MAP/SERVICE GUIDE TABLE OF CONTENTS

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0700	D	2	002

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
7	040	0101	A
8	043	0101	A
6	031	0103	A
7	039	0104	A
8	042	0104	A
8	045	0105	A
6	028	0105	A
6	033	0111	A
6	032	0112	A
6	030	0112	A
3	010	0200	A
9	046	0201	A
2	003	0300	A
3	011	0300	A
9	047	0700	A
3	007	0900	B
3	015	0900	C

```
001
(ENTRY POINT A)
**********************************
*        SYSTEM ENTRY CHART      *
**********************************
|
**********************************
*  ON ALL MULTI CARD CALL OUT,   *
* REPLACE ALL CARDS THAT ARE     *
* CALLED OUT. IF THOSE CARDS FIX *
* THE PROBLEM REPLACE ONE AT A   *
* TIME UNTILL YOU FIND THE FAIL- *
* ING CARD, THEN PUT THE REMAIN- *
* ING CARDS BACK INTO THE SYSTEM.*
**********************************
|
IS A SCP ERROR MESSAGE DISPLAYED ON
THE CRT?
Y N
| |
| |
| |
| |
| |
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| |
| |
| |
| |
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| |
| |
| |
| |
| |
9 2
A B
```

002
(ENTRY POINT D)
IF THE SYSTEM IS LEFT WITH AN ERROR INDICATION, RECORD THE STATUS OF THE FOLLOWING INDICATORS

-PROCESSOR CHECK LIGHT
-STOP LIGHT
-KEYBD RDY LIGHT
-LOAD LIGHT
-EVENT INDICATORS
-PROCESSOR ERROR BYTE(DPLY CHKS MODE)
-PORT ERROR BYTE(DPLY CHKS MODE)
-CONTROL STORAGE DATA AT ADDRESS X'0081'
-CONTROL STORAGE DATA AT ADDRESS X'0082'
-PROCESSOR CONDITION REG(DPLY PCR MODE)
-CRT DISPLAY

POWER OFF.
WAIT UNTIL SYSTEM POWERS DOWN.
POWER ON.

ALWAYS AFTER POWER UP WAIT APPROX. 45 SECONDS FOR THE DISK AND DISKETTE TO BECOME READY, UNLESS INSTRUCTED OTHERWISE.

POWER PROBLEMS APPEAR AS:
POWER CHECK
THERMAL CHECK
WILL NOT POWER UP
WILL NOT POWER DOWN
IS POWER OK ON THE 5320?
Y N

003
POWER PROBLEM.
GO TO MAP 0300, ENTRY POINT A.

004
IS A 5321(MCU) INSTALLED?
Y N

005

GO TO PAGE 3, STEP 008,
ENTRY POINT B.

006
IS THE 5321 POWER INDICATOR ON?
Y N

INSURE THAT THE IMPL DISKETTE USED IS CONFIGURED FOR YOUR SYSTEM AND USE THE DIAG 01 DISKETTE.

IF NECESSARY, REFER TO MLM CONSOLE SECTION FOR CE PANEL OPERATIONS.

007

GO TO MAP 0900, ENTRY POINT B.

008
(ENTRY POINT B)

IF THE FAILING FRU IS OBVIOUS, SUCH AS A BROKEN RIBBON, BROKEN PRINTER BELT, STUCK KEYBOARD KEYS, BROKEN GLASS, ETC., REFERENCE THE MLM AND CORRECT FAILURE, OTHERWISE CONTINUE.

DEPRESS RESET.
DEPRESS AND HOLD LAMP TEST SWITCH.
ARE ALL LAMPS ON THE 5320 LIT?
Y N

009
DEPRESS AND HOLD LAMP TEST SWITCH.
THERMAL AND/OR POWER CHECK LIGHTS OFF?
Y N

010
LAMP TEST.
GO TO MAP 0200, ENTRY POINT A.

011
POWER PROBLEM.
GO TO MAP 0300, ENTRY POINT A.

012
IS A 5321(MCU) INSTALLED?
Y N

013

GO TO PAGE 4, STEP 016,
ENTRY POINT C.

014
DEPRESS AND HOLD LAMP TEST SWITCH.
ARE ALL LAMPS LIT ON THE 5321?
Y N

015

GO TO MAP 0900, ENTRY POINT C.

016
(ENTRY POINT C)

TO CLEAR CONTROL STORAGE AND IMPL FROM THE DISK, PERFORM THE FOLLOWING:

.
OPEN THE DOOR ON DISKETTE DRIVE.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO ALTER STOR.
SET STOR SEL SWITCH TO CTL.
SET FORCE CLOCK SWITCH TO ON.
DEPRESS RESET.
SET FORCE CLOCK SWITCH TO OFF.
DEPRESS RESET.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
IMPL SEQUENCE COMPLETED NORMALLY?
(CRT DISPLAY EXACTLY AS SHOWN IN MLM SECTION 5, DIAGNOSTIC PATTERNS, FIGURE 1.)
Y N

THE CRT MESSAGE FOR NORMAL COMPLETION OF THE IMPL SEQUENCE IS REFERENCED IN MLM SECTION 5, DIAGNOSTIC PATTERNS, FIGURE 1.

017
REFERENCE MLM SECTION 5, DIAGNOSTIC PATTERNS, FIGURE 2, TO OBSERVE THE CRT MESSAGE THAT MAY BE DISPLAYED.
IS THE EXACT MESSAGE DISPLAYED ON CRT?
Y N

018
THE CRT MAY HAVE AN IMPL WRAP ERROR MESSAGE.
(SEE DIAGNOSTIC USER'S GUIDE FOR WRAP ERROR CODE DESCRIPTION)
IS A WRAP ERROR MESSAGE DISPLAYED ON CRT?
(CRT DISPLAY AS SHOWN IN MLM SECTION 5, DIAGNOSTIC PATTERNS, FIGURE 3.)
(IF SCREEN IS BLANK, UNREADABLE OR IN DIFFERENT FORMAT, ANSWER NO)
Y N

019

TO CLEAR CONTROL STORAGE AND IMPL FROM THE DISKETTE, DO THE FOLLOWING:

.

SET THE DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO ALTER STOR.
SET STOR SEL SWITCH TO CTL.
SET FORCE CLOCK SWITCH TO ON.
DEPRESS RESET.
SET FORCE CLOCK SWITCH OFF.
DEPRESS RESET.
SET THE MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.

DO NOT TAKE ACTION AS DESCRIBED ON CRT DISPLAY.
DID THE IMPL SEQUENCE COMPLETE NORMALLY?
(CRT DISPLAY EXACTLY AS SHOWN IN MLM SECTION 5, DIAGNOSTIC PATTERNS, FIGURE 4.)
Y N

THE NORMAL COMPLETION OF THE IMPL SEQUENCE IS DISPLAYED IN MLM SECTION 5, DIAGNOSTIC PATTERNS, FIGURE 4.

020

IS A WRAP ERROR MESSAGE DISPLAYED ON CRT?
Y N

021

DEPRESS RESET.
PROBE AA1-B2-B06 (-LOAD KEY PRESSED)
.
LINE DOWN?
Y N

022

DEPRESS AND HOLD THE LOAD KEY.
PROBE.AA1-B2-B06 (-LOAD KEY PRESSED)
.
LINE DOWN?
Y N

023
CHECK FOR DEFECTIVE N/O LOAD KEY
CHECK FOR OPEN CABLE FROM LOAD KEY TO AA1-B2-B06.

024
DEPRESS RESET.
PROBE AA1-B2-B08 (+STOP KEY PRESSED)
.
LINE DOWN?
Y N

025
CHECK FOR DEFECTIVE N/C STOP KEY.
CHECK FOR OPEN CABLE FROM STOP KEY TO AA1-B2-B08.

026
DEPRESS RESET.
PROBE AA1-B2-B07 (-LOAD KEY RELEASED)
LINE DOWN?
Y N

027
CHECK FOR DEFECTIVE N/C LOAD KEY.
CHECK FOR OPEN CABLE FROM NC LOAD KEY TO AA1-B2-B07.

028

GO TO MAP 0105, ENTRY POINT A.

029
1. CHECK FOR DEFECTIVE N/O LOAD KEY.
2. REPLACE CARD AA1-K2.

030

GO TO MAP 0112, ENTRY POINT A.

031

GO TO MAP 0103, ENTRY POINT A.

032

GO TO MAP 0112, ENTRY POINT A.

033

GO TO MAP 0111, ENTRY POINT A.

034
DEPRESS AND HOLD THE RESET KEY.
ANY 5320 INDICATOR ON?
Y N

035
IS THE DISKETTE OPERATING PROPERLY TO THE BEST OF YOUR KNOWLEDGE OR CUSTOMER INFORMATION?
.
IF NOT SURE, ANSWER YES TO THIS QUESTION.
Y N

036
RUN DISKETTE DIAGNOSTICS AS FOLLOWS:
1. SET DATA SWITCHES TO F800.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE SCRATCH DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY.
(WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. LOAD PROGRAM ID BY TYPING IN 33FD.
8. DEPRESS ENTER KEY.
9. FOLLOW INSTRUCTIONS ON CRT.

DID DISKETTE DIAGNOSTICS RUN OK?
Y N

037
FOLLOW THE INSTRUCTIONS ON CRT.

038
TO CLEAR CONTROL STORAGE AND IMPL FROM THE DISKETTE, DO THE FOLLOWING:
.
SET THE DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO ALTER STOR.
SET STOR SEL SWITCH TO CTL.
SET FORCE CLOCK SWITCH TO ON.
DEPRESS RESET.
SET FORCE CLOCK SWITCH OFF.
DEPRESS RESET.
SET THE MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.

DO NOT TAKE ACTION AS DESCRIBED ON CRT DISPLAY.
DID THE IMPL SEQUENCE COMPLETE NORMALLY?
(CRT DISPLAY EXACTLY AS SHOWN IN MLM SECTION 5, DIAGNOSTIC PATTERNS, FIGURE 4.)
Y N

039

GO TO MAP 0104, ENTRY POINT A.

040

GO TO MAP 0101, ENTRY POINT A.

041
TO CLEAR CONTROL STORAGE AND IMPL FROM THE DISKETTE, DO THE FOLLOWING:
.
SET THE DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO ALTER STOR.
SET STOR SEL SWITCH TO CTL.
SET FORCE CLOCK SWITCH TO ON.
DEPRESS RESET.
SET FORCE CLOCK SWITCH OFF.
DEPRESS RESET.
SET THE MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.

DO NOT TAKE ACTION AS DESCRIBED ON CRT DISPLAY.
DID THE IMPL SEQUENCE COMPLETE NORMALLY?
(CRT DISPLAY EXACTLY AS SHOWN IN MLM SECTION 5, DIAGNOSTIC PATTERNS, FIGURE 4.)
Y N

042

GO TO MAP 0104, ENTRY POINT A.

043

GO TO MAP 0101, ENTRY POINT A.

044
IMPL FROM THE DISK.
.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
IMPL SEQUENCE COMPLETED NORMALLY?
CRT DISPLAY AS SHOWN PREVIOUSLY)
Y N

045

GO TO MAP 0105, ENTRY POINT A.

THE NORMAL COMPLETION OF THE IMPL SEQUENCE IS DISPLAYED IN MLM SECTION 5, DIAGNOSTIC PATTERNS, FIGURE 4.

SYSTEM 32

PAGE 9 OF 9

046

GO TO MAP 0201, ENTRY POINT A.

047

DO NOT POWER OFF.
DO NOT RESET.
DO NOT IMPL.
GO TO MAP 0700, ENTRY POINT A.

SYSTEM 32

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0100	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	009	0102	A
2	011	0102	A
6	032	0600	A
3	020	0600	A
4	022	0900	A
7	035	0900	A
6	032	1200	A
5	026	1200	A

001
(ENTRY POINT A)

DID THE CUSTOMER IDENTIFY THE FAILING DEVICE?
Y N

| 002
| SET THE DATA SWITCHES TO 0000.
| SET THE MODE SELECTOR SWITCH TO PROC. RUN.
| SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
| INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
| DEPRESS THE LOAD KEY.
| WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
| .
| DEPRESS START.
| WILL SYSTEM CONTINUE?
| Y N
| |
| | 003
| | DEPRESS AND HOLD START.
| | PROBE AA1-J2-D02 (-OP START KEY PRESSED)
| | LINE DOWN?
| | Y N
| | |
| | | 004
| | | CHECK FOR OPEN CABLE FROM AA1-B2-B04 TO OPERATOR PANEL N/O START KEY (OP010)
| | | CHECK FOR DEFECTIVE OPERATOR N/O START KEY (OP010)
| | | REPLACE CARD AA1-J2.

THE IMPL SEQUENCE COMPLETED NORMALLY BOTH FROM THE DISK AND THE DISKETTE.

005
PROBE AA1-J2-D04 (-OP START KEY RELEASED)
LINE DOWN?
Y N

006
CHECK FOR OPEN CABLE FROM AA1-B2-B05 TO OPERATOR PANEL N/C START KEY (OP010)
CHECK FOR DEFECTIVE OPERATOR N/C START KEY (OP010)
REPLACE CARD AA1-J2.

007
REPLACE CARDS AA1-J2, AA1-N2.

008
SELECT AND RUN ERAP PROGRAM TO RESET ALL THE ERROR COUNTERS AS FOLLOWS:

SET THE DATA SWITCHES TO 0000.
SET THE MODE SELECTOR SWITCH TO PROC. RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 02 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR THE CRT DISPLAY.
LOAD PROGRAM ID BY TYPING IN ERAP.
DEPRESS THE ENTER KEY.
FOLLOW INSTRUCTIONS ON CRT.

WILL THE ERAP PROGRAM LOAD AND RUN?
Y N

009

GO TO MAP 0102, ENTRY POINT A.

010
SELECT AND RUN SYSTEM TEST AS FOLLOWS:

SET THE DATA SWITCHES TO 0000.
SET THE MODE SELECTOR SWITCH TO PROC. RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 02 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR THE CRT DISPLAY.
LOAD PROGRAM ID BY TYPING IN SYSTST.
DEPRESS THE ENTER KEY.
CAUTION:
CERTAIN FEATURE DEVICE SYSTEM TEST MODULES ARE MUTUALLY EXCLUSIVE. SEE SECTION III OF DIAGNOSTIC SERVICE(USERS) GUIDE(SECTION 3000). FOLLOW INSTRUCTIONS ON CRT; IF DISK ERROR MESSAGE APPEARS ON CRT EXIT TO 62GV MAIN ENTRY CHART PAGE 0600-2.

SELECT AND RUN ERAP PROGRAM AGAIN AS FOLLOWS:

SET THE DATA SWITCHES TO 0000.
SET THE MODE SELECTOR SWITCH TO PROC. RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 02 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR THE CRT DISPLAY.
LOAD PROGRAM ID BY TYPING IN ERAP.
DEPRESS THE ENTER KEY.
FOLLOW INSTRUCTIONS ON CRT.

DID ANY DEVICE FAIL?
Y N

011

GO TO MAP 0102, ENTRY POINT A.

012
IS THE FAILING DEVICE THE CRT AND/OR KEYBOARD?
Y N

15APR77 PN2547506
EC830358 PEC830357

013
IS THE FAILING DEVICE THE PRINTER?
Y N

014
IS THE FAILING DEVICE THE BSCA OR SDLC?
Y N

015
IS THE FAILING DEVICE THE 129 OR 5496 (CARDID)?
Y N

016
IS THE FAILING DEVICE THE 5321(MCU)?
Y N

017
IS THE FAILING DEVICE THE 1255(MICR)?
Y N

018
IS THE FAILING DEVICE FD-DISK?
Y N

019
RD-DISKETTE
.
1. SET DATA SWITCHES TO F800.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE SCRATCH DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY
7. ENTER PROGRAM ID BY TYPING IN 33FD.
8. DEPRESS THE ENTER KEY.
9. FOLLOW INSTRUCTIONS ON CRT.

020
62GV PROBLEM
GO TO MAP 0600, ENTRY POINT A.

021
MICR
.
1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. REMOVE THE CE DIAG 01 DISKETTE AND INSERT THE CE DIAG 04 DISKETTE AND CLOSE THE DOOR.
9. ENTER PROGRAM ID BY TYPING IN MICR.
** NOTE **
IF PROCESSOR CHECK OCCURS WHEN LOADING OR RUNNING MICR DIAGNOSTICS, REPLACE CARD AA1-F2.
10. DEPRESS THE ENTER KEY.
11. FOLLOW INSTRUCTIONS ON CRT.

J K SYSTEM ENTRY
3 3

SYSTEM 32

PAGE 4 OF 7

022
5321 PROBLEM
GO TO MAP 0900, ENTRY POINT A.

023
CARDIO
.
1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. REMOVE THE CE DIAG 01 DISKETTE AND INSERT THE CE DIAG 03 DISKETTE AND CLOSE THE DOOR.
9. ENTER PROGRAM ID BY TYPING IN CARDIO.
** NOTE **
IF PROCESSOR CHECK OCCURS WHEN LOADING OR RUNNING CARDIO DIAGNOSTICS, REPLACE CARD AA2-N2.
10. DEPRESS THE ENTER KEY.
11. FOLLOW INSTRUCTIONS ON CRT.

024
BSCA OR SDLC
.
1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. REMOVE THE CE DIAG 01 DISKETTE AND INSERT THE CE DIAG 04 DISKETTE AND CLOSE THE DOOR.
9. ENTER PROGRAM ID BY TYPING IN BSCA OR SDLC.
** NOTE **
IF PROCESSOR CHECK OCCURS WHEN LOADING OR RUNNING BSCA OR SDLC DIAGNOSTICS, REPLACE CARD AA2-L2.
10. DEPRESS THE ENTER KEY.
11. FOLLOW INSTRUCTIONS ON CRT.

025
PRINTER
.
1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. ENTER PROGRAM ID BY TYPING IN PRINTER IF LINE PRINTER. IF SERIAL PRINTER GO TO MAP 0525, ENTRY POINT A.
9. DEPRESS THE ENTER KEY.
10. FOLLOW INSTRUCTIONS ON CRT.

026
SELECT THE FAILING DEVICE FROM THE FOLLOWING CHART AND PERFORM ACTION AS INDICATED.

IF BOTH THE CRT AND KEYBOARD FAIL RUN DIAGNOSTICS ON BOTH DEVICES.

KYB-KEYBOARD

1. SET DATA SWITCHES TO F100.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND THE IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. FOLLOW INSTRUCTIONS ON THE CRT.

CRT DISPLAY

1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY.

6.
GO TO MAP 1200, ENTRY POINT A.

027
DID THE CUSTOMER IDENTIFY THE BSCA OR SDLC AS THE FAILING DEVICE?
Y N

028
DID THE CUSTOMER IDENTIFY THE 129 OR 5496 (CARDIO) AS THE FAILING DEVICE?
Y N

029
DID THE CUSTOMER IDENTIFY THE 5321(MCU) AS THE FAILING DEVICE?
Y N

030
DID THE CUSTOMER IDENTIFY THE 1255(MICR) AS THE FAILING DEVICE?
Y N

031
DID THE CUSTOMER IDENTIFY THE PRINTER AS THE FAILING DEVICE?
Y N

15APR77 PN2547506
EC830358 PEC830357

032
EXIT TO THE FAILING DEVICE MAP CHART.

KYB-KEYBOARD
.
1. SET DATA SWITCHES TO F100.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND THE IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY.(WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. FOLLOW INSTRUCTIONS ON THE CRT.

CRT DISPLAY
.
1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY.

6.
GO TO MAP 1200, ENTRY POINT A.

FD-DISK
.

---

1. 62GV MAIN ENTRY CHART
GO TO MAP 0600, ENTRY POINT A.

RD-DISKETTE
.
1. SET DATA SWITCHES TO F800.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE SCRATCH DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. ENTER PROGRAM ID BY TYPING IN 33FD.
8. DEPRESS THE ENTER KEY.
(STEP 032 CONTINUES)

(STEP 032 CONTINUED)
9. FOLLOW INSTRUCTIONS ON CRT.

033
PRINTER
.
1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. ENTER PROGRAM ID BY TYPING IN PRINTER IF LINE PRINTER. IF SERIAL PRINTER GO TO MAP 0525, ENTRY POINT A.
9. DEPRESS THE ENTER KEY.
10. FOLLOW INSTRUCTIONS ON CRT.

034
MICR
.
1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. REMOVE THE CE DIAG 01 DISKETTE AND INSERT THE CE DIAG 04 DISKETTE AND CLOSE THE DOOR.
9. ENTER PROGRAM ID BY TYPING IN MICR.
** NOTE **
IF PROCESSOR CHECK OCCURS WHEN LOADING OR RUNNING MICR DIAGNOSTICS, REPLACE CARD AA1-F2.
10. DEPRESS THE ENTER KEY.
11. FOLLOW INSTRUCTIONS ON CRT.

035
5321 PROBLEM
GO TO MAP 0900, ENTRY POINT A.

036
CARDIO

1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. REMOVE THE CE DIAG 01 DISKETTE AND INSERT THE CE DIAG 03 DISKETTE AND CLOSE THE DOOR.
9. ENTER PROGRAM ID BY TYPING IN CARDIO.
** NOTE **
IF PROCESSOR CHECK OCCURS WHEN LOADING OR RUNNING CARDIO DIAGNOSTICS, REPLACE CARD AA2-N2.
10. DEPRESS THE ENTER KEY.
11. FOLLOW INSTRUCTIONS ON CRT.

037
BSCA OR SDLC

1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. REMOVE THE CE DIAG 01 DISKETTE AND INSERT THE CE DIAG 03 DISKETTE AND CLOSE THE DOOR.
9. ENTER PROGRAM ID BY TYPING IN BSCA OR SDLC.
** NOTE **
IF PROCESSOR CHECK OCCURS WHEN LOADING OR RUNNING BSCA OR SDLC DIAGNOSTICS, REPLACE CARD AA2-L2.
10. DEPRESS THE ENTER KEY.
11. FOLLOW INSTRUCTIONS ON CRT.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	A	2	001
0700	B	4	005

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
3	004	0105	A

001
(ENTRY POINT A)
SELECT AND RUN ALL DEVICE TESTS THAT ARE ON YOUR SYSTEM 32, AS INDICATED BELOW;

IF A DEVICE TEST FAILS AND THE FAILURE IS NOT ISOLATED USING THE DEVICE MAPS, GO TO ENTRY POINT B ,PAGE 3, OF THIS MAP(INTERMITTENT FAULTS).

KEYBOARD:

1. SET DATA SWITCHES TO F100.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. FOLLOW INSTRUCTIONS ON CRT.

PRINTER:

1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. ENTER PROGRAM ID BY TYPING IN PRINTER IF LINE PRINTER. IF SERIAL PRINTER GO TO MAP 0525, ENTRY POINT A.
9. DEPRESS THE ENTER KEY.
10. FOLLOW INSTRUCTIONS ON CRT.

DISK:

1. GO TO 62GV MAIN ENTRY CHART, MAP 0600, ENTRY POINT A.
(RETURN HERE AND CONTINUE IF NO (STEP 001 CONTINUES)
(STEP 001 CONTINUED)
PROBLEM FOUND)

DISKETTE:

1. SET DATA SWITCHES TO F800.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE SCRATCH DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. ENTER PROGRAM ID BY TYPING IN 33FD.
8. DEPRESS THE ENTER KEY.
9. FOLLOW INSTRUCTIONS ON CRT.

CRT:

1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY.
6. GO TO MAP 1200, ENTRY POINT A. (RETURN HERE AND CONTINUE IF NO PROBLEM FOUND)

BSCA OR SDLC: (ONLY IF AA2-L2 CARD IS INSTALLED)

1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. REMOVE THE CE DIAG 01 DISKETTE, INSERT THE CE DIAG 03 DISKETTE AND CLOSE THE DOOR.
9. ENTER PROGRAM ID BY TYPING IN (STEP 001 CONTINUES)

(STEP 001 CONTINUED)
BSCA OR SDLC.
** NOTE **
IF PROCESSOR CHECK OCCURS WHEN LOADING OR RUNNING BSCA OR SDLC DIAGNOSICS, REPLACE CARD AA2-L2.
10. DEPRESS THE ENTER KEY.
11. FOLLOW INSTRUCTIONS ON CRT.

CARDIO (ONLY IF AA2-N2 CARD IS INSTALLED)

1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. REMOVE THE CE DIAG 01 DISKETTE, INSERT THE CE DIAG 03 DISKETTE AND CLOSE THE DOOR.
9. ENTER PROGRAM ID BY TYPING IN CARDIO.
** NOTE **
IF PROCESSOR CHECK OCCURS WHEN LOADING OR RUNNING CARDIO DIAGNOSTICS, REPLACE CARD AA2-N2.
10. DEPRESS THE ENTER KEY.
11. FOLLOW INSTRUCTIONS ON CRT.

MICR (ONLY IF AA1-F2 CARD IS INSTALLED)

1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. REMOVE THE CE DIAG 01 DISKETTE, INSERT THE CE DIAG 04 DISKETTE AND CLOSE THE DOOR.
9. ENTER PROGRAM ID BY TYPING IN
(STEP 001 CONTINUES)

(STEP 001 CONTINUED)
MICR.
** NOTE **
IF PROCESSOR CHECK OCCURS WHEN LOADING OR RUNNING MICR DIAGNOSTICS, REPLACE CARD AA1-F2.
10. DEPRESS THE ENTER KEY.
11. FOLLOW INSTRUCTIONS ON CRT.

5321(MCU): (ONLY IF CARDS AA2-N2 AND AA2-P2 ARE INSTALLED.
1. GO TO MAP 0900 ENTRY POINT A.
(RETURN HERE AND CONTINUE IF NO PROBLEM FOUND)

DID ALL THE DEVICE TESTS RUN OK?
Y N
|
| 002
| FOLLOW INSTRUCTIONS ON CRT OR
| HARD COPY MAPS.
|
003
RELOAD THE SCP PROGRAM.

.
SELECT AND RUN THE ERAP PROGRAM.

.
SET DATA SWITCHES TO 0000.
SET THE MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 02 DISKETTE AND CLOSE THE DOOR.
WAIT FOR THE CRT DISPLAY.
LOAD PROGRAM ID BY TYPING IN ERAP
DEPRESS THE ENTER KEY.
FOLLOW INSTRUCTIONS ON CRT.

.
WILL THE ERAP PROGRAM LOAD AND RUN?
Y N
|
| 004
|
| GO TO MAP 0105, ENTRY POINT A.
|
4
A

005
(ENTRY POINT B)
INTERMITTENT FAULTS:

THE TABLES TO THE RIGHT CORRELATE THE HEX REPRESENTATION OF THE ERROR CHECKS, STORED IN THE PROCESSOR ERROR BYTE REG AND THE PORT ERROR BYTE REG, WITH THE MOST PROBABLE CAUSES OF THE RECORDED FAILURE.

THE APPROPRIATE HEX VALUE FOR THE ERROR BYTE, MAY BE DETERMINED AS FOLLOWS:

IF ERROR INDICATIONS WERE RECORDED IN MAP 0100 AT THE START OF CALL AND:

THE ERROR BYTE DISPLAY WITH THE MODE SWITCH IN 'DPLY CHKS' POSITION WAS NOT X'0000', USE THE RECORDED HEX VALUE FOR THE PROC ERROR BYTE (HIGH BYTE) AND THE PORT ERROR BYTE (LOW BYTE).

THE ERROR BYTE DISPLAY WITH THE MODE SWITCH IN 'DPLY CHKS' POSITION WAS X'0000', USE THE RECORDED HEX VALUE OF THE CONTENTS OF CONTROL STORE ADDRESS X'0082'(HIGH BYTE) FOR PROC ERROR BYTE AND THE CONTENTS OF CONTROL STORE ADDRESS X'0081'(HIGH BYTE) FOR PORT ERROR BYTE.

IF ERROR INDICATIONS WERE RECORDED IN MAP 0700(SCP ERROR MAP), USE THE RECORDED HEX VALUE OF THE CONTENTS OF CONTROL STORE ADDRESS X'0082'(HIGH BYTE) FOR PROC ERROR BYTE AND THE CONTENTS OF CONTROL STORE ADDRESS X'0081'(HIGH BYTE) FOR PORT ERROR BYTE.

IF ERROR INDICATIONS WERE NOT RECORDED IN MAP 0100 OR MAP 0700, DETERMINE HEX VALUES OF PROC ERROR BYTE AND PORT ERROR BYTE FROM FIRST ERAP PRINTOUT.

COMPARE THE APPROPRIATE HEX VALUES FOR THE ERROR BYTES WITH THE HEX NUMBERS IN THE TABLES TO THE RIGHT. FIND AN EXACT MATCH. THE FRU'S(REFER TO PLUG CHART AY020 FOR
(STEP 005 CONTINUES)

PROC ERROR BYTE

RECORDED ERR BYTE	FRU'S (CARDS ON AA1)
X'01'	M2
X'04'	N2/M2
X'08'	N2/M2
X'0C'	N2/M2
X'10'	L2/M2/J2/K2/H2
X'20'	L2/M2/J2/K2/H2
X'24'	L2/M2
X'28'	L2/M2
X'2C'	L2/M2
X'30'	L2/M2/J2/K2/H2
X'34'	L2/M2
X'38'	L2/M2
X'3C'	L2/M2
X'40'	M2/R2/S2/T2/U2
X'80'	L2/R2/S2/T2/U2
X'90'	L2/M2/R2/S2/T2/U2
X'A0'	L2/R2/S2/T2/U2
X'B0'	L2/M2/R2/S2/T2/U2
X'C0'	P2/Q4
X'D0'	L2/M2/R2/S2/T2/U2

PORT ERROR BYTE

RECORDED ERR BYTE	FRU'S (H2 CARD ON AA1)
X'01'	H2/IO ATTACH(NOTE1)
X'04'	H2
X'06'	H2
X'08'	H2/IO ATTACH(NOTE1)
X'10'	H2/IO ATTACH(NOTE1)
X'20'	H2/IO ATTACH(NOTE1)
X'22'	H2/IO ATTACH(NOTE1)
X'40'	H2/IO ATTACH(NOTE1)
X'80'	H2/IO ATTACH(NOTE1)
X'82'	H2/IO ATTACH(NOTE1)

(STEP 005 CONTINUED)
CARD FUNCTION)TO THE RIGHT OF THE MATCHED HEX NUMBER IN THE TABLE ARE IN ORDER OF PROBABLE CAUSE OF THE DISPLAYED ERROR.

FAILURE DIAGNOSIS BY MATCHING DISPLAYED ERRORS TO THE TABLE ENTRIES SHOULD BE MADE ONLY IN THE EVENT OF INTERMITTENT FAILURES OR WHEN THE MAPS FAIL TO ISOLATE THE FAILURE. THE TABLES DO NOT NECESSARILY INCLUDE EVERY POSSIBLE CAUSE OF THE DISPLAYED ERROR BUT ONLY THE MOST PROBABLE CAUSES.

NOTE1

IF THE TABLE TO THE RIGHT IDENTIFIES IO ATTACHMENT AS A PROBABLE FAILURE, THE HIGH ORDER 4 BITS OF THE ADDRESS OF THE FAILING ATTACHMENT CAN BE DETERMINED BY REFERRING TO BITS 0 THRU 3 OF THE LOW BYTE STORED AT CONTROL STORE ADDRESS X'0081' AND PREVIOUSLY RECORDED. USE TABLE BELOW TO IDENTIFY FAILING DEVICE. REFER TO PLUG CHART AY020 AND AY030 FOR DEVICE ATTACHMENT CARD LOCATION.

ADDRESS	DEVICE
10	KEYBOARD
40	DISPLAY
50	CARDIO
50	MICR
80	BSCA
A0	62GV
D0	33FD
E0	LINE PRINTER
E1	SERIAL PRINTER

SYSTEM 32

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0100	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	008	0110	A
3	014	0110	A
3	006	0600	A
3	012	0600	A
4	030	0600	A
5	040	0600	A
5	035	0600	A

001
(ENTRY POINT A)

SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
OPEN THE DISKETTE DOOR.
DEPRESS THE LOAD KEY.
DID EVENT INDICATOR BIT P GO OFF?
Y N

002
REPLACE CARDS AA1-H2, AA1-K2, AA2-G2.

THE IMPL SEQUENCE COMPLETED NORMALLY FROM THE DISKETTE BUT FAILED FROM THE DISK.

WHEN THE LOAD KEY IS DEPRESSED ALL THE EVENT INDICATORS SHOULD COME ON.

003
POWER OFF.
REMOVE ALL ADAPTER INTERFACE CARDS EXCEPT DISK.

CARDS IDENTIFIED IN THE ADAPTER CARD LOCATION TABLE AS FEATURE CARDS WILL BE PRESENT ONLY IF THE FEATURE IS INSTALLED.

POWER ON.
SET DATA SWITCHES TO F701.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL OTHER TOGGLE SWITCHES IN THE DOWN POSITION.
WAIT APPROX. 45 SECONDS FOR THE DISK TO BECOME READY.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
DID THE STOP LIGHT COME ON?
Y N

004
POWER OFF.
REINSTALL ALL PREVIOUSLY REMOVED CARDS.
REMOVE CABLES FROM LOCATIONS AA1-B4 AND AA1-B5.
JUMPER AA1-M2-B13 (+ SINGLE CYCLE) TO AA1-M2-D08 (GROUND).
JUMPER AA1-J2-M12 (+ MODE SEL SW BIT 0) TO AA1-J2-D08 (GROUND).
POWER ON. WAIT 45 SECONDS.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
IMPL SEQUENCE COMPLETED NORMALLY?
Y N

005
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CABLES AND REMOVE JUMPERS.
POWER ON.
.
OPEN THE DISKETTE DOOR.
DEPRESS AND HOLD THE LOAD KEY.
PROBE AA1-N2-J09 (- LOAD KEY RELEASED).
.
LINE DOWN?
Y N

ADAPTER INTERFACE CARD LOCATIONS

REFER TO AY030 FOR AA2 BOARD PLUG CHART.

AA2-F2	DISK	
AA2-G2	DISK	
AA2-K2	DISKETTE	
AA2-L2	BSCA OR	FEATURE
	SDLC	FEATURE
AA2-M2	CRT/KYBD	
AA2-Q2	LINE PRINTER	
AA2-Q2	SERIAL PRINTER	
AA2-R2	SERIAL PRINTER	
AA2-N2	CARDIO	FEATURE

REFER TO AY020 FOR AA2 BOARD PLUG CHART.

AA1-F2	MICR	FEATURE

006
62GV MAIN ENTRY CHART
GO TO MAP 0600,
ENTRY POINT A.

007
1. CHECK FOR DEFECTIVE N/C LOAD KEY.
2. REPLACE CARD AA1-N2.

008
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CABLES AND REMOVE JUMPERS.
POWER ON.
GO TO MAP 0110, ENTRY POINT A.

009
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR
.
IS WR1 EQUAL TO X'0000'?
Y N

010
POWER OFF.
REINSTALL ALL PREVIOUSLY REMOVED CARDS.
REMOVE CABLES FROM LOCATIONS AA1-B4 AND AA1-B5.
JUMPER AA1-M2-B13 (+ SINGLE CYCLE) TO AA1-M2-D08 (GROUND).
JUMPER AA1-J2-M12 (+ MODE SEL SW BIT 0) TO AA1-J2-D08 (GROUND).
POWER ON.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
IMPL SEQUENCE COMPLETED NORMALLY?
Y N

011
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CABLES AND REMOVE JUMPERS.
POWER ON.
.
OPEN THE DISKETTE DOOR.
DEPRESS AND HOLD THE LOAD KEY.
PROBE AA1-N2-J09 (- LOAD KEY RELEASED).
.
LINE DOWN?
Y N

012
62GV MAIN ENTRY CHART
GO TO MAP 0600,
ENTRY POINT A.

013
1. CHECK FOR DEFECTIVE N/C LOAD KEY.
2. REPLACE CARD AA1-N2.

014
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CABLES AND REMOVE JUMPERS.
POWER ON.
GO TO MAP 0110, ENTRY POINT A.

015
POWER OFF.
REINSTALL CARD AA2-Q2 IF LINE PRINTER.
REINSTALL CARD AA2-Q2 AND AA2-R2 IF SERIAL PRINTER.
POWER ON.
SET DATA SWITCHES TO F703.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

016
REPLACE CARD AA2-Q2, OR AA2-R2 IF SERIAL PRINTER.

15APR77 PN2547508
EC830358 PEC830357

017
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR
.
IS WR1 EQUAL TO X'0000'?
Y N

018
REPLACE CARDS AA2-Q2, AA1-J2, AA1-H2, OR AA2-R2 IF SERIAL PRINTER.

019
POWER OFF.
REINSTALL CARD AA2-M2.
POWER ON.
SET DATA SWITCHES TO F70F.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

020
REPLACE CARD AA2-M2.

021
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR
.
IS WR1 EQUAL TO X'0000'?
Y N

022
REPLACE CARDS AA2-M2, AA1-J2, AA1-H2.

023
POWER OFF.
REINSTALL CARD AA2-K2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

024
REPLACE CARD AA2-K2.

025
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR
.
IS WR1 EQUAL TO X'0000'?
Y N

026
REPLACE CARDS AA2-K2, AA1-J2, AA1-H2.

027
IS BSCA OR SDLC INSTALLED ON THE SYSTEM?
Y N

028
(ENTRY POINT B)
.
.
IS A 129 OR 5496 (CARDIO) INSTALLED ON THE SYSTEM?
Y N

029
IS A 1255(MICR) INSTALLED ON THE SYSTEM?
Y N

030
62GV MAIN ENTRY CHART
GO TO MAP 0600,
ENTRY POINT A.

031
POWER OFF.
REINSTALL CARD AA1-F2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

032
REPLACE CARD AA1-F2.

15APR77 PN2547508

EC830358 PEC830357

033
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR
.
IS WR1 EQUAL TO X'0000'?
Y N

034
REPLACE CARDS AA1-F2, AA1-J2, AA1-H2.

035
62GV MAIN ENTRY CHART
GO TO MAP 0600, ENTRY POINT A.

036
POWER OFF.
REINSTALL CARD AA2-N2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

037
REPLACE CARD AA2-N2.

038
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR
.
IS WR1 EQUAL TO X'0000'?
Y N

039
REPLACE CARDS AA2-N2, AA1-J2, AA1-H2.

040
62GV MAIN ENTRY CHART
GO TO MAP 0600, ENTRY POINT A.

041
POWER OFF.
REINSTALL CARD AA2-L2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

042
REPLACE CARD AA2-L2.

043
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR
.
IS WR1 EQUAL TO X'0000'?
Y N

044
REPLACE CARDS AA2-L2, AA1-J2, AA1-H2.

045

GO TO PAGE 4, STEP 028,
ENTRY POINT B.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0100	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
3	009	0110	A
4	015	0110	A

001
(ENTRY POINT A)

THE FIRST DCP MESSAGE DISPLAYED ON CRT MAY BE FOUND IN MLM SECTION 5, DIAGNOSTIC PATTERNS, FIGURE 5.
IS THE EXACT MESSAGE DISPLAYED ON CRT?
Y N

THE IMPL SEQUENCE COMPLETED NORMALLY FROM THE DISK BUT FAILED FROM THE DISKETTE.

002
OPEN THE DISKETTE DOOR.
DEPRESS LOAD KEY.

DID EVENT INDICATOR BIT P GO OFF?
Y N

WHEN THE LOAD KEY IS DEPRESSED ALL THE EVENT INDICATORS SHOULD COME ON.

003
REPLACE CARDS AA1-H2, AA1-K2.

004
POWER OFF.
REMOVE ALL ADAPTER INTERFACE CARDS EXCEPT DISKETTE.

CARDS IDENTIFIED IN THE ADAPTER CARD LOCATION TABLE AS FEATURE CARDS WILL BE PRESENT ONLY IF THE FEATURE IS INSTALLED.

POWER ON.
SET DATA SWITCHES TO F780.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID THE STOP LIGHT COME ON?
Y N

005
POWER OFF.
REINSTALL ALL PREVIOUSLY REMOVED CARDS.
REMOVE CABLES FROM LOCATION AA1-B4 AND AA1-B5.
JUMPER AA1-M2-B13 (+ SINGLE CYCLE) TO AA1-M2-D08 (GROUND).
JUMPER AA1-J2-M12 (+ MODE SEL SW BIT 0) TO AA1-J2-D08 (GROUND).
JUMPER AA1-B5-D07 (-IMPL DISKETTE) TO AA1-D5-D08 (GROUND).
POWER ON.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
IMPL SEQUENCE COMPLETED NORMALLY?
Y N

ADAPTER INTERFACE CARD LOCATIONS

REFER TO AY030 FOR AA2 BOARD PLUG CHART.

AA2-F2	DISK	
AA2-G2	DISK	
AA2-J4	HALF INDEX (PRINTER)	FEATURE
AA2-K2	DISKETTE	
AA2-L2	BSCA OR	FEATURE
	SDLC	FEATURE
AA2-M2	CRT/KYBD	
AA2-N2	CARDIO	FEATURE
AA2-N2	5321(MCU)	FEATURE
AA2-P2	5321(MCU)	FEATURE
AA2-Q2	LINE PRINTER	
AA2-Q2	SERIAL PRINTER	
AA2-R2	SERIAL PRINTER	

REFER TO AY020 FOR AA1 BOARD PLUG CHART.

AA1-F2	MICR	FEATURE

006
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CABLES AND REMOVE JUMPERS.
POWER ON.
.
OPEN THE DISKETTE DOOR.
DEPRESS AND HOLD THE LOAD KEY.
PROBE AA1-N2-J09 (- LOAD KEY RELEASED).
.
LINE DOWN?
Y N

007
RUN DISKETTE DIAGNOSTICS AS FOLLOWS:
.
1. SET DATA SWITCHES TO F800.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE SCRATCH DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. ENTER PROGRAM ID BY TYPING IN 33FD.
8. DEPRESS THE ENTER KEY.
9. FOLLOW INSTRUCTIONS ON CRT.

IF NO TROUBLE IS FOUND WITH THE 33FD DIAGNOSTIC TESTS, SUSPECT A DAMAGED OR DESTROYED DIAG 01 DISKETTE.

008
1. CHECK FOR DEFECTIVE N/C LOAD KEY.
2. REPLACE CARD AA1-N2.

009
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CABLES AND REMOVE JUMPERS.
POWER ON.
GO TO MAP 0110, ENTRY POINT A.

010
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

011
POWER OFF.
REINSTALL ALL PREVIOUSLY REMOVED CARDS.
REMOVE CABLES FROM LOCATION AA1-B4 AND AA1-B5.
JUMPER AA1-M2-B13 (+ SINGLE CYCLE) TO AA1-M2-D08 (GROUND).
JUMPER AA1-J2-M12 (+ MODE SEL SW BIT 0) TO AA1-J2-D08 (GROUND).
JUMPER AA1-B5-D07 (-IMPL DISKETTE) TO AA1-D5-D08 (GROUND).
POWER ON.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
IMPL SEQUENCE COMPLETED NORMALLY?
Y N

012
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CABLES AND REMOVE JUMPERS.
POWER ON.
.
OPEN THE DISKETTE DOOR.
DEPRESS AND HOLD THE LOAD KEY.
PROBE AA1-N2-J09 (- LOAD KEY RELEASED).
.
LINE DOWN?
Y N

013
RUN DISKETTE DIAGNOSTICS AS FOLLOWS:
.
1. SET DATA SWITCHES TO F800.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE SCRATCH DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. ENTER PROGRAM ID BY TYPING IN 33FD.
8. DEPRESS THE ENTER KEY.
9. FOLLOW INSTRUCTIONS ON CRT.

IF NO TROUBLE IS FOUND WITH THE 33FD DIAGNOSTIC TESTS, SUSPECT A DAMAGED OR DESTROYED DIAG 01 DISKETTE.

014
1. CHECK FOR DEFECTIVE N/C LOAD KEY.
2. REPLACE CARD AA1-N2.

015
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CABLES AND REMOVE JUMPERS.
POWER ON.
GO TO MAP 0110, ENTRY POINT A.

016
POWER OFF.
REINSTALL CARD AA2-Q2 IF LINE PRINTER.
REINSTALL CARD AA2-Q2 AND AA2-R2 IF SERIAL PRINTER.
POWER ON.
SET DATA SWITCHES TO F782.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

017
REPLACE CARD AA2-Q2 AND AA2-R2 IF SERIAL PRINTER.

018
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01'AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

019
REPLACE CARDS AA2-Q2, AA1-J2, AA1-H2, AND AA2-R2 IF SERIAL PRINTER.

020
POWER OFF.
REINSTALL CARD AA2-M2.
POWER ON.
SET DATA SWITCHES TO F78E.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

021
REPLACE CARD AA2-M2.

022
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

023
REPLACE CARDS AA2-M2, AA1-J2, AA1-H2.

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024
POWER OFF.
REINSTALL CARDS AA2-F2, AA2-G2.
POWER ON.
SET DATA SWITCHES F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

025
REPLACE CARDS AA2-F2, AA2-G2.

026
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

027
REPLACE CARDS AA2-F2, AA2-G2, AA1-J2, AA1-H2.

028
IS BSCA OR SDLC INSTALLED ON THE SYSTEM?
Y N

029
(ENTRY POINT B)
.
.
IS A 129 OR 5496 (CARDIO) INSTALLED ON THE SYSTEM?
Y N

030
IS A 5321(MCU) INSTALLED ON THE SYSTEM?
Y N

031
IS A 1255(MICR) INSTALLED ON THE SYSTEM?
Y N

032
(ENTRY POINT C)
.
RUN DISKETTE DIAGNOSTICS AS FOLLOWS:
.
1. SET DATA SWITCHES TO F800.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE SCRATCH DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. ENTER PROGRAM ID BY TYPING IN 33FD.
8. DEPRESS THE ENTER KEY.
9. FOLLOW INSTRUCTIONS ON CRT.

IF NO TROUBLE IS FOUND WITH THE 33FD DIAGNOSTIC TESTS, SUSPECT A DAMAGED OR DESTROYED DIAG 01 DISKETTE.

033
POWER OFF.
REINSTALL CARD AA1-F2.
POWER ON.
SET DATA SWITCHES F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

034
REPLACE CARD AA1-F2.

035
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

036
REPLACE CARDS AA1-F2, AA1-J2, AA1-H2.

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037

GO TO PAGE 5, STEP 032,
ENTRY POINT C.

038
POWER OFF.
REINSTALL CARDS AA2-N2 AND AA2-P2
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT FOR 45 SECONDS
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

039
POWER OFF.
REMOVE CARD AA2-P2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT FOR 45 SECONDS
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

040
REPLACE CARDS AA2-N2 AND AA1-H2.

041
REPLACE CARDS AA2-P2 AND AA1-H2.

042
DISPLAY WR1 BY SETTING THE DATA SWITCHES TO X'01' AND THE MODE SELECTOR SWITCH TO DPLY LSR.
IS WR1 EQUAL TO X'0000'?
Y N

043
REPLACE CARDS AA2-N2 AND AA1-H2.

044

GO TO PAGE 5, STEP 032,
ENTRY POINT C.

045
POWER OFF.
REINSTALL CARD AA2-N2.
POWER ON.
SET DATA SWITCHES F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

046
REPLACE CARD AA2-N2.

047
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

048
REPLACE CARDS AA2-N2, AA1-J2, AA1-H2.

049

GO TO PAGE 5, STEP 032,
ENTRY POINT C.

050
POWER OFF.
REINSTALL CARD AA2-L2.
POWER ON.
SET DATA SWITCHES F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

051
REPLACE CARD AA2-L2.

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052
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

053
REPLACE CARDS AA2-L2, AA1-J2, AA1-H2.

054

GO TO PAGE 5, STEP 029, ENTRY POINT B.

055
1. CHECK FOR SHORTED OPERATOR START N/O KEY.
2. REPLACE CARD AA1-J2.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0100	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
2	007	0106	A
3	009	0106	A
3	015	0106	A
3	017	0106	A
5	043	0106	A
7	062	0106	A
6	050	0106	A
6	057	0106	A
1	004	0300	A
1	003	0310	A
5	033	0600	A

001
(ENTRY POINT A)
VISUALLY CHECK IF THE DISK IS ROTATING.

THE IMPL SEQUENCE FAILED TO COMPLETE NORMALLY FROM BOTH THE DISK AND THE DISKETTE.

.
IS THE DISK ROTATING?
Y N
|
| 002
| VISUALLY CHECK THE DISKETTE DRIVE.
| .
| IS BELT TURNING?
| Y N
| |
| | 003
| |
| | GO TO MAP 0310, ENTRY POINT A.
| |
| 004
|
| GO TO MAP 0300, ENTRY POINT A.

005
POWER OFF.
REMOVE ALL ADAPTER INTERFACE CARDS EXCEPT THE DISKETTE.

CARDS IDENTIFIED IN THE ADAPTER CARD LOCATION TABLE AS FEATURE CARDS WILL BE PRESENT ONLY IF THE FEATURE IS INSTALLED.

POWER ON.
SET DATA SWITCHES TO F780.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

006
POWER OFF.
REMOVE DISKETTE INTERFACE CARD AT AA2-K2 AND REINSTALL DISK INTERFACE CARDS AT AA2-F2, AA2-G2.
POWER ON.
SET DATA SWITCHES TO F701.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
WAIT APPROX. 45 SECONDS FOR THE DISK TO BECOME READY.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

007

GO TO MAP 0106, ENTRY POINT A.

ADAPTER INTERFACE CARD LOCATIONS

REFER TO AY030 FOR AA2 BOARD PLUG CHART.

AA2-K2	DISKETTE	
AA2-F2	DISK	
AA2-G2	DISK	
AA2-J4	HALF INDEX (PRINTER)	FEATURE
AA2-K2	DISKETTE	
AA2-L2	BSCA OR SDLC	FEATURE FEATURE
AA2-M2	CRT/KYBD	
AA2-N2	CARDIO	FEATURE
AA2-N2	5321(MCU)	FEATURE
AA2-P2	5321(MCU)	FEATURE
AA2-Q2	LINE PRINTER	
AA2-T2	LINE PRINTER	
AA2-Q2	SERIAL PRINTER	
AA2-R2	SERIAL PRINTER	

REFER TO AY020 FOR AA1 BOARD PLUG CHART.

AA1-F2	MICR	FEATURE
AA1-D2	MICR	FEATURE

008
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

009
GO TO MAP 0106, ENTRY POINT A.

010
POWER OFF.
REINSTALL ALL PREVIOUSLY REMOVED CARDS.
POWER ON.
.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
WAIT APPROX. 45 SECONDS FOR THE DISK TO BECOME READY.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
ANY DISPLAY ON CRT?
Y N

011
REPLACE CARD AA2-K2, AA1-H2.

012
RUN DISKETTE DIAGNOSTICS AS FOLLOWS:
.
1. SET DATA SWITCHES TO F800.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE SCRATCH DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE LOAD KEY.
7. LOAD PROGRAM ID BY TYPING IN 33FD.
8. DEPRESS ENTER KEY.
9. FOLLOW INSTRUCTIONS ON CRT.
IF NO TROUBLE IS FOUND WITH THE 33FD DIAGNOSTIC TESTS, SUSPECT A DAMAGED OR DESTROYED DIAG 01 DISKETTE.

013
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

014
POWER OFF.
REMOVE DISKETTE INTERFACE CARD AA2-K2 AND REINSTALL THE DISK INTERFACE CARDS AT AA2-F2, AA2-G2.
POWER ON.
SET DATA SWITCHES TO F701.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
WAIT APPROX. 45 SECONDS FOR THE DISK TO BECOME READY.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

015
GO TO MAP 0106, ENTRY POINT A.

016
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

017
GO TO MAP 0106, ENTRY POINT A.

018
REPLACE CARD AA2-K2, AA1-H2.

019
POWER OFF.
REINSTALL CARDS AA2-Q2, AA2-T2 IF LINE PRINTER(IF HALF INDEX FEATURE IS INSTALLED, REINSTALL AA2-J4)

REINSTALL CARDS AA2-Q2, AA2-R2 IF SERIAL PRINTER.

POWER ON. WAIT 45 SECONDS.
SET DATA SWITCHES TO F782.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

020
IS HALF INDEX FEATURE INSTALLED(CARD AA2-J4)?
Y N

021
REPLACE CARDS AA2-Q2, AA2-T2, AA1-H2 IF LINE PRINTER.
REPLACE CARDS AA2-Q2, AA2-R2, AA1-H2 IF SERIAL PRINTER.

022
POWER OFF.
REMOVE CARD AA2-J4.
JUMPER AA2-J4B02 TO AA2-J4B09.
POWER ON.
SET DATA SWITCHES TO F782.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT FOR 45 SECONDS.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

023
REPLACE CARDS AA2-Q2, AA2-T2.

024
REPLACE CARD AA2-J4.

025
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

026
REPLACE CARDS AA2-Q2, AA2-T2, AA1-J2, AA1-H2 (AA2-J4 IF HALF INDEX) IF LINE PRINTER.
REPLACE CARDS AA2-Q2, AA2-R2, AA1-J2, AA1-H2 IF SERIAL PRINTER.

027
POWER OFF.
REINSTALL CARD AA2-M2.
POWER ON.
SET DATA SWITCHES TO F78E.
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

028
REPLACE CARD AA2-M2, AA1-H2.

029
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01'AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

030
REPLACE CARDS AA2-M2, AA1-J2, AA1-H2.

031
POWER OFF.
REINSTALL CARDS AA2-F2, AA2-G2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT FOR 45 SECONDS.
DEPRESS CE RESET TWICE.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID STOP LIGHT COME ON?
Y N

032
SET DATA SWITCHES TO FF00.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR TO OCCUR.
.
DID PROCESSOR CHECK OCCUR?
Y N

033
GO TO MAP 0600, ENTRY POINT A.

034
REPLACE CARDS AA2-F2, AA2-G2, AA2-E2, AA2-D4, AA1-H2.

035
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

036
MEASURE +6 VDC TO THE FIXED DISK FROM POWER DISTRIBUTION TERMINAL BLOCK (PD-TB2-3) TO I/O BOARD, PIN LOCATIONS AA2-B3-E01, B4-A01, A4-B11, AND TO FIXED DISK CIRCUIT BOARD 62GV-B5-B11.
.
+6 VOLTS OK?
Y N

037
IF ERROR WAS ISOLATED TO A CABLE, REPAIR OR REPLACE. IF OTHER, REPLACE AS REQUIRED.

038
REPLACE CARDS AA2-E2, AA2-F2, AA2-G2, AA1-H2, AA1-J2.

039
IS BSCA OR SDLC INSTALLED ON THE SYSTEM?
Y N

040
(ENTRY POINT B)
.
IS A 129 OR 5496 (CARDIO) INSTALLED ON THE SYSTEM?
Y N

041
IS 5321(MCU) INSTALLED ON THE SYSTEM?
Y N

042
IS A 1255(MICR) INSTALLED ON THE SYSTEM?
Y N

043
GO TO MAP 0106, ENTRY POINT A.

044
POWER OFF.
REINSTALL CARDS AA1-F2 AND AA1-D2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT FOR 45 SECONDS.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID THE STOP LIGHT COME ON?
Y N

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EC830356 PEC830357

045
POWER OFF.
REMOVE CARD AA1-D2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT FOR 45 SECONDS.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID THE STOP LIGHT COME ON?
Y N

Y: 046
REPLACE CARD AA1-F2.

N: 047
REPLACE CARD AA1-D2.

048
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

Y: 049
REPLACE CARDS AA1-F2, AA1-J2, AA1-H2.

N: 050

GO TO MAP 0106, ENTRY POINT A.

051
POWER OFF.
REINSTALL CARDS AA2-N2 AND AA2-P2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT FOR 45 SECONDS.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID THE STOP LIGHT COME ON?
Y N

052
POWER OFF.
REMOVE CARD AA2-P2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT FOR 45 SECONDS.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID THE STOP LIGHT COME ON?
Y N

Y: 053
REPLACE CARDS AA2-N2 AND AA1-H2.

N: 054
REPLACE CARDS AA2-P2, AA1-H2.

055
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

Y: 056
REPLACE CARDS AA2-N2 AND AA1-H2.

N: 057

GO TO MAP 0106, ENTRY POINT A.

058
POWER OFF.
REINSTALL CARD AA2-N2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT FOR 45 SECONDS.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID THE STOP LIGHT COME ON?
Y N

059
REPLACE CARD AA2-N2, AA1-H2.

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060
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

061
REPLACE CARDS AA2-N2, AA1-J2, AA1-H2.

062

GO TO MAP 0106, ENTRY POINT A.

063
POWER OFF.
REINSTALL CARD AA2-L2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT FOR 45 SECONDS.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR STOP LIGHT TO COME ON.
.
DID THE STOP LIGHT COME ON?
Y N

064
REPLACE CARD AA2-L2, AA1-H2.

065
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

066
REPLACE CARDS AA2-L2, AA1-J2, AA1-H2.

067

GO TO PAGE 5, STEP 040, ENTRY POINT B.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0105	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	005	0107	A
2	007	0107	A
4	014	0107	A
4	019	0107	A
10	068	0107	A
10	071	0110	A

001
(ENTRY POINT A)
POWER OFF.
REINSTALL ALL PREVIOUSLY REMOVED CARDS.
REMOVE CABLES FROM LOCATIONS AA1-B4 AND AA1-B5.
JUMPER AA1-M2-B13 (+ SINGLE CYCLE) TO AA1-M2-D08 (GROUND).
JUMPER AA1-J2-M12 (+ MODE SEL SW BIT 0) TO AA1-J2-D08 (GROUND).
JUMPER AA1-B5-D07 (-IMPL DISKETTE) TO AA1-D5-D08 (GROUND).
POWER ON.
.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
WAIT APPROX. 45 SECONDS.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
IMPL SEQUENCE COMPLETED NORMALLY?
Y N

THE IMPL SEQUENCE FAILED TO COMPLETE NORMALLY FROM BOTH THE DISK AND THE DISKETTE.

002
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CABLES AND REMOVE JUMPERS.
POWER ON.
.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
IS CE PANEL CLOCK LIGHT ON?
Y N

003
ARE ONLY EVENT INDICATOR BITS 5, 6, AND 7 ON?
Y N

004
ARE ONLY EVENT INDICATOR BITS 6 AND 7 ON?
Y N

005

GO TO MAP 0107, ENTRY POINT A.

006
DISPLAY WR3 BY SETTING DATA SWITCHES 3 AND 4 TO X'03' AND MODE SELECTOR SWITCH TO DPLY LSR.
IS WR3 LOW BYTE EQUAL TO X'64'?
Y N

007

GO TO MAP 0107, ENTRY POINT A.

008
POWER OFF.
SWAP CARDS BETWEEN POSITIONS AA1-Q4 AND AA1-S2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 6 AND 7 ON?
Y N

MAIN STORAGE CARDS AND CONTROL STORAGE CARDS MAY HAVE DIFFERENT P/N'S BUT MAY BE INTERCHANGED FOR DIAGNOSTIC PURPOSES.

009
POWER OFF.
PLACE CARD FROM LOCATION AA1-Q4 BACK TO AA1-S2.
REPLACE CARD AA1-Q4

010
POWER OFF.
SWAP CARDS BETWEEN POSITIONS AA1-Q4 AND AA1-S2.
SWAP CARDS BETWEEN POSITIONS AA1-P2 AND AA1-R2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 6 AND 7 ON?
Y N

MAIN STORAGE CARDS AND CONTROL STORAGE CARDS MAY HAVE DIFFERENT P/N'S BUT MAY BE INTERCHANGED FOR DIAGNOSTIC PURPOSES.

011
POWER OFF.
PLACE CARD FROM LOCATION AA1-P2 BACK TO AA1-R2.
REPLACE CARD AA1-P2.

012
POWER OFF.
SWAP CARDS BETWEEN POSITIONS AA1-P2 AND AA1-R2.
.
REPLACE CARDS AA1-L2, AA1-M2, AA1-N2, AA1-K2.

013
DISPLAY WR3 BY SETTING DATA SWITCHES 3 AND 4 TO X'03' AND MODE SELECTOR SWITCH TO DPLY LSR.
IS WR3 -LOW BYTE EQUAL TO X'63'?
Y N

014
GO TO MAP 0107, ENTRY POINT A.

015
DISPLAY WR5 BY SETTING DATA SWITCHES 3 AND 4 TO X'05' AND MODE SELECTOR SWITCH TO DPLY LSR.
IS WR5 EQUAL TO OR BETWEEN X'0000'-X'1FFF'? (0K-8K)
Y N

016
IS WR5 EQUAL TO OR BETWEEN X'2000'-X'3FFF'? (8K - 16K)
Y N

017
IS WR5 EQUAL TO OR BETWEEN X'4000'-X'5FFF'? (16K - 24K)
Y N

018
IS WR5 EQUAL TO OR BETWEEN X'6000'-X'7FFF'? (24K - 32K)
Y N

019
GO TO MAP 0107, ENTRY POINT A.

020
POWER OFF.
SWAP MAIN STORAGE CARDS AA1-R2 WITH AA1-U2.
POWER ON.
.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR5 BY SETTING DATA SWITCHES 3 AND 4 TO X'05' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR5 EQUAL TO OR BETWEEN X'6000'-X'7FFF'?
Y N

021
REPLACE CARD NOW IN AA1-R2.

022
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

023
POWER OFF.
REINSTALL ALL PREVIOUSLY REMOVED CARDS INTO THEIR ORIGINAL LOCATION.

REMOVE ALL MAIN STORAGE CARDS.

AA1-R2	0-8K
AA1-S2	8-16K
AA1-T2	16-24K
AA1-U2	24-32K

POWER ON.

PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

024
POWER OFF.
REMOVE CARD FROM POSITION AA1-P2.
.
PLACE CARD PREVIOUSLY REMOVED FROM AA1-R2 INTO AA1-P2 POSITION.
.
POWER ON.
.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

025
POWER OFF.
REMOVE CARD FROM POSITION AA1-P2.
.
REINSTALL CARD PREVIOUSLY REMOVED FROM AA1-P2. INTO AA1-P2 POSITION.
.
REMOVE CARD FROM AA1-Q4.
.
PLACE CARD PREVIOUSLY REMOVED FROM AA1-S2 INTO AA1-Q4 POSITION.
.
POWER ON.
.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

026
REPLACE CARD AA1-N2.

027
REINSTALL ALL PREVIOUSLY REMOVED CARDS INTO THEIR ORIGINAL LOCATIONS.
.
REPLACE CARD AA1-Q4.

028
REINSTALL ALL PREVIOUSLY REMOVED CARDS INTO THEIR ORIGINAL LOCATIONS.
.
REPLACE CARD AA1-P2.

029
POWER OFF.
REINSTALL CARD AA1-R2.
POWER UP.
.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

030
REPLACE CARD AA1-R2.

031
POWER OFF.
REINSTALL CARD AA1-S2.
POWER UP.
.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

032
REPLACE CARD AA1-S2

033
POWER OFF.
REINSTALL CARD AA1-T2.
POWER UP.
.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

034
REPLACE CARD AA1-T2.

035
REPLACE CARD AA1-U2.

036
REPLACE CARDS AA1-U2, AA1-N2, AA1-L2, AA1-M2, AA1-K2.

037
POWER OFF.
SWAP MAIN STORAGE CARDS AA1-R2 WITH AA1-T2.
POWER ON.
.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR5 BY SETTING DATA SWITCHES 3 AND 4 TO X'05' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR5 EQUAL TO OR BETWEEN X'4000'-X'5FFF'?
Y N

038
REPLACE CARD NOW IN AA1-R2.

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039
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

040
POWER OFF.
REINSTALL ALL PREVIOUSLY REMOVED CARDS INTO THEIR ORIGINAL LOCATION.

REMOVE ALL MAIN STORAGE CARDS.

AA1-R2	0-8K
AA1-S2	8-16K
AA1-T2	16-24K

POWER ON.

PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

041
POWER OFF.
REMOVE CARD FROM POSITION AA1-P2.
.
PLACE CARD PREVIOUSLY REMOVED FROM AA1-R2 INTO AA1-P2 POSITION.
.
POWER ON.
.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

042
POWER OFF.
REMOVE CARD FROM POSITION AA1-P2.
.
REINSTALL CARD PREVIOUSLY REMOVED FROM AA1-P2 INTO AA1-P2 POSITION.
.
REMOVE CARD FROM AA1-Q4.
.
PLACE CARD PREVIOUSLY REMOVED FROM AA1-S2 INTO AA1-Q4 POSITION.
.
POWER ON.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

043
REPLACE CARD AA1-N2.

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044
REINSTALL ALL PREVIOUSLY REMOVED CARDS INTO THEIR ORIGINAL LOCATIONS.
.
REPLACE CARD AA1-Q4.

045
REINSTALL ALL PREVIOUSLY REMOVED CARDS INTO THEIR ORIGINAL LOCATIONS.
.
REPLACE CARD AA1-P2.

046
POWER OFF.
REINSTALL CARD AA1-R2.
POWER UP.
.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

047
REPLACE CARD AA1-R2.

048
POWER OFF.
REINSTALL CARD AA1-S2.
POWER UP.
.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

049
REPLACE CARD AA1-S2.

050
REPLACE CARD AA1-T2.

051
REPLACE CARDS AA1-T2, AA1-N2, AA1-L2, AA1-M2, AA1-K2.

052
POWER OFF.
SWAP MAIN STORAGE CARDS AA1-R2 WITH AA1-S2.
POWER ON.
.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR5 BY SETTING DATA SWITCHES 3 AND 4 TO X'05' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR5 EQUAL TO OR BETWEEN X'2000'-X'3FFF'?
Y N

053
REPLACE CARD NOW IN AA1-R2.

054
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

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A A
A B

055
POWER OFF.

REMOVE ALL MAIN STORAGE CARDS.

AA1-R2	0-8K
AA1-S2	8-16K

POWER ON.

PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

056
POWER OFF.
REMOVE CARD FROM POSITION AA1-P2.
.
PLACE CARD PREVIOUSLY REMOVED FROM AA1-R2 INTO AA1-P2 POSITION.
.
POWER ON.
.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

1
0

057
POWER OFF.
REMOVE CARD FROM POSITION AA1-P2.
.
REINSTALL CARD PREVIOUSLY REMOVED FROM AA1-P2. INTO AA1-P2 POSITION.
.
REMOVE CARD FROM AA1-Q4.
.
PLACE CARD PREVIOUSLY REMOVED FROM AA1-S2 INTO AA1-Q4 POSITION.
.
POWER ON.
.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

058
REPLACE CARD AA1-N2.

059
REINSTALL ALL PREVIOUSLY REMOVED CARDS INTO THEIR ORIGINAL LOCATIONS.
.
REPLACE CARD AA1-Q4.

060
REINSTALL ALL PREVIOUSLY REMOVED CARDS INTO THEIR ORIGINAL LOCATIONS.
.
REPLACE CARD AA1-P2.

061
POWER OFF.
REINSTALL CARD AA1-R2.
POWER UP.
.
PROBE AA1-N2-B07 (+CSX3)
PROBE AA1-N2-B06 (+CSX4)
.
SET DATA SWITCHES TO F800.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
DEPRESS THE LOAD KEY.
DEPRESS THE LOAD KEY ONCE FOR EACH PROBE PIN.
.
BOTH LINES PULSING?
Y N

062
REPLACE CARD AA1-R2.

063
REPLACE CARD AA1-S2.

064
REPLACE CARDS AA1-S2, AA1-N2, AA1-L2, AA1-M2, AA1-K2.

065
POWER OFF.
SWAP MAIN STORAGE CARDS AA1-R2 WITH AA1-S2.
POWER ON.
.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR5 BY SETTING DATA SWITCHES 3 AND 4 TO X'05' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR5 EQUAL TO OR BETWEEN X'0000'-X'1FFF'?
Y N

066
REPLACE CARD NOW IN AA1-S2.

067
REPLACE CARDS AA1-R2, AA1-N2, AA1-L2, AA1-M2, AA1-K2.

068

GO TO MAP 0107, ENTRY POINT A.

069
PROBE AA1-J2-G09 (+ENABLE INTERRUPT)
.
LINE DOWN OR PULSING?
Y N

070
REPLACE CARDS AA1-J2, AA1-H2.

071

GO TO MAP 0110, ENTRY POINT A.

SYSTEM 32

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0106	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	003	0108	A
2	009	0108	A
2	005	1200	A
2	010	1200	A

001
(ENTRY POINT A)
POWER OFF.
REINSTALL ALL PREVIOUSLY REMOVED CARDS IF ANY HAVE BEEN REMOVED.
POWER ON.
.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
.
CHECK THE CONSOLE AND THE CE PANEL FOR THE FOLLOWING INDICATIONS:

PROC CHK LIGHT	OFF
STOP KEY LIGHT	ON
LOAD KEY LIGHT	OFF
KEYBD RDY LIGHT	OFF
CLOCK LIGHT	ON
PROC INTERRUPT LIGHTS	OFF
CRT DISPLAY	BLANK

DO ABOVE INDICATIONS EXIST?
Y N

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2 2
A B

SYSTEM ENTRY

SYSTEM 32

PAGE 2 OF 2

002
EXAMPLES OF OBVIOUS CRT PROBLEMS ARE:
-RANDOM CHARACTERS
-MISSING OR OVERLAID LINES
-PARTIAL DISPLAY
-UNABLE TO OBTAIN PROPER BRIGHTNESS
-ANY OTHER OBVIOUS CRT PROBLEMS.

EXCLUDING BLANK DISPLAY, IS THE CRT OBVIOUSLY BAD?
Y N

003

GO TO MAP 0108, ENTRY POINT A.

004
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
IS WR1 EQUAL TO X'0800' OR X'0C00'?
Y N

005
SET MODE SELECTOR SWITCH TO PROC RUN.
DEPRESS CE START KEY.
GO TO MAP 1200, ENTRY POINT A.

006
REPLACE CARD AA2-M2.

007
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
IS WR1 EQUAL TO X'0800' OR X'0C00'?
Y N

008
RETURN MODE SELECTOR SWITCH TO PROCESSOR RUN.
DEPRESS CE START KEY.
DEPRESS OPERATOR START KEY.
(WAIT FOR SEVERAL SECONDS)
DEPRESS AND HOLD THE SHIFT KEY.
DEPRESS THE PRINT/RESET KEY.
.
DID A MESSAGE PRINT ON PRINTER?
Y N

009

GO TO MAP 0108, ENTRY POINT A.

010

GO TO MAP 1200, ENTRY POINT A.

011
WRAP ERROR ON CRT OR KEYBOARD.
REPLACE CARD AA2-M2.
(CRT KEYBOARD CARD)

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0107	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	005	0109	A
3	014	0109	A
3	017	0109	A
4	021	0109	A
6	042	0109	A
7	051	0109	A
7	054	0109	A
8	058	0109	A
9	067	0109	A
10	076	0109	A
10	079	0109	A
11	083	0109	A

001
(ENTRY POINT A)
REFER TO SYSTEM LOGIC AY020 FOR PART NUMBERS AND SOCKET LOCATIONS.

AA1-R2 MAIN STG. 0K -8K
AA1-S2 MAIN STG. 8K -16K
AA1-T2 MAIN STG. 16K-24K
AA1-U2 MAIN STG. 24K-32K

AA1-P2 CONTROL STG 0-4K OR
0-8K LOW
AA1-Q4 CONTROL STG 0-4K OR
0-8K HIGH

MAIN STORAGE CARDS AND CONTROL STORAGE CARDS MAY HAVE DIFFERENT P/N'S BUT MAY BE INTERCHANGED FOR DIAGNOSTIC PURPOSES.

IS THIS A 16K MAIN STORAGE SYSTEM?
Y N

002
IS THIS A 24K MAIN STORAGE SYSTEM?
Y N

003
POWER OFF.
REMOVE CARDS AA1-R2, AA1-S2, AA1-T2, AA1-U2. (MAIN STORAGE CARDS)
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5,6, AND 7 ON?
Y N

004
POWER OFF.
REMOVE CARDS AA1-P2, AA1-Q4 (CONTROL STG).
PLACE CARDS REMOVED PREVIOUSLY (MAIN STG) INTO AA1-P2, AA1-Q4.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5,6, AND 7 ON?
Y N

005

GO TO MAP 0109, ENTRY POINT A.

006
POWER OFF.
REMOVE CARD FROM AA1-P2 AND REINSTALL INTO PREVIOUS MAIN STG LOCATION.
REINSTALL PREVIOUSLY REMOVED CARD FROM AA1-P2 INTO LOCATION AA1-P2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5, 6 AND 7 ON?
Y N

007
POWER OFF.
REMOVE CARD FROM AA1-Q4 AND REINSTALL INTO PREVIOUS MAIN STG LOCATION.
REINSTALL ALL MAIN STG CARDS.
REINSTALL PREVIOUSLY REMOVED CARD FROM AA1-Q4 INTO LOCATION AA1-Q4.
.
REPLACE CARD AA1-P2.

008
POWER OFF.
REMOVE CARD FROM AA1-Q4 AND REINSTALL INTO PREVIOUS MAIN STG LOCATION.
REINSTALL ALL MAIN STG CARDS.
REPLACE CARD REMOVED FROM AA1-Q4.

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009
POWER OFF.
REINSTALL CARD INTO LOCATION AA1-R2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5, 6 AND 7 ON?
Y N

010
POWER OFF.
REINSTALL CARDS AA1-S2, AA1-T2, AA1-U2.
.
REPLACE CARD AA1-R2.

011
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
IS WR3 LOW EQUAL TO X'63'?
Y N

012
IS WR3 LOW EQUAL TO X'57'?
Y N

013
DISPLAY PROCESSOR CHECKS BY SETTING MODE SELECTOR SWITCH TO DPLY CHKS.
.
ARE BOTH THE SDR AND MOR P-CHK INDICATORS ON?
Y N

014

GO TO MAP 0109, ENTRY POINT A.

015
POWER OFF.
REMOVE CARD FROM AA1-P2 (CONTROL STG).
PLACE CARD PREVIOUSLY REMOVED FROM MAIN STG INTO AA1-P2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

016
POWER OFF.
REMOVE CARD FROM AA1-P2.
REINSTALL PREVIOUSLY REMOVED CARD FROM AA1-P2 INTO LOCATION AA1-P2.
REMOVE CARD FROM AA1-Q4 (CONTROL STG).
PLACE CARD PREVIOUSLY REMOVED FROM MAIN STG INTO AA1-Q4.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

017

GO TO MAP 0109, ENTRY POINT A.

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018
POWER OFF.
PLACE PREVIOUSLY INTERCHANGED MAIN STG AND CONTROL STG CARDS INTO THEIR ORIGINAL LOCATIONS.
.
REPLACE CARD AA1-Q4.

019
POWER OFF.
PLACE PREVIOUSLY INTERCHANGED MAIN STG AND CONTROL STG CARDS INTO THEIR ORIGINAL LOCATIONS.
.
REPLACE CARD AA1-P2.

020
POWER OFF.
REMOVE CARD AA1-R2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

021

GO TO MAP 0109, ENTRY POINT A.

022
REPLACE CARD AA1-R2.

023
POWER OFF.
REINSTALL CARD INTO LOCATION AA1-S2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5,6, AND 7 ON?
Y N

024
POWER OFF.
REINSTALL AA1-T2, AA1-U2.
.
REPLACE CARD AA1-S2.

025
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

026
IS WR3 LOW EQUAL TO X'57'?
Y N

027

GO TO PAGE 5, STEP 031, ENTRY POINT B.

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028
POWER OFF.
REMOVE CARD AA1-S2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

029

GO TO STEP 031,
ENTRY POINT B.

030
REPLACE CARD AA1-S2.

031
(ENTRY POINT B)
POWER OFF.
REINSTALL CARD INTO LOCATION AA1-T2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5,6, AND 7 ON?
Y N

032
POWER OFF.
REINSTALL CARD AA1-U2.
.
REPLACE CARD AA1-T2.

033
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

034
IS WR3 LOW EQUAL TO '57'?
Y N

035
REPLACE CARDS AA1-U2, AA1-N2, AA1-L2, AA1-M2, AA1-K2.

036
POWER OFF.
REMOVE CARD AA1-T2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

037
REPLACE CARDS AA1-U2, AA1-N2, AA1-L2, AA1-M2, AA1-K2.

038
REPLACE CARD AA1-T2.

039
REPLACE CARDS AA1-U2, AA1-N2, AA1-L2, AA1-M2, AA1-K2.

040
POWER OFF.
REMOVE CARDS AA1-R2, AA1-S2, AA1-T2. (MAIN STORAGE CARDS)
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5, 6 AND 7 ON?
Y N

041
POWER OFF.
REMOVE CARDS AA1-P2, AA1-Q4 (CONTROL STG).
PLACE CARDS REMOVED PREVIOUSLY (MAIN STG) INTO AA1-P2, AA1-Q4.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5, 6 AND 7 ON?
Y N

042

GO TO MAP 0109, ENTRY POINT A.

043
POWER OFF.
REMOVE CARD FROM AA1-P2 AND REINSTALL INTO PREVIOUS MAIN STG LOCATION.
REINSTALL PREVIOUSLY REMOVED CARD FROM AA1-P2 INTO LOCATION AA1-P2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5, 6 AND 7 ON?
Y N

044
POWER OFF.
REMOVE CARD FROM AA1-Q4 AND REINSTALL INTO PREVIOUS MAIN STG LOCATION.
REINSTALL ALL MAIN STG CARDS.
REINSTALL PREVIOUSLY REMOVED CARD FROM AA1-Q4 INTO LOCATION AA1-Q4.
.
REPLACE CARD AA1-P2.

045
POWER OFF.
REMOVE CARD FROM AA1-Q4 AND REINSTALL INTO PREVIOUS MAIN STG LOCATION.
REINSTALL ALL MAIN STG CARDS.
REPLACE CARD REMOVED FROM AA1-Q4.

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046
POWER OFF.
REINSTALL CARD INTO LOCATION AA1-R2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5,6, AND 7 ON?
Y N

047
POWER OFF.
REINSTALL CARDS AA1-S2, AA1-T2.
.
REPLACE CARD AA1-R2.

048
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
IS WR3 LOW EQUAL TO X'63'?
Y N

049
IS WR3 LOW EQUAL TO X'57'?
Y N

050
DISPLAY PROCESSOR CHECKS BY SETTING MODE SELECTOR SWITCH TO DPLY CHKS.
.
ARE BOTH THE SDR AND MOR P-CHK INDICATORS ON?
Y N

051

GO TO MAP 0109, ENTRY POINT A.

052
POWER OFF.
REMOVE CARD FROM AA1-P2 (CONTROL STG).
PLACE CARD PREVIOUSLY REMOVED FROM MAIN STG INTO AA1-P2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

053
POWER OFF.
REMOVE CARD FROM AA1-P2.
REINSTALL PREVIOUSLY REMOVED CARD FROM AA1-P2 INTO LOCATION AA1-P2.
REMOVE CARD FROM AA1-Q4 (CONTROL STG).
PLACE CARD PREVIOUSLY REMOVED FROM MAIN STG INTO AA1-Q4.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

054

GO TO MAP 0109, ENTRY POINT A.

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055
POWER OFF.
PLACE PREVIOUSLY INTERCHANGED MAIN STG AND CONTROL STG CARDS INTO THEIR ORIGINAL LOCATIONS.
.
REPLACE CARD AA1-Q4.

056
POWER OFF.
PLACE PREVIOUSLY INTERCHANGED MAIN STG AND CONTROL STG CARDS INTO THEIR ORIGINAL LOCATIONS.
.
REPLACE CARD AA1-P2.

057
POWER OFF.
REMOVE CARD AA1-R2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

058

GO TO MAP 0109, ENTRY POINT A.

059
REPLACE CARD AA1-R2.

060
POWER OFF.
REINSTALL CARD INTO LOCATION AA1-S2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5, 6 AND 7 ON?
Y N

061
POWER OFF.
REINSTALL CARD AA1-T2.
.
REPLACE CARD AA1-S2.

062
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'57'?
Y N

063
REPLACE CARDS AA1-T2, AA1-N2, AA1-L2, AA1-M2, AA1-K2.

064
REPLACE CARD AA1-S2.

065
POWER OFF.
REMOVE CARDS AA1-R2, AA1-S2.(MAIN STG)
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5,6, AND 7 ON?
Y N

066
POWER OFF.
REMOVE CARDS AA1-P2, AA1-Q4 (CONTROL STG).
PLACE CARDS REMOVED PREVIOUSLY (MAIN STG) INTO AA1-P2, AA1-Q4.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5,6, AND 7 ON?
Y N

067

GO TO MAP 0109, ENTRY POINT A.

068
POWER OFF.
REMOVE CARD FROM AA1-P2 AND REINSTALL INTO PREVIOUS MAIN STG LOCATION.
REINSTALL PREVIOUSLY REMOVED CARD FROM AA1-P2 INTO LOCATION AA1-P2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5, 6 AND 7 ON?
Y N

069
POWER OFF.
REMOVE CARD FROM AA1-Q4 AND REINSTALL INTO PREVIOUS MAIN STG LOCATION.
REINSTALL MAIN STG CARD.
REINSTALL PREVIOUSLY REMOVED CARD FROM AA1-Q4 INTO LOCATION AA1-Q4.
.
REPLACE CARD AA1-P2.

070
POWER OFF.
REMOVE CARD FROM AA1-Q4 AND REINSTALL INTO PREVIOUS MAIN STG LOCATION.
REINSTALL MAIN STG CARD.
REPLACE CARD REMOVED FROM AA1-Q4.

071
POWER OFF.
REINSTALL CARD INTO LOCATION AA1-R2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
ARE ONLY EVENT INDICATOR BITS 5, 6 AND 7 ON?
Y N

072
POWER OFF.
REINSTALL CARD INTO LOCATION AA1-S2.
.
REPLACE CARD AA1-R2.

073
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

074
IS WR3 LOW EQUAL TO X'57'?
Y N

075
DISPLAY PROCESSOR CHECKS BY SETTING MODE SELECTOR SWITCH TO DPLY CHKS.
.
ARE BOTH THE SDR AND MOR P-CHK INDICATORS ON?
Y N

076

GO TO MAP 0109, ENTRY POINT A.

077
POWER OFF.
REMOVE CARD FROM AA1-P2 (CONTROL STG).
PLACE CARD PREVIOUSLY REMOVED FROM MAIN STG INTO AA1-P2.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

078
POWER OFF.
REMOVE CARD FROM AA1-P2.
REINSTALL PREVIOUSLY REMOVED CARD FROM AA1-P2 INTO LOCATION AA1-P2.
REMOVE CARD FROM AA1-Q4 (CONTROL STG).
PLACE CARD PREVIOUSLY REMOVED FROM MAIN STG INTO AA1-Q4.
POWER ON.
SET DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT UNTIL ERROR OCCURS.
.
DISPLAY WR3 LOW BY SETTING DATA SWITCHES 3-4 TO X'03' AND MODE SELECTOR SWITCH TO DSPL LSR.
.
IS WR3 LOW EQUAL TO X'63'?
Y N

079

GO TO MAP 0109, ENTRY POINT A.

```
Y Z A A      SYSTEM ENTRY
1 1 B C
0 0 1 1      SYSTEM 32
     0 0
| |          PAGE  11 OF  11
| | | |
| | | |
| | | 080
| | | POWER OFF.
| | | PLACE PREVIOUSLY INTERCHANGED
| | | MAIN  STG  AND  CONTROL  STG
| | | CARDS   INTO  THEIR  ORIGINAL
| | | LOCATIONS.
| | | .
| | | REPLACE CARD AA1-Q4.
| | |
| | 081
| | POWER OFF.
| | PLACE  PREVIOUSLY  INTERCHANGED
| | MAIN  STG AND CONTROL STG CARDS
| | INTO THEIR ORIGINAL LOCATIONS.
| | .
| | REPLACE CARD AA1-P2.
| |
| 082
| POWER OFF.
| REMOVE CARD AA1-R2.
| POWER ON.
| SET DATA SWITCHES TO 0000.
| SET MODE SELECTOR SWITCH TO  PROC
| RUN.
| SET  BOTH  THE  IMPL  AND  IPL
| SWITCHES  TO  THE UP POSITION AND
| ALL OTHER TOGGLE SWITCHES TO  THE
| DOWN POSITION.
| INSERT  THE  CE  DIAG 01 DISKETTE
| AND CLOSE THE DOOR.
| DEPRESS THE LOAD KEY.
| WAIT UNTIL ERROR OCCURS.
| .
| DISPLAY WR3 LOW BY  SETTING  DATA
| SWITCHES  3-4  TO  X'03' AND MODE
| SELECTOR SWITCH TO DSPL LSR.
| .
| IS WR3 LOW EQUAL TO X'63'?
| Y N
| |
| | 083
| |
| | GO TO MAP 0109, ENTRY POINT A.
| |
| 084
| REPLACE CARD AA1-R2.
|
085
REPLACE   CARDS   AA1-S2,   AA1-M2,
AA1-L2, AA1-N2, AA1-K2.
```

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0108	A	1	001
0111	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
5	031	0300	E

001
(ENTRY POINT A)
|
POWER OFF.
REINSTALL ALL PREVIOUSLY REMOVED CARDS IF ANY. PLACE PREVIOUSLY INTERCHANGED MAIN STORAGE AND CONTROL STORAGE CARDS, IF ANY HAVE BEEN INTERCHANGED, INTO THEIR ORIGINAL SOCKET LOCATIONS.
POWER ON.
|
CHECK FOR LOOSE OR MISSING MINIBUS VOLTAGE CONNECTORS ON AA1 BOARD.(PIN SIDE)
|
CHECK FOR CORRECT VOLTAGE ON THE MINIBUS.
|
REFER TO POWER DISTRIBUTION DIAGRAM.
. +5VDC (YA160)
. +8.5VDC (YA160)
. -5VDC (YA160)
.
METER VOLTAGE ON
.
AA1-N2-D03 (+5VDC) TO
AA1-M2-D08 (GROUND).
AA1-P2-B06 (-5VDC) TO
AA1-M2-D08 (GROUND).
AA1-P2-B11 (+8.5VDC) TO
AA1-M2-D08 (GROUND).
(REMOVE THE CONNECTOR ON AA1-P2-B11 TO MEASURE THE +8.5VDC. REPLACE CONNECTOR AFTER COMPLETION.)
.
ANY PROBLEMS FOUND?
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |

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002
POWER OFF.
OPEN THE DISKETTE DRIVE.
WAIT UNTIL SYSTEM POWERS DOWN.
PROBE AA1-K2-D06 (+SYSTEM POR)
POWER ON.
.
LINE PULSE UP?
Y N

AS POWER COMES ON BOTH THE UP AND DOWN LIGHTS COME ON MOMENTARILY, THEN ONLY THE UP LIGHT IS ON FOR APPROX. 8 SECONDS (LINE PULSE UP?) GOES OFF AND ONLY THE DOWN LIGHT IS ON.

003
LEAVE PROBE ON PIN.
POWER OFF.
REMOVE CARDS AA1-K2, AA1-J2.
POWER ON.
.
LINE PULSE UP?
Y N

004
REPLACE POWER SEQUENCE CARD

005
LEAVE PROBE ON PIN.
POWER OFF.
REINSTALL CARD AT AA1-K2.
POWER ON.
.
LINE PULSE UP?
Y N

006
REPLACE CARD AA1-K2.

007
REPLACE CARD AA1-J2.

008
DEPRESS RESET.
SET FORCE CLOCK SWITCH TO ON.
PROBE AA1-J2-S06 (- 131.1 MS CLOCK).
.
LINE PULSING?
Y N

009
UNPLUG CABLE AA2-U3.
PROBE AA1-J2-S06 (- 131.1 MS CLOCK).
.
LINE PULSING?
Y N

010
REINSTALL CABLE AA2-U3.
UNPLUG CROSSOVER CABLE AA1-Z4.
PROBE AA1-J2-S06 (- 131.1 MS CLOCK).
.
LINE PULSING?
Y N

011
REINSTALL CROSSOVER CABLE AA1-Z4.
REPLACE CARD AA1-J2.

012
REPLACE CROSSOVER CABLE AA1-Z4.

013
REINSTALL CABLE AA2-U3.
REMOVE KEYBOARD COVER.
UNPLUG KEYBOARD PC BOARD SIGNAL CABLE.
PROBE AA1-J2-S06 (- 131.1 MS CLOCK).
.
LINE PULSING?
Y N

014
REPLACE CABLE AA2-U3.

015
DISASSEMBLE KEYBOARD PER MLM.
REPLACE KEYBOARD PC BOARD.

016
REPLACE THE FOLLOWING FRU'S IN THIS SUGGESTED ORDER.

POWER OFF.
REMOVE AA1-L2, AA1-M2, AA1-N2 CARDS AND REPLACE THESE CARDS WITH NEW ONES. LABEL EACH REMOVED CARD WITH SOCKET LOCATION FOR EASIER IDENTIFICATION.
POWER ON.
.
SET ALL DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
DID THE IMPL SEQUENCE COMPLETE NORMALLY?
Y N

017
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CARDS AA1-L2, AA1-M2, AA1-N2.
.
REMOVE AA1-H2, AA1-J2, AA1-K2 AND REPLACE THESE CARDS WITH NEW ONES. LABEL EACH REMOVED CARD WITH SOCKET LOCATION FOR EASIER IDENTIFICATION.
POWER ON.
.
SET ALL DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
DID THE IMPL SEQUENCE COMPLETE NORMALLY?
Y N

018
POWER OFF.
REPLACE THE CROSSOVER CABLE AT AA1-Z2. (REFER TO ALD AY020)
POWER ON.
.
SET ALL DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
DID THE IMPL SEQUENCE COMPLETE NORMALLY?
Y N

019
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CROSSOVER CABLE AT AA1-Z2.
REPLACE THE CROSSOVER CABLE AT AA1-Z3. (REFER TO ALD AY020)
POWER ON.
.
SET ALL DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
DID THE IMPL SEQUENCE COMPLETE NORMALLY?
Y N

020
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CROSSOVER CABLE AT AA1-Z3.
REPLACE THE CROSSOVER CABLE AT AA1-Z4. (REFER TO ALD AY020)
POWER ON.
.
SET ALL DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
DID THE IMPL SEQUENCE COMPLETE NORMALLY?
Y N

021
IS BSCA OR SDLC INSTALLED ON THE SYSTEM?
Y N

022
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CROSSOVER CABLE AT AA1-Z4.

023
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CROSSOVER CABLE AT AA1-Z4.
REPLACE THE CROSSOVER CABLE AT AA1-Z1. (REFER TO ALD AY020)
POWER ON.
.
SET ALL DATA SWITCHES TO 0000.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH THE IMPL AND IPL SWITCH TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR ERROR OR CRT DISPLAY TO OCCUR.
.
DID THE IMPL SEQUENCE COMPLETE NORMALLY?
Y N

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024
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CROSSOVER CABLE AT AA1-Z1.

025
REPLACE CROSSOVER CABLE AA1-Z1.

026
REPLACE CROSSOVER CABLE AA1-Z4.

027
REPLACE CROSSOVER CABLE AA1-Z3.

028
REPLACE CROSSOVER CABLE AA1-Z2.

029
POWER OFF.
REINSTALL ONE CARD AT A TIME.
POWER ON.
REIMPL TO FIND THE FAILING CARD.

030
POWER OFF.
REINSTALL ONE CARD AT A TIME.
POWER ON.
REIMPL TO FIND THE FAILING CARD.

031

GO TO MAP 0300, ENTRY POINT B.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0103	A	1	001
0104	A	1	001
0106	A	1	001

C01
(ENTRY POINT A)
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CABLES AND REMOVE JUMPERS.
POWER ON.
•
SET THE MODE SELECTOR SWITCH TO PROC RUN.
ALL PINS SHOULD BE AT THE DOWN LEVEL.
•
PROBE AA1-B4-B13
(+MODE SELECTOR SW BIT 0)
PROBE AA1-B4-B12
(+MODE SELECTOR SW BIT 1)
PROBE AA1-B4-D13
(+MODE SELECTOR SW BIT 2)
PROBE AA1-B4-D12
(+MODE SELECTOR SW BIT 3)
•
ALL LINES DOWN?
Y N

C02
IS ONLY (+MODE SELECTOR SW BIT 0) LINE UP?
Y N

003
1. CHECK FOR OPEN CABLE FROM MODE SELECTOR SWITCH TO THE FAILING PIN. (REFER TO ALD ZZ930)
2. CHECK FOR DEFECTIVE MODE SELECTOR SWITCH. (REFER TO ALD ZZ930)
3. REPLACE CARD AA1-J2.

THE IMPL SEQUENCE FAILED TO COMPLETE BECAUSE OF A CE PANEL PROBLEM OR THE PROBLEM IS KNOWN TO BE IN THE CE PANEL.

C04
1. CHECK FOR OPEN CABLE FROM MODE SELECTOR SWITCH TO AA1-B4-B13. (REFER TO ALD ZZ930)
2. CHECK FOR DEFECTIVE MODE SELECTOR SWITCH. (REFER TO ALD ZZ930)
3. REPLACE CARD AA1-J2.

005
TURN THE MODE SELECTOR SWITCH ONE POSITION COUNTER CLOCKWISE.
ALL PINS SHOULD BE AT THE UP LEVEL.
.
PROBE AA1-B4-B13
(+MODE SELECTOR SW BIT 0)
PROBE AA1-B4-B12
(+MODE SELECTOR SW BIT 1)
PROBE AA1-B4-D13
(+MODE SELECTOR SW BIT 2)
PROBE AA1-B4-D12
(+MODE SELECTOR SW BIT 3)
.
ANY LINE DOWN?
Y N

C06
PROBE AA1-B5-D05 (-ADDRESS COMP STOP SW)
.
ADDRESS COMP SWITCH.
SWITCH IN DOWN POSITION - LINE UP
SWITCH IN UP POSITION - LINE DOWN
.
ARE LEVELS CORRECT?
Y N

007
1. CHECK FOR DEFECTIVE SWITCH. (REFER TO ALD ZZ930)
2. REPLACE CARD AA1-J2.

C08
PROBE AA1-B5-D09 (-IPL DISKETTE)
.
IPL DISKETTE SWITCH.
SWITCH IN DOWN POSITION - LINE UP
SWITCH IN UP POSITION - LINE DOWN
.
ARE LEVELS CORRECT?
Y N

009
1. CHECK FOR DEFECTIVE SWITCH. (REFER TO ALD ZZ930)
2. REPLACE CARD AA1-J2.

010
PROBE AA1-B5-D07 (-IMPL DISKETTE)
.
IMPL DISKETTE SWITCH.
SWITCH IN DOWN POSITION - LINE UP
SWITCH IN UP POSITION - LINE DOWN
.
ARE LEVELS CORRECT?
Y N

011
1. CHECK FOR DEFECTIVE SWITCH. (REFER TO ALD ZZ930)
2. REPLACE CARD AA1-J2.

012
PROBE AA1-B5-D13 (-CHECK RUN SWITCH)
.
CHECK RUN SWITCH.
SWITCH IN DOWN POSITION - LINE UP
SWITCH IN UP POSITION - LINE DOWN
.
ARE LEVELS CORRECT?
Y N

013
1. CHECK FOR DEFECTIVE SWITCH. (REFER TO ALD ZZ930)
2. REPLACE CARD AA1-J2.

014
PROBE AA1-B5-B08 (-CE START KEY PRESSED)
.
CE START SWITCH.
SWITCH DEPRESSED - LINE DOWN
SWITCH RELEASED - LINE UP
.
ARE LEVELS CORRECT?
Y N

015
1. CHECK FOR DEFECTIVE SWITCH. (REFER TO ALD ZZ930)
2. REPLACE CARD AA1-J2.

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016
PROBE AA1-B5-B08 (-CE START KEY PRESSED)
.
FORCE CLOCK SWITCH.
SWITCH IN DOWN POSITION - LINE UP
SWITCH IN UP POSITION - LINE DOWN
.
ARE LEVELS CORRECT?
Y N

017
1. CHECK FOR DEFECTIVE SWITCH.
(REFER TO ALD ZZ930)
2. REPLACE CARD AA1-J2.

018
PROBE AA1-B5-D06 (-CONTROL STORAGE SW)
.
STOR SEL SWITCH.
SWITCH IN DOWN POSITION - LINE UP
SWITCH IN UP POSITION - LINE DOWN
.
ARE LEVELS CORRECT?
Y N

019
1. CHECK FOR DEFECTIVE SWITCH.
(REFER TO ALD ZZ930)
2. REPLACE CARD AA1-J2.

020
PROBE AA1-B5-D11 (-PREVIOUS PWR FAULT DISP)
.
PWR FAULT DISP PREV SWITCH.
SWITCH IN DOWN POSITION - LINE UP
SWITCH IN UP POSITION - LINE DOWN
.
ARE LEVELS CORRECT?
Y N

021
1. CHECK FOR DEFECTIVE SWITCH.
(REFER TO ALD ZZ930)
2. REPLACE POWER SEQUENCE CARD.

022
PROBE AA1-B5-B12 (-RESET KEY PRESSED)
.
RESET SWITCH.
SWITCH DEPRESSED - LINE DOWN
SWITCH RELEASED - LINE UP
.
ARE LEVELS CORRECT?
Y N

023
1. CHECK FOR DEFECTIVE SWITCH.
(REFER TO ALD ZZ930)
2. REPLACE CARD AA1-K2.

024
PROBE AA1-B5-B04 (-LAMP TEST)
.
LAMP TEST SWITCH.
SWITCH RELEASED - LINE UP
SWITCH DEPRESSED - LINE DOWN
.
ARE LEVELS CORRECT?
Y N

025
1. CHECK FOR DEFECTIVE SWITCH.
(REFER TO ALD ZZ930)
2. REPLACE CARD AA1-J2.

026
PROBE AA1-B5-D12 (-DISPLAY PWR CHECK)
.
DPLY PWR CHK SWITCH.
SWITCH DEPRESSED - LINE DOWN
SWITCH RELEASED - LINE UP
.
ARE LEVELS CORRECT?
Y N

027
1. CHECK FOR DEFECTIVE SWITCH.
(REFER TO ALD ZZ930)
2. REPLACE CARD AA1-K2.

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028
PROBE ONLY IF BSCA OR SDLC IS INSTALLED.
IF BSCA OR SDLC IS NOT INSTALLED ANSWER YES TO THIS QUESTION.
PROBE AA1-B5-B05 (-COM DISPLAY TO ADAPTER)
.
COM DPLY SWITCH.
SWITCH IN DOWN POSITION - LINE UP
SWITCH IN UP POSITION - LINE DOWN
.
ARE LEVELS CORRECT?
Y N

029
1. CHECK FOR DEFECTIVE SWITCH. (REFER TO ALD ZZ930)
2. REPLACE CARD AA2-L2.

030
SET THE ADDRESS SWITCHES 1-2 TO 00.
ALL PINS SHOULD BE AT THE DOWN LEVEL.
.
PROBE AA1-B4-D05
(+ADDRESS SWITCH 1-2 BIT 0)
PROBE AA1-B4-D04
(+ADDRESS SWITCH 1-2 BIT 1)
PROBE AA1-B4-B03
(+ADDRESS SWITCH 1-2 BIT 2)
PROBE AA1-B4-D02
(+ADDRESS SWITCH 1-2 BIT 3)
PROBE AA1-B4-D10
(+ADDRESS SWITCH 1-2 BIT 4)
PROBE AA1-B4-D09
(+ADDRESS SWITCH 1-2 BIT 5)
PROBE AA1-B4-B08
(+ADDRESS SWITCH 1-2 BIT 6)
PROBE AA1-B4-D07
(+ADDRESS SWITCH 1-2 BIT 7)
.
ARE ALL LINES DOWN?
Y N

031
1. CHECK FOR OPEN CABLE FROM ADDRESS SWITCH 1-2 TO THE FAILING PIN. (REFER TO ALD ZZ930)
2. CHECK FOR DEFECTIVE ADDRESS SWITCH 1-2. (REFER TO ALD ZZ930)
3. REPLACE CARD AA1-K2.

032
SET THE ADDRESS SWITCHES 1-2 TO FF.
ALL PINS SHOULD BE AT THE UP LEVEL.
.
PROBE AA1-B4-D05
(+ADDRESS SWITCH 1-2 BIT 0)
PROBE AA1-B4-D04
(+ADDRESS SWITCH 1-2 BIT 1)
PROBE AA1-B4-B03
(+ADDRESS SWITCH 1-2 BIT 2)
PROBE AA1-B4-D02
(+ADDRESS SWITCH 1-2 BIT 3)
PROBE AA1-B4-D10
(+ADDRESS SWITCH 1-2 BIT 4)
PROBE AA1-B4-D09
(+ADDRESS SWITCH 1-2 BIT 5)
PROBE AA1-B4-B08
(+ADDRESS SWITCH 1-2 BIT 6)
PROBE AA1-B4-D07
(+ADDRESS SWITCH 1-2 BIT 7)
.
ANY LINE DOWN?
Y N

033
SET THE ADDRESS SWITCHES 3-4 TO 00.
ALL PINS SHOULD BE AT THE DOWN LEVEL.
.
PROBE AA1-B4-D06
(+ADDRESS SWITCH 3-4 BIT 0)
PROBE AA1-B4-B05
(+ADDRESS SWITCH 3-4 BIT 1)
PROBE AA1-B4-B04
(+ADDRESS SWITCH 3-4 BIT 2)
PROBE AA1-B4-B02
(+ADDRESS SWITCH 3-4 BIT 3)
PROBE AA1-B4-D11
(+ADDRESS SWITCH 3-4 BIT 4)
PROBE AA1-B4-B10
(+ADDRESS SWITCH 3-4 BIT 5)
PROBE AA1-B4-B09
(+ADDRESS SWITCH 3-4 BIT 6)
PROBE AA1-B4-B07
(+ADDRESS SWITCH 3-4 BIT 7)
.
ARE ALL LINES DOWN?
Y N

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.
EC828579 PEC825460

C34
1. CHECK FOR OPEN CABLE FROM ADDRESS SWITCH 3-4 TO THE FAILING PIN. (REFER TO ALD ZZ930)
2. CHECK FOR DEFECTIVE ADDRESS SWITCH 3-4. (REFER TO ALD ZZ930)
3. REPLACE CARD AA1-J2.

C35
SET THE ADDRESS SWITCHES 3-4 TO FF.
ALL PINS SHOULD BE AT THE UP LEVEL.
.
PROBE AA1-B4-D06
(+ADDRESS SWITCH 3-4 BIT 0)
PROBE AA1-B4-B05
(+ADDRESS SWITCH 3-4 BIT 1)
PROBE AA1-B4-B04
(+ADDRESS SWITCH 3-4 BIT 2)
PROBE AA1-B4-B02
(+ADDRESS SWITCH 3-4 BIT 3)
PROBE AA1-B4-D11
(+ADDRESS SWITCH 3-4 BIT 4)
PROBE AA1-B4-B10
(+ADDRESS SWITCH 3-4 BIT 5)
PROBE AA1-B4-B09
(+ADDRESS SWITCH 3-4 BIT 6)
PROBE AA1-B4-B07
(+ADDRESS SWITCH 3-4 BIT 7)
.
ANY LINE DOWN?
Y N

C36
END

C37
LEAVE PROBE ON FAILING PIN.
.
POWER OFF.
REMOVE THE Y1 CABLE.(REFER TO ALD ZZ930)
POWER ON.
.
LINE DOWN?
Y N

C38
1. CHECK FOR DEFECTIVE ADDRESS SWITCH 3-4. (REFER TO ALD ZZ930)
2. CHECK FOR SHORTED CABLE. (REFER TO ALD ZZ930)

C39
REPLACE Y1 CABLE. (REFER TO ALD ZZ930)

C40
LEAVE PROBE ON FAILING PIN.
.
POWER OFF.
REMOVE THE Y1 CABLE.(REFER TO AL ZZ930)
POWER ON.
.
LINE DOWN?
Y N

C41
1. CHECK FOR DEFECTIVE ADDRESS SWITCH 1-2. (REFER TO ALD ZZ930)
2. CHECK FOR SHORTED CABLE. (REFER TO ALD ZZ930)

C42
REPLACE Y1 CABLE. (REFER TO ALD ZZ930)

C43
IS ONLY (+MODE SELECTOR SW BIT 0) LINE DOWN?
Y N

C44
LEAVE PROBE ON FAILING PIN.
.
POWER OFF.
REMOVE THE Y1 CABLE.(REFER TO ALD ZZ930)
POWER ON.
.
LINE DOWN?
Y N

C45
1. CHECK FOR DEFECTIVE MODE SELECTOR SWITCH. (REFER TO ALD ZZ930)
2. CHECK FOR SHORTED CABLE. (REFER TO ALD ZZ930)

C46
REPLACE Y1 CABLE. (REFER TO ALD ZZ930)

060CT75 PN2547515
EC828579 PEC825460

047
LEAVE PROBE ON FAILING PIN.
.
POWER OFF.
REMOVE THE Y1 CABLE.(REFER TO ALD ZZ930)
POWER ON.
.
LINE DOWN?
Y N

048
1. CHECK FOR DEFECTIVE MODE SELECTOR SWITCH. (REFER TO ALD ZZ930)
2. CHECK FOR SHORTED CABLE. (REFER TO ALD ZZ930)

049
REPLACE Y1 CABLE. (REFER TO ALD ZZ930)

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0100	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
2	007	0109	A

001
(ENTRY POINT A)
POWER OFF.
REINSTALL PREVIOUSLY REMOVED CABLES AND REMOVE JUMPERS.
POWER ON.
.
SET THE ADDRESS SWITCHES 1-2 TO 00.
ALL PINS SHOULD BE AT THE DOWN LEVEL.
.
PROBE AA1-B4-D05
(+ADDRESS SWITCH 1-2 BIT 0)
PROBE AA1-B4-D04
(+ADDRESS SWITCH 1-2 BIT 1)
PROBE AA1-B4-B03
(+ADDRESS SWITCH 1-2 BIT 2)
PROBE AA1-B4-D02
(+ADDRESS SWITCH 1-2 BIT 3)
PROBE AA1-B4-D10
(+ADDRESS SWITCH 1-2 BIT 4)
PROBE AA1-B4-D09
(+ADDRESS SWITCH 1-2 BIT 5)
PROBE AA1-B4-B08
(+ADDRESS SWITCH 1-2 BIT 6)
PROBE AA1-B4-D07
(+ADDRESS SWITCH 1-2 BIT 7)
.
ARE ALL LINES DOWN?
Y N

002
1. CHECK FOR OPEN CABLE FROM ADDRESS SWITCH 1-2 TO THE FAILING PIN. (REFER TO ALD ZZ930)
2. CHECK FOR DEFECTIVE ADDRESS SWITCH 1-2. (REFER TO ALD ZZ930)
3. REPLACE CARD AA1-K2.

THE IMPL SEQUENCE FAILED TO COMPLETE BECAUSE OF A CE PANEL PROBLEM.

003
SET THE ADDRESS SWITCHES 1-2 TO FF.
ALL PINS SHOULD BE AT THE UP LEVEL.
.
PROBE AA1-B4-D05
(+ADDRESS SWITCH 1-2 BIT 0)
PROBE AA1-B4-D04
(+ADDRESS SWITCH 1-2 BIT 1)
PROBE AA1-B4-B03
(+ADDRESS SWITCH 1-2 BIT 2)
PROBE AA1-B4-D02
(+ADDRESS SWITCH 1-2 BIT 3)
PROBE AA1-B4-D10
(+ADDRESS SWITCH 1-2 BIT 4)
PROBE AA1-B4-D09
(+ADDRESS SWITCH 1-2 BIT 5)
PROBE AA1-B4-B08
(+ADDRESS SWITCH 1-2 BIT 6)
PROBE AA1-B4-D07
(+ADDRESS SWITCH 1-2 BIT 7)
.
ANY LINE DOWN?
Y N

004
SET THE ADDRESS SWITCHES 3-4 TO 00.
ALL PINS SHOULD BE AT THE DOWN LEVEL.
.
PROBE AA1-B4-D06
(+ADDRESS SWITCH 3-4 BIT 0)
PROBE AA1-B4-B05
(+ADDRESS SWITCH 3-4 BIT 1)
PROBE AA1-B4-B04
(+ADDRESS SWITCH 3-4 BIT 2)
PROBE AA1-B4-B02
(+ADDRESS SWITCH 3-4 BIT 3)
PROBE AA1-B4-D11
(+ADDRESS SWITCH 3-4 BIT 4)
PROBE AA1-B4-B10
(+ADDRESS SWITCH 3-4 BIT 5)
PROBE AA1-B4-B09
(+ADDRESS SWITCH 3-4 BIT 6)
PROBE AA1-B4-B07
(+ADDRESS SWITCH 3-4 BIT 7)
.
ARE ALL LINES DOWN?
Y N

005
1. CHECK FOR OPEN CABLE FROM ADDRESS SWITCH 3-4 TO THE FAILING PIN. (REFER TO ALD ZZ930)
2. CHECK FOR DEFECTIVE ADDRESS SWITCH 3-4. (REFER TO ALD ZZ930)
3. REPLACE CARD AA1-J2.

006
SET THE ADDRESS SWITCHES 3-4 TO FF.
ALL PINS SHOULD BE AT THE UP LEVEL.
.
PROBE AA1-B4-D06
(+ADDRESS SWITCH 3-4 BIT 0)
PROBE AA1-B4-B05
(+ADDRESS SWITCH 3-4 BIT 1)
PROBE AA1-B4-B04
(+ADDRESS SWITCH 3-4 BIT 2)
PROBE AA1-B4-B02
(+ADDRESS SWITCH 3-4 BIT 3)
PROBE AA1-B4-D11
(+ADDRESS SWITCH 3-4 BIT 4)
PROBE AA1-B4-B10
(+ADDRESS SWITCH 3-4 BIT 5)
PROBE AA1-B4-B09
(+ADDRESS SWITCH 3-4 BIT 6)
PROBE AA1-B4-B07
(+ADDRESS SWITCH 3-4 BIT 7)
.
ANY LINE DOWN?
Y N

007

GO TO MAP 0109, ENTRY POINT A.

008
LEAVE PROBE ON FAILING PIN.
.
POWER OFF.
REMOVE THE Y1 CABLE.(REFER TO ALD ZZ930)
POWER ON.
.
LINE DOWN?
Y N

009
1. CHECK FOR DEFECTIVE ADDRESS SWITCH 3-4. (REFER TO ALD ZZ930)
2. CHECK FOR SHORTED CABLE. (REFER TO ALD ZZ930)

060CT75 PN2547516

EC828579 PEC825460

SYSTEM 32

PAGE 3 OF 3

010
1. REPLACE CARDS AA1-M2, AA1-J2, AA1-K2.
2. REPLACE Y1 CABLE. (REFER TO ALD ZZ930)

011
LEAVE PROBE ON FAILING PIN.
.
POWER OFF.
REMOVE THE Y1 CABLE.(REFER TO ALD ZZ930)
POWER ON.
.
LINE DOWN?
Y N

012
1. CHECK FOR DEFECTIVE ADDRESS SWITCH 1-2. (REFER TO ALD ZZ930)
2. CHECK FOR SHORTED CABLE. (REFER TO ALD ZZ930)

013
1. REPLACE CARDS AA1-M2, AA1-J2, AA1-K2.
2. REPLACE Y1 CABLE. (REFER TO ALD ZZ930)

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0100	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
1	004	0113	A

001
(ENTRY POINT A)
THE WRAP ERROR DISPLAY ON CRT APPEARS AS SHOWN IN MLM SECTION 5, DIAGNOSTIC PATTERNS, FIGURE 3.
(SEE DIAGNOSTIC USER'S GUIDE FOR WRAP ERROR CODE DESCRIPTION)
IS ONLY A DISKETTE WRAP ERROR MESSAGE DISPLAYED ON CRT?
Y N

002
IS ONLY A DISPLAY OR KEYBOARD WRAP ERROR MESSAGE DISPLAYED ON CRT?
Y N

003
IS ONLY ONE WRAP ERROR MESSAGE DISPLAYED?
Y N

004
GO TO MAP 0113, ENTRY POINT A.

005
SELECT THE DEVICE WITH THE WRAP ERROR AND PERFORM ACTION AS INDICATED IN THE FOLLOWING CHART.

IS THE WRAP ERROR DISPLAYED FOR THE DISK OR THE DISKETTE?
Y N

WRAP ERROR DISPLAYED ON CRT IS THE FAILURE.

D 1 SYSTEM ENTRY

SYSTEM 32

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006
KEYBOARD
.
REPLACE AA2-M2.

CRT DISPLAY
.
REPLACE AA2-M2.

PRINTER
1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. ENTER PROGRAM ID BY TYPING IN PRINTER IF LINE PRINTER. IF SERIAL PRINTER GO TO MAP 0525, ENTRY POINT A.
9. DEPRESS THE ENTER KEY.
10. FOLLOW INSTRUCTIONS ON CRT.

B 1 C 1 MAP 0112-2

007
DISKETTE
.
1. SET DATA SWITCHES TO F800.
2. SET THE MODE SELECTOR TO PROC RUN.
3. SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE SCRATCH DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. ENTER PROGRAM ID BY TYPING IN 33FD.
8. DEPRESS THE ENTER KEY.
9. FOLLOW INSTRUCTIONS ON CRT.

DISK
.
PRESS RESET
PROBE AA2-K2-P04(- CHAN DATA PROTECT).

IF THE LINE IS DOWN GO TO MAP 0319,ENTRY POINT A.

IF THE LINE IS UP GO TO MAP 0600, ENTRY POINT A(DISK MAIN ENTRY CHART).

008
IS THE WRAP ERROR MESSAGE 1026?
Y N

009
REPLACE CARD AA2-M2.

010
RUN KEYBOARD DIAGNOSTICS AS FOLLOWS:
.
1. SET DATA SWITCHES TO F100.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. FOLLOW INSTRUCTIONS ON CRT.

011
IS THE WRAP ERROR MESSAGE D050?
Y N

012
RUN DISKETTE DIAGNOSTICS AS FOLLOWS:

1. SET DATA SWITCHES TO F800.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE SCRATCH DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. ENTER PROGRAM ID BY TYPING IN 33FD.
8. DEPRESS THE ENTER KEY.
9. FOLLOW INSTRUCTIONS ON CRT.

013
DEPRESS RESET.
PROBE AA1-N2-S03 (-CHAN IO DEVICE WORKING)

LINE DOWN?
Y N

014
REPLACE CARD AA2-K2.

015
POWER OFF.
REMOVE THE ADAPTER CARDS LISTED TO THE RIGHT.

POWER ON.
DEPRESS RESET.
PROBE AA1-N2S03(-CHAN I/O DEVICE WORKING).

LINE UP?
Y N

016
REPLACE CARD AA1-N2.

ADAPTER CARD LOCATIONS
(REFER TO AY030 FOR PLUG CHART)

AA2-F2	DISK
AA2-K2	DISKETTE
AA2-Q2	LINE PRINTER
AA2-R2	SERIAL PRINTER
AA2-L2	BSCA OR SDLC (FEATURES)
AA2-N2	CARDIC (FEATURE)

SYSTEM ENTRY

SYSTEM 32

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017
POWER OFF.
REINSTALL CARD AA2-F2.

POWER ON.
DEPRESS RESET.
PROBE AA1-N2S03(-CHAN I/O DEVICE WORKING).
.
LINE UP?
Y N

018
REPLACE CARD AA2-F2.

019
POWER OFF.
REINSTALL CARD AA2-K2.

POWER ON.
DEPRESS RESET.
PROBE AA1-N2S03(-CHAN I/O DEVICE WORKING).
.
LINE UP?
Y N

020
REPLACE CARD AA2-K2.

021
POWER OFF.
REINSTALL CARD AA2-Q2(LINE PRINTER) OR AA2-R2(SERIAL PRINTER).

POWER ON.
DEPRESS RESET.
PROBE AA1-N2S03(-CHAN I/O DEVICE WORKING).
.
LINE UP?
Y N

022
REPLACE CARD AA2-Q2 (LINE PRINTER) OR AA2-R2 (SERIAL PRINTER).

MAP 0112-4

023
POWER OFF.
REINSTALL CARD AA2-L2(BSCA OR SDLC).

POWER ON.
DEPRESS RESET.
PROBE AA1-N2S03(-CHAN I/O DEVICE WORKING).
.
LINE UP?
Y N

024
REPLACE CARD AA2-L2.

025
REPLACE CARD AA2-N2.

22OCT76 PN2547517
EC830357 PEC830387

MAP 0112-4

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0112	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
2	008	0319	A

001
(ENTRY POINT A)
POWER OFF.
REMOVE ALL ADAPTER INTERFACE CARDS EXCEPT THE DISKETTE.

CARDS IDENTIFIED IN THE ADAPTER CARD LOCATION CHART AS FEATURE CARDS WILL BE PRESENT ONLY IF THE FEATURE IS INSTALLED.

POWER ON.
SET DATA SWITCHES TO F780.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET BOTH IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
DEPRESS THE LOAD KEY.
WAIT FOR STOP LIGHT TO COME ON.
.
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01'AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO '0000'?
Y N
| |

THE FAILURE IS A MULTIPLE WRAP ERROR DISPLAY.

ADAPTER INTERFACE CARD LOCATIONS

REFER TO AY030 FOR AA2 BOARD PLUG CHART.

AA2-F2	DISK	
AA2-G2	DISK	
AA2-K2	DISKETTE	
AA2-L2	BSCA OR	FEATURE
	SDLC	FEATURE
AA2-M2	CRT/KYBD	
AA2-Q2	LINE PRINTER	
AA2-T2	LINE PRINTER	
AA2-Q2	SERIAL PRINTER	
AA2-R2	SERIAL PRINTER	
AA2-N2	CARDIO	FEATURE

REFER TO AY020 FOR AA1 BOARD PLUG CHART.

AA1-F2	MICR	FEATURE

002
POWER OFF.
REMOVE DISKETTE INTERFACE CARD AA2-K2 AND REINSTALL THE DISK INTERFACE CARDS AT AA2-F2, AA2-G2.
POWER ON.
SET DATA SWITCHES TO F701.
SET MODE SELECTOR SWITCH TO PROC RUN.
SET ALL TOGGLE SWITCHES TO THE DOWN POSITION.
WAIT APPROX. 45 SECONDS FOR THE DISK TO BECOME READY.
DEPRESS THE LOAD KEY.
WAIT FOR STOP LIGHT TO COME ON.
.
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01'AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

003
REPLACE CARDS AA1-J2, AA1-H2, CROSSOVER CABLE AA1-Z3, AA1-Z4.

004
REPLACE CARD AA2-K2.

005
POWER OFF.
REINSTALL CARDS AA2-Q2, AA2-T2 IF LINE PRINTER. REINSTALL CARDS AA2-Q2, AA2-R2 IF SERIAL PRINTER.
POWER ON.
SET DATA SWITCHES TO F782.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT APPROX. 45 SECONDS FOR THE DISK TO BECOME READY.
DEPRESS THE LOAD KEY.
WAIT FOR STOP LIGHT TO COME ON.
.
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01'AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

006
DISPLAY WR5 BY SETTING DATA SWITCHES 3 AND 4 TO X'05'AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR5 EQUAL TO X'E084'?
Y N

007
REPLACE CARDS AA2-Q2, AA2-T2 IF LINE PRINTER. REPLACE CARDS AA2-Q2, AA2-R2 IF SERIAL PRINTER.

008

GO TO MAP 0319, ENTRY POINT A.

009
POWER OFF.
REINSTALL CARD AA2-M2.
POWER ON.
SET DATA SWITCHES TO F78E.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT APPROX. 45 SECONDS FOR THE DISK TO BECOME READY.
DEPRESS THE LOAD KEY.
WAIT FOR STOP LIGHT TO COME ON.
.
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01'AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

010
REPLACE CARD AA2-M2.

15APR77 PN2547518
EC830358 PEC830357

011
POWER OFF.
REINSTALL CARDS AA2-F2, AA2-G2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT APPROX. 45 SECONDS FOR THE DISK TO BECOME READY.
DEPRESS THE LOAD KEY.
WAIT FOR STOP LIGHT TO COME ON.
.
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

012
REPLACE CARDS AA2-E2, AA2-F2, AA2-G2.

013
IS BSCA OR SDLC INSTALLED ON THE SYSTEM?
Y N

014
(ENTRY POINT B)
.
.
IS A 129 OR 5496 (CARDIO) INSTALLED ON THE SYSTEM?
Y N

015
IS A 1255(MICR) INSTALLED ON THE SYSTEM?
Y N

016
REPLACE CARDS AA1-J2, AA1-H2, CROSSOVER CABLE AA1-Z3, AA1-Z4.

017
POWER OFF.
REINSTALL CARD AA1-F2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT APPROX. 45 SECONDS FOR THE DISK TO BECOME READY.
DEPRESS THE LOAD KEY.
WAIT FOR THE STOP LIGHT TO COME ON.
.
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

018
REPLACE CARD AA1-F2.

019
REPLACE CARDS AA1-J2, AA1-H2, CROSSOVER CABLE AA1-Z3, AA1-Z4.

020
POWER OFF.
REINSTALL CARD AA2-N2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT APPROX. 45 SECONDS FOR THE DISK TO BECOME READY.
DEPRESS THE LOAD KEY.
WAIT FOR THE STOP LIGHT TO COME ON.
.
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01' AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

021
REPLACE CARD AA2-N2.

022
REPLACE CARDS AA1-J2, AA1-H2, CROSSOVER CABLE AA1-Z3, AA1-Z4.

023
POWER OFF.
REINSTALL CARD AA2-L2.
POWER ON.
SET DATA SWITCHES TO F78F.
SET MODE SELECTOR SWITCH TO PROC RUN.
WAIT APPROX. 45 SECONDS FOR THE DISK TO BECOME READY.
DEPRESS THE LOAD KEY.
WAIT FOR THE STOP LIGHT TO COME ON.
.
DISPLAY WR1 BY SETTING DATA SWITCHES 3 AND 4 TO X'01'AND MODE SELECTOR SWITCH TO DPLY LSR.
.
IS WR1 EQUAL TO X'0000'?
Y N

024
REPLACE CARD AA2-L2.

025

GO TO PAGE 3, STEP 014,
ENTRY POINT B.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0100	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
3	025	0300	A

001
(ENTRY POINT A)
****
* LAMP TEST *
****
.
DEPRESS SYSTEM RESET.
IS LOW BYTE BIT P INDICATOR ON?
Y N
|
| 002
| PROBE AA1-B5-D04 (+5VDC CPU)
| (VOLTAGE FOR LED'S)
| LINE UP?
| Y N
| |
| | 003
| | CHECK FOR MISSING +5 VDC ON CPU
| | BOARD.
| |
| 004
| 1.CHECK FOR OPEN CABLE.(ZZ930)
| (FROM AA1-B5-D04 TO CE PANEL
| +5VDC) (FROM AA1-B5-B03 TO CE
| PANEL +5VDC)
| 2. REPLACE DEFECTIVE INDICATOR.
| 3. CHECK FOR MISSING +5VDC ON CE
| PANEL.
| 4. REPLACE DEFECTIVE CE PANEL
| PRINTED CIRCUIT BOARD FOR
| INDICATORS.
|
005
DEPRESS AND HOLD SYSTEM RESET
SWITCH.
.
ARE POWER CHECK AND/OR THERMAL
CHECK
INDICATORS ON?
Y N
|
| 006
| DEPRESS AND HOLD LAMP TEST
| SWITCH.
| ALL INDICATORS OFF ON CE PANEL?
| Y N

007
DEPRESS AND HOLD LAMP TEST SWITCH.
ALL INDICATORS OFF (EXCEPT LOW BYTE P)?
Y N

008
DEPRESS AND HOLD LAMP TEST SWITCH.
SINGLE INDICATOR FAILS TO COME ON?
Y N

009
DEPRESS AND HOLD LAMP TEST SWITCH.
LOW BYTE LIGHTS 0, 1, 2, AND 3 FAIL TO LITE?
Y N

010
DEPRESS AND HOLD LAMP TEST SWITCH.
LOW BYTE LIGHTS 4, 5, 6, 7, AND THE LOAD LIGHT AND STOP LIGHT FAIL TO LITE?
Y N

011
DEPRESS AND HOLD THE LAMP TEST SWITCH.
PROC. INTERRUPT LIGHTS 4, 2, 1 FAIL TO LITE?
Y N

012
DEPRESS AND HOLD LAMP TEST SWITCH.
PROCESSOR CHECK, CLOCK LIGHT, AND HIGH BYTE DISPLAY FAIL TO LITE?
Y N

013
1. CHECK FOR OPEN CABLE. (FROM AA1-B5-D04 TO CE PANEL +5VDC)
2. RESEAT CABLE AT LOCATION AA1-B2, AA1-A2, AND AA1-A3.
3. CHECK FOR +5VDC AT OPERATOR PANEL. (FROM AA1-B2-D03 TO OPERATOR PANEL)
4. REPLACE THE FAILING INDICATORS.

014
REPLACE CARD AA1-K2.

015
REPLACE CARD AA1-H2.

016
REPLACE CARD AA1-N2.

017
REPLACE CARD AA1-J2.

15APR77 PN2547504
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E LAMP TEST
2

SYSTEM 32

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018
PROBE THE PIN FOR THE FAILING INDICATOR AND DEPRESS AND HOLD LAMP TEST SWITCH.

IF THE LINE IS DOWN THE CARD IS GOOD AND THE PROBLEM IS FROM THE PROBED PIN IN THE INDICATOR CIRCUIT.

IF LINE WILL NOT GO DOWN REPLACE CARD SPECIFIED BELOW.
THE'PFFPFF'IS THE HIGH/LOW BYTE ON THE CE PANEL.

FAILING INDICATOR	PROBE LOC. AA1-	BOARD CABLE LOC. AA1-	REPLACE CARD AA1-
PROC CHECK	K2-S09	B2-B12	K2
LOAD LIGHT	N2-B04	B2-B10	N2
STOP LIGHT	N2-D04	B2-B09	N2
STOP LIGHT	J2-D13		J2
STRT LIGHT	H2-S13	B2-D05	H2
KYBD LIGHT	AA2-		AA2-
	M2-S12	B2-B11	M2*
CLK LIGHT	K2-B12	A3-B11	K2
CLK LIGHT	K2-B12	A3-B11	K2
PROC INTR4	H2-B05	A3-B13	H2
PROC INTR2	H2-D04	A3-D13	H2
PROC INTR1	H2-D05	A3-D12	H2
X'_FFPFF'	K2-B04	A3-B12	K2
X'P7FPFF'	K2-D12	A3-B10	K2
X'PBFPFF'	K2-J05	A3-B03	K2
X'PDFPFF'	K2-B02	A3-D03	K2
X'PEFPFF'	K2-B09	A3-D02	K2
X'PF7PFF'	K2-G03	A3-D04	K2
X'PFBPFF'	K2-D13	A3-B04	K2
X'PFDPFF'	K2-D11	A3-D05	K2
X'PFEPFF'	K2-B13	A3-B05	K2
X'PFF_FF'	J2-G05	A3-D11	J2
X'PFFP7F'	N2-M03	A3-D06	N2
X'PFFPBF'	N2-S12	A3-B06	N2
X'PFFPDF'	N2-M09	A3-D07	N2
X'PFFPEF'	N2-P09	A3-D10	N2
X'PFFPF7'	J2-G06	A3-B09	J2
X'PFFPFB'	J2-G07	A3-D09	J2
X'PFFPFD'	J2-J06	A3-B08	J2
X'PFFPFE'	J2-J07	A3-B07	J2

*CONTINUITY CHECK CROSSOVER CABLE FROM AA1-Z3-D11 TO AA2-Y3-D11.

A B D MAP 0200-3
1 1 2

019
PROBE AA1-B5-B04 (-LAMP TEST)
DEPRESS AND HOLD LAMP TEST SWITCH.
LINE DOWN?
Y N

020
1. CHECK FOR OPEN CABLE.(ZZ930) (FROM AA1-B5-B04 TO CE PANEL LAMP TEST SW.
2. REPLACE DEFECTIVE LAMP TEST SWITCH.

021
CHECK FOR MISSING GROUND TO CE/OPERATOR PANEL.
(ZZ930,OP010)

022
PROBE AA1-B5-D04 (+CPU +5VDC TO CE PANEL)
LINE UP?
Y N

023
CHECK FOR MISSING +5 VDC ON CPU BOARD.

024
1. CHECK FOR OPEN CABLE.(ZZ930) (FROM AA1-B5-D04 TO CE PANEL)
2. REPLACE PRINTED CIRCUIT BOARD ON CE PANEL.

025
POWER CHARTS
GO TO MAP 0300, ENTRY POINT A.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0100	A	1	001
1400	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
1	007	0900	C
4	018	0900	C

001
(ENTRY POINT A)
****
* LAMP RESET *
****
DEPRESS AND HOLD THE RESET KEY.
.
ARE ALL INDICATORS ON OPERATOR AND CE PANEL ON EXCEPT THE POWER CHECK AND THERMAL CHECK?
Y N

ANY NUMBER OF INDICATORS ON WHICH MAY OR MAY NOT EFFECT CUSTOMER OPERATION AFTER POWER IS UP AND RESET HAS BEEN DEPRESSED.

002
DEPRESS AND HOLD THE RESET KEY.
.
IS HIGH BYTE DISPLAY P-BIT INDICATOR ON?
Y N

003
IS ANY HIGH BYTE DISPLAY INDICATOR ON?
Y N

004
IS A 5321(MCU) INSTALLED ON THE SYSTEM?
Y N

005

GO TO PAGE 2, STEP 008, ENTRY POINT C.

006
ARE ALL 5321 LIGHTS (EXCEPT POWER INDICATOR) OFF?
Y N

007

GO TO MAP 0900, ENTRY POINT C.

D
1

LAMP RESET

SYSTEM 32

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008
(ENTRY POINT C)
PROBE THE PIN FOR THE FAILING INDICATOR.

IF THE LINE IS UP THE CARD IS GOOD AND THE PROBLEM IS FROM THE PROBED PIN IN THE INDICATOR CIRCUIT.

THE '_00_00' IS THE HIGH/LOW BYTE ON THE CE PANEL.

REFER TO THE TABLE BELOW TO FIND THE PROBLEM.

FAILING INDICATOR	PROBE LOC. AA1-	BOARD CABLE LOC. AA1-	REPLACE CARD AA1-
PROC CHECK	K2-S09	B2-B12	K2
LOAD LIGHT	N2-B04	B2-B10	N2
STOP LIGHT	N2-D04	B2-B09	N2
STOP LIGHT	J2-D13		J2
STRT LIGHT	H2-S13	B2-D05	H2
KYBD LIGHT	AA2-		AA2-
	M2-S12	B2-B11	M2
CLK LIGHT	K2-B12	A3-B11	K2
CLK LIGHT	K2-B12	A3-B11	K2
PROC INTR4	H2-B05	A3-B13	H2
PROC INTR2	H2-D04	A3-D13	H2
PROC INTR1	H2-D05	A3-D12	H2
X'P00_00'	K2-B04	A3-B12	K2
X'_80_00'	K2-D12	A3-B10	K2
X'_40_00'	K2-J05	A3-B03	K2
X'_20_00'	K2-B02	A3-D03	K2
X'_10_00'	K2-B09	A3-D02	K2
X'_08_00'	K2-G03	A3-D04	K2
X'_04_00'	K2-D13	A3-B04	K2
X'_02_00'	K2-D11	A3-D05	K2
X'_01_00'	K2-B13	A3-B05	K2
X'_00P00'	J2-G05	A3-D11	J2
X'_00_80'	N2-M03	A3-D06	N2
X'_00_40'	N2-S12	A3-B06	N2
X'_00_20'	N2-M09	A3-D07	N2
X'_00_10'	N2-P09	A3-D10	N2
X'_00_08'	J2-G06	A3-B09	J2
X'_00_04'	J2-G07	A3-D09	J2
X'_00_02'	J2-J06	A3-B08	J2
X'_00_01'	J2-J07	A3-B07	J2

009
POWER OFF.
REMOVE CARD AT AA2-L2.
POWER ON.
SET THE BSCA DISPLAY SWITCH TO THE DOWN POSITION.

(AA2-L2 CARD ONLY PRESENT IF BSCA IS INSTALLED. IF BSCA IS NOT INSTALLED ANSWER YES TO THIS QUESTION.)

IS ANY HIGH ORDER INDICATOR ON?
Y N

010
POWER OFF.
REINSTALL CARD AA2-L2.
POWER ON.

RUN BSCA DIAGNOSTICS AS FOLLOWS:

1. SET DATA SWITCHES TO 0000.
2. SET MODE SELECTOR SWITCH TO PROC RUN.
3. SET THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION.
4. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR.
5. DEPRESS THE LOAD KEY. (WAIT FOR CRT DISPLAY)
6. DEPRESS THE START KEY.
7. DEPRESS THE INQ KEY.
8. REMOVE THE CE DIAG 01 DISKETTE AND INSERT THE CE DIAG 03 DISKETTE AND CLOSE THE DOOR.
9. ENTER PROGRAM ID BY TYPING IN BSCA.
10. DEPRESS THE ENTER KEY.
11. FOLLOW INSTRUCTIONS ON CRT.

011
POWER OFF.
REMOVE CARD AT AA1-K2.
DEPRESS AND HOLD THE DPLY PWR CHK SWITCH.

IS ANY HIGH ORDER INDICATOR ON?
Y N

F 3 LAMP RESET

SYSTEM 32

PAGE 4 OF 6

012
REINSTALL PREVIOUSLY REMOVED CARD/S.
POWER ON.
DEPRESS THE RESET KEY.
PROBE THE PIN FOR THE FAILING INDICATOR.
.
IF THE LINE IS UP THE CARD IS GOOD AND THE PROBLEM IS FROM THE PROBED PIN IN THE INDICATOR CIRCUIT.
.
THE '_00_00' IS THE HIGH/LOW BYTE ON THE CE PANEL.
.
REFER TO THE TABLE BELOW TO FIND THE PROBLEM.
.

FAILING INDICATOR	PROBE LOC. AA1-	BOARD CABLE LOC. AA1-	REPLACE CARD AA1-
PROC CHECK	K2-S09	B2-B12	K2
LOAD LIGHT	N2-B04	B2-B10	N2
STOP LIGHT	N2-D04	B2-B09	N2
STOP LIGHT	J2-D13		J2
STRT LIGHT	H2-S13	B2-D05	H2
KYBD LIGHT	AA2-		AA2-
	M2-S12	B2-B11	M2
CLK LIGHT	K2-E12	A3-B11	K2
CLK LIGHT	K2-B12	A3-B11	K2
PROC INTR4	H2-B05	A3-B13	H2
PROC INTR2	H2-D04	A3-D13	H2
PROC INTR1	H2-D05	A3-D12	H2
X'P00_00'	K2-B04	A3-B12	K2
X'_80_00'	K2-D12	A3-B10	K2
X'_40_00'	K2-J05	A3-B03	K2
X'_20_00'	K2-B02	A3-D03	K2
X'_10_00'	K2-B09	A3-D02	K2
X'_08_00'	K2-G03	A3-D04	K2
X'_04_00'	K2-D13	A3-B04	K2
X'_02_00'	K2-D11	A3-D05	K2
X'_01_00'	K2-B13	A3-B05	K2
X'_00P00'	J2-G05	A3-D11	J2
X'_00_80'	N2-M03	A3-D06	N2
X'_00_40'	N2-S12	A3-B06	N2
X'_00_20'	N2-M09	A3-D07	N2
X'_00_10'	N2-P09	A3-D10	N2
X'_00_08'	J2-G06	A3-B09	J2
X'_00_04'	J2-G07	A3-D09	J2
X'_00_02'	J2-J06	A3-B08	J2
X'_00_01'	J2-J07	A3-B07	J2

A B E 1 1 3 MAP 0201-4

013
REPLACE POWER SEQUENCE CARD.

014
REPLACE CARDS AA1-H2, AA1-J2, AA1-K2.

015
IS A 5321(MCU) INSTALLED ON THE SYSTEM?
Y N

016

GO TO PAGE 4, STEP 019, ENTRY POINT B.

017
UNPLUG CABLE AA2-U5.
DEPRESS AND HOLD THE RESET KEY.
ARE ALL INDICATORS ON OPERATOR AND CE PANEL ON EXCEPT THE POWER CHECK AND THERMAL CHECK?
Y N

018

GO TO MAP 0900, ENTRY POINT C.

019
(ENTRY POINT B)
PROBE AA1-B5-B04 (-LAMP TEST)
LINE DOWN?
Y N

020
PROBE THE PIN FOR THE FAILING INDICATOR.
.
IF THE LINE IS UP THE CARD IS GOOD AND THE PROBLEM IS FROM THE PROBED PIN IN THE INDICATOR CIRCUIT.
.
THE '_00_00' IS THE HIGH/LOW BYTE ON THE CE PANEL.
.
REFER TO THE TABLE BELOW TO FIND THE PROBLEM.
.

FAILING INDICATOR	PROBE LOC. AA1-	BOARD CABLE LOC. AA1-	REPLACE CARD AA1-
PROC CHECK	K2-S09	B2-B12	K2
LOAD LIGHT	N2-B04	B2-B10	N2
STOP LIGHT	N2-D04	B2-B09	N2
STOP LIGHT	J2-D13		J2
STRT LIGHT	H2-S13	B2-D05	H2
KYBD LIGHT	AA2-		AA2-
	M2-S12	B2-B11	M2
CLK LIGHT	K2-B12	A3-B11	K2
CLK LIGHT	K2-B12	A3-B11	K2
PROC INTR4	H2-B05	A3-B13	H2
PROC INTR2	H2-D04	A3-D13	H2
PROC INTR1	H2-D05	A3-D12	H2
X'P00_00'	K2-B04	A3-B12	K2
X'_80_00'	K2-D12	A3-B10	K2
X'_40_00'	K2-J05	A3-B03	K2
X'_20_00'	K2-B02	A3-D03	K2
X'_10_00'	K2-B09	A3-D02	K2
X'_08_00'	K2-G03	A3-D04	K2
X'_04_00'	K2-D13	A3-B04	K2
X'_02_00'	K2-D11	A3-D05	K2
X'_01_00'	K2-B13	A3-B05	K2
X'_00P00'	J2-G05	A3-D11	J2
X'_00_80'	N2-M03	A3-D06	N2
X'_00_40'	N2-S12	A3-B06	N2
X'_00_20'	N2-M09	A3-D07	N2
X'_00_10'	N2-P09	A3-D10	N2
X'_00_08'	J2-G06	A3-B09	J2
X'_00_04'	J2-G07	A3-D09	J2
X'_00_02'	J2-J06	A3-B08	J2
X'_00_01'	J2-J07	A3-B07	J2

021
LEAVE THE PROBE ON THE PIN.
.
POWER OFF.
REMOVE CABLE AT AA1-B5.
POWER ON.
.
LINE DOWN?
Y N
|
| 022
| LEAVE THE PROBE ON THE PIN.
| .
| POWER OFF.
| REINSTALL CABLE AT AA1-B5.
| REMOVE CABLE AT Y1.
| POWER ON.
| .
| LINE DOWN?
| Y N
| |
| | 023
| | 1. CHECK FOR DEFECTIVE LAMP TEST SWITCH. (REFER TO ALD ZZ930)
| | 2. CHECK FOR SHORTED CABLE. (REFER TO ALD ZZ930)
| |
| 024
| REPLACE Y2 CABLE.
|
025
LEAVE THE PROBE ON THE PIN.
.
POWER OFF.
REINSTALL CABLE AT AA1-B5.
REMOVE CARD AT AA1-J2.
POWER ON.
.
LINE DOWN?
Y N
|
| 026
| REPLACE CARD AA1-J2.
|
027
LEAVE THE PROBE ON THE PIN.
.
POWER OFF.
REMOVE CARD AT AA1-H2.
POWER ON.
.
LINE DOWN?
Y N
|
| 028
| REPLACE CARD AA1-H2.
|
|
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J LAMP RESET
5
SYSTEM 32
|
| PAGE 6 OF 6
|
|
029
LEAVE THE PROBE ON THE PIN.
.
POWER OFF.
REMOVE CARD AT AA1-K2.
POWER ON.
.
LINE DOWN?
Y N
|
| 030
| REPLACE CARD AA1-K2.
|
031
LEAVE THE PROBE ON THE PIN.
.
POWER OFF.
REMOVE CARD AT AA2-M2.
POWER ON.
.
LINE DOWN?
Y N
|
| 032
| REPLACE CARD AA2-M2.
|
033
REPLACE CARD AA1-N2.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0100	A	2	001
0105	A	2	001
0200	A	2	001
0318	G	27	144

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
30	173	0301	A
24	116	0301	A
31	176	0301	A
25	131	0301	B
30	173	0302	A
24	116	0302	A
31	176	0302	A
25	131	0302	B
30	173	0303	A
24	116	0303	A
31	176	0303	A
25	131	0303	B
30	173	0304	A
24	116	0304	A
31	176	0304	A
25	131	0304	B
31	173	0305	A
24	116	0305	A
31	176	0305	A
25	131	0305	B
31	173	0306	A
24	116	0306	A
31	176	0306	A
25	131	0306	B
31	173	0307	A
24	116	0307	A
31	176	0307	A
26	131	0307	B
22	109	0308	A
29	158	0308	A
22	109	0309	A
29	159	0309	A
5	012	0310	A
13	046	0310	A
33	184	0310	A
33	189	0310	A
13	048	0310	A
19	079	0311	A
21	095	0311	A
9	023	0311	A
19	077	0311	A
12	036	0312	A
15	057	0312	A
12	040	0313	A
12	045	0313	A
14	053	0313	A
16	062	0315	A
31	173	0315	A
34	193	0315	A
22	108	0316	A
23	115	0316	A

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY PCINT
28	149	0316	A
31	175	0316	A
34	190	0316	A
34	192	0316	A
24	116	0316	A
35	194	0316	A
7	018	0317	A
11	030	0317	A
19	076	0317	A
35	194	0317	A
9	023	0317	A
6	014	0317	B
29	156	0503	A

001

(ENTRY POINT A) 21

INTRODUCTION:

IT IS A GOOD PROCEDURE TO CHECK FOR OBVIOUS PROBLEMS SUCH AS, FUSE 101, FUSE 102, AND CUSTOMER INPUT POWER BEFORE CONTINUING THROUGH MAPS.

ALL LOCATIONS IN THE POWER SUPPLY AREA ARE SHOWN IN SEC. 8 OF THE MLM.

FRAME GROUND MAY BE USED FOR GROUND REFERENCE UNLESS OTHERWISE STATED.

TOOLS NEEDED FOR PROBLEM ISOLATION:
1) CE PROBE.
2) CE METER.
3) JUMPER WIRES.
4) CABLE EXTENDER.
5) TOOLS FOR REMOVING COVERS.

+6 VDC CONTROL VOLTAGE ON SEQUENCE CARD TEST POINT, SC-TP-805 IS A 2.5% TOLERANCE VOLTAGE THAT CAN BE USED AS A REFERENCE FOR CE METER ACCURACY CHECK.

TO DISPLAY THE POWER CHECK BYTE:

FOLLOWING A PWR CHK, PRESS THE DPLY PWR CHK SWITCH WITH THE PWR FAULT (STEP 001 CONTINUES)

(STEP 001 CONTINUED)
DPLY SWITCH IN THE PRES POSITION. THE CONDITION CAUSING THE CURRENT PWR CHK IS DISPLAYED. WITH THE PWR FAULT DISP SWITCH IN THE PREV POSITION, THE ERROR CHECK BYTE FROM THE LAST PWR CHK IS DISPLAYED. THIS CHECK BYTE IS RECORDED AUTOMATICALLY IN THE PREVIOUS CHECK REGISTER BY PRESSING THE SYSTEM RESET BUTTON WITH THE CONSOLE POWER SWITCH OFF WHEN ATTEMPTING TO CLEAR THE PWR CHK. THIS CHECK BYTE CANNOT BE RETAINED IF MAIN LINE POWER WAS LOST OR REMOVED SINCE THE RECORDING.

THE NORMAL RECOVERY TECHNIQUE OF PRESSING RESET WITH SETING 'POWER ON' TO 'OFF' (OPERATORS PANEL) IN ORDER TO CLEAR A POWER CHECK MAY NOT WORK IN THE CASE OF A POWER LINE DISTURBANCE WHERE POWER IS NOT LOST COMPLETELY. IN THIS CASE THE PWR CHK INDICATOR MAY BE CLEARED BY TURNING MAIN LINE SWITCH 'OFF' FOR A FEW SECONDS, THEN 'ON'.

THE FEED THROUGH CONNECTOR USED TO INTERFACE THE POWER SEQUENCE CARD TO ITS CABLING IS REFERRED TO IN THE POWER MAPS AS A 'MAPLE BLOCK CONNECTOR'.

THE FORMAT USED FOR REFERRING TO SIGNAL LINES WILL BE:

>> SIGNAL LINE NAME <<.
PIN LOCATION
****
POWER SEQ CARD CONNECTOR — MAPLE--XYY

1) CHECK FUSES F101 & F102.

AFTER ATTEMPTING TO POWER UP, IS PWR OR TH CHK ON?
Y N

002
GO TO PAGE 4, STEP 007,
ENTRY POINT B.

003
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) DISPLAY AND RECORD PRESENT POWER FAULT INDICATORS. (SEE NOTE 1. BELOW.)

NOTE 1.

POWER FAULT DISPLAY - HIGH BYTE.

0	1	2	3	4	5	6	7	
*	*	*	*	*	*	*	*	
0	1	-	-	-	-	-	-	UNDER VOLTAGE.
1	0	-	-	-	-	-	-	OVER VOLTAGE.
1	1	-	-	-	-	-	-	OVER CURRENT.
-	-	0	1	-	-	-	-	MULTI LEVEL FILTER ASM.
-	-	1	1	-	-	-	-	DUAL LEVEL FILTER ASM.
-	-	-	-	0	0	0	0	LEVEL UNKNOWN.
-	-	-	-	0	0	0	1	-4V
-	-	-	-	0	0	1	0	+5V
-	-	-	-	0	0	1	1	-5V
-	-	-	-	0	1	0	0	+6V
-	-	-	-	0	1	0	1	+8.5V
-	-	-	-	0	1	1	0	+12V
-	-	-	-	0	1	1	1	-12V
-	-	-	-	1	0	0	0	+24V
-	-	-	-	1	0	0	1	-24V
-	-	-	-	1	1	1	1	MORE THAN ONE LEVEL BAD.

ON THE OPERATOR PANEL, ARE BOTH TH AND PWR CHK INDICATORS ON?
Y N

004
1) SET MAIN LINE SWITCH TO 'OFF'.
2) WAIT 10 SECONDS.
3) SET MAIN LINE SWITCH TO 'ON'.

MAIN LINE SWITCH IS LOCATED AT REAR OF MACHINE AND BELOW PRINTER.

IS PWR CHK INDICATOR ON SOLID IMMEDIATELY AFTER MAIN LINE SWITCH IS SET 'ON'?
Y N

005
1) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

IS THE PWR CHK INDICATOR ON AFTER ATTEMPTING TO POWER UP? (ALLOW UP TO 45 SECONDS DELAY.)
Y N

006
IS THE TH CHK INDICATOR ON?
Y N

007
(ENTRY POINT B)

IS THE SYSTEM POWERED ON NORMALLY?
Y N

008
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET THE PWR FAULT DISP SWITCH ON THE CE PANEL TO THE PRES POSITION.
3) PRESS THE LAMP TEST SWITCH ON THE CE PANEL AND AT THE SAME TIME PRESS THE DPLY PWR CHK SWITCH.

DID TEST SHOW BOTH POWER AND TH INDICATORS AND HIGH BYTE (LEFTMOST 8 BITS) ON CE PANEL?
Y N

009
DID TEST SHOW BOTH PWR AND TH INDICATORS BUT NOT ALL THE HIGH BYTE INDICATORS ON?
Y N

010
DID TEST SHOW EITHER PWR OR TH INDICATORS?
Y N

NORMAL OPERATION: FANS RUNNING, DISK MOTOR TURNING, DISKETTE MOTOR TURNING, AND LAMP TEST LIGHTS ALL LED'S.

PWR CHK AND TH CHK ON THE OPERATOR PANEL SHOULD LIGHT ANY TIME THE LAMP TEST SWITCH IS PRESSED WITH THE MACHINE POWERED OFF AND WITH THE MAIN LINE SWITCH STILL ON.

IN ADDITION, WHEN THE LAMP TEST AND DPLY PWR CHK SWITCHES ARE PRESSED CONCURRENTLY THE LEFTMOST 8 BITS ONLY SHOULD LIGHT ON THE CE PANEL.

IF ALL INDICATORS LIGHT WITH LAMP TEST ONLY, THE MACHINE IS NOT POWERED OFF PROPERLY.

IF NO INDICATORS LIGHT WITH LAMP TEST THE MACHINE MAY NOT HAVE AC POWER OR THE LAMP TEST CIRCUITRY MAY BE FAULTY.

011
1) SET MAIN LINE SWITCH TO 'OFF'.
DANGER: LINE VOLTAGE PRESENT WHEN MACHINE SET 'OFF'.
2) REMOVE AC POWER BOARD COVER.
3) PUSH IN TO CLOSE K1 RELAY CONTACTS WITH AN INSULATED TOOL.
4) SET MAIN LINE SWITCH TO 'ON'.

MLM SEC. 8 SHOWS LOCATION OF K1 ON THE AC BOARD.

MLM SEC. 8 SHOWS HOW AC POWER COMES INTO THE MACHINE. ALSO REFERS TO FEALD'S.

DO THE COOLING FANS OPERATE PROPERLY?
Y N

012
DANGER ---> WHEN CHECKING PRIMARY POWER CABLING, UNPLUG THE AC CORD.

1) CHECK CUSTOMER INPUT AC POWER.
2) CHECK FROM MAIN LINE SWITCH THROUGH LINE FILTER TO AC CORD AT CUSTOMER INPUT. CHECK FOR ALL CONDITIONS THAT WOULD PREVENT AC VOLTAGE FROM BEING PRESENT.
3) CHECK FOR DEFECTIVE MAIN LINE SWITCH
(CONTINUITY CHECK FOR SWITCH ACTION & FOR GROUND SHORTS & OPENS ON SWITCH & CABLE).
4) TO CHECK OUT AC POWER DISTRIBUTION,
GO TO MAP 0310, ENTRY POINT A.
---
5) REPLACE AC BOARD.

013
1) SET MAIN LINE SWITCH TO 'OFF'.
2) CHECK FUSE 101.

LOCATION: FIRST FUSE TO THE RIGHT OF MAIN LINE SWITCH.

AC TO THE AC POWER BOARD TRANSFORMER IS SUPPLIED THROUGH FUSE 101.

FUSE 101 GOOD?
Y N

014
1) REPLACE FUSE 101.
2) SET MAIN LINE SWITCH TO 'ON'.
3) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
4) WAIT FOR A REASONABLE LENGTH OF TIME TO SEE IF THERE IS SOME PROBLEM CAUSING THE FUSE TC BLOW.

IF FUSE CONTINUES TO BLOW.
5) MARK THIS PLACE.

---

6) TO CHECK OUT CONTROL VOLTAGE LOADING.
GO TO MAP 0317, ENTRY POINT B.

IF FUSE CONTINUES TO BLOW, AND NO OTHER DEFECT IS FOUND.
7) REPLACE AC POWER BOARD.

015
1) INSTALL FUSE 101.

(ENTRY POINT C)

---

2) OPEN COVERS TO ACCESS THE POWER SUPPLIES, POWER SEQUENCE CARD, AND CPU LOGIC GATE.
3) REMOVE POWER SEQUENCE CARD.
4) SEAT POWER STATUS CABLE AT PWR SEQ CARD.

TOP PLUG POSITION.

5) SEAT POWER SENSE CABLE AT PWR SEQ CARD.

BOTTOM PLUG POSITION.

6) SEAT POWER SEQUENCE CARD.
7) SEAT CABLE AT CPU BOARD AA1-A2 PLUG POSITION ON CARD SIDE OF BOARD.

POWER STATUS CABLE.

8) SEAT ALL J-CONNECTORS ON MULTI AND DUAL LEVEL FILTER ASM.

POWER SENSE CABLE.

9) SET MAIN LINE SWITCH TO 'ON'.
10) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

(STEP 015 CONTINUES)

MLM SEC. 8 SHOWS LOCATION OF SEQ CARD AND CABLES.

(STEP 015 CONTINUED)
DID SYMPTOMS REMAIN SAME AFTER SEATING?
Y N

016

GO TO PAGE 2, STEP 001,
ENTRY POINT A.

017
1) MEASURE CONTROL +5 VDC AT AA1-A2-B03 OR -D02.

WAS +5 VDC OUT TO THE AA1 BOARD CORRECT?
Y N

018
1) MARK THIS PLACE.
---
2) TO CHECK OUT ALL CONTROL VOLTAGES,
GO TO MAP 0317, ENTRY POINT A.
---
3) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
4) SET MAIN LINE SWITCH TO 'OFF'.
5) REMOVE THE POWER SEQUENCE CARD.
6) USE POINTS LISTED BELOW TO ISOLATE THE PROBLEM:

POWER +5 VDC. (CONTROL VOLTAGE).
5% (+/-)

		PIN LOCATION
		**********
FROM:	POWER SEQUENCE CARD CONNECTOR	MAPLE--B03, --D02.
TO:	CPU BOARD	AA1-A2-B03, --D02.

019
1) INSTALL ANY CABLES PREVIOUSLY REMOVED.
2) REMOVE CONSOLE OPERATOR PANEL TO ACCESS PWR CHK AND TH CHK LED'S.
3) MEASURE CONTROL +5 VDC ON OPERATOR PANEL:

POWER +5 VDC TO OPERATOR PANEL LED'S.

	PIN LOCATION
	**********
OPERATOR PANEL PWR,TH,LED'S	(LONG LEG OF CABLE TO LED'S)

WAS +5 VDC TO THE OPERATOR PANEL CORRECT?
Y N

020
1) USE SIGNAL POINTS LISTED BELOW TO ISOLATE THE PROBLEM:

POWER +5 VDC TO OPERATOR PANEL LED'S.

		PIN LOCATION
		**********
FROM:	CPU BOARD	AA1-A2-B03, D02,
TO:	CPU BOARD	AA1-B2-B02
TO:	OPERATOR PANEL PWR,TH,LED'S	(LONG LEG OF CABLE TO LED'S)

2) REPAIR OR REPLACE DEFECTIVE +5V CABLES FROM CPU BOARD TO OPERATOR PANEL.

021
1) REMOVE CE PANEL AND ATTACH THE RIGHT HAND SIDE OF PANEL TO RIGHT HAND SIDE OF THE CPU FRAME SO THAT IT EXTENDS OUTWARD FACING THE KEYBOARD.
2) MEASURE CONTROL +5 VDC ON THE CE PANEL.

POWER +5 VDC TO CE PANEL SWITCHES AND LED'S.

	PIN LOCATION
	**********
J CONNECTOR ON LED PC BOARD	CEP-J1-5

WAS +5 VDC TO THE CE PANEL CORRECT?
Y N

022
1) USE SIGNAL POINTS LISTED BELOW TC ISOLATE THE PROBLEM:

POWER +5 VDC TO CE PANEL SWITCHES AND LED'S.

	PIN LOCATION
	**********
FROM: CPU BOARD	AA1-A2-B03, D02,
TO: CPU BOARD	AA1-B5-B02
TO: CE PANEL Y2 CONNECTOR	CEP-Y2-D02
TO: DPLY PWR CHK SWITCH	CE PANEL
TO: J CONNECTOR ON LED PC BOARD	CEP-J1-5

2) REPAIR OR REPLACE DEFECTIVE +5V CABLES FROM CPU BOARD TO THE CE PANEL LED'S.

023
1) MARK THIS PLACE.

---

2) TO CHECK OUT CONTROL VOLTAGES AT THE POWER SEQUENCE CARD.
GO TO MAP 0317, ENTRY POINT A.

---

3) SET MAIN LINE SWITCH TO 'OFF'.
4) MARK THIS PLACE.

---

5) TO CHECK OUT LAMP TEST CABLING.
GO TO MAP 0311, ENTRY POINT A.

---

6) REPLACE THE POWER SEQUENCE CARD.

024

GO TO PAGE 19, STEP 078,
ENTRY POINT E.

025

GO TO PAGE 19, STEP 083,
ENTRY POINT D.

026
THE FOLLOWING CONDITIONS SHOULD EXIST:
1) DISK MOTOR TURNING.
2) DISKETTE MOTOR TURNING.
3) FANS BLOWING.
ARE ALL OR ANY CONDITIONS MET?
Y N

027
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE COVER FROM THE AC POWER BOARD.
3) SET MAIN LINE SWITCH TO 'ON'.
4) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
5) OBSERVE K1 AS POWER IS APPLIED. (LOCATION: LARGE RELAY ON BOTTOM LEFT AC POWER BOARD, MLM SEC. 8.)

DOES K1 PICK OR PICK AND THEN DROP?
Y N

028
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) MEASURE CONTROL VOLTAGE AT THE FOLLOWING POINT ON THE POWER SEQUENCE CARD: (MLM SEC 8 FOR PIN LOCATION)

GROUND ------ SC-TP-B08
+24VDC ------ SC-TP-B04
(21.6 TO 26.4)

+24 V NORMAL AT SC-TP PIN?
Y N

029
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE POWER SEQUENCE CARD.
3) SET MAIN LINE SWITCH TO 'ON'.

MLM SEC. 8.

4) MEASURE CONTROL VOLTAGE ON POINTS ON THE MAPLE BLOCK TAB PINS:

DANGER: LINE VOLTAGE PRESENT ON AC BOARD.

(STEP 029 CONTINUES)

(STEP 029 CONTINUED)
GROUND ----- MAPLE--M08,P08,
--M09,P09
+24VDC (21.6 TO 26.4)
-- MAPLE--M13,P13

+24 V NORMAL?
Y N

030
1) MARK THIS PLACE.

---

2) TO CHECK ALL CONTROL VOLTAGES,
GO TO MAP 0317, ENTRY POINT A.

031
REPLACE POWER SEQUENCE CARD.

032
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) PROBE SC-TP-D03, (-PICK K1).
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
5) OBSERVE PROBE AS 'POWER ON' SWITCH IS SET 'ON'.

MLM SEC. 8.
PROBE GROUND IS ON SC-TP-B08.
FRAME CAN ALSO BE USED FOR PROBE GND.
+5VDC PROBE POWER IS LOCATED ON AA1-B5-B02 OR AA1-C5-B02.

DID THE LINE GO TO DOWN POSITION AFTER THE 'POWER ON' SWITCH WAS SET 'ON'?
Y N

033
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) REMOVE POWER SEQUENCE CARD.

MLM SEC. 8.

4) METER CONTINUITY FROM MAPLE--B04, (-POWER OFF), TO GROUND, MAPLE--D08.
WITH 'POWER ON' SWITCH 'OFF', DOES METER SHOW AN OPEN CIRCUIT?
Y N

034
GO TO PAGE 12, STEP 036,
ENTRY POINT CA.

035
WITH 'POWER ON' SWITCH 'ON', DOES METER SHOW A SHORT CIRCUIT?
Y N

036

(ENTRY POINT CA)

1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

3) TO CHECK OUT 'POWER ON' SWITCH CABLING, GO TO MAP 0312, ENTRY POINT A.

DANGER: LINE VOLTAGE PRESENT WITH 'POWER ON' SWITCH IN 'OFF' POSITION.
4) REPLACE THE POWER ON/OFF SWITCH.

037

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).

MLM SEC. 8.

2) METER CONTINUITY OF MAPLE--D03, (-POWER ON), TO GROUND, MAPLE--D08 (MLM SEC 8).

WITH 'POWER ON' SWITCH 'ON', DOES METER SHOW AN OPEN CIRCUIT?
Y N

038

GO TO STEP 040,
ENTRY POINT CB.

039

WITH 'POWER ON' SWITCH 'OFF', DOES METER SHOW A SHORT CIRCUIT?
Y N

040

(ENTRY POINT CB)

1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

3) TO CHECK OUT 'POWER ON' SWITCH CABLING, GO TO MAP 0313, ENTRY POINT A.

(STEP 040 CONTINUES)

(STEP 040 CONTINUED)

DANGER: LINE VOLTAGE PRESENT WITH 'POWER ON' SWITCH IN 'OFF' POSITION.
4) REPLACE THE POWER ON SWITCH.

041

1) REPLACE POWER SEQUENCE CARD. IF FAILURE PERSISTS,
2) CHECK CONTINUITY OF PINS THROUGH JUMPER PLUG IN THE MAPLE CONNECTOR, J/G PLUG POSITION.
3) REPLACE CONNECTOR.

042

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) REMOVE POWER SEQUENCE CARD.

MLM SEC. 8.

4) METER CONTINUITY OF MAPLE--D03, (-POWER ON), TO GROUND, MAPLE--D08. WITH 'POWER ON' SWITCH 'ON', DOES METER SHOW AN OPEN CIRCUIT?
Y N

043

GO TO STEP 045,
ENTRY POINT CC.

044

WITH 'POWER ON' SWITCH 'OFF', DOES METER SHOW A SHORT CIRCUIT?
Y N

045

(ENTRY POINT CC)

1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

3) TO CHECK OUT 'POWER ON' SWITCH CABLING, GO TO MAP 0313, ENTRY POINT A.

DANGER: LINE VOLTAGE PRESENT WITH 'POWER ON' SWITCH IN 'OFF' POSITION.
4) REPLACE THE 'POWER ON' SWITCH.

046
1) MARK THIS PLACE.

2) TO CHECK OUT AC POWER DISTRIBUTION,
GO TO MAP 0310,
ENTRY POINT A.

3) REPLACE THE POWER SEQUENCE CARD.

047
REPLACE SEQUENCE CARD

048
1) MARK THIS PLACE.

2) TO CHECK OUT AC POWER DISTRIBUTION,
GO TO MAP 0310, ENTRY POINT A.

3) REPLACE THE POWER SEQUENCE CARD.

049
1) MARK THIS PLACE.

2) TO CHECK OUT OPERATING VOLTAGES TO ALL I/O DEVICES,
GO TO MAP 0318, ENTRY POINT A.
3) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).

NORMAL POWERED OFF: FANS STOPPED, DISK MOTOR STOPPED, DISKETTE MOTOR STOPPED.

IS THE SYSTEM POWERED 'OFF' NORMALLY?
Y N

050
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE POWER SEQUENCE CARD.
3) METER CONTINUITY OF MAPLE--D03, (-POWER ON), TO GROUND, MAPLE--D08.

WITH 'POWER ON' SWITCH 'ON', DOES METER SHOW AN OPEN CIRCUIT?
Y N

051
GO TO STEP 053.
ENTRY POINT CD.

052
WITH 'POWER ON' SWITCH 'OFF', DOES METER SHOW A SHORT CIRCUIT?
Y N

053

(ENTRY POINT CD)
---
1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.
---
3) TO CHECK OUT 'POWER ON' SWITCH CABLING,
GO TO MAP 0313, ENTRY POINT A.

DANGER: LINE VOLTAGE PRESENT WITH 'POWER ON' SWITCH IN 'OFF' POSITION.
4) REPLACE THE POWER ON SWITCH.

054
1) METER CONTINUITY FROM MAPLE--B04, (-POWER OFF). TO GROUND, MAPLE--D08.

WITH 'POWER ON' SWITCH 'OFF', DOES METER SHOW AN OPEN CIRCUIT?
Y N

055
GO TO PAGE 15, STEP 057,
ENTRY POINT CE.

056
WITH 'POWER ON' SWITCH 'ON', DOES METER SHOW A SHORT CIRCUIT?
Y N

057

(ENTRY POINT CE)

1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

3) TO CHECK OUT POWER ON/OFF SWITCH CABLING, GO TO MAP 0312, ENTRY POINT A.

DANGER: LINE VOLTAGE PRESENT WITH 'POWER ON' SWITCH IN 'OFF' POSITION.

4) REPLACE THE POWER ON SWITCH.

058

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) INSTALL THE POWER SEQUENCE CARD.
4) SET MAIN LINE SWITCH TO 'ON'.
5) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
6) MEASURE VOLTAGES AT THE FOLLOWING POINTS ON THE TERMINAL BLOCK:

GROUND ---- PD-TB1-1,2,3,4.
+24VDC ---- PD-TB2-8 (21.6 TO 26.4)
-24VDC ---- PD-TB2-7 (21.6 TO 26.4)

ARE BOTH VOLTAGES PRESENT?
Y N

059

GO TO PAGE 17, STEP 070, ENTRY POINT F.

060

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) PROBE SC-TP-B13, (+PICK K1 DUAL).

PROBE GROUND IS ON SC-TP-B08. FRAME CAN ALSO BE USED FOR PROBE GND.
+5VDC PROBE POWER IS LOCATED ON AA1-B5-B02 OR AA1-C5-B02.

3) SET MAIN LINE SWITCH TO 'OFF'.
4) SET MAIN LINE SWITCH TO 'ON'.
5) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
6) OBSERVE PROBE AS POWER SWITCH IS TURNED OFF AGAIN.

(STEP 060 CONTINUES)

(STEP 060 CONTINUED)
IS THE SIGNAL DOWN AFTER 'POWER ON' SWITCH IS TURNED 'OFF'?
Y N

061
1) REPLACE POWER SEQUENCE CARD.

062
1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

---

3) TO CHECK OUT CONTROL LINE CABLING TO DUAL, GO TO MAP 0315, ENTRY POINT A.

---

4) REPLACE THE POWER SEQUENCE CARD.
IF FAILURE PERSISTS
5) REPLACE DUAL LEVEL FILTER ASM.

063

GO TO PAGE 17, STEP 070, ENTRY POINT F.

064
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) METER SC-TP-D09, (+THERMAL SENSE).

+5 VDC RANGE.
MLM SEC. 8.
GROUND IS ON SC-TP-B08.

4) OBSERVE METER AS MAIN LINE SWITCH IS SET TO 'ON'.

LINE DOWN (BELOW .5VDC)?
Y N

065
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE THE POWER SEQUENCE CARD.
3) CHECK CONTINUITY BETWEEN POINTS ON THE PWR SEQ CARD CONNECTOR (CALLED MAPLE):

+THERMAL SENSE.

	PIN LOCATION
FROM: POWER SEQUENCE CARD CONNECTOR	MAPLE--P10

GROUND.

TO:	POWER SEQUENCE CARD CONNECTOR	MAPLE--M08, P08, M09, P09

IS THE THERMAL CIRCUIT OPEN?
Y N

066
1) REPLACE POWER SEQUENCE CARD.

067
1) USE THE POINTS LISTED BELOW TO ISOLATE THE OPEN CIRCUIT.

CONTROL GROUND TO +THERMAL SENSE.

		PIN LOCATION
FROM:	POWER SEQUENCE CARD CONNECTOR	MAPLE--M08, P08, M09, P09
NOTE:	CABLE EXTENDER NEEDED FOR MEASUREMENT ON AC POWER BOARD.	
TO:	AC POWER BOARD	ACP-J1-B08, D08, B09, D09
TO:	AC POWER BOARD	ACP-J2-3
TO:	AA2 BOARD	AA2-V3-D11
TO:	PRINTER BOARD	13C-11, 13C51
TO:	PRINTER THERMAL	
TO:	PRINTER BOARD	13C-52, 13C12
TO:	AA2 BOARD	AA2-V3-D12
TO:	AA GATE THERMAL	
TO:	POWER SUPPLIES THERMAL	
TO:	AC POWER BOARD	ACP-J2-1

IF NO CONTINUITY, REPLACE CABLE

(STEP 067 CONTINUES)

(STEP 067 CONTINUED)
TO: AC POWER BOARD ACP-J1-B10
IF NO CONTINUITY, REPLACE AC BOARD

TO: POWER SEQUENCE CARD CONNECTOR MAPLE--P10
IF NO CONTINUITY, REPLACE CABLE

IF ISOLATED TO OPEN THERMAL,
2) CORRECT THE CAUSE OF OVERHEATING.

CHECK FANS, CHECK FOR HOT COMPONENTS,

3) REPLACE THE THERMAL IF DEFECTIVE.
OTHERWISE,
4) CORRECT THE OPEN CIRCUIT.

068
1) REPLACE POWER SEQUENCE CARD.

069
1) DISPLAY AND RECORD POWER FAULT INDICATORS. (SEE NOTE 1, STEP 003)

ANY PRES FAULT INDICATORS ON?
Y N

070

(ENTRY POINT F)
---

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) CHECK PREVIOUS PWR FAULT REGISTER.
ANY PREV FAULT INDICATORS ON FROM SOME PREVIOUSLY RECORDED ERROR?
Y N

071
ARE BOTH PWR CHK AND TH CHK INDICATORS ON?
Y N

CAUTION:
THE PREV FAULT REGISTER HAS NO DC RESET AT MAIN LINE POWER 'ON' TIME. THERE MAY BE BITS ON RANDOMLY IN THE PREV FAULT REGISTER IF NO FAULT HAS BEEN SAVED SINCE THE MAIN LINE SWITCH WAS SET TO 'ON'. THEREFORE, THESE BITS ARE MEANINGLESS.

072

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET THE PWR FAULT DISP SWITCH ON THE CE PANEL TO THE PRES POSITION.
3) PRESS THE LAMP TEST SWITCH ON THE CE PANEL AND AT THE SAME TIME PRESS THE DPLY PWR CHK SWITCH.

PWR CHK AND TH CHK ON THE OPERATOR PANEL SHOULD LIGHT ANY TIME THE LAMP TEST SWITCH IS PRESSED WITH THE MACHINE POWERED 'OFF' AND WITH THE MAIN LINE SWITCH STILL 'ON'.

IN ADDITION, WHEN THE LAMP TEST AND DPLY PWR CHK SWITCHES ARE PRESSED CONCURRENTLY THE LEFTMOST 8 BITS ONLY SHOULD LIGHT ON THE CE PANEL.

IF ALL INDICATORS LIGHT WITH LAMP TEST ONLY, THE MACHINE IS NOT POWERED 'OFF' PROPERLY.

IF NO INDICATORS LIGHT ON LAMP TEST THE MACHINE MAY NOT HAVE AC POWER OR THE LAMP TEST CIRCUITRY IS FAULTY.

DID TEST SHOW BOTH 'PWR CHK' AND 'TH CHK' INDICATORS 'ON' (OPERATOR PANEL) AND HIGH BYTE (LEFTMOST 8 BITS) ON CE PANEL?
Y N

073
DID TEST SHOW BOTH 'PWR CHK' AND 'TH CHK' INDICATORS 'ON' (OPERATOR PANEL) BUT NOT ALL THE HIGH BYTE LIGHTS ON?
Y N

074
DID TEST SHOW EITHER 'PWR CHK' OR 'TH CHK INDICATORS 'ON' (OPERATOR PANEL)?
Y N

075
1) SET MAIN LINE SWITCH TO 'OFF'.
2) CHECK FUSE 102.

FUSE 102 GOOD?
Y N

LOCATION: SECOND FUSE TO THE RIGHT OF THE MAIN LINE SWITCH. AC TO THE AC POWER BOARD IS SUPPLIED THROUGH FUSE 102.

076
1) REPLACE FUSE 102.
2) SET MAIN LINE SWITCH TO 'ON'.
3) MARK THIS PLACE.

---

4) TO CHECK OUT CONTROL VOLTAGES,
GO TO MAP 0317, ENTRY POINT A.

---

5) REPLACE POWER SEQUENCE CARD.

077
1) INSTALL FUSE 102.
2) SET MAIN LINE SWITCH TO 'OFF'.
3) MARK THIS PLACE.

---

4) TO CHECK OUT LAMP TEST CABLING,
GO TO MAP 0311, ENTRY POINT A.

---

5) REPLACE THE POWER SEQUENCE CARD.

IF FAILURE PERSISTS.

---

6)
GO TO PAGE 6, STEP 015,
ENTRY POINT C.

078

(ENTRY POINT E)

---

1) METER AA1-B2-B13, (-DISPLAY PWR CHK DOTTED).

+5 VDC RANGE.
GROUND IS ON AA1-B2-D08.

2) PRESS LAMP TEST SWITCH.

DOES SIGNAL HAVE A NOTICABLE DEFLECTION OF APPROXIMATELY 1V TOWARD GROUND?
Y N

079
1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

---

3) TO CHECK OUT LAMP TEST CABLING,
GO TO MAP 0311, ENTRY POINT A.

---

4) REPLACE THE POWER SEQUENCE CARD.

080
CABLE IS CORRECT FROM SWITCH TO CPU BOARD.
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) REMOVE OPERATOR PANEL TO ACCESS THE LED'S.
3) OPEN CABLE TO PWR CHK OR TH CHK LED. METER THE RESISTANCE BETWEEN AA1-B2-B13 AND THE REMOVED LEAD (SHORT LEG).
4) PRESS LAMP TEST SWITCH.

DOES CABLE SHOW CONTINUITY?
Y N

081
1) REPAIR OR REPLACE CABLE.

082
1) REPLACE THERMAL CHECK OR POWER CHECK LED.

083

(ENTRY POINT D)

---

1) REMOVE CE PANEL AND ATTACH THE RIGHT HAND SIDE OF PANEL TO RIGHT HAND SIDE OF THE CPU FRAME SO THAT THE PANEL EXTENDS OUTWARD FACING THE KEYBOARD.
2) MEASURE CONTROL +5 VDC ON THE CE PANEL. USE SIGNAL POINT LISTED BELOW:

POWER +5 VDC TO CE PANEL SWITCHES AND LED'S.

	PIN LOCATION
	**********
J CONNECTOR ON LED PC BOARD	CEP-J1-5

(STEP 083 CONTINUES)

(STEP 083 CONTINUED)
WAS +5 VDC TO THE CE PANEL CORRECT?
Y N

084
1) REPAIR OR REPLACE DEFECTIVE +5V CABLES FROM CPU BOARD TO THE CE PANEL.
USE SIGNAL POINTS LISTED BELOW TO ISOLATE THE PROBLEM:

POWER +5 VDC TO CE PANEL SWITCHES AND LED'S.

	PIN LOCATION
FROM:	
CPU BOARD	AA1-A2-B03, D02,
TO:	
CPU BOARD	AA1-B5-B02
CE PANEL Y2 CONNECTOR	CEP-Y2-D02
DPLY PWR CHK CE PANEL SWITCH	
J CONNECTOR ON LED PC BOARD	CEP-J1-5

085
1) CHECK LINES USED FOR DISPLAYING HIGH BYTE (MLM SEC. 8).
2) CHECK FOR DEFECTIVE LED.
3) AFTER CORRECTING PROBLEM, INSTALL CE PANEL BACK IN THE MACHINE).

086
1) SET MAIN LINE SWITCH TO 'OFF'.
2) SET MAIN LINE SWITCH TO 'ON'.
3) PRESS THE DPLY PWR CHK SWITCH WITH THE PWR FAULT DISP SWITCH IN THE PRES POSITION.

DOES PRES FAULT REGISTER CONTAIN X'00'?
Y N

087
REFER TO FEALD LOGICS TO TRACE PROBLEM CAUSING BIT TO STAY ON. IF PROBLEM NOT FOUND IN CABLING,
1) REPLACE POWER SEQUENCE CARD.

088
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE J9 ON DUAL FILTER ASM. J9 LOCATED ABOUT CENTER ON DUAL FILTER ASM BOARD.

MLM SEC. 8.

3) SET MAIN LINE SWITCH TO 'ON'.
4) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

X'7F' CAN BE DISPLAYED IN THE PRES FAULT REGISTER WHEN THE 'PWR CHK' INDICATOR IS ON.

DO INDICATORS DISPLAY X'7F' AND 'PWR CHK'?
Y N

089
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) CONNECT J9 DUAL.
4) REPLACE THE POWER SEQUENCE CARD.
5) CHECK CABLE TO CE PANEL.
6) CHECK CE PANEL INDICATORS.
7) CHECK POWER STATUS CABLE TO AC BOARD.

090
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) CONNECT J9 DUAL.
FORCE AN OVERCURRENT 'PWR CHK' BY SHORTING THE +24 VDC OUTPUT FROM THE DUAL LEVEL FILTER ASM CONNECTOR, DUAL-E3 OR DUAL-E4, TO GROUND CONNECTOR, DUAL-E6 OR DUAL-E7.

MLM SEC. 8.

4) SET MAIN LINE SWITCH TO 'ON'.
5) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

X'F8' OR X'FF' CAN BE DISPLAYED IN THE PRES FAULT REGISTER WHEN THE 'PWR CHK' INDICATOR IS 'ON'.

(STEP 090 CONTINUES)

(STEP 090 CONTINUED)
DO INDICATORS DISPLAY X'F8' OR X'FF' AND 'PWR CHK'?
Y N

091
1) DISCONNECT JUMPER +24V TO GND, INSTALLED TO FORCE CHECK.
2) REPLACE THE POWER SEQUENCE CARD.
3) CHECK CABLE TO CE PANEL.
4) CHECK CE PANEL INDICATORS.
5) CHECK POWER STATUS CABLE TO AC BOARD.

092
INDICATORS APPEAR TO BE WORKING PROPERLY.
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) DISCONNECT YOUR JUMPER +24V TO GND INSTALLED TO FORCE CHECK.
4) SET MAIN LINE SWITCH TO 'ON'.
5) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
6) TRY TO RECREATE POWER CHECK.
7) IF NO CHECK OCCURS, RERUN DIAGNOSTICS TO VERIFY SYSTEM OPERATION.
ARE ALL SYSTEM FUNCTIONS CORRECT?
Y N

093
USE YA160 & YA162, VOLTAGE DISTRIBUTION PAGES, TO ISOLATE MISSING VOLTAGE(S).

094
RETURN SYSTEM TO THE CUSTOMER.

095
1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

---

3) TO CHECK OUT LAMP TEST CABLING, GO TO MAP 0311, ENTRY POINT A.

---

4) REPLACE THE POWER SEQUENCE CARD.

096
KEEP A RECORD OF PREV FAULT DISPLAYS FOR FUTURE REFERENCE.
1) SEAT POWER SEQUENCE CARD.
2) SEAT ALL CABLES AND CONNECTORS. CHECK THAT ALL TERMINAL BLOCK SCREWS ARE TIGHT.

IF INTERMITTENT FAILURES PERSIST, REPLACE FRU'S IN THE FOLLOWING ORDER UNTIL THE PROBLEM IS RESOLVED.

3) REPLACE POWER SEQUENCE CARD.
IF FAILURE PERSISTS,
4) REPLACE MULTI OR DUAL FILTER ASSEMBLY AS INDICATED BY A HISTORY OF FAILURES ENCODED IN THE PREV FAULT REGISTER.
IF FAILURE PERSISTS,
5) REPLACE AC POWER BOARD.
IF FAILURE PERSISTS,
6) REPLACE POWER SWITCHES.
IF FAILURE PERSISTS,
7) REPLACE CABLES ONE AT A TIME.

097
1) MARK THIS PLACE.

---

2) GO TO MAP 0317, ENTRY POINT A.

TO CHECK OUT CONTROL VOLTAGES AT THE POWER SEQUENCE CARD.

---

3) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
4) SET MAIN LINE SWITCH TO 'OFF'.
5) OPEN COVERS TO ACCESS THE POWER SUPPLIES, POWER SEQUENCE CARD, AND CPU LOGIC GATE.
(REF MLM SEC. 8)
6) REMOVE POWER SEQUENCE CARD.
7) SEAT JUMPER CARD PLUGGED INTO REAR OF MAPLE BLOCK CONNECTOR.
(G AND J MAPLE BLOCK POSITIONS)
8) SEAT POWER STATUS CABLE AT PWR SEQ CARD.

(TOP PLUG POSITION.)

9) SEAT POWER SENSE CABLE AT PWR SEQ CARD.

(BOTTOM PLUG POSITION.)

10) SEAT POWER SEQUENCE CARD.
11) SEAT CABLE AT CPU BOARD AA1-A2
(STEP 097 CONTINUES)

(STEP 097 CONTINUED)
PLUG POSITION ON CARD SIDE OF BOARD.

(POWER STATUS CABLE.)

12) SEAT ALL J-CONNECTORS ON MULTI AND DUAL LEVEL FILTER ASM.

(POWER SENSE CABLE.)

13) SET MAIN LINE SWITCH TO 'ON'.
14) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

DID PROBLEM REMAIN AFTER SEATING?
Y N

098
1) IF NC FAILURE OCCURS, RERUN DIAGNOSTICS TO VERIFY SYSTEM OPERATION.

2) IF ALL SYSTEM FUNCTIONS ARE CORRECT, RETURN THE SYSTEM TO THE CUSTOMER.

099
IS THIS AN INDICATED UNDER VOLTAGE PROBLEM (BIT 0 - OFF, BIT 1 - ON)?
Y N

100
IS THIS AN INDICATED OVER VOLTAGE PROBLEM (BIT 0 - ON, BIT 1 - OFF)?
Y N

101
IS THIS AN INDICATED OVER CURRENT PROBLEM (BIT 0 - ON, BIT 1 - ON)?
Y N

102
INCORRECT INDICATION HAS BEEN DETECTED.
IF FAILURE PERSISTS,
1) REPLACE THE POWER SEQUENCE CARD.

103
IS THE ERROR OVER CURRENT ON MULTI (BIT 2 - OFF, BIT 3 -ON)?
Y N

104
IS THE ERROR OVER CURRENT ON DUAL (BIT 2 - ON, BIT 3 - ON)?
Y N

105
INCORRECT INDICATION HAS BEEN DETECTED.
IF FAILURE PERSISTS,
1) REPLACE THE POWER SEQUENCE CARD.

106
OVERCURRENT AND MORE THAN ONE LEVEL (BITS 4-7 ALL ON)?
Y N

107
OVERCURRENT AND ANY LEVELS INDICATED (ANY BITS 4-7 ON)?
Y N

108
1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

---

3) TO CHECK OUT SENSE LINE CABLING,
GO TO MAP 0316, ENTRY POINT A.

---

4) REPLACE THE POWER SEQUENCE CARD.
IF FAILURE PERSISTS,
5) REPLACE DUAL LEVEL FILTER ASM.

109
1) MARK THIS PLACE.

2) EXIT TO THE APPROPRIATE CHART FOR THE VOLTAGE LEVEL DETECTED BY LIGHTS 4-7 ON THE CE PANEL UPON POWER CHECK.

-24 VDC --->
GO TO MAP 0308, ENTRY POINT A.

+24 VDC --->
GO TO MAP 0309, ENTRY POINT A.

(STEP 109 CONTINUES)

(STEP 109 CONTINUED)

3) REPLACE THE POWER SEQUENCE CARD.
IF FAILURE PERSISTS,
4) REPLACE THE DUAL LEVEL FILTER ASM.

110
1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

3) GO TO MAP 0316, ENTRY POINT A.
TO CHECK OUT SENSE LINE CABLING.

ANY PROBLEM FOUND IN SENSE LINES?
Y N

111
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) REPLACE SEQUENCE CARD.
IF FAILURE PERSISTS,
3) REPLACE DUAL LEVEL FILTER ASM.

112
REPAIR OR REPLACE CABLES THAT WERE FOUND TO BE BAD.

113
OVERCURRENT AND MORE THAN ONE LEVEL (BITS 4-7 ALL ON?)
Y N

114
OVERCURRENT AND ANY LEVELS INDICATED (BITS 4-7 ON)?
Y N

115
1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

3) TO CHECK OUT SENSE LINE CABLING,
GO TO MAP 0316, ENTRY POINT A.

4) REPLACE THE POWER SEQUENCE CARD.
IF FAILURE PERSISTS,
5) REPLACE MULTI LEVEL FILTER ASM.
IF FAILURE PERSISTS,
6) REPLACE DUAL LEVEL FILTER ASM.
(STEP 115 CONTINUES)

(STEP 115 CONTINUED)

A BAD DUAL COULD CAUSE AN OVER-VOLTAGE CONDITION IN THE MULTI.
(EXAMPLE) ONE +24 RECTIFIER COULD BE BAD AND CAUSE THE 8.5 VOLTS TO PEAK AT OVER 10 VOLTS, WHICH WOULD CAUSE OVER VOLTAGE ON 8.5 INDICATING A BAD MULTI. THE +24 VOLTS WOULD EVENTUALLY BUILD UP TO +24 VOLTS SO NO INDICATION WOULD BE APPARENT ON THE DUAL.

116
1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

---

3) TO CHECK CUT SENSE LINE CABLING (SKIP OVER VOLTAGES NOT ENCODED IN THE FAULT REGISTER.)
GO TO MAP 0316, ENTRY POINT A.

---

4) MARK THIS PLACE.

5) EXIT TO THE APPROPRIATE CHART FOR THE VOLTAGE LEVEL DETECTED BY LIGHTS 4-7 ON THE CE PANEL UPON POWER CHECK.

-4 VDC
GO TO MAP 0301, ENTRY POINT A.

-5 VDC
GO TO MAP 0302, ENTRY POINT A.

+5 VDC
GO TO MAP 0303, ENTRY POINT A.

+6 VDC
GO TO MAP 0304, ENTRY POINT A.

+8.5 VDC
GO TO MAP 0305, ENTRY POINT A.

-12 VDC
GO TO MAP 0306, ENTRY POINT A.

+12 VDC
GO TO MAP 0307, ENTRY POINT A.

---

7) REPLACE THE POWER SEQUENCE CARD.
8) TRY TO POWER ON AGAIN.
IF FAILURE PERSISTS.
9) REPLACE THE MULTI LEVEL FILTER ASM.

117
1) SET MAIN LINE SWITCH TO 'OFF'.
2) MARK THIS PLACE.

3) GO TO MAP 0316, ENTRY POINT A.
TO CHECK OUT SENSE LINE CABLING.

ANY PROBLEM FOUND IN SENSE LINES?
Y N

118
1) REPLACE SEQUENCE CARD.
IF PROBLEM NOT FOUND,
2) REPLACE MULTI LEVEL FILTER ASM.

119
REPAIR OR REPLACE CABLES THAT WERE FOUND TO BE BAD.

120
IS THE ERROR OVER VOLTAGE ON MULTI (BIT 2 - OFF, BIT 3 -ON)?
Y N

121
IS THE ERROR OVER VOLTAGE ON DUAL (BIT 2 - ON, BIT 3 - ON)?
Y N

122
INCORRECT INDICATION HAS BEEN DETECTED.
IF FAILURE PERSISTS,
1) REPLACE THE POWER SEQUENCE CARD.

123
IS MORE THAN ONE LEVEL OF A SUPPLY INDICATED (LIGHTS 4-7 ALL ON)?
Y N

124
ARE ANY VALID LEVELS INDICATED (ANY LIGHTS 4-7 ON)?
Y N

125

GO TO PAGE 27, STEP 144,
ENTRY POINT G.

126
1) TRY TO POWER UP AGAIN.
IF FAILURE PERSISTS,
2) REPLACE THE DUAL LEVEL FILTER ASM.
IF PROBLEM NOT FOUND,
3) REPLACE POWER SEQUENCE CARD.

127
1) TRY TO POWER UP AGAIN.
IF FAILURE PERSISTS,
2) REPLACE THE DUAL LEVEL FILTER ASM.
IF PROBLEM NOT FOUND,
3) REPLACE POWER SEQUENCE CARD.

128
IS MORE THAN ONE LEVEL OF A SUPPLY INDICATED (LIGHTS 4-7 ALL ON)?
Y N

129
ARE ANY VALID LEVELS INDICATED (ANY LIGHTS 4-7 ON)?
Y N

130

GO TO PAGE 33, STEP 185,
ENTRY POINT H.

131
1) TRY TO POWER UP AGAIN.
IF FAILURE PERSISTS,
2) EXIT TO THE APPROPRIATE CHART FOR THE VOLTAGE LEVEL DETECTED BY LIGHTS 4-7 ON THE CE PANEL UPON POWER CHECK CONDITION.

-4 VDC
GO TO MAP 0301, ENTRY POINT B.

-5 VDC
GO TO MAP 0302, ENTRY POINT B.

+5 VDC
GO TO MAP 0303, ENTRY POINT B.

+6 VDC
GO TO MAP 0304, ENTRY POINT B.

+8.5 VDC
GO TO MAP 0305, ENTRY POINT B.

-12 VDC
GO TO MAP 0306, ENTRY POINT B.

(STEP 131 CONTINUES)

(STEP 131 CONTINUED)
+12 VDC
GO TO MAP 0307, ENTRY POINT B.

3) REPLACE THE MULTI LEVEL FILTER ASM.
IF PROBLEM NOT FOUND,
4) REPLACE POWER SEQUENCE CARD.

132
1) TRY TO POWER UP AGAIN.
IF FAILURE PERSISTS,
2) REPLACE THE MULTI LEVEL FILTER ASM.
IF PROBLEM NOT FOUND,
3) REPLACE POWER SEQUENCE CARD.

133
IS THE ERROR UNDER VOLTAGE ON MULTI (BIT 2 - OFF, BIT 3 -ON)?
Y N

134
IS THE ERROR UNDER VOLTAGE ON DUAL (BIT 2 - ON, BIT 3 - ON)?
Y N

135
INCORRECT INDICATION HAS BEEN DETECTED.
IF FAILURE PERSISTS,
1) REPLACE THE POWER SEQUENCE CARD.

136
IS MORE THAN ONE LEVEL OF A SUPPLY INDICATED (LIGHTS 4-7 ALL ON)?
Y N

137

GO TO PAGE 27, STEP 144,
ENTRY POINT G.

138
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) CHECK FUSE 102.

FUSE 102 GOOD?
Y N

LOCATION: SECOND FUSE TO THE RIGHT OF MAIN LINE SWITCH.
AC TO THE AC POWER BOARD IS SUPPLIED THROUGH FUSE 102.

139
1) REPLACE FUSE 102.
2) SET MAIN LINE SWITCH TO 'ON'.
3) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
4) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
5) SET MAIN LINE SWITCH TO 'OFF'.
6) CHECK FUSE 102.

FUSE STILL GOOD?
Y N

140

GO TO STEP 144,
ENTRY POINT GG.

141
1) SET MAIN LINE SWITCH TO 'ON'.
2) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).
3) FANS RUNNING.
4) DISK MOTOR RUNNING.
5) DISKETTE MOTOR TURNING.
6) LAMP TEST LIGHTS ALL LEDS.

ARE STEPS 3, 4, 5 & 6 ABOVE CORRECT?
Y N

142
1) MARK THIS PLACE.
---
2) FOR CHECKING OPERATING VOLTAGES FOR I/O DEVICES, GO TO MAP 0310, ENTRY POINT A.
3) MARK THIS PLACE.
---
4) FOR CHECKING OPERATING VOLTAGES FOR I/O DEVICES, GO TO MAP 0318, ENTRY POINT A.
5) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
6) SET MAIN LINE SWITCH TO 'OFF'.
7) CHECK ANY FANS NOT WORKING FOR DEFECTIVE MOTORS.
8) CHECK & REPAIR ANY DEFECTIVE CABLES TO THESE MOTORS.
9) REPLACE AC POWER BOARD.

143
1) IF NO FAILURE OCCURS, RERUN DIAGNOSTICS TO VERIFY SYSTEM OPERATION.

2) IF ALL SYSTEM FUNCTIONS ARE CORRECT, RETURN THE SYSTEM TO THE CUSTOMER.

144
1) SET MAIN LINE SWITCH TO 'OFF'.
2) TO CHECK OUT AC OUTPUTS, GO TO MAP 0310, ENTRY POINT A.
3) SET MAIN LINE SWITCH TO 'ON'.
4) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

(ENTRY POINT G)
---
1) MARK THIS PLACE.

2) GO TO MAP 0309, ENTRY POINT A. TO CHECK OUT +24 V LOADING.

(ENTRY POINT GG)

MANUALLY BRING UP THE MULTI LEVEL AND DUAL LEVEL FILTER ASM.
1) SET MAIN LINE SWITCH TO 'OFF'.

DOES THIS MACHINE HAVE A BELT PRINTER?
Y N

145
GO TO STEP 146,
ENTRY POINT GE.

146
1) FIND THE K1 RELAY IN THE PRINTER AND UNPLUG IT FOR THE DURATION OF THE MANUAL BRING UP PROCEDURE (+24V TO HAMMER DRIVERS BELT PRINTER ONLY UNPLUG AT THE SLIP CONNECTOR P6) (MLM 4.3.5 FOR PG LOCATION).

(ENTRY POINT GE)
---
2) REMOVE THE POWER SEQUENCE CARD.
3) JUMPER MAPLE CONNECTOR TAB PINS TO GROUND:

MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND FERRO.

4) SET MAIN LINE SWITCH TO 'ON'.
5) MEASURE VOLTAGES AT THE POINTS LISTED BELOW:
(STEP 146 CONTINUES)

(STEP 146 CONTINUED)

48VAC -- DUAL FROM E20 TO E21

GROUND -- DUAL E6,E7
+24VDC -- DUAL E4,E3 (21.6 TO 26.4)
-24VDC -- DUAL E5 (21.6 TO 26.4)

DUAL LEVEL VOLTAGES MEASURE CORRECT?
Y N

147
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE JUMPER TO MAPLE CONNECTOR TAB PINS:

(MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND FERRO.)

3) INSTALL THE POWER SEQUENCE CARD.
4) REPLACE THE DUAL LEVEL FILTER ASM.

148
1) MEASURE POINTS ON THE PWR SEQ CARD CONNECTOR TAB PINS (CALLED MAPLE):

GROUND -------- MAPLE--M08,P08,
--M09,P09
+24VDC -------- MAPLE--U13
-24VDC -------- MAPLE--U06

ARE SENSE VOLTAGE REFERENCES CORRECT?
Y N

149
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE JUMPER TO MAPLE CONNECTOR TAB PINS:

(MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND FERRO.)

3) MARK THIS PLACE.

---

4) TO CHECK OUT SENSE LINE CABLING (SKIP OVER ALL VOLTAGES EXCEPT + AND - 24V.)
GO TO MAP 0316, ENTRY POINT A.

(STEP 149 CONTINUES)

(STEP 149 CONTINUED)

5) INSTALL THE POWER SEQUENCE CARD.
6) REPLACE THE DUAL LEVEL FILTER ASM.

150
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE JUMPER TO MAPLE CONNECTOR TAB PINS.

MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND FERRO.

3) INSTALL POWER SEQUENCE CARD.
4) REMOVE LOADS ON DUAL (E3, E4, E5, E20, E21).
5) SET MAIN LINE SWITCH TO 'ON'.
6) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

DOES SYSTEM FAIL TO POWER UP NORMAL WITH DUAL UNLOADED?
Y N

151
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) CONNECT E3, E4 (THE +24VDC LOAD).
3) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

DOES SYSTEM FAIL TO POWER UP NORMAL?
Y N

152
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) CONNECT E5 (-24VDC LOAD).
3) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

DOES SYSTEM FAIL TO POWER UP NORMAL?
Y N

153
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) CONNECT DUAL E20-E21 (48VAC FOR SERIAL PRINTER).
3) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

DOES SYSTEM FAIL TO POWER UP NORMAL?
Y N

154
SUSPECT INTERMITTENT POWER PROBLEMS
1) CYCLE POWER ON AND OFF SEVERAL TIMES AND TRY TO RECREATE FAILURE.
2) IF NO FAILURE OCCURS, RERUN DIAGNOSTICS TO VERIFY SYSTEM OPERATION.
3) IF ALL SYSTEM FUNCTIONS ARE CORRECT, RETURN THE SYSTEM TO THE CUSTOMER.

155
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) DISCONNECT THE 48VAC POWER CABLE FROM CONNECTOR AT THE SERIAL PRINTER.
3) PRESS SYSTEM RESET.
4) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

DOES THE SYSTEM FAIL TO POWER UP NORMAL?
Y N

156
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) CONNECT 48VAC POWER CABLE AT PRINTER.
---
3) TO ISOLATE THE 48VAC LOAD, GO TO MAP 0503, ENTRY POINT A.

157
REPLACE AC POWER CABLE BETWEEN DUAL LEVEL FILTER ASM AND SERIAL PRINTER.

158
1) CONNECT E20 AND E21 (48VAC)
---
2) FOR -24V LOAD ISOLATION, GO TO MAP 0308, ENTRY POINT A.

159
1) CONNECT E5 (-24VDC LOAD).
2) CONNECT E20 AND E21 (48VAC)
---
3) FOR +24V LOAD ISOLATION, GO TO MAP 0309, ENTRY POINT A.

160
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) REPLACE POWER SEQUENCE CARD (CONNECT ALL LEADS).
IF FAILURE PERSISTS,
4) REPLACE DUAL LEVEL FILTER ASM.
VERIFY FIX BY RUNNING DIAGNOSTIC.

161
IS MORE THAN ONE LEVEL OF A SUPPLY INDICATED (LIGHTS 4-7 ALL ON)?
Y N

162
ARE ANY VALID LEVELS INDICATED (ANY LIGHTS 4-7 ON)?
Y N

163

GO TO PAGE 33, STEP 165, ENTRY POINT H.

164
(MANUALLY BRING UP THE MULTI AND DUAL LEVEL FILTER ASM.)

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.

DO YOU HAVE A BELT PRINTER?
Y N

165

GO TO STEP 166.
ENTRY POINT GD.

166

1) FIND THE K1 RELAY IN THE PRINTER AND UNPLUG IT FOR THE DURATION OF THE MANUAL BRING UP PROCEDURE (+24V TO HAMMER DRIVERS BELT PRINTER ONLY).
(UNPLUG AT THE SLIP CONNECTOR P6.)
(MLM SEC. 4.3.5 FOR P6 LOCATION)

(ENTRY POINT GD)

---

2) REMOVE THE POWER SEQUENCE CARD.
3) JUMPER MAPLE CONNECTOR TAB PINS TO GROUND:

(MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND FERRO.)

4) SET MAIN LINE SWITCH TO 'ON'.
5) MEASURE VOLTAGE FOR THE LEVEL DETECTED IN THE PWR FAULT REGISTER:

GROUND---PD-TB1-1,2,3,4.
+12VDC---PD-TB2-5 (10.8 TO 13.2)
+8.5VDC---PD-TB2-1,2 (7.65 TC 9.35)
+6VDC---PD-TB2-3 (5.4 TO 6.6)
+5VDC---PD-TB1-5,6,7 (4.5 TO 5.5)
-12VDC---PD-TB2-6 (10.8 TO 13.2)
-5VDC---PD-TB1-8 (4.5 TO 5.5)
-4VDC---PD-TB2-4 (3.68 TO 4.32)

VOLTAGE MEASURE CORRECT?
Y N

167
IS +5V CORRECT?
Y N

168
ARE ANY CTHER MEASURED VOLTAGES INCORRECT?
Y N

169
1) CHECK FOR APPROXIMATELY 6.5 VAC BETWEEN (MULTI-LEVEL FILTER ASM) (MLM SEC. 8) TB2-1 TO TB2-2.
ALSO, TB2-3 TO TB2-2.

IS VOLTAGE CORRECT?
Y N

3
1

170
1) SET MAIN LINE SWITCH TO 'OFF'.
2) PULL MAIN LINE CORD.
3) REMOVE JUMPER TO MAPLE CONNECTOR TAB PINS.

(MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND FERRO.)

4) INSTALL THE POWER SEQUENCE CARD.
5) REPLACE FERRO TRANSFORMER.

171

GO TO STEP 173.
ENTRY POINT GH.

172

GO TO STEP 173.
ENTRY POINT GH.

173

(ENTRY POINT GH)

---

1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE JUMPER TO MAPLE CONNECTOR TAB PINS:

(MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND FERRO.)

3) INSTALL THE POWER SEQUENCE CARD.
4) SET MAIN LINE SWITCH TO 'ON'.
5) MARK THIS PLACE.

6) EXIT TO THE APPROPRIATE CHART FOR THE VOLTAGE LEVEL DETECTED BY LIGHTS 4-7 ON THE CE PANEL UPON POWER CHECK.

-4 VDC
GO TO MAP 0301, ENTRY POINT A.

-5 VDC
GO TO MAP 0302, ENTRY POINT A.

+5 VDC
GO TO MAP 0303, ENTRY POINT A.

+6 VDC
GO TO MAP 0304, ENTRY POINT A.
(STEP 173 CONTINUES)

(STEP 173 CONTINUED)

+8.5 VDC
GO TO MAP 0305, ENTRY POINT A.

-12 VDC
GO TO MAP 0306, ENTRY POINT A.

+12 VDC
GO TO MAP 0307, ENTRY POINT A.

7) MARK THIS PLACE.

8) TO CHECK ALL VOLTAGES THAT WERE MISSING ON MANUAL BRING UP, GO TO MAP 0315, ENTRY POINT A.

9) REPAIR OR REPLACE SENSE CABLE (MULTI J2, J3).
IF FAILURE PERSISTS,
10) REPLACE THE MULTI LEVEL FILTER ASM.

174
1) MEASURE POINTS ON THE PWR SEQ CARD CONNECTOR TAB PINS (CALLED MAPLE):

```
 GROUND--- MAPLE--M08,P08,
                --M09,P09
 +12VDC---MAPLE--U12 (10.8 TO 13.2)
+8.5VDC---MAPLE--U09 (7.65 TO 9.35)
  +6VDC---MAPLE--U10  (5.4 TO 6.6)
  +5VDC---MAPLE--U11  (4.5 TO 5.5)
 -12VDC---MAPLE--U05 (10.8 TO 13.2)
  -5VDC---MAPLE--U04  (4.5 TO 5.5)
  -4VDC---MAPLE--U07 (3.62 TO 4.32)
```

ARE SENSE VOLTAGE REFERENCES CORRECT?
Y N

175
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE JUMPER TO MAPLE CONNECTOR TAB PINS:

(MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND FERRO.)

3) MARK THIS PLACE.

4) TO CHECK OUT SENSE LINE CABLING (SKIP OVER VOLTAGES NOT ENCODED IN THE FAULT REGISTER.), GO TO MAP 0316, ENTRY POINT A.

(STEP 175 CONTINUES)

(STEP 175 CONTINUED)

5) INSTALL THE POWER SEQUENCE CARD.
6) REPLACE THE MULTI LEVEL FILTER ASM.

176
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE JUMPER TO MAPLE CONNECTOR TAB PINS.
3) INSTALL THE POWER SEQUENCE CARD.
4) SET MAIN LINE SWITCH TO 'ON'.
5) MARK THIS PLACE.

6) EXIT TO THE APPROPRIATE CHART FOR THE VOLTAGE LEVEL DETECTED BY LIGHTS 4-7 ON THE CE PANEL UPON POWER CHECK.

-4 VDC
GO TO MAP 0301, ENTRY POINT A.

-5 VDC
GO TO MAP 0302, ENTRY POINT A.

+5 VDC
GO TO MAP 0303, ENTRY POINT A.

+6 VDC
GO TO MAP 0304, ENTRY POINT A.

+8.5 VDC
GO TO MAP 0305, ENTRY POINT A.

-12 VDC
GO TO MAP 0306, ENTRY POINT A.

+12 VDC
GO TO MAP 0307, ENTRY POINT A.

7) REPLACE THE POWER SEQUENCE CARD.
8) TRY TO POWER UP AGAIN.
IF FAILURE PERSISTS,
9) REPLACE THE MULTI LEVEL FILTER ASM.

177

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) REMOVE COVER FROM THE AC POWER BOARD.
4) SET MAIN LINE SWITCH TO 'ON'.
5) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
6) OBSERVE K1 AS POWER IS APPLIED.

MLM SEC. 8.

LOCATION: LARGE RELAY ON BOTTOM LEFT OF AC POWER BOARD.

DOES K1 PICK OR PICK AND THEN DROP?

Y N

178

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) PROBE SC-TP-D03, (-PICK K1 RELAY).

MLM SEC. 8.

PROBE GROUND IS ON SC-TP-B08. FRAME CAN ALSO BE USED FOR PROBE GND. +5VDC PROBE POWER IS LOCATED ON AA1-B5-B02 OR AA1-C5-B02.

3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
5) OBSERVE PROBE AS 'POWER ON' SWITCH IS SET TO 'ON'.

IS LINE DOWN?

Y N

179

1) REPLACE THE POWER SEQUENCE CARD.

180

1) SET MAIN LINE SWITCH TO 'OFF'.
2) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL). CHECK CONTINUITY ON THE PWP SEQ CARD K1 DRIVER CABLES.

-K1 DRIVER.

	PIN LOCATION
FROM: POWER SEQUENCE CARD CONNECTOR	MAPLE--P05
TO: AC POWER BOARD	ACP-J1-B05

3) IF PROBLEM FOUND, REPAIR OR REPLACE CABLE.
4) IF PROBLEM NOT FOUND, REPLACE SEQ CARD.
5) IF PROBLEM NOT FOUND, REPLACE AC POWER BOARD.

181

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) CHECK FERRO TB1 PIN, (REF), TO PIN WITH AC VOLTAGE.

MLM SEC. 8.

(METER RANGE +500VAC.)

4) SET MAIN LINE SWITCH TO 'ON'.
5) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
6) MEASURE LINE VOLTAGE ON FERRO TB1.

IS LINE VOLTAGE PRESENT WHEN 'POWER ON' SWITCH IS SET TO 'ON' (OPERATORS PANEL)?

Y N

182
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) CHECK FUSE 102.

MLM SEC. 8.

LOCATION: SECOND FUSE TO THE RIGHT OF THE MAIN LINE SWITCH. AC VOLTAGE TO THE AC POWER BOARD IS SUPPLIED THROUGH FUSE 102.

FUSE 102 GOOD?
Y N

183
1) REPLACE FUSE. TRY TO POWER ON AGAIN. IF FUSE BLOWS.
2) REPLACE THE AC POWER BOARD.

184

AC VOLTAGE ISOLATE PROBLEMS, GO TO MAP 0310, ENTRY POINT A.

185

(ENTRY POINT H)

(MANUALLY BRING UP THE MULTI & DUAL LEVEL FILTER ASM.)

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
DOES MACHINE HAVE A BELT PRINTER?
Y N

186

GO TO STEP 187, ENTRY POINT HA.

187
1) FIND THE K1 RELAY IN THE PRINTER AND UNPLUG IT FOR THE DURATION OF THE MANUAL BRING UP PROCEDURE (+24V TO HAMMER DRIVERS BELT PRINTER ONLY).
(UNPLUG AT THE SLIP CONNECTOR P6)
(MLM SEC. 4.3.5 FOR P6 LOCATION)

(ENTRY POINT HA)
---
2) REMOVE THE POWER SEQUENCE CARD.
3) JUMPER MAPLE CONNECTOR TAB PINS TO GROUND:

(MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND INPUT TO FERRO.)

4) SET MAIN LINE SWITCH TO 'ON'.
5) MEASURE VOLTAGES AT POINTS LISTED BELOW:

GROUND---PD-TB1-1,2,3,4.
+12VDC---PD-TB2-5 (10.8 TO 13.2)
+8.5VDC---PD-TB2-1,2 (7.65 TO 9.35)
+6VDC---PD-TB2-3 (5.4 TO 6.6)
+5VDC---PD-TB1-5,6,7 (4.5 TO 5.5)
-12VDC---PD-TB2-6 (10.8 TO 13.2)
-5VDC---PD-TB1-8 (4.5 TO 5.5)
-4VDC---PD-TB2-4 (3.68 TO 4.32)

MULTI LEVEL VOLTAGES MEASURE CORRECT?
Y N

188
IS ANY VOLTAGE PRESENT?
Y N

189
AC VOLTAGE ISOLATION CHART, GO TO MAP 0310, ENTRY POINT A.

190
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE JUMPER TO MAPLE CONNECTOR TAB PINS:

(MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND INPUT TO FERRO.)

3) INSTALL THE POWER SEQUENCE CARD.
4) MARK THIS PLACE.

---

5) TO CHECK OUT SENSE LINE CABLING,
GO TO MAP 0316, ENTRY POINT A.

---

6) REPLACE THE MULTI LEVEL FILTER ASM.
IF FAILURE PERSISTS,
7) REPLACE FERRO & FERRO CAPACITOR.
(CAUTION: FERRO WEIGHS ABOUT 38 POUNDS.)

191
1) MEASURE POINTS ON THE PWR SEQ CARD CONNECTOR TAB PINS (CALLED MAPLE):

GROUND---MAPLE--M08,P08,
--M09,P09
+12VDC---MAPLE--U12 (10.8 TO 13.2)
+8.5VDC---MAPLE--U09 (7.65 TO 9.35)
+6VDC---MAPLE--U10 (5.4 TO 6.6)
+5VDC---MAPLE--U11 (4.5 TO 5.5)
-12VDC---MAPLE--U05 (10.8 TO 13.2)
-5VDC---MAPLE--U04 (4.5 TO 5.5)
-4VDC---MAPLE--U07 (3.68 TO 4.32)

ARE SENSE VOLTAGE REFERENCES CORRECT?
Y N

C C
H J

C C MAP 0300-34
H J

192
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE JUMPER TO MAPLE CONNECTOR TAB PINS:

(MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND INPUT TO FERRO.)

3) MARK THIS PLACE.

---

4) TO CHECK OUT SENSE LINE CABLING
(CHECK OUT ONLY VOLTAGES COMING FROM THE MULTI LEVEL FILTER ASM.),
GO TO MAP 0316, ENTRY POINT A.

---

5) INSTALL THE POWER SEQUENCE CARD.
6) REPLACE THE MULTI LEVEL FILTER ASM.

193
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE JUMPER TO MAPLE CONNECTOR TAB PINS:

(MAPLE--P05 TO MAPLE--M08 TO PICK THE K1 RELAY, FANS AND INPUT TO FERRO.)

3) MARK THIS PLACE.

---

4) TO CHECK OUT CONTROL LINE CABLING TO DUAL,
GO TO MAP 0315, ENTRY POINT A.

IF PROBLEM NOT FOUND,
5) REPLACE POWER SEQUENCE CARD.
6) TRY TO POWER ON AGAIN.
IF FAILURE PERSISTS,
7) REPLACE THE MULTI LEVEL FILTER ASM.
8) TRY TO POWER ON AGAIN.
IF FAILURE PERSISTS,
9) REPLACE DUAL LEVEL FILTER ASM.
(STEP 193 CONTINUES)

(STEP 193 CONTINUED)

A BAD DUAL COULD CAUSE AN OVER-VOLTAGE CONDITION IN THE MULTI.
(EXAMPLE) ONE +24 RECTIFIER COULD BE BAD AND CAUSE THE 8.5 VOLTS TO PEAK AT OVER 10 VOLTS, WHICH WOULD CAUSE OVER VOLTAGE ON 8.5 INDICATING A BAD MULTI. THE +24 VOLTS WOULD EVENTUALLY BUILD UP TO +24 VOLTS SO NO INDICATION WOULD BE APPARENT ON THE DUAL.

194

1) MARK THIS PLACE.

---

2) TO CHECK OUT CONTROL VOLTAGES, GO TO MAP 0317, ENTRY POINT A.

---

3) SET MAIN LINE SWITCH TO 'OFF'.
4) MARK THIS PLACE.

---

5) TO CHECK OUT SENSE LINE CABLING, GO TO MAP 0316, ENTRY POINT A.

---

6) REPLACE THE POWER SEQUENCE CARD.
IF FAILURE PERSISTS,
7) REPLACE MULTI LEVEL FILTER ASM.

195

BOTH PWR CHK AND TH CHK LED'S SHOULD NOT BE ON AT THE SAME TIME UNLESS LAMP TEST SWITCH IS PRESSED ON THE CE PANEL. A LEGITIMATE CHECK SHOULD LIGHT ONLY ONE OF THESE LED'S.

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) PRESS RESET.

---

3)
GO TO PAGE 6, STEP 015, ENTRY POINT C.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001
0318	B	4	015

001

(ENTRY POINT A)

18

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT LEADS FROM PD-TB2-4 (CABLE TO AA2 BOARD).

-4VDC LOAD ISOLATION ON MULTI LEVEL FILTER ASM.
PD-TB2-4 SUPPLIES -4VDC TO THE AA2 BOARD AND DISK. REFER TO MLM SEC. 8 FOR LOCATION OF TERMINAL BLOCK. LEADS TO BE REMOVED ARE ATTACHED TO BOTTOM SIDE OF THE TERMINAL BLOCK.

3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

002
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEADS REMOVED FROM PD-TB2-4.
3) REMOVE CABLE FROM AA2-A4 PLUG POSITION ON CARD SIDE OF BOARD (PIN B06 CARRIES -4 VDC TO THE DISK).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

003
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM AA2-A4 PLUG POSITION.
3) REMOVE LOGIC CARDS FROM DISK PLUG BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

004
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

005
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE END OF CABLE THAT PLUGS INTO DISK AT PLUG POSITION B5.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

006
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE DISK FRU.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

007
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE THE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

008
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE ONE-HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN THE AA2 BOARD, CARDS, OR CABLE FROM PD-TB2-4.
LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

009
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

010
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

011
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

012
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTOR FROM PIN SIDE OF BOARD AT LOCATION:
AA2-B3-A14.
3) METER THIS POINT TO GROUND ON THE AA2 BOARD TO LOCATE SHORT.

AA2 BOARD SHORTED?
Y N

013
1) DISCONNECT LEAD FROM PD-TB2-4.
2) METER WIRE REMOVED FROM PD-TB2-4 TO GROUND TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

014
1) REPLACE THE AA2 BOARD.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

015

(ENTRY POINT B)

PWR CHK INDICATION NOT CAUSED BY EXCESSIVE LOAD FROM PD-TB2-4 OUT TO THE I/O FUNCTION.

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD REMOVED FROM PD-TB2-4 (IF PREVIOUSLY REMOVED).
MLM SEC. 8.
3) REMOVE LEAD AT PD-TB2-4 ON THE POWER SUPPLY (TOP) SIDE OF THE TERMINAL BLOCK.
4) DISCONNECT CABLE CONNECTOR MULTI-J1 ON MULTI LEVEL FILTER ASM.

MULTI-J1-11, AND MULTI-J1-12 SUPPLY -4VDC TO PD-TB2-4.

5) CHECK FOR SHORT TO GROUND ON CABLE REMOVED FROM PD-TB2-4, MULTI-J1-11, AND MULTI-J1-12.

DOES CABLE SHOW SHORT TO GROUND?
Y N

016
CHECK CABLE FOR AN OPEN.

IS CABLE OPEN?
Y N

017
1) CONNECT ALL CABLES PREVIOUSLY REMOVED.
RETURN TO THE CALLING CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

018
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

019
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

SYSTEM 32

PAGE 1 OF 9

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001
0318	A	1	001

001

(ENTRY POINT A) 18

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) FIND THE CABLE ON PD-TB1-8 THAT GOES TO BA1-U5-D12 (-5VDC).
3) DISCONNECT THAT CABLE ONLY FROM PD-TB1-8.
4) FIND THE CABLE ON PD-TB2-2 THAT GOES TO BA1-U5-D11 (+8.5VDC).
5) DISCONNECT THAT CABLE ONLY FROM PD-TB2-2.
6) PRESS RESET.
7) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

002
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM PD-TB1-8.
3) CONNECT CABLE REMOVED FROM PD-TB2-2.
4) DISCONNECT CABLE FROM MODEM BA1-U5-D12 AND D11.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

-5VDC LOAD ISOLATION ON MULTI LEVEL FILTER ASM.
A WORD OF CAUTION IN THIS MAP---, -5VDC MUST NOT BE REMOVED FROM FET CIRCUITS WITHOUT REMOVING +8.5VDC FIRST. DAMMAGE MAY OCCUR TO THE CHIPS IF DONE.
UNLOAD THE 2400 MODEM FEATURE IF INSTALLED. IF NOT INSTALLED, BYPASS THIS QUESTION BY ANSWERING 'YES'.
-REF MLM SEC. 8 FOR LOCATION OF TERMINAL BLOCK. LEADS TO BE REMOVED ARE ATTACHED TO THE BOTTOM SIDE OF THE TERMINAL BLOCK.

003
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM MODEM BA1-U5-D12 AND D11.
3) REMOVE ONE-HALF OF THE CARDS FROM THE BA1 BOARD.

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN BA1 BOARD, CARDS, OR CABLE FROM PD-TB2-2.

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

004
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

005
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE BA1 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

006
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

007
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLE FROM MODEM AT LOCATION: BA1-U5-D12 AND D11.
3) METER THIS POINT TO GROUND ON THE CA1 BOARD TO LOCATE SHORT.

BA1 BOARD SHORTED?
Y N

008
1) DISCONNECT LEADS FROM PD-TB1-8.
2) METER WIRES REMOVED TO GROUND TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

009
1) REPLACE MODEM BOARD BA1.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

010
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

011
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTORS FROM PIN SIDE OF THE BOARD BETWEEN LOCATIONS:
AA2-U2,U3 AA2-U3,U4 AA2-U4,U5.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

PIN A14 ON EACH CONNECTOR CARRIES -5VDC TO THE AA2 BOARD, DISKETTE, AND KEYBOARD.

PIN E01 ON EACH CONNECTOR CARRIES +8.5VDC TO THE AA2 BOARD AND KEYBOARD.

012
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT MINI BUS CONNECTORS REMOVED BETWEEN LOCATIONS:
AA2-U2,U3 AA2-U3,U4 AA2-U4,U5.
3) REMOVE CABLE FROM AA2-B2 PLUG POSITION ON CARD SIDE OF BOARD (PIN D11 CARRIES -5 VDC TO THE DISKETTE).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

013
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM LOCATION:
AA2-B2.
3) REMOVE LOGIC CARD FROM DISKETTE PLUG BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

014
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE LOGIC CARD WITH NEW LOGIC CARD.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

015
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE FROM AA2-B2 TO DISKETTE.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

016
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE CABLE FROM AA2-U3 PLUG POSITION ON PIN SIDE OF BOARD. (PIN B06 CARRIES -5VDC, PIN B11 CARRIES +8.5VDC TO THE KEYBOARD.)
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

017
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM LOCATION:
AA2-U3.
3) REMOVE FLAT CABLE AT KEYBOARD PRINTED CIRCUIT BOARD (KBD-PC).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

018
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE KEYBOARD PRINTED CIRCUIT BOARD.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

019
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

03SEP76 PN2594603
EC828777 PEC-------

020
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE ONE-HALF OF THE CARDS FROM AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN THE AA2 BOARD, CARDS OR CABLE FROM PD-TB1-8.
LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

021
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

022
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

023
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

024
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTORS FROM PIN SIDE OF BOARD AT LOCATIONS: AA2-U2-A14, U3-A14, U4-A14.
3) METER THESE POINTS TO GROUND ON THE AA2 BOARD TO LOCATE SHORT.

AA2 BOARD SHORTED?
Y N

025
1) DISCONNECT LEAD FROM PD-TB1-8.
2) DISCONNECT MINI BUS CONNECTORS FROM PIN SIDE OF THE BOARD AT LOCATION: AA1-U2-B06.
3) METER WIRE REMOVED FROM PD-TB1-8 TO GROUND TO LOCATE SHORT IN CABLE.
AFTER CORRECTING PROBLEM,
4) REPLACE ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

026
1) REPLACE THE AA2 BOARD.
AFTER CORRECTING PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

027
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT MINI BUS CONNECTORS.
3) DISCONNECT CABLE FROM PD-TB2-1. (PD-TB2-1 SUPPLIES +8.5 VDC TO THE AA1 BOARD. MLM SEC.8.)
4) DISCONNECT MINI BUS CONNECTORS FROM PIN SIDE OF THE BOARD AT LOCATION:
AA1-U2-B06.
(PIN B06 CARRIES -5VDC TO THE AA1 BOARD.)
5) PRESS RESET.
6) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

028
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE ALL CABLES PREVIOUSLY REMOVED.
3) REMOVE ONE-HALF OF THE CARDS FROM THE AA1 BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

029
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

030
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA1 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

031
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

032
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTOR FROM PIN SIDE OF THE BOARD AT LOCATION:
AA1-U2-B06.
3) METER THIS POINT TO GROUND ON THE AA1 BOARD TO LOCATE SHORT.

AA1 BOARD SHORTED?
Y N

033
1) DISCONNECT LEAD FROM PD-TB1-8 (BOTTOM LEAD).
2) DISCONNECT MINI BUS CONNECTORS FROM PIN SIDE OF THE BOARD AT LOCATIONS: AA2-U2-A14, U3-A14, U4-A14.
3) METER WIRE REMOVED FROM PD-TB1-8 TO GROUND TO LOCATE SHORT IN CABLE.
AFTER CORRECTING PROBLEM,
4) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

034
1) REPLACE THE AA1 BOARD.
AFTER CORRECTING PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

035
1) SET 'POWER ON' TO OFF.
2) DISCONNECT AT PDTB1-8 (ONE THAT GOES TO AA1-U2-B06).
3) PRESS RESET.
4) SET 'POWER ON' TO ON.
POWER CHECK?
Y N

036
REPAIR OR REPLACE CABLE (INSTALL ALL OTHER CABLES REMOVED.

037

(ENTRY POINT B)

PWR CHK INDICATION NOT CAUSED BY EXCESSIVE LOAD FROM PD-TB1-8 OUT TO THE I/O FUNCTIONS.

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ALL CABLES PREVIOUSLY REMOVED.
3) DISCONNECT CABLE CONNECTOR MULTI-J1 FROM THE MULTI LEVEL SUPPLY AND AT PD-TB1-8 ON THE POWER SUPPLY SIDE OF THE TERMINAL BLOCK.
MULTI J1-8 - PDTB1-8 -5VDC
4) CHECK CABLE REMOVED FOR SHORT TO GROUND.

DOES CABLE SHOW SHORT TO GROUND?
Y N

038
CHECK CABLE FOR AN OPEN.

IS CABLE OPEN?
Y N

039
1) CONNECT ALL CABLES PREVIOUSLY REMOVED.
RETURN TO THE CALLING CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

040
1) REPLACE CABLES.
AFTER CORRECTING THE PROBLEM
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

041
1) REPLACE CABLE.
AFTER CORRECTING PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001
0318	B	9	043

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	012	0504	A

001

(ENTRY POINT A) 18

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT LEADS FROM PD-TB1-5 (CABLE TO AA2 BOARD).

+5VDC LOAD ISOLATION ON MULTI LEVEL FILTER ASM.

REFER TO MLM SEC. 8 FOR LOCATION OF TERMINAL BLOCK. LEADS TO BE REMOVED ARE ATTACHED TO THE BOTTOM SIDE OF THE TERMINAL BLOCK.

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PD-TB1-5 SUPPLIES +5VDC TO THE AA2 BOARD, DISKETTE, AND KEYBOARD.

3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

002
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEADS REMOVED FROM PD-TB1-5.
3) REMOVE CABLE FROM AA2-B2 PLUG POSITION ON CARD SIDE OF BOARD (PIN D03 CARRIES +5 VDC TO THE DISKETTE).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

003
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM LOCATION AA2-B2.
3) REMOVE LOGIC CARD FROM DISKETTE PLUG BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

004
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE LOGIC CARD WITH NEW LOGIC CARD.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

005
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE FROM AA2-32 TO REMOVABLE DISK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

006
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLE FROM AA2-U3 PLUG POSITION ON PIN SIDE OF BOARD. (PIN D03 CARRIES +5 VDC TO THE KEYBOARD).
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

007
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM AA2-U3.
3) REMOVE FLAT CABLE AT KEYBOARD PRINTED CIRCUIT BOARD (KBD-PC).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

008
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE KEYBOARD PRINTED CIRCUIT BOARD.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

009
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

010
IS BELT PRINTER INSTALLED ON MACHINE?
Y N

011
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLES FROM AA2-V2 AND AA2-V3. (PINS D11 AND D12 SUPPLY +5V TO SERIAL PRINTER).
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

012
CONNECT ALL CABLES REMOVED.
GO TO MAP 0504, ENTRY POINT A.

013

GO TO PAGE 3, STEP 014,
ENTRY POINT C.

10DEC76 PN2594604

EC831962 PEC828777

014

(ENTRY POINT C)

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE ONE-HALF OF THE CARDS FROM AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

015
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

016
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

017
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN AA2 BOARD, CARDS OR CABLE FROM PD-TB1-5.
LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

LABEL EACH CARD AS IT IS REMOVED TO AVOID REPLACING IN THE WRONG LOCATION.

POWER MAPS

SYSTEM 32

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018
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTORS FROM PIN SIDE OF BOARD AT LOCATIONS:
AA2-B2-A14, AA2-B4-E01,
AA2-B5-A01,
AA2-U3-A01, AA2-U4-A01,
AA2-U5-A01.
3) METER THESE POINTS TO GROUND ON THE AA2 BOARD TO LOCATE SHORT.

AA2 BOARD SHORTED?
Y N

019
1) DISCONNECT LEAD FROM PD-TB1-5.
2) METER WIRE REMOVED FROM PD-TB1-5 TO GROUND TO LOCATE SHORT IN CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

REFER TO MLM SEC. 8 FOR LOCATION OF TERMINAL BLOCK. LEADS TO BE REMOVED ARE ATTACHED TO THE BOTTOM SIDE OF THE TERMINAL BLOCK.

PD-TB1-6 SUPPLIES +5VDC TO THE AA1 BOARD, DISKETTE, AND KEYBCARD.

020
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

021
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEADS REMOVED FROM PD-TB1-5.
3) DISCONNECT LEADS FROM PD-TB1-6 (CABLE TO AA1 BOARD).
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

022
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEADS REMOVED FROM PD-TB1-6.
3) REMOVE CABLE FROM AA1-B4 PLUG POSITION ON CARD SIDE OF BOARD.
4) REMOVE CABLE FROM AA1-B5 PLUG POSITION ON CARD SIDE OF BOARD (PIN D04 CARRIES +5 VDC TO THE CE PANEL).
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

023
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM AA1-B5.
3) REMOVE CE PANEL AND ATTACH TO SIDE OF FRAME SO THAT IT EXTENDS OUTWARD.
4) REMOVE CABLE AT PLUG POSITION CEP-Y2.

Y2 IS CABLE PLUG AT LEFT WHEN LOOKING DOWN AT TOP OF CE PANEL FROM FRONT.

5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

024
1) REFER TO CE PANEL WIRING FE ALD'S CE PAGES TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

025
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE BETWEEN AA1-B5 AND CE PANEL Y2 CONNECTOR (CEP-Y2).
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

026
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLES REMOVED FROM AA1-B4 AND AA1-B5.
3) REMOVE CABLE FROM AA1-B2 PLUG POSITION ON CARD SIDE OF BOARD (PIN D03 CARRIES +5 VDC TO THE OPERATOR PANEL).
4) METER FOR SHORT (AA1-D08 IS GROUND).

OPERATOR PANEL AND CABLE CORRECT (NOT GROUNDED)?
Y N

027
1) REFER TO OPERATOR PANEL WIRING FE ALD'S OP PAGES TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN AA1 BOARD, CARDS, OR CABLE FROM PD-TB1-6, OR OPERATOR PANEL AND CABLE.

028
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM AA1-B2.
3) REMOVE ONE-HALF OF THE CARDS FROM THE AA1 BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

029
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN AA1 BOARD, CARDS OR CABLE FROM PD-TB1-6.
LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

030
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA1 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

031
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. PRESS RESET AND POWER ON EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

032
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTORS FROM PIN SIDE OF BOARD AT LOCATIONS:
AA1-B3-A01, AA1-B4-A01, AA1-B5-A01.
3) IF 1255 ATTACHMENT MICR IS INSTALLED, ALSO DISCONNECT AA1-U4-A01 AND AA1-U4-A01.
4) METER THESE POINTS TO GROUND ON THE AA1 BOARD TO LOCATE SHORT.

AA1 BOARD SHORTED?
Y N

033
1) DISCONNECT LEADS FROM PD-TB1-6.
2) METER WIRES REMOVED FROM PD-TB1-6 TO GROUND TO LOCATE SHORT IN CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

034
1) REPLACE THE AA1 BOARD.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

035
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEADS REMOVED FROM PD-TB1-6.
3) DISCONNECT LEAD FROM PD-TB1-7. (CABLE TO PRINTER).
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

REFER TO MLM SEC. 8 FOR LOCATION OF TERMINAL BLOCK. LEADS TO BE REMOVED ARE ATTACHED TO THE TOP SIDE OF THE TERMINAL BLOCK (RED LEAD).
PD-TB1-7 SUPPLIES +5VDC TO THE PRINTER (BELT PRINTER ONLY).

POWER CHECK?
Y N

036
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD REMOVED FROM PD-TB1-7 (BELT PRINTER ONLY.
3) DISCONNECT LEAD AT PTR-TB1-14 (285 LPM PRINTER IS PTR-TB1-15) +5 VOLTS
(REFER TO MLM SEC. 4 FOR LOCATION OF PTR-TB1.)
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

037
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD AT PTR-TB1-14 (285 LPM PRINTER IS PTR-TB1-15) +5 VOLTS
TO ISOLATE THE BAD CARD, PULL CARDS ONE AT A TIME. SET 'POWER ON' TO 'OFF' PRESS RESET, AND SET 'POWER ON' TO 'ON' AFTER EACH CARD REMOVAL UNTIL POWER CHECK INDICATION DOES NOT APPEAR.

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

IS POWER CHECK INDICATOR 'ON' WITH ALL CARDS OUT?
Y N

038
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE LAST CARD REMOVED WITH A NEW CARD.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

039
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE CABLES AT PTR-TB2-14 (285 LPM PRINTER IN PTR-TB2-15)
3) CHECK PRINTER PLUG BOARD FOR SHORT.

PRINTER PLUG BOARD SHORTED?
Y N

040
1) CHECK ALL CABLES CARRYING +5 VDC FOR SHORT
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

041
1) REPLACE PRINTER PRINTED CIRCUIT BOARD.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

042
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE BETWEEN PTR-TB1-14 (285 LPM PRINTER IN PTR-TB2-15) AND PD-TB1-7.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

043

(ENTRY POINT B)

PWR CHK INDICATION NOT CAUSED BY EXCESSIVE LOAD FROM PD-TB1-5, 6, OR 7 OUT TO I/O FUNCTIONS.

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEADS REMOVED FROM PD-TB1-7 IF PREVIOUSLY REMOVED.
3) DISCONNECT CABLE FROM MULTI E1 OR E2 ON THE MULTI LEVEL FILTER ASM AND AT PD-TB1-6 (TOP SIDE OF TERMINAL BLOCK, POWER SUPPLY SIDE).
4) CHECK CABLE REMOVED FROM MULTI E1 OR E2 AND PD-TB1-6 FOR SHORT TO GROUND.
5) CHECK CABLE FOR OPEN.

(STEP 043 CONTINUES)

(STEP 043 CONTINUED)
DOES CABLE SHOW AN OPEN OR SHORT TO GROUND?
Y N
|
| 044
| 1) DISCONNECT CABLE FROM MULTI E1 OR E2 ON THE MULTI LEVEL SUPPLY AND AT PD-TB1-5 (TOP SIDE OF TERMINAL BLOCK, POWER SUPPLY SIDE).
| 2) CHECK FOR SHORT TO GROUND.
| |
| DOES CABLE SHOW A SHORT TO GROUND?
| Y N
| |
| | 045
| | 1) CONNECT ALL CABLES PREVIOUSLY REMOVED.
| | RETURN TO THE CALLING CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.
| |
| 046
| 1) REPLACE THE CABLE.
| AFTER CORRECTING THE PROBLEM,
| 2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.
|
047
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001
0318	B	5	019

001

(ENTRY POINT A) 18

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT LEADS FROM PD-TB2-3 (CABLES TO THE AA2 BOARD AND CRT).

3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

002
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) FIND THE LEADS REMOVED FROM PD-TB2-3 THAT GO TO THE AA2 BOARD (MINI BUS CONNECTORS CARRY +6VDC TO THE AA2 BOARD AA2-B3-E01, AND AA2-B4-A01).
3) CONNECT THOSE LEADS ONLY AT PD-TB2-3.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

+6VDC LOAD ISOLATION ON MULTI LEVEL FILTER ASM.
+6 VDC IS INTERNALLY REGULATED ON THE MULTI LEVEL FILTER ASM AND CAN BE UNLOADED COMPLETELY.
REFER TO MLM SEC. 8 FOR LOCATION OF TERMINAL BLOCK. LEADS TO BE REMOVED ARE ATTACHED TO BOTTOM SIDE OF TERMINAL BLOCK.
PD-TB2-3 SUPPLIES +6VDC TO THE AA2 BOARD, DISK, AND CRT.

B C
1 1

POWER MAPS

SYSTEM 32

PAGE 2 OF 6

003
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT THE DISCRETE WIRE CABLE REMOVED FROM PD-TB2-3 THAT SUPPLIES CRT.
3) DISCONNECT CABLE FROM THE CRT PRINTED CIRCUIT BOARD (CRT-PC).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

004
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPAIR OR REPLACE CRT.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

005
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE THE CABLE.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

006
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLE FROM AA2-A4 PLUG POSITION ON CARD SIDE OF BOARD (PIN B11 CARRIES +6 VDC TO THE DISK).
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

007
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM AA2-A4.
3) REMOVE LOGIC CARDS FROM DISK PLUG BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).
|
POWER CHECK?
Y N
|
| 008
| 1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
| 2) INSTALL CARDS ONE AT A TIME FROM THOSE JUST REMOVED. SET 'POWER ON' TO 'OFF', PRESS RESET AND 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
| AFTER CORRECTING PROBLEM,
| 3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.
|
009
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT END OF CABLE THAT PLUGS INTO THE DISK AT PLUG POSITION B5.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).
|
POWER CHECK?
Y N
|
| 010
| 1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
| 2) REPLACE DISK FRU.
| AFTER CORRECTING PROBLEM,
| 3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.
|
011
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE THE CABLE.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

012
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE ONE-HALF OF THE CARDS FROM AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

013
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING PROBLEM,
4) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

014
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA2 BOARD.
3) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

015
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING PROBLEM,
4) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN AA2 BOARD, CARDS, OR CABLE FROM PD-TB2-3. LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

016
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTORS FROM PIN SIDE OF BOARD AT LOCATIONS:
AA2-B3-E01, AA2-B4-A01.
3) METER THESE POINTS TO GROUND ON THE AA2 BOARD TO LOCATE SHORT.

AA2 BOARD SHORTED?
Y N

017
1) DISCONNECT LEAD FROM PD-TB2-3.
2) METER WIRE REMOVED FROM PD-TB2-3 TO GROUND TO LOCATE SHORT.
AFTER CORRECTING PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

018
1) REPLACE THE AA2 BOARD.
AFTER CORRECTING PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

019

(ENTRY POINT B)

---

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEADS REMOVED FROM PD-TB2-3 IF PREVIOUSLY REMOVED.
3) REMOVE LEADS AT PD-TB2-3 ON THE POWER SUPPLY SIDE OF THE TERMINAL BLOCK.
4) DISCONNECT CABLE CONNECTOR MUL-J1 ON MULTI LEVEL FILTER ASM. MLM SEC. 8.
5) CONTINUITY CHECK FOR SHORT TO GROUND ON CABLE (GROUND IS FRAME GROUND) FROM PD-TB2-3, MULTI-J1-9, AND MULTI-J1-10.

DOES CABLE SHOW SHORT TO GROUND?
Y N

PWR CHK INDICATION NOT CAUSED BY EXCESSIVE LOAD FROM PD-TB2-3 OUT TO I/O FUNCTION.
MLM SEC. 8 REF FOR PLUG LOCATIONS.

020
CHECK CABLE FOR AN OPEN.

IS CABLE OPEN?
Y N

021
1) CONNECT ALL CABLES PREVIOUSLY REMOVED. RETURN TO THE CALLING CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

022
1) REPLACE THE CABLE.
AFTER CORRECTING PROBLEM
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

023
1) REPLACE THE CABLE.
AFTER CORRECTING PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001
0318	B	9	039

001

(ENTRY POINT A) 18

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) FIND THE CABLE ON PD-TB2-2 THAT GOES TO BA1-U5-D11 (+8.5VDC).
3) DISCONNECT THAT CABLE ONLY FROM PD-TB2-2.
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

+8.5VDC LOAD ISOLATION ON MULTI LEVEL FILTER ASM.
UNLOAD THE 2400 MODEM FEATURE IF INSTALLED. IF NOT INSTALLED, BYPASS THIS QUESTION BY ANSWERING 'YES'.
REFER TO MLM SEC. 8 FOR LOCATION OF TERMINAL BLOCK. LEADS TO BE REMOVED ARE ATTAINED TO BOTTOM SIDE OF TERMINAL BLOCK.

002

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM PD-TB2-2.
3) DISCONNECT CABLE FROM 2400 MODEM BA1-U5-D12.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

003

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM MODEM BA1-U5-D10.
3) REMOVE ONE-HALF OF THE CARDS FROM THE BA1 BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN BA1 BOARD, CARDS, OR CABLE FROM PD-TB2-6.
LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

004
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

005
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE BA1 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

006
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

007
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLE FROM MODEM AT LOCATION:
BA1-U5-D10.
3) METER THIS POINT TO GROUND ON THE CA1 BOARD TO LOCATE SHORT.

BA1 BOARD SHORTED?
Y N

C08
1) DISCONNECT LEAD FROM PD-TB2-2.
2) METER WIRE REMOVED FROM PD-TB2-2 TO GROUND TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

009
1) REPLACE MODEM BOARD BA1.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

010
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

011
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT THE WIRE FROM PD-TB2-2 WHICH SUPPLIES +2.5 VDC TO THE AA2 BOARD (AA2-V3E01) AND RECONNECT ANY WIRES PREVIOUSLY REMOVED (BOTTOM SIDE OF TERMINAL BLOCK).
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

PD-TB2-2 SUPPLIES +8.5VDC TO THE AA2 BOARD AND KEYBOARD.

POWER CHECK?
Y N

012
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM PD-TB2-2.
3) REMOVE CABLE FROM AA2-U3 PLUG POSITION ON CARD SIDE OF BOARD (PIN B11 CARRIES +8.5 VDC TO THE KEYBOARD).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

013
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM AA2-U3.
3) REMOVE FLAT CABLE AT KEYBOARD PRINTED CIRCUIT BOARD (KBD-PC).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

014
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE KEYBOARD PRINTED CIRCUIT BOARD.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

015
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

016
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE ONE-HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

017
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

SHORT CAUSING THE C/C OR U/V INDICATION IS IN AA2 BOARD, CARDS, OR CABLE FROM PD-TB2-2.
LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

018
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA2 BOARD.
3) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

019
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

020
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTORS FROM PIN SIDE OF BOARD AT LOCATIONS:
AA2-U3-E01, AA2-U4-E01, AA2-U5-E01.
3) METER THESE POINTS TO GROUND ON THE AA2 BOARD TO LOCATE SHORT.

AA2 BOARD SHORTED?
Y N

021
1) DISCONNECT LEAD FROM PD-TB2-2.
2) METER WIRE REMOVED FROM PD-TB2-2 TO GROUND TO LOCATE SHORT IN CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

022
1) REPLACE THE AA2 BOARD.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

023
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ALL CABLES PREVIOUSLY REMOVED.
3) DISCONNECT CABLE FROM PD-TB2-1.
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

PD-TB2-1 SUPPLIES +8.5VDC TO THE AA1 BOARD. MLM SEC. 8.

POWER CHECK?
Y N

024
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ALL CABLES PREVIOUSLY REMOVED.
3) REMOVE ONE-HALF OF THE CARDS FROM THE AA1 BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN THE AA1 BOARD, CARDS, OR CABLE FROM PD-TB2-1. LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

025
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

026
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA1 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

027
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK. AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

028
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTORS PIN SIDE OF BOARD AT LOCATIONS: AA1-
U2-B11,U3-B11, T2-B11,T3-B11,
S2-B11, S3-B11, R2-B11,R3-B11,
Q2-B11,Q3-B11, Q4-B11,Q5-B11,
P2-B11,P3-B11,P4-B11,P5-B11.
3) METER THESE POINTS TO GROUND ON THE AA1 BOARD TO LOCATE SHORT.

AA1 BOARD SHORTED?
Y N

029
1) DISCONNECT LEAD FROM PD-TB2-1.
2) METER WIRE REMOVED FROM PD-TB2-1 TO GROUND TO LOCATE SHORT IN CABLE. AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

030
1) REPLACE THE AA1 BOARD. AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

031
IS THE 1255 ATTACHMENT (MICR) FEATURE INSTALLED ON THE SYSTEM?
Y N

032
GO TO PAGE 9, STEP 039, ENTRY POINT B.

033
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLE FROM PD-TB2-2 WHICH GOES TO AA1-E4B11 (BOTTOM SIDE OF TERMINAL BLOCK).
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL)

ONE OF THE WIRES FROM PD-TB2-2 SUPPLIES +8.5 V TO THE 1255 ATTACHMENT CARDS IN AA1-E2 AND AA1-F2.

POWER CHECK?
Y N

034
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ALL CABLES PREVIOUSLY REMOVED.
3) REMOVE THE AA1-E2 AND AA1-F2 CARDS.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL)

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IT IN THE WRONG LOCATION.

POWER CHECK?
Y N

035
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE TWO JUST REMOVED. SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.

ONE OF THE TWO CARDS JUST REMOVED IS CAUSING THE POWER CHECK.

036
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT THE VOLTAGE CONNECTORS ON THE PIN SIDE OF BOARD AT LOCATIONS:

AA1-E4B11 E5B11 F4B11 F5B11

CHECK FOR BOARD SHORT TO GROUND.

3) METER THESE POINTS TO GROUND ON THE AA1 BOARD TO LOCATE SHORT.

AA1 BOARD SHORTED?
Y N

037
1) DISCONNECT LEAD FROM PD-TB2-2 WHICH SUPPLIES MICR +8.5 VOLTS.
2) METER WIRE REMOVED FROM PD-TB2-2 TO GROUND TO LOCATE SHORT IN CABLE.
3) AFTER CORRECTING THE PROBLEM, INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

CABLE MUST BE SHORTED.

038
1) REPLACE THE AA1 BOARD.
2) AFTER CORRECTING THE PROBLEM, INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

039

PWR CHK INDICATION NOT CAUSED BY LOAD FROM PD-TB2-1 OR PD-TB2-2 OUT TO I/O FUNCTIONS.

(ENTRY POINT B)

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ALL CABLES PREVIOUSLY REMOVED.
3) DISCONNECT PD-TB2-1 AND PD-TB2-2 FROM POWER SUPPLY SIDE OF TERMINAL BLOCK.
4) DISCONNECT CABLE FROM MULTI-E6 ON THE MULTI LEVEL FILTER ASM.
5) CHECK CABLE REMOVED FROM MULTI-E6, PD-TB2-1, AND PD-TB2-2 FOR SHORT TO GROUND.

DOES CABLE SHOW SHORT TO GROUND?
Y N

040
CHECK CABLE FOR AN OPEN.

IS CABLE OPEN?
Y N

041
1) CONNECT ALL CABLES PREVIOUSLY REMOVED.
RETURN TO THE CALLING CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

042
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM, INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

043
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM, INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001
0318	B	9	041
2057	A	1	001

001

(ENTRY POINT A) 20

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
FIND THE CABLE ON PD-TB2-6 THAT GOES TO BA1-U5-D10.
2) DISCONNECT THAT CABLE ONLY FROM PD-TB2-6.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

-12VDC LOAD ISOLATION ON MULTI LEVEL FILTER ASM.
UNLOAD THE 2400 MODEM FEATURE IF INSTALLED. IF NOT INSTALLED, BYPASS THIS QUESTION BY ANSWERING 'YES'.

REFER TO MLM SEC. 8 FOR LOCATION OF TERMINAL BLOCK LEADS TO BE REMOVED ARE ATTACHED TO BOTTOM SIDE OF THE TERMINAL BLOCK.

002
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM PD-TB2-6.
3) DISCONNECT CABLE FROM MODEM BA1-U5-D10.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

003
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM MODEM BA1-U5-D10.
3) REMOVE ONE-HALF OF THE CARDS FROM THE BA1 BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN BA1 BOARD, CARDS, OR CABLE FROM PD-TB2-6.
LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

004
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

005
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE BA1 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

006
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

007
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLE FROM MODEM AT LOCATION:
BA1-U5-D10.
3) METER THIS POINT TO GROUND ON THE BA1 BOARD TO LOCATE SHORT.

BA1 BOARD SHORTED?
Y N

008
1) DISCONNECT LEAD FROM PD-TB2-6.
2) METER WIRE REMOVED FROM PD-TB2-6 TO GROUND TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

009
1) REPLACE MODEM BOARD BA1.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

010
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

011
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ANY CABLES PREVIOUSLY REMOVED.
FIND THE CABLE ON PD-TB2-6 THAT GOES TO CA1-E1-B11.
3) DISCONNECT THAT CABLE ONLY FROM PD-TB2-6.
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

UNLOAD THE 1200 MODEM FEATURE IF INSTALLED. IF NOT INSTALLED, BYPASS THIS QUESTION BY ANSWERING 'YES'.

012
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM PD-TB2-6.
3) DISCONNECT CABLE FROM MODEM CA1-E1-B11.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

013
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM MODEM CA1-E1-B11.
3) REMOVE ONE-HALF OF THE CARDS FROM THE CA1 BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN CA1 BOARD, CARDS, OR CABLE FROM PD-TB2-6. LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

014
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

015
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE CA1 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

016
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

017
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLE FROM MODEM AT LOCATION:
CA1-E1-B11.
3) METER THIS POINT TO GROUND ON THE CA1 BOARD TO LOCATE SHORT.

CA1 BOARD SHORTED?
Y N

018
1) DISCONNECT LEAD FROM PD-TB2-6.
2) METER WIRE REMOVED FROM PD-TB2-6 TO GROUND TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

019
1) REPLACE MODEM BOARD CA1.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

020
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

021
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) FIND THE CABLE ON PD-TB2-6 THAT GOES TO THE CRT (PIN D02 CARRIES -12 VDC TO THE CRT).
3) DISCONNECT THAT CABLE ONLY FROM PD-TB2-6 (DISCRETE CABLE TO CRT).
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

022
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM PD-TB2-6.
3) DISCONNECT FLAT CABLE FROM CRT PRINTED CIRCUIT BOARD (CRT-PC).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

023
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPAIR OR REPLACE THE CRT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

024
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

025
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ALL CABLES PREVIOUSLY REMOVED.
3) DISCONNECT CABLE FROM PD-TB2-6 (CABLE TO AA2 BOARD).
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

10DEC76 PN2594607
EC831962 PEC828777

026
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM PD-TB2-6 THAT WENT TO THE AA2 BOARD.
3) REMOVE ONE-HALF OF THE CARDS FROM THE AA2 BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN AA2 BOARD, CARDS, OR CABLE FROM PD-TB2-6. LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

027
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

028
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

029
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

030
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTOR FROM PIN SIDE OF BOARD AT LOCATION:
AA2-B3-A01.
3) METER THIS POINT TO GROUND ON THE AA2 BOARD TO LOCATE SHORT.

AA2 BOARD SHORTED?
Y N

031
1) DISCONNECT LEAD FROM PD-TB2-6.
2) METER WIRE REMOVED FROM PD-TB2-6 TO GROUND TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

032
1) REPLACE THE AA2 BOARD.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

033
IS THE 1255 ATTACHMENT (MICR) FEATURE INSTALLED ON THE SYSTEM?
Y N

034
GO TO PAGE 9, STEP 041, ENTRY POINT B.

035
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT THE WIRE FROM PD-TB2-6 THAT GOES TO AA1-D4B13. RECONNECT ALL PREVIOUSLY REMOVED CABLES.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

UNLOAD THE MICR FEATURE -12 VOLTS.

POWER CHECK?
Y N

036
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM PD-TB2-6 THAT WENT TO AA1-D4B13.
3) REMOVE THE AA1-D2 CARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

SHORT CAUSING THE POWER CHECK IS IN EITHER THE AA1-D2 CARD, THE AA1 BOARD OR THE CABLE PROVIDING THE -12 VOLTS TO IT.

POWER CHECK?
Y N

037
REPLACE THE AA1-D2 CARD (1255 DRIVER/RECEIVER/REGULATOR)

038
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT VOLTAGE CONNECTOR FROM PIN SIDE OF BOARD AT AA1-D4B13.
3) METER THIS POINT TO GROUND ON THE AA1 BOARD TO LOCATE SHORT.

SHORT CAUSING POWER CHECK IS IN AA1 BOARD OR MICR CABLE.

IS THE AA1 BOARD SHORTED?
Y N

039
1) DISCONNECT MICR LEAD FROM PD-TB2-6.
2) METER WIRE REMOVED FROM PD-TB2-6 TO GROUND TO LOCATE CABLE SHORT.
3) AFTER CORRECTING PROBLEM, INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

SHORT CAUSING POWER CHECK IS IN THE CABLE CABLE PROVIDING -12 VOLTS TO THE MICR FEATURE.

040
1) REPLACE THE AA1 BOARD.
2) AFTER CORRECTING THE PROBLEM, INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

SHORT CAUSING POWER CHECK IS IN AA1 BOARD.

041

(ENTRY POINT B)

PWR CHK INDICATION NOT CAUSED BY EXCESSIVE LOAD FROM PD-TB2-6 OUT TO I/O FUNCTION.

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD REMOVED FROM PD-TB2-6 IF PREVIOUSLY REMOVED.
3) REMOVE LEAD AT PD-TB2-6 ON THE POWER SUPPLY SIDE OF THE TERMINAL BLOCK.
4) DISCONNECT CABLE CONNECTOR MULTI-J1 FROM THE MULTI LEVEL FILTER ASM.
5) CHECK CABLE REMOVED FROM PD-TB2-6 AND MULTI-J1-7 FOR SHORT TO GROUND.

DOES CABLE SHOW SHORT TO GROUND?
Y N

042
CHECK CABLE FOR AN OPEN.

IS CABLE OPEN?
Y N

043
1) CONNECT ALL CABLES PREVIOUSLY REMOVED.
RETURN TO THE CALLING CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

044
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

045
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001
0318	B	8	035

001

(ENTRY POINT A) 18

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
FIND THE CABLE ON PD-TB2-5 THAT GOES TO BA1-U5-D03 AND D04.
2) DISCONNECT THAT CABLE ONLY FROM PD-TB2-5.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

+12VDC LOAD ISOLATION ON MULTI LEVEL FILTER ASM.
UNLOAD THE 2400 MODEM FEATURE IF INSTALLED. IF NOT INSTALLED, BYPASS THIS QUESTION BY ANSWERING 'YES'.

REFER TO MLM SEC. 8 FOR LOCATION OF TERMINAL BLOCKS. LEADS TO BE REMOVED ARE ATTACHED TO BOTTOM SIDE OF THE TERMINAL BLOCK.

002

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM MODEM BA1-U5-D03 AND D04.
3) REMOVE ONE-HALF OF THE CARDS FROM THE BA1 BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN BA1 BOARD, CARDS, OR CABLE FROM PD-TB2-5. LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

003

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM PD-TB2-5.
3) DISCONNECT CABLE FROM MODEM BA1-U5-D03 AND D04.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

004
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

005
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

006
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE BA1 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

007
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

008
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLE FROM MODEM AT LOCATION:
BA1-U5-D03 AND D04.
3) METER THIS POINT TO GROUND ON THE BA1 BOARD TO LOCATE SHORT.

BA1 BOARD SHORTED?
Y N

009
1) DISCONNECT LEAD FROM PD-TB2-5.
2) METER WIRE REMOVED FROM PD-TB2-5 TO GROUND TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

010
1) REPLACE MODEM BOARD BA1.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

011
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ANY CABLES PREVIOUSLY REMOVED.
FIND THE CABLE ON PD-TB2-5 THAT GOES TO CA1-E1-B13.
3) DISCONNECT THAT CABLE ONLY FROM PD-TB2-5.
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

UNLOAD THE 1200 MODEM FEATURE IF INSTALLED. IF NOT INSTALLED, BYPASS THIS QUESTION BY ANSWERING 'YES'.

012
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM PD-TB2-5.
3) DISCONNECT CABLE FROM MODEM CA1-E1-B13.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

013
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM MODEM CA1-E1-B13.
3) REMOVE ONE-HALF OF THE CARDS FROM THE CA1 BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN CA1 BOARD, CARDS, OR CABLE FROM PD-TB2-5. LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

014
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK. AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

015
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE CA1 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

016
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

017
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLE FROM MODEM AT LOCATION:
CA1-E1-B13.
3) METER THIS POINT TO GROUND ON THE CA1 BOARD TO LOCATE SHORT.

CA1 BOARD SHORTED?
Y N

018
1) DISCONNECT LEAD FROM PD-TB2-5.
2) METER WIRE REMOVED FROM PD-TB2-5 TO GROUND TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

019
1) REPLACE MODEM BOARD CA1.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

020
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

021
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) FIND THE CABLE ON PD-TB2-5 THAT GOES TO THE CRT (PINS B08,B09,D09, & D10 ON THE CRT).
3) DISCONNECT THAT CABLE ONLY FROM PD-TB2-5 (DISCRETE CABLE TO CRT).
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

022
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM PD-TB2-5.
3) DISCONNECT FLAT CABLE FROM CRT PRINTED CIRCUIT BOARD (CRT-PC).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

023
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT FLAT CABLE REMOVED FROM CRT MLM SEC. 5 PRINTED CIRCUIT BOARD (CRT-PC).
3) UNPLUG CONNECTOR ON CRT-PC BOARD THAT GOES TO THE HIGH VOLTAGE CONVERTER.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

024
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE HIGH VOLTAGE CONVERTER ASSEMBLY.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

025
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPAIR OR REPLACE THE CRT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

026
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

027
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ALL CABLES PREVIOUSLY REMOVED.
3) DISCONNECT REMAINING CABLE FROM PD-TB2-5 (CABLE TO AA2 BOARD).
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

028
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE ONE-HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN AA2 BOARD, CARDS, OR CABLE FROM PD-TB2-5. LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

029
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

030
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

031
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

032
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTOR FROM PIN SIDE OF BOARD AT LOCATION: AA2-B3-A01.
3) METER THIS POINT TO GROUND ON THE AA2 BOARD TO LOCATE SHORT.

AA2 BOARD SHORTED?
Y N

033
1) DISCONNECT LEAD FROM PD-TB2-5.
2) METER WIRE REMOVED FROM PD-TB2-5 TO GROUND TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

034
1) REPLACE THE AA2 BOARD.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

035

(ENTRY POINT B)

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD REMOVED FROM PD-TB2-5 IF PREVIOUSLY REMOVED.
3) REMOVE LEAD AT PD-TB2-5 ON THE POWER SUPPLY SIDE OF THE TERMINAL BLOCK.
4) DISCONNECT CABLE CONNECTOR MULTI-J1 FROM THE MULTI LEVEL FILTER ASM.
5) CHECK CABLE REMOVED FROM PD-TB2-5 AND MULTI-J1-5 AND 6 FOR SHORT TO GROUND.

DOES CABLE SHOW SHORT TO GROUND?
Y N

036
CHECK CABLE FOR AN OPEN.

IS CABLE OPEN?
Y N

037
1) CONNECT ALL CABLES PREVIOUSLY REMOVED. RETURN TO THE CALLING CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

038
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

039
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

PWR CHK INDICATION NOT CAUSED BY EXCESSIVE LOAD FROM PD-TB2-5 OUT TO I/O FUNCTION.

MLM SEC 8 REF FOR PLUG LOCATIONS.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001
0318	B	5	019

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
3	011	0900	A

001

(ENTRY POINT A) 22

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ALL LEADS PREVIOUSLY DISCONNECTED.
3) DISCONNECT LEAD FROM PD-TB2-7 (CABLE TO AA2 BOARD).
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

-24VDC LOAD ISOLATION ON DUAL LEVEL FILTER ASM.

PD-TB2-7 SUPPLIES -24VDC TO THE AA2 BOARD AND DISK.

REFER TO MLM SEC 8 FOR LOCATION OF TERMINAL BLOCK. LEADS TO BE REMOVED ARE ATTACHED TO BOTTOM SIDE OF TERMINAL BLOCK.

AN UNDER VOLTAGE ON THE DUAL LEVEL FILTER ASM, -24V LEVEL, COULD BE CAUSED BY AN OVER LOAD ON THE 48VAC OUTPUT. IF UNDER VOLTAGE INDICATION OCCURED, REFER TO MAP 0300, ENTRY POINT G TO ISOLATE THE CAUSE OF THE PROBLEM.

POWER CHECK?
Y N

002
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEADS REMOVED FROM PD-TB2-7.
3) REMOVE CABLE FROM AA2-A4 PLUG ON CARD SIDE OF BOARD (PIN B13 CARRIES -24 VDC TO THE DISK).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

003
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM AA2-A4.
3) REMOVE LOGIC CARDS FROM DISK PLUG BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

004
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME. SET 'POWER ON' TO 'OFF', RESET, SET 'POWER ON' TO 'ON'. EACH TIME TO FIND THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

005
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT END OF CABLE THAT PLUGS INTO THE DISK AT PLUG POSITION B5.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

006
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE DISK FRU.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

007
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE THE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

008
IS THE 5321 MCU INSTALLED?
Y N

009
GO TO STEP 012,
ENTRY POINT C.

010
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE CABLE FROM AA2-U4 PLUG ON CARD SIDE OF BOARD (PIN IN CABLE CARRIES -24 VDC TO THE 5321 MCU).
3) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

011
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM AA2-A4.
3) CONNECT CABLE REMOVED FROM AA2-U4.

(-24 V DC PROBLEM IN 5321 MCU.)
GO TO MAP 0900, ENTRY POINT A.

012

(ENTRY POINT C)

---

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE ONE-HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN AA2 BOARD, CARDS OR CABLE FROM PD-TB2-7.
LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

013
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

014
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

015
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED. SET 'POWER ON' TO 'OFF'. PRESS RESET AND SET 'POWER ON' TO 'ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

016
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTOR FROM PIN SIDE OF BOARD AT LOCATION: AA2-B4-A14.
3) METER THIS POINT TO GROUND ON THE AA2 BOARD TO LOCATE SHORT.

AA2 BOARD SHORTED?
Y N

017
1) DISCONNECT LEAD FROM PD-TB2-7.
2) METER WIRE REMOVED FROM PD-TB2-7 TO GROUND TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

018
1) REPLACE THE AA2 BOARD.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

019

(ENTRY POINT B)

PWR CHK INDICATION NOT CAUSED BY EXCESSIVE LOAD FROM PD-TB2-7 OUT TO THE I/O FUNCTION.

MLM SEC. 8 REF FOR PLUG LOCATIONS.

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD REMOVED FROM PD-TB2-7 IF PREVIOUSLY REMOVED.
3) REMOVE LEAD AT PD-TB2-7 ON THE POWER SUPPLY SIDE OF THE TERMINAL BLOCK.
4) DISCONNECT CABLE CONNECTOR DUAL E5 ON DUAL LEVEL FILTER ASM.
5) CHECK CABLE DUAL-E5 FOR SHORT TO GND.

DOES CABLE SHOW SHORT TO GROUND?
Y N

020
CHECK CABLE FOR AN OPEN.

IS CABLE OPEN?
Y N

021
1) CONNECT ALL CABLES PREVIOUSLY REMOVED. RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

022
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

023
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND
CABLES TO THEIR ORIGINAL POSITIONS.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001
0318	B	5	018
0318	C	11	044

001

(ENTRY POINT A) 21

+24VDC LOAD ISOLATION ON DUAL LEVEL FILTER ASM.

DUAL-E3 OR E4 SUPPLIES +24 VDC TO THE PRINTER DIRECTLY AND DOES NOT GO THROUGH THE POWER DISTRIBUTION TERMINAL BLOCK, PD-TB2.

REFER TO MLM SEC. 8 FOR LOCATION OF TERMINAL BLOCKS.
LEADS TO BE REMOVED ARE ATTACHED TO BOTTOM SIDE OF THE TERMINAL BLOCK.

DOES THIS MACHINE HAVE A BELT PRINTER?
Y N
|
| 002
| GO TO PAGE 6, STEP 023,
| ENTRY POINT BA.
|
003
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ANY LEADS PREVIOUSLY DISCONNECTED.
3) DISCONNECT LEAD FROM DUAL LEVEL FILTER ASM TO PRINTER AT DUAL-E3 OR E4 (LARGE WIRE).
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).
|
POWER CHECK?
Y N

004
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD REMOVED FROM DUAL-E3 OR E4.
3) DISCONNECT LEAD FROM PRINTER TERMINAL BLOCK, PTR-TB1-11 OR -12 (285 LPM PRINTER PTR-TB1-18) (WIRE THAT COMES FROM DUAL-E3 OR E4).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

005
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD REMOVED FROM PTR-TB1-11 OR -12 (285 LPM PRINTER PTR-TB1-18)
3) DISCONNECT POSITIVE LEAD TO LARGE CAPACITOR C5 (#10 HEAVY WIRE).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

006
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CAPACITOR C5.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

007
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD REMOVED FROM LARGE CAPACITOR.
3) DISCONNECT REMAINING LEADS ONE AT A TIME FROM PTR-TB1-11 AND 12 (285 LPM PRINTER PTR-TB1-18)
4) SET 'POWER ON' TO 'OFF, RESET, SET 'POWER ON' TO 'ON', EACH TIME UNTIL POWER CHECK DOES NOT APPEAR IN ORDER TO IDENTIFY THE SHORTED LEAD.

IS LEAD CAUSING PROBLEM GOING TO THE PTR-K1 +24V CONTACTOR POINTS (#10 HEAVY WIRE)?
Y N

C5 CAPACITOR IS LOCATED ON BELT PRINTER TERMINAL BOARD (MLM SEC. 4.3.4).

008
IS LEAD CAUSING PROBLEM GOING TO THE PTR-K1 +24V CONTACTOR PICK COIL (#10 HEAVY WIRES)?
Y N

009
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REFER TO PRINTER LOGICS FOR FURTHER PROBLEM ISOLATION (DQ - DX LOGIC PAGES)
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

010
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CHECK CONTACTOR PTR-K1. REPLACE IF NECESSARY.
IF PROBLEM NOT CONTACTOR,
3) REFER TO PRINTER LOGICS FOR FURTHER PROBLEM ISOLATION (DQ - DX LOGIC PAGES).
AFTER CORRECTING THE PROBLEM,
4) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

011
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL)..
2) CONNECT LEAD REMOVED FROM PTR-TB1-11 OR -12 (285 LPM PRINTER PTR-TB1-18) (#10 HEAVY WIRE).
TO ISOLATE THE +24V CONTACTOR,
3) DISCONNECT LEAD COMING FROM THE +24V CONTACTOR (#10 HEAVY WIRE) AT 285 LPM PRINTER PTR-TB1-10 OR 11 OR 12.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

012
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CHECK CONTACTOR PTR-K1. CHECK FOR GROUNDED OR FAULTY CONTACTS. REPLACE IF NECESSARY.
IF PROBLEM NOT CONTACTOR,
3) CHECK CABLING TO AND FROM CONTACTOR FOR SHORT.
AFTER CORRECTING THE PROBLEM,
4) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

013
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) RECONNECT LEAD REMOVED FROM PTR-TB1-8,9, OR 10 (285 LPM PRINTER 10, 11 OR 12)
TO ISOLATE ANY POSSIBLE BAD CARDS, PULL CARDS ONE AT A TIME. SET 'POWER ON' TO 'OFF' PRESS RESET, AND SET 'POWER ON' TO 'ON' AFTER EACH CARD REMOVAL UNTIL POWER CHECK INDICATION DOES NOT APPEAR (CARDS ARE LOCATED ON PRINTER).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN WRONG LOCATION.

POWER CHECK INDICATION WITH ALL CARDS OUT?
Y N

014
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE LAST CARD REMOVED WITH A NEW CARD.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

015
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLES FROM THE PRINTER PLUG BOARD.
3) CONTINUITY CHECK BOARD FOR SHORT (CHECK BETWEEN EACH POSITION TO GROUND EACH VOLTAGE TO EACH OTHER).

PRINTER PLUG BOARD SHORTED?
Y N

016
1) CHECK ALL CABLES CARRYING +24 VDC FROM PTR-TB1-8,9, OR 10 FOR SHORT.
(285 LPM PRINTER PTR-TB1-10, 11 OR 12)
USE POINTS LISTED BELOW FOR ISOLATION (MLM SEC. 4).

+24V

PIN LOCATION
****

FROM: PRINTER TERM BLOCK PTR-TB1-8,9, AND -10
(285 LPM PRINTER PTR-TB1-10, 11 OR 12)
TO: PRINTER PLUG BOARD, HAMMER DRIVERS

ALSO
TO: PRINTER TERM BLOCK PTR-TB1-2,3

THEN
TO: +24V CLAMP AND HAMMER DRIVERS

AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

017
1) REPLACE PRINTER PLUG BOARD.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

018

(ENTRY POINT B)

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT ALL CABLES PREVIOUSLY REMOVED.
3) DISCONNECT CABLE CONNECTOR DUAL-E3 OR E4 FROM THE DUAL LEVEL FILTER ASM.
4) CHECK CABLE REMOVED FROM DUAL-E3 OR E4 AND PTR-TB1-11 OR -12 FOR SHORT TO GROUND.
(285 LPM PRINTER THIS POINT IS PTR-TB1-18).

(STEP 018 CONTINUES)

PWR CHK INDICATION NOT CAUSED BY EXCESSIVE LOAD FROM PTR-TB1-11 OR -12 OUT TO THE PRINTER (MLM - SEC. 8) 285 LPM PRINTER IS PTR-TB1-18.

(STEP 018 CONTINUED)
DOES CABLE SHOW SHORT TO GROUND?
Y N

019
CHECK CABLE FOR AN OPEN.

IS CABLE OPEN?
Y N

020
1) CONNECT ALL CABLES PREVIOUSLY REMOVED.
RETURN TO THE CALLING CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

021
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

022
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

023
(ENTRY POINT BA)
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT LEAD FROM DUAL LEVEL FILTER ASM AT DUAL-E3 OR E4 TO PD-TB2-8 (SMALL LEAD).
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

DUAL-E3 OR E4 SUPPLIES +24VDC TO THE AA2 BOARD, DISK, AND DISKETTE (MLM SEC. 8).

POWER CHECK?
Y N

024
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD REMOVED FROM DUAL LEVEL FILTER ASM AT DUAL-E3 OR E4 THAT WENT TO PD-TB2-8.
3) DISCONNECT LEAD FROM PD-TB2-8 (CABLE TO THE AA2 BOARD).
4) PRESS RESET.
5) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LEADS TO BE REMOVED ARE ATTACHED TO BOTTOM SIDE OF THE TERMINAL BLOCK.

POWER CHECK?
Y N

025
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD REMOVED FROM PD-TB2-8.
3) REMOVE CABLE FROM AA2-A3 PLUG POSITION OF CARD SIDE OF BOARD (PIN B05 CARRIES +24 VDC TO THE DISK).
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

026
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM AA2-A3.
3) REMOVE LOGIC CARDS FROM DISK PLUG BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

027
4) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THOSE JUST REMOVED AND SET 'POWER ON' TO 'OFF', RESET, SET 'POWER ON' TO ON' EACH TIME TO FIND THE CARD CAUSING THE POWER CHECK.
IF TROUBLE NOT FOUND,
3) REPLACE THE DISK FRU.
AFTER CORRECTING THE PROBLEM,
4) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

028
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT END OF CABLE THAT PLUGS INTO THE DISK AT PLUG POSITION A1.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

029
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE DISK FRU.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

030
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLE AT DISK FRAME, DISK-TB-6.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

031
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CHECK THE DISK BRAKE OR REPLACE THE DISK FRU.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

032
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE THE CABLE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

033
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT CABLE FROM AA2-B2 PLUG (PIN D10 CARRIES +24 VDC TO THE DISKETTE).
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

034
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT CABLE REMOVED FROM LOCATION AA2-B2.
3) REMOVE LOGIC CARD FROM DISKETTE PLUG BOARD.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

POWER CHECK?
Y N

035
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE LOGIC CARD WITH NEW LOGIC CARD.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

036
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REPLACE CABLE FROM AA2-B2 TO DISKETTE.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

037
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE ONE-HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

SHORT CAUSING THE PWR CHK INDICATION MAY BE IN AA2 BOARD, CARDS OR CABLE FROM PD-TB2-8. LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

038
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE CARDS JUST REMOVED AND SET 'POWER ON' TO 'OFF', RESET, SET 'POWER ON' TO ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

039
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE THE OTHER HALF OF THE CARDS FROM THE AA2 BOARD.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

LABEL EACH CARD AS IT IS REMOVED TO AVOID INSTALLING IN THE WRONG LOCATION.

POWER CHECK?
Y N

040
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CARDS ONE AT A TIME FROM THE LAST HALF REMOVED AND SET 'POWER ON' TO 'OFF', RESET, SET 'POWER ON' TO ON' EACH TIME TO ISOLATE THE CARD CAUSING THE POWER CHECK.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

041
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT MINI BUS CONNECTOR FROM PIN SIDE OF BOARD AT LOCATION: AA2-B5-E01.
3) METER THIS POINT TO GROUND ON THE AA2 BOARD TO LOCATE SHORT.

AA2 BOARD SHORTED?
Y N

042
1) DISCONNECT LEAD FROM PD-TB2-8.
2) METER LEAD REMOVED FROM PD-TB2-8 TO GROUND TO LOCATE SHORT.
AFTER CORRECTING THE PROBLEM,
3) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

043
1) REPLACE AA2 BOARD.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

044

PWR CHK INDICATION NOT CAUSED BY EXCESSIVE LOAD FROM PD-TB2-8 OUT TO I/O FUNCTION.

(ENTRY POINT C)

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) CONNECT LEAD REMOVED FROM PD-TB2-8.
3) REMOVE LEAD AT PD-TB2-8 ON THE POWER SUPPLY SIDE OF THE TERMINAL BLOCK.
4) DISCONNECT CABLE CONNECTOR DUAL-E3 OR E4 FROM THE DUAL LEVEL FILTER ASM.
5) CHECK CABLE REMOVED FROM DUAL-E3 OR E4 AND PD-TB2-8 FOR SHORT TO GROUND.

DOES CABLE SHOW SHORT TO GROUND?
Y N

045
CHECK CABLE FOR AN OPEN.

IS CABLE OPEN?
Y N

046
1) CONNECT ALL CABLES PREVIOUSLY REMOVED.
RETURN TO THE CALLING CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

047
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

048
1) REPLACE CABLE.
AFTER CORRECTING THE PROBLEM,
2) INSTALL ALL REMOVED CARDS AND CABLES TO THEIR ORIGINAL POSITIONS.

049
1) CONNECT ALL CABLES PREVIOUSLY REMOVED.
RETURN TO THE CALLING CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0105	A	1	001
0300	A	1	001
0635	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
11	053	0300	B

001

(ENTRY POINT A) 21

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'ON'.
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
5) CHECK ALL FANS AND THE DISKETTE MOTOR.
(IF THIS MACHINE HAS A SERIAL PRINTER, BE SURE TO CHECK THE SMALL FAN WITHIN THE PRINTER ENCLOSURE.)

IS A BELT PRINTER ON THIS SYSTEM?
Y N

002
DO ALL COOLING FANS RUN EXCEPT THE SERIAL PRINTER?
Y N

003
GO TO PAGE 2, STEP 011, ENTRY POINT B.

004
MEASURE 40-60V AC FROM DUAL-20 TO DUAL-21.

IS 40-60V AC PRESENT?
Y N

AC VOLTAGE PROBLEM ISOLATION CHART.

1) POWER SUPPLY FAN.
2) PRINTER FAN.
3) FAN OVER DISK.
4) DISKETTE MOTOR.
5) DISK MOTOR.
6) FERRO.

POWER MAPS

SYSTEM 32

005
1) MEASURE 208-230V AC ON FERRO, TB1-1 TO TB1-4 OR 5 DEPENDING ON WHAT VOLTAGE THE MACHINE IS WIRED TO) (UPPER LEFT HAND CORNER OF POWER COMPARTMENT).

IS 208-230V AC PRESENT?
Y N

006
GO TO STEP 011,
ENTRY POINT B.

007
1) REPLACE DUAL LEVEL FILTER ASM.
2) REPLACE FERRO & FERRO CAP OR CABLES TO FERRO.
(CAUTION: FERRO WEIGHS ABOUT 38 POUNDS)

008
IS VOLTAGE PRESENT AT FAN CONNECTOR?
Y N

009
REPLACE CABLE (AC POWER CABLE TO SERIAL PRINTER).

010
REPLACE FAN.

011

(ENTRY POINT B)

WHEN 'POWER ON' SWITCH IS SET TO 'ON' POSITION:
1) COOLING FANS RUNNING.
2) DISKETTE MOTOR TURNING
3) 40 - 60 VAC PRESENT ON DUAL E20 - E21

DO ABOVE INDICATIONS EXIST?
Y N

012
1) COOLING FANS RUNNING.
2) DISKETTE MOTOR TURNING
3) 40 - 60 VAC PRESENT

DOES ONE OR MORE OF THESE CONDITIONS EXIST?
Y N

013
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) CHECK FUSE 101 & 102 MLM SEC 8.
ARE FUSES GOOD?
Y N

014
REPLACE FUSE. CHECK SYSTEM OUT AGAIN

015
1) SET MAIN LINE SWITCH TO 'OFF'. (METER RANGE ON 500VAC SCALE.)
2) MEASURE INPUT AC ON THE AC-TB1 BLOCK.
(ATTACH METER LEADS WITH MAIN LINE SWITCH OFF.)

FROM ACP-E9
AC-TB1-5 (FANS COM)
AND
AC-TB1-6
208/230 V AC
TO ACP-E11
AC-TB1-7 (FANS)
AND
AC-TB1-8

3) SET MAIN LINE SWITCH TO 'ON'.
4) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

ARE THE AC VOLTAGES NORMAL ON THE AC TERMINALS WHEN 'POWER ON' SWITCH IS SET TO 'ON' POSITION?
Y N

016
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) MEASURE AC ON THE AC POWER BOARD ACROSS THE TERMINALS.
(ATTACH METER LEADS WITH MAIN LINE SWITCH 'OFF'.)

FROM ACP-E9
(FANS COM)
(FERRO COM)
208/230 V AC
TO ACP-E11
(FANS)
(FERRO)

4) SET MAIN LINE SWITCH TO 'ON'.
5) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
(STEP 016 CONTINUES)

208/230 VAC IS ROUTED TO AC TERMINAL BLOCK, (AC-TB1, LOCATED JUST UNDER THE POWER SEQUENCE CARD), THROUGH K1 AND K2 RELAYS ON THE AC POWER BOARD.

THE POINTS BELOW SHOW THE AC DISTRIBUTION FROM THE AC POWER BOARD TO AC-TB1.

ALL FANS, THE DISKETTE MOTOR, AND FERRO RECEIVE INPUT AC FROM AC-TB1-5 OR -6, AND AC-TB1-7 OR -8 CONTROLLED BY THE K1 RELAY ON THE AC POWER BOARD.

AC VOLTAGE IS SUPPLIED FROM CUSTOMER OUTLET INTO LINE CORD THROUGH LINE FILTER ASM, THEN TO THE MAIN LINE SWITCH, THROUGH FUSE 101 & 102 TO THE AC BOARD FROM AC BOARD TO AC POWER DISTRIBUTION TO THE AC FANS, ETC.

SEE MLM SEC. 8

(STEP 016 CONTINUED)

ARE THE AC VOLTAGES PRESENT ON THE AC BOARD TERMINALS WHEN 'POWER ON' IS SET TO THE 'ON POSITION?

Y N

017

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) JUMPER SC-TP-D03 TO SC-TP-B08 (GND) ON SEQ CARD.
3) OBSERVE K1 FOR MOTION.

K1 IS LARGE RELAY ON BOTTOM LEFT OF AC POWER BOARD.

THE FANS SHOULD ALL OPERATE WHEN K1 IS PICKED.

DOES K1 PICK AND THE FANS RUN?

Y N

018

1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE JUMPER SC-TP-D03 TO SC-TP-B08.
3) REMOVE THE CABLE AT AC BOARD, ACP-J1.
4) JUMPER ACP-J1-B05 TO ACP-J1-B08,(GND).
5) SET MAIN LINE SWITCH TO 'ON'.
6) OBSERVE K1 FOR MOTION.

DANGER: THERE IS LINE VOLTAGE ON THE AC BOARD, SO TAKE CARE WHEN JUMPERING.

K1 IS LARGE RELAY ON BOTTOM LEFT OF AC POWER BOARD. REFER TO MLM SEC. 8

THE FANS SHOULD ALL OPERATE WHEN K1 IS PICKED.

DOES K1 PICK?

Y N

019

REMOVE JUMPER ACP-J1-B05 TO ACP-J1-B08.
REPLACE AC POWER BOARD.

020

1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE JUMPER ACP-J1-B05 TO ACP-J1-B08.
3) CHECK FOR SHORT TO GROUND.
4) REMOVE POWER SEQ CARD.

-PICK K1.

	PIN LOCATION
	**********
FROM:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--P05
TO:	
AC POWER BOARD	ACP-J1-B05
	REMOVED CABLE NOT PLUG

(STEP 020 CONTINUES)

(STEP 020 CONTINUED)
LINE CORRECT (NOT SHORTED TO GROUND)?
Y N

021
REPAIR OR REPLACE K1 CABLING.

022
CHECK CABLE FOR OPEN.

IS CABLE CORRECT?
Y N

023
REPAIR OR REPLACE K1 CABLING.

024
1) INSTALL ACP-J1 CABLE.
2) REMOVE FUSE 102.
3) CHECK FOR SHORT TO GROUND FROM SIDE OF FUSE HOLDER #102 TO AC POWER BOARD E4.

LINE CORRECT (NOT SHORTED TO GROUND)?
Y N

025
1) INSTALL FUSE 102.
2) REPAIR OR REPLACE CABLING.

026
CHECK CABLE FOR OPEN.

IS CABLE CORRECT?
Y N

027
1) INSTALL FUSE 102.
2) REPAIR OR REPLACE CABLING.

028
1) INSTALL FUSE 102.
2) REPLACE THE POWER SEQUENCE CARD.
IF FAILURE PERSISTS
3) REPLACE AC POWER BOARD.

029
(REMOVE JUMPER FROM SC-TP-D03 TO SC-TP-B08).
RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

030
REPAIR OR REPLACE CABLING FROM THE AC POWER BOARD TO THE AC TERMINAL BLOCK.

031
RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

032
1) REPAIR OR REPLACE DEFECTIVE FAN OR CABLE TO FAN WHICH WAS OBSERVED TO BE INOPERATIVE.

2) REPAIR OR REPLACE DEFECTIVE DISKETTE MOTOR OR CABLE TO MOTOR.
3) REPAIR OR REPLACE DEFECTIVE FERRO & FERRO CAP OR CABLE TO FERRO.
(CAUTION: FERRO WEIGHS ABOUT 38 POUNDS)

033
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) PRESS RESET.
3) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

DOES THE DISK MOTOR TURN WHEN 'POWER ON' IS SET TO THE 'ON' POSITION?
Y N

034
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).

2) INSTALL CABLE EXTENDER AT DISK-B5 PLUG POSITION ON THE DISK. MLM SEC. 2.0.0
3) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

4) MEASURE -4 VDC TO THE DISK.
-(3.68-4.32 VDC)

DISK DISK-B5-B06
CIRCUIT BOARD

5) MEASURE +6 VDC TO THE DISK.
+(5.4-6.6 VDC)

DISK DISK-B5-B11
CIRCUIT BOARD

6) MEASURE -24 VDC TO THE DISK.
(STEP 034 CONTINUES)

(STEP 034 CONTINUED)
-(21.6-26.4 VDC)
|
| DISK DISK-B5-B13
| CIRCUIT BOARD
|
7) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
|
8) INSTALL CABLE AT THE DISK-B5 PLUG POSITION ON THE DISK.
|
9) INSTALL CABLE EXTENDER AT DISK-A1 PLUG POSITION ON THE DISK. MLM SEC. 2.
10) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
|
11) MEASURE +24 VDC TO THE DISK.
+(21.6-26.4 VDC)
|
| DISK DISK-A1-B02
| CIRCUIT BOARD
|
| ALSO:
| DISK DETB1-6
| TERM BLOCK (DISK BRAKE)
|
VOLTAGES CORRECT TO THE DISK?
Y N
|
| 035
| USING INFORMATION IN THE LISTS BELOW, ISOLATE TO THE FAILING FIELD REPLACEABLE UNIT FOR THE VOLTAGE THAT WAS MISSING.
| |
| 1) MISSING -4 VDC TO THE DISK.
| USE SIGNAL POINTS LISTED BELOW:
|
| (3.68-4.32 VDC)
| | PIN LOCATION
| | **********
| | FROM:
| | PWR DISTRIBUTION PD-TB2-4
| | TERM BLOCK
| | TO:
| | I/O BOARD AA2-B3-A14
| | I/O BOARD AA2-A4-B08
| | DISK DISK-B5-B06
| | CIRCUIT BOARD
|
| 2) MISSING +6 VDC TO THE DISK.
| USE SIGNAL POINTS LISTED BELOW:
|
| +(5.4-6.6 VDC)
| | PIN LOCATION
| | **********
| | FROM:
| (STEP 035 CONTINUES)
|
|
|

(STEP 035 CONTINUED)
| PWR DISTRIBUTION PD-TB2-3
| TERM BLOCK
| TO:
| I/O BOARD AA2-B3-E01, -B4-A01
| I/O BOARD AA2-A4-B11
| DISK DISK-B5-B11
| CIRCUIT BOARD

3) MISSING -24 VDC TO THE DISK.
USE SIGNAL POINTS LISTED BELOW:

-(21.6-26.4 VDC)
| PIN LOCATION
| **********
| FROM:
| PWR DISTRIBUTION PD-TB2-7
| TERM BLOCK
| TO:
| I/O BOARD AA2-B4-A14
| I/O BOARD AA2-A4-B13
| DISK DISK-B5-B13
| CIRCUIT BOARD

4) MISSING +24 VDC TO THE DISK.
USE SIGNAL POINTS LISTED BELOW:

+24 VDC. +(21.6-26.4 VDC)
| PIN LOCATION
| **********
| FROM:
| PWR DISTRIBUTION PD-TB2-8
| TERM BLOCK
| TO:
| I/O BOARD AA2-B5-E01
| I/O BOARD AA2-A3-B02, -B03
| DISK DISK-A1-B02
| CIRCUIT BOARD

| ALSO TO:
| DISK DISK-TB1-6
| TERM BLOCK (DISK BRAKE)

036
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) PROBE SC-TP-B03, (-PICK K2 LINE).
3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
5) OBSERVE PROBE AS POWER SWITCH IS TURNED ON.

DOES THE LINE GO TO 'DOWN' POSITION AFTER THE 'POWER ON' SWITCH IS SET TO THE 'ON' POSITION?
Y N

PROBE GROUND IS ON SC-TP-B08. FRAME CAN ALSO BE USED FOR PROBE GND. +5VDC PROBE POWER IS LOCATED ON AA1-B5-B02 OR AA1-C5-B02.

037
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) PROBE SC-TP-B11, (+DISK BRAKE FAULT).

3) PRESS RESET.
4) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).
5) OBSERVE PROBE AS POWER SWITCH IS TURNED ON.

IS THE LINE DOWN AFTER SHORT FLUCTUATION WHEN 'POWER ON' SWITCH IS SET TO THE 'ON' POSITION?
Y N

PROBE GROUND IS ON SC-TP-B08. FRAME CAN ALSO BE USED FOR PROBE GND. +5VDC PROBE POWER IS LOCATED ON AA1-B5-B02 OR AA1-C5-B02.

038
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) REMOVE THE POWER SEQUENCE CARD.
4) REMOVE CARDS FROM GATE AT AA2-D4, AA2-E2, AND AA2-G2.

5) CHECK CONTINUITY AND FOR SHORT TO GROUND.

THIS INDICATES AN OPEN CIRCUIT FROM THE +DISK BRAKE FAULT LINE.

+DISK BRAKE FAULT.

	PIN LOCATI
	**********
FROM:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--D06 MLM SEC. 8
TO:	
AA2 BOARD	AA2-D4-B08
AND TO:	

(STEP 038 CONTINUES)

(STEP 038 CONTINUED)

AA2 BOARD	AA2-E2-D06
AND TO:	
AA2 BOARD	AA2-G2-D06

DOES LINE SHOW CONTINUITY?

Y N

039

ISOLATE THE PROBLEM TO THE FAILING FIELD REPLACEABLE UNIT.

1) USE THE POINTS LISTED BELOW:

+DISK BRAKE FAULT.

	PIN LOCATION
	**********
FROM:	
AA2 BOARD (ORIGINATES)	AA2-D4-B08
TO:	
AA2 BOARD	AA2-E2-D06
AA2 BOARD	AA2-G2-D06
AA2 BOARD	AA2-J1-D11
EDGE CONNECTOR THEN THROUGH EDGE CONNECTOR TO AA1 BOARD	
TO:	
AA1 BOARD	AA1-J6-D02
EDGE CONNECTOR AA1 BOARD	AA1-A2-D06
CABLE CONNECTOR POWER SEQUENCE CARD CONNECTOR	MAPLE--D06

040

1) REPLACE THE POWER SEQUENCE CARD.
2) REPLACE THE CARD AT AA2-D4, AA2-E2, OR AA2-G2 AS REQUIRED.

041

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) PRESS RESET.

RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

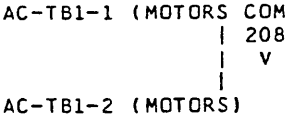
042

208/230 VAC IS ROUTED TO AC TERMINAL BLOCK, (AC-TB1, LOCATED JUST UNDER THE POWER SEQUENCE CARD), THROUGH K1 AND K2 RELAYS ON THE AC POWER BOARD.

THE POINTS BELOW SHOW THE AC DISTRIBUTION FROM THE AC POWER BOARD TO AC-TB1.

THE DISK MOTOR RECIEVES INPUT AC FROM AC-TB1-1, AND AC-TB1-2 CONTROLLED BY THE K2 RELAY ON THE AC POWER BOARD.

1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'. (METER RANGE ON 500VAC SCALE.)
3) MEASURE INPUT AC ON THE AC-TB1 BLOCK.
(ATTACH METER LEADS WITH MAIN LINE SWITCH 'OFF'.)
ONE LEAD TO 'MOTORS COM', THE OTHER TO 'MOTORS'.



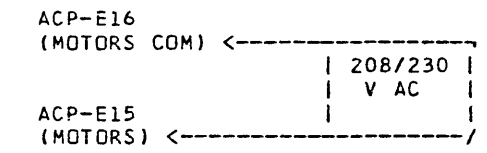
4) SET MAIN LINE SWITCH TO 'ON'.
5) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

ARE THE AC VOLTAGES NORMAL ON THE AC TERMINAL BLOCK AS ATTEMPT MADE TO POWER ON?

Y N

043
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) MEASURE AC ON THE AC POWER BOARD ACROSS
THE TERMINALS LISTED BELOW:

ATTACH METER LEADS WITH MAIN LINE SWITCH OFF.
ONE LEAD TO 'MOTORS COM', THE OTHER TO 'MOTORS'.



4) SET MAIN LINE SWITCH TO 'ON'.
5) SET 'POWER ON' TO 'ON' (OPERATORS PANEL).

ARE THE AC VOLTAGES NORMAL ON THE AC BOARD TERMINALS AS ATTEMPT IS MADE TO POWER ON?
Y N

044
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) PRESS RESET.
3) JUMPER SC-TP-B03 TO SC-TP-B08 (GND).

4) OPERATE K2 BY TOUCHING THIS JUMPER TO GROUND.

DOES K2 PICK?
Y N

K2 IS THE MIDDLE RELAY ON BOTTOM OF AC POWER BOARD (MLM SEC. 8)

LISTEN FOR AUDIBLE CLICKS OF K2 AS IT PICKS AND OBSERVE K2 FOR MOTION.

045
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE THE CABLE AT AC BOARD, ACP-J1.
3) SET MAIN LINE SWITCH TO 'ON'.
(DANGER: THERE IS LINE VOLTAGE ON THE AC BOARD, SO TAKE CARE WHEN JUMPERING.)

4) JUMPER ACP-J1-D05 TO ACP-J1-B08,(GND).
5) WHEN JUMPER IS PUT TO GROUND, RELAY SHOULD PICK. WHEN REMOVED FROM GROUND RELAY SHOULD DROP.

(K2 IS THE MIDDLE RELAY ON BOTTOM OF AC POWER BOARD.)

(LISTEN FOR AUDIBLE CLICKS OF K2 AS IT PICKS AND OBSERVE K2 FOR MOTION.

DOES K2 PICK?
Y N

046
REPLACE AC POWER BOARD.

047
1) SET MAIN LINE SWITCH TO 'OFF'.
2) CHECK CABLE CONTINUITY AND FOR SHORT TO GROUND BETWEEN MAPLE--M05 AND ACP-J1-D05.

UNPLUG CABLE AT AC BOARD WHEN MEASURING FOR SHORT TO GROUND.

CABLING CORRECT (NOT OPEN OR SHORTED TO GND)?
Y N

048
ISOLATE THE PROBLEM TO THE FAILING FIELD REPLACEABLE UNIT.

1) USE THE POINTS LISTED BELOW:

-PICK K2

	PIN LOCATION
	**********
FROM:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--M05
TO:	
AC POWER BOARD	ACP-J1-D05

049
REPLACE THE POWER SEQUENCE CARD.

050
1) CHECK AC WIRING ON AC BOARD AND TO AC TERMINAL BLOCK.
IF CABLES ARE CORRECT,
2) REPLACE THE AC POWER BOARD.

051
1) REPAIR OR REPLACE CABLING FROM THE AC POWER BOARD TO THE AC TERMINAL BLOCK.

052
1) CHECK AC TO DISK MOTOR.
2) RESET THE OVERLOAD BUTTON ON DISK MOTOR.
3) REPLACE THE DISK MOTOR.

053
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) PRESS RESET.
RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.
(IF PLACE OF LAST EXIT IS OTHER THAN POWER MAPS, THEN
GO TO MAP 0300, ENTRY POINT B.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001

001

(ENTRY POINT A) 18

1) CHECK GROUND CIRCUIT CONTINUITY.

GROUND.

	PIN LOCATION
FROM:	
SWITCH ON CE PANEL	LAMP TEST SW PIN 6, COM
TO:	
POWER SEQUENCE CARD, TEST POINT	SC-TP-B08 (MEASURE THIS POINT WITH SEQ CARD INSTALLED)

LINE CORRECT (NOT OPEN)?
Y N

002

BELOW IS A POINT-TO-POINT CONNECTION LIST OF THE GROUND CIRCUIT. ISOLATE TO A FIELD REPLACEABLE UNIT USING THIS INFORMATION.

GROUND.

	PIN LOCATION
FROM:	
SWITCH ON CE PANEL	LAMP TEST SW PIN 6, COM
TO:	
Y2 CONNECTOR	CEP-Y2-D08
CPU BOARD	AA1-B5-D08
CPU BOARD	AA1-A2-D08
POWER SE-	MAPLE--D08

(STEP 002 CONTINUES)

LAMP TEST.
CONTROL LINE CHECKOUT FOR OPEN OR SHORTED SIGNAL LINES.

THIS MAP CONTAINS LISTS OF POINT TO POINT CONNECTIONS. SIGNAL LINE NAME IS GIVEN AT THE TOP OF EACH LIST. GROUND CIRCUIT LIST IS INCLUDED FIRST FOR LATER PROBING REFERENCE.

IN GENERAL:
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) REMOVE POWER SEQUENCE CARD FOR ALL MEASUREMENTS, EXCEPT WHERE OTHERWISE NOTED. THIS OPENS SIGNAL PATHS.

IF AN OPEN OR SHORT IS FOUND, ISOLATE TO A FIELD REPLACEABLE UNIT USING THE INFORMATION IN THE LIST.

LAMP TEST SWITCH LOCATION 7.2.10

(STEP 002 CONTINUED)
QUENCE CARD
CONNECTOR
POWER SE- SC-TP-B08
QUENCE CARD, (MEASURE THIS
TEST POINT POINT WITH SEQ
CARD INSTALLED)

003
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-LAMP TEST.

	PIN LOCATION
	**********
FROM:	
SWITCH ON CE PANEL	LAMP TEST SW PIN 8, N/O
TO:	
POWER SE-QUENCE CARD CONNECTOR	MAPLE--B08

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

004
BELOW IS A POINT-TO-POINT CONNECTION LIST OF THE LAMP TEST CIRCUIT. ISOLATE TO A FIELD REPLACEABLE UNIT USING THIS INFORMATION.

-LAMP TEST.

	PIN LOCATION
	**********
FROM:	
SWITCH ON CE PANEL	LAMP TEST SW PIN 8, N/O
TO:	
FLAT CABLE	CEP-Y2-B09
CPU BOARD	AA1-B5-B09
CPU BOARD	AA1-A2-B08
POWER SE-QUENCE CARD CONNECTOR	MAPLE--B08

005
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-DISPLAY POWER CHECK DOTTED IS DEVELOPED FROM -LAMP TEST ON THE POWER SEQUENCE CARD.

	PIN LOCATION
	**********
FROM:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--B07
TO:	
DISCRETE CABLE TO OP PANEL LED	POWER CHECK LED, SHORT LEG

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

006
BELOW IS A POINT-TO-POINT CONNECTION LIST OF THE DISPLAY CIRCUIT. ISOLATE TO A FIELD REPLACEABLE UNIT USING THIS INFORMATION.

1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-DISPLAY POWER CHECK DOTTED IS DEVELOPED FROM -LAMP TEST ON THE POWER SEQUENCE CARD.

	PIN LOCATION
	**********
FROM:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--B07
TO:	
CPU BOARD	AA1-A2-B07
CPU BOARD	AA1-B2-D13
DISCRETE CABLE TO OP PANEL LED	POWER CHECK LED, SHORT LEG

007
CHECK CONTINUITY AND FOR SHORT TO GROUND.

-DISPLAY THERMAL CHECK DOTTED DEVELOPED FROM -LAMP TEST ON THE POWER SEQUENCE CARD.

	PIN LOCATION
	**********
FROM:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--B06
TO:	
DISCRETE CABLE TO OP PANEL LED	TH CHK LED, SHORT LEG

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

008
BELOW IS A POINT-TO-POINT CONNECTION LIST OF THE DISPLAY CIRCUIT. ISOLATE TO A FIELD REPLACEABLE UNIT USING THIS INFORMATION.

1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-DISPLAY THERMAL CHECK DOTTED DEVELOPED FROM -LAMP TEST ON THE POWER SEQUENCE CARD.

	PIN LOCATION
	**********
FROM:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--B06
TO:	
CPU BOARD	AA1-A2-B06
CPU BOARD	AA1-B2-B13
DISCRETE CABLE TO OP PANEL LED	TH CHK LED, SHORT LEG

D MAP 0311-3

009
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-PREV POWER FAULT DISPLAY.

	PIN LOCATION
	**********
FROM:	
SWITCH ON CE PANEL	PREV PWR FAULT PIN 8, N/O
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE-B09

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

010
BELOW IS A POINT-TO-POINT CONNECTION LIST OF THE CIRCUIT. ISOLATE TO A FIELD REPLACEABLE UNIT USING THIS INFORMATION.

-PREV POWER FAULT DISPLAY.

	PIN LOCATION
	**********
FROM:	
SWITCH ON CE PANEL	PREV PWR FAULT PIN 8, N/O
TO:	
Y2 CONNECTOR	CEP-Y2-D11
CPU BOARD	AA1-B5-D11
CPU BOARD	AA1-A2-B09
POWER SEQUENCE CARD CONNECTOR	MAPLE-B09

011
INSTALL POWER SEQUENCE CARD REMOVED. RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001

001

(ENTRY POINT A) 18

1) CHECK GROUND CIRCUIT CONTINUITY.

GROUND.

	PIN LOCATION **********
FROM: SWITCH ON OPERATOR PANEL	COMMON ON SW IS GROUND (#5 POSITION, CENTER)
TO: POWER SEQUENCE CARD, TEST POINT	SC-TP-B08 (MEASURE THIS POINT WITH SEQ CARD INSTALLED)

LINE CORRECT (NOT OPEN)?
Y N

002
BELOW IS A POINT-TO-POINT CONNECTION LIST OF THE GROUND CIRCUIT. ISOLATE TO A FIELD REPLACEABLE UNIT USING THE INFORMATION IN THE LIST.

1) CHECK GROUND CIRCUIT CONTINUITY.

GROUND.

	PIN LOCATION **********
FROM: SWITCH ON OPERATOR PANEL	COMMON ON SW IS GROUND (#5 POSITION, CENTER)
TO: (STEP 002 CONTINUES)	

CONSOLE POWER ON. CONTROL LINE CHECKOUT FOR OPEN OR SHORTED SIGNAL LINES.

THIS MAP CONTAINS LISTS OF POINT TO POINT CONNECTIONS. SIGNAL LINE NAME IS GIVEN AT THE TOP OF EACH LIST. GROUND CIRCUIT LIST IS GIVEN FIRST FOR LATER PROBING REFERENCE.

IN GENERAL:
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL)
2) SET MAIN LINE SWITCH TO 'OFF'.
3) REMOVE POWER SEQUENCE CARD FOR ALL MEASUREMENTS, EXCEPT WHERE OTHERWISE NOTED. THIS OPENS SIGNAL PATHS.

IF AN OPEN OR SHORT IS FOUND, ISOLATE TO A FIELD REPLACEABLE UNIT USING THE INFORMATION IN THE LIST.

MLM SEC. 7)

(STEP 002 CONTINUED)

CPU BOARD	AA1-B2-D04
CPU BOARD	AA1-B2-D08
POWER SE-	MAPLE--M08,
QUENCE CARD	-P08,
CONNECTOR	-M09,
	-P09.
POWER SE-	SC-TP-B08
QUENCE CARD,	(MEASURE THIS
TEST PIN	POINT WITH SEQ
	CARD INSTALLED)

003
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

'POWER ON' SWITCH.

	PIN LOCATION
	**********
FROM:	
SWITCH ON	'POWER ON' SWITCH
OPERATOR PANEL	N/O CONTACT (#4 POSITION)
TO:	
POWER SE-	MAPLE--B04
QUENCE CARD	
CONNECTOR	

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

004
BELOW IS A POINT-TO-POINT CONNECTION LIST OF THE CIRCUIT. ISOLATE TO A FIELD REPLACEABLE UNIT USING THE INFORMATION IN THE LIST.

1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

'POWER ON' SWITCH.

	PIN LOCATION
	**********
FROM:	
SWITCH ON	'POWER ON' SWITCH
OPERATOR PANEL	N/O CONTACT (#4 POSITION)
TO:	
CPU BOARD	AA1-B2-B03
CPU BOARD	AA1-A2-B04
POWER SE-	MAPLE--B04
QUENCE CARD	
CONNECTOR	

005
INSTALL THE POWER SEQUENCE CARD REMOVED. RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

03SEP76 PN2594613
EC828777 PEC--------

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001

001

(ENTRY POINT A) .18

1) CHECK GROUND CIRCUIT CONTINUITY.

GROUND.

	PIN LOCATION **********
FROM: SWITCH ON OPERATOR PANEL TO:	COMMON ON SW IS GROUND (#5 POSITION, CENTER)
TO: POWER SEQUENCE CARD, TEST POINT	SC-TP-B08 (MEASURE THIS POINT WITH SEQ CARD INSTALLED)

LINE CORRECT (NOT OPEN)?
Y N

002
BELOW IS A POINT-TO-POINT CONNECTION LIST OF THE GROUND CIRCUIT. ISOLATE TO A FIELD REPLACEABLE UNIT USING INFORMATION IN THE LIST.

1) CHECK GROUND CIRCUIT CONTINUITY.

GROUND.

	PIN LOCATION **********
FROM: SWITCH ON OPERATOR PANEL TO:	COMMON ON SW IS GROUND (#5 POSITION, CENTER)

(STEP 002 CONTINUES)

CONSOLE POWER OFF. CONTROL LINE CHECKOUT FOR OPEN OR SHORTED SIGNAL LINES.

THIS MAP CONTAINS LISTS OF POINT TO POINT CONNECTIONS. SIGNAL LINE NAME IS GIVEN AT THE TOP OF EACH LIST. GROUND CIRCUIT LIST IS GIVEN FIRST FOR LATER PROBING REFERENCE.

IN GENERAL:
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) REMOVE POWER SEQUENCE CARD FOR ALL MEASUREMENTS, EXCEPT WHERE OTHERWISE NOTED. THIS OPENS SIGNAL PATHS.

IF AN OPEN OR SHORT IS FOUND, ISOLATE TO A FIELD REPLACEABLE UNIT USING THE INFORMATION IN THE LIST.

MLM SEC. 7

POWER MAPS

SYSTEM 32

PAGE 2 OF 2

(STEP 002 CONTINUED)

CPU BOARD	AA1-B2-D04
CPU BOARD	AA1-B2-D08
POWER SE-	MAPLE--M08
QUENCE CARD	-P08,
CONNECTOR	-M09,
	-P09.
POWER SE-	SC-TP-B08
QUENCE CARD,	(MEASURE THIS
TEST POINT	POINT WITH SEQ
	CARD INSTALLED)

003

1) CHECK CONTINUITY AND FOR SHORT TO GROUND.
'POWER ON' SWITCH.

	PIN LOCATION
	**********
FROM:	
SWITCH ON	'POWER ON' SWITCH
OPERATOR PANEL	N/C CONTACT (#6 POSITION)
	MAPLE--D03

TO:
POWER SE-
QUENCE CARD
CONNECTOR

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

004

BELOW IS A POINT-TO-POINT CONNECTION LIST OF THE CIRCUIT. ISOLATE TO A FIELD REPLACEABLE UNIT USING INFORMATION IN THE LIST.

1) CHECK CONTINUITY AND FOR SHORT TO GROUND.
'POWER ON' SWITCH

	PIN LOCATION
	**********
FROM:	
SWITCH ON	'POWER ON' SWITCH
OPERATOR PANEL	N/C CONTACT (#6 POSITION)

TO:	
CPU BOARD	AA1-B2-D02
CPU BOARD	AA1-A2-B02
POWER SE-	MAPLE--D03
QUENCE CARD	
CONNECTOR	

005

INSTALL THE POWER SEQUENCE CARD REMOVED. RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

03SEP76 PN2594614

EC828777 PEC-------

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001

001

(ENTRY POINT A) 18

1) CHECK GROUND CIRCUIT CONTINUITY.

CONTROL GROUND.

	PIN LOCATION
FROM: AC POWER BOARD	ACP-J2-5
TO: DUAL LEVEL FILTER ASM	DUAL J4-3

START/STOP DUAL LEVEL FILTER ASM. CONTROL LINE CHECKOUT FOR OPEN OR SHORTED SIGNAL LINES.

THIS MAP CONTAINS LISTS OF POINT TO POINT CONNECTIONS. SIGNAL LINE NAME IS GIVEN AT THE TOP OF EACH LIST. GROUND CIRCUIT LIST IS GIVEN FIRST FOR LATER PROBING REFERENCE.

IN GENERAL:
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL)
2) SET MAIN LINE SWITCH TO 'OFF'.
3) REMOVE POWER SEQUENCE CARD FOR ALL MEASUREMENTS, EXCEPT WHEN OTHERWISE NOTED. THIS OPENS SIGNAL PATHS.

IF AN OPEN OR SHORT IS FOUND, ISOLATE TO A FIELD REPLACEABLE UNIT USING THE INFORMATION IN THE LIST. IF NO PROBLEM FOUND, CONTINUE TO NEXT LIST.

MLM SEC. 8

LINE CORRECT (NOT OPEN)?
Y N

002
IF ERROR WAS ISOLATED TO A CABLE, REPAIR OR REPLACE. IF OTHER, REPLACE AS REQUIRED.

003
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

UNPLUG DUAL J4 CABLE FROM SUPPLY WHEN CHECKING FOR SHORT TO GROUND.

+PICK K1 DUAL.

	PIN LOCATION **********
FROM:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S03
TO:	
DUAL LEVEL J4 CONNECTOR	DUAL J4-1

CABLE LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

004
IF ERROR WAS ISOLATED TO A CABLE, REPAIR OR REPLACE. IF OTHER, REPLACE AS REQUIRED.

005
1) CONNECT CABLE UNPLUGGED IN PREVIOUS STEP.
2) SET MAIN LINE SWITCH TO 'ON'.
MEASURE POINTS LISTED BELOW.

USE GROUND LIST PREVIOUSLY GIVEN IN STEP 1 FOR GROUND REFERENCE.

DANGER: LINE VOLTAGE IS PRESENT ON THE AC BOARD.

+24 VDC CONTROL SUP (21.6 TO 26.4).

	PIN LOCATION **********
FROM:	
AC POWER BOARD	ACP-J1-B13, D13
TO:	GROUND
ALSO FROM:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--M13, P13
ALSO FROM:	
AC POWER BOARD	ACP-J2-6

ALSO FROM:
(STEP 005 CONTINUES)

(STEP 005 CONTINUED)
DUAL LEVEL DUAL J4-5

CONTROL +24V CORRECT?
Y N

006
IF ERROR WAS ISOLATED TO A CABLE, REPAIR OR REPLACE. IF OTHER, REPLACE AS REQUIRED.

007
1) SET MAIN LINE SWITCH TO 'OFF'.
2) INSTALL POWER SEQUENCE CARD.
3) SET MAIN LINE SWITCH TO 'ON'.
RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001

001

(ENTRY POINT A)

18

SENSE LINE CHECKOUT FOR OPEN OR SHORTED SIGNAL LINES.

THIS MAP CONTAINS LISTS OF POINT TO POINT CONNECTIONS. SIGNAL LINE NAME IS GIVEN AT THE TOP OF EACH LIST. GROUND CIRCUIT IS GIVEN AS FRAME GROUND FOR ALL PROBING REFERENCE.

IN GENERAL:
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) REMOVE POWER SEQUENCE CARD FOR ALL MEASUREMENTS, EXCEPT WHERE OTHERWISE NOTED. THIS OPENS SIGNAL PATHS.
LEAVE ALL J CONNECTORS CONNECTED UNLESS DIRECTED OTHERWISE.

NOTE:
WHEN CHECKING THE OVER CURRENT SENSE LINE CABLES FOR SHORT TO GROUND, THE CABLE SHOULD BE DISCONNECTED FROM THE POWER SUPPLY.

IF AN OPEN OR SHORT IS FOUND, ISOLATE TO A FIELD REPLACEABLE UNIT USING THE INFORMATION IN THE INDEX.

IF NO PROBLEM FOUND, CONTINUE TO NEXT ITEM IN THE INDEX UNLESS INSTRUCTIONS WERE GIVEN IN THE CALLING MAP TO CHECK ONLY LINES FOR VOLTAGES ENCODED IN THE FAULT REGISTER. IN THIS CASE, CONTINUE AT STEP 004.

MLM SEC. 8

WERE YOU PREVIOUSLY DIRECTED TO CHECK ALL O/C AND U/V SENSE LINES?
Y N

002
AT THIS POINT YOU MAY USE THE INDEX LISTED BELOW TO CHECK OUT SENSE LINES SUSPECTED AS BEING PERTINENT TO THE PROBLEM.
|
1) SET 'POWER ON' TO 'OFF' (OPERATORS PANEL).
2) REMOVE THE POWER SEQUENCE CARD.
3) USE THE INDEX BELOW TO CHECK SENSE LINE CONTINUITY AND FOR SHORT TO GROUND FOR A PARTICULAR VOLTAGE LEVEL.
(AS INDICATED BY POWER FAULT INDICATORS)

-4 V O/V AND U/V SENSE LINE
GO TO PAGE 3, STEP 004,
ENTRY POINT B.

-4 V O/C SENSE LINE
GO TO PAGE 3, STEP 008,
ENTRY POINT C.

.
-5 V O/V AND U/V SENSE LINE
GO TO PAGE 4, STEP 010,
ENTRY POINT D.

-5 V O/C SENSE LINE
GO TO PAGE 4, STEP 014,
ENTRY POINT E.

.
+5 V O/V AND U/V SENSE LINE
GO TO PAGE 5, STEP 016,
ENTRY POINT F.

+5 V O/C SENSE LINE
GO TO PAGE 5, STEP 020,
ENTRY POINT G.

.
+6 V O/V AND U/V SENSE LINE
GO TO PAGE 6, STEP 022,
ENTRY POINT H.

+6 V O/C SENSE LINE
GO TO PAGE 6, STEP 026,
ENTRY POINT J.

.
+8.5 V O/V AND U/V SENSE LINE
GO TO PAGE 7, STEP 028,
ENTRY POINT K.

+8.5 V O/C SENSE LINE
(STEP 002 CONTINUES)

(STEP 002 CONTINUED)
GO TO PAGE 7, STEP 032,
ENTRY POINT L.

.
-12 V O/V AND U/V SENSE LINE
GO TO PAGE 8, STEP 034,
ENTRY POINT M.

-12 V O/C SENSE LINE
GO TO PAGE 8, STEP 038,
ENTRY POINT N.

.
+12 V O/V AND U/V SENSE LINE
GO TO PAGE 9, STEP 040,
ENTRY POINT P.

+12 V O/C SENSE LINE
GO TO PAGE 9, STEP 044,
ENTRY POINT Q.

.
-24 V O/V AND U/V SENSE LINE
GO TO PAGE 10, STEP 046,
ENTRY POINT R.

-24 V O/C SENSE LINE
GO TO PAGE 10, STEP 050,
ENTRY POINT S.

.
+24 V O/V AND U/V SENSE LINE
GO TO PAGE 11, STEP 052,
ENTRY POINT T.

+24 V O/C SENSE LINE
GO TO PAGE 12, STEP 056,
ENTRY POINT V.

|
4) INSTALL THE POWER SEQUENCE CARD.
5) INSTALL ALL CABLES REMOVED IN THIS MAP.,
6) RETURN TO THE POWER PROBLEM ENTRY CHART,
PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

003
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-4V SENSE LINE.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR	MULTI-J2-6
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U07

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

004
1) USE FEALDS YA014 & YA160 TO HELP ISOLATE PROBLEM.
2) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE.

(ENTRY POINT B)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

-4V SENSE LINE.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR	MULTI-J2-6
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U07

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

005
1) USE FEALDS YA014 & YA160 TO HELP ISOLATE PROBLEM.
2) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES.

006
RETURN TO THE INDEX, PAGE 0316-2.

007
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-O/C SENSE LINE -4V.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR REMOVED	MULTI-J2-8
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S07

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

008
1) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE (USE YA014 TO HELP ISOLATE PROBLEM).

(ENTRY POINT C)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

-O/C SENSE LINE -4V.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR REMOVED	MULTI-J2-8
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S07

2) USE YA014 TO HELP ISOLATE PROBLEM.
3) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES AND NO PROBLEM WAS FOUND,
RETURN TO THE INDEX, PAGE 0316-2.

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009
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-5V SENSE LINE.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR	MULTI-J2-1
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U04

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

010
1) USE FEALDS YA014 & YA160 TO HELP ISOLATE PROBLEM.
2) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE.

(ENTRY POINT D)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

-5V SENSE LINE.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR	MULTI-J2-1
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U04

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

011
1) USE FEALDS YA014 & YA160 TO HELP ISOLATE PROBLEM.
2) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES.

012
RETURN TO THE INDEX, PAGE 0316-2.

013
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-O/C SENSE LINE -5V.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR REMOVED	MULTI-J2-3
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S04

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

014
1) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE (USE YA014 TO HELP ISOLATE PROBLEM).

(ENTRY POINT E)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

-O/C SENSE LINE -5V.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR	MULTI-J2-3
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S04

2) USE YA014 TO HELP ISOLATE PROBLEM.
3) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES AND NO PROBLEM WAS FOUND,
RETURN TO THE INDEX, PAGE 0316-2.

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015
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

+5V SENSE LINE.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR	MULTI-J3-4
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U11

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

016
1) USE FEALDS YA014 & YA160 TO HELP ISOLATE PROBLEM.
2) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE.

(ENTRY POINT F)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

+5V SENSE LINE.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR	MULTI-J3-4
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U11

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

017
1) USE FEALDS YA014 & YA160 TO HELP ISOLATE PROBLEM.
2) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES.

018
RETURN TO THE INDEX, PAGE 0316-2.

019
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

+O/C SENSE LINE +5V.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR REMOVED	MULTI-J3-1
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S11

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

020
1) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE (USE YA014 TO HELP ISOLATE PROBLEM).

(ENTRY POINT G)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

+O/C SENSE LINE +5V.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR REMOVED	MULTI-J3-1
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S11

2) USE YA014 TO HELP ISOLATE PROBLEM.
3) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES AND NO PROBLEM WAS FOUND,
RETURN TO THE INDEX, PAGE 0316-2.

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021
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

+6V SENSE LINE.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR	MULTI-J2-4
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U10

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

022
1) USE FEALDS YA014 & YA160 TO HELP ISOLATE PROBLEM.
2) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE.

(ENTRY POINT H)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

+6V SENSE LINE.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR	MULTI-J2-4
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U10

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

023
1) USE FEALDS YA014 & YA160 TO HELP ISOLATE PROBLEM.
2) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES.

024
RETURN TO THE INDEX, PAGE 0316-2.

025
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

+0/C SENSE LINE +6V.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR REMOVED	MULTI-J2-5
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S10

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

026
1) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE (USE YA014 TO HELP ISOLATE PROBLEM).

(ENTRY POINT J)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

+0/C SENSE LINE +6V.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J2 CONNECTOR REMOVED	MULTI-J2-5
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S10

2) USE FEALDS YA014 & YA160 TO HELP ISOLATE PROBLEM.
3) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES AND NO PROBLEM WAS FOUND,
RETURN TO THE INDEX, PAGE 0316-2.

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027
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

+8.5V SENSE LINE.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR	MULTI-J3-5
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U09

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

028
1) USE FEALDS YA014 & YA160 TO HELP ISOLATE PROBLEM.
2) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE.

(ENTRY POINT K)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

+8.5V SENSE LINE.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR	MULTI-J3-5
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U09

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

029
1) USE FEALDS YA014 & YA160 TO HELP ISOLATE PROBLEM.
2) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES.

030
RETURN TO THE INDEX, PAGE 0316-2.

031
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

+0/C SENSE LINE +8.5V.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR REMOVED	MULTI-J3-6
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S09

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

032
1) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE (USE YA014 TO HELP ISOLATE PROBLEM).

(ENTRY POINT L)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

+0/C SENSE LINE +8.5V.

	PIN LOCATION
	**********
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR REMOVED	MULTI-J3-6
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S09

2) USE YA014 TO HELP ISOLATE PROBLEM.
3) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES AND NO PROBLEM WAS FOUND,
RETURN TO THE INDEX, PAGE 0316-2.

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EC828777 PEC-------

033
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-12V SENSE LINE.

	PIN LOCATION **********
FROM: MULTI LEVEL FILTER ASM J3 CONNECTOR	MULTI-J3-8
TO: POWER SEQUENCE CARD CONNECTOR	MAPLE--U05

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

034
1) USE FEALDS YA014 & YA162 TO HELP ISOLATE PROBLEM.
2) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE.

(ENTRY POINT M)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

-12V SENSE LINE.

	PIN LOCATION **********
FROM: MULTI LEVEL FILTER ASM J3 CONNECTOR	MULTI-J3-8
TO: POWER SEQUENCE CARD CONNECTOR	MAPLE--U05

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

035
1) USE FEALDS YA014 & YA162 TO HELP ISOLATE PROBLEM.
2) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES.

036
RETURN TO THE INDEX, PAGE 0316-2.

037
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-O/C SENSE LINE -12V.

	PIN LOCATION **********
FROM: MULTI LEVEL FILTER ASM J3 CONNECTOR REMOVED	MULTI-J3-7
TO: POWER SEQUENCE CARD CONNECTOR	MAPLE--S05

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

038
1) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE (USE YA014 TO HELP ISOLATE PROBLEM).

(ENTRY POINT N)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

-O/C SENSE LINE -12V.

	PIN LOCATION **********
FROM: MULTI LEVEL FILTER ASM J3 CONNECTOR REMOVED	MULTI-J3-7
TO: POWER SEQUENCE CARD CONNECTOR	MAPLE--S05

2) USE YA014 TO HELP ISOLATE PROBLEM.
3) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES AND NO PROBLEM WAS FOUND,
RETURN TO THE INDEX, PAGE 0316-2.

039
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

+12V SENSE LINE.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR	MULTI-J3-11
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U12

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

040
1) USE FEALDS YA014 & YA162 TO HELP ISOLATE PROBLEM.
2) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE.

(ENTRY POINT P)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

+12V SENSE LINE.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR	MULTI-J3-11
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U12

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

041
1) USE FEALDS YA014 & YA162 TO HELP ISOLATE PROBLEM.
2) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES.

042
RETURN TO THE INDEX, PAGE 0316-2.

043
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

+0/C SENSE LINE +12V.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR REMOVED	MULTI-J3-12
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S12

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

044
1) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE (USE YA014 TO HELP ISOLATE PROBLEM).

(ENTRY POINT Q)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

+0/C SENSE LINE +12V.

	PIN LOCATION
FROM:	
MULTI LEVEL FILTER ASM J3 CONNECTOR REMOVED	MULTI-J3-12
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S12

2) USE YA014 TO HELP ISOLATE PROBLEM.
3) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES AND NO PROBLEM WAS FOUND,
RETURN TO THE INDEX, PAGE 0316-2.

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045
1) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-24V SENSE LINE.

	PIN LOCATION
	**********
FROM:	
DUAL FILTER ASM J5 CONNECTOR	DUAL J5-7
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U06

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

046
1) USE FEALDS YA014 & YA162 TO HELP ISOLATE PROBLEM.
2) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE.

(ENTRY POINT R)

1) CHECK CONTINUITY AND FOR SHORT TO GROUND. USE SIGNAL POINTS LISTED BELOW:

-24V SENSE LINE.

	PIN LOCATION
	**********
FROM:	
DUAL FILTER ASM J5 CONNECTOR	DUAL J5-7
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U06

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

047
1) USE FEALDS YA014 & YA162 TO HELP ISOLATE PROBLEM.
2) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES AND NO PROBLEM WAS FOUND.
RETURN TO INDEX, PAGE 316-2.

A
Z A

Z A MAP 0316-10
A

048
RETURN TO THE INDEX, PAGE 0316-2.

049
1) CHECK COMMON GROUND CIRCUIT FOR OPEN.

O/C GROUND REFERENCE.

	PIN LOCATION
	**********
FROM:	
DUAL FILTER ASM J5 CONNECTOR	DUAL J5-4
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S08

2) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-O/C SENSE LINE -24V.

	PIN LOCATION
	**********
FROM:	
DUAL FILTER ASM J5 CONNECTOR REMOVED	DUAL J5-8
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S06

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

050
1) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE (USE YA014 TO HELP ISOLATE PROBLEM).

(ENTRY POINT S)

(STEP 050 CONTINUES)

(STEP 050 CONTINUED)
1) CHECK CONTINUITY.
USE SIGNAL POINTS LISTED BELOW:

O/C GROUND REFERENCE.

	PIN LOCATION
	**********
FROM:	
DUAL FILTER ASM	DUAL J5-4
J5 CONNECTOR	
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S08

2) CHECK CONTINUITY AND FOR SHORT TO GROUND.

-O/C SENSE LINE -24V.

	PIN LOCATION
	**********
FROM:	
DUAL FILTER ASM	DUAL J5-8
J5 CONNECTOR REMOVED	
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S06

3) USE YA014 TO HELP ISOLATE PROBLEM.
4) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES AND NO PROBLEM WAS FOUND,
RETURN TO THE INDEX, PAGE 0316-2.

051
1) CHECK COMMON GROUND CIRCUIT FOR OPEN.

+24V SENSE LINE.

	PIN LOCATION
	**********
FROM:	
DUAL FILTER ASM	DUAL J5-6
J5 CONNECTOR	
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U13

(STEP 051 CONTINUES)

(STEP 051 CONTINUED)
LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

052
1) USE FEALDS YA014 & YA162 TO HELP ISOLATE PROBLEM.
2) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE.

(ENTRY POINT T)

---

1) CHECK CONTINUITY AND FOR SHORT TO GROUND.
USE SIGNAL POINTS LISTED BELOW:

+24V SENSE LINE.

	PIN LOCATION
	**********
FROM:	
DUAL FILTER ASM	DUAL J5-6
J5 CONNECTOR	
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--U13

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

053
1) USE FEALDS YA014 & YA162 TO HELP ISOLATE PROBLEM.
2) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT.

054
RETURN TO THE INDEX, PAGE 0316-2.

055
1) CHECK COMMON GROUND CIRCUIT FOR OPEN.

CONTROL GROUND.

	PIN LOCATION
	**********
FROM:	
DUAL FILTER ASM J5 CONNECTOR	DUAL J5-4
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S08

2) CHECK CONTINUITY AND FOR SHORT TO GROUND.

+O/C SENSE LINE +24V.

	PIN LOCATION
	**********
FROM:	
DUAL LEVEL FILTER ASM J5 CONNECTOR REMOVED	DUAL J5-5
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S13

LINE CORRECT (NOT OPEN OR SHORTED TO GROUND)?
Y N

056
1) ISOLATE TO A FIELD REPLACEABLE UNIT AND REPLACE (USE YA014 TO HELP ISOLATE PROBLEM).

(ENTRY POINT V)

(STEP 056 CONTINUES)

(STEP 056 CONTINUED)
1) CHECK CONTINUITY.
USE SIGNAL POINTS LISTED BELOW:

CONTROL GROUND.

	PIN LOCATION
	**********
FROM:	
DUAL LEVEL FILTER ASM J5 CONNECTOR	DUAL J5-4
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S08

2) CHECK CONTINUITY AND FOR SHORT TO GROUND.

+O/C SENSE LINE +24V.

	PIN LOCATION
	**********
FROM:	
DUAL LEVEL FILTER ASM J5 CONNECTOR REMOVED	DUAL J5-5
TO:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--S13

3) USE YA014 TO HELP ISOLATE PROBLEM.
4) IF PROBLEM WAS ISOLATED, REPLACE THE FAILING FIELD REPLACEABLE UNIT. OTHERWISE, IF USING THE INDEX TO CHECK OUT SENSE LINES AND NO PROBLEM WAS FOUND,
RETURN TO THE INDEX, PAGE 0316-3.

057
INSTALL THE POWER SEQUENCE CARD.
RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0300	A	1	001
0300	B	2	003

001

(ENTRY POINT A) 21

1) SET MAIN LINE SWITCH TO 'OFF'.
2) INSTALL POWER SEQ CARD
(IF PREVIOUSLY REMOVED).
3) SET MAIN LINE SWITCH 'ON'.

MEASURE VOLTAGES AT THE FOLLOWING POINTS ON THE POWER SEQUENCE CARD:

GROUND---- SC-TP-B08
+24VDC---- SC-TP-B04 (21.6 TO 31.2)
+6VDC----- SC-TP-B05 (5.85 TO 6.15)
+5VDC----- SC-TP-D05 (4.75 TO 5.5)
-24VDC---- SC-TP-D04 (21.6 TO 31.2)
-6VDC----- SC-TP-B02 (5.7 TO 6.3)

ARE ALL CONTRCL VOLTAGES NORMAL AT THE SEQUENCE CARD TEST POINTS?
Y N

002
ARE ALL CONTROL VOLTAGES PRESENT BUT BOTH +24V AND -24V DEFINITELY LOWER THAN THE 21.6 (LOWER TOLERANCE LIMIT)?
Y N

CONTROL VOLTAGES PROBLEM ISOLATION CHART.

+6 VDC CONTROL VOLTAGE ON SEQUENCE CARD TEST POINT, SC-TP-B05 IS A 2.5% TOLERANCE VOLTAGE THAT CAN BE USED AS A REFERENCE FOR CE METER ACCURACY CHECK.

IF ALL CONTROL VOLTAGE MEASUREMENTS ARE SLIGHTLY LOW OR HIGH, CHANCES ARE THAT THE CE METER IS AT FAULT. ASSUME THE +6 VOLT REFERENCE GIVEN IS ACCURATE AND TAKE THE OTHER READINGS INTO CONSIDERATION BEFORE CHANGING THE AC BOARD.

USE MLM SEC. 8 FOR REFERENCE

003

(ENTRY POINT B)

1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE POWER SEQUENCE CARD.
3) REPLACE FUSE 101, IF NECESSARY.
4) SET MAIN LINE SWITCH TO 'ON'.
5) MEASURE POINTS ON THE POWER SEQ CARD CONNECTOR TAB PINS (CALLED MAPLE):

GROUND ------ MAPLE--M08,P08,
--M09,P09
+24VDC CNTR SUP -- (21.6 TO 31.2)
-- MAPLE--M13,P13
+6VDC CNTR SUP --- (5.85 TO 6.15)
-- MAPLE--M12
+5VDC CNTR SUP --- (4.75 TO 5.5)
-- MAPLE--M02,P02,
--M07,P07
-24VDC CNTR SUP -- (21.6 TO 31.2)
-- MAPLE--M10
-6VDC CNTR SUP --- (5.75 TO 6.3)
-- MAPLE--P12

ARE CONTROL VOLTAGES CORRECT AT THE CONNECTOR?

Y N

CONTROL VOLTAGES LOAD ISOLATION ENTRY POINT.

A CONTROL VOLTAGE LEVEL BEING OVERLOADED WILL CAUSE FUSE 101 TO BLOW. IF THE PROBLEM IS AN OVERLOAD, THE FOLLOWING PROCEDURE SHOULD ISOLATE THE PROBLEM AREA.

THIS PROCEDURE USES FUSE 101 AS A DETECTOR SHOWING WHEN THE OVERLOAD CONDITION HAS BEEN REMOVED.

THIS PROCEDURE MAY COST SEVERAL 0.4 AMP FUSES, SO BE PREPARED.

004
1) SET MAIN LINE SWITCH TO 'OFF'.
2) REMOVE COVER TO AC POWER BOARD.
3) DISCONNECT FLAT CABLE AT ACP-J1.
4) REPLACE FUSE 101, IF NECESSARY.
5) SET MAIN LINE SWITCH TO 'ON'.
6) MEASURE POINTS ON THE AC POWER BOARD TAB PINS:

(DANGER: LINE VOLTAGE IS PRESENT ON THE AC BOARD.)

GROUND ------ ACP-J1-B08,D08,
--B09,D09
+24VDC CNTR SUP -- (21.6 TC 31.2)
-- ACP-J1-B13,D13
+6VDC CNTR SUP --- (5.85 TO 6.15)
-- ACP-J1-D12
+5VDC CNTR SUP --- (4.75 TO 5.5)
-- ACP-J1-B02,D02,
--B07,D07
-24VDC CNTR SUP -- (21.6 TO 31.2)
-- ACP-J1-D10
-6VDC CNTL SUP --- (5.7 TO 6.3)
-- ACP-J1-B12

ARE CONTROL VOLTAGES CORRECT?
Y N

005
1) SET MAIN LINE SWITCH TO 'OFF'.
2) DISCONNECT CABLE AT ACP-J2.
3) REPLACE FUSE 101, IF NECESSARY.
4) SET MAIN LINE SWITCH TO 'ON'.
5) MEASURE POINTS ON THE AC POWER BOARD TAB PINS:

(DANGER: LINE VOLTAGE IS PRESENT ON THE AC BOARD.)

DO NOT USE ACP-J1 FOR REFERENCE
(STEP 005 CONTINUES)

(STEP 005 CONTINUED)
WHEN MAKING MEASUREMENTS WITH ACP-J2 (USE FRAME GROUND) CABLE REMOVED.
|
FRAME GROUND
+24VDC CNTR SUP -- (21.6 TO 31.2)
-- ACP-J1-B13,D13
+6VDC CNTR SUP --- (5.85 TO 6.15)
-- ACP-J1-D12
+5VDC CNTR SUP --- (4.75 TO 5.5)
-- ACP-J1-B02,D02,
--B07,D07
-24VDC CNTR SUP -- (21.6 TO 31.2)
-- ACP-J1-D10
-6VDC CNTL SUP --- (5.7 TO 6.3)
-- ACP-J1-B12
|
ARE CONTROL VOLTAGES CORRECT ON AC POWER BOARD?
Y N
|
| 006
| REPLACE AC POWER BOARD.
|
007

(ENTRY POINT C)
---
1) SET MAIN LINE SWITCH TO 'OFF'.
2) CONNECT CABLE AT ACP-J2 ON AC BOARD (IF PREVIOUSLY REMOVED).
3) DISCONNECT CABLE AT DUAL J4 ON DUAL LEVEL FILTER ASM.
4) MEASURE COMMON GROUND TO THE DUAL LEVEL (CONTINUITY CHECK).
|
CONTROL GROUND

FROM:	PIN LOCATION
	FRAME GROUND

(STEP 007 CONTINUES)

+24V CONTROL VOLTAGE PROBLEM ISOLATION.

(STEP 007 CONTINUED)
TO:
DUAL LEVEL FILTER ASM — DUAL J4-3 (CABLE)
IS LINE CORRECT?
Y N
|
| 008
| CONTINUITY CHECK FROM FRAME GROUND TO ACP-J2-5.
| |
| IS LINE CORRECT?
| Y N
| |
| | 009
| | REPLACE AC BOARD.
| |
| 010
| REPAIR OR REPLACE CABLE FROM ACP-J2-5 TO DUAL J4-3.
|
011
1) SET MAIN LINE SWITCH TO 'ON'.
2) MEASURE POINTS LISTED BELOW:
|
(USE THE GROUND LIST ABOVE FOR REF.)
|
(DANGER: LINE VOLTAGE IS PRESENT ON THE AC BOARD.)
|
+24 VDC CNTR SUP (21.6 TO 31.2).

	PIN LOCATION **********
DUAL LEVEL FILTER ASM	DUAL J4-5 (CABLE)

|
CONTROL +24V CORRECT?
Y N
| |
| |
| |
| |
| |
| |
| |
| |

| |
| |
| |
| |
| |
| 012
| 1) SET MAIN LINE SWITCH TO 'OFF'.
| 2) CHECK CONTINUITY FROM ACP-J2-6 TO DUAL J4-5.
| |
| IS LINE CORRECT?
| Y N
| |
| | 013
| | REPLACE CABLE ASSEMBLY FROM ACP-J2 TO DUAL J4.
| |
| 014
| REPLACE AC BOARD.
|
015
1) SET MAIN LINE SWITCH TO 'OFF'.
2) CONNECT CABLE AT DUAL J4 ON DUAL LEVEL FILTER ASM.
3) DISCONNECT CABLE AT MULTI-J3 ON MULTI LEVEL FILTER ASM.
4) MEASURE COMMON GROUND TO THE MULTI.
CONTINUITY CHECK)
|
CONTROL GROUND

	PIN LOCATION **********
FROM: AC POWER BOARD	ACP-J2-4
TO: MULTI LEVEL FILTER ASM J3 CONNECTOR	MULTI-J3-10 (CABLE)

|
LINE CORRECT?
Y N
|
| 016
| REPLACE CABLE ASM FROM ACP-J2-4 TO MULTI-J3.
|
|
| 30DEC77 PN2594617
|
EC832050A PEC828777
6
J

017
(1) INSTALL J3 CABLE.
(2) RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

018
REPLACE CABLE FROM ACP-J1 TO MAPLE--M,P.

019
1) SET MAIN LINE SWITCH TO 'OFF'.
2) INSTALL THE POWER SEQUENCE CARD.
3) DISCONNECT CABLE AT MAPLE--B,D POSITION.
4) SET MAIN LINE SWITCH TO 'ON'.
5) MEASURE VOLTAGES AT THE FOLLOWING POINTS ON THE POWER SEQUENCE CARD:

GROUND---- SC-TP-B08
+24VDC---- SC-TP-B04 (21.6 TO 31.2)
+6VDC----- SC-TP-B05 (5.85 TO 6.15)
+5VDC----- SC-TP-D05 (4.75 TC 5.5)
-24VDC---- SC-TP-D04 (21.6 TO 31.2)
-6VDC----- SC-TP-B02 (5.7 TO 6.3)

ARE CONTROL VCLTAGES CORRECT ON POWER SEQ CARD?
Y N

020
REPLACE THE POWER SEQUENCE CARD AND/OR THE AC BOARD.

021
1) SET MAIN LINE SWITCH TO 'OFF'.
2) CONNECT THE POWER STATUS CABLE AT MAPLE--B.D.
3) DISCONNECT CABLE AT AA1-A2.
4) SET MAIN LINE SWITCH TO 'ON'.
5) MEASURE VOLTAGE AT THE FOLLOWING POINTS ON THE CABLE JUST REMOVED:

GROUND ------ AA1-A2-D08
+5VDC -------- (4.75 TO 5.5)
-- AA1-A2-B03,C02

IS CONTROL +5V CORRECT ON THE CABLE?
Y N

022
REPLACE CABLE FROM MAPLE--B.D TO AA1-A2.

023
1) SET MAIN LINE SWITCH TO 'OFF'.
2) INSTALL CABLE AT AA1-A2.
3) DISCONNECT CABLE AT AA1-B2.
4) SET MAIN LINE SWITCH TO 'ON'.
5) MEASURE VOLTAGE AT THE FOLLOWING POINTS ON THE AA1 BOARD:

GROUND ------ AA1-A2-D08
+5VDC -------- (4.75 TO 5.5)
-- AA1-A2-B03,D02

IS CONTROL +5V CORRECT?
Y N

+5V CONTROL VOLTAGE PROBLEM ISOLATION.

024
1) SET MAIN LINE SWITCH TO 'OFF'.
2) DISCONNECT CABLE AT AA1-B5.
3) REPLACE FUSE 101, IF NECESSARY.
4) SET MAIN LINE SWITCH TO 'ON'.
5) MEASURE VOLTAGE AT THE FOLLOWING POINTS ON THE AA1 BOARD:

GROUND ------ AA1-A2-D08
+5VDC -------- (4.75 TO 5.5)
-- AA1-A2-B03,D02

IS CONTROL +5V CORRECT?
Y N

025
REPLACE AA1 I/O BOARD.

026
1) SET MAIN LINE SWITCH TO 'OFF'.
2) CONNECT CABLE AT AA1-B5.
3) REMOVE CE PANEL AND ATTACH TO CPU FRAME SO THAT IT EXTENDS OUTWARD.
4) MEASURE COMMON GROUND TO THE CE PANEL.

CONTROL GROUND.

	PIN LOCATION
FROM:	
CPU BOARD	AA1-B5-D02, -D08
TO:	
CE PANEL Y2 CONNECTOR	CEP-Y2-B02, B08

5) MEASURE CONTROL +5 VDC ON THE CE PANEL. USE SIGNAL POINTS LISTED BELOW TO ISOLATE THE PROBLEM:

(USE THE GROUND LIST ABOVE FOR (STEP 026 CONTINUES)

(STEP 026 CONTINUED)
REF.)

(POWER +5 VDC TO CE PANEL SWITCHES AND LED'S.)

	PIN LOCATION
FROM:	
CPU BOARD	AA1-A2-B03, D02,
TO:	
CPU BOARD	AA1-B5-B03
CE PANEL Y2 CONNECTOR	CEP-Y2-D02
DPLY PWR CHK SWITCH	N/O
J CONNECTOR ON LED PC BOARD	CEP-J1-5

PROBLEM ISOLATED?
Y N

027
REPLACE AC POWER BOARD.

028
REPLACE DEFECTIVE FIELD REPLACEABLE UNIT.

029
CHECK +5V AT LEDS ON OP PANEL (LEADS THAT ARE COMMON TOGETHER).
CABLE CORRECT?
Y N

030
REPLACE CABLE.

031
REPLACE LEDS.

032
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
DANGER: LINE VOLTAGE PRESENT ON MACHINE AFTER POWER OFF.

---

2) SET MAIN LINE SWITCH TO 'OFF'.
3) UNPLUG THE MACHINE FROM CUSTOMER POWER.
4) CHECK WIRES LEADING TO THE FERRO RESONANT CONTROL CAPACITOR (C4) FOR OPEN OR SHORT.
5) CHECK THE CONTROL CAPACITOR (C4) FOR SHORT OR OPEN. IF DEFECTIVE, REPLACE.
   A) SET CE METER TO HIGHEST OHM RANGE.
   B) OBSERVE METER WHILE CONNECTING LEADS TO C4. NEEDLE SHOULD DEFLECT UP SCALE THEN DECLINE TO ZERO.
IF DEFECTIVE, REPLACE.
6) REPLACE THE AC POWER BOARD.

033
GO TO PAGE 4, STEP 007, ENTRY POINT C.

THE INDICATION APPEARS TO BE: LOW OUTPUT FROM THE FERRO-REGULATOR.

-6V, +5V, AND +6V ALL HAVE INTRIGATED CIRCUIT VOLTAGE REGULATORS SO THEY MAY NOT SHOW UP AS BEING LOW.

THE NEXT STEP IS TO CHECK THE CONTROL CAPACITOR (C4).
DANGER-->POWER DOWN AND UNPLUG THE MACHINE BEFORE CHECKING.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0109	A	1	001
0300	A	1	001
1705	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
5	016	0300	G
2	002	0301	B
2	002	0302	B
2	002	0303	B
2	002	0304	B
2	002	0305	B
2	002	0306	B
2	002	0307	B
2	004	0308	B
2	004	0309	B
2	004	0309	C

001

(ENTRY POINT A) 18

OPERATING VOLTAGES FOR I/O DEVICES

(OPERATING VOLTAGE CHECKOUT.)

1) MEASURE VOLTAGES AT POINTS LISTED BELOW. USE PD-TB1-1,2,3,OR 4 FOR GROUND REFERENCE WHEN MEASURING VOLTAGES ON PD-TB'S.

GROUND--PD-TB1-1,2,3,4.
+12 VDC--PD-TB2-5 (10.8 TO 13.2)
+8.5 VDC--PD-TB2-1,2 (7.65 TO 9.35)
+6 VDC--PD-TB2-3 (5.4 TO 6.6)
+5 VDC--PD-TB1-5,6,7 (4.5 TO 5.5)
-12 VDC--PD-TB2-6 (10.8 TC 13.2)
-5 VDC--PD-TB1-8 (4.5 TC 5.5)
-4 VDC--PD-TB2-4 (3.68 TO 4.32)

ARE MULTI LEVEL VOLTAGES CORRECT AT PD-TB'S?

Y N

002
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) MARK THIS PLACE.

4) EXIT TO THE APPROPRIATE CHART FOR THE VOLTAGE LEVEL DETECTED AS BEING BAD:

-4 VDC
GO TO MAP 0301, ENTRY POINT B.

-5 VDC
GO TO MAP 0302, ENTRY POINT B.

+5 VDC
GO TO MAP 0303, ENTRY POINT B.

+6 VDC
GO TO MAP 0304, ENTRY POINT B.

+8.5 VDC
GO TO MAP 0305, ENTRY POINT B.

-12 VDC
GO TO MAP 0306, ENTRY POINT B.

+12 VDC
GO TO MAP 0307, ENTRY POINT B.

---

5) REPLACE THE MULTI LEVEL FILTER ASM.

003
1) MEASURE VOLTAGES AT THE POINTS LISTED BELOW.
USE PD-TB1-1,2,3,OR 4 FOR GROUND REFERENCE WHEN MEASURING VOLTAGES ON PD-TB'S.

GROUND---PD-TB1-1,2,3,4
+24 VDC---PD-TB2-8 (21.6 TO 26.4)
-24 VDC---PD-TB2-7 (21.6 TO 26.4)
ARE DUAL LEVEL VOLTAGES CORRECT AT PD-TB'S?
Y N

004
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) MARK THIS PLACE.

4) EXIT TO THE APPROPRIATE CHART FOR THE VOLTAGE LEVEL DETECTED AS BEING BAD:

-24 VDC
GO TO MAP 0308, ENTRY POINT B.

+24 VDC
GO TO MAP 0309, ENTRY POINT C.

IF PROBLEM NOT FOUND UPON RETURN FROM TAKING ENTRY POINT C ABOVE, GO TO MAP 0309, ENTRY POINT B.

---

5) REPLACE THE DUAL LEVEL FILTER ASM.

005
DO YOU WISH TO CHECK ALL VOLTAGES ON ALL DEVICES?
Y N

006
AT THIS POINT YOU MAY USE THE MATRIX LISTED BELOW TO CHECK OPERATING VOLTAGES TO A PARTICULAR DEVICE.

DO YOU SUSPECT A PROBLEM WITH THAT DEVICE?
Y N

007
GO TO PAGE 3, STEP 008, ENTRY POINT AA.

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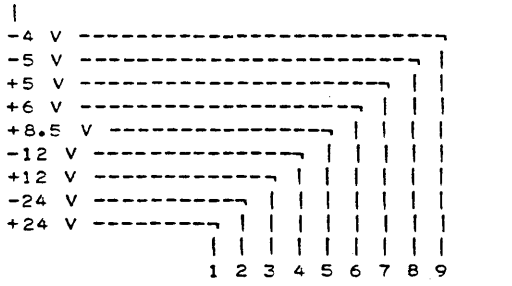
008

1) USE THE MATRIX BELOW TO CHECK FOR MISSING VOLTAGES.



GO TO STEP 010.
ENTRY POINT B.

GO TO PAGE 4, STEP 012.
ENTRY POINT C.

GO TO PAGE 5, STEP 018.
ENTRY POINT D.

GO TO PAGE 6, STEP 020.
ENTRY POINT E.

GO TO PAGE 7, STEP 022.
ENTRY POINT F.

GO TO PAGE 9, STEP 026.
ENTRY POINT G.

GO TO PAGE 10, STEP 030.
ENTRY POINT H.

(ENTRY POINT AA)

---

2) RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

009

1) MEASURE -5 VDC TO THE KEYBOARD (REF MLM SEC. 6).

(4.5 TO 5.5)

KEYBOARD PRINTED KBD-PC-B06 CIRCUIT BOARD

2) MEASURE +5 VDC TO THE KEYBOARD.

(4.5 TO 5.5)

KEYBOARD PRINTED KBD-PC-D03 CIRCUIT BOARD

3) MEASURE +8.5 VDC TO THE KEYBOARD.

(7.65 TO 9.35)

KEYBOARD PRINTED KBD-PC-B11 CIRCUIT BOARD

VOLTAGES CORRECT AT KEYBOARD?
Y N

010

(ENTRY POINT B)

ISOLATE PROBLEM ACCORDING TO THE VOLTAGE THAT APPEARS MISSING (REF MLM SEC. 6 & 8).

1) MEASURE -5 VDC TO THE KEYBOARD.
USE SIGNAL POINTS LISTED BELOW:

-5 VDC. (4.5 TO 5.5)

	PIN LOCATION
	**********
FROM:	
PWR DISTRIBUTION TERMINAL BLOCK	PD-TB1-8
TO:	
I/O BOARD	AA2-U2-A14, -U3-A14, -U4-A14
I/O BOARD	AA2-U3-B06

KEYBOARD PRINTED KBD-PC-B06 CIRCUIT BOARD

2) MEASURE +5 VDC TO THE KEYBOARD.
(STEP 010 CONTINUES)

(STEP 010 CONTINUED)
USE SIGNAL POINTS LISTED BELOW:
|
+5 VDC. (4.5 TO 5.5)
PIN LOCATION
****
FROM:
PWR DISTRIBUTION PD-TB1-5
TERMINAL BLOCK

TO:
I/O BOARD AA2-B2-A14,
-B4-E01,
-B5-A01,
-U3-A01,
-U4-A01,
-U5-A01
I/O BOARD AA2-U3-D03
KEYBOARD PRINTED KBD-PC-D03
CIRCUIT BOARD
|
3) MEASURE +8.5 VDC TO THE KEYBOARD.
USE SIGNAL POINTS LISTED BELOW:
|
+8.5 VDC. (7.65 TO 9.35)
PIN LOCATION
****
FROM:
PWR DISTRIBUTION PD-TB2-2
TERMINAL BLOCK
TO:
I/O BOARD AA2-U3-E01,
-U4-E01,
-U5-E01

I/O BOARD AA2-U3-B11

KEYBOARD PRINTED KBD-PC-B11
CIRCUIT BOARD
|
IF USING THE MATRIX TO CHECK OUT VOLTAGES AND NO VOLTAGE WAS MISSING,
RETURN TO THE MATRIX, PAGE 0318-3.

G
3 MAP 0318-4

|
|
|
|
011
1) MEASURE +6 VDC TO THE CRT (REF MLM SEC. 5).
|
(4.5 TO 5.5)

CRT CRT-PC-B12,
CIRCUIT BOARD B13
|
2) MEASURE -12 VDC TO THE CRT.
|
(10.8 TO 13.2)

CRT CRT-PC-D02
CIRCUIT BOARD
|
3) MEASURE +12 VDC TO THE CRT.
|
(10.8 TO 13.2)

CRT CRT-PC-B08,
CIRCUIT BOARD B09,
D09,
D10
VOLTAGES CORRECT AT CRT?
Y N
|
| 012
| ----------
| (ENTRY POINT C)
| ----------
| ----------
| ISOLATE PROBLEM ACCORDING TO THE VOLTAGE THAT APPEARS MISSING (REF MLM SEC. 5 & 8).
| |
| 1) MEASURE +6 VDC TO THE CRT.
| USE SIGNAL POINTS LISTED BELOW:
| |
| +6 VDC. (5.4 TO 6.6)
| PIN LOCATION
| **********
| FROM:
| PWR DISTRIBUTION PD-TB2-3
| TERMINAL BLOCK
|
| TO:
| CRT CRT-PC-B12,
| CIRCUIT BOARD B13
| |
| 2) MEASURE -12 VDC TO THE CRT.
| USE SIGNAL POINTS LISTED BELOW:
| |
| -12 VDC. (10.8 TO 13.2)
| PIN LOCATION
| **********
| FROM:
| PWR DISTRIBUTION PD-TB2-6
| (STEP 012 CONTINUES)
|
|

(STEP 012 CONTINUED)
TERMINAL BLOCK

TO:
CRT CRT-PC-D02,
CIRCUIT BOARD

3) MEASURE +12 VDC TO THE CRT.
USE SIGNAL POINTS LISTED BELOW:

+12 VDC. (10.8 TO 13.2)

	PIN LOCATION
	**********
FROM:	
PWR DISTRIBUTION	PD-TB2-5
TERMINAL BLOCK	
TO:	
CRT	CRT-PC-B08,
CIRCUIT BOARD	B09,
	D09,
	D10

IF USING THE MATRIX TO CHECK OUT VOLTAGES AND NO VOLTAGE WAS MISSING,
RETURN TO THE MATRIX, PAGE 0318-3.

013
IS THERE A BELT PRINTER ON THIS SYSTEM?
Y N

014
IS THE SERIAL PRINTER THE ONLY DEVICE NOT WORKING?
Y N

015

GO TO PAGE 6, STEP 019,
ENTRY POINT J.

016
1) MEASURE 48VAC FROM DUAL TO PPINTER.

	PIN LOCATION
	**********
FROM: DUAL	E20 & E21
TO: PRINTER	J1

2)
GO TO MAP 0300, ENTRY POINT G.

017
1) USE PRINTER GROUND, PRT-TB1-7 FOR GROUND REFERENCE WHEN MEASURING ON THE PRINTER
(REF MLM SEC. 4).

1) MEASURE +5 VDC TO THE PRINTER.

(4.5 TO 5.5)

PRINTER PRT-TB1-14,
TERMINAL BLOCK

2) MEASURE +24 VDC TO THE PRINTER.

(21.6 TO 26.4)

PRINTER PRT-TB1-12
TERMINAL BLOCK

VOLTAGES CORRECT AT PRINTER?
Y N

018

(ENTRY POINT D)

ISOLATE PROBLEM ACCORDING TO THE VOLTAGE THAT APPEARS MISSING.
(REF MLM SEC. 4 & 8).

1) MEASURE +5 VDC TO THE PRINTER.
USE SIGNAL POINTS LISTED BELOW:

+5 VDC. (4.5 TO 5.5)

	PIN LOCATION
	**********
FROM:	
PWR DISTRIBUTION	PD-TB1-7
TERMINAL BLOCK	
TO:	
PRINTER	PRT-TB1-14,
TERMINAL BLOCK	

2) MEASURE +24 VDC TO THE PRINTER.
USE SIGNAL POINTS LISTED BELOW:

+24 VDC. (21.6 TO 26.4)

	PIN LOCATION
	**********
FROM:	
DUAL LEVEL	DUAL-E3
POWER SUPPLY	

TO:
(STEP 018 CONTINUES)

(STEP 018 CONTINUED)
PRINTER PRT-TB1-12
TERMINAL BLOCK

IF USING THE MATRIX TO CHECK OUT VOLTAGES AND NO VOLTAGE WAS MISSING,
RETURN TO THE MATRIX, PAGE 0318-3.

019

(ENTRY POINT J)

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) INSTALL CABLE EXTENDER AT J/G PLUG POSITION ON THE DISKETTE.
3) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

4) MEASURE -5 VDC TO THE DISKETTE (REF MLM SEC. 3).

(4.5 TO 5.5)

DISKETTE CIRCUIT BOARD DISKETTE---J11

5) MEASURE +5 VDC TO THE DISKETTE.

(4.5 TO 5.5)

DISKETTE CIRCUIT BOARD DISKETTE---J03

6) MEASURE +24 VDC TO THE DISKETTE.

(21.6 TO 26.4)

DISKETTE CIRCUIT BOARD DISKETTE---J10

VOLTAGES CORRECT AT DISKETTE?

Y N

020

(ENTRY POINT E)

ISOLATE PROBLEM ACCORDING TO THE VOLTAGE THAT APPEARS MISSING (REF MLM SEC. 3 & 8).

1) MEASURE -5 VDC TO THE DISKETTE. USE SIGNAL POINTS LISTED BELOW:

-5 VDC. (4.5 TO 5.5)

	PIN LOCATION
	**********
FROM:	
PWR DISTRIBUTION TERMINAL BLOCK	PD-TB1-8
TO:	
I/O BOARD	AA2-U2-A14, -U3-A14, -U4-A14
I/O BOARD	AA2-B2-D11
DISKETTE CIRCUIT BOARD	DISKETTE---J11

2) MEASURE +5 VDC TO THE DISKETTE. USE SIGNAL POINTS LISTED BELOW:

+5 VDC. (4.5 TO 5.5)

	PIN LOCATION
	**********
FROM:	
PWR DISTRIBUTION TERMINAL BLOCK	PD-TB1-6
TO:	
I/O BOARD	AA2-B2-A14, -B4-E01, -B5-A01, -U3-A01, -U4-A01, -U5-A01
I/O BOARD	AA2-B2-D03
DISKETTE CIRCUIT BOARD	DISKETTE---J03

3) MEASURE +24 VDC TO THE DISKETTE. USE SIGNAL POINTS LISTED BELOW:

+24 VDC. (21.6 TO 26.4)

	PIN LOCATION
	**********

(STEP 020 CONTINUES)

(STEP 020 CONTINUED)
FROM:
PWR DISTRIBUTION PD-TB2-8
TERMINAL BLOCK

TO:
I/O BOARD AA2-B5-E01

I/O BOARD AA2-B2-D10

DISKETTE DISKETTE---J10
CIRCUIT BOARD

IF USING THE MATRIX TO CHECK OUT VOLTAGES AND NO VOLTAGE WAS MISSING,
RETURN TO THE MATRIX, PAGE 0318-3.

021
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REINSTALL CABLE AT THE J/G PLUG POSITION ON THE DISKETTE.
3) INSTALL CABLE EXTENDER AT DISK-B5 PLUG.
4) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

5) MEASURE -4 VDC TO THE DISK (REF MLM SEC. 2).
(3.68 TO 4.32)
DISK DISK-B5-B06
CIRCUIT BOARD

6) MEASURE +6 VDC TO THE DISK.
(5.4 TO 6.6)
DISK DISK-B5-B11
CIRCUIT BOARD

7) MEASURE -24 VDC TO THE DISK.
(21.6 TO 26.4)
DISK DISK-B5-B13
CIRCUIT BOARD

8) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
9) REINSTALL CABLE AT THE DISK-B5 PLUG.
10) INSTALL CABLE EXTENDER AT DISK-A1 PLUG.
11) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

12) MEASURE +24 VDC TO THE DISK.
(21.6 TO 26.4)
DISK DISK-A1-B02
CIRCUIT BOARD

(STEP 021 CONTINUES)

(STEP 021 CONTINUED)
ALSO:
DISK DISK-TB1-6
TERMINAL BLOCK (DISK BRAKE)

VOLTAGES CORRECT?
Y N

022

(ENTRY POINT F)

ISOLATE PROBLEM ACCORDING TO THE VOLTAGE THAT APPEARS MISSING (REF MLM SEC. 2 & 8).

1) MEASURE -4 VDC TO THE DISK.
USE SIGNAL POINTS LISTED BELOW:

-4 VDC. (3.68 TO 4.32)
USE FRAME GND AS REF)
PIN LOCATION
****
SIGNAL FROM:
PWR DISTRIBUTION PD-TB2-4
TERMINAL BLOCK
I/O BOARD AA2-B3-A14

DISK DISK-B5-B06
CIRCUIT BOARD

2) MEASURE +6 VDC TO THE DISK.
USE SIGNAL POINTS LISTED BELOW:
+6 VDC. (5.4 TO 6.6)
USE FRAME GND AS REF
PIN LOCATION
****
SIGNAL FROM:
PWR DISTRIBUTION PD-TB2-3
TERMINAL BLOCK

I/O BOARD AA2-B3-E01
-B4-A01

I/O BOARD AA2-A4-B11

DISK DISK-B5-B11
CIRCUIT BOARD

3) MEASURE -24 VDC TO THE DISK.
USE SIGNAL POINTS LISTED BELOW:

-24 VDC. (21.6 TO 26.4)
USE FRAME GND AS REF
PIN LOCATION
****
SIGNAL FROM:
PWR DISTRIBUTION PD-TB2-7
(STEP 022 CONTINUES)

(STEP 022 CONTINUED)
TERMINAL BLOCK

I/O BOARD AA2-B4-A14

I/O BOARD AA2-A4-B13

DISK DISK-B5-B13
CIRCUIT BOARD

4) MEASURE +24 VDC TO THE DISK.
USE SIGNAL POINTS LISTED BELOW:

+24 VDC. (21.6 TO 26.4)
USE FRAME GND AS REF

	PIN LOCATION
	**********
SIGNAL FROM:	
PWR DISTRIBUTION	PD-TB2-8
TERMINAL BLOCK	
I/O BOARD	AA2-B5-E01
I/O BOARD	AA2-A3-B02
	-B03
DISK	DISK-A1-B02
CIRCUIT BOARD	
ALSO	
DISK	DISK-TB1-6
TERMINAL BLOCK	(DISK BRAKE)

IF USING THE MATRIX TO CHECK OUT VOLTAGES AND NO VOLTAGE WAS MISSING,
RETURN TO THE MATRIX, PAGE 0318-3.

023
IS A 1200 MODEM FEATURE ON MACHINE?
Y N

024

GO TO PAGE 9, STEP 027,
ENTRY POINT GG.

025

1) MEASURE -12 VDC TO THE 1200 MODEM
(REF MLM SEC. 10).

(10.8 TO 13.2)
1200 MODEM CA1-E1-B11
CIRCUIT BOARD

2) MEASURE +12 VDC TO THE 1200 MODEM.

(10.8 TO 13.2)
1200 MODEM CA1-E1-B13
CIRCUIT BOARD

VOLTAGES CORRECT?
Y N

026

(ENTRY POINT G)

ISOLATE PROBLEM ACCORDING TO THE VOLTAGE THAT APPEARS MISSING
(REF MLM SEC. 8 & 10).

1) MEASURE -12 VDC TO THE 1200 MODEM:
USE SIGNAL POINTS LISTED BELOW:

-12 VDC (10.8 TO 13.2)
USE FRAME GND AS REF
PIN LOCATION
****
SIGNAL FROM:
PWR DISTRIBUTION PD-TB2-6
TERMINAL BLOCK

1200 MODEM CA1-E1-B11
CIRCUIT BOARD

2) MEASURE +12 VDC TO THE 1200 MODEM.
USE SIGNAL POINTS LISTED BELOW:
+12 VDC (10.8 TO 13.2)
USE FRAME GND AS REF
PIN LOCATION
****
SIGNAL FROM:
PWR DISTRIBUTION PD-TB2-5
TERMINAL BLOCK

1200 MODEM CA1-E1-B13
CIRCUIT BOARD

(STEP 026 CONTINUES)

(STEP 026 CONTINUED)
IF USING THE MATRIX TO CHECK OUT VOLTAGES AND NO VOLTAGE WAS MISSING,
RETURN TO THE MATRIX, PAGE 0318-3.

027

(ENTRY POINT GG)

IS A 2400 MODEM FEATURE ON MACHINE?
Y N

028

GO TO PAGE 10, STEP 031,
ENTRY POINT HH.

029

1) MEASURE -5 VDC TO THE 2400 MODEM
(REF MLM SEC. 10).

(4.5 TO 5.5)

2400 MODEM BA1-U5-D12
CIRCUIT BOARD

2) MEASURE +8.5 VDC TO THE 2400 MODEM.
(7.65 TO 9.35)

2400 MODEM BA1-U5-D11
CIRCUIT BOARD

3) MEASURE -12 VDC TO THE 2400 MODEM.

(10.8 TO 13.2)

2400 MODEM BA1-U5-D10
CIRCUIT BOARD

4) MEASURE +12 VDC TO THE 2400 MODEM.

(10.8 TO 13.2)

2400 MODEM BA1-U5-D03,
CIRCUIT BOARD -D04

VOLTAGES CORRECT?
Y N

30DEC77 PN2594618

1 1 EC832050A PEC828777
0 0
R S

030

(ENTRY POINT H)

ISOLATE PROBLEM ACCORDING TO THE VOLTAGE THAT APPEARS MISSING (REF MLM SEC. 8 & 10).

1) MEASURE -5 VDC TO THE 2400 MODEM.
USE SIGNAL POINTS LISTED BELOW:

-5 VDC (4.5 TO 5.5)
USE FRAME GND AS REF

	PIN LOCATION
SIGNAL FROM:	
PWR DISTRIBUTION	PD-TB1-8
TERMINAL BLOCK	
ALSO:	
2400 MODEM	BA1-U5-D12
CIRCUIT BOARD	

2) MEASURE +8.5 VDC TO THE 2400 MODEM.
USE SIGNAL POINTS LISTED BELOW:
+8.5 VDC (7.65 TO 9.35)
USE FRAME GND AS REF

	PIN LOCATION
SIGNAL FROM:	
PWR DISTRIBUTION	PD-TB2-2
TERMINAL BLOCK	
ALSO:	
2400 MODEM	BA1-U5-D11
CIRCUIT BOARD	

3) MEASURE -12 VDC TO THE 2400 MODEM.
USE SIGNAL POINTS LISTED BELOW:

-12 VDC. (10.8 TO 13.2)
USE FRAME GND AS REF

	PIN LOCATION
SIGNAL FROM:	
PWR DISTRIBUTION	PD-TB2-6
TERMINAL BLOCK	
ALSO:	
2400 MODEM	BA1-U5-D10
CIRCUIT BOARD	

4) MEASURE +12 VDC TO THE 2400 MODEM.
(STEP 030 CONTINUES)

(STEP 030 CONTINUED)
USE SIGNAL POINTS LISTED BELOW:

+12 VDC. (10.8 TO 13.2)
USE FRAME GND AS REF

	PIN LOCATION
SIGNAL FROM:	
PWR DISTRIBUTION	PD-TB2-5
TERMINAL BLOCK	
ALSO:	
2400 MODEM	BA1-U5-D03
CIRCUIT BOARD	-D04

IF USING THE MATRIX TO CHECK OUT VOLTAGES AND NO VOLTAGE WAS MISSING, RETURN TO THE MATRIX, PAGE 0318-3.

031

(ENTRY POINT HH)

RETURN TO THE POWER PROBLEM ENTRY CHART, PLACE OF LAST EXIT, NEXT SEQUENTIAL COMMAND.

001

(ENTRY POINT A)

18

1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) PROBE AA1-A2-D05, (-CHANNEL DATA PROTECT).

PROBE GROUND IS ON AA1-A2-D08. FRAME CAN ALSO BE USED FOR PROBE GND. +5VDC PROBE POWER IS LOCATED ON AA1-B5-B02 OR AA1-C5-B02.

3) OBSERVE PROBE, SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

THE LINE SHOULD BE DOWN. THE LINE SHOULD GO UP AFTER APPROXIMATELY 40 SECONDS DELAY.

DOES THE LINE GO UP AFTER REASONABLE POWER ON DELAY?
Y N

002
DOES DOWN LEVEL GO AWAY AND PROBE READ NEITHER UP NOR DOWN?
Y N

003
DOES LINE STAY DOWN?
Y N

004
RETURN TO THE TOP OF THIS CHART AND RECHECK STEPS.

005
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) DISCONNECT EDGE CONNECTOR FROM AA1-Z3 PLUG POSITION.

CABLE PLUG LIES ACROSS H,J,K PLUG COLUMN ON BOTTOM OF AA1 BOARD.

3) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).

DOES LINE STAY DOWN?
Y N

CHANNEL DATA PROTECT OR LINE FAULT PROBLEM.

SYMPTOMS:
1) BOTH DISK AND DISKETTE MOTOR TURNS.
2) CAN IMPL AND IPL DISKETTE BUT NOT WRITE ON IT.
3) CAN NOT IMPL OR IPL DISK BECAUSE IT IS NOT READY.

THIS INDICATES THE -CHANNEL DATA PROTECT LINE IS DOWN. THIS LINE IS ALSO CALLED -PRIMARY POWER FAULT IN SOME LOGICS FOR THE DEVICES. THIS LINE IS DROPPED TO GROUND BY K5 RELAY WHEN THERE IS A POWER FAULT. ALSO IT IS DROPPED BY A DOT-OR ON THE DISK ATTACHMENT CARD AT AA2-F2-M04 UNTIL DISK IS READY.

MLM SEC. 8

006
ATTACHMENT CARDS ARE HOLDING THE LINE DOWN OR THERE IS A SHORT IN THE AA1 BOARD.

1) ISOLATE THE PROBLEM USING THE INFORMATION GIVEN BELOW:

+CHANNEL DATA PROTECT.

	PIN LOCATION
	**********
FROM:	
EDGE CONNECTOR	AA1-J6-C02
TO:	
EDGE CONNECTOR	AA2-J1-C11
PRINTER CARD	AA2-Q2-J12
ALSO TO:	
DISKETTE CARD	AA2-K2-P04
ALSO TO:	
DISK STORAGE CARD	AA2-E2-U02
ALSO (HERE THE LINE IS DOT-ORED)	
TO:	
DISK STORAGE CARD	AA2-F2-M04

2) REPAIR OR REPLACE CABLE.
3) INSTALL ALL CABLES, CONNECTORS AND CARDS.

007
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) REMOVE POWER SEQUENCE CARD.
4) INSTALL EDGE CONNECTOR AA1-Z3.
5) INSTALL CABLE EXTENDER AT MAPLE CONNECTOR MAPLE--M,P PLUG POSITION FOR MEASURING CONVENIENCE.
6) ATTACH METER TO CHECK CONTINUITY ACROSS TWO POINTS LISTED BELOW:

	PIN LOCATION
	**********
FROM:	
GROUND. (FRAME GROUND WILL DO)	
PWR SEQ CARD	MAPLE--M08,P08
CONNECTOR	--M09,P09
TO:	
-CHANNEL DATA PROTECT.	
PWR SEQ CARD	MAPLE--M06
CONNECTOR	

7) SET MAIN LINE SWITCH TO 'ON'.
8) JUMPER MAPLE--P04 (-PICK K5) TO MAPLE--M08,P08,M09, OR P09 (GROUND), (FRAME GROUND WILL DO).
(STEP 007 CONTINUES)

(STEP 007 CONTINUED)

(THIS SHOULD PICK THE PRIMARY POWER FAULT RELAY, K5, AND CE METER SHOULD MEASURE FIRST SHORT, THEN OPEN WHEN K5 PICKS.)

DOES LINE GO FROM SHORT TO OPEN CIRCUIT?
Y N

008
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) DISCONNECT CABLE AT AC POWER BOARD, ACP-J1 PLUG POSITION.
4) INSTALL CABLE EXTENDER AT ACP-J1 PLUG POSITION FOR MEASURING CONVENIENCE.
5) ATTACH METER TO CHECK CONTINUITY ACROSS TWO POINTS LISTED BELOW:

	PIN LOCATION
	**********
FROM:	
GROUND (FRAME GROUND WILL DO).	
AC POWER	ACP-J1-B08,D08
BOARD	--B09,D09
TO:	
-CHANNEL DATA PROTECT.	
AC POWER	ACP-J1-D06
BOARD	

6) SET MAIN LINE SWITCH TO 'ON'.
7) JUMPER ACP-J1-B04 (-PICK K5) TO ACP-J1-B08,D08,B09, OR D09 (GROUND), (FRAME GROUND WILL DO).

THIS SHOULD PICK THE PRIMARY POWER FAULT RELAY, K5, AND CE METER SHOULD MEASURE FIRST SHORT, THEN OPEN WHEN K5 PICKS.

DOES LINE GO FROM SHORT TO OPEN CIRCUIT?
Y N

009
1) REPLACE AC POWER BOARD.
2) INSTALL ALL CABLES & CARDS TO ORIGINAL POSITIONS.

010
1) REPLACE CABLE FROM AC BOARD TO MAPLE BLOCK CONNECTOR.
2) INSTALL ALL CABLES & CARDS TO ORIGINAL POSITIONS.

011
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) REMOVE PROBE FROM AA1 BOARD.
3) CONTINUITY CHECK MAPLE--D05 (-DATA CHANNEL PROTECT) TO MAPLE--M08 OR FRAME GROUND.

DOES LINE SHOW OPEN CIRCUIT?
Y N

012
THERE IS A SHORT IN THE AA1 BOARD OR CABLE TO THE POWER SEQUENCE CARD.

1) ISOLATE THE PROBLEM USING THE INFORMATION GIVEN BELOW:

-CHANNEL DATA PROTECT.

	PIN LOCATION
	**********
FROM:	
POWER SEQUENCE CARD CONNECTOR	MAPLE--D05
TO:	
AA1 BOARD EDGE CONNECTOR	AA1-A2-D05
AA1 BOARD EDGE CONNECTOR	AA1-J6-C02

2) REPAIR OR REPLACE CABLE.
3) INSTALL ALL CABLES & CARDS TO ORIGINAL POSITION.

013
1) REPLACE THE POWER SEQUENCE CARD.
2) INSTALL ALL CABLES TO ORIGINAL POSITION.

014
THERE IS AN OPEN LINE AT THE ATTACHMENT CARD OR DISTRIBUTION TO THE ATTACHMENT CARD.

1) ISOLATE THE PROBLEM USING THE INFORMATION GIVEN BELOW:

-CHANNEL DATA PROTECT.

	PIN LOCATION
	**********
FROM:	
EDGE CONNECTOR	AA1-J6-C02
TO:	
EDGE CONNECTOR	AA2-J1-C11
PRINTER CARD	AA2-Q2-J12
ALSO TO:	
DISKETTE CARD	AA2-K2-P04

(STEP 014 CONTINUES)

LINE SHOULD BE FLOATING WITH CROSSOVER CONNECTOR FROM AA1 TO AA2 BOARD DISCONNECTED.

(STEP 014 CONTINUED)
ALSO TO:
DISK CARD AA2-E2-U02

ALSO (HERE THE LINE IS DOT-ORED)
TO:
DISK CARD AA2-F2-M04

015
1) SET 'POWER ON' TO 'OFF' (OPERATOR PANEL).
2) SET MAIN LINE SWITCH TO 'OFF'.
3) INSTALL CABLE EXTENDER AT ACP-J1 PLUG POSITION.
4) PROBE AT ACP-J1-D06, (-CHANNEL DATA PROTECT).
5) SET MAIN LINE SWITCH TO 'ON'.
6) SET 'POWER ON' TO 'ON' (OPERATOR PANEL).
7) FORCE A LINE FAULT AT THE AC POWER BOARD BY MOMENTARILY SHORTING THE -24V* AC POWER SENSING LINE AT ACP-J1-B04 TO +5V CONTROL VOLTAGE, ACP-J1-B02, OR D02.

DOES LINE GO FROM UP TO DOWN IMMEDIATELY?
Y N

016
1) REPLACE THE POWER SEQUENCE CARD.
2) INSTALL ALL CABLES TO ORIGINAL POSITION.

017
1) INSTALL ALL CABLES TO ORIGINAL POSITION.
2) RETURN TO MAP 113, ENTRY POINT A.

THIS SHOULD CAUSE NO HARM BECAUSE THE -24V* SENSE LINE HAS A SERIES RESISTOR IN ITS PATH AT THIS POINT. THE CPU SHOULD POWER OFF IMMEDIATELY AND THE POWER CHECK INDICATIONS WILL BE ERRATIC BUT THE -CHANNEL DATA PROTECT SHOULD GO DOWN IMMEDIATELY.

CHOOSE FROM THE FOLLOWING SYMPTOMS:

SYMPTOM(SEE NOTE 1)	EXIT TO MAP
INTERMITTENT PROBLEMS	0400-2
DESCRIPTION OF PRINTOUT FROM PROGRAM ID PRINTER3, COMMONLY CALLED FUNCTION TESTS.	0400-3
BELT WILL NOT RUN SPEED CHECK, SYNC CHECK, BINDS	0401-1
HAMMER UNIT FAILURE MISSING PRINT	0402-1
PRINT QUALITY PROBLEM MLM HAS SAMPLES SMUDGE PRINTING HORIZONTAL CUTOFF VERTICAL REGISTRATION VERTICAL CUTOFF HORIZONTAL REGISTRATION DENSITY PROBLEM (END TO END) (ACROSS ENTIRE PAGE)	0403-1
RIBBON FAILURES, RIBBON SMUDGE PRINT QUALITY BAD OR GOOD	0404-1
FORMS MOVEMENT PROBLEM INCORRECT MOVEMENT OR PAPER JAM	0405-1
MOVEMENT PROBLEM(HALF INDEX ONLY)	0408-1
FORMS JAM DETECTION PROBLEM FALSE OR FAILURE TO DETECT JAM	0406-1
INTERLOCK PROBLEM FAILURE TO OPEN OR CLOSE	0407-1
HALF INDEX PROBLEMS - CONTINUOUS HALF INDEXING - DOES NOT HALF INDEX	0408-1

NOTE 1:
FOR ALL PRINTER TESTS EXCEPT HALF INDEX TESTS, REMOVE CARD AA2-J4 AND ADD JUMPER FROM AA2-J4B02 TO AA2-J4B09.

IF THE PROBLEM IS SUSPECTED TO BE INTERMITTENT, RUN ERAP TO HELP ISOLATE THE FAILING FUNCTION.

RESEAT ALL ATTACHMENT CARDS
- AA2-Q2 CONTROL CARD
- AA2-R2 HAMMER SELECT CARD
- AA2-T2 DUTY CYCLE LIMIT CARD
- AA2-J4 HALF INDEX CARD(FEATURE)

RESEAT ALL ATTACHMENT CABLES
- AA2-V2 HAMMERS 1-22
- AA2-V3 CONTROL CABLE
- AA2-V4 HAMMERS 23-44
- AA2-V5 HAMMERS 45-66

RESEAT ALL PRINTER PLANAR CARDS
- PTR-13A BELT/CARRIAGE CONTROL CARD
- PTR-13E STEPPER DRIVE CARD
- PTR-23G FORMS JAM DETECTION CARD
- PTR-23A HAMMER DRIVER 1-22
- PTR-23C HAMMER DRIVER 23-44
- PTR-23E HAMMER DRIVER 45-66

RESEAT ALL PRINTER PLANAR CABLES
- PTR-13C CONTROL CABLE
- PTR-23F HAMMERS 1-22
- PTR-23D HAMMERS 23-44
- PTR-23B HAMMERS 45-66

CHECK TIGHTNESS OF CONNECTIONS ON PTR-TB1

CHECK ZENER DIODE AS PER MLM

INTERMITTENT BELT SPEED CHECK
1) RIBBON EXIT TENSION TOO HIGH- CHANGE RIBBON
2) RIBBON DRIVE TOO TIGHT
3) BAD BELT DRIVE STEPPER MOTOR.
4) CHECK TRANSDUCER AIR GAP

INTERMITTENT PRINTER ERRORS
1) THROAT INTERLOCK SWITCH.
2) END OF FORMS SWITCH.
3) COVER INTERLOCK SWITCH.
4) 2 CHADS (CHIPS) INSUCCESSION NOT COMPLETELY PUNCHED OUT OF PAPER FEED HOLES.

FUNCTION TESTS PRINTED BY PROGRAM ID PRINTER3
(SEE NOTE 1, PAGE 0400-1)

ONE HAMMER PRINT TEST----TU67

PROGRAM FIRES 1 HAMMER PER LINE AND SPACES TILL EACH PRINT POSITION CONTAINS AN -X-. THIS WILL SHOW UP HAMMERS NOT PRINTING OR LIGHT PRINTING. THE PROGRAM PRINTS AND SPACES 132 LINES. ALL NOT READY AND CHECK CONDITIONS WILL BE DISPLAYED BY THE DCP PRINT ROUTINE.

H PATTERN PRINT TEST----TU60

PROGRAM PRINTS LINES OF H'S FOR THE CE TO BE ABLE TO VISUALLY CHECK PRINT QUALITY BY CHECKING THE HORIZONTAL AND VERTICAL RELATIONSHIP OF THE H'S WITH EACHOTHER. THE PROGRAM PRINTS AND SPACES 25 LINES. ALL NOT READY AND CHECK CONDITIONS WILL BE DISPLAYED BY THE DCP PRINT ROUTINE.

T PATTERN PRINT TEST----TU61

PROGRAM PRINTS LINES OF T'S FOR THE CE TO BE ABLE TO VISUALLY CHECK PRINT QUALITY BY CHECKING THE HORIZONTAL AND VERTICAL RELATIONSHIP OF THE T'S WITH EACHOTHER. THE PROGRAM PRINTS AND SPACES 25 LINES. ALL NOT READY AND CHECK CONDITIONS WILL BE DISPLAYED BY THE DCP PRINT ROUTINE.

RIPPLE PRINT TEST----TU62

PROGRAM PRINTS LINES OF THE BELT IMAGE FOR THE CE TO VISUALLY CHECK QUALITY OF THE PRINT BELT, AN INSPECTION OF EACH CHARACTER, IN EACH SET, SHOULD BE MADE TO DETERMINE IF THE BELT NEEDS CLEANING OR REPLACING. THE PROGRAM PRINTS AND SPACES AS MANY LINES AS IS THE CHARACTER SET SIZE. THE PRINTING IS INCREMENTED ONE POSITION FROM HOME FOR EACH LINE OF PRINT. ALL NOT READY AND CHECK CONDITIONS WILL BE DISPLAYED BY THE DCP PRINT ROUTINE.

WORST PROBABILITY PRINT TEST----TU64

PROGRAM FILLS THE PRINT BUFFER WITH ONE OF FIVE STANDARD WORST PROBABILITY PATTERNS, TO CAUSE WORST PROBABILITY PRINT PATTERNS TO BE PRINTED. THE PROGRAM PRINTS FIVE LINES OF EACH OF THE FIVE STANDARD PATTERNS, SPACING ONCE AFTER EACH LINE FOR A TOTAL OF 25 LINES. THE PROGRAM IS DESIGNED TO SHOW UP INTERMITTENT HAMMER CHECKS AND POSSIBLY 24V POWER PROBLEMS, HAMMER CHECKS OR SOME LIGHT PRINTING WOULD OCCUR. ALL NOT READY AND CHECK CONDITIONS WILL BE DISPLAYED BY THE DCP PRINT ROUTINE.

CARRIAGE SPACE/SKIP TEST----TU65

PROGRAM PRINTS NUMBER OF LINES THAT IT IS GOING TO SPACE OR SKIP THEN DOES IT. THE PROGRAM SPACES OR SKIPS THE FOLLOWING COMBINATION OF LINES: 2,7,4,9,5,3,1,1,1,3,3,3,7,1. THE PRINTED OUTPUT SHOULD BE CHECKED TO INSURE THAT THE PROPER NUMBER OF SPACES OR SKIPS WERE TAKEN. ALL NOT READY AND CHECK CONDITIONS WILL BE DISPLAYED BY THE DCP PRINT ROUTINE.

FUNCTION TESTS CONTINUED ON NEXT PAGE

FUNCTION TESTS CONTINUED

PAPER SETTLING TEST----TU66

PROGRAM ISSUES CURRENT SPACE/SKIP AND AS SOON AS CARRIAGE BUSY DROPS, FIVE HAMMERS IN THE ODD PRINT POSITIONS, PER EACH OF THREE SUBSCANS ARE FIRED. THEN WHEN 'EVEN' PRINT TIME COMES, '-'S ARE PRINTED IN THE EVEN POSITIONS BETWEEN THE ALREADY PRINTED CHARACTERS(WHATEVER THEY MIGHT BE). THE PROGRAM SPACES OR SKIPS THE FOLLOWING COMBINATION OF LINES: 3,4,5,7,1,3,10,2,9,2,1,2,5. THE PURPOSE OF THE PROGRAM IS TO CHECK THE PAPER SETTLING TIME. THIS IS DONE BY INSPECTING THE OUTPUT AND CHECKING THAT THE CHARACTERS PRINTED IN THE ODD POSITION ARE NOT MIS-ALIGNED WITH THE CHARACTERS IN THE EVEN POSITIONS. ALL NOT READY AND CHECK CONDITIONS WILL BE DISPLAYED BY THE DCP PRINT ROUTINE.

HALF INDEX CARRIAGE TIMING TEST----PRT10

THIS TEST CHECKS THE CARRIAGE ADVANCE TIMINGS(SIMILAR TO TU31) DURING HALF INDEX OPERATION. THE TEST ALSO CHECKS THE UDT TO INSURE THAT THE SYSTEM IS CONFIGURED FOR HALF INDEX FEATURE. THE ABILITY TO SET/RESET HALF INDEX MODE IS TESTED AS IS THE PRESENCE OF THE HALF INDEX COMPLETE INDICATOR.

HALF INDEX PRINT TEST----PRT11

PROGRAM PERFORMS THE SAME FUNCTION AS TU67(PREVIOUSLY DESCRIBED), EXCEPT THAT THE LINE SPACING IS 12 LINES PER INCH. THE CHARACTERS PRINTED BY THIS PROGRAM WOULD OVERLAP IF PRINTED IN THE SAME POSITION ON ADJACENT LINES(SEE MLM SECTION FOR EXAMPLE OF CORRECT PRINTING).

TYPE BELT NOT TURNING

SYSTEM 32

PAGE 1 OF 4

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0451	A	1	001

001
(ENTRY POINT A)
****
* TYPE BELT NOT TURNING *
* SPEED CHECKS *
****
A BELT SPEED CHECK IS DETECTED IF THE TYPE BELT:
-FAILS TO GET UP TO SPEED WITHIN 2 SECONDS.
-HAS A 10% REDUCTION IN SPEED AFTER GETTING UP TO SPEED.

IF A SPEED CHECK IS DETECTED ONLY WHEN PRINTING:
-HEAVY PAPER MAY BE BINDING THE TYPE BELT.
-VIBRATION CAUSED BY EITHER THE PAPER CLAMP OR THE PRINT HAMMERS MAY CAUSE A MISADJUSTED COVER INTERLOCK SWITCH TO OPEN INTERMITTANTLY, STOPPING THE PRINTER.
DOES FAILURE OCCUR ONLY WHEN PRINTING?
Y N

002
DOES TYPE BELT APPEAR TO BE BOUND UP?
Y N

003
IF THE BELT STARTS UP BUT DOES NOT CONTINUE RUNNING, THE FAILURE MAY BE IN THE BELT MOTION DETECTION HARDWARE.
IF NOT SURE, ANSWER NO TO THE FOLLOWING QUESTION.
DOES TYPE BELT START(AT LEAST 1 REVELUTION), THEN STOP?
Y N

004
DOES THE MOTOR DETENT AND LOCK UP WITHOUT A SOUND?
Y N

005
OPEN FRONT COVER AND BYPASS COVER INTERLOCK. REFER TO MLM SECTION 4. ROTATE TYPE BELT PULLEY COUNTERCLOCKWISE, AS DESCRIBED IN STATIC TEST FOR BELT BINDS (MLM SECTION 4).
THE TYPE BELT SHOULD REQUIRE NO MORE THAN 150 GRAMS OF FORCE TO MOVE IT AT A CONSTANT VELOCITY FOR 1 REVELUTION.
DOES TYPE BELT MOVE AS DESCRIBED?
Y N

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006
THE FOLLOWING CAN CAUSE EXCESSIVE DRAG:

- RIBBON DRIVE BELT TOO TIGHT OR RUBBING ON THE MOTOR MOUNTING PLATE.
- HIGH RIBBON EXIT TENSION.
- RIBBON SHIELD INTERFERENCE.
- CONTAMINANTS ON THE TYPE BELT AND PLATEN.
- RIBBON DRIVE BELT RUBBING ON THE RIBBON CARTRIDGE MOUNTING BAR. SEE MLM SECTION 4 FOR ADJUSTMENT.
- PULLEY PIVET BEARING MAY BIND.
- PULLEY TOPOUT. IF THE FREE FLOATING PULLEY RIDES UP TOO HIGH AND COMES IN CONTACT WITH THE COVER, THE BELT WILL GO DOWN PUTTING EXCESSIVE FORCE ON THE TWO FRONT BEARINGS.
- A DEFECTIVE PLATEN CAN CAUSE EXCESSIVE DRAG ON THE BELT. THIS CAN BE DIAGNOSED BY PLACING A STRIP OF PAPER BETWEEN THE BELT AND THE PLATEN. IF THE EXCESSIVE DRAG IS ELIMINATED, THE BELT OR THE PLATEN MAY BE DEFECTIVE.

IF AN OSCILLOSCOPE IS AVAILABLE USE THE FOLLOWING DYNAMIC TEST TO AID IN FAULT ISOLATION.

(ENTRY POINT B)

SEE DYNAMIC TEST FOR TYPE BELT BINDS(MLM SECTION 4).

TO EXERCISE THE TYPE BELT DRIVE MOTOR FOR SCOPING:
1) REMOVE THE TYPE BELT AND THE RIBBON CARTRIDGE.
2) IMPL DIAG 01 DISKETTE.
3) TIE DOWN THE '- BELT GO' SIGNAL BY JUMPERING A-A2V3D04 TO ANY D08 PIN(THIS SHOULD CAUSE THE MOTOR TO START AND TO KEEP RUNNING).

SCOPE THE SIGNALS AS DESCRIBED IN THE MLM DYNAMIC TEST AND COMPARE THE SCOPE TRACE TO THE PICTURES IN THE MLM.

IF THE TRACE IS AS SHOWN FOR A GOOD MACHINE, EXCESSIVE DRAG ON THE TYPE BELT OR THE RIBBON IS THE CAUSE OF FAILURE.

(CONTINUED, NEXT COL)

(CONTINUED)
IF THE TRACE IS NOT AS SHOWN FOR A GOOD MACHINE, THE RIBBON DRIVE OR THE TYPE BELT MOTOR IS THE CAUSE OF FAILURE.

007
(ENTRY POINT C)

POWER UP.
IMPL DIAG 01.
LOAD PROGRAM ID PRT7.
DEPRESS ENTER.
DOES BELT TURN AT LEAST 1 REVOLUTION?
Y N

008
A LOOSE DRIVE PULLEY FLYWHEEL CAN CAUSE A FAILURE. CHECK DRIVE PULLEY FLYWHEEL FOR A LOOSE MOUNTING SCREW.

THE WASHER UNDER THE MOUNTING SCREW MAY BE BOWED WITH THE CENTER DOWN, DUE TO OVERTIGHTENING
IS THE WASHER BOWED?
Y N

009
SWAP CABLE PTR-13E WITH PTR-13F. DEPRESS ENTER.
DOES BELT TURN AT LEAST 1 REVOLUTION?
Y N

010
DEPRESS ENTER FOR EACH PROBE:
PROBE PTR-13B-72, (-BELT A NOT) PROBE PTR-13B-52, (-BELT A) PROBE PTR-13B-62, (-BELT B NOT) PROBE PTR-13B-42. (-BELT B)
ALL LINES PULSING?
Y N

011
PROBE PTR-13A-73, (-BELT GO)
LINE UP?
Y N

012
DEFECTIVE CARD PTR-13A (BELT CARRIAGE CONTROL CARD).

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J K L M TYPE BELT NOT TURNING H MAP 0401-3
2 2 2 2 2

SYSTEM 32

PAGE 3 OF 4

013
PROBE PTR-13A-73, (-BELT GO)
DEPRESS ENTER.
LINE UP, CHANGE DOWN?
Y N

014
PROBE AA2-Q2-P11, (-BELT GO)
LINE UP?
Y N

015
DEFECTIVE CABLE FROM AA2-V3 TO PTR-13C.

016
DEFECTIVE CARD AT AA2-Q2, (PRINTER CONTROL CARD).

017
DEFECTIVE CARD PTR-13A, (BELT CARRIAGE CONTROL CARD).

018
PERFORM BELT MOTOR CHECKOUT PROCEDURE AS OUTLINED IN THE MLM SECTION 4.
REPLACE THE FOLLOWING DEFECTIVE COMPONENTS AS NECESSARY.
1. BELT MOTOR.
2. RESISTORS R2 AND R3.
3. CAPACITORS C3 AND C4.

IF FAILURE IS NOT ISOLATED GO TO PAGE 2, STEP 006, ENTRY POINT B.

019
DEFECTIVE CARD PTR-13E, (BELT CARRIAGE DRIVE CARD).

020
IF THE WASHER IS SILVER IN COLOR IT IS SOFT AND SUBJECT TO BOWING UNDER STRESS. A HARDENED WASHER,A COMPATABLE FLYWHEEEL AND PLATE MAY BE OBTAINED BY ORDERING A NEW FLYWHEEL.

021
DEPRESS RESET. DEPRESS CE START. DEPRESS ENTER. PROBE AA2-Q2-S10, (-BELT MOTION)
LINE UP?
Y N

022
DEFECTIVE CARD AT AA2-Q2 (PRINTER CONTROL CARD).

023
PROBE AA2-Q2-S10, (-BELT MOTION)
DEPRESS ENTER.
LINE UP, CHANGE DOWN?
Y N

024
PROBE PTR-13A-45, (-BELT MOTION)
LINE UP?
Y N

025
DEFECTIVE CABLE FROM AA2-V3 TO PTR-13C.

026
CHECK BELT FOR KINKS, SCRATCHES, OR DAMMAGED TEETH.
BELT DAMAGED?
Y N

027
PERFORM TRANSDUCER SERVICE CHECK(MLM SECTION 4):
1.ADJUST AIR GAP IF NECESSARY.
2.REPLACE IF RESISTANCE CHECK IS BAD.
TRANSDUCER OK?
Y N

028
CORRECT TRANSDUCER FAILURE.

029
DEFECTIVE CARD PTR-13A, (BELT CARRIAGE CONTROL CARD).

030
DEFECTIVE BELT

031
DEFECTIVE CARD AT AA2-Q2, (PRINTER CONTROL CARD).

A B C D
1 1 1 1

TYPE BELT NOT TURNING

SYSTEM 32

PAGE 4 OF 4

032
OBSERVE AA2-Q2-P11, (-BELT GO) DURING IMPL FROM DISK. DOES LINE GO DOWN FOR APPROXIMATELY 2 SECONDS?
Y N

033
THE COVER INTERLOCK SWITCH IS NOT FUNCTIONING CORRECTLY.

034
DEFECTIVE CARD PTR-13A, (BELT CARRIAGE CONTROL CARD).

035

GO TO PAGE 2, STEP 007, ENTRY POINT C.

036
THE TYPE BELT AND PLATEN ARE CONTAMINATED.

037
CHECK THE PAPER PATH CLEARANCE AND THE PAPER THICKNESS.
CHECK THE COVER INTERLOCK ADJUSTMENT(MLM SECTION 4).

HAMMER UNIT FAILURES

SYSTEM 32

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0403	A	1	001

001
(ENTRY POINT A)
****
* HAMMER UNIT FAILURES *
****
DETERMINE THE FAILING HAMMER FROM INSPECTING THE PRINTED OUTPUT. TURN POWER OFF. REMOVE THE MACHINE COVERS. REMOVE THE FRONT PAPER GUIDE FROM THE FRONT OF THE HAMMERS. POSSIBLE BINDING HAMMER: COMPARE MOVEMENT OF SUSPECTED HAMMER WITH HAMMERS THAT PRINT CORRECTLY.
IS SUSPECTED HAMMER FREE?
Y N

002
HAMMER IS BINDING. CHECK THE FOLLOWING: INTERFERENCE WITH PLASTIC BUMPER BETWEEN HAMMER AND FLIGHT TIME SCREW. REFERENCE MLM SECTION 4 FOR DETAIL.
IS BUMPER POSITIONED CORRECTLY?
Y N

003
REPOSITION PLASTIC BUMPER AND TEST.

004
REMOVE SUSPECTED HAMMER
CHECK THE FOLLOWING:
1. DIRT IN COMB BAR.
2. BINDING HAMMER PIVOT.
3. INTERFERENCE WITH COIL.
4. DEFECTIVE HAMMER.
REPAIR OR REPLACE FAILING UNIT AND TEST

005
POSSIBLE SHORTED HAMMER COIL. A SHORTED HAMMER COIL USUALLY IS DISCOLORED. CHECK FOR A SHORTED HAMMER COIL: COMPARE SUSPECTED COIL WITH GOOD COILS: A SHORTED COIL WILL APPEAR BURNED, AND MAY CAUSE THE HAMMER TO BIND INSIDE THE COIL.
DOES SUSPECTED COIL LOOK GOOD?
Y N

006
COIL LOOKS BURNED OR OVERHEATED. REPLACE COIL, REFERENCE MLM SECTION 4 . IF OTHER POSITIONS ARE FAILING, CHECK EACH SUSPECTED COIL.

007
POSSIBLE HAMMER RETURN SPRING PROBLEM. MOVE SUSPECTED HAMMER AND COMPARE ITS MOTION WITH A GOOD HAMMER. THE HAMMER SHOULD RETURN TO ITS BACK POSITION WITH SOME FORCE.
DOES SUSPECTED HAMMER RETURN PROPERLY?
Y N

008
CORRECT HAMMER RETURN PROBLEM. REFERENCE MLM SECTION 4 , PROBABLE CAUSE OF FAILURE IS A BROKEN HAMMER RETURN SPRING.

009
REPLACE APPROPRIATE HAMMER DRIVER
HAMMERS 1-22 PTR-23A
HAMMERS 23-44 PTR-23C
HAMMERS 45-66 PTR-23E

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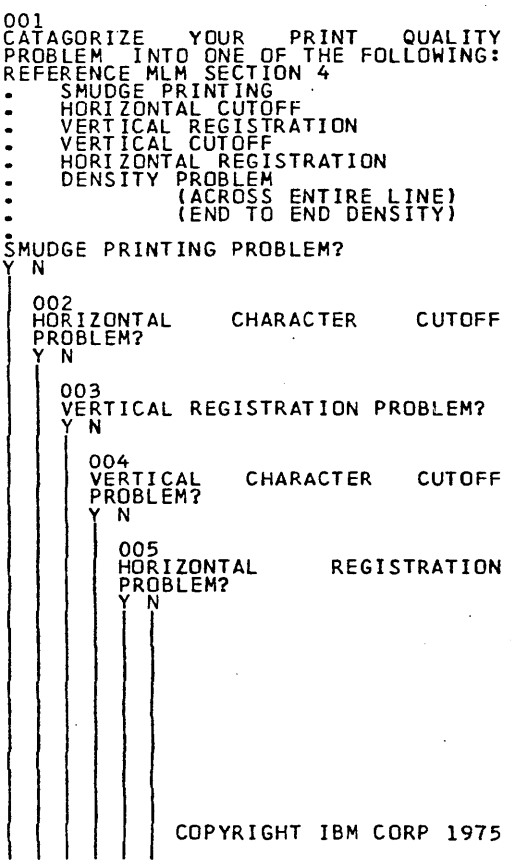
ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
NO ENTRIES IN THIS TABLE			

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
4	039	0402	A
4	042	0402	A
5	049	0404	A
2	008	0404	A
3	035	0405	A



006
DENSITY PROBLEM?
Y N

007
REDEFINE, IF POSSIBLE, YOUR SYMPTOM INTO ONE OF THE FOLLOWING:
REFERENCE MLM SECTION 4
- SMUDGE PRINTING
- HORIZONTAL CHARACTER CUTOFF
- VERTICAL REGISTRATION
- VERTICAL CHARACTER CUTOFF
- HORIZONTAL REGISTRATION
- DENSITY PROBLEM

RESTART AT THE BEGINNING OF THESE PRINT QUALITY CHARTS.

008
PERFORM PLATEN GAP ADJUSTMENT, REFERENCE MLM SECTION 4 . IF PLATEN GAP IS CORRECT, THE PROBLEM IS RIBBON FAILURES. GO TO MAP 0404, ENTRY POINT A.

009
****
* HORIZONTAL REGISTRATION *
****

SOME HORIZONTAL REGISTRATION PROBLEMS ARE A RESULT OF HORIZONTAL CUTOFF. BE SURE THAT THERE IS NO HORIZONTAL CUTOFF.
DO CHARACTERS PRINT WITHOUT CUTOFF?
Y N

010
RESTART PRINT QUALITY MAPS.

011
LOAD PROGRAM ID PRT1, OPEN AND CLOSE CLAMPS WITH PRT1
DID CLAMP/CLAMPS MOVE?
Y N

012
CLOSE CLAMPS WITH PRT1, PROBE AA2-Q2-P12, (-ACTIVATE PAPER CLAMP)
LINE DOWN?
Y N

013
REPLACE CARD AA2-Q2. (PRINTER CONTROL)

014
CLOSE CLAMPS WITH PRT1, PROBE PTR-13E-63, (-ACTIVATE PAPER CLAMP)
LINE DOWN?
Y N

015
REPLACE CABLE FROM AA2-V3 TO PTR-13C.

016
SWAP CABLES PTR-13E WITH PTR-13F, OPEN AND CLOSE CLAMPS WITH PRT1.
DID CLAMP/CLAMPS MOVE?
Y N

017
ADJUST CLAMPS IF POSSIBLE, OTHERWISE REPLACE AND ADJUST FAILING CLAMP USING PRT1, REFERENCE MLM SECTION 4

018
REPLACE CARD PTR-13E, (BELT CARRIAGE DRIVE)

019
USING PRT1, PERFORM LOWER PAPER CLAMP ADJUSTMENT, REFERENCE MLM SECTION 4

020
****
* VERTICAL CUTOFF *
****

PROBABLE RIBBON TROUBLE.
INSERT MULTI-PART FORMS
RUN PRINTER3

DOES LAST COPY HAVE CUTOFF?
Y N

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021
THE RIBBON MOVING UP OR DOWN CAN BE CAUSED BY:
1. WORN RIBBON.
2. WORN GUIDES.
3. FORMS INTERFERENCE WITH RIBBON.
4. RIBBON PATH OBSTRUCTION.
5. BENT OR BROKEN MYLAR RIBBON SHIELD.
6. INTERFERENCE WITH TYPE BELT.
REPAIR OR REPLACE ANY FAILING PART. REFERENCE MLM SECTION 4

022
USING PRT1, PERFORM LOWER PAPER CLAMP ADJUSTMENT, REFERENCE MLM SECTION 4

023
****
* VERTICAL REGISTRATION *
****

THE TYPE BELT MAY BE TRACKING INCORRECTLY ON THE POSITIONING ROLLERS. REMOVE THE TYPE BELT CHECK FOR KINKS, SPLITS, OR DIRT ON THE BELT. CHECK FOR DIRT ON BELT PULLEYS.
ARE THE TYPE BELT AND PULLEYS OK?
Y N

024
CLEAN OR REPLACE THE TYPE BELT AND TEST THE MACHINE.

025
CHECK THE TYPE BELT POSITIONING ROLLERS FOR BINDS OR WEAR.
ARE THE ROLLERS OK?
Y N

026
REPLACE BOTH POSITIONING ROLLERS REFERENCE MLM SECTION 4

027
CHECK FOR WEAR IN THE TYPE BELT DRIVE PULLEY BEARINGS AND TYPE BELT IDLER PULLEY BEARINGS. CHECK FOR BROKEN OR BINDING IDLER PULLEY SPRING.
ARE THE CHECKS OK?
Y N

028
REPLACE THE PARTS AS REQUIRED REFERENCE MLM SECTION 4

029
POSSIBLE BELT SPEED VARIATION. LOAD PROGRAM ID PRT3, SELECT OPTION 1 TO DISPLAY PSS TIMING. PSS TIMING SHOULD BE 710 +-10% USEC
IS THE BELT SPEED CORRECT?
Y N

030
REPLACE CARD PTR-13A (BELT CARRIAGE CONTROL)

031
USING PRT1 AND REFERENCE MLM SECTION 4 CHECK ADJUSTMENT OF LOWER PAPER CLAMP.
PAPER CLAMP OK?
Y N

032
DID LOWER CLAMP ENERGIZE DURING CHECK?
Y N

033
RESTART MAP ON PAGE 0403-1. USE HORIZONTAL REGISTRATION AS YOUR SYMPTOM.

034
ADJUST OR REPLACE DEFECTIVE COMPONENTS. REFERENCE MLM SECTION 4

035
CARRIAGE MOVEMENT PROBLEM.
GO TO MAP 0405, ENTRY POINT A.

036
****
* HORIZONTAL CHARACTER CUTOFF *
****

CHECK THE FORMS THICKNESS CONTROL SETTING FOR THE FORMS BEING USED. TEST MACHINE IF FORMS THICKNESS WAS CHANGED.
DOES CUTOFF OCCUR IN AN ODD/EVEN PATTERN ACROSS THE ENTIRE PAGE?
Y N

037
RANDOM POSITIONS CUTOFF. CHECK HAMMER IN FAILING POSITION FOR A BIND.
IS HAMMER FREE?
Y N

038
HAMMER IS BINDING. REMOVE FRONT PAPER GUIDE FROM FRONT OF HAMMERS. REFERENCE MLM SECTION 4 . REMOVE HAMMER RETAINING PLATE FROM SUSPECTED HAMMER BLOCK.
CHECK THE FOLLOWING BIND AREAS:
1. DIRT OR FOREIGN MATERIAL AROUND HAMMER.
2. HAMMER AND COIL.
3. HAMMER PIVOT.
4. HAMMER AND COMB BAR.
5. HAMMER AND BUMPER.
REPLACE ANY FAILING UNITS. REPLACE RETAINING PLATE AND TEST.

039
PERFORM HAMMER FLIGHT TIME ADJUSTMENT ON THE HAMMERS DISPLAYING CUTOFF. REFERENCE MLM SECTION 4 IF CUTOFF PERSISTS, THERE ARE HAMMER UNIT FAILURES.
GO TO MAP 0402, ENTRY POINT A.

040
1.PERFORM PRINT UNIT SERVICE CHECK, REFERENCE MLM SECTION 4, FIX AS REQUIRED.
2.PERFORM TRANSDUCER SERVICE CHECK AND TRANSDUCER POSITION ADJUSTMENT PROCEDURE, REFERENCE MLM SECTION 4.
DO ANY POSITIONS DISPLAY HORIZONTAL CUTOFF?
Y N

041
END OF CALL

042
PERFORM HAMMER FLIGHT TIME ADJUSTMENT ON THE HAMMERS DISPLAYING CUTOFF. REFERENCE MLM SECTION 4 . IF CUTOFF PERSISTS, THERE ARE HAMMER UNIT FAILURES.
GO TO MAP 0402, ENTRY POINT A.

043
****
* SMUDGE PRINTING *
****

DETERMINE IF SMUDGE WAS CAUSED BY RIBBON OR PRINT MECHANICS: INSTALL MULTI-PART PAPER AND SET FORMS THICKNESS CONTROL. RERUN PRINTER3. COMPARE THE PRINT ON THE FIRST AND SECOND PARTS.
DO BOTH PARTS HAVE SMUDGED PRINTING?
Y N

044
ONLY FRONT PART HAS SMUDGE. PROBABLE RIBBON TROUBLE. POWER DOWN PRINTER. ROTATE TYPE BELT DRIVE PULLEY COUNTERCLOCKWISE AND OBSERVE RIBBON FEEDING AT PRINT LINE. BE SURE RIBBON IS NOT CURLED OVER OR TWISTED. (RIBBON HAS ONE TWIST BETWEEN CASSETTE AND RIGHT GUIDE.)
DOES RIBBON APPEAR GOOD?
Y N

045
REPLACE RIBBON CASSETTE.

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046
CONTINUE ROTATING THE BELT PULLEY, OBSERVING RIBBON FEED.

THE RIBBON SHOULD FEED EVENLY BETWEEN THE RIGHT AND LEFT GUIDES, APPROXIMATELY .025 INCH (0,635 MM) ABOVE THE TYPE BELT, AND REMAIN IN BACK OF THE TYPE BELT AND IN FRONT OF THE RIBBON SHIELD.

DOES THE RIBBON FEED CORRECTLY?
Y N

047
CHECK THE FOLLOWING:
1. RIBBON SHIELD DAMAGED.
2. RIBBON GUIDES.
3. RIBBON FEED PATH.

048
LOAD PROGRAM ID PRT7, DEPRESS ENTER KEY.

THIS ACTION CAUSES THE BELT TO TURN BUT NOT THE RIBBON.

IS RIBBON IDLE?
Y N

049
RIBBON IS FEEDING WITH TYPE BELT RUNNING. RIBBON CLUTCH SHOULD KEEP RIBBON FROM FEEDING UNTIL AFTER PRINTING STARTS.
RIBBON PROBLEM.
GO TO MAP 0404, ENTRY POINT A.

050
RIBBON NOT FEEDING WITH TYPE BELT RUNNING. THIS IS NORMAL. PAPER MAY BE TOO CLOSE TO RIBBON.
CHECK THE FOLLOWING:
1. RIBBON SHIELD
2. PAPER FEEDING AT PRINT LINE
3. PLATEN GAP

051
DO ALL HAMMERS FAIL? (EVERY OTHER POSITION)
Y N

052
RANDOM POSITIONS FAIL. POSSIBLE BINDING HAMMER. CHECK HAMMER IN FAILING POSITION FOR A BIND.
IS HAMMER FREE?
Y N

053
HAMMER IS BINDING. REMOVE FRONT PAPER GUIDE FROM FRONT OF HAMMERS. REMOVE HAMMER RETAINING PLATE FROM SUSPECTED HAMMER BLOCK.
CHECK THE FOLLOWING BIND AREAS:
1. DIRT OR FOREIGN MATERIAL AROUND HAMMER.
2. HAMMER AND COIL.
3. HAMMER PIVOT.
4. HAMMER AND COMB BAR.
5. HAMMER AND BUMPER.
REPLACE ANY FAILING UNITS. REPLACE RETAINING PLATE AND TEST.
DOES SUSPECTED POSITION PRINT CORRECTLY?
Y N

054
PERFORM FLIGHT TIME ADJUSTMENT. REFERENCE MLM SECTION 4

055
END OF CALL

056
PERFORM FLIGHT TIME ADJUSTMENT REFERENCE MLM SECTION 4

057
PLATEN GAP MAY BE INCORRECT. CHECK PLATEN GAP, REFERENCE MLM
IS PLATEN GAP CORRECT?
Y N

058
ADJUST PLATEN GAP. REFERENCE MLM SECTION 4

059
IMPRESSION CONTROL, WHICH AFFECTS HAMMER FIRE TIME, MAY BE INCORRECT. LOAD PROGRAM ID PRT3. SELECT OPTION 2 TO DISPLAY IMPSS TIMINGS. VARY THE FORMS CONTROL FROM 1 TO 6. THE AVERAGE IMPSS TIMINGS SHOULD FALL INTO THE FOLLOWING RANGES:

SETTINGS 1&2	221 TO 287
SETTING 3	327 TO 361
SETTINGS 4,5&6	427 TO 443

THE DIFFERENCE BETWEEN THE HI AND THE LO IMPSS TIMES SHOULD NOT BE GREATER THAN 10.
IS TIMING CORRECT?
Y N

060
ADJUST TIMING USING PRT3, REFERENCE MLM SECTION 4
CAN TIMING BE ADJUSTED WITHIN LIMITS?
Y N

061
USE CE METER. MEASURE RESISTANCE OF IMPSS POT BY CONNECTING ACROSS PLUG TERMINALS. RESISTANCE SHOULD VARY FROM 0 TO 5K AS FORMS CONTROL SETTING IS MOVED FROM 1 TO 6.
RESISTANCE OK?
Y N

062
REPLACE IMPSS POT. REFERENCE MLM SECTION 4

063
REPLACE CARD PTR-13A (BELT CARRIAGE CONTROL)

064
END OF CALL

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065
REDEFINE, IF POSSIBLE, YOUR SYMPTOM
INTO ONE OF THE FOLLOWING:
REFERENCE MLM SECTION 4
. SMUDGE PRINTING
. HORIZONTAL CHARACTER CUTOFF
. VERTICAL REGISTRATION
. VERTICAL CHARACTER CUTOFF
. HORIZONTAL REGISTRATION
. DENSITY PROBLEM
RESTART AT THE BEGINING OF THESE
PRINT QUALITY CHARTS.

RIBBON FAILURES

SYSTEM 32

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0403	A	1	001

001
(ENTRY POINT A)
****
* RIBBON FAILURES *
****

THE RIBBON SHOULD FEED EVENLY BETWEEN THE RIGHT AND LEFT GUIDES APPROXIMATELY .025 INCH (0.635MM) ABOVE THE TYPE BELT. THE RIBBON MUST BE IN BACK OF THE BELT AND IN FRONT OF THE RIBBON SHIELD. THE RIBBON SHOULD FEED ONLY WHEN THE MACHINE PRINTS. BE SURE TO USE A GOOD RIBBON. POWER OFF. ROTATE LEFT TYPE BELT PULLEY COUNTERCLOCKWISE AND OBSERVE RIBBON.
DOES RIBBON FEED?
Y N

002
DO RIBBON DRIVE ROLLS TURN?
Y N

003
MECHANICAL TROUBLE IN RIBBON DRIVE.
DOES RIBBON DRIVE BELT TURN?
Y N

004
CHECK FOR BROKEN, WORN, OR LOOSE BELT.
IS BELT OK?
Y N

005
REPLACE BELT IF WORN OR BROKEN. ADJUST BELT TENSION. REFERENCE MLM SECTION 4

006
DRIVE PULLEY UNDER TYPE BELT PULLEY IS NOT DRIVING RIBBON BELT. CHECK PULLEY. REPLACE, REPAIR, OR ADJUST AS NECESSARY. REFERENCE MLM SECTION 4

007
DOES RIBBON SHAFT FAIL TO TURN?
Y N

008
RIBBON SHAFT TURNING; ROLLS DO NOT. REPLACE, REPAIR, OR ADJUST AS NECESSARY. REFERENCE MLM SECTION 4

009
POSSIBLE RIBBON CLUTCH OR DRIVE MECHANISM FAILURE. -CHECK THE DRIVE MECHANISM; REFERENCE MLM SECTION 4

010
DRIVE ROLLS TURN, BUT RIBBON DOES NOT FEED. POSSIBLE RIBBON JAM. CHECK FOR RIBBON JAM. PULL ABOUT THREE INCHES OF RIBBON SLACK FROM THE LEFT RIBBON GUIDE. ROTATE THE LEFT TYPE BELT PULLEY TO FEED THE RIBBON.
DOES THE SLACK RIBBON FEED INTO CASSETTE?
Y N

011
CHECK THE FOLLOWING: JAM IN CASSETTE ENTRY. ROLLERS NOT CONTACTING EACH OTHER. REFERENCE MLM SECTION 4

012
RIBBON HAS HEAVY DRAG OR BIND IN PATH AROUND CASSETTE EXIT, PRINT LINE, OR RIBBON GUIDES. CHECK THE ABOVE AREAS IN THE RIBBON PATH TO DETERMINE CAUSE OF BIND. CLEAN, ADJUST, REPAIR, OR REPLACE FAILING PARTS. REFERENCE MLM SECTION 4

01APR75 PN2547554
EC828518 PEC825412

013
POSSIBLE RIBBON CLUTCH FAILURE. THE RIBBON SHOULD FEED (SOLENOID DE-ENERGIZED) WHEN PRINTING. AND STOP FEEDING (SOLENOID ENERGIZED) DURING IDLE PEROIDS. RIBBON CLUTCH IS NORMALLY ENGAGED WITH NO POWER ON. OBSERVE RIBBON SOLENOID.
IS IT DE-ENERGIZED?
Y N

014
REPLACE CARD PTR-13E (BELT CARRIAGE DRIVE)

015
LOAD PROGRAM ID PRT7. DEPRESS ENTER TO START BELT. OBSERVE RIBBON SOLENOID.
IS IT ENERGIZED?
Y N

016
PROBE AA2-Q2-G13 (-STOP RIBBON) LINE DOWN?
Y N

017
REPLACE CARD AA2-Q2 (PRINTER CONTROL)

018
PROBE PTR-13F-46 (-STOP RIBBON) LINE DOWN?
Y N

019
REPLACE CABLE FROM AA2-V3 TO PTR-13C

020
MEASURE RESISTANCE OF RIBBON SOLENOID, SHOULD BE APPROX 470 OHMS.
SOLENOID OK?
Y N

021
REPLACE RIBBON SOLENOID. REFERENCE MLM SECTION 4

022
REPLACE CARD PTR-13E (BELT CARRIAGE DRIVE) OR CONNECTOR PTR-13F AND P1

023
IS RIBBON IDLE?
Y N

024
MECHANICAL TROUBLE IN RIBBON CLUTCH. CHECK MECHANICAL OPERATION OF SOLENOID AND CLUTCH. REFERENCE MLM SECTION 4 . ADJUST, REPAIR, OR REPLACE ANY FAILING COMPONENT.

025
THE RIBBON OPERATION APPEARS GOOD. IF A PROBLEM STILL EXISTS REPLACE RIBBON. END OF CALL

PAPER TRANSPORT

SYSTEM 32

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0403	A	1	001
0452	A	1	001

001
(ENTRY POINT A)
****
* FORMS MOVEMENT PROBLEM *
* INCORRECT MOVEMENT OR *
* PAPER JAM *
****
THE PRINTER IS RECEIVING CARRIAGE GO AND IS RESPONDING PROPERLY WITH CARRIAGE ADVANCE PULSES.

NOTE:
IF FORMS MOVEMENT PROBLEMS OCCUR ONLY WHEN USING HALF INDEX FEATURE, GO TO MAP 0408 ENTRY POINT A.
IS PAPER JAMMING OR RIPPING PAPER?
Y N

002
POWER DOWN, TURN FORMS ADVANCE KNOB.
DOES FORMS ADVANCE KNOB TURN EASILY?
Y N

003
MECHANICAL PROBLEM
REPAIR THE FOLLOWING AS NECESSARY.
1. WORN OR BROKEN TRACTORS
2. BELT, PULLEY, OR MOTOR BINDING

004
DO TRACTORS AND CARRIAGE MOTOR TURN PROPERLY WHEN FORMS ADVANCE KNOB IS TURNED?
Y N

005
MECHANICAL PROBLEM
REPAIR THE FOLLOWING AS NECESSARY.
1. CARRIAGE DRIVE BELT
2. BROKEN PULLEYS
3. VERNIER FAILURE

006
****
* ELECTRICAL PROBLEM *
****
SWAP CABLE PTR-13E WITH PTR-13F, POWER UP, IMPL DIAG 01. LOAD PROGRAM ID PRT3. SELECT OPTION 5 TO DISPLAY CARRIAGE ADVANCE PULSE TIMINGS.
DO TRACTORS TURN PROPERLY?
Y N

007
WITH PROGRAM PRT3 RUNNING,
PROBE PTR-13B-51,
(-CARRIAGE A)
PROBE PTR-13B-70,
(-CARRIAGE A NOT)
PROBE PTR-13B-53,
(-CARRIAGE B)
PROBE PTR-13B-73,
(-CARRIAGE B NOT)
ALL LINES PULSING?
Y N

008
REPLACE CARD PTR-13A, (BELT CARRIAGE CONTROL)

009
PERFORM CARRIAGE MOTOR CHECKOUT PROCEDURE AS OUTLINED IN THE MLM SECTION 4. REPLACE THE FOLLOWING DEFECTIVE COMPONENTS AS NECESSARY:
1. CARRIAGE MOTOR.
2. RESISTORS R1 AND R4.
3. CAPACITORS C1 AND C2.

010
REPLACE CARD PTR-13E, (BELT CARRIAGE DRIVE)

220CT76 PN2547555
EC830357 PEC828518

011
****
* PAPER JAMMING OR *
* RIPPING PROBLEM *
****
POWER DOWN. SWAP CABLE PTR-13E WITH PTR-13F. POWER UP. IMPL DIAG 01 AND DEPRESS START. USING THE PAGE/LINE KEY TO MOVE FORMS,
DOES THE JAM OR RIP APPEAR AS BEFORE?
Y N

012
REPLACE CARD PTR-13E, (BELT CARRIAGE DRIVE)

013
IS JAMMING OR RIPPING ABOVE THE PRINT LINE?
Y N

014
PAPER JAMMING OR RIPPING BELOW THE PRINT LINE.
CHECK THE FOLLOWING IN LOWER FORMS PATH:
1. COVER INTERFERENCE WITH PAPER.
2. DEBRIS IN FORMS CHUTE.
3. LOWER PAPER CLAMP
4. FORMS DRAG FINGERS
5. END OF FORMS SWITCH
.
CHECK THE FOLLOWING AREAS THAT COULD CAUSE INTERFERENCE.
1. PLATEN GAP
2. RIBBON SHIELD.
3. PAPER DEBRIS IN PAPER PATH.
-REPAIR, ADJUST, OR REPLACE FAILING UNITS.
-TEST MACHINE OPERATION.

015
JAMMING OR RIPPING IS ABOVE THE PRINT LINE.
DOES JAMMING OR RIPPING OCCUR AFTER THE TRACTORS?
Y N

016
JAMS OR RIPS AT TRACTORS.
CHECK THE FOLLOWING, REFERENCE MLM SECTION 4.
1. TRACTOR DOOR PROBLEMS.
2. PAPER GUIDE ON UPPER PAPER CLAMP.
3. PERFORM FORMS DRAG SERVICE CHECK.
REPAIR, ADJUST, OR REPLACE FAILING UNITS
TEST OPERATION.

017
JAMS OR RIPS AFTER TRACTORS
-CHECK THE FOLLOWING, REFERENCE MLM SECTION 4
1. UPPER PAPER CLAMP
2. INTERFERENCE WITH UPPER FORM CHUTE OR COVER.
REPAIR AND TEST OPERATION.

22OCT76 PN2547555
EC830357 PEC828518

FORM JAM DETECTION FEATURE

SYSTEM 32

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0452	A	1	001

001
(ENTRY POINT A)
****
* FORM JAM DETECTION FEATURE *
****
COVER THE LED ASSEMBLY WITH PAPER.
PROBE PTR-23G-67, (-HOLE SENSED).
LINE UP?
Y N

002
JUMPER PTR-23G-42 TO PTR-23G-62,
PROBE PTR-23G-67, (-HOLE SENSED).
LINE UP?
Y N

003
WITH POWER UP, UNPLUG PTR-23G,
PROBE PTR-23G-67, (-HOLE
SENSED).
LINE UP?
Y N

004
REPLACE CARD PTR-13A, (BELT
CARRIAGE CONTROL CARD)

005
REPLACE CARD PTR-23G, (FORMS
MOVEMENT AMPLIFIER CARD)

006
REPLACE LED ASSEMBLY OR CARD
PTR-23G (FORMS MOVEMENT AMPLIFIER
CARD) REFERENCE MLM SECTION 4

007
PROBE PTR-23G-67, (-HOLE SENSED),
REMOVE PAPER FROM COVERING LED
ASSEMBLY.
LINE UP PULSE DOWN?
Y N

1 1
A B

008
UNPLUG CONNECTOR P9, PROBE
PTR-23G-67, (-HOLE SENSED).
LINE DOWN?
Y N

009
REPLACE CARD PTR-23G, (FORMS
MOVEMENT AMPLIFIER CARD)

010
REPLACE LED ASSEMBLY. REFERENCE
MLM SECTION 4

011
PROBE PTR-13A-64, (-FORMS JAM).
LINE UP?
Y N

012
REPLACE CABLE FROM AA2-V3 TO
PTR-13C.

013
REPLACE CARD PTR-13A, (BELT
CARRIAGE CONTROL CARD)

01APR75 PN2547556
EC828518 PEC825412

INTERLOCK PROBLEM CHART

SYSTEM 32

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0451	A	1	001

001
(ENTRY POINT A)

```
*******************************
* THERE ARE THREE INTERLOCK   *
* SWITCHES IN THE PRINTER.    *
*      COVER INTERLOCK        *
*      THROAT INTERLOCK       *
*      END OF FORMS INTERLOCK *
* ALL OF THESE SWITCHES ARE   *
* OF THE HALL EFFECT TYPE AND*
* REQUIRE THREE LEADS TO THEM*
*      BLACK      GROUND      *
*      RED        +5 VOLTS    *
*      YELLOW     SIGNAL      *
* REMOVE ALL PREVIOUSLY       *
* INSTALLED JUMPERS.          *
* LOAD PROGRAM ID PRT2, THIS  *
* PROGRAM WILL DISPLAY THE    *
* STATUS OF THESE THREE       *
* PRINTER INTERLOCK SWITCHES  *
* ON THE CRT.                 *
* REFER TO THIS STATUS TO     *
* ANSWER THE FOLLOWING        *
* QUESTIONS.                  *
*******************************
***
```

DOES COVER INTERLOCK INDICATE CLOSED?
Y N

002
OPEN THE COVER AND MANUALLY CLOSE THE INTERLOCK SWITCH.
DOES COVER INTERLOCK SWITCH INDICATE CLOSED?
Y N

003
JUMPER THE YELLOW SIGNAL CABLE ON THE COVER INTERLOCK SWITCH TO FRAME GROUND.
DOES COVER INTERLOCK SWITCH INDICATE CLOSED?
Y N

004
JUMPER FROM AA2-Q2-U08 TO S09.
DOES COVER INTERLOCK SWITCH INDICATE CLOSED?
Y N

005
REPLACE CARD AA2-Q2 (PRINTER CONTROL CARD)

006
REPLACE CABLE FROM AA2-V3 TO PTR-13C OR WIRE FROM SWITCH TO PTR-13C.

007
MEASURE WITH THE CE METER (+) ON THE COVER INTERLOCK SWITCH RED LEAD AND (-) ON THE BLACK LEAD.
DID YOU MEASURE APPROXIMATELY 5 VOLTS?
Y N

008
MEASURE WITH THE CE METER (+) ON PTR-TB1-1 AND (-) ON PTR-TB1-7.
DID YOU MEASURE APPROXIMATELY 5 VOLTS?
Y N

009
CABLE FROM PTR-13A TO PTR-TB1-1 OR CARD PTR-13A (BELT/CARRIAGE CONTROL)

010
CABLE FROM PTR-TB1-1 (+5 VOLTS) OR PTR-TB1-7 (GROUND) TO SWITCH.

011
REPLACE COVER INTERLOCK SWITCH AND ADJUST IT USING PROGRAM ID PRT2, REFERENCE MLM SECTION 4

012
ADJUST THE COVER INTERLOCK SWITCH USING PROGRAM ID PRT2, REFERENCE MLM SECTION 4

01APR75 PN2547557
EC828518 PEC825412

A 1

INTERLOCK PROBLEM CHART

SYSTEM 32

PAGE 2 OF 3

013
DOES THROAT INTERLOCK SWITCH INDICATE CLOSED?
Y N

014
OPEN THE THROAT AND MANUALLY CLOSE THE INTERLOCK SWITCH.
DOES THROAT INTERLOCK SWITCH INDICATE CLOSED?
Y N

015
JUMPER THE YELLOW SIGNAL CABLE ON THE THROAT INTERLOCK SWITCH TO FRAME GROUND.
DOES THROAT INTERLOCK SWITCH INDICATE CLOSED?
Y N

016
JUMPER FROM AA2-Q2-U08 TO U09.
DOES THROAT INTERLOCK SWITCH INDICATE CLOSED?
Y N

017
REPLACE CARD AA2-Q2 (PRINTER CONTROL CARD)

018
REPLACE CABLE FROM AA2-V3 TO PTR-13C OR WIRE FROM SWITCH TO PTR-13C.

019
MEASURE WITH THE CE METER (+) ON THE THROAT INTERLOCK SWITCH RED LEAD AND (-) ON THE BLACK LEAD.
DID YOU MEASURE APPROXIMATELY 5 VOLTS?
Y N

020
CABLE FROM PTR-TB1-1 (+5VOLTS) OR PTR-TB1-7 (GROUND) TO SWITCH.

021
REPLACE THROAT INTERLOCK SWITCH AND ADJUST IT USING PROGRAM ID PRT2, REFERENCE MLM SECTION 4

2 2
E F

E F 2 2

MAP 0407-2

022
ADJUST THE THROAT INTERLOCK SWITCH USING PROGRAM ID PRT2.
REFERENCE MLM SECTION 4

023
DOES THE END OF FORMS INTERLOCK SWITCH INDICATE CLOSED?
Y N

024
REMOVE COVER, REMOVE FORMS, SWING UP PRINTER LOGIC GATE. MANUALLY CLOSE THE END OF FORMS INTERLOCK SWITCH.
DOES THE END OF FORMS INTERLOCK SWITCH INDICATE CLOSED?
Y N

025
JUMPER THE YELLOW SIGNAL CABLE ON THE END OF FORMS INTERLOCK SWITCH TO FRAME GROUND.
DOES THE END OF FORMS INTERLOCK SWITCH INDICATE CLOSED?
Y N

026
JUMPER FROM AA2-Q2-U08 TO S03.
DOES THE END OF FORMS INTERLOCK SWITCH INDICATE CLOSED?
Y N

027
REPLACE CARD AA2-Q2 (PRINTER CONTROL CARD)

028
REPLACE CABLE FROM AA2-V3 TO PTR-13C OR WIRE FROM SWITCH TO PTR-13C.

029
MEASURE WITH THE CE METER (+) ON THE END OF FORMS INTERLOCK SWITCH RED LEAD AND (-) ON THE BLACK LEAD.
DID YOU MEASURE APPROXIMATELY 5 VOLTS?
Y N

01APR75 PN2547557
EC828518 PEC825412

3 3 3 3
G H J K

INTERLOCK PROBLEM CHART

SYSTEM 32

PAGE 3 OF 3

030
CABLE FROM PTR-TB1-1 (+5 VOLTS) OR PTR-TB1-7 (GROUND) TO SWITCH.

031
REPLACE THE END OF FORMS INTERLOCK SWITCH AND ADJUST IT USING PROGRAM ID PRT2, REFERENCE MLM SECTION 4

032
ADJUST THE END OF FORMS INTERLOCK SWITCH USING PROGRAM ID PRT2, REFERENCE MLM SECTION 4

033
PROBLEM IS THAT A SWITCH INDICATES CLOSED ALL OF THE TIME.

OPEN THE FAILING SWITCH BY OPENING THE COVER, OR OPENING THE THROAT OR REMOVING FORMS.
DOES FAILING SWITCH MECHANICALLY OPEN?
Y N

034
ADJUST OR REPLACE FAILING INTERLOCK SWITCH. ADJUST IT USING PROGRAM ID PRT2, REFERENCE MLM SECTION 4

035
REMOVE THREE WIRE CONNECTOR FROM FAILING SWITCH.
DOES THE FAILING SWITCH INDICATE OPEN?
Y N

036
REPLACE CARD AA2-Q2 (PRINTER CONTROL CARD)

037
MEASURE WITH THE CE METER (+) ON THE FAILING INTERLOCK SWITCH RED LEAD AND (-) ON THE BLACK LEAD.
DID YOU MEASURE APPROXIMATELY 5 VOLTS?
Y N

038
MEASURE WITH THE CE METER (+) ON PTR-TB1-1 AND (-) ON PTR-TB1-7.
DID YOU MEASURE APPROXIMATELY 5 VOLTS?
Y N

039
CABLE FROM PTR-13A TO PTR-TB1-1 OR CARD PTR-13A (BELT/CARRIAGE CONTROL)

040
CABLE FROM PTR-TB1-1 (+5 VOLTS) OR PTR-TB1-7 (GROUND) TO SWITCH.

041
REPLACE FAILING INTERLOCK SWITCH AND ADJUST IT USING PROGRAM ID PRT2, REFERENCE MLM SECTION 4

01APR75 PN2547557

EC828518 PEC825412

PAGE 1 OF 5

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	A	2	001
0102	A	2	001
0103	A	2	001
0105	A	2	001
0112	A	2	001
0633	A	2	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
4	034	0601	A
3	004	300	A
2	002	318	A

001
AVOID USE OF PROBE EXTENDER
USE OF PROBE EXTENDERS
WHILE PROBING 62GV SIGNAL
LINES CAN CAUSE THE****
SYSTEM TO HANG UP******
****

TITLE	PN	MAP #
MAIN ENTRY	2547586	0600
62GV 20	2547587	0601
62GV 100	2547544	0602
62GV 103	2547545	0603
62GV 104	2547546	0604
62GV 105	2547547	0605
62GV 106	2547548	0606
62GV 107	2547549	0607
62GV 108	2547558	0608
62GV 111	2547559	0609
62GV 112	2547585	0610
62GV 113	2547609	0611
62GV 114	2547627	0612
62GV 115	2547628	0613
62GV 116	2547629	0614
62GV 117	2547630	0615
62GV 121	2547631	0616
62GV 122	2547632	0617
62GV 123	2547633	0618
62GV 126	2547634	0619
62GV 127	2547635	0620
62GV 128	2547636	0621
62GV 133	2547637	0622

(STEP 001 CONTINUES)

(STEP 001 CONTINUED)

62GV 210	2547593	0623
62GV 220	2547594	0624
62GV 230	2547595	0625
62GV 240	2547596	0626
62GV 250	2547597	0627
62GV 260	2547598	0628
62GV 270	2547599	0629
62GV 280	2547603	0630
READ FAIL	2547605	0631
SEEK FAIL	2547606	0632
INTF FAIL	2547607	0633
CABLES	2547608	0634
NOT READY	2547783	0635

****

(ENTRY POINT A)
1.POWER OFF
2.RESEAT CABLES DW1-A1,
DW1-B1, DW1-B5, DW1-B6,
AA2-A2, AA2-A3, AA2-A4,
AND AA2-A5
3.RESEAT CARDS AA2-F2, G2,
D2, C2, D4, C4, E2,
DW1-B3, AND DW1-A5.
4.POWER ON.
5.WAIT 45 SECONDS.
6.CHECK VOLTAGES

+6 VOLTS	AA2-C2-G11
-4 VOLTS	AA2-C4-B06
+24 VOLTS	AA2-A3-B02
-24 VOLTS	AA2-A4-B13
+24 VOLTS(BRAKE)	AA2-A3-B05

NOTE-REMOVE CAP WHILE MEASURING
VOLT. REINSTALL CAP AT AA2-A3-B05.
ARE ALL DC VOLTAGES CORRECT
WITHIN 10% ?
Y N
|
| 002
| GO TO MAP 318, ENTRY POINT A.
|
|
|
|
|

003
MEASURE +8.5V AT AA2-F2-G11
IS VOLTAGE CORRECT WITHIN 10%?
Y N

004
GO TO MAP 300, ENTRY POINT A.

005
MEASURE +8.5V AT AA2-F2-B11 AND
S11
IS VOLTAGE CORRECT WITHIN 10%?
Y N

006
RESEAT CARD AA2-F2
MEASURE +8.5V AT AA2-F2-B11 AND
S11
IS VOLTAGE CORRECT WITHIN 10%?
Y N

007
REPLACE CARD AA2-F2

008
GO TO STEP 017,
ENTRY POINT B.

009
PROBE AA2-E2-D02(-FCU READY)
IS LINE DOWN?
Y N

010
PROBE AA2-F2-U02(-FCU DC RESET)
IS LINE DOWN?
Y N

011
PROBE AA2-E2-S13(+ DATA
UNSAFE)
IS LINE DOWN?
Y N

012
REPLACE CARD AA2-F2

013
GO TO STEP 017,
ENTRY POINT B.

014
GO TO STEP 017,
ENTRY POINT B.

015
PROBE AA2-F2-U02 (FCU DC RESET).
DEPRESS CE RESET.
PROBE AA2-F2-U06 (RESET FCU CHECK
TRGRS).
DEPRESS CE RESET.
DO LINES PULSE DOWN?
Y N

016
REPLACE CARD AA2-F2

017
(ENTRY POINT B)
*LOAD THE '62GV' PROGRAM
BY THE FOLLOWING STEPS:
1.SET DATA SWITCHES TO FF00.
2.SET MODE SELECTOR SWITCH
TO PROC RUN.
3.SET THE IMPL AND IPL
SWITCHES TO THE UP POSIT-
ION AND ALL OTHER TOGGLE
SWITCHES TO THE DOWN
POSITION.
4.INSERT THE DIAG 01
DISKETTE AND CLOSE
THE DOOR.
5.DEPRESS THE LOAD KEY.
(WAIT FOR THE CRT DISPLAY)
DID 33FD FAIL TO IMPL? (CRT
DISPLAY WITHIN 45 SECONDS)
Y N

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PAGE 4 OF 5

018
(ENTRY POINT C)
1. DEPRESS THE START KEY.
2. DEPRESS THE INQ KEY.
3. ENTER PROGRAM ID BY TYPING IN 62GV.
4. DEPRESS THE ENTER KEY.
****
NOTE THE INDIVIDUAL TESTS NORMALLY RUN IN A FEW SECONDS AT MOST. TROUBLES MAY CAUSE CERTAIN TESTS TO RUN LONGER AND EVEN HANG UP. IF ANY TEST IS DISPLAYED FOR MORE THAN ONE MINUTE ASSUME A PROGRAM HANGUP HAS OCCURRED.
DID A PROCESS CHECK OCCUR?
Y N

019
DID A PROGRAM HANGUP OCCUR?
Y N

020
FOLLOW INSTRUCTIONS ON CRT

021
WAS TU50 DISPLAYED ON THE SCREEN?
Y N

022
REPLACE CARDS AA2-F2, G2 AND E2

023
PROBE AA2-G2-P09
(-1F READ CLOCK)
IS LINE PULSING?
Y N

024
REPLACE CARDS AA2-E2 AND D4

025
PROBE AA2-G2-M03
(-STANDARDIZED DATA)
IS LINE PULSING?
Y N

026
REPLACE CARDS AA2-E2 AND D4

027
PROBE AA2-G2-P12
(+1F WRITE CLOCK)
IS LINE PULSING?
Y N

028
REPLACE CARDS AA2-E2 AND D4

029
REPLACE CARDS AA2-F2, G2, AND E2.

030
WAS TU50 DISPLAYED ON CRT?
Y N

031
POWER OFF. POWER ON. IMPL DIAG 01 AS SOON AS THE STOP LIGHT COMES ON.
DID PROCESS CHECK OCCUR?
Y N

032
REPLACE CARDS AA2-F2 G2 AND E2

033
REPLACE CARDS AA1-H2, AA1-J2, AND AA2-G2

034
GO TO MAP 0601, ENTRY POINT A.

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EC832050 PEC830358A

PAGE 5 OF 5

035
POWER OFF.POWER ON. IMPL DIAG 01
AS SOON AS THE STOP LIGHT COMES
ON.
DID 33FD FAIL TO IMPL ?
Y N

036
GO TO PAGE 4, STEP 018,
ENTRY POINT C.

037
REPLACE CARDS AA2-F2 G2 AND E2

SYSTEM 32

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0600	A	1	001
0648	A	1	001
0649	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
1	003	0631	A

001
(ENTRY POINT A)
DEPRESS INQ KEY. LOAD PROGRAM ID TUSELCT. SELECT DEVICE 62GV. SELECT TU01. SELECT OPTION 1. PROBE AA2-G2-P11(+FILE FAST SYNC).
IS LINE PULSING?
Y N
|
| 002
| REPLACE CARD AA2-G2.
|
|
003
@
GO TO MAP 0631, ENTRY POINT A.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0644	A	1	001
0647	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
3	032	0605	A
3	028	0605	A
3	027	0605	A
3	031	0606	A
2	017	0635	Q
2	016	0635	Q
2	013	0635	Q
2	012	0635	Q

001
(ENTRY POINT A)
POWER OFF. INSPECT DRIVE MOTOR, MOTOR BRAKE, DRIVE BELT, BELT TENSIONING SPRING, AND ACTUATOR LOCKOUT LEVER FOR OBVIOUS FAILURES.
ANY OBVIOUS FAILURES?
Y N

002
IS THIS A 3MB OR 5MB FILE?
Y N

003
IS BRAKE OR MOTOR HOT TO TOUCH OR GIVING OFF BURNING SMELL?
Y N

004
IS MOTOR THERMAL BUTTON OUT?
Y N

005
IS MOTOR TENSIONING SPRING LOOSE OR BROKEN? (SEE MLM)
Y N

006
IS ACTUATOR LOCKOUT LEVER IN LOCK ON POSITION.?
Y N

007
POWER ON. IMPL DIAG01 AS SOON AS STOP LIGHT COMES ON. BE SURE THAT GENERAL LOGIC PROBE IS SET TO NONE. PROBE AA2-E2-B04(+SPEED OK).
IS LINE PULSING?
Y N

008
IS LINE DOWN?
Y N

009
METER VOLTAGE
+12V AA2-C4-B09
-12V AA2-C4-J12

ARE VOLTAGES OUTSIDE RANGE OF 11 TO 13 VOLTS?
Y N

010
LOAD PROGRAM ID 62TMSNS

011
REPLACE AA2-C4 CARD (SOURCE)
AA2-C2 CARD (LOAD1)
AA2-D4 CARD (LOAD2)

012
GO TO MAP 0635, ENTRY POINT Q.

013
GO TO MAP 0635, ENTRY POINT Q.

014
MOVE LOCKOUT LEVER TO OFF POSITION

015
REPLACE MOTOR TENSION SPRING

016
GO TO MAP 0635, ENTRY POINT Q.

017
GO TO MAP 0635, ENTRY POINT Q.

018
IS BRAKE OR MOTOR HOT TO TOUCH OR GIVING OFF BURNING SMELL?
Y N

019
IS MOTOR THERMAL BUTTON OUT?
Y N

020
IS MOTOR TENSIONING SPRING LOOSE OR BROKEN? (SEE MLM)
Y N

021
IS ACTUATOR LOCKOUT LEVER IN LOCK ON POSITION.?
Y N

022
POWER ON. IMPL DIAG01 AS SOON AS STOP LIGHT COMES ON. BE SURE THAT GENERAL LOGIC PROBE IS SET TO NONE. PROBE AA2-E2-B04(+SPEED OK).
IS LINE PULSING?
Y N

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023
IS LINE DOWN?
Y N

024
METER VOLTAGE
+12V AA2-C4-B09
-12V AA2-C4-J12

ARE VOLTAGES OUTSIDE RANGE OF 11 TO 13 VOLTS?
Y N

025
LOAD PROGRAM ID 62GVSNS

026
REPLACE AA2-C4 CARD (SOURCE)
AA2-C2 CARD (LOAD1)
AA2-D4 CARD (LOAD2)

027
GO TO MAP 0605, ENTRY POINT A.

028
GO TO MAP 0605, ENTRY POINT A.

029
MOVE LOCKOUT LEVER TO OFF POSITION.

030
REPLACE MOTOR TENSION SPRING

031
GO TO MAP 0606, ENTRY POINT A.

032
GO TO MAP 0605, ENTRY POINT A.

033
REPAIR OBVIOUS PROBLEMS. CHECK PULLEYS AND TENSION SPRING BEFORE REPLACING BELT

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0605	A	1	001
0651	A	1	001

```
001
(ENTRY POINT A)
PROBE AA2-C4-J02(+VFO FAST SYNC)
IS LINE UP?
Y N
|
| 002
| POWER OFF. REMOVE AA2-C4 CARD.
| METER RESISTANCE OF ACTUATOR COIL
| AA2-A3-B04 TO AA2-A3-B02.
| IS RESISTANCE BETWEEN 40 AND 100
| OHMS?
| Y N
| |
| | 003
| | CHECK CONTINUITY OF CABLE IN
| | D-W1A1. SEE CABLE CHECKING
| | CHART PAGE 0634-2
| | IS CABLE OK?
| | Y N
| | |
| | | 004
| | | REPLACE CABLE. REINSTALL CARD
| | | AA2-C4
| | |
| | |
| | 005
| | REPLACE DE UNIT. SEE MLM.
| | REINSTALL CARD AA2-C4
| |
| |
| 006
| REINSTALL CARD AA2-C4. POWER ON.
| WAIT 45 SECONDS. JUMPER
| AA2-C4-J13 TO J08.
| IS ACTUATOR ARM BEHIND HOME?
| Y N
| |
| | 007
| | REMOVE JUMPER. PROBE
| | AA2-D4-B12(+TOO FAST)
| | IS LINE DOWN
| | Y N
| | |
| | | 008
| | | REPLACE CARD AA2-D4
| | |
| | |
| | |
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| | |
| | |
| | |
| | |
| | 009
| | REPLACE CARD AA2-E2
| |
| |
| 010
| REPLACE CARD AA2-C4
|
|
011
REPLACE CARD AA2-E2
```

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

001
(ENTRY POINT A)
PROBE AA2-E2-B13(+OUT)
LINE DOWN?
Y N
|
| 002
| OBSERVE ACTUATOR ARM (SEE NOTE
| PAGE 0630-1). JUMPER AA2-E2-G08
| TO J08.
| DOES ACTUATOR ARM MOVE
| OUTWARDS(TOWARD EDGE OF DISK)
| Y N
| |
| | 003
| | REMOVE JUMPER. REPLACE CARD
| | AA2-E2
| |
| |
| 004
| REMOVE JUMPER. REPLACE CARD
| AA2-D4
|
|
005
REPLACE CARD AA2-E2

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0602	A	1	001
0606	A	1	001
0613	A	1	001
0651	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
1	002	0300	A
3	027	0603	A
3	028	0603	A
3	029	0606	A

001
(ENTRY POINT A)
POWER OFF. DISCONNECT 208/240 VAC SUPPLY TO DRIVE MOTOR AT DETB1-1 AND DETB1-2. (LOCATED ON REAR OF 62GV CASTING.) POWER ON. METER DC VOLTAGE AT FOLLOWING POINTS: AA2-C4-G02 POS AND D08 NEG, AND AA2-C4-G13 NEG D08 POS.
IS VOLTAGE INSIDE RANGE 21.6V TO 26.4V ON BOTH LINES?
Y N

002
GO TO MAP 0300, ENTRY POINT A.

003
IS BRAKE DISENGAGED?
Y N

004
METER DC VOLTAGE DETB1-6 (POS) DETB1-5 (NEG) FOR 24 VOLTS.
IS VOLTAGE INSIDE RANGE 21.6V TO 26.4V?
Y N

005
POWER OFF. CHECK CONTINUITY OF CABLE IN AA2-A3 TO DETB1. SEE PAGE 0634-2.
IS CABLE GOOD?
Y N

006
REPLACE CABLE AA2-A3.
RECONNECT VAC SUPPLY AT DETB1. RESET MOTOR THERMAL BUTTON IF TRIPPED

007
REPLACE CARD AA2-D4. RECONNECT VAC SUPPLY AT DETB1. RESET MOTOR THERMAL BUTTON IF TRIPPED.

008
REPLACE BRAKE ASSEMBLY.(SEE MLM) RECONNECT VAC SUPPLY AT DETB1. RESET MOTOR THERMAL BUTTON IF TRIPPED

009
PROBE AA2-D4-B08 (+BRAKE FAILURE) IS LINE DOWN?
Y N

010
REPLACE CARD AA2-D4. RECONNECT VAC SUPPLY AT DETB1. RESET MOTOR THERMAL BUTTON IF TRIPPED.

011
CHECK BRAKE ADJUSTMENT.(SEE MLM) CHECK TENSION ON DRIVE BELT. CHECK FOR LOOSE PULLEYS CHECK FOR BIND IN MOTOR AND SPINDLE BEARINGS. ALL GOOD?
Y N

012
MAKE NECESSARY REPAIRS. RECONNECT VAC SUPPLY AT DETB1. RESET MOTOR THERMAL BUTTON IF TRIPPED.

013
POWER OFF. RECONNECT VAC SUPPLY TO DETB1-1 AND DETB1-2. POWER ON. DOES DRIVE MOTOR FAIL TO START?
Y N

014
DOES DRIVE MOTOR RUN SLOWLY?
Y N

015
PROBE AA2-D4-G08(+SPEED PULSES) IS LINE PULSING?
Y N

016
POWER OFF. CHECK CONTINUITY OF CABLE AA2-A3 AND CONNECTIONS TO DETB1-7 AND DETB1-8. SEE PAGE 0634-2.
CABLE AND CONNECTIONS OK?
Y N

017
REPLACE CABLE IF BAD. REPAIR CONNECTIONS IF BAD.

018
POWER OFF. CHECK TRANSDUCER ADJUSTMENT.(SEE MLM) ADJUSTMENT GOOD?
Y N

019
ADJUST TRANSDUCER.

020
REPLACE TRANSDUCER.

021
PROBE AA2-E2-B04(+SPEED OK) IS LINE UP?
Y N

022
PROBE AA2-E2-B03(+SPEED PULSES) AND AA2-E2-D05(+SPEED SS) BOTH LINES PULSING?
Y N

023
CHECK TRANSDUCER ADJUSTMENT.(SEE MLM) IF ADJUSTMENT OK REPLACE CARD AA2-D4.

024
PROBE AA2-E2-B02(+SPEED HOLDOVER) IS LINE UP?
Y N

025
CHECK TRANSDUCER ADJUSTMENT.(SEE MLM) IF ADJUSTMENT OK REPLACE CARD AA2-D4.

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026
CHECK SHIELD OF TRANSDUCER CABLE FOR GOOD GROUND CONNECTION AT SYSTEM. IF OK REPLACE CARD AA2-E2.

027
GO TO MAP 0603, ENTRY POINT A.

028
GO TO MAP 0603, ENTRY POINT A.

029
GO TO MAP 0606, ENTRY POINT A.

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0602	A	1	001
0605	A	1	001
0611	A	1	001
0651	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
1	004	0310	A
2	015	0605	A
2	017	0605	A

001
(ENTRY POINT A)
POWER OFF. PRESS ON THE RED MOTOR THERMAL TRIP BUTTON, LOCATED ON THE BRAKE END OF MOTOR.
DOES MOTOR NOW RUN?
Y N

002
PROBE AA2-G2-B06(+BRAKE FAILURE) IS LINE UP?
Y N

003
METER VAC SUPPLY ACROSS DETB1-1 AND DETB1-2, LOCATED ON REAR OF 62GV CASTING, FOR 208/230V VAC 60 HZ OR 240 VAC 50 HZ.
VAC SUPPLY PRESENT?
Y N

004
METER VAC SUPPLY AT ACTB1, BETWEEN TERMINALS 1 AND 2, FOR 208/230 VAC 60 HZ OR 240 VAC 50 HZ. IF VOLTAGE IS PRESENT, CABLE IS OPEN BETWEEN ACTB1 AND 62GV-DETB1.
IF VOLTAGE IS NOT PRESENT, GO TO MAP 0310, ENTRY POINT A.

005
POWOR OFF. GO TO MLM TO IDENTIFY THE TYPE OF MOTOR THAT IS INSTALLED.
IS THIS AN OLD STYLE DISK DRIVE MOTOR?
Y N

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006
REPLACE THE DISK DRIVE START RELAY. (SEE MLM).
POWER ON
DOES THE DISK DRIVE MOTOR TURN?
Y N

007
REPLACE DRIVE MOTOR. (SEE MLM)

008
THE DISK DRIVE START RELAY WAS FAULTY.

009
REPLACE DRIVE MOTOR. (SEE MLM)

010
FCU ERROR. FALSE BRAKE FAILURE INDICATED.

011
OBSERVE MOTOR AND BRAKE FOR 10 TO 20 MINUTES FOR OVERHEATING?
ARE THEY GETTING HOT?
Y N

012
CHECK MOTOR AND BRAKE LEAD CONNECTIONS FOR POOR CONTACT. IF MOTOR TRIPS AGAIN REPLACE MOTOR.

013
GO TO THE MLM TO IDENTIFY THE TYPE OF MOTOR THAT IS INSTALLED.
IS THIS AN OLD STYLE DISK DRIVE MOTOR?
Y N

014
POWER OFF. MEASURE THE RESISTANCE BETWEEN TERMINALS 2 AND 4 ON THE START RELAY. SEE MLM. USE THE 'X1' SCALE ON THE METER.
WAS ZERO OHMS RESISTANCE MEASURED?
Y N

015
GO TO MAP 0605, ENTRY POINT A.

016
REPLACE THE DISK DRIVE START RELAY. (SEE MLM)

017
GO TO MAP 0605, ENTRY POINT A.

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EC832050 PEC828518

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
1	005	0608	A

001
(ENTRY POINT A)
PROBE AA2-E2-M02(-1F WRITE CLOCK)
IS LINE PULSING?
Y N
|
| 002
| REPLACE CARD AA2-D2
|
|
003
PROBE AA2-C2-G03(-SELECT OUT DEMOD)
IS LINE UP?
Y N
|
| 004
| PROBE AA2-C2-J07(-SELECT IN
| DEMOD)
| IS LINE UP?
| Y N
| |
| | 005
| | GO TO MAP 0608, ENTRY POINT A.
| |
| |
| 006
| REPLACE CARD AA2-E2
|
|
007
REPLACE CARD AA2-E2

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0607	A	1	001
0651	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
1	003	0622	A

001
(ENTRY POINT A)
ADD THE FOLLOWING JUMPERS:
AA2-C2-G03 TO D08
AA2-C2-J07 TO J08
METER DC VOLTAGE BETWEEN
AA2-C2-D11 AND AA2-C2-D13.
IS VOLTAGE GREATER THAN 1 VOLT?
Y N

002
REMOVE JUMPERS PREVIOUSLY INSTALLED. JUMPER AA2-E2-B12 TO D08.
IS ARM NOW AT OUTER STOP? (SEE PAGE 0630-1)
Y N

003
GO TO MAP 0622, ENTRY POINT A.

004
REMOVE JUMPER. PROBE AA2-D4-D10(+DESIRED VELOCITY)
IS LINE PULSING?
Y N

005
PROBE AA2-E2-P04(-SELECT OUT MOD)
IS LINE PULSING?
Y N

006
REPLACE CARD AA2-E2

007
PROBE AA2-D4-D07(LINEAR REGION)
IS LINE PULSING?
Y N

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| | | |
| | | |       PAGE    2 OF    2
| | | |
| | | |
| | | 008
| | | JUMPER AA2-E2-D12 TO D08
| | | DOES      ARM      CONTINUOUSLY
| | | OSCILLATE RAPIDLY ACROSS DISK
| | | Y N
| | | |
| | | | 009
| | | | REPLACE  CARDS  AA2-C4  AND
| | | | D4. REMOVE JUMPER
| | | |
| | | |
| | | 010
| | | REPLACE  CARD  AA2-C4. REMOVE
| | | JUMPER.
| | |
| | |
| | 011
| | REPLACE CARD AA2-C2
| |
| |
| 012
| REPLACE CARD AA2-E2
|
|
013
REMOVE   JUMPERS.   REPLACE    CARD
AA2-C2.
```

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
1	004	0614	A
1	005	0614	A

```
001
(ENTRY POINT A)
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE DOWN?
Y N
|
| 002
| LEAVE PROBE ON AA2-D4-D11. JUMPER
| AA2-C2-D11 TO AA2-C2-D13.
| LINE DOWN?
| Y N
| | |
| | 003
| | REMOVE JUMPER. REPLACE CARD
| | AA2-D4.
| | |
| | |
| 004
| POWER OFF. REMOVE JUMPER. POWER
| ON. WAIT 45 SECONDS.
| GO TO MAP 0614. ENTRY POINT A.
|
|
005
GO TO MAP 0614. ENTRY POINT A.
```

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

001
(ENTRY POINT A)
METER DC VOLTAGE AA2-A3-D07(NEG) TO D08(POS) FOR 8.6 VOLTS.(POWER ON IF PREVIOUSLY REMOVED.
IS VOLTAGE WITHIN RANGE 7.7V TO 9.5 V?
Y N
|
| 002
| REPLACE CARD AA2-C2
|
|
003
POWER OFF. INSTALL SERVO SIMULATOR. (SEE NOTE PAGE 0630-1) POWER ON.
PROBE AA2-C2-J05(-SERVO CLOCK)
IS LINE PULSING?
Y N
|
| 004
| REPLACE CARD AA2-C2
|
|
005
CHECK CONTINUITY OF CABLE D-W1A1.
(SEE PAGE 0634-2)
IS CABLE CONTINUITY GOOD?
Y N
|
| 006
| REPLACE CABLE
|
|
007
REPLACE DE UNIT. (SEE MLM)

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	015	0100	A
1	003	0606	A
2	011	0612	A
2	014	0615	A

001
(ENTRY POINT A)
OBSERVE DRIVE MOTOR, DISK AND DRIVE BELT
IS DISK SPINNING?
Y N
|
| 002
| IS DRIVE MOTOR SHAFT TURNING?
| Y N
| |
| | 003
| | GO TO MAP 0606, ENTRY POINT A.
| |
| 004
| CHECK BELT AND PULLEYS. MAKE REPAIRS.
|
005
PROBE AA2-E2-U02
IS LINE DOWN?
Y N
|
| 006
| METER DC VOLTAGE AA2-C4-J12 (NEG) AA2-C4-J08 (POS) FOR 12 VOLTS.
| VOLTAGE WITHIN RANGE 10.8V TO 13.2V?
| Y N
| |
| | 007
| | REPLACE CARD AA2-C4 (SOURCE)
| | CARD AA2-C2 (LOAD1)
| | CARD AA2-D4 (LOAD2)
| |
| 008
| PROBE AA2-E2-M02(1F WRITE CLOCK)
| IS LINE PULSING?
| Y N
| |
| | 009
| | REPLACE CARD AA2-D2
| |
| |
| |
| |
| |
| |

010
PROBE AA2-C2-J05(+SERVO CLOCKS)
IS LINE PULSING?
Y N

011
GO TO MAP 0612, ENTRY POINT A.

012
PROBE AA2-E2-M10(+LOOK AHEAD SS)
IS LINE PULSING?
Y N

013
REPLACE CARD AA2-E2

014
GO TO MAP 0615, ENTRY POINT A.

015
GO TO MAP 0100, ENTRY POINT A.

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0611	A	1	001
0651	A	1	001

001
(ENTRY POINT A)
POWER OFF. INSTALL SERVO SIMULATOR. SEE NOTE PAGE 0630-1. POWER ON. WAIT 45 SECONDS. PROBE AA2-C2-J05 (+SERVO CLOCKS)
IS LINE PULSING?
Y N

002
METER DC VOLTAGE AA2-C2-B09 (POS) AA2-C2-D08 (NEG) FOR 12 VOLTS.
VOLTAGE WITHIN RANGE 10.8V TO 13.2V ?
Y N

003
REPLACE CARD AA2-C4 (SOURCE)
CARD AA2-C2 (LOAD1)
CARD AA2-D4 (LOAD2)
REMOVE SERVO SIMULATOR

004
REPLACE CARD AA2-C2. REMOVE THE SERVO SIMULATOR.

005
POWER OFF. REMOVE THE SERVO SIMULATOR. CHECK CONTINUITY OF CABLE D-W1B1. SEE PAGE 0634-2
IS CONTINUITY OK?
Y N

006
REPLACE CABLE.

007
POWER ON. METER DC VOLTAGE AA2-A3-D07 (NEG) D08 (POS) FOR 8.6 VOLTS
IS VOLTAGE BETWEEN 7.7V AND 9.5V?
Y N

008
REMOVE CONNECTOR D-W1A1 ON DISK.
IS VOLTAGE NOW OK?
Y N

009
REPLACE CARD AA2-C2

010
REPLACE THE DE.(SEE MLM)

011
REPLACE THE DE.(SEE MLM)

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EC830358 PEC830357

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
4	041	0605	A
1	005	0622	A

001
(ENTRY POINT A)
POWER OFF. CAUTIOUSLY TEST TEMPERATURE OF BRAKE HOUSING BY HAND.
IS THE BRAKE HOT?
Y N

002
POWER ON. WAIT 45 SECONDS. OBSERVE ACTUATOR ARM.
ARM AT HOME POSITION?(SEE PAGE 0630-1)
Y N

003
ARM BEHIND HOME POSITION?(SEE PAGE 0630-1)
Y N

004
JUMPER AA2-E2-D12 TO D08 AND OBSERVE ACTUATOR ARM
ACTUATOR ARM AT OR HITTING INNER STOP? (SEE PAGE 0630-1)
Y N

005
GO TO MAP 0622, ENTRY POINT A.

006
POWER OFF. REMOVE JUMPER. INSTALL SERVO SIMULATOR. SEE PAGE 0630-1. POWER ON. WAIT 45 SECONDS. PROBE AA2-C2-J05(+SERVO CLOCKS)
IS LINE PULSING?
Y N

007
REPLACE CARDS AA2-C2 AND E2. REMOVE THE SERVO SIMULATOR

008
POWER OFF AND REMOVE THE AA2-C4 CARD. REMOVE THE SERVO SIMULATOR. MEASURE THE RESISTANCE OF ACTUATOR COILS AA2-A3-B02 TO B03 AND AA2-A3-B02 TO B04. RESISTANCE SHOULD BE 40 TO 100 OHMS. IS RESISTANCE GOOD?
Y N

009
REINSTALL AA2-C4 CARD. CHECK CABLE AA2-A3 CONTINUITY. SEE PAGE 0634-2. IF CABLE IS OK REPLACE DE UNIT.(SEE MLM)

010
REINSTALL AA2-C4 CARD. POWER ON. METER DC VOLTAGE AA2-C2-B04 TO D08 AND AA2-C2-B05 TO D08. IS VOLTAGE BETWEEN +0.4V AND -0.4V ON BOTH LINES?
Y N

011
REPLACE CARDS AA2-E2, C4, AND D4.

012
CHECK CABLE IN D-W1B1 FOR CONTINUITY. SEE PAGE 0634-2. IF CABLE OK REPLACE DE UNIT. (SEE MLM)

013
PROBE AA2-D4-G03(+OUT CURRENT SELECTED)
IS LINE DOWN?
Y N

014
REPLACE CARDS AA2-D4 AND C4.

015
REPLACE CARD AA2-D4.

016
PROBE AA2-E2-D06(+BRAKE FAILURE)
IS LINE DOWN?
Y N

017
REPLACE CARD AA2-D4

018
PROBE AA2-E2-J04(-STORE BIT 16) AND AA2-E2-G03(-STORE BIT 32).
EITHER LINE DOWN OR PULSING?
Y N

019
JUMPER AA2-E2-D02 TO D08. (FILE IS NOW READY TO SYSTEM.) IMPL DIAG 01 AND LOAD PROGRAM ID 62GV4.
DO DIAGNOSTICS RUN TO ALL TESTS RAN MESSAGE?
Y N

020
POWER OFF. REMOVE JUMPER. POWER ON. WAIT 45 SECONDS. PROBE AA2-D4-D11 (-SETTLED ON TRACK)
IS LINE PULSING?
Y N

021
IS LINE UP?
Y N

022
PROBE AA2-E2-D02 (-FILE READY)
IS LINE DOWN?
Y N

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EC828518 PEC825412

023
PROBE AA2-E2-J09(-SEEK COMPLETE)
IS LINE UP?
Y N

024
PROBE AA2-D4-J05(-OUT)
IS LINE UP?
Y N

025
POWER OFF. INSTALL SERVO SIMULATOR. SEE PAGE 0630-1. POWER ON. WAIT 45 SECONDS. PROBE AA2-E2-D02 (-FILE READY)
IS LINE DOWN?
Y N

026
REPLACE CARD AA2-C2. REMOVE THE SERVO SIMULATOR.

027
JUMPER AA2-C4-J11 TO J08. METER DC VOLTAGE AA2-C2-D11 TO AA2-C2-D13 ON 10 VOLT RANGE.
IS VOLTAGE GREATER THAN 3.0 VOLTS?
Y N

028
REPLACE CARDS AA2-D4 AND C4. REMOVE THE SERVO SIMULATOR AND JUMPER.

029
REPLACE CARD AA2-C2. REMOVE THE SERVO SIMULATOR AND JUMPER.

030
JUMPER AA2-E2-D02 TO D08.(SEE PAGE 0630-1)
DOES ACTUATOR ARM MOVE TO INNER STOP?
Y N

031
REPLACE CARDS AA2-C4 AND E2.

032
REPLACE CARD AA2-E2

033
POWER OFF. INSTALL SERVO SIMULATOR.(SEE PAGE 0630-1) POWER ON. WAIT 45 SECONDS. PROBE AA2-E2-D02 (-FILE READY)
IS LINE DOWN?
Y N

034
REPLACE CARD AA2-E2. REMOVE THE SERVO SIMULATOR.

035
REPLACE CARD AA2-C4. REMOVE THE SERVO SIMULATOR.

036
REPLACE CARD AA2-D4

037
REPLACE CARD AA2-D4

038
REPLACE CARD AA2-C4

039
REMOVE JUMPER. REPLACE CARD AA2-E2.

040
REPLACE CARD AA2-E2

041
GO TO MAP 0605, ENTRY POINT A.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0609	A	1	001
0651	A	1	001

001
(ENTRY POINT A)
PROBE AA2-E2-J09 (-SEEK COMPLETE)
IS LINE UP?
Y N

002
POWER OFF. INSTALL SERVO SIMULATOR. SEE PAGE 0630-1. POWER ON. WAIT 45 SECONDS. PROBE AA2-E2-D02 (-FILE READY)
IS LINE DOWN?
Y N

003
REPLACE CARD AA2-C2. REMOVE THE SERVO SIMULATOR

004
JUMPER AA2-C4-J11 TO J08. METER DC VOLTAGE AA2-C2-D11 TO AA2-C2-D13 ON 10 VOLT RANGE.
IS VOLTAGE GREATER THAN 3.0 VOLTS?
Y N

005
REPLACE CARDS AA2-D4 AND C4. REMOVE THE SERVO SIMULATOR AND JUMPER.

006
REPLACE CARD AA2-C2. REMOVE THE SERVO SIMULATOR AND JUMPER.

007
POWER OFF. INSTALL THE SERVO SIMULATOR. SEE PAGE 0630-1. POWER ON. WAIT 45 SECONDS. PROBE AA2-E2-D02 (-FILE READY)
IS LINE DOWN?
Y N

008
REPLACE CARD AA2-E2. REMOVE THE SERVO SIMULATOR.

009
REPLACE CARD AA2-C4. REMOVE THE SERVO SIMULATOR.

02APR75 PN2547629

EC828518 PEC825412

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0611	A	1	001
0651	A	1	001

001
(ENTRY POINT A)
PROBE AA2-E2-U12(+WRITE CURRENT ON)
IS LINE DOWN OR PULSING?
Y N
|
| 002
| REPLACE CARD D-W1B3
|
|
003
POWER OFF REMOVE D-W1B3 CARD. METER
CONTINUITY AA2-E2-U12 TO D-W1B3G04.
IS CONTINUITY OK?
Y N
|
| 004
| REPLACE CABLE D-W1B5. REINSTALL
| CARD D-W1B3.
|
|
005
REPLACE CARD AA2-E2. REINSTALL CARD
D-W1B3.

SYSTEM 32

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

001
(ENTRY POINT A)
POWER OFF. CHECK FOR LOOSE PULLEYS, SLACK DRIVE BELT. (BROKEN TENSION SPRING)
ALL OK?
Y N
|
| 002
| MAKE REPAIRS
|
|
003
POWER ON. WAIT 45 SECONDS. OBSERVE ACTUATOR ARM (SEE PAGE 0630-1)
IS ARM BEHIND HOME?
Y N
|
| 004
| REPLACE CARD AA2-E2
|
|
005
REPLACE CARDS AA2-C4, D4 AND E2.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

001
(ENTRY POINT A)
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE UP?
Y N
|
| 002
| REPLACE CARD AA2-E2
|
|
003
PROBE AA2-E2-M03 (-SELECT IN DEMOD)
IS LINE PULSING?
Y N
|
| 004
| REPLACE CARDS AA2-D4 AND E2.
|
|
005
PROBE AA2-D4-B07 (-ON TRACK). NOTE
LEVEL THEN ADD JUMPER AA2-C2-D11 TO
AA2-C2-D13.
DID LINE CHANGE?
Y N
|
| 006
| REPLACE CARD AA2-D4
|
|
007
REPLACE CARDS AA2-C4 AND C2.

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

001
(ENTRY POINT A)
PROBE AA2-E2-D07 (-FCU SEEK 2)
IS LINE DOWN?
Y N

002
POWER OFF AND OBSERVE ACTUATOR ARM. SEE PAGE 0630-1.
IS ARM AT OUTSIDE STOP?
Y N

003
JUMPER AA2-E2-U02 TO U08. POWER ON. OBSERVE ACTUATOR ARM. SEE PAGE 0630-1.
IS ARM AT OUTSIDE STOP?
Y N

004
SET GENERAL LOGIC PROBE LATCH TO 'UP'. PROBE AA2-D4-D07 (-LINEAR REGION) AND REMOVE JUMPER ON E2-U02.
IS UP LIGHT ON? (INDICATES UP PULSE)
Y N

005
LEAVE PROBE ON AA2-D4-D07. JUMPER AA2-D4-B04 TO D08.
IS UP LIGHT ON? (INDICATES UP PULSE)
Y N

006
REMOVE JUMPER. REPLACE CARD AA2-D4

007
REMOVE JUMPER. REPLACE CARD AA2-C2

008
REPLACE CARD AA2-E2

1 1 1
A B C

A B C
1 1 1

MAP 0618-1

009
REPLACE CARD AA2-E2

010
REPLACE DE UNIT. SEE MLM

011
REPLACE CARDS AA2-E2 AND D4.

SYSTEM 32

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

001
(ENTRY POINT A)
METER DC VOLTAGE AA2-C2-B09 (POS)
AA2-C2-D08 (NEG) FOR +12 VOLTS.
IS VOLTAGE WITHIN RANGE 10.8V TO
13.2V?
Y N
|
| 002
| REPLACE CARD AA2-C4
|
|
003
PROBE AA2-C2-D09 (AGC GEN)
IS LINE DOWN?
Y N
|
| 004
| REPLACE CARD AA2-C2
|
|
005
REPLACE CARDS AA2-C2 AND AA2-E2

SYSTEM 32

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

001
(ENTRY POINT A)
POWER OFF. INSTALL SERVO SIMULATOR. SEE PAGE 0630-1. POWER ON. WAIT 45 SECONDS. PROBE AA2-E2-D02 (-FILE READY)
IS LINE DOWN?
Y N
|
| 002
| REPLACE CARD AA2-C2. REMOVE THE
| SERVO SIMULATOR
|
|
003
REPLACE DE UNIT. SEE MLM. REMOVE THE SERVO SIMULATOR

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0651	A	1	001

001
(ENTRY POINT A)
PROBE AA2-E2-J12 AND AA2-E2-J13 TO DETERMINE IF EITHER LINE PULSES OVER A 30 SECOND DURATION.
ARE BOTH LINES PULSING?
Y N
|
| 002
| REPLACE CARD AA2-E2
|
|
003
PROBE AA2-E2-S09(-PLO RUN)
IS LINE PULSING?
Y N
|
| 004
| REPLACE CARD AA2-E2
|
|
005
REPLACE CARD AA2-C2

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SYSTEM 32

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0608	A	1	001
0613	A	1	001
0651	A	1	001

001
(ENTRY POINT A)
POWER OFF. REMOVE ANY JUMPERS PREVIOUSLY INSTALLED. REMOVE AA2-C4 CARD. METER RESISTANCE OF ACTUATOR COILS AA2-A3-B02 TO AA2-A3-B03 AND AA2-A3-B02 TO AA2-A3-B04.
IS RESISTANCE BETWEEN 40 AND 100 OHMS ON BOTH LINES?
Y N

002
REINSTALL CARD AA2-C4. CHECK CONTINUITY OF CABLE D-W1A1. SEE PAGE 0634-2.
IS CONTINUITY OK?
Y N

003
REPLACE CABLE D-W1A1

004
CHECK THAT ACTUATOR LOCKOUT LEVER DOES NOT INTERFERE WITH ARM. IF OK, REPLACE DE UNIT. (SEE MLM)

005
REINSTALL CARD AA2-C4. POWER ON. JUMPER AA2-A3-B04 TO D08. (SEE PAGE 0630-1)
IS ARM AT OR HITTING OUTSIDE STOP?
Y N

006
CHECK THAT ACTUATOR LOCKOUT LEVER DOES NOT INTERFERE WITH ARM. IF OK, REPLACE DE UNIT. (SEE MLM)

007
REMOVE JUMPER. PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE UP?
Y N

008
REPLACE CARD AA2-D4

009
REPLACE CARDS AA2-C4 AND AA2-E2

02APR75 PN2547637
EC828518 PEC825412

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0643	A	1	001

001
(ENTRY POINT A)
POWER OFF. CHECK CABLE D-W1B5. SEE PAGE 0634-1.
IS CABLE GOOD?
Y N
|
| 002
| REPLACE CABLE D-W1B5. REMOVE
| JUMPER.
|
|
003
REPLACE CARDS D-W1B3 AND D-W1A5.
REMOVE JUMPER.

ENTRY A
POWER OFF.REMOVE JUMPERS.
CHECK CABLES D-W1B5, D-W1B6
SEE PAGE 0634-1
IF CABLES ARE GOOD REPLACE
CARDS D-W1A5 AND D-W1B3
IF STILL FAILS REPLACE DE UNIT
SEE MLM.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0642	A	1	001

001
(ENTRY POINT A)
POWER OFF. JUMPER AA2-E2-S13 TO U08. POWER ON. WAIT 45 SECONDS. IMPL DIAG 01. LOAD PROGRAM ID 62GVA7. SET SSW 4 TO 0. DEPRESS ENTER. PROBE AA2-E2-U04 (+MULTI HEAD SELECTED)
IS LINE DOWN?
Y N

002
PROBE AA2-A4-B04
IS LINE DOWN?
Y N

003
PROBE AA2-A4-B09(HEAD SEL 0)
IS LINE DOWN?
Y N

004
GO TO MAP 633,ENTRY D

005
PROBE AA2-A4-B08(HEAD SEL 1)
IS LINE UP?
Y N

006
GO TO MAP 633,ENTRY D

007
(3MB,5MB AND 9MB FILES HAVE TWO HEADS, 13.7MB FILES HAVE THREE HEADS)
DOES THIS UNIT HAVE THREE DATA HEADS?
Y N

008
SET SSW4 TO1. DEPRESS ENTER TWICE. PROBE AA2-A4-B04
IS LINE DOWN?
Y N

009
PROBE AA2-A4-B09(HEAD SEL 0)
IS LINE UP?
Y N

010
GO TO MAP 633,ENTRY D

011
PROBE AA2-A4-B08(HEAD SEL 1)
IS LINE DOWN?
Y N

012
GO TO MAP 633,ENTRY D

013
POWER OFF. CHECK CABLE D-W1B5. SEE PAGE 0634-1.
IS CABLE GOOD
Y N

014
REPLACE FAULTY CABLE

015
REMOVE JUMPER. REPLACE CARD D-W1B3. IF FAILS TO FIX FAULT REPLACE DE UNIT.

18AUG76 PN2547595

EC830357 PEC828692

016
REMOVE JUMPER. REPLACE AA2-E2 CARD

017
PROBE AA2-A4-B10(HEAD SEL 2)
IS LINE UP?
Y N

018
GO TO MAP 633,ENTRY D

019
SET SSW4 TO 1. DEPRESS ENTER TWICE. PROBE AA2-A4-B04.
IS LINE DOWN?
Y N

020
PROBE AA2-A4-B09(HEAD SEL 0)
IS LINE UP?
Y N

021
GO TO MAP 633,ENTRY D

022
PROBE AA2-A4-B08(HEAD SEL 1)
IS LINE DOWN?
Y N

023
GO TO MAP 633,ENTRY D

024
PROBE AA2-A4-B10
IS LINE UP?
Y N

025
GO TO MAP 633,ENTRY D

026
SET SSW4 TO 2. DEPRESS ENTER TWICE. PROBE AA2-A4-B04
IS LINE DOWN?
Y N

027
PROBE AA2-A4-B09
IS LINE UP?
Y N

028
GO TO MAP 633,ENTRY D

029
PROBE AA2-A4-B08(HEAD SEL 1)
IS LINE UP?
Y N

030
GO TO MAP 633,ENTRY D

031
PROBE AA2-A4-B10(HEAD SEL 2)
IS LINW DOWN?
Y N

032
GO TO MAP 633,ENTRY D

033
POWER OFF. CHECK CABLE D-W185.
SEE PAGE 0634-1.
IS CABLE GOOD?
Y N

034
REPLACE FAULTY CABLE

035
REMOVE JUMPER. REPLACE CARD D-W183. IF FAILS TO FIX FAULT REPLACE DE UNIT.

18AUG76 PN2547595

EC830357 PEC828692

036
REMOVE JUMPER. REPLACE CARD
AA2-E2.

037
REMOVE JUMPER. REPLACE CARD
AA2-E2.

038
GO TO MAP 633,ENTRY D

039
POWER OFF. CHECK CABLE D-W1B5.
SEE PAGE 0634-1
IS CABLE GOOD?
Y N

040
REPLACE FAULTY CABLE

041
REPLACE CARDS AA2-E2, D-W1B3 AND
D-W1A5

PAGE 1 OF 4

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0647	A	1	001
0648	A	1	001
0649	A	1	001

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	018	0300	A
3	024	0300	A

001
(ENTRY POINT A)
DEPRESS CE RESET. PROBE
AA2-E2-S13 (+DATA UNSAFE)
IS LINE DOWN?
Y N

002
PROBE AA2-E2-U10(INTERLOCK
LINE)
IS LINE DOWN?
Y N

003
PROBE AA2-D2-G02 (INTERLOCK
LINE)
IS LINE DOWN?
Y N

004
PROBE AA2-D2-B02 (INTERLOCK
LINE)
IS LINE DOWN?
Y N

005
POWER OFF. METER CONTINUITY AA2-A4-D12 TO AA2-A4-D08. WHILE METERING CONTINUITY, RESEAT EACH OF THE FOLLOWING: CABLES- AA2-A4, D-W1B5, CARDS- D-W1B3, D-W1A5
IS CONTINUITY OK?
Y N

006
REMOVE CABLE FROM D-W1B5 SOCKET. METER CONTINUITY FROM D-W1-B5-D12 TO D-W1B5-D08
IS CONTINUITY GOOD?
Y N

007
REMOVE CARD FROM D-W1B3. JUMPER D-W1B3-B08 TO D-W1B3-J06. METER CONTINUITY FROM D-W1B5-D08 TO D-W1B5-D12.
IS CONTINUITY GOOD?
Y N

008
REMOVE CARD FROM D-W1A5. JUMPER D-W1A5-B07 TO D-W1A5-D07 AND D-W1A5-G07 TO D-W1A5-G08. METER CONTINUITY FROM D-W1B5-D08 TO D-W1B5-D12.
IS CONTINUITY GOOD?
Y N

009
REPLACE DE

010
REPLACE D-W1A5 CARD

011
REPLACE D-W1B3 CARD

012
REPLACE CABLE

013
PROBLEM WAS A LOOSE CABLE. RERUN TEST TO VERIFY

014
REPLACE CARD AA2-D2

015
CHECK WIRE LINK BETWEEN AA2-D2-G02 AND AA2-E2-U10.

016
METER DC VOLTAGE AA2-A4-D11 (POS) D08 (NEG) FOR 6 VOLTS
IS +6V PRESENT?(+5 TO +7 RANGE)
Y N

017
METER DC VOLTAGE AA2-A4-B11 (POS) D08 (NEG) FOR 6 VOLTS.
IS +6V PRESENT? (+5 TO +7 RANGE)
Y N

018
GO TO MAP 0300, ENTRY POINT A.

019
POWER OFF. CHECK CABLE D-W1B5.
SEE PAGE 0634-1.
IS CABLE GOOD?
Y N

020
REPLACE CABLE D-W1B5

23JAN76 PN2547596
EC828692 PEC828518

| |
| | PAGE 3 OF 4
| |
| |

| 021
| REPLACE DE UNIT. (SEE MLM)
|
|

022
METER DC VOLTAGE AA2-A4-B07 (NEG) D08 (POS) FOR -4 VOLTS.
IS -4V PRESENT? (-3 TO -5 RANGE)
Y N

| 023
| METER DC VOLTAGE AA2-A4-B06 (NEG) D08 (POS) FOR -4 VOLTS
| IS -4V PRESENT? (-3 TO -5 RANGE)
| Y N
| |
| | 024
| | GO TO MAP 0300, ENTRY POINT A.
| |
| |

| 025
| POWER OFF. CHECK CABLE D-W1B5. SEE PAGE 0634-1.
| IS CABLE GOOD?
| Y N
| |
| | 026
| | REPLACE CABLE D-W1B5.
| |
| |

| 027
| REPLACE DE UNIT. SEE MLM.
|
|

028
SET GENERAL LOGIC PROBE LATCH TO 'DOWN' POSITION. PROBE AA2-E2-S04 (-RESET). DEPRESS CE RESET KEY.
IS DOWN LIGHT ON?(INDICATING RESET PULSED)
Y N
| |
| |
| |
| |
| |
| |
| |

| |
| |
| |
| |

| 029
| FCU DC RESET LINE MISSING. AA2-G2-G09 TO AA2-E2-S04. CALL FOR ASSISTANCE.
|
|

030
RESET GENERAL LOGIC PROBE LATCH TO NONE. PROBE AA2-E2-U12 (+WRITE CURRENT ON)
IS LINE DOWN OR PULSING?
Y N
|
| 031
| PROBE AA2-E2-U05 (-WRITE SELECT)
| IS LINE DOWN?
| Y N
| |
| | 032
| | POWER OFF. CHECK CABLE D-W1B5. SEE PAGE 0634-1. IF CABLE IS GOOD REPLACE D-W1B3 CARD.
| |
| |

| 033
| REPLACE CARD AA2-E2
|
|

034
PROBE AA2-E2-U06 (-WRITE)
IS LINE DOWN OR PULSING?
Y N
|
| 035
| POWER OFF. REMOVE D-W1B3 CARD. METER CONTINUITY AA2-E2-U12 TO D-W1B3-G04. VERIFY CABLE AA2-A4 TO D-W1B5 IS CORRECTLY SEATED
| IS CONTINUITY GOOD?
| Y N

23JAN76 PN2547596

EC828692 PEC828518

PAGE 4 OF 4

036
METER CONTINUITY FROM AA2-E2-U12TO AA2-A4-D09 IS CONTINUITY GOOD?
Y N

037
CHECK WIRE LINK BETWEEN AA2-E2-U12 TO AA2-A4-D09

038
CHECK CABLE D-W1B5. SEE PAGE 0634-1
IS CABLE GOOD?
Y N

039
REPLACE CABLE D-W1B5

040
REPLACE DE

041
REPLACE CARD AA2-E2. REINSTALL D-W1B3 CARD

042
PROBE AA2-G2-S11
IS LINE DOWN OR PULSING?
Y N

043
POWER DOWN. CHECK WIRE LINK BETWEEN AA2-G2-S11 AND AA2-E2-U06

044
REPLACE AA2-G2 CARD

045
PROBE AA2-G2-B06 AND AA2-F2-S05 ARE BOTH LINES DOWN?
Y N

046
POWER DOWN. CHECK OPEN WIRE LINKS AA2-G2-B06, F2-S04,E2-S13

047
DEPRESS CE START. LOAD PROGRAM ID 62BOXUN. FOLLOW INSTRUCTIONS ON CRT.

SYSTEM 32

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0645	A	1	001

001
(ENTRY POINT A)
LOAD PROGRAM ID 62GVA6. (SEEK RECAL TEST) PROBE AA2-E2-P13 (+HOME)
IS LINE PULSING?
Y N
|
| 002
| REPLACE CARD AA2-E2
|
|
003
POWER OFF. CHECK THAT ARM GOES TO INNER STOP. IF OK RETURN FILE TO CUSTOMER IF FAILURE IS BELIEVED TO BE VERY INTERMITTENT REPLACE FRU'S IN FOLLOWING ORDER:

FRU	PROBABILITY
CARD AA2-E2	70%
CARD AA2-D4	20%
CARD AA2-C4	7%
CARD AA2-C2	1%
DE UNIT	2%

ENTRY A
FAULT NOW PROBABLY IN DE UNIT.
DE MAY HAVE A BIND IN ACTUATOR ARM IF
ERRORS ARE ISOLATED TO CERTAIN TRACKS
ONLY. IF ERRORS OCCUR IN MOST TRACKS OR ARE
INTERMITTENT REPLACE FRU'S IN FOLLOWING
ORDER:

FRU	PROBABILITY
CARD AA2-E2	70%
CARD AA2-D4	20%
CARD AA2-C4	7%
CARD AA2-C2.	1%
DE UNIT	2%

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0640	A	1	001
0641	A	1	001
0643	A	1	001

001
(ENTRY POINT A)
POWER OFF. REMOVE D-W1B3 AND D-W1A5 CARDS. POWER ON. METER VOLTAGE (-4V) ON D-W1 BOARD AT FOLLOWING PINS:
DW1-B3-B06 NEG D08 POS
DW1-B3-G06 NEG D08 POS
DW1-A5-B06 NEG D08 POS
DW1-A5-G06 NEG D08 POS
ARE ALL PINS -4V + OR - 0.4V?
Y N

002
REPLACE DE UNIT. SEE MLM

003
IMPL DIAG 01. LOAD PROGRAM ID 62GVA4. SET SSW 4 TO 0. DEPRESS ENTER. PROBE AA2-F2-S05 (+DATA UNSAFE). NOTE LEVEL. LEAVE PROBE ON AA2-F2-S05. DEPRESS CE RESET. SET SSW 4 TO 1. DEPRESS CE START. DEPRESS ENTER TWICE. AGAIN NOTE LEVEL.(NOTE* SWITCH SETTINGS CONTROL HEAD SELECT.)
WAS LINE UP OR PULSING FOR ONLY ONE SWITCH SETTING?
Y N

004
POWER OFF. REINSTALL D-W1B3 AND A5 CARDS. POWER ON. JUMPER AA2-E2-S13 TO U08. WAIT 45 SECONDS. IMPL DIAG 01. LOAD PROGRAM ID 62GVA2. PROBE AA2-E2-U11(-TRANSITIONS)
IS LINE PULSING?
Y N

005
POWER OFF. REMOVE JUMPER. REMOVE CARD D-W1B3. METER CONTINUITY AA2-E2-U11 TO D-W1B3-J04.
IS CONTINUITY GOOD?
Y N

006
REPLACE CABLE D-W1B5. REINSTALL CARD D-W1B3.

007
REPLACE CARDS AA2-E2, D-W1A5 AND D-W1B3.

008
POWER OFF. REMOVE JUMPER. REMOVE CARD D-W1B3. METER CONTINUITY AA2-E2-U11 TO D-W1B3-J04.
IS CONTINUITY GOOD
Y N

009
REINSTALL CARD D-W1B3. POWER ON. WAIT 45 SECONDS. PROBE AA2-E2-S08 (+WRITE ERROR)
IS LINE UP?
Y N

010
CHECK CABLES D-W1B5 AND D-W1B6. SEE PAGE 0634-1.
ARE CABLES GOOD?
Y N

011
RESEAT OR REPLACE DEFECTIVE CABLES.

012
REPLACE CARDS D-W1B3 AND D-W1A5. IF STILL FAILS REPLACE DE. SEE MLM.

013
REPLACE CARD AA2-E2

02APR75 PN2547599

EC828518 PEC825412

014
REINSTALL CARD D-W1B3. POWER ON.
WAIT 45 SECONDS. PROBE AA2-E2-S08
(+WRITE ERROR)
IS LINE UP?
Y N

015
CHECK CABLES D-W1B5 AND D-W1B6.
SEE PAGE 0634-1.
ARE CABLES GOOD?
Y N

016
RESEAT OR REPLACE DEFECTIVE
CABLES.

017
REPLACE CARDS D-W1B3 AND
D-W1A5. IF STILL FAILS REPLACE
DE UNIT. SEE MLM.

018
REPLACE CARD AA2-E2

019
REPLACE CARD D-W1B3

1. THE SERVO SIMULATOR IS INSTALLED ON THE FILE AS FOLLOWS:
   DISCONNECT PADDLE D-W1B1. INSTALL 6 JUMPERS ON AA2- BOARD:
   A2-B05 TO A2-D05
   A2-B03 TO A2-B04
   A2-B07 TO A2-B08
   D4-D09 TO D4-D08
   E2-S09 TO E2-U08
   E2-P09 TO E2-P08

**NOTE* TO REMOVE SERVO-SIMULATOR REMOVE
*JUMPERS AND RE-INSTALL PADDLE D-W1B1.
*

2. ACTUATOR ARM POSITION INDICATOR.

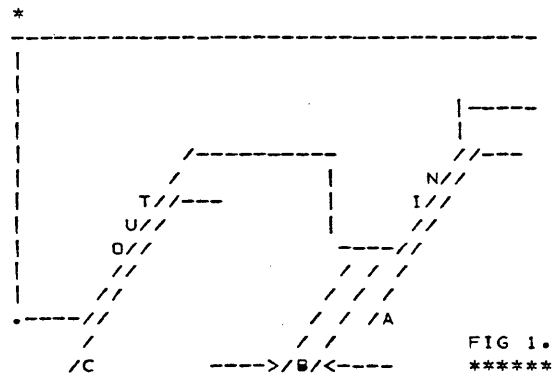

FIG 1.

THE ARM IS AT THE INNER STOP POSITION AND BEHIND HOME WHEN THE EDGE OF THE COIL FORMER IS IN LINE WITH THE 'IN' EDGE OF THE INDICATOR (FIG 1 A).
THE ARM IS AT THE HOME POSITION WHEN THE EDGE OF THE COIL FORMER IS APPROXIMATELY WITHIN THE AREA MARKED B IN FIG 1 .
THE ARM IS AT THE OUTER STOP POSITION WHEN THE EDGE OF THE COIL FORMER IS IN LINE WITH THE 'OUT' EDGE OF THE INDICATOR (FIG 1 C).

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0601	A	1	001

001
(ENTRY POINT A)
POWER OFF. INSPECT BOTH ANTI-STATIC BRUSHES FOR POOR CONTACT OR BAD CONNECTION TO GROUND LEAD. THIS MAY BE THE CAUSE OF HIGHLY INTERMITTENT READ FAILURES.
(SEE MLM FOR BRUSH LOCATION) BRUSH TENSION SHOULD BE 50 TO 70 GRAMS AT POINT OF CONTACT.
ARE BOTH BRUSHES AND GROUND LEADS GOOD?
Y N

| 002
| MAKE REPAIRS. POWER ON. WAIT 45 SECONDS. IMPL DIAG 01. LOAD PROGRAM ID 62GV4.
| DOES PROGRAM RUN TO 'ALL TEST RUN OK'?
| Y N
| | 003
| | LOAD PROGRAM ID 62BOXRD. FOLLOW INSTRUCTIONS ON CRT.
| |
| | 004
| REPAIR COMPLETE.
|
|
005
POWER ON. WAIT 45 SECONDS. IMPL DIAG 01. LOAD PROGRAM ID 62BOXRD. FOLLOW INSTRUCTIONS ON CRT.

SYSTEM 32

ENTRY A

POWER OFF.
CHECK THAT CARDS IN POSITIONS AA2-C2,C4,D4,
AND E2 ARE WELL SEATED.
.
CHECK THAT ACTUATOR LOCKOUT LEVER IS IN
LOCK 'OFF' POSITION.
.
POWER ON.
AS SOON AS STOP LIGHT COMES ON,
IMPL DIAG 01. LOAD PROGRAM ID 628OXSK.
FOLLOW INSTRUCTIONS ON CRT.

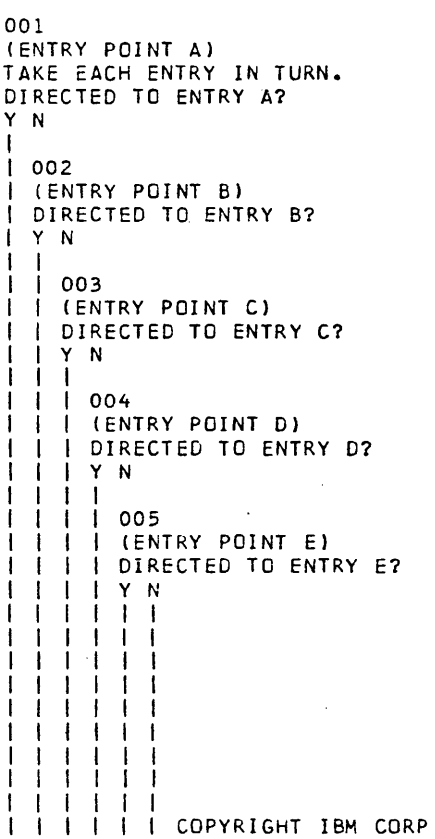
PAGE 1 OF 5

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0625	A	1	001
0640	A	1	001
0641	A	1	001
0644	A	1	001
0646	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	011	0600	A



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006
(ENTRY POINT F)
DIRECTED TO ENTRY F?
Y N

007
(ENTRY POINT G)
DIRECTED TO ENTRY G?
Y N

008
(ENTRY POINT H)
DIRECTED TO ENTRY H?
Y N

009
(ENTRY POINT J)
DIRECTED TO ENTRY J?
Y N

010
(ENTRY POINT K)
DIRECTED TO ENTRY K?
Y N

011
GO TO MAP 0600, ENTRY POINT A.

012
LOAD PROGRAM ID 62GVA5.
PROBE FOLLOWING POINTS:
AA2-F2-P02
(-SEEK 2 TO FILE)
AA2-F2-J13
(-SEEK 1 TO FILE)
AA2-F2-M02
(-ODD TRACK DEST.)
ARE ALL LINES PULSING?
Y N

013
REPLACE CARD AA2-F2
REPLACE CARD AA2-G2

014
CALL FOR ASSISTANCE.(AA2 BOARD IS DEFECTIVE.)

015
CHECK CONTINUITY BETWEEN AA2-F2-M02 AND AA2-E2-M13.
CIRCUIT ALL RIGHT?
Y N

016
CALL FOR ASSISTANCE.(AA2 BOARD IS DEFECTIVE.)

017
REPLACE CARD AA2-F2

018
FCU RECAL ACTIVE
REPLACE CARD AA2-F2

019
CHECK CONTINUITY BETWEEN AA2-F2-J07 AND AA2-E2-P13. CIRCUIT ALL RIGHT?
Y N

020
CALL FOR ASSISTANCE.(AA2 BOARD IS DEFECTIVE.)

021
REPLACE CARD AA2-F2

022
CHECK CONTINUITY BETWEEN AA2-F2-M09 AND AA2-E2-P07. CIRCUIT ALL RIGHT?
Y N

023
CALL FOR ASSISTANCE.(AA2 BOARD IS DEFECTIVE.)

024
REPLACE CARD AA2-F2
REPLACE CARD AA2-E2

025
REPLACE CARDS AA2-F2 AND G2

026
LOAD PROGRAM ID 62GVA7. SET SSW4 TO 0. DEPRESS ENTER. PROBE AA2-E2-U04(+MULTI HEAD SELECTED) IS LINE DOWN?
Y N

027
CALL FOR ASSISTANCE(AA2 BOARD IS DEFECTIVE)

028
PROBE AA2-F2-U04(-SEL HEAD 0 TO FILE)
IS LINE DOWN?
Y N

029
REPLACE CARD AA2-F2

030
PROBE AA2-F2-U05(-SEL HEAD 1 TO FILE)
IS LINE UP?
Y N

031
REPLACE CARD AA2-F2

032
(3MB,5MB AND 9MB FILES HAVE TWO HEADS, 13MB FILE HAS THREE HEADS.)
DOES THIS UNIT HAVE THREE DATA HEADS?
Y N

033
SET SSW4 TO 1. DEPRESS INQ. DEPRESS ENTER TWICE. PROBE AA2-F2-U05(-SEL HEAD 1 TO FILE)
IS LINE DOWN?
Y N

034
REPLACE CARD AA2-F2

035
PROBE AA2-F2-U04(-SEL HEAD 0 TO FILE)
IS LINE UP?
Y N

036
REPLACE CARD AA2-F2

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037
CALL FOR ASSISTANCE.(AA2 BOARD IS DEFECTIVE)

038
PROBE AA2-F2-U12
IS LINE UP?
Y N

039
REPLACE CARD AA2-F2

040
SET SSW4 TO 1. DEPRESS INQ. DEPRESS ENTER TWICE. PROBE AA2-F2-U05(-SEL HEAD 1 TO FILE)
IS LINE DOWN?
Y N

041
REPLACE CARD AA2-F2

042
PROBE AA2-F2-U04(-SEL HEAD 0 TO FILE)
IS LINE UP?
Y N

043
REPLACE CARD AA2-F2

044
PROBE AA2-F2-U12(-SEL HEAD 2 TO FILE)
IS LINE UP?
Y N

045
REPLACE CARD AA2-F2

046
SET SSW4 TO 2. DEPRESS INQ. DEPRESS ENTER TWICE. PROBE AA2-F2-U12(-SEL HEAD 2 TO FILE)
IS LINE DOWN?
Y N

047
REPLACE CARD AA2-F2

048
PROBE AA2-F2-U04(-SEL HEAD 0 TO FILE)
IS LINE UP?
Y N

049
REPLACE CARD AA2-F2

050
PROBE AA2-F2-U05(-SEL HEAD 1 TO FILE)
IS LINE UP?
Y N

051
REPLACE CARD AA2-F2

052
CALL FOR ASSISTANCE.(AA2 BOARD IS DEFECTIVE)

053
ERRONEOUS DSF RESET.
REPLACE CARD AA2-F2

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054
LOAD PROGRAM ID 62GVA3. PROBE AA2-G2-P11(+FILE FAST SYNC) IS LINE PULSING?
Y N

055
REPLACE CARD AA2-G2

056
CALL FOR ASSISTANCE.(AA2 BOARD IS DEFECTIVE.)

057
LOAD PROGRAM ID 62GVA2. PROBE AA2-G2-S05 (-SERIAL WRITE DATA TO FILE) IS LINE PULSING?
Y N

058
REPLACE CARD AA2-G2

059
CALL FOR ASSISTANCE.(AA2 BOARD IS DEFECTIVE.)

NOTE 1.
TO IDENTIFY CABLE POSITIONING SEE MLM
WHERE A CABLE WRAP BACK IS PROVIDED,
CONTINUITY TO THE D-W1 BOARD CONNECTION CAN
BE CHECKED ON THE AA2 BOARD WITHOUT
UNPLUGGING CABLE.

MOVEABLE AND FIXED HEADS.

CONTINUITY AND RESISTANCE CHECKS SHOULD BE
MADE BETWEEN EACH HEAD WINDING. CENTER TAP
AND GROUND.
ACCESS TO PINS IS OBTAINED BY REMOVING CARD
IN POSITION D-W1B3 FOR MOVEABLE HEADS AND
CARD IN POSITION D-W1A2 FOR FIXED HEADS.
RESISTANCE BETWEEN WINDINGS (A TO B)
= 5 TO 25 OHMS
RESISTANCE BETWEEN WINDING AND CENTRE TAP
(A TO C AND B TO C) = 5 TO 25 OHMS.
NOTE:- MOST OF THIS IS RESISTANCE OF LEAD
CONNECTING WINDING TO SOCKET.
RESISTANCE BETWEEN CENTRE TAP AND D-W1D08
= GREATER THAN 100K OHMS.
RESISTANCE BETWEEN CENTRE TAP AND DE FRAME
= GREATER THAN 100K OHMS

HEAD	WINDING A	WINDING B	CENTER TAP C.
0	D-W1B3D04	D-W1B3D06	D-W1B3G10
1	D-W1B3B03	D-W1B3D07	D-W1B3J11
2	D-W1B3B04	D-W1B3D05	D-W1B3G13

1.1

CABLE D-W1B6 TO AA2-A5

NET NAME	CABLE CONNECTION	WRAP BACK
-DATA TRANS	D-W1B6D11 TO AA2-A5-D11	NONE
+DATA TRANS	D-W1B6D13 TO AA2-A5-D13	NONE

CABLE D-W1B5 TO AA2-A4.

NET NAME	CABLE CONNECTION	WRAP BACK

3.1	+6 VOLTS	D-W1B5B11 TO AA2-A4-B11	AA2-A4-D11	
	-4 VOLTS	D-W1B5B06 TO AA2-A4-B06	AA2-A4-B07	
	-24 VOLTS	D-W1B5B13 TO AA2-A4-B13	AA2-A4-D13	
	GROUND	D-W1B5D08 TO AA2-A4-D08	NONE	
3.2	SEL HD 0	D-W1B5B09 TO AA2-A4-B09	AA2-A4-D10	
	SEL HD 1	D-W1B5B08 TO AA2-A4-B08	AA2-A4-D07	
	SEL HD 2	D-W1B5B10 TO AA2-A4-B10	AA2-A4-D04	
3.3	-READ SEL	D-W1B5B12 TO AA2-A4-B12	NONE	
	+WR GATE 1	D-W1B5D06 TO AA2-A4-D06	NONE	
	-WR SEL	D-W1B5D05 TO AA2-A4-D05	NONE	
	+WR CURR ON	D-W1B5D09 TO AA2-A4-D09	NONE	
	ONE HD SEL	D-W1B5B04 TO AA2-A4-B04	NONE	
	-TRANSIT	D-W1B5B03 TO AA2-A4-B03	NONE	
3.4	CARD INTLK	D-W1B5D12 TO AA2-A4-D12	NONE	

CABLE D-W1B1 TO AA2-A2 (SERVO AMP CABLE).

NET NAME	CABLE CONNECTION	WRAP BACK
SERVO SIG A	D-W1B1D04 TO AA2-A2-D04	NONE
SERVO SIG B	D-W1B1D05 TO AA2-A2-D05	NONE

CABLE D-W1A1 TO AA2-A3

NET NAME	CABLE CONNECTION	WRAP BACK
SERV GND	D-W1A1D09 TO AA2-A3-D08	NONE
-8.7 VOLTS	D-W1A1D07 TO AA2-A3-D07	AA2-A3-B08
IN COIL	D-W1A1B03 TO AA2-A3-B03	NONE
OUT COIL	D-W1A1B04 TO AA2-A3-B04	NONE
+24V	D-W1A1B02 TO AA2-A3-B02	AA2-A3-D02
+24V BRAKE	AA2-A3-B05 TO DETB1-6	NONE
BRAKE COIL	DETB1-5 TO AA2-A3-B07	NONE
TRANSDUCER	DETB1-7 TO AA2-A3-D11	NONE
TRANSDUCER	DETB1-8 TO AA2-A3-D10	NONE

SERV GND AA2-A3-D12 TO DETB2-1 NONE
SETTING RES DETB2-2 TO AA2-A3-D13 NONE

MOTOR SUPPLY CABLE
****

240 VAC 50 HZ OR 208/230 VAC 60 HZ
NEUTRAL TO DETB1-1
LINE TO DETB1-2
GROUND TO DETB1-3

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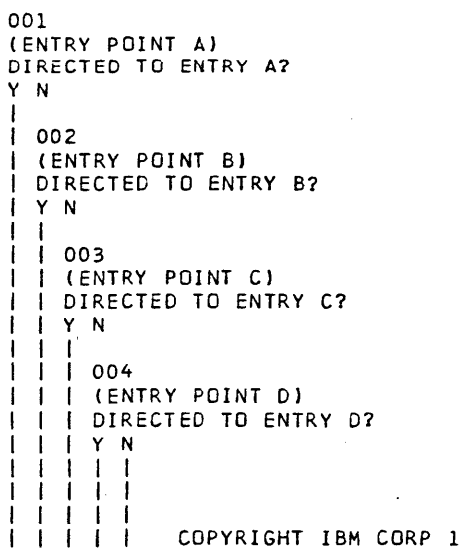
ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0602	Q	3	015
0652	A	1	001
0652	B	1	002
0652	C	1	003
0652	D	1	004
0652	E	2	005
0652	F	2	006
0652	G	2	007
0652	H	2	008
0652	J	2	009
0652	K	2	010
0652	L	2	011
0652	M	2	012
0652	N	2	013
0652	P	2	014
0652	Q	3	015
0652	R	3	016

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
3	022	0300	A
7	095	0300	A
10	136	0300	A
5	046	0310	A
4	029	300	A



005
(ENTRY POINT E)
DIRECTED TO ENTRY E?
Y N

006
(ENTRY POINT F)
DIRECTED TO ENTRY F?
Y N

007
(ENTRY POINT G)
DIRECTED TO ENTRY G?
Y N

008
(ENTRY POINT H)
DIRECTED TO ENTRY H?
Y N

009
(ENTRY POINT J)
DIRECTED TO ENTRY J?
Y N

1 1 1 1 1
3 2 2 1 1
F G H J K L

010
(ENTRY POINT K)
DIRECTED TO ENTRY K?
Y N

011
(ENTRY POINT L)
DIRECTED TO ENTRY L?
Y N

012
(ENTRY POINT M)
DIRECTED TO ENTRY M
Y N

013
(ENTRY POINT N)
DIRECTED TO ENTRY N?
Y N

014
(ENTRY POINT P)
DIRECTED TO ENTRY P?
Y N

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1 1 EC832050 PEC830357
0 0 7 6 6 3
M N P Q R S

015
(ENTRY POINT Q)
DIRECTED TO ENTRY Q?
Y N

016
(ENTRY POINT R)
DIRECTED TO ENTRY R?
Y N

017
ENTRY NOT IN THIS MAP

018
PROBE AA2-E2-B05(-OUT DIRECTION)
IS LINE DOWN?
Y N

019
REPLACE CARD AA2-E2

020
REPLACE CARD AA2-C2

021
POWER OFF. RESET THERMAL TRIP BUTTON ON DRIVE MOTOR IF TRIPPED.(SEE MLM) ISOLATE 110/240 VOLTS AC TO MOTOR BY DISCONNECTING DRIVE MOTOR LEADS AT DETB1-1 AND DETB1-2. POWER ON. METER DC VOLTAGE AA2-C4-G02 POSITIVE, AA2- C4-D08 NEGATIVE FOR +24 VOLTS. METER DC VOLTAGE AA2-C4-G13 NEGATIVE, AA2-C4-D08 POSITIVE FOR -24 VOLTS.
ARE BOTH 24 VOLT SUPPLIES PRESENT?
Y N

022
GO TO MAP 0300, ENTRY POINT A.

023
WITH DC SUPPLIES STILL SWITCHED ON, MOTOR BRAKE SHOULD BE ENERGIZED,ALLOWING MOTOR TO ROTATE FREELY.REMOVE BELT GUARD.CAREFULLY ROTATE MOTOR PULLEY BY HAND CLOCKWISE ONE OR TWO REVOLUTIONS ONLY TO CHECK FOR ANY BINDING.
IS MOTOR SHAFT FREE TO RUN?
Y N

024
INSPECT BRAKE FOR GAP BETWEEN PAD AND PLATE. (SEE MLM)
IS GAP LESS THAN 0.003 INCHES (0.0762MM)?
Y N

025
POWER OFF. REMOVE DRIVE BELT.(SEE MLM) CAREFULLY TURN SPINDLE PULLEY BY HAND CLOCKWISE ONE REVOLUTION TO CHECK FOR ANY BINDING.
IS SPINDLE FREE TO TURN?
Y N

026
REPLACE DE UNIT. (SEE MLM)

027
REPLACE DRIVE MOTOR.(SEE MLM)

028
METER +24 VOLTS.(CAUTION:- VAC PRESENT AT DETB1-1/2) DETB1-6 POSITIVE, AA2-E2-D08 NEGATIVE.
IS 24 VOLTS PRESENT?
Y N

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029
MISSING +24 VOLT BRAKE SUPPLY.
POWER OFF. CHECK CABLE AA2-A3.
SEE PAGE 0634-2. IF CONTINUITY
IS GOOD, RECONNECT MOTOR LEADS
TO DETB1-1/2.
GO TO MAP 300, ENTRY POINT A.

030
POWER OFF. RECONNECT MOTOR LEADS
TO DETB1-1/2. CHECK BRAKE
ADJUSTMENT.(SEE MLM)
IS ADJUSTMENT CORRECT?
Y N

031
IF UNABLE TO OBTAIN CORRECT
ADJUSTMENT REPLACE BRAKE
ASSEMBLY.(SEE MLM)

032
METER RESISTANCE OF BRAKE COIL.
DETB1-5 TO DETB1-6.
IS RESISTANCE INSIDE RANGE 90 TO
120 OHMS?
Y N

033
REPLACE BRAKE COIL
ASSEMBLY.(SEE MLM)

034
CHECK CONTINUITY OF CABLE AA2-A3.
SEE PAGE 0634-2.
IS ANY LINE OPEN?
Y N

035
REPLACE CARD AA2-D4

036
RESEAT CABLE. IF FAULT IS NOT
CLEARED REPLACE CABLE.

037
POWER OFF. REINSTALL BELT GUARD.
RECONNECT MOTOR LEADS TO DETB1-1
AND DETB1-2. POWER ON. WAIT ONE
MINUTE. OBSERVE DRIVE MOTOR.
IS DRIVE MOTOR TURNING?
Y N

038
PROBE AA2-D4-B08(+BRAKE
FAILURE)
IS LINE DOWN?
Y N

039
REPLACE CARD AA2-D4

040
METER VAC SUPPLY TO MOTOR.
110/240V (SEE PLATE ON
MOTOR).DETB1-2 LINE, DETB1-1
NEUTRAL.(90 TO 127V IS
ACCEPTABLE RANGE FOR 110V),(180
TO 253V IS ACCEPTABLE FOR 240V)
IS VOLTAGE OUSIDE SPECIFIED
RANGE?
Y N

041
GO TO THE MLM TO IDENTIFY THE
TYPE OF MOTOR THAT IS
INSTALLED.
IS THIS AN OLD STYLE DISK
DRIVE MOTOR?
Y N

042
POWER OFF. REPLACE THE
DISK DRIVE START RELAY.
(SEE MLM).
POWER ON
DOES THE DISK DRIVE MOTOR
TURN?
Y N

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043
REPLACE DRIVE MOTOR.(SEE MLM)

044
THE DISK DRIVE START RELAY WAS FAULTY.

045
REPLACE DRIVE MOTOR. (SEE MLM)

046
GO TO MAP 0310, ENTRY POINT A.

047
PROBE AA2-D4-G08(SPEED PULSES) IS LINE PULSING?
Y N

048
PROBE AA2-D4-G05(+DATA AREA PULSE) IS LINE PULSING?
Y N

049
PROBE AA2-D4-J13(TRANSDUCER OUTPUT) IS LINE PULSING?
Y N

050
POWER OFF.
REMOVE AA2-D4 CARD.
METER RESISTANCE OF SPEED TRANSDUCER.
AA2-A3-D10 TO AA2-A3-D11.
IS RESISTANCE INSIDE 200 TO 400 OHM RANGE?
Y N

051
REINSTALL AA2-D4 CARD.
CHECK CABLE AA2-A3 FOR CONTINUITY (SEE PAGE 0634-2). CHECK CONNECTIONS TO DETB1. IF GOOD, REPLACE SPEED TRANSDUCER.

052
REINSTALL AA2-D4 CARD.
CHECK FOR MALADJUSTED TRANSDUCER.
(SEE MLM)
ADJUSTMENT OK?
Y N

053
IF UNABLE TO CORRECTLY ADJUST SPEED TRANSDUCER, REPLACE IT.

054
REPLACE CARD AA2-D4

055
REPLACE CARD AA2-D4

056
REPLACE CARD AA2-D4

057
PROBE AA2-E2-B02(+SPEED HOLDOVER) IS LINE UP?
Y N

058
REPLACE CARD AA2-D4

059
REPLACE CARD AA2-E2

060
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE PULSING?
Y N

061
PROBE AA2-E2-M12(-OUT)
IS LINE PULSING?
Y N

062
REPLACE CARD AA2-D4

063
REPLACE CARD AA2-E2

064
PROBE AA2-E2-J09(-SEEK COMPLETE)
IS LINE DOWN?
Y N

065
PROBE AA2-E2-J04(-STORE BIT 16)
IS LINE UP?
Y N

066
REPLACE CARD AA2-E2

067
PROBE AA2-E2-M13(-RECALIBRATE)
IS LINE UP?
Y N

068
REPLACE CARD AA2-E2

069
JUMPER E2-D12 TO E2-D08.
(REMOVE JUMPER BEFORE CONTINUING)
IS ACTUATOR ARM BEHIND HOME?
Y N

070
REPLACE CARD AA2-E2
REPLACE CARD AA2-C4

071
PROBE AA2-E2-G09(-VFL)
IS LINE DOWN?
Y N

072
METER VOLTAGE. AA2-C4-B09 POSITIVE, D08 NEGATIVE.
IS VOLTAGE OUTSIDE RANGE 11 TO 13 VOLTS?
Y N

073
REPLACE CARDS AA2-D4 AND E2

074
REPLACE CARD AA2-C4

075
REPLACE CARD AA2-D4

076
REPLACE CARD AA2-D4

077
PROBE AA2-E2-J09(-SEEK COMPLETE)
IS LINE DOWN?
Y N

078
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE DOWN?
Y N

079
PROBE AA2-E2-J04(-STORE BIT 16)
IS LINE UP?
Y N

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080
REPLACE CARD AA2-E2

081
PROBE AA2-E2-B05(-OUT DIRECTION)
IS LINE DOWN?
Y N

082
REPLACE CARD AA2-E2

083
JUMPER AA2-E2-D12 TO D08.
PROBE AA2-E2-M09 (+BEHIND HOME). REMOVE JUMPER BEFORE CONTINUING.
IS LINE UP?
Y N

084
POWER OFF AND REMOVE AA2-C4 CARD. METER RESISTANCE AA2-A3-B02 TO AA2-A3-B03 AND AA2-A3-B02 TO AA2-A3-B04.
EITHER RESISTANCE OUTSIDE RANGE 40 TO 100 OHMS?
Y N

085
REPLACE CARDS AA2-C4 AND E2.

086
REINSTALL CARD IN AA2-C4 POSITION.CHECK CONTINTUITY OF CABLE IN AA2-A3. SEE CABLE CHART 0634-2. IF OK REPLACE DE UNIT.(SEE MLM.)

087
REPLACE CARD AA2-E2

088
REPLACE CARD AA2-C2

089
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE DOWN?
Y N

090
REPLACE CARD AA2-C2

091
REPLACE CARD AA2-D4

092
PROBE AA2-E2-J09(-SEEK COMPLETE)
IS LINE DOWN?
Y N

093
PROBE AA2-E2-M09(+BEHIND HOME)
IS LINE UP?
Y N

094
PROBE AA2-D4-B08(+BRAKE FAIL)
IS LINE DOWN?
Y N

095
MISSING +24V SUPPLY.
GO TO MAP 0300,
ENTRY POINT A.

096
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE PULSING?
Y N

097
REPLACE CARD AA2-C4

098
REPLACE CARD AA2-D4

099
POWER DOWN FILE. JUMPER AA2-E2-U02 TO U08. POWER UP FILE.
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE UP?
Y N

100
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE DOWN?
Y N

101
REPLACE CARD AA2-D4
(REMOVE JUMPER)

102
REPLACE CARD AA2-E2
REPLACE CARD AA2-D4
(REMOVE JUMPER)

103
REPLACE CARD AA2-D4
(REMOVE JUMPER)

104
PROBE AA2-D4-B08(+BRAKE FAIL)
IS LINE DOWN?
Y N

105
LOAD PROGRAM ID 62GV4
DOES PROGRAM RUN TO 'ALL TESTS RAN MESSAGE'?
Y N

106
POWER OFF. METER RESISTANCE OF BRAKE COIL. DETB1-5 TO DETB1-6.
IS RESISTANCE INSIDE RANGE 90 TO 120 OHMS?
Y N

107
FAILING BRAKE ASSEMBLY.(SEE MLM)

108
REPLACE CARD AA2-D4

109
REPLACE CARD AA2-D4

110
PROBE AA2-D4-D11 (-SETTLED ON TRACK)
IS LINE DOWN?
Y N

111
REPLACE CARD AA2-E2

112
PROBE AA2-E2-J04(-STORE BIT 16)
IS LINE UP?
Y N

113
REPLACE CARD AA2-E2
REPLACE CARD AA2-D4

114
PROBE AA2-E2-G03(-STORE BIT 32)
IS LINE UP?
Y N

115
REPLACE CARD AA2-E2

116
PROBE AA2-E2-G09(-VFL)
IS LINE DOWN?
Y N

117
PROBE AA2-D4-B12(+TOO FAST)
IS LINE UP?
Y N

118
JUMPER AA2-E2 D02 TO D08.
LOAD PROGRAM ID 62GV4. (NOTE
* REMOVE JUMPER BEFORE
CONTINUING)
DOES PROGRAM RUN TO 'ALL
TESTS RAN MESSAGE'?
Y N

119
METER VOLTAGE AA2-C4-B09
POSITIVE, D08 NEGATIVE.
IS VOLTAGE OUTSIDE RANGE 11
TO 13 VOLTS?
Y N

120
POWER OFF AND REMOVE
AA2-C4 CARD. METER
RESISTANCE AA2-A3-B02 TO
AA2-A3-B03, AND
AA2-A3-B02 TO AA2-A3-B04.
EITHER RESISTANCE OUTSIDE
RANGE 40 TO 100 OHMS
Y N

121
REPLACE CARD AA2-C4
REPLACE CARD AA2-D4
REPLACE CARD AA2-C2

122
REINSTALL CARD IN AA2-C4
POSITION. CHECK
CONTINUITY OF CABLE IN
AA2-A3. SEE CABLE CHART
0634-2. IF CABLE OK
REPLACE DE UNIT.(SEE MLM)

123
REPLACE CARD AA2-C4

124
REPLACE CARD AA2-E2
REPLACE CARD AA2-D4

125
REPLACE CARD AA2-C4

126
REPLACE CARD AA2-C4

127
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE DOWN?
Y N

128
PROBE AA2-E2-J09(-SEEK COMPLETE)
IS LINE DOWN?
Y N

129
PROBE AA2-E2-P11(SECTOR PULSE)
IS LINE PULSING?
Y N

130
REPLACE CARD AA2-C4

131
REPLACE CARD AA2-D4

132
PROBE AA2-D4-G05(+DATA AREA PULSE)
IS LINE UP OR NO INDICATION ON PROBE?
Y N

133
REPLACE CARD AA2-D4

134
REPLACE CARD AA2-E2

135
PROBE AA2-D4-B08(+BRAKE FAIL)
IS LINE DOWN?
Y N

136
MISSING +24V SUPPLY.
GO TO MAP 0300, ENTRY POINT A.

137
PROBE AA2-D4-G05(+DATA AREA PULSE)
IS LINE PULSING?
Y N

138
REPLACE CARD AA2-D4

139
REPLACE CARD AA2-E2

140
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE DOWN?
Y N

141
JUMPER AA2-C2-G04 TO AA2-C2-J04. PROBE AA2-E2-B12.
IS LINE PULSING?
Y N

142
REPLACE CARD AA2-C2
REMOVE JUMPER

143
REPLACE CARD AA2-E2
REMOVE JUMPER

144
PROBE AA2-D4-B07(-ON TRACK)
IS LINE DOWN?
Y N

145
JUMPER AA2-C2-G04 TO AA2-C2-J04. PROBE AA2-E2-B12.
IS LINE PULSING?
Y N

146
REPLACE CARD AA2-C2
REMOVE JUMPER

147
REPLACE CARD AA2-E2
REPLACE CARD AA2-C4
(REMOVE JUMPER)

148
REPLACE CARD AA2-C2

149
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE DOWN?
Y N

150
JUMPER AA2-E2-B04 TO D08.
OBSERVE ACTUATOR ARM POSITION
IS ARM AT INSIDE STOP?
Y N

151
REPLACE CARD AA2-C4
(REMOVE JUMPER)

152
REPLACE CARD AA2-C2
(REMOVE JUMPER)

153
REPLACE CARD AA2-C2

154
PROBE AA2-D4-G05(+DATA AREA PULSE)
IS LINE PULSING?
Y N

155
PROBE AA2-C2-J05(+SERVO CLOCK)
IS LINE PULSING?
Y N

156
PROBE AA2-E2-U04(-1 HEAD SELECTED)
IS LINE DOWN?
Y N

157
REPLACE CARD AA2-C2

158
METER DC VOLTAGE AA2-C2-D05(NEG) TO D08(POS).
IS VOLTAGE OUTSIDE RANGE 7.5 TO 9.5 VOLTS?
Y N

159
POWER OFF. INSTALL SERVO-SIMULATOR. SEE PAGE 0630-1.
PROBE AA2-C2-J05(+SERVO CLOCK)
IS LINE PULSING?
Y N

160
REPLACE CARD AA2-C2
(REMOVE SERVO SIMULATOR)

161
CHECK CONTINIUTY OF CABLES AA2-A2 AND AA2-A3. SEE CABLE CHART 0634-2.
IS ANY LINE OPEN?
Y N

162
REPLACE DE UNIT. (SEE MLM)
(REMOVE SERVO SIMULATOR)

163
RESEAT CABLE. IF TROUBLE IS NOT CLEARED, REPLACE CABLE
(REMOVE SERVO SIMULATOR)

164
REPLACE CARD AA2-C2

165
REPLACE CARD AA2-E2

166
REPLACE CARD AA2-C2
REPLACE CARD AA2-E2

167
PROBE AA2-D4-B07(-ON TRACK)
IS LINE PULSING?
Y N

168
POWER OFF. JUMPER AA2-C2-D11 TO AA2-C2-D13. POWER ON. PROBE AA2-D4-J02.(-GUARD BAND) WAIT 1 MINUTE.
IS LINE UP?
Y N

169
PROBE AA2-D4-B07(-ON TRACK)
IS LINE DOWN?
Y N

170
REPLACE CARD AA2-D4

171
REPLACE CARD AA2-D4
REPLACE CARD AA2-E2

172
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE DOWN?
Y N

173
REPLACE CARD AA2-C2
REPLACE CARD AA2-D4

174
REPLACE CARD AA2-E2

175
PROBE AA2-E2-J09(-SEEK COMPLETE)
IS LINE DOWN?
Y N

176
PROBE AA2-E2-J04(-STORE BIT 16)
IS LINE UP?
Y N

177
REPLACE CARD AA2-E2

178
POWER OFF. PROBE AA2-E2-G09(-VFL). JUMPER AA2-E2-U02 TO U08. POWER ON. WAIT ONE MINUTE.
IS LINE UP?
Y N

179
REPLACE CARD AA2-E2
REPLACE CARD AA2-D4
REPLACE CARD AA2-C4

180
REPLACE CARD AA2-D4

181
REPLACE CARD AA2-E2

182
IS ARM AT OUTSIDE STOP?
Y N

183
REPLACE CARD AA2-C4
REPLACE CARD AA2-D4

184
JUMPER AA2-E2-B12 TO D08.
IS ACTUATOR ARM AT OUTSIDE STOP?
Y N

185
REPLACE DE UNIT.(SEE MLM)

186
PROBE AA2-E2-M12(-OUT)
IS LINE UP?
Y N

187
REPLACE CARD AA2-E2
REPLACE CARD AA2-D4

188
REPLACE CARD AA2-E2

189
PROBE AA2-D2-D02(1F READ CLOCK)
IS LINE PULSING?
Y N

190
PROBE AA2-D4-G05(+DATA AREA PULSE)
IS LINE PULSING?
Y N

191
JUMPER AA2-C2-G03 TO AA2-C2-J07. METER VOLTS AA2-C2-D11 TO AA2-C2-D13.
IS VOLTAGE GREATER THAN 1 VOLT?
Y N

192
REPLACE CARD AA2-E2

193
REPLACE CARD AA2-D2
REPLACE CARD AA2-C2

194
REPLACE CARD AA2-D2

195
POWER OFF.
JUMPER AA2-C2-D11 TO AA2-C2-D13.
POWER ON. WAIT ONE MINUTE.
PROBE AA2-D4-J02 (-GUARD BAND)
(REMOVE JUMPER BEFORE CONTINUING)
IS LINE UP?
Y N

196
PROBE AA2-D4-G05(+DATA AREA PULSE)
IS LINE PULSING?
Y N

197
JUMPER AA2-C2-G03 TO AA2-C2-J07. METER VOLTS AA2-C2-D11 TO D13. (REMOVE JUMPER BEFORE CONTINUING)
IS VOLTAGE GREATER THAN 1 VOLT?
Y N

198
PROBE AA2-E2-G13(+CTR 4)
IS LINE DOWN?
Y N

199
METER DC VOLTAGE
C4-B09 POSITIVE
C4-B08 NEGATIVE
IS VOLTAGE INSIDE RANGE OF 11 TO 13 VOLTS?
Y N

200
REPLACE CARD AA2-C4 (SOURCE)
CARD AA2-C2 (LOAD1)
CARD AA2-D4 (LOAD2)

201
POWER OFF AND REMOVE AA2-C4 CARD. METER RESISTANCE AA2-A3-B02 TO AA2-A3-B03 AND AA2-A3-B02 TO AA2-A3-B04.
EITHER RESISTANCE OUTSIDE RANGE 40 TO 100 OHMS?
Y N

202
REPLACE CARD AA2-E2
REPLACE CARD AA2-D4
REPLACE CARD AA2-C4

203
REINSTALL CARD IN AA2-C4 POSITION.CHECK CONTINUITY OF CABLE IN AA2-A3. SEE CABLE CHART 0634-2. IF CABLE OK REPLACE DE UNIT.

204
REPLACE CARD AA2-D2
REPLACE CARD AA2-E2
REPLACE CARD AA2-D4

205
REPLACE CARD AA2-C2
REPLACE CARD AA2-D4

206
REPLACE CARD AA2-E2

207
PROBE AA2-E2-P04 AND AA2-E2-M03 (IN/OUT DEMOD)
IS EITHER LINE DOWN?
Y N

208
REPLACE CARD AA2-E2

209
REPLACE CARD AA2-C4
REPLACE CARD AA2-C2

210
PROBE AA2-D4-G05(+DATA AREA PULSE)
IS LINE PULSING?
Y N

211
JUMPER AA2-E2-G08 TO J08.
DOES ACTUATOR ARM MOVE OUT?
Y N

212
REPLACE CARD AA2-E2

213
REPLACE CARD AA2-D4

214
REPLACE CARD AA2-D4

215
PROBE AA2-E2-U09 (PLO OUT OF SYNC)
IS LINE UP?
Y N

216
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE DOWN?
Y N

217
REPLACE CARD AA2-E2
REPLACE CARD AA2-D4

218
PROBE AA2-D4-G05(+DATA AREA PULSE)
IS LINE PULSING?
Y N

219
JUMPER AA2-E2-D12 TO D08.
IS ACTUATOR ARM BEHIND HOME?
Y N

220
REPLACE CARD AA2-C4

221
REPLACE CARD AA2-E2
REPLACE CARD AA2-C2

222
REPLACE CARD AA2-E2

223
REPLACE CARD AA2-C4

224
POWER OFF AND REMOVE AA2-C4 CARD.
METER RESISTANCE AA2-A3-B02 TO AA2-A3-B03 AND AA2-A3-B02 TO AA2-A3-B04.
EITHER RESISTANCE OUTSIDE RANGE 40 TO 100 OHMS?
Y N

225
REPLACE CARD AA2-D4
REPLACE CARD AA2-E2
REPLACE CARD AA2-C4

226
REINSTALL CARD IN AA2-C4 POSITION. CHECK CABLE IN AA2-A3 POSITION. SEE CABLE CHART 0634-2. IF CABLE OK REPLACE DE UNIT.

227
PROBE AA2-D4-D11(-SETTLED ON TRACK)
IS LINE DOWN?
Y N

228
PROBE AA2-D4-G05(+DATA AREA PULSE)
IS LINE PULSING?
Y N

229
PROBE AA2-E2-B07 (+ RETRACT)
IS LINE UP?
Y N

230
CHECK CONTINUITY OF CABLE AA2-A3. SEE CABLE CHART 0634-2.
IS ANY LINE OPEN?
Y N

231
REPLACE CARD AA2-C4
REPLACE CARD AA2-E2

232
RESEAT CABLE. IF FAULT IS NOT CLEARED REPLACE CABLE.

233
REPLACE CARD AA2-E2

234
REPLACE CARD AA2-C4

235
PROBE AA2-E2-B07 (+ RETRACT)
IS LINE UP?
Y N

```
| |
| |
| 236
| JUMPER AA2-C4-B04 TO D08
| DOES ACTUATOR ARM MOVE OUT?
| Y N
| |
| | 237
| | CHECK CONTINUITY OF CABLE
| | AA2-A3. SEE PAGE 0634-1.
| | IS ANY LINE OPEN?
| | Y N
| | |
| | | 238
| | | REPLACE DE UNIT. SEE MLM.
| | |
| | 239
| | RESEAT CABLE. IF FAULT IS
| | NOT CLEARED REPLACE CABLE.
| |
| 240
| REPLACE CARD AA2-C4
|
241
JUMPER AA2-C4-B04 TO D08
DOES ACTUATOR ARM MOVE OUT?
Y N
|
| 242
| CHECK CONTINUITY OF CABLE
| AA2-A3. SEE CABLE CHART
| 0634-2.
| IS ANY LINE OPEN?
| Y N
| |
| | 243
| | REPLACE DE UNIT. (SEE MLM)
| |
| 244
| RESEAT CABLE. IF FAULT IS NOT
| CLEARED, REPLACE CABLE
|
245
REPLACE CARD AA2-E2
```

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0100	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	012	0102	B

001
(ENTRY POINT A)
IS SCP ERROR 33 DISPLAYED ON THE CRT?
Y N
|
| 002
| FOR SCP ERRORS OTHER THAN SCP ERROR 33, REFER TO SCP ERROR MESSAGES GUIDE (CUSTOMER MANUAL). RUN DIAGNOSTICS FOR A DEVICE IF INDICATED, OR DEPRESS CE RESET AND RETURN TO SYSTEM MAP 0100, ENTRY POINT D.
|
003
DEPRESS SYSTEM RESET.
DISPLAY AND RECORD THE CONTENTS OF THE FOLLOWING LSR'S AND CONTROL STORE LOCATION:

LSR X'00'
LSR X'0A'(MAR-INTERRUPT LEVEL 0)
LSR X'0C'(MAR-INTERRUPT LEVEL 1)
LSR X'0E'(MAR-INTERRUPT LEVEL 2)
CONTROL STORE ADDRESS X'0070'
|
IS THE CONTENTS OF CONTROL STORE ADDRESS X'0070' BETWEEN X'0000' AND X'0011'?
Y N
|
| 004
| IS THE CONTENTS OF CONTROL STORE ADDRESS X'0070' EQUAL TO X'0012'?
| Y N
| |
| | 005
| | IS THE CONTENTS OF CONTROL STORE ADDRESS X'0070' EQUAL TO X'FFFF'?
| | Y N
| | |
| | | 006
| | | RUN SYSTST. IF NO ERRORS OCCUR RETURN MACHINE TO CUSTOMER.

007
TWO PERMENENT 62GV ERRORS HAVE OCCURRED BEFORE END OF JOB.
GO TO PAGE 3, STEP 019,
ENTRY POINT B.

008
TO ISOLATE THE FAILING DEVICE, DISPLAY AND RECORD THE CONTENTS OF CONTROL STORE ADDRESS X'0083', X'0084', AND X'0086'.

IF THE CONTENTS OF CONTROL STORE ADDRESS X'0083' IS LESS THAN X'05C2', THE ACTIVE MAR IS STORED IN LSR X'0C'. USE VALUE RECORDED EARLIER TO ANSWER THE FOLLOWING QUESTIONS.

IF THE CONTENTS OF CONTROL STORE ADDRESS X'0083' IS GREATER THAN X'05C1', AND THE CONTENTS OF CONTROL STORE ADDRESS X'0084' IS LESS THAN X'0C19', THE ACTIVE MAR IS STORED IN LSR X'0E'. USE VALUE RECORDED EARLIER TO ANSWER THE FOLLOWING QUESTIONS.

IF THE CONTENTS OF CONTROL STORE ADDRESS X'0083' IS GREATER THAN X'05C1'AND THE CONTENTS OF X'0084' IS GREATER THAN X'0C18', THE ACTIVE MAR IS STORED IN CONTROL STORE ADDRESS X'0086'. USE VALUE RECORDED EARLIER TO ANSWER THE FOLLOWING QUESTIONS.

IS THE VALUE OF THE ACTIVE MAR BETWEEN X'0580' AND X'0699'?
Y N

009
IS THE VALUE OF THE ACTIVE MAR BETWEEN X'0700' AND X'0879'?
Y N

010
IS THE VALUE OF THE ACTIVE MAR BETWEEN X'0880' AND X'09FF'?
Y N

011
IS THE VALUE OF THE ACTIVE MAR BETWEEN X'0A00' AND X'0C00'?
Y N

012
THE CPU FAILED.
DISPLAY AND RECORD THE CONTENTS OF CONTROL STORE ADDRESS X'0081' AND X'0082'.
GO TO MAP 0102,
ENTRY POINT B.

013
A FAILURE HAS OCCURRED IN THE 33FD OR A FEATURE DEVICE. RUN 33FD AND FEATURE DEVICE DIAGNOSTICS TO ISOLATE THE FAILURE. IF FAILURE IS NOT DIAGNOSED, REPLACE:

AA1-H2(PORT CARD)
AA2-K2(33FD)
AA2-L2(BSCA OR SDLC)
AA2-N2(CARDIO)
AA1-F2(MICR)

014
A FAILURE HAS OCCURRED IN THE KEYBOARD. RUN KEYBOARD DIAGNOSTICS TO ISOLATE THE FAILURE. IF FAILURE IS NOT DIAGNOSED, REPLACE:

AA1-H2(PORT CARD)
AA2-M2(KEYBOARD/CRT)

015
A FAILURE HAS OCCURRED IN THE PRINTER. RUN PRINTER DIAGNOSTICS TO ISOLATE THE FAILURE. IF FAILURE IS NOT DIAGNOSED, REPLACE:

AA1-H2(PORT CARD)
AA2-Q2(LINE PRINTER)
AA2-Q2,AA2-R2(SERIAL PRINTER)

016
A FAILURE HAS OCCURRED IN THE 62GV. RUN 62GV DIAGNOSTICS TO ISOLATE THE FAILURE. IF FAILURE IS NOT DIAGNOSED, REPLACE:

AA1-H2(PORT CARD)
AA2-F2(62GV)
AA2-G2(62GV)

15APR77 PN2546666
EC830358 PEC830357

D E F G H MAP 0700-2

017
IS THE CONTENTS OF CONTROL STORE ADDRESS X'0070' EQUAL TO X'000B' OR X'000C'?
Y N

018
THE ERROR MAY BE IN SOFTWARE OR IN THE HARDWARE.
A STORAGE DUMP MAY HAVE OCCURRED. IPL FROM 62GV. INSERT A SCRATCH DISKETTE. EXECUTE APAR COMMAND. SEE SCP REFERENCE MANUAL. CALL PSR.

019
TWO ERRORS HAVE OCCURRED. THE SECOND ERROR WAS A 62GV ERROR. THE FIRST ERROR MAY ALSO BEEN A 62GV ERROR.
THE IOB FOR THE SECOND ERROR WILL BE IN THE CONTROL STORE LOCATIONS DEFINED BELOW. THE IOB FOR THE FIRST ERROR (IF THE ERROR WAS A 62GV ERROR) WILL BE IN THE MAIN STORE LOCATIONS DEFINED BELOW. LOOK FOR SIMILARITIES IN THE IOB'S AND FREELANCE.

(ENTRY POINT B)

DISPLAY AND RECORD THE IOB'S FOR THE ERRORS. THE IOB FOR THE FIRST ERROR STARTS AT MAIN STORE ADDRESS X'0594'. THE IOB FOR THE SECOND ERROR STARTS AT CONTROL STORE ADDRESS X'0025'.

SENSE BYTES SHOULD BE OF PRIMARY INTEREST.

IF THE FOLLOWING SENSE BITS ARE ON:
SECTOR SYNC CK
OR CRC CK
OR WRITE ECHO CK
OR WRITE CK TRIGGER
OR DISK NOT READY WITH DATA UNSAFE AND WRITE UNSAFE
OR DISK NOT READY WITH DATA UNSAFE AND SELECT UNSAFE

THE PROBABLE CAUSES OF FAILURE ARE:
CARDS D-W1B3, D-W1A5, A-A2D2, A-A2G2 AND A-A2E2
OR CABLES A-A2A4 AND A-A2A5.

IF THE FOLLOWING SENSE BITS ARE ON:
(STEP 019 CONTINUES)

62GV IOB DESRIPTION

LOCATION MS 1ST ERR	LOCATION CS 2ND ERR	DESCRIPTION
X'0594' X'0595'	X'0025'	CHAIN POINTER- SECTOR ADDR OF NEXT IOB. X'FFFF' IF THIS IS LAST IOB IN CHAIN.
X'0596'	X'0026' (HIGH)	COMPLETION CODE- X'40'-NORMAL COMPLETION X'41'-PERMENENT I/O ERROR X'42'-SCAN NOT HIT X'44'-SCAN EQUAL HIT X'80'-CALL FROM CS X'20'-MAIN OP ISSUED X'10'-VERIFY ISSUED X'08'-SEEK ISSUED

(STEP 019 CONTINUED)
NO-OP
OR DISK NOT READY WITHOUT
DATA UNSAFE

THE PROBABLE CAUSES OF FAILURE ARE:
CARD INTERLOCK NET-
SEE THEORY-DIAGRAMS MANUAL 62GV-38
BRAKE FAILURE NET-
SEE THEORY-DIAGRAMS MANUAL 62GV-39
CHAN DATA PROTECT NET-
SEE THEORY-DIAGRAMS MANUAL 62GV-39

IF THE FOLLOWING SENSE BITS ARE ON:
SEEK CK
OR OFF TRACK CK
OR NO RECORD FOUND

THE PROBABLE CAUSES OF FAILURE ARE:
CARDS A-A2C2, A-A2C4, A-A2D4,
A-A2E2 AND A-A2F2
OR CABLES A-A2A2 AND A-A2A3.

IF THE FOLLOWING SENSE BITS ARE ON:
CHAN TRANSFER ERROR
OR CHAN OVERRUN
OR PARALLEL PARITY CK

THE PROBABLE CAUSES OF FAILURE ARE:
CARDS A-A2F2, A-A2G2
OR XOVERS A-A1Z2, A-A1Z3 AND A-A1Z4

IF THE FOLLOWING SENSE BIT IS ON:
SERDES CK

THE PROBABLE CAUSE OF FAILURE IS:
CARD A-A2G2

REFER TO 62GV IOB DESRIPTION TO THE RIGHT AND THE FOUR 62GV SENSE BYTE DESCIPTIONS BELOW.

SENSE BYTE 0:

MS X'059E'/CS X'002A'

BIT 0-DISK NOT READY
BIT 1-ALT SECTOR PROC
BIT 2-SECTOR SYNC CHK
BIT 3-OFF TRACK CHK
BIT 4-CRC CHK
BIT 5-PARALLEL PRTY CHK
BIT 6-WRITE ECHO CHK
(STEP 019 CONTINUES)

		X'04'-SEEK BEFORE VERIFY ISSUED
X'0597'	X'0026' (LOW)	Q BYTE- X'A0'-CONTROL X'A1'-READ X'A2'-WRITE X'A3'-SCAN
X'0598'	X'0027' (HIGH)	R BYTE- CONTROL: X'00'-SEEK X'01'-RECALIBRATE READ AND WRITE: X'80'-REPEAT SAME DATA X'40'-CS LOW ONLY X'08'-FAST SYNC EXTENDED X'04'-CS SELECT X'01'- ID READ/WRITE X'00'-DATA READ ONLY: X'03'-VERIFY X'02'-READ DIAG SCAN ONLY: X'02'-SCAN HI OR EQUAL X'01'-SCAN LO OR EQUAL X'00'-SCAN EQUAL
X'0599' X'059A'	X'0027' (LOW) X'0028' (HIGH)	STARTING SECTOR ADDR- (SS FORMAT)
X'059B'	X'0028' (LOW)	NUMBER OF SECTORS (-1)- DATA TRANSFER
X'059C' X'059D'	X'0029'	DATA FIELD ADDRESS
X'059E' X'059F'	X'002A'	SENSE BYTES 0-1 (SEE TABLE TO LEFT)
X'05A0' X'05A1'	X'002B'	SENSE BYTES 2-3 (SEE TABLE TO LEFT)
X'05A2'	X'002C' (HIGH)	I/O OPERATION RETRY COUNTER
X'05A3'	X'002C'	FLAG BYTE-

(STEP 019 CONTINUED)
BIT 7-CHANNEL OVERRUN

SENSE BYTE 1:

MS X'059F'/CS X'002A'

BIT 0-NO-OP
BIT 1-DATA UNSAFE
BIT 2-INVALID SEEK ADDR
BIT 3-ATTACH EQUIP CHK
BIT 4-NO RECORD FOUND
BIT 5-SCAN EQUAL HIT
BIT 6-SCAN NOT HIT
BIT 7-SEEK CHK

SENSE BYTE 2:

MS X'05A0'/CS X'002B'

BIT 0-SERDES CHK
BIT 1-WRITE CHK TRIGGER
BIT 2-CHAN TFER ERR
BIT 3-NOT USED
BIT 4-NOT USED
BIT 5-NOT USED
BIT 6-NOT USED
BIT 7-NOT USED

SENSE BYTE 3:

MS X'05A1'/CS X'002B'

BIT 0-NOT USED
BIT 1-SELECT UNSAFE
BIT 2-WRITE UNSAFE
BIT 3-BRAKE FAILURE
BIT 4-SERVO UNSAFE
BIT 5-NOT USED
BIT 6-9.1 MEGABYTE
BIT 7-NOT USED

	(LOW)	X'80'-NO ERROR RECOVERY ATTEMPT
		X'40'-NO WRITE DATA VERIFY
		X'20'-NO ERROR LOGGING
		X'10'-USE SUPPLYED NFCCHS FIELD
		X'08'-USED BY RPG COMPILER
		X'04'-NO RETURN ON PERMENENT ERROR
		X'02'-RESERVED
		X'01'-NO SEEK BEFORE OPERATION
X'05A4'	X'002D' (HIGH)	QUEUEING PRIORITY
X'05A5'	X'002D' (LOW)	UNASSIGNED

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
0101	A	1	001
0102	A	1	001
0107	A	1	001
1201	A	1	001

001
(ENTRY POINT A)

POWER OFF. INSTALL 1-WIDE CABLE EXTENDER PART# 5998763 BETWEEN CRT-PC AND CRT-PC CABLE AND LEAVE IT INSTALLED UNTIL END OF CALL. POWER ON. SET ALL DATA SWITCHES TO 0000. SET MODE SELECTOR SWITCH TO PROCESS RUN. SET BOTH THE IMPL AND IPL SWITCHES TO THE UP POSITION AND ALL OTHER TOGGLE SWITCHES TO THE DOWN POSITION. INSERT THE CE DIAG 01 DISKETTE AND CLOSE THE DOOR. WAIT 45 SECONDS. DEPRESS THE LOAD KEY.
WAIT UNTIL THE STOP LIGHT COMES ON

CONTINUE HERE ONLY AFTER BEGINNING IN THE SYSTEM ENTRY CHART.

```
**********************************
* DISPLAY MAY BE BLANK OR        *
* HAVE ABNORMAL DISPLAY ON IT.   *
**********************************
```

THE FOLLOWING INSTRUCTIONS ASSUME YOU HAVE IMPLED. THEY WILL LEAD YOU TO THE MAIN MENU AND LOAD PROGRAM CRT1.

DEPRESS START AND WAIT SEVERAL SECONDS, DEPRESS INQ KEY, TYPE IN CRT1, DEPRESS ENTER KEY

THIS ACTION WILL CAUSE PROGRAM CRT1, (VIDEO CLOCK STEP) TO RUN, THE RESULTS OF CRT1 WILL BE PRINTED ON THE PRINTER.

CRT1 RUN WITH NO ERRORS?
Y N

002
REPLACE CARD AA2-M2 (CRT KEYBOARD CARD)

A CRT ENTRY CHART

1

SYSTEM 32

PAGE 2 OF 5

003

DEPRESS SYSTEM RESET, TURN BRIGHTNESS CONTROL FULL CLOCKWISE TO DISPLAY RASTER (REFERENCE MLM DISPLAY SECTION FOR A PICTURE OF A NORMAL RASTER)

DOES RASTER APPEAR NORMAL AND IN PROPER POSITION?

Y N

3 2

B C

C MAP 1200-2

2

004

REF PICTURES IN MLM DISPLAY SECTION TO HELP DEFINE SOME SYMPTOMS THAT MAY OCCUR. CHOOSE FROM THE FOLLOWING SYMPTOMS AND EXIT TO SPECIFIED MAP:

SYMPTOM	EXIT MAP
BLANK CRT -- BRIGHTNESS CONTROL TURNED CW. SCREEN DOES NOT GLOW OR APPEAR HAZY.	1201-1
DISPLAY TOO BRIGHT, DIM, AND/OR UNADJUSTABLE	1202-1
SIX VERTICAL MARKS ON CRT, OR PARTIAL HORIZONTAL (PROBABLE FAILURE: HORIZONTAL CKT)	1203-1
SOME HORIZONTAL LINES MISSING (PROBABLE FAILURE: VERTICAL CKT)	1204-1
APPEARS AS ALL THIN HORIZONTAL LINES (PROBABLE FAILURE: WIGGLE CKT)	1205-1
JITTERY DISPLAY	1207-1
FLASHING DISPLAY	1208-1
VERY LARGE DISPLAY	1209-1
MIS-POSITIONED RASTER SHIFTED LEFT OR RIGHT, TOP OR BOTTOM OR CHANGED IN SIZE FROM NORMAL. MAY BE SHIFTED SO FAR THAT IT IS NO LONGER ON THE FACE OF THE SCREEN, AND WITH BRIGHTNESS CONTROL TURNED FULL CLOCKWISE, THE FACE OF THE SCREEN WILL GLOW OR BE HAZY.	1210-1

IF THE ABOVE SYMPTOMS DO NOT DEFINE YOUR PROBLEM,
GO TO PAGE 3, STEP 005, ENTRY POINT B.

005
(ENTRY POINT B)
DEPRESS CE START, TYPE IN CRT2, DEPRESS ENTER KEY, TURN THE BRIGHTNESS CONTROL BACK TO SHOW NORMAL BRIGHTNESS, IF POSSIBLE. THE PATTERN IS SHOWN IN MLM, SECTION 5 FIGURE 15.
CHOOSE FROM THE FOLLOWING SYMPTOMS:
REF PICTURES IN MLM DISPLAY SECTION.

SYMPTOM	EXIT MAP
DISPLAY TOO BRIGHT, DIM, AND/OR UNADJUSTABLE	1202-1
RASTER ONLY WITH BRIGHTNESS HIGH (PROBABLE FAILURE: VIDEO CIRCUIT)	1206-1
JITTERY DISPLAY	1207-1
FLASHING DISPLAY	1208-1
VERY LARGE DISPLAY	1209-1
CONTINUE IF MORE SYMPTOMS ARE REQUIRED	

DEPRESS START,
SYMPTOM REQUIRE FURTHER DEFINITION?
Y N

006
END OF CALL

007
TYPE IN CRT3,
DEPRESS ENTER KEY

THE PATTERN SHOULD APPEAR AS SHOWN IN MLM, SECTION 5 FIGURE 24 FOR DOMESTIC SYSTEMS. WORLD TRADE SYSTEMS SEE FIGURES 25-36 FOR YOUR COUNTRY.
SYSTEMS WITH KATAKANA, SEE NOTE 1.
SYSTEMS WITH U/L CASE, SEE NOTE 2.

DOES DISPLAY APPEAR AS EXPECTED?
Y N

008
REPLACE CARD AA2-M2 (CRT KEYBOARD CARD)

009
IS U/L CASE FEATURE INSTALLED ON THE SYSTEM?
Y N

010

GO TO PAGE 5, STEP 015, ENTRY POINT C.

011
DEPRESS CODE KEY(LOWER CASE CHARACTERS SHOULD BE DISPLAYED).
DEPRESS CODE KEY AGAIN(UPPER CASE CHARACTERS SHOULD BE DISPLAYED).
DOES DISPLAY ALTER CORRECTLY WHEN CODE KEY IS DEPRESSED?
Y N

012
CONFIGURATION ERROR.
RECONFIGURE SYSTEM FOR U/L CASE FEATURE.
RUN CUSTOMIZE PROGRAM.

THIS ACTION WILL CAUSE PROGRAM CRT3, (ALL CHARACTER DISPLAY) TO RUN.

NOTE 1:(KATAKANA FEATURE)

DEPRESS KANA ON KEY FOR KATAKANA CHAACTERS.
DEPRESS KANA OFF KEY FOR NON-KATAKANA CHARACTERS.

NOTE 2:(U/L CASE FEATURE)

SYSTEM MUST BE CONFIGURED FOR UPPER/LOWER CASE FEATURE TO ENABLE CRT3 TEST TO RUN CORRECTLY.
WHILE CRT3 IS EXECUTING, PRESS THE CODE KEY. LOWER CASE CHARACTERS SHOULD BE DISPLAYED(SEE MLM SECTION 5.4.4).
TO RETURN TO UPPER CASE DISPLAY, PRESS THE CODE KEY AGAIN.

013
IS LOWER CASE DISPLAY SAME AS MLM SECTION 5.4.4?
Y N

014
REPLACE CARD AA2-M2 (CRT KEYBOARD CARD)

015
(ENTRY POINT C)
DEPRESS START, TYPE IN CRT4, DEPRESS ENTER KEY.
THE DISPLAY SHOULD APPEAR AS SHOWN IN MLM, SECTION 5 FIGURE 37.
DOES DISPLAY APPEAR AS EXPECTED?
Y N

THIS ACTION WILL CAUSE PROGRAM CRT4, (DYNAMIC REDISPLAY TEST) TO RUN.

016
REPLACE CARD AA2-M2 (CRT KEYBOARD CARD)

017
DEPRESS START,
PROBLEM IS INTERMITTENT.

UNADJUSTABLE BRIGHTNESS AND FAILURE TO BLANK THE CRT DISPLAY CAN BE INTERMITTENT BECAUSE OF A FAILING CRT. VIBRATION OR POWERING UP AND DOWN CAN REMOVE THE SYMPTOMS TEMPOARILY.
IF THIS CONDITION EXISTS:
-GROUND THE CRT HIGH VOLTAGE ANODE
-REPLACE THE CRT AND CHASSIS ASM
-READJUST THE YOKE

OTHERWISE:
LOAD PROGRAM ID KBDTOCRT- THIS IS A FREELANCE PROGRAM TO AID IN LOCATING KEYBOARD AND CRT FAILURES.

RESEAT ATTACHMENT CARD AA2-M2.
RESEAT CABLE FROM AA2-U2 TO CRT-PC.
CHECK POWER CONNECTIONS TO CABLE (TB1 AND TB2 TO CRT-PC)

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
NO ENTRIES IN THIS TABLE			

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
1	002	1200	A

001
POWER UP. TURN BRIGHTNESS CONTROL CLOCKWISE UNTIL ANY DISPLAY IS VISABLE (DOT, RASTER, ETC.) OR POT REACHES ITS STOP.

A BLANK CRT INDICATES THAT THE ELECTRON BEAM IS NOT REACHING THE FACE OF THE CRT. THE ELECTRON BEAM IS GENERATED WHEN THE FILAMENT HEATS THE CATHODE OF THE TUBE. THIS ELECTRON BEAM IS THEN CONTROLLED BY THE GRIDS AS IT IS ATTRACTED TO THE FACE OF THE CRT BY THE HIGH VOLTAGE APPLIED TO THE ANODE OF THE CRT.

IS SCREEN COMPLETLY BLANK?
Y N
|
| 002
|
| GO TO MAP 1200, ENTRY POINT A.
|
|
003
REMOVE CRT REAR PANEL.
USING CE METER 15 VDC SCALE, REF TO FRAME GROUND, MEASURE:

+12 VDC	CABLE-PIN	B08, B09, D09, D10
-12 VDC	CABLE-PIN	D02
+6 VDC	CABLE-PIN	B12, B13
GND	CABLE-PIN	D12, D13

.
ALL VOLTAGES OK, AND GND AT ZERO?
Y N
|
| 004
| MEASURE FAILING LINE ON TB

+12 VDC	TB2-5
-12 VDC	TB2-6
+6 VDC	TB2-3
GND	TB1-2

| .
| FAILING LINE OK?
| Y N
| |
| | 005
| | REFERENCE POWER DISTRIBUTION DIAGRAM, LOCATE OPEN AND CORRECT. FAILURE BETWEEN PS AND TB.

006
REPLACE CABLE TO CRT-PC

007
VISUALLY INSPECT THE CRT YOKE (BOTTOM OF CRT CHASSIS ASSEMBLY) FILAMENT SHOULD GLOW.
IS FILAMENT GLOWING?
Y N

008
POWER DOWN. REMOVE DISPLAY SIGNAL CABLE. USE CE METER RX1 (-)LEAD ON CHASSIS GROUND (+)LEAD CABLE-PIN B12, B13
.
CONTINUITY?
Y N

009
(+)LEAD ON PC-PIN 18
.
CONTINUITY?
Y N

010
UNPLUG SOCKET ON CRT YOKE.
CHECK CONTINUITY OF BROWN WIRE ON SOCKET-PIN 8, AND
CHECK CONTINUITY OF BROWN WIRE ON SOCKET-PIN 1
.
CONTINUITY GOOD ON BOTH CHECKS?
Y N

011
REPLACE CRT SOCKET ASM.

012
REPLACE CHASSIS AND CRT ASM.

013
REPLACE DISPLAY PC BOARD

014
REPLACE CHASSIS AND CRT ASM.

015
USE CE METER 500 VDC SCALE
(-) LEAD ON PC-PIN 6
(+) LEAD ON PC-PIN 7
.
VOLTAGE BETWEEN 320-400 VDC?
Y N

016
USE CE METER 50 VAC SCALE.
LEAD ON PC-PIN 1
LEAD ON PC-PIN 3
.
VOLTAGE BETWEEN 12-30 VAC?
Y N

017
REPLACE DISPLAY PC BOARD

018
REPLACE CONVERTER.

019
USE CE METER 500 VDC SCALE
(-) LEAD ON PC-PIN 15
(+) LEAD ON PC-PIN 17
TURN BRIGHTNESS CONTROL FROM FULL CCW TO CW AND OBSERVE METER. (LEAVE BRIGHT- NESS CONTROL IN ITS FULL CW POSITION) VOLTAGE SHOULD VARY FROM LESS THAN 50 VDC TO MORE THAN 100VDC.
.
VOLTAGE VARY CORRECTLY?
Y N

020
POWER DOWN.
DISCONNECT LEAD 10.
RX 10K SCALE
MEASURE RESISTANCE BETWEEN LEAD 10 AND PC-PIN 9, VARY BRIGHTNESS CONTROL. MEASURE RESISTANCE BETWEEN LEAD 10 AND PC-PIN 11, VARY BRIGHTNESS CONTROL.
.
RESISTANCE VARY FROM APPROX. 0 TO 1 MEGOHM.
Y N

021
REPLACE BRIGHTNESS CONTROL POT.

022
REPLACE DISPLAY PC BOARD

03JUN75 PN2547611
EC828552 PEC828518

023

WE RECOMMEND OBTAINING ALL FOUR FRU'S AND REPLACING THEM ONE AT A TIME IN THE SEQUENCE SHOWN UNTIL PROBLEM IS RESOLVED AND ONLY ONE FRU HAS BEEN REPLACED:

DISPLAY PC BOARD
CONVERTER
CRT SOCKET ASM
CHASSIS AND CRT ASM

001
DISPLAY IS TOO BRIGHT, DIM, AND/OR UNADJUSTABLE.

BRIGHTNESS ON THE CRT IS CONTROLLED FROM THE 400 VDC OUTPUT OF THE CONVERTER. THE BRIGHTNESS CONTROL FORMS PART OF A VOLTAGE DIVIDER FROM THE 400 VDC SUPPLY TO GROUND. TURNING THE BRIGHTNESS CONTROL CHANGES THE VOLTAGE APPLIED TO THE VIDEO AMPLIFIER. THIS IN TURN CHANGES THE BIAS ON THE CRT WHICH INCREASES OR DECREASES THE ELECTRON FLOW TO THE FACE OF THE CRT. THIS CHANGES THE BRIGHTNESS.

USING 500 VDC SCALE, MEASURE FROM PC-PIN 10 (+) TO PC-PIN 15 (-). VARY THE BRIGHTNESS CONTROL TO ITS LIMITS.
VOLTAGE VARY FROM 0 TO 130V (+-30%)?
Y N

CHECKS THE RANGE OF VOLTAGE AVAILABLE FROM THE BRIGHTNESS CONTROL.

002
USING 500 VDC SCALE, MEASURE FROM PC-PIN 7 (+) TO PC-PIN 6 (-)
IS THE VOLTAGE BETWEEN 320 AND 400 VDC?
Y N

CHECKS THE 400 VDC OUTPUT OF THE CONVERTER.

003
REPLACE CONVERTER.

004
POWER DOWN.
REMOVE YELLOW WIRE FROM PC-PIN 10
USE CE METER RX 1K
MEASURE RESISTANCE FROM PC-PIN 9 TO YELLOW WIRE, VARY BRIGHTNESS CONTROL.
RESISTANCE SHOULD VARY FROM 0 OHMS TO 1 MEG.
MEASURE RESISTANCE FROM PC-PIN 11 TO YELLOW WIRE, VARY BRIGHTNESS CONTROL.
RESISTANCE SHOULD VARY FROM 0 OHMS TO 1 MEG.
.
RESISTANCE VARY CORRECTLY AND SMOOTHLY?
Y N

005
REPLACE BRIGHTNESS CONTROL POT.

006
REPLACE DISPLAY PC BOARD.

A BRIGHT, DIM,
1

SYSTEM 32

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007
DOES VOLTAGE VARY SMOOTHLY?
Y N

008
REPLACE BRIGHTNESS CONTROL POT.

009
POWER DOWN. DISCONNECT PC-PIN 17.
METER RESISTANCE FROM WIRE REMOVED
TO PC-PIN 14 WITH METER SET TO RX1.
.
IS THE RESISTANCE APPROXIMATELY
INFINITY?
Y N

010
REPLACE CRT SOCKET ASM.
RECONNECT WIRE TO PIN 17 ON PC
BOARD.

011
POWER UP.
USING 500 VDC SCALE, MEASURE FROM
PC-PIN 17 (+) TO PC-PIN 15 (-) WITH
WIRE STILL REMOVED. VARY THE
BRIGHTNESS CONTROL TO ITS LIMITS
.
VOLTAGE VARY FROM LESS THAN 50 VDC
TO MORE THAN 90 VDC?
Y N

012
REPLACE DISPLAY PC BOARD.

013
REPLACE CRT AND CHASSIS ASM
RECONNECT WIRE TO PIN 17 ON PC
BOARD.

001
SIX MARKS ON CRT, PARTIAL HORIZONTAL DEFLECTION, OR CHARACTERS DISTORTED ON THE ENDS.

THE HORIZONTAL SWEEP CIRCUIT MOVES THE ELECTRON BEAM IN A HORIZONTAL LINE ACROSS THE FACE OF THE CRT. THE ATTACHMENT GENERATES HORIZONTAL INPUT PULSES. THESE PULSES TRIGGER AMPLIFIERS ON THE DISPLAY PC BOARD. THESE AMPLIFIERS DRIVE CURRENT THROUGH THE TWO HORIZONTAL YOKE WINDINGS. THIS CURRENT GENERATES THE MAGNETIC FIELD TO MOVE THE ELECTRON BEAM. THE MAGNETIC FIELD FROM EACH WINDING MOVES THE BEAM HALF-WAY.

PROBE AA2-M2-U06 (-HORIZONTAL)
.
LINE PULSING?
Y N
|
| 002
| REPLACE CONTROL CARD, AA2-M2.
|
|
003
REMOVE CRT REAR COVER. PROBE CRT CABLE-PIN B10 (-HORIZONTAL)
.
LINE PULSING?
Y N
|
| 004
| REPLACE DISPLAY SIGNAL CABLE.
|
|
005
POWER DOWN.
REMOVE YOKE CONNECTOR FROM PC BOARD. USE CE METER, RX1 SCALE. CHECK FOR RESISTANCE IN WIRE B TO D AND C TO E.
.
RESISTANCE BETWEEN 5-20 OHMS ON BOTH CHECKS?
Y N
|
| 006
| REPLACE YOKE ASSEMBLY.
|
|
007
REMOVE CRT REAR COVER. POWER UP. USE CE METER, 15 VDC SCALE. MEASURE FROM FRAME GROUND TO PROBE POINT ON DIODE D1.
.
VOLTAGE +12 VDC +- 10%?
Y N
| |
| |
| |
| |
| |

008
USE CE METER, 15 VDC SCALE.
MEASURE FROM FRAME GROUND TO CRT
CABLE PIN-D09, D10.
.
VOLTAGE +12 VDC +- 10%?
Y N

009
USE CE METER, 15 VDC SCALE.
MEASURE FROM FRAME GROUND TO
TB2-5.
.
VOLTAGE +12 VDC +- 10%?
Y N

010
REF VOLTAGE DIST. DIAGRAM AND
FIX FAILURE FROM PS TO TB.

011
REPLACE CABLE TO CRT-PC

012
REPLACE DISPLAY PC BOARD.

013
REPLACE DISPLAY PC BOARD.

001
LESS THAN SIX LINES OF DISPLAY.

THE VERTICAL SWEEP CIRCUIT POSITIONS THE ELECTRON BEAM VERTICALLY ON THE FACE OF THE CRT. THIS POSITIONING PROVIDES THE SIX LINES ON THE DISPLAY. VERTICAL INPUTS ARE GENERATED BY THE ATTACHMENT, SENT TO THE PC BOARD, AMPLIFIED, AND USED TO DRIVE CURRENT THROUGH THE VERTICAL YOKE. THIS CURRENT GENERATES THE MAGNETIC FIELD TO MOVE THE ELECTRON BEAM.

PROBE LINES:
. AA2-M2-S09 (-VERTICAL 1)
. AA2-M2-S04 (-VERTICAL 2)
. AA2-M2-S08 (-VERTICAL 4)
ALL LINES PULSING?
Y N
|
| 002
| REPLACE CONTROL CARD, AA2-M2.
|
|
003
REMOVE CRT REAR COVER.
PROBE:
CRT CABLE-PIN B02 (-VERTICAL 1)
PIN B03 (-VERTICAL 2)
PIN B04 (-VERTICAL 4)
ALL LINES PULSING?
Y N
|
| 004
| REPLACE DISPLAY SIGNAL CABLE.
|
|
005
POWER DOWN.
REMOVE YOKE CONNECTOR FROM PC BOARD.
USE CE METER RX1 SCALE.
CHECK FOR RESISTANCE IN WIRE A TO F.
.
CONTINUITY OK?
Y N
|
| 006
| REPLACE YOKE ASSEMBLY.
|
|
007
REPLACE DISPLAY PC BOARD.

001
SIX NARROW LINES ACROSS FULL FACE OF DISPLAY.

THE WIGGLE SWEEP CIRCUIT MOVES THE ELECTRON BEAM UP AND DOWN TO GIVE THE CHARACTERS HEIGHT. CONTROL PULSES ARE GENERATED BY THE ATTACHMENT, SENT TO THE DISPLAY PC BOARD, AMPLIFIED, AND USED TO DRIVE CURRENT THROUGH THE CHARACTER YOKE. THIS CURRENT GENERATES THE MAGNETIC FIELD TO MOVE THE ELECTRON BEAM.

PROBE AA2-M2-S05 (-WIGGLE)
.
LINE PULSING?
Y N
|
| 002
| REPLACE CONTROL CARD. AA2-M2.
|
|
003
REMOVE CRT REAR COVER.
PROBE PC-PIN 13
.
LINE PULSING?
Y N
|
| 004
| PROBE CRT CABLE-PIN B05 (-WIGGLE)
| .
| LINE PULSING?
| Y N
| |
| | 005
| | REPLACE DISPLAY SIGNAL CABLE.
| |
| |
| 006
| REPLACE DISPLAY PC BOARD.
|
|
007
USE DF METER 15 VDC
REFERENCE ON CHASSIS GROUND
MEASURE PC-PIN 12.
.
VOLTAGE +12 VDC +-10%?
Y N
|
| 008
| REPLACE DISPLAY PC BOARD.
|
|
009
REPLACE CRT YOKE ASSEMBLY.

001
RASTER ONLY

BRIGHTNESS CONTROL TURNED UP AND NO VIDEO. JUST RASTER

PROBE AA2-M2-U05 (-VIDEO)
.
LINE PULSING?
Y N
|
| 002
| REPLACE CONTROL CARD, AA2-M2
|
|
003
REMOVE REAR COVER ON CRT. PROBE CRT CABLE-PIN B07 (-VIDEO)
.
LINE PULSING?
Y N
|
| 004
| REPLACE DISPLAY SIGNAL CABLE.
|
|
005
REPLACE DISPLAY PC BOARD.

001
REMOVE CRT REAR PANEL.
USING CE METER, 15 VDC SCALE, REFERENCE TO FRAME GROUND, MEASURE:
+12 VDC CABLE-PIN B08, B09, D09, D10
-12 VDC CABLE-PIN D02
+6 VDC CABLE-PIN B12, B13
.
ALL VOLTAGES +- 10% OF NOMINAL?
Y N
|
| 002
| MEASURE FAILING VOLTAGE ON TB.
| +12 VDC TB2-5
| -12 VDC TB2-6
| +6 VDC TB2-3
| .
| FAILING VOLTAGE OK?
| Y N
| |
| | 003
| | REFERENCE POWER DISTRIBUTION DIAG. LOCATE LOOSE CONNECTION AND CORRECT FAILURE BETWEEN PS AND TB.
| |
| |
| 004
| REPLACE CABLE TO CRT-PC.
|
|
005
CHECK VISUALLY FOR ITEMS WHICH COULD CAUSE A MAGNETIC FIELD NEAR THE MACHINE. A MAGNETIC FIELD CAN BE CAUSED BY A MOTOR OR MACHINE OPERATING NEAR BY.
.
IS THERE A MAGNETIC FIELD?
Y N
|
| 006
| REPLACE THE CONVERTER.
|
|
007
ELIMINATE THE CAUSE OF THE MAGNETIC FIELD.

A JITTERY (MOVING, UNSTABLE) DISPLAY CAN BE CAUSED BY A RIPPLE ON THE +12 VDC POWER SUPPLY, OR A MAGNETIC FIELD CAUSED BY A MOTOR OR MACHINE OPERATING NEARBY.

001
FLASHING DISPLAY

THE DISPLAY FLASHES BECAUSE THE HIGH VOLTAGE IS BEING CUT OFF. WHEN THE HIGH VOLTAGE SUPPLY IS OVERLOADED, IT TURNS OFF. AFTER 10 SECONDS, THE HIGH VOLTAGE SUPPLY TURNS ON AGAIN. IF AN OVERLOAD CONDITION STILL EXISTS, THE DISPLAY FLASHES ON FOR 1 SECOND AND THEN OFF FOR 10 SECONDS. FLASHING OR CHANGES IN THE BRIGHTNESS CAN BE CAUSED BY CHANGES IN THE 400 VDC USED FOR BRIGHTNESS CONTROL.

POWER DOWN.
REMOVE CRT REAR COVER.
REMOVE HIGH VOLTAGE ANODE.
POWER UP.
USE CE METER, 500 VDC SCALE.
MEASURE PC-PIN 6 (-) AND PC-PIN 7 (+)
.
VOLTAGE 320-400 VDC AND STEADY?
Y N
|
| 002
| REPLACE DISPLAY PC BOARD.
| REPLACE CONVERTER.
|
|
003
REPLACE CHASSIS AND CRT ASM

001
VERY LARGE DISPLAY

A VERY LARGE DISPLAY IS CAUSED WHEN THE HIGH VOLTAGE APPLIED TO THE CRT ANODE IS LOW. WHEN THIS VOLTAGE IS LOW, THE ELECTRON BEAM MOVES SLOWER TOWARD THE FACE OF THE CRT. THIS PERMITS THE MAGNETIC FIELD DEVELOPED BY THE YOKE TO DEFLECT THE BEAM A GREATER DISTANCE. THE HIGH VOLTAGE OSCILLATOR ON THE DISPLAY PC BOARD PROVIDES THE DRIVE PULSES TO THE CONVERTER. THE CONVERTER CHANGES THESE PULSES TO 400 VDC FOR BRIGHTNESS CONTROL AND THE HIGH VOLTAGE FOR THE ANODE LEAD.

REMOVE CRT REAR COVER.
USE CE METER, 50 VAC SCALE.
MEASURE FROM PC-PIN 1 TO PC-PIN 3
.
VOLTAGE 12-30 VAC?
Y N
|
| 002
| POWER DOWN. GROUND HIGH VOLTAGE
| ANODE. USE CE METER, RX1 SCALE.
| CHECK FOR OPEN FROM HIGH VOLTAGE
| LEAD TO GROUND.
| .
| RESISTANCE HIGH?
| Y N
| |
| | 003
| | REPLACE CONVERTER.
| |
| |
| 004
| POWER UP.
| USING CE METER 15 VDC SCALE,
| REFERENCE TO CHASSIS GROUND.
| MEASURE:
| +12VDC CABLE-PIN B08, B09,
| D09, D10
| -12VDC CABLE-PIN D02
| +6VDC CABLE-PIN B12, B13
| GND CABLE-PIN D12, D13
| .
| ALL VOLTAGES OK?
| Y N
| |
| | 005
| | MEASURE VOLTAGES ON TB.
| | +12 VDC TB2-5
| | -12 VDC TB2-6
| | +6 VDC TB2-3
| | .
| | ALL VOLTAGES OK?
| | Y N

```
A B C D      VERY LARGE DISPLAY
1 1 1 1
                SYSTEM 32
| | | |
| | | |       PAGE    2 OF    2
| | | |
| | | |
| | | 006
| | | REF.  VOLTAGE  DIST.  DIAGRAM
| | | AND FIX FAILURES  FROM  POWER
| | | SUPPLY TO TB.
| | |
| | |
| | 007
| | REPLACE CABLE TO CRT-PC.
| |
| |
| C08
| REPLACE DISPLAY PC BOARD.
|
|
C09
REPLACE CONVERTER.
```

001
MIS-POSITIONED RASTER

SHIFTED LEFT OR RIGHT TOP OR BOTTOM. MAY BE SHIFTED SO FAR THAT IT IS NO LONGER ON THE FACE OF THE SCREEN, AND WITH BRIGHTNESS CONTROL TURNED FULL CLOCKWISE, THE FACE OF THE SCREEN WILL GLOW OR BE HAZY.

POWER DOWN.
DISCONNECT YOKE CONNECTOR (ON TOP OF CRT-PC BOARD). MEASURE RESISTANCE ON CABLE WITH RX1:

HORIZONTAL B TO D AND C TO E
VERTICAL A TO F

IS RESISTANCE APPROXIMATELY 5-20 OHMS ON ALL MEASUREMENTS?
Y N
|
| 002
| REPLACE YOKE ASM.
|
|
003
REPLACE DISPLAY PC BOARD.

SYSTEM/32

DIAGNOSTIC SERVICE (USER'S) GUIDE

09/29/77 P/N 2547690
EC 832050 PEC 830358

TABLE OF CONTENTS

NOTE: DISPLAYS ARE IN ORDER BY DISPLAY MESSAGE NUMBER. THEY ARE LISTED HERE BY TYPE OF TEST.

INTRODUCTION:

PURPOSE:

THIS GUIDE IS INTENDED FOR YOU TO USE WHEN CHECKING OUT THE SYSTEM FOR PROPER OPERATION, AND TO ASSIST YOU WHEN RUNNING DIAGNOSTICS ON THE SYSTEM. IF YOU ARE NOT FAMILIAR WITH S/32 DIAGNOSTICS, THE HELP FUNCTION OF DCP CAN BE A GOOD TOOL FOR YOU TO LEARN THE TESTS THAT ARE AVAILABLE.

CATAGORIES OF DIAGNOSTIC TESTS AND UTILITY PROGRAMS AS DEFINED BY THE 'HELP' PROGRAM OF THE DIAGNOSTIC CONTROL PROGRAM ARE:

1. MAP DIAGNOSTICS (MDI).
   USE OF TUXX TESTS WITH MAPS TO TEST:

1. KYBD	5. BSCA
2. PRINTER	6. SDLC
3. 62GV	7. CARD I/O
4. 33FD	8. 1255

2. SPECIAL DIAGNOSTICS

   THESE TESTS ARE DESIGNED TO RUN AGAINST A SPECIFIC DEVICE. TESTS ARE AVAILABLE FOR THE FOLLOWING DEVICES:

KEYBOARD	CRT	BSCA
PRINTER	33FD	SDLC
62GV	CPU	CARD I/O

3. UTILITIES:

   CONFIGURE, DISKETTE LIST, ANAL 33FD, 33FD ALT/DISP, 62GV ALT/DISP, PATCH, MOVE, DUMP 33FD, INIT 62GV, MDI TU SELECT, AND FRIEND.

4. OTHER DIAGNOSTICS

   1. SYSTEM TEST
   2. ERAP
   3. BSCA (IF INSTSLLED)
   4. SDLC (IF INSTALLED)

FORMAT:
THE GUIDE IS SECTIONALIZED IN THE FOLLOWIING MANNER:
INTRODUCTION:
GENERAL INFORMATION.

IMPL:
THE FOLLOWING OPERATIONS ARE EXPLAINED:
A. DETAILED DESCRIPTION OF IMPL SEQUENCE
B. NORMAL IMPL OPERATIONS FROM 62GV & 33FD
C. IMPL ERROR INDICATIONS.
D. IMPL DIAGNOSTIC TESTING OPTIONS
E. DETAILED DESCRIPTION OF TEST OPTIONS
F. ETC.

DISPLAYS:
THE CRT DISPLAYS ARE LISTED BY DISPLAY NUMBER AND CONTAIN ADDITIONAL INFORMATION ABOUT EACH DISPLAY. THE TABLE OF CONTENTS LISTS THE DISPLAYS BY TYPE SUCH AS:
FRIEND DISPLAYS,
ERAP DISPLAYS,
62GV INITIALIZE DISPLAYS,
CONFIGURE DISPLAYS,
PATCH DISPLAYS,
PRINTER DISPLAYS,
ETC.

MDI PROGRAM DESCRIPTION :
THE TYPES OF TESTS ARE LISTED IN THE FOLLOWING CATAGORIES:
A. MAP DIAGNOSTICS-(MDI'S)
B. TUXX TESTS
C. DIAGNOSTIC PROGRAM DESCRIPTIONS
D. UTILITIES
E. OTHER DIAGNOSTIC SUPPORT

MISCELLANEOUS INFORMATION:
THIS SECTION CONTAINS INFORMATION SUCH AS:
A. STORAGE DUMP FROM THE C.E. PANEL
B. RUNNING 33FD TESTS FROM THE 33FD
C. 33FD FREELANCING
D. 33FD FREELANCING ERROR CODES
E. 62GV FRIEND SCOPING NOTES
F. 33FD COMMANDS

DISKETTE INFORMATION:

THE FOLLOWING DISKETTES ARE SHIPPED WITH A BASIC S/32:

DIAG 01- CONTAINS THE DIAGNOSTIC CONTROL PROGRAM (DCP). AND MOST OF THE DIAGNOSTIC TESTS.

DIAG 02- CONTAINS ERAP TEST AND SYSTEM TEST. YOU CANNOT IMPL DIAG 02.

SYSTEMS WITH OPTIONAL FEATURES HAVE ADDITIONAL DISKETTES. ALL FEATURES EXCEPT 1255 (MICR) USE DIAG 03. 1255 DIAGNOSTICS ARE ON DIAG 04 DISKETTE. NEITHER DIAG 03 NOR DIAG 04 CAN BE IMPL'ED.

FEATURE SERVICE GUIDE INFORMATION:

THE FOLLOWING CHART SHOWS THE PART AND E.C. NUMBERS OF THE DIAGNOSTIC SERVICE GUIDES FOR OPTIONAL FEATURES:

FEATURE NAME	LOCATION	PART NUMBER	E.C. NUMBER
BSCA	S/32 MAPS (3100)	2547691	830358
SDLC	S/32 MAPS (3200)	2773056	830358
CARD I/O	S/32 MAPS (3300)	2594628	830357
MCU (5321)	5321 MAPS (0914)	1635739	386102
1255 (MICR)	S/32 MAPS (3600)	2548063	830358

OPERATIONAL NOTE:
THE POSITION OF THE IPL SWITCH DETERMINES WHETHER THE 'ALTER/DISPLAY' OR 'INQUIRY' ROUTINE IS ENTERED WHEN THE CPU IS STOPPED, AND THE INQUIRY KEY IS PRESSED.
IPL SWITCH UP (DISKETTE)= ALTER/DISPLAY
IPL SWITCH DOWN (DISK) =INQUIRY

THE ALTER/DISPLAY STORAGE ROUTINE WILL BE ENTERED IF THE FOLLOWING 3 CONDITIONS EXIST:

1. THE IPL SWITCH IS UP (DISKETTE POSITION).
2. THE CPU IS STOPPED (STOP KEY/LIGHT IS ON).
3. THE INQ KEY IS PRESSED.

TO RETURN TO THE MAIN MENU FROM THE ALTER/DISPLAY ROUTINE:

1. IPL SWITCH TO DISK (DOWN).
2. PRESS START KEY.
3. PRESS THE INQ KEY.

I. IMPL

IMPL (INITIAL MICROPROGRAM LOAD)

YOU CAN IMPL FROM EITHER THE 33FD (DIAG 01 ONLY) OR FROM THE 62GV.

IMPL FROM EITHER THE 33FD OR THE 62GV CAUSES THREE SEPARATE LOADS ($CP01,$CP02 AND $CP03) INTO CONTROL STORE TO OCCUR. THESE LOADS CONTAIN CPU DIAGNOSTIC TESTS, PORT DIAGNOSTIC TESTS, ATTACHMENT DIAGNOSTIC WRAP TESTS, AND SUPPORTING PROGRAMS THAT ARE EXECUTED EACH TIME THEY ARE LOADED.

IF FAILURES OCCUR DURING IMPL, YOU CAN USE THE EVENT INDICATORS, WRAP TEST FAILURE CODES, CRT DISPLAYS, AND REGISTER VALUES (AS DIRECTED BY THE SYSTEM ENTRY MAPS) TO ISOLATE FAILURES.
TO ISOLATE FAILURES, DIAGNOSTIC WRAP TEST OPTIONS SUCH AS LOOP ON ROUTINE, LOOP ON 1'ST 2K WORD, LOOP ON 1'ST 4K WORD, AND SO ON,CAN BE SET INTO THE ADDRESS/DATA SWITCHES BEFORE PRESSING THE LOAD KEY AGAIN.

NOTE THAT THE INFORMATION ABOVE IS THE SAME FOR THE FIRST THREE LOADS OF EITHER THE 33FD OR 62GV IMPL. DIFFERENCES BETWEEN THE 33FD AND 62GV IMPL'S FOLLOW:

1. IF THE DIAGNOSTIC WRAP TESTS DURING IMPL FROM THE 33FD ARE SUCCESSFULLY COMPLETED, CONTROL STORE IS LOADED WITH THE DIAGNOSTIC CONTROL PROGRAM. SUCCESSFUL COMPLETION IS INDICATED BY THE DISPLAY 'IMPL DIAGNOSTIC TESTS RAN WITHOUT ERRORS'. PRESSING THE START KEY TO CONTINUE, AS INDICATED BY THE DISPLAY, CAUSES THE MAIN MENU TO BE DISPLAYED. THIS ALLOWS YOU TO SELECT DEVICE DIAGNOSTIC TESTS, MDI-MAP TU DIAGNOSTICS, OR UTILITY PROGRAMS IF DEVICE FAILURES ARE SUSPECTED.

2. IF THE DIAGNOSTIC WRAP TESTS DURING IMPL FROM THE 62GV ARE SUCCESSFULLY COMPLETED, CONTROL STORE IS LOADED WITH THE SCP. SUCCESSFUL COMPLETION IS INDICATED BY THE DISPLAY ' INITIAL PROGRAM LOAD COMPLETE '. THIS ALLOWS YOU TO RUN SYSTEM TEST OR ERAP FROM THE DIAG 02 DISKETTE UNDER CONTROL OF THE SCP.

EITHER THE 33FD OR THE 62GV IMPL SEQUENCE CAN BE VARIED TO HELP YOU LOCATE FAILURES. SOME DIAGNOSTIC OPTIONS APPLY TO BOTH DEVICES, AND SOME TO ONLY ONE DEVICE. SEE DETAILED DESCRIPTION OF IMPL OPTIONS IN THIS SECTION TO FIND WHICH OPTIONS APPLY TO WHICH DEVICE.

1. DETAILED DESCRIPTION OF IMPL SEQUENCE

THE BASIC 33FD IMPL CONSISTS OF THREE (3) OR OPTIONALLY UP TO SEVEN (7) PARTIAL CONTROL STORE LOADS BEFORE THE DEVICE DIAGNOSTIC PROGRAMS ARE LOADED. BECAUSE THE 33FD AND 62GV IMPL SEQUENCES ARE SIMILAR, THE FOLLOWING SEQUENCE APPLIES TO BOTH.

THE FOLLOWING IS A SUMMARY OF THE TYPES OF TESTS CONTAINED WITHIN THESE LOADS. FIG. 1 SHOWS PICTORIALLY THE CE DISKETTE IMPL SEQUENCE OF TESTS LISTED BELOW:

A. INITIAL 2K WORD LOAD (TRACK 0 - SPECIAL SECTOR OF 4094 DATA BYTES AND 2 CRC CHARACTERS) BY HARDWARE INTO CONTROL STORE LOCATIONS 0000-07FF. THESE WORDS CONTAIN THE FOLLOWING:

   - DIRECT AREA DATA
   - CPU INSTRUCTION TESTS
   - PORT TESTS
   - 33FD/62GV LOADER

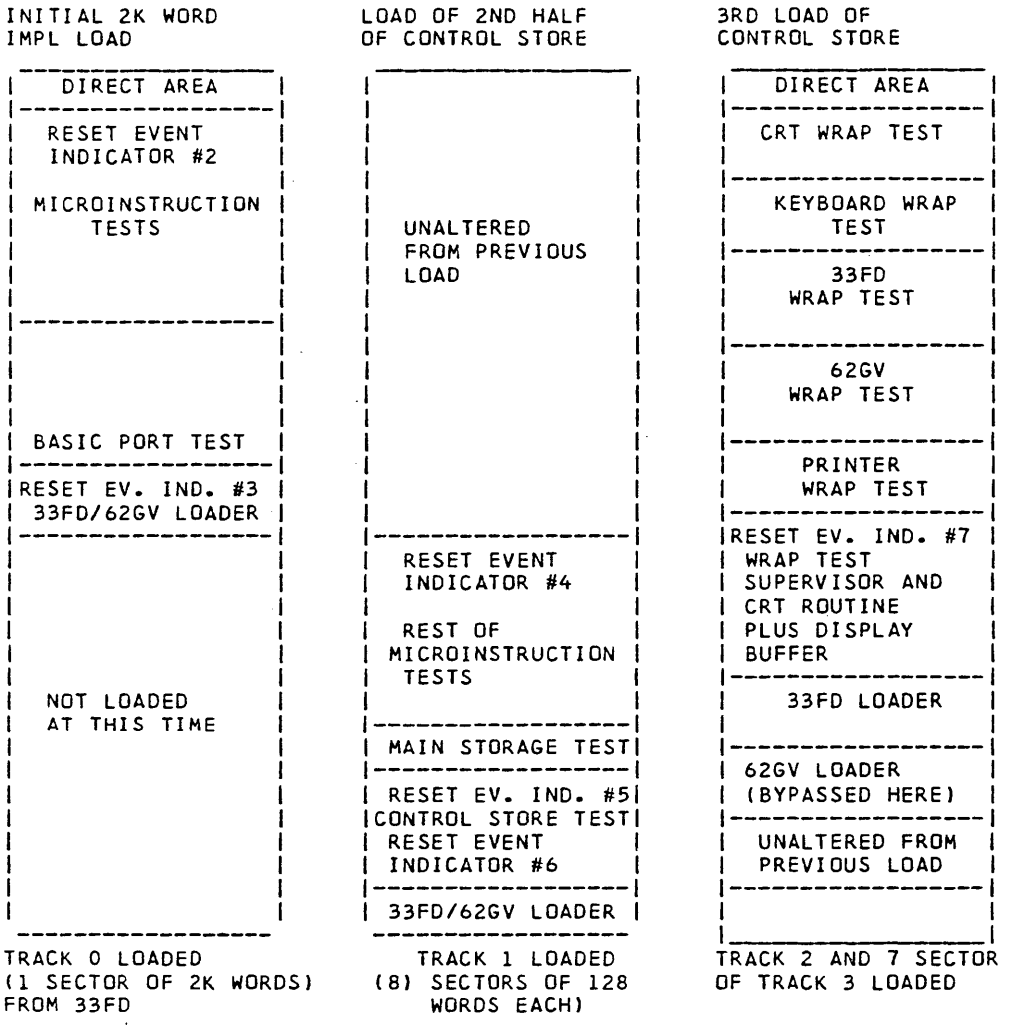
B. SECOND LOAD OF 2K WORDS (TRACK 1) BY 33FD LOADER INTO CONTROL STORE LOCATIONS 0800-0FFF.

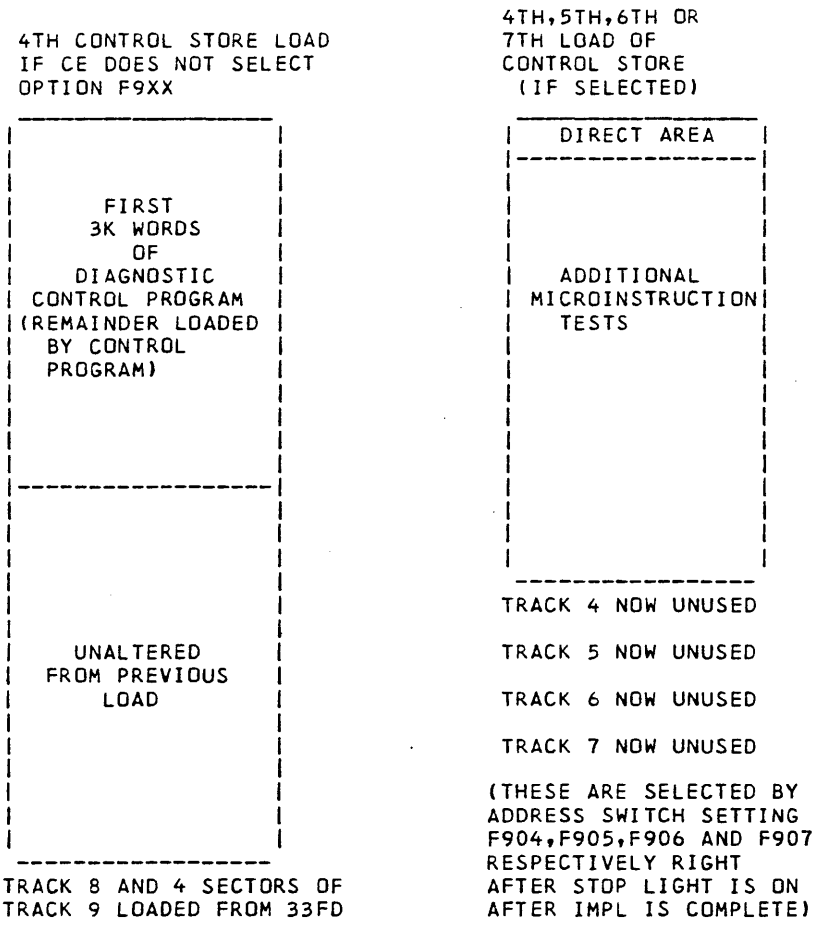
   - REST OF CPU INSTRUCTION TESTS
   - MAIN STORE TESTS
   - CONTROL STORE TEST
   - 33FD/62GV LOADER

C. THIRD LOAD OF 2.75K WORDS (TRACK 2 AND 7 SECTORS OF TRACK 3) BY 33FD LOADER INTO CONTROL STORE LOCATIONS 0080-0F7F.

   - CRT WRAP TEST
   - KEYBOARD WRAP TEST
   - 33FD WRAP TEST
   - 62GV WRAP TEST
   - PRINTER WRAP TEST
   - WRAP TEST SUPERVISOR
   - 33FD LOADER
   - 62GV LOADER (NOT USED HERE)

FIG.1 DISKETTE DIAG01 IMPL SEQUENCE




4TH CONTROL STORE LOAD
IF CE DOES NOT SELECT
OPTION F9XX
FIRST
3K WORDS
OF
DIAGNOSTIC
CONTROL PROGRAM
(REMAINDER LOADED
BY CONTROL
PROGRAM)
UNALTERED
FROM PREVIOUS
LOAD
TRACK 8 AND 4 SECTORS OF
TRACK 9 LOADED FROM 33FD
4TH,5TH,6TH OR
7TH LOAD OF
CONTROL STORE
(IF SELECTED)
DIRECT AREA
ADDITIONAL
MICROINSTRUCTION
TESTS
TRACK 4 NOW UNUSED
TRACK 5 NOW UNUSED
TRACK 6 NOW UNUSED
TRACK 7 NOW UNUSED
(THESE ARE SELECTED BY
ADDRESS SWITCH SETTING
F904,F905,F906 AND F907
RESPECTIVELY RIGHT
AFTER STOP LIGHT IS ON
AFTER IMPL IS COMPLETE)

2. LOADING FROM 33FD OR 62GV (NORMAL OPERATION)
(NORMAL OPERATION = ADDRESS/DATA SWITCHES SET AT 0000,
AND NO IMPL ERRORS.)

A. IF LOADING FROM 33FD, INSERT DISKETTE DIAG01.

B. SET CE PANEL SWITCHES TO THE FOLLOWING SETTINGS:

- MODE SELECTOR SW TO 'PROC RUN' POSITION
- CHECK - STOP
- POWER FAULT DPLY - PRESENT
- FORCE CLOCK - OFF
- IPL - DISKETTE (SET TO 'DISK' FOR 62GV)
- IMPL - DISKETTE (SET TO 'DISK' FOR 62GV)
- STOR SEL - MAIN
- ADDR COMPARE - RUN
- ADDRESS SWITCHES SET TO 0000

C. PRESS LOAD KEY ON OPERATORS PANEL. LOAD KEY SHOULD LIGHT AND STAY ON UNTIL THE 1ST 4096 BYTES ARE TRANSFERRED INTO CONTROL STORAGE.

D. THE 33FD MECHANISM WILL CLICK FOR ABOUT 14 SECONDS

THIS MESSAGE OCCURS IF DIAG02,03 OR HIGHER IS IMPL'ED

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|* * * *  A T T E N T I O N    * * * * * | 1
|                                        |
|                                        | 2
|                                        |
|THIS DISKETTE CAN'T BE IMPL'ED .        | 3
|                                        |
|INSERT DIAG01 AND                       | 4
|                                        |
|                                        | 5
|                                        |
|            RE-IMPL                0000 | 6
 ----------------------------------------
```

E. IF THE MACHINE IS FUNCTIONING PROPERLY DURING IMPL,THE 'EVENT INDICATORS' (LEFT BYTE P,0,1,2,3,4,5,6,7 INDICATOR LIGHTS) TURN OFF IN SEQUENCE FROM LEFT TO RIGHT (P--->7). SEE PARAGRAPH 3.4 IN THIS SECTION FOR EACH EVENT INDICATOR MEANING.

F. THE 33FD MECHANISM CLICKS SEVERAL TIMES WHILE THE 'EVENT INDICATORS' ARE BEING RESET.THIS INDICATES THE 33FD LOADERS ARE BEING EXECUTED.(THE 62GV EMITS A LOW LEVEL HUM.)

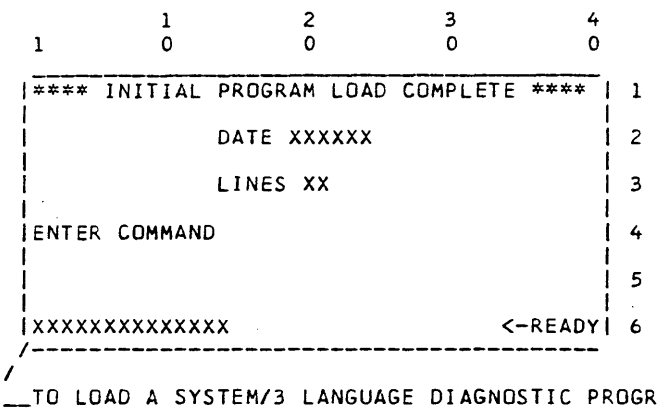
G. THE FOLLOWING CRT DISPLAYS SHOULD OCCUR APPROXIMATELY 30 SECONDS (20 SECONDS IF LOADING FROM 62GV) AFTER THE LOAD KEY IS PRESSED.

DISPLAY AFTER NORMAL 33FD IMPL

```
          1         2         3         4
 1        0         0         0         0
 ------------------------------------------
|*     IMPL DIAGNOSTICS RAN              *| 1
|                                          |
|*           WITHOUT ERRORS.             *| 2
|                                          |
|* CAUTION:  ANY RPQ'S INSTALLED MAY     *| 3
|                                          |
|* AFFECT DIAGNOSTICS.  REFER TO VOL.101*| 4
|                                          |
|* FOR A DESCRIPTION.                    *| 5
|                                          |
|* PUSH START KEY TO CONTINUE       0001 | 6
 ------------------------------------------
```

H. THE STOP KEY/LIGHT ON THE OPERATOR PANEL WILL BE ON. IF DEVICE DIAGNOSTIC PROGRAMS OR UTILITY PROGRAMS ARE DESIRED, PRESS THE CONSOLE START KEY AND FOLLOW THE DISPLAYED INSTRUCTIONS.

DISPLAY AFTER NORMAL 62GV IMPL



TO LOAD A SYSTEM/3 LANGUAGE DIAGNOSTIC PROGRAM, ENTER:

```
SYSTST (FOR SYSTEM TEST)        OR
ERAP   (FOR ERROR RECORDING)    OR
BSCA   (FOR BSCA TEST IF BSCA IS INSTALLED)  OR
SDLC   (FOR SDLC TEST IF SDLC IS INSTALLED)  AND
PRESS ENTER KEY.

NEXT DISPLAY WILL BE 0600
```

NOTE: SEE BSCA OR SDLC DIAGNOSTIC SERVICE GUIDES FOR TESTING OF THOSE FEATURES.

3. IMPL ERROR INDICATIONS

AFTER PRESSING THE LOAD KEY (IMPLING), IF THE APPROPRIATE CRT DISPLAY DOES NOT APPEAR WITHIN THE DESIGNATED TIME AND/OR THE EVENT INDICATORS (PARAGRAPH 3.4) ARE NOT ALL OFF, THEN A MACHINE FAILURE SHOULD BE SUSPECTED. OTHER CAUSES COULD BE IMPROPER INSERTION OF DISKETTE OR THE WRONG DISKETTE, OR IMPROPER SETTING OF CE PANEL SWITCHES. PROPER SWITCH SETTINGS ARE:

1. IF YOU ARE LOADING FROM THE 33FD, THE IMPL SWITCH MUST BE UP, AND THE IPL SWITCH IS IGNORED.
2. IF YOU ARE LOADING FROM THE 62GV,THE IMPL AND IPL SWITCHES MUST BE DOWN. IF THE IPL SWITCH IS UP, AND ANY DISKETTE OTHER THAN THE SCP BACKUP DISKETTE IS INSERTED, A '13 ERROR' OCCURS.

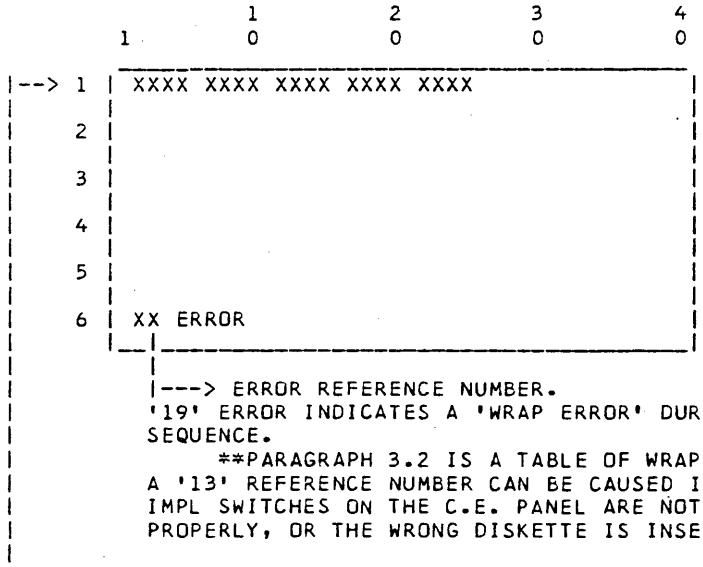
3.1 WRAP TEST ERRORS:

THE IMPL DIAGNOSTIC 'WRAP TESTS' DETECT AN ERROR IN A DEVICE ATTACHMENT.
USUALLY THIS ERROR STILL ALLOWS THE CRT TO BE USED FOR DISPLAYING THE ERROR AS SHOWN BELOW.
IF THE DISPLAY OCCURS AND/OR THE STOP LIGHT COMES ON, THE SAME INFORMATION WOULD BE IN THE MACHINE MAIN LEVEL REGISTERS WR1-WR6 AS WELL AS IN CONTROL STORAGE LOCATIONS 0017 - 001B. (SEE THE DISPLAY ON THE NEXT PAGE FOR DEFINITION.)
NORMALLY, AT THE TIME OF THE DISPLAY, YOU WOULD GO TO THE MAP CHARTS TO DETERMINE THE CAUSE OF THE FAILURE. HOWEVER, YOU COULD PRESS START TO ATTEMPT EXECUTION OF DEVICE DIAGNOSTICS, EXERCISERS, OR UTILITIES. AT THIS TIME, YOU CAN ALSO LOAD OPTIONAL TESTS USING ADDRESS SWITCH SELECTION. SEE PARAGRAPHS 4 AND 5 OF THIS SECTION FOR IMPL OPTIONS AVAILABLE TO YOU.

DON'T FORGET: IF A WRAP TEST STOPS WITH AN ERROR DISPLAY, YOU CAN PRESS START AND CONTINUE TO THE MAIN MENU IN ORDER TO RUN DIAGNOSTICS AGAINST THE ATTACHMENT THAT CAUSED THE 'WRAP ERROR'.

WRAP TEST ERROR DISPLAY

(APPEARS FROM EITHER 62GV IMPL OR 33FD IMPL)



THIS LINE CONTAINS EITHER 1,2,3,4, OR UP TO 5 4-DIGIT 'WRAP ERROR' ID'S. THESE NUMBERS IDENTIFY THE FAILING DEVICE AND THE TYPE OF FAILURE. THE FIRST TWO DIGITS OF AN ID ARE THE DEVICE ADDRESS AND THE SECOND TWO DIGITS IDENTIFY THE PARTICULAR FAILURE.

** PARAGRAPH 3.2 IS A TABLE OF WRAP ERROR ID'S **

THE ID'S DISPLAYED ON THE CRT ARE ALSO PUT INTO CONTROL STORE AND REGISTERS AS FOLLOWS:

ID	C/S ADDRESS	REGISTER	DEVICE
D0XX	0017	WR2	33FD
40XX	0018	WR3	CRT
10XX	0019	WR4	KEYBOARD
E0XX	001A	WR5	LINE PRINTER
E1XX	001A	WR5	SERIAL PRINTER
A0XX	001B	WR6	62GV

ALSO AT THIS TIME WR1 AND CS LOCATION 0016 WILL CONTAIN DATA INDICATING WHICH DEVICE(S) HAD WRAP ERRORS:

BIT 0=1 33FD WRAP ERROR
1-3 NOT USED
4=1 CRT WRAP ERROR
5=1 KEYBOARD WRAP ERROR
6=1 PRINTER WRAP ERROR
7=1 62GV WRAP ERROR
8-15 NOT USED

3.2 ** WRAP ERROR ID TABLE **

33FD ERRORS

D001	JIO ON NO-INDEX FAILED TO JUMP
D002	STEP MODE INDEX FAILED
D003	INDEX COUNTER 8 BIT NOT OFF
D004	INDEX COUNTER 8 BIT NOT COME ON
D005	DIAGNOSTIC INDEX NOT RESET
D006	INDEX COUNTER NOT RESET BY INDEX
D007	READY COUNTER IS AT 172
D008	READY COUNTER IS NOT AT 172
D009	READY COUNTER ADVANCED FROM 172
D010	READY WHEN INDEX IS LATE
D011	DISK IS FAST WHEN IT SHOULD BE SLOW
D012	DISK READY WHEN SHOULDN'T BE
D013	DISK IS FAST WHEN SHOULDN'T BE
D014	READY COUNTER IS AT 172
D015	FAST OR NOT READY NOT ON WITH EARLY INDEX
D016	JIO RESET ERRORS NOT TURN OFF ERROR BITS
D017	JIO ON ERROR BRANCHED WHEN SHOULD NOT
D018	ERROR BITS ON FOR GOOD EARLY INDEX
D019	ERROR BITS ON FOR GOOD LATE INDEX
D020	LATE INDEX NOT GET 'NOT READY'
D021	JIO ON ERROR NOT BRANCH WHEN SHOULD
D022	READ CLOCK 1&2 NOT RESET BY STANDARD CLOCK
D023	READ 8F CLOCK NOT ADVANCE RIGHT
D024	READ CLOCK 1&2 NOT RESET BY STANDARD CLOCK
D026	FAILED TO FORCE MACHINE CHECK INTERRUPT
D027	MACHINE CHECK INTERRUPT RESULTS NOT AS EXPECTED.
D028	I/O WORKING FAILURE FROM 33FD
D050	I/O WORKING FAILURE (EXTERNAL)

THE NEXT 9 ERROR ID'S INDICATE AN ERROR IN THE IMPL COUNTER & SEEK STEP ROUTINE. THE DESCRIPTION INDICATES WHAT IS EXPECTED.

D031	IMPL COUNTER NOT 81 , TRACK 1
D032	NOT IMPL COUNTER NOT 81, HEAD LOAD & TRACK 0
D033	FIND BIT SYNC ON ZERO'S
D034	HEAD LOAD, LOW WR CURRENT,TRACK 0 & NO ERASE GATE
D035	'' '' '' '' '' '' '' '' '' ''
D036	READ CONTROL. HEAD LOAD & TRACK 0
D037	'' '' '' '' '' 3
D038	'' '' '' '' '' 2
D039	'' '' '' '' '' 1

THE NEXT 6 ERROR ID'S INDICATE AN ERROR IN THE CE WRAP DATA ROUTINE. THE DESCRIPTION INDICATES DATA EXPECTED.

D03A	DATA = 'FB55'
D03B	DATA = '55AA'
D03C	DATA = '0F00'
D03D	CRC = '00DF'
D03E	33FD READY & NO ERRORS
D03F	C E WRAP MODE

WRAP ERROR ID	FAILURE MEANING
	KEYBOARD ERRORS
1001	KEYBOARD ENABLE FAILED
1002	KEYBOARD DISABLE FAILED
1003	SET DIAGNOSTIC MODE FAILED
1004	RESET DIAGNOSTIC MODE FAILED
1005	SET DATA GATE LATCH FAILED
1006	RESET DATA GATE LATCH FAILED
1007	SET OVERRUN LATCH FAILED
1008	JIO ON OVERRUN FAILED TO JUMP
1009	OVERRUN FAILED TO DISABLE KEYBOARD
1010	RESET OVERRUN LATCH FAILED
1011	MICRO-INTERRUPT ENABLE FAILED
1012	JUMP ON MICRO-INTERRUPT ENABLED FAILED
1013	FAILED TO MICRO-INTERRUPT
1014	RESET INTERRUPT FAILED
1015	MICRO-INTERRUPT DISABLE FAILED
1016	DIAGNOSTIC JUMP TRUE FAILED
1017	DIAGNOSTIC JUMP FALSE FAILED
1018	DIAGNOSTIC SENSE -00- FAILURE
1019	DIAGNOSTIC SENSE -55- FAILURE
1020	DIAGNOSTIC SENSE -AA- FAILUREE
1021	DIAGNOSTIC SENSE -FE- FAILURE
1022	DATA WRAP FAILURE
1023	LEVEL 2 INTERRUPT STUCK ON
1024	FAILED TO FORCE MACHINE CHECK
1025	MACHINE CHECK INTERRUPT RESULTS NOT AS EXPECTED.
1026	A KEY IS PROBABLY STUCK DOWN
	SERIAL PRINTER ERRORS
E101	INITIAL SENSE FAILURE (PART 1)
E102	INITIAL SENSE FAILURE (PART 2)
E103	EMITTER COLUMN COUNTER FAILURE
E104	FORMS EMITTER COUNTER FAILURE
E105	HEAD WIRE WRAP FAILURE
E106	HEAD POSITION COUNTER FAILURE (INCREMENTING)
E107	HEAD POSITION COUNTER FAILURE (DECREMENTING)
E108	LINE COUNTER FAILURE
E109	MAR ADDRESS WRAP FAILURE
E10A	MEMORY PARITY ERROR
E10B	RAM FAILURE
E10C	RAM PATTERN FAILURE
E10D	INTERRUPT FAILURE
E10E	INTERRUPT RESET FAILURE
E110	ROS SENSE TEST FAILURE
E111	MOTOR ELAPSE COUNTER FAILURE
E112	DBO PARITY CHECK NOT INTERRUPT
E113	DBO PARITY CHECK NOT OCCUR CORRECTLY
E114	DBO PARITY CHECK NOT RESET

WRAP ERROR ID	FAILURE MEANING
CRT ERRORS	
4001	SET DIAGNOSTIC MODE FAILED
4002	RESET DIAGNOSTIC MODE FAILED
4003	DIAGNOSTIC JUMP TRUE FAILED
4004	DIAGNOSTIC JUMP FALSE FAILED
4005	ADAPTER RESET AND INITIAL SENSE
4006	LOAD/SENSE LD/SNS ADDRESS REGISTER
4007	LD/SNS ADRS REG NOT RESET
4008	LD/SNS ADRS REG NOT INCR'ED PROPERLY
4009	DISPLAY ADRS REG NOT RESET
4010	DISPLAY ADRS REG NOT INCR'ED PROPERLY
4011	DISPLAY ADRS REG NOT INCR FROM 'EF' TO '00'
4012	ONE DATA BYTE LOAD/SENSE (AA AND 55)
4013	LOAD/SENSE ALL DATA BUFFER LOCATIONS
4014	IMPROPER LINE INCR
4015	HORIZONTAL NOT ON DURING TRACE
4016	HORIZONTAL NOT OFF DURING RETRACE
4017	WIGGLE BIT NOT ON DURING TRACE
4018	WIGGLE BIT NOT OFF DURING RETRACE
4019	JIO BRANCHED WHEN NOT EXPECTED
4020	JIO DID NOT BRANCH
4021	JIO BRANCHED WHEN NOT EXPECTED
4022	ODD/EVEN VIDEO BIT NOT SET
4023	ODD/EVEN VIDEO BIT NOT RESET
LINE PRINTER ERRORS	
E001	INITIAL ADAPTER CHECK OUT
E002	BASIC PRINTER INTERRUPT CHECK OUT
E004	PRINT BUFFER ADDRESS INCR TEST
E021	PRINT AND BELT UP TO SPEED CHECK OUT
E029	PSS TIMING ANALYSIS
E02C	DIAGNOSTIC HAMMER FIRE TEST
E02D	BLANK LINE PRINT TEST
E084	24 VOLT CONTACTOR AND POWER TEST
62GV ERRORS	
A001	INITIAL ADAPTER CHECK OUT
A002	SEEK TO CE TRACK
A003	TEST READ ID COMMAND (ALL HEADS)
A004	TEST WRITE DATA COMMAND (ALL HEADS)
A005	TEST READ DATA COMMAND (ALL HEADS)
A006	SEEK BACK TO HOME
A007	SEEK 'BEHIND' HOME
A008	TEST INDEX PULSE

3.3 PROCESSOR CHECK

WHEN THE IMPL DIAGNOSTIC TESTS DETECT AN ERROR, THEY FORCE A PROCESSOR CHECK BY EXECUTING A CHECK HALT INSTRUCTION. AT THE TIME OF THE PROCESSOR CHECK,SYSTEM REGISTER WR3 (L) CONTAINS THE FAILING DIAGNOSTIC ROUTINE NUMBER.

TO DETERMINE THE FAILING CPU FUNCTION,USE THE CE PANEL AND IMPL DIAGNOSTIC LISTINGS ($CP01,$CP02 AND $CP03) AS FOLLOWS:

1. IF EVENT INDICATORS 0-7 ARE RESET (OFF) THEN THE FAILURE OCCURRED IN THE I/O DEVICE TESTS,AND THE DIAGNOSTIC LISTING '$CP03' SHOULD BE USED. USE THE MAR ADDRESS -1 TO LOCATE THE FAILING INSTRUCTION.

2. IF ANY EVENT INDICATOR 2-6 BUT NOT 7 IS RESET,THEN LOOK AT THE MAR ADDRESS. IF THE MAR ADDRESS IS 0719,THEN USE THE MAB ADDRESS -1 TO FIND THE FAILING INSTRUCTION IN 'CP01' OR '$CP02'.LISTING '$CP01' INCLUDES ADDRESSES 0000-07FF. LISTING '$CP02' INCLUDES ADDRESSES 0800-0FFF.
IF THE MAR ADDRESS IS NOT 0719 THEN USE THAT MAR ADDRESS -1 TO FIND THE FAILING INSTRUCTION IN LISTING '$CP01' OR '$CP02'. USE '$CP01' IF ADDRESS IS BETWEEN 0000-07FF , USE '$CP02' IF ADDRESS IS BETWEEN 0800-0FFF.

3. IF EVENT INDICATORS 0 OR 1 ARE NOT RESET,THEN THE IMPL DIAGNOSTICS HAVE NOT BEEN LOADED. IN THIS CASE THE MAP CHARTS MUST BE USED TO DETERMINE FAILING FUNCTION.

WHEN USING DIAGNOSTIC LISTINGS '$CP01','$CP02',OR '$CP03', READ THE COMMENTS NEXT TO THE FAILING INSTRUCTION AS WELL AS THE DIAGNOSTIC ROUTINE HEADING DESCRIPTION TO DETERMINE THE EXACT OPERATION BEING PERFORMED.

3.4 EVENT INDICATORS

THE LOAD AND ALL NINE EVENT INDICATOR LIGHTS (LEFT BYTE DISPLAY ON CE PANEL) WILL BE TURNED ON WITH A DEPRESSION OF THE LOAD KEY. THE SEQUENCE WILL START WHEN THE KEY IS RELEASED AND WILL TRANSFER 4K BYTES FROM THE 33FD DISKETTE INTO CONTROL STORAGE. THE EVENT INDICATORS ARE DISPLAYED WHEN THE MODE SELECTOR SWITCH IS IN PROCESSOR RUN POSITION.

*P LIGHT OFF - ADAPTER RECEIVED THE LOAD SIGNAL AND INITIATED ACTION IN RESPONSE. (BPC)

*0 LIGHT OFF - 1ST CYCLE STEAL REQUEST RECEIVED, DATA TRANSFER HAS STARTED. (WRITE TRIGGER)

*1 LIGHT OFF - LOAD DROPS INDICATING THAT THE DATA TRANSFER WAS COMPLETED. (ALU BIT 4 AND WRITE TRIGGER)

*LOAD LIGHT OFF - DATA TRANSFER COMPLETED WITH NO DATA CHECK. (ALU BIT 4, WRITE TRIGGER, AND NOT PROCESSOR CHECK, AND NOT BPC.)

2 LIGHT OFF - BRANCHING AND CONDITIONAL BRANCHING ROUTINES COMPLETE. LSR'S ARE CLEARED OF BAD PARITY. RESET OF INDICATOR 2 OCCURS IN ROUTINE #2.

3 LIGHT OFF - LOAD #1 COMPLETE. AFTER RESETTING EVENT INDICATOR #3 THE LOADER WILL BE EXECUTED TO LOAD THE 2ND 2K WORDS OF TEST.

4 LIGHT OFF - FIRST MICRO-INSTRUCTION OF LOAD #2. INDICATES LOAD #2 TRANSFERRED PROPERLY. RESET OF EVENT INDICATOR 4 OCCURS IN ROUTINE #36.

5 LIGHT OFF - FIRST INSTRUCTION OF THE CONTROL STORAGE TEST (ROUTINE #64). THIS LIGHT OFF INDICATES ALL PREVIOUS ROUTINES (#36 - #63) RAN OK. THIS INCLUDES REST OF CPU TESTS AND MAIN STORE TEST.

6 LIGHT OFF - LAST INSTRUCTION OF THE CONTROL STORAGE TEST (ROUTINE #64). THIS LIGHT OFF INDICATES CONTROL STORAGE TEST RAN OK.

7 LIGHT OFF - FIRST INSTRUCTION OF IMPL LOAD #3 (WRAP TEST LOAD). THIS LIGHT OFF INDICATES BOTH LOAD #1 AND LOAD #2 RAN OK AND THAT THE 3RD LOAD HAS STARTED EXECUTION.

* THESE LIGHTS RESET BY HARDWARE CONTROLS, THE REMAINDER BY MICROPROGRAM INSTRUCTIONS.

4. IMPL DIAGNOSTIC OPTIONS (SUMMARY)

(A DETAILED DESCRIPTION FOLLOWS THIS SUMMARY)

ADDRESS SW SETTING	FUNCTION
F100	RUN KEYBOARD DIAGNOSTICS
F7XX	BYPASS WRAPS, RUN CPU TESTS, BUT NO CRT DISPLAY OCCURS. THE CONTENTS OF WR1-WR6 INDICATE IF ANY WRAP TEST ERRORS OCCURRED.
F800	LOAD 33FD DIAGNOSTICS WHEN IMPLING FROM THE 62GV.
F90X X=4,5,6,7	LOAD OPTIONAL MICROCODE TEST FROM TRACK X OF DISKETTE. THESE TRACKS DO NOT CONTAIN ANY RELEASE PROGRAMS. THEY CAN BE USED BY THE CE FOR HIS OWN TESTS. THESE TRACKS ARE LOADED AT CONTROL STORE LOCATION 0080. THE CE MUST WRITE HIS TESTS ASSUMING THAT STARTING LOCATION.
FA01	STOP AFTER EXECUTION OF 2K WORDS.
FA02	STOP AFTER EXECUTION OF 4K WORDS.
FB01	LOOP ON 1ST 2K WORDS.
FB02	LOOP ON 1ST 4K WORDS.
FC01	LOOP ON 1ST 2K WORDS AND BYPASS ERRORS.
FC02	LOOP ON 1ST 4K WORDS AND BYPASS ERRORS.
FDXX	LOOP ON ROUTINE XX.
FEXX	LOOP ON ROUTINE XX AND BYPASS ERRORS.
FFXX	RUN ONLY SELECTED WRAP TESTS INDICATED BY BITS ON.

|__ HEX VALUE

80	33FD WRAP TEST
08	CRT WRAP TEST
04	KEYBOARD WRAP TEST
02	PRINTER WRAP TEST
01	62GV WRAP TEST
00	BYPASS WRAPS AND CPU TESTS (SEE NEXT PAGE).

********** IMPORTANT NOTE ********

FF00 WILL BYPASS ALL WRAP TESTS AND ALSO SKIP CONFIGURATION SENSITIVE CPU TESTS. THIS SETTING SHOULD BE USED IF A CE DISKETTE FROM ANOTHER SYSTEM (THAT HAS A DIFFERENT STORAGE CONFIGURATION) IS IMPL'ED. THIS SETTING SHOULD BE USED IF ADDITIONAL STORAGE IS BEING ADDED TO THE SYSTEM AND THE CE DISKETTE IN NOT YET RECONFIGURED.

5. DETAILED DESCRIPTION OF IMPL DIAGNOSTIC OPTIONS

OPTION	FUNCTION
F10C 33FD ONLY	THIS SWITCH SETTING WHEN IMPL'ING CAUSES THE KEYBOARD DIAGNOSTIC TESTS TO BE AUTOMATICALLY LOADED AND EXECUTED AFTER THE WRAP TESTS HAVE RUN. (THIS IS USED WHEN THE KEYBOARD IS UNRELIABLE OR INOPERABLE AND CAN'T BE USED TO CALL IN THE KEYBOARD DIAGNOSTICS.
F7XX 33FD OR 62GV	SEE FFXX DETAILED DESCRIPTION. ONLY DIFFERENCE IS THAT NO CRT DISPLAY WILL OCCUR WITH THIS OPTION. ONLY THE STOP LIGHT WILL COME ON (WHETHER AN ERROR OCCURS OR NOT). THE REGISTERS WR1-WR6 CONTENTS INDICATE FAILURES. F7XX WILL COME TO A HALT IMPLING FROM EITHER 62GV OR 33FD.
F800 62GV ONLY	SWITCH SETTING APPLICABLE ONLY TO 62GV IMPL. F800 MUST BE ENTERED BEFORE IMPL OR, SWITCH SETTING CAN BE MADE AT THE TIME A WRAP ERROR DISPLAY MESSAGE IS PRESENT. BYPASSES LOADING SCP AND LOADS 33FD DIAGNOSTICS AND SUPERVISOR.
F904 F905 F906 F907 LOAD OPTIONAL MICROCODE TEST 33FD ONLY	SWITCH SETTING MAY BE ENTERED BEFORE IMPL OR WHEN THE STOP LIGHT COMES ON AND CRT DISPLAY APPEARS. LOADS MICRO CODE FROM TRACKS 4,5,6, OR 7 RESPECTIVLY INTO CONTROL STORE (LOCATIONS 0080-087F) AND STARTS EXECUTION OF LOADED CODE. THIS PROVIDES ROOM FOR OPTIONAL MICROCODE TESTS THAT LATER MAY BE NEEDED OR FOR TESTS NOT RUN DURING NORMAL IMPL SEQUENCE. IF YOU PUT YOUR OWN TESTS ON THESE TRACKS, YOU SHOULD START YOUR PROGRAMS AT CS LOCATION 0080.
FA01 STOP AFTER FIRST 2K WORDS EXECUTED 33FD ONLY	CAUSES A STOP (STOP LIGHT ON) AFTER 1ST 2K WORDS OF THE IMPL TESTS. THE STOP OCCURS PRIOR TO LOADING THE 2ND 2K WORDS. THE SWITCH SETTING MUST BE MADE PRIOR TO PERFORMING IMPL. WHEN THE STOP LIGHT TURNS ON, THE CPU LOOPS UNTIL THE START KEY IS PRESSED. WHEN THE STOP LIGHT IS TURNED ON, THE ADDRESS SWITCHES MAY BE ALTERED TO ANOTHER OPTION. IF FA01 IS LEFT IN THE SWITCHES AND THE START KEY IS PRESSED, THE FIRST 2K WORDS EXECUTE AGAIN AND THE STOP LIGHT COMES ON. IN OTHER WORDS, EACH DEPRESSION OF THE START KEY WILL RE-EXECUTE THE FIRST LOAD AND COME BACK TO THE SAME STOP LOOP.

OPTION	FUNCTION
FA02 STOP AFTER 1ST 4K WORDS EXECUTED	PERFORMS SIMILAR FUNCTION AS OPTION SETTING FA01 EXCEPT STOP LIGHT COMES ON AFTER THE SECOND 2K WORDS HAVE EXECUTED. (33FD ONLY) WHEN THE STOP LIGHT IS ON, THE CPU LOOPS UNTIL THE START KEY IS PRESSED. PRIOR TO THE KEY BEING PRESSED, THE ADDRESS SWITCHES MAY BE ALTERED TO ANOTHER OPTION. PRESSING THE START KEY WITH A NON-OPTION SETTING IN THE ADDRESS SWITCHES CAUSES NORMAL CONTINUATION OF THE IMPL SEQUENCE. IF FA02 IS LEFT IN THE SWITCHES, EACH START KEY DEPRESSION WILL EXECUTE THE FIRST 4K WORDS OF TEST (LOADER IS BYPASSED) AND WILL COME TO A STOP.
FB01 LOOP ON 1ST 2K WORDS	CAUSES LOOPING ON THE 1ST 2K WORDS OF IMPL DIAGNOSTICS. (33FD ONLY) ONCE THE PROGRAM IS LOOPING, THE ADDRESS SWITCHES MAY BE CHANGED TO ANY ADDRESS SINCE THEY WILL BE IGNORED BY THE PROGRAM. IN THIS WAY, THE ADDRESS COMPARE FUNCTION MAY BE USED. ONLY A RE-IMPL GETS PROGRAM OUT OF THIS LOOP. THIS LOOPING EXECUTES ALL CODE OF THE FIRST 2K WORDS EXCEPT THE LOADER.
FB02 LOOP ON 1ST 4K WORDS	CAUSES LOOPING ON THE FIRST 4K WORDS OF IMPL DIAGNOSTICS (FIRST 2 LOADS OF CONTROL STORE). (33FD ONLY) ONCE THE PROGRAM IS LOOPING, THE ADDRESS SWITCHES MAY BE CHANGED TO ANY ADDRESS SINCE THEY WILL BE IGNORED BY THE PROGRAM. IN THIS WAY, THE ADDRESS COMPARE FUNCTION MAY BE USED. ONLY RE-IMPL GETS PROGRAM OUT OF THIS LOOP. THE LOOPING EXECUTES ALL CODE OF THE FIRST 2 LOADS OF CONTROL STORE (4K WORDS) EXCEPT THE LOADERS.
FC01 LOOP ON 1ST 2K WORDS AND BYPASS ERRORS	THESE OPTION SETTINGS ARE IDENTICAL TO FB01 AND FB02 RESPECTIVELY EXCEPT THAT WHEN LOOPING, DETECTED ERRORS ARE IGNORED (33FD ONLY).
FC02 LOOP ON 1ST 4K WORDS AND BYPASS ERRORS. 33FD ONLY.	

OPTION	FUNCTION
FDXX LOOP ON ROUTINE XX	CAUSES LOOPING ON ROUTINE XX. XX CAN BE ANY ROUTINE NUMBERED 13 - 64. SWITCH SETTING MUST BE MADE PRIOR TO IMPL.

33FD ONLY

ALL ROUTINES BEFORE THE SELECTED ROUTINE WILL BE RUN PRIOR TO LOOPING.
ONCE LOOPING BEGINS, THE ADDRESS SWITCHES MAY BE CHANGED WITHOUT STOPPING THE LOOPING.
ONLY RE-IMPL GETS PROGRAM OUT OF THIS LOOP.

FEXX LOOP ON ROUTINE XX AND BYPASS ERRORS	THIS OPTION IS IDENTICAL TO THE FDXX OPTION EXCEPT THAT IT ALSO CAUSES ALL DETECTED ERRORS TO BE BYPASSED, CAN ONLY BE RUN FROM THE 33FD, AND ROUTINE 64 (CONTROL STORE TEST) CANNOT BYPASS DETECTED ERRORS.

FFXX RUN ONLY WRAP TEST XX — EXECUTE ONLY THOSE 'WRAP TESTS' DESIGNATED BY XX.

THIS PROVIDES A MEANS OF BYPASSING CERTAIN 33FD OR WRAP TESTS, ALL WRAP TESTS, OR 62GV RUNNING ANY COMBINATION OF WRAP TESTS.
EACH DEVICE WRAP TEST HAS A BIT ASSIGNED IN THE XX ENTRY:

	BIT	
	0	33FD
	1	UNASSIGNED
33FD	2	UNASSIGNED
OR	3	UNASSIGNED
62GV	4	CRT
	5	KEYBOARD
	6	PRINTER
	7	62GV

THE BIT -ON- MEANS RUN THAT DEVICE WRAP TEST. THE BIT -OFF- MEANS BYPASS THAT DEVICE WRAP TEST.
ANY COMBINATION OF THE BITS MAY BE ON OR OFF.
IF FF IS NOT IN THE LEFT ADDRESS SWITCHES, ALL WRAP TESTS ARE RUN (DEFAULT).

----------***** IMPORTANT NOTE *****----------

FF00
33FD
OR
62GV

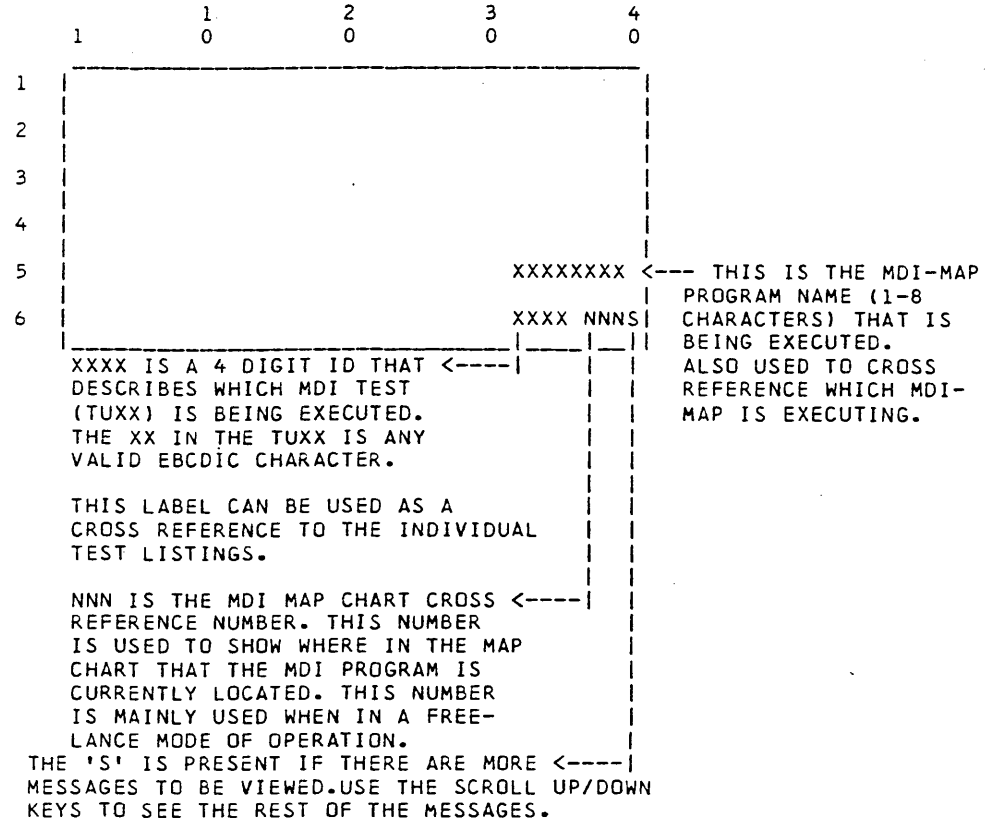
WILL BYPASS ALL WRAP TESTS AND ALSO SKIP ALL CONFIGURATION SENSITIVE CPU TESTS. THIS SETTING SHOULD BE USED IF A CE DISKETTE FROM ANOTHER SYSTEM (THAT HAS A DIFFERENT STORAGE CONFIGURATION) IS IMPL'ED. THIS SETTING SHOULD ALSO BE USED IF ADDITIONAL STORAGE IS BEING ADDED TO THE SYSTEM AND THE CE DISKETTE IS NOT YET RECONFIGURED.

II. DIAGNOSTIC CRT/PRINTER DISPLAYS

THE FOLLOWING CRT DISPLAYS ARE IN SEQUENCE BY DISPLAY MESSAGE NUMBER. THEY ARE INTENDED TO BE USED WITH THE MAPS, BUT CAN BE USED ANY TIME ADDITIONAL INFORMATION IS NEEDED ABOUT A SPECIFIC DISPLAY.

1. DIAGNOSTIC MDI DISPLAYS 0001 THRU 0255

THE FOLLOWING DISPLAY IS REPRESENTATIVE OF THE MENUES THAT ARE DISPLAYED WHILE THE MDI (MAP-DIAGNOSTIC INTEGRATED) PROGRAMS ARE EXECUTING.



THE REMAINING PART OF THE SCREEN IS USED FOR INFORMATION TO DESCRIBE THE TEST BEING EXECUTED, THE QUESTION TO BE ANSWERED OR THE FAILURE AND HOW TO FIX IT.

CE PANEL TEST (PANEL) 0260 & 0261

```
            1         2         3         4
1           0         0         0         0
 ---------------------------------------
| ADDRESS SWITCHES TEST.                | 1
|                                       |
| ENTER ANY SWITCH SETTING THEN PRESS CE | 2
|                                       |
| START. THE SENSED ADDRESS DATA WILL BE | 3
|                                       |
| DISPLAYED ON LAST LINE. REPEAT TIL YOU | 4
|                                       |
| WISH TO STOP BY ENTERING 0000.        | 5
|                                       |
| XXXX IS PRESENT ADDR SWITCHES SET 0260 | 6
|                                       |
 ---------------------------------------
```

IN THIS TEST THE ADDRESS SWITCH SETTING
IS SENSED AND DISPLAYED ON CRT FOR VERIFICATION
BY CE. ANY SETTING CAN BE CHECKED BY THIS
TEST. TERMINATE TEST BY ENTERING 0000 IN
SWITCHES AND PRESSING CE START.

```
            1         2         3         4
1           0         0         0         0
 ---------------------------------------
| IPL SWITCH TEST.                      | 1
|                                       |
|                                       | 2
|                                       |
| PUT IPL SWITCH IN DOWN POSITION THEN  | 3
|                                       |
| PRESS CE START.                       | 4
|                                       |
|                                       | 5
|                                       |
|                                  0261 | 6
|                                       |
 ---------------------------------------
```

THIS IS THE FIRST INSTRUCTION IN THE
IPL SWITCH TEST.

09/29/77 P/N 2547690
EC 832050 PEC 830358

CE PANEL TEST 0262 & 0263

```
          1         2         3         4
1         0         0         0         0
 ---------------------------------------
| IPL SWITCH TEST ERROR :                 | 1
|                                         |
|                                         | 2
|                                         |
| IPL SWITCH BIT IN CONSOLE STATUS BYTE   | 3
|                                         |
| IS OFF. SHOULD BE ON.                   | 4
|                                         |
|                                         | 5
|                                         |
|                                    0262 | 6
|                                         |
 ---------------------------------------
```

THIS INDICATES A FAILURE OCCURRED IN THE IPL SWITCH TEST. NORMALLY WHEN THE IPL SWITCH IS PUT IN THE DOWN POSITION THE IPL BIT IN THE CONSOLE STATUS BYTE WILL BE ON.

```
          1         2         3         4
1         0         0         0         0
 ---------------------------------------
| IPL SWITCH TEST.                        | 1
|                                         |
|                                         | 2
|                                         |
| PUT IPL SWITCH IN THE UP POSITION THEN  | 3
|                                         |
| PRESS CE START.                         | 4
|                                         |
|                                         | 5
|                                         |
|                                    0263 | 6
|                                         |
 ---------------------------------------
```

THIS IS THE SECOND INSTRUCTION IN THE IPL SWITCH TEST.

CE PANEL TEST 0264 & 0265

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
| IPL SWITCH TEST ERROR :                | 1
|                                        |
|                                        | 2
|                                        |
| IPL SWITCH BIT IN CONSOLE STATUS BYTE  | 3
|                                        |
| IS NOT OFF.                            | 4
|                                        |
|                                        | 5
|                                        |
|                                  0264  | 6
|                                        |
 ----------------------------------------
```

THIS INDICATES A FAILURE OCCURRED IN THE IPL SWITCH TEST. NORMALLY WHEN THE IPL SWITCH IS IN THE UP POSITION THE IPL BIT IN THE CONSOLE STATUS BYTE SHOULD BE OFF.

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
| TEST COMPLETE.                         | 1
|                                        |
| PRESS CE START TO RUN NEXT TEST.       | 2
|                                        |
|                                        | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
|                                  0265  | 6
|                                        |
 ----------------------------------------
```

THIS MESSAGE WILL SEPARATE INDIVIDUAL ROUTINES IN THE CE PANEL TEST.

CE PANEL TEST 0266 & 0267

```
          1         2         3         4
1         0         0         0         0
 ---------------------------------------
| SYS INSN STEP SWITCH TEST ERROR:      | 1
|                                       |
|                                       | 2
|                                       |
| SYS INSN STEP BIT ON NOW IN CONSOLE   | 3
|                                       |
| STATUS BYTE.                          | 4
|                                       |
|                                       | 5
|                                       |
|                                  0266 | 6
|                                       |
 ---------------------------------------
```

THIS ERROR MESSAGE OCCURS IF THE SYS INSN STEP BIT IN THE CONSOLE STATUS BYTE IS ON WHEN THE MODE SELECTOR SWITCH IS IN THE RUN POSITION.

```
          1         2         3         4
1         0         0         0         0
 ---------------------------------------
| SYS INSN STEP SWITCH TEST ERROR:      | 1
|                                       |
|                                       | 2
|                                       |
| SERVICE REQUEST ON.                   | 3
|                                       |
|                                       | 4
|                                       |
|                                       | 5
|                                       |
|                                  0267 | 6
|                                       |
 ---------------------------------------
```

THIS ERROR MESSAGE OCCURS IF THE SERVICE REQUEST LATCH IS FOUND ON DURING THE FIRST PART OF THE SYS INSN STEP SWITCH TEST.

CE PANEL TEST 0268 & 0269

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
| SYS INSN STEP SWITCH TEST.             | 1
|                                        |
|                                        | 2
|                                        |
| TURN MODE SELECTOR SWITCH TO SYS INSN  | 3
|                                        |
| STEP POSITION, AND PRESS CE START.     | 4
|                                        |
|                                        | 5
|                                        |
|                                  0268  | 6
|                                        |
 ----------------------------------------
```

THIS DISPLAY INSTRUCTS THE CE TO TURN THE MODE SELECTOR SWITCH TO THE SYS INSN STEP POSITION SO THAT THIS FUNCTION CAN BE TESTED.

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
| SYS INSN STEP SWITCH TEST ERROR:       | 1
|                                        |
|                                        | 2
|                                        |
| SYS INSN STEP BIT IN CONSOLE STATUS    | 3
|                                        |
| BYTE NOT ON.                           | 4
|                                        |
|                                        | 5
|                                        |
|                                  0269  | 6
|                                        |
 ----------------------------------------
```

THIS ERROR MESSAGE OCCURRS IF, AFTER THE MODE SELECTOR SWITCH IS PUT IN SYS INSN STEP POSITION THE SYS INSN MODE BIT IS THE CONSOLE STATUS BYTE IS NOT ON.

CE PANEL TEST 0270 & 0271

```
          1         2         3         4
1         0         0         0         0
 ---------------------------------------
| SYS INSN STEP SWITCH TEST ERROR:      | 1
|                                       |
|                                       | 2
|                                       |
| SERVICE REQUEST NOT ON.               | 3
|                                       |
|                                       | 4
|                                       |
|                                       | 5
|                                       |
|                                  0270 | 6
|                                       |
 ---------------------------------------
```

THIS ERROR MESSAGE OCCURRS IF, AFTER THE MODE SELECTOR SWITCH IS PUT IN THE SYS INSN STEP POSITION THE SERVICE REQUEST LATCH DOES NOT COME ACTIVE.

```
          1         2         3         4
1         0         0         0         0
 ---------------------------------------
| SYS INSN STEP SWITCH TEST ERROR:      | 1
|                                       |
|                                       | 2
|                                       |
| RETURN MODE SELECTOR SWITCH TO        | 3
|                                       |
| RUN POSITION THEN PRESS CE START.     | 4
|                                       |
|                                       | 5
|                                       |
|                                  0271 | 6
|                                       |
 ---------------------------------------
```

THIS COMMAND INSTRUCTS THE CE TO RETURN THE MODE SELECTOR SWITCH TO THE NORMAL RUN POSITION.

CE PANEL TEST 0272 &0273

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
| MAINSTORE ADDRESS COMPARE TEST.        | 1
|                                        |
|                                        | 2
|                                        |
| PUT ADDRESS COMPARE SWITCH IN RUN      | 3
|                                        |
| POSITION THEN PRESS CE START.          | 4
|                                        |
|                                        | 5
|                                        |
|                                  0272  | 6
|                                        |
 ----------------------------------------
```

THIS IS THE FIRST INSTRUCTION IN THE MAINSTORE ADDRESS COMPARE TEST. AT THIS TIME THE ADDRESS COMPARE SWITCH SHOULD BE IN THE RUN POSITION AND THE STORAGE SELECT SWITCH SHOULD BE IN THE MAIN STORAGE POSITION.

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
| MAINSTORE ADDRESS COMPARE TEST ERROR : | 1
|                                        |
|                                        | 2
|                                        |
| MAINSTORE ADDRESS COMPARE BIT ON IN    | 3
|                                        |
| CONSOLE STATUS BYTE.                   | 4
|                                        |
|                                        | 5
|                                        |
|                                  0273  | 6
|                                        |
 ----------------------------------------
```

THIS ERROR MESSAGE OCCURS IF THE MAIN STORE ADDRESS COMPARE BIT IS FOUND IN THE CONSOLE STATUS BYTE BEFORE THE ADDRESS COMPARE SWITCH HAS BEEN PUT IN THE STOP POSITION.

CE PANEL TEST 0274 & 0275

```
         1         2         3         4
1        0         0         0         0
 ----------------------------------------
| MAINSTORE ADDRESS COMPARE TEST ERROR : | 1
|                                       |
|                                       | 2
|                                       |
| SERVICE REQUEST ON.                   | 3
|                                       |
|                                       | 4
|                                       |
|                                       | 5
|                                       |
|                                  0274 | 6
|                                       |
 ----------------------------------------
```

THIS ERROR MESSAGE OCCURS IF THE SERVICE REQUEST LATCH IS ON BEFORE THE ADDRESS COMPARE SWITCH WAS PUT IN THE STOP POSITION.

```
         1         2         3         4
1        0         0         0         0
 ----------------------------------------
| MAINSTORE ADDRESS COMPARE TEST.       | 1
|                                       |
| PUT ADDRESS COMPARE SWITCH IN STOP    | 2
|                                       |
| POSITION THEN ENTER VALID MAINSTORE   | 3
|                                       |
| ADDRESS FOR COMPARE STOP. PRESS CE    | 4
|                                       |
| START TO RUN. REPEAT FOR ANY VALID    | 5
|                                       |
| ADDR EXCEPT FFFF WHICH STOPS TEST 0275| 6
|                                       |
 ----------------------------------------
```

THIS CRT DISPLAY INSTRUCTS THE CE TO PUT THE ADDRESS COMPARE SWITCH IN THE STOP POSITION THEN ENTER A VALID MAINSTORE ADDRESS. THEN PRESSING THE CE START KEY WILL TEST THE MAINSTORE ADDRESS COMPARE CIRCUITS. IF THE TEST WORKS, DISPLAY #0279 APPEARS FOR 2 SECONDS THEN RETURNS TO THIS DISPLAY FOR ANOTHER ENTRY. TERMINATION OF THIS ROUTINE IS DONE BY ENTERING FFFF IN THE SWITCHES. ENTERING AN INVALID MAINSTORE ADDRESS HERE(OTHER THAN FFFF) WILL CAUSE A MAINSTORE INVALID ADDRESS PROC CHECK.

```
          1         2         3         4
1         0         0         0         0
 ---------------------------------------
| MAINSTORE ADDRESS COMPARE TEST ERROR : | 1
|                                        |
|                                        | 2
|                                        |
| MAINSTORE ADDRESS COMPARE BIT NOT ON   | 3
|                                        |
| IN CONSOLE STATUS BYTE.                | 4
|                                        |
|                                        | 5
|                                        |
|                                   0276 | 6
|                                        |
 ----------------------------------------
```

THIS ERROR MESSAGE OCCURS AFTER A MAINSTORE ADDRESS COMPARE STOP HAS BEEN ATTEMPTED.

```
          1         2         3         4
1         0         0         0         0
 ---------------------------------------
| MAINSTORE ADDRESS COMPARE TEST ERROR : | 1
|                                        |
|                                        | 2
|                                        |
| SERVICE REQUEST NOT ON.                | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
|                                   0277 | 6
|                                        |
 ----------------------------------------
```

THIS ERROR MESSAGE OCCURS AFTER A MAINSTORE ADDRESS COMPARE STOP HAS BEEN ATTEMPTED.

CE PANEL TEST 0278 &0279

```
          1         2         3         4
1         0         0         0         0
 ---------------------------------------
|7 SECOND MICROLOOP TIMEOUT TEST.       | 1
|                                       |
| THIS TEST ENABLES THE 7 SEC TIMEOUT.  | 2
|                                       |
| IT WILL CAUSE A PROC CHECK 7 SEC      | 3
|                                       |
| AFTER YOU PRESS CE START.             | 4
|                                       |
| THIS IS THE LAST TEST. PRESS RESET    | 5
|                                       |
| AND START TO REPEAT THE TEST.   0278  | 6
|                                       |
 ---------------------------------------
```

THIS CRT DISPLAY DESCRIBES THE 7 SECOND MICROLOOP TIMEOUT TEST. THE TEST RESULTS IN A PROCESSOR CHECK. A SYSTEM RESET, CE START RETURNS BACK TO START OF THE CE PANEL TEST.

```
          1         2         3         4
1         0         0         0         0
 ---------------------------------------
| MAINSTORE ADDRESS COMPARE TEST.       | 1
|                                       |
|                                       | 2
|                                       |
| MAINSTORE ADDRESS COMPARE OCCURRED.   | 3
|                                       |
|                                       | 4
|                                       |
|                                       | 5
|                                       |
|                                 0279  | 6
|                                       |
 ---------------------------------------
```

THIS MESSAGE WILL OCCUR IF THE MAINSTORE ADDRESS STOP HAS PERFORMED SUCCESSFULLY. IN 2 SECONDS DISPLAY # 0275 WILL APPEAR.

CRT/KEYBOARD FAMILIARIZATION 0301 & 0302

THESE DISPLAYS OCCUR ONLY AFTER RUNNING THE IMPL SEQUENCE. IT IS FOR OPERATORS WHO NEED FAMILIARIZATION WITH THE CRT AND KEYBOARD TO SELECT PROGRAMS. PRESSING THE INQUIRY KEY AT ANY TIME BYPASSES THIS FAMILIARIZATION AND WILL DISPLAY THE MAIN MENU.

```
          1         2         3         4
    1     0         0         0         0
     ----------------------------------------
    |MESSAGES LARGER THAN ONE DISPLAY ARE    | 1
    |                                        |
    |SCROLLABLE.  SCROLL MESSAGES ARE IDEN-  | 2
    |                                        |
    |TIFIED BY 'S' IN THE LAST POSITION -----| 3
    |                                       ||
    |'ROLL UP/DOWN' KEYS CONTROL SCROLLING  || 4
    |                                       ||
--->|PRESS 'ROLL UP' KEY TO CONTINUE.       || 5
|   |                                       ||
|   |THESE 4 DIGITS ARE THE DISPLAY ID  0301S| 6
|   |                                        |
|    ----------------------------------------
|___DON'T BE AFRAID TO EXPERIMENT.
    THE DISPLAY WILL REMAIN UNTIL
    THE PROPER KEY IS PRESSED.
```

```
          1         2         3         4
    1     0         0         0         0
     ----------------------------------------
    |THE ENTER KEY WILL BE USED BY YOU       | 1
    |                                        |
    |TO SIGNAL THE SYSTEM THAT YOU HAVE      | 2
    |                                        |
    |ACKNOWLEDGED A MESSAGE.                 | 3
    |                                        |
    |PRESS ENTER KEY TO CONTINUE.            | 4
    |                                        |
    |                                        | 5
    |                                        |
    |EACH DISPLAY HAS THIS UNIQUE ID--- 0302 | 6
    |                                        |
     ----------------------------------------
```

CRT/KEYBOARD FAMILIARIZATION (CONTINUED) 0303

```
          1         2         3         4
     1    0         0         0         0
     ----------------------------------------
     |THE 'ENTER' KEY WILL ALSO BE USED BY YOU| 1
     |                                        |
     |TO SIGNAL THE SYSTEM THAT YOUR DATA ENT-| 2
     |                                        |
     |RY IS DONE.                             | 3
     |                                        |
     |TYPE IN 'GO' AND PRESS 'ENTER' KEY.     | 4
     |                                        |
     |       ALL DISPLAYS ARE LOCATED IN      | 5
     |                                        |
---->|__     THE USERS GUIDE BY THIS ID  0303 | 6
|    |----------------------------------------|
|
|___'GO' MUST BE TYPED IN THE FIRST 2 POSITIONS OF THIS LINE TO
     PROCEED TO THE NEXT STEP. IF AN ERROR IS MADE, PRESS ENTER TO
     TO REDISPLAY THE WHOLE SCREEN.
```

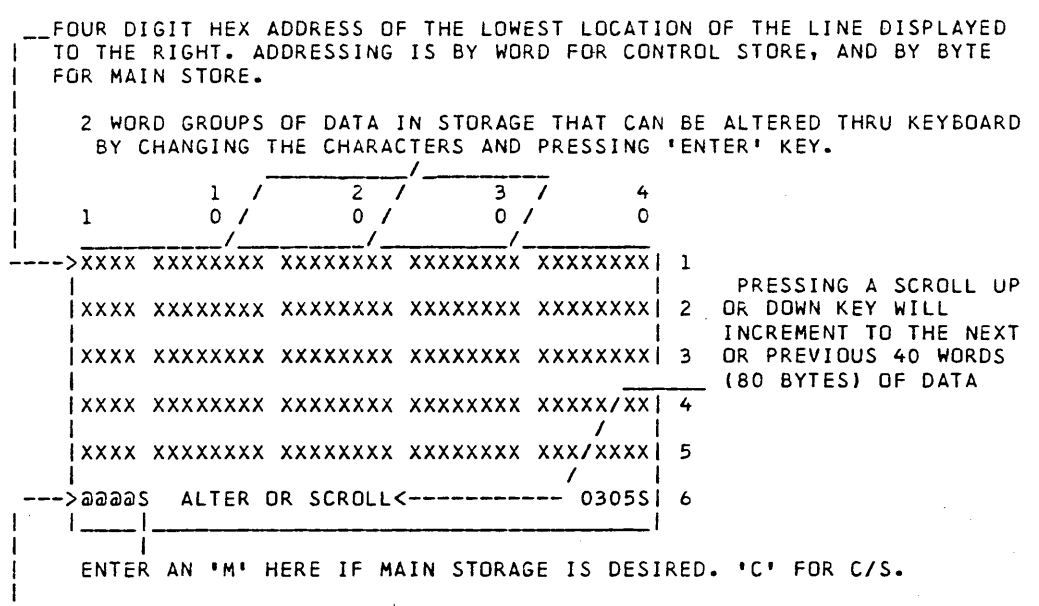
MAIN MENU 0304

NOTE I - IF A KEYBOARD PROBLEM IS APPARENT OR SUSPECT, SET 'F1' IN DATA SWITCHES 1 AND 2 AND RE-IMPL.

NOTE II - TO DISPLAY OR ALTER STORAGE, PRESS OPERATOR CONSOLE STOP, PUT THE IPL SWITCH IN THE DISKETTE (UP) POSITION AND PRESS THE 'INQ' KEY.

```
          1         2         3         4
     1    0         0         0         0
     ----------------------------------------
     |ENTER MAP OR PROGRAM NAME.              | 1
     |                                        |
     |                                        | 2
     |                                        |
     |   IF UNKNOWN REFER TO SERVICE GUIDE    | 3
     |                                        |
     |      OR ENTER HELP                     | 4
     |                                        |
     |                                        | 5
     |                                        |
---->|XXXXXXXX   <---INPUT NAME         0304  | 6
|    |                                        |
|     ----------------------------------------
|
|___ENTER IN THESE POSITIONS, LEFT JUSTIFIED, A PROG ID FROM THE
    DIAGNOSTIC PROGRAM DESCRIPTIONS IN SECTION III OF THIS GUIDE.
```

STORAGE ALTER/DISPLAY FORMAT 0305



ENTER IN THESE 4 POSITIONS THE ADDRESS DESIRED TO SKIP TO, THEN PRESS A SCROLL KEY TO SKIP DIRECTLY TO A DISPLAY OF THAT PORTION OF STORAGE.

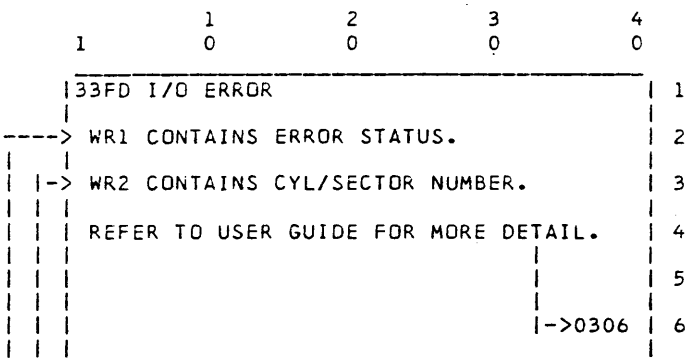
NOTE - A PROCESS CHECK WILL OCCUR IF YOU TRY TO SCROLL OR SKIP TO AN ADDRESS OUTSIDE THE LIMITS OF STORAGE ON THIS SYSTEM.

0305 (ALTERNATE)

THIS DISPLAY OCCURS IF AN ATTEMPT IS MADE TO ENTER AN INVALID HEX CHARACTER. CORRECTING THE ERRONEOUS CHARACTER(S) WILL ALLOW CONTINUATION.

```
                 1          2          3          4
     1           0          0          0          0
   _______________________________________________________
  | XXXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX |  1
  |                                          |
  | XXXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX |  2
  |                                          |
  | XXXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX |  3
  |                                          |
  | XXXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX |  4
  |                                          |
  | XXXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX |  5
  |                                          |
  | @@@S ----- INVALID DATA ------     0305S |  6
  |__________________________________________|
```

UNRECOVERABLE 33FD ERROR DISPLAY 0306



->HEX VALUE IN WR2(H)=FAILING CYLINDER ID
HEX VALUE IN WR2(L)=FAILING SECTOR ID

->HEX VALUE IN WR1(H)

00= HARDWARE ERROR
-SEE WR1(L)-
01= SECTOR NOT WITHIN FILE LIMITS.
02= DATA CHECKS (CRC CHECKS)
03= EXPECTED ADDRESS MARK NOT A DATA ADDRESS MARK.
04= WRITE ERROR
05= INVALID CYL. OR SECTOR SPECIFIED.
07= WRONG SECTOR LENGTH
08= UNINITIALIZED TRACK

SENSE BIT INFORMATION IN WR1(L)

BIT	MEANING
0	DISK FAST
1	NOT READY
2	END OF CYLINDER
3	FIRST RECORD NOT FOUND
4	READ OVERRUN
5	UNDEFINED
6	WRITE OVERRUN
7	SERIAL WRITE PARITY CHECK

IF WR1(H) CONTAINS A 7, THE CAUSE IS MOST LIKELY
A) WRONG DISKETTE OR
B) PROGRAMMING PROBLEM.

IF WR1(H) CONTAINS A 1 OR 5, THE PROBABLE CAUSE IS A PROGRAMMING PROBLEM.

0307 & 0308

```
 ------------------------------------------
|                                          | 1
|                                          |
|  SEE THE MDI PROGRAM DESCRIPTION IN THE  | 2
|                                          |
|  DIAGNOSTIC USER'S  GUIDE                | 3
|                                          |
|  FOR THESE DISPLAYS.                     | 4
|                                          |
|                                          | 5
|                                          |
|                            0307 & 0308   | 6
|__________________________________________|
```

KEYBOARD TO CRT FRIENDS TEST DISPLAY 0309

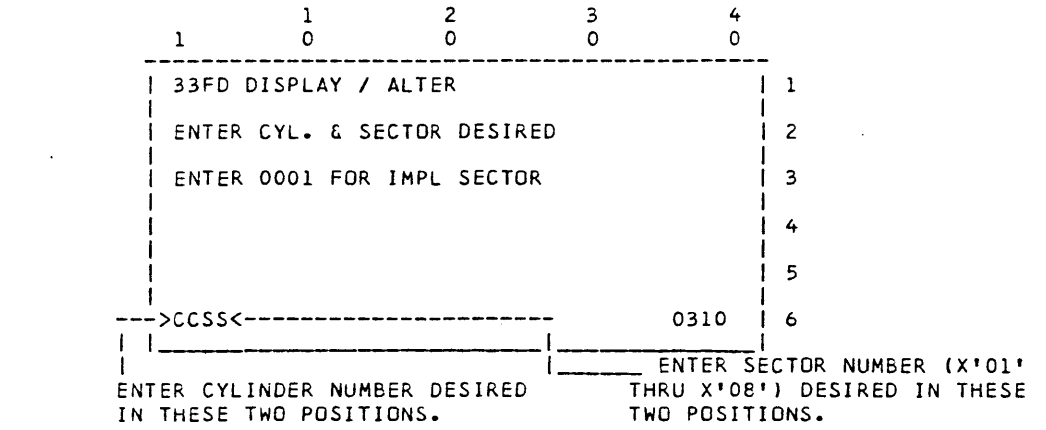
THIS TEST ALLOWS FREELANCE EXERCISING OF THE KEYBOARD. DEPRESSING ANY DATA KEY (DISPLAYABLE CHARACTER) WILL FILL ALL 240 POSITIONS OF THE CRT WITH THAT CHARACTER - EITHER UPPER OR LOWER SHIFT. DEPRESSING ANY FUNCTION KEY WILL CAUSE A ONE-LINE DESCRIPTION OF THE KEY THAT WAS DEPRESSED.
NOTE : KATAKANA INPUT IS NOT ALLOWED.
PRESSING 'START' CAUSES A RETURN TO MAIN MENU.

	1	2	3	4
1	0	0	0	0

```
 ------------------------------------------
|                                          | 1
|                                          |
|        KEYBOARD FRIEND'S TEST            | 2
|                                          |
|                                          | 3
|                                          |
| TO START: PRESS ANY KEY.                 | 4
|                                          |
| TO EXIT: PRESS START KEY                 | 5
|                                          |
|                                0309      | 6
|__________________________________________|
```

33FD DISPLAY / ALTER MENU (DSPA33FD) 0310

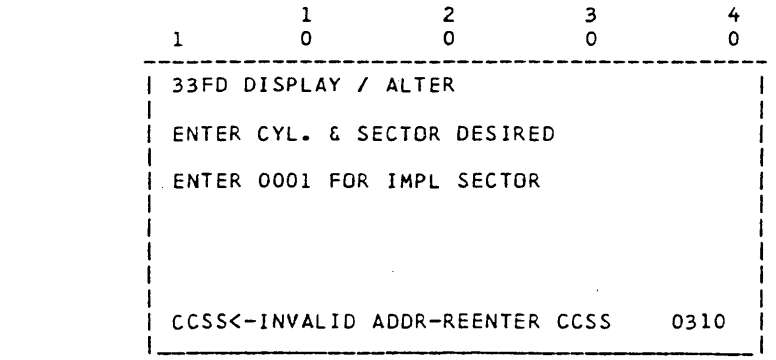
THIS UTILITY WILL SCROLL AND/OR ALTER ONLY 1 SECTOR OF THE 33FD DISKETTE AT A TIME. EACH SECTOR MUST BE SELECTED INDIVIDUALLY BY THIS MENU AND THEN EITHER REPLACED OR CANCELLED BEFORE ANOTHER CAN BE SELECTED.



NOTE - '01' IS THE ONLY VALID SECTOR FOR CYLINDER 00

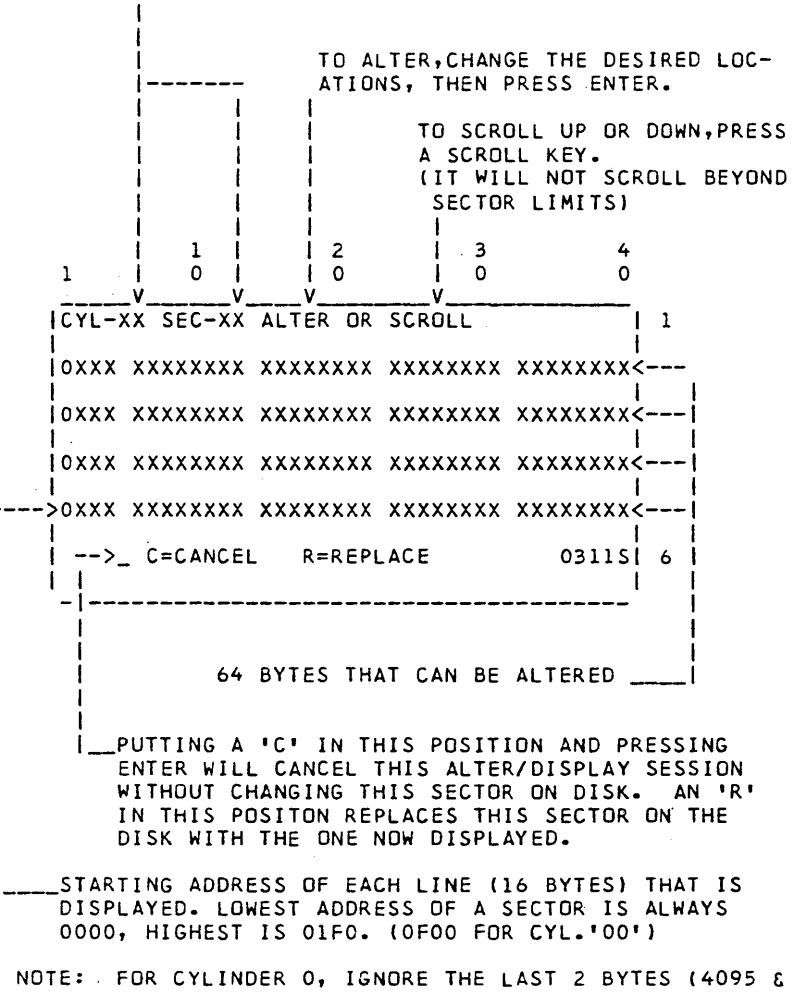
33FD DISPLAY/ALTER ERROR DISPLAY (ALTERNATE) 0310

THIS DISPLAY WILL OCCUR IF AN ATTEMPT IS MADE TO ENTER AN INVALID DISK ADDRESS. CORRECTING THE ERRONEOUS CHARACTER(S) WILL ALLOW CONTINUATION.



33FD DISPLAY/ALTER DISPLAY 0311

THE CYLINDER AND SECTOR NUMBER NOW BEING DISPLAYED.



NOTE: FOR CYLINDER 0, IGNORE THE LAST 2 BYTES (4095 & 4096).

33FD DISPLAY/ALTER ERROR DISPLAY 0311 ALTERNATE

THIS DISPLAY WILL OCCUR IF AN ATTEMPT IS MADE TO ENTER AN INVALID HEX CHARACTER. CORRECTING THE ERRONEOUS CHARACTER(S) WILL ALLOW CONTINUATION.

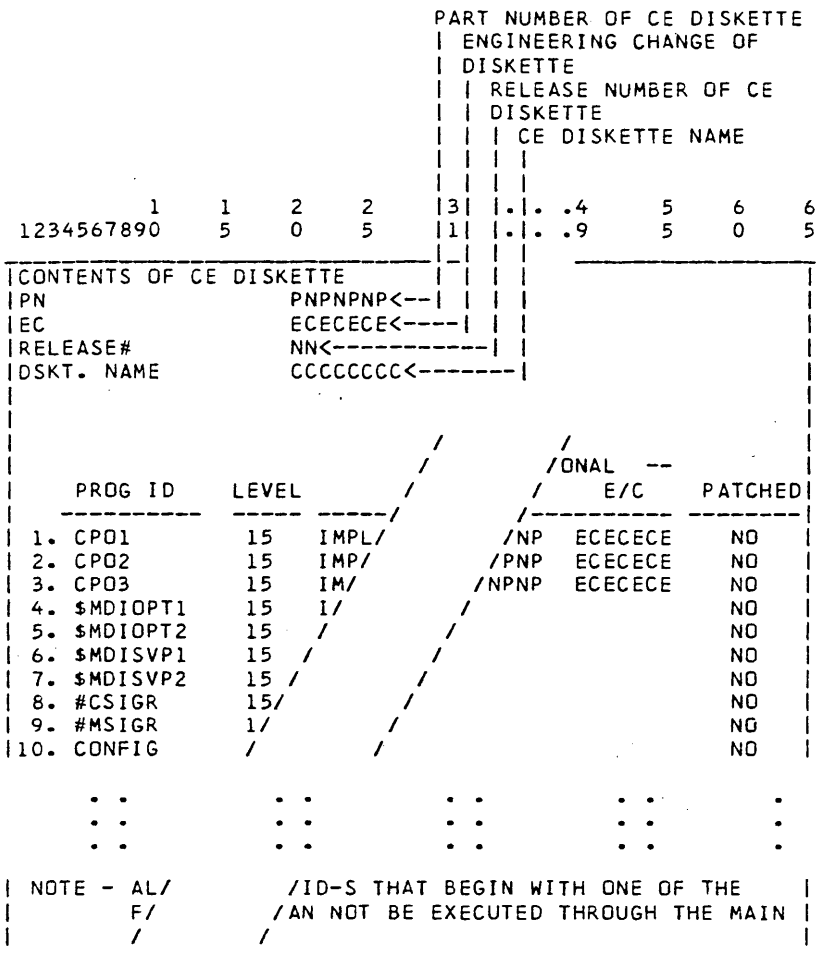
```
                1           2           3           4
     1          0           0           0           0
      ---------------------------------------------
     |CYL-XX SEC-XX  --INVALID DATA--              | 1
     |                                             |
     |0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX| 2
     |                                             |
     |0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX| 3
     |                                             |
     |0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX| 4
     |                                             |
     |0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX| 5
     |                                             |
     |    _ C=CANCEL    R=REPLACE          0311S| 6
     |                                             |
      ---------------------------------------------
```

33FD DISKETTE LIST UTILITY (LIST) 0312

```
                1           2           3           4
     1          0           0           0           0
    -----------------------------------------------
    | CE DISKETTE LIST PROGRAM                    | 1
    |                                             |
    |                                             | 2
    |                                             |
    |     MOUNT CE DISKETTE TO BE LISTED          | 3
    |                                             |
    |                                             | 4
    |                                             |
    |                                             | 5
    |                                             |
    | PRESS 'ENTER' TO CONTINUE           0312    | 6
    |                                             |
    -----------------------------------------------
```

INSERT DISKETTE TO BE LISTED. THIS MENU APPEARS WHEN THE PROGRAM IS FIRST LOADED AND WHEN THE CURRENT DISKETTE HAS BEEN LISTED. THIS ALLOWS FOR MORE THAN ONE DISKETTE TO BE LISTED.
PRESS 'INQUIRY' KEY TO TERMINATE PROGRAM AND RETURN TO MAIN MENU.

33FD DISKETTE LIST UTILITY 0313



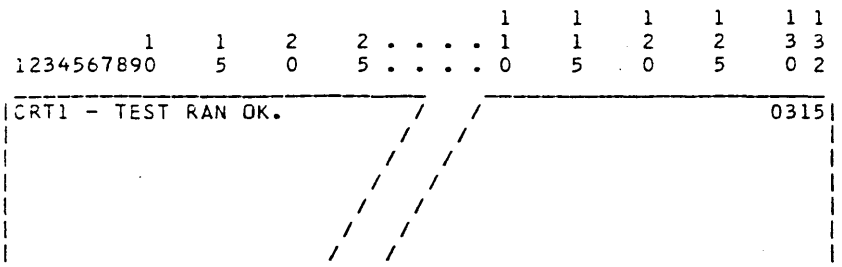
33FD DISKETTE LIST UTILITY (CONT'D) 0313

PRINTOUT HEADINGS	DEFINITIONS
PROG ID	PROGRAM ID OR NAME THAT IS USED TO CALL UP OR EXECUTE THAT PROGRAM
LEVEL	ACTUAL LEVEL OF EACH INDIVIDUAL PROGRAM. THE LEVEL ID MAY CONTAIN A CHARACTER TO DESIGNATE WHICH SYSTEM THE PROGRAM MUST RUN UNDER. A = BASE SYSTEM WITH SERIAL PRINTER B = BASE SYSTEM WITH LINE PRINTER IF THE LEVEL ID DOES NOT CONTAIN A CHARACTER, THAT PROGRAM WILL RUN ON ANY SYSTEM.
COMMENT	BRIEF DESCRIPTION OF THE PROGRAM
-- OPTIONAL -- P/N E/C	SOME PROGRAMS CONTAIN THEIR OWN PART NUMBER AND ENGINEERING CHANGE ID NUMBERS.
PATCHED	REFERENCE AS WHETHER OR NOT THE PROGRAM HAS BEEN PATCHED OR UPDATED BY THE PATCH PROGRAM

NOTE: (IN REFERENCE TO THE NOTE APPEARING IN THE PRINTOUT) THESE PROGRAMS ARE NOT CALLABLE THROUGH THE MAIN MENU BECAUSE THEY ARE EITHER SUPERVISOR PROGRAMS, DATE MODULES OR SUBROUTINE SUPPORT MODULES.

*** DISPLAY NUMBER 0314 ***
SEE SECTION IV, PARAGRAPH 5. FOR STORAGE DUMP PRINTOUT EXAMPLE.

CRT ATTACHMENT TEST MESSAGE 0315



CRT1 - VIDEO CLOCK STEP OF TEST CHARACTER - RAN WITHOUT ERRORS. ALL CRT ATTACHMENT TESTS HAVE NOW BEEN RUN.

CRT ATTACHMENT TEST ERROR MESSAGE 0316

```
                                     1    1    1    1    1 1
         1    1    2    2 . . . . .1    1    2    2    3 3
1234567890    5    0    5 . . . . .0    5    0    5    0 2
----------------------------------------   ------------------------
|CRT1 - ERROR -VIDEO CLOCK ST/   /                          0316|
|                            /   /                              |
|                           /   /                               |
|                          /   /                                |
|                         /   /                                 |
|                        /   /                                  |
|                       /   /                                   |
```

CRT1 - VIDEO CLOCK STEP OF TEST CHARACTER - AN ERROR OCCURRED WHILE RUNNING THIS CRT ATTACHMENT TEST. THE CRT MAP CHART WILL INDICATE APPROPRIATE ACTION.

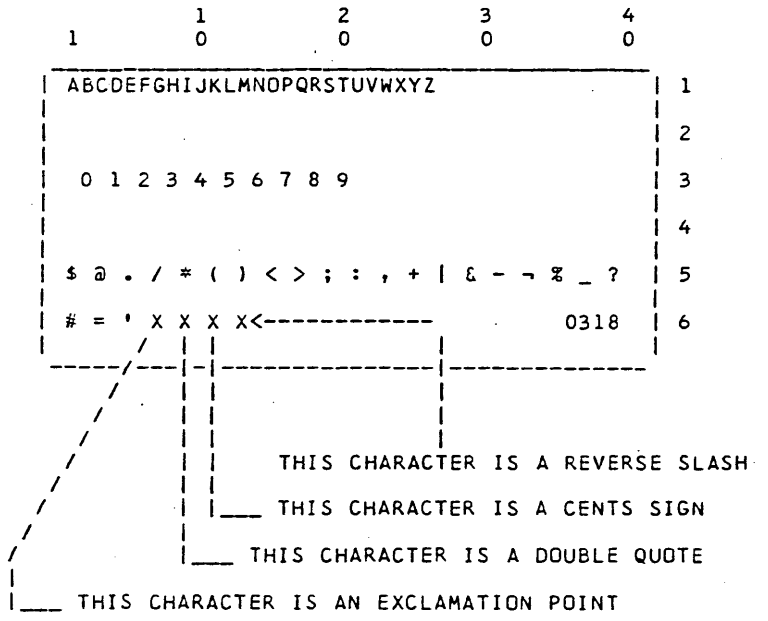
CRT ALIGNMENT TEST PATTERN 0317

THIS DISPLAY OCCURS IN CRT ALIGNMENT TEST 'CRT2'.
PRESSING 'START' CAUSES A RETURN TO MAIN MENU.

```
             1         2         3         4
  1          0         0         0         0
--------------------------------------------
| 1      78901     78901     78901         0 | 1
|                                            |
| 12         2         2         2         0 | 2
|                                            |
| 1 3         3         3         3        0 | 3
|                                            |
| 1  4         4         4         4       0 | 4
|                                            |
| 1   5         5         5         5      0 | 5
|                                            |
| 1    6         6         6       0317      | 6
|                                            |
--------------------------------------------
```

CRT ALL CHARACTER PATTERN 0318

THIS DISPLAY OCCURS IN THE CRT STATIC ALL CHARACTER DISPLAY TEST 'CRT3' ON DOMESTIC MACHINES. FOR ASCII OR WORLD TRADE CHARACTER SET, SEE THE INTRODUCTION AND MAINTENANCE MANUAL (SECTION 5.4.4, FIGURES 24 THROUGH 36).
PRESSING THE 'KANA ON' KEY, IF INSTALLED, WILL CAUSE THE KATAKANA CHARACTERS TO BE DISPLAYED. PRESSING 'KANA OFF' CAUSES THE 'NON KATAKANA' DISPLAY. PRESSING THE 'CODE' KEY (IF DUAL CASE FEATURE IS INSTALLED) CAUSES LOWER CASE CHARACTERS TO BE DISPLAYED.
PRESSING 'START' CAUSES A RETURN TO MAIN MENU.

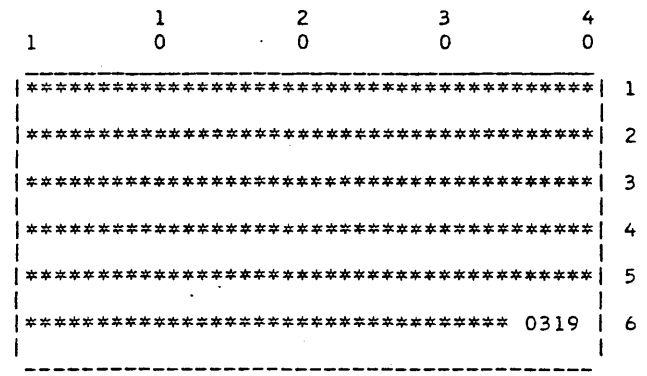


CRT DYNAMIC REDISPLAY 0319

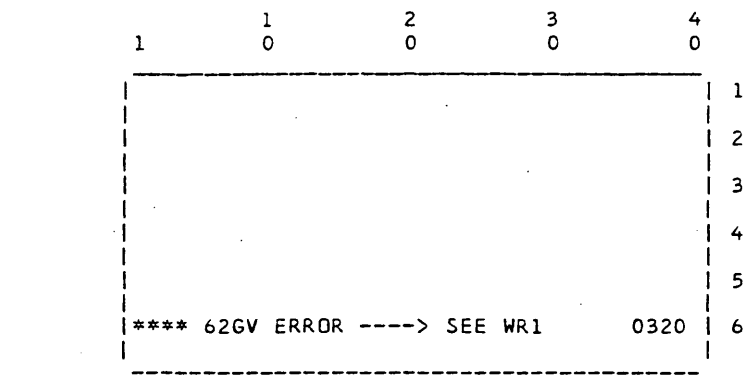
THIS PATTERN OCCURS IN CRT DYNAMIC REDISPLAY TEST 'CRT4'. LINES 1, 2, 5, & 6 CONTAIN ALL '*'S, EXCEPT FOR THE MESSAGE ID IN LINE 6.

LINES 3 & 4 ARE RIPPLED CONTINOUSLY WITH THE FOLLOWING CHARACTERS: /(SLASH), _(UNDERSCORE), .(PERIOD), (BLANK), *(ASTERISK)

THE ENTIRE SCREEN WILL BE ERASED AFTER THE *'S ARE RIPPLED IN LINE 4. AFTER ABOUT 500 MSEC, IT WILL BE RE-DISPLAYED.
PRESSING 'START' CAUSES A RETURN TO MAIN MENU.



62GV I/O ERROR DISPLAY 0320



HEX VALUE OF WR1:

0001 ... READ ID ERROR OCCURRED ON SELECTED SECTOR
WITH BOTH NORMAL AND EXTENDED READ ID COMMANDS.(16 RETRIES)
0002 ... WRITE ID ERROR. PROGRAM FOUND ALTERNATE SECTOR THAT IS
FLAGGED AS HAVING POSSIBLE BAD DATA FOR A READ OPERATION,
BUT WOULD BE OK FOR WRITE DATA. BEFORE DOING A WRITE
DATA, THE PROGRAM HAS TO CHANGE THE FLAG
BYTE IN CONTROL FIELD FROM 05 TO 01 -- HENCE
THE WRITE ID COMMAND WHICH IS FAILING.(16 RETRIES)
0004 ... READ ID ERROR. READ ID ERRORS HAVE OCCURRED
ON EVERY SECTOR (BOTH READ ID AND EXTENDED READ ID COMMANDS
FAILED) OF CURRENT TRACK IN WR5. (16 RETRIES PER SECTOR)
0008 ... READ/WRITE ERROR. PROGRAM ISSUED READ/WRITE COMMAND AND
AFTER 16 RETRIES AN ERROR STILL EXISTS WITH THE HARDWARE.
0010 ... SEEK ERROR OCCURRED WHILE TRYING TO SEEK TO A NEW TRACK.
(16 RETRIES) THIS ERROR CAN OCCUR IF THE 62GV IS NOT CON-
FIGURED CORRECTLY. RE=RUN -CONFIG- TO VERIFY THAT THE
62GV IS CONFIGURED CORRECTLY.
0020 ... RECALIBRATE ERROR. AFTER DOING RESET AND
RECALIBRATE 16 TIMES, THE ERROR STILL EXISTS.
0100 ... NO RECORD FOUND. SELECTED SECTOR HAS NO ERRORS
BUT DID NOT GET SECTOR HIT.
0400 ... 62GV IOB ERROR (PROGRAM ERROR). ADDRESS OF IOB IS
IN C/S LOCATION -0055-.
0800 ... POSSIBLE BAD DATA WARNING. CURRENT SECTOR
TRYING TO BE READ IS FLAGGED AS QUESTIONABLE DATA.
PRESS CE START TO TRY READING IT.

OTHER REGISTERS CONTAIN THE FOLLOWING INFORMATION:

```
WR2(H) ... STATUS BYTE 0
WR2(L) ... STATUS BYTE 1
WR3(H) ... STATUS BYTE 2
WR3(L) ... DIAGNOSTIC STATUS BYTE 6
WR4(L) ... HEX VALUE OF SECTOR FLAG BYTE OF SECTOR BEING OPERATED ON
WR5    ... HEX VALUE OF TRACK ID BEING OPERATED ON
WR6(H) ... HEX VALUE OF HEAD ID BEING OPERATED ON
WR6(L) ... HEX VALUE OF SECTOR ID BEING OPERATED ON
```

62GV STATUS BYTE BIT DEFINITION

```
STATUS BYTE 0
   BIT 0 ... FILE NOT READY
       1 ... N/A
       2 ... SECTOR SYNC CK
       3 ... OFF TRACK CK
       4 ... CRC CK
       5 ... PARALLEL PARITY CK
       6 ... WRITE ECHO CK
       7 ... PORT OVERRUN
STATUS BYTE 1
   BIT 0 ... N/A
       1 ... DATA UNSAFE
       2 ... INVALID SEEK
       3 ... ATTCH EQUIP CK
       4 ... N/A
       5 ... N/A
       6 ... N/A
       7 ... PLO OUT OF SYNC
STATUS BYTE 2
   BIT 0 ... SERDES CK
       1 ... N/A
       2 ... PORT TRANSFER ERROR
       3 ... N/A
       4 ... INTR T.O. CK
       5 ... N/A
       6 ... N/A
       7 ... N/A
DIAGNOSTIC STATUS BYTE 6
   BIT 0 ... N/A
       1 ... SELECT UNSAFE
       2 ... WRITE UNSAFE
       3 ... BRAKE FAILURE
       4 ... SERVO UNSAFE
       5 ... N/A
       6 ... N/A
       7 ... N/A
```

0321 & 0322

```
 ------------------------------------------
|                                          | 1
|                                          |
|  SEE THE MDI PROGRAM DESCRIPTION IN THE  | 2
|                                          |
|  DIAGNOSTIC USER'S  GUIDE                | 3
|                                          |
|  FOR THESE DISPLAYS.                     | 4
|                                          |
|                                          | 5
|                                          |
|                            0321 & 0322   | 6
|__________________________________________|
```

LINE PRINTER NOT READY DISPLAY (B-SYSTEM) 0323

```
-----TOP LINE OF DISPLAY AT TIME NOT READY CONDITION OCCURRED.
|            1         2         3         4
|    1       0         0         0         0
|    _____________________________________________
|---> XXXXXXXXX . . . XXX                        | 1
|    |                                           |
|    | PRINTER NOT READY BECAUSE OF:             | 2
|    |                                           |
|  |-> XXXXXXXX . . . XXX                        | 3
|  | |                                           |
|  | |                                           | 4
|  | |                                           |
|  | |                                           | 5
|  | |                                           |
|  | | PRESS 'ENTER' KEY TO CONTINUE     0323    | 6
|  | |_____________________________________________|
|  |
|  |___IDENTIFICATION OF 1 OF THE FOLLOWING NOT READY CONDITIONS
```

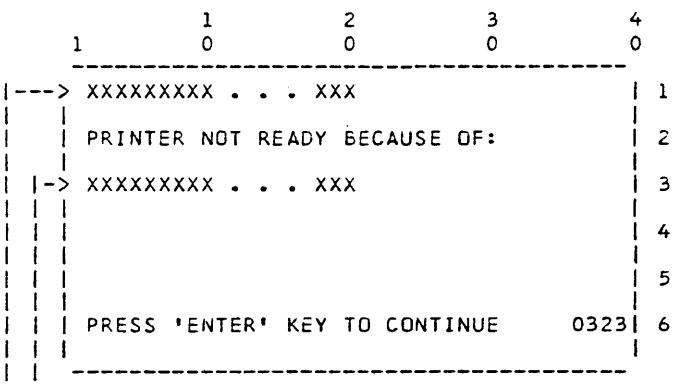
THROAT INTERLOCK OPEN- THE THROAT (BETWEEN PRINT HAMMERS AND PRINT BELT) IS OPEN. IT MUST BE CLOSED TO ALLOW PRINTING.

END OF FORMS- PRINTER RAN OUT OF PAPER. PUT MORE PAPER IN TO CONTINUE.

COVER INTERLOCK OPEN- COVER IS OPEN WHICH DOES NOT ALLOW PRINTING TO OCCUR. CLOSE THE COVER.

** CORRECT THE PROBLEM AND PRESS 'ENTER' KEY FOR THE PROGRAM TO CONTINUE PRINTING.

SERIAL PRINTER NOT READY DISPLAY (A-SYSTEM) 0323



---IDENTIFICATION OF 'NOT READY' CONDITION, WHICH IS ONE OF THE FOLLOWING:

END OF FORMS
PRINTER RAN OUT OF PAPER. PUT MORE PAPER IN TO CONTINUE.

FORMS HUNG

HORIZONTAL CHECK

FORMS RUNAWAY

WIRE CHECK

MEMORY PARITY CHECK

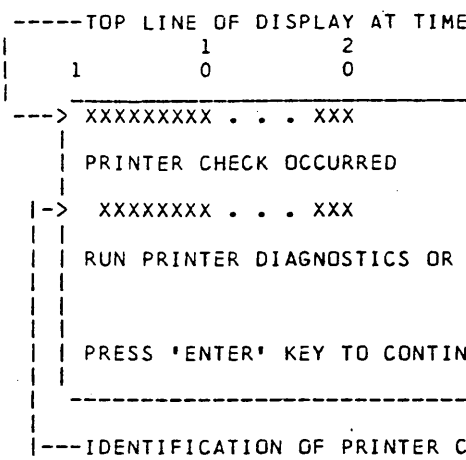
UNPRINTABLE CHARACTER CHECK

PRINTER NOT READY

** CORRECT THE PROBLEM AND PRESS 'ENTER' KEY FOR THE PROGRAM TO CONTINUE PRINTING.

-----TOP LINE OF DISPLAY AT TIME 'NOT READY' CONDITION OCCURRED.

LINE PRINTER CHECK DISPLAY 0324



IDENTIFICATION OF PRINTER CHECK THAT HAS OCCURRED WHILE PRINTING, WHICH IS ONE OF THE FOLLOWING:

FORMS JAM CHECK - THE FORMS JAM DETECTOR SHOWS THAT THE PAPER IS NOT SPACING PROPERLY.

BELT SPEED CHECK - THE BELT IS NOT MAINTAINING CORRECT RPM.

CARRIAGE SYNC CHECK - INCORRECT FEEDBACK PULSE COUNT RECEIVED FROM CARRIAGE STEPPER MOTOR CONTROL CARD.

BELT SYNC CHECK - INCORRECT PRINT SUBSCAN PULSE COUNT BETWEEN HOME PULSES. MOST LIKELY CAUSE IS THAT THE SYSTEM IS NOT CORRECTLY CONFIGURED FOR THAT PRINTER. RE-RUN -CONFIG- PROGRAM TO CORRECT.

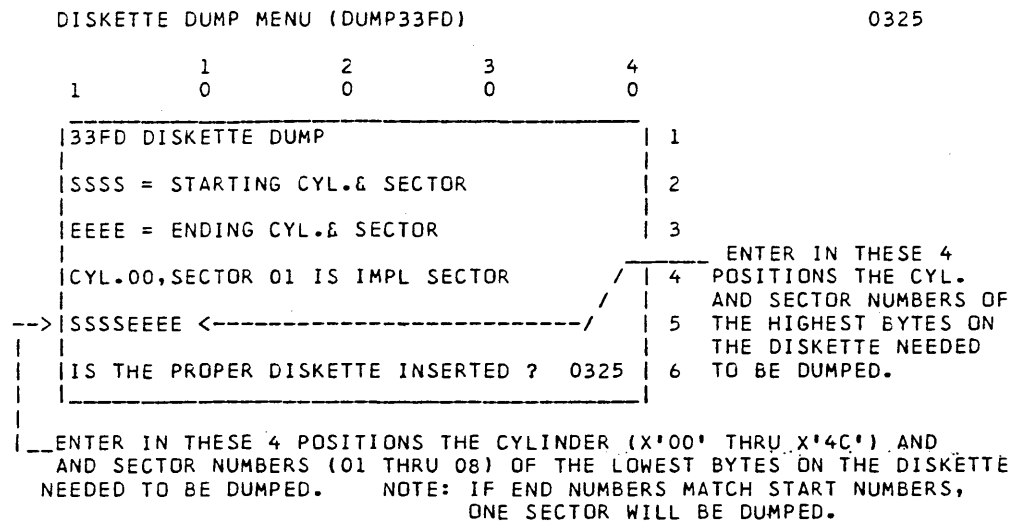
BELT EMITTER CHECK - BELT EMITTER IS NOT DETECTING THE PRINT BELT IMPRESSIONS CORRECTLY.

BUFFER DATA CHECK - PRINT DATA BUFFER HAS BAD PARITY

HAMMER PARITY CHECK - THE ODD/EVEN NUMBER OF HAMMERS SELECTED DOES NOT CORRESPOND TO COIL CURRENT FEEDBACK.

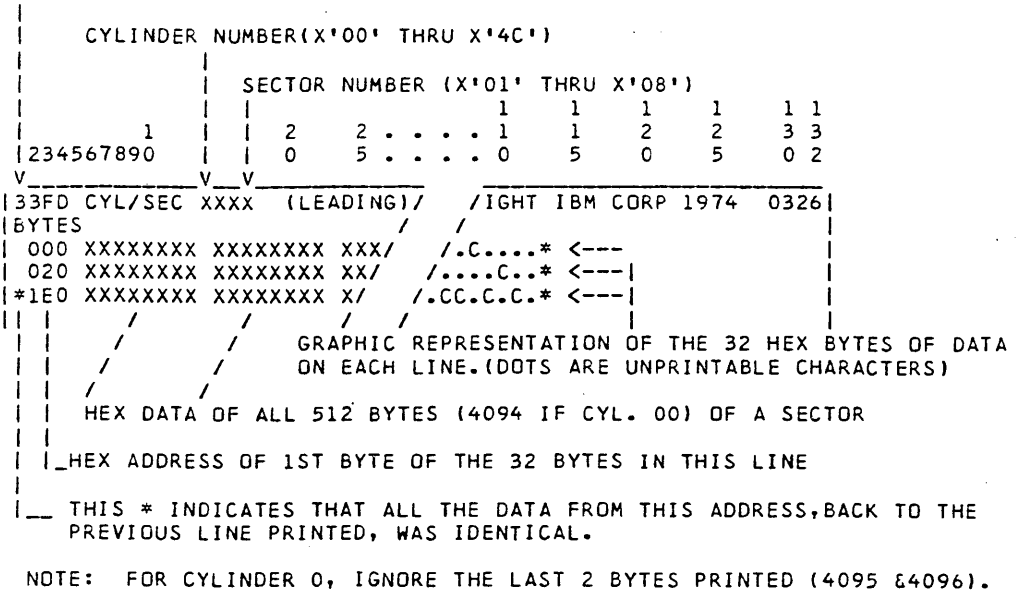
COIL CURRENT CHECK - HAMMER COIL CURRENT IS ON TOO LONG.

** CORRECT THE PROBLEM IF POSSIBLE AND PRESS THE 'ENTER' KEY. THE PROGRAM WILL RESET THE ERROR, TRY AGAIN AND CONTINUE. IF PROBLEM PERSISTS, RUN THE PRINTER DIAGNOSTICS.


DISKETTE DUMP MENU (DUMP33FD) 0325
1 2 3 4
1 0 0 0 0
33FD DISKETTE DUMP
SSSS = STARTING CYL.& SECTOR
EEEE = ENDING CYL.& SECTOR
CYL.00,SECTOR 01 IS IMPL SECTOR
SSSSEEEE
IS THE PROPER DISKETTE INSERTED ? 0325
1
2
3
4
5
6
ENTER IN THESE 4 POSITIONS THE CYL. AND SECTOR NUMBERS OF THE HIGHEST BYTES ON THE DISKETTE NEEDED TO BE DUMPED.
ENTER IN THESE 4 POSITIONS THE CYLINDER (X'00' THRU X'4C') AND AND SECTOR NUMBERS (01 THRU 08) OF THE LOWEST BYTES ON THE DISKETTE NEEDED TO BE DUMPED. NOTE: IF END NUMBERS MATCH START NUMBERS, ONE SECTOR WILL BE DUMPED.

DISKETTE DUMP PRINTOUT 0326

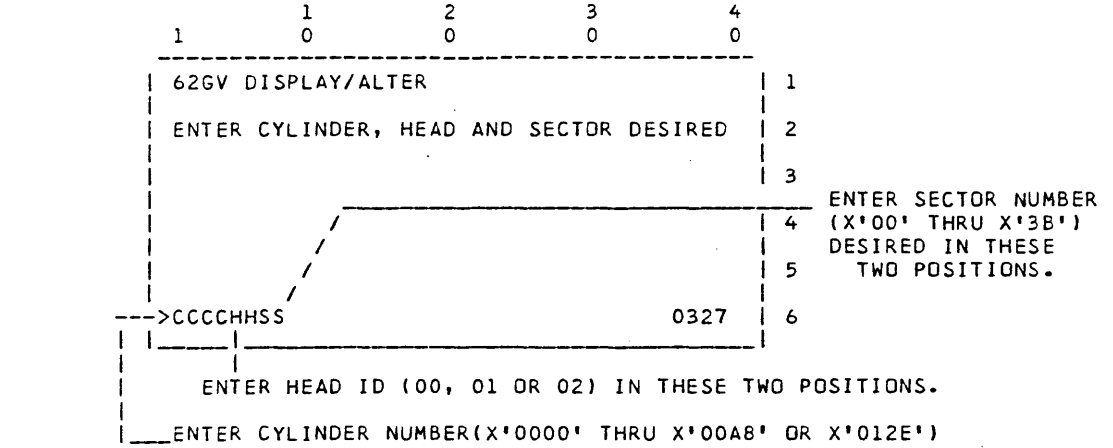
HEADER LINES ARE PRINTED ANY TIME THE CYLINDER/SECTOR NUMBERS CHANGE.



NOTE: FOR CYLINDER 0, IGNORE THE LAST 2 BYTES PRINTED (4095 &4096).

62GV DISPLAY/ALTER MENU (DSPA62GV) 0327

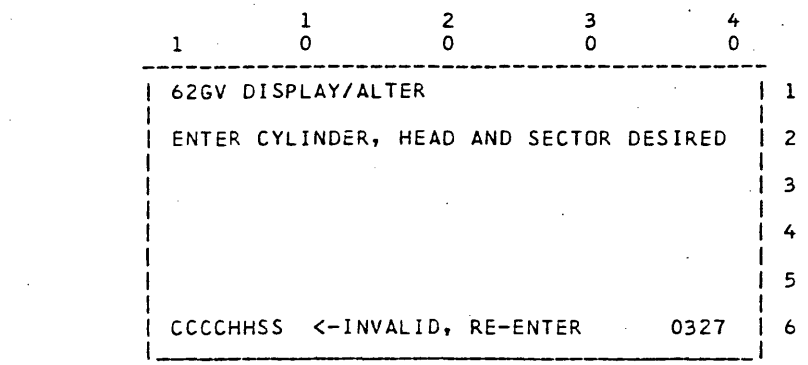
THIS UTILITY WILL SCROLL AND/OR ALTER ONLY 1 SECTOR OF THE 62GV DISK AT A TIME. EACH SECTOR MUST BE SELECTED INDIVIDUALLY BY THIS MENU AND THEN EITHER REPLACED OR CANCELLED BEFORE ANOTHER CAN BE SELECTED.

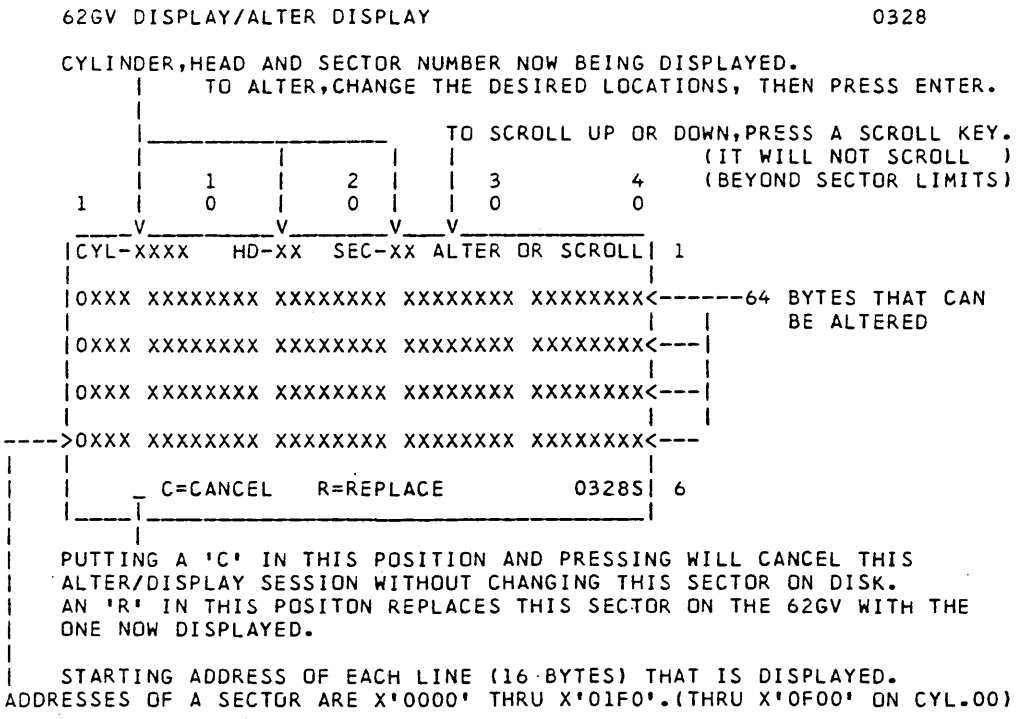


NOTE: MAXIMUM CYLINDER NUMBER DEPENDS ON FILE CAPACITY.
(006C FOR 3.2MB, 00A8 FOR 5.0MB, OR 012E FOR 9.1 AND 13.7MB)

62GV DISPLAY/ALTER ERROR DISPLAY (ALTERNATE) 0327

THIS DISPLAY WILL OCCUR IF AN ATTEMPT IS MADE TO ENTER AN INVALID DISK ADDRESS. CORRECTING THE ERRONEOUS CHARACTER(S) WILL ALLOW CONTINUATION.




62GV DISPLAY/ALTER DISPLAY 0328
CYLINDER,HEAD AND SECTOR NUMBER NOW BEING DISPLAYED.
TO ALTER,CHANGE THE DESIRED LOCATIONS, THEN PRESS ENTER.
TO SCROLL UP OR DOWN,PRESS A SCROLL KEY.
(IT WILL NOT SCROLL)
(BEYOND SECTOR LIMITS)
1 2 3 4
1 0 0 0 0
CYL-XXXX HD-XX SEC-XX ALTER OR SCROLL
0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
64 BYTES THAT CAN BE ALTERED
0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
_ C=CANCEL R=REPLACE 0328S
PUTTING A 'C' IN THIS POSITION AND PRESSING WILL CANCEL THIS
ALTER/DISPLAY SESSION WITHOUT CHANGING THIS SECTOR ON DISK.
AN 'R' IN THIS POSITON REPLACES THIS SECTOR ON THE 62GV WITH THE
ONE NOW DISPLAYED.
STARTING ADDRESS OF EACH LINE (16 BYTES) THAT IS DISPLAYED.
ADDRESSES OF A SECTOR ARE X'0000' THRU X'01F0'.(THRU X'0F00' ON CYL.00)

62GV DISPLAY/ALTER ERROR DISPLAY (ALTERNATE) 0328

THIS DISPLAY OCCURS IF AN ATTEMPT IS MADE TO ENTER AN INVALID HEX CHARACTER. CORRECTING THE ERRONEOUS CHARACTER(S) WILL ALLOW CONTINUATION.

```
          1         2         3         4
 1        0         0         0         0
 ┌──────────────────────────────────────────┐
 │CYL-XXXX   HD-XX--INVALID DATA--          │ 1
 │                                          │
 │0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX │ 2
 │                                          │
 │0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX │ 3
 │                                          │
 │0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX │ 4
 │                                          │
 │0XXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX │ 5
 │                                          │
 │    _ C=CANCEL   R=REPLACE          0328S │ 6
 └──────────────────────────────────────────┘
```

LINE PRINTER PAPER CLAMP TEST

0330

THIS DISPLAY OCCURS WHEN THE PAPER CLAMPS ARE DE-ACTIVATED. PRESSING 'ENTER' ACTIVATES THE PAPER CLAMPS.

```
          1         2         3         4
 1        0         0         0         0
 ------------------------------------------
|PAPER CLAMP OPEN/CLOSE TEST               | 1
|                                          |
|                                          | 2
|                                          |
|CLAMP IS NOW OPEN.                        | 3
|                                          |
|READY TO CLOSE IT.                        | 4
|                                          |
|                                          | 5
|                                          |
|PRESS 'ENTER' TO CONTINUE          0330   | 6
|__________________________________________|
```

ALTERNATE 0330

THIS DISPLAY OCCURS WHEN THE PAPER CLAMPS ARE ACTIVATED. PRESSING THE 'ENTER' KEY DE-ACTIVATES THE CLAMPS.

```
          1         2         3         4
 1        0         0         0         0
 ------------------------------------------
|PAPER CLAMP OPEN/CLOSE TEST               | 1
|                                          |
|                                          | 2
|                                          |
| CLAMP IS NOW CLOSED.                     | 3
|                                          |
| READY TO OPEN IT.                        | 4
|                                          |
|                                          | 5
|                                          |
| PRESS 'ENTER' TO CONTINUE         0330   | 6
|                                          |
 ------------------------------------------
```

LINE PRINTER 1/2 INDEX FEATURE TEST (PRT10)

0332-0334

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
| THIS MACHINE IS NOT CONFIGURED FOR     | 1
|                                        |
| HALF INDEX FEATURE.                    | 2
|                                        |
|                                        | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
| PRESS 'ENTER' KEY TO CONTINUE    0332  | 6
|                                        |
 ----------------------------------------
```

0333

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
| HALF INDEX CARD AA2-J4 FAILING.        | 1
|                                        |
|                                        | 2
|                                        |
|                                        | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
| PRESS 'ENTER' KEY TO CONTINUE    0333  | 6
|                                        |
 ----------------------------------------
```

0334

```
         1         2         3         4
1        0         0         0         0
 ----------------------------------------
|  ALL TESTS RAN OK.                     | 1
|                                        |
|                                        | 2
|                                        |
|                                        | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
| PRESS 'ENTER' KEY TO CONTINUE     0334 | 6
|                                        |
 ----------------------------------------
```

LINE PRINTER INTERLOCK STATUS DISPLAY TEST (PRT2) 0335

```
         1         2         3         4
1        0         0         0         0
 ----------------------------------------
|PROGRAM IS SAMPLING INTERLOCK STATUS    | 1
|                                        |
|EVERY -500- MSEC.                       | 2
|                                        |
|                                        | 3
|                                        |
| END OF FORMS SWITCH .... CLOSED<-|     | 4
|                                  |     |
| THROAT SWITCH .......... CLOSED<-|     | 5
|                                  |     |
| COVER SWITCH ........... CLOSED<-|0335 | 6
|__________________________________|_____|
                                   |
IF AN INTERLOCK SWITCH IS OPENED,IT WILL BE INDICATED HERE.
```

LINE PRINTER HALF INDEX FEATURE DISPLAY (PRT10)

0336

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|                                        | 1
|                                        |
|                                        | 2
|                                        |
|  HALF INDEX CARRIAGE TIMING TEST       | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
| PRESS 'ENTER' KEY TO CONTINUE    0336  | 6
|                                        |
 ----------------------------------------
```

LINE PRINTER HALF INDEX FEATURE DISPLAYS (PRT11) 0337 & 0338

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|THIS MACHINE IS NOT CONFIGURED FOR      | 1
|                                        |
|HALF INDEX FEATURE.                     | 2
|                                        |
|                                        | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
|PRESS 'ENTER KEY TO CONTINUE      0337  | 6
|                                        |
 ----------------------------------------
```

```
          1         2         3         4
 1        0         0         0         0
 ┌──────────────────────────────────────────┐
 │THIS COMPLETES THE HALF INDEX TEST.       │ 1
 │                                          │
 │VERIFY THE OUTPUT.  REFER TO MAP          │ 2
 │                                          │
 │0400-4 FOR OUTPUT DESCRIPTION.            │ 3
 │                                          │
 │                                          │ 4
 │                                          │
 │                                          │ 5
 │                                          │
 │PRESS 'ENTER KEY TO CONTINUE       0338   │ 6
 └──────────────────────────────────────────┘
```

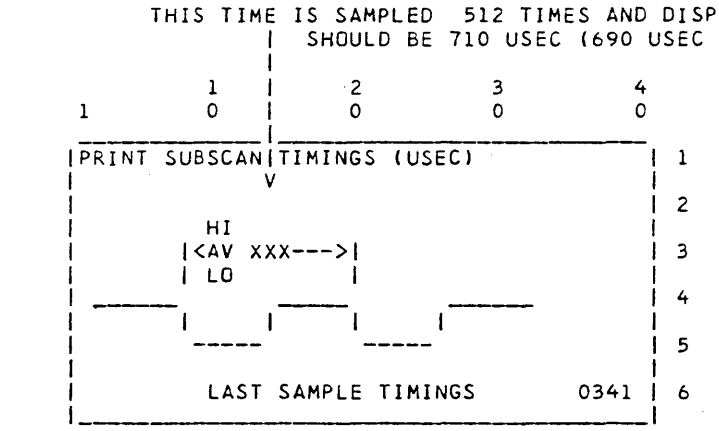
LINE PRINTER TIMING TEST OPTION MENU (PRT3) 0340

```
          1         2         3         4
 1        0         0         0         0
 ┌──────────────────────────────────────────┐
 │CHOOSE FOLLOWING SIGNAL FOR TIMING :      │ 1
 │                                          │
 │                                          │ 2
 │                                          │
 │ 1 - PSS              4 - HAMMER          │ 3
 │                                          │
 │ 2 - IMPSS            5 - CARRIAGE        │ 4
 │                                          │
 │ 3 - HOME                                 │ 5
 │                                          │
-->│ _                                 0340   │ 6
 └──────────────────────────────────────────┘
```

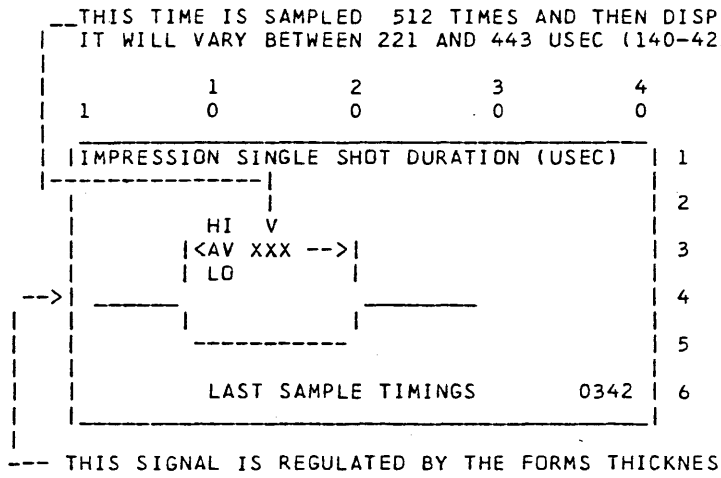
___ENTER HERE THE NUMBER (1 THRU 5) OF THE SIGNAL TO BE TIMED,
THEN PRESS 'ENTER'

PSS = PRINT SUB-SCAN PULSES
IMPSS = IMPRESSION SINGE SHOT
HOME = CHAIN HOME PULSE
HAMMER = HAMMER FIRE PULSE
CARRIAGE = CARRIAGE FEEDBACK PULSES

LINE PRINTER PRINT SUBSCAN PULSES DISPLAY 0341



LINE PRINTER IMPRESSION SINGLE SHOT DISPLAY 0342



--- THIS SIGNAL IS REGULATED BY THE FORMS THICKNESS CONTROL SWITCH

LINE PRINTER HOME PULSE DISPLAY 0343

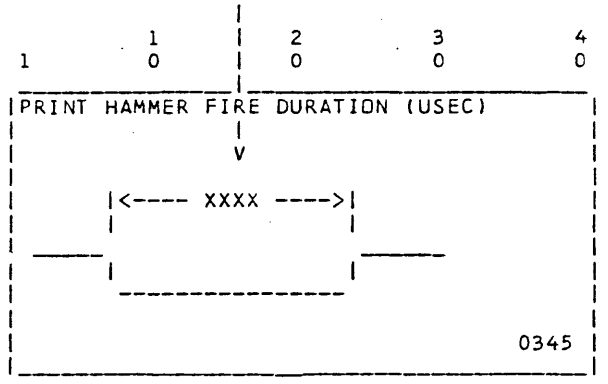
```
|->THIS PULSE VARIES WITH THE CHARACTER SET AND PRINTER SPEED:
|                              50-155 LPM      285 LPM
|       48 CHAR BELT =           170             165       MSEC +OR- 10%
|       64 CHAR BELT =           227             220        "   "   "
|       96 CHAR BELT =           340             330        "   "   "
|      128 CHAR BELT =           455             440        "   "   "
|
|
|  ____________________________________________
|  |HOME PULSE DURATION TIMING (MILLISEC)     | 1
|  |------------------|                       |
|    |                |                       | 2
|    |                |                       |
|    |                V                       | 3
|    |           |<---------->|               |
|    |            __                          | 4
|    |           |  |         |               |
|    |  ________|  |_________|               | 5
|    |                                        |
|    |      LAST SAMPLE TIMING        0343    | 6
|    |________________________________________|
```

LINE PRINTER HAMMER NUMBER TIMING 0344

```
              1         2         3         4
     1        0         0         0         0
     ____________________________________________
     |CHOOSE ONE TO THREE DIGIT PRINT           | 1
     |                                          |
     |POSITION ( 1-132 ) TO FIRE AND            | 2
     |                                          |
     |TIME HAMMER.                              | 3
     |                                          |
     |                                          | 4
     |                                          |
     |                                          | 5
     |                                          |
 -->|_                                  0344   | 6
 |   |__________________________________________|
 |---ENTER THE NUMBER OF THE POSITION TO BE PRINTED.
     NOTE:  ON 285 LPM MACHINES, THE HAMMER NUMBER EQUALS THE PRINT
            POSITION NUMBER.  ON 50-155 LPM MACHINES, THE HAMMER NUMBER
            EQUALS THE PRINT POSITION DIVIDED BY 2.  (IF THE PRINT
            POSITION NUMBER IS ODD, ADD 1 TO IT BEFORE DIVIDING BY 2).
```

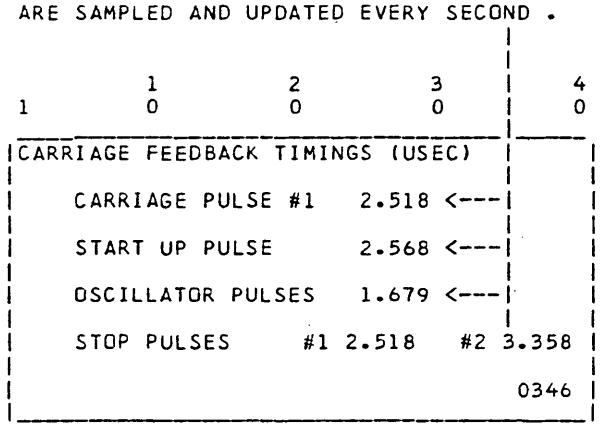
LINE PRINTER HAMMER NUMBER TIMING 0345

THIS TIME IS SAMPLED AND UPDATED EACH PRINT CYCLE. IT SHOULD BE FROM 1300 TO 1500 USEC (1200-1450 FOR 285 LPM) PLUS OR MINUS 10%.



LINE PRINTER CARRIAGE FEEDBACK TIMINGS DISPLAY 0346

THESE TIMES, THAT OCCUR DURING A SPACE OPERATION, ARE SAMPLED AND UPDATED EVERY SECOND .



TOLERANCES:
THE VALUES SHOWN IN THIS SAMPLE ARE PLUS OR MINUS 10% EXCEPT FOR THE START UP PULSE VALUE. IT CAN VARY FROM 1.679 TO 3.358US.

LINE PRINTER HAMMER/CHARACTER FIRE TEST (PRT4) 0350 & 0351

THIS PROGRAM ALLOWS THE OPERATOR TO PRINT ANY CHARACTER(S) IN ANY PRINT POSITION(S).

```
          1         2         3         4
    1     0         0         0         0
    ----------------------------------------
    |TYPE IN AND ENTER PRINT POSITION AND    | 1
    |                                        |
    |CHARACTER TO PRINT. WHEN DONE TYPE END. | 2
    |                                        |
    |                                        | 3
    |                                        |
    |     PPP = PRINT POSITION               | 4
    |                                        |
    |       C = CHARACTER                    | 5
    |                                        |
|-->|PPPC                              0350  | 6
|   |                                        |
|   ----------------------------------------
|
|----ENTER THE PRINT POSITION 'PPP' (3 DIGIT DECIMAL 001-132)
AND THE CHARACTER TO BE PRINTED IN THAT POSITION, THEN PRESS
'ENTER'. AFTER PUTTING IN ALL CHARACTERS AND POSITIONS DESIRED,
ENTER AN 'END' IN THE PRINT POSITION AND PRESS 'ENTER' TO START
PRINTING THE LINE.
```

THIS DISPLAY APPEARS ON THE CRT WHILE THE PROGRAM IS IN PROGRESS.

```
          1         2         3         4
    1     0         0         0         0
    ----------------------------------------
    |PROGRAM PRINTING                        | 1
    |                                        |
    |                                        | 2
    |                                        |
    |                                        | 3
    |                                        |
    |                                        | 4
    |                                        |
    |                                        | 5
    |                                        |
    |                                  0351  | 6
    |                                        |
    ----------------------------------------
```

HELP DISPLAY FOR ERAP & SYSTST PROGRAM 0352 & 0353

```
          1         2         3         4
1         0         0         0         0
-----------------------------------------
|TO EXECUTE THE ERAP PROGRAM              | 1
|                                         |
| 1.  IMPL 62GV                           | 2
|                                         |
| 2.  ENTER ERAP                          | 3
|                                         |
| 3.  BE SURE DIAG02 IS LOADED IN 33FD    | 4
|                                         |
| 4.  FOLLOW CRT INSTRUCTIONS             | 5
|                                         |
|                                   0352  | 6
|                                         |
-----------------------------------------
```

```
          1         2         3         4
1         0         0         0         0
-----------------------------------------
|TO EXECUTE SYSTEM TEST PROGRAM           | 1
|                                         |
| 1.  IMPL 62GV                           | 2
|                                         |
| 2.  ENTER SYSTST                        | 3
|                                         |
| 3.  BE SURE DIAG02 IS LOADED IN 33FD    | 4
|                                         |
| 4.  FOLLOW CRT INSTRUCTIONS             | 5
|                                         |
|                                   0353  | 6
|                                         |
-----------------------------------------
```

LINE PRINTER PRINT BELT ON TEST 0354 - 0356

```
PRINT BELT ON TEST.                          1
                                             2
PRINTER NOT READY DUE TO                     3
COVER, THROAT OR END OF FORMS.               4
CORRECT CONDITION AND                        5
PRESS ENTER TO CONTINUE              0354    6
```

```
PRINT BELT ON TEST.                          1
                                             2
PROGRAM WILL ISSUE COMMAND TO START          3
THE PRINT BELT.                              4
                                             5
PRESS 'ENTER' TO CONTINUE            0355    6
```

WHEN DISPLAY 0355 OCCURS, THE PROGRAM IS READY TO RESET THE LINE PRINTER (BELT WILL STOP IF IT'S RUNNING) AND ISSUE A BELT GO COMMAND. IF THE BELT WAS ALREADY TURNED ON BY THIS PROGRAM, THE BELT GO REMAINS ACTIVE, UNTIL 'ENTER' IS PRESSED AND THEN THE RESET AND BELT GO COMMAND IS RE-ISSUED.

```
                                             1
                                             2
 BELT GO IS BEING ISSUED.                    3
                                             4
                                             5
                                      0356   6
```

THIS DISPLAY OCCURS FOR A COUPLE OF SECONDS WHILE THE LINE PRINTER IS RESET AND THE BELT GO COMMAND IS ISSUED.

LINE PRINTER WORST PROBABILITY PRINT PATTERNS 0357
OPTION MENU

```
              1          2          3          4
     1        0          0          0          0
    ----------------------------------------------
 1 | WORST PROBABILITY PRINT PATTERNS             |
   |                                              |
 2 | SELECT ONE OF THE PATTERNS:                  |
   |                                              |
 3 | (1) 5,5,* FOR 50-155 LPM PRINTER             |
   |                                              |
 4 | (2) 5,5,5,* FOR 285 LPM PRINTER              |
   |                                              |
 5 |                                              |
   |                                              |
 6 |  _ <------ENTER SELECTION              0357  |
   |                                              |
    ----------------------------------------------
```

THESE PATTERNS INDICATE THE NUMBER OF HAMMERS THAT WILL BE FIRED ON A PARTICULAR SUBSCAN. FOR EXAMPLE: ON PATTERN 1, 5 HAMMERS WILL FIRE ON SUBSCAN 1 AND 5 ON SUBSCAN 2 AND THE REST OF THE LINE IS RANDOM.

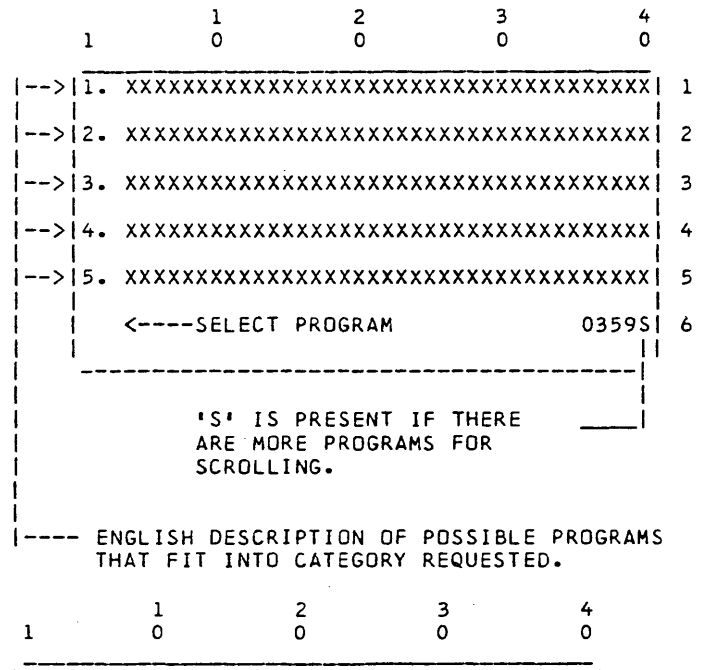
LINE PRINTER H PATTERN PRINT TEST

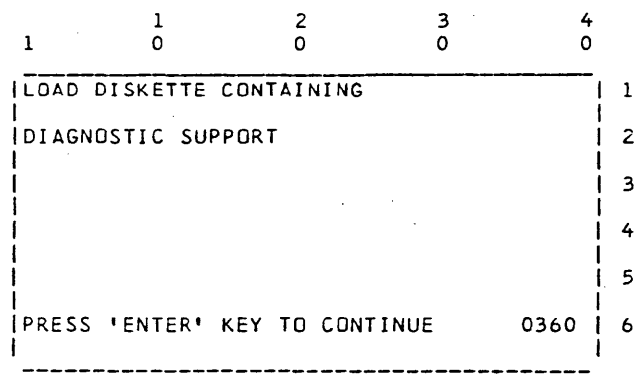
0358

```
              1          2          3          4
     1        0          0          0          0
    ----------------------------------------------
   | H PATTERN PRINT TEST                         | 1
   |                                              |
   |                                              | 2
   |                                              |
   |                                              | 3
   |                                              |
   |                                              | 4
   |                                              |
   |                                              | 5
   |                                              |
   |                                        0358  | 6
   |                                              |
    ----------------------------------------------
```

THIS PROGRAM WILL PRINT FULL LINES OF H'S
AS LONG AS THE PROGRAM IS ALLOWED TO RUN.
PRESS INQUIRY KEY TO EXIT.

HELP PROGRAM (HELP) 0359 & 0360





SELECTED DEVICE IS A FEATURE. LOAD DISKETTE CONTAINING ITS SUPPORT AND CONTINUE.

HELP PROGRAM 0361

```
          1         2         3         4
 1        0         0         0         0
 ___________________________________________
|NO PROGRAMS AVAILABLE ON THIS DISKETTE     | 1
|                                           |
|                                           | 2
|                                           |
|                                           | 3
|                                           |
|                                           | 4
|                                           |
|                                           | 5
|                                           |
|PRESS 'ENTER' KEY TO CONTINUE      0361    | 6
|___________________________________________|
```

CURRENT DISKETTE DOES NOT CONTAIN THE PROGRAM SUPPORT. MOUNT CORRECT DISKETTE AND CONTINUE.

HELP PROGRAM - MAIN MENU 0362

```
          1         2         3         4
 1        0         0         0         0
 ___________________________________________
|SELECT AREA                                | 1
|                                           |
| 1. MAP DIAGNOSTICS                        | 2
|                                           |
| 2. SPECIAL DIAGNOSTICS                    | 3
|                                           |
| 3. UTILITIES                              | 4
|                                           |
| 4. OTHER DIAGNOSTIC SUPPORT               | 5
|                                           |
--->  <-----SELECTION             0362      | 6
|   |___________________________________________|
|__ SEE GENERAL PROGRAM AREAS DESCRIBED ON NEXT PAGE.
```

HELP PROGRAM - MAIN MENU (CONTINUED) 0362

MAP DIAGNOSTICS

THE MDI-MAP PROGRAMS THAT FAULT ISOLATE PROBLEMS FOR A DEVICE.

SPECIAL DIAGNOSTICS

STAND-ALONE PROGRAMS THAT PERFORM A SPECIFIC FUNCTION FOR A DEVICE.

UTILITIES

SPECIAL OVERALL SYSTEM SUPPORT PROGRAMS TO DO VARIOUS 'HOUSEKEEPING' FUNCTIONS AND TESTING.

OTHER DIAGNOSTIC SUPPORT

DIAGNOSTIC PROGRAMS THAT ARE AVAILABLE FOR EXECUTION UNDER SYSTEM CONTROL. THIS SELECTION ONLY PROVIDES A DESCRIPTION OF THE TEST. THE ACTUAL PROGRAMS DO NOT RESIDE ON DIAG01.

HELP PROGRAM - DEVICE SELECTION 0363

```
           1         2         3         4
 1         0         0         0         0
 -----------------------------------------
|SELECT PROGRAM AREA                      | 1
|                                         |
| 1. XXXXXXXX        5. XXXXXXXX          | 2
|                                         |
| 2. XXXXXXXX        6. XXXXXXXX          | 3
|                                         |
| 3. XXXXXXXX        7. XXXXXXXX          | 4
|                                         |
| 4. XXXXXXXX        8. XXXXXXXX          | 5
|                                         |
|  <-----SELECTION                   0363 | 6
|                                         |
 -----------------------------------------
```

CHOOSE DEVICE FROM LIST OF DEVICES THAT HAVE DESIRED PROGRAM SUPPORT.

62GV WRITE ID LOOP TEST (62GV) 0364

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|WRITE ID LOOP TEST.                     | 1
|                                        |
|                                        | 2
|                                        |
|PROGRAM IS ISSUING WRITE ID'S TO        | 3
|                                        |
|SECTOR 30 (ALL HEADS) ON THE            | 4
|                                        |
|CE TRACK.                               | 5
|                                        |
|                                  0364  | 6
|                                        |
 ----------------------------------------
```

THIS DISPLAY IS SHOWN WHILE THE PROGRAM IS EXECUTING.

62GV READ ID LOOP TEST VIA ADDR/DATA SW-4

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|READ ID LOOP TEST - ALL SECTORS-CE TRCK | 1
|                                        |
|DATA SWITCH 4 = 0   (HEAD 0)            | 2
|                                        |
|                1   (HEAD 1)            | 3
|                                        |
|                2   (HEAD 2)            | 4
|                                        |
|                                        | 5
|                                        |
|PRESS 'ENTER' TO CONTINUE         0365  | 6
|                                        |
 ----------------------------------------
```

INFORMATION DISPLAY TO INFORM YOU THAT
DATA SWITCH 4 IS USED TO SELECT THE HEAD
ID TO BE TESTED. THE SWITCH CAN BE CHANGED
WHILE THE PROGRAM IS RUNNING.

62GV READ ID LOOP TEST VIA ADDR/DATA SW-4 (ALTERNATE) 0365

THIS DISPLAY IS SHOWN WHILE THE TEST IS EXECUTING.

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|READ ID LOOP TEST - ALL SECTORS-CE TRCK | 1
|                                        |
|DATA SWITCH 4 = 0   (HEAD 0)            | 2
|                                        |
|                1   (HEAD 1)            | 3
|                                        |
|                2   (HEAD 2)            | 4
|                                        |
|   TESTING HEAD X <------               | 5
|                        |               |
| PROGRAM IS EXECUTING   |          0365 | 6
|                        |               |
 ------------------------|---------------
  THIS SHOWS THE HEAD THAT IS CURRENTLY BEING TESTED..
```

62GV WRITE ID LOOP VIA ADDR/DATA SW-4 0367

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|WRITE ID LOOP  (SECTOR 30) CE TRACK     | 1
|                                        |
|DATA SWITCH 4 = 0   (HEAD 0)            | 2
|                                        |
|                1   (HEAD 1)            | 3
|                                        |
|                2   (HEAD 2)            | 4
|                                        |
|                                        | 5
|                                        |
|PRESS 'ENTER' TO CONTINUE          0367 | 6
|                                        |
 ----------------------------------------
```

INFORMATION DISPLAY TO INFORM THE CE
THAT DATA SWITCH 4 IS USED TO SELECT
THE HEAD ID TO BE TESTED. THE HEAD
CAN BE CHANGED WHILE THE PROGRAM IS RUNNING.

62GV WRITE ID LOOP VIA ADDR/DATA SW-4   (ALTERNATE) 0367

THIS DISPLAY IS SHOWN WHILE THE TEST IS EXECUTING.

```
          1         2         3         4
 1        0         0         0         0
  ----------------------------------------
 |WRITE ID LOOP    (SECTOR 30)  CE TRACK  | 1
 |                                        |
 |DATA SWITCH 4 = 0   (HEAD 0)            | 2
 |                                        |
 |                1   (HEAD 1)            | 3
 |                                        |
 |                2   (HEAD 2)            | 4
 |                                        |
 |   TESTING HEAD X <------               | 5
 |                          |             |
 | PROGRAM IS EXECUTING     |        0367 | 6
 |                          |             |
 |                          |             |
  --------------------------|-------------
   THIS SHOWS WHAT HEAD IS CURRENTLY BEING TESTED.
```

62GV +-1 TRACK SEEK LOOP TEST

0369

THIS DISPLAY IS SHOWN WHILE THE TEST IS BEING EXECUTED.

```
          1         2         3         4
 1        0         0         0         0
  ----------------------------------------
 |+- 1-TRACK SEEK LOOP TEST.              | 1
 |                                        |
 |                                        | 2
 |                                        |
 | PROGRAM IS SEEKING BACK AND FORTH      | 3
 |                                        |
 | +1 AND -1 CONTINUOUSLY                 | 4
 |                                        |
 |                                        | 5
 |                                        |
 |                                   0369 | 6
 |                                        |
  ----------------------------------------
```

62GV +11 TRACK SEEK RECALIBRATE LOOP TEST 0370

THIS DISPLAY IS SHOWN WHILE THE TEST IS BEING EXECUTED.

```
                 1         2         3         4
        1        0         0         0         0
       ----------------------------------------
      |+ 11-TRACK SEEK/RECALIBRATE TEST LOOP.  | 1
      |                                        |
      |                                        | 2
      |                                        |
      | PROGRAM ISSUES A RECALIBRATE AND       | 3
      |                                        |
      | THEN A + 11-TRACK SEEK.                | 4
      |                                        |
      |                                        | 5
      |                                        |
      |                                   0370 | 6
      |                                        |
       ----------------------------------------
```

62GV HEAD SELECT TEST MENU 0371

```
                 1         2         3         4
        1        0         0         0         0
       ----------------------------------------
      |HEAD SELECTION VIA SSW 4                | 1
      |                                        |
  |-> |DATA SWITCH 4 = 0   (HEAD 0)            | 2
  |   |                                        |
  |   |                1   (HEAD 1)            | 3
  |   |                                        |
  |   |                2   (HEAD 2)            | 4
  |   |    TESTING HEAD   X                    |
  |   |                  /                     | 5
  |   |                 /                      |
  |   |                /                  0371 | 6
  |   |               /                        |
  |    --------------/-------------------------
  |              AFTER HEAD SELECTION, THIS POSITION
  |         WILL INDICATE WHICH HEAD IS BEING TESTED.
  |--------------SWITCH SHOULD NOT BE RESET WHILE
                 WHILE TEST IS RUNNING.
```

THIS DISPLAY IS ALSO SHOWN WHILE THE TEST IS RUNNING. *** FOR DISPLAYS 0373 & 0374 *** SEE SECTION II, HELP DISPLAYS.

SERIAL PRINTER CHARACTER SET (SPRT1) 0375

THE FOLLOWING MESSAGE OCCURS WHEN THE CHARACTER SET TEST (SPRT1) IS SELECTED. AT EACH DEPRESSION OF THE 'ENTER' KEY , THE 64 CHARACTER SET IS PRINTED . IF THE 'KANA ON' KEY HAS BEEN PRESSED, THE 67 KATAKANA CHARACTERS ARE PRINTED.

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|   SERIAL PRINTER CHARACTER SET         | 1
|                                        |
|                                        | 2
|                                        |      THIS LINE APPEARS
|               KATAKANA                 | 3 <-- ONLY IF THE 'KANA ON'
|                                        |      KEY HAS BEEN PRESSED
|                                        | 4
|                                        |
|                                        | 5
|                                        |
| PRESS 'ENTER' KEY TO CONTINUE    0375  | 6
|                                        |
 ----------------------------------------
```

SERIAL PRINTER H/I PATTERN TEST (SPRT2) 0376

THE FOLLOWING MESSAGE OCCURS WHEN THE H/I OVERPRINT PATTERN TEST (SPRT2) HAS BEEN SELECTED. 'HI HI HI' IS PRINTED FIRST. THEN 'IH IH IH' OVERPRINTS.

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|   SERIAL PRINTER H/I PATTERN           | 1
|                                        |
|                                        | 2
|                                        |
|                                        | 3
|                                        |
|   PRESS 'INQ' TO TERMINATE TEST.       | 4
|                                        |
|                                        | 5
|                                        |
|                                  0376  | 6
|                                        |
 ----------------------------------------
```

SERIAL PRINTER RIPPLE PRINT (SPRT3) 0377

THE FOLLOWING MESSAGE OCCURS WHEN THE ALL CHARACTER RIPPLE PRINT TEST (SPRT3) HAS BEEN SELECTED. ALL 132 PRINT POSITIONS ARE FILLED WITH THE 64 CHARACTER SET WITH A BLANK IN EVERY 4TH POSITION. THE LINE IS SHIFTED LEFT EACH TIME IT PRINTS.
NOTE : PRESSING THE KANA ON KEY WILL NOT CAUSE KATAKANA CHARACTERS TO BE PRINTED.

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|   SERIAL PRINTER RIPPLE PRINT          | 1
|                                        |
|                                        | 2
|                                        |
|                                        | 3
|                                        |
|   PRESS 'INQ' TO TERMINATE TEST.       | 4
|                                        |
|                                        | 5
|                                        |
|                                  0377  | 6
|________________________________________|
```

SERIAL PRINTER FRIENDS TEST (SPRT4) 0378

THE FOLLOWING MESSAGE OCCURS WHEN THE FRIEND'S TEST (SPRT4) HAS BEEN SELECTED. THE FIRST CHARACTER ENTERED WILL BE THE ONE THAT IS PRINTED. THE NEXT CHARACTER ENTERED MUST BE A DIGIT (0 THRU 9). THIS DIGIT INDICATES THE NUMBER OF LINES TO BE SPACED AFTER THE LINE IS PRINTED. THE NEXT 3 DIGITS ARE THE DECIMAL NUMBER (001-132) OF THE STARTING PRINT POSITION. THE NEXT 3 ARE THE ENDING PRINT POSITION (001-132). THE LAST CHARACTER IS THE DIRECTION DESIRED FOR THE PRINT LINE. 'R' FOR RIGHT, 'L' FOR LEFT OR 'B' FOR BOTH.

NOTE : KATAKANA INPUT IS NOT ALLOWED.

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|   SERIAL PRINTER FRIENDS TEST          | 1
|                                        |
|ENTER CHAR. TO PRINT, NO. OF LINES TO   | 2
|                                        |
|SPACE (0-9), STRT AND END POS. AND      | 3
|                                        |
|DIRECTION TO PRINT (R,L OR B)           | 4
|                                        |
|                                        | 5
|                                        |
|H,1,001,132,B <-SELECTION          0378 | 6
|________________________________________|
```

NOTE: SELECT A DIRECTION OF R FOR UNIDIRECTIONAL PRINTERS.

SERIAL PRINTER FRIENDS TEST (SPRT4) 0378 (ALTERNATE)

THE PREVIOUS DISPLAY IS MODIFIED, IF AN INVALID ENTRY IS MADE, BY INSERTING THE WORD 'INVALID' FOLLOWING 'SELECTION'. PROGRAM THEN ALLOWS RE-ENTRY OF DIGITS.

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|   SERIAL PRINTER FRIENDS TEST          | 1
|                                        |
|                                        | 2
|                                        |
|PRESS 'INQ' TO RETURN TO OPTION MENU    | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
|H,1,001,132,B <-SELECTION INVALID  0378 | 6
|                                        |
 ----------------------------------------
```

(ALTERNATE) 0378

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|   SERIAL PRINTER FRIENDS TEST          | 1
|                                        |
|                                        | 2
|                                        |
|   CAUTION.. DO NOT PRINT FOR MORE THAN | 3
|                                        |
|     2 PAGES ----,ALLOW 5 MINUTES FOR   | 4
|                                        |
|     PRINT MAGNET COOLING..   120 CPS   | 5
|                                        |
|  PRESS 'ENTER' KEY TO CONTINUE   0378  | 6
|________________________________________|
```

THIS DISPLAY WILL ONLY BE SEEN ON SYSTEMS WITH 120 CPS PRINTERS.

SERIAL PRINTER RIPPLE WIRE TEST (SPRT5) 0379

THE FOLLOWING MESSAGE OCCURS WHEN THE RIPPLE WIRE TEST (SPRT5) HAS BEEN SELECTED. THE PATTERN IS ALTERNATING 'SLASH' & 'REVERSE SLASH'.

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|   SERIAL PRINTER RIPPLE WIRE TEST      | 1
|                                        |
|                                        | 2
|                                        |
|   PRESS 'INQ' TO TERMINATE TEST.       | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
|                                  0379  | 6
|                                        |
 ----------------------------------------
```

SERIAL PRINTER EVEN/ODD WIRE TEST (SPRT6) 0380

THE FOLLOWING MESSAGE OCCURS WHEN THE EVEN/ODD WIRE TEST (SPRT6) HAS BEEN SELECTED. THE PATTERN IS A LINE FULL OF THREE CHARACTERS FOLLOWED BY THREE BLANKS. THE CHARACTERS CONSIST OF THE 7X7 MATRIX WITH ALTERNATING 4 WIRES AND 3 WIRES.

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|   SERIAL PRINTER EVEN/ODD WIRE TEST    | 1
|                                        |
|                                        | 2
|                                        |
|   PRESS 'INQ' TO TERMINATE TEST.       | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
|                                  0380  | 6
|                                        |
 ----------------------------------------
```

SERIAL PRINTER STRESS TEST (SPRT7) 0381

THE FOLLOWING MESSAGE OCCURS WHEN THE STRESS TEST (SPRT7) HAS BEEN SELECTED. THE TEST CONSISTS OF 'H'S PRINTED IN POSITIONS 1-10. NEXT LINE IS 'H'S IN POSITIONS 2-11, ETC. UNTIL THE TEN 'H'S ARE RIPPLED TO THE RIGHT MARGIN. THEN THEY ARE RIPPLED BACK TO THE LEFT MARGIN.

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|   SERIAL PRINTER STRESS TEST           | 1
|                                        |
|                                        | 2
|                                        |
|   PRESS 'INQ' TO TERMINATE TEST.       | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
|                                  0381  | 6
|                                        |
 ----------------------------------------
```

S-PRINTER TIMING TOLERANCE TEST (SPRT9) 0382 & 0383

THE FOLLOWING MESSAGES OCCUR WHEN THE TIMING TOLERANCE TEST (SPRT9) HAS BEEN SELECTED.

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
| TIMING TEST - PLUS 10% VARIATION       | 1
|                                        |
| MOTOR AND EMITTER TIMINGS HAVE         | 2
|                                        |
| BEEN INCREASED BY 10 PERCENT.          | 3
|                                        |
| SIX LINES WILL PRINT TO TEST.          | 4
|                                        |
|  PRESS 'INQ' TO EXIT TEST.             | 5
|                                        |
|PRESS 'ENTER' KEY TO CONTINUE      0382 | 6
|                                        |
 ----------------------------------------
```

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
| TIMING TEST - MINUS 10% VARIATION      | 1
|                                        |
| MOTOR AND EMITTER TIMINGS HAVE         | 2
|                                        |
| BEEN DECREASED BY 10 PERCENT.          | 3
|                                        |
| SIX LINES WILL PRINT TO TEST.          | 4
|                                        |
|  PRESS 'INQ' TO EXIT TEST.             | 5
|                                        |
|PRESS 'ENTER' KEY TO CONTINUE      0383 | 6
|                                        |
 ----------------------------------------
```

THE TIMING VALUES FOR EMITTERS AND MOTOR ARE CHANGED IN THE RAM. THE MESSAGE IS DISPLAYED AND THE PROGRAM HALTS.
WHEN 'ENTER' IS PRESSED, THE PROGRAM PRINTS 6 LINES OF H'S, 3 IN EACH DIRECTION, WITH ERROR CHECKING. ERRORS ARE DISPLAYED.

0384

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|   TIMING VARIATION TEST                | 1
|                                        |
| CONFIGURATION DATA IS INCORRECT.       | 2
|                                        |
|    GO TO CONFIG PROGRAM.               | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
|PRESS 'ENTER' KEY TO CONTINUE     0384  | 6
|                                        |
 ----------------------------------------
```

IF THE CONFIGURATION DATA IS NOT FOUND, OR FOUND TO BE INCORRECT, THIS MESSAGE IS DISPLAYED. (PRINTER SPEED PROBABLY INVALID) . RUN 'CONFIG' PROGRAM TO CORRECT THE PROBLEM.

S-PRINTER CONTINUOUS HEAD RESTORE TEST (SPRT10) 0385

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|   SERIAL PRINTER CONTINUOUS RESTORE    | 1
|                                        |
|                                        | 2
|                                        |
|   PRESS 'INQ' TO TERMINATE TEST.       | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
|                                  0385  | 6
|                                        |
 ----------------------------------------
```

THIS MESSAGE OCCURS WHEN THE CONTINUOUS HEAD RESTORE TEST (SPRT10) HAS BEEN SELECTED. HEAD RESTORES WILL BE EXECUTED APPROXIMATELY EVERY 250 MSEC.

BSCA PROGRAM DISPLAYS (BSCA) 0400-0499

```
-----------------------------------------------
|                                             | 1
|                                             |
|  FOR DISPLAY ID'S 0400 - 0499 SEE           | 2
|                                             |
|  BSCA DIAGNOSTIC SERVICE GUIDE.             | 3
|                                             |
|                                             | 4
|                                             |
|                                             | 5
|                                             |
|                              0400 - 0499    | 6
|_____________________________________________|
```

NOTE: THE BSCA SERVICE GUIDE IS MAP SECTION 3100.

MOVE-ERROR 0503

THIS DISPLAY WILL NOT BE SEEN IF THE CORRECT PROCEDURES ARE USED FOR CONFIG, MOVE AND CUSTOMIZ. IF THE DISPLAY IS SEEN, LOAD DIAG01.

```
          1         2         3         4
  1       0         0         0         0
-----------------------------------------------
| DISKETTE IN THE 33FD DRIVE IS NOT THE       | 1
|                                             |
| -DIAG01- DISKETTE.                          | 2
|                                             |
|                                             | 3
|                                             |
| LOAD THE -DIAG01- DISKETTE.                 | 4
|                                             |
|                                             | 5
|                                             |
| PRESS 'ENTER' KEY TO CONTINUE      0503     | 6
|_____________________________________________|
```

33FD C.E. DISKETTE ANALYZE (ANAL33FD) 0504

THIS DISPLAY OCCURS WHEN THE ANALYZE OPTION IS SELECTED.

```
          1         2         3         4
  1       0         0         0         0
-------------------------------------------
| 33FD DISK - ANALYZE                     | 1
|                                         |
|                                         | 2
|                                         |
| INSERT C.E. DISKETTE TO BE ANALYZED.    | 3
|                                         |
|                                         | 4
|                                         |
|                                         | 5
|                                         |
| PRESS 'ENTER' TO CONTINUE         0504  | 6
|_________________________________________|
```

THIS DISPLAY OCCURS WHILE THE DISKETTE IS BEING ANALYZED. (ALTERNATE) 0504

```
          1         2         3         4
  1       0         0         0         0
-------------------------------------------
| 33FD DISK - ANALYZE                     | 1
|                                         |
|                                         | 2
|                                         |
|                                         | 3
|                                         |
|                                         | 4
|                                         |
|                                         | 5
|                                         |
| --PROGRAM IS EXECUTING--          0504  | 6
|                                         |
-------------------------------------------
```

33FD C.E. DISKETTE ANALYZE 0505 &0506

THIS DISPLAY OCCURS WHEN THE DISKETTE HAS BEEN ANALYZED

```
          1         2         3         4
  1       0         0         0         0
 ----------------------------------------------
 | 33FD DISK - ANALYZE                        | 1
 |                                            |
 |                                            | 2
 |                                            |
 | DISKETTE ANALYZED - NO ERRORS OCCURRED     | 3
 |                                            |
 |                                            | 4
 |                                            |
 |                                            | 5
 |                                            |
 | PRESS INQ TO RETURN TO MAIN MENU.  0506    | 6
 ----------------------------------------------
```

THIS DISPLAY OCCURS WHEN ANALYSIS DETECTS AN ERROR. 0506

```
          1         2         3         4
  1       0         0         0         0
 ---------------------------------------------
 |33FD DISK - ANALYZE                        | 1
 |                                           |
 |                                           | 2
 |                                           |
 |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX<--- THIS LINE CAN BE
 |                                           |    ONE OF THE
 |      EXPECTED CCSS = ____                 | 4    FOLLOWING:
 |                                           |      |
 |      ACTUAL   CCSS = ____                 | 5    |
 |                                           |      |
--->YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY 0506 | 6    |
|   |                                           |      |
|   ---------------------------------------------      |
|                                                      |
|___ THIS LINE CAN BE EITHER:                          |
 1. PRESS INQ TO RETURN TO MAIN MENU                   |
 2. PRESS START TO TRY ANALYZE AGAIN                   |
                                                       |
                                    1.CYLINDER NOT AS EXPECTED.
                                    2.SECTOR LENGTH NOT 512,OR
                                      4094 BYTES
                                    3.EXPECTED ADDR MARK NOT
                                      A DATA AM
                                    4.CRC ERROR READING ZZZZ FIELD
                                      (ZZZZ = DATA OR ID )
                                  5.SECTOR NUMBER NOT AS EXPECTED.
```

MOVE (MOVE) 0507 & 0508

```
          1         2         3         4
  1       0         0         0         0
----------------------------------------------
|                                            | 1
|                                            |
|                                            | 2
|                                            |
| DATA IS BEING MOVED TO 62GV                | 3
|                                            |
|                                            | 4
|                                            |
|                                            | 5
|                                            |
|                                            | 6
|                                     0507   |
----------------------------------------------
```

```
          1         2         3         4
  1       0         0         0         0
----------------------------------------------
| ALL DIAGNOSTIC SUPPORT HAS BEEN MOVED      | 1
|                                            |
| TO THE 62GV.                               | 2
|                                            |
| ----------------- NOTE -------------------| 3
|                                            |
| MOUNT -DIAG02- DISKETTE AND EXECUTE        | 4
|                                            |
| PROGRAM -CUSTOMIZ- TO MOVE SCP SUPPORT.    | 5
|                                            |
| PRESS 'ENTER' KEY TO CONTINUE       0508   | 6
----------------------------------------------
```

NOTE: THE -MOVE- PROGRAM ONLY TRANSFERS DIAGNOSTIC PROGRAM SUPPORT TO THE 62GV WHICH RESIDES ON DISKETTE -DIAG01-. TO TRANSFER SCP MODULES TO THE 62GV, LOAD DISKETTE -DIAG02- AND CALL UP AND EXECUTE PROGRAM -CUSTOMIZ-. DO NOT IMPL -DIAG02- DISKETTE.

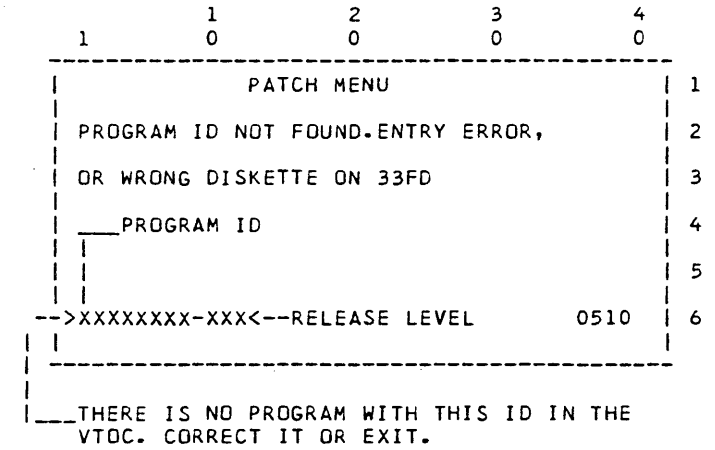
MOVE 0509

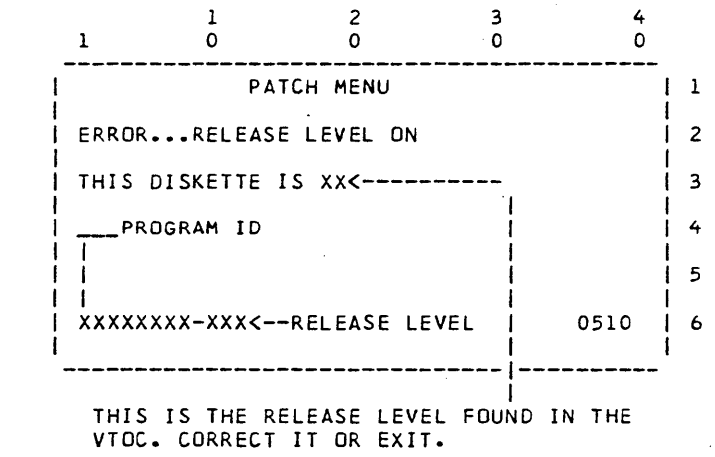
```
          1         2         3         4
  1       0         0         0         0
 ----------------------------------------------
 |     --- W A R N I N G ---                  | 1
 |                                            |
 | CPU ERROR STATISTICS WILL BE DESTROYED.    | 2
 |                                            |
 | IF THE STATISTICS ARE WANTED,              | 3
 |                                            |
 | RUN ERAP BEFORE MOVING THE CONFIGURATION   | 4
 |                                            |
 | DATA OVER TO 62GV                          | 5
 |                                            |
 |PRESS 'ENTER' TO CONTINUE          0509     | 6
 |                                            |
 ----------------------------------------------
```

PATCH MENU (PATCH) 0510

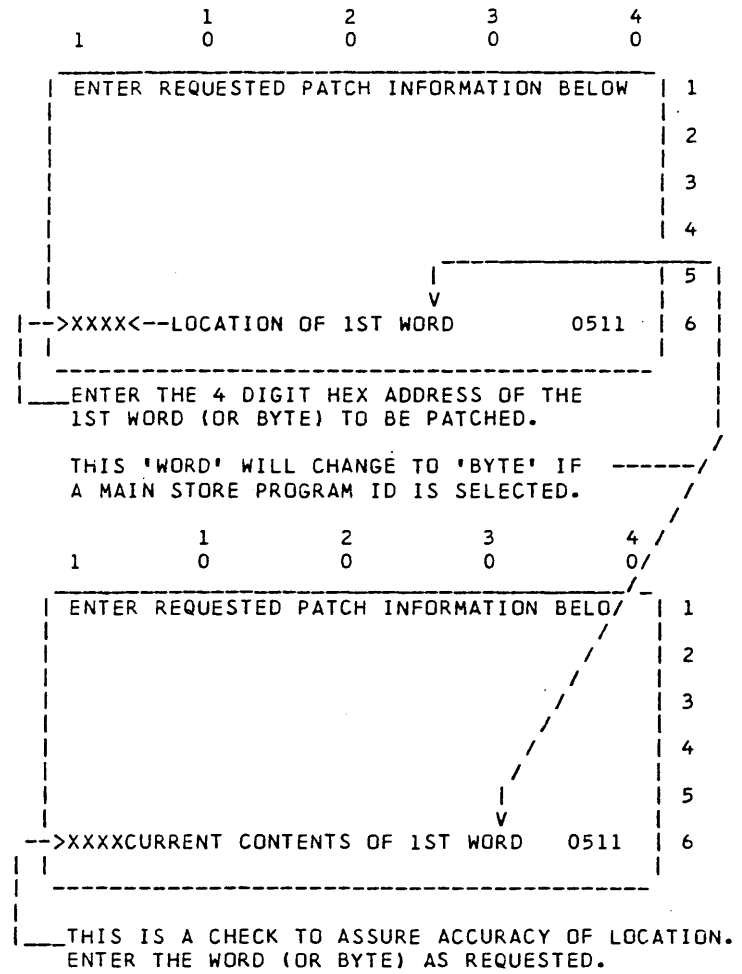
```
          1         2         3         4
  1       0         0         0         0
 ----------------------------------------
 |             PATCH MENU                 | 1
 |                                        |
 | ENTER REQUESTED DATA OR,               | 2
 |                                        |
 | PRESS 'INQ'TO EXIT                     | 3
 |                                        |
 | ___PROGRAM ID                          | 4
 | |                                      |
 | |                                      | 5
 | |                                      |
--->XXXXXXXX-XXX<--RELEASE LEVEL    0510   | 6
 | |_________|_|_____________________________|
 |           | |___ ENTER THE BASE SYSTEM TYPE. LEAVE BLANK IF
 |           |      PROGRAM RUNS ON ANY SYSTEM.
 |           |__ ENTER THE RELEASE LEVEL,LISTED IN THE
 |               VTOC, OF THE PROGRAM ID ENTERED.
 |____  ENTER ANY PROGRAM ID LISTED IN THE VTOC
       OF A DISKETTE. LEFT JUSTIFIED, 8 CHARACTERS
```

PATCH MENU ERRORS (MODIFIED) 0510

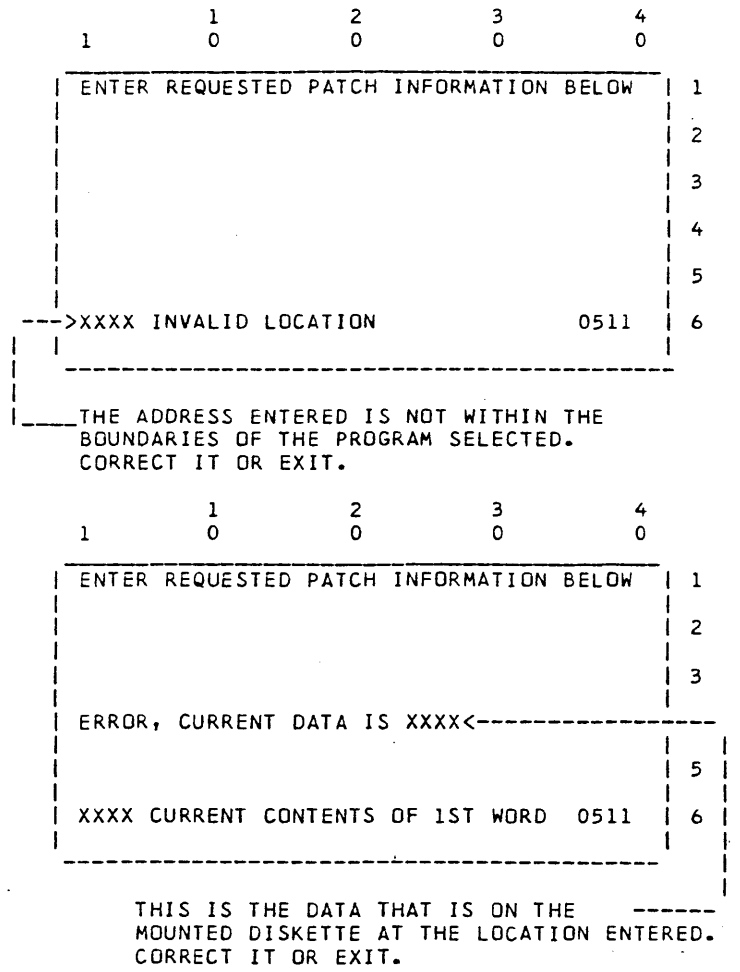




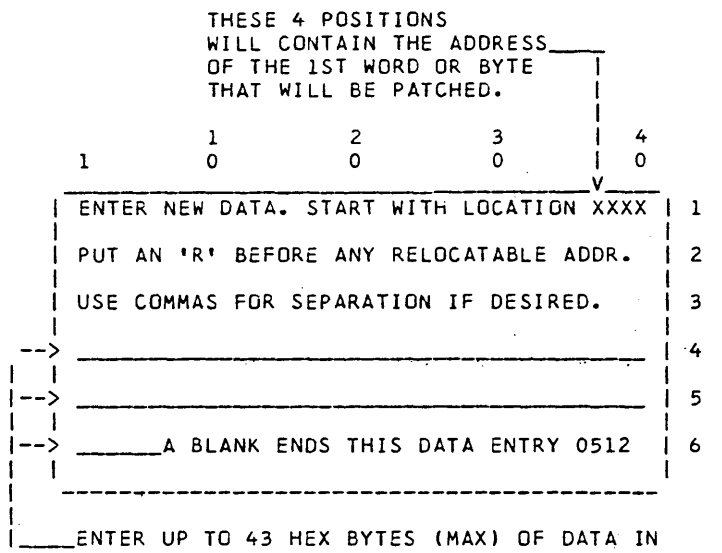
PATCH LOCATION & CHECK BYTE MENUS 0511

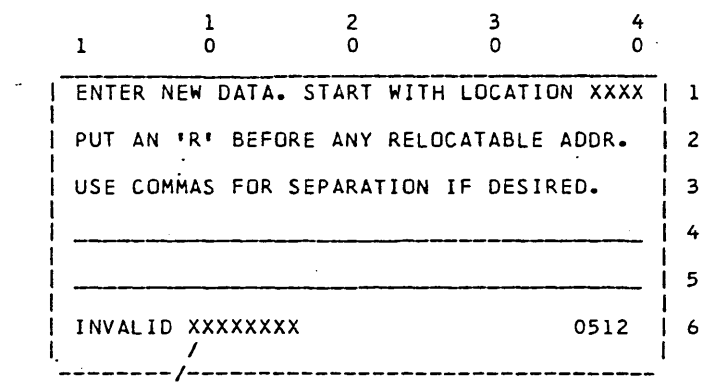


PATCH LOCATION & CHECK BYTE MENU ERRORS (MODIFIED) 0511



PATCH NEW DATA MENU 0512

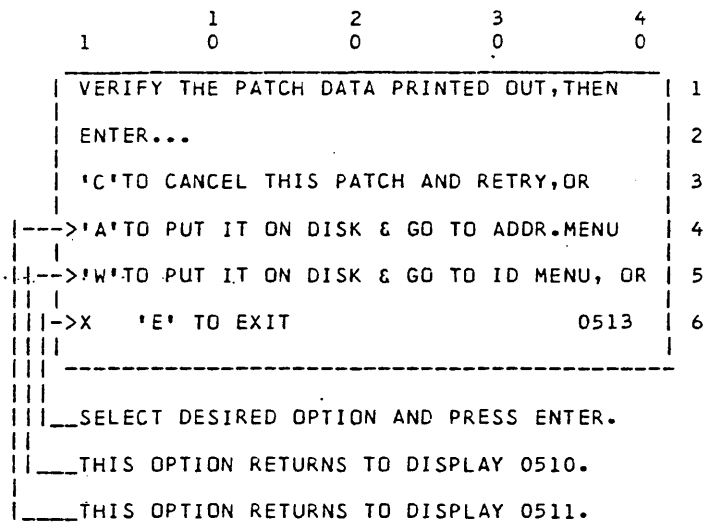




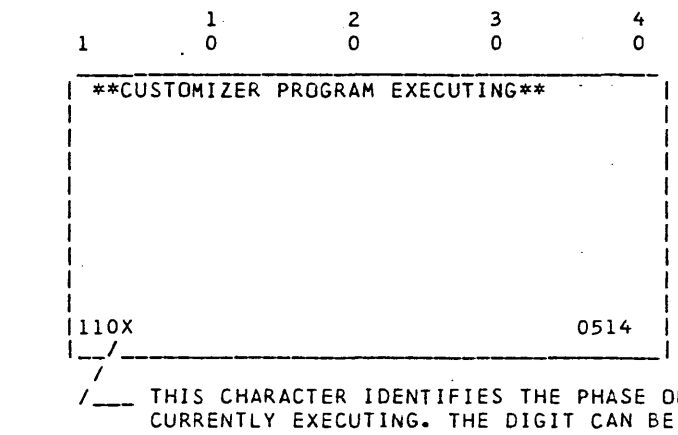
THIS WORD WILL BE 'LOCATION' IF THE END OF A PROGRAM IS ENCOUNTERED WHILE ENTERING THE PATCH DATA, OR THIS WORD WILL BE 'DATA' IF A CHARACTER OTHER THAN 0-9 OR A-F IS ENTERED.

PATCH END MENU 0513

NOTE - IF OPTION 'A' OR 'W' HAVE BEEN SELECTED AT LEAST ONCE DURING THIS PATCH SESSION, PRESSING 'INQ' WILL RETURN TO THIS DISPLAY FOR EXIT.



CUSTOMIZE (CUSTOMIZ) 0514



CUSTOMIZE 0515 & 0516

```
           1         2         3         4
 1         0         0         0         0

 ------------------------------------------
 | **CUSTOMIZER PROGRAM EXECUTING **      | 1
 |                                        |
 |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX<----
 |                                        |    |
 |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX<----|
 |                                        |    |
 |                                        | 4  |
 |                                        |    |
 |SEE THE DIAGNOSTIC SERVICE (USERS) GUIDE | 5  |
 |                                        |    |
 | ** ERROR MESSAGE  000X  **        0515 | 6  |
 |                    /                   |    |
 --------------------/---------------------    |
ERROR <-------------/                          |
NUMBER           ERROR MESSAGE MEANING ________|
------           ---------------------
```

0001 ---- UDT ON DISK & DISKETTE DON'T COMPARE
0002 ---- EXTRN LABEL HAS NO MATCH IN ENTRY TABLE
CS@ 0073=EXTRN @ CS@ 0074=MOD #
0003 ---- MODULE NUMBER NOT FOUND IN VTOC
WR3(H) CONTAINS THE MODULE NUMBER
0004 ---- A READ OR WRITE TO 33FD OR 62GV FAILED
0005 ---- A DUPLICATE LABEL FOUND IN ENTRY TABLE
CS@ 0074=MOD # WR1=LABEL @ IN MS
0006 ---- NIETHER MODULE 01 NOR 02 IS IN CVTOC

EXCEPT FOR ERROR 0004, RE-RUN CONFIG, MOVE AND CUSTOMIZ PROGRAMS. USE YOUR B/O SUPPORT STRUCTURE IF THE PROBLEM REMAINS. ON A 0004 ERROR, RUN 33FD AND DISK DIAGNOSTICS IN ADDITION TO CONFIG, MOVE AND CUSTOMIZE.

```
           1         2         3         4
 1         0         0         0         0

 ------------------------------------------
 |CUSTOMIZ IS COMPLETED.  TAKE ONE OF     | 1
 |                                        |
 |THE FOLLOWING ACTIONS:                  | 2
 |                                        |
 |1.  INSERT DIAG01 AND PRESS INQ KEY TO  | 3
 |                                        |
 |    RETURN TO THE OPTION MENU.          | 4
 |                                        |
 |2.  IMPL FROM DISK TO LOAD SCP.         | 5
 |                                        |
 | PRESS 'ENTER' KEY TO CONTINUE     0516 | 6
 |                                        |
 ------------------------------------------
```

CONFIGURATOR (CONFIG) 0519 & 0520

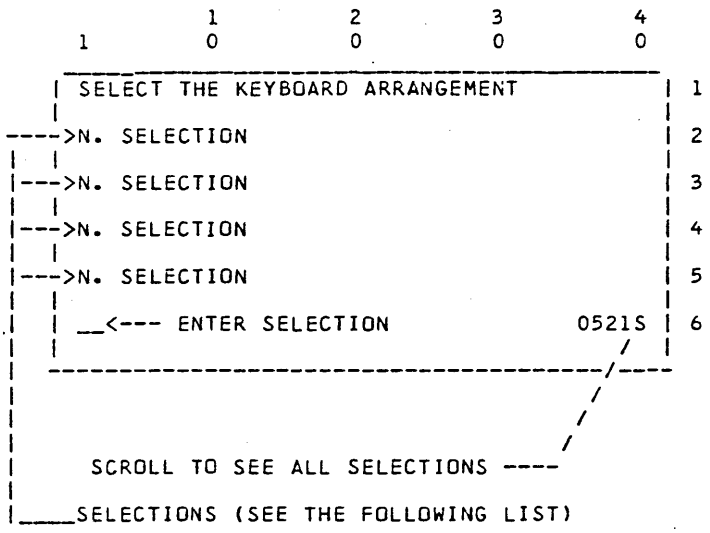
```
          1         2         3         4
 1        0         0         0         0
-----------------------------------------------
|SYSTEM CONFIGURATOR                          | 1
|                                             |
|                                             | 2
|                                             |
|DISKETTE IN 33FD IS NOT -DIAG01-             | 3
|                                             |
|                                             | 4
|                                             |
|MOUNT THE -DIAG01- DISKETTE                  | 5
|                                             |
|PRESS 'ENTER' KEY TO CONTINUE      0519      | 6
|                                             |
-----------------------------------------------
```

CONFIGURATOR INFORMATION DISPLAY

```
          1         2         3         4
 1        0         0         0         0
-----------------------------------------------
| CAUTION: IF ANY RPQ'S ARE INSTALLED ON      | 1
|                                             |
| THIS SYSTEM, THEY MAY AFFECT YOUR CON-      | 2
|                                             |
| FIGURATION AND DIAGNOSTICS. REFER TO VOL    | 3
|                                             |
| 101 FOR A DESCRIPTION OF YOUR RPQ'S. ANY    | 4
|                                             |
| PREVIOUS CONFIGURATION OF THIS DIAG01 IS    | 5
|                                             |
| PUT IN THE MENU'S.  'PRESS ENTER'  0520     | 6
|                                             |
-----------------------------------------------
```

*** WARNING *** UNLESS THIS CONFIGURATION DATA AGREES EXACTLY WITH THE ACTUAL SYSTEM CONFIGURATION, VARIOUS PROBLEMS WILL RESULT. SEE THE MACHINE LEVEL HISTORY IN SLD VOL. 1 FOR THE CORRECT CONFIGURATION. STORAGE SIZES OF 24K OR 32K WILL BE INDICATED. IF THERE IS NO STORAGE SIZE LISTED, ASSUME 16K.

CONFIGURATOR KEYBOARD ARRANGEMENT DISPLAY 0521



1. USA, OR AUS/GER(QWERTY)
2. USA, OR AUS/GER OR ASCII
3. AUSTRIA/GERMANY (QWERTZ)
4. FINLAND
5. BRAZIL
6. DENMARK
7. FRANCE II/BELGIUM (AZERTY)
8. ITALY
9. JAPAN
10. NORWAY
11. SPAIN
12. SPANISH SPEAKING
13. SWEDEN
14. FRANCE I(QWERTY)
15. UNITED KINGDOM
16. UNITED KINGDOM 2
17. KATAKANA
18. PORTUGAL

****
NOTE:
INFORMATION ON THE FEATURES AND CONFIGURATION OF YOUR SYSTEM CAN BE FOUND IN SLD VOL.1 ON THE MACHINE LEVEL HISTORY PAGE.
****

CONFIGURATOR FEATURE MENU 0522 & 0523

```
          1         2         3         4
  1       0         0         0         0
-------------------------------------------
|                                         | 1
|                                         |
|  ARE THERE FEATURE  DEVICES ON          | 2
|                                         |
|  THE SYSTEM ?       Y - YES             | 3
|                                         |
|                     N - NO              | 4
|                                         |
|                                         | 5
|                                         |
| _<--- ENTER 'Y' OR 'N'           0522   | 6
|                                         |
 -----------------------------------------
```

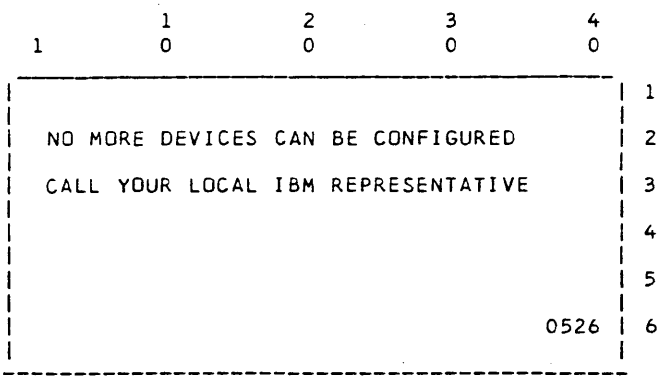
IF YOUR SYSTEM HAS BSCA/SDLC, DATA RECORDER, MAG CARD UNIT OR 1255, ENTER A 'Y'. INFORMATION ABOUT FEATURES THAT ARE ON YOUR SYSTEM CAN BE FOUND ON THE YELLOW 'HARD CARD' IN MLM VOLUME 1.

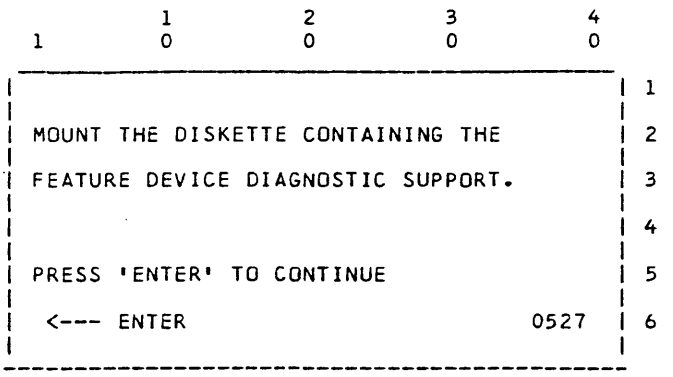
```
          1         2         3         4
  1       0         0         0         0
-------------------------------------------
|                                         | 1
|                                         |
|                                         | 2
|                                         |
|  MOUNT THE -DIAG01- DISKETTE SO THAT    | 3
|                                         |
|  THE CONFIGURATION DATA CAN BE STORED.  | 4
|                                         |
|                                         | 5
|                                         |
| PRESS 'ENTER' TO CONTINUE        0523   | 6
|                                         |
 -----------------------------------------
```

```
          1         2         3         4
 1        0         0         0         0
-----------------------------------------------
| SELECT FEATURES DESIRED ON THIS DISKETTE.| 1
|                                          |
| 1. XXXXXXXX          5. XXXXXXXX         | 2
|                                          |
| 2. XXXXXXXX          6. XXXXXXXX         | 3
|                                          |
| 3. XXXXXXXX          7. XXXXXXXX         | 4
|                                          |
| 4. XXXXXXXX          8. XXXXXXXX         | 5
|                                          |
| 3     <----- SEPARATE BY COMMAS    0524  | 6
|                                          |
-------------------------------------------
```

```
          1         2         3         4
 1        0         0         0         0
-----------------------------------------------
|                                          | 1
|                                          |
|  ARE THERE ANY MORE FEATURE DISKETTES    | 2
|                                          |
|  FOR THIS SYSTEM?   Y - YES              | 3
|                                          |
|                     N - NO               | 4
|                                          |
|                                          | 5
|                                          |
|  <--- ENTER 'Y' OR 'N'             0525  | 6
|                                          |
-------------------------------------------
```

CONFIGURATOR 0526 & 0527





```
          1         2         3         4
 1        0         0         0         0
┌──────────────────────────────────────────┐
| DO YOU WANT TO WRITE THE CONFIGURATION   | 1
|                                          |
| DATA ON 62GV ?                           | 2
|                                          |
|                                          | 3
|                                          |
|              Y - YES                     | 4
|                                          |
|              N - NO                      | 5
|                                          |
| Y <--- ANSWER                      0528  | 6
└──────────────────────────────────────────┘
```

```
          1         2         3         4
 1        0         0         0         0
┌──────────────────────────────────────────┐
| FEATURE DEVICES HAVE BEEN DEFINED BEFORE.| 1
|                                          |
| DO YOU WANT TO DELETE CONFIGURATION FOR  | 2
|                                          |
| FEATURE DEVICES ?    Y - YES             | 3
|                                          |
|                      N- NO               | 4
|                                          |
|                                          | 5
|                                          |
| N <--- ENTER 'Y' OR 'N'            0529  | 6
|                                          |
└──────────────────────────────────────────┘
```

CONFIGURATOR 0530 & 0531

```
          1         2         3         4
1         0         0         0         0
 ------------------------------------------
|           MAIN STORE SIZE ?              | 1
|                                          |
| 1.  16K (BASE SYSTEM)                    | 2
|                                          |
| 2.  24K                                  | 3
|                                          |
| 3.  32K                                  | 4
|                                          |
|                                          | 5
|                                          |
|  <--- SELECTION                    0530  | 6
|                                          |
 ------------------------------------------
```

THE PREVIOUSLY DEFINED MAIN STORAGE SIZE WILL BE SHOWN.

```
          1         2         3         4
1         0         0         0         0
 ------------------------------------------
|       CONTROL STORE SIZE  ?              | 1
|                                          |
| 1. 4K  (BASE SYSTEM)                     | 2
|                                          |
| 2. 8K                                    | 3
|                                          |
|                                          | 4
|                                          |
|                                          | 5
|                                          |
| 1<---- SELECTION                   0531  | 6
|                                          |
 ------------------------------------------
```

THE PREVIOUSLY DEFINED CONTROL STORAGE SIZE WILL BE SHOWN.

CRT/KYBD FEATURES

0532

```
          1           2           3           4
1         0           0           0           0
 ----------------------------------------------
|  DOES CRT/KYBD HAVE LOWER CASE               | 1
|                                              |
|  FEATURE ?        Y = YES                    | 2
|                                              |
|                   N = NO                     | 3
|                                              |
|                                              | 4
|                                              |
|                                              | 5
|                                              |
|Y <---ENTER Y OR N                      0532  | 6
|                                              |
 ----------------------------------------------
```

33FD CONFIGURATOR

0536

```
          1           2           3           4
1         0           0           0           0
 ------------------------------------------------
|           33FD CONFIGURATOR                    | 1
|                                                |
| IS ASCII FEATURE INSTALLED?                    | 2
|                                                |
|                                                | 3
|                                                |
|                                                | 4
|                                                |
|                                                | 5
|                                                |
| - <-----(Y OR N)                        0536   | 6
|                                                |
 ------------------------------------------------
```

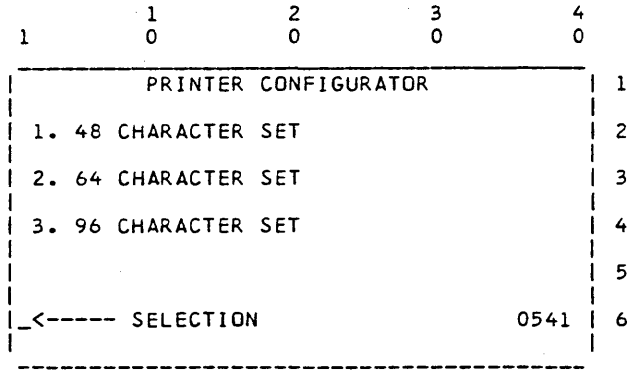
PRINTER CONFIGURATOR (SPEED) 0539 & 0540

THESE DISPLAYS REQUIRE YOU TO SELECT THE PRINTING SPEED BY ENTERING THE CORRESPONDING NUMBER .

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|  SERIAL PRINTER  CONFIGURATOR          | 1
|                                        |
| 1. 40  CHAR./SEC UNIDIRECTIONAL        | 2
|                                        |
| 2. 40  CHAR./SEC BIDIRECTIONAL         | 3
|                                        |
| 3. 80  CHAR./SEC                       | 4
|                                        |
| 4. 120 CHAR./SEC                       | 5
|                                        |
|1<----- SELECTION                 0539  | 6
|                                        |
 ----------------------------------------
```

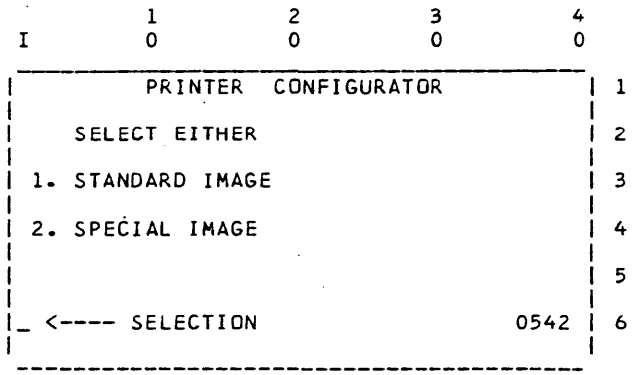
```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|          PRINTER  CONFIGURATOR         | 1
|                                        |
| 1. 50 LINES PER MINUTE                 | 2
|                                        |
| 2.100 LINES PER MINUTE                 | 3
|                                        |
| 3.155 LINES PER MINUTE                 | 4
|                                        |
| 4.285 LINES PER MINUTE                 | 5
|                                        |
|_<----- SELECTION                 0540  | 6
|                                        |
 ----------------------------------------
```

LINE PRINTER CONFIGURATOR 0541 & 0542



THIS DISPLAY REQUIRES YOU TO SELECT THE PRINT IMAGE SIZE BY ENTERING THE CORRESPONDING NUMBER.

THIS DISLAY OFFERS THE OPTION OF CHANGING THE PRINT IMAGE IN THE EVENT THE PRINTER DOES NOT HAVE A STANDARD IMAGE.



LINE PRINTER CONFIGURATOR 0543 & 0544

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|         PRINTER CONFIGURATOR           | 1
|                                        |
|USE THE CHART JUST PRINTED TO CHANGE    | 2
|                                        |
|THE      IMAGE. USE THE FORMAT: NNN,XX  | 3
|                                        |
|(NNN=IMAGE POSITION & XX=EBCDIC). PRESS | 4
|                                        |
|ENTER TO CHANGE. ENTER 'END' TO EXIT    | 5
|                                        |
|NNN,XX <----                      0543  | 6
|                                        |
 ----------------------------------------
```

THIS DISPLAY ALLOWS THE C.E. TO CHANGE ANY OR ALL POSITIONS OF THE PRINT IMAGE.

IE: ENTERING '035,4A' WOULD CHANGE IMAGE POSITION #35 FROM ITS STANDARD VALUE TO X'4A'.

IN ADDITION TO THE CHART PRINTED ALONG WITH THIS DISPLAY, THE CE MUST HAVE KNOWLEDGE OF OR INFORMATION SHOWING WHICH POSITIONS TO CHANGE FOR HIS SPECIAL IMAGE.

THE CURRENT IMAGE HAS JUST BEEN PRINTED FOR VERIFICATION. IT SHOULD BE SAVED. A 'Y' REPLY TERMINATES PRINTER CONFIGURATION. AN 'N' REPLY WILL CAUSE RE-EXECUTION OF THE ENTIRE LINE PRINTER PORTION OF THE CONFIGURATOR PROGRAM.

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|         PRINTER CONFIGURATOR           | 1
|                                        |
|                                        | 2
|                                        |
| THE PRINT IMAGE AND ITS CORRESPONDING  | 3
|                                        |
| EBCDIC HAVE PRINTED. SAVE THIS.        | 4
|                                        |
| IS THIS CORRECT? ENTER Y OR N          | 5
|                                        |
|Y <----                           0544  | 6
|                                        |
 ----------------------------------------
```

LINE PRINTER CONFIGURATOR 0545 & 0546

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|          PRINTER CONFIGURATOR          | 1
|                                        |
|  1.   KATAKANA PRINT BELT ?            | 2
|                                        |
|  2.   8 LPI CARRIAGE FEATURE ?         | 3
|                                        |
|  3.   1/2 INDEX CARRIAGE FEATURE ?     | 4
|                                        |
|  4.   NONE OF THE ABOVE.               | 5
|                                        |
| 3<-----SELECTION              0545     | 6
|                                        |
 ----------------------------------------
```

THIS DISPLAY OCCURS DURING THE LINE PRINTER CONFIGURATION IF A KATAKANA PRINT BELT HAS BEEN SELECTED.

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|          PRINTER CONFIGURATOR          | 1
|                                        |
| 1.  64 CHARACTER SET                   | 2
|                                        |
| 2.  96 CHARACTER SET                   | 3
|                                        |
| 3. 128 CHARACTER SET                   | 4
|                                        |
|                                        | 5
|                                        |
|  <-----SELECTION              0546     | 6
|                                        |
 ----------------------------------------
```

62GV CONFIGURATOR 0548 & 0549

THESE DISPLAYS OCCUR DURING THE 62GV PORTION OF THE CONFIGURATOR PROGRAM. THE SIZE LAST CONFIGURED IS DISPLAYED. A 'Y' REPLY TERMINATES THE 62GV CONFIGURATION. AN 'N' REPLY WILL ALLOW YOU TO CHANGE THE SIZE ON ANOTHER DISPLAY.

```
         1         2         3         4
1        0         0         0         0
-------------------------------------------
|           62GV CONFIGURATOR              | 1
|               |---------------------------CAN BE 3, 5, 9, OR 13.
|               |                           | 2
|               V                           |
| THE 62GV IS A X MEGABYTE FILE.            | 3
|                                           |
| IS THIS CORRECT?  (ENTER Y OR N)          | 4
|                                           |
|                                           | 5
|                                           |
|Y<----- REPLY                        0548  | 6
-------------------------------------------
```

YOU ARE ALLOWED TO SPECIFY THE SIZE OF THE 62GV WHICH IN TURN CHANGES THE CE CYLINDER. IF THE INCORRECT SIZE IS ENTERED THE HARDWARE DIAGNOSTICS WILL CATCH IT WHEN THEY TRY TO EXECUTE.

```
          1         2         3         4
1         0         0         0         0
    ---------------------------------------
    |          DISK CONFIGURATOR          | 1
    |                                     |
    | 1 = 5   MEGABYTE                    | 2
    |                                     |
    | 2 = 9   MEGABYTE                    | 3
    |                                     |
    | 3 =13   MEGABYTE                    | 4
    |                                     |
    | 4 = 3   MEGABYTE                    | 5
    |                                     |
    |_ <---- ENTER SIZE (1, 2, 3 OR 4)  0549 | 6
    |                                     |
    ---------------------------------------
```

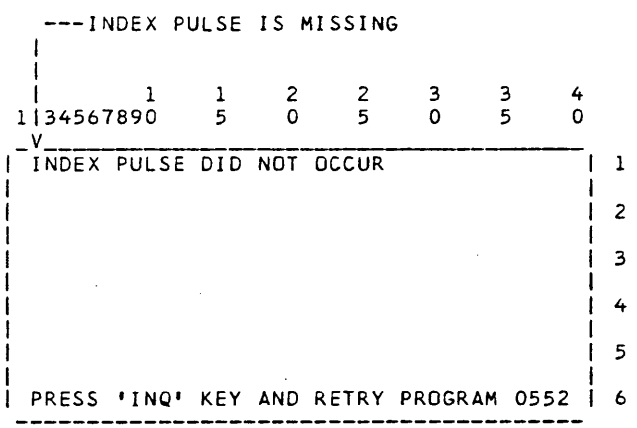
DISK INITIALIZE (INITDISK) 0550 & 0551

THIS DISPLAY INDICATES THAT THE MAIN STORE LOAD OF THE MESSAGES, TABLES AND WORK AREAS, WAS NOT FOUND ON THE DISKETTE OR AN ERROR OCCURRED IN LOADING.

```
          1    1    2    2    3    3    4
 1234567890    5    0    5    0    5    0
 ----------------------------------------
|                                        | 1
|                                        |
|$INITMSG DID NOT LOAD                   | 2
|                                        |
| ENTER KEY WILL CAUSE PROGRAM TO        | 3
|                                        |
|   RESTART                              | 4
|                                        |
|                                        | 5
|                                        |
| PRESS 'ENTER' TO CONTINUE         0550 | 6
|                                        |
 ----------------------------------------
```

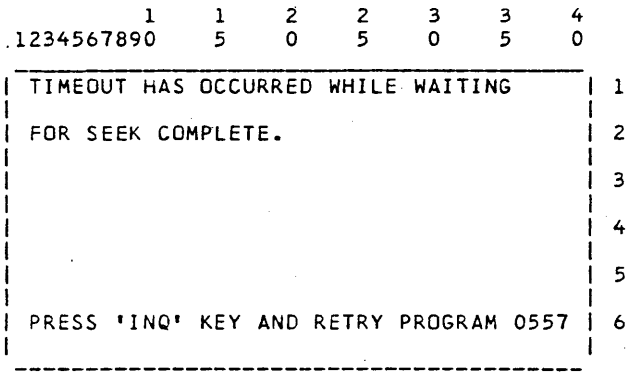
```
|---1 OR MORE OF THE 59 SECTOR PULSES
|   IS MISSING
|
|
|          1    1    2    2    3    3    4
|  1234567890    5    0    5    0    5    0
|  ----------------------------------------
|-> SECTOR PULSES ARE NOT CORRECT          | 1
  |                                        |
  |                                        | 2
  |                                        |
  |                                        | 3
  |                                        |
  |                                        | 4
  |                                        |
  |                                        | 5
  |                                        |
  | PRESS 'INQ' KEY AND RETRY PROGRAM 0551 | 6
  |                                        |
   ----------------------------------------
```

DISK INITIALIZE 0552 & 0557



DISK INITIALIZE 0557

A SEEK COMMAND HAS BEEN ATTEMPTED AND TOO LONG A TIME HAS ELAPSED WHILE WAITING FOR SEEK COMPLETE



DISK INITIALIZE 0558 & 0559

NO DEFECTIVE SECTORS ARE ALLOWED ON CYLINDER 0 OR 1. REPLACEMENT OF DISK ENCLOSURE IS NECESSARY IF DEFECTS ARE FOUND ON THESE TRACKS.

```
          1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
 ---------------------------------------
| A DEFECTIVE SECTOR HAS BEEN FOUND ON  | 1
|                                       |
|              CYLINDER                 | 2
|                                       |
|                XXXX<------------------------ CYLINDER ID (0000
|                                       |       OR 0001) APPEARS HERE
| NO DEFECTS ARE ALLOWED ON THIS CYL.   | 4
|                                       |
|                                       | 5
|                                       |
| PRESS 'INQ' KEY AND RETRY PROGRAM 0558| 6
 ---------------------------------------
```

AN ID CANNOT BE WRITTEN IN A CERTAIN LOCATION. THIS NECESSITATES DISK ENCLOSURE REPLACEMENT

```
          1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
 ---------------------------------------
| A DEFECTIVE SECTOR HAS BEEN FOUND ON  | 1
|                                       |
| WHICH AN  ID CANNOT BE WRITTEN,       | 2
|                                       |
|        REGULAR OR EXTENDED.           | 3
|                                       |
|                                       | 4
|                                       |
|                                       | 5
|                                       |
| PRESS 'INQ' KEY AND RETRY PROGRAM 0559| 6
|                                       |
 ---------------------------------------
```

DISK INITIALIZE 0560 & 0561

AN ID WAS WRITTEN IN THIS SECTOR BUT THE DATA FIELD WAS FOUND TO BE BAD, SO THE ID WAS RE-WRITTEN FLAGGED. THIS FLAGGED ID CANNOT BE READ. RETRY PROGRAM FROM START.

```
          1    1    2    2    3    3    4
 1234567890    5    0    5    0    5    0
 ------------------------------------------
| UNABLE TO WRITE FLAGGED ID. ID WAS       | 1
|                                          |
| PREVIOUSLY WRITTEN OK IN SAME SECTOR     | 2
|                                          |
|                                          | 3
|                                          |
|                                          | 4
|                                          |
|                                          | 5
|                                          |
| PRESS 'INQ' KEY AND RETRY PROGRAM 0560   | 6
|                                          |
 ------------------------------------------
```

ERRORS OCCURRING ON WRITE COMMANDS CAN BE SERIOUS PROBLEMS. MAKE NOTE OF THE ERRORS AND PROCEED AT YOUR DISCRETION.

```
          1    1    2    2    3    3    4
 1234567890    5    0    5    0    5    0
 ------------------------------------------
| ERROR OCCURRED ON WRITE COMMAND.         | 1
|                                          |
-----> XXXXXXXXXX          XXXXXXXXXX <---------
|  |                                       |     |
|----> XXXXXXXXXX          XXXXXXXXXX <---------|
|  |                                       |     |
|----> XXXXXXXXXX          XXXXXXXXXX <---------|
|  |                                       |     |
|  | PROCEED AT YOUR DISCRETION            | 5   |
|  |                                       |     |
|  | PRESS 'ENTER' TO CONTINUE       0561  | 6   |
|  |                                       |     |
|   ---------------------------------------      |
|                                                |
|___ ANY OF THE DISK ERRORS MAY BE IN THESE ______|
     VARIABLE FIELDS.
```

FOR DISK STATUS BYTES AND BITS, SEE DISPLAY 0320.

DISK INITIALIZE 0562 & 0563

A CONDITION HAS OCCURRED WHICH SHOULD NOT HAPPEN. RE-START THE PROGRAM.

```
          1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
 ----------------------------------------
|                                        | 1
|                                        |
|                                        | 2
|                                        |
| PROGRAM IS LOADED INCORRECTLY-RELOAD   | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
| PRESS 'INQ' KEY AND RETRY PROGRAM 0562 | 6
|                                        |
 ----------------------------------------
```

ALL ID'S HAVE BEEN RE-WRITTEN, ALL DATA FIELDS RE-WRITTEN, AND A LISTING OF THE CYL 2 ID CONTENTS HAS BEEN PRINTED.

```
          1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
 ----------------------------------------
|                                        | 1
|                                        |
|                                        | 2
|                                        |
|          END OF JOB                    | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
| PRESS 'ENTER' TO CONTINUE         0563 | 6
|                                        |
 ----------------------------------------
```

DISK INITIALIZE 0564 & 0565

ALL ALTERNATE SECTORS HAVE BEEN ASSIGNED. THIS CAN OCCUR DUE TO HARDWARE FAULT, IN WHICH CASE THE DATA SECTORS WITH ASSIGNED ALTERNATES MAY NOT BE BAD. REFER TO SCP OPERATING GUIDE FOR RECOVERY. IF ALL THE SECTORS ARE TRULY DEFECTIVE,DISK ENCLOSURE REPLACEMENT IS NECESSARY.

```
         1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
-----------------------------------------
| ALL ALTERNATE SECTORS ARE ASSIGNED.    | 1
|                                        |
| THEY MAY HAVE BEEN INCORRECTLY         | 2
|                                        |
| ASSIGNED DUE TO A HARDWARE FAILURE.    | 3
|                                        |
| PRESS 'ENTER' TO RE-WRITE THE ID'S     | 4
|                                        |
| IGNORING THE ALTERNATES ASSIGNED.      | 5
|                                        |
| PRESS 'ENTER' TO CONTINUE        0564  | 6
|                                        |
-----------------------------------------
```

AN UNSUCCESSFUL ATTEMPT HAS BEEN MADE TO WRITE AND READ AN EXTENDED ID

```
         1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
-----------------------------------------
|                                        | 1
|                                        |
|                                        | 2
|                                        |
| UNABLE TO WRITE/READ EXTENDED ID       | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
| PRESS 'INQ' KEY AND RETRY PROGRAM 0565 | 6
|                                        |
-----------------------------------------
```

DISK INITIALIZE 0566 & 0567

DURING EXECUTION OF THE INITIALIZE PROGRAM ERRORS OCCURRED WHICH ARE NOT NORMALLY EXPECTED. CRC AND SECTOR CONDITION CHECKS WILL NOT CAUSE THIS HALT.

```
 WILL CONTAIN CURRENT CYL_____        _____ WILL CONTAIN 0, 1 OR 2
            1    1    2    2 |  3  | 3    4
    1234567890    5    0    5 |  0  | 5    0
    _____________________________V_____V_______
   | ERRORS OCCURRED ON CYL 0XXX HD X *      | 1
   |                                         |
---->XXXXXXXXXX           XXXXXXXXXX  <-----------
|  |                                         |     |
|--->XXXXXXXXXX           XXXXXXXXXX  <-----------|
|  |                                         |     |
|--->XXXXXXXXXX           XXXXXXXXXX  <-----------|
|  |                                         |     |
|  | PROCEED AT YOUR DISCRETION              | 5   |
|  |                                         |     |
|  | PRESS 'ENTER' TO CONTINUE         0566  | 6   |
|  |                                         |     |
|   -----------------------------------------      |
|                                                  |
|___ ANY OF THE DISK ERRORS MAY BE IN THESE ______|
     VARIABLE FIELDS.
```

FOR 62GV STATUS BYTES AND BITS, SEE DISPLAY 0320.

A FLAG HAS INDICATED THAT THE CONFIGURATION PROGRAM NEEDS TO BE RUN.

```
            1    1    2    2    3    3    4
    1234567890    5    0    5    0    5    0
    ____________________________________________
   |                                            | 1
   |                                            |
   |                                            | 2
   |                                            |
   |          RUN CONFIG PROGRAM                | 3
   |                                            |
   |                                            | 4
   |                                            |
   |                                            | 5
   |                                            |
   | PRESS 'ENTER' TO CONTINUE          0567    | 6
   |                                            |
    --------------------------------------------
```

DISK INITIALIZE 0568

THIS DISPLAY IS ACTIVE DURING THE EXECUTION OF THIS PROGRAM.

```
        1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
-----------------------------------------
|          WRITING ON CYLINDER          | 1
|                                       |
|                XXXX<-------------------------
|                                       |     |
|                                       | 3   |
|                                       |     |
|                                       | 4   |
|                                       |     |
|                                       | 5   |
|                                       |     |
| PROGRAM IS EXECUTING            0568  | 6   |
|                                       |     |
-----------------------------------------     |
                                              |
THIS VARIABLE FIELD WILL CONTAIN THE PRESENT -|
CYLINDER NUMBER (HEX).
```

DISK INITIALIZE 0569

THESE DISPLAYS BEGIN THE PROCESS OF INITIALIZING THE 62GV FILE. FOLLOW THE DIRECTIONS TO CONTINUE FROM THIS POINT.

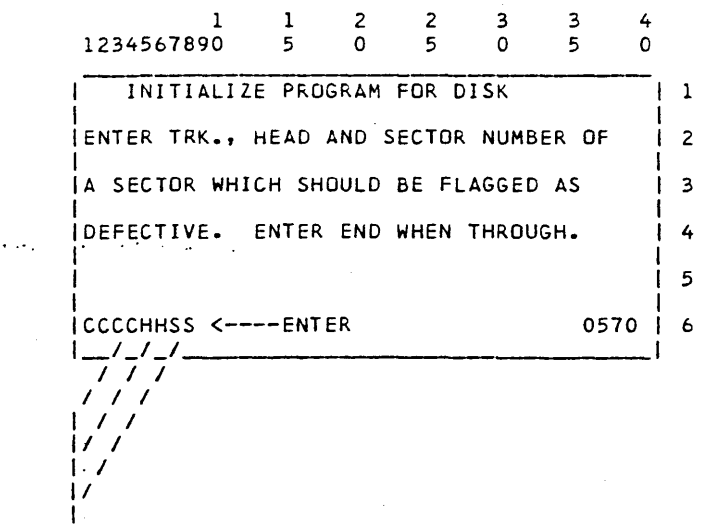
NOTE: THE NEXT THREE DISPLAYS ARE ALL NUMBERED 0569, AND ARE NEEDED TO DISPLAY THE ENTIRE TEXT OF THE MESSAGE. THE FIFTH LINE OF THE FIRST DISPLAY CONTINUES ON THE FIRST LINE OF THE SECOND DISPLAY.

```
         1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
-----------------------------------------
| >>>>>>CAUTION - SEVERE UTILITY<<<<<<  | 1
|                                       |
|THIS PROGRAM WILL DESTROY ALL DATA ON  | 2
|                                       |
| THE DISK WHILE REWRITING ID'S.        | 3
|                                       |
| THE CUSTOMER MUST BE MADE AWARE OF    | 4
|                                       |
| THIS SITUATION.  TO ATTEMPT TO SAVE   | 5
|                                       |
|PRESS 'ENTER' KEY TO CONTINUE    0569  | 6
|---------------------------------------|
```

```
          1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
 ____________________________________________
| DATA, IT MUST BE DUMPED TO DISKETTES.      | 1
|                                            |
|  IF YOU WISH TO CONTINUE WITH THIS         | 2
|                                            |
|PROGRAM, YOU MUST CHANGE THE SETTING OF     | 3
|                                            |
|    AT LEAST ONE OF THE ADDR/DATA           | 4
|                                            |
| SWITCHES FROM ITS PRESENT POSITION.        | 5
|                                            |
|PRESS 'ENTER' KEY TO CONTINUE       0569    | 6
|____________________________________________|
```

```
          1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
 ____________________________________________
|                                            | 1
|                                            |
|     PLEASE RETURN -ALL- ADDR/DATA          | 2
|                                            |
|       SWITCHES TO ZERO POSITION.           | 3
|                                            |
|                                            | 4
|                                            |
|                                            | 5
|                                            |
|PRESS 'ENTER' KEY TO CONTINUE       0569    | 6
|____________________________________________|
```

DISK INITIALIZE 0570



ENTER THE DEFECTIVE TRACK,HEAD, AND SECTOR NUMBERS IN THE POSITIONS SHOWN. ENTER ALL DEFECTIVE SECTORS INDICATED BY THE ANALDISK PROG. AS WELL AS ALL SECTORS LISTED ON THE WHITE (OR GREY) LABEL ON THE D.E.. ENTER 'END' IF THERE ARE NO BAD SECTORS OR ALL HAVE BEEN ENTERED. THESE SECTORS WILL BE FLAGGED AS DEFECTIVE AND ALTERNATES ASSIGNED.

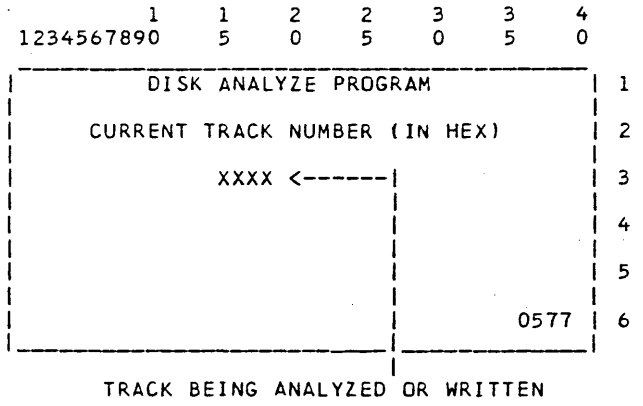
FUNCTION MENU

```
           1    1    2    2    3    3    4
  1234567890    5    0    5    0    5    0
  ----------------------------------------
 |         DISK ANALYZE PROGRAM            | 1
 |                                         |
 | CHOOSE THE FUNCTION WHICH YOU WANT      | 2
 |                                         |
 |     THIS PROGRAM TO PERFORM.            | 3
 |                                         |
 |1.ANALYZE THE ENTIRE DISK.               | 4
 |                                         |
 |2.REWRITE SELECTED ID'S AND ZERO DATA.   | 5
 |                                         |
 |  <-- SELECTION                     0575 | 6
 /_________________________________________|
/
/___ OPTION 1 SHOULD BE SELECTED FIRST TO DETERMINE
     THE CONDITION OF THE DISK SURFACE.
```

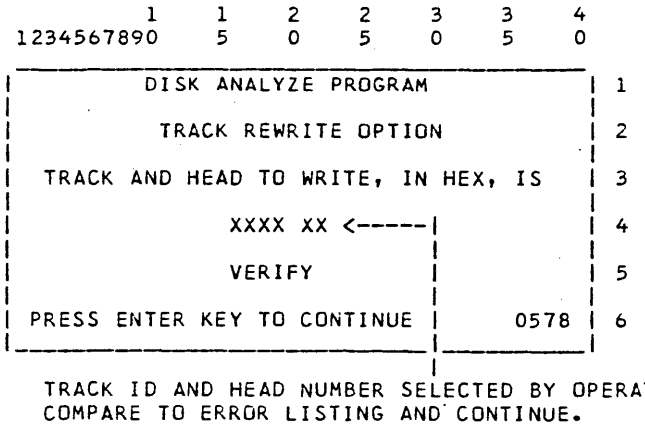
REWRITE MENU

```
           1    1    2    2    3    3    4
  1234567890    5    0    5    0    5    0
  ----------------------------------------
 |         DISK ANALYZE PROGRAM            | 1
 |                                         |
 |     TRACK REWRITE OPTION                | 2
 |                                         |
 | ENTER TRACK ID AND HEAD NUMBER OF       | 3
 |                                         |
 |  TRACK TO BE REWRITTEN, IN HEX.         | 4
 |                                         |
 |  ENTER 'END' WHEN FINISHED. <-------------- ENTERING END WILL
 |                                         |  CAUSE END OF JOB
--->CCCCHH<-- SELECTION               0576 | 6    DISPLAY.
|   |__________________________________________|
|
|___  ENTER THE TRACK AND HEAD AS PRINTED ON THE ERROR
    LISTING PRINTED DURING THE ANALYZE FUNCTION.
```

62GV ANALYZE PROGRAM 0577 & 0578



TRACK BEING ANALYZED OR WRITTEN



TRACK ID AND HEAD NUMBER SELECTED BY OPERATOR.
COMPARE TO ERROR LISTING AND CONTINUE.

62GV ANALYZE PROGRAM 0579 & 0580

```
          1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
 ----------------------------------------
|        DISK ANALYZE PROGRAM            | 1
|                                        |
|THIS MESSAGE SHOULD DISPLAY FOLLOWING   | 2
|                                        |
|  RECOVERY FROM A PROC CHECK ERROR.     | 3
|                                        |
| IF NOT TRUE - PRESS 'INQ' TO END JOB.  | 4
|                                        |
|                                        | 5
|                                        |
| PRESS 'ENTER' TO CONTINUE        0579  | 6
 ----------------------------------------
```

A SYSTEM RESET & CE START AFTER A PROCESS CHECK DISPLAYS THIS MESSAGE.
CONTINUING WILL CAUSE A PRINTOUT OF THE TRACK AND HEAD NUMBER THAT WAS BEING ANALYZED.

END DISPLAY

```
          1    1    2    2    3    3    4
1234567890    5    0    5    0    5    0
 ----------------------------------------
|        DISK ANALYZE PROGRAM            | 1
|                                        |
|                                        | 2
|                                        |
|                                        | 3
|                                        |
|            END OF JOB                  | 4
|                                        |
|                                        | 5
|                                        |
| PRESS ENTER TO CONTINUE          0580  | 6
|----------------------------------------|
```

PRESSING 'INQ' AT ANY TIME WHILE PROGRAM IS EXECUTING CAUSES THIS DISPLAY.

62GV ANALYZE PROGRAM (LEFT-HALF) 0581

SURFACE ANALYZE RESULTS PRINTOUT

NOTE: IF NO ERRORS ARE DISCOVERED, AN 'OK MESSAGGE' REPLACES THIS PRINTOUT.

```
          1         2         3         4         5         6
1         0         0         0         0         0         0
```

DISK SURFACE ANALYSIS RESULTS

TRACK ID	HEAD ID	SECTOR ID	READ ID RESULTS: EXPECTED CONTROL FIELD	ACTUAL CONTROL FIELD	ID LSR INCREMENT(S/B 05)	ADAPTER CK -Y/N-	NOT READY -Y/N-	STATUS BYTES 0 1 2	
			FFCCCCHHSS	FFCCCCHHSS					
0002	00	00	0000020000	010011001D	05	N	N	00 00 00	<--
0002	00	01	0000020001	0100160034	05	N	N	00 00 00	<--
0011	00	1D	000011001D	0200020000	05	N	N	00 00 00	<--

62GV ANALSYSIS TEST COMPLETE.

IF ERRORS OCCUR ON READ ID OPERATION - NO -READ DATA RESULT/

*INCORRECT FIGURES IN -LSR INCREMENT- FIELDS MAY MEAN POTE/

* THESE SECTORS MAY NEED TO BE REWRITTEN.

*REFER TO THE -FRIEND- UTILITY PROGRAM TO READ OR REBU/

MEANING OF BITS IN STATUS BYTES IS SHOWN IN THE US/

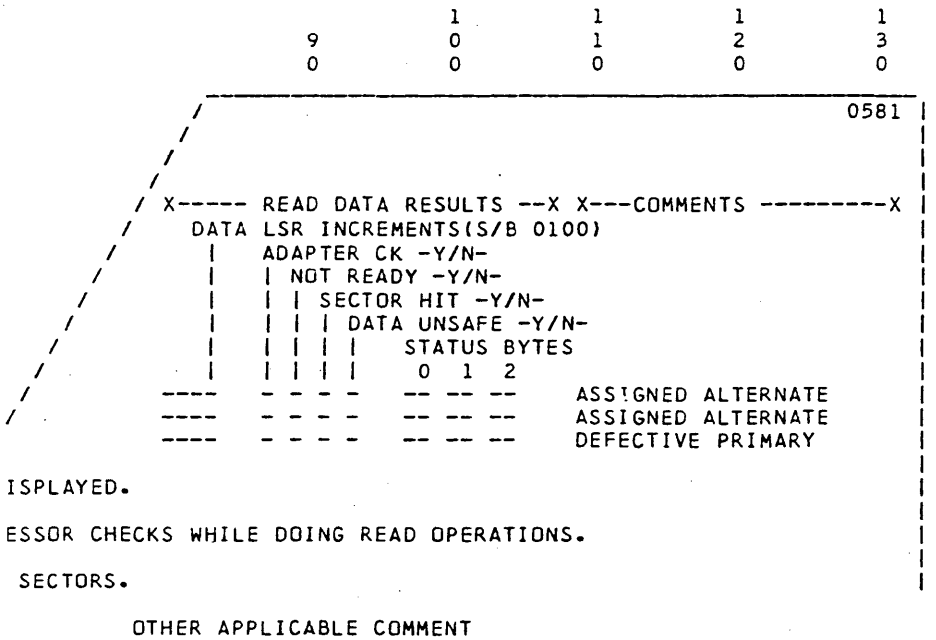
SEE DISPLAY 0320

EXAMPLE PRINTOUT: SHOWS 2 SECTORS ON TRACK 2 WHICH HAVE BEEN ASSIGNED AS ALTERNATES, WITH THE ACTUAL CONTROL FIELD SHOWING THE SECTOR ID OF THE DEFECTIVE SECTOR. ALSO SHOWS ONE OF THE DEFECTIVE PRIMARY SECTORS WHICH IS ASSIGNED TO AN ALTERNATE.

SEE NEXT PAGE FOR RIGHT-HALF

62GV ANALYZE PROGRAM (RIGHT=HALF) 0581

SURFACE ANALYZE RESULTS PRINTOUT CONTINUED



OTHER APPLICABLE COMMENT
ERROR DETECTED - ONE OF THE ERROR COLUMNS, OR THE STATUS BYTES, WILL SHOW OTHER THAN NORMAL RESULTS.

DIAGNOSTIC CRT/PRINTER DISPLAYS

S/3 LANGUAGE DIAGNOSTIC SUPERVISOR 0600 & 0602

```
           1         2         3         4
  1        0         0         0         0
 ----------------------------------------
 |                                       | 1
 |                                       |
 | MOUNT DISKETTE DIAG02                 | 2
 |                                       |
 |                                       | 3
 |                                       |
 | PRESS 'ENTER' KEY WHEN MOUNTED.       | 4
 |                                       |
 |                                       | 5
 |                                       |
 |                                  0600 | 6
 |                                       |
 ----------------------------------------
```

DISKETTE DIAG02 CONTAINS ALL S/3 LANGUAGE DIAGNOSTIC PROGRAMS. THIS DISKETTE MUST BE INSERTED TO CONTINUE OPERATION.

```
 ____ SEE THE NEXT PAGE FOR IOB AND STATUS BYTE FORMATS.
|
|          1         2         3         4
|  1       0         0         0         0
|   ----------------------------------------
|   | ERROR OCCURRED WHILE DOING A          | 1
|   |                                       |
|   | 33FD I/O OPERATION.                   | 2
|   |                                       |
----> XR2 POINTS TO THE IOB AND             | 3
    |                                       |
    | STATUS.                               | 4
    |                                       |
    |                                       | 5
    |                                       |
    |                                  0602 | 6
    |                                       |
    ----------------------------------------
```

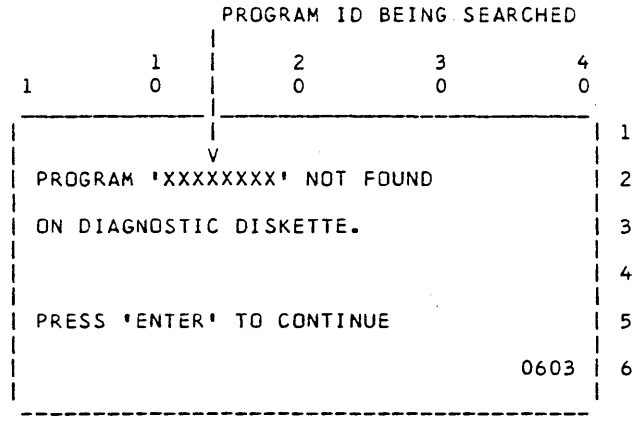
ALL 33FD I/O OPERATIONS ARE BEING DONE THRU $DI2 MICRO CODE TRANSIENT.

IOB PARM LIST FORMAT:

```
          OFFSET FROM XR2

          0,1   DC    XL2'FILE START CYL,SECTOR'
          2,3   DC    XL2'PRESENT CYL,SECTOR BEING OPERATED ON'
          4,5   DC    XL2'FILE END CYL,SECTOR'
          6     DC    XL1' 82 FOR 512 FUNCTIONS '
                      ' 85 FOR IMPL FUNCTIONS'
          7     DC    IL1' NUMBER OF SECTOR -1'
          8,9   DC    AL2(BUFFER ADDRESS OF A 512 BYTE AREA)
          10    DS    XL1' OPERATION CODE'
                            0 - READ
                            1 - WRITE
          11    DC    XL1' COMPLETION CODE'
                            0 - AOK
                            1 - END OF FILE, NO OPERATION DONE
                            2 - END OF FILE WAS REACHED BEFORE
                                OPERATION COMPLETED. BYTE 12 WILL
                                HAVE THE NUMBER OF SECTORS COMPLETED.
                            3 - ERROR,BYTE 12 AND 13 WILL CONTAIN
                                TH ERROR CODES.
        12,13 DS    XL2 DEFINED BY BYTE 11
                        FOR COMPLETION CODE =3
                    BYTE 12 STATUS CODE
                              0 HARDWARE ERROR(SEE SENSE)
                                INFO IN BYTE 12)
                              1 SECTOR NOT WITHIN FILE LIMITS
                              2 DATA CHECKS (CRC CHECKS)
                              3 EXPECTED ADDRESS MARK NOT A DATA AM
                              4 WRITE ERROR
                              5 INVALID CYL. OR SECOT
                              6 UNINITIALIZED TRACK
                              7 WRONG SECTOR LENGTH
                    BYTE 13 SENSE INFORMATION AS FOLLOWS
                             BIT 0 DISK FAST
                                 1 NOT READY
                                 2 END OF CYLINDER
                                 3 FIRST RECORD NOT FOUND
                                 4 READ OVERRUN
                                 5 UNDEFINED
                                 6 WRITE OVERRUN
                                 7 SERIAL WRITE PARITY CHECK
```

S/3 DIAGNOSTIC SUPERVISOR 0603



EITHER YOU HAVE THE WRONG DISKETTE MOUNTED, OR THE PROGRAM IS NOT CONTAINED ON THE DISKETTE.

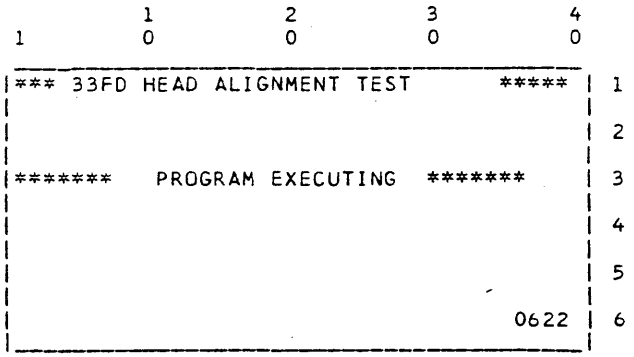
33FD HEAD ALIGNMENT TEST (HEADALGN) 0620 & 0621

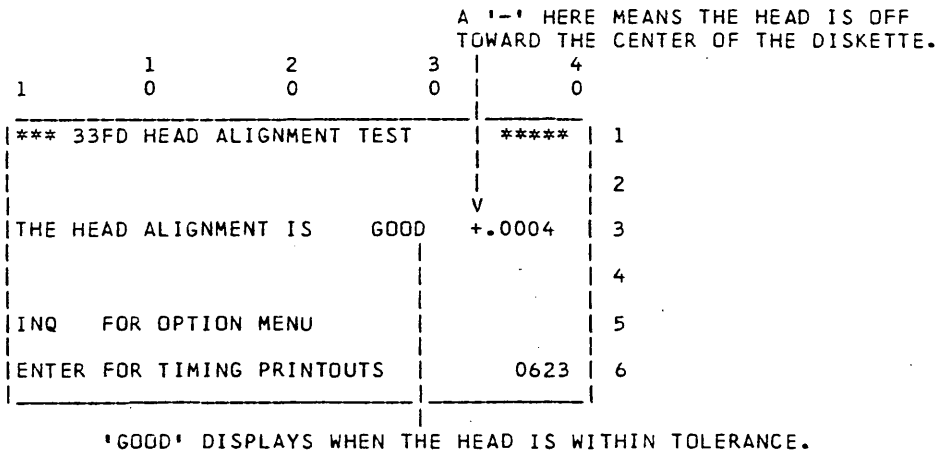
```
          1         2         3         4
 1        0         0         0         0
 ┌──────────────────────────────────────────┐
 |*** 33FD HEAD ALIGNMENT TEST      *****  | 1
 |                                          | 2
 |INSERT MASTER   DIAG02   DISKETTE TO BE   | 3
 |READ                                      | 4
 |                                          | 5
 |PRESS 'ENTER' KEY TO CONTINUE      0620   | 6
 └──────────────────────────────────────────┘
```

NOTE: PERFORM STATIC HEAD ALIGNMENT AJUSTMENT PRIOR TO RUNNING THIS TEST IF THE DISKETTE OR HEAD HAS BEEN REPLACED.

```
          1         2         3         4
 1        0         0         0         0
 ┌──────────────────────────────────────────┐
 |*** 33FD HEAD ALIGNMENT TEST      *****  | 1
 | PUT A SCRATCH DISKETTE IN DRIVE.         | 2
 | WRITING WILL OCCUR IN TRACKS 71-76       | 3
 |NOTE  IT MUST NOT HAVE FLAGGED TRACKS     | 4
 |      OR DISKETTE ERROR WILL OCCUR.       | 5
 |PRESS 'ENTER' KEY TO CONTINUE      0621   | 6
 └──────────────────────────────────────────┘
```

HEAD ALIGNMENT TEST 0622 & 0623





'GOOD' DISPLAYS WHEN THE HEAD IS WITHIN TOLERANCE.

HEAD ALIGNMENT TEST 0624

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|************* ERROR ******************|  1
|                                        |
|                                        |  2
|                                        |
| INSERT THE MASTER  DIAG02  DISKETTE.   |  3
|                                        |
|                                        |  4
|                                        |
|                                        |  5
|                                        |
|N  SCROLL STATUS/'Y' TO BYPASS ERR 0624S|  6
|________________________________________|
```

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|STATUS  X'XX'                           |  1
|                                        |
|BIT 0--FAST             BIT 4--READ OVERUN|  2
|                                        |
|    1--NOT READY            5--    N/A  |  3
|                                        |
|    2--END OF CYL           6--WRIT OVERUN|  4
|                                        |
|    3--MISSING REC          7--WRIT PARITY|  5
|                                        |
|N  SCROLL STATUS/'Y' TO BYPASS ERR 0624S|  6
|________________________________________|
```

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|STATUS  X'XX'                           |  1
|                                        |
|1  NOT READY IF    NO DISKETTE IN DRIVE |  2
|                                        |
|2  MISSING REC IF  REC 1/5 IS MISSING   |  3
|                                        |
|3  READ OVERUN IF  BAD DISKETTE IN DRIVE|  4
|                                        |
|                                        |  5
|                                        |
|N  SCROLL STATUS/'Y' TO BYPASS ERR 0624S|  6
|________________________________________|
```

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|************* ERROR *******************| 1
|                                       |
|INSURE THAT THE SCRATCH DISKETTE       | 2
|                                       |
|  1  DOES NOT HAVE ANY FLAGGED TRACKS & | 3
|                                       |
|  2  IS FORMATED TO 128 BYTES PER SECTOR| 4
|                                       |
|INSERT A GOOD SCRATCH DISKETTE TO RETRY.| 5
|                                       |
|N  SCROLL STATUS/'Y' TO BYPASS ERR 0625S| 6
|_______________________________________|
```

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|STATUS  X'XX'                          | 1
|                                       |
|BIT 0--FAST          BIT 4--READ OVERUN| 2
|                                       |
|    1--NOT READY         5--   N/A     | 3
|                                       |
|    2--END OF CYL        6--WRIT OVERUN| 4
|                                       |
|    3--MISSING REC       7--WRIT PARITY| 5
|                                       |
|N  SCROLL STATUS/'Y' TO BYPASS ERR 0625S| 6
|_______________________________________|
```


09/29/77 P/N 2547690
EC 832050 PEC 830358

HEAD ALIGNMENT TEST 0626

```
          1         2         3         4
 1        0         0         0         0
 ┌──────────────────────────────────────────┐
 |STATUS  X'80' ******* ERROR  DOIT RTN  *| 1
 |                                          |
 |BIT 0--MISSING ID 1/5  BIT 4--NO DATA AM| 2
 |                                          |
 |    1--WRONG TRACK          5--WRONG DATA| 3
 |                                          |
 |    2--WRONG SEC SIZE       6--   N/A    | 4
 |                                          |
 |    3--NO AM                7--   N/A    | 5
 |                                          |
 |ENTER/SCROLL FOR STATUS            0626S| 6
 |__________________________________________|

          1         2         3         4
 1        0         0         0         0
 ┌──────────────────────────────────────────┐
 |STATUS  X'XX'                             | 1
 |                                          |
 |BIT 0--FAST            BIT 4--READ OVERUN| 2
 |                                          |
 |    1--NOT READY            5--   N/A    | 3
 |                                          |
 |    2--END OF CYL           6--WRIT OVERUN| 4
 |                                          |
 |    3--MISSING REC          7--WRIT PARITY| 5
 |                                          |
 |ENTER/SCROLL FOR STATUS            0626S| 6
 |__________________________________________|

          1         2         3         4
 1        0         0         0         0
 ┌──────────────────────────────────────────┐
 |STATUS  X'XX'                             | 1
 |                                          |
 |1  NOT READY IF    NO DISKETTE IN DRIVE   | 2
 |                                          |
 |2  MISSING REC IF  REC 1/5 IS MISSING     | 3
 |                                          |
 |3  READ OVERUN IF  BAD DISKETTE IN DRIVE  | 4
 |                                          |
 |                                          | 5
 |                                          |
 |ENTER/SCROLL FOR STATUS            0626S| 6
 |__________________________________________|
```

HEAD ALIGNMENT TEST 0627 & 0628

THIS DISPLAY OCCURS WHEN SOME MEASUREMENTS ARE OUTSDE THE VALID RANGE, AND IS FOLLOWED BY THE NEXT 2 PRINTOUTS.

```
               1          2          3          4
     1         0          0          0          0
   ------------------------------------------
   |***33FD HEAD ALIGNMENT TEST        **** | 1
   |                                        |
   |                                        | 2
   |                                        |
   |                                        | 3
   |                                        |
   |NOTE: SOME OF THE MEASUREMENTS ARE      | 4
   |                                        |
   |      OUTSIDE THE VALID RANGE           | 5
   |                                        |
   |                                   0627 | 6
   |________________________________________|
```

OPTIONAL PRINTOUT (SEE 0623) OR AUTOMATIC AFTER PREVIOUS DISPLAY.

```
           A TIME OF '.1' MEANS AN ERROR PREVENTED THE MEASUREMENT.
           VALID READINGS ARE FROM     17.4  TO  33.6

**********    33FD HEAD ALIGNMENT TEST   **********              0628
 NUMBERS ARE MILLISEC UNTIL HEAD GETS OFF TRACK.
 TO ELIMINATE ECCENTRICITY IN THE MASTER DISKETTE
      ROW  2 & 3  ARE STARTED ON SECTOR ONE
      ROW  2 & 4  ARE STARTED ON SECTOR FIVE

    ------    MASTER  DIAG02  DISKETTE   ------
       ECCENTRICITY CAUSES TYPICAL VARIATIONS UP TO
            2.5 MILLISEC PER COLUMN
    ----- FORWARD ----       ----- REVERSE -----
   0-1   1-2   2-3   3-0   3-2   2-1   1-0   0-3

  26.1  25.6  26.0  25.3  27.1  24.8  26.7  25.3
  27.9  27.9  27.8  27.5  25.7  23.2  25.0  24.0
  26.4  25.6  26.0    .1    .1    .1    .1    .1
  23.0    .1    .1    .1    .1    .1    .1    .1

    ----------------- AVERAGE ------------------
    ----- FORWARD ----       ----- REVERSE -----
   0-1   1-2   2-3   3-0   3-2   2-1   1-0   0-3

  25.8  19.8  20.0  13.2  13.2  12.0  12.9  12.4
           19.7              12.6
```

HEAD ALIGNMENT TEST 0629

READING IS STARTED ON STEPPER TRACK 0 AND SEEK IS ENERGIZED TO MOVE TO STEPPER TRACK 1. WHEN THE DATA BEING READ IS SENSED INCORRECTLY THE TIME ELAPSED IS STORED IN COLUMN 0-1. THIS IS REPEATED FORWARD 1 TO 2, 2 TO 3, AND 3 TO 0, THEN IN REVERSE FROM 3 TO 2, 2 TO 1,1 TO 0 AND 0 TO 3. READING IS DONE TWICE STARTING AT SECTOR ONE AND TWICE AT SECTOR 5 TO COMPENSATE FOR HUB POSITIONING VARIATIONS. AVERAGES ARE CALCULATED AND STORED.

---------- SCRATCH DISKETTE ----------
TYPICAL VARIATIONS ARE
0.8 PER COLUMN
3.5 FORWARD OR REVERSE
2.0 AVE FORWARD TO AVE REV

----- FORWARD ----				----- REVERSE -----			
0-1	1-2	2-3	3-0	3-2	2-1	1-0	0-3
25.6	26.6	26.5	25.7	26.5	24.8	26.8	25.7
26.5	26.3	25.7	25.7	26.7	24.6	27.2	25.4
26.4	26.6	26.0	25.6	26.2	24.8	26.9	25.5
25.6	25.9	26.3	25.7	26.7	25.0	27.3	25.4

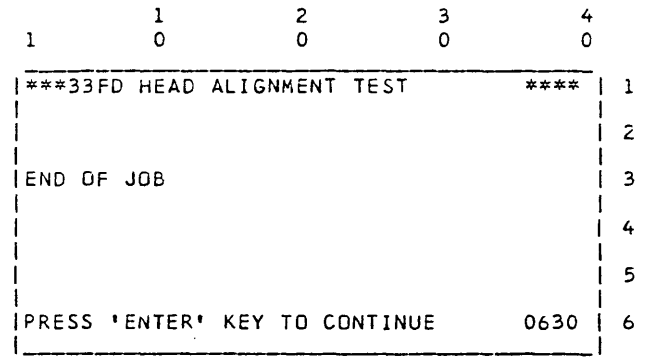
---------- AVERAGE ----------

----- FORWARD ----				----- REVERSE -----			
0-1	1-2	2-3	3-0	3-2	2-1	1-0	0-3
26.0	26.4	26.1	25.6	26.5	24.8	27.1	25.5
		26.0			26.0		

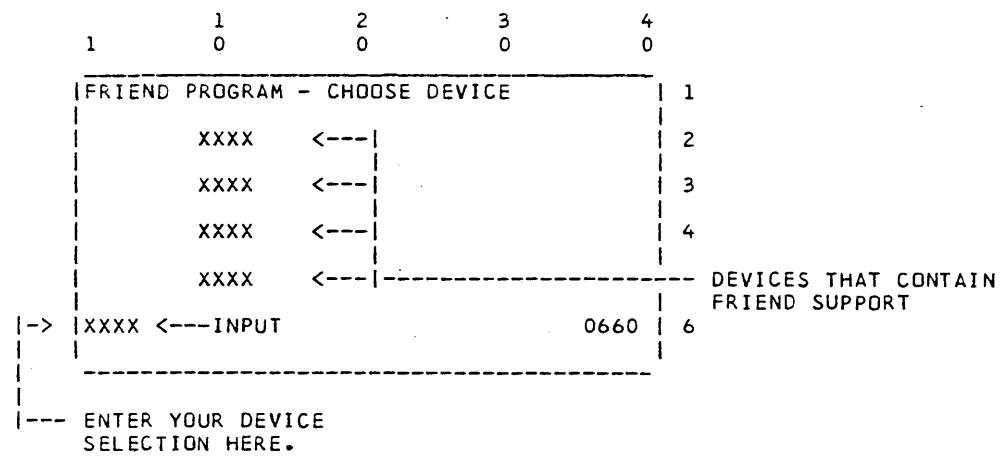
THE HEAD ALIGNMENT IS +.0036 INCHES

A SCRATCH DISKETTE IS WRITTEN WITH PATTERNS LIKE THOSE ON THE MASTER DISKETTE, THEN THE READ AND SEEK SEQUENCE PROCEEDS. THIS SEQUENCE IS SIMILAR TO THE SEQUENCE USED ON THE MASTER DISKETTE. NO HUB VARIATION CAN OCCUR BETWEEN WRITING AND READING SO READING IS STARTED ON THE SAME SECTOR FOR THESE 4 PASSES. THE AVERAGES ARE THEN USED TO CALCULATE THE HEAD POSITION.

HEAD ALIGNMENT END DISPLAY 0630



FRIEND PROGRAM - ENTRY MENU (FRIEND) 0660



FRIEND PROGRAM - MAIN OPTION MENU 0661

(ALSO SEE 62GV FRIEND TEST IN SECTION IV OF THIS GUIDE)

```
          1         2         3         4
 1        0         0         0         0
 _____________________________________________
|FRIEND PROGRAM - XXXX <----------------------DEVICE ID SELECTED
|                                             |
| 1-BUILD CMND TABLE      5-SET OPTIONS       | 2
|                                             |
| 2-DUMP CMND TABLE                           | 3
|                                             |
| 3-EXECUTE CMND TABLE                        | 4
|                                             |
| 4-SET/DUMP DATA FIELDS                      | 5
|                                             |
|_<---CHOOSE OPTION                    0661   | 6
|_____________________________________________|
```

SUGGESTED ORDER OF OPTION SELECTION
1 - BUILD CMND TABLE
2 - DUMP CMND TABLE
4 - SET/DUMP DATA FIELDS
(FOR READ/WRITE OPERATIONS)
5 - SET OPTIONS
3 - EXECUTE CMND TABLE

NOTES:
1. PRESS 'INQ' TO RETURN TO THIS MENU FROM ANY OPTION.
2. THE COMMAND TABLE REMAINS AS SET UNTIL OPTION 1 IS SELECTED OR WHEN A NEW DEVICE IS CHOSEN.
3. THE 2 DATA FIELDS ARE CHANGED BY OPTION 4, OR A READ/WRITE OPERATION. THE FRIEND SUPERVISOR DOES NOT PRESET THE FIELDS.

FRIEND PROGRAM - CMND TABLE BUILD MENU 0662

```
          1         2         3         4
 1        0         0         0         0
 _____________________________________________
|FRIEND PROGRAM - XXXX <----------------------DEVICE ID SELECTED
|                                             |
|-->| 1. XXXXXXXXXXXXXXXXXXXXXXXX             | 2
|   |                                         |
|-->| 2. XXXXXXXXXXXXXXXXXXXXXXXX             | 3
|   |                                         |
|-->| 3. XXXXXXXXXXXXXXXXXXXXXXXX             | 4
|   |                                         |
|-->| 4. XXXXXXXXXXXXXXXXXXXXXXXX             | 5
|   |                                         |
|   | <---INPUT (TYPE 'E' WHEN DONE)  0662S<--- SCROLL FOR MORE
|   |__|______________________________________|    COMMANDS
|      |
|       MAXIMUM NUMBER OF ENTRIES IS 10.
|
```

DESCRIPTION OF COMMANDS AVAILABLE FOR THE DEVICE. AFTER ENTERING THE SELECTION, FOLLOW THE DIRECTIONS ON EACH MENU AS PER DEVICE COMMANDS.

FRIEND PROGRAM - CMND TABLE BUILD MENU 0663

```
          1         2         3         4
 1        0         0         0         0
 ___________________________________________
|FRIEND PROGRAM - XXXX                      | 1
|                                           |
|                                           | 2
|                                           |
|                                           | 3
|                                           |
| --COMMAND TABLE FILLED--                  | 4
|                                           |
|                                           | 5
|                                           |
| PRESS 'ENTER' TO CONTINUE          0663   | 6
|___________________________________________|
```

THIS DISPLAY DESIGNATES THAT 10 CMND ENTRIES HAVE BEEN MADE. PRESSING 'ENTER' TO CONTINUE RETURNS PROGRAM BACK TO MAIN OPTION MENU (0661). OPTION 2 SHOULD NOW BE SELECTED TO PRINT THE COMMAND TABLE FOR VERIFICATION. NOTE: SEE 62GV FRIEND NOTES (IN SECTION IV) FOR COMMAND TABLE NOTES.

FRIEND PROGRAM - EXECUTION DISPLAY 0664

```
  ___ ENGLISH INTERPRETATION OF COMMAND JUST EXECUTED.
 |
 |            1         2         3         4
 |    1       0         0         0         0
 |    _____________________________________________
 |   |FRIEND PROGRAM - XXXX <--------------------DEVICE ID SELECTED
 |   |                                           |
 -->|XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX| 2
    |                                           |
    |ERROR BYTES ... 00 00 00 00 00 00          | 3
    |                                      _____|      THESE LINES DEPEND
    |OTHER BYTES ... 00 00 00 00 00 00    /     | 4    ON THE RUN TIME
    |                                    /      |      OPTIONS SELECTED.
    | <-----TYPE D TO DEFINE BITS OR <--/       | 5    -STEP MODE-
    |                                  /        |      -LOOP ON TABLE-
    |*STEP MODE*    ENTER TO CONTINUE<- 0664    | 6    -STOP ON ERROR-
    |___________________________________________|      OR -STOP AT END
                                                        OF TABLE-
     IF YOU TYPE IN 'D', THE BIT MEANINGS OF THE
     ERROR AND OTHER BYTES ARE DEFINED BY MENU 0666, OR SEE THE NEXT
     PAGE.
```

THE FOLLOWING ARE THE MEANINGS OF THE DISK ERROR BYTES.

BYTE 1	
BIT 0	-FILE READY
BIT 1	N/A
BIT 2	+SECTOR SYNC CHECK
BIT 3	+OFF TRACK ERROR
BIT 4	+CRC CHECK
BIT 5	+DBO PARITY CHECK
BIT 6	+WRITE ECHO CHECK
BIT 7	+CYCLE STEAL OVERRUN

BYTE 2	
BIT 0	N/A
BIT 1	+DATA UNSAFE
BIT 2	N/A
BIT 3	+ADAPTER CHECK
BIT 4	N/A
BIT 5	N/A
BIT 6	N/A
BIT 7	+PLO OUT OF SYNC

BYTE 3	
BIT 0	+SERDES PARITY CHECK
BIT 1	N/A
BIT 2	+CHANNEL TRANSFER CHECK
BIT 3	N/A
BIT 4	INTERRUPT TIME OUT CHECK
BIT 5	N/A
BIT 6	N/A
BIT 7	N/A

BYTE 4	
BIT 0	N/A
BIT 1	+SELECT UNSAFE
BIT 2	+WRITE ERROR
BIT 3	+BRAKE FAILURE
BIT 4	+SERVO UNSAFE
BIT 5	N/A
BIT 6	N/A
BIT 7	+FAST SYNC

BYTE 5	
BIT 0	ADAPTER CHECK JIO SET
BIT 1	NOT READY JIO SET
BIT 2	UNSAFE JIO SET
BIT 3	N/A
BIT 4	N/A
BIT 5	N/A
BIT 6	N/A
BIT 7	N/A

BYTE 6	
BIT 0	CTRL REG NOT INCRMTD
BIT 1	DATA REG NOT INCRMTD
BIT 2	RECAL TIME OUT
BIT 3	SEEK TIME OUT
BIT 4	OP END TIME OUT
BIT 5	CONTROL FIELD ERROR
BIT 6	SECTOR HIT ERROR
BIT 7	UNEXPECTED INTERRUPT

THE FOLLOWING ARE THE BIT MEANINGS OF THE OTHER DISK ERROR BYTES:

BYTE 1

BIT 0	N/A
BIT 1	N/A
BIT 2	N/A
BIT 3	N/A
BIT 4	N/A
BIT 5	-SCAN EQUAL HIT
BIT 6	-SCAN EQUAL
BIT 7	N/A

BYTE 2

BIT 0	SCAN HIT JIO SET
BIT 1	HEAD 1 JIO SET
BIT 2	N/A
BIT 3	N/A
BIT 4	N/A
BIT 5	N/A
BIT 6	HOME
BIT 7	BEHIND HOME

BYTE 3

HIGH BYTE OF ENDING CONTROL REGISTER ADDRESS VALUE.

BYTE 4

LOW BYTE OF ENDING CONTROL REGISTER ADDRESS VALUE.

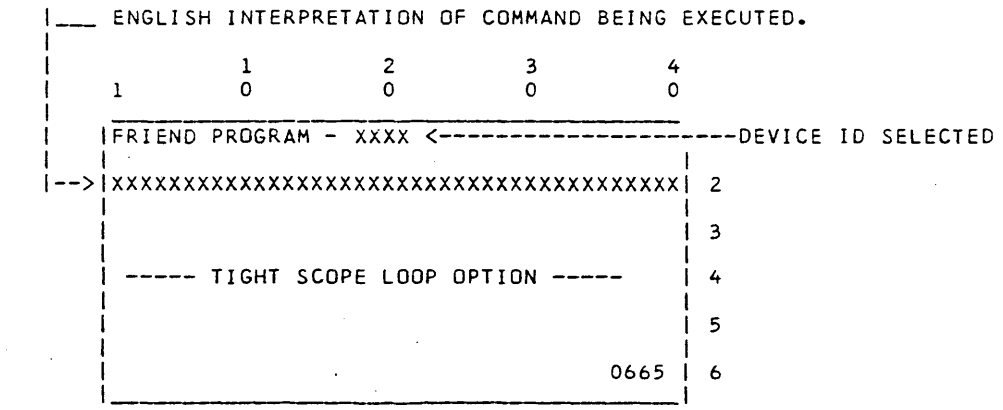
BYTE 5

HIGH BYTE OF ENDING DATA REGISTER ADDRESS VALUE.

BYTE 6

LOW BYTE OF ENDING DATA REGISTER ADDRESS VALUE.

FRIEND PROGRAM - SCOPE LOOP OPTION MENU 0665



THIS MENU IS DISPLAYED WHILE THE PROGRAM IS LOOPING ON THE SELECTED COMMAND. THIS IS A TIGHT PROGRAM LOOP (MINIMUM PROGRAM OVERHEAD) FOR SCOPING PURPOSES.

TO SET UP FOR SCOPING, DO THE FOLLOWING:

1 - SET ADDRESS SWITCHES TO -0060-

2 - SET -STOR SEL- SWITCH TO CONTROL STORE (CTL)

3 - CONNECT SYNC LEAD TO AA1-J2-D12 (-ADRS COMPARE SYNC)

4 - CONNECT THE SCOPE PROBE TO DESIRED SIGNAL

THE PURPOSE OF SETTING THE ADDRESS SWITCHES IS THAT JUST BEFORE THE ACTUAL TEST IS STARTED, THE PROGRAM BRANCHES TO THIS LOCATION TO PROVIDE A 'SYNC POINT' FOR SCOPING PURPOSES. THIS TECHNIQUE REDUCES THE NUMBER OF INSTRUCTIONS IN THE LOOP AND ALLOWS FOR A MORE STABLE SCOPE TRACE.

FRIEND PROGRAM - BYTE MEANING DISPLAYS 0666

```
 ___BYTE ID (ERROR OR OTHER)
|                       _____BYTE NUMBER IN SEQUENCE
|            1     /  2            3           4
|   1        0    /   0            0           0
|    _____________/___________________________
|--->XXXXX BYTE #X       00 00 00 00 00 00 <------ VALUE OF ALL 6 BYTES
|    |                                         |   AFTER LAST COMMAND.
|-->|XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX | 2
|   |                                       |
|-->|XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX | 3
|   |                                       |
|-->|XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX | 4
|   |                                       |
|-->|XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX | 5
|   |                                       |
|   |  SCROLL OR ENTER TO CONTINUE    0666S| 6
|   |_______________________________________|
|
|-----DEFINITION OF CURRENT BYTE BEING DISPLAYED
```

USE SCROLL KEYS TO SCAN FORWARD/BACKWARD FOR INTERPRETATION OF OTHER BYTES.

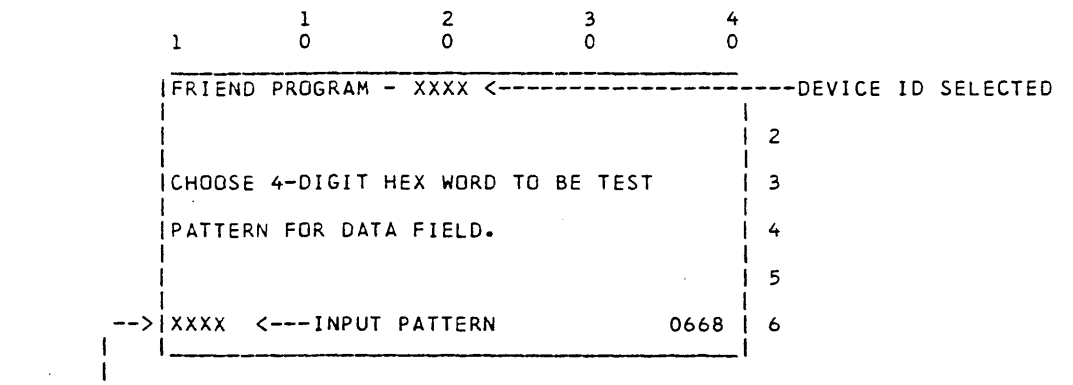
PRESS 'ENTER' TO RETURN TO EXECUTION OF NEXT COMMAND IN CMND TABLE.

FRIEND PROGRAM - M/S DATA FIELD SET 0667

THIS MENU ALLOWS M/S DATA FIELDS (512 BYTES IN LENGTH) TO BE PRESET TO A DESIRED PATTERN.

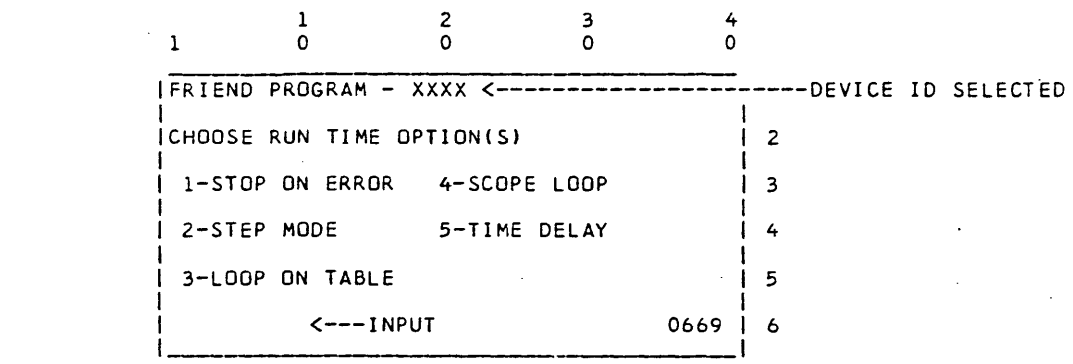
```
              1          2          3          4
   1          0          0          0          0
     ________________________________________
    |FRIEND PROGRAM - XXXX <--------------------DEVICE ID SELECTED
    |                                        |
    |CHOOSE OPTION                           | 2
    |                                        |
    | 1-PRESET M/S DATA FIELD 1              | 3
    |                                        |
    | 2-PRESET M/S DATA FIELD 2              | 4
    |                                        |
 ---->3-DUMP DATA FIELDS                     | 5
|   |                                        |
|   |  <---INPUT                        0667 | 6
|   |________________________________________|
|
|____OPTION 3 WILL PROVIDE A PRINTED OUTPUT OF THE TWO FIELDS.
```

FRIEND PROGRAM - M/S DATA FIELD SET 0668



--- ENTER A VALID 4-DIGIT HEX TEST PATTERN THAT YOU WOULD WANT REPEATED THROUGHOUT THE 512-BYTE DATA FIELD.

FRIEND PROGRAM - RUN TIME OPTION SELECTION 0669



TO SELECT ONE OR MORE OPTIONS, TYPE IN THE CORRESPONDING NUMBER(S). IF YOU DO NOT TYPE IN A NUMBER, THE OPPOSITE OPTION IS ASSUMED.

EXAMPLE:
3,5 <---INPUT

THE PROGRAM WILL LOOP ON THE TABLE, CHECK DATA SWITCHES FOR TIME DELAY BETWEEN COMMANDS, NOT STOP ON ERROR, NOT STEP THROUGH THE TABLE AND NOT HAVE SCOPE LOOP.
OPTION 5 CAUSES THE PROGRAM TO USE THE 4 DATA SWITCHES AS A VALUE TO DELAY THAT MANY MILLISECS BETWEEN COMMANDS.
SEPARATE OPTION SELCTIONS WITH COMMA'S.

FRIEND PROGRAM CMND TABLE PRINTOUT 0670

```
DEVICE ID SELECTED_____          1    1    1    1 1
          1    1    2    2 /  3 .....1    2    2    3 3
 1234567890    5    0    5/   0 .....5    0    5    0 2
 ____________________/_____    _____________________
|FRIEND COMMAND TABLE - XXXX    /   /               0670|
|                             /   /                     |
|   ENTRY          COMMAND    /   /                     |
|                           /   /                       |
| --> 1      XXXXXXXXXXXXXXXX/   /                       |
||--> 2      XXXXXXXXXXXXXXX/   /                        |
||--> 3      XXXXXXXXXXXXXX/   /                         |
||--> 4      XXXXXXXXXXXXX/   /                          |
||--> 5      XXXXXXXXXXXX/   /                           |
||--> 6      XXXXXXXXXXX/   /                            |
||--> 7      XXXXXXXXXX/   /                             |
||--> 8      XXXXXXXXX/   /                              |
||--> 9      XXXXXXXX/   /                               |
||-->10      XXXXXXX/   /                                |
 |----END OF TABLE-
 |
  --- LIST OF COMMANDS CURRENTLY STORED IN CMND TABLE.
```

NOTE: THIS WILL REMAIN UNCHANGED UNLESS A NEW TABLE IS BUILT OR THE SELECT A DEVICE MENU (0660) IS RE-DISPLAYED.

FRIEND PROGRAM - M/S FIELD PRINTOUT 0675

```
                                      1    1    1    1 1
          1    1    2    2    3      1    2    2    3 3
 1234567890    5    0    5    0      5    0    5    0 2
 ____________________________________    _____________
|M/S DATA FIELD 1   1000 - 11FF /   /              0675|
|                              /   /                    |
|WR1=XXXX  WR2=XXXX  WR3=XXXX /   /                     |
|                            /   /                      |
|XXXX  XXXXXXXX  XXXXXXXX  X/   /XXXXXXX  XXXXXXXX     |
|XXXX  XXXXXXXX  XXXXXXXX  /   /XXXXXXXX  XXXXXXXX     |
|XXXX  XXXXXXXX  XXXXXXXX /   /XXXXXXXXX  XXXXXXXX     |
||     |         |       /   / |          |             |
 |     ------------------------------------ CURRENT CONTENTS OF M/S
  -- ADDRESSES
```

NOTE: THE ADDRESSES OF THE DATA FIELDS ARE PRINTED AT THE TOP. YOU COULD USE THE ALTER/DISPLAY STORAGE PROGRAM TO CHANGE THE DATA FIELDS TO ANY MIXED PATTERN DESIRED.
THE 2 DATA FIELDS ARE ONLY CHANGED BY THE PRESET M/S FIELD OPTION OR BY A DEVICE OPERATION.
THE 2 DATA FIELDS ARE NOT PRESET BY THE FRIEND PROGRAM

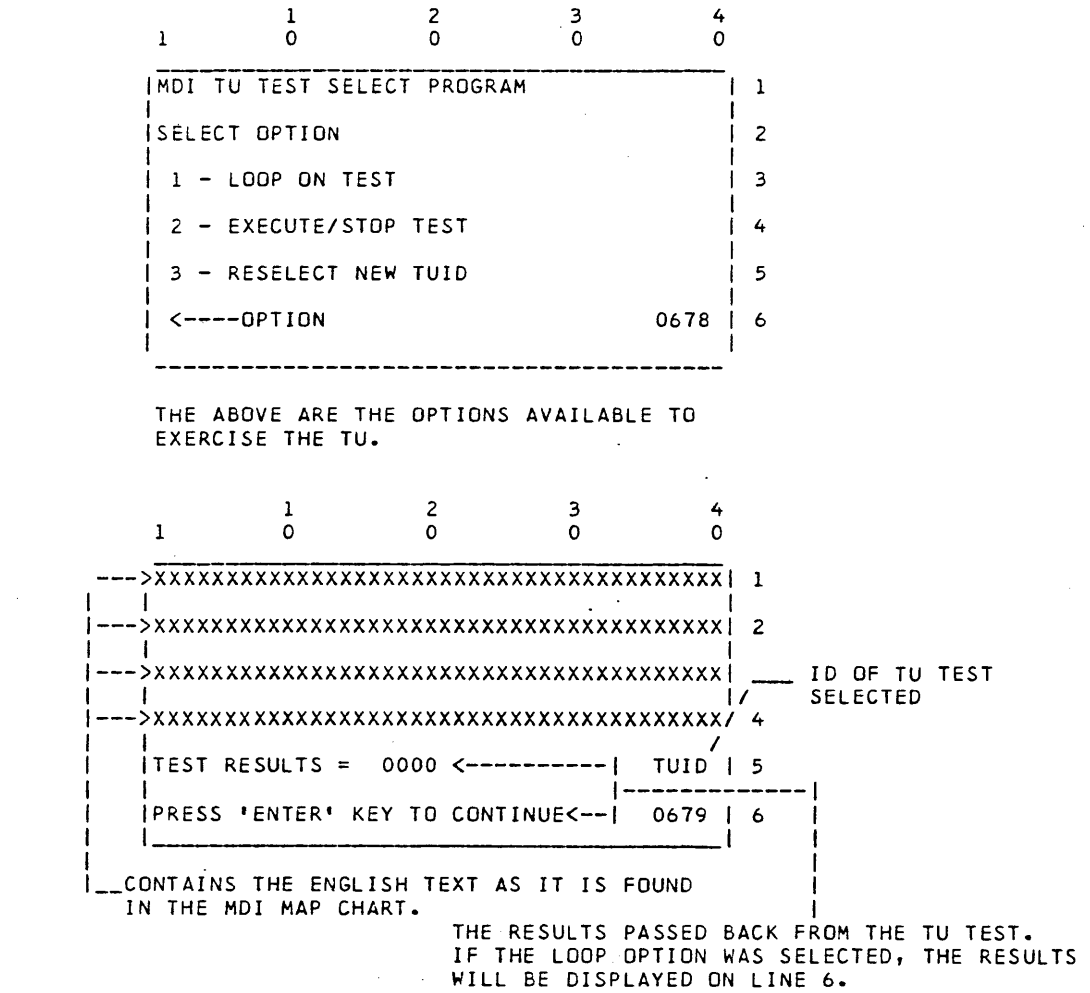
MDI TU TEST SELECT PROGRAM (TUSELCT) 0676 & 0677

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|MDI TU TEST SELECT PROGRAM                | 1
|                                          |
| 1. XXXXXXXX         5. XXXXXXXX          | 2
|                                          |
| 2. XXXXXXXX         6. XXXXXXXX          | 3
|                                          |
| 3. XXXXXXXX         7. XXXXXXXX          | 4
|                                          |
| 4. XXXXXXXX         8. XXXXXXXX          | 5
|                                          |
|    <---SELECT A DEVICE            0676   | 6
|                                          |
 ----------------------------------------
```

THIS MENU DISPLAYS ALL THE DEVICES THAT HAVE MDI MAP PROGRAMS WHICH CONTAIN INDIVIDUAL TU TESTS.

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|MDI TU TEST SELECT PROGRAM                | 1
|                                          |
|REFER TO THE DIAGNOSTIC USER'S  GUIDE     | 2
|                                          |
|             - MDI TU TEST LISTING -      | 3
|                                          |
|AND ENTER MDI TU TEST ID TO EXERCISE      | 4
|                       |                  |
|                       |                  | 5
|                       |                  |
|TUXX <-----------------|        0677      | 6
|                                          |
 ----------------------------------------
```

MDI TU TEST SELECT PROGRAM 0678 & 0679



MDI TU TEST SELECT PROGRAM 0680 & 0681

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|MDI TU TEST SELECT PROGRAM              | 1
|                                        |
|                                        | 2
|                                        |
|TU DOES NOT EXIST ON THIS DISKETTE      | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
|PRESS 'ENTER' KEY TO CONTINUE     0680  | 6
|                                        |
 ----------------------------------------
```

THE TU TEST SELECTED IS EITHER INVALID
OR THE DISKETTE DOES NOT CONTAIN IT.

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|MDI TU TEST SELECT PROGRAM              | 1
|                                        |
|                                        | 2
|                                        |
|LOAD DISKETTE CONTAINING                | 3
|                                        |
|DIAGNOSTIC SUPPORT                      | 4
|                                        |
|                                        | 5
|                                        |
|PRESS 'ENTER' KEY TO CONTINUE     0681  | 6
|                                        |
 ----------------------------------------
```

THE DEVICE SELECTED IS DEFINED AS A
FEATURE. LOAD THE DISKETTE CONTAINING
THAT DEVICE'S SUPPORT.

MDI TU TEST SELECT PROGRAM 0682

```
          1         2         3         4
 1        0         0         0         0
 ----------------------------------------
|MDI TU TEST SELECT PROGRAM              | 1
|                                        |
|                                        | 2
|                                        |
|NO PROGRAMS AVAILABLE ON THIS DISKETTE  | 3
|                                        |
|                                        | 4
|                                        |
|                                        | 5
|                                        |
|PRESS 'ENTER' KEY TO CONTINUE    0682   | 6
|________________________________________|
```

THE MDI MAP PROGRAMS ARE NOT ON THIS DISKETTE. LOAD THE CORRECT DISKETTE CONTAINING THE SUPPORT.

33FD FREE LANCE SUPPORT 0690-0693

```
 ------------------------------------------
|                                          | 1
|                                          |
|  FOR DISPLAY ID'S 0690 - 0693 SEE        | 2
|                                          |
|  DIAGNOSTIC USER'S  GUIDE                | 3
|                                          |
|  33FD FREELANCE SUPPORT SECTION.         | 4
|                                          |
|                                          | 5
|                                          |
|                          0690 - 0693     | 6
|__________________________________________|
```

33FD FREELANCE SUPPORT IS IN SECTION IV OF THIS GUIDE.

SYSTEM TEST MAIN MENU (SYSTST) 0700

THIS DISPLAY OCCURS AFTER THE SYSTEM TEST HAS BEEN LOADED. IT WILL STAY ON THE SCREEN FOR ABOUT 5 SECONDS,

```
 ------------------------------------------
|                                          | 1
|                                          |
|                                          | 2
|                                          |
|SYSTEM TEST MENU - SELECT ONE:            | 3
|                                          |
|                                          | 4
|                                          |
|                                          | 5
|                                          |
|                                          | 6
 ------------------------------------------
```

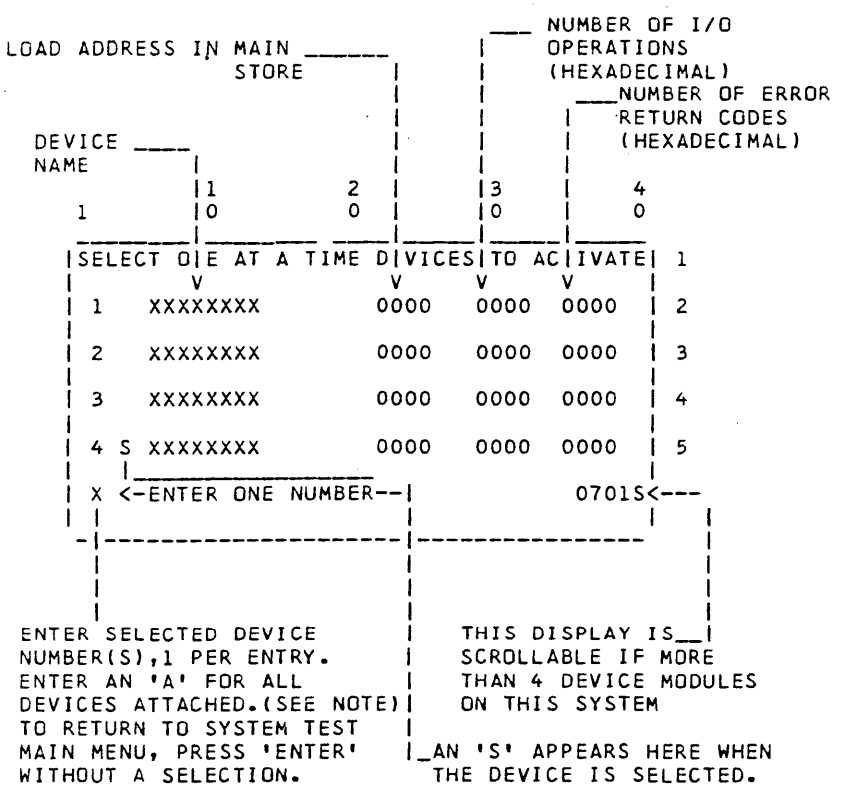
```
          1         2         3         4
 1        0         0         0         0
 ------------------------------------------
|1-SELECT OR ACTIVATE DEVICES              | 1
|                                          |
|2-RUN SYSTEM TEST                         | 2
|                                          |
|3-SCAN RESULTS OF SYSTEM TEST             | 3
|                                          |
|4-DISPLAY ACTIVATED DEVICES OR DESELECT.  | 4
|                                          |
|5-TERMINATE SYSTEM TEST                   | 5
|                                          |
|  <-ENTER SELECTION NUMBER          0700  | 6
 /----------------------------------------
/
```

/__ ENTER ANY OF THE 5 SELECTIONS HERE.(BLANK IS A NO-OP)
APPROPRIATE DISPLAYS WILL OCCUR FOR EACH OPTION SELECTED.
THEY ARE ALL DESCRIBED ON THE FOLLOWING PAGES.
SELECTING OPTION 5 TERMINATES THE TEST AND RETURNS
TO SCP MAIN MENU.

*NOTE-'PRINT' 'PAGE' & 'SPACE' FUNCTIONS OF KEYBOARD ARE AVAILABLE ANYTIME DURING TEST. THE DISPLAY WILL NOT FLASH IF A KEYBOARD ERROR OCCURS.

SYSTEM TEST SELECT OR ACTIVATE DEVICE (OPTION 1) 0701

TO SELECT 1 OR MORE DEVICES TO RUN DURING SYSTEM TEST EXECUTION.
(SEE THE NOTE AT THE BOTTOM OF THIS PAGE).



NOTES: 1. THE 33FD CANNOT BE RUN WITH ANY OF THE FOLLOWING DEVICES: BSCA/SDLC, DATA RECORDER, 1255, OR MAG CARD UNIT. THESE DEVICES AND THE 33FD USE THE SAME CONTROL STORAGE TRANSIENT AREA, SO THEY ARE MUTUALLY EXCLUSIVE. CONSEQUENTLY,YOU CANNOT ENTER 'A' TO RUN ALL DEVICES IF YOU HAVE ANY OF THESE FEATURE DEVICES. THE 33FD CAN BE RUN WITH THE DISK. IF THE 33FD IS ACTIVE, NO OTHER DEVICE CAN BE ACTIVATED UNTIL YOU DE-SELECT THE 33FD.

2. DO NOT USE 'ALL' IF YOUR SYSTEM HAS A 1255. IF THE KEYBOARD AND THE 1255 ARE ACTIVATED AT THE SAME TIME, UNPREDICTABLE RESULTS WILL OCCUR.

3. IF YOU TRY TO OPERATE THE 1255 WHILE THE BELT PRINTER IS RUNNING IN 8 LPI MODE YOU MAY GET STACKER COMMAND ERRORS.

SYSTEM TEST RUN (OPTION 2) 0702

THIS OPTION STARTS EXECUTION OF THE SELECTED DEVICES. THE KEYBOARD MODULE USES THE CRT DURING EXECUTION. IF THE KEYBOARD MODULE IS NOT SELECTED FOR EXECUTION, THEN THIS DISPLAY APPEARS WHILE SYSTEM TEST IS RUNNING.

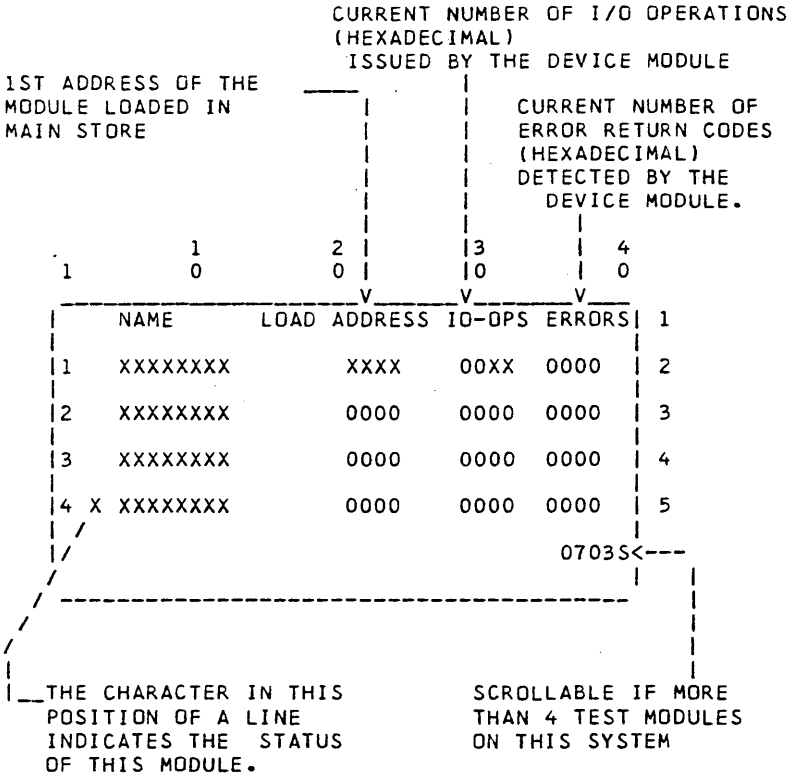
```
 ----------------------------------------
|                                        | 1
|                                        |
|                                        | 2
|                                        |
|                                        | 3
|                                        |
| SYSTEM TEST IS EXECUTING.              | 4
|                                        |
|                                        | 5
|                                        |
|                                   0702 | 6
 ----------------------------------------
```

```
         1         2         3         4
1        0         0         0         0
 ----------------------------------------
|                                        | 1
|                                        |
|****        INQUIRY  REQUEST       *****| 2
|                                        |
|0 - RETURN TO INTERRUPTED PROGRAM       | 3
|                                        |
|1 - CONTINUE INQUIRY REQUESTS           | 4
|                                        |
|2 - TERMINATE JOB & CLOSE FILES         | 5
|                                        |
-->               CHOOSE OPTION  0 1 2   | 6
|----------------------------------------
|
|
|  THIS SCP DISPLAY OCCURS ANYTIME THE 'INQ' KEY
| IS PRESSED DURING EXECUTION. THE TEST IS HALTED,
| BUT NOT TERMINATED.
|
ENTERING A '0' HERE CONTINUES EXECUTING THE TEST.
ENTERING A '1' HERE RETURNS TO THE SYSTEM TEST MAIN MENU.
```

WHEN BSCA OR SDLC IS SELECTED, ALLOW ADEQUATE TIME (5 SECONDS) FOR THE TEST TO COMPLETE BEFORE ENTERING OPTION 2.

SCAN RESULTS OF SYSTEM TEST (OPTION 3) 0703

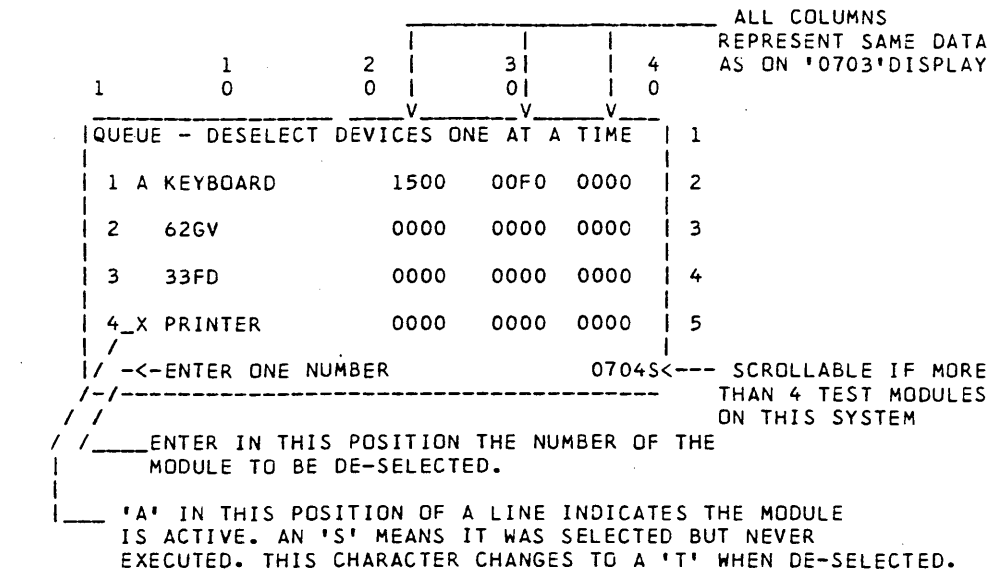
PRESSING 'ENTER' RETURNS TO SYSTEM TEST MAIN MENU.

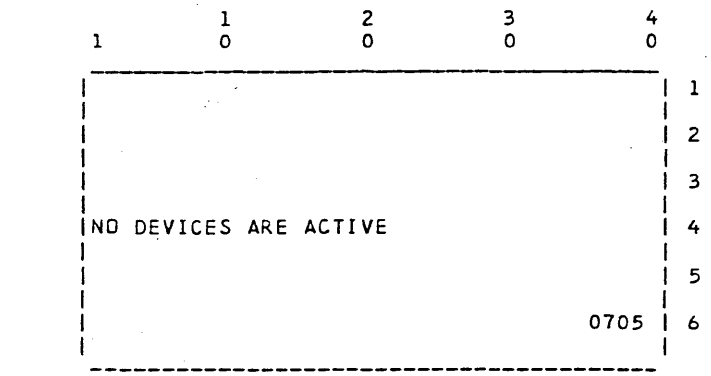


'A' MEANS MODULE IS LOADED AND HAS BEEN EXECUTED.
'S' MEANS MODULE IS SELECTED,BUT NOT LOADED & EXECUTED.
'T' MEANS MODULE WAS TERMINATED.
' ' (BLANK) MEANS MODULE WAS NEVER SELECTED OR LOADED.

SYSTEM TEST DE-SELECT (OPTION 4) 0704 & 0705

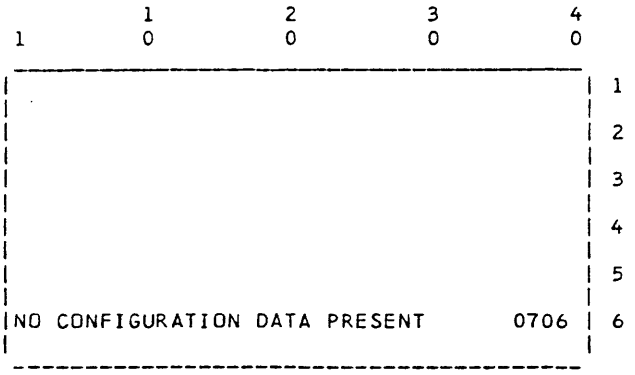
THIS OPTION IS USED TO TERMINATE ONE OR MORE SYSTEM TEST MODULES.



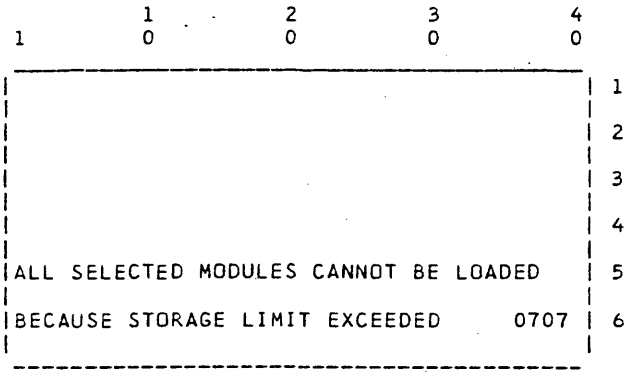


THIS DISPLAY OCCURS IF OPTION 2 IS TAKEN WITH NO DEVICES SELECTED. THIS DISPLAY IS VISIBLE FOR 5 SECONDS BEFORE RETURNING TO MAIN MENU.

SYSTEM TEST ERROR 0706 & 0707



THIS ERROR DISPLAY OCCURS DURING SYSTEM TEST START UP IF NO CONFIGURATION DATA CAN BE FOUND.



THIS ERROR DISPLAY OCCURS DURING SYSTEM TEST IF NO MORE STORAGE IS AVAILABLE TO LOAD ANOTHER DEVICE MODULE. SOLUTION IS TO RUN WITH FEWER MODULES.

SYSTEM TEST KEYBOARD MODULE 0710

```
          1         2         3         4
1         0         0         0         0
 ----------------------------------------
|ALL DATA KEYS ARE DISPLAYED ON LINE SIX.| 1
|                                        |
|THESE FUNCTION KEYS : INQ,ERROR,        | 2
|                                        |
|ALL CURSOR POSITION AND PRINTER CONTROL | 3
|                                        |
|KEYS ARE HANDLED. THE REST ARE NO-OPED. | 4
|                                        |
|SCREEN IS ROLLED UP WHEN LINE 6 IS FULL.| 5
|                                        |
|                                  0710  | 6
|                                        |
 ----------------------------------------
```

SYSTEM TEST 62GV MODULE 0720

THIS DISPLAYS IF A 62GV ERROR OCCURS

```
                                    _____ THIS FIELD WILL CONTAIN A
                                   |      COMMAND FROM THIS LIST
                                   |                     SCAN EQUAL
          1         2              |  3         4        SCAN HIGH
1         0         0              |  0         0        SCAN LOW
 __________________________________|____________         SCAN INVAL
|AN ERROR OCCURRED ON THE          |62GV ,      | 1      READ DATA
|                                  |            |
|WHILE DOING A XXXXXXXXXX <-                    2
|                                               |
|AND CHECKING XXXXXXXXXX XXXXXXXX <------------
|                                               |    |
|ON RELATIVE SECTOR # XXXX                      | 4  |
|                    /                          |    |
|                   /                           | 5  |
|                  /                            |    |
|                 /                       0720  | 6  |
|________________|______________________________|    |
                 |                                   |
THIS IS A DECIMAL NUMBER BETWEEN 1 AND 20100         |
                                                     |
THIS FIELD WILL CONTAIN 'FOR SCAN HIT' OR 'FOR SCAN NOT HIT'
ON A SCAN COMMAND. ON A READ DATA COMMAND IT WILL CONTAIN,
  'DATA FOR 55' OR 'DATA FOR AA'
```

SYSTEM TEST 33FD TEST 0730

THIS DISPLAY OCCURS BEFORE THE 33FD SYSTEM TEST MODULE EXECUTES ANY I/O OPERATIONS. THE PROGRAM ASSUMES THAT AN SCP INITIALIZED SCRATCH DISKETTE HAS BEEN INSTALLED WHEN THE ENTER KEY IS PRESSED.

```
          1         2         3         4
1         0         0         0         0
 ________________________________________
|         33FD SYSTEM TEST MODULE         | 1
|                                         |
|     *-*-*-*- W A R N I N G -*-*-*-*     | 2
|                                         |
|      INSERT A CUSTOMER INITIALIZED      | 3
|                                         |
|           *- S C R A T C H -*           | 4
|                                         |
|    DISKETTE. DATA WILL BE WRITTEN ON    | 5
|                                         |
|             THIS DISKETTE.        0730  | 6
|_________________________________________|
```


09/29/77 P/N 2547690
EC 832050 PEC 830358

ERAP MENU (ERAP) 0801

THIS DISPLAY SHOWS THE DEVICES FOR WHICH AN ERAP PRINT IS AVAILABLE. THE DEVICE ERROR COUNTERS AND TABLES ARE RESET AFTER ERAP PRINTS THE RECORDED DATA FOR THE SELECTED DEVICES.

```
               1          2          3          4    IF THE SYSTEM INCLUDES
     1         0          0          0          0     MORE THAN 9 DEVICES
     ___________________________________________      WHICH HAVE AN ERAP
    |ENTER ERAP SELECTIONS          LIKE 1,3,4| 1   PRINTOUT AVAILABLE,
    |                                         |     THIS DISPLAY BECOMES
    |END TO STOP       ,MOD TO MODIFY SIO CTRS| 2   SCROLLABLE WITH THE
    |                                         |     3 DEVICE NAME LINES
    |  1 KEYBOARD   2 PRINTER    3 62GV       | 3   ROLLING UP OR DOWN.
    |                                         |     |
    |  4 33FD       5 CPU        6 XXXXXXXX   | 4   |
    |                                         |     |
    |  7 XXXXXXXX   8 XXXXXXXX   9 XXXXXXXX   | 5   |
    |                                         |     |
 --->SELECTION ALL                       0801S<----
 |  |_________________________________________|
```

ALLOWED ENTRIES ARE:

'ALL' - DEFAULT
'END' - TERMINATES THE PROGRAM, AND RETURNS TO SYSTEM CONTROL.
'X,XX,...'- NUMBER(S) OF 1 OR MORE DEVICES ATTACHED.
'MOD' - AFTER DEVICES ARE SELECTED,GIVES YOU THE OPPORTUNITY TO CHANGE THE SIO COUNTERS FOR THE SELECTED DEVICE(S). THIS IS THE ONLY WAY SIO COUNTERS CAN BE CHANGED. IF YOU ZERO THE SIO COUNTERS FOR A DEVICE, RUN AN ERAP PRINTOUT TO ZERO ERROR COUNTERS AND THE ERROR HISTORY COUNTERS ALSO.

NOTES:

1. IF AN INVALID INPUT IS ENTERED ALL INPUT IS IGNORED AND THIS DISPLAY IS REPEATED.
2. SEE SYSTEM LOGIC MANUAL (SY21-0567) FOR INFORMATION ON THE TYPES OF ERRORS RECORDED FOR EACH SELECTION.

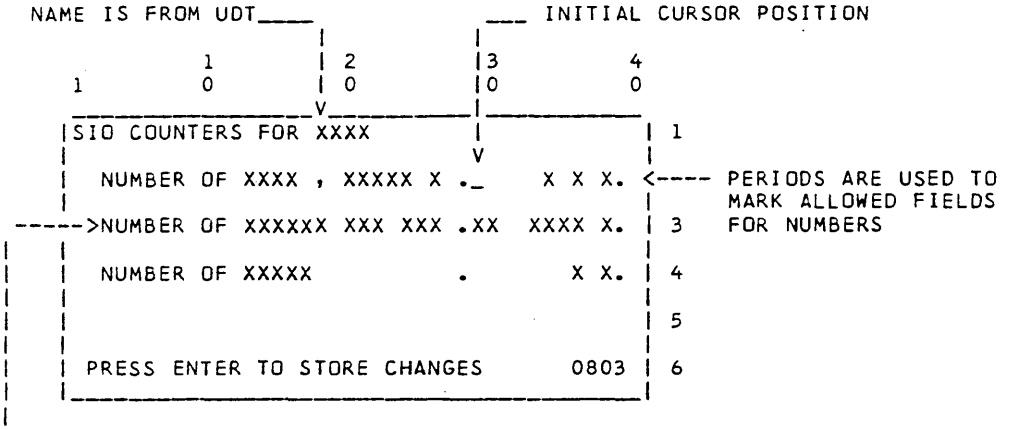
ERAP DIRECTORY ERROR 0802

THE DIRECTORY TO THE ERROR RECORDING TABLES DID NOT CONTAIN AN ENTRY FOR THE DEVICE WHICH WAS SELECTED. THE MOST PROBABLE CAUSE OF THIS ERROR IS THAT SOME PROGRAM HAS INCORRECTLY MODIFIED OR WRITTEN OVER THE DIRECTORY. RESTORE THE SYSTEM TO CORRECT THE DIRECTORY.

```
              1         2         3         4
    1         0         0         0         0
     ________________________________________
    |                                        | 1
    |                                        |
    | THE ERT DIRECTORY DOES NOT CONTAIN     | 2
    |                                        |
    | AN ENTRY FOR THIS DEVICE               | 3
    |                                        |
    |                                        | 4
    |                                        |
    | PRESS ENTER TO TERMINATE ERAP          | 5
    |                                        |
    |                                   0802 | 6
    |________________________________________|
```

ERAP SIO COUNTER(S) MODIFY/DISPLAY 0803

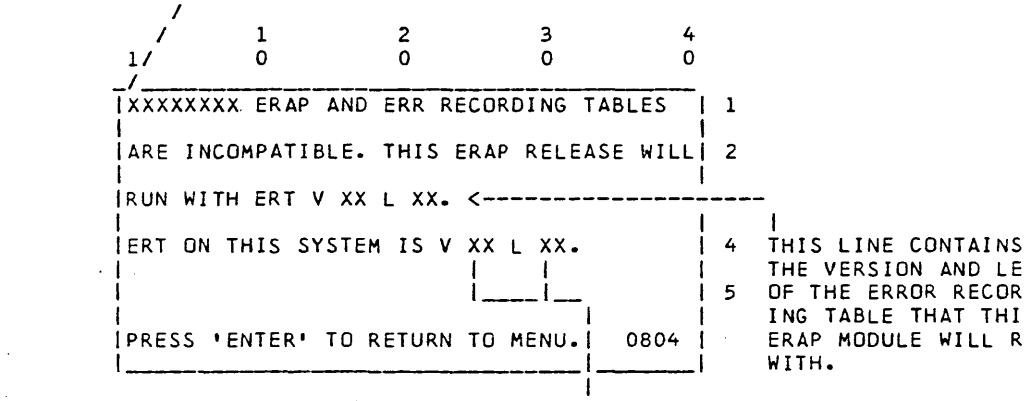
THIS DISPLAY SHOWS THE CURRENT CONTENTS OF THE SIO COUNTERS FOR A DEVICE. THE NUMBERS SHOWN CAN BE CHANGED. WHEN THE ENTER KEY IS PRESSED THE NUMBERS SHOWN WILL BE RETURNED TO THE SIO COUNTERS.



___ TITLES ARE THE SAME AS THOSE APPEARING ON A NORMAL ERAP PRINTOUT. A TITLE WHICH IS TOO LONG IS TRUNCATED.

ERAP/ERT COMPATIBILITY ERROR 0804

THIS WILL BE THE NAME OF THE DEVICE THAT IS INCOMPATIBLE.



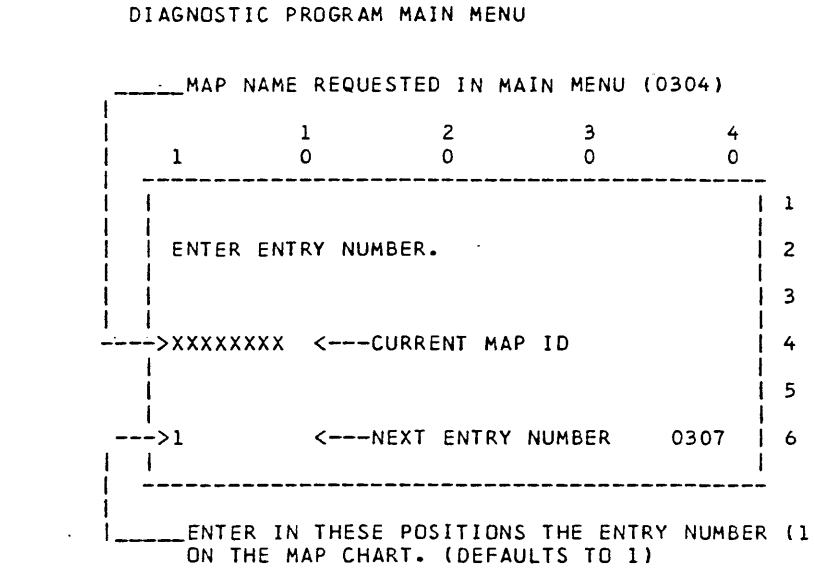
THIS LINE CONTAINS THE VERSION AND LEVEL OF THE ERROR RECORDING TABLE FOR THIS DEVICE ON THE SCP INSTALLED.

III. PROGRAM DESCRIPTIONS:

MDI (MAP-DIAGNOSTIC INTEGRATION) IS A METHOD OF MERGING DIAGNOSTIC TESTS WITH A MAP CHART INTO A SINGLE 'PROGRAM'. THIS 'PROGRAM' IS BUILT TO REPRESENT THE LOGICAL FLOW OF THE MAP CHART AND ALSO CONTAINS THE ACTUAL MICRO CODE TESTS. AT EXECUTION TIME, THE MDI SUPERVISOR FOLLOWS THE LOGIC FLOW OF THE MAP CHART BY DETERMINING YES/NO DECISIONS. THESE YES/NO DECISIONS ARE MADE BY EITHER ANALYZING THE RESULTS FROM EXECUTING THE SMALL DIAGNOSTIC TESTS (TU TESTS), OR ACCEPTING A 'Y' OR 'N' RESPONSE FROM YOU TO A MAP CHART QUESTION.

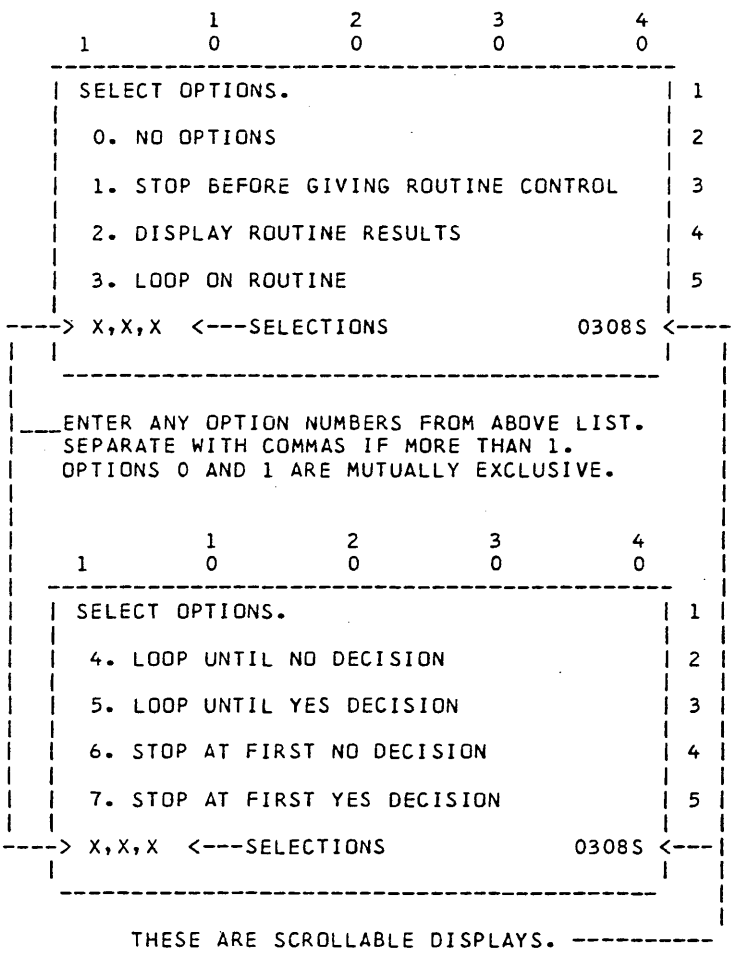
UNDER NORMAL CONDITIONS, THE MDI PROGRAMS ARE EXECUTED IN AN AUTOMATIC MODE. THAT IS, EACH TU TEST IS EXECUTED AND ITS RESULTS ANALYZED WITHOUT CE INTERVENTION, UP TO THE POINT WHERE THE PROGRAM CANNOT CONTINUE WITHOUT SOME EXTERNAL ACTION.

THE MDI PROGRAMS CAN BE EXECUTED IN A FREELANCE MODE BY SETTING THE MODE SELECTOR SWITCH TO 'SYS INSN STEP'. THE FOLLOWING DISPLAY IS PRESENTED BEFORE EXECUTING THE MDI PROGRAM:



THE ENTRY NUMBER IS THE 3 DIGIT ID AT EACH POINT IN A MDI MAP CHART. YOU NEED TO REFER TO THE HARD COPY MAP CHART. THIS DISPLAY ALLOWS PROGRAM TO GO TO ANY POINT IN THE MDI MAP CHART.

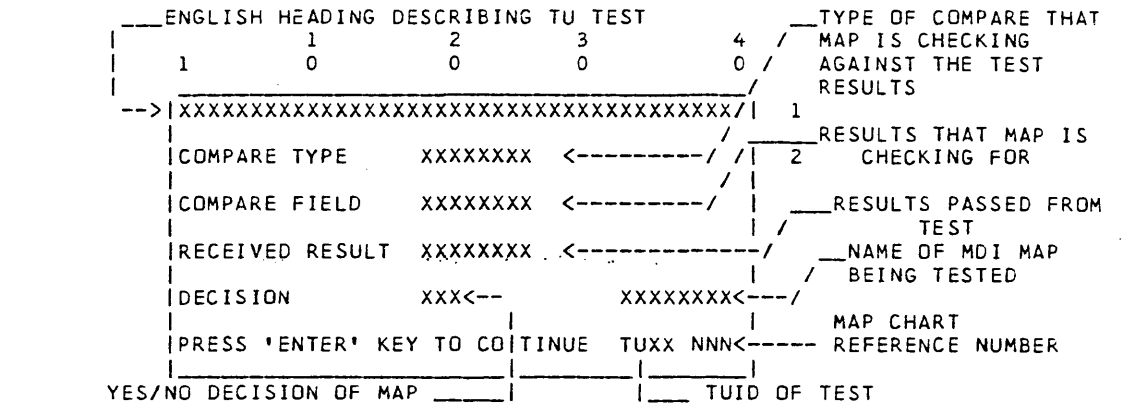
DIAGNOSTIC OPTION MENU(S) 0308



TO 'STEP' THROUGH THE MDI MAP, SELECT OPTIONS 1 AND 2. THIS CAUSES THE TEST DESCRIPTION TO BE DISPLAYED BEFORE THE TEST IS EXECUTED AND ALSO DISPLAYS THE TEST RESULTS AND HOW THE MAP CHART IS ANALYZING THE RESULTS AFTER THE TEST IS EXECUTED.

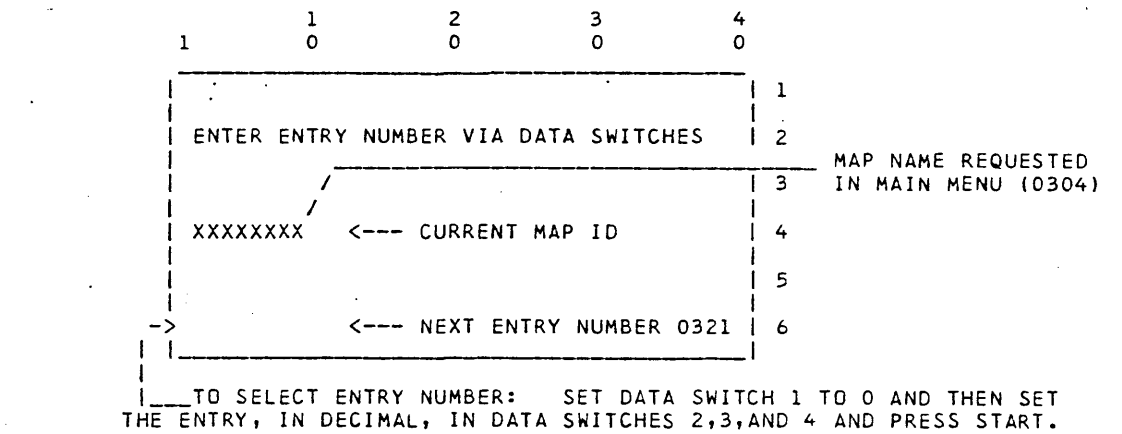
DIAGNOSTIC MDI DISPLAYS 0001 THRU 0255

THIS DISPLAY IS ALSO SHOWN WHEN ONE OF THE LOOP OPTIONS IS SELECTED. THIS WILL ALLOW VISUAL ANALYSIS OF ANY CHANGING RESULTS. NOTE OPTIONS 4-7. THESE CAN BE USED TO 'TRAP' INTERMITTENT FAILURES BY LOOPING ON A TU TEST UNTIL THE RESULTS CHANGE. WHEN THE TEST STOPS, THE CHANGED RESULTS REMAIN DISPLAYED.

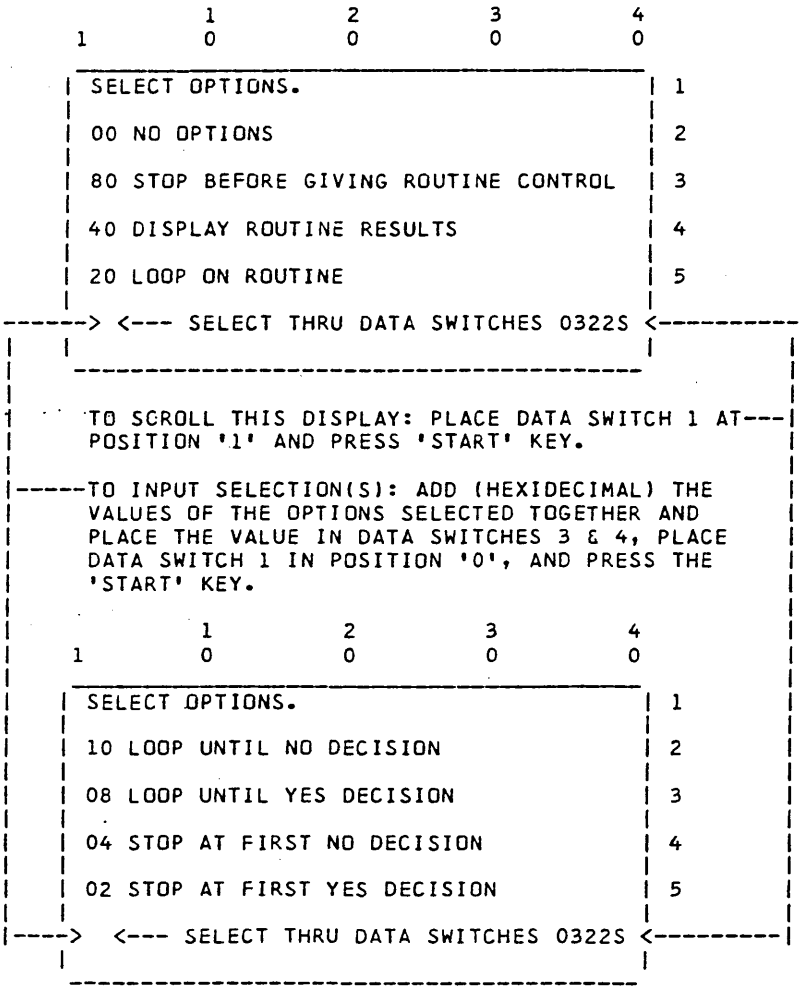


THE FOLLOWING TWO DISPLAYS CORRESPOND TO DISPLAYS 0307 AND 0308, BUT ARE USED FOR THE KEYBOARD MDI TESTS. NOTE THE USE OF DATA SWITCHES AND START KEY RATHER THAN THE 'Y', 'N' AND 'ENTER' KEYS.

DIAGNOSTIC PROGRAM MAIN MENU (KEYBOARD) 0321



DIAGNOSTIC OPTION MENU(S) (KEYBOARD) 0322



1. MDI-MAP TU TEST LISTING (ALL DEVICES)

THE FOLLOWING TU TESTS ARE IMBEDDED IN THE MDI-MAP DIAGNOSTICS FOR EACH DEVICE.(FOR FEATURE DEVICES, SEE THAT FEATURE SERVICE GUIDE) EACH TEST CAN BE CALLED INDIVIDUALLY BY USING THE -TUSELCT- PROGRAM. ***** SEE CAUTION BELOW *****

33FD

TU	DESCRIPTION
TU01	STEP MODE READ TEST
TU02	STEP MODE CE WRITE TEST
TU03	READY/SPEED TEST
TU04	SEEK/READ ID TEST
TU05	WRITE TEST (USE SCRATCH DISKETTE)

62GV

TU	DESCRIPTION
TU01	READ ID STEP MODE TEST
TU02	WRITE DATA STEP MODE TEST
TU03	READ DATA STEP MODE TEST
TU04	INITIAL ADAPTER CHECK OUT
TU05	BASIC 62GV INTERRUPT TEST
TU06	DATA BUFFER LOAD/SENSE TEST
TU07	DIAGNOSTIC MODE SET/RESET
TU08	INTERRUPT REQUEST TEST
TU09	SECTOR/INDEX SET/RESET TEST
TU0A	SEEK COUNTERS 1/2 TEST
TU0B	SEEK CONTER INCREMENT TEST
TU0C	ENABLE INTERRUPT TIMEOUT TEST
TU20	INITIAL RESET OF SEEK LINES
TU21	INITIAL RESET OF DATA LINES
TU23	RECALIBRATE TEST
TU25	OFF TRACK TEST
TU26	RECALIBRATE AND 1 TRACK SEEK TEST
TU30	COMPOSITE RECALIBRATE AND SEEK TEST
TU31	+- 1-TRACK SEEK TEST
TU32	+- 5 OR 7 TRACK SEEK TEST
TU33	+- 11 OR 17 TRACK SEEK TEST
TU40	HOME SENSE TEST
TU41	+- 1-TRACK SEEK TEST
TU50	READ COMPOSITE TEST
TU56	READ ID (ALL HEADS)
TU60	READ DATA M/S (CONTROL FIELD IN M/S)
TU63	READ DATA M/S (CONTROL FIELD IN C/S)
TU64	READ DATA C/S (CONTROL FIELD IN M/S)
TU70	INITIAL RESET OF SEEK OPERATIONS
TU71	RESET AND RECALIBRATE TEST
TU73	SPEED TEST
TU75	RANDOM SEEK TEST
TU76	INTERFACE SENSE/RECORD TEST

CAUTION:
THE TU TESTS ARE DESIGNED TO RUN IN SEQUENCE AS CALLED BY THE MAPS. RANDOM SELECTION OF TU TESTS CAN CAUSE UNEXPECTED RESULTS FROM CERTAIN TESTS.

62GV (CONTINUED)

TU83	WRITE ID (HEAD 2) TEST
TU84	WRITE ID (HEAD 0) TEST
TU85	WRITE ID (HEAD 1) TEST
TU86	WRITE ID TEST (ALL HEADS)
TU87	WRITE ID TEST (ALL HEADS)
TU88	EXTENDED WRITE/READ ID TEST
TU90	WRITE DATA (HEAD 0 - SECTOR 30)
TU96	WRITE/READ DATA (ALL HEADS)
TUA0	SCAN EQUAL (HEAD 0 - SECTOR 30) TEST
TUAA	SCAN EQUAL NO HIT TEST
TUAB	SCAN LOW (HEAD 0) TEST
TUAD	SCAN HIGH (HEAD 0) TEST
TUB0	READ VERIFY (HEAD 0) TEST
TUC0	DIAGNOSTIC READ TEST

KEYBOARD

TU	DESCRIPTION
TU00	INTERRUPT NOT ENABLED TEST
TU01	SCAN CODE '55' TEST
TU02	SCAN CODE 'AA' TEST
TU03	RIGHT SHIFT KEY TEST
TU04	OVERRUN TEST
TU05	LEFT REPEAT KEY TEST
TU06	RIGHT REPEAT KEY TEST
TU07	DEPRESS ALL KEYS TEST
TU08	KEYBOARD TO CRT FRIEND'S CALLER

LINE PRINTER

TU	DESCRIPTION
TU01	INITIAL IOS/JIO TEST
TU02	BASIC PRINTER INTERRUPT
TU03	PRINT BUFFER LOAD/SENSE
TU04	PRINT BUFFER ADDRESS INCREMENT
TU05	ALL PRINT BUFFER LOAD/SENSE
TU06	PAPER CLAMP WRAP
TU07	PRINTER RESET SET/RESET
TU08	DIAGNOSTIC MODE SET/RESET
TU09	ELAPSED TIME COUNTER
TU0A	INITIAL CARRIAGE FUNCTION
TU0B	CARRIAGE GO SET/RESET
TU0C	END SPACE TIME COUNTER
TU0D	CARRIAGE SYNC CHECK SET/RESET
TU0E	ONE SPACE AND CARRIAGE LOAD SPACE
TU0F	SPACE COUNTER (16 LINES)
TU10	BELT GO SET/RESET
TU11	DIAGNOSTIC MODE UP TO SPEED
TU12	BELT SPEED CHECK SET/RESET
TU13	RIBBON CONTROL (6 SEC RUN TIME)
TU14	PRINT SUBSCAN AND HOME
TU15	ODD/EVEN SUBSCAN SET/RESET
TU16	SUBSCAN RESET SET/RESET
TU17	SUBSCAN(1-5) INCREMENT (ODD)
TU18	SUBSCAN(1-5) INCREMENT (EVEN)

LINE PRINTER (CONTINUED)

TU	DESCRIPTION
TU19	BELT SYNC CHECK SET/RESET
TU1A	CHARACTER SET SIZE
TU1B	HAMMER CONTROL SELECT WRAP
TU1C	COIL CURRENT DIAGNOSTIC WRAP
TU1D	COIL CURRENT CHECK SET/RESET
TU1E	HAMMER PARITY CHECK SET/RESET
TU1F	COIL CURRENT CHECK JIO SET/RESET
TU20	INITIAL BOX SENSE
TU21	BELT ON
TU22	CARRIAGE LOAD AND GO
TU23	HAMMER MATRIX RESET
TU24	INTERRUPT REQUEST
TU25	PRINTER OSCILLATORS
TU26	PRINT BUSY SET/RESET
TU29	PSS/IMPSS TIMING
TU2A	HAMMER MATRIX RESET
TU2C	DIAGNOSTIC HAMMER FIRE
TU2D	BLANK LINE PRINT AND BUSY TIMEOUT
TU2E	ATTACHMENT HAMMER FIRE
TU30	HAMMER DUTY CYCLE TIMING TEST
TU31	CARRIAGE TIMING
TU32	PRINTER FEATURE WRAP
TU34	FORMS JAM DETECT
TU60	H PATTERN
TU61	T PATTERN
TU62	RIPPLE PATTERN
TU64	WORST PROBABILITY PRINT
TU65	CARRIAGE SPACE SKIP
TU66	PAPER SETTLING
TU67	ONE HAMMER PRINT
TU80	AA2-Q2 TO CARRIAGE CONTROL WRAP TEST
TU81	AA2-Q2 TO AA2-R2 AND AA2-S2 WRAP STATUS TEST
TU82	AA2-Q2 TO AA2-T2 WRAP STATUS TEST
TU83	FORCE DBO PARITY CHECK
TU84	24 VOLT CONTACTOR CHECKOUT
TU85	CONTACTOR OFF SENSE TEST
TU86	INTERLOCK SENSE TEST (TU20)
TU88	COIL CHECK WITH CONTACTOR OPEN
TU90	ANALYZE HAMMERS FIRED BY TU2C (50-155 LPM)
TU91	PRINTER RESET WORKING
TU92	PRINTER I/O WORKING
TU95	ANALYZE HAMMERS FIRED BY TU2C (285 LPM)
TUA0	UDT FEATURE CHECK

SERIAL PRINTER

TU	DESCRIPTION
TUA1	INITIAL ADAPTER CHECKOUT(1)
TUA2	INITIAL ADAPTER CHECKOUT (2)
TUA3	EMITTER COLUMN COUNTER TEST
TUA4	FORMS LINE COUNTER TEST
TUA5	HEAD POSITION COUNTER TEST
TUA6	WIRE LATCHES TEST
TUA7	INTERRUPT TEST
TUA8	FORMS SPACE COUNTER TEST
TUA9	RAM CHECKOUT
TUAA	RAM PATTERNS TEST
TUAB	MAR TEST
TUAC	ROS TEST
TUAD	MOTOR ELAPSE COUNTER TEST
TUAE	FORCE DBO PARITY CHECK
TUB1	SINGLE FORM/LEDGER CARD SWITCH TEST
TUB2	END OF FORMS TEST
TU01	DIAGNOSTIC RESTORE
TU02	DIAGNOSTIC RESTORE (W/TURNAROND)
TU03	DIAGNOSTIC PRINT LEFT (W/TURNAROUND)
TU04	DIAGNOSTIC PRINT LEFT (W/TURNAROUND & L.MARGIN)
TU05	DIAGNOSTIC PRINT LEFT
TU06	DIAGNOSTIC FORCING UNPRINTABLE CHARACTER CHECK
TU07	DIAGNOSTIC PRINT RIGHT (W/TURNAROUND)
TU08	DIAGNOSTIC PRINT RIGHT (W/TURNAROUND)
TU09	DIAGNOSTIC PRINT RIGHT (W/TURNAROUND & L.MARGIN)
TU10	DIAGNOSTIC PRINT RIGHT (L.MARGIN)
TU11	DIAGNOSTIC PRINT RIGHT (L.MARGIN)
TU12	DIAGNOSTIC PRINT RIGHT
TU13	DIAGNOSTIC PRINT RIGHT
TU14	DIAGNOSTIC EMITTER OUT OF ORDER CHECK
TU15	DIAGNOSTIC EMITTER OUT OF ORDER CHECK
TU16	DIAGNOSTIC EMITTER OUT OF ORDER CHECK
TU17	DIAGNOSTIC FALSE EMITTER CHECK
TU18	DIAGNOSTIC PRINT HUNG CHECK
TU19	DIAGNOSTIC EMITTER TOO FAST CHECK
TU21	DIAGNOSTIC EMITTER SEQUENCES
TU22	DIAGNOSTIC PRINT/FETCH MOTOR TIME OVERLAP
TU23	DIAGNOSTIC PRINT/FORMS OPERATION OVERLAP
TU24	DIAGNOSTIC FORMS HUNG CHECK
TU25	DIAGNOSTIC 40 CPS UINDIRECTION COMMANDS

2. DIAGNOSTIC PROGRAM DESCRIPTIONS

THE FOLLOWING ARE DESCRIPTIONS OF DIAGNOSTIC PROGRAMS AVAILABLE.

ALL PROGRAMS,UNLESS OTHERWISE SPECIFIED:
A. RESIDE ON DIAGNOSTIC DISKETTE DIAG01
B. ARE EXECUTED BY ENTERING THE PROGRAM ID IN MAIN MENU
C. ARE TERMINATED BY PRESSING 'INQ' KEY AT ANY TIME

PROG ID	DESCRIPTION
ANAL33FD	THIS PROGRAM READS ALL ID'S & DATA FIELDS FROM EACH CYLINDER ON THE CE DISKETTE. IT CHECKS FOR PRESENCE OF SECTORS, PROPER ID'S & NO CRC CHECKS WHILE READING ID'S OR DATA FIELDS. DISPLAY REFERENCE NUMBERS ARE 0504-0506.
ANALDISK	THIS PROGRAM READS ALL ID'S & DATA ON 62GV DISKS, CHECKS FOR CORRECT ID'S AND NO ERROR CONDITIONS IN EITHER ID OR DATA. A PRINTOUT SHOWS ALL EXCEPTIONS TO EXPECTED RESULTS. IT ALSO ALLOWS REWRITING OF SELECTED TRACKS OF ID'S AND ZEROING OF DATA ON THOSE TRACKS. DISPLAY REFERENCE NUMBERS ARE 0575-0580.
BSCA	THE PROGRAM DESCRIPTIONS FOR THIS FEATURE ARE IN THE BSCA DIAGNOSTIC SERVICE GUIDE -(3100)-
CONFIG	CONFIGURATOR PROGRAM CONFIGURES THE DISK AND THE DISKETTE FOR THE SPECIFIC OPTIONS THAT ARE ON EACH SYSTEM. DISPLAY REFERENCE NUMBERS ARE 0520-0549.
CRT1	THE VIDEO CLOCK STEP PROGRAM CLOCK STEPS 2 CHARACTERS, AN 'A' AND AN '=', AND CHECKS FOR PROPER CHARACTER GENERATOR BITS ALONG WITH PROPER ROS AND RAM ADDRESSING. DISPLAY REFERENCE NUMBER IS 0316.
CRT2	DISPLAY ALIGNMENT PATTERN PROGRAM DISPLAYS AN ALIGNMENT PATTERN TO PROVIDE A VISUAL CHECK FOR MISSING LINES AND/ OR RETRACE PROBLEMS. DISPLAY REFERENCE NUMBER IS 0317.
CRT3	ALL CHARACTER PATTERN PROGRAM DISPLAYS ALL CHARACTERS FROM THE ROS TO PROVIDE A VISUAL CHECK FOR MISSING CHARACTERS OR PORTIONS OF MISSING CHARACTERS. DISPLAY REFERENCE NUMBER IS 0318. IF DUAL CASE FEATURE IS INSTALLED, PRESSING THE 'CODE' KEY DURING THIS TEST WILL DISPLAY THE LOWER CASE CHARACTERS.
CRT4	THE DYNAMIC CHARACTER RE-DISPLAY PROGRAM DISPLAYS A PATTERN OF ASTERISKS, THEN RIPPLES LINES 3 AND 4 WITH DIFFERENT CHARACTERS, THEN THE ENTIRE SCREEN IS ERASED. DISPLAY REFERENCE NUMBER IS 0319.

PROG ID	DESCRIPTION
CUSTOMIZ	THIS PROGRAM SELECTS APPROPRIATE MICRO-PROGRAM MODULES FROM THE MICRO-CODE SYSTEM/3 EMULATOR THAT RESIDES ON DIAG02. IT SELECTS ACCORDING TO THE I/O DEVICES AND FEATURES DEFINED BY THE CONFIG PROGRAM. THIS INFORMATION IS THEN MOVED TO THE DISK FOR SYSTEM PROGRAMMING USE. DISPLAY REFERENCE NUMBERS ARE 0514-0516
DSPA33FD	THIS PROGRAM ALLOWS THE OPERATOR TO INDIVIDUALLY CALL ANY SECTOR OF A DIAGNOSTIC DISKETTE (INCLUDING IMPL SECTOR) AND DISPLAY OR ALTER THE DATA AND RETURN IT TO THE DISKETTE. DISPLAY REFERENCE NUMBERS ARE 0310 & 0311
DSPA62GV	THIS PROGRAM ALLOWS THE OPERATOR TO INDIVIDUALLY CALL ANY SECTOR OF THE 62GV DISK, DISPLAY AND/OR ALTER THE DATA AND RETURN IT TO THE DISK. DISPLAY REFERENCE NUMBERS ARE 0327-0328
DUMP33FD	THIS PROGRAM IS USED TO PRINT OUT ANY SECTOR(S) OF A DIAGNOSTIC DISKETTE BY SPECIFYING THE STARTING AND ENDING CYLINDER AND SECTOR NUMBER(S). DISPLAY REFERENCE NUMBERS ARE 0325-0326.
FRIEND	FRIEND PROGRAM ALLOWS THE CE TO BUILD A TABLE OF COMMANDS TO EXERCISE THE 62GV. DISPLAY REFERENCE NUMBERS ARE 0660-0670.
HEADALGN	THIS PROGRAM CALCULATES 33FD HEAD POSITION VARIANCE FROM OPTIMUM BY READING WHILE SEEKING ACROSS TRACKS. DISPLAY REFERENCE NUMBERS ARE 0620-0630.
HELP	HELP PROGRAM ALLOWS CE TO SELECT A PROGRAM FROM ONE OF THE FOLLOWING CATEGORIES: MAP DIAGNOSTICS SPECIAL DIAGNOSTICS UTILITIES OTHER DIAGNOSTIC SUPPORT DISPLAY REFERENCE NUMBERS ARE 0359-0363.
INITDISK	DISK INITIALIZE PROGRAM REWRITES ALL ID'S,ZEROES ALL DATA FIELDS AND ASSIGNS ALTERNATES TO DEFECTIVE SECTORS. A LISTING OF THE CYL 2 ID CONTENTS IS PRINTED AT THE CONCLUSION OF THE PROGRAM. DISPLAY REFERENCE NUMBERS ARE 0550-0570.
KBDTOCRT	KEYBOARD TO CRT FRIENDS PROGRAM DISPLAYS A FULL SCREEN OF ANY CHARACTER DEPRESSED ON THE KEYBOARD. FUNCTION KEYS HAVE THEIR NAME DISPLAYED WHEN DEPRESSED. DISPLAY REFERENCE NUMBER IS 0309.

PROG ID	DESCRIPTION
KEYBOARD	KEYBOARD MAP PROGRAMS ARE LOADED FROM THE CE DISKETTE EITHER BY TYPING IN THEIR PROGRAM ID, OR FOR KEYBOARD, BY SETTING THE DATA SWITCHES TO F100 AT IMPL TIME. THE THE MAP PROGRAMS ARE USED TO LEAD THE CE TO THE FRU. THERE ARE NO DISPLAY REFERENCE NUMBERS. A MAP REFERENCE NUMBER IS GIVEN TO FREELANCE WITH THE PROGRAM LISTINGS.
LIST	THIS PROGRAM ALLOWS THE OPERATOR TO PRINT A HARD COPY OF ALL PERTINENT INFORMATION ABOUT ALL PROGRAMS ON ANY DIAGNOSTIC DISKETTE. DISPLAY REFERENCE NUMBERS ARE 0312-0313.
MOVE	THE PROGRAM MOVES THE DIAGNOSTIC SUPPORT FOR THE 33FD AND ALL SYSTEM CONFIGURE INFORMATION TO THE 62GV. MOVE IS USED WITH THE CONFIG OPERATION. DISPLAY REFERENCE NUMBERS ARE 0507-0509.
PANEL	THE CE PANEL PROGRAM ALLOWS THE CE TO DISPLAY DATA SWITCHES THEN PROMPTS HIM TO CHECK OUT THE REMAINDER OF THE CE PANEL. DISPLAY REFERENCE NUMBERS ARE 0260-0279.
PATCH	THIS PROGRAM ALLOWS THE OPERATOR TO PATCH ANY PROGRAM ON A DIAGNOSTIC DISKETTE(INCLUDING RELOCATABLE)BY ENTERING THE PROGRAM ID, THE ADDRESS TO BE PATCHED, AND THE CURRENT AND NEW DATA. DISPLAY NUMBERS ARE 0510 THRU 0513. NOTE: ONCE THE DISKETTE IS WRITTEN ON, THE 'INQ' KEY WILL NOT TERMINATE THE PROGRAM.
PRINTER	THE LINE PRINTER MAP PROGRAMS ARE USED TO LEAD THE CE TO THE FRU. A MAP REFERENCE NUMBER IS GIVEN FOR FREELANCING WITH THE MAP PROGRAM LISTINGS.
PRT1	LINE PRINTER PAPER CLAMP PROGRAM ALLOWS THE CE TO OPEN OR CLOSE THE PAPER CLAMP WITH EACH DEPRESSION OF THE ENTER KEY. DISPLAY REFERENCE NUMBERS ARE 0330-0331.
PRT2	THE LINE PRINTER INTERLOCK STATUS DISPLAY PROGRAM IS USED TO DISPLAY THE STATUS,OPEN OR CLOSED,OF THE END OF FORMS, COVER, AND THROAT SWITCHES. THE DISPLAY REFERENCE NUMBER IS 0335.
PRT3	LINE PRINTER TIMINGS DISPLAY PROGRAM ALLOWS ONE OF FIVE TIMINGS TO BE DISPLAYED. THE TIMINGS ARE : 1. PSS (PRINT SUBSCAN PULSES) 2. ISS (IMPRESSION SINGLESHOT PULSES) 3. HOME 4. HAMMER (HAMMER FIRE TIME) 5. CARRIAGE (CARRIAGE ADVANCE PULSES) DISPLAY REFERENCE NUMBERS ARE 0340-0346.

PROG ID	DESCRIPTION
PRT4	LINE PRINTER HAMMER/CHARACTER FIRE PROGRAM ALLOWS THE CE TO PRINT ANY CHARACTER(S) IN ANY PRINT POSITION(S). DISPLAY REFERENCE NUMBERS ARE 0350-0351
PRT7	LINE PRINTER PRINT BELT ON PROGRAM ALLOWS THE CE TO START THE PRINT BELT WITH EACH DEPRESSION OF THE ENTER KEY. DISPLAY REFERENCE NUMBERS ARE 0355-0356
PRT8	LINE PRINTER WORST PROBABILITY PRINT TEST ALLOWS FOR PRINTING A PATTERN TO TEST THE LINE PRINTER. DISPLAY REFERENCE NUMBER IS 0357.
PRT9	LINE PRINTER H PATTERN PRINT TEST PRINTS A COMPLETE LINE OF H'S UNTIL TERMINATED BY THE 'INQ'KEY. DISPLAY REFERENCE NUMBER IS 0358.
PRT10	LINE PRINTER 1/2 INDEX FEATURE CARRIAGE TIMING AND SET/RESET TEST. DISPLAY REFERENCES ARE 332-334 AND 336.
PRT11	ONE HAMMER PRINT TEST FOR 1/2 INDEX FEATURE. DISPLAY REFERENCE NUMBERS ARE 0337 AND 0338.
SDLC	THE PROGRAM DESCRIPTIONS FOR THIS FEATURE ARE IN THE SDLC DIAGNOSTIC SERVICE GUIDE -(3200)-.

PROG ID	DESCRIPTION
SPRT1	THIS PROGRAM PRINTS THE 64 CHARACTER SET EACH TIME THE 'ENTER' KEY IS PRESSED. IF THE 'KANA ON' KEY HAS BEEN PRESSED, THE 67 KATAKANA CHARACTERS WILL BE PRINTED. DISPLAY REFERENCE IS 0375.
SPRT2	THIS PROGRAM OVERPRINTS H'S AND I'S. A PATTERN 2 H/I CHARACTERS,FOLLOWED BY 2 BLANKS, FOLLOWED BY 2 H/I CHARACTERS IS PRINTED ACROSS THE PAGE. DISPLAY REFERENCE IS 0376.
SPRT3	THIS PROGRAM RIPPLES THE ENTIRE 64 CHARACTER SET IN ALL PRINT POSITIONS. A BLANK IS PRINTED AFTER EVERY 3RD CHARACTER. BLANKS ARE SHIFTED ONE POSITION EACH LINE. DISPLAY REFERENCE IS 0377.
SPRT4	THIS PROGRAM ALLOWS INPUTTING A CHARACTER TO PRINT, THE STARTING AND ENDING POSITIONS OF THE PRINT LINE , THE NUMBER OF LINES TO MOVE THE FORMS, AND THE DIRECTION TO PRINT (RIGHT, LEFT OR BOTH). DISPLAY REFERENCE IS 0378.
SPRT5	THIS PROGRAM DOES A RIPPLE WIRE PRINT BY ALTERNATING THE CHARACTERS 'SLASH' AND 'REVERSE SLASH'. DISPLAY REFERENCE IS 0379.
SPRT6	THIS PROGRAM PRINTS AN EVEN/ODD WIRE PATTERN CONSISTING OF CHARACTERS WHICH ARE 7 COLUMNS WIDE (THE 1ST, 3RD, 5TH, & 7TH COLUMNS CONTAIN 4 WIRES - THE 2ND, 4TH, & 6TH COLUMNS CONTAIN 3 WIRES). 3 CHAR. FOLLOWED BY 3 BLANKS PRINT ACROSS THE PAGE. DISPLAY REFERENCE IS 0380.
SPRT7	THIS PROGRAM IS A STRESS TEST. THE CHARACTER 'H' IS PRINTED IN POSITIONS 1 THRU 10. THE NEXT LINE IT'S POSITIONS 2 THRU 11. EACH SUCCEEDING LINE IS SHIFTED TO THE RIGHT UNTIL RIGHT MARGIN IS REACHED. THEN THE PATTERN IS SHIFTED LEFT UNTIL LEFT MARGIN IS REACHED. DISPLAY REFERENCE IS 0381.
SPRT9	THIS PROGRAM VARIES THE TIMINGS + 10 % AND PRINTS 6 LINES OF 'H'S. THEN THE TIMINGS ARE CHANGED - 10 % AND 6 LINES OF 'H'S ARE PRINTED. DISPLAY REFERENCE IS 0382.
SPRT10	THIS PROGRAM EXECUTES HEAD RESTORES EVERY 250 MSEC. DISPLAY REFERENCE IS 0385.
SPRINT	THIS PROGRAM EXECUTES THE ATTACHMENT MDI-MAP DIAGNOSTICS.
SPRINT5	THIS PROGRAM EXECUTES THE I/O BOX MDI-MAP DIAGNOSTICS.

PROG ID	DESCRIPTION
TUSELCT	MDI TU TEST SELECT PROGRAM ALLOWS THE CE TO EXECUTE A GIVEN TU TEST FOR A DEVICE WITHOUT HAVING TO KNOW WHERE THE TU TEST IS LOCATED WITHIN THE MAP DIAGNOSTICS. REFER TO THE TU TEST LISTING/DESCRIPTION FOR EACH DEVICE. DISPLAY REFERENCE NUMBERS ARE 0676-0682. * NOTE : DO NOT USE AUTOMATIC LOOP MODE IF THE KEYBOARD TU TESTS ARE SELECTED. * CAUTION: THE TU TESTS ARE DESIGNED TO RUN IN SEQUENCE AS CALLED FOR BY THE MAPS. RANDOM SELECTION OF TU TESTS CAN CAUSE UNEXPECTED RESULTS FROM CERTAIN TESTS.
33FD	DISKETTE MAP PROGRAMS ARE USED TO LEAD THE CE TO THE FRU. A MAP REFERENCE NUMBER IS GIVEN FOR FREELANCING WITH THE MAP PROGRAM LISTINGS.
62GV	DISK MAP PROGRAMS ARE USED TO LEAD THE CE TO THE FRU. A MAP REFERENCE NUMBER IS GIVEN FOR FREELANCING WITH THE MAP PROGRAM LISTINGS.

3. OTHER DIAGNOSTIC SUPPORT (S/3 PROGRAM DESCRIPTIONS)

THE FOLLOWING LIST OF PROGRAMS ARE AVAILABLE TO THE CE FOR EXECUTION IN THE CUSTOMER (S/3) ENVIRONMENT.
UNLESS OTHERWISE SPECIFIED,THESE PROGRAMS:
A. RESIDE ON DIAGNOSTIC DISKETTE DIAG02
B. ARE EXECUTED BY ENTERING THE PROGRAM ID IN SCP MAIN MENU.

PROG ID	DESCRIPTION
ERAP	THIS PROGRAM ALLOWS THE OPERATOR TO PRINT OUT THE OPERATING AND ERROR STATISTICS OF THE CPU, AND EACH I/O DEVICE ATTACHED TO SYS/32. THIS INFORMATION WAS GATHERED IN THE CUSTOMER OPERATING ENVIRONMENT. DISPLAY REFERENCE NUMBERS ARE 0801 - 0804
SYSTST	THIS PROGRAM ALLOWS THE YOU TO RUN MOST I/O DEVICES INDIVIDUALLY OR SIMULTANEOUSLY. DISPLAY REFERENCE NUMBERS ARE 0700-0707,0710,0720,0730.
BSCA	SEE THE BSCA DIAGNOSTIC SERVICE GUIDE (MAP SECTION 3100) FOR THE DETAILED OPERATION OF THESE TESTS.
SDLC	SEE THE SDLC DIAGNOSTIC SERVICE GUIDE (MAP SECTION 3200) FOR THE DETAILED OPERATION OF THESE TESTS.

4. SYSTEM TEST MAINTENANCE STRATEGY

SYSTEM TEST WAS DESIGNED AS A SIMPLE-TO-OPERATE AND COMPREHENSIVE TOOL TO DETERMINE IF THE SYSTEM/32 AND ITS COMPONENTS ARE FUNCTIONING PROPERLY.
THESE COMPONENTS ARE:

- CPU HARDWARE
- CERTAIN I/O DEVICES
- EMULATOR
- I/O MICRO-CODE
- SCP

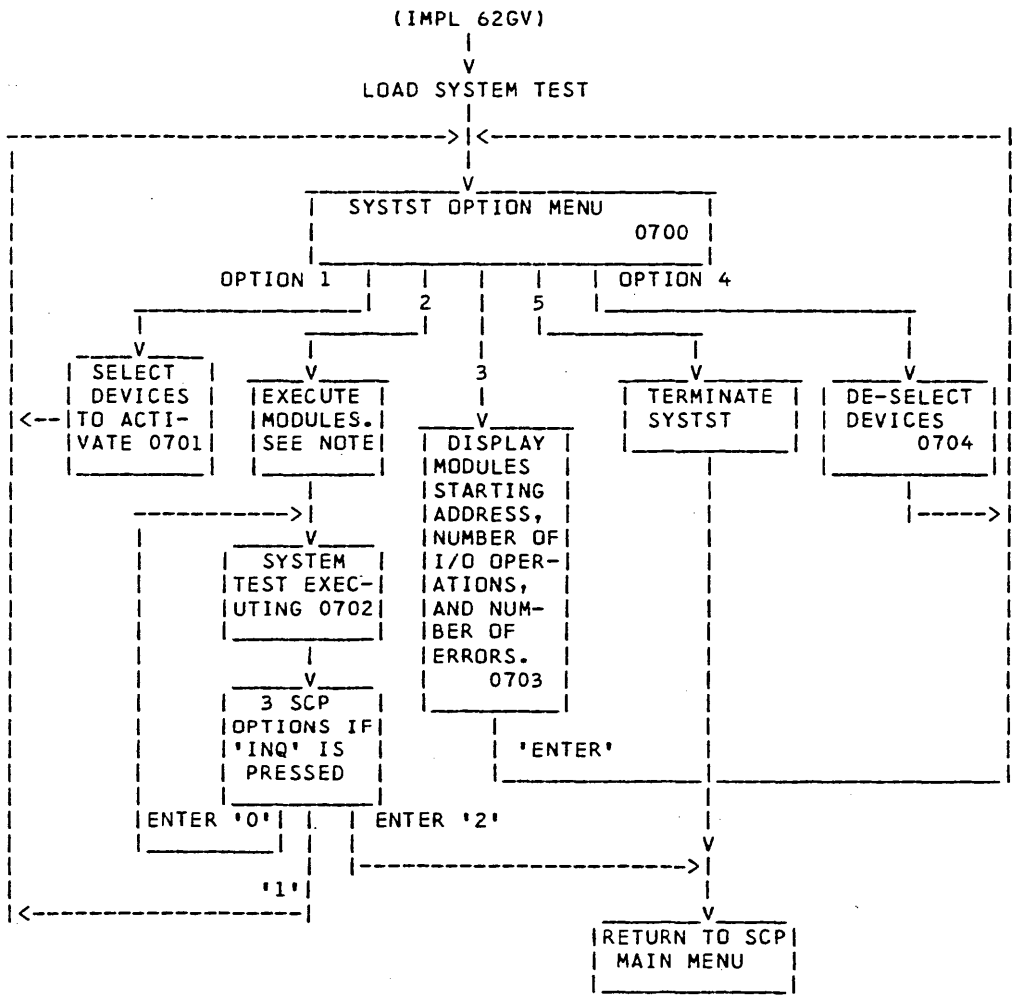
THE SYSTEM TEST EXERCISES THESE COMPONENTS IN THE SAME FASHION AS AN APPLICATION PROGRAM. I/O DEVICES CAN BE OPERATED AT THEIR FULLEST OVERLAP CAPABILITY. INDIVIDUAL OR COMBINATIONS OF I/O DEVICES CAN BE EXERCISED.
THE SYSTEM TEST HAS THREE PRIMARY FUNCTIONS:

1. PASS/FAIL SYSTEM INTEGRITY TEST
2. ISOLATE A FAILING I/O DEVICE.
3. ISOLATE TO A FAILING FUNCTION OF AN I/O DEVICE USING BOTH SYSTEM TEST AND ERAP DUMP.

CAUTIONS

******** SINCE THE 33FD SHARES A CONTROL STORAGE AREA
* WITH I/O DEVICES SUCH AS MAG CARD, 1255, DATA RECORDER,
* AND BSCA/SDLC, IT (THE 33FD) SHOULD ONLY BE ACTIVATED
* WITH THE 62GV.
********** SYSTST IS AN 'EXERCISER' PROGRAM AND IS NOT
* MEANT TO BE A FAULT LOCATOR TEST. IF A PROC CHECK
* OCCURS DURING SYSTST, RUN DIAGNOSTICS FOR EACH FEATURE
* DEVICE TO ISOLATE THE FAILURE.
******** IF YOUR SYSTEM HAS THE DATA COMMUNICATIONS
FEATURE AND EITHER MCU OR DATA RECORDER FEATURES, YOU
CANNOT ACTIVATE DATA COM. AND EITHER MCU OR DATA RECORD-
ER AT THE SAME TIME DURING SYSTST. (CAUSES PROC CHECKS)

5. FLOWCHART FOR RUNNING SYSTEM TEST



NOTE - IF OPTION 2 IS THE FIRST OPTION SELECTED AFTER LOADING, SYSTEM TEST WILL DEFAULT TO EXECUTING ALL DEVICES CONFIGURED EXCEPT THE 33FD. IF ANY OTHER OPTION IS SELECTED FIRST AFTER LOADING, THEN OPTION 2 WILL ONLY EXECUTE MODULES SELECTED VIA OPTION 1. IF NONE ARE SELECTED ,DISPLAY 0705 INDICATES NO DEVICES ACTIVE.

IV. MISCELLANEOUS INFORMATION

1. 62GV FRIEND TEST NOTES.

--- SCOPE SYNC NOTES ---

TO SET UP FOR SCOPING, DO THE FOLLOWING:
1 - SET ADDRESS SWITCHES TO -0060-
2 - SET -STOR SEL- SWITCH TO CONTROL STORE (CTL)
3 - CONNECT SYNC LEAD TO AA1-J2-D12 (-ADRS COMPARE SYNC)
4 - CONNECT SCOPE PROBE TO DESIRED SIGNAL

ALL 62GV FRIEND MODULES USE ADDRESS -0060- FOR THE SYNC POINT EXCEPT FOR THE -SEEK TO A CYLINDER- MODULE. THIS MODULE DOES NOT CHECK FOR SCOPING, WHICH ALLOWS YOU TO SEEK TO A DESIRED CYLINDER AND THEN SCOPE LOOP ON READ/WRITE OPERATIONS.

THE +- SEEK MODULE USES ADDRESS -0060- TO SYNC ON THE + TRACK SEEK AND USES ADDRESS -0061- TO SYNC ON THE -TRACK SEEK. THEREFORE, BY CHANGING THE ADDRESS SWITCHES TO -0061- YOU CAN SYNC JUST ON THE -TRACK SEEK.

--- COMMAND TABLE BUILDING NOTES ---

ALL THE 62GV SEEK MODULES DO -NOT- ISSUE A READ ID TO SEE WHERE THE READ/WRITE HEADS ARE LOCATED BEFORE DOING THE SEEK. THE MODULES USE A STORAGE LOCATION TO KEEP TRACK OF CURRENT CYLINDER ID. THEREFORE, TO GET THE HARDWARE AND SOFTWARE 'LINED UP', YOU SHOULD ISSUE A RECALIBRATE COMMAND TO 'INITALIZE' BOTH THE HARDWARE AND THE PROGRAM.

IF YOU SELECT THE OPTION TO DO A WRITE ID COMMAND WITH A SPECIAL TEST PATTERN,BE SURE TO RESTORE THE SECTOR WITH IT'S CORRECT SECTOR ID.

2. RUNNING 33FD TESTS FROM 33FD

A. IMPL DISKETTE DIAG01

B. DEPRESS START - DEPRESS 'INQ' KEY

C. SET MODE SELECTOR SWITCH TO 'SYS INST STEP' AND PRESS CE START.

D. TYPE IN '33FD' AND PRESS 'ENTER'

E. SELECT ENTRY '1' AND PRESS 'ENTER'

F. SELECT OPTION '1' AND PRESS 'ENTER'

G. ON FIRST DISPLAY IGNORE MESSAGE TO INSERT SCRATCH DISKETTE. ANSWER QUESTION AND PROCEED THROUGH TESTS BY DEPRESSING ENTER AS INSTRUCTED ON THE CRT UNTIL TU05 TEST MESSAGE APPEARS.

H. REMOVE DIAG01 AND MOUNT A SCRATCH DISKETTE

I. PRESS 'ENTER' AS INSTRUCTED ON CRT.

NOTE: 33FD ERRORS MAY INTERFERE WITH THE COMPLETION OF THE ABOVE AS THESE TESTS ARE NORMALLY RUN FROM THE 62GV.

IF INTERMITTENT TROUBLES ARE SUSPECTED:

1. RESEAT AA2-K2, AA2-J2, CABLE IN AA2-B2, 33FD CARDS AND CABLES.

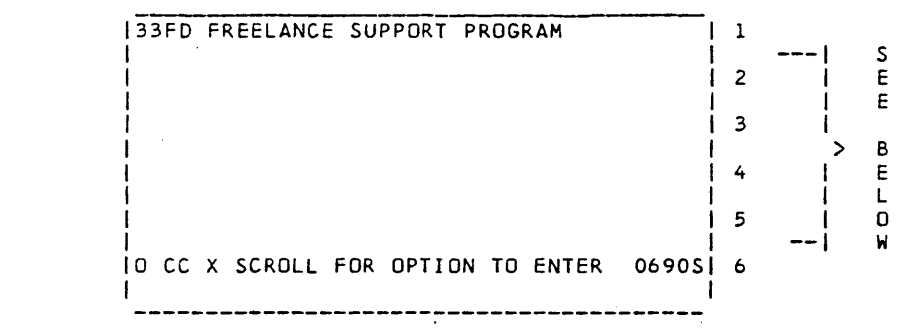
2. VISUALLY INSPECT 33FD FOR WEAR AND DIRT ACCUMULATION.

3. REPLACE CARDS IN THE FOLLOWING ORDER, IF NECESSARY:
   AA2-K2
   AA2-J2
   33FD

4. DISKETTES WEARING OUT PREMATURELY CAN BE CAUSED BY A CONTINOUSLY ENERGIZED HEAD SOLENOID.

3. 33FD FREELANCE SUPPORT

FIRST CHECK INTERMITTANT LIST ON PRECEDING PAGE



ONE OF THE OPTION NUMBERS (1 -> E) MUST BE ENTERED IN PLACE OF THE '0'.

```
*---- LINES 2, 3, 4, & 5 ----------------------------------*
*   THE FOLLOWING MESSAGE IS SCROLLED ON LINES 2 -> 5      *
*---- DISPLAY 1 -------------------------------------------*
*  1)  PRINT FIRST ID FROM EACH TRACK                      *
*  2)  PRINT ALL AM'S & ID'S FOR 1 TRACK                   *
*  3)  PRINT DATA & GAPS FOR 1 TRACK                       *
*  4)  WRITE FORMAT 1 TRK (128 BYTE REC)                   *
*---- DISPLAY 2 -------------------------------------------*
*  5)  SEEK TO A SPECIFIC TRACK                            *
*  6)  LOOP: SEEK +4, CHK ID, -4, CHK ID                   *
*  7)  LOOP: SEEK FORWARD CONTINOUSLY                      *
*  8)  LOOP: SEEK REVERSE CONTINOUSLY                      *
*---- DISPLAY 3 -------------------------------------------*
*  9)  LOOP: READ ID OP                                    *
*  A)  LOOP: SHORT WRITE OP                                *
*  B)  LOOP: HEAD LOAD & IO WORKING                        *
*  C)  LOOP: WRAP THRU DATA SEP                            *
*---- DISPLAY 4 -------------------------------------------*
*  D)  LOOP: CHANNEL EXERCISER                             *
*  E)  WRITE FIRST ID                                      *
*                                                          *
*                                                          *
*----------------------------------------------------------*
```

```
*---- ROUTINE 1 ----------------------------------------*
*   READS THE FIRST ID AFTER INDEX ON EVERY TRACK.
*       THE DATA IS THEN PRINTED IN HEX
*   THIS ENABLES CHECKING OF EVERY TRACK # ON THE DISKETTE
*       FIRST TRACK # = X'00'
*       LAST  TRACK # = X'4C' (SUBTRACT 1 FOR EACH BAD TRK)
*       BAD   TRACK # = X'FF'
*   7 BYTES ARE PRINTED FOR EACH TRACK (AM,C,H,R,N,CRC,CRC)
*       AN EIGHT POSITION WILL SHOW INVALID ID'S WITH '*'
*       7 BYTES OF ALL ZEROS MEANS THAT NO AM WAS FOUND ON
*       THIS TRACK.
*   MAIN STORE DATA BUFFER STARTS AT X'1000'
*-----------------------------------------------------------

*---- ROUTINE 2 ----------------------------------------
*   SEEKS TO TRACK REQUESTED AND READS ALL THE AM'S ON THE
*       TRACK, IT ALSO READS THE 6 DATA BYTES FOLLOWING THE
*       AM. IF THE CRC IS NOT ZERO AT THIS TIME AN '*' IS
*       SET IN POSITION 8.
*   THIS ENABLES THE CHECKING OF EVERY ID, DATA AM AND
*       THEIR SEQUENCE ON THE DISKETTE.
*   7 BYTES ARE PRINTED FOR EACH AM    (AM,C,H,R,N,CRC,CRC)
*       AN EIGHT POSITION WILL SHOW INVALID ID'S WITH '*'
*       7 BYTES OF ALL ZEROS MEANS THAT NO AM WAS FOUND ON
*       THIS TRACK.
*   MAIN STORE DATA BUFFER STARTS AT X'1000'
*-----------------------------------------------------------

*---- ROUTINE 3 ----------------------------------------
*   SEEKS TO TRACK REQUESTED AND READS FROM FIRST AM AFTER
*   INDEX TILL INDEX OCCURS AGAIN. THIS ENABLES THE CHECKING
*   OF GAP SIZES AND SYNC FIELD SIZES ON A DISKETTE.
*   7 BYTES ARE GROUPED FOR PRINTING, WITH A BLANK IN
*   AN EIGHT POSITION.
*   7 BYTES OF ALL ZEROS MEANS THAT NO AM WAS FOUND ON
*   THIS TRACK.
*   MAIN STORE DATA BUFFER STARTS AT X'1000'
*-----------------------------------------------------------

*---- ROUTINE 4 ----------------------------------------
*   ROUTINE FORMATS THE TRACK WITH 128 BYTE SECTORS.
*   THIS MAY BE USED TO WRITE A FIXED PATTERN ON 1 TRACK OF
*       SCRATCH DISKETTE  FOR  USE  WITH ROUTINE X'02'.
* NOTE:  THIS MAY WRITE AN INVALID TRACK # (IF ANY WERE
*          FLAGGED), SUCH THAT THE SCRATCH DISKETTE MUST
*          BE INITIALISED AFTER RUNNING THIS OPTION.
*-----------------------------------------------------------

*---- ROUTINE 5 ----------------------------------------
*   SEEKS TO A SPECIFIC TRACK AS REQUESTED BY 'FINDTRK'.
*   MAY BE USED TO POSITION THE HEAD ON A DESIRED TRACK.
*-----------------------------------------------------------
```

```
*---- ROUTINE 6 ------------------------------------------
*   SEEKS ALTERNATELY 4 TRACKS FORWARD THEN 4 TRACKS REVERSE.
*   IT CHECKS THE CYLINDER # OF EACH TRACK ON ARRIVAL.
*   THIS MAY BE USED FOR INTERMITTENT SEEK READ ERRORS.
*NOTE: THIS WILL GIVE COMPARE ERRORS (CODE X'45') IF THE DISKETTE
*      HAS FLAGGED TRACKS.  ROUTINE X'01' SHOWS FLAGGED TRACKS.
*-------------------------------------------------------

*---- ROUTINE 7 ------------------------------------------
*   SEEKS CONTINUOSLY IN THE FORWARD DIRECTION
*   THIS MAY BE USED FOR SCOPING THE SEEK LINES
*-------------------------------------------------------

*---- ROUTINE 8 ------------------------------------------
*   SEEKS CONTINUOSLY IN THE REVERSE DIRECTION
*   THIS MAY BE USED FOR SCOPING THE SEEK LINES
*-------------------------------------------------------

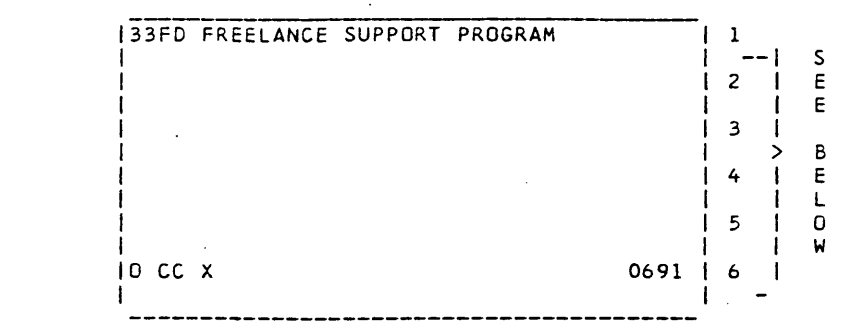
*---- ROUTINE 9 ------------------------------------------
*   ROUTINE LOOPS ON A SHORT READ OP
*   THIS MAY BE USED FOR SCOPING THE READ CIRCUITS.
*-------------------------------------------------------

*---- ROUTINE A ------------------------------------------
*   ROUTINE LOOPS ON A SHORT WRITE OP
*   THIS MAY BE USED FOR SCOPING THE WRITE LINES
* NOTE:  THIS WILL CREATE MANY IDS, SOME WITH BAD CRC'S.
*     THE SCRATCH DISKETTE MUST BE INITIALIZED AFTER THIS OPTION.
*-------------------------------------------------------

*---- ROUTINE B ------------------------------------------
*   ROUTINE LOOPS ON HEAD LOAD OPERATION
*       WHICH ALSO SETS/RESETS IO WORKING
*   THIS MAY BE USED FOR SCOPING HEAD LOAD/ IO WORKING
*-------------------------------------------------------

*---- ROUTINE C ------------------------------------------
*   ROUTINE WRAPS WRITE DATA THRU DATA SEP & COMPARES
*       RETURNED DATA TO WHAT IS EXPECTED
*   THIS MAY BE USED FOR SCOPING DATA SEPARATER
*-------------------------------------------------------

*---- ROUTINE D ------------------------------------------
*   ROUTINE EXERCISES CPU TO ATCH CHANNEL AND CLEARS
*       ERROR IF POSSIBLE, THEN CONTINUES.
*   THIS MAY BE USED FOR SCOPING 33FD CHANNEL LINES
*-------------------------------------------------------
*---- ROUTINE E ------------------------------------------
*   ROUTINE WRITES ONLY THE FIRST ID ON THE TRACK REQUESTED
*   THIS MAY BE USED TO WRITE AN ID FOR USE WITH ROUTINE
*       X'03' WHEN NO AM WAS COULD BE FOUND.
*-------------------------------------------------------
```



IF ACTION IS REQUESTED ON LINE 4, DO AS REQUESTED & THEN
PRESS THE ENTER KEY.

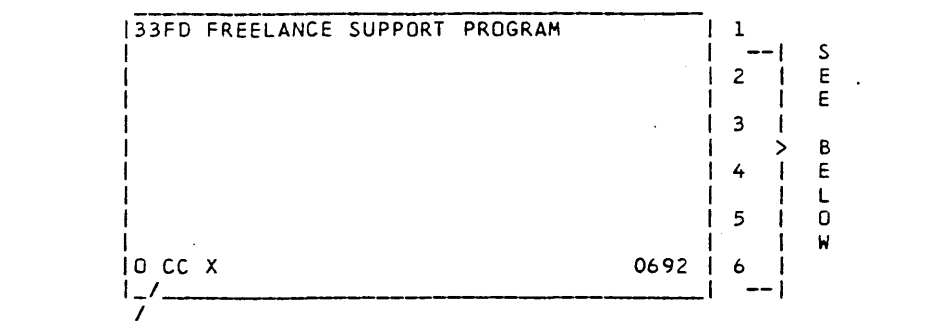
```
*---- LINE 2 ------------------------------------------------*
*  CRT DISPLAYS FOR SUB-HEADINGS ON LINE 2                   *
*       THESE ARE DISPLAYED ACCORDING TO THE ROUTINE         *
*       SELECTED DURING DISPLAY   0690                       *
*-----------------------------------------------------------*
*                                                           *
*INVALID                                                    *
*PRINT 1 ID PER TRK                                         *
*PRINT ALL AM'S                                             *
*PRINT DATA & GAPS                                          *
*WRITE FORMAT 128 BYTE                                      *
*SEEK TO TRACK                                              *
*SEEK 4 TRACKS                                              *
*SEEK FORWARD                                               *
*SEEK REVERSE                                               *
*READ LOOP                                                  *
*SHORT WRITE LOOP                                           *
*HEAD LOAD LOOP                                             *
*WRAP THRU DATA SEP                                         *
*CPU INTERFACE LOOP                                         *
*WRITE FIRST ID                                             *
*-----------------------------------------------------------*
```

```
*---- LINE 3 ------------------------------------------------*
*  LINE 3 IS BLANK                                           *
*------------------------------------------------------------*


*---- LINE 4 ------------------------------------------------*
*  CRT DISPLAYS ON LINE 4 ARE EITHER 'BLANK' OR:             *
*------------------------------------------------------------*
*                                                            *
*MOUNT SCRATCH DISKETTE                                      *
*                                                            *
*------------------------------------------------------------*


*---- LINE 5 ------------------------------------------------*
*  CRT DISPLAYS ON LINE 5 IS EITHER BLANK OR, IF A SCRATCH*
*       DISKETTE WAS REQUESTED & NOT DETECTED:               *
*------------------------------------------------------------*
*                                                            *
*ERROR ** SECTOR SIZE IS NOT 128 BYTE                        *
*                                                            *
*------------------------------------------------------------*

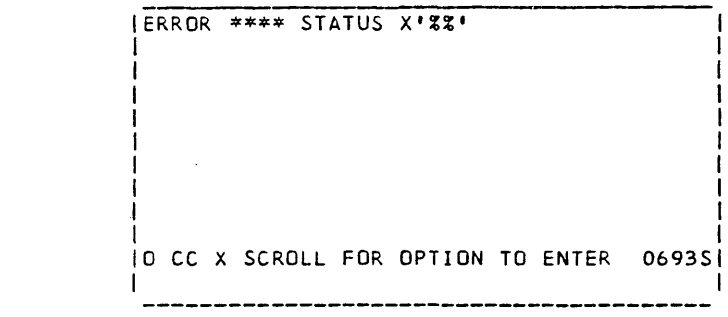

*---- LINE 6 ------------------------------------------------*
*  CRT DISPLAYS ON LINE 6 IS ONE OF THE FOLLOWING:           *
*------------------------------------------------------------*
*                                                            *
*0 CC X 33FD SEEK RECAL              0691                   *
*                                                            *
*0 CC X 33FD SEEKING                 0691                   *
*                                                            *
*0 CC X ENTER TO CONTINUE            0691                   *
*                                                            *
*0 CC X PROGRAM IS EXECUTING         0691                   *
*                                                            *
*------------------------------------------------------------*
```




```
*---- LINE 2 ------------------------------------------------*
*  CRT DISPLAYS FOR SUB-HEADINGS ON LINE 2                   *
*       THESE ARE DISPLAYED ACCORDING TO THE ROUTINE         *
*       SELECTED DURING DISPLAY   0690                       *
*-----------------------------------------------------------*
*INVALID                                                    *
*PRINT 1 ID PER TRK                                         *
*PRINT ALL AM'S                                             *
*PRINT DATA & GAPS                                          *
*WRITE FORMAT 128 BYTE                                      *
*SEEK TO TRACK                                              *
*SEEK 4 TRACKS                                              *
*SEEK FORWARD                                               *
*SEEK REVERSE                                               *
*READ LOOP                                                  *
*SHORT WRITE LOOP                                           *
*HEAD LOAD LOOP                                             *
*WRAP THRU DATA SEP                                         *
*CPU INTERFACE LOOP                                         *
*WRITE FIRST ID                                             *
*-----------------------------------------------------------*

*---- LINE 3, 4, & 5 ----------------------------------------*
*  CRT DISPLAYS ON LINES 3 -> 5 ARE BLANK                    *
*-----------------------------------------------------------*

*---- LINE 6 ------------------------------------------------*
*  CRT DISPLAYS FOR LINE 6 ARE AS FOLLOWS:                   *
*-----------------------------------------------------------*
*0 CC X ENTER CYLINDER # IN HEX     0692                    *
*                                                           *
*0 CC X 33FD SEEK RECAL             0692                    *
*                                                           *
*0 CC X 33FD SEEKING                0692                    *
*-----------------------------------------------------------*
```



1) DETERMINE THE CAUSE OF THE FAILURE (USE ERROR CODES & SENSE INFORMATION).

2) CHOOSE COURSE OF ACTION (RETRY, LOOP ON ERR, IGNORE ERROR).

```
*-------------------------------------------------------------*
*   THE FOLLOWING MESSAGE IS SCROLLED ON THE CRT              *
*-------------------------------------------------------------*
*                                                             *
*                                                             *
*---- DISPLAY 1  (LINES 2 -> 5) ------------------------------*
*BIT 0--FAST            BIT 4--READ OVERUN                   *
*    1--NOT READY           5--   N/A                        *
*    2--END OF CYL          6--WRIT OVERUN                   *
*    3--MISSING REC         7--WRIT PARITY                   *
*                                                             *
*---- DISPLAY 2  (LINES 2 -> 5) ------------------------------*
*''''SUBHEADING''''      OPTION # X'%%'                       *
*                                                             *
*X'%%' ERROR FAILURE CODE                                    *
*REFER TO ERROR CODE TABLE ON FOLLOWING PAGES.               *
*                                                             *
* NOTE:  FOR SUBHEADING, SEE DISPLAY  0690 & 0691            *
* NOTE:  FOR ERROR FAILURE CODES, SEE FOLLOWING PAGES.       *
---------------------------------------------------------------
```

```
*---- DISPLAY 3  (LINES 2 -> 5) -------------------------*
*X'%%' DATA BYTE                                         *
*X'%%' ERR BYTE 1                                        *
*X'%%' ERR BYTE 2                                        *
*X'%%' 33FD CONTROL                                      *
*                                                        *
* NOTE:  FOR SENSE BIT DIFINITION, SEE CMND TABLE BELOW. *
*                                                        *
*---- DISPLAY 4  (LINES 2 -> 5) -------------------------*
*X'%%' READ CONTROL                                      *
*X'%%' WRITE CONTROL                                     *
*X'%%' BIT RINGS                                         *
*X'%%' CNTRS & CRC REG                                   *
*                                                        *
* NOTE:  FOR SENSE BIT DIFINITION, SEE CMND TABLE BELOW. *
*                                                        *
*---- DISPLAY 5  (LINES 2 -> 5) -------------------------*
*X'%%' HEX 00                                            *
*X'%%' HEX FF                                            *
*X'%%' HEX 0F                                            *
*X'%%' HEX F0                                            *
*                                                        *
* NOTE:  FOR SENSE BIT DIFINITION, SEE CMND TABLE BELOW. *
*                                                        *
*---- DISPLAY 6  (LINES 2 -> 5) -------------------------*
*                                                        *
*L  TO LOOP ON FAILURE                                   *
*Y  TO BYPASS ERROR                                      *
*ENTER TO CONTINUE                                       *
*                                                        *
* NOTE:  LOOP RETURNS TO PREVIOUSLY SET START POINT &    *
*           RETRYS THE FAILING SEQUENCE.                 *
*        ERROR BYPASS IGNORES THE ERROR & CONTINUES TO    *
*           RUN ROUTINE.                                 *
*-------------------------------------------------------*
```

4. 33FD FREELANCE ERROR FAILURE CODES

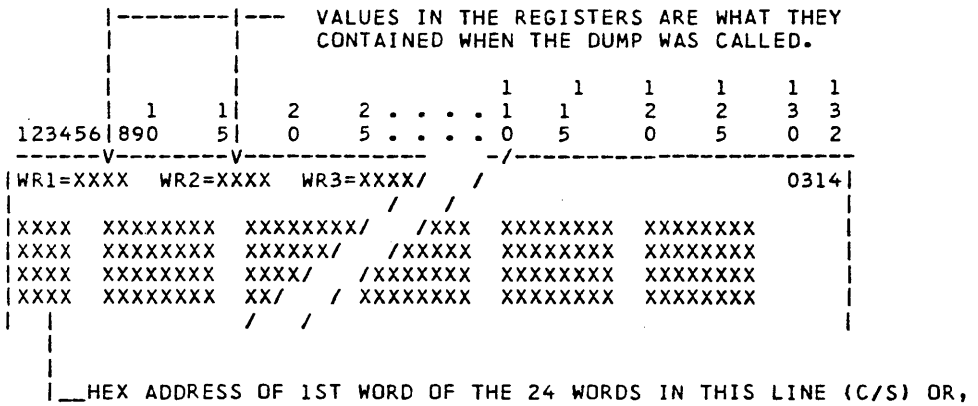
```
*---- ERROR CODE ------------------------------------------*
* ERROR FAILURE CODES REFERENCED BY (DISPLAY 2) 0693      *
*      EACH ROUTINE # & ERROR CODE # SHOW A UNIQUE FAILURE *
*      IN THE PROGRAM.                                    *
*---------------------------------------------------------*
*  CODE    ------ DISCRIPTION OF ERROR ------             *
*                                                         *
*   00  BIT 5 OF 'IOS' (ENABLE) WAS WRONG                 *
*   01  ERROR BYTE 1 WAS NOT RESET                        *
*   02  ERROR BYTE 2 (& IO WORKING) WAS NOT RESET         *
*   03  33FD CONTROL BYTE (SNS CABLE LINES) WAS NOT RESET *
*                                                         *
*   04  READ CONTROL CIRCUITS WERE NOT RESET              *
*   05  WRITE CONTROL CIRCUITS WERE NOT RESET             *
*   06  BIT RINGS WERE NOT RESET                          *
*   07  COUNTERS OR CRC REG WERE NOT RESET                *
*                                                         *
*   08  JUMP I/O NOOP JUMPED                              *
*   09  JUMP I/O CHIP1 DID NOT JUMP                       *
*   0A  JUMP I/O CHIP2 DID NOT JUMP                       *
*   0B  JUMP I/O CHIP3 DID NOT JUMP                       *
*                                                         *
*   0C  SENSE FOR HEX '00' WRONG                          *
*   0D  SENSE FOR HEX 'FF' WRONG                          *
*   0E  SENSE FOR HEX '0F' WRONG                          *
*   0F  SENSE FOR HEX 'F0' WRONG                          *
*                                                         *
*   10  SEEK TO POLE 0 WRONG                              *
*   11  SEEK TO POLE 1 WRONG                              *
*   12  SEEK TO POLE 2 WRONG                              *
*   13  SEEK TO POLE 3 WRONG                              *
*                                                         *
*   14  ERROR DURING SEEK                                 *
*   15  ERROR WHILE SEARCHING FOR ANY 'AM'                *
*   16  ERROR WAITING FOR INDEX TO GO OFF                 *
*   17  ERROR WAITING FOR INDEX TO COME ON                *
*                                                         *
*   18  ERROR AFTER MOUNTING SCRATCH DISKETTE             *
*   19  ERROR WHILE LOOKING FOR ANY VALID ID              *
*   1A  ERROR WHILE LOOKING FOR AN 'AM' DURING INDEX      *
*   1B  ERROR WHILE READING, WITH INDEX ON                *
*                                                         *
*   1C  ERROR WHILE LOOKING FOR AN 'AM' WITH INDEX OFF    *
*   1D  ERROR WHILE READING, WITH INDEX OFF               *
*   1E  ERROR AT THE END OF THE TRACK                     *
*   1F  ERROR AT THE END OF A READ OP                     *
```

```
*    20  ERROR WHILE WRITING INDEX TO DATA GAP                    *
*    21  ERROR WHILE WRITING ID FIELD                             *
*    22  ERROR WHILE WRITING DATA FIELD                           *
*    23  ERROR WHILE WRITING GAP FROM LAST SECTOR TO INDEX        *
*                                                                 *
*    24  ERROR AT THE END OF THE TRACK                            *
*    25                                                           *
*    26  WRITE GATE ON, ERASE GATE OFF FAILED IN SYNC FIELD       *
*    27  WRITE AM COMMAND WAS NOT SET ON                          *
*                                                                 *
*    28  WRITE GATE ON, ERASE GATE ON FAILED AT 'AM' TIME         *
*    29  WRITE CRC COMMAND NOT SET                                *
*    2A  WRITE GATE OFF, ERASE GATE ON FAILED AT 'CRC' TIME       *
*    2B  WRITE GATE OFF, ERASE GATE OFF FAILED AT 'CRC' TIM       *
*                                                                 *
*    2C  LOW WRITE CURRENT TO 33FD FAILED TO SET                  *
*    2D  ERROR DURING THE WRITE OP                                *
*    2E                                                           *
*    2F                                                           *
*                                                                 *
*    30  WRAP MODE DID NOT SET                                    *
*    31  33FD CONTROL BYTE DID NOT STAY OFF                       *
*    32  CRC FAILED TO GO TO NOT ZERO                             *
*    33  'FIND BIT SYNC ON ZEROS' FAILED TO SET                   *
*                                                                 *
*    34  'FIND BIT SYNC ON ZEROS' FAILED GO OFF                   *
*    35  'SYNC DATA SEP ON DATA BITS' FAILED TO SET               *
*    36  'SYNC DATA SEP ON DATA BITS' FAILED GO OFF               *
*    37  AM COMPARE WAS WRONG                                     *
*                                                                 *
*    38  DATA COMPARE WAS WRONG                                   *
*    39  CRC CHECK WAS IN ERROR                                   *
*    3A  'AM GOOD' FAILED TO SET                                  *
*    3B  'AM GOOD' FAILED GO OFF                                  *
*                                                                 *
*    3C  ERROR DURING WRAP OP                                     *
*    3D                                                           *
*    3E                                                           *
*    3F                                                           *
*    40                                                           *
*    41  HEAD LOAD NOT SET                                        *
*    42  I/O WORKING NOT SET                                      *
*    43  ERROR DURING HEAD LOAD                                   *
*    44                                                           *
*    45  TRACK ID (C-BYTE) DOES NOT MATCH EXPECTED VALUE          *
*                                                                 *
*    F0  BLAST DUE TO MACHINE CHECK (MAR AT ERR -> X'0064')       *
*****************************************************************
```

5. STORAGE DUMP PRINTOUT FROM CE PANEL

TO DUMP MAIN OR CONTROL STORAGE TO THE PRINTER, THE FOLLOWING PROCEDURE CAN BE USED:

1. IMPL DIAG 01.
2. PRESS RESET.
3. ALTER MAR TO '0001'.
4. SET DATA SWITCHES 1 AND 2 TO THE HIGH ORDER DIGITS OF A STARTING ADDRESS.
5. SET DATA SWITCHES 3 AND 4 TO THE HIGH ORDER DIGITS OF A STOP ADDRESS.
6. SET THE MODE SELECTOR SWICH TO:
   A. PROC RUN FOR A C/S DUMP
   B. S/3 INSN STEP FOR M/S DUMP
7. PRESS CE START.
8. PRESS CONSOLE START.



__HEX ADDRESS OF 1ST WORD OF THE 24 WORDS IN THIS LINE (C/S) OR, 1ST BYTE OF 48 BYTES IF THIS IS A M/S DUMP.

6. 33FD COMMANDS

```
**** 33FD ****************  'JIO' (CBO = X'3') MODIFIERS**
*                                                          *
*     CBO MOD                                              *
*    ---------                                             *
*        0  JUMP ON ERROR/NOT READY                        *
*                    INCLD'S:    33FD FAST                 *
*                                NOT READY                 *
*                                END OF CYLINDER           *
*                                RECORD NOT FOUND          *
*                                READ OVER RUN             *
*                                WRITE OVER RUN            *
*                                SERIAL PARITY ERROR       *
*                                DATA UNSAFE               *
*                                MISSING ERASE GATE        *
*        1  JUMP ON NOT AM BYTE FOUND                      *
*        2  JUMP ON NOT CRC BYTE ZERO                      *
*        3  JUMP ON NOT INDEX                              *
*        4  NO-OP                                          *
*        5  JUMP (FROM FET CHIP 1)                         *
*        6  JUMP (FROM FET CHIP 2)                         *
*        7  JUMP (FROM FET CHIP 3)                         *
*        8  SET HEAD LOAD LATCH                            *
*        9  SET LOW WRITE CURRENT                          *
*        A  SET ERASE GATE                                 *
*        B  SET ID OREINTATION                             *
*        C  RESET ERROR STATUS                             *
*        D  NO-OP                                          *
*        E  RESET ERASE GATE                               *
*        F  RESET SECTOR OP                                *
*                                                          *
************************************************************

**** 33FD ****************** 'IOL' (CBO = X'4') MODIFIERS**
*                                                          *
*     CBO MOD                                              *
*    ---------                                             *
*        0  33FD DISABLE                                   *
*        1  33FD ENABLE (DBO MUST BE X'D-')                *
*                                                          *
* NOTE 1:    EITHER AN IOL OR AN IOS WILL GENERATE A 1-US  *
*               OSC PULSE THAT GOES TO WRITE CIRCUITS &    *
*               INDEX COUNTER.                             *
************************************************************
```

```
**** 33FD  ***************** 'IOS' (CBO = X'5') MODIFIERS**
*                                                         *
*     CBO MOD (SEE NOTE 1)                                *
*    ---------                                            *
*        4  SENSE 33FD ENABLED (DBI BIT 5)                *
*                                                         *
* NOTE 1:    EITHER AN IOL OR AN IOS WILL GENERATE A 1-US *
*              OSC PULSE THAT GOES TO WRITE CIRCUITS &    *
*              INDEX COUNTER.                             *
***********************************************************

**** 33FD ***************** 'IOCL' (CBO = X'6') MODIFIERS*
*                                                         *
*     CBO MOD                                             *
*    ---------                                            *
*        0  WRITE A DATA BYTE FROM WORK REG (SENT ON DBO) *
*        1  WRITE AN AM BYTE FROM WORK REG (SENT ON DBO)  *
*        2  SET CNTL LOAD X'2'                            *
*        3  WRITE CRC BYTE FROM GENERATOR                 *
*        4  SEEK ONE TRACK OVERLAP                        *
*        5  SET 33FD WORKING                              *
*        6  SEEK TO NEXT TRACK                            *
*        7  SEARCH FOR AM BYTE                            *
*        8  SET CE INDEX PULSE LATCH (RESET WITH JIO X'F')*
*        9  NO-OP (SET UNUSED CNTL LATCH 'IOCL X-9 LATCH) *
*        A  CE INDEX COUNTER ADVANCE                      *
*        B  CE READY COUNTER ADVANCE                      *
*        C  CE SET IMPL COUNTER GATE                      *
*        D  MANUFACTURING COUNTER ADVANCE                 *
*        E  SET CE STEP MODE                              *
*        F  SET CE WRAP MODE                              *
*                                                         *
***********************************************************
```

```
**** 33FD ****************** 'IOCS' (CBO =X'7') MODIFIERS**
*                                                        *
*     CBO MOD                                            *
*     ---------                                          *
*         0  READ DATA BYTE  (READ DATA ON DBI)          *
*         1  ERROR BYTE 1                                *
*              DBI 0 - 33FD FAST                         *
*                  1 - NOT READY                         *
*                  2 - END OF CYLINDER                   *
*                  3 - RECORD NOT FOUND                  *
*                  4 - READ OVERRUN                      *
*                  5 - RESERVED                          *
*                  6 - WRITE OVERRUN                     *
*                  7 - SERIAL WRITE PARITY               *
*         2  ERROR BYTE 2                                *
*              DBI 0 - DATA UNSAFE                       *
*                  1 - MISSING ERASE GATE                *
*                  2 -                                   *
*                  3 -                                   *
*                  4 - SPARE                             *
*                  5 - SPARE                             *
*                  6 - NO  IO WORKING                    *
*                  7 - NOT 33FD WORKING                  *
*         3  33FD CONTROL                                *
*              DBI 0 - LOAD HEAD LATCH                   *
*                  1 - LOW WRITE CURRENT                 *
*                  2 - WRITE GATE                        *
*                  3 - ERASE GATE                        *
*                  4 - TRACK 3 OR 0                      *
*                  5 - TRACK 0 OR 1                      *
*                  6 - TRACK 1 OR 2                      *
*                  7 - TRACK 2 OR 3                      *
*         4  READ CONTROL                                *
*              DBI 0 - WRITE DATA                        *
*                  1 - CE WRAP MODE                      *
*                  2 - FIND BIT SYNC ON ZEROS            *
*                  3 - SYNC ON DATA BITS                 *
*                  4 - AM BYTE GOOD                      *
*                  5 -                                   *
*                  6 - READ CLOCK 1/2                    *
*                  7 - READ CLOCK 2/3                    *
```

(CONTINUED ON NEXT PAGE)

```
*         5  WRITE CONTROL                                          *
*              DBI 0 -                                              *
*                  1 - CE READ DATA                                 *
*                  2 -                                              *
*                  3 -                                              *
*                  4 - WRITE AM COMMAND                             *
*                  5 - WRITE CRC COMMAND                            *
*                  6 - WRITE CLOCK 1/2                              *
*                  7 - WRITE CLOCK 2/3                              *
*         6  READ & WRITE BIT RINGS                                 *
*              DBI 0 - READ BIT RING 1-4                            *
*                  1 - READ BIT RING 2-5                            *
*                  2 - READ BIT RING 3-6                            *
*                  3 - READ BIT RING 4-7                            *
*                  4 - WRITE BIT RING 1-4                           *
*                  5 - WRITE BIT RING 2-5                           *
*                  6 - WRITE BIT RING 3-7                           *
*                  7 - WRITE BIT RING 4-7                           *
*         7  COUNTERS &RC REGISTERS                                 *
*              DBI 0 -                                              *
*                  1 - IMPL COUNTER NOT EQUAL TO 81                 *
*                  2 - INDEX COUNTER POSITION 8                     *
*                  3 - READY COUBTER NOT = TO 170,032 USEC          *
*                  4 - CRC GENERATOR NOT ALL ZEROS                  *
*                  5 - CRC NOT DIVIDE                               *
*                  6 - CRC REGISTER POSITION X1                     *
*                  7 - CRC REGISTER POSITION X16                    *
*         8  CE WRITE CLOCK ADVANCE                                 *
*         9  CE STANDARD READ DATA PULSE                            *
*         A  CE STANDARD READ CLOCK PULSE                           *
*         B  CE 8F READ CLOCK                                       *
*         C  SENSE FOR X'00' ON DBI (NO RESP FROM ANY CHIP)         *
*         D  SENSE FOR X'FF' ON DBI (ALL DBI FROM CHIP 1)           *
*         E  SENSE FOR X'0F' ON DBI (ALL DBI FROM CHIP 2)           *
*         F  SENSE FOR X'F0' ON DBI (ALL DBI FROM CHIP 3)           *
*                                                                   *
*********************************************************************
```

---------- LAST PAGE ----------

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THE MAPS HAVE BEEN DESIGNED TO ISOLATE FAILURES IN THE MINIMUM AMOUNT OF TIME AND WITHOUT ELABORATE TEST EQUIPMENT. THESE MAPS SHOULD BE USED PRIOR TO TRYING FREE-LANCE METHODS ON A PROBLEM.

THE MAPS HAVE BEEN STANDARDIZED WHEREVER POSSIBLE, USING COMMON METHODS OF REFERING TO PROBE POINTS, CARDS, CABLES, LINE NAMES, PROBE INFORMATION, ...ETC. HOWEVER, CLARITY, SIMPLICITY, AND EASE OF USE HAVE BEEN THE OVERRIDING FACTORS IN MAP DESIGN. FOR THESE REASONS THERE WILL BE DIFFERENCES BETWEEN THE MAPS FOR VARIOUS SYSTEM DEVICES.

THE MAPS EXIST IN TWO FORMS, MAP PROGRAMS AND MAP CHARTS.

MAP PROGRAMS ARE ON THE CE DISKETTE, THIS ALLOWS MOST OF THE DECISIONS TO BE MADE BY THE PROGRAM, WITH MINIMAL CE INTERVENTION. ANY INTERVENTION REQUIRED IS VIA CRT/KEYBOARD OR CRT/DATA SWITCHES.

MAP PROGRAMS RELY ON THE POWER, CPU, CHANNEL AND CRT TO BE WORKING.

MAP PROGRAMS ARE UTILIZED ON SUCH DEVICES AS THE KEYBOARD, PRINTER, DISK, DISKETTE ....ETC.

MAP CHARTS ARE IN HARD COPY OUTPUT WITH THE CE MAKING ALL DECISIONS.

THE CE IS EXPECTED TO KNOW HOW TO OPERATE ALL OF THE FUNCTIONS OF THE CE PANEL AND OPERATOR PANEL. REFERENCE MLM FOR OPERATING INSTRUCTIONS.

FOR INSTRUCTIONS ON HOW TO RUN DIAGNOSTICS, REFERENCE THE DIAGNOSTIC SERVICE GUIDE.

THE FOLLOWING ITEMS MUST BE OBSERVED WHEN USING THE MAPS:

1. CHECK THE PROBE FOR CORRECT OPERATION.

   WHEN USING THE GENERAL LOGIC PROBE, DO THE FOLLOWING:
   A. CONNECT BLACK LEAD TO GROUND (ANY VALID D08 PIN) AND RED LEAD TO +5 VOLTS (ANY VALID D03 PIN OR AA1-C5-B02 PIN FOR POWER FAILURES)
   B. SET TECHNOLOGY SWITCH TO MULTI UNLESS INSTRUCTED OTHERWISE.
   C. SET LATCH TO NONE
   D. SET GATE TO GND
   E. ALWAYS CONNECT PROBE GROUND LEAD TO GND (ANY VALID D08 PIN)
      ***** IF GROUND LEAD IS NOT CONNECTED **********
      ***** THE PROBE WILL INDICATE INCORRECTLY **********
   F. AVOID USE OF PROBE EXTENDERS.
      *** USE OF PROBE EXTENDER WHILE PROBING 62GV ***
      *** SIGNAL LINES CAN CAUSE THE SYSTEM TO HANG UP ***

2. FOR ANY SYSTEM FAILURE OR CUSTOMER CALL, ENTER THE SYSTEM ENTRY CHART, MAP 0100-1. THIS CHART WILL EVENTUALLY DIRECT YOU TO THE FAILING I/O DEVICE, EITHER MAP PROGRAM OR MAP CHART. ONCE YOU EXIT TO THE I/O DEVICE, HOWEVER, IT IS ASSUMED THE CPU IS FUNCTIONING PROPERLY.

3. ALWAYS ENTER DEVICE MAP CHARTS OR MAP PROGRAM AT THE ENTRY.

4. DOUBLE CHECK YOUR WORK AS YOU GO. IF YOU MAKE A MISTAKE GO BACK TO THE ENTRY CHART TO RESTART. REMEMBER, THE MAPS USE A VERY SYSTEMATIC APPROACH TO ALL PROBLEMS. IF YOU ALTER THIS APPROACH OR BACK UP IN THE MAPS, THEIR ACCURACY CANNOT BE GUARANTEED. IF YOU SUSPECT A HUMAN ERROR WAS MADE IN PROCEEDING THROUGH A MAP (PROBED WRONG PIN, MISREAD QUESTION, MISINTERPRETED ACTION STATEMENT), NOTE THE FRU THE MAP SAYS IS FAILING ON THE FIRST PASS AND GO THRU THE MAPS A SECOND TIME TO VERIFY THAT YOU HAVE NOT MADE A MISTAKE.

5. BEFORE REPLACING A CARD INDICATED BY THE MAPS:

   A. CHECK THE VOLTAGE PLUG-ON CONNECTORS ON THE PIN-SIDE OF THE GATE.
   B. MAKE A VISUAL INSPECTION OF THE CARD CALLED OUT BY THE MAPS FOR BAD MECHANICAL CONNECTIONS.
   C. RESEAT THE CARD INDICATED BY THE MAPS.

6. DROP POWER BEFORE REMOVING A CARD UNLESS TOLD TO DO OTHERWISE, ALWAYS REMOVE POWER BEFORE INSTALLING A CARD.

7. ALWAYS INVESTIGATE AUDIBLE NOISES AND OBVIOUS ERRORS BEFORE USING MAPS.

8. IF YOU HAVE NOT ISOLATED THE PROBLEM WITHIN TWO HOURS, IT IS RECOMMENDED THAT YOU CALL FOR ASSISTANCE.

THE ABOVE ITEMS SHOULD BE REVIEWED PERIODICALLY SINCE THEY ARE IMPORTANT TO A SUCCESSFUL COMPLETION OF A CALL USING THE MAPS.

TERMINOLOGY

THE FOLLOWING TERMINOLOGY WILL BE USED THROUGHOUT THE MAP CHARTS AND MAP PROGRAMS.

TERM	EXPLANATION
DEPRESS	THIS MEANS TO DEPRESS AND RELEASE A KEY, BUTTON, SWITCH....ETC EXAMPLES: DEPRESS START DEPRESS SYSTEM RESET DEPRESS INQ KEY
DEPRESS AND HOLD	THIS MEANS TO DEPRESS AND HOLD A KEY, BUTTON, SWITCH...ETC, UNTIL INSTRUCTED TO RELEASE OR UNTIL A DECISION HAS BEEN MADE AND A QUESTION ANSWERED. EXAMPLES: DEPRESS AND HOLD START DEPRESS AND HOLD SYSTEM RESET DEPRESS AND HOLD SHIFT KEY
LOAD PROGRAM ID XXXX XXXX IS PRT2, KBDTOCRT, PRINTER, PRINTER3, CRT1,...ETC.	THIS MEANS THAT IF NOT ALREADY DONE, THE CE DISKETTE MUST BE IMPLED AND AND THE NAME XXXX MUST BE ENTERED IN THE MAIN MENU, DISPLAY 0304, REFERENCE DIAGNOSTIC USER GUIDE FOR DETAILED INFORMATION ON LOADING PROGRAMS. EXAMPLES: LOAD PROGRAM ID PRT2 LOAD PROGRAM ID KBDTOCRT LOAD PROGRAM ID PRINTER LOAD PROGRAM ID PRINTER3 LOAD PROGRAM ID CRT1

GENERAL LOGIC PROBE

THIS PROBE IS DESIGNED AS A SUBSTITUTE FOR THE SCOPE IN NORMAL SYSTEM DIAGNOSTIC TECHNIQUES.

THE GENERAL LOGIC PROBE IS DESIGNED TO GIVE A VISUAL INDICATION OF THE PRESENCE OR ABSENCE OF A MST 1, TTL, SLT, SLD, OR FET DRIVER SIGNAL LEVELS. THE PROBE CONSISTS OF A RECTANGULAR SHAPED PACKAGE APPROXIMATELY 3 IN. X 5.5 IN. X 1.3 IN., TWO INDICATING LIGHTS, A SLIDING SWITCH FOR SELECTING THE TECHNOLOGY TO BE PROBED, A SCOPE TYPE PROBE TIP WITH GROUND, TWO SLT-TYPE PINS FOR THE GATING FUNCTION, A GATE THRESHOLD SELECTOR SWITCH, A BABY-SITTING LATCH SELECTOR SWITCH, AND A POWER CABLE WHICH CONNECTS TO ANY DC POWER HAVING 4V TO 12V DIFFERENCE.

TWO LAMPS ARE PROVIDED TO INDICATE THE STATUS OF THE LINE BEING PROBED. IF THE LINE HAS AN UP LEVEL THE 'UP' INDICATOR WILL BE ON. A DOWN LEVEL WILL CAUSE THE 'DOWN' INDICATOR TO BE ON. A PULSE WILL BE SHOWN AS A FLASH OF ONE OF THE INDICATORS (DEPENDING ON THE LEVEL). A SERIES OF PULSES IS INDICATED BY BOTH LAMPS ON, OR ALTERNATELY ON, DEPENDING ON THE FREQUENCY OF THE PULSES.

EACH INDICATOR HAS ITS OWN SAMPLING CIRCUITS AND OPERATES INDEPENTENTLY OF THE OTHER INDICATOR. THUS PULSES WILL BE DETECTED AND DISPLAYED BY THE PROBE. THE PROBE WILL RESPOND TO A 5 TO 6 NANOSECOND PULSE. IF A LINE IS ACTIVE, EITHER UP OR DOWN WHEN PROBED, THE APPROPRIATE INDICATOR WILL BE TURNED ON FOR APPROXIMATELY 300 MSEC. AFTER THIS TIME THE INDICATOR WILL GO OFF AND THE LINE WILL IMMEDIATLY BE SAMPLED AGAIN. IF IT IS STILL ACTIVE THE INDICATOR WILL BE TURNED ON FOR ANOTHER 300 MS, OTHERWISE IT WILL STAY OFF UNTIL THE LINE BECOMES ACTIVE AGAIN.

THE FOLLOWING ARE TYPICAL SPECIFICATIONS PERTINENT TO THE GENERAL LOGIC PROBE. 'INBETWEEN LEVELS' ARE NOT DEFINED AND WILL VARY FROM PROBE TO PROBE.

MST 1 SPECIFICATIONS

UP LEVEL:	-0.60V TO -1.00V
DOWN LEVEL:	-1.45V TO -2.40V
PROTECTION:	-14V TO +14 V
RESPONSE:	5 NANOSECOND PULSE WIDTH
INHIBIT RANGE:	-3.8V > VIN > -.1
(LIGHTS OFF)	INPUT OPEN

FET/TTL/SLD SPECIFICATIONS

UP LEVEL:	+1.85V TO +60.0V
DOWN LEVEL:	+0.95V TO -60.0V
PROTECTION:	-60V TO +60 V
RESPONSE:	6 NANOSECOND PULSE WIDTH

INHIBIT RANGE: +.95V < VIN < +1.85V
(LIGHTS OFF) INPUT OPEN

POWER REQUIREMENTS: ANY DC POWER DIFFERENCE OF 4V TO 12V
FOR EXAMPLE, A +1.25V AND A -3V COULD BE USED TO POWER THE PROBE
POWER DISSIPATION: 1.2 WATTS

CE AIDS PROVIDED WITH THIS SYSTEM

SINGLE PIN EXTENDERS - THE SINGLE PIN EXTENDERS SHIPPED WITH EACH SYSTEM ALLOW THE CE TO USE THE CE METER ON BOARD PINS WITHOUT SHORTING TO ADJACENT PINS. THIS EXTENDER SLIPS OVER THE PIN AND ALLOWS THE CE TO PLACE THE ALLIGATOR CLIPS OF HIS METER ON THE STUB END.

JUMPER WIRES - EIGHT JUMPER WIRES (6, 12 AND 18 INCH) ARE PROVIDED WITH EACH SYSTEM. THESE ARE USED IN CONJUNCTION WITH THE MAPS. THEY ARE ALSO USED TO INPUT SIGNALS INTO THE GENERAL LOGIC PROBE GATES AND CE SENSE BITS.

```
**********************************************************
*  1. ALWAYS USE THE SHORTEST JUMPER POSSIBLE WHEN       *
*     JUMPERING SIGNAL PINS                              *
*  2. NEVER PLACE ONE END OF A JUMPER ON A PIN AND       *
*     AND TOUCH THE OPPOSITE END TO OTHER PINS AS        *
*     YOU COUNT THEM                                     *
**********************************************************
```

FE PUBLICATIONS

THE FOLLOWING TYPES OF PUBLICATIONS WILL BE AVIALABLE FOR THE SYSTEM.

A. SPLIT MANUAL CONTAINING THE FOLLOWING:
    1. MAP CHARTS AND DIAGNOSTIC USERS GUIDE
    2. MAINTAINENCE LIBRARAY MANUAL (MLM)
B. FE AUTOMATED LOGIC DIAGRAMS (FEALD'S)
C. FE THEORY OF OPERATIONS MANUAL (FETOM)
D. ILLUSTRATED PARTS CATALOG (IPC)
E. PROGRAM LISTINGS

MAP CHART DESCRIPTION

MAPS ARE PRINTED IN A TWO COLUMN FORMAT. THE FIRST COLUMN (COMMAND COLUMN) CONTAINS CONCISE STATEMENTS AND QUESTIONS TO DIRECT THE CE.

THE SECOND COLUMN (SUPLEMENTARY COLUMN) TELLS THE CE THE PURPOSE OF THE CHECKS BEING PERFORMED OR, GIVES CONCLUSIONS THAT HAVE BEEN REACHED AS A RESULT OF HIS ANSWERS TO QUESTIONS IN THE COMMAND COLUMN. THE SUPLEMENTARY COLUMN IS LOCATED TO THE RIGHT OF THE COMMAND COLUMN. IF NO SUPPLEMENTARY INFORMATION EXISTS, THEN ANOTHER COMMAND COLUMN IS PUT IN THE PLACE OF THE SUPPLEMENTARY COLUMN. MAP PROGRAMS MAY HAVE ADDITIONAL INFORMATION SCROLLABLE. THIS INFORMATION IS INDICATED BY AN 'S' IN THE LOWER RIGHT HAND CORNER OF THE DISPLAY.

FORMAT OF QUESTIONS IN COMMAND COLUMN:

1ST PART, PREPARE FOR QUESTION (OPTIONAL)
THIS MAY BE ANY STATEMENT SUCH AS:
REMOVE CABLE AA2-V3
PROBE AA2-M2-U11
TURN BELT MOTOR
POWER DOWN
DEPRESS START

2ND PART, QUESTION
THIS MAY BE ANY QUESTION SUCH AS:
LINE UP?
MOTOR TURN EASILY?
THERMAL LIGHT ON?

EXAMPLES:

JUMPER AA2-V3-D11 TO D12	PREPARE
REMOVE CABLE AA2-V3	PREPARE
PROBE AA2-M2-U11,	PREPARE
(-BELT GO),(DQ031)	OPTIONAL
LINE DOWN?	QUESTION
Y N	ANSWER
PROBE AA2-M2-U11,(-BELT GO)	PREPARE
LINE DOWN?	QUESTION
Y N	ANSWER
IS STOP LIGHT ON?	QUESTION
Y N	ANSWER
DOES FORMS ADVANCE KNOB	QUESTION
TURN EASILY?	
Y N	ANSWER

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EXAMPLES OF COMMAND AND SUPLEMENTARY COLUMN:

```
001
IS THE SYSTEM CLOCK ON?
Y N
|
| 002
| |                          THE SYSTEM CLOCK LIGHT IS OFF
| |                          THIS MAY BE CAUSED BY A
| |                          DEFECTIVE SYSTEM RESET KEY OR
| |                          CARD IN THE CPU.
| PROBE AA1-M2-P13,
| (-BLOCK PROCESSOR CLOCK)
| LINE UP?
| Y N
```

OR

```
001
IS THE SYSTEM CLOCK ON?
Y N
|
| 002
| |                          ******************************
| |                          * CHECKING INHIBIT FUNCTION *
| |                          * ON PROCESSOR CLOCK        *
| |                          ******************************
| PROBE AA1-M2-P13,
| (-BLOCK PROCESSOR CLOCK)
| LINE UP?
| Y N
```

ALL QUESTIONS ARE WRITTEN SO THEY CAN BE ANSWERED WITH YES (Y) OR NO (N). A Y AND AN N APPEARS UNDER EACH QUESTION, WITH THE Y ON THE LEFT AND THE N TO THE RIGHT. A VERTICAL LINE APPEARS UNDER THE Y TO LEAD THE CE TO THE NEXT LOGICAL STEP OR FRU IF THE QUESTION IS ANSWERED YES. IF THE QUESTION IS ANSWERED NO, THE NEXT LOGICAL STEP OR FRU APPEARS UNDER THE N AND ALIGNED WITH IT.

EXAMPLE:

```
001
IS THE SYSTEM CLOCK LIGHT ON?
Y N
|
| 002
| PROBE AA1-M2-P13, (-BLOCK PROC CLK)
| LINE UP?
| Y N
| |
| | 003
| | REPLACE AA1-M2
| |
| 004
| DEPRESS SYSTEM RESET,
| DEPRESS CE START
| DID SYSTEM CLOCK LIGHT COME ON?
| Y N
| |
| | 005
| | EXIT TO SYSTEM RESET CHART
```

WHEN THE NEXT LOGICAL STEP OF THE MAP FLOW IS ON ANOTHER PAGE, VERTICAL LINES ARE EXTENDED FROM THE Y'S AND N'S TO THE BOTTOM OF THE PAGE AND THE LOCATION OF THE NEXT LOGICAL STEP IS GIVEN.

FOR Y TRACES, THIS OFF PAGE REFERENCE CONSISTS OF THE DESTINATION PAGE NUMBER AND AN ALPHABETIC TRACE IDENTIFIER. ON THE DESTINATION PAGE THE ALPHABETIC TRACE IDENTIFIER IS REPEATED AND THE PAGE THE TRACE CAME FROM IS IDENTIFIED.

PROBE OPERATIONS - PROBE OPERATIONS ARE SPECIFIED IN THE FOLLOWING MANNER. ALL OPERATIONS REFER TO THE MULTI SETTING UNLESS SPECIFIED OTHERWISE:

```
AA2-Q2-P07
||  |  |
||  |  PIN NUMBER
||  |
||  CARD SOCKET
||
|BOARD NUMBER
|
GATE
```

SOME VARIATIONS OF THIS PROBE CALLOUT ARE:

```
PTR-13A-45
 |   |  |
 |   |  PIN NUMBER          THIS NUMBERING SCHEME
 |   |                      IS FOR A PLANAR BOARD,
 |   CARD SOCKET            REFERENCE MLM, PRINTER
 |                          SECTION FOR AN EXPLANATION
 PRINTER                    OF WHAT NUMBERS REFER TO.
```

```
XXX-XXX-XXX
 |   |   |
 |   |   B11 - PIN NUMBER
 |   |   12  - TERMINAL NUMBER
 |   |
 |   PC  - PRINTED CIRCUIT BOARD
 |   TB1 - TERMINAL BLOCK
 |   J1  - PLUG CONNECTOR
 |   Y1  - CONNECTOR
 |
 CRT - CRT DISPLAY
 KBD - KEYBOARD
 PTR - PRINTER
 DUL - DUAL LEVEL POWER SUPPLY
 CEP - CE PANEL
```

LINE NAME AND PAGE NUMBER (OPTIONAL)

THE LINE NAME AND PAGE NUMBER FOR A PROBE OPERATION MAY FOLLOW THE PROBE AND WILL BE IN PARENTHESES. THE LINE NAME WILL CONTAIN ITS ACTIVE LEVEL, EITHER MINUS OR PLUS, AS THE FIRST CHARACTER. THE PAGE NUMBER WILL BE THE LOGIC PAGE IN WHICH THE LINE BEING PROBED IS GENERATED.

EXAMPLES:

PROBE AA2-M2-U04 (+WIGGLE) (DM040)

PROBE AA2-M2-U03 (-VERTICAL 4)
(DM045)

JUMPERING FROM ONE POINT TO ANOTHER

JUMPERING IS DONE FOR THE FOLLOWING REASONS:
FROM ONE PIN TO A GROUND TO FORCE A CONDITION
FROM ONE PIN TO ANOTHER PIN TO SENSE A LOGIC LEVEL
FROM ONE PIN TO ANOTHER PIN TO BYPASS AN INTERLOCK

THE FORMAT IS
JUMPER AA2-Q2-P07 TO AA2-R2-U11

IF JUMPERING IS DONE ON THE SAME CARD, THEN
THE FORMAT IS
JUMPER AA2-Q2-P07 TO U11
OR
JUMPER AA2-V3-D11 TO D12
REMOVE CABLE AA2-V3
OR
JUMPER AA2-Q2-P07 TO S13 TO SENSE
-HAMMER SELECT STROBE

CARD CALLOUTS

SINGLE CARD CALLOUTS

REPLACE AA2-Q2
OR
REPLACE AA2-Q2 (PRINTER CONTROL)
OR
REPLACE KBD-PC (KEYBOARD PC BOARD)
OR
REPLACE PTR-13C (STEPPER DRIVER)

MULTIPLE CARD CALLOUTS

THESE CALLOUTS ARE LISTED IN THE ORDER IN WHICH THEY ARE MOST LIKELY TO FAIL.

REPLACE AA2-Q2
REPLACE PTR-13A
OR
1. CHECK ADJUSTMENT OF CLICKER
2. CHECK RESISTANCE OF CLICKER TO 2 OHMS
3. REPLACE KBD-PC (KEYBOARD PC BOARD)

CABLE CALLOUTS

CABLES ARE ONLY ISOLATED IF THEY ARE OPEN, NO SHORTED CABLES ARE DETECTED.

REPLACE CABLE FROM AA2-U3 TO KBD-PC
OR
REPLACE CABLE FROM AA2-V3 TO PTR-13C

DIAGNOSTIC PROBE INDICATIONS:

ALL PROBES WILL REFERENCE THE LINE BEING PROBED IN THE FOLLOWING MANNER:

LINE UP?	-UP LIGHT IS ON, DOWN LIGHT IS OFF.
LINE DOWN?	-DOWN LIGHT IS ON, UP LIGHT IS OFF.
LINE PULSING?	-BOTH LIGHTS ARE ON OR ALTERNATING.
LINE PULSE UP?	-UP LIGHT IS OFF, THEN FLASHES ON MOMENTARILY WHEN ACTION PERFORMED. NO REFERENCE IS MADE TO THE DOWN LIGHT.
LINE PULSE DOWN?	-DOWN LIGHT IS OFF, THEN FLASHES ON MOMENTARILY WHEN ACTION PERFORMED. NO REFERENCE IS MADE TO UP LIGHT.
LINE DOWN, PULSE UP?	-DOWN LIGHT IS ON AND STAYS ON. UP LIGHT IS OFF, THEN FLASHES ON MOMENTARILY WHEN ACTION PERFORMED.
LINE UP, PULSE DOWN?	-UP LIGHT IS ON AND STAYS ON. DOWN LIGHT IS OFF, THEN FLASHES ON MOMENTARILY WHEN ACTION PERFORMED.
LINE DOWN, CHANGE UP?	-DOWN LIGHT IS ON, THEN GOES OFF WHEN ACTION PERFORMED. UP LIGHT IS OFF, THEN GOES ON WHEN ACTION PERFORMED.
LINE UP, CHANGE DOWN?	-UP LIGHT IS ON, THEN GOES OFF WHEN ACTION PERFORMED. DOWN LIGHT IS OFF, THEN GOES ON WHEN ACTION PERFORMED.
LINE DOWN, CHANGE PULSING?	-DOWN LIGHT IS ON AND STAYS ON. UP LIGHT IS OFF, THEN GOES ON WHEN ACTION PERFORMED.
LINE UP, CHANGE PULSING?	-UP LIGHT IS ON AND STAYS ON. DOWN LIGHT IS OFF, THEN GOES ON WHEN ACTION PERFORMED.