FORTUNE SYSTEMS CORP.
SERVICE NOTICE INDEX

SERVICE NOTICE NUMBER	DATE	SUBJECT	ACTIVE?
0001	10/18/82	Floppy Disk Read Problems	NO
0002	10/18/82	Shugart Floppy Drive	NO
0003	11/01/82	Micropolis 45 MB Drive	NO
0004	11/04/82	Floppy Disk Media Failures	YES
0005	11/04/82	Floppy Disk Replacement Alert	YES
0006	11/04/82	Printer I/O Cable:Caution/Alert	YES
0007	11/04/82	Miniscribe Shunt Block Information	YES
0008	11/04/82	Shugart Address Information JUMPER SETTINGS	YES
0009A	11/05/82	32:16 Cables (Supercedes Notice 0009)	YES
0010	11/11/82	CRT Failure Replacement Alert	YES
0011	12/28/82	Fortune Terminal:Quick Check Procedure	YES
0012	12/28/82	Diagnostic Paramaters for 20MB Disk	NO
0013	02/16/83	Ampex Address Information	YES
0014A	02/16/83	SIO Port Testing w/ASCII Terminal	YES
0015	03/10/83	New:32:16 Diagnostics, Release 3.0	YES
0015A	03/10/83	New:Floppy Disk Diagnostic-Changes	YES
0015B	03/10/83	New:Hard Disk Diagnostic-Changes	YES
0015C	03/10/83	New:Keyboard/CRT Diagnostic-Changes	YES
0016	03/21/83	Intermittent 120 Errors	NO
0017	03/21/83	Airflow/Cooling Problem	YES
0018	03/21/83	Poor Quality Video	YES
0019	03/30/83	Correction:Seagate Address Information	YES
0020	04/15/83	Power Supply Adjustment Procedure	YES
0021	06/07/83	Optional Capacitor Kit for 20MB	YES
0022	06/07/83	20MB Upgrade Instructions	YES
0023A	09/12/83	Boot Problems	YES
0024A	09/12/83	ID or CRC Problems	YES
0025A	09/12/83	Bad Block Sparing	YES
0026	08/18/83	Motherboard Failure	YES
0027	09/02/83	Failing I/O PAL	YES
0028	01/09/84	Support For Additions to 30MB Exp.Chas.	NO
0029	01/09/84	Running hdtest diagnostics on Drive 1	YES
0030A	01/09/84	Warning - Possible Disk Damage	YES
0031	01/09/84	Verification of Serial Pal	YES
0032	01/09/84	Spare Motherboards/Software Replacement	YES
0033	01/18/84	New Hard Disk Controller 1000079-04	NO
0034	01/18/84	CPU Upgrade Document	YES
0035	01/18/84	Initial Warm Up Before Formatting	YES
0036	01/18/84	Exp. Cab. Software Install Procedure	YES
0037	01/23/84	Western Electric Power Supplies	NO
0038	01/23/84	Systems Problems Due to AC Power	YES
0039	02/10/84	W.E. Power Supply Install Instructions	YES
0040	04/20/84	Changes to Service Notice 0023A	YES
0041	04/20/84	Level of WD controller	YES
0042	04/20/84	Intermittent hard disk drive errors	YES

FORTUNE SYSTEMS CORP.
SERVICE NOTICE INDEX

SERVICE NOTICE NUMBER	DATE	SUBJECT	ACTIVE?
0043	04/20/84	Servicing a 32:16/XP 32:16 w/exp. cab.	YES
0044	04/20/84	Hard disk controller used w/ exp. cab.	NO
0045	04/20/84	Hard disk controller change	NO
0046	05/25/84	Streamer tape full system restore	YES
0047	05/25/84	PS and Disk Drive Identification	NO
0048	05/25/84	3 Disk Drive Systems	YES
0049	05/25/84	FIS 1000 Interchangeability	NO
0050	05/25/84	Streamer Tape Testing	YES
0051	05/25/84	Short Between Conformal Coat. & PS	YES
0052	05/25/84	Streamer Tape Replac.Policy & Proced.	YES
0053	05/25/84	Western Elec.Power Sup.Upgrade Kit	YES
0054	08/17/84	New Loc. of Serial Pal	NO
0055	08/17/84	Streamer Tape - Drive #0 Only	YES
0056	08/17/84	Installing PIO in CommA Slot	YES
0057	08/17/84	CommB Cables	YES
0058	08/17/84	New CPU Cabinet	YES
0059	08/17/84	1 K Ohm Termination	YES
0060	08/17/84	Grinding Int. 5	YES
0061	10/17/84	Disk Mounting Chassis Isolation	YES
0062	10/17/84	45 Meg Drive Requirements	YES
0063	10/17/84	Half High Floppy Switch	YES
0064	10/17/84	Half High Floppy Height Adjustment	YES
0065	10/17/84	Half High Floppy is Quiet & Dim	YES
0066	10/17/84	Running Diagnostics on Micropolis 45meg	NO
0067	10/17/84	New Case/New Screws	NO
0068	10/17/84	Streamer Tape Cartridges	YES
0069	01/14/85	Genicom 3000 Strapping Info	YES
0070	01/14/85	Using Nologin	YES
0071	01/14/85	Tape Diagnostic Info	YES
0072	01/14/85	45 Meg Drive Addressing Info	YES
0073	01/14/85	45 Meg Drive in Expansion Cabinets	YES
0074	04/12/85	C20 Hard Disk Errors	NO
0075	04/12/85	Fortune 1000 Display Terminal change	YES
0076	04/12/85	Fortune 1000 Display Terminal change	YES
0077	04/12/85	New Hard Disk Diag. Error Messages	YES
0078	04/12/85	F-1000 Display Terminal Troubleshooting	YES
0079	04/18/85	Set-up Menu on Power On	YES
0080	05/29/85	MX Jumper on Floppy Drive	YES
0081	08/16/85	Fortune 1000 Keyboard Problem	NO
0082	08/16/85	Install.Conf.Block for 1.8	YES
0083	08/16/85	Formatting New Floppy Diskettes - 1.8	YES
0084	08/16/85	Upgrading to SX (WD Nistory)	YES
0085	10/11/85	COMB Change	YES
0086	10/11/85	COMA Extenders	YES
0087	10/11/85	Cleaning SXT Tape Drives	YES

FORTUNE SYSTEMS CORP.
SERVICE NOTICE INDEX

SERVICE NOTICE NUMBER	DATE	SUBJECT	ACTIVE?
0088	10/11/85	SXT Tape Cartridges	YES
0089	10/11/85	MX Jumper Drive Repair	NO
0090	10/11/85	New 45 Meg Drive (C45)	YES
0091	10/11/85	COMA Change	YES
0092	10/11/85	Archive Tape Drives	YES
0093	11/04/85	Fortune 1000 CRT Elect/Assy Replacement	YES
0094	11/04/85	Fortune 1000 Base/Assy Replacement	YES
0095	11/04/85	Fortune 1000 NCE Elects. Replacement	YES
0096	11/25/85	MX Shunt Chip on Tandom Floppy Drives	YES
0097	11/25/85	Rodime/Ampex Microprocesser Replacement	NO
0098	12/02/85	Exp. Cab. Disc Only Resistor Assembly	YES
0099	03/10/86	Plastic Pal Chip in SX Mother Board	NO
0100	03/18/86	256k Memory Bds. in SX Systems	NO
0100A	04/29/86	256k Memory Bds. in SX Systems Update	NO
0101	03/20/86	MS-DOS/Wyse Term. requires PAL Change	YES
0102	03/20/86	Horizontal Adjustment on F1000	YES
0103	03/20/86	Adding Memory to MS-DOS/Wyse Terminals	YES
0104	04/29/86	Risk in Buying Vendor Hard Disk	YES
0105	04/30/86	Bad Block Information	YES
0106	04/30/86	Spurious Pixels:FOR:1000	YES
0107	06/09/86	Western Elec. Power Sup. Modification	YES
0108	07/22/86	PIO PWA SHAMROCK	YES
0109	10/01/86	Fortune:Link	YES
0110	10/01/86	Correction to Comm B/Diagnostics	YES
0111	10/01/86	1 MB Memory Board/.5 MB Memory Board	NO
0112	10/01/86	SX 3.5 MB Memory Upgrade	YES
0113	02/27/87	Fortune Supplied Free Parts	YES
0114	02/27/87	Multiplier Card	YES
0115	02/27/87	Graphics Coprocessor	YES
0116	05/29/87	Embedded SCSI Drives	YES
0117	05/29/87	SCSI Upgrade Path/32:16	YES
0118	05/29/87	SCSI Host Adapter (PN 1003800-0X	YES
0119	06/29/87	Comm-6 Hang Problem	YES
0120	06/29/87	Comm-6 Hang Problem, SLB Fix	YES
0121	06/29/87	SCSI Tape Controller Rework	YES
0122	06/29/87	SCSI Host Adapter Board Rework	YES

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0001

PROBLEM: POSSIBLE FLOPPY DISK PROBLEMS WITH READING DISKETTES FROM OTHER SYSTEMS.

SOLUTION: PROBLEM MAY BE DUE TO WARPING OF THE FLOPPY DRIVE BASE. ENSURE THAT THE FLOPPY DRIVE IS ATTACHED TO THE MOUNTING PLATE WITH ONLY TWO SCREWS, AND THAT BOTH SCREWS ARE ON THE SAME SIDE. THIS WILL PREVENT THE BASE OF THE DRIVE FROM BEING WARPED DUE TO UNEVEN TORQUE OF THE MOUNTING SCREWS.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE 10-18-82

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FORTUNE SYSTEMS CORP

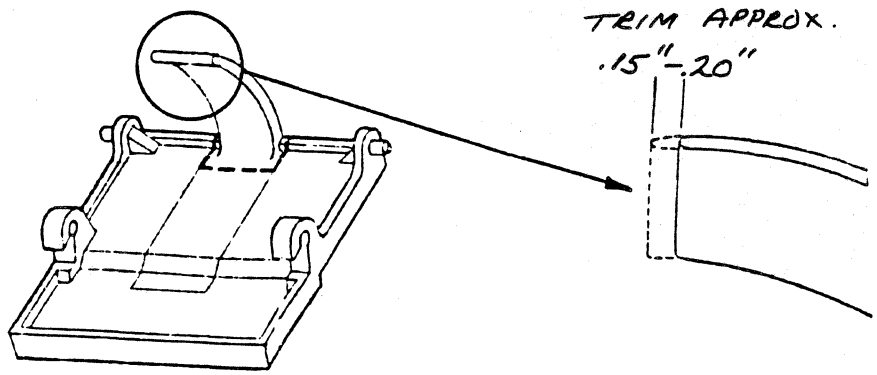
SERVICE NOTICE

NUMBER 0002

PROBLEM: FLOPPY DISK DOOR SENSE SWITCH ON SHGUART DRIVES MAY NOT BE OPERATING PROPERLY DUE TO THE TONGUE ON THE DOOR.

NOTE: FLOPPY DIAGNOSTICS WILL RUN ERROR FREE BECAUSE THEY DO NOT CHECK THE DOOR SWITCH. HOWEVER, THE OPERATING SYSTEM WILL NOT WORK PROPERLY WHEN TRYING TO ACCESS THE FLOPPY.

SOLUTION: CHECK THAT THE TONGUE ON THE BACK OF THE FLOPPY DISK DOOR IS ALLOWING THE DOOR SWITCH TO OPEN AND CLOSE PROPERLY. THIS IS BEST DONE BY REMOVING THE TOP COVER AND OBSERVING THE OPERATION OF THE DOOR AND SWITCH BY LOOKING DOWN AT THE DOOR FROM THE TOP. IF THE SWITCH IS NOT MAKING PROPERLY TRIM WITH DYKES OR FILE ABOUT .20" FROM THE END OF THE FLOPPY DISK DOOR TONGUE. REFER TO DRAWING BELOW.



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DATE 10-18-82

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0003

PROBLEM: Possiible error in assembly of Spacer on floppy disk door.

SOLUTION: Insure Spacer is installed per the attached drawing on each of the floppy drive types.

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DATE Nov 1, 1982

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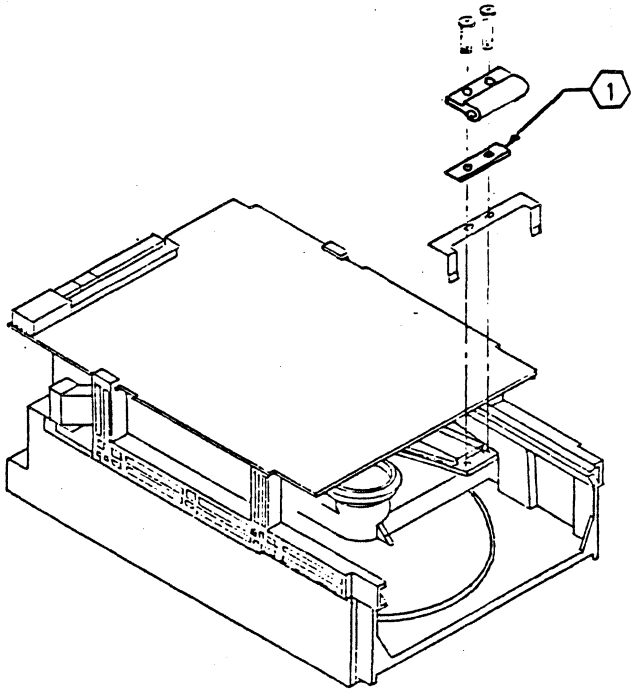
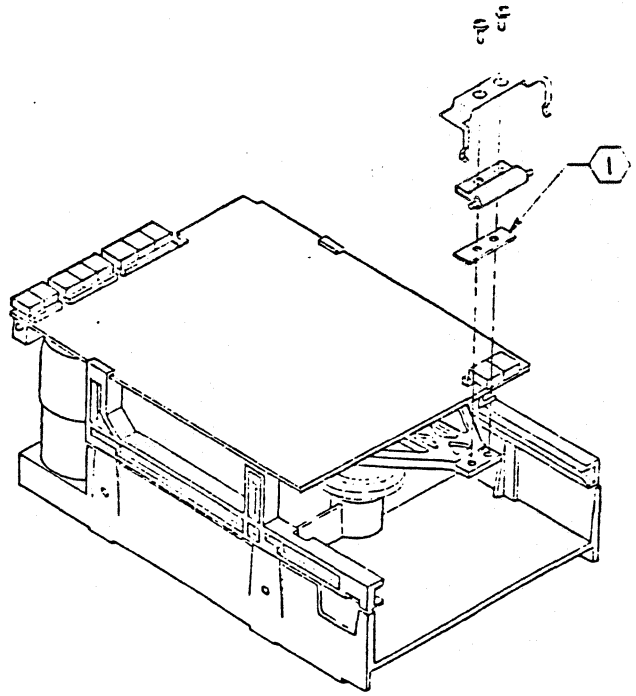


SHUGART DISK DRIVE



TANDON DISK DRIVE

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0004

PROBLEM: Floppy disk failures.

SOLUTION: Insure that the diskettes are certified for 96TPI, 80 TRACKS PER SIDE, DOUBLE SIDED, DOUBLE DENSITY.
The following products have been used on the Fortune 32:16

1) DYSAN CORP.
SANATA CLARA, CA. 95051

P/N 204-2D
ORDER NO. 802067

2) VERBATIAM CORP.
SUNNYVALE, CA. 94086

P/N MD557-01
ORDER NO. 18239 SOFT BOX
19242 PLASTIC BOX

3) MAXELL CORP.
MOONACHIE, N.J. 07074

P/N MD2-DD

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE 11-4-82

APPROVED _____

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0005

PROBLEM: CHANGING FLOPPY DISK DRIVES AND INSTALLING A DRIVE FROM A DIFFERENT VENDOR.

SOLUTION: WHEN CHANGING FLOPPY DISK DRIVES, REMEMBER TO CHANGE THE DRIVE TYPE ON THE MAINTENANCE MENU IF THE DRIVE IS FROM A DIFFERENT VENDOR. THIS IS DONE BY HOLDING DOWN THE "CANCEL/DEL" KEY WHEN FIRST POWERING ON THE SYSTEM, PRESSING THE "F6" KEY, AND THEN SELECTING THE DRIVE TYPE WITH THE "SPACE BAR". YOU SHOULD THEN PRESS THE "F9" KEY TO STORE THE NEW INFORMATION ON EAROM.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE NOV 4, 1982

APPROVED_____

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0006

PROBLEM: ATTACHING PRINTERS TO THE SYSTEM USING THE INCORRECT CABLE MAY DESTROY THE PRINTER OR THE POWER SUPPLY IN THE FORTUNE CPU.

SOLUTION: THE SIO PORT AND NEW COMA BOARDS HAVE +12 VOLTS ON PIN 9 AND -12 VOLTS ON PIN 10. ON PRINTERS DESIGNED TO OPERATE IN BOTH PARALLEL AND SERIAL MODE (i.e.IDS) THESE VOLTAGES CAN DAMAGE THE PRINTER INTERFACE OR BE HELD DOWN BY THE PRINTER AND CAUSE FAILURE OF THE POWER SUPPLY IN THE CPU. BE SURE TO USE ONLY THE CABLES SPECIFIED IN THE FIELD SERVICE MANUAL. IF YOU ARE MAKING YOUR OWN OR USING OFF THE SHELF CABLES, BE SURE THEY ARE WIRED AS SHOWN IN THE FIELD SERVICE MANUAL.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE NOV 4, 1982

APPROVED_____

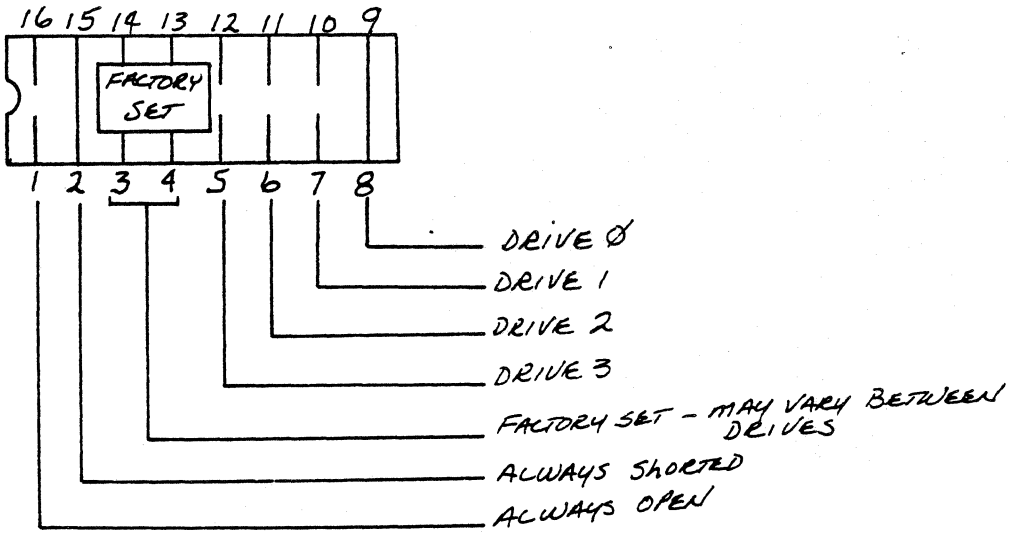
FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0007

PROBLEM: NEW HARD DISK DRIVE FOR THE FORTUNE CPU. FORTUNE IS NOW SHIPPING THE "MINI-SCIBE" HARD DISK IN THE SYSTEM AND FOR SPARES.

SOLUTION: SEE BELOW FOR THE PROPER PLUGGING OF THE "MINI-SCRIBE" DISK.



FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
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DATE NOV 4, 1982

APPROVED_____

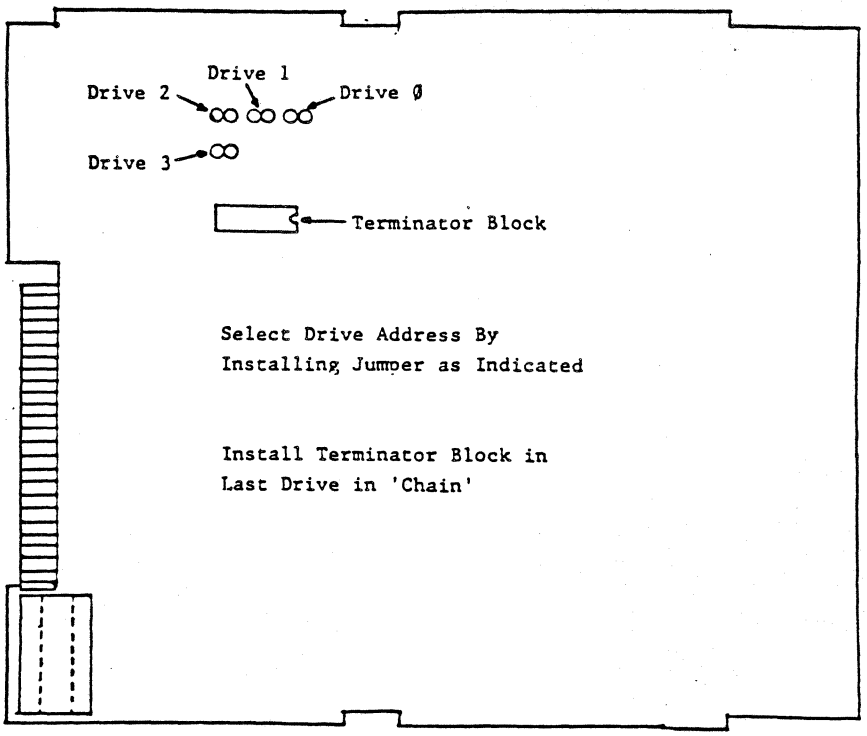
FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0008

PROBLEM: FORTUNE IS NOW SHIPPING "SHUGART" FLOPPY DISK DRIVES IN THE SYSTEM AND AS SPARES.

SOLUTION: BELOW IS THE PLUGGING FOR THE "SHUGART" FLOPPY DISK DRIVE:



MS
MX
> OPEN

SS
RD
> CLOSED

TRACE CUT BETWEEN 2 PINS OF R1

ON 26S BOARDS 1U IS NOT JUMPERED BUT AØ IS.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE 11-4-82

APPROVED _____

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0009 A (To supercede 0009)

PROBLEM: CONFUSION ABOUT THE CABLES TO ATTACH VARIOUS EQUIPMENT TO THE FORTUNE 32:16. CORRECT ERROR IN EARLY FIELD SERVICE MANUALS.

SOLUTION: ATTACHED YOU WILL FIND THE PART NUMBER AND DIAGRAM FOR THE VARIOUS TYPES OF CABLES USED ON THE FORTUNE SYSTEM. PLEASE ENSURE THAT THE DIAGRAMS IN YOUR FIELD SERVICE MANUAL ARE CORRECT. THESE DRAWINGS SUPERSEDE ALL OLDER DRAWINGS.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
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DATE NOV 5, 1982

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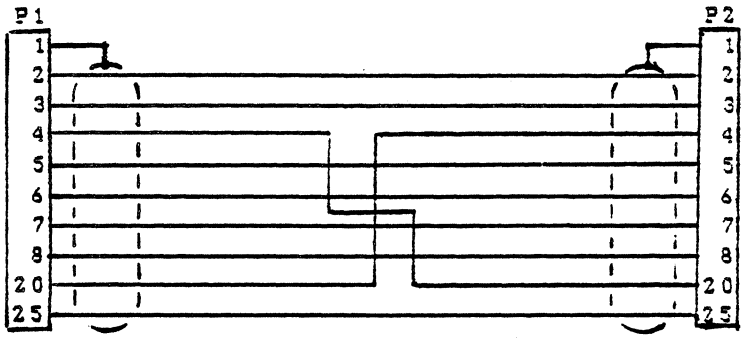
PRINTER CABLES

THE FOLLOWING DIAGRAM REFERS TO THE 1000664-XXCABLES THATARE USED FOR PRINTERS ON THE FORTUNE 32:16:

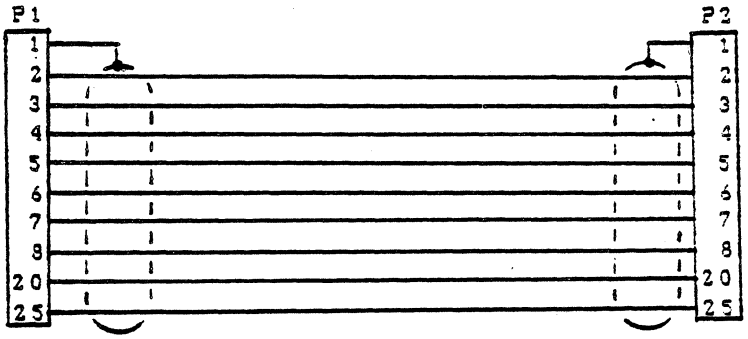


THE ABOVE DIAGRAM HAS THE FOLLOWING PART NUMBERS AND USES:

1000664-01	P1-MALE, P2-MALE	LETTER QUALITY PRINTER	LENGTH 10'
-02	P1-MALE, P2-MALE	" " "	" 20'
-03	P1-MALE, P2-MALE	" " "	" 50'
-04	P1-MALE, P2-FEMALE	DOT MATRIX PRINTER	" 10'
-05	P1-MALE, P2-FEMALE	" " "	" 20'
-06	P1-MALE, P2-FEMALE	" " "	" 50'

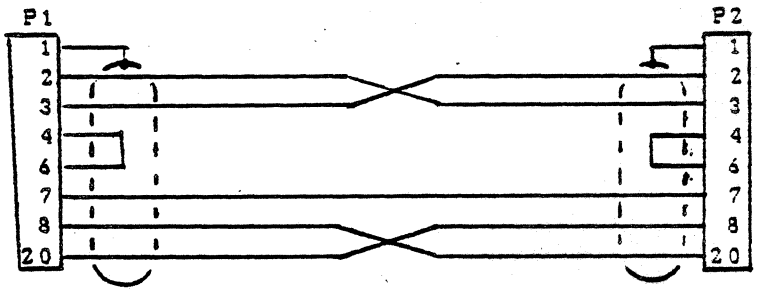
COMMUNICATION CABLES

THE FOLLOWING DIAGRAMS REFER TO THE 1000633-XX CABLES THAT ARE USED FOR COMMUNICATION DEVICES:



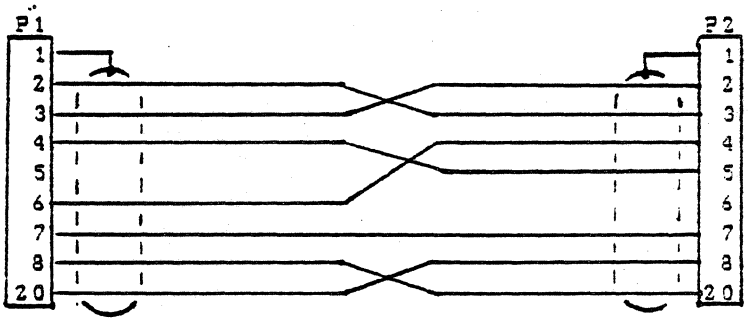
THE ABOVE DIAGRAM HAS THE FOLLOWING PART NUMBERS AND USES:

1000633-01	P1-MALE, P2-MALE	USED FOR CPU TO ASCII TERMINAL	LENGTH 10'
-02	P1-MALE, P2-FEMALE	USED FOR EXTENSION CABLE	" 10'
-03	P1-MALE, P2-FEMALE	" " " "	" 20'
-04	P1-MALE, P2-FEMALE	" " " "	" 50'
→ -08	P1-MALE, P2-MALE	USED FOR CPU TO ASCII TERMINAL	" 20'
→ -09	P1-MALE, P2-MALE	" " " " " "	" 50'



THE ABOVE DIAGRAM HAS THE FOLLOWING PART NUMBERS AND USES:

1000633-05	P1-MALE, P2-MALE	CPU TO CPU	LENGTH 10'
-06	P1-MALE, P2-MALE	CPU TO CPU	" 20'
-07	P1-MALE, P2-MALE	CPU TO CPU	" 50'



THE ABOVE DIAGRAM HAS THE FOLLOWING PART NUMBERS AND USES:

1000633-10	P1-MALE, P2-MALE	CPU TO MODEM	LENGTH 10'
-11	P1-MALE, P2-MALE	" " "	" 20'
-12	P1-MALE, P2-MALE	" " "	" 50'

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0010

PROBLEM: POSSIBLE PROBLEM OF SHORTING OUT THE ANALOG PCB WHEN CHANGING CRT.

SOLUTION: BE SURE THAT THE CONFORMAL COATING (THE GRAY COATING ON THE INSIDE OF THE COVER) ON THE STAND-OFF'S FOR THE ANALOG PCB IN THE CRT HOUSING HAS BEEN REMOVED. SOME ASCII TERMINALS AND MASTER CONSOLE CRT'S WERE SHIPPED WITH-OUT THE COATING REMOVED. IF THE CRT IS REPLACED WITH A DIFFERENT VENDOR TYPE CRT, THE ANALOG PCB MAY SHORT TO THE CONFORMAL COATING.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE NOV 11, 1982

APPROVED_____

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0011

PROBLEM:A quick way to check out a Fortune Intelligent Work Station.

SOLUTION:Jumper pins 2 and 3 of the host connector together. Then any character input from the keyboard will be echoed to the CRT screen.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE 12-28-82

APPROVED _____

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0012

PROBLEM:Running fids on ampex 20 megabyte hard disk.

SOLUTION:Load the diagnostic using the load procedure on page 7-1 of the Field Service manual. After the Fortune Diagnostic main menu appears do the following:

1. Change Slot = E
2. Change Drive type = other
3. Press Execute Key.
4. Type - INIT - Press Return.
5. Change # of Cyls = 320
   Change # of Heads = 8
   RWC Cyl = 132
   WDRECMP CYS = 132
   ECC length = 11
6. Press Execute Key
7. Press 'F9'
8. Press Execute, test will run in usual way.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE 12-28-82

APPROVED _____

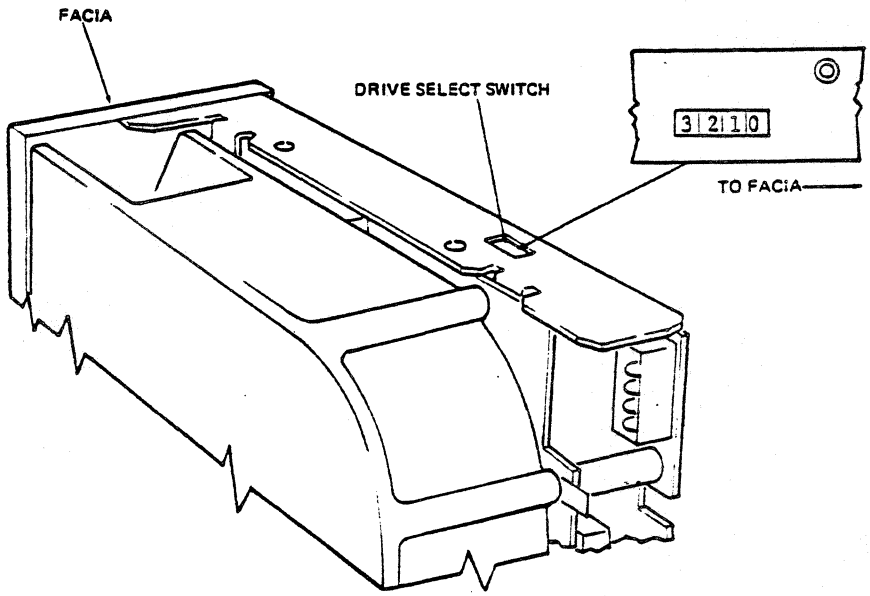
FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0013

PROBLEM: Fortune is now shipping AMPEX PYXIS Model 27 (20 Meg) hard disk.

SOLUTION: Below is the addressing information.



To identify a drive, the pole corresponding to the address of the drive is closed. Only one pole in each drive can be in the closed position.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE 2/16/82

APPROVED _____

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0014

PROBLEM: This Service Notice is intended to describe the procedure for exercising the Fortune 32:16 SIO PORT using an ASCII Terminal.

SOLUTION: 1. Cable the ASCII Termimal Host Port to the 32:16 SIO Port.

2. Reset or power up the 32:16 while holding down the cancel/del key. The Maintenance menu will appear.

3. Set the ASCII Terminal Baud Rate switches to match the back port speed of the 32:16 (F2 on the Menu). Remember to turn the ASCII Terminal off/then on after changing switches.

4. Press the F3 key. Press the space bar until the power-up action changes to "Terminal Mode". Press the execute key.

5. The 32:16 is now ready to communicate with the terminal. Data entered on the 32:16 keyboard is displayed on the ASCII Terminal display, and date entered on the terminal keyboard is displayed on the 32:16 CRT. Enter several lines on each device and verify that the corresponding display is correct.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE 5/15/83

APPROVED _____

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0015

PROBLEM: Notification of new release of Field Engineering 32:16 diagnostics. PART NUMBER: 1000834-02

NOTE: This Service Notice was written to notify the people who had already been to Field Service Training of the difference between 1000834-01 (old diagnostic floppy) and 1000834-02 (new diagnostic floppy). Attached to their copy of this service notice is a new chapter on diagnostics (page 7.1 has an 03-83 in the bottom left corner). They should note the differences between the old and the new diagnostic procedures, then replace the old diagnostic chapter with the new diagnostic chapter.

SOLUTION: New release of diagnostics has improvements to:

1. Floppy Disk Diagnostic
2. Keyboard/CRT Diagnostic
3. Hard Disk Diagnostic

The name of the Floppy Disk Diagnostics was changed from "fdmenu" to "fdtest.

The name of the Keyboard/CRT Diagnostics was changed from "kbdcrt" to "kbtest".

The name of the Hard Disk Diagnostic was changed from "fids" to "hdtest".

No changes were made to the "mem", "mmu", or "coma" diagnostics.

See the following pages for instructions.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE 3/16/83

APPROVED

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0015A

PROBLEM: Changes to Floppy Disk Diagnostic "fdmenu".

NOTE: "fdmenu" has changed to "fdtest".

Reference: Pages 7-9 to 7-12 of Field Service Manual for the following changes.

SOLUTION: Select the Floppy Disk Diagnostic using file name "fd02/fdtest".

The only change to this diagnostic was made to the Read Cycle Test. This test no longer does a data comparison test. CRC verification is done on all blocks read. This is a good media test. Use to read suspect floppy disks.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE 5/10/83

APPROVED _____

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0015B

PROBLEM: Change to Hard Disk Diagnostic "fids".

NOTE: "fids" has changed to "hdtest".

Reference: Pages 7-13 to 7-19 of the Field Service Manual for the following changes.

SOLUTION: Select the Hard Disk Diagnostic using file name "fd02/hdtest"

The diagnostic now defaults to slot "E" instead of slot "B". The diagnostic now uses the same device codes as the operating system.

DRIVE TYPE:

A10 - Seagate 10 meg
B5 - Miniscribe 5 meg
B10 - Miniscribe 10 meg
B20 - Miniscribe 15 meg
C20 - Ampex 25 meg
E15 - IMI 15 meg
G25 - ATASI 25 meg
H25 - Evotek 25 meg
I20 - Disctron 20 meg
Z5 - Seagate 5 meg
OTHER - Make your own parameters.

The diagnostic now uses the "Down Arrow" key to move the cursor on the main menu. Press the "Down Arrow" key twice to move the cursor to the drive type.

The diagnostic now uses the "Right Arrow" key to change the drive type.

EXAMPLE: Press "Right Arrow" key four (4) times to change drive type to C20 (Ampex 20).

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For systems running Operating Systems 1.2.4. and above, after selecting the drive type all options are default values. You do not have to change the step rate for the (Z5) Seagate 5 meg or add parameters to the (C20) Ampex 20 meg.

For systems running Operating System 1.2.3., all options are default except for the (C20) Ampex 20 meg. You must change the end block count from 43655 to 43519. This is because the diagnostic uses 321 cylinders and 1.2.3. only uses 320 cylinders.

For systems Below 1.2.3., you have to do an "init" command and change the number of blk/Track from 17 to 16. This is because the diagnostic uses 17 blocks per track and the older operating systems used 16. You can find the operating system level using "pstat" under Unix.

HELPFUL HINTS

1. I20 is the Disctron 20 meg designation. A few, approximately 30, systems left the plant with an F20 on the system configuration sticker as the hard disk drive type. If you see an F20, change it to read I20.

2. The Disctron 20 meg systems have a capacitor mounted on the back of the hard disk shield. Do not try to run a Disctron without this capacitor.

3. Operating systems below 1.2.4 cannot be run on Disctron 20 meg systems.

4. After a sucessful completion of a sequencial test, run a few minutes of random testing. To do this change the test mode = random and the loop count = 9999.

5. Soft errors are recoverable errors of the disk system. A few are normal, alot are unusual and the cause should be found. Hard errors are unrecoverable. Remember, the operating system uses bad block forwarding and the diagnostic does not. Always check the configuration block of the hard disk using rdconf /dev/hd02 (under Unix) to find the true bad blocks of a hard disk.

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0015C

PROBLEM: Changes to keyboard/CRT test "kbdcrt".

NOTE: "kbdcrt" has changed to "kbtest"

Reference: Page 7-8 of the Field Service Manual.

SOLUTION: Select the keyboard/CRT test by selecting file name "fd02/kbtest".

The CRT Scroll Test now will test either a domestic or an international CRT. The default is domestic. If you change the default to "No" the international test will be run.

The CRT Atribute Test still tests all of the atribute functions.

The keyboard test has changed drastically. You will like this one alot better. The keyboard test will test the following types of keyboards.

AM - American
BR - British (U.K.)
FR - Francaise
DE - Deutsch
IT - Italian
SV - Sverige
NO - Norge
SR - Swisse - Romande
SD - Schweiger - Deutsch

Use the first two (2) uppercase letters of the type of keyboard you have.

EXAMPLE: AM (Return) will select the domestic keyboard.

The screen displays an outline of all the keys on the selected keyboard. Press each key on the keyboard. As you press a key, the same location on the outline should change to the letter on the key top.

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NOTE: To remove the special keys (CTRL, LOCK, SHIFT), press these keys:

(CTRL) - Hold down (CTRL) and press 'q'
(LOCK) - Hold down (LOCK), then press 't', then to unlock the keyboard release and press (Lock) again.
Right (SHIFT)- Hold down right (SHIFT) and press 'h'.
Left (SHIFT)- Hold down left (SHIFT) and press 'g'.

If the keyboard will not remove all the keys, you can press the (Return) key next to the far right number keys at the same time holding down the (SHIFT)key. This will abort the test.

The keyboard driver test has been removed.

The cursor positioning test now gives you a boot prompt after the screen is filled with "X's".

You do not have to reset to exit.

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0016

PROBLEM: Intermittent 120 Errors.

SOLUTION: When after running all diagnostics your systems still get Intermittent 120 errors, try replacing the floppy pal (coordinates 9F on the motherboard) before replacing the motherboard. Order floppy pals through Field Engineering.

Fortune System Corp.
300 Harbor Blvd.
Belmont, CA 94002
Attn: Angie Alvarez

NOTE: Floppy pals labeled .1 CPU FLO have been screened for this problem and do not need to be replaced.

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SERVICE NOTICE

NUMBER 0017

PROBLEM: Reduced airflow because of a poor fan voltage connection.

SOLUTION: After servicing the Fortune 32:16, always check the voltage connection at the fan and make sure it is tight before buttoning up the machine. After button up always turn on the machine and check for proper air flow before returning to the customer.

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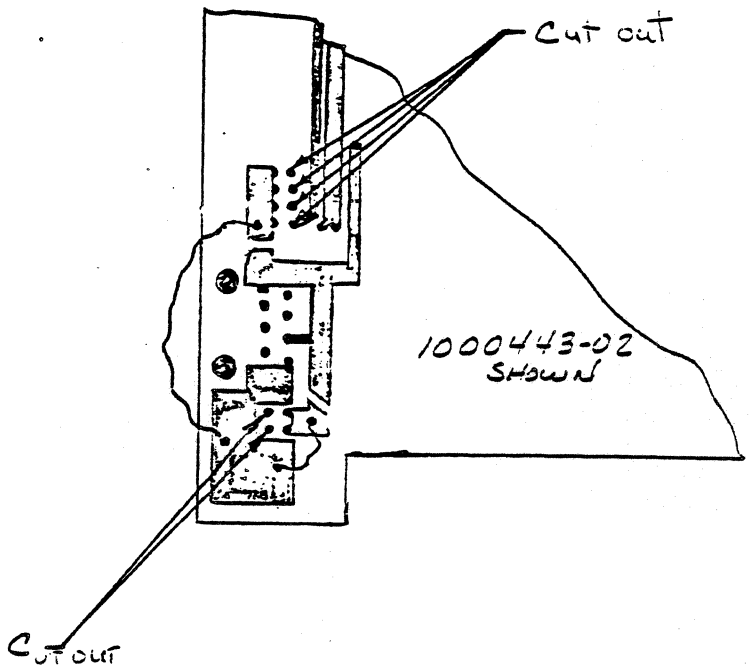
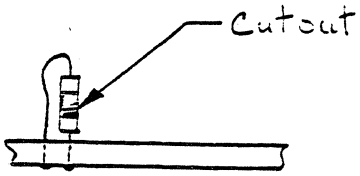
SERVICE NOTICE

NUMBER 0018

PROBLEM: Poor quality video on CRT monitors and reduced range of contrast adjustment on CRT controller.

SOLUTION: Some video controllers have six capacitors, C4-C9, located in the area of P2. If you experience either of the above problems check to see if these capacitors are installed. If installed, cut out.





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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0019

PROBLEM: Drive selection and terminator block locations shown incorrectly for Seagate ST506 and ST412 drives.

SOLUTION: Remove page 6-7/6-8 Revision 01-83 from the Field Service Manual and replace with page 6-7/6-8 Revision 02/83.
Note that the terminator resistor pack and drive selection shunt were reversed in the old drawing.

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SERVICE NOTICE

NUMBER 0020

PROBLEM: 32:16 System Power Supply Adjustment Procedure.

SOLUTION:

1.0 GENERAL

Voltage levels at the +5 volt, +12 volt and -12 volt outputs are controlled by one common adjustment and those voltages are affected by current draw at each output. Certain supplies may require some readjustment as the +5 volt current draw is increased. Adding additional memory and/or options increases the +5 volt current draw.

2.0 VOLTAGE SPECIFICATION

Voltages should be adjusted to achieve the range shown in Table 1. These voltages are specified at the connector that plugs into the motherboard. The connector pin numbers for the various voltages are also shown in Table 1.

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BACK

13.20
12.00

-12.60
-11.40

12.60
11.40

16	14	12	10	8	6	4	2
15	13	11	9 PFL	7 PFL	5	3	1

5.25
4.90

FRONT

OUTPUT NAME	OUTPUT VOLTAGE TOLERANCE RANGE Min.	MAX.	CONNECTOR PIN NUMBERS	WIRE COLOR
+5V	4.90	5.25	1, 2, 3 , 4, 5	RED
+12V	11.40	12.60	6	YELLOW
-12V	11.40	12.60	8	VIOLET
+12V Reg	12.00	13.20	10	WHITE YELLOW
GROUND	-0-		11, 12, 13, 14, 15, 16	BLACK

TABLE 1

WARNING

HIGH VOLTAGE IS PRESENT AT VARIOUS POINTS ON THE POWER SUPPLY. CARE SHOULD BE EXERCISED TO AVOID TOUCHING ANY EXPOSED COMPONENT LEADS, HEAT SINKS, ETC.

Air flow through the system is affected by removal of the cover. The system should not be powered up for more than 30 minutes with the cover off.

3.0 PROCEDURE

Equipment required for this procedure is a digital voltmeter (.01 volt graduation) and a non-conductive flat blade 6 inch adjustment tool. Cover should be removed and all options plugged in before AC power is applied. Remove all potting material on adjusting screw with power off and AC cord unplugged.

3.1 +12 VOLTS

Check the +12 volt output, it should be less than 12.60 volts. If it is above, adjust potentiometer R26 (see Figure 1.0) until voltage is 12.60 volts.

3.2 +5 VOLTS

Check the +5 volt output, it should be above 4.90 volts. If it is below 4.90 volts, and +12 is at 12.60, reject the power supply. If the +12 is less than 12.60, raise the +5 until it reads 4.90 to 5.00 making sure the +12 does not go above 12.60.

3.3 +12 VOLTS REGULATED

Check the +12 volt REG output, it should be greater than 12.00 volts. If the voltage is less than 12.00 volts, the size of the display area on the system monitor should be checked. If the display is acceptable, the supply can be used if the output is above 11.60 volts.

3.4 -12 VOLTS

Check the -12 volt output, it should be between -11.40 volts and -12.60 volts. This supply is used only for RS232 type communications options at this time. If the system includes only RS232 type options (Comm A or Comm B), the supply will be acceptable if the -12 volt output is as low as -13.00 volts.

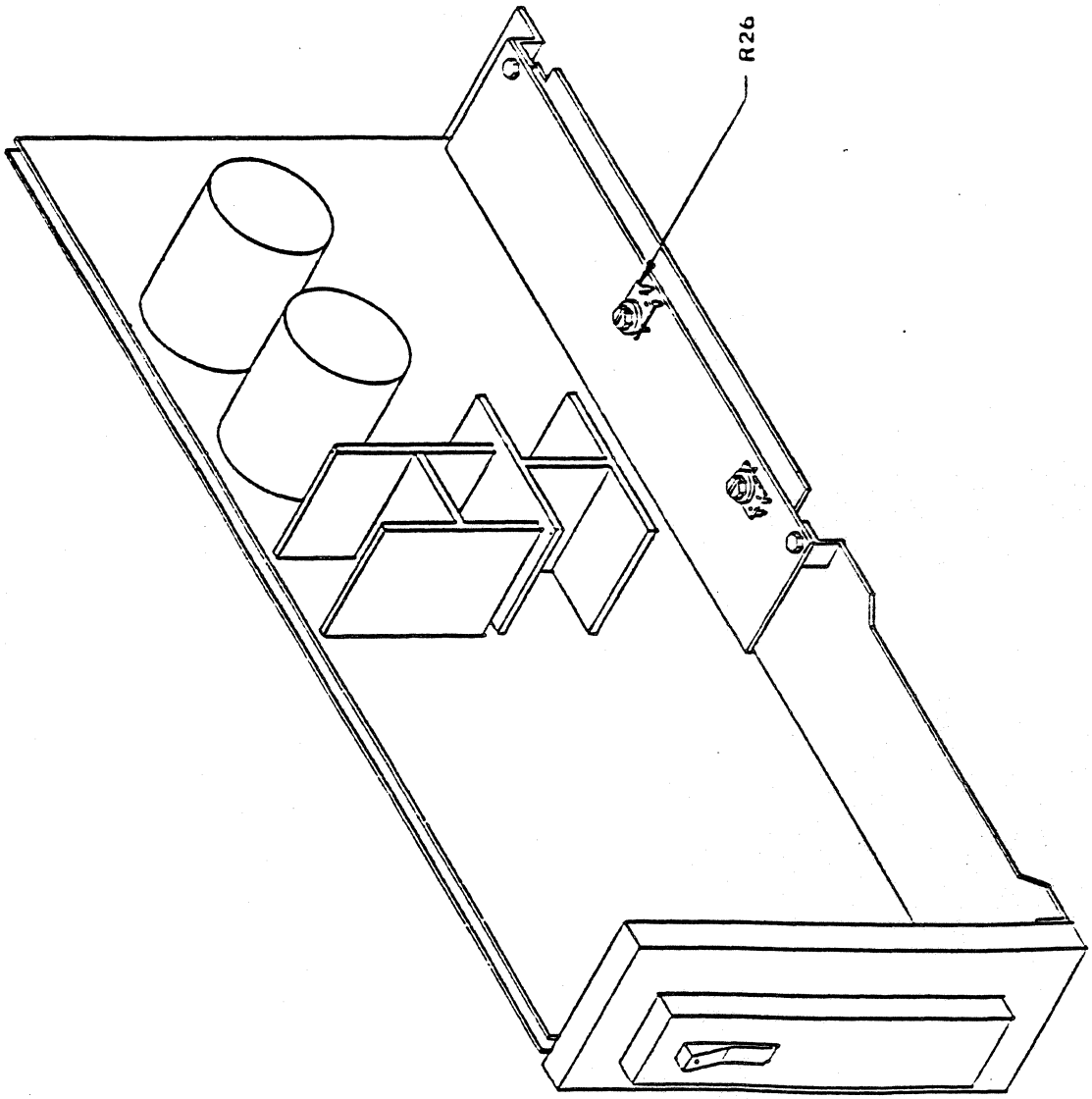

FIGURE 1.0

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SERVICE NOTICE

NUMBER 0021

PROBLEM: Announcing an optional capacitor kit for 20 megabyte systems.

Only order the kit, part #1001775-01, if the 20 megabyte system is experiencing intermittent hard disk/floppy disk problems.

SOLUTION: Install capacitor assembly, part #1001612-01 between hard disk power plug from power supply, and hard disk power plug on drive.

Secure capacitor assembly to back of hard disk shield using clamp, part #1001614-01. Use 1 (6X32 3/8" pan head) screw and 1 each #6 lockwasher and flat washer. The shield is tapped at the rear for a 6X32 screw.

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SERVICE NOTICE

NUMBER 0022

PROBLEM: 20 megabyte upgrade instructions.

SOLUTION: Before proceeding to upgrade a 5 or 10 megabyte system make sure you have the following parts available.

	PART#		QUANTITY
	1000081-03	20MB Disk Drive	1ea.
	1000380-01	Disk Mounting Bracket	1ea.
	1000448-02	Shield, 20MB	1ea.
	1001172-01	Shield, Hard Disk	1ea.
	1001130-01	Standoffs	4ea.
	1000411-01	Lockwasher #6	5ea.
	1000303-07	Screw,Pan Head 6X32 3/16"	6ea.
	1001612-01	Capacitor Assembly	1ea.
	1000303-01	Screw,Pan Head 6X32 3/8"	1ea.
	1000326-01	Washer,Flat #6	1ea.
	1001614-01	Clamp	1ea.
**	1001051-01	Screw,Under Cut,6X32 1/4"	4ea.
	1000454-03	Insulator	2ea.
** or	1000303-02	Screw,Pan Head 6X32 1/4"	3ea.

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Ser.0022 Continued

These parts can be ordered under one part number, #1001700-01 (20MB Upgrade Kit).

STEP 1

Remove the old drive from the system.

STEP 2

If the original disk mounting bracket has the same number of holes as the new one, you do not have to remove the floppy disk drive from the disk mounting bracket. If the original disk mounting bracket has fewer holes than the new one, install the floppy disk drive on the new mounting bracket and discard the old mounting bracket.

STEP 3

Install the four standoffs on the bottom of the 20 meg drive.

STEP 4

Install the large shield on the 20 meg drive using the 3 (6X32 1/4" pan head) screws. Leave the left rear screw hole blank. If the under cut 6X32 1/4" screw was supplied, use it instead.

STEP 5

Install the 20 meg disk drive onto the disk mounting bracket using the third and last (from the front) set of holes. Use 4 (6X32 3/16" pan head) screws and 4 (#6) lock washers.

STEP 6

Install the disk assembly into the system.

STEP 7

Install the capacitor assembly onto the back of shield using the clamp with a (6X32 3/8" pan head screw, #6 flat and lockwashers). The capacitor assembly electrically goes between the disk power supply connection and the 20 meg disk drive.

STEP 9

Install the two insulators on the small shield, one on the top and one on the side.

STEP 9

Install the small shield to the large shield using the two remaining (6X32 3/16" pan head) screws.

STEP 10

Test using hdtest. See Service Notice #15.

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0023A

PROBLEM: Boot problems caused by missing or damaged 'Configuration Block' or 'Boot' file.

If during the normal boot procedure the system shows one of the following abnormal conditions:

1. Screen shows '1 2' and goes no further.
2. Screen shows '1 2 3' and goes no further.
3. The message "There's something wrong, start over" appears at the bottom of the screen.
4. Goes to the "Maintenance Menu" and continually returns to the "Maintenance Menu" after pressing the 'execute' key.

It may mean that the 'Boot' program or the 'Configuration Block' may have been damaged. Rewriting the 'Boot' or 'Conf Block' may solve the problem without having to 'Cold Boot' the system.

Determine if the 'Conf Block' is damaged by booting up from floppy disk (i.e. Cold Boot #1). If the message "hd: Drive 0 is bad" appears, the 'Conf Block' on the rigid disk cannot be read.

Determine if the 'Boot Program' is bad by changing the 'Boot Device' (F4) on the maintenance menu to boot from floppy drive, and install 'Cold Boot #1'. If the system comes up normally after reading the boot from floppy, the 'Boot' on the rigid disk is damaged.

SOLUTION: First run diagnostics to determine that the hardware is OK. If 'hdtest' runs OK, then you can proceed to rebuild the 'Configuration Block' or the 'Boot' program on the rigid disk.

Rebuilding Configuration Block

There are two things you need to know before rebuilding the 'Conf Block'. The number of users the disk was formatted for, and any 'Bad Blocks' that were spared in the original 'Conf Block'. It is advised that on any systems you sell or do service on, that you do the command **rdconf /dev/hd00** and record the information concerning bad blocks that are spared and the size of the partitions **BEFORE ANY PROBLEMS OCCUR**, so that if the following procedures are required you will have all the information you need. Also note the number of users specified at the time of 'Cold Boot'.

Only proceed to rebuild the configuration block if you had recorded the bad blocks and number of users.

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Service Notice 0023A Continued

----NOTE----

In the following write-up, all references to 'disk type' will be 'XYY'. You would substitute the the correct value for the disk type you are working with (i.e. A10, B10,C20, I20, Z5 etc..).

PROCEDURE: Start a normal 'Cold Boot' bringing the system all the way to the menu that asks you to select F1, F2, or F3 to reload the system. You will note that the last message says that anything else will be treated as a 'maintenance mode' command. At this point enter;
cd /etc <RETURN>
This will cause the system to change the working directory to /etc and return with the # prompt. At this time enter;
dskselect XYY <RETURN> Example: Use C20 for XYY if you have a C20 system.
A menu will appear asking you to select a disk type. Enter the number that corresponds to the drive type in your system. Example: **10 <RETURN>** for a C20 system.
You will now enter;
mkconf -i XYY /dev/hd00 <RETURN>
The 'Configuration Block' will now begin to appear on the CRT with '?' prompts. Press the <RETURN> to enter the default value until you get the question 'Number of Spare Blocks =0'?, at this point enter;
46 <RETURN>
The system will now be set to spare any known bad blocks, and will return the message 'Spare 0 (Block 3)= free ?' If you have any known bad blocks you would enter the first bad block number here and hit <RETURN>. You would continue to do this for all bad blocks. If there are no bad blocks or when you have entered all known bad blocks, you will enter '**bad**' for the remainder of the spares entries. When you make the last entry, the system will automatically write the new 'Conf Block' to the rigid disk. The disk now has a 'Conf Block' for a one (1) user system. If the system was formatted for a 3 or 5 user system, do the following command; FOLLOW WITH DF TO DETERMINE VALID NUMBER.
mkconf -U * /dev/hd00 <RETURN> INSERT NUMBER FOR * UNTIL DF READS OK
where * is the number of users (i.e. 3 or 5). You should now check the 'Conf Block' by doing the following command;
rdconf /dev/hd00 <RETURN> RDCONF -U GIVES SWAP UNITS
If all went well, you should have a working hard disk at this point. Do a file system check to verify system file integrity, enter;
fsck /dev/hd02 <RETURN> — DO NOT SKIP THIS STEP
The file system check should run error free. If not, you have file damage and a cold boot may be in order.Enter the following commands;
sync <RETURN>
sync <RETURN>
You may now remove the 'Cold Boot' disk and reboot the system in the normal configuration.

IF WON'T WRITE CONF BLOCK, POWER DOWN SYSTEM & COME BACK UP.

SN #23 w/1.8

USE /dev/RFD00 AS SOURCE

DEST = /DEV/HD00

BUT NOT WITH 1.8.1.1. INSTALLED

IF POSSIBLE, USE /SA/BOOT
ON NORD DRIVE AS SOURCE

Rebuilding Boot Program

PROCEDURE: Start a normal 'Cold Boot' and bring the system up to the point where it displays the menu that asks you to select F1, F2 or F3 to reload the system. You will note that the last message says that anything else entered will be treated as a 'maintenance mode' command. At this point enter the following;

cd /etc <RETURN>

This changes the working directory to /etc and the system will return with a # prompt. You will now enter the following;

bootcp /sa/boot /dev/rhd00 0 <RETURN>

The system will now write the 'Boot' program from floppy to the hard disk and return the # prompt. You will then enter;

sync <RETURN>
sync <RETURN>

and remove the 'Cold Boot' disk and bring up the system in the normal manner to verify operation.

If when you entered **bootcp.....** the system returned the message **bootcp; not found**, enter the following command;

dd if=/sa/boot of=/dev/hd00 bs=512 seek=* <RETURN>

and then proceed as above.
For the * parameter use the starting block number of the boot 0 program. This information is available in the configuration block. The "Boot 0 begins at" message gives the starting block number that should be used for this parameter. To see the configuration block enter;

rdconf /dev/hd00 <RETURN>

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SERVICE NOTICE

NUMBER 0024A

PROBLEM: Rigid Disk Error messages of 'ID not found' or 'CRC Error'.

First you must know what 'ID" and 'CRC' mean. The 'ID Fields' on the disk are the headers for the data blocks, which contain the cylinder, head and sector information. 'CRC' stands for 'Cyclic Redundency Check' which is the way we check for errors in the 'ID Field'.

If an error occurs in the 'ID field' we must reformat, that is, rewrite the cylinder, head and sector information for that section of the rigid disk drive.

-NOTE-

ALL DATA WILL BE LOST IN THE AREAS THAT ARE REFORMATTED

For this reason only the boot program area of partition 0 and all of partition 1 can be reformatted. The danger of losing data and pointers is to great to allow reformatting of other areas. The boot program area and partition 1's area are shown in the configuration block of the rigid disk drive. If other areas of the disk have ID errors a cold boot will be necessary.

SOLUTION: Since both hdtest (diagnostic) and unix (operating system) give error information in blocks, and the format command needs track (t) and head (h) information we need to be able to convert blocks to tracks and heads.

To convert you need to know the sectors/track and number of heads for your particular operating system/disk drive combination. This information is available in the configuration block of the rigid disk drive. How to read the configuration block will be shown later.

-NOTE-

DRIVES HAVE VARIOUS NUMBERS OF HEADS AND SECTORS PER TRACK

After you have the sectors/track (sectors per track) information and the number of heads information, multiply them together.

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EXAMPLE:

Unix 1.2.4 operating system and a 20 megabyte C20 disk drive
sectors/track = 17
number of heads = 8
136 (blocks per cylinder)

EXAMPLE:

Unix 1.2.4 operating system and a 10 megabyte B10 disk drive.
sectors/track = 17
number of heads = 4
68 (blocks per cylinder)

Take this number (blocks per cylinder) and divide it into the failing block(s) number. The result is the track (t) number you need for the format command. Divide the remainder by sectors/track (sectors per track). This result is the head (h) number you need for the format command.

EXAMPLE:

Block 128 is bad on a 1.2.4 system with a C20 disk drive.

```
    0= Track (t)          7= Head (h)
136) 128              17)128
                          119
remainder=128               9
```

With this example the format command would reformat one entire track, from block 119 to block 135. 17 blocks total reformatted.

EXAMPLE:

Block 1000 is bad on a 1.2.4 system with a B10 drive.

```
   14= Track (t)          2= Head (h)
68)1000               17) 48
  68                      34
  320                     14
  272
remainder=48
```

With this example the format command would reformat one entire track, from block 986 to block 1002. 17 blocks total reformatted.

Now that we have track (t) and head (h) information we can use the following reformat procedure to restore the 'ID Field' on the rigid disk drive.

FLOPPY

10 BLOCK

3 REMAINDER

PROCEDURE FOR REFORMATTING:

Start a normal 'cold boot' bringing the system all the way to the menu that asks you to select F1, F2, or F3 to reload the system. You will note that the last message says that anything else will be treated as a 'maintenance mode' command. At this point enter;
cd /etc <Return>

This will cause the system to change the working directory to /etc and return with the # prompt. At this time enter;
rdconf /dev/hd00 <Return>

The rigid disk configuration block will appear.

-NOTE-

CHECK TO SEE THAT THE AREA YOU WANT TO REFORMAT IS IN THE BOOT PROGRAM AREA OR PARTITION 1. ONLY PROCEED IF IT IS.

This is where you find the sector/track and number of heads information that you needed for the block to track (t) and head (h) conversion. Do your conversion and proceed as follows. Enter;
format -t * -h @ /dev/hd00 <Return>
Use the track (t) number from your calculations in place of the * symbol. Use the head (h) number from your calculations in place of the @ symbol.
At this point enter;
sync <Return>
sync <Return>

At this point run diagnostics to see that the ID field was restored correctly.

-POINTS TO PONDER-

1. The bad block replacement area of the rigid disk starts at block 3 and ends at block 48. If the disk has bad blocks they were spared to this area. **This area is considered part of the file system.**

2. The swap area (All of partition 1) can be reformatted without any file rebuilding. Partition information can be found in the configuration block.

3. You can reformat the 'boot' area, then rebuild it using Service Notice 0023. The 'boot' area location of each rigid disk is also shown in its configuration block.

4. Major file damage can occur if the area reformatted was in the file system. The file system starts at the beginning of partition 2. The super block , i-list, unix files and user files make up the file system, respectively. **Do not reformat this area.**

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0025A

PROBLEM: Bad block sparing

Over the life of a rigid disk drive it is normal that some bad blocks (bad media) will develop. This procedure, hopefully, will tell you when and how to spare out the bad blocks that develop.

First a determination must be made as to the validity of the bad block. Is it really bad media or is it some other disk system related problem?

Only spare a block if it repeatedly fails either under the 'operating system' or 'hdtest'. Randomly failing blocks should not be spared but the problem with the rigid disk system should be found.

-NOTES-

SPARING A BLOCK DESTROYS ALL DATA IN THAT BLOCK! The diagnostic (hdtest) does not recognize bad blocks sparing. If a block fails repeatedly running 'hdtest', check the configuration block to see if that block is already spared out. If not, sprare it out using the sparing procedure. **DO A FULL SYSTEM BACKUP BEFORE PROCEEDING.**

SOLUTION: Start a normal 'cold boot' bringing the system all the way to the menu that asks you to select F1, F2, or F3 to reload the system. You will note that the last message says that anything else will be treated as a 'maintenance mode' command. At this point enter;
cd /etc <Return>

This will cause the system to change the working directory to /etc and return with the # prompt. At this time enter:
mkconf -i /dev/hd00 /dev/hd00 <Return>

The 'Configuration Block' will now begin to appear on the CRT with '?' prompts. Press the <Return> key to enter the default value until you get the question 'Number of Spare Blocks = 46'? at this time enter:
46 <Return>

At this point we can start sparing bad blocks. Enter the **bad block number** followed by **<Return>** at the first spare entry that ends in 'Bad?'. Repeat this for all known bad blocks.

After entering all bad block numbers enter ; **Done <Return>** at the next spare entry.

Now do a; **rdconf /dev/hd00 <Return>** and check the configuration block. It should now show the bad block as being spared out. Enter;
sync <Return>
sync <Return>

Now recold boot the system.

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DATE Nov 2 83

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DATE: 03/25/83

BAD BLOCK SPARING

YOU WILL USE ONLY VOLUME 1 OF COLD BOOT....

Power on or reset the CPU, while holding down the Cancel/Del key. The boot menu will be displayed as shown in Figure 3-1

```
        Copyright (c)  Fortune Systems,  Rev 1.0

  F1    Change front port speed        2400
  F2    Change back port speed         9600
  F3    Change power-up action         Boot up
  F4    Change boot device             WD Boot, Drive 0
  F5    Change boot program number     0
  F6    Change floppy drive 0 type     Tandon
  F7    Set boot file name             hd02/unix
  F8    Read settings from EAROM
  F9    Save settings from EAROM
```

Figure 3-1
Boot Menu

Load the Cold Boot diskette #1 into the floppy drive. Depress the function key (F4), and observe that "Change boot device" adjacent to F4 is now highlighted. Depress the space bar until the boot device is changed to "Floppy Drive 0".

Depress the function key (F7), and observe that "Set boot file name" adjacent to F7 is now highlighted, and that "hd02/unix" is no longer displayed. Enter "fd02/sa/reconf" and depress (RETURN) and (EXECUTE). The system will then display the configuration Menu as in Figure 3-2

Depress (RETURN) until "root device"is highlighted, and enter "fd02". Depress (RETURN) until "swap device" is highlighted, and enter "fd01". Depress "F3" to GO, and the system will start loading the information from the first Cold Boot diskette. Shortly afterword, the system will ask a series of questions, about the size of the hard disk, number of users, and whether to reformat the hard disk.

After answering the questions, the system will format the hard disk, if selected, then load unix and files onto the hard disk. After about five to ten minutes (depending on memory size), the system will prompt the operator to power the system off then on again. It will load more files from the #1 diskette, and will prompt the operator to load the #2 diskette. When the system is finished loading all the files, it will prompt the operator to remove diskette #2, and eventually come up to the date and time prompt, followed by the logon prompt.

After a cold boot, the system will only contain the cold boot, system management and system utilities. All applications whether highlighted in the global menu or not will have to be loaded onto the system from back up copies.

```
                Fortune Systems Configuration Menu

  Power up action = BOOT          Console location = CRT
       Boot device = hd                    timezone = PACIFIC
      Boot drive # = 00           Daylight savings = YES
    Boot Program # = 00             Line Frequency = 60
         Boot file = hd02/unix      Number buffers = 010
     Flex drive #1 = TANDON          Number inodes = 040
     Flex drive #2 = TANDON           Number files = 040
     Flex drive #3 = TANDON           Number texts = 005
     Flex drive #4 = TANDON          Number clists = 010
       Root device = hd02          Number processes = 010
       Swap device = hd01          Max process size = 160
 TTY00 port speed = 2400           Set params auto? = YES
 TTY01 port speed = 9600          Approx # of users = 1

            EAROM has been changed 14 times

         Revision 1.0 Tue Aug 10 23:33:48 PDT 1982
      F1 = STORE    F2 = READ    F3 = GO    F4 = REBOOT
```

Figure 3-2
Configuration Menu

BOOT PROMPT .....

ENTER

:fd02/unix <cr>

THE OPERATING SYSTEM WILL DISPLAY THE NEXT MENU...

Select a function key:	[Help]	For more information
	[F1]	To completely erase and reload your disk
	[F2]	To reload your hard disk without erasing or reformatting it [not implemented yet]
	[F3]	To retry starting up the system as specified in the Maintenance Screen
	....	(Anything else typed in will be executed as a maintenance mode command.)

At this menu depress the CANCEL key to bring up the root prompt.You will be operational with unix in maintenance mode.

RUNNING UNIX FROM THE FLOPPY....

perform the following:

at the unix prompt
enter

cd etc

enter

mkconf -i /dev/hd02 /dev/hd02

the following menu will appear

```
Configuration block for: /dev/hd12
System ID: 0
Format time: Wed Dec 29 13:31:30 1982
Modify time: Wed Dec 29 13:31:40 1982
Media type: Hard
Sectors/track: 17
Number of heads: 8
Number of cylinders: 320
Write reduce: 132
Write precomp: 132
Drive attributes: 0
Block size: 512
Software interlace: 1
Hardware interlace: 2
System interlace: 3
Disk identification: "C20 - 20 Mega byte"
   Partition 0 begins at 0, 272 in length
   Partition 1 begins at 272, 4480 in length
   Partition 2 begins at 4752, 38768 in length
   Boot 0 begins at 68, 84 in length
Number of bad blocks: 46
Diagnostic spares:      0-2
Spares bad, not used:   3-45
```

..... depress the RETURN key untill you reach the prompt diplayin
NUMBER OF BAD BLOCKS: 46

enter 46

by entering a value you will be able to spare blocks 0 -45.

RUNNING UNIX FROM THE FLOPPY.....

at this point you now have four options:

- you can enter the actual bad block number.

0 - free the spare block to be used later you can enter 0 or free.

bad - delete the spare block from the table by entering bad.

done - to end entries into the table.

spares 0 -45 will apear one at time by entering <CR>.if you have a bad block number to enter, enter it at the first available spare block (spare 3 block 6). the first three block are reserved for diag, Also spare 15,16, 32, 33. After you have spared a bad block you can enter BAD to all remaining blocks.

```
spare 0 (block 3) = diag ?
spare 1 (block 4) = diag ?
spare 2 (block 5) = diag ?
spare 3 (block 6) = bad ? 11223
spare 4 (block 7) = bad ? 0
          .
          .
          .
          .
          .
spare 45 (block 48) = bad ? 0

#
```

please not successfull entry into the bad block table will result in the root prompt being returned. If it is not successful it will indicate to you that it 'CAN 'T WRITE TO /DEV/HD02' in which case start over with the MKCONF command. If failure still occurs the second time call product support.

RETURN THE FILE SYSTEM TO HARD DISK....

If your were successful, you return the operating system to hard disk. You do this by depressing <RESET> on your cpu, and allowing it to come up normally. When you have the logon prompt enter root and do the following to verify your enteries into th table.

enter

```
# cd etc

# rdconf /dev/hd02
```

The conf. table will apppear as below diplaying the ba block you entered and the spares available to the operating system. From this point the operating system will spare the blocks for you.

```
Configuration block for: /dev/hd12
System ID: 0
Format time: Wed Dec 29 13:31:30 1982
Modify time: Wed Dec 29 13:31:40 1982
Media type: Hard
Sectors/track: 17
Number of heads: 8
Number of cylinders: 320
Write reduce: 132
Write precomp: 132
Drive attributes: 0
Block size: 512
Software interlace: 1
Hardware interlace: 2
System interlace: 3
Disk identification: "C20 - 20 Mega byte"
   Partition 0 begins at 0, 272 in length
   Partition 1 begins at 272, 4480 in length
   Partition 2 begins at 4752, 38768 in length
   Boot 0 begins at 68, 84 in length
Number of bad blocks: 46
Diagnostic spares:      0-2
Spares bad, not used:   3-45
```

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0026

PROBLEM: Motherboard Failure

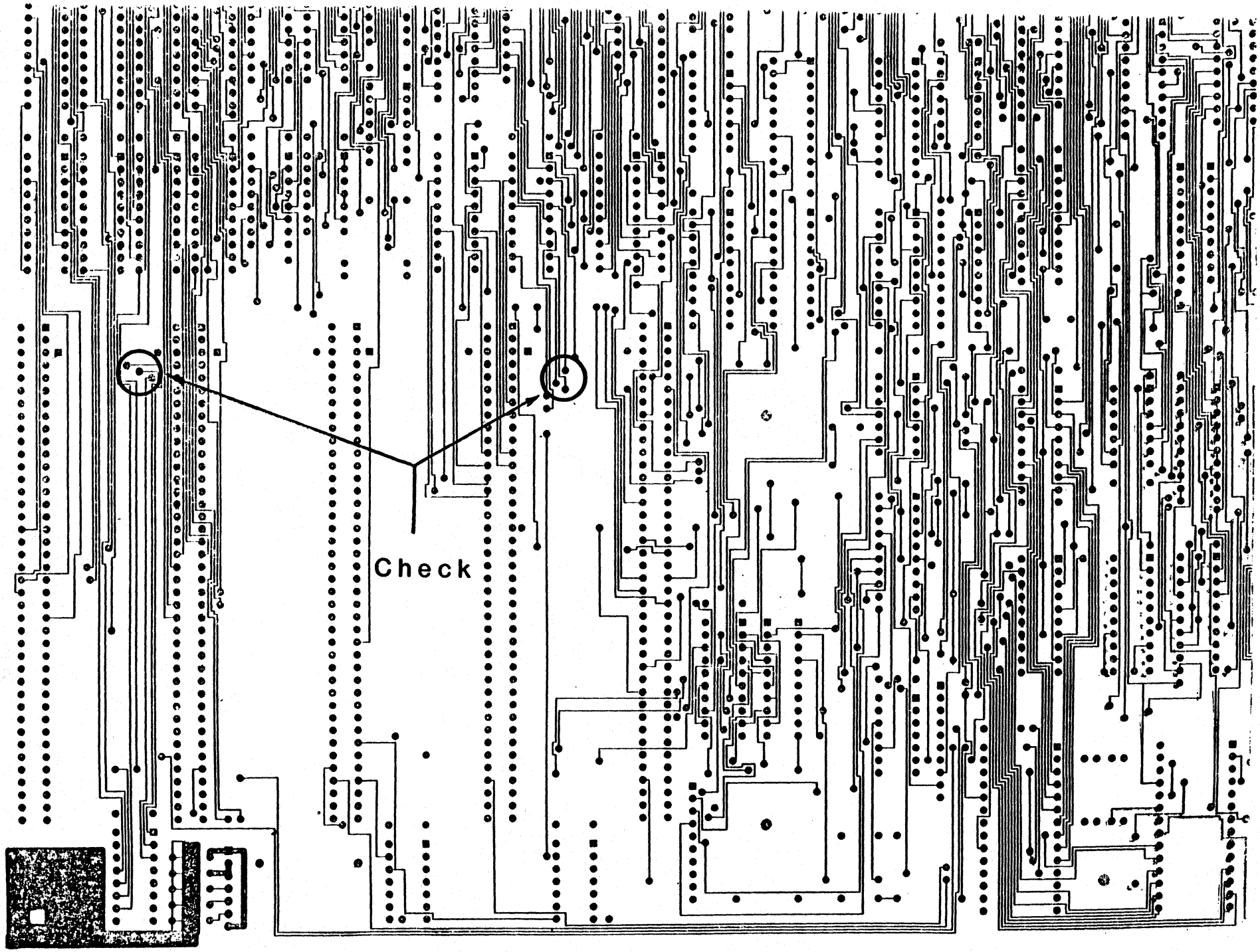
SOLUTION: If a system problem is isolated to a motherboard check the six solder pads, shown in the two circles on the following page, for solder shorts from these pads to adjacent traces. Remove all excess solder with an exacto knife being very careful not to damage the motherboard.

Recheck the motherboard in the system if excess solder was removed.

FORTUNE SYSTEMS CORP.
1501 INDUSTRIAL RD.
SAN CARLOS, CA 94070

DATE 8/15/83

APPROVED H. W. Sinclair



. Bottom Left Corner – Etch Side – Under I/O Option Slot Connectors

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0027

PROBLEM: **A failing motherboard I/O pal** which shows up most often in systems with fully loaded option slots. The failure will appear in the following two areas:

1. System Clock Circuitry:
Upon bringing up the system from power on, the system may appear to be completely dead. Also, if you should get as far as the password prompt, keyed characters will not be displayed of course but as more and more characters are keyed in (around 15 or so) all the characters keyed so far will suddenly display as a block. The system will then go into lock-up condition.

2. System Display Errors:
These may show up as: Displaying a different character than the one keyed; dropping characters, or most commonly; recognizing in duplicate the last character keyed.

*** THIS PROBLEM HAS BEEN RESOLVED ON ALL MOTHERBOARDS AT REV. 10 AND ABOVE.

SOLUTION: Physically inspect the manufacturer type code on the I/O pal at location **19E** on the motherboard. Yes, it will be necessary to remove the disk module base plate assembly first. If you are experiencing problems as described above you will most likely find a pal with the manufacturers code of **AMD** installed. After peeling back the sticky label on top of the chips, reference the diagrams below for a facsimile of what the logos look like. Order and replace this pal with one made by **MMI**, part number **1000226-01.** When ordering, don't forget to specify **MMI I/O pal** as the description of the part.

MMI

AMPAL

FORTUNE SYSTEMS CORP.
101 TWIN DOLPHINS DRIVE
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AUTHOR Bruce Castle 9/1/83
FLD.ENG.
APPROVED [illegible] 9/1/83
HDW.ENG.
APPROVED [illegible] 9/2/83
SFT.ENG.
APPROVED N/A /__/__

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0028

PROBLEM: Fortune is now shipping the 30 megabyte disk only expansion chassis. This cabinet has only been tested with the 30 megabyte device. It is possible to add other disks or move the 30 to the CPU, but these configurations have not been tested. In light of this, any changes made to Fortune products that are not in the form of kits from Fortune will **not** be supported by the 800 numbers or be covered under Fortune Maintenance Agreements. Examples of changes are as follows:

A. Additional hard disk added to the expansion chassis.
B. Hard disks rotated between main chassis and expansion chassis.
C. Additional equipment added to expansion chassis.
D. Non-Fortune cables used between main chassis and expansion chassis.
E. Or any other non-Fortune supplied upgrade

SOLUTION:

FORTUNE SYSTEMS CORP.
1101 TWIN DOLPHINS DRIVE
REDWOOD CITY, CA 94065

AUTHOR Howard W. Saunter 1/9/84
FLD.ENG.
APPROVED [signature] 1/11/84
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APPROVED C. Eberle 1/19/84
SFT.ENG.
APPROVED [signature illegible] 1/__/__

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0029

PROBLEM: The Fortune 30 megabyte disk only expansion chassis has the disk in the expansion chassis addressed as drive 1. To run the hdtest diagnostic on this drive the following should be done:

A. Load diagnostic
B. Change the drive type to J30
C. Press Execute
D. Type in **init <Return>**
E. Change the unit number from **0** to **1**
F. Press Execute
G. Run test as you would on drive **0**

SOLUTION:

FORTUNE SYSTEMS CORP.
101 TWIN DOLPHINS DRIVE
REDWOOD CITY, CA 94065

AUTHOR Howard W. Painter 1/9/84
FLD.ENG.
APPROVED Howard W. Painter 1/9/84
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APPROVED [signature] 1/12/84
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APPROVED [signature] 1/12/84

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0030

PROBLEM: The Fortune expansion chassis power supply outputs three voltages.

+5 and +12 for disk drives

+5 and +24 for tape drives.

The power supply has three output connectors. Two of these are labeled **disk** and go to disk drives. The third output connector is for future tape expansion and is labeled **Tape.**

NOTE

THE CONNECTOR LABELED TAPE MUST NEVER BE PLUGGED INTO A DISK DRIVE. THE 24 VOLTS WILL DESTROY THE DISK DRIVE.

SOLUTION:

FORTUNE SYSTEMS CORP.
101 TWIN DOLPHINS DRIVE
REDWOOD CITY, CA 94065

AUTHOR Howard W. Painter 1/9/84
FLD.ENG.
APPROVED 1/9/84
HDW.ENG.
APPROVED 1/19/84
SFT.ENG.
APPROVED 1/__/__

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0031

PROBLEM: Verification of Serial Pal.

SOLUTION: There are currently two ways to know if a serial pal is failing.

1. Hardware error #26 indicates a bad serial pal.

2. After the system boots up, enter as root and do a **mid** command. A successful print out of the system serial number and the common group ID indicates that the serial pal is good.

FORTUNE SYSTEMS CORP.
101 TWIN DOLPHINS DRIVE
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AUTHOR ____________

FLD.ENG. APPROVED ____________

HDW.ENG. APPROVED ____________

SFT.ENG. APPROVED ____________

SERVICE NOTICE

NUMBER 0032

PROBLEM: Spare motherboards/software replacement.

SOLUTION: All spare motherboards currently being shipped from Fortune are now manufactured in a way which does not require new software to be loaded after a motherboard replacement.

These motherboards are identified by a tag located between the option slots labeled:

APLC. SFWR
REISSUE
NOT
REQUIRED

FORTUNE SYSTEMS CORP.
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AUTHOR Howard W. Painter 1/10/84
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APPROVED Q. Wall 1/18/84
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APPROVED R. Smith 1/19/84

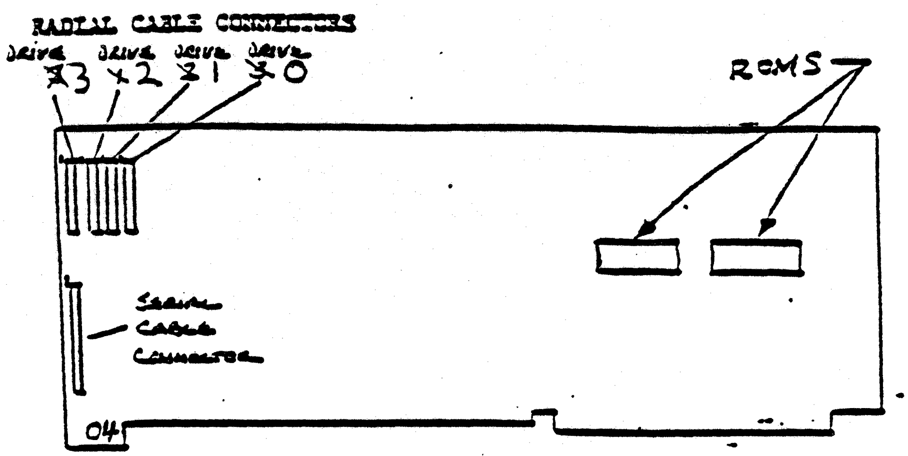
FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0033

PROBLEM: All expansion cabinets have to be connected to a 1000079-04 hard disk controller. The hard disk controller shipped with the expansion cabinet is a 1000079-04. Notice that the drive radial cable connectors have been changed. Drive 0 is now the right radial connector and drive 3 is the left radial connector. The new hard disk controller can be identified by an '04' stamped as shown. Also, there is a daughter board located in the lower left corner.

SOLUTION:



FORTUNE SYSTEMS CORP.
101 TWIN DOLPHINS DRIVE
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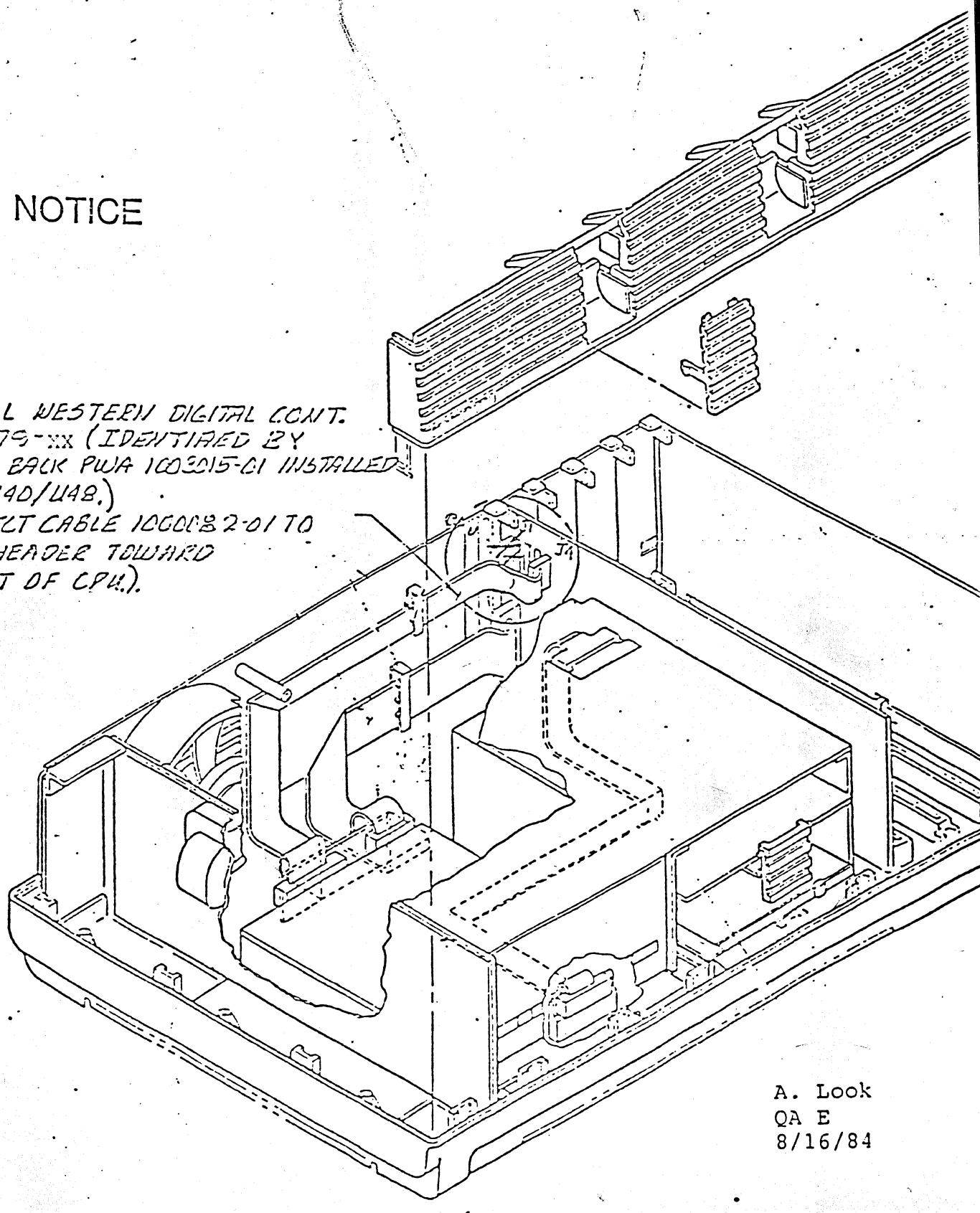
AUTHOR 1/18/84
FLD.ENG. APPROVED __/__/__
HDW.ENG. APPROVED 1/19/84
SFT.ENG. APPROVED 1/19/84

IMPORTANT

NOTICE

1. INSTALL WESTERN DIGITAL CONT. 1000079-XX (IDENTIFIED BY PIGGY BACK PWA 1003015-01 INSTALLED AT U140/U48.)
2. CONNECT CABLE 1000082-01 TO J4 (HEADER TOWARD FRONT OF CPU.).



A. Look
QA E
8/16/84

IMPORTANT

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0034

PROBLEM: A document called **CPU UPGRADE INSTRUCTIONS** is shipped with each expansion cabinet. Here is a general summary of the CPU upgrade.

SOLUTION: The 220/330 ohm terminator on the internal disk drive (drive 0) is replaced with a 1000 ohm pull up resistor. This supplies light termination inside the CPU cabinet. The expansion cabinet disk drive (drive 1) is terminated with the normal 220/330 ohm terminator.

A new WD controller (1000079-04) is installed. Notice that the radial (data) cable connectors have been reversed. This WD controller has a daughter board installed that controls the interface lines during power up/down conditions.

Use the existing radial cable to go to drive 0.

Two external plug-in cables are connected between the hard disk controller in the CPU cabinet and the expansion cabinet. Make sure that you plug these two cables into the correct connector. They are keyed so they will not go in upside down. The cable connectors have a blue line on them that is a seating guide. When this blue line is flush against the cabinet it is seated properly.

Power up to expansion cabinet first or within 15 seconds of powering up the CPU cabinet.

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APPROVED Carl Thurk 1/20/84
SFT.ENG.
APPROVED [illegible] 1/20/84

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0035

PROBLEM: Initial warm up before formatting.

SOLUTION: Field Engineering advises that the disk back up drive in the expansion cabinet be warmed up for 30 minutes before formatting. This will ensure the best performance over all temperature ranges.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0036

PROBLEM: The 30 megabyte drives in the expansion cabinet are leaving the factory with a single user 30 megabyte configuration block and no file systems. If you are going to use the expansion cabinet for additional storage you need to do the following.

SOLUTION: Install expansion cabinet and run diagnostics (hdtest) successfully.

Login as **root.**

At the prompt (#) enter; **mkconf -S 0 /dev/hd10 <Return>**

At the prompt (#) enter; **mkfs -a /dev/hd12 <Return>**

sync <Return>

sync <Return>

Enter; **bye <Return>** to return to the login prompt.

Partition 1 has been removed and its space added to that of partition 2.

You have made a file system for partition 2 and can use partition 2 for additional storage. Just mount it to directory h.

AUTHOR [signature] 1/18/84
FLD.ENG. APPROVED [signature] 1/20/84
HDW.ENG. APPROVED [signature] 1/20/84
SFT.ENG. APPROVED [signature] 1/20/84

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REDWOOD CITY, CA 94065

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0037

PROBLEM: Fortune Systems is now shipping a power supply manufactured by Western Electric under the part number 1001851-01.

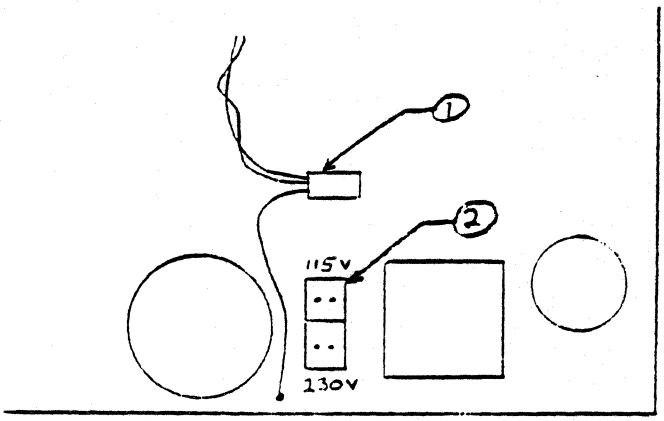
SOLUTION:

1. The WE power supply can be identified by the one and zero printed on the on/off switch at the rear of the CPU.

2. The WE power supply is not currently exchangeable for the Zenith power supply. Therefore, if a WE power supply should fail, it must be replaced by a WE power supply. If a Zenith power supply fails, it must be replaced with a Zenith power supply until interchangeability issues between supplies can be resolved.

3. As with any high power device, care must be taken when handling the power supply. Holding the supply by the heat syncs, transformers, capacitors, or wires may cause failures, or an increased failure rate.

4. Select 110 or 230 VAC operation by moving the jumper plug as indicated on the drawing below. 110 VAC in the upper position, 230 VAC in the lower position.



Front of CPU

FORTUNE SYSTEMS CORP.
101 TWIN DOLPHINS DRIVE
REDWOOD CITY, CA 94065

AUTHOR _____ 1/23/84
FLD.ENG.
APPROVED _____ 1/23/84
HDW.ENG.
APPROVED Tom Meyer 1/24/84
SFT.ENG.
APPROVED _____ /___/___

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0038

PROBLEM: Erratic system operation or excessive system errors. Intermittent power failure messages.

SOLUTION: Missing earth ground or improperly wired ac power receptacles have been found to cause the above symptoms. Any suspected power line problems should be referred to a qualified electrical contractor for evaluation or repair. Missing or improperly provided earth ground (i.e.),tied to conduit) will degrade system reliability by making the system more susceptible to Radio Frequency Interference (RFI), Electro Static Discharge (ESD) damage, and Electro Magnetic Interference (EMI) from the power line.

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AUTHOR _____ 1/23/84

FLD.ENG.
APPROVED _____ 1/23/__

HDW.ENG.
APPROVED _____ 1/24/84

SFT.ENG.
APPROVED _____ 1/__/__

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0039

PROBLEM: The Western Electric power supply can now be used to replace a Zenith power supply. A Zenith power supply is not exchangeable for a Western Electric power supply.

SOLUTION: To install a Western Electric power supply in a 32:16, XP or PS system to a Western Electric Power Supply the following sequence is recommended.

1. Remove old power supply.

2. Remove 1001612-01 or 02 capacitor from disk drive assembly as this parts is not needed with the Western Electric supply.

3. If 230 V operation is required, configure supply as shown in figure 3 and attach the required label as shown in figure 2. Make sure that the plug (Figure 3 ref 1) is pressed down firmly in place as the power supply is selected for 230 V operation if the plug is not plugged in all the way.

4. If not already installed, attach copper contacts as shown in figure 1.

5. Install new power supply, reconnect cables.

6. Invert the CPU top cover, and install insulator as shown in figure 4.

7. Reassemble CPU and run diagnostics as required.

FORTUNE SYSTEMS CORP.
101 TWIN DOLPHINS DRIVE
REDWOOD CITY, CA 94065

AUTHOR [signature] 2/10/84
FLD.ENG.
APPROVED [signature] 2/10/84
HDW.ENG.
APPROVED [signature] 2/10/84
SFT.ENG.
APPROVED _____ / /

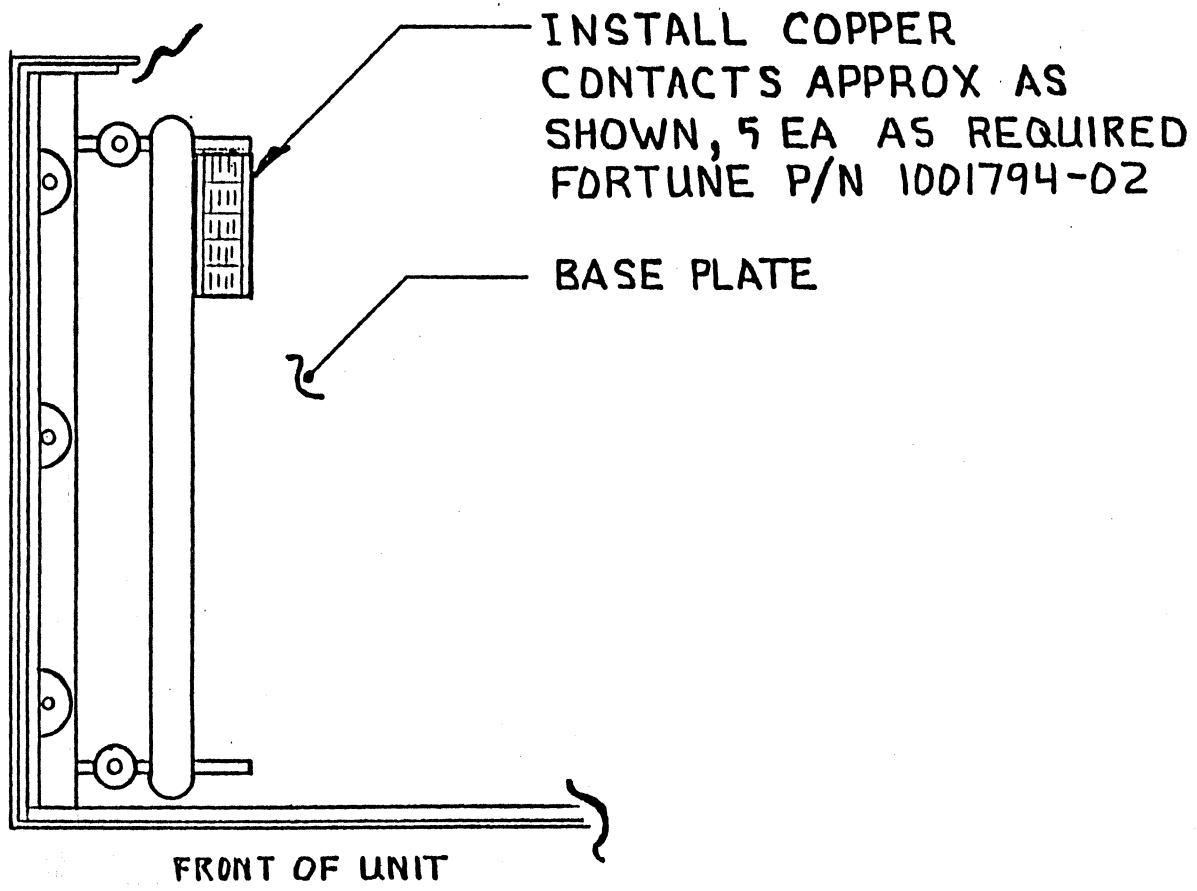
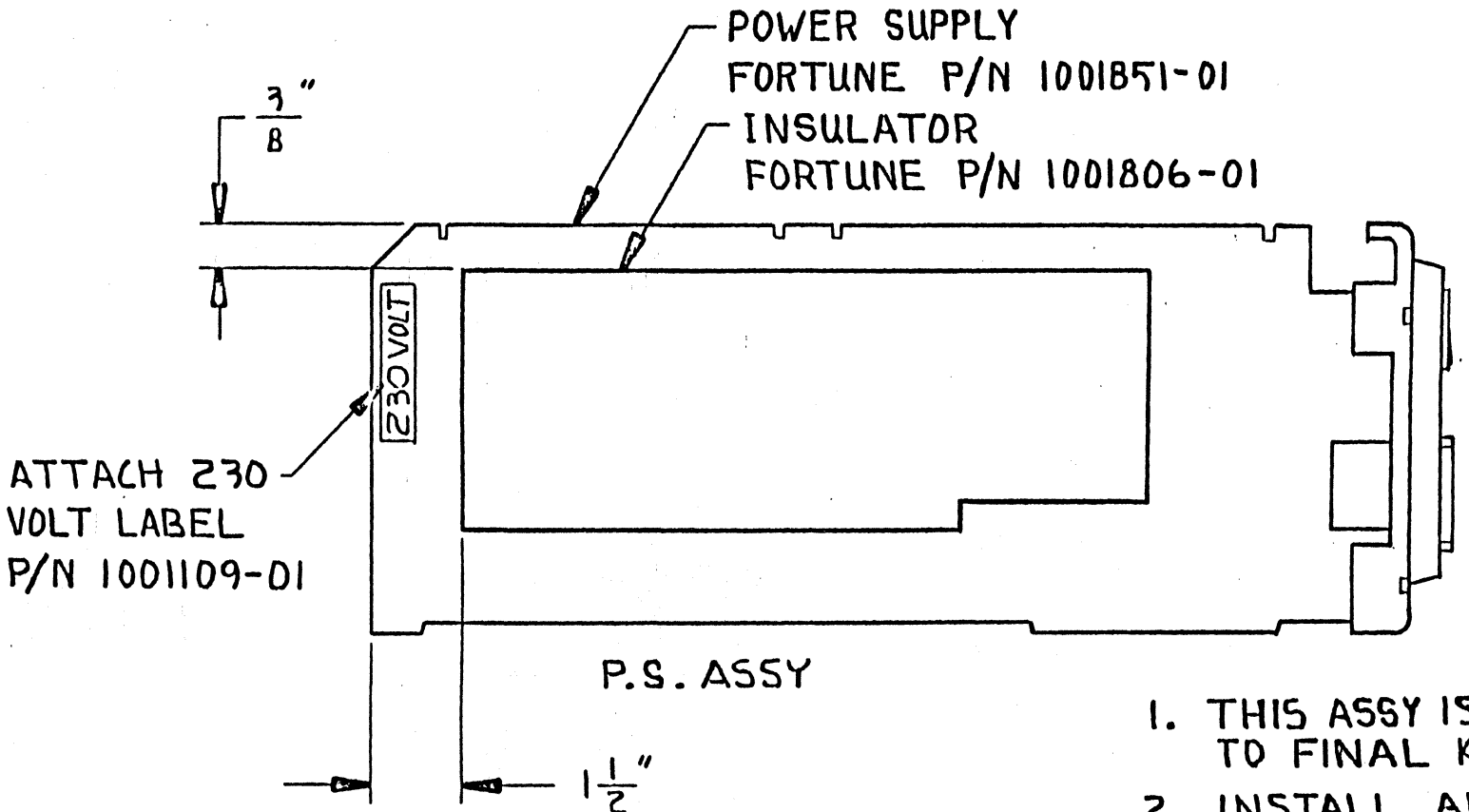

INSTALL COPPER
CONTACTS APPROX AS
SHOWN, 5 EA AS REQUIRED
FORTUNE P/N 1001794-02
BASE PLATE
FRONT OF UNIT

FIGURE 1

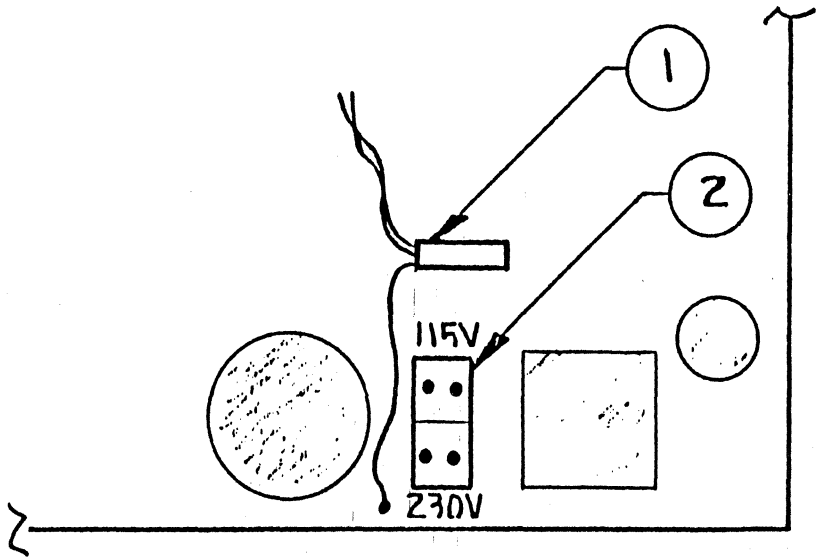


1. THIS ASSY IS MADE PRIOR TO FINAL KIT PACKAGING.
2. INSTALL APPROX AS. SHOWN.

1003093-0
SH3

FIGURE 2

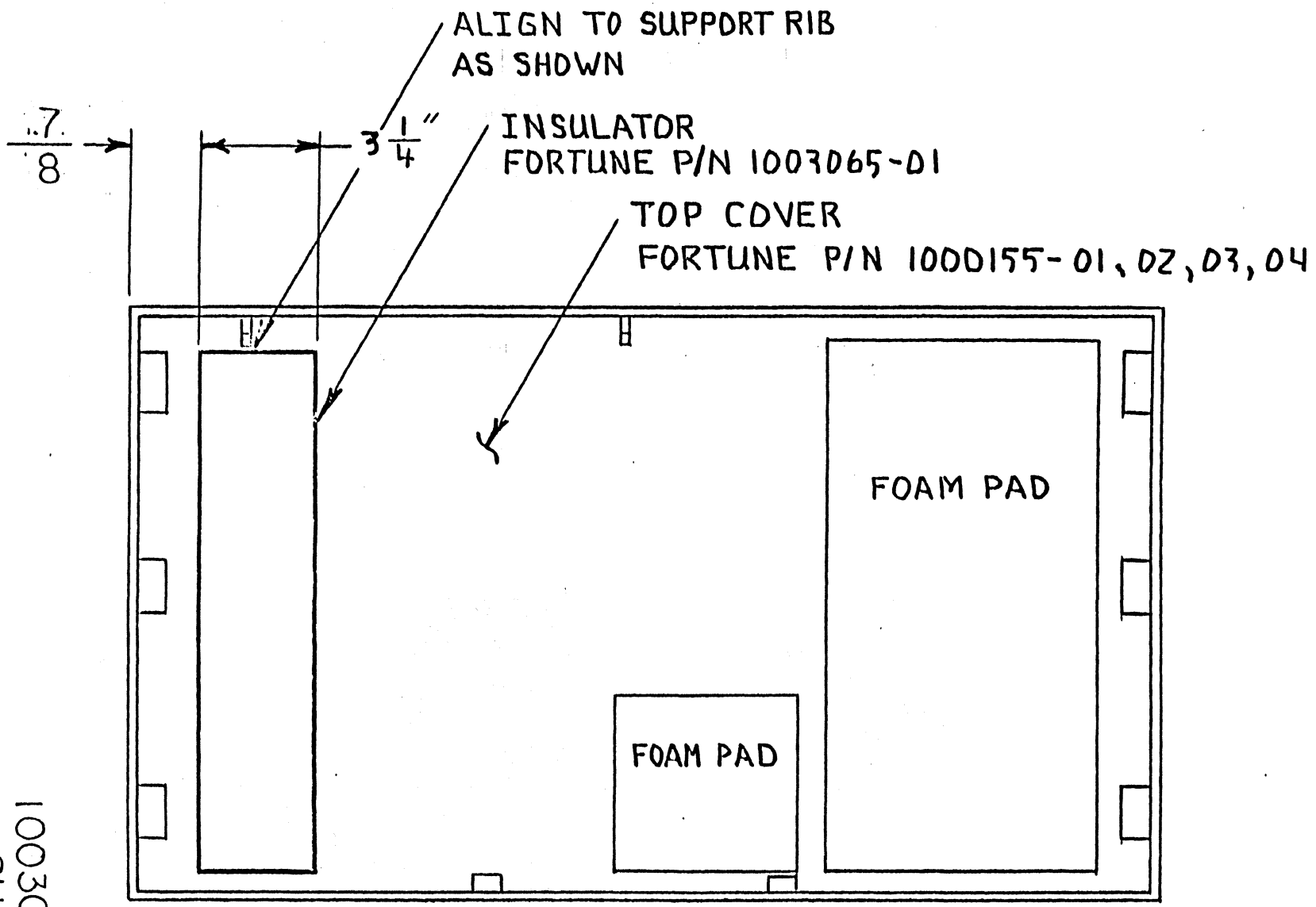
POWER SUPPLY INSULATOR ASSY CHASSIS SIDE SHOWN



(1) VOLTAGE SELECT PLUG.

(2) 115/230 VOLTAGE SELECT POSITION, INSERT PLUG IN TO LOWER POSITION TO CONNECT TO 230V.

FIGURE 3



1003093-01
SH 5

FIGURE 4

TOP COVER INSULATOR ASSY

WIRE HARNESS MUST BE SPREAD OUT THIN IN AREA ① SO AS NOT TO INTERFERE WITH FAN MOUNTS.

WIRE MUST REMAIN BELOW TAB ② SO THAT WIRES DO NOT BECOME PINCHED BY COVER.

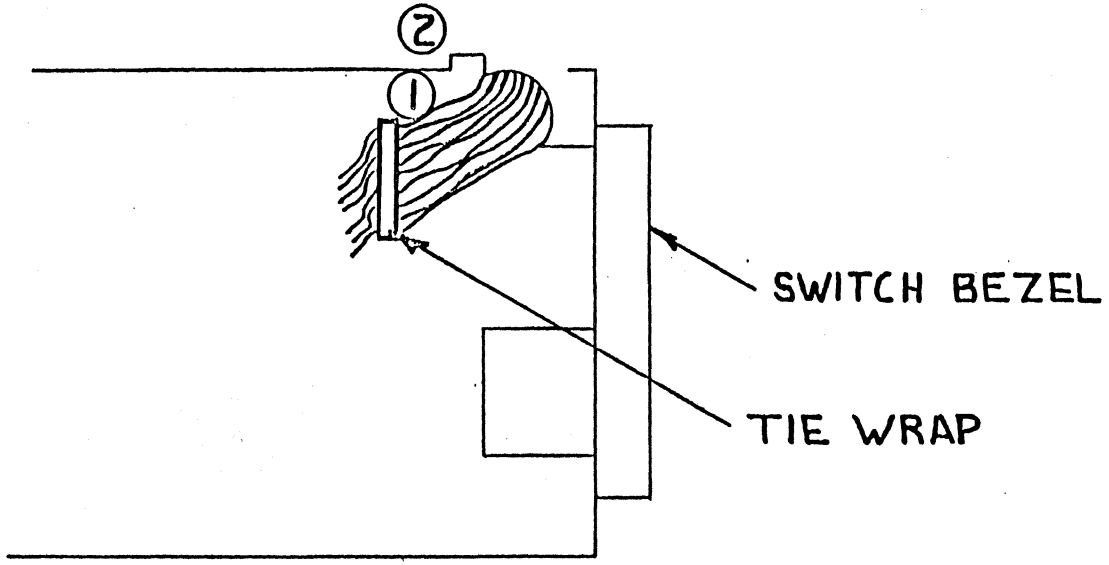


FIGURE 5

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0040

PROBLEM: Changes to Service Notice 0023A when using with For:Pro 1.7 Operating System.

SOLUTION: Always do a mkconf -U * /dev/hd00 <Return> where * is the number of users. 1.7 defaults the configuration block to a zero user system so even for a one user system you have to do this command.

lways rebuild the boot program after rebuilding the configuration olock. 1.7 defaults the conf. block to zero boot devices so you have to add boot information to the conf. block.

FORTUNE SYSTEMS CORP.
.01 TWIN DOLPHINS DRIVE
EDWOOD CITY, CA 94065

AUTHOR Howard W. Smith 4/9/84
FLD.ENG. APPROVED [signature] 4/9/84
HDW.ENG. APPROVED Pradip Morzaria 4/17/84
SFT.ENG. APPROVED [signature] 4/20/84

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0041

PROBLEM: Field Engineering recommends that a B9 or higher level WD Controller be used as a spare replacement in 20meg and XP systems. Don't put a lower level WD Controller in these higher performance disk drives.

SOLUTION:

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APPROVED Pradip Thakore 4/17/84
SFT.ENG.
APPROVED N/A /__/__

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0042

PROBLEM: Intermittent hard disk drive errors.

SOLUTION: Disconnect all cables, both power and signal, going to both drives. Measure (ohms) between disk drive shields and conformal coating in base of CPU cabinet. (Conformal coating is that black coating on the inside of the cabinet.) You should measure an open between these two points. If you have a short either the hard disk shield is shorting to the power supply or the front lip of the disk mounting chassis is shorting to the conformal coating. To fix put an insulator between the shield and the power supply or put electrical tape on the lip of the disk mounting chassis. Make sure that the 20 meg hard drive small shield has an insulator on top of it so that the top cover conformal coating does not short out to the shield when the top cover is installed.

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HDW.ENG.
APPROVED [signature] 4/17/84
SFT.ENG.
APPROVED N/A 1/1

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0043

PROBLEM: When servicing a 32:16/XP 32:16 that has an expansion cabinet installed, make sure that any new hard drive that you put in the CPU cabinet has a 1K ohm pull up resistor installed in place of the 220/330 ohm terminator. You will have to take the pull up resistor out of the old drive and put it in the new drive.

Remember, when troubleshooting an expanded system, that the CPU cabinet will run Diagnostics without the expansion cabinet installed.

SOLUTION:

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0044

PROBLEM: As of 4/2/84 the hard disk controller used with the expansion cabinet is going through a more intensive check out procedure. Field Engineering thinks this will resolve the current problem with expansion cabinet installation.

SOLUTION: On hard disk controllers shipped before this date check all cabling before attempting to install. Take off the I/O adapter (on back of hard disk controller) and make sure the data cables are plugged correctly at both ends. Make sure the control cable is plugged correctly at both ends. Make sure the piggyback board in the lower left corner is seated properly.

If you have problems with the system after installing the expansion cabinet and it looks like the hard disk controller is the problem call our 800 support number for a replacement.

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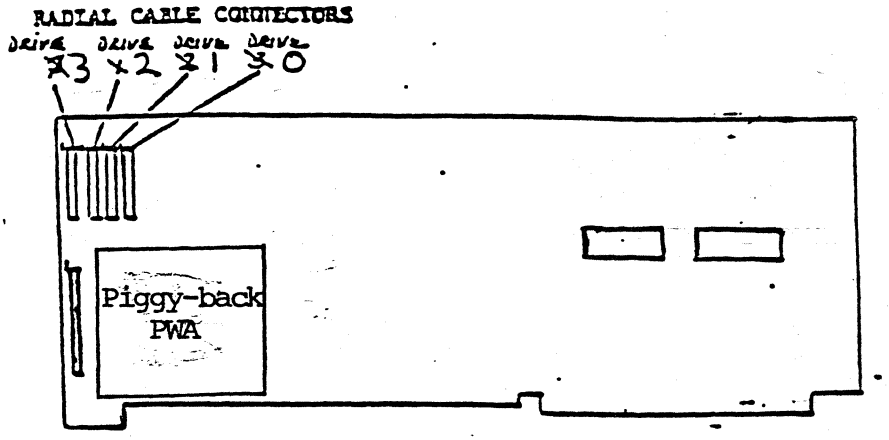
FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0045

PROBLEM: Effective 4/16/84 all computers being built by Fortune Systems Corporation will have a 1000079-04 hard disk controller installed. All repair and return 1000079-01 hard disk controllers will be replaced by/or upgraded to 1000079-04 hard disk controllers. The 1000079-04 hard disk controller has the radial (data) cables connectors reversed and a piggy-back PWA has been installed. The piggy-back PWA enables the hard disk controller to be used with multiple drive systems.

SOLUTION:



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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0046

PROBLEM: The first release of the tape streamer software does not automatically have the capability of full system restore. When a full system backup is done, four files and one directory have to be saved on floppy disk. Below are the files and directory that have to be saved.

/m/menu	Directory
/etc/fstab	File
/etc/devtype	File
/etc/passwd	File
/etc/group	File

Now let's explain why these have to be saved. When files are pulled off the streamer tape, they are only restored to the hard disk if they do not exist on the hard disk. So, when we have to cold boot the system, the above files are put on the hard disk from the cold boot set. When we restore the system from streamer tape, these files are not updated.

SOLUTION:

Backing Up

Login as Manager. Backup the full system by selecting:

S6	on the Global menu
T	on the Additional Choices menu
Backup	on the Tape Streamer Utilities menu
Create	on the Backup menu,
No Query	on the Backup Confirmation menu

Assign a backup set name of root and use / for files and/or directories to be backed up.

Now, let's go through how to create a Tape Restore floppy disk. Insert a blank floppy disk in the floppy disk drive. Use the Menu System to format the floppy disk. From the Global menu:

S1	for System Utilities
32	to format a blank floppy disk

After the floppy disk is formatted, go back to the log-in message and log-in as root. At the unix prompt (#), type in:

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```
mount /dev/fd02 /f <RET>
cp -roust /m/menu /f <RET>
cp /etc/fstab /f <RET>
cp /etc/devtype /f <RET>
cp /etc/passwd /f <RET>
cp /etc/group /f <RET>
umount /dev/fd02 <RET>
bye <RET>
```

You now have a Tape Restore floppy disk. Label it and save it with your streamer tape.

Restoring

When for some reason you have to do a full system restore, you have to:

1. Cold boot the system

2. Install the multi-user software, if applicable

3. Install the tape streamer software

4. Do a full system restore by selecting:

   S6 on the Global menu
   T on the Additional Choices menu
   Restore on the Tape Streamer Utilities menu
   No Query on the Restore Confirmation menu

   Remember the backup set name is root.

   At the Files and/or Directories to be Restored Question, enter: **/ <RET>**.

5. When the Tape Restore is complete, insert the Tape Restore floppy disk that was made at backup time.

6. Go back and log-in as root. At the unix prompt (#), enter:

```
mount /dev/fd02 /f <RET>
cp -roust /f/menu /m <RET>
cp /f/fstab /etc <RET>
cp /f/devtype /etc <RET>
cp /f/passwd /etc <RET>
cp /f/group /etc <RET>
umount /dev/fd02 <RET>
bye <RET>
```

Your systemm is now restored. Do a shutdown and bring the system back up to re-initialize.

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0047

PROBLEM: Power Supply and Disk Drive Identification

SOLUTION:

Power Supplies:

Fortune Systems Corporation has used three (3) power supplies since it began shipment of 32:16's in August, 1982.

The first was a 22 amp supply (1000050-01 or 02). The Zenith part number (OE-A-00012 is located on the back of the supply. It can be further identified by the absence of a small coil on the power supply electronics board. See figure 1.0 for details.

The second was a 28 amp supply (1000050-03 or 04) also manufactured for Fortune by Zenith. The Zenith part number (OE-A-00012-01) is located on the back of the supply. It can be further identified by the presence of a small coil on the power supply electronics board. See figure 1.0 for detail.

The third is a 32 amp supply (1001851-01 or 02) manufactured for Fortune by Western Electric.

This supply can be recognized by a perforated shield along the top of the power supply.

Disk Drives:
The easiest way to find which type hard disk drive is installed in the system is to read the system configuration sticker on the back of the 32:16.

J30-CDC 30 Meg
J20-CDC 20 Meg
C20-Rodime or Ampex 20 Meg
I20-Distron 20 Meg
B10-Miniscribe 10 Meg
A10-Seagate 10 Meg
Z05-Seagate 5 Meg

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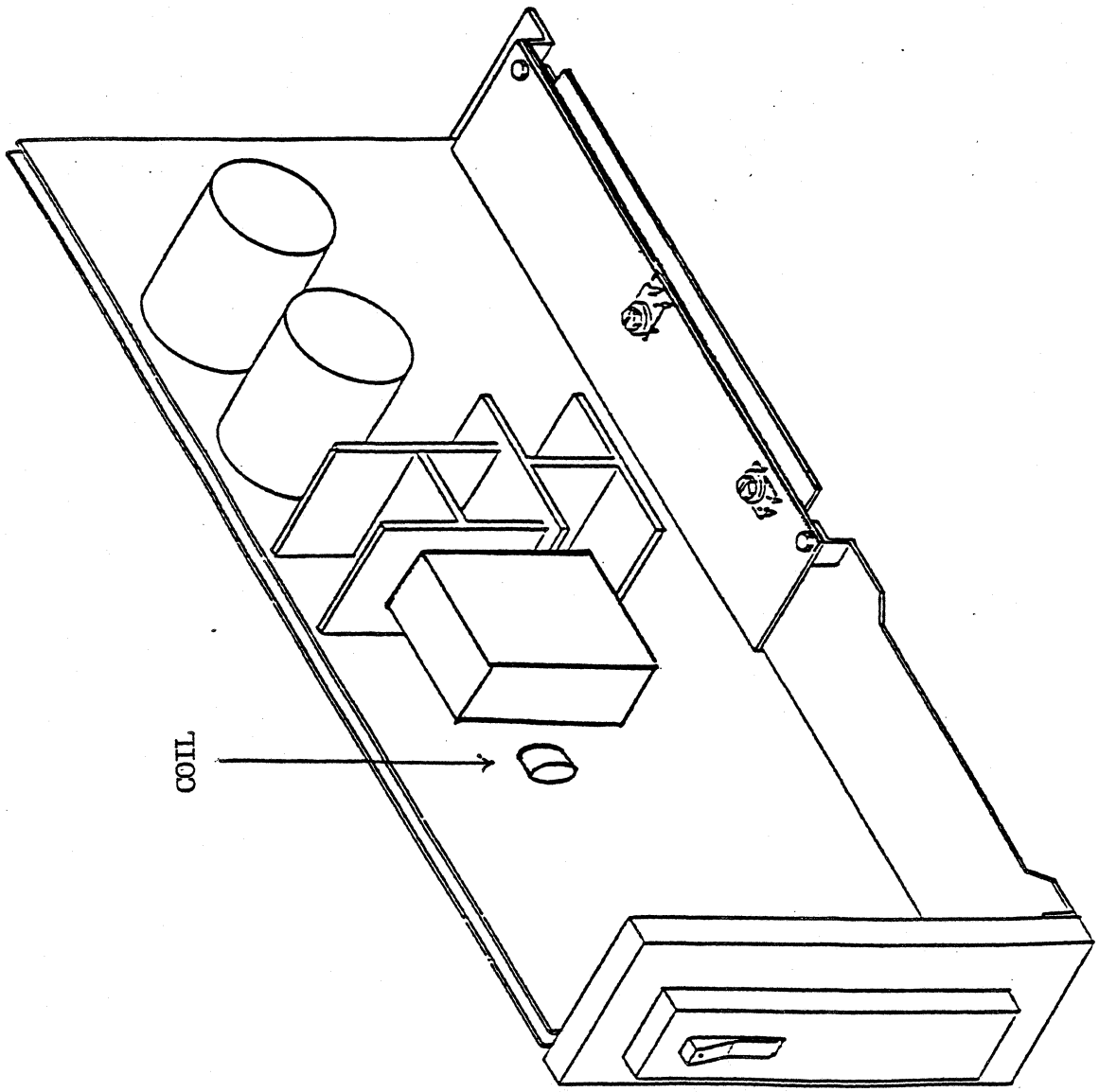

FIGURE 1.0

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0048

PROBLEM:

Now it is possible to have a system with 3 disk drives. The original disk drive in the CPU cabinet plus two 30 meg disk drives in the expansion cabinet. This service notice will try to explain their addressing and termination.

The drive in the CPU cabinet is addressed as Drive 0. It has a one K ohm pull up resistor for termination.

The left drive in the expansion cabinet is addressed as Drive 1. It has the 220/330 ohm terminator.

The right drive in the expansion cabinet is addressed as Drive 2. It has no termination.

SOLUTION:

When one of these drives has to be replaced, it is very important that the address and termination be checked and that the replacement drive be set up accordingly.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0049

PROBLEM: Incompatibility when interchanging different FIS 1000 motherboards and bases.

SOLUTION: It is now possible to order the following two items from Customer Service.

1.	Keyboard harness (long)	1000048-01
2.	FIS 1000 Installment kit	1003108-01

The FIS 1000 installation kit consists of the following items:

1.	2 ea. screws 6-32 X 11/16	1000303-05
2.	2 ea. lock washers #6	1000411-01
3.	2 ea. Hex nuts 6-32	1001094-01
4.	2 ea. piece of electrical tape 3 inches long.	

The FIS 1000 installation kit will go out with all spare motherboards. The keyboard harness will go out with spare 1000100-XX motherboards. If you need either the keyboard harness or FIS 1000 installation kit for existing spares, order them through Customer Service.

Use the following pages for reference when installing FIS 1000 motherboards.

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The original version of the FIS 1000 (manufactured between May and September of 1982) had a metal base. The power supply was mounted on the motherboard 1000100-XX (which had no standoffs) with four plastic fasteners. There is no way to screw the power supply to the base. There are very few, if any, 1000100-XX motherboards (without standoffs) as spares. This document will only cover motherboards with standoffs embedded into the motherboard.

The second version of the FIS 1000 had a metal base. The power supply was mounted on the motherboard 1000100-XX (which had standoffs) with two screws and two plastic fasteners. The two screws screwed into the base of the FIS 1000.

The third version of the FIS 1000 is the one we are manufacturing today. It has a plastic base. It was either a 1000100-XX or a 1001246-XX motherboard and the power supply is mounted to the motherboard with two screws and two plastic fasteners. The two screws screw into the base of the FIS 1000.

This document is designed to allow interchangeability between the last two versions. It is designed in parts, so go to the part that applies to your particular need.

Part 1 - 1001246-XX motherboard into original metal base.
Part 2 - 1000100-XX motherboard with standoffs into original metal base.
Part 3 - 1001246-XX motherboard into second version of metal base.
Part 4 - 1000100-XX motherboard with standoffs into plastic base.

Part 1 A. If a spare 1001246-XX motherboard is installed into the oldest metal base there is no way to screw the power supply to the base and on a few motherboards the mounting holes closest to the keyboard connector may not line up.

B. Use the screws, lock washers and nuts supplied with the kit plus two plastic fasteners from the old motherboard to secure the power supply the the motherboard. Fasten the power supply to the motherboard before mounting into the base. Put the nuts and lock washers on the power supply side of the motherboard.

C. If the mounting hole nearest the keyboard connector does not line up with the base, tape the ground strap so it does not short out. Tape the unused screw to the inside of the base.

Part 2 A. If a spare 1000100-XX motherboard with standoffs is installed into the oldest metal base there is no way to screw the power supply to the base.

Use paragraph B of Part 1 to resolve.

Part 3 A. If a spare 1001246-XX motherboard is installed into the second version of the metal base on a few motherboards the mounting hole nearest the keyboard connector may not line up.

Use Paragraph C of Part 1 to resolve.

Part 4 A. If a 1000100-XX with standoffs is mounted into a plastic base the keyboard harness may be too short and the mounting hole nearest the keyboard connector may not line up.

B. If the keyboard connector harness is too short replace with 1000048-01.

C. If the mounting hole closest to the keyboard connect does not line up, tape the ground strap so it does not short out. Tape the unused screw to the inside of the base.

FORTUNE SYSTEMS CORP.

SERVICE NOTICE

NUMBER 0050

PROBLEM: Fortune Systems Corp. Field Engineering Department will not automatically send out streamer tape diagnostics. If you are going to sell and maintain streamer tape expansion cabinets, please call Field Engineering at (415) 593-9000, Ext. 426 and we will send you a diagnostic floppy and instructions.

SOLUTION: The streamer tape is connected to the main system through A PIO board. Always run the PIO diagnostic first if you suspect streamer tape problems.

The PIO diagnostic is on your diagnostic floppy (1000834-03 Release 3.1) under the name fd02/pio. It runs exactly like the comb diagnostic. When the diagnostic menu appears, type: **a*** **<RET>** (where * is the slot where the PIO is installed; type: **g <RET>** and the diagnostic will run to completion. Type: **q <RET>** to exit to the boot prompt.

After the PIO diagnostic has run successfully, there is an alternate way to test the streamer tape without streamer tape diagnostics.

Testing Procedure

Insert a blank streamer tape cartridge into the streamer tape. Login as Manager. Run test by selecting:

S6 on the Global Menu
T on the Additional Choices Menu
Backup on the Tape Streamer Utilities Menu
Create on the Backup Menu
No Query on the Backup Confirmation Menu

Assign a backup set name of diag and use /etc/fsck for files and/or directories to be backed up.

After the file /etc/fsck is written to tape, respond to the prompt with <RET>. See if you can read the file /etc/fsck from tape by selecting:

List from the Tape Streamer Utilities Menu
All from the List Menu

The streamer tape will now read the tape and display the /etc/fsck header.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0051

PROBLEM: It has been determined that there is a possibility of the left/front boss (post) on the top cover shorting to a trace on the front of the Western Electric power supply.

SOLUTION: Remove the top cover. Scrape all of the conformal coating off of this boss (post) (Conformal coating is that dark gray coating sprayed on the inside of the cabinet.) Re-install top cover.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0052

PROBLEM: The streamer tape drive, Fortune Part Number 1001755-01 (consisting of the drive and the upper and lower PWA), is a complete assembly. The drive and the two formatter boards must stay together as one assembly.

SOLUTION: When you have determined the drive is bad, remove the two formatter boards as a unit by removing the four screws securing them to the mounting brackets. You will have to unsnap the plastic catches that hold the two boards together and raise the top board so you can unscrew the left/rear mounting screw.

Remove and save the signal cable (1001797-01) between the formatter boards and the drive. (When re-installing, disregard the <u>This Side Up</u> designation. Early cables were labeled wrong.)

Remove the four screws securing the tape drive to the base of the cabinet.

Send the drive and the two formatter boards to Fortune for repair.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0053

PROBLEM: When you order a Western Electric Power Supply (Part Number 1001851-01), you only get the power supply.

SOLUTION: If you order the Western Electric Power Supply Upgrade Kit (Part Number 1003177-01), you get the power supply plus all of the pieces you need for replacing a Zenith Power Supply with a Western Electric Power Supply.

The Kit consists of:

1. #1001851-01 Power Supply
2. #1001806-01 Insulator
3. #1003065-01 Insulator
4. #1001794-02 RFI/EMI Shielding Gasket
5. #1001109-01 Label

See Service Notice #0039 for installation instructions

See Service Notice #0051 for additional instructions

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0054

PROBLEM: New location of serial pal.

SOLUTION: On the new XP Motherboard Part Number 1001177-01 and the new PS Motherboard Part Number 1001177-02 the location of the serial pal has been changed to 14A.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0055

PROBLEM: The Streamer Tape Subsystem will not function properly when Hard Disk Drive #1 is used as the main system drive. The Streamer Tape Subsystem was designed to use Hard Disk Drive #0 as the main system drive.

SOLUTION: Future revisions of the streamer tape software may allow Drive #1 to be used as the main system drive.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0056

PROBLEM: Problem encountered when removing a CommA and replacing with a PIO for streamer tape operation.

SOLUTION: If you remove a CommA and replace it with a PIO, remove the device connections for that CommA card.

The device connections for the CommA cards are as follows:

CommA in Slot B - TTY02-TTY05
CommA in Slot C - TTY06-TTY09
CommA in Slot D - TTY10-TTY13

Use the menu system. **S2** for system management. **39** for device connections. Select the device connection you are removing. **8** to remove.

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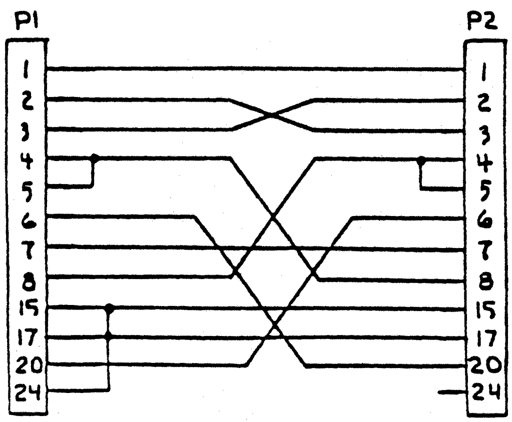
FORTUNE SYSTEMS CORP

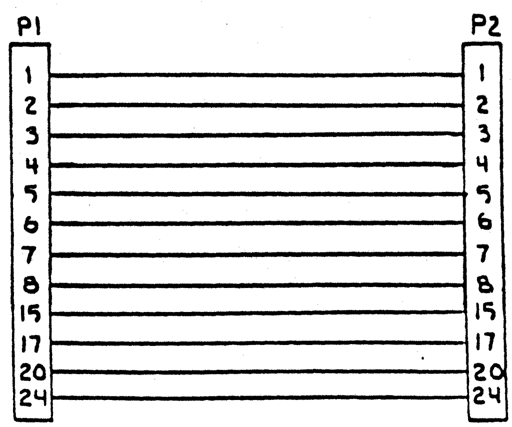
SERVICE NOTICE

NUMBER 0057

PROBLEM: CommB (intelligent communication) controller cables.

SOLUTION: Below are the part numbers and pin configurations of the CommB cables.





1000633-13	6 Ft.	Female to Female
1000633-14	6 Ft.	Female to Male
1000633-15	10 Ft.	Female to Male
1000633-16	20 Ft.	Female to Male
1000633-17	50 Ft.	Female to Male

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0059

PROBLEM: Beginning with the August, 1984 build, Fortune Systems Corporation will ship a 1K Pullup Resistor installed in the hard disk drive in the CPU cabinet (Drive #0) and in all spare hard disk drives.

The left drive in the expansion cabinet (Drive #1) will still use the 220/330 ohm terminator.

SOLUTION: The part number of the 1K Pullup Resistor is 1001725-02 for the DIP type and 1000352-07 for the SIP type.

-NOTE-

SIP - Single Inline Package
DIP - Dual Inline Package

You can replace a drive in the CPU that has a 220/330 terminator with a spare drive that has a 1K Pullup resistor without a problem. The hard disk controller works equally well with either type termination in systems without disk expansion cabinets. In systems with disk expansion cabinets, a 220/330 ohm terminator will still have to be used in Drive #1.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0058

PROBLEM: Fortune System Corporation will phase in a new CPU cabinet during the month of August, 1984. This cabinet is 3/4 of an inch wider and 1/2 of an inch higher than the old cabinet.

All components inside this cabinet will stay the same, except for hard disk drive termination. (see Service Notice #59)

SOLUTION: The cabinet itself has the following changes that you should be aware of:

1. Two additional screws hold the top cover on. They are located at the back of the cabinet. They come up through the back panel and screw into the top cover.

2. The top screw on the hard disk controller screws into the back panel, not into the top cover.

3. The front panel no longer is secured with clamps. It rotates and snaps into the base.

4. The memory cards are held in by a bracket that screws to the back panel.

5. The fan A/C power connection is at the top instead of at the bottom of the fan.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0060

PROBLEM: Grinding Interrupt #5

SOLUTION: This error message is usually caused by a communication input to the CPU or a problem with one of the CommA cards.

One troubleshooting procedure is to remove the communications cables. If the problem ceases, you will have to find the problem cable by connecting cables one at a time.

If the problem persists with the communication cables removed, one of the CommA cards is probably bad. Remove one at a time until problem ceases.

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SERVICE NOTICE

NUMBER 0061

PROBLEM: The disk mounting chassis in the new CPU cabinet is isolated from the three metal mounting posts with six insulating washers, three on the bottom and three on the top. The left front post does not have to be isolated - it is plastic. The insulating washers on the top may come off when the mounting chassis screws are removed.

SOLUTION: Always make sure that each of the three mounting holes is isolated from its post. If not, soft and hard errors on the hard disk drive may result.

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SERVICE NOTICE

NUMBER 0062

PROBLEM: The Micropolis 45 meg. Hard Disk Drive will only function properly with a 1000079-06 hard disk controller. The 1000079-06 hard disk controller can be recognized by the presence of two piggyback boards on the hard disk controller board. It is also recommended that a Western Electric Power Supply be used with the above drive. The Micropolis 45 meg Hard Disk Drive is shipped with a 1K ohm pullup resistor in place of the 220/330 ohm terminator.

SOLUTION:

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0063

PROBLEM: Fortune Systems Corporation is now shipping half high floppy disk drives. They are completely compatible with the full high floppy disk drive data format. The door open/close switch on the half high floppy disk drive must never be closed unless a floppy disk is installed in the drive. Forcing the door closed without a floppy disk installed will damage the drive.

- NOTICE -

The drive type, in the Maintenance Menu, must be set to Tandon when using half high floppy disk drives.

SOLUTION:

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0064

PROBLEM: The half high floppy drive mounting bracket has two screws, one on each side, that are used to adjust the height of the drive so it will fit through the hole in the front bezel.

SOLUTION: If the height ever has to be adjusted, it can be done from either side using a long Phillips screwdriver. The half high floppy can be removed from its mounting bracket without touching the two adjusting screws so, when it is replaced, no adjustment is necessary.

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APPROVED [illegible] 10/17/84
SFT.ENG.
APPROVED N/A / /

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0065

PROBLEM: The half high floppy disk drive is very quiet and the front panel light is very dim.

SOLUTION: After working with full high floppy disk drives, it may be hard to recognize when the drive is working. Remember that the drive is very quiet. The full high floppy disk drives always had a very dim front panel light when the drive was idle. The half high floppy disk drive front panel use light is no brighter than the full high floppy disk drive idle light. So, remember the words are quiet and dim for half highs.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0066

PROBLEM: There is no entry in hdtest for Micropolis 45 Meg Disk Drives.

SOLUTION: Since there is no drive entry for Micropolis 45 Meg Drives, you can run diagnostics by making your own disk drive entry. To do this, do the following after the diagnostic is loaded.

Select drive type = Other using the right arrow key.
Press the Execute key.
Type in: init <return>.
A menu will appear in the middle of the screen.
Change the menu to reflect the following:

Unit number	= 0	
Step Rate	= 0	
Address	= 0	
Block Count	= 1	
Interleave	= 2	
Blk/Track	= 17	16
Loop Count	= 1	
# of Cyls	= 830	697
# of Heads	= 6	5
WPRECMP Cyl	= 831	698

Press the Execute key
Press the F9 function key
Run diagnostics normally

Remember to check the bad block table in the configuration block before running diagnostics. Disregard all diagnostic error entries for these blocks.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0067

PROBLEM: The eight captive screws that hold the top cover to the new CPU cabinet have been changed.

SOLUTION: These screws are now Phillips instead of slotted and they are longer than the old ones. When removing the cover, turn these screws counter-clockwise until you hear a popping sound. This sound means the screw is loose and you will not have to go back and loosen it some more later.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0068

PROBLEM: The wrong type of tape cartridge is being used with the Fortune Systems Corp. Streamer Tape Drive.

SOLUTION: Fortune Systems Corp. recommends that the only tape cartridge to use with its streamer tape is the Cipher certified tape cartridge sold by us or a Scotch DC300XL (or equivalent) tape cartridge. The two above tape cartridges contain 450 ft. of 1/4 inch wide tape and the magnetic coating on the tape was designed to be used with the streamer tape drive used by Fortune Systems Corp. Tape cartridges with 600 ft. of tape may give unreliable operation because of differences in magnetic coating.

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APPROVED N/A / /

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0069

PROBLEM: **Genicom 3000 Series printers.**

Genicom printers using Diablo emulation must have Printer Control Strap A, bit 15 set (to 1), to ensure proper operation.

Printers not having this bit set will not respond correctly to the escape sequences for the chosen emulation mode.

This bit must always be set after a printer initialization as it is not an original factory setting.

SOLUTION: Set Printer Control Strap A, bit 15. See the sample configuration below. Refer to the Genicom manuals for more information.

1. Font:
   Style - (44A506175) Gothic NLQ
   CPI - 10.0
   Country - USA
   Mode - Normal
2. LPI - 6
3. Forms Control:
   Form Length - 11.0"
   Top Margin - 0.0"
   Bottom Margin- 0.0"
4. Interface Control:
   Interface Type - Serial
   Input buffer length 0512
   Interface Straps A:

```
0         1         2         3
12345678901234567890123456789012
00001000000010000000100000001000
```

   Interface Straps B:

```
0         1         2         3
12345678901234567890123456789012
00000000000000000000000000000000
```

   Speed - 9600
   Parity - Space
5. Margin Settings:
   Left Margin - 0.0"
   Right Margin - 13.2"
8. Printer Control Straps:
   Printer Straps A:

```
0         1         2         3
12345678901234567890123456789012
10000000101100100000000000000000
```

   Printer Straps B:

```
0         1         2         3
12345678901234567890123456789012
00000101000010000000000000000000
```

9. Emulation Mode - Diablo

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0070

PROBLEM: It is sometimes necessary to do a file system check before returning the system back to the users. It is also hard to keep the users from logging in during a file system check. This service notice will tell you how to keep the user off while you are doing a **fsck**.

SOLUTION: If a file called **nologin** is put in the **etc** directory, only superusers can log on. If a non-superuser tries to log on, the message that is in the **nologin** file is displayed.

Do the following:

Create a **NOLOGIN** file in the **etc** directory using capital letters. Edit or screen that file and put in the message you want to send to users when **nologin** is in effect.

To invoke **nologin:**

cp /etc/NOLOGIN /etc/nologin<Ret>

To cancel **nologin:**

rm /etc/nologin<Ret>

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0071

PROBLEM: The tape diagnostic needs the Max process size in the configuration menu set to 256 or greater. The tape diagnostic will fail if the Max process size is set at 160.

SOLUTION:

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0072

PROBLEM: 45 meg drives are shipped as drive 0 and with 1K ohm terminating resistors. To put the 45 meg drive in an expansion cabinet, both of these have to be changed.

SOLUTION: Turn drive upside down on a soft surface. Unscrew the two slotted captive screws at rear end of the drive electronics board. Raise the drive electronics board. Just below J1 you will see the terminating resistor and the drive select (addressing) jumpers. Move the shorting bar from DS1 to DS2 to change the drive from drive 0 to drive 1. Replace the 1K ohm terminator sip with a 220/330 ohm sip if this drive is the last one in the expansion cabinet. Remember that Pin 1 has to be reversed when changing the 1K ohm to 220/330 ohm and visa versa.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0073

PROBLEM: When a 45 meg drive is installed in an expansion cabinet, a jumper and capacitor assembly have to be added to the expansion cabinet power supply.

SOLUTION: When installing a 45 meg drive in an expansion cabinet, check for the presence of a jumper between Tabs 7 and 8 (from the top) of the power supply voltage block. The jumper will be on tabs that have adjacent yellow wires. If not, install jumper Part #1001787-06. Always install a capacitor assembly Part #1001612-01 between the power supply and the drive.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0074

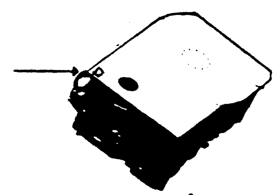
PROBLEM: Older Rodime (C20) Disk Drives that experience very intermittent hard disk errors may have wrong revision programmable microprocessor.

SOLUTION: To check the microprocessor, do the following:

Backup customer data and remove drive from the system. If the drive has the label

Update 6052-11B or Update 6097-7B

Update Label



on the top left front of the drive, the microprocessor has already been checked and you do not have to proceed further. If this label is not on the drive, remove the four Phillips screws holding the front panel to the drive. Remove front panel. Then remove the six Allen screws holding the logic board to the drive. Lift the logic board up and over (notice that there is a 16 pin connector at the front of the drive that will have to be aligned when reinstalling the logic board).

Check the microprocessor IC22 (40 pin chip on component side of logic board). The correct numbers are 6097-7B, or higher, if the drive has a narrow band stepper motor and 6052-11B if the drive has a wide band stepper motor.

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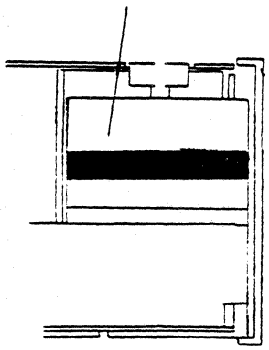
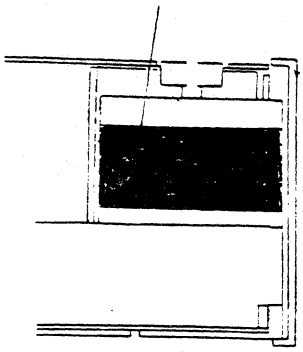
Narrow
Band
Stepper
Motor



Wide
Band
Stepper
Motor



If the microprocessor is the wrong revision, call the Customer Support Hot Line 800-FOR-3216 for a replacement. After replacing the microprocessor, reassemble the drive and put an update label on the top left front of the drive. Run diagnostics and return to the customer's system.

The old microprocessor must be returned to Customer Support immediately after replacement. Use the following return address:

Fortune Systems Corp.
101 Twin Dolphin Drive
Redwood City, CA 94065
Attn: Customer Support

FORTUNE SYSTEMS CORP

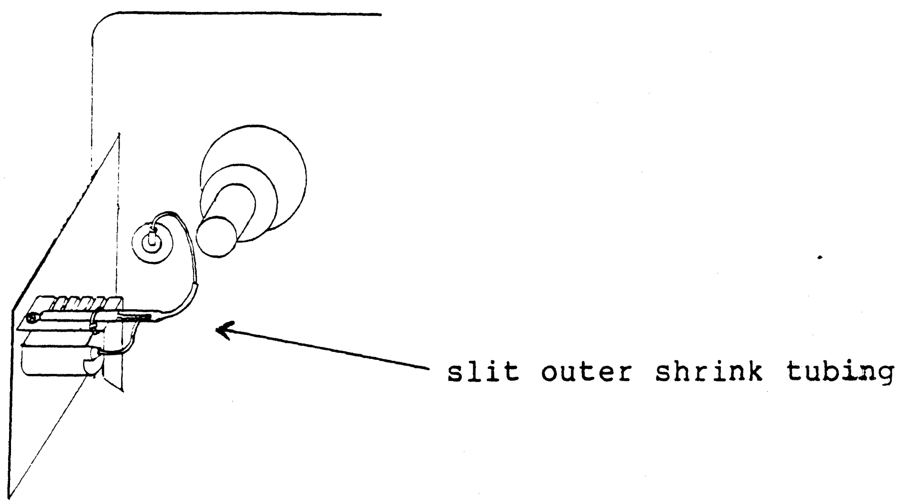
SERVICE NOTICE

NUMBER 0075

PROBLEM: On some early Fortune 1000 Display Terminals with green screens (serial numbers below TG000739), the high voltage lead from flyback transformer can arc to the heat sink that surrounds transformer.

SOLUTION: To correct do the following:

Turn Display Terminal off and unplug power cord. Remove the top cover. You will need a 5/32 allen head wrench to do this.



Slit outer shrink tubing to within 1/4 inch of end of bleeder resistor to expose high voltage lead wire. Form wire away from heat sink as far as possible.

Rotate high voltage plug where it connects to the tube so that lead wire is in vertical position.

Reinstall top cover.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0076

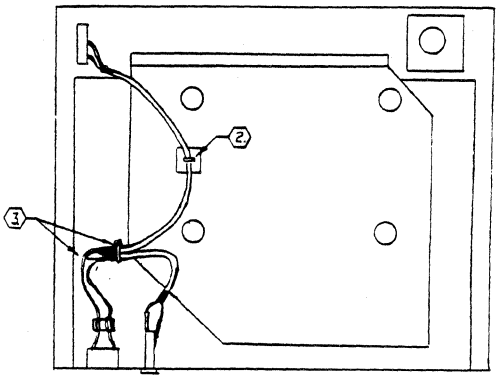
PROBLEM: On some early Fortune 1000 Display Terminals (serial numbers below TG000739 for green screens, and below TA000900 for amber screens), there is a possibility of the internal power harness being crimped or damaged

---

SOLUTION: To correct do the following:

Turn display terminal off and unplug power cord.

1. As viewed from front, place terminal on its right side. Remove 4 screws to detach base assembly. Gently swing down base plate to work surface.



(2.) Position an adhesive backed tie wrap midway between holes in PWA shield. Tie down AC cable that goes between switch and AC receptacle. Form cable to avoid holes in shield.

(3.) Tie wrap AC cables together just beyond their heat shrink tubing. Try to dress cables and wires so that they do not extend beyond edge of PC board.

4. Put unit back together.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0077

PROBLEM: New error messages for latest Hard Disk Diagnostic.

SOLUTION: Listed below are the latest hard disk error messages, their meaning, and most likely cause.

HARD - Hard error, not ECC correctable. Drive or controller.

SOFT - Soft error, ECC correctable. Drive or controller.

COMP - Compare error, even though no error was detected by the Hard Disk controller, when the data was compared in memory it did not compare. Controller or memory.

TSOFT- True soft error, retried without ECC correction and passed. Drive or controller.

ECCF - False ECC error, showed ECC error but data in memory compared, controller.

Protect test error messages.

PHRD - Hard error, not ECC correctable. Drive or controller.

PSOFT- Soft error, ECC correctable. Drive or controller.

NRST - Write error trying to restore original data. Drive or controller.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0078

PROBLEM: Fortune 1000 Basic Workstation Troubleshooting.

SOLUTION: This Service Notice covers troubleshooting the Fortune 1000 Basic Workstation (terminal). The terminal has built-in diagnostics which make troubleshooting easier but most of the troubleshooting will still have to be done by observing the CRT screen.

Apply power by pressing the dotted end of the rocker switch on the right front of the base. The terminal should then beep once, verifying the operation of the speaker. Set the intensity and contrast controls completely clockwise and either the setup menu screen (see Fortune 1000 Basic Workstation Guide for setup menu information) or a blank screen with the cursor in the upper left corner should be displayed. Adjust the intensity and contrast controls as desired.

If one or more alphabetic characters appear in the upper left corner of the screen or if the speaker emits a repeating pattern of beeps the terminal logic board has failed its self-test diagnostics. Replace terminal.
If there is no video on the screen do the following:

1. Make sure the terminal is plugged into a functioning A/C outlet.
2. Make sure switch on back panel is in the internal video position.
3. Make sure brightness and contrast controls are turned all the way clockwise.
4. Replace terminal.

If the keyboard is not functioning do the following:

1. Make sure keyboard cable is plugged in properly at both ends.
2. Replace keyboard cable.
3. Replace keyboard.
4. Replace terminal.

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Service Notice 0078 Continued:

If the screen is rolling or the video does not seem correct there are the following adjustments on the flyback transformer PCB:

1. VIDEO CENTER - centers video
2. VERTICAL LIN. - makes top and bottom characters the same size.
3. VERTICAL SIZE - adjusts picture height.
4. VERTICAL HOLD - keeps screen from rolling.
5. INTERNAL CONTRAST - rough contrast
6. INTERNAL BRIGHTNESS - rough brightness
7. HORIZONTAL SIZE AND LINEAR SIZE - takes special tools to adjust and should only be done by an expert.

To adjust any of the above, turn the power off, remove the top cover, pull the flyback transformer PCB out of its keeper slot, lay it on its side, turn power back on and adjust.

Now that you have the terminal working, a more complete test of the keyboard and the terminal character generation circuitry can be performed by putting the terminal in LOCAL MODE, which displays typed characters on the screen.

Press the SHIFT, CNTL AND HELP keys at the same time, the setup menu should appear on the screen.

Using the DOWN ARROW KEY move the HIGH LIGHTED BLOCK down to LINE 9.

Using the LEFT ARROW KEY change that block from ON LINE to LOCAL.

Press the HELP KEY. Now any key typed will be displayed on the CRT screen.

Press the SHIFT, CNTL and HELP keys at the same time, the setup menu will appear again.

Use the DOWN ARROW KEY to move the HIGH LIGHTED BLOCK to LINE 9.

Use the LEFT ARROW KEY to change that block to ON LINE.

Press the HELP KEY. The terminal is now back in user mode.

Service Notice 0078 Continued:

If LOCAL MODE works and you can receive data (get the login prompt) but cannot login (keyboard seems dead) do the following:

Record the information in the setup menu.

Use the DOWN ARROW key to move the HIGH LIGHTED BLOCK to LINE 2.

Use the LEFT ARROW KEY to change that block from SOFT SET to DEFAULT.

Press the HELP KEY to save this new information.

Power the terminal off then on.

Use the DOWN ARROW KEY to move the HIGH LIGHTED BLOCK to LINE 2.

Use the LEFT ARROW KEY to change that block from DEFAULT to SOFT SET.

Put the original information back into the setup menu.

Press the HELP KEY.

Press the CANCEL KEY. The login prompt should appear.

If you still cannot login, try trouble shooting hints below before replacing terminal.

If the terminal is working in local mode but does not receive the login prompt the terminal could be bad, try trouble shooting hints below before replacing terminal.

TROUBLE SHOOTING HINTS: Try plugging another terminal into the offending RS232 cable. If the second terminal works, you know the trouble is in the first terminal. If the second terminal still fails check the RS232 cable and 32:16 port.

NOTE

When in on line mode you press a character on the keyboard, that character is sent to the terminal logic board, over the RS232 cable, into the appropriate 32:16 port, then back over the RS232 cable to the terminal logic board, then it is written to the screen. This is commonly refered to as echoplexing.

Service Notice 0078 Continued:

The Fortune 1000 Terminal has a built-in screen exercise that will fill the screen with a partial ASCII sequence combined with all the screen attributes that the terminal can produce. This test is useful for checking the character generation circuitry and the screen alignment.

From setup mode hit PrtSc. The message "TOAR" will be displayed. Now hit PrtSc again. The screen exercise should start. This consists of scrolling sequences of ASCII characters with various combinations of the normal bold, reverse video, underline, blink, and overstrike attributes activated. Striking any key except PrtSc will alternately stop and start the scrolling, while striking PrtSc will terminate the test and return the unit to setup mode. The speed of the scrolling depends on the setting of the "Scrolling" field on the setup menu.

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0079

PROBLEM: Fortune 1000 display terminal always comes up to the setup menu on power on.

SOLUTION: Even though you are content to run with the setup menu default values, if you change line 2 from default to soft set, the display terminal will not display the setup menu on power on.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 80

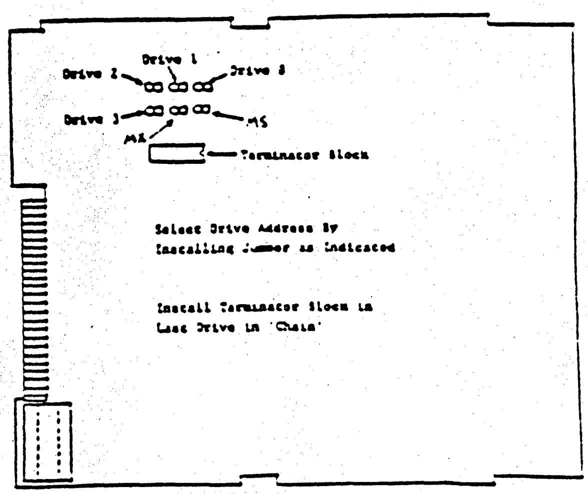
PROBLEM: Shugart floppy disk drives may have the "MX" jumper installed, resulting in excessive interrupts being presented to the system. All systems should have this jumper removed, if present. See Service Notice 8 for Jumper Specs.

SOLUTION: You can check for the presence of the "MX" jumper by using the following procedure;

Bring up the system and login as **root.** At the prompt type;
mkdevs -p | more <RETURN>
If you have only entries for fd00 - fd07 the "MX" jumper is not installed. If you have entries for fd00 - fd07, fd10 - fd17, fd20 - fd27, fd30 - fd37 the "MX" jumper is installed and will have to be removed.

To remove the "MX" jumper do the following;

1. Remove the drive shield.
2. Using the following picture for reference, remove the "MX" jumper.



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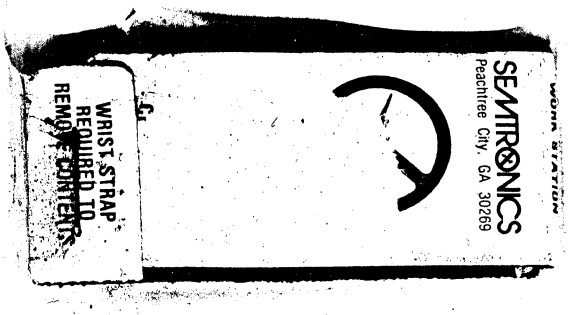
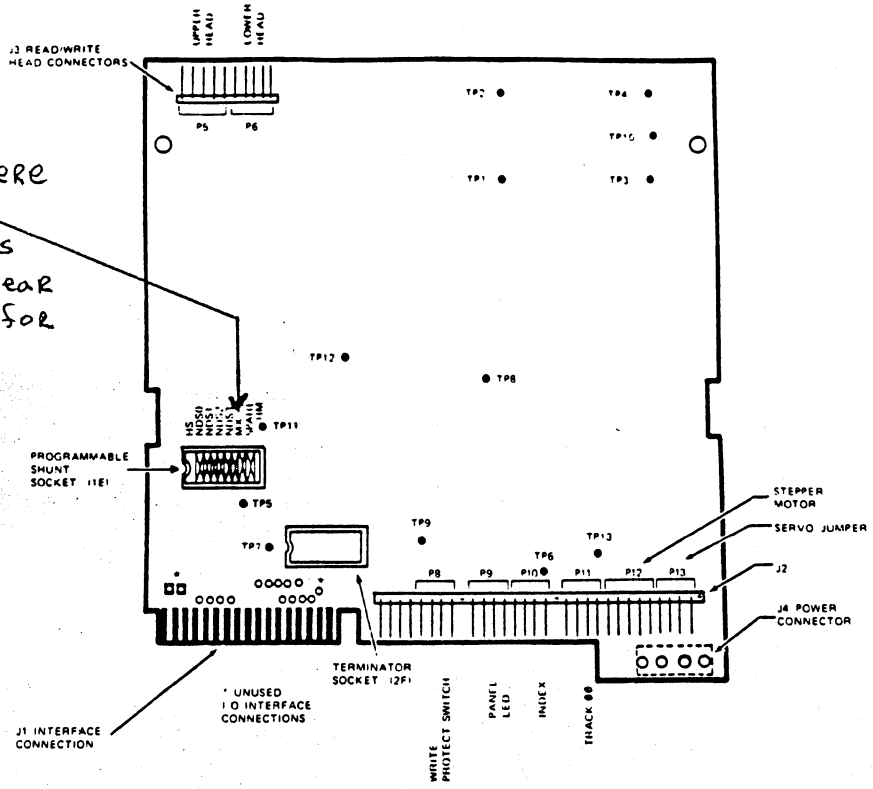


Mike
Cut Here
I Hope ↓ This
Is Clear
enough for
you.
John



LOGIC P.C.B.A.

Fig. 11

TANDON FLOPPY DRIVE

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0081

PROBLEM: Some early Fortune 1000 keyboards have a wrong revision programmable micro-processor. This causes the keyboard lock key (light) to get out of sync.

SOLUTION: If your customer's Fortune 1000 keyboard has this problem, call Customer Support (415) 594-2949 for a replacement programmable micro-processor and installation instructions.

The old micro-processor must be returned to Customer Support immediately after replacement. Use the following return address:

Fortune Systems Corporation
Attn: Customer Support Center
101 Twin Dolphin
Redwood City, CA 94065

FORTUNE SYSTEMS
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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0082

PROBLEM: The 1.8 cold boot procedure does not properly handle unformatted hard disks or hard disks with un-readable configuration blocks. When selecting the <F1> option, completely erase your disk, the message:

rdconf: cannot read conf block for /dev/rhd00

is printed continuously.

SOLUTION: To install a configuration block on the hard disk drive, perform the following steps:

1. Hit **<CANCEL/DEL>** to terminate the scrolling error message and enter into maintenance mode. You'll be prompted with the message 'Running in Single User Mode' and the Bourne shell's '#' prompt.

2. Type; **/etc/dskselect /tmp/confblock<RETURN>.** Select the appropriate disk type and press return. You'll once again be prompted with the shell '#'.

3. Type; **/etc/format -c /tmp/confblock /dev/rhd00<RETURN>.** This will install a new configuration block as well as erase the entire disk. When completed, you'll be prompted with the shell '#'.

4. You're now ready to restart the cold boot procedure. To do so, type; **/bin/sh /etc/rc<RETURN>.** The numbers 8 and 9 will be displayed, the screen cleared, and the Cold Boot 'select a function key' menu will reappear. Select <F1> to completely erase and reload your disk and proceed as normal. The problem should not repeat itself unless there is something wrong with your hard disk.

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APPROVED Bill Anderson 8/16/85

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0083

PROBLEM: The 1.8 Operating System has a problem formatting new (unformatted) floppy diskettes.

SOLUTION: Format each new floppy diskette twice. This corrects the problem. More information will be forthcoming when it is available.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0084

PROBLEM: Upgrading to an SX.

SOLUTION: See attached document.

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UPGRADING TO AN SX

As the 32:16 evolved, various changes and modifications were incorporated. Different series (PS and XP) branched out from the original. Later, new skins (texture and color molded in) were added. Now the SX series has been introduced.

This document will explain how to upgrade any earlier 32:16 Series System to an SX Series System. Please note that earlier 32:16 series Systems cannot be upgraded to SXT Series Systems.

There are only three important variations that can be encountered in the existing 32:16 Systems that would effect upgrading to an SX System.

1. Power Supplies - #2001851-01 for 110 volt

   First Model - Made by Zenith
   Latest Model - Made by Western Electric

   The Western Electric Power Supply can be recognized by a perforated shield over the top of the supply. This supply has higher current carrying capabilities than the Zenith and should be used for heavily loaded systems - A MUST FOR XP AND SX SYSTEMS.

Order Part Number 1003177-01 (Western Electric Power Supply Upgrade kit) if replacing a Zenith supply with a Western Electric supply.

2. Disk Drive Shielding

   First Shielding - Flat mounting plate

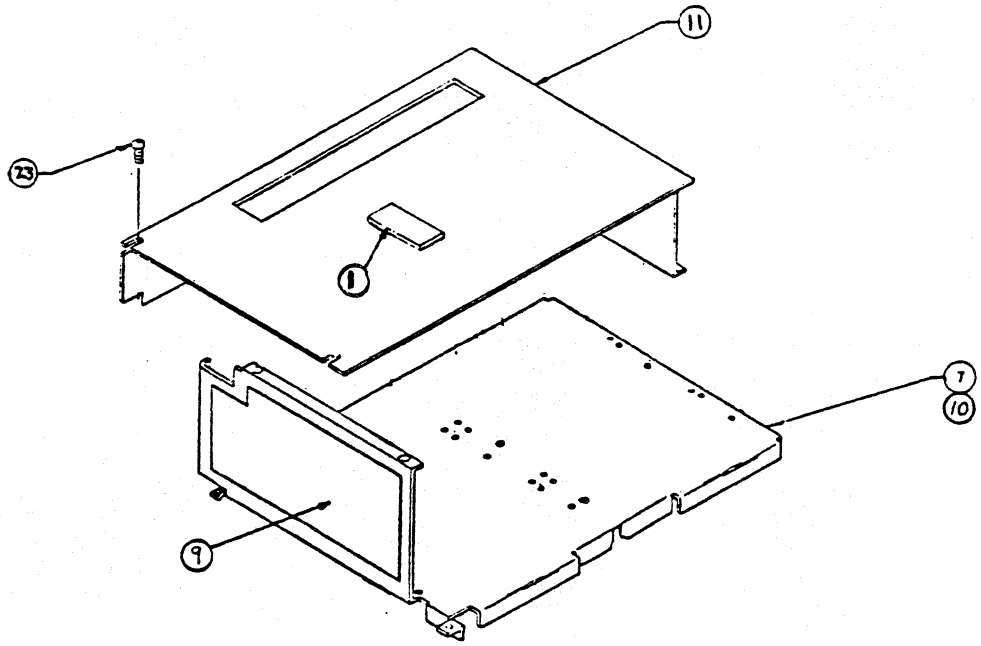
   Each disk drive (floppy and hard) had its own shield(s).

   Latest Shielding - Two piece shield

   Both disk drives mounted inside inclusive shielding

   THE LATEST SHIELD IS A MUST FOR 30, 45 AND 70 MEGABYTE HARD DISK DRIVES. See the following figure for parts information.

(Continued)



1 ea.	Item 1	Pad, shield - #1000454-03 old skins only
1 ea.	Item 7	Disk Drive Mounting Chassis - #1001745-01
1 ea.	Item 9	Insulator - #1001806-01 old skins only Insulator is also part of Western Electric update kit
6 ea.	Item 10	I/O Plate Insulating Washer - #1000601-04 new skins only
1 ea.	Item 11	Cover, Disk Drives - #1001748-01
4 ea.	Item 23	Screw, Cover - #1001283-01

(Continued)

3. Hard Disk Controllers

First Hard Disk Controller - #1000079-01

Works with 5 and 10 megabyte drives.

Later Hard Disk Controller - #1000079-01 RevB9

Works with 5, 10, 20 and 30 megabyte drives.

Still Later Hard Disk Controller - #1000079-04

Added to work with expansion cabinets

Latest Hard Disk Controller - #1000079-06

MUST BE USED WITH 45 AND 70 MEGABYTE DISK DRIVES. This controller is being shipped in all new PS, XP and SX series systems.

Now let's see how to use the above information to upgrade a system to an SX.

Note

The internal tape drive will not fit into any 32:16, PS or XP series systems. This is because the plastic base was modified (mold was changed) to allow the hardware needed for the internal tape drive to fit. Older bases cannot be modified.

If you want to upgrade an older 32:16, PS or XP series to an SX45 or SX70, verify which of the following is currently in the system:

1. Western Electric P/S? ☐
2. #1000079-06 Hard Disk Controller? ☐
3. Inclusive shielding? ☐

(Continued)

If you checked all of the blocks above, just order SX Upgrade Kit 1 (#1003697-01) and a 45 Megabyte Drive (#2003241-02) or a 70 megabyte drive (#2003241-03 see note below).

If you had checked 1 and 3, but not 2, order SX Upgrade Kit II (#1003697-02) and the drive.

If you only checked 3, order SX Upgrade Kit III (#1003697-03) and the drive.

If you checked 2 and 3, but not 1, order SX Upgrade Kit IV (#1003697-04) and the drive.

If you did not check Block 3, order the parts listed under Disk Drive Shielding and go through the check list again.

If you want to use an existing hard disk drive, but add a SX Motherboard, just make sure you have a Western Electric Power Supply. The Hard Disk Controller and Shielding must match the disk drive, but this has no effect on the operation of the SX Motherboard.

Note:

The 45 Megabyte Drive now has two part numbers:

SX45 - #2003241-02 (No standoffs)
XP45 - #2003241-01 (Standoffs)

To turn a #2003241-01 into a #2003241-02, remove the standoffs.

The 70 megabyte drive (#2003241-03) does not come with standoffs. If you are going to put this drive into inclusive shielding, order:

4 ea. Standoffs, #1001130-01

4 ea. #6 Lockwasher, #1000411-01

Install the standoffs on your 70 Megabyte Drive before installing the drive.

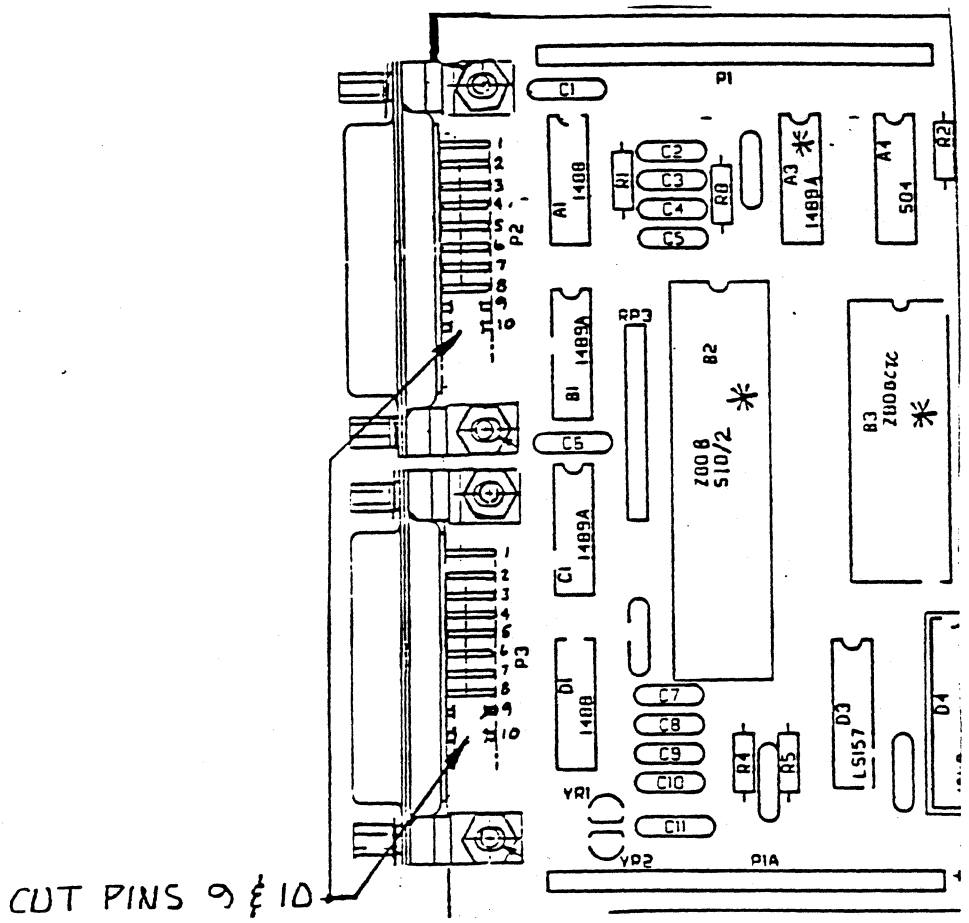
FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0085

PROBLEM: The ComB is a DTE device and should not have + and - 12 volts on Pins 9 and 10 of the RS232 connectors. This could possibly damage modems when used with a non-Fortune cable.

SOLUTION: If you are going to connect a ComB to a modem with a non-Fortune cable, do the following rework to the ComB.



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FORTUNE SYSTEMS CORP

SERVICE NOTICE

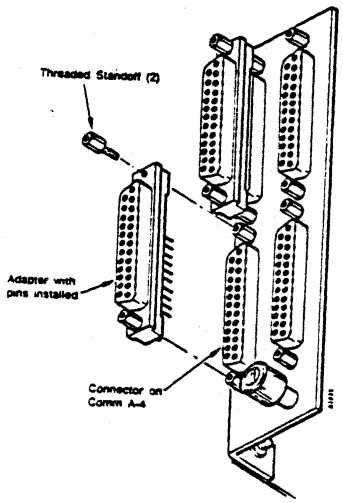
NUMBER 0086

PROBLEM: ComA cards in Slot A (old Video Controller Slot) need an extender for Ports 1 and 2. Without the extender, the RS 232 cable cannot be installed.

SOLUTION: Order Part Number 1000171-04 if you want a four port ComA with adapters already installed on Ports 1 and 2.

Order Part Number 1003703-01 (Kit, Adapter) if you want to add the adapters to an existing ComA.

See details below.



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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0087

PROBLEM: Head Cleaning Procedure SXT Tape Drives.

SOLUTION: Do not use the Expansion Cabinet tape cleaning cartridge in the SXT Tape Drive. Use the following procedure:

1. Remove cartridge/power down system.

2. Move head assembly into tape contact position by moving the slide lever to the right hand stop.

3. Using an Inmac or Perfect Data plastic super swab (or similar) dampened by dripping 95% Isopropyl alcohol onto the dual colored spade end of the swab, clean the head assembly by inserting the swab (spade end first) through the cartridge access slot and contacting the head using up and down motion (tooth brush style) with the dampened swab. Commence the process by using the coarse (green) side of the swab and finish by using the fine (white) side in two separate applications of solution.

4. A dry swab should be used to remove any residue of cleaning fluid at the completion of the cleaning operation.

5. This cleaning procedure should be performed after an initial pass with a new tape cartridge or if using all new tape cartridges after every two hours of actual use. For other cartridge conditions, cleaning should be performed at 8 hour intervals of normal use.

   Normal use is considered to be within the outlined specification for the unit. For hostile environments, such as high humidity, high temperature or dust contaminated, it may be necessary to increase the frequency of head cleaning to once every 4 to 6 hours.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0088

PROBLEM: Tape Cartridges to use with the SXT Tape Drive.

SOLUTION: Fortune Systems Corporation recommends that only Archive certified tape cartridges be used in the SXT. If you use another tape cartridge, expect some fallout and performance degradation. If you must use these other tape cartridges, you could use the following:

1. Scotch DC300 XLP — 45 megabyte capacity
2. Scotch DC300 XL — 45 megabyte capacity
3. Scotch DC600 A — 60 megabyte capacity

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0089

PROBLEM: Floppy drives refuse to function once MX Jumper is removed (see Service Notice 0080).

SOLUTION: Fortune Systems Corporation will fix this drive at no cost to you if you return it to the Parts Distribution Center. State the MX Jumper problem on the CSR tag and write "MX Jumper Problem" on the outside of the shipping container.

This applies to Shugart Floppy Drives with Logic Board No. 25265-4-XXXX-XX-X only. This number is stamped on the front edge (component side) of the floppy disk drive logic board.

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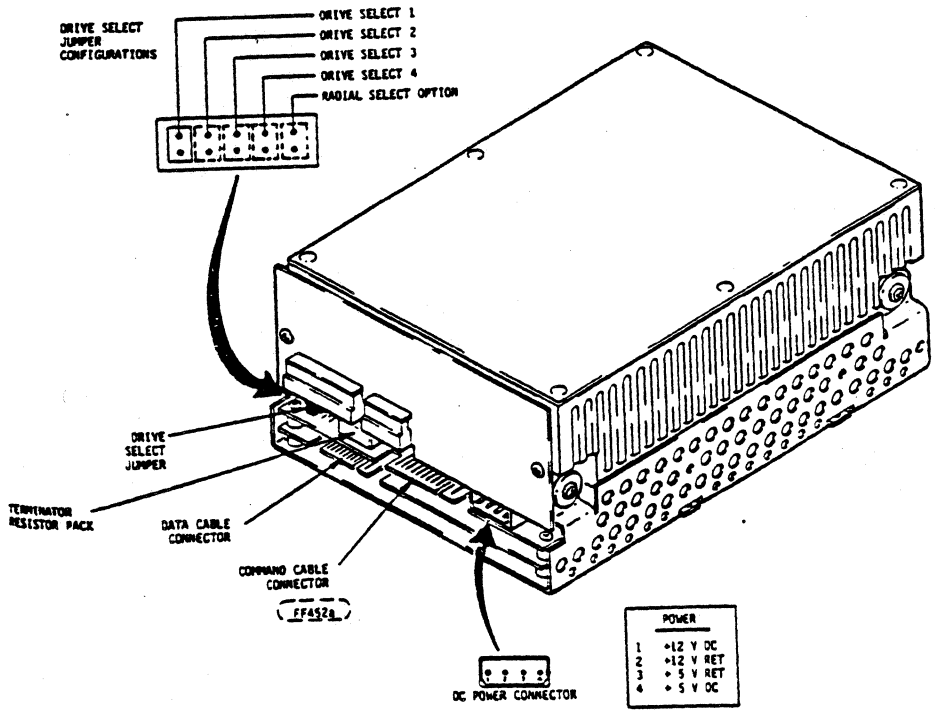
FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0090

PROBLEM: Fortune Systems Corporation has qualified a new 45 megabyte hard disk drive. It is made by CDC and has a C45 designation.

SOLUTION: Since you will be receiving this new drive in systems and as a spare, please note this drive type when cold booting and running diagnostics. Drive jumpering and termination is the same as the J30 drive.



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FORTUNE SYSTEMS CORP

SERVICE NOTICE

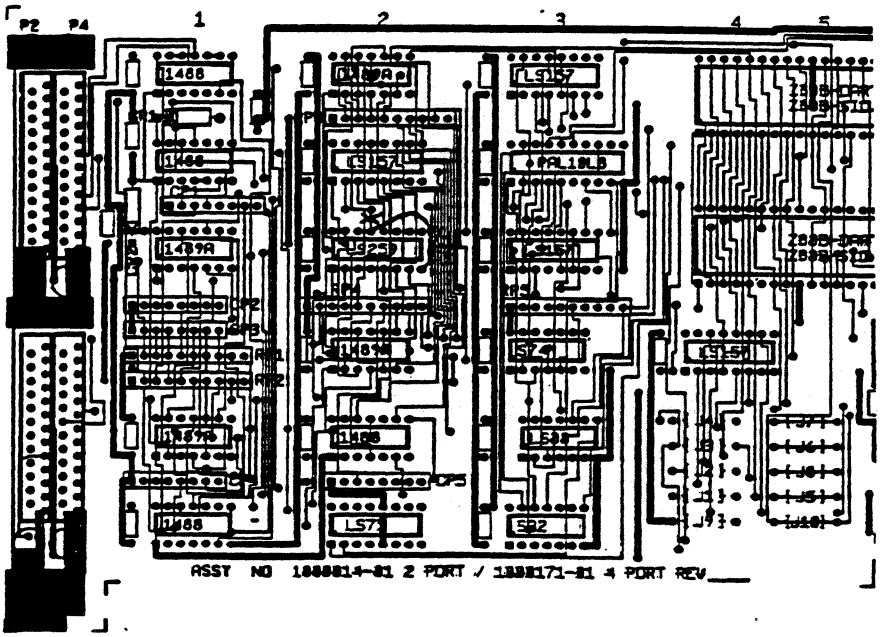
NUMBER 0091

PROBLEM: System running slow or Grinding Interupt 5 messages in multiuser operation. Possible to check by issuing ps axl commands. If swapper is incrementing every second with no user activity the ComA could be in loop-back mode.

SOLUTION: A simple fix to this problem is to disable the circuitry involved with internal loop-back. Do the following rework to the ComA's. Cut trace going to IC 2C Pin 13. Solder a wire between IC 2C Pin 13 and IC 2C Pin 8. See details below. Revision 11 and above ComA's will not have to be modified.

<u>CUT TRACE EXACTLY WHERE SHOWN</u>
2C13 to 5C40

<u>ADD WIRE: 30 AWG KYNAR</u>
2C13 to 2C8



The ComA diagnostic will run as normal if you strap together Pins 2 and 3 of the RS232 connectors (a bent paper clip will work just fine). Remember to remove the straps from all ports before returning to the customer.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0092

PROBLEM: New Archive tape drives require 1.2 version of streamer tape software.

SOLUTION: Fortune Systems Corporation is now shipping Archive tape drives in the expansion cabinet and the SXT System. The drive in the expansion cabinet is still a 20 megabyte drive, but is made by Archive and needs 1.2 streamer tape software. The drive in the SXT is a 60 megabyte drive made by Archive and also needs 1.2 streamer tape software.

Using 1.1 streamer tape software will result in "Tape not Valid" messages.

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0093

PROBLEM: Fortune 1000 CRT Eletctronics Assembly (part number 1003479-01 or 1003479-02) replacement.

SOLUTION: See attached document.

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Procedure for replacing Fortune 1000 CRT Electronics Assembly (#1003479-01 or #1003479-02).

Material Needed:

1 ea. CRT Electronics, Green (#1003479-01) or
CRT Electronics, Amber (#1003479-02)

1 ea. Ground Wire (#1003592-01)

Procedure: **WARNING - Only proceed if you are thoroughly familiar with all safety precautions that should be observed when servicing CRT equipment.**

Disconnect the AC power plug, loosen the two Allen screws (5/32) shown in Figure 1, Item 5. Lift the top cover (Item 14) from the display. Discharge the CRT anode using proper safety procedures.

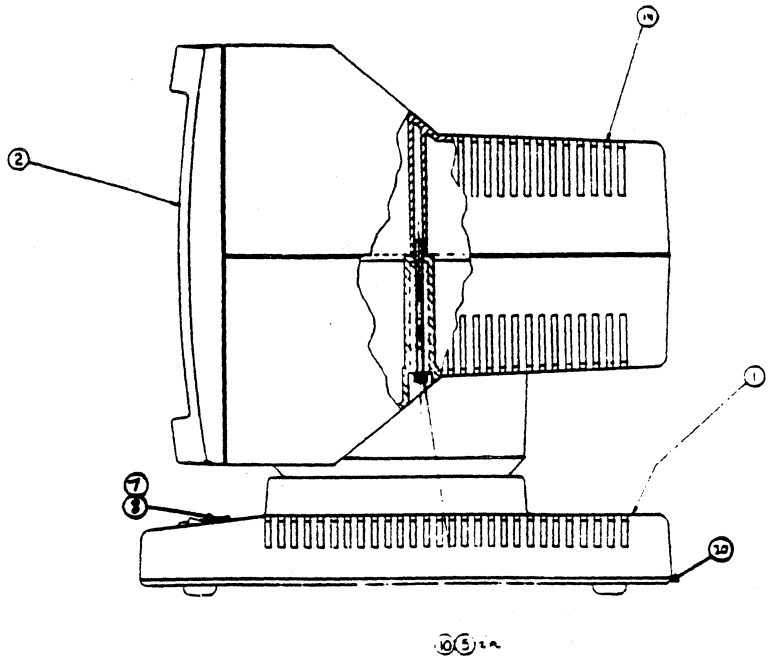

Figure 1

Disconnect the ground strap from the CRT grounding fingers (a slight pull should be sufficient).

Push down on and remove the interconnect harness connector that goes to the bottom of the CRT Electronics Board (green or red 10 pin connector).

Disconnect the green ground wire that goes from the CRT Electronics Board to the base of the display. On some earlier models this wire is soldered to the CRT Electronics Board. If this is the case, cut this wire and replace with the ground wire supplied.

Lift the CRT Electronics Board up and out of the display. Place it gently on top of the CRT yoke. Lift up on the entire CRT/Bezel Assembly and remove it from the display. Lay face down on a flat surface.

Remove the CRT Assembly from the Bezel. See Figure 2 for details.

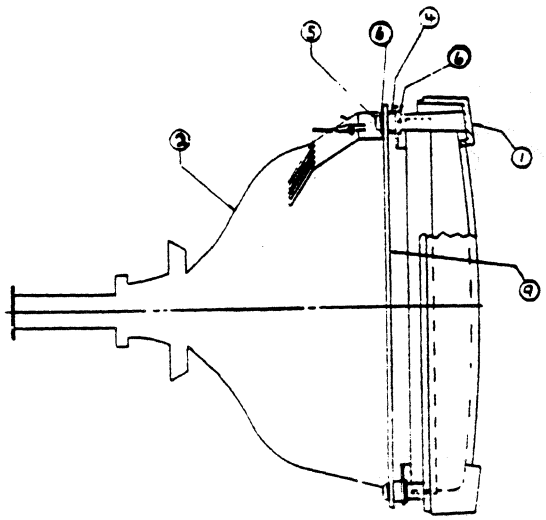

Figure 2

Install the new CRT Electronics onto the Bezel again using Figure 2 for details.

Place the CRT/Bezel Assembly into the display. Put the CRT Electronics Board into its place noting that the board keeper slides over the front post. Install the interconnect harness connector to the CRT Electronics Board. Connect the ground wire (from the Base) onto the CRT Electronics Board ground connector. Connect the ground strap onto the CRT grounding fingers. Position the CRT anode wire so that it is not laying on the CRT yoke.

The display is now ready for check out.

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0094

PROBLEM: Fortune 1000 Base Assembly (part number 1003481-01) replacement.

SOLUTION: See attached document.

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Procedure for replacing the Fortune 1000 Base Assembly (#1003481-01).

Material Needed:

1 ea. Base Assembly (#1003481-01) minus Item 32 (DC Harness Assembly #1003549-01)

Procedure: **WARNING: Only proceed if you are thoroughly familiar with all safety precautions that should be observed when servicing CRT equipment.**

Disconnect the AC power plug. Loosen the two Allen screws (5/32) shown in Figure 1, Item 5. Lift the top cover (Item 14) from the display. Discharge the CRT anode using proper safety procedures.

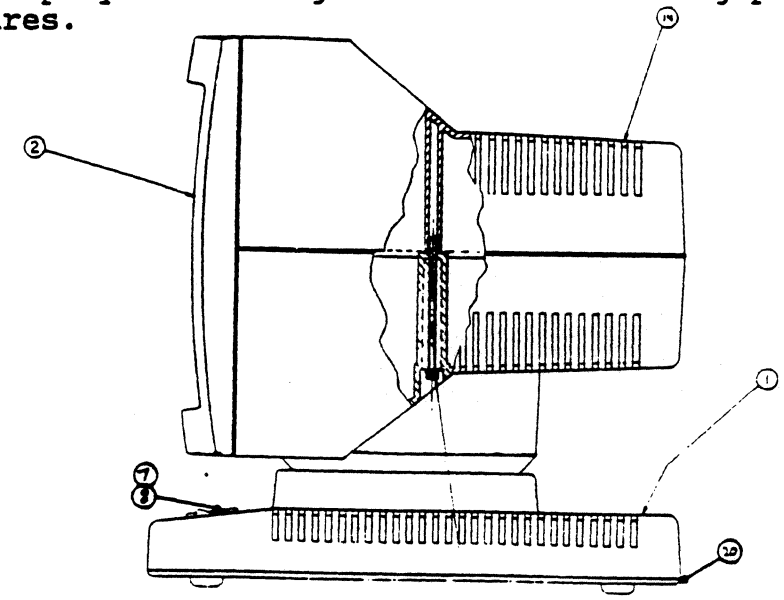

Figure 1

Remove the AC connections at P1, P4 and P7 of the power supply. The power supply is located on the left side as you face the front of the display. See Figure 2 for details. Push the AC harness that you just removed toward the hole in bottom of the upper pedestal. You will have to pull this harness through to the base in a later step.

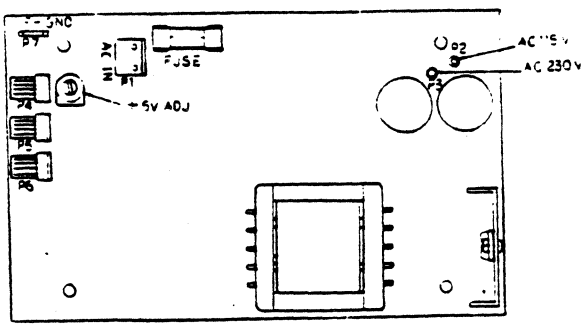

Figure 2

Now lay the display on its side with the keyboard connector facing up. Remove the four (4) screws holding the base assembly to the lower pedestal. Lower the base assembly. The keyboard harness should disconnect from the pedestal and follow the base assembly. Disconnect the DC connector at J5 of the logic board and the base assembly will lay flat.

Pull the AC harness (the one connected to the power switch) through the hole in the pedestal.

Disconnect the interconnect harness from J4 of the logic board (J4 is next to the Int/Ext video switch at the rear of the base assembly). See Figure 3 for details.

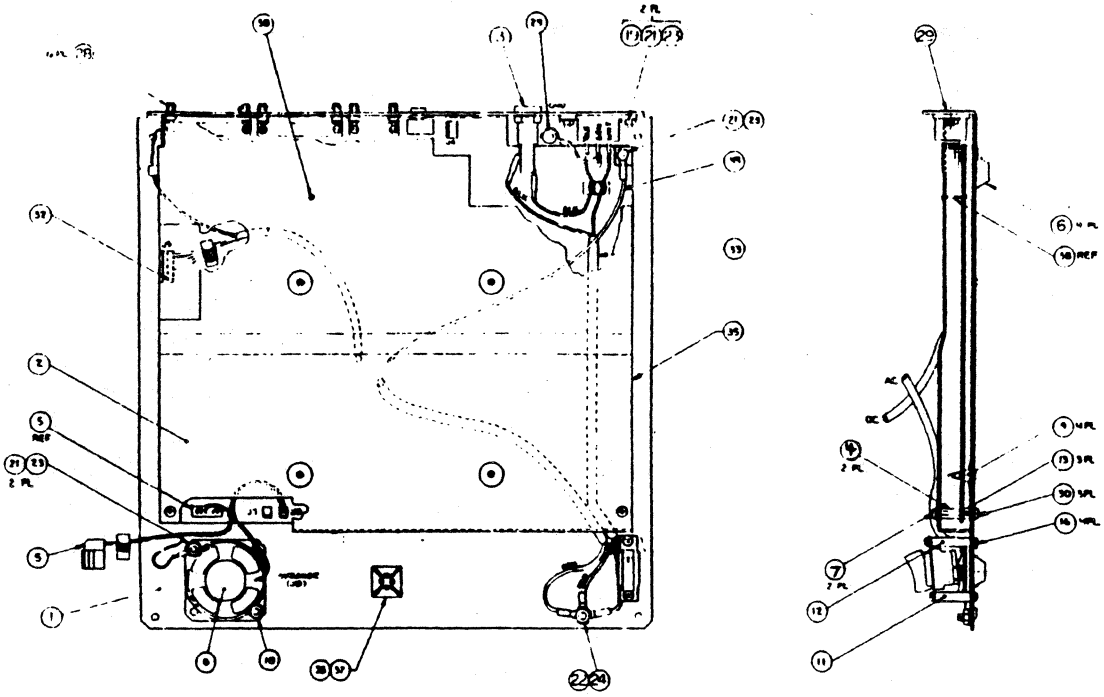

Figure 3

Cut the cable tie holding the contrast harness assembly to the base. Disconnect the contrast harness from J7 of the logic board.

Now remove the four (4) ground wires connecting the various cable to the base assembly. The base assembly should now be free from the display.

Install the new base assembly connecting everything in the reverse order. It may be necessary to remove the shield from the new base assembly to install the DC harness assembly ground wire.

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0095

PROBLEM: Replacing the first release CRT Electronics with the new NCE CRT Electronics.

SOLUTION: See attached document.

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Procedure for replacing the first release CRT Electronics with the new NCE CRT Electronics. New NCE CRT Electronics include the power supply.

Material Needed:

1 ea. (NCE) CRT Electronics, Green,115V (#1003691-01) or
(NCE) CRT Electronics, Amber,115V (#1003691-03)

1 ea. Ground wire (#1003592-01)

Procedure: **WARNING: Only proceed if you are thoroughly familiar with all safety precautions that should be observed when servicing CRT equipment.**

Disconnect the AC power plug. Loosen the two Allen screws (5/32) shown in Figure 1, Item 5. Lift the top cover (Item 14). Discharge the CRT anode using proper safety procedures.

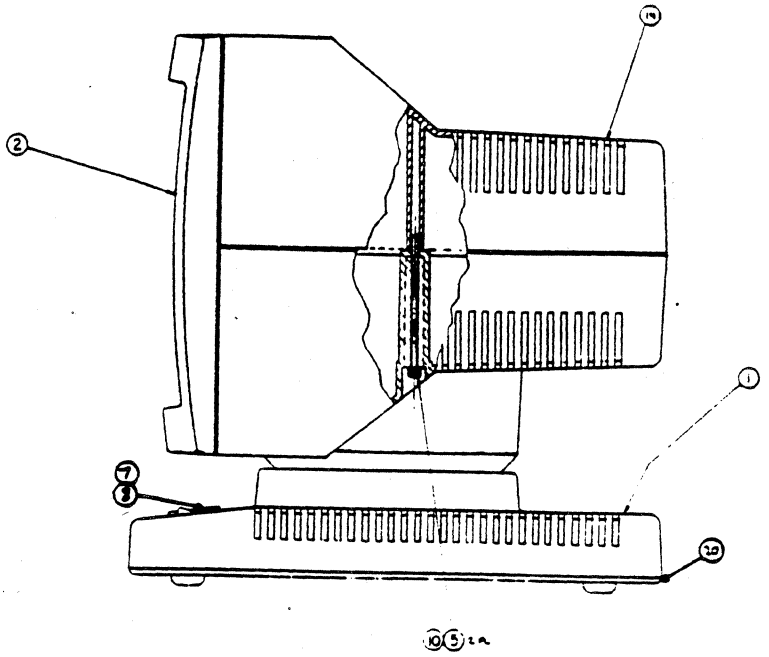


Figure 1

Disconnect the ground strap from the CRT grounding fingers (a slight pull should be sufficient).

Push down on and remove the interconnect harness connector that goes to the bottom of the CRT electronics board (green or red 10 pin connector).

Disconnect the green ground wire that goes from the CRT electronics board to the base of the display. On some earlier models this wire is soldered to the CRT electronics board. If this is the case, cut this wire and replace it with the ground wire supplied.

Remove the connectors going to P1, P4, P5, P6 and P7 of the power supply. Note where each one goes. See Figure 2 for details. Lift the power supply and its shield up and out of the display.

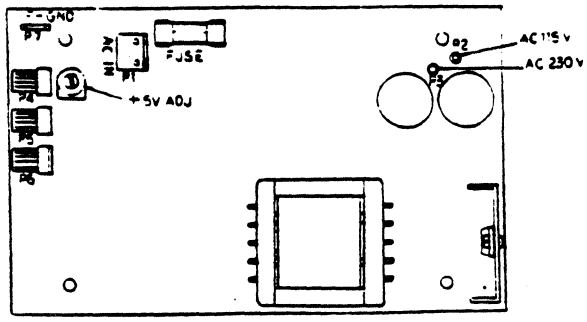


Figure 2

Lift the CRT electronics board up and out of the display. Place it gently on top of the CRT yoke. Lift up on the entire CRT/Bezel Assembly and remove it from the display. Lay face down on a flat surface.

Remove the CRT Assembly from the Bezel (see Figure 3 for details).

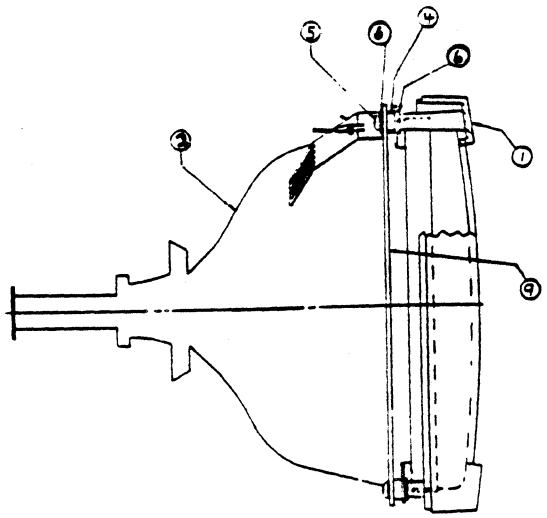


Figure 3

Remove the new NCE Electronics Assembly from its shipping container. Discharge the CRT anode to the metal mounting bracket. Disconnect the CRT Anode connection at the CRT tube. Unplug the connector from the end of the CRT tube. Unplug the two connectors (on the electronics board) that go to the yoke of the tube (note where each one goes). See Figure 4 for details. The CRT tube should now be separated from the CRT Assembly.

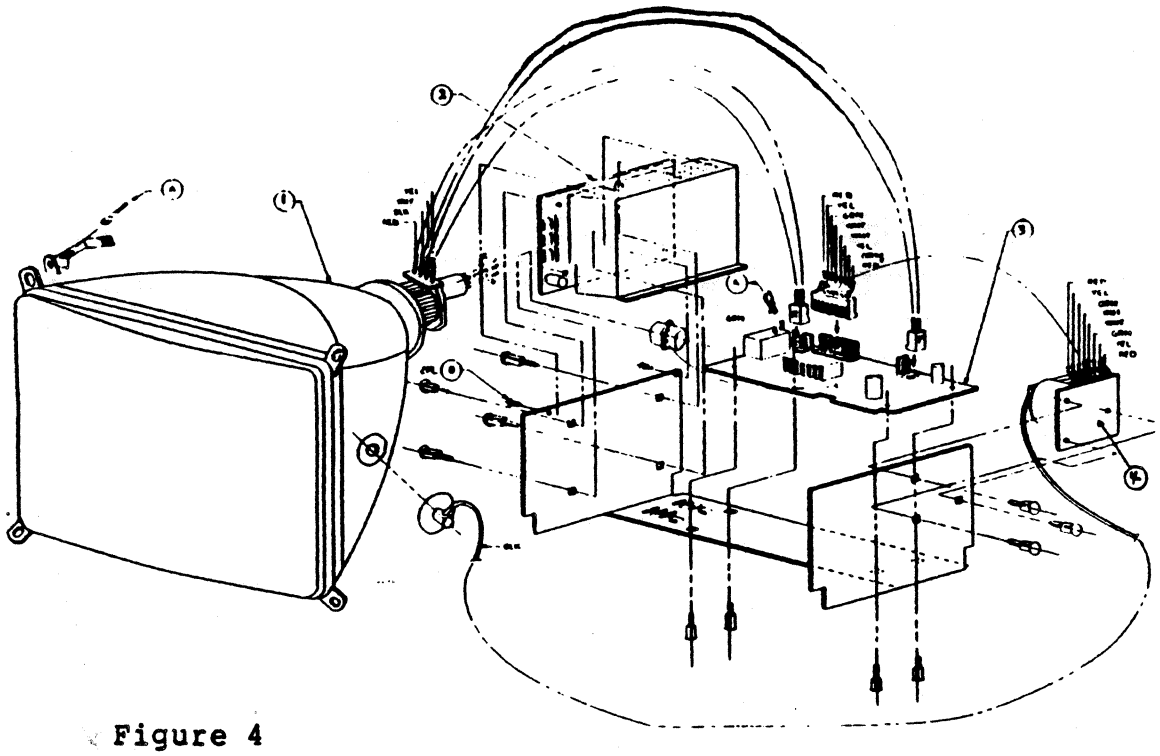


Figure 4

Install the tube onto the CRT Bezel, again using Figure 3 for details.

Place the CRT Electonics (metal mounting bracket, power supply, electronic board and flyback transformer) into the display.

Connect the interconnect harness connector to the CRT electronics board. Remove the shield (2 screws) from the power supply. Install the connectors at P1, P4, P5, P6 and P7 of the power supply. Replace the power supply shield. Connect the green ground wire to the spade lug on the metal mounting bracket.

Now place the CRT tube/Bezel into the display. Connect the green ground wire (from the electronics board) to the CRT grounding fingers. Connect the CRT anode connection to the tube. Replace the connector onto the end of the CRT tube and plug the two connectors (from the yoke) onto the electronics board. Position the CRT anode connection wire so it is not laying on th CRT yoke or touching the metal mounting plate.

The display is now ready for checkout.

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0096

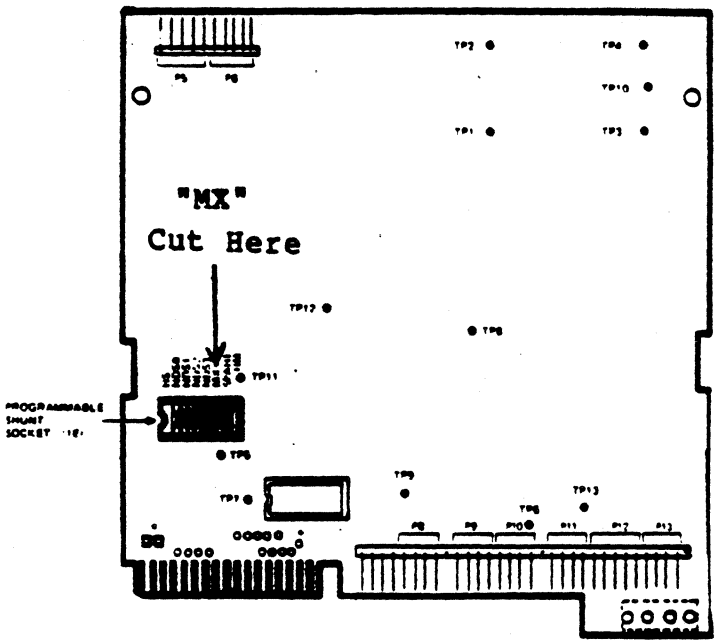
PROBLEM: Tandon floppy disk drives may have the "MX" tie uncut on the programmable shunt socket (1E), resulting in excessive interrupts being presented to the system. All systems should have this tie cut, if present.

SOLUTION: Check for the presence of the "MX" tie by using the following procedure;

Bring up the system and login as **root**. At the prompt type;
mkdevs -p | more <RETURN>
If there are only entries for fd00 - fd07 the "MX" tie is cut. If there are entries for fd00 - fd07, fd10 - fd17, fd20 - fd27, fd30 - fd37 the "MX" tie is uncut and will have to be cut.

To cut the "MX" tie do the following;

1. Remove the drive shield.
2. Using the following picture for reference, cut the "MX" tie.



1 - OPEN
2 - CLOSED DS∅
3 - OPEN
4 - OPEN
5 - OPEN
6 - OPEN
7 - CLOSED
8 - OPEN

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FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0097

PROBLEM: This Service Notice replaces Service Notice 74.

Rodime/Ampex (C20) Disk Drives that experience very intermittent hard disk errors or system locks for no apparent reason (drive actually spins down), may have wrong revision programmable microprocessor. These drives require a hardware modification. The Microprocessor will have to be updated to the current level and a capacitor will have to be installed.

SOLUTION: To replace the microprocessor, and install capacitor, do the following:

Backup customer data and remove drive from the system. Remove the four Phillips screws holding the front panel to the drive (see figure 1). Remove front panel. Then remove the six Allen screws holding the logic board to the drive (see figure 1). Lift the logic board up and over (see figure 2) notice that there is a 16 pin connector at the front of the drive that will have to be aligned when reinstalling the logic board.

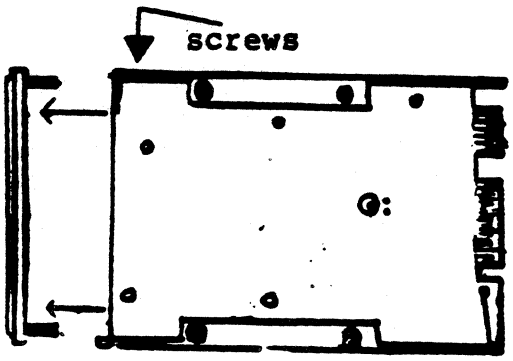


Figure 1
Disk Drive Board View

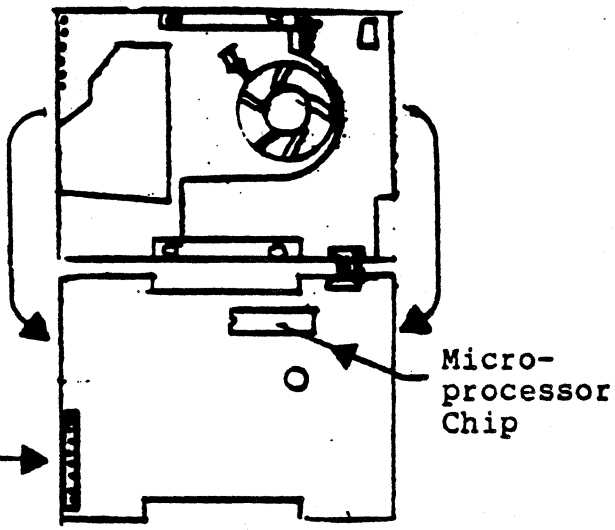


Figure 2
Disk Drive Component View

FORTUNE SYSTEMS CORP.
101 TWIN DOLPHIN
REDWOOD CITY, CA 94065

AUTHOR 11/26/85
FLD.ENG.
APPROVED 12/1/85
HDW.ENG.
APPROVED 12/2/85
SFT.ENG.
APPROVED N/A / /

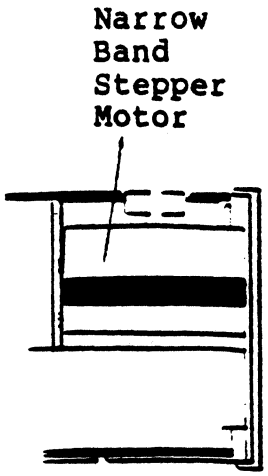


Figure 3

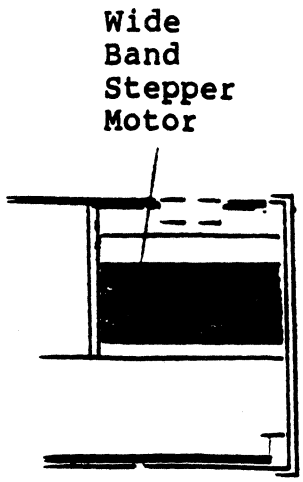
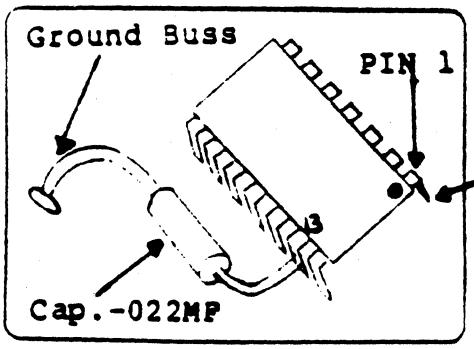


Figure 4

Check the microprocessor IC22 (40 pin chip on component side of logic board) to see if proper chip is installed. If the drive has a narrow band stepper motor (see figure 3) the correct numbers should be 6109-2. If the drive has a wide band stepper motor (see figure 4) the correct numbers should be 6052-13B. If the microprocessor is the wrong revision, call Customer Support (415) 594-2949) for a replacement, be sure to also ask for a capacitor (part# 1000376-08). After replacing the microprocessor, install the capacitor.

With Disk Drive PCB component side up solder one end of capacitor to IC11 PIN 13 and the other end to Ground Buss (see figure 5, Solder Detail). Ground Buss is located between IC13 and IC15.

NOTE: <u>DO NOT</u> let leads of capacitor touch leads on IC11.



Solder Detail

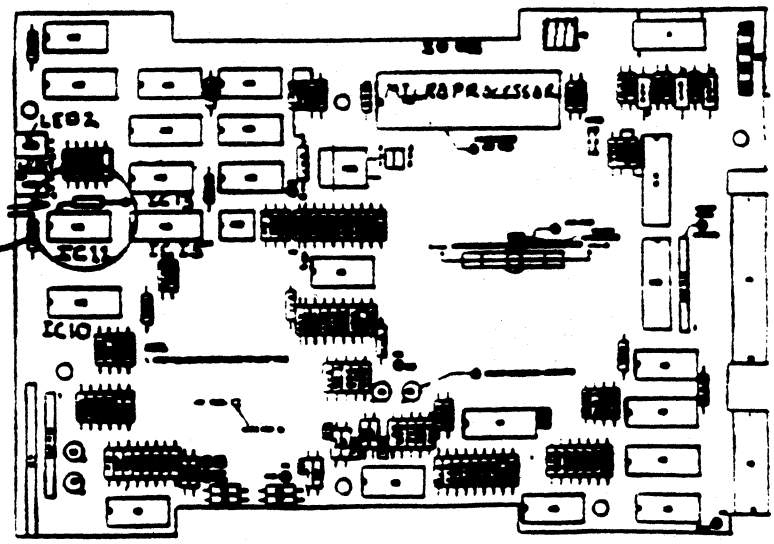


Figure 5

FORTUNE SYSTEMS CORP

SERVICE NOTICE

NUMBER 0098

PROBLEM: Expansion Chassis **without** Tape Streamer and one or two drives installed (45Meg drive and larger), will cause power supply to be unstable. A Resistor Assembly will have to be installed to stabilize the power supply. When ordering ask for Resistor Assembly for the "Disc Only Expansion Cabinet", part number 1003717-01.

NOTE: This Service Notice does not apply to Expansion Cabinets with a Tape Streamer Installed.

SOLUTION: With Back Panel removed from Expansion Box, loosen screws A and B on fan (see Figure 1). Slide top of Resistor Assembly under head of screw A. Now slide bottom half of Resistor Assembly under head of screw B. Now tighten screws snugly. When complete, back panel should look like Figure 2.

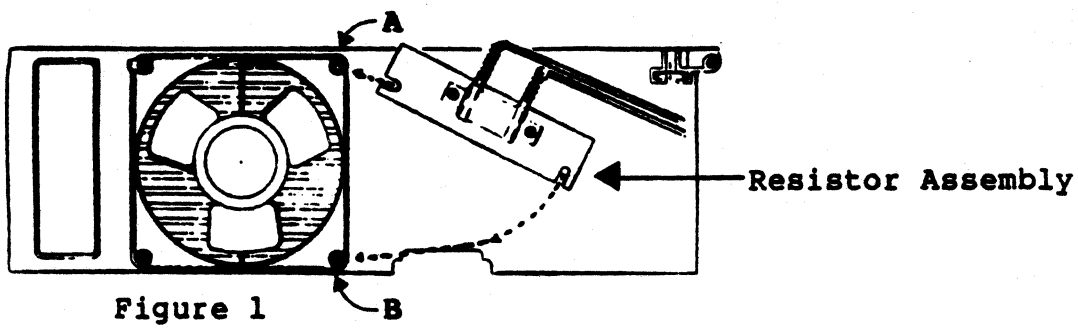


Figure 1

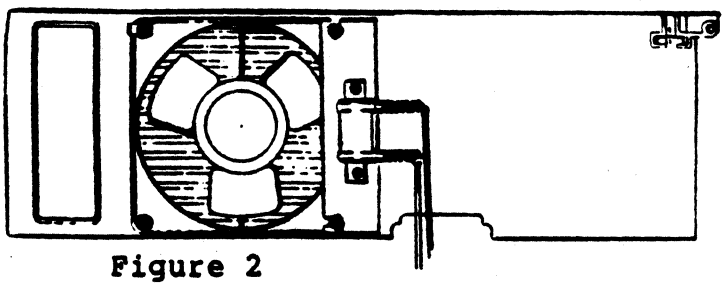


Figure 2

Once the Back Panel is reinstalled into Expansion Cabinet, connect the connector coming from the Resistor Assembly to an available connector on the power supply (see NOTE below).

NOTE: There are three power connectors coming from the power supply, Discl, Disc2, and Tape. If using two Disc Drives then connect Resistor connector to the Tape connector. If only one Disc Drive, connect the Resistor Connector to Disc2 connector.

FORTUNE SYSTEMS CORP.
101 TWIN DOLPHIN DRIVE
REDWOOD CITY, CA 94065

AUTHOR _____ 12/2/85
FLD.ENG.
APPROVED _____ 12/2/85
HDW.ENG.
APPROVED _____ 12/2/85
SFT.ENG.
APPROVED N/A ___/___

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: 32:16 SX **Revision:** ALL **FSN #** 99

Description:

SX systems using plastic security PALs may experience hangs and software error 22 at number 4 in the power-up sequence.

Plastic Security PAL is not compatible with SX motherboard. Systems being upgraded to SX need ceramic Security PALs.

TYPE

Mandatory

As Required

Revision Change

Rework

Documentation

Information

Issue Date 3-17-86

New Issue

Replaces #

Originator

Approved

Corrective Action:

Check the Security PAL (location D-7 or A-14) before doing SX upgrades. Ceramic PALs can be distinguished by their three layered appearance when looking at them from the end. If the PAL looks solid black with just a single seam, it is plastic and must be replaced before upgrading to an SX.

Replacement PALs are available through the Parts Distribution Center. The PDC will need the CPU serial number of the machine to be upgraded, and the number from the label affixed to the old PAL in order to properly process replacements.

FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: 32:16 SX **Revision:** All **FSN #** 100A

Description:

Service Notice 100 suggested that a 22 ohm chip resistor be used for the memory board upgrade. Further testing has found that while the 22 ohm chip resistor performs well, a 68 ohm chip resistor is much more reliable.

TYPE

Mandatory
As Required
Revision Change
(Rework)
Documentation
(Information)

Issue Date 4-28-86

(New Issue)
Replaces #

Originator John R. Hyatt

Approved

Corrective Action:

Recommendation to go ahead and use the 22 ohm chip resistor if already purchased, otherwise use the 68 ohm chip resistor.

FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: 32:16 SX **Revision:** ALL **FSN #** 100

Description:

Some SX systems have experienced intermittent parity errors at various addresses, occasionally causing a system halt.

Sometimes, the problem has been corrected on an interim basis by replacing 256KB memory boards, or by rearranging them in different priority slots.

This FSN corrects the parity problem with SX systems, and is a requirement for all SX models.

TYPE

Mandatory

As Required

Revision Change

Rework

Documentation

Information

Issue Date 3-12-86

New Issue

Replaces #

Originator

Approved

Corrective Action:

This problem is caused by the RAS control lines to the 256KB memory boards. SX systems must use 1000031-03 Revision 7 256KB memory boards, which fix this problem.

Fortune will upgrade 256KB memory boards in existing SX systems free of charge, according to the following procedures:

1. Existing Systems and Upgrades

Customers with existing SX systems which need the memory upgrade should order part number '1003967-01 SX 256KB Memory Upgrade', which contains 4 256KB memory boards. This will be treated as a regular order, at full list price less any applicable discounts, subject to Fortune's regular order processing procedures.

For each SX memory upgrade purchased, the customer may return 4 256KB memory boards for full credit. The memory cards must be returned within 30 days of the original shipment, and must be operational according to XP standards to be eligible for 100% credit. Memory boards not operating to XP standards will be credited at the normal PDC rate of 55%.

2. New Upgrades

Customers will be required to order the 'SX 256KB Memory Upgrade' with each SX upgrade kit ordered. The same return privileges outlined above will apply.

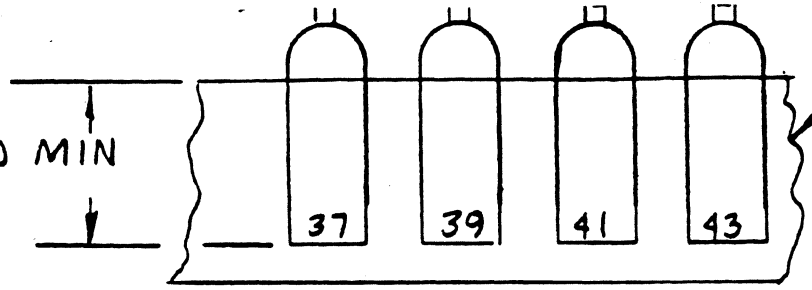
Alternatively, customers with the repair capability may elect to perform the upgrade themselves. Outlined below are the upgrade instructions which bring any version of 1000031-01 to 1000031-03 Revision 7.

Rework instructions: 256KB Memory PWA
Converts any revision 1000031-01 to 1000031-03 revision 7

Materials Required:

4ea 22 Ω Chip Resistors (See spec sheet page 4)
Solder Creme (General Purpose 60-40)

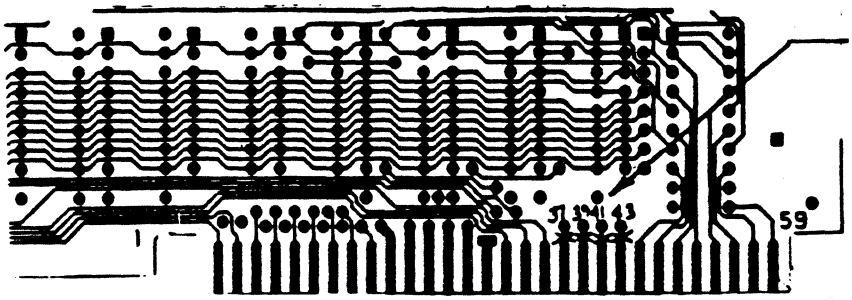
Step 1.



Cover at least the lower .20" of fingers with masking tape to prevent damage.

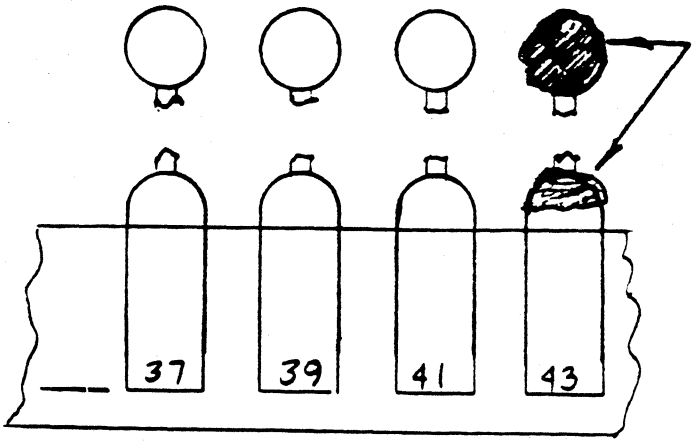
Step 2.

Component Side View



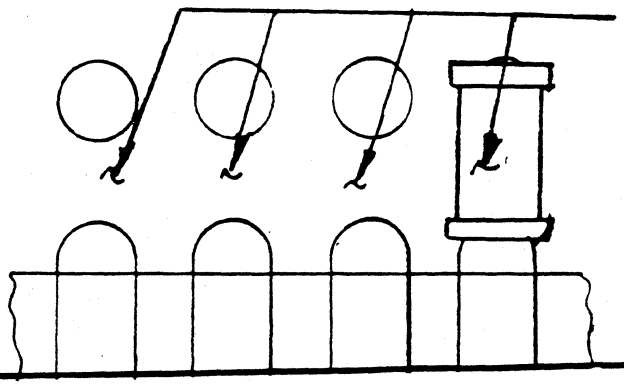
Cut traces exactly where shown. P1-37, P1-39, P1-41, P1-43.

Step 3.



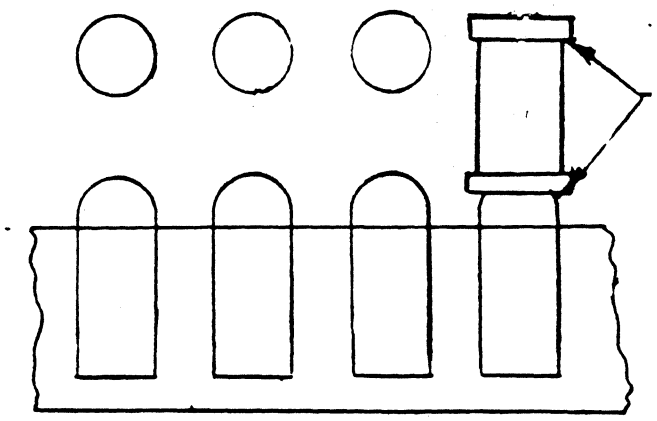
Apply small amount of solder creme to feed throughs and tops of fingers (8 places).

Step 4.



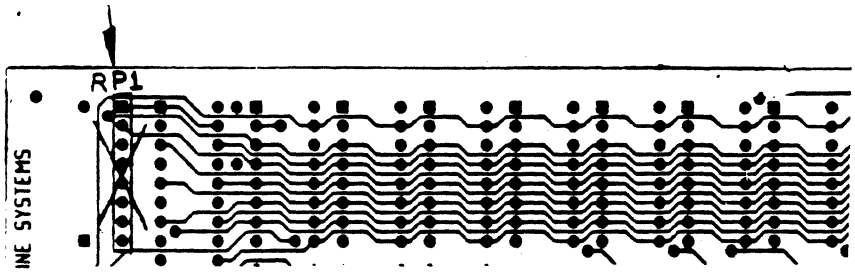
Position 22 Ω chip resistor as shown.

Step 5.



Step 6.

Remover resistor pack RP1 at location 1A by rocking back and forth until leads break.



Step 7.

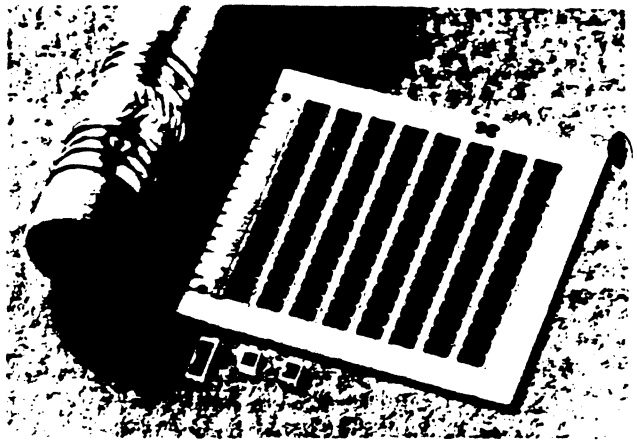
Remove masking tape and clean fingers with alcohol.

Step 8.

Attach label at location 15A indicating '31-03 Rev 7'

Note: Be sure that at least the lower .20" of each finger is free of solder.

Chip Resistor Specification



DALE®

COMMERCIAL
THICK FILM CHIP RESISTORS

DALE SERIES RC and RCW

FEATURES

- Allows wide design flexibility for use with hybrid circuitry
- One-surface and wrap-around terminations
- Choices of sizes and power ratings
- Dale has complete capability to develop specific reliability programs designed to customer requirements
- Custom sizes can be designed for special applications

SPECIFICATIONS

ELECTRICAL

Resistance Range: RC/RCW550: 5Ω to 2 Meg.
RC/RCW575: 5Ω to 5 Meg.
RC/RCW5100: 10Ω to 10 Meg.
RC/RCW5150: 10Ω to 15 Meg.
RC/RCW1100: 5Ω to 5 Meg.
RC/RCW7225: 10Ω to 15 Meg.
RC/RCW2010: 10Ω to 15 Meg.
RC/RCW2512: 10Ω to 15 Meg.
RC/RCW1206: 10Ω to 1 Meg.

Resistance Tolerance: ±1%, ±2%, ±5%, ±10%, ±20%

Resistance Temperature Coefficient: (−55°C to +125°C) ±200 PPM/°C

Power Rating (@ 70°C) and Maximum Operating Voltage: RC/RCW550 = 100 MW, 50 VDC
RC/RCW575 = 150 MW, 70 VDC
RC/RCW5100 = 200 MW, 100 VDC
RC/RCW5150 = 350 MW, 125 VDC
RC/RCW1100 = 400 MW, 100 VDC
RC/RCW7225 = 600 MW, 200 VDC
RC/RCW2010 = 800 MW, 200 VDC
RC/RCW2512 = 1000 MW, 200 VDC
RC/RCW1206 = 250 MW, 100 VDC

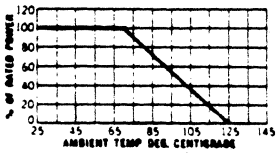
Operating Temperature Range: −55°C to +125°C

PHYSICAL

Body: 95% minimum alumina

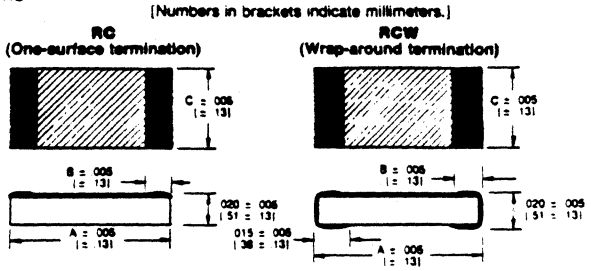
Termination: Solder pre-tinned electrodes standard. Gold, platinum gold, platinum silver or palladium silver available.

DERATING CURVE



DIMENSIONAL AND TERMINAL CONFIGURATIONS

[Numbers in brackets indicate millimeters.]



DALE TYPE	A (Length)	B	C (Width)
RC550	.050 [1.27]	.010 [.25]	.050 [1.27]
RCW550	.055 [1.40]	.010 [.25]	.050 [1.27]
RC575	.075 [1.91]	.015 [.38]	.050 [1.27]
RCW575	.080 [2.03]	.015 [.38]	.050 [1.27]
RC5100	.100 [2.54]	.015 [.38]	.050 [1.27]
RCW5100	.105 [2.67]	.015 [.38]	.050 [1.27]
RC5150	.150 [3.81]	.015 [.38]	.050 [1.27]
RCW5150	.155 [3.94]	.015 [.38]	.050 [1.27]
RC1100	.100 [2.54]	.015 [.38]	.100 [2.54]
RCW1100	.105 [2.67]	.015 [.38]	.100 [2.54]
RC7225	.225 [5.72]	.015 [.38]	.075 [1.91]
RCW7225	.230 [5.84]	.015 [.38]	.075 [1.91]
RC2010	.200 [5.08]	.015 [.38]	.100 [2.54]
RCW2010	.205 [5.21]	.015 [.38]	.100 [2.54]
RC2512	.250 [6.35]	.015 [.38]	.125 [3.18]
RCW2512	.255 [6.48]	.015 [.38]	.125 [3.18]
RC1206	.120 [3.05]	.015 [.38]	.060 [1.52]
RCW1206	.120 [3.05]	.015 [.38]	.060 [1.52]

HOW TO ORDER

RC	5100	103	G	41
STYLE	SIZE	RESISTANCE CODE	TOLERANCE	TERMINATION CODE
RC = One-surface termination. RCW = Wrap-around termination	550 5150 2010 575 1100 2512 5100 7225 1206	The first two digits (three for "F" tolerance) are significant figures and the last digit specifies the number of zeros to follow	F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	No Code = Solder Pre-tinned (standard) 20 = Gold (RC only) 40 = Platinum Gold 41 = Platinum Silver 42 = Palladium Silver

DALE ELECTRONICS, INC., 2300 Riverside Blvd., Norfolk, NE 68701 • Phone 402-371-0080
Canada: Dale Electronics Ltd., 16 Howden Rd., Scarborough, Ontario M1R 3E6
Europe: Dale Electronics GmbH, Benzstrasse 28, 8039 Puchheim, West Germany

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: MS-DOS Workstations Graphics Workstations **Revision:** WYSE Models **FSN #** 101

Description:
Current versions of the Fortune MS-DOS workstation manufactured by Wyse require a PAL change in order to operate as other than Fortune Graphics Workstations.

TYPE
Mandatory
As Required
Revision Change
Rework
(Documentation)
Information

Issue Date
3-15-86
New Issue
Replaces #
Originator
Approved

Corrective Action:

The I/O PAL used in the graphics and non-graphics workstations is different. All units are shipped with both PALs, with the graphics PAL active. In order to use the unit without a graphics card, the PALs must be exchanged.

The I/O PAL is in a socket at location 2S. The spare I/O PAL is kept in conductive foam located on the power supply shield.

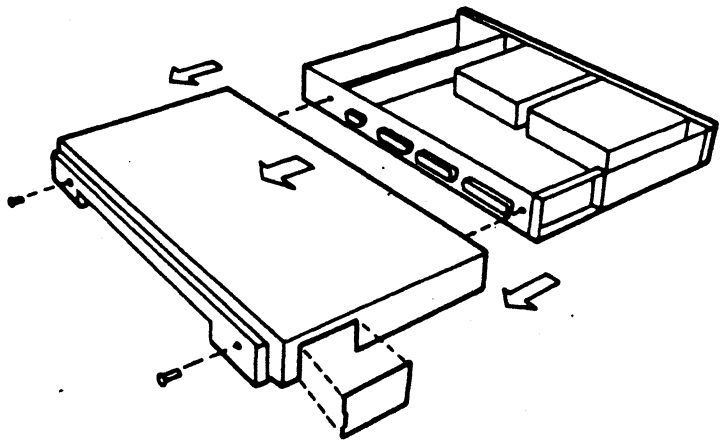
To convert a Fortune Graphics Workstation to non-graphics operation, follow these steps:

Removing the Computer Case

To remove the case follow these steps:

1. Turn the computer switch off.
2. Unplug the computer power cord from the wall outlet, and disconnect all cables from the computer. Loosen the screws on the video signal cable with the flat-blade screwdriver.
3. Remove the monitor and keyboard and place them safely away from your work surface.
4. From the rear of the computer, remove the two screws securing the case to the back panel with a Phillips screwdriver (Figure 1).
5. Slide the case toward the rear of the computer assembly until it clears the unit. Ensure that the case does not interfere with any internal cable harnesses as you remove it.

Figure 1 - Removing the Computer Case



Remove the spare I/O PAL from the conductive foam on the power supply shield (Figure 2).

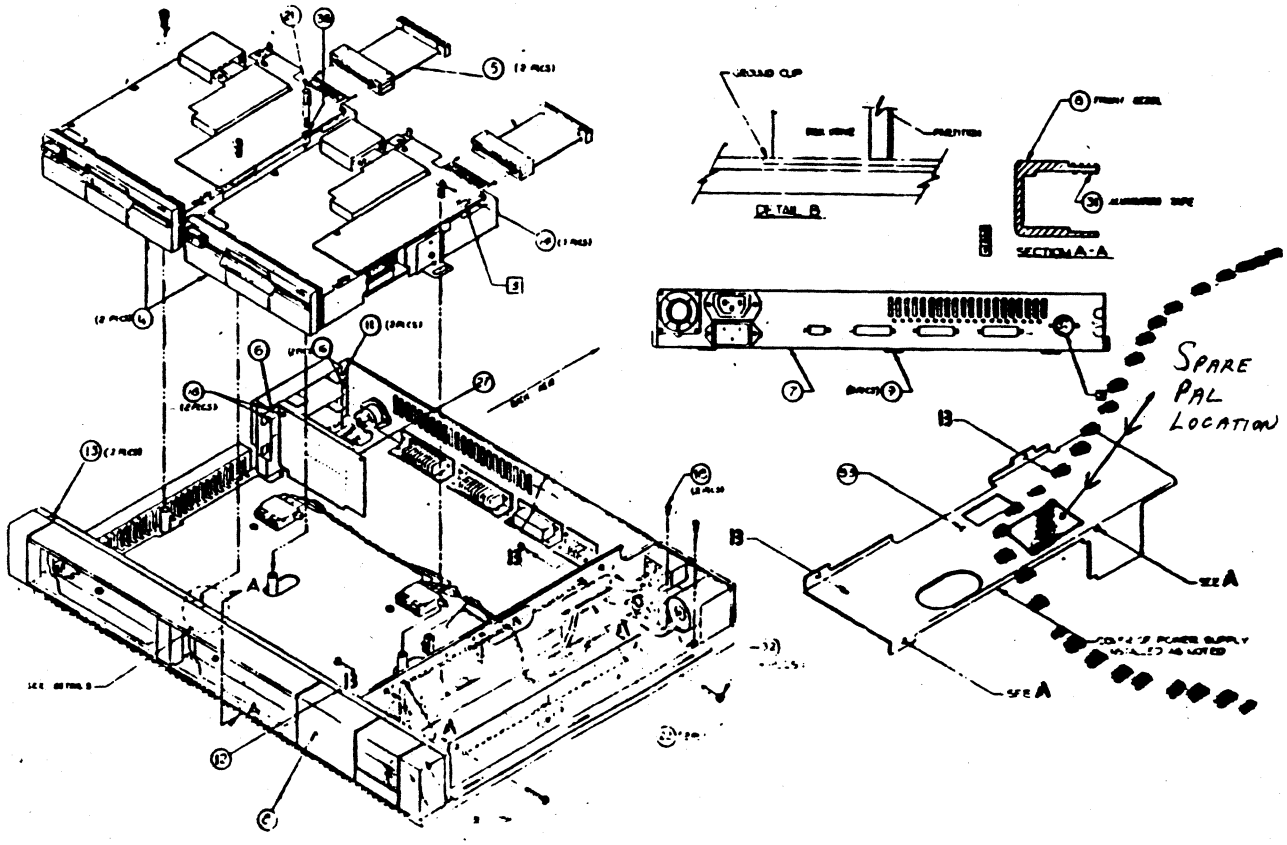


Figure 2

Remove diskette drive A as follows:

1. Disconnect the four-pin power supply harness connector from the back of both drives. (Figure 3)

2. Disconnect the keyed-to-fit ribbon cable connector from the disk drive. If a plastic key exists, make sure it stays in the connector.

3. Remove the hexagonal post between the two drives with a nut driver.

4. Remove the screw from the inside metal bracket (between the two drives) with a Phillips screwdriver.

5. Remove the screw from the outside bracket of the drive with a Phillips screwdriver.

6. Slide the disk drive toward the rear of the computer until the front panel of the drive clears the front of the computer case.

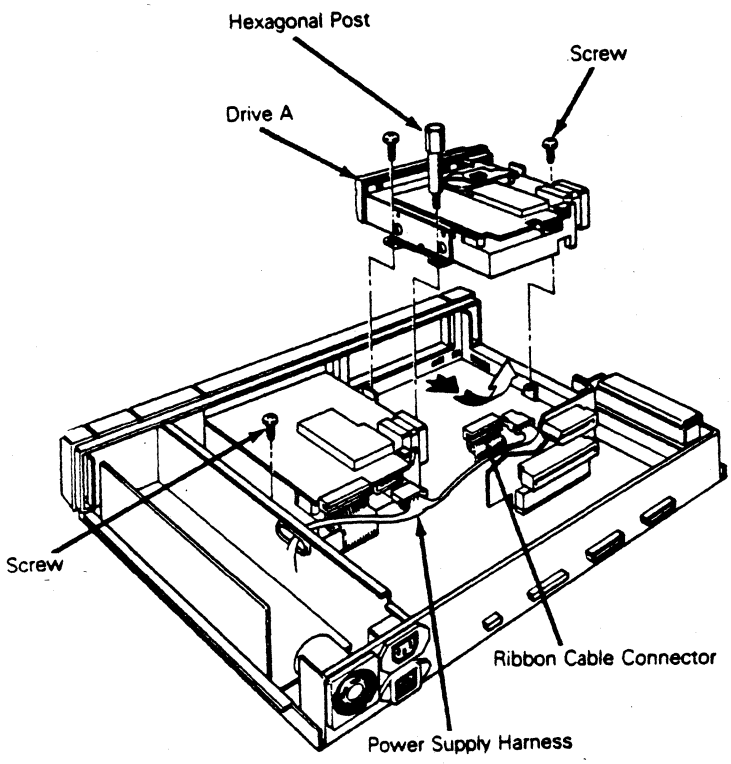


Figure 3

Remove the I/O PAL from socket at location 2S on the main logic board. (Figure 4). Carefully insert replacement PAL, making sure that all pins are sqaurely in socket holes, not bent or broken.

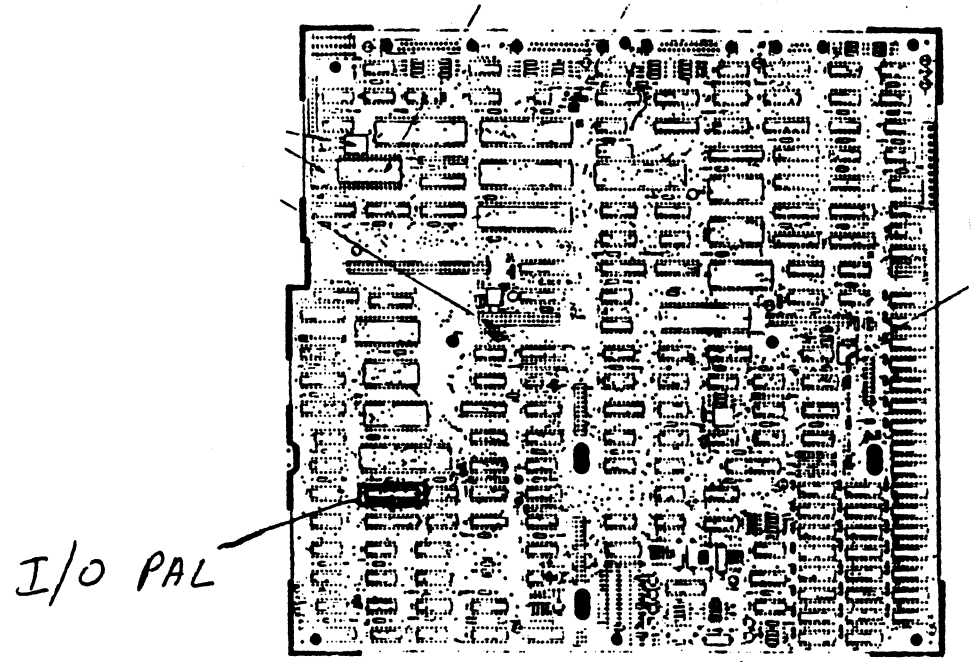
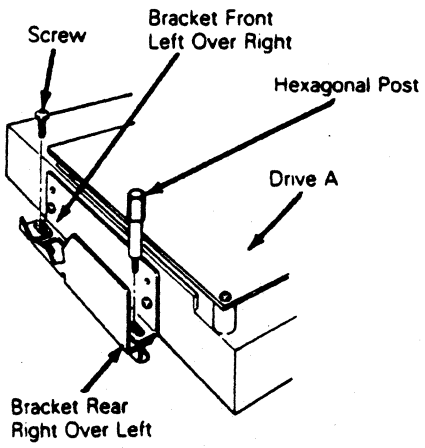


Figure 4

Replace disk drive as follows:

1. Slide each disk drive in so the plastic bezel is flush with the top edge of the front panel making sure the metal mounting brackets align with each other and the screw standoffs on the floor of the computer as shown in Figure 5.

Figure 5 Disk Drive Mounting Bracket



2. Install the hexagonal post between the disk drives; hand tighten until secure.

   Note--The hexagonal post provides support for the weight of the monitor.

3. Ensure that the top of the drive bezel is flush with the front panel. Tighten the screws with a Phillips screwdriver until they bottom out against the drive brackets. Tighten the hexagonal post.

4. Connect the keyed-to-fit ribbon cable connector to the pins on the CPU logic board.

5. Plug the hard disk controller cable firmly onto hard disk drive C, if applicable.

6. Slide the keyed-to-fit ribbon cable connector onto the disk drive circuit board. Ensure that it is firmly seated.

7. Connect the four-pin power supply harness to the drive.

Place the old I/O PAL into the conductive foam on the power supply shield for future use.

Replace the computer case as follows:

1. Ensure that all circuit boards are securely in place and that all internal connectors are firmly seated.

2. From the rear of the computer, align the left side of the case so that the groove at the bottom of the case slides onto the flange on the bottom left of the case.

3. Align the right side of the case and slide it into position.

The procedure is complete.

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: Fortune 1000 Basic Workstation **Revision:** 3.6 **FSN #** 102

Description:

Horizontal video is out of adjustment. Characters appear to wrap around the left side of the screen reversed and double sized. Cursor appears long and faded.

TYPE

Mandatory
As Required
Revision Change
Rework
Documentation
Information

Issue Date 3-13-86

New Issue
Replaces #

Originator

Approved

Corrective Action:

The 3.6 versions of the Basic Workstation have a feature which allows horizontal image movement through the soft set menu. If this is adjusted improperly, the symptoms described above will appear.

To re-adjust the horizontal video, enter the soft-set menu by holding <CONTROL/SHIFT> and pressing the <HELP> key. When the menu comes up, hold the <SHIFT> key down, and press the right or left arrow keys to adjust the screen centering. Return to normal operation by pressing the <HELP> key.

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: MS-DOS Workstation, Graphics Workstation **Revision:** All Wyse Units, All Wyse Units **FSN #** 103

Description:
Wyse built MS-DOS and Graphics workstations require jumper changes on the logic board when additional memory is added.

TYPE
Mandatory
As Required
Revision Change
Rework
Documentation
Information

Issue Date
3-20-86

New Issue
Replaces #

Originator

Approved

Corrective Action:

Jumpers J30 and J31 are used in memory configuration. Proper jumper settings are shown below:

Memory Size	J30	J31
256K	IN	IN
512K	OUT	IN
640K	OUT	OUT

These jumper configurations apply to Wyse part number 99-0104-00 only.

FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: Hard Drives **Revision:** All Models **FSN #** 104

Description:

The potential risks in buying a hard disk drive directly from the vendor.

TYPE

Mandatory
As Required
Revision Change
Rework
Documentation
Information

Issue Date 4-28-86

New Issue
Replaces #

Originator John R. Bryant

Approved

Corrective Action:

1. Fortune Systems has specific specifications and requirements that the drive vendor follows to meet the environment needs of Fortune Systems. This means that a drive off the shelf may or may not meet Fortune Systems specific specifications. For example on the 70MB hard disk drive, Fortune Systems requires less than 30 mapped media defects due to software constraints, and also requires that cylinder 0 and 1 must be defect free.

2. Drive integrity in relationship to media defects. The drive vendor does not guarantee that 100% of the media defects present are captured. Therefore, extended testing is required to raise the confidence level of the media defect map located on the HDA of the drive. The result of ignoring this fact will be data storage corruption and/or loss.

3. System error rates. This requires that the hard disk drive be throughly tested with the particular controller board and environment to assure that the drive meets or exceeds the specified error rates.

FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: Hard Drives **Revision:** All Types **FSN #** 105

Description:

The following example will show how to find Bad Blocks on any Hard Drive using the information from the media defect table (on top of drive).

TYPE
Mandatory
As Required
Revision Change
Rework
(Documentation)
Information

Issue Date 4/30/86
(New Issue)
Replaces #

Originator

Approved

Corrective Action:

Do the following calculation to figure out the bad blocks from the media defect table:

(Cyl#) x (# of heads) x (sectors/track) = X
'X' + 'z' = bad block

Selecting Proper Table
If the number of heads is an even number refer to Table 1 (17 Sector/Track Map Table). If the number of heads is odd refer to Table 2 (16 Sector/Track Map Table). Take **BFIND** number and put it between proper numbers at top of chart (see Table 1). Use **Hd** information to get right head. Take 'z' and add it to 'X'.

Example Media Defect Table

Hd	Cyl	BFIND	Hd	Cyl	BFIND	Hd	Cyl	BFIND
Ø	**233**	**8356**	Ø	382	8553	3	296	3768

(This is for a 45MB Disk Drive)

The example uses the **Highlighted numbers** from the Media Defect Table.

(233) x (6) x (17) = 23766

BFIND = 8356 (see Table 1)

23766 + 7 = 23773

PHYSICAL - LOGICAL SECTOR RELATIONSHIP (17 SECTOR):

BYTES FROM INDEX

HEAD	PHYS BLOCK	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
0	0	0	9	1	10	2	11	3	12	4	13	5	14	6	15	7	16	8	
	'z'->	0	9	1	10	2	11	3	12	4	13	5	14	6	15	7	16	8	17
1		16	8	0	9	1	10	2	11	3	12	4	13	5	14	6	15	7	
	'z'->	33	25	17	26	18	27	19	28	20	29	21	30	22	31	23	32	24	33
2		15	7	16	8	0	9	1	10	2	11	3	12	4	13	5	14	6	
	'z'->	49	41	50	42	34	43	35	44	36	45	37	46	38	47	39	48	40	49
3		14	6	15	7	16	8	0	9	1	10	2	11	3	12	4	13	5	
	'z'->	65	57	66	58	67	59	51	60	52	61	53	62	54	63	55	64	56	65
4		13	5	14	6	15	7	16	8	0	9	1	10	2	11	3	12	4	
	'z'->	81	73	82	74	83	75	84	76	68	77	69	78	70	79	71	80	72	81
5		12	4	13	5	14	6	15	7	16	8	0	9	1	10	2	11	3	
	'z'->	97	89	98	90	99	91	100	92	101	93	85	94	86	95	87	96	88	97
6		11	3	12	4	13	5	14	6	15	7	16	8	0	9	1	10	2	
	'z'->	113	105	114	106	115	107	116	108	117	109	118	110	102	111	103	112	104	113
7		10	2	11	3	12	4	13	5	14	6	15	7	16	8	0	9	1	
	'z'->	129	121	130	122	131	123	134	124	135	125	136	126	137	127	119	128	120	129

TABLE 1
17 SECTOR/TRACK MAP TABLE

PHYSICAL - LOGICAL SECTOR RELATIONSHIP (16 SECTOR):

		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
HEAD	0	0	8	1	9	2	10	3	11	4	12	5	13	6	14	7	15
	'z'->	0	8	1	9	2	10	3	11	4	12	5	13	6	14	7	15
	1	7	15	0	8	1	9	2	10	3	11	4	12	5	13	6	14
	'z'->	23	31	16	24	17	25	18	26	19	27	20	28	21	29	22	30
	2	6	14	7	15	0	8	1	9	2	10	3	11	4	12	5	13
	'z'->	38	46	39	47	32	40	33	41	34	42	35	43	36	44	37	45
	3	5	13	6	14	7	15	0	8	1	9	2	10	3	11	4	12
	'z'->	53	61	54	62	55	63	48	56	49	57	50	58	51	59	52	60
	4	4	12	5	13	6	14	7	15	0	8	1	9	2	10	3	11
	'z'->	68	76	69	77	70	78	71	79	64	72	65	73	66	74	67	75
	5	3	11	4	12	5	13	6	14	7	15	0	8	1	9	2	10
	'z'->	83	91	84	92	85	93	86	94	87	95	80	88	81	89	82	90
	6	2	10	3	11	4	12	5	13	6	14	7	15	0	8	1	9
	'z'->	98	106	99	107	100	108	101	109	102	110	103	111	96	104	97	105
	7	1	9	2	10	3	11	4	12	5	13	6	14	7	15	0	8
	'z'->	113	121	114	122	115	123	116	124	117	125	118	126	119	127	112	120

1 -> 0 = 15

0 -> 8 = 8

TABLE 2
16 SECTOR/TRACK MAP TABLE

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: FOR:1000 **Revision:** PWA 1003503-01 **FSN #** 106

Description:

This service notice should only be done if the following occurs:

Spurious pixels appear on screen of FOR:1000 Terminals.

TYPE

Mandatory

As Required

Revision Change

Rework

Documentation

Information

Issue Date 4-29-86

New Issue

Replaces #

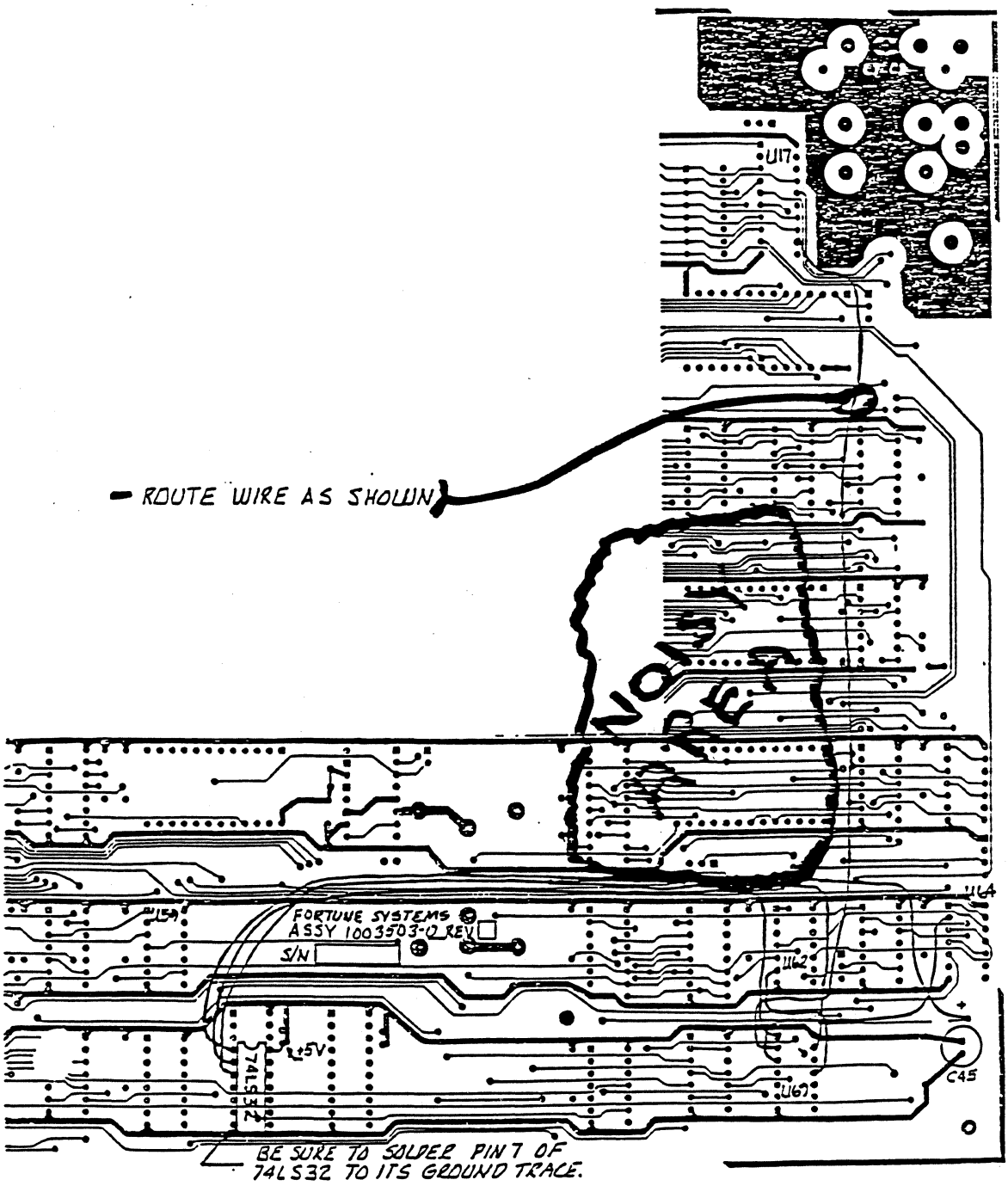
Originator J. R. L.

Approved

Corrective Action:

This problem will only happen if wire that runs from U17 to U69 is routed through noisy area on the PWA board..

If this symptom does arise the wire on the PWA board going from U17 to U69 (see diagram on page 2) will have to be physically moved out of the noisy area.


U17
ROUTE WIRE AS SHOWN
NOT USED
U15A
FORTUNE SYSTEMS
ASSY 1003503-0 REV
S/N
+5V
74LS32
U64
U62
U67
C45
BE SURE TO SOLDER PIN 7 OF
74LS32 TO ITS GROUND TRACE.

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: Western Electric Power Supply **Revision:** _____ **FSN #** 107

Description:

A few Western Electric power supplies have been sent out to the field with a pair of green and yellow wires about 22 inches long that go nowhere. These wires were specifically added for an OEM. When these wires aren't connected to anything they act as an antenna, drawing unwanted signals causing interference or power failures.

TYPE

Mandatory

As Required

Revision Change

Rework

Documentation

Information

Issue Date 6/13/86

New Issue

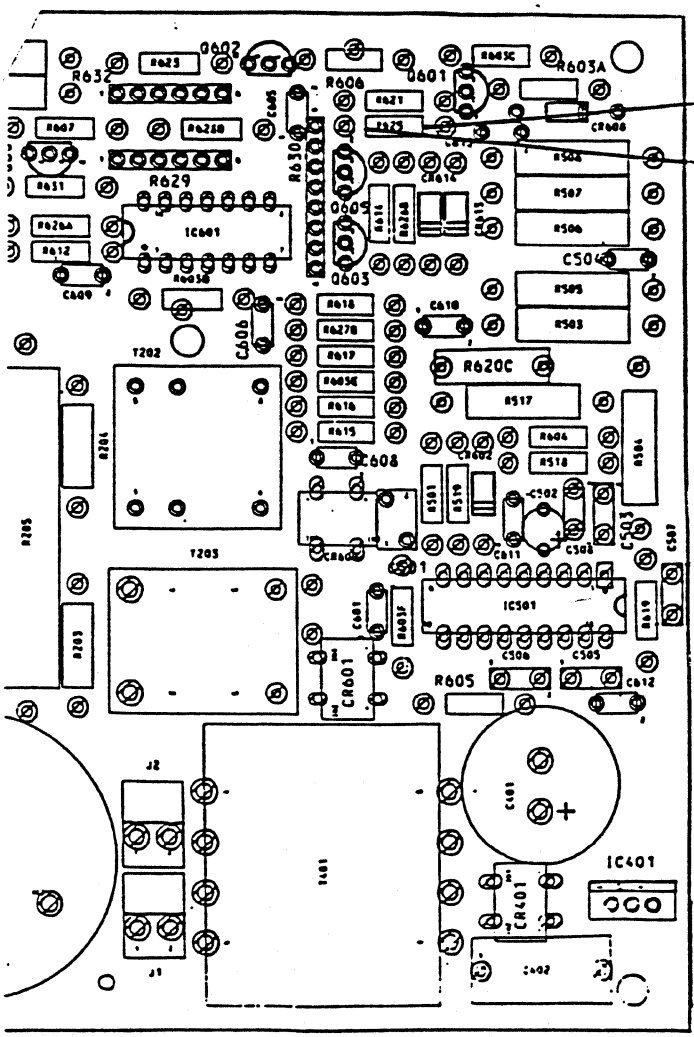
Replaces #

Originator

Approved

Corrective Action:

If wires do exist either cut off as much as possible or desolder from board (preferably the latter). Location of wires are at R625 on the power supply (see diagram below).



FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: PIO PWA SHAMROCK lot 23-86 **Revision:** 1001672-0X **FSN #** 108

Description:

PWB's from SHAMROCK lot #23-86 are plated through the mounting holes for the I/O plate and cause the +5 volt plane to be shorted to the GROUND plane. All boards will have the mounting holes drilled and nylon screws, #6-32 X 1/4 will be used with steel nuts.

TYPE

Mandatory
As Required
Revision Change
Rework
Documentation
Information

Issue Date 22 Jul 86

New Issue
Replaces #

Originator DSS

Approved CRB

Corrective Action:

This notice is for information only. All effected boards will have the modifications made prior to being shipped.

Care must be taken when tightening nylon screws to avoid applying too much torque and stripping or breaking the screw. Additionally, the I/O plate to board mount will not be as strong as with steel screws and must not be overstressed when installing assembly.

FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: Fortune-Link **Revision:** 1.0 **FSN #** 109

Description:

System seems to hang up when booting at the message 'Node name is ????' and will not complete. Occurs after an improper system shutdown, i.e. power failure.

TYPE

Mandatory
(As Required)
Revision Change
Rework
(Documentation)
(Information)

Issue Date

1 OCT 86

(New Issue)
Replaces #

Originator

Approved

Corrective Action:

Problem is due to improper status in the network card. This is solved by running diagnostics on the network card (only the self-test is necessary). Follow procedures in the Fortune-Link manual for network diagnostics.

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: Correction to Comm B Diagnostics **Revision:** _____ **FSN #** 110

Description:

An error exists in the documentation for Comm B diagnostics. When using the loopback test in the CommB diag. a special test connector must be installed on both ports of the CommB or errors will result.

TYPE

Mandatory

(As Required)

Revision Change

Rework

(Documentation)

(Information)

Issue Date

1 OCT 86

(New Issue)

Replaces #

(Originator)

Approved

(TRB)

Corrective Action:

The test connector must be a female 25 pin 'D' type connector (DB-25S) with the following connections made:

Pin 2 - 3
Pin 4 - 5
Pin 6 - 8 - 20
Pin 15 - 17 - 24

The loopback portion of the CommB diagnostic is required only in cases where no failures occur during all other tests and the system exhibits problems with communications. In cases where all the other tests pass and no other problems are apparent, loopback testing is not necessary.

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: 1 MB Memory Board / .5 MB Memory Board

Revision: 1003307-03 / 1003307-04

FSN # 111

Description:

When 2 memory boards are installed back to back, random parity errors and system hangs occur.

TYPE

(Mandatory)

As Required

Revision Change

(Rework)

Documentation

Information

Issue Date

1 OCT 86

New Issue

Replaces #

Originator

Approved

Corrective Action:

Black colored mini-jumps on headers B12C, B12D and B12 E (made by AMP) have exposed contacts which short to the adjacent board. This is remedied by replacing the mini-jumps with blue colored ones (made by Berg). For replacement mini-jumps call Technical Support with the quantity required.

FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: SX 3.5 MB Memory Upgrade **Revision:** _____ **FSN #** ~~112~~

Description:

With the release of FOR:PRO 2.0 the capability for 3.5 MB of memory in SX systems is available. This Service Notice is intended to clarify the installation and configuration of the new memory capabilities.

TYPE

(Mandatory)

As Required

Revision Change

(Rework)

Documentation

(Information)

Issue Date

1 Oct 86

New Issue

Replaces #

Originator

Approved

Corrective Action:

Required components:

1.	3.5 MB Compatable SX Motherboard	1003396-02	1 per system
2.	Memory Connector Cable	1008106-01	1 per system
3.	1 MB Memory Boards	1003307-03	variable
4.	.5 MB Memory Boards	1003307-04	variable

All memory boards must have the 'CONB' pins installed and be joined by the memory connector cable (this does not apply to 256 KB memory). Each memory board (1003307-03 & -04) also requires a PAL located in 13C (1003312-02 PAL for 1 MB and 1003312-03 PAL for .5 MB).

The following pages detail installation and jumpering of memory boards to provide the 3.5 MB capabilities.

3.5 Megabyte Memory Jumpering Guide

OVERVIEW:

There are 4 memory and 1 ECC slots in the 32:16. The absolute maximum amount of memory that can be installed is 3.5 Megabytes. This can be accomplished through various configurations of 256K byte boards, 512K byte boards, and 1 Megabyte boards.

When using 1 Megabyte boards, one must be present in the ECC slot. All the others must be cabled to the one in the ECC slot using the memory expansion cable.

When mixing 256K byte boards and either 512K boards or 1 Megabyte boards, the 256K byte boards must reside in the lowest memory slots (the ones nearest the ECC slot).

The memory configuration instructions will be presented in two parts: how to jumper the 1 Megabyte and the 512K byte boards for various addresses, and what addresses they should be jumpered to for the various possible configurations.

1 MEGABYTE MEMORY BOARD JUMPERING:

There are 3 sets of jumpers on the 1 Megabyte and 512K byte memory boards. These are: B12C (3 pins), B12D (2 pins), and B12E (3 pins).

The new 1 Megabyte memory board can be jumpered start at address 0.0, 0.5 Meg, 1.0 Meg, 1.5 Meg, 2.0 Meg, and 2.5 Meg. The jumpering for each of these starting addresses is shown below.

Starting Addr.	B12C	B12D	B12E
0.0 Meg	Jumper 1 to 2	Jumper 1 to 2	Jumper 1 to 3
0.5 Meg	Jumper 1 to 2	Jumper 1 to 2	Do not Jumper
1.0 Meg	Jumper 1 to 2	Do not Jumper	Jumper 1 to 3
1.5 Meg	Jumper 1 to 2	Do not Jumper	Do not Jumper
2.0 Meg	Do not Jumper	Jumper 1 to 2	Jumper 1 to 3
2.5 Meg	Do not Jumper	Jumper 1 to 2	Do not Jumper

512K BYTE JUMPERING:

The new 512K byte memory board can be jumpered for starting addresses of: 0.0 Meg, 0.5 Meg, 1.0 Meg, 1.5 Meg, 2.0 Meg, 2.5 Meg, and 3.0 Meg. The jumper ing for these starting addresses is shown below.

Starting Addr.	B12C	B12D	B12E
0.0 Meg	Jumper 1 to 2	Jumper 1 to 2	Jumper 1 to 3
0.5 Meg	Jumper 1 to 2	Jumper 1 to 2	Do not Jumper
1.0 Meg	Jumper 1 to 2	Do not Jumper	Jumper 1 to 3
1.5 Meg	Jumper 1 to 2	Do not Jumper	Do not Jumper
2.0 Meg	Do not Jumper	Jumper 1 to 2	Jumper 1 to 3
3.0 Meg	Do not Jumper	Jumper 1 to 2	Do not Jumper

(Note that the 512K byte board cannot be jumpered to start at 2.5 Megabytes do to hardware restrictions, but this will not affect the memory capacity of the system)

SYSTEM CONFIGURATION:

There are 4 types of memory boards to consider: 256K byte boards, 1 Megabyte memory boards that are in the field already, the new 1 Megabyte memory boards and the new 512K byte memory boards. The difference between the old and new 1 Megabyte memory boards is that the new ones have a new PAL and hence different jumpering required.

EXISTING BOARDS:

Systems that will use their existing 256K byte memory boards must use only two, and they must be in the two memory slots closest to the rear of the system (but not in the 80 pin ECC slot). This positioning gives the two cards starting addresses of 0.0 and 0.25 Megabytes (so the next card installed must begin at 0.5 Megabytes).

Systems that have one old 1 Megabyte memory board must change their jumpering to start at 0.5 Megabytes if 256K boards are to be used, or at address 0.0 if they are not to be used. Systems with two old 1 Megabyte memory boards must jumper one to start at address 0.0 and the other to start at address 1.0 Megabytes.

BOARD ADDRESSING:

The addresses shown in parantheses are the starting addresses that the board must be jumpered for. Numbers shown for the 256K boards are for reference only, as they do not require jumpering.

Using 256K boards:

ECC slot	Mem Slot A	Mem slot B	Mem slot C	Mem slot D
1 Meg	256K	256K	1 Meg	1 Meg
(.5)	(0.0)	(0.25)	(1.5)	(2.5)

Using an old 1 Meg memory Board and 256K boards:

ECC slot	Mem Slot A	Mem slot B	Mem slot C	Mem slot D
1 Meg-Old	256K	256K	1 Meg	1 Meg
(.5)	(0.0)	(0.25)	(1.5)	(2.5)

Using 2 Old 1 megabyte memory boards:

ECC slot	Mem Slot A	Mem slot B	Mem slot C	Mem slot D
1 Meg-Old	1 Meg-Old	1 Meg-New	512K	Empty
(0.0)	(1.0)	(2.0)	(3.0)	

Using new 1 Megabyte memory boards:

ECC slot	Mem Slot A	Mem slot B	Mem slot C	Mem slot D
1 Meg-New	1 Meg-New	1 Meg-New	512K	Empty
(0.0)	(1.0)	(2.0)	(3.0)	

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: Fortune Supplied Free Parts **Revision:** _____ **FSN #** 113

Description:

Effective March 31, 1987 Fortune will no longer supply replacement parts or upgrade services referred to by Field Service Notices 111, 100, 99, 97, 89, 81, 74, and 16 at no charge. After March 31, these items will be chargeable. Once current supplies are expended, Fortune will no longer supply micro processor upgrades for the C20 drives.

TYPE

Mandatory

As Required

Revision Change

Rework

Documentation

Information

Issue Date
02/27/87

New Issue

Replaces #

Originator
Brian L Wood

Approved
C M Mott

Corrective Action:

Please review the above Field Service Notices. If any of them apply, take action as described by the FSN. The deadline for all requests under the original conditions of the FSN's is March 31, 1987.

111	AMP MINI JUMPS	TECH SUPPORT
100	SX MEMORY UPGRADE 1003967-01	SALES/SERVICE
99	CERAMIC SECURITY PAL	PDC
74/97	C20 PROMS	TECH SUPPORT
89	SHUGART MX JUMPER REPAIR	PDC
81	FORTUNE 1000 KEYBOARDS	CUSTOMER SUPPORT (415) 594-2949
16	FLOPPY PALS	TECH SUPPORT

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: Multiplier Card **Revision:** All **FSN #** 114

Description:

The Multiplier card does not operate in PC's which have clock speeds over 6Mhz.

TYPE	
Mandatory	
As Required (circled)	
Revision Change	
Rework	
Documentation	
Information	

Issue Date 02/27/87

New Issue (circled)

Replaces #

Originator [signature]

Approved [signature]

Corrective Action:

The following upgrade will allow the Multiplier to run in machines with clock speeds up to 8Mhz.

Materials Required:

one 74S05 I.C. (Fortune part # 1003853-01)
Note: this chip is avialable at almost any electronics supply store

1. Separate the two boards from each other, being careful not to bend the pins of the connector which holds the two together. See Appendix A of the Multiplier user's guide for more information.

2. With an I.C. puller, remove the 74LS05 I.C. from the socket labeled U9, and replace it with the 74S05 I.C..

3. Re-assemble the two boards and install the Multiplier into the PC, following instructions in the Multiplier user's guide.

FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: Graphics Coprocessor **Revision:** All **FSN #** 115

Description:

Firmware version 2.0 for the Graphics Coprocessor is not compatible with For:Pro version 2.0.

TYPE

Mandatory

~~As Required~~

Revision Change

Rework

Documentation

Information

Issue Date

02/27/87

New Issue

Replaces #

Originator

Brian L. Wood

Approved

E. M. Smith

Corrective Action:

There is a new version of firmware for the Graphics board, version 2.1, available. Version 2.1 is compatible with For:Pro version 2.0, as well as earlier versions of For:Pro. The new firmware is available in the form of an upgrade kit, Fortune Systems part number 1003428-01, and may be ordered through Customer Service.

To install the new firmware, do the following:

1. From the component side of the board set, remove the four screws which hold the two boards of the coprocessor together. Separate the two boards, and set aside the top board.
2. Using an I.C. puller or a small screwdriver, remove the two EPROMS at locations E6 and G6 from their sockets on the bottom board.
3. Insert the new I.C. labeled:

```
GRDD 2.1
1883-02
xx/xx/87
XX HI
```

into the socket at location E6 with the notched end of the chip pointing toward the video connector at rear edge of the board. Note: there is also an outline drawing printed on the board showing the correct orientation of the chip.

4. Insert the new I.C. labeled:

GRDD 2.1
1881-02
xx/xx/87
XX LO

into the socket at location G6 with the notched end of the chip pointing toward the video connector at rear edge of the board. Note: there is also an outline drawing printed on the board showing the correct orientation of the chip.

5. Re-assemble the two boards, and install the Graphics coprocessor.

FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: Embedded SCSI Drives **Revision:** ALL **FSN #** 116

Description:

Fortune Systems does not currently support formatting embedded SCSI drives addressed as other than "0" under the FOR:PRO operating system.

TYPE

Mandatory
As Required
Revision Change
Rework
Documentation
(Information)

Issue Date 05/29/87

New Issue
Replaces #

Originator Kenneth Wood

Approved E. M. Smith

Corrective Action:

As Embedded SCSI (ESCSI) drives are hard sector formatted, there is no way to reformat them as with ST-506 interface drives (i.e. rewrite sector ID fields, etc.). **Even with ST-506 type drives, reformatting the drive is only recommended in the most extreme circumstances, most of which are related to either WD controller problems or operator error in connecting interface cables.** Since the drive controller logic and analog circuitry is integrated into the drive itself, problems of this nature are not likely to occur with ESCSI drives.

Even when a format is forced during the cold boot procedure on an ESCSI drive, all that happens is that a data pattern is written to each sector of the drive. Media defects mapped by the manufacturer are permanently stored on the drive in a user transparent manner, and will be spared automatically. The only defects which will be apparent to the user or field technician will be those mapped out by Fortune Systems during our burn-in and testing of the drive. These defects will be spared in the normal manner, i.e. through the FOR:PRO mkconf utility. After the cold boot program has formatted the drive and written a conf block to it, the surftest utility is run on partition hd02. This utility will test for and spare any defects not found by either the drive manufacturer or Fortune Systems.

If you are installing an add on ESCSI drive into a system (or ST-506 for that matter) only three FOR:PRO utilities should be run. Mkconf should be run to adjust partition boundaries. **The -i option should always be used with mkconf in order to preserve mapped spares information.** For example the command

'mkconf -U 0 -i /dev/hd10 /dev/hd10'

would create a conf block on drive one with no space allocated for swap and all previously mapped media defects would remain spared. The surftest utility may then be run on /dev/hd12 in order to verify the integrity of the file system partition of the drive. No further testing of the drive need normally be done. The only remaining thing to be done to the add-on drive is to build a file system on it. The mkfs utility is used for this purpose, most commonly with the '-a' option.

FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: SCSI Upgrade Path Fortune Systems 32:16 **Revision:** ALL **FSN #** 117

Description:

This Field service notice provides an outline of the upgrade path from WD/PIO disk and tape subsystems to SCSI based storage systems.

TYPE	Issue Date
Mandatory	05/29/87
As Required	New Issue
Revision Change	Replaces #
Rework	Originator: Brian D. Ward
Documentation	Approved: E. M. Smith
Information (circled)	

Corrective Action:

OVERVIEW

This Field service notice is intended to provide an outline of requirements and procedures for upgrading a system in the field to use the SCSI storage system. Step by step installation procedures are provided with the upgrade kits and will not be included here.

To convert a WD/PIO system to SCSI involves several hardware and software changes to the system. Most involve replacing various controller cards. The WD controller and PIO are replaced by the SCSI host adapter. If ST-506 interface drives are to be used in the SCSI system a controller board must be installed to allow the ST-506 drives to function within the SCSI subsystem. If ST-506 drives are to be used in an expansion cabinet, a separate controller must also be installed there. If a tape drive is to be used, its PIO compatible formatter board must be replaced with a SCSI formatter board.

If an expansion cabinet is being upgraded, there may be mounting brackets which need to be replaced. The SCSI subsystem requires the use of only one cable between the host system and the expansion cabinet. The connector at either end of the cable plugs into a 50-pin socket in the rear of each cabinet. A terminating module is provided with either the SCSI expansion upgrade kit or a new SCSI expansion cabinet. This module is to be plugged into the SCSI I/O connector in the back of the host system if the expansion cabinet is ever disconnected (e.g. for service or to be used with another host).

One primary concern when doing a SCSI upgrade is that a full backup for all applications and user files be available. Applications should be backed up through the menu to diskette. User files should be backed up to either tape or diskette. If files are backed up to tape, it is recommended that no multi-volume backup sets be used, the tape should be verified after doing the backup, and two copies should be made of each tape.

The primary advantages which the SCSI storage system has over the older WD/PIO configurations are:

1. One less slot is used for peripheral controllers in a system with a tape drive.
2. Compatibility with higher capacity hard disk drives, tape drives, and other peripheral devices using the SCSI interface.
3. Simplification of adding additional peripheral devices, e.g. more devices supported by a single controller and easier cabling.

Considerations which weigh against upgrading to SCSI include:

1. Expense - A considerable amount of hardware must be replaced when upgrading to SCSI. The WD controller and PIO are replaced by the SCSI host adapter. If ST-506 interface drives are to be used in the SCSI system a controller board must be installed allow the ST-506 drives to function within the SCSI subsystem. If ST-506 drives are to be used in an expansion cabinet, a separate controller must also be installed there. If a tape drive is to be used, it must be a 60 MB, and its PIO compatible formatter board must be replaced with a SCSI formatter board.
2. Time Consuming Upgrade - Since any ST-506 drives to be used in the SCSI system must be reformatted, all applications and user data must be backed up and then reloaded once the upgrade has been completed. The replacement of hardware in the system unit (and expansion cabinet) also takes time, though probably not as much as software related tasks.
3. Limitations - Due to hardware and operating system constraints, if two SCSI/ST-506 controllers are on the SCSI buss, no embedded SCSI hard drives may be used. What this means is that if there is an N70 hard drive in the system unit as well as one in the expansion cabinet, a 145 MB embedded SCSI drive may not be installed in an expansion unit. However, since the SCSI/ST-506 controller will control two drives, the 145 MB drive could be installed as drive 0 in the system unit, and the two N70's could be installed in one expansion cabinet with one SCSI/ST-506 controller.

Preliminary Requirements

Operating System

The machine must currently be running FOR:PRO version 2.0 or an upgrade to 2.0 must be performed at the time of the SCSI upgrade. Aditionally, version 1.3 or later Streaming Tape software must be used with SCSI. The SCSI storage system will not operate with an earlier version of FOR:PRO or tape software. If the operating system will need to be upgraded so may some applications (e.g. Fortune:Link, Business Basic, etc.). **Check to see which applications are currently being run to avert the possibility of compatibility problems with the newer version of FOR:PRO.**

System Units

The system unit to be upgraded must be an SX with hard tooled skins (HTS). The SCSI host adapter is supported only by the SX logic board, and the larger HTS cabinet and internal sheet metal are required for hardware mounting purposes. Additionally, the 300 watt power supply (Digipower) is recommended to provide adequate current overhead for the SCSI subsystem.

This does not disallow the possible upgrade of an XP system to SCSI. It simply means that the XP must have a HTS cabinet and first be upgraded with an SX logic board (and possibly power supply) prior to installing the SCSI subsystem.

If the system unit is to be used with an expansion cabinet, the expansion cabinet must also be converted to SCSI.

Expansion Cabinet

The expansion cabinet must be a HTS unit. If a tape drive is present in the expansion cabinet, it must be a 60 MB unit. **The 20 MB tape drive is not supported by SCSI, and the PIO tape controller may not be installed in the same unit as a SCSI host adapter.**

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: SCSI Host Adapter (PN 1003800-0X)

Revision: REV 10 or Lower

FSN # 118

Description:

SCSI Host Adapter may not remove CLB control signals in time when bus is heavily loaded, i.e. 4 or more slots in use. This may cause random interrupts (error 218) or other problems which will hang the system.

TYPE

Mandatory

(As Required)

Revision Change

(Rework)

Documentation

Information

Issue Date

05/29/87

New Issue

Replaces #

Originator

Brian L. Wood

Approved

E. M. Muth

Corrective Action:

Perform rework as per these instructions.

Solder Side Rework

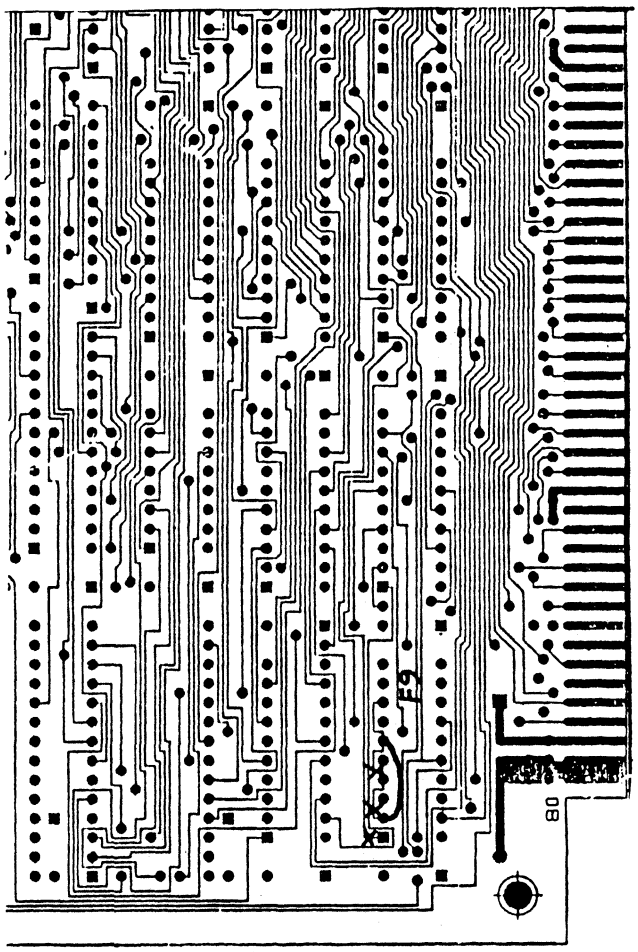
Cut Traces Exactly Where Shown.

F9 pin-1 to E2 pin-3
F9 pin-2 to F9 pin-4
F9 pin-4 to F9 pin-6

Add Wire: 30 AWG Kynar

F9 pin-2 to F9 pin-6

Note: 30 AWG Kynar wire is available at most electronic supply outlets. It is commonly used for wire-wrap work. Use an Xacto knife to cut circuit board traces, and a fine point soldering iron for soldering. When rework is complete, test for continuity at all cut and add locations with a multimeter.



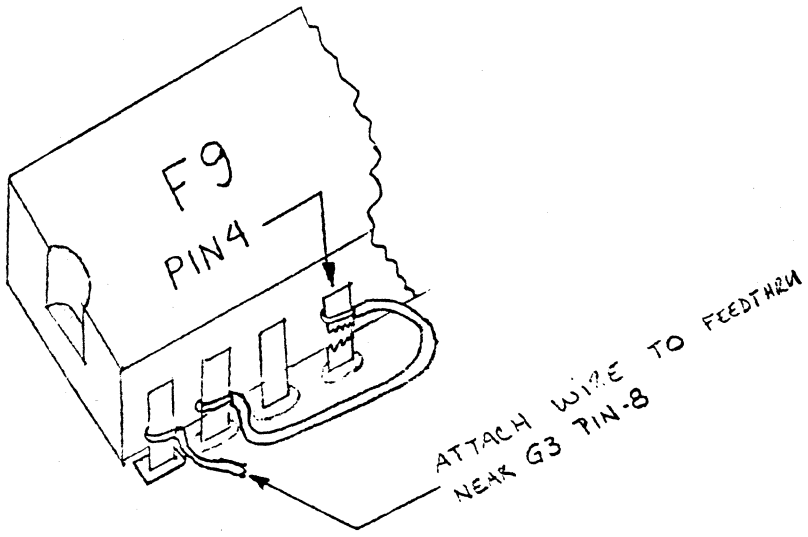
Component Side Rework

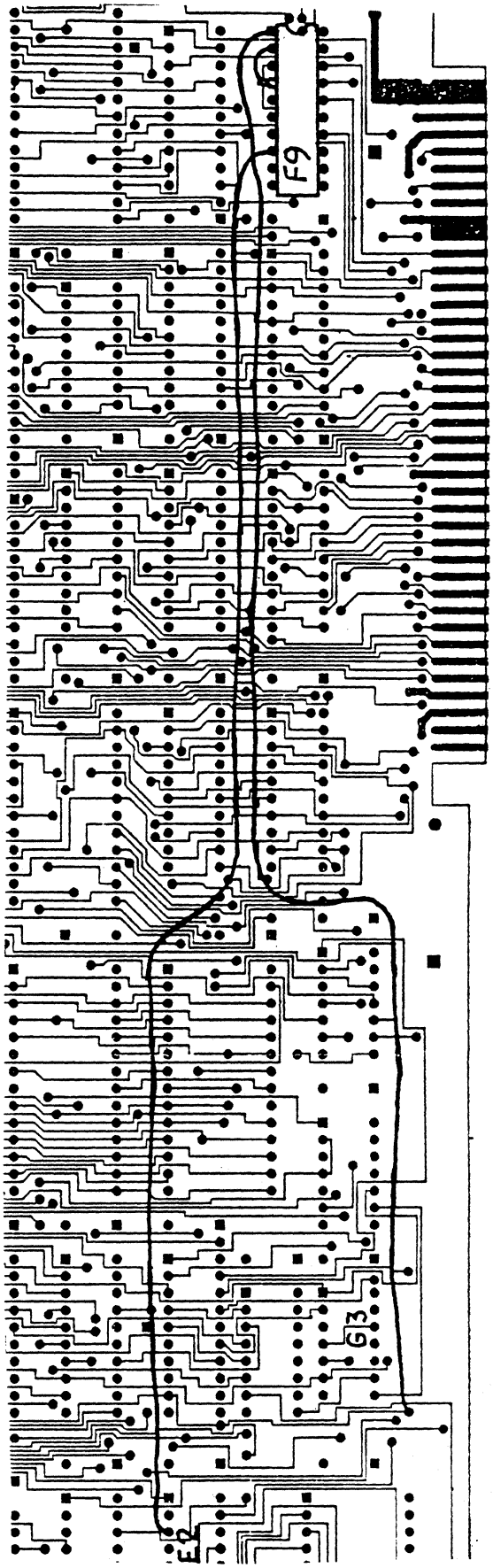
Cut and bend up pin

F9 pin-4

Add Wire: 30 AWG Kynar

F9 pin-1 to Feedthru
near G3 pin-8
F9 pin-2 to F9 pin-4
(bent up pin)
F9 pin-8 to E2 pin-3





FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: COMM-6 1003461-0X **Revision:** Rev 3 to 8 **FSN #** 119

Description:

Formula 4000 and 8000 systems with 3 or more COMM 6's will hang up intermittently.

If system is running reliably, DON'T FIX IT.

Rev's 4 through 7 are documentation changes only. Rev 8 boards remain compatible with the 32:16 product line.

TYPE

Mandatory

As Required

Revision Change

Rework

Documentation

Information

Issue Date 6/30/87

New Issue

Replaces #

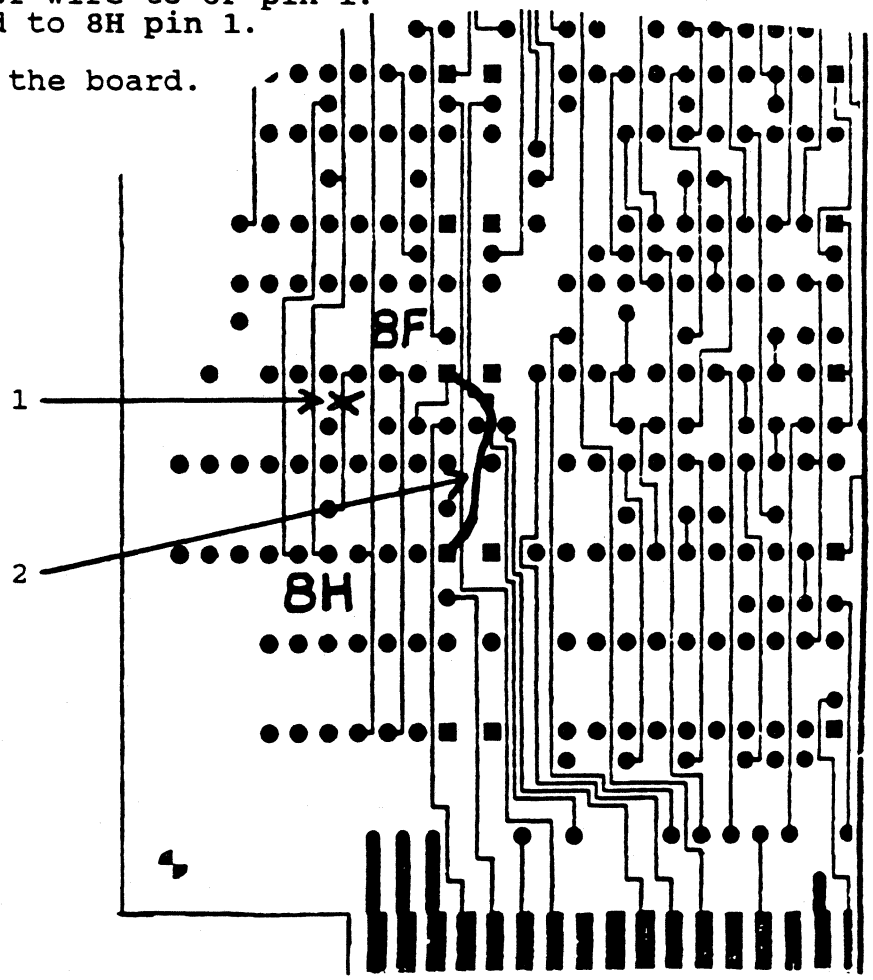
Originator

Approved

Corrective Action:

SOLDER SIDE

1. **Cut trace exactly where shown. IC location 8F pin 4.**
2. **Add wire:** 30 AWG Kynar. Connect one end of wire to 8F pin 1. Connect other end to 8H pin 1.
3. Stamp Rev "8" on the board.



FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: SLB 1003344-03 & -04 **Revision:** Rev 7 and below **FSN #** 120

Description:

Formula 8000 systems with 4 meg boards and multiple COMM 6's will hang up intermittently.

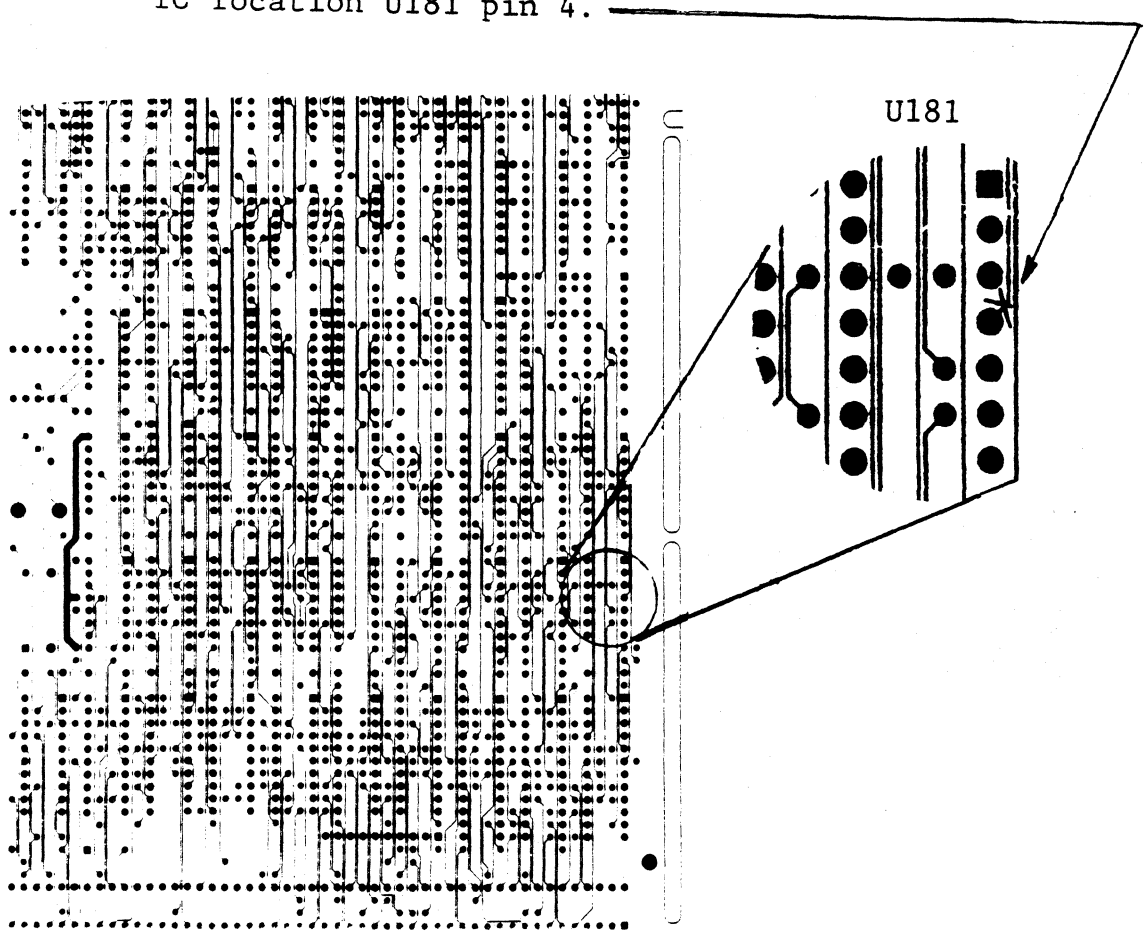
If system is running reliably, don't fix it.

TYPE	Issue Date
Mandatory	6/30/87
As Required	New Issue
Revision Change	Replaces #
Rework	Originator
Documentation	Approved
Information	

Corrective Action:

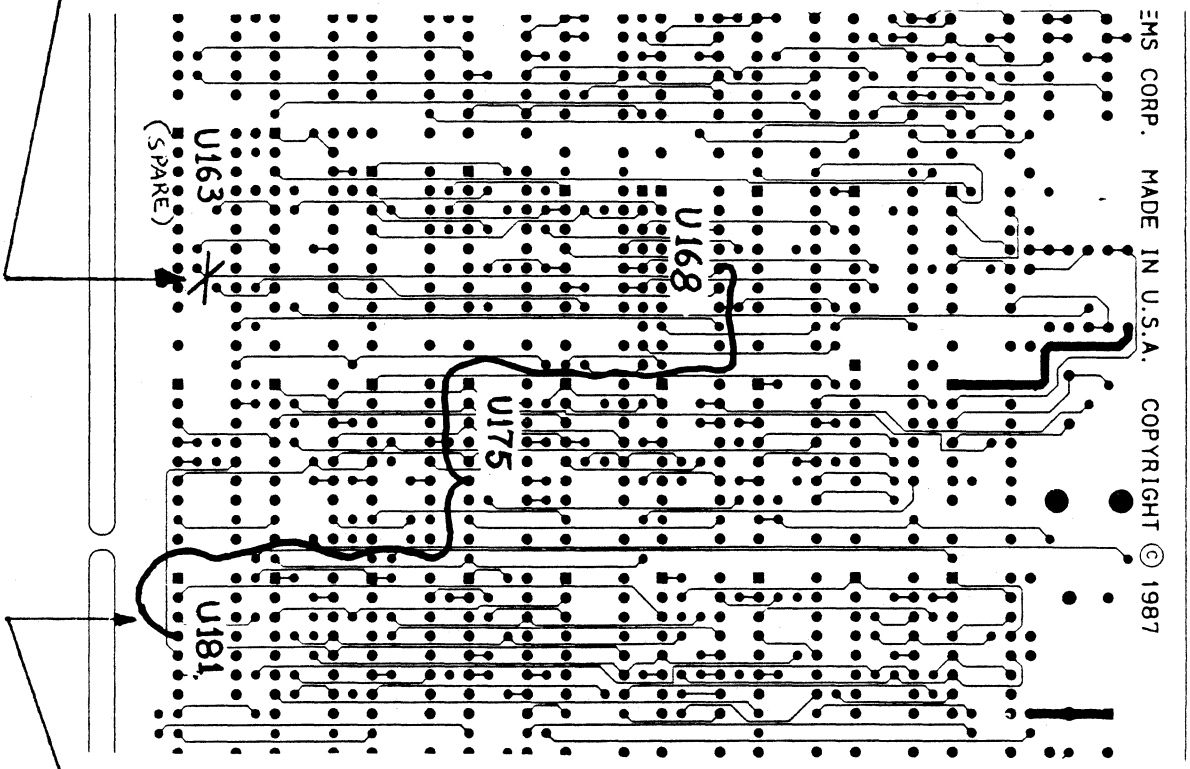
SOLDER SIDE

1. Cut trace exactly where shown. IC location U181 pin 4.



COMPONENT SIDE

2. Cut trace exactly where shown.
Feedthru near spare IC location U163 pin 4.



3. **Add wire:** 30 AWG Kynar.
Connect one end of wire from **U168 pin 10** to a middle connection at location **U175 pin 6** and then to a final connection at **U181 pin 4.**

4. Indicate on the board that this modification has been incorporated on it. Next to the last board REV #, write **",8.1".**

In order to keep an accurate history of the modifications done to the board, don't erase the old board revisions. Instead, just add the new mod # (8.1) next to the old rev #.

FORTUNE SYSTEMS PRODUCT SUPPORT

Field Service Notice

Product: SCSI Tape Controller 1008065-01 **Revision:** -- **FSN #** 121

Description:

Formula 4000, Formula 8000, and SCSI SXT systems may hang during tape backup when appending files to those already on the tape.

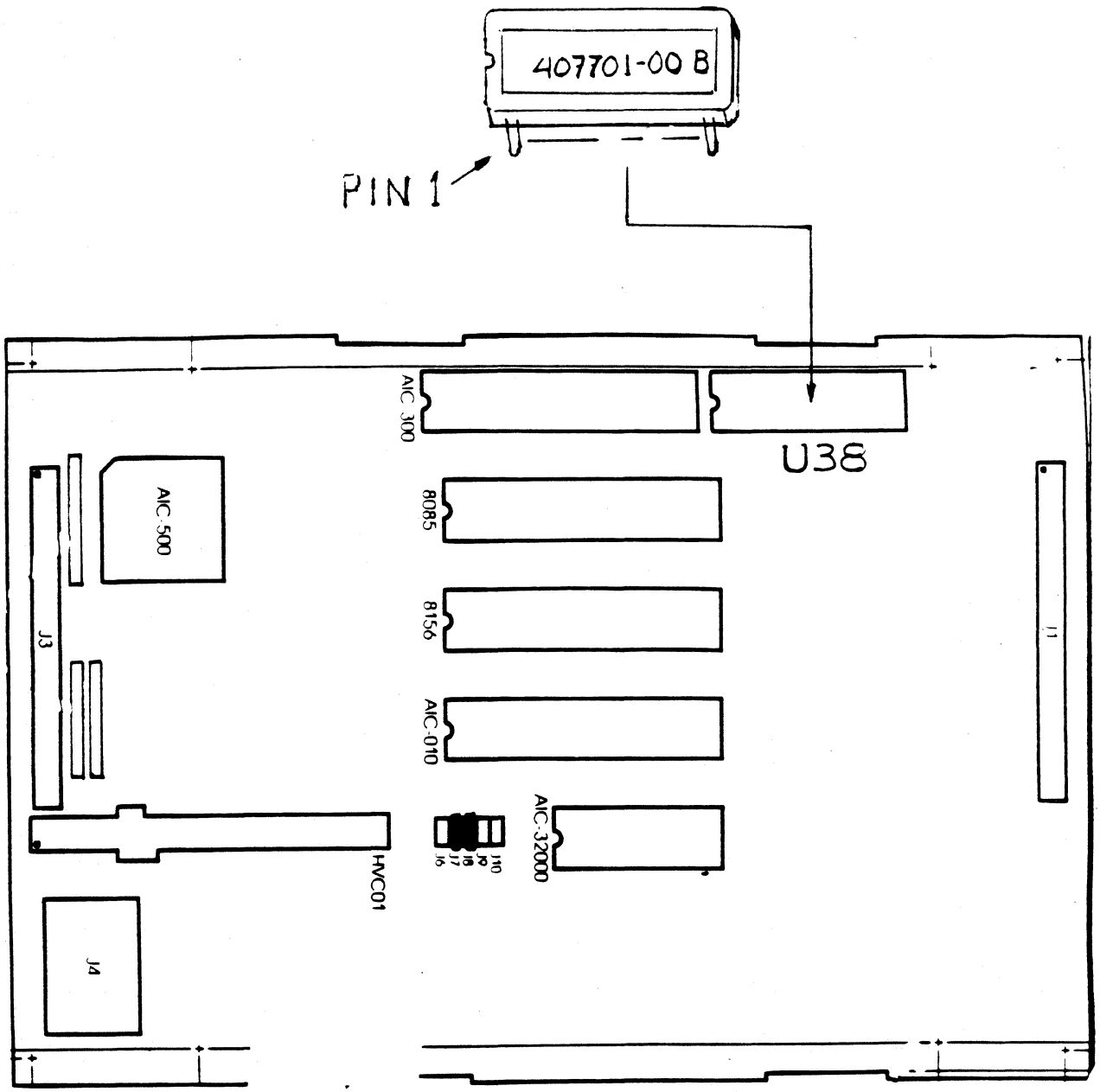
Check the system configuration label. Systems with controller part number 1008065-01R2 have been upgraded in the factory and do not require this rework.

TYPE	Issue Date
Mandatory	6/30/87
As Required	New Issue
Revision Change	Replaces #
Rework	Originator
Documentation	Approved
Information	

Corrective Action:

1. Perform a normal shutdown and turn power off.
2. Remove the tape drive assembly from the system and separate the tape controller from the dive assembly. Pay attention to the location of pin 1 (red stripe) when removing cables.
3. Check ID label on EPROM at U38. Down level part is # 4007701-00 A.
4. If down level, replace EPROM with # 407701-00 B. Notice that the new EPROM is installed in the same orientation as the other chips on the board. Pin 1 on the chip has a marking, a dot or a notch; pin 1 on the board is marked by a square pad.
5. To identify that the system has been updated, record the controller part # 1008065-01 and the revision level "R2" on the system configuration label.
6. Reassemble unit paying close attention to cable pin 1 location.

Order part number 1008470-01. The cost is $4.00



TAPE CONTROLLER BOARD

FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: SCSI Host Adaptor Board 1003800-01,-02,-03,-04 **Revision:** Rev 11 and below **FSN #** 122

Description:

Formula 4000, Formula 8000, and SCSI SXT systems may hang during concurrent disk and tape operations.

Check the system configuration label. Systems with adaptor board part number 1003800-03 7 -04 Rev 12 have been upgraded in the factory and do not require this rework.

TYPE

Mandatory

As Required

Revision Change

Rework

Documentation

Information

Issue Date
6/30/87

New Issue

Replaces #

Originator

Approved
E. M. Mack

Corrective Action:

1. Perform a normal shutdown and turn power off.

2. Remove the SCSI Host Adaptor board from the system. Pay attention to the location of pin 1 (red stripe) when disconnecting the SCSI cable.

3. Check ID label on EPROM at location IC-D5. Down level part number is 1003974-05.

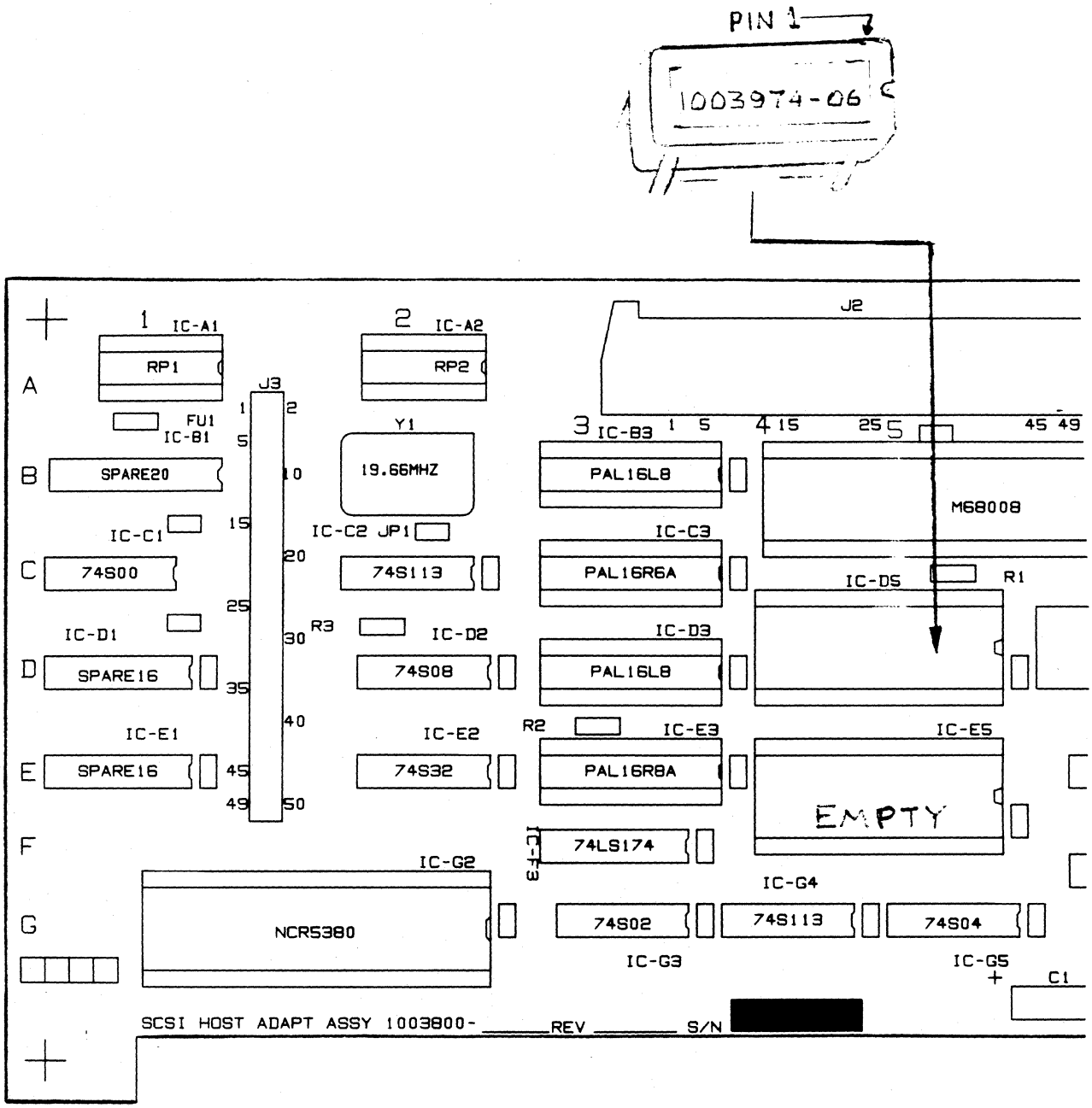
4. If down level, replace EPROM with 1003974-06. Notice that the new EPROM is installed in the same orientation as the other chips on the board. Pin 1 on the chip has a marking, or dot or a notch; pin 1 on the board is marked by a square pad.

5. To identify that the system has been updated, record the new revision level "R12" on both the system configuration label and the board.

   In order to keep an accurate history of the modifications done to the board, don't erase old board revisions. Instead, just add the new mod # (12) next to the old rev #.

6. Reassemble unit paying close attention to cable pin 1 location.

Order IC part number 1003974-05. The cost is $4.00



SCSI Host Adapter Board

FORTUNE SYSTEMS PRODUCT SUPPORT — Field Service Notice

Product: A Formula 4000 with a M85 drive 0 and a C145 expansion cabinet as drive 1 **Revision:** _____ **FSN #** 123

Description:

System fails to recognize the expansion drive.

TYPE	Issue Date 1/27/88
Mandatory	New Issue
As Required	Replaces #
Revision Change	
Rework	Originator
Documentation	Approved
Information	

Workaround:

1. Install Cold Boot floppy #1, and go to the ICON menu screen.
   a. Reset system
   b. Press the CANCEL/DEL key before the number 2 is displayed.
2. Boot up the **fd02/sa/reconf** menu.
   a. Select floppy drive by moving the cursor under the floppy drive.
   b. Press the EXECUTE key.
   c. Type **fd02/sa/reconf**
   d. Press RETURN followed by EXECUTE.
3. Boot up **hd02/unix**
   a. Press the F4 key

PROBLEM IS UNDER INVESTIGATION

FORTUNE/SCI Product Support — Field Service Notice

Product: SCSI Host Adapter Board 1003800-0X **Revision:** 14 and below 124

Description:

Possible System interrupt problems.

TYPE

Mandatory
As Required
Revision Change
Rework
Documentation
Information

Issue Date

2-23-88

New Issue Replaces #

Originator

Approved

Corrective Action:

1. Remove solder from feedthru above and between pins 69 & 71 of the Component side.

   NOTE: The pins on the component side of the board are odd numbers & the solder side are even pin numbers.

2. Mask off with tape all but .050" (less than 1/16 in) of gold fingers on pin 69 and pin 70.

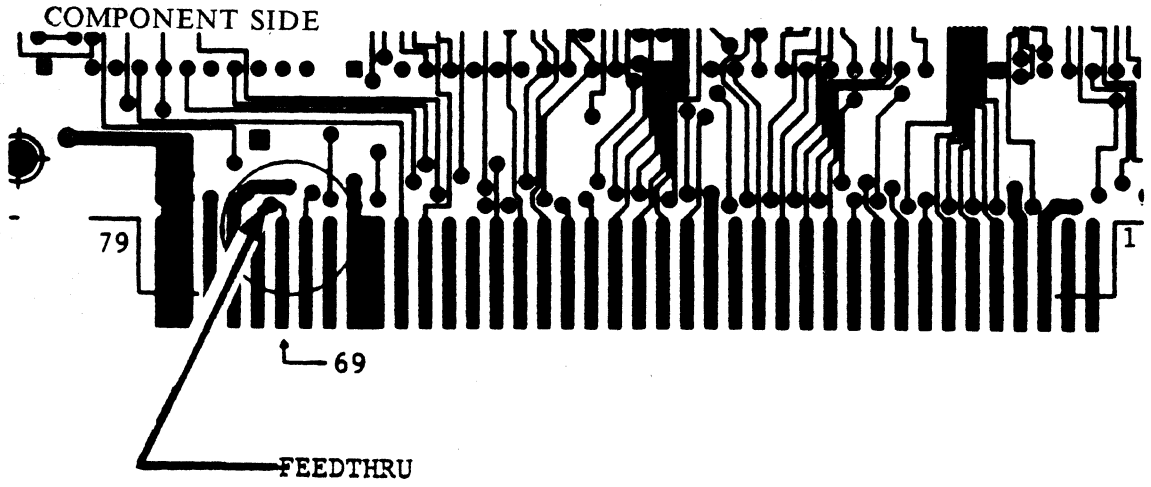
3. Solder one end of 30AWG kynar wire to pin 69. Route other end through cleared feedthru to solder side. Solder to pin 70. ** CAUTION - Keep solder area on pins to minimum for proper connector clearance.

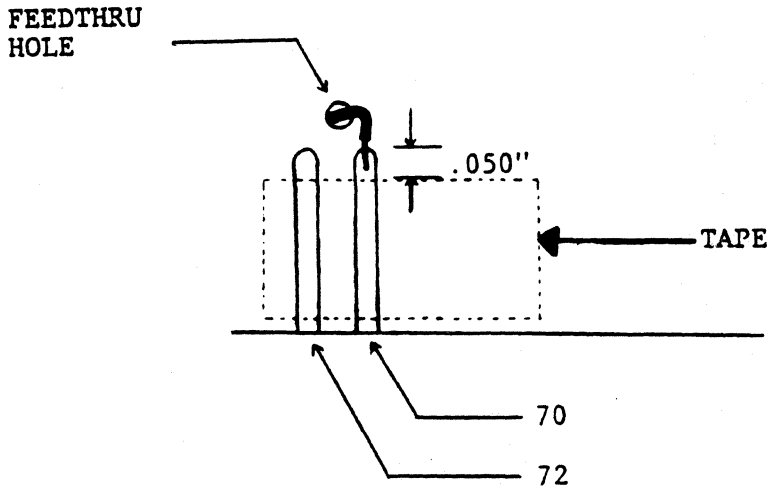
4. Remove masking tape from gold fingers.

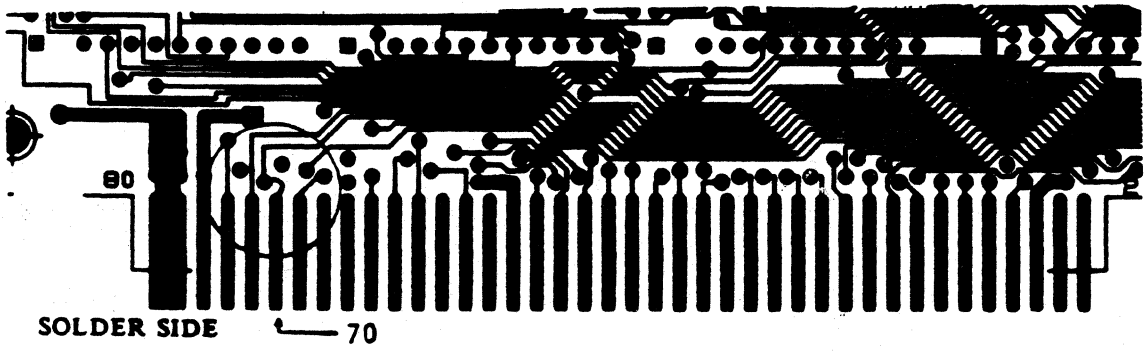
5. Stamp REV 15 on board.

FORTUNE/SCI Product Support — Field Service Notice

Continuation Sheet FSN# 124 **Page** 2 **of** 2







FORTUNE/SCI Product Support — Field Service Notice

Product: Formula 4000 System Board **Revision:** 1008203-02 REV. 6 only FSN # 125

Description:

Unable to perform a software reset (reboot command).

TYPE

Mandatory

As Required

Revision Change

Rework

Documentation

Information

Issue Date

02/29/88

New Issue Replaces #

Originator

3/1

Approved

E Muth

Corrective Action:

COMPONENT SIDE

REWORK RN10

A. Remove wire connecting RN10-10 to RN10-9 from Solder side if present.

B. Remove RN10 from board.

C. Cut off pin 10 as short as possible.

D. Wrap high temperature tape around resistor pack so that pin 10 is covered.

E. If fab is 1008202-02 Rev. 1A, with an added layer of kapton laminated to the component side, cut trace between RN10-9 and RN10-10 before reinstalling RN10.

F. Reinstall RN10 into board. Pin 1 of resistor pack goes to square pad just as before.

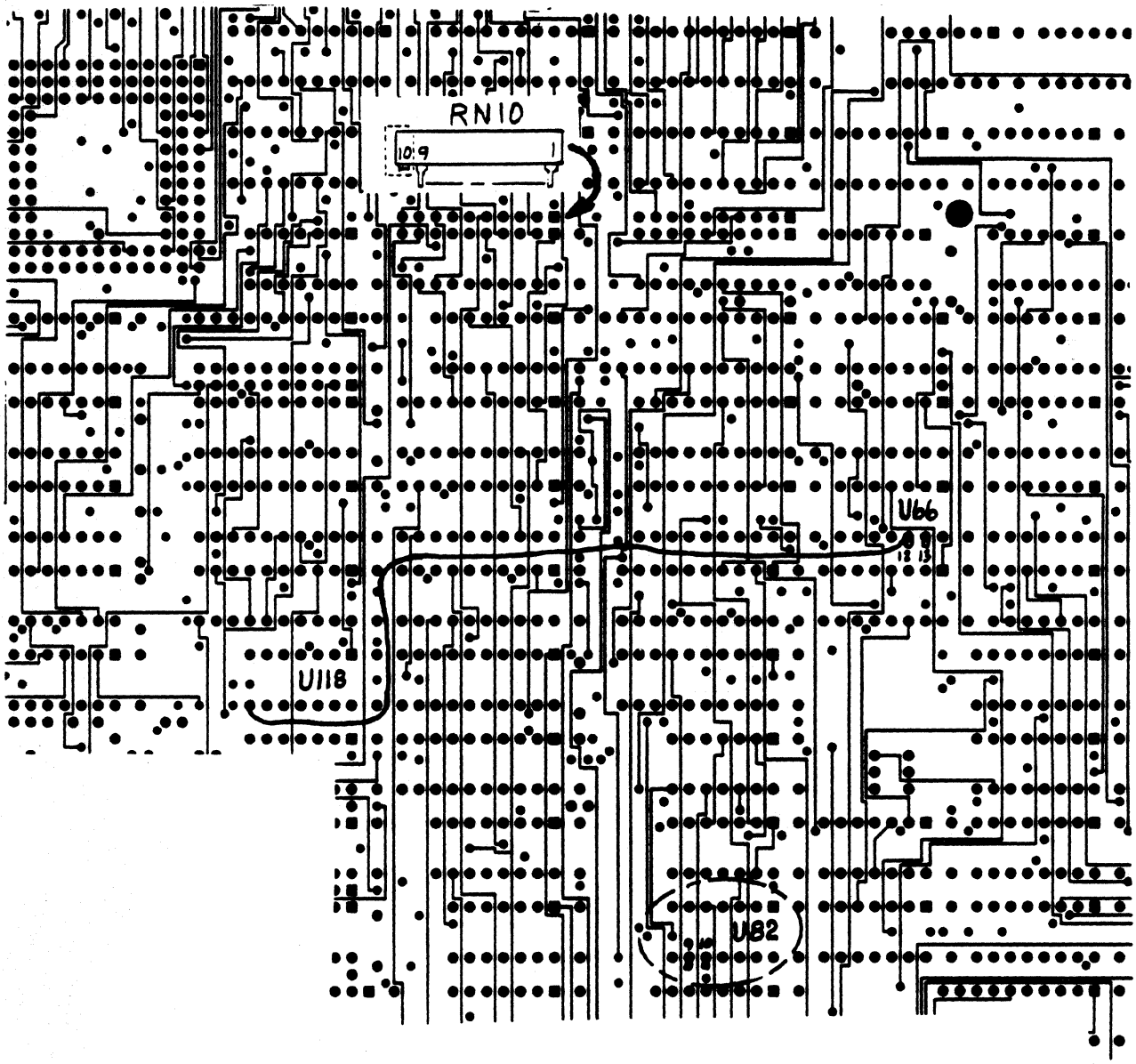
CUT AND BEND UP IC LEAD

U82-9, U82-10, U66-12, U66-13

ADD WIRE: 30 AWG KYNAR

U118-8 TO U66-12 PAD (do not attach wire to bent up pin at U66-12.)

COMPONENT SIDE VIEW



FORTUNE/SCI
Product Support

Field Service Notice

Continuation Sheet FSN # 125 **Page** 3 **of** 3

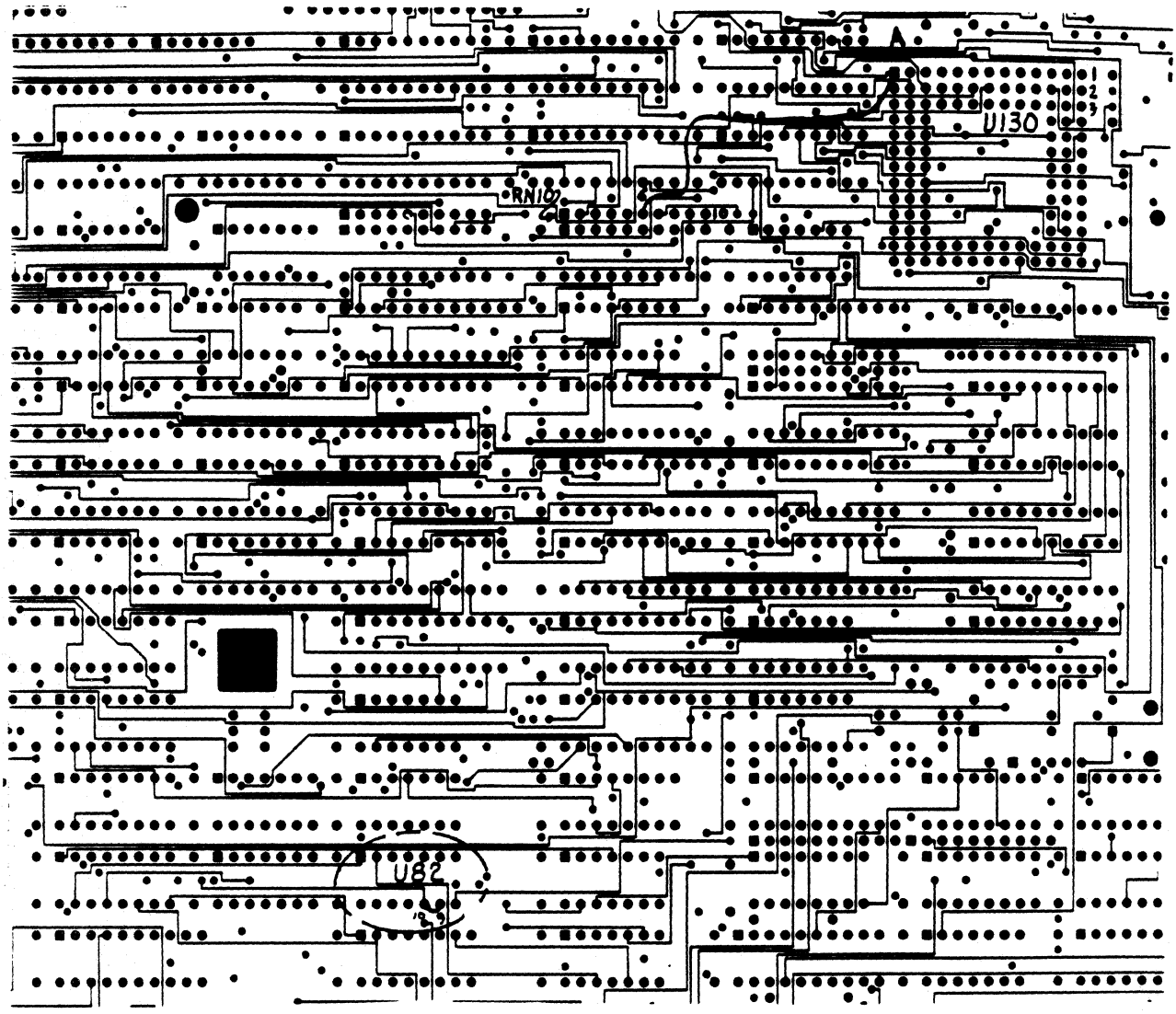
Remove wire between RN10-9 and RN10-10 if present.

Add wires: 30 AWG KYNAR

U82-10 TO U82-9 (no insulator necessary)
U130-A1 TO RN10-6

Stamp rev 7 on the board.

SOLDER SIDE VIEW



FORTUNE/SCI Product Support Field Service Notice

Product: Fortune 1000 Terminal **Revision:** _____ **#** 126

Description:

Fortune 1000 Terminals may intermittently jump into setup mode.

TYPE

Mandatory

As Required

Revision Change

Rework

Documentation

Information

Issue Date
3-7-88

New Issue Replaces #

Originator
Rick Bell

Approved
E Mr Smith 3/10/88

ELEC. ENG.
Eric Taylor

Corrective Action:

All terminals must be properly grounded. An improper ground may cause the terminal to interpret power fluctuations as a power-up initiation for the setup menu. Only use 3 prong power cords as well as grounded 3 prong recepticals.

FORTUNE/SCI Product Support — Field Service Notice

Product: Comm 6 PCB 1003461-0X **Revision:** Rev 9 & Below **#** 127

Description:

Recommended fix to Comm 6 hang problem.

Some systems with multiple Comm 6's (IAC) will halt, and/or the terminals will lock-up, requiring a hardware reset.

TYPE

Mandatory
(As Required)
Revision Change
Rework
Documentation
Information

Issue Date
3/16/88

New Issue Replaces #

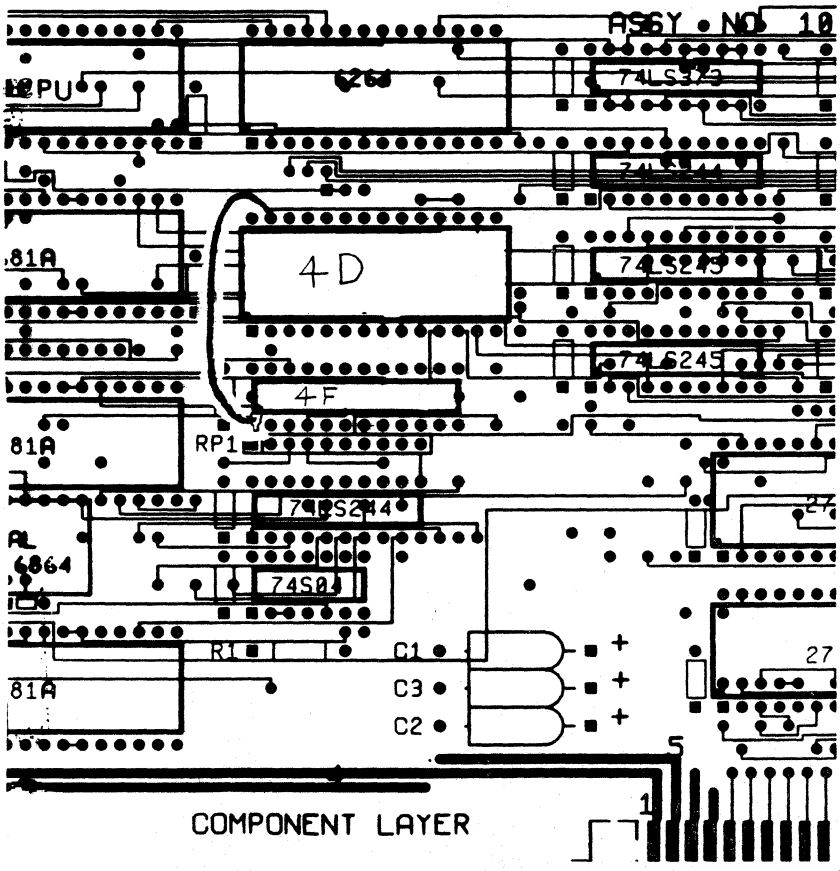
Originator

Approved 3/16/88

Eng.	Eng.	Eng.

Corrective Action:

1. New PAL required at location 4F.
2. Remove the old PAL at location 4F, and discard locally.
3. Bend up leg on pin #1 of the new PAL .
4. Insert the new PAL in location 4F. Leave pin #1 out - Do not insert into socket.
5. Attach one end of 30 AWG Kynar wire to pin one of the new PAL.
6. Attach other end on Kynar wire to pin #27 of the chip located at 4D. Stamp rev. 10 on BD.



ORDER NEW PAL KIT (#1008568-01) THROUGH NORMAL SALES CHANNELS

FORTUNE/SCI Product Support Field Service Notice

Product: Fortune Formula and 32:16 Systems **Revision:** ALL **SB #** 128

Description:

Recommended Cold Boot of all systems when they are received from SCI/Fortune Systems.

TYPE

Mandatory
As Required
Revision Change
Rework
Documentation
Information

Issue Date
6/29/88

New Issue Replaces #

Originator
Madeleine Edwards

Approved

Corrective Action:

It is recommended that when a new system is received from SCI/Fortune Systems that it be cold booted using the For:Pro Cold Boot diskettes that are shipped with the system. The cold boot procedure will reformat the hard drive and reload the operating system files onto the hard drive. This will insure that the data on the hard drive is correct and has not been corrupted during shipping.

The Cold Boot procedure is documented in detail in the following SCI/Fortune Systems publications:

Chapter 8 of the Fortune 32:16 Set Up Guide for the 32:16
Chapter 4 of the Formula 4000 Set Up Guide for the Formula 4000
Chapter 9 of the Formula 8000 Set Up Guide for the Formula 8000