 PCA when replacing a defective PCA. This results in field confusion and NTF's on assemblies returned to SMR/CSG. This mainly occurs when the replacement PCA is a different revision PC board than the original assembly.

**Solution:**

The position of configuration jumper 6 (D/H) is determined by the PCA revision only. Controller PCA's with electrical revision date code 2520A or higher will have the connector for jumper 6 removed and a soldered jumper installed.

**Warranty:**

This change does not affect FSI or installed base. No extended warranty or FSI upgrade is authorized by this service note. Controller assemblies will be updated during normal repair at SMR/CSG.

KK

01/19/86



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## SERVICE NOTE

9133H

20 Mbyte Hard Disc - 3 1/2 Inch  
Floppy Disc

Serial number:  
Approximately 2621A36270 to  
2621A42000

Floppy Disc problems ONLY when using  
9817A Host Controller.

Supersedes: N/A

APPLIES TO:	All Units: <u>X</u>	Only Units on Agreement:	
PERFORM:	Immediately: On Failure: <u>X</u>	At PM/Normal Call: Information Only:	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:		X	
PARTS:		X	
TRAVEL:			X
SERVICE INVENTORY:	Return for Update:	Use as is: <u>X</u>	
	Return for Salvage:	See Text:	
WARRANTY EXTENDED UNTIL:	Jan 1, 1988		

## Problem Symptoms:

ONLY when using a 9817A computer as a host, ONLY on the floppy disc mechanism:

1. Cannot boot-up
2. Read errors
3. Cannot initialize.

## Cause:

A ground strap was removed on the products shipped from August 1986 through November 1986. Removing the ground strap caused noise to appear on the floppy disc read channel ONLY when the product was used with a 9817A Computer.

## Solution:

If any of the above symptoms occur, install a ground strap (09133-61620) between the hard disc bracket and the chassis. Use screw (2360-0113) to install one side of the ground strap to the bracket, remove screw (0515-1085) on the chassis and install the other side of the ground strap under the screw and tighten. Refer to page 5-2 in the 9133/34, D, H & L service manual part number 5957-6571, for a pictorial drawing.

## Warranty:

GLD will pay for 1/2 hour labor and parts (09133-61620 & 2360-0113) to install the ground strap and screw if any of the above symptoms occur using a 9817A Computer. Both parts are available at CPE or CPC.

RP  
12-4-86



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## SERVICE NOTE

9133H

Disc Drive

Serial number:  
AllController PCA PN 09133-69540 Changes  
to 09133-69550

Supersedes: None

APPLIES TO:	All Units: <input checked="" type="checkbox"/> Only Units on Agreement: <input type="checkbox"/>
PERFORM:	Immediately: <input type="checkbox"/> On Failure: <input checked="" type="checkbox"/> At PN/Normal Call: <input type="checkbox"/> Information Only: <input type="checkbox"/>
WARRANTY:	EXTENDED <input type="checkbox"/> NORMAL <input checked="" type="checkbox"/> NONE <input type="checkbox"/>
LABOR:	<input checked="" type="checkbox"/>
PARTS:	<input checked="" type="checkbox"/>
TRAVEL:	See Text
SERVICE INVENTORY:	Return for Update: <input type="checkbox"/> Use as is: <input type="checkbox"/> Return for Salvage: <input type="checkbox"/> See Text: <input checked="" type="checkbox"/>
WARRANTY EXTENDED UNTIL:	12/01/87

## Situation:

Some 9133H Disc Drives with revision C Controller PCA's (PN09133-69540) can incorrectly report "recoverable" data errors. This situation does not affect transfer rate and is transparent to the user in most cases as these errors are not reported to the user. The System 1000 is the only host which reports recoverable (soft) data errors to the user. While no data is affected, this is perceived by System 1000 users as a performance problem. The problem only affects some revision C controllers.

## Solution:

A firmware revision on controller PCA 09133-69550 corrects this situation. The change allows one free retry before setting status information indicating a recoverable data error. An upgrade kit PN09133-89904 is set up at CPC/PCE to allow field upgrade of Controller PCA PN09133-69540. The kit includes EPROM's PN09133-89110 and 09133-89210, an instruction sheet and a PN09133-69550 label to identify upgraded assemblies. Inspect and upgrade all Field Service inventory of controller PCA PN09133-69540.

This firmware change will not have any real affect on drive performance. No hard data errors will be corrected as a result of this change and no performance enhancement will occur. The change should be performed on a customer unit only when a System 1000 user perceives the reporting of "recoverable" data errors as a problem in their application.

Other systems should not have this firmware upgrade performed as no problems will be corrected as a result of the change.

## Warranty:

KK  
03/28/87

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Greeley Division will accept 0.5 hours of labor and the cost of the upgrade kit PN09133-89904 to perform F.S.I. upgrade of Controller PCA PN09133-69540.

On 1000 Systems, "only when a customer complains of excessive recoverable data errors". Greeley Division will accept 1 hour of labor and the cost of the upgrade kit, PN09133-89904, to perform the upgrade. Travel is only allowed if the 9133H was ordered as Option W03 and under warranty or if the customer has an on-site maintenance agreement.

KK  
03/28/87

2 of 2

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## SERVICE NOTE

9133H

Winchester\3 1/2 Floppy Disc Drive

Serial number:  
All

New shipping disc

## Supersedes:

APPLIES TO:	All Units: <input checked="" type="checkbox"/> Only Units on Agreement: <input type="checkbox"/>
REPORT:	Immediately: <input type="checkbox"/> On Failure: <input type="checkbox"/> At PM/Normal Call: <input type="checkbox"/> Information Only: <input checked="" type="checkbox"/>
WARRANTY:	EXTENDED <input type="checkbox"/> NORMAL <input type="checkbox"/> NONE <input type="checkbox"/>
LABOR:	<input type="checkbox"/>
PARTS:	<input type="checkbox"/>
TRAVEL:	<input type="checkbox"/>
SERVICE INVENTORY:	Return for Update: <input type="checkbox"/> Use as is: <input type="checkbox"/> Return for Salvage: <input type="checkbox"/> See Text: <input checked="" type="checkbox"/>
WARRANTY EXTENDED UNTIL:	N/A

## Situation:

There is a new improved shipping disc available for the 3 1/2 Inch floppy disc drives. This new shipping disc has a disc lock attached to the plastic shipping disc which eliminates the need for the rubber wedge (9223-0648) required on the old shipping disc (1535-4881).

## Solution:

All products will be shipped with the new shipping discs starting approximately Mar 1, 1987. The new shipping disc will have part number 1150-1786 and will be available approximately Mar 1, 1987 from CPC and PCE. The old discs and wedges will be available until the stock is depleted. There will be NO upgrade, users must purchase the new shipping discs if needed.

RP  
2-25-87



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9133D-19 9134D-12  
9133H-14 9134H-7  
9133L-9 9134L-9

## S E R V I C E N O T E

### MODELS AFFECTED:

9133D/H/L  
9134D/H/L

PARTS AFFECTED:  
CONTROLLER PCA CHANGES FROM  
09133-69550 TO 09133-69560

DRIVE SERIAL PREFIX:  
ALL

Supersedes: None

<b>APPLIES TO:</b>	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>	
<b>PERFORM:</b>	Immediately <input type="checkbox"/> On Failure <input checked="" type="checkbox"/>	At PM/Normal Call <input checked="" type="checkbox"/> Information Only <input type="checkbox"/>	
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>	<b>NONE</b>
<b>LABOR:</b>			X
<b>PARTS:</b>			X
<b>TRAVEL:</b>			X
<b>SERVICE INVENTORY</b>	Return for update <input type="checkbox"/> Return for salvage <input type="checkbox"/>	Use as is <input type="checkbox"/> See text <input checked="" type="checkbox"/>	
<b>WARRANTY EXTENDED UNTIL:</b>	N / A		

TITLE: 9133/34D/H/L FIRMWARE UPDATE

**PROBLEM:** Some 9133L drives have intermittently failed during a back up operation to a 914X tape drive due to "UNRECOVERABLE DATA ERRORS". A firmware defect causes the problem. There is NO corruption of the customer's data. The problem occurs when a data pointer that should point to a good sector is incorrectly set to point to a sector which has been spared out. This defect has only been seen with 9133L drives but can occur on any 913XD/H/L drive. The problem has also been seen on a HP 9000 series 310 which was loading large programs.

**SOLUTION:** The firmware on the controller PCA was changed to correct the defect. The old EPROMs (09133-89110 and 09133-89210) have been replaced with new EPROMs (09133-89111 and 09133-89211).

**ACTION:** The new EPROMs are being put into all SMR exchange controller PCAs. The part number for the board will change from 09133-69550 to 09133-69560. A new firmware upgrade kit PN 09133-89905 is now available to allow field upgrade of Controller PCA 09133-69550 to 09133-69560. The kit includes the new EPROMs, a label to change the PCA part number, and instructions. In addition to upgrading all your current stock of Controller PCAs, upgrade all 913XD/H/L disc drives when they come in for repair regardless of the initial problem.



FW/ss

2/88-48

9320-4766 (1/83)



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## SERVICE NOTE

9133L

Disc Drive

Serial number:

All

9133L May Fail Initialization after  
replacement of Controller PCA  
PN09133- 69520

Supersedes: None

APPLIES TO:	All Units: X	Only Units on Agreement:	
PERFORM:	立即: On Failure:	At PM/Normal Call: [information Only:	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:	X		
PARTS:	X		
TRAVEL:			X
SERVICE INVENTORY:	Return for Update:	Use as is:	
	Return for Salvage:	See Text:	X
WARRANTY EXTENDED UNTIL:	May 1 1986		

\*\* See Text

**Situation:**

If a Controller PCA, PN 09133-69520, with EPROMs part numbers 09133-89107 and 09133-89207 is used as a repair part in a 9133L, the drive may fail when attempting to perform a media initialization on the 40 MByte winchester drive.

This occurs when a host attempts to perform a SS/80 level Initiate Diagnostic command when the head carriage is in a locked position. Series 200 with Basic 3.0 performs this command before entering the initialize sequence. This is used to determine drive functionality. Firmware revision 09133-89107/207 parks the heads in the carriage lock position at the conclusion of the power up self test. All 9133L Disc Drives have been shipped with firmware that does not exhibit this problem. This service note affects F.S.I. only.

**Solution:**

Controller PCA PN09133-69530 has firmware that does not park the head after power up self test. The head is only parked at power down and will unlock when the unit is powered up. A firmware upgrade kit, PN09133-89902, has been set up at CPC to allow field upgrade of FSI. The kit includes EPROMs part numbers 09133-89108/208, upgrade instructions and a part number label to indicate the new Controller PCA part number. All FSI of controller PCA PN09133-69520 should be checked and upgraded if necessary to ensure the firmware is part number 09133-89108/208 or higher.

**Warranty:**

Greeley Division will accept 0.25 hours labor and material cost for the firmware upgrade kit, PN09133-89902, to perform the upgrade. No installed base action is required. The cost of the parts in the upgrade kit and the anticipated inventory at each site does not justify returning old revision EPROM's for reprogramming. Scrap any EPROMs replaced per this service note locally.

KK

10/30/85



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## SERVICE NOTE

9133L

9133L DISC DRIVE

Serial number:  
ALL

CONTROLLER PCA JUMPERING

Supersedes: NONE

<b>APPLIES TO:</b>	<b>All Units</b> <input type="checkbox"/>	<b>Only Units on Agreement</b> <input type="checkbox"/>	
<b>PERFORM:</b>	<b>Immediately</b> <input type="checkbox"/>	<b>At PMA/Normal Call</b> <input type="checkbox"/>	
	<b>On Failure</b> <input type="checkbox"/>	<b>Information Only</b> <input type="checkbox"/>	
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>	<b>NONE</b>
<b>LABOR:</b>			<b>X</b>
<b>PARTS:</b>			<b>X</b>
<b>TRAVEL:</b>			<b>X</b>
<b>SERVICE</b>	<b>Return for update</b> <input type="checkbox"/>	<b>Use as is</b> <input type="checkbox"/>	
<b>INVENTORY</b>	<b>Return for salvage</b> <input type="checkbox"/>	<b>See text</b> <input type="checkbox"/>	
<b>WARRANTY EXTENDED UNTIL:</b>	<b>N/A</b>		

**Situation:**

The 09133-69530 Controller PCA which is used in the 9133D, 9133H, 9133L, 9134D, 9134H, and 9134L may be a board which has '09133-66510 Rev B' or '09133-66510 Rev C' etched on the board. The correct configuration of JMP3-JMP6 on the 09133-69530 is determined by the product in which it is installed and the revision letter on the PC assembly.

**Solution:**

Set JMP3-JMP6 as shown in the figure on the next page to assure that the jumpering is correct for the product in which the controller PCA is installed.

Note that if the revision letter on a controller PCA which is being replaced is not the same as the revision letter on the controller PCA which is being installed, the jumpering on the two PCA's will not be the same.

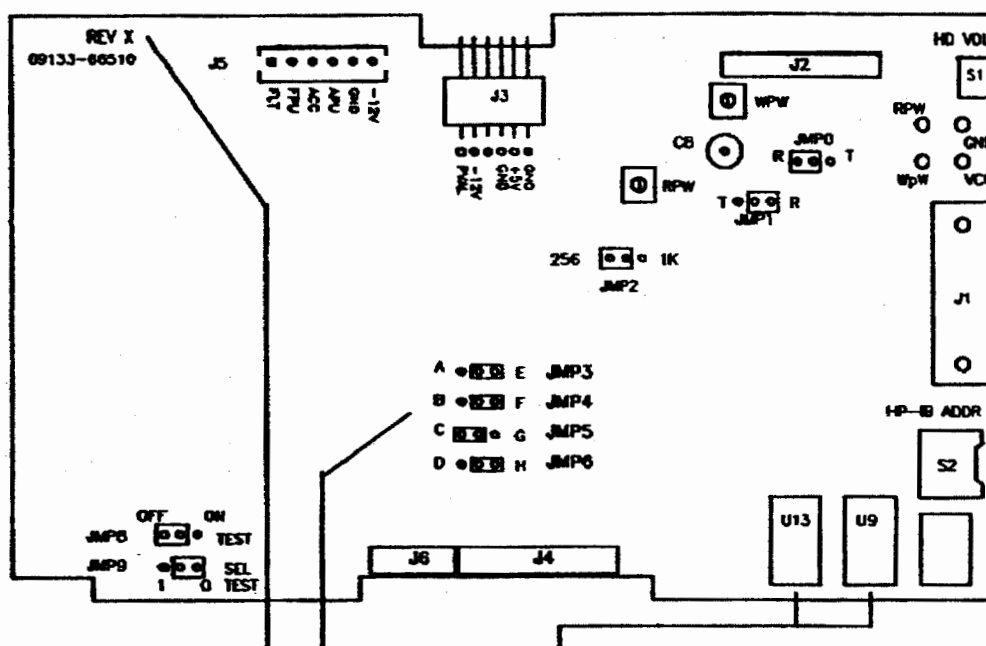
Also note that JMP2 will have to be changed when a controller PCA is installed if the disc drive is option 001.



LSM  
11/06/85



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Product	S/N Prefix	Rev*	JMP3-JMP6	Required Firmware
9133D	2419A/2511A	B	EFCH	Any 09133-8910X/-8920X
9133D	2419A/2511A	C	EFCD	09133-89105/-89205 and above
9133D	2513A and above	B	ABCH	09133-89105/-89205 and above
9133D	2513A and above	C	ABCD	09133-89105/-89205 and above
9134D	2425A	B	EFGH	Any 09133-8910X/-8920X
9134D	2425A	C	EFCD	09133-89105/-89205 and above
9134D	2514A and above	B	ABGH	09133-89105/-89205 and above
9134D	2514A and above	C	ABGD	09133-89105/-89205 and above
9133H	ALL	B	AFCH	09133-89105/-89205 and above
9133H	ALL	C	AFCD	09133-89105/-89205 and above
9134H	ALL	B	AFGH	09133-89105/-89205 and above
9134H	ALL	C	AFGD	09133-89105/-89205 and above
9133L	ALL	B	EBCH	09133-89108/-89208 and above
9133L	ALL	C	EBCD	09133-89108/-89208 and above
9134L	ALL	B	EBGH	09133-89108/-89208 and above
9134L	ALL	C	EBGD	09133-89108/-89208 and above

NOTE: JMP2 is shown in the position for a standard product.  
Option 001 will have JMP2 in the 1K position.

\*The alpha character on the electrical date code label also indicates the PCA revision letter

LSM  
11/06/85

## SERVICE NOTE

9133L

Disc Drive

Serial number:

All

Controller PCA Jumper Revision

Supersedes: None

APPLIES TO:	All Units: X	Only Units on Agreement:	
PERFORM:	Immediately: On Failure:	At PM/Normal Call: Information Only: X	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:			X
PARTS:			X
TRAVEL:			X
SERVICE INVENTORY:	Return for Update:	Use as Is: X	
	Return for Salvage:	See Text:	
WARRANTY EXTENDED UNTIL:	NR		

**Situation:**

There continues to be confusion in setting the jumpers on the 09133-69540 PCA when replacing a defective PCA. This results in field confusion and NTF's on assemblies returned to SMR/CSG. This mainly occurs when the replacement PCA is a different revision PC board than the original assembly.

**Solution:**

The position of configuration jumper 6 (D/H) is determined by the PCA revision only. Controller PCA's with electrical revision date code 2520A or higher will have the connector for jumper 6 removed and a soldered jumper installed.

**Warranty:**

This change does not affect FSI or installed base. No extended warranty or FSI upgrade is authorized by this service note. Controller assemblies will be updated during normal repair at SMR/CSG.

KK

05/19/86



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## SERVICE NOTE

9133L

40 Mbyte Hard Disc

Serial number:

Serial Number Prefix 2525A

New Exchange Part Number on the 40  
Mbyte Hard Disc

Supersedes: N/A

APPLIES TO:	AS Units <input checked="" type="checkbox"/>	Only Units on Agreement/Warranty <input type="checkbox"/>
PERFORM:	Immediately <input type="checkbox"/>	At PM/Normal Call <input type="checkbox"/>
	On Failure <input type="checkbox"/>	Information Only <input checked="" type="checkbox"/>
WARRANTY:	EXTENDED	NORMAL
LABOR:		X
PARTS:		X
TRAVEL:		X
SERVICE	Return for update <input checked="" type="checkbox"/>	Use as is <input type="checkbox"/>
INVENTORY	Return for salvage <input type="checkbox"/>	See text <input type="checkbox"/>
WARRANTY EXTENDED UNTIL: N/A		

## Situation:

Contamination has been found in a significant percentage of failed 09133-69108 drives. A new process has been developed by the vendor to eliminate this contamination during the assembly of the drive.

## Cause:

The contamination of the drives has been traced to pressure sensitive adhesive used in the manufacturing process getting on the head disc assembly and the spindle motor. Even though this contamination has been found on a significant number of the older drives it has been shown to cause ONLY about a 1-2 % INCREASE in the failure rate (which is still below the original estimate of AFR). If a failure does occur due to the contamination, the failures do not appear to be related to temperature or humidity.

## FSI:

Return all FSI of exchange part 09133-69108 to SMR and CSE for upgrade to 09133-69208.

## Note:

No customer action is planned due to the very small failure rate.



RP

6-26-86



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## SERVICE NOTE

9133L

40 Mbyte Hard Disc - 3 1/2 Inch  
Floppy Disc

Serial number:  
Approximately 2623A00850 to  
2623A99494

Floppy Disc problems ONLY when using  
9817A Host Controller.

Supersedes: N/A

APPLIES TO:	All Units: <input checked="" type="checkbox"/> Only Units on Agreement:
PERFORM:	Immediately: <input checked="" type="checkbox"/> On Failure: <input checked="" type="checkbox"/> At PM/Normal Call: <input checked="" type="checkbox"/> Information Only:
WARRANTY:	EXTENDED NORMAL NONE
LABOR:	<input checked="" type="checkbox"/>
PARTS:	<input checked="" type="checkbox"/>
TRAVEL:	<input checked="" type="checkbox"/>
SERVICE INVENTORY:	Return for Update: <input checked="" type="checkbox"/> Use as is: <input checked="" type="checkbox"/> Return for Salvage: <input checked="" type="checkbox"/> See Text:
WARRANTY EXTENDED UNTIL:	Jan 1, 1988

**Problem Symptoms:**

ONLY when using a 9817A computer as a host, ONLY on the floppy disc mechanism:

1. Cannot boot-up
2. Read errors
3. Cannot initialize.

**Cause:**

A ground strap was removed on the products shipped from August 1986 through November 1986. Removing the ground strap caused noise to appear on the floppy disc read channel ONLY when the product was used with a 9817A Computer.

**Solution:**

If any of the above symptoms occur, install a ground strap (09133-61620) between the hard disc bracket and the chassis. Use screw (2360-0113) to install one side of the ground strap to the bracket, remove screw (0515-1085) on the chassis and install the other side of the ground strap under the screw and tighten. Refer to page 5-2 in the 9133/34, D, H & L service manual part number 5957-6571, for a pictorial drawing.

**Warranty:**

GLD will pay for 1/2 hour labor and parts (09133-61620 & 2360-0113) to install the ground strap and screw if any of the above symptoms occur using a 9817A Computer. Both parts are available at CPE or CPC.

RP

12-4-86



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## SERVICE NOTE

9133L

Winchester\3 1/2 Floppy Disc Drive

Serial number:

All

New shipping disc

## Supersedes:

APPLIES TO:	All Units: X	Only Units on Agreement:	
PERFORM:	Immediately: On Failure:	At PPT/Normal Call: Information Only: X	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:			X
PARTS:			X
TRAVEL:			X
SERVICE INVENTORY:	Return for Update:	Use as is:	
	Return for Salvage:	See Text: X	
WARRANTY EXTENDED UNTIL:	N/A		

## Situation:

There is a new improved shipping disc available for the 3 1/2 Inch floppy disc drives. This new shipping disc has a disc lock attached to the plastic shipping disc which eliminates the need for the rubber wedge (9223-0648) required on the old shipping disc (1535-4881).

## Solution:

All products will ship with the new shipping disc starting approximately Mar 1, 1987. The new shipping disc will have part number 1150-1786 and will be available approximately Mar 1, 1987 from CPC and PCE. The old discs and wedges will be available until the stock is depleted. There will be NO upgrade, users must purchase the new shipping discs if needed.



RP

2-25-87



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## SERVICE NOTE

9133L

Disc Drive

Serial number:

All

Controller PCA PN 09133-69540 Changes  
to 09133-69550

Supersedes: None

APPLIES TO:	All Units: <u>X</u>	Only Units on Agreement:	
PERFORM:	Immediately: On Failure: <u>X</u>	At PFI/Normal Call: Information Only:	
WARRANTY:	EXTENDED	NORMAL	NONE
LABOR:	<u>X</u>		
PARTS:	<u>X</u>		
TRAVEL:	See Text		
SERVICE INVENTORY:	Return for Update:	Use as is:	
	Return for Salvage:	See Text: <u>X</u>	
WARRANTY EXTENDED UNTIL:	12/01/87		

**Situation:**

Some 9133L Disc Drives with revision C Controller PCA's (PN09133-69540) can incorrectly report "recoverable" data errors. This situation does not affect transfer rate and is transparent to the user in most cases as these errors are not reported to the user. The System 1000 is the only host which reports recoverable (soft) data errors to the user. While no data is affected, this is perceived by System 1000 users as a performance problem. The problem only affects some revision C controllers.

**Solution:**

A firmware revision on controller PCA 09133-69550 corrects this situation. The change allows one free retry before setting status information indicating a recoverable data error. An upgrade kit PN09133-89904 is set up at CPC/PCE to allow field upgrade of Controller PCA PN09133-69540. The kit includes EPROM's PN09133-89110 and 09133-89210, an instruction sheet and a PN09133-69550 label to identify upgraded assemblies. Inspect and upgrade all Field Service inventory of controller PCA PN09133-69540.

This firmware change will not have any real affect on drive performance. No hard data errors will be corrected as a result of this change and no performance enhancement will occur. The change should be performed on a customer unit only when a System 1000 user perceives the reporting of "recoverable" data errors as a problem in their application.

Other systems should not have this firmware upgrade performed as no problems will be corrected as a result of the change.

**Warranty:**

KK  
03/30/87



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Greeley Division will accept 0.5 hours of labor and the cost of the upgrade kit PN09133-89904 to perform F.S.I. upgrade of Controller PCA PN09133-69540.

On 1000 Systems, "only when a customer complains of excessive recoverable data errors", Greeley Division will accept 1 hour of labor and the cost of the upgrade kit, PN09133-89904, to perform the upgrade. Travel is only allowed if the 9133L was ordered as Option W03 and under warranty or if the customer has an on-site maintenance agreement.

KK  
03/30/87

2 of 2

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## SERVICE NOTE

Supersedes:

9134L

40 Mbyte Hard Disc for Vectra

Serial Number:  
AllNew Exchange Part Number on the  
40 Mbyte Hard Disc

APPLIES TO:	All Units <input checked="" type="checkbox"/>	Only Units on Agreement/Warranty <input type="checkbox"/>
PERFORM:	Immediately <input type="checkbox"/>	At PMA/Normal Call <input type="checkbox"/>
	On Failure <input type="checkbox"/>	Information Only <input type="checkbox"/>
WARRANTY:	EXTENDED	NORMAL
LABOR:		
PARTS:		
TRAVEL:		
SERVICE	Return for update <input checked="" type="checkbox"/>	Use as is <input type="checkbox"/>
INVENTORY	Return for salvage <input type="checkbox"/>	See text <input type="checkbox"/>
WARRANTY EXTENDED UNTIL:		n/a

## Situation:

Contamination has been found on a small percentage of 09133-69208 (Seagate 4051) 40 Mbyte hard discs. This contamination normally causes spin up problems when the drive has been turned off overnight and then turned on again the next morning.

## Cause:

The contamination of the drives has been traced to cutting oil used on early date codes. A new testing procedure has been developed by the vendor and SMO/CSE to eliminate this problem.

## Solution:

Return all FSI of exchange part 09133-69208 to SMO and CSE for upgrade to 09133-69308.

## Warranty:

There will be no extended warranty as a result of this service note.

RP  
10-5-87

5800

9320-4766 (1/83)



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9133D-19 9134D-12  
9133H-14 9134H-7  
9133L-9 9134L-9

## S E R V I C E N O T E

### MODELS AFFECTED:

9133D/H/L  
9134D/H/L

PARTS AFFECTED:  
CONTROLLER PCA CHANGES FROM  
09133-69550 TO 09133-69560

DRIVE SERIAL PREFIX:  
ALL

Supersedes: None

<b>APPLIES TO:</b>	All Units <input checked="" type="checkbox"/>	Only Units on Agreement <input type="checkbox"/>	
<b>PERFORM:</b>	Immediately <input type="checkbox"/> On Failure <input checked="" type="checkbox"/>	At PM/Normal Call <input checked="" type="checkbox"/> Information Only <input type="checkbox"/>	
<b>WARRANTY:</b>	<b>EXTENDED</b>	<b>NORMAL</b>	<b>NONE</b>
<b>LABOR:</b>			X
<b>PARTS:</b>			X
<b>TRAVEL:</b>			X
<b>SERVICE INVENTORY</b>	Return for update <input type="checkbox"/> Return for salvage <input type="checkbox"/>	Use as is <input type="checkbox"/> See text <input checked="" type="checkbox"/>	
<b>WARRANTY EXTENDED UNTIL:</b>	N / A		

### TITLE: 9133/34D/H/L FIRMWARE UPDATE



**PROBLEM:** Some 9133L drives have intermittently failed during a back up operation to a 914X tape drive due to "UNRECOVERABLE DATA ERRORS". A firmware defect causes the problem. There is NO corruption of the customer's data. The problem occurs when a data pointer that should point to a good sector is incorrectly set to point to a sector which has been spared out. This defect has only been seen with 9133L drives but can occur on any 913XD/H/L drive. The problem has also been seen on a HP 9000 series 310 which was loading large programs.

**SOLUTION:** The firmware on the controller PCA was changed to correct the defect. The old EPROMs (09133-89110 and 09133-89210) have been replaced with new EPROMs (09133-89111 and 09133-89211).

**ACTION:** The new EPROMs are being put into all SMR exchange controller PCAs. The part number for the board will change from 09133-69550 to 09133-69560. A new firmware upgrade kit PN 09133-89905 is now available to allow field upgrade of Controller PCA 09133-69550 to 09133-69560. The kit includes the new EPROMs, a label to change the PCA part number, and instructions. In addition to upgrading all your current stock of Controller PCAs, upgrade all 913XD/H/L disc drives when they come in for repair regardless of the initial problem.

FW/ss

2/88-48

9320-4766 (1/83)



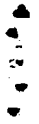
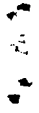
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**E0488**

